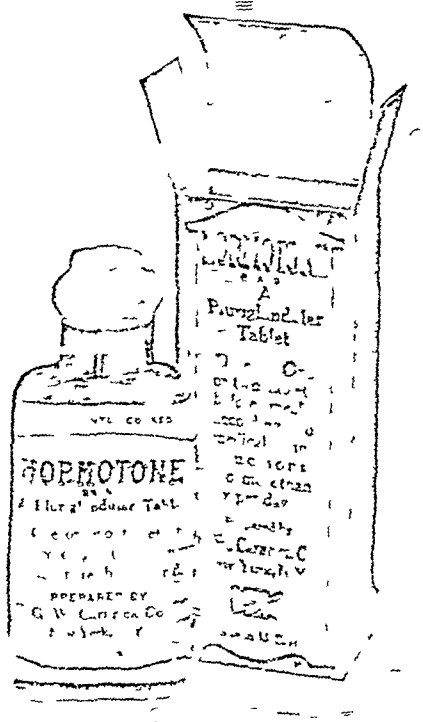
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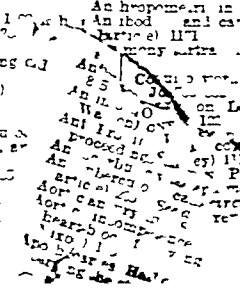
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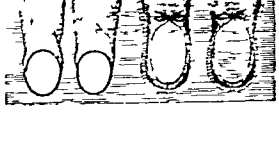
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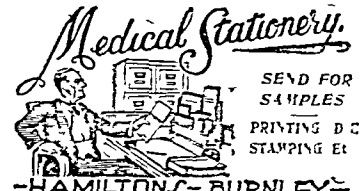
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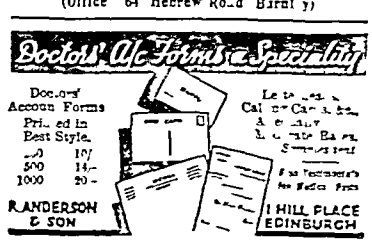
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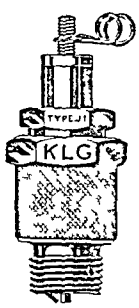
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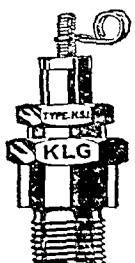
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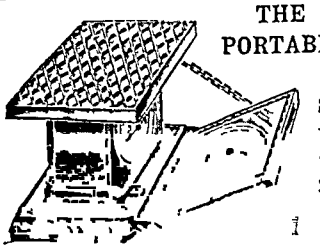
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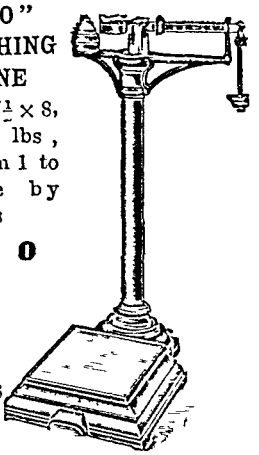
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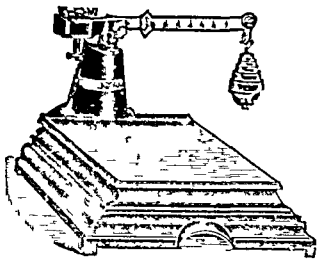
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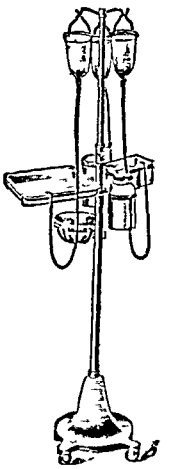
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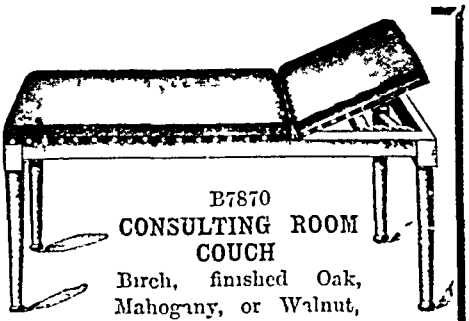
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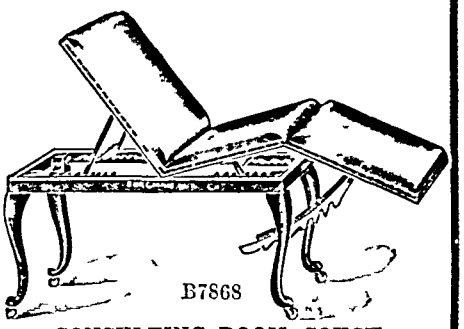
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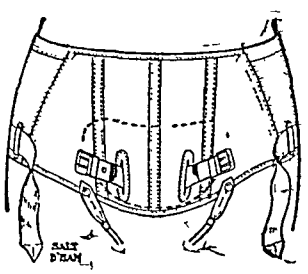
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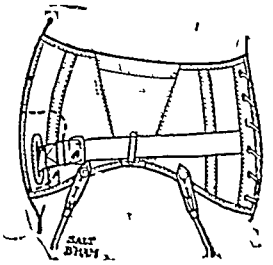
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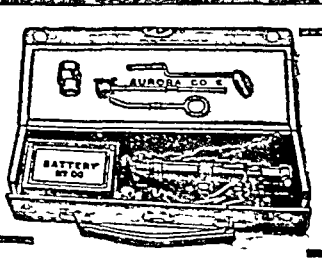


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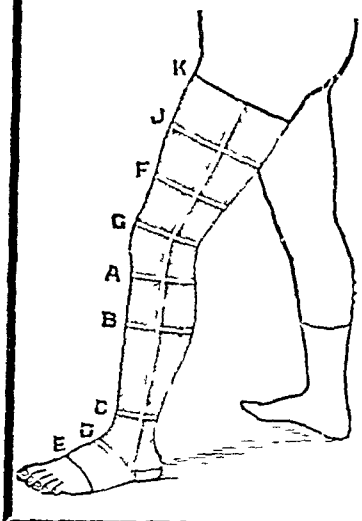
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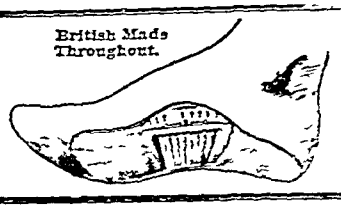
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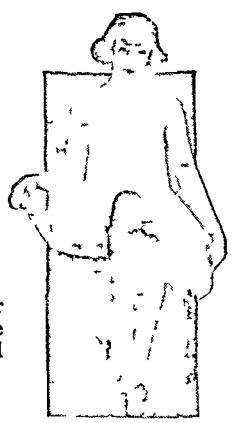
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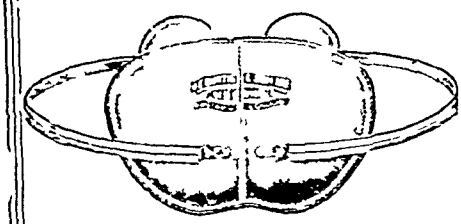
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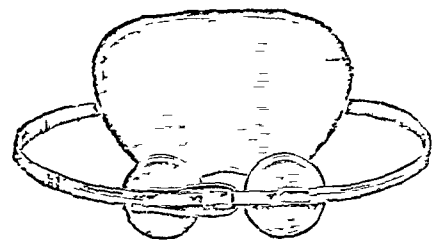
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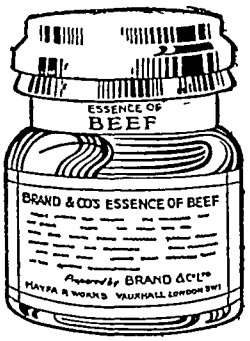
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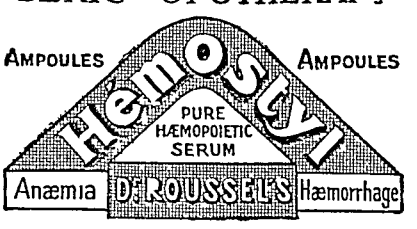
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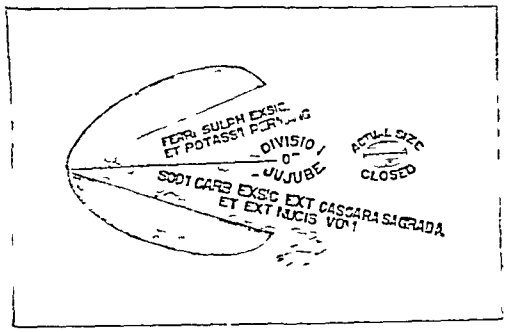
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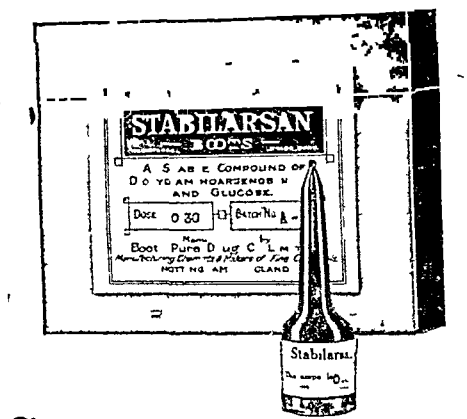
Dioxydiaminoarsenobenzol—Glucose

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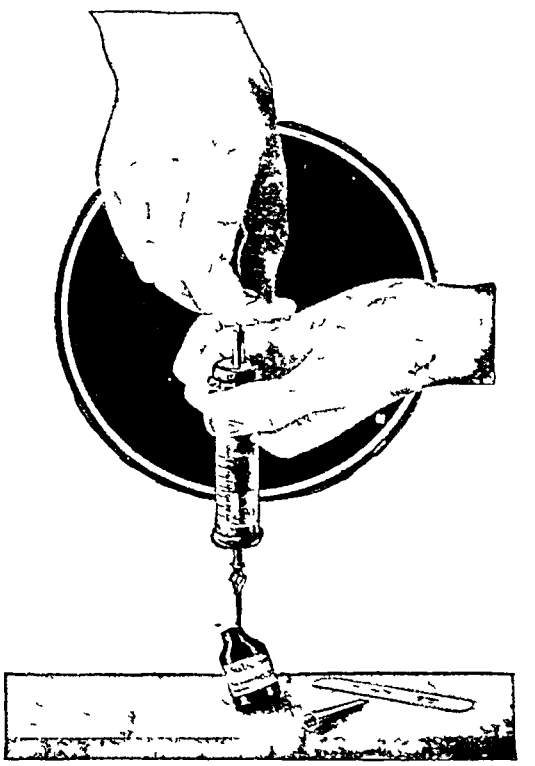
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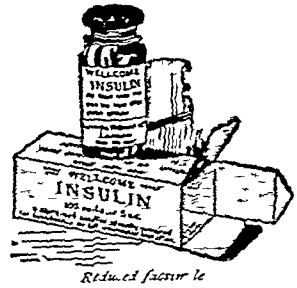
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I am personally most grateful for Dimol I used to get intestinal fermentation and toxæmic headaches continually Salol was no good at all, but Dimol relieves the symptoms in less than one hour '

———, F R C S Eng
Hants, July 17, 1921

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———, M R C S
Derbyshire September 2, 1921

COLITIS

I have used Dimol in cases of colitis and irritative diarrhœa with excellent effect and I intend to test its uses further It promises to be a valuable addition to therapeutic resources '

———, M D Lond
Devon October 12, 1921

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——— M D Ed
Cavendish Square, W 1 June 2, 1922

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LONDON SATURDAY, JULY 5TH, 1924

A British Medical Association Lecture
ON
THE ESSENTIAL SIGNS OF ARTERIO-SCLEROTIC DISEASE *
(*With Plate in Colours*)

BY
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NOMENCLATURE

IT will make the ultimate exposition of the subject clearer if I begin with a few explanatory remarks on the nomenclature of arterial disease. "Arterio-sclerosis" is a term which includes both forms of arterial disease of uncertain etiology as well as those so lacking in identity that there is no agreement on their names. The term "arterio-sclerosis" may, indeed, be compared to a creche for children who have not known their parents, or who have so little individuality that they cannot be distinguished apart. Thus when the etiology of some form or arterio-sclerosis becomes known, the creche loses one of its children an event which took place with the recognition of tuberculous endarteritis and syphilitic endarteritis and mesaortitis. Again, although the etiology may be unknown, there are forms of arterial disease, such as thrombo-angeitis obliterans and periarteritis nodosa, which are so distinct pathologically and clinically that they cannot pass the test of nonentity that admits them to the creche.

CLASSIFICATION OF ARTERIO-SCLEROSIS

If the children of the creche are examined with care they lend themselves to classification on alternative lines. On the one hand, in terms of etiology, there are some with a presumed parentage, though they are lacking in distinction, such as the arterio-scleroses caused by infections, of which typhoid fever is an example, on the other hand, in terms of morphology, there are forms of arterio-sclerosis that appear sufficiently distinct to deserve group names, and examples of these are nodular, diffuse hyperplastic, senile, and Monckeberg's sclerosis. The distinction between these several groups is a morphological one, and it is based on variation in the form of the lesion, the distinction must not be pressed to too fine a point, because, just as groups of individuals, as families, lose some of their identity by marriage, so these groups of arterio-scleroses lose some of their distinction by coincidence and overlap. So long as the etiology of arterio-sclerosis remains veiled in relative obscurity, the latter of these two lines of classification is the more convenient, and, being based on variations in structure, it is in accord with the proper use of the term "arterio-sclerosis."

THE SIGNIFICANCE OF ARTERIO-SCLEROSIS

Arterio-sclerosis is first and foremost an anatomical as opposed to a clinical conception. To the morbid anatomist arterio-sclerosis has a definite significance. It is a lesion that he can recognize and describe, and though he more often collects his material for examination from the *post-mortem* room than the operating theatre, the lesion has for him a living interest, for in it he sees the fierce struggle between the forces of destruction and the forces of resistance and repair. Contrast this vital interest of the morbid anatomist with the commonplace opinion of the clinician who is inclined to see in arterio-sclerosis mere evidence of senility and arterial decay. It cannot be only the failure of therapeusis that gives the clinician this hopeless outlook, it is due rather to an imperfect understanding of vascular function and vascular disease. Thus it is not long since arteries were regarded merely as pipes whose chief function was to withstand the pressure of the blood they contain, and conduct it from the heart to the periphery, as a result, most changes in arterial structure were attributed either to the continued effect of this pressure or to the use of bad material in making the pipes. These simple mechanistic views are being superseded as we recognize variations in tone of the whole vascular system, including the capillaries, and a power of rhythmical contraction of the arteries—activities which bring the physiology of arteries into line with that of the heart.

An incomplete appreciation of the pathology of arterial disease also lent support to the inanimate clinical view of arterio-sclerosis. Thus, much of the thickening and hardening of arteries is due to calcification and fibrosis—the end result of processes of necrosis and repair. The fatty degeneration so constantly present in arterio-sclerosis is evidence of mere arterial decay, even the cellular proliferation, which is an integral part of the lesion, is open to explanation in terms of replacement fibrosis and repair. If this were the whole explanation of the changes in vascular structure that make arterio-sclerosis, the lesion would be simply evidence of a process of degeneration or repair. It would provide a natural explanation of the fact that the majority of persons with arterio-sclerosis do not suffer from it, and the palpation of a thickened radial artery or the inspection of retinal arterio-sclerosis in the fundus oculi would approach in its clinical significance to the signs of a healed tuberculous lesion in the apex of a lung.

ACTIVITY OR QUIESCENCE OF THE LESION

To a certain extent we are indeed right in regarding the presence of arterio-sclerosis as evidence of recovery from disease, but it is only right within strict limitation because arterio-sclerosis tends to be a progressive or an active lesion and one that often leads to incapacity and not infrequently to death.

Whenever the diagnosis of arterio-sclerosis is made we want to know if the person is suffering from it: the first step in diagnosis is the determination of its presence: the second immediate step is the determination of its activity or quiescence.

The importance of this distinction is more clearly realized by comparison with the same problem as it is presented by valvular disease of the heart. The first step in diagnosis is the recognition of the presence of an organic change in the valves: the second step is the distinction between an active and an old lesion. When the lesion is active we may speak of the person suffering from *heart disease*, and similarly, if we can define the position in which we are able to make the diagnosis of active arterio-sclerosis we shall be able to speak of *arterio-sclerotic disease*.

* Delivered before the Mid-Cheshire Division at Altrincham on June 20th.

The term "arterio-sclerotic disease" is synonymous with "an active arterio-sclerotic lesion" or "active arterio-sclerosis" But whereas the term "arterio-sclerosis" has a morphological significance, arterio-sclerotic disease has a clinical significance, because the diagnosis of active arterial disease raises the presumption that the person affected is suffering from arterio-sclerosis or will suffer from it unless its activity is arrested Further, in using the term "arterio-sclerotic disease," there is no implication of a disease *sui generis*, for arterio-sclerosis, like endocarditis, is a part of the picture of many clinical entities and the product of many different causes

THE BASIS FOR THE DIAGNOSIS OF ARTERIO-SCLEROTIC DISEASE

My ideas of arterio-sclerotic disease rest on observations of the morbid anatomy of arterio-sclerosis My studies of arterio-sclerosis have been chiefly concerned with the form which is known as arterio-capillary fibrosis, or diffuse hyperplastic sclerosis The striking fact of this form of arterio-sclerosis is the cellular proliferation which, both in priority of appearance and degree of development, dominates the histological picture of diffuse hyperplastic sclerosis

At any rate, in this form of arterio-sclerosis there is no doubt as to the activity of the lesion while the form of the lesion is that of an active inflammatory process, followed by degenerative changes at a later stage

Histology of Diffuse Hyperplastic Sclerosis

The main incidence of the lesion is on the finer ramifications of the vascular tree Some organs tend to be affected more than others, the kidneys and spleen being especially affected In other organs, such as the heart and skeletal muscles, the lesion is rarely found At any one time, in an organ such as the kidney or spleen, the lesion is to be found in all stages of development The earliest stage is one of endothelial proliferation visible in the terminal arterioles, and this, indeed, may be preceded by capillary changes At a later stage the swollen and proliferated endothelial cells undergo fatty degeneration, and occlusion of the lumen results The arteriole change varies in the length of the vessel, there is a varying swelling of the vessel wall, giving it a moniliform appearance, and a variable degree of fatty degeneration At this stage there are obvious capillary changes in the glomerular tufts, such as are seen in Fig II While these changes are proceeding, the proliferation of the intima of the parent vessels, the intralobular arteries in the kidney, is taking place In these vessels also there is, I think, endothelial cell proliferation in addition to proliferation of the other cells of the intima, at the same time there is formation of new layers of elastic tissue, which is perhaps a secretion by the newly formed endothelial cells These vessels are in contrast to the terminal arterioles in that there is little or no fatty degeneration in the intima, even when the lesion is advanced Fig III shows the complete lesion as it affects a terminal arteriole, and the parent vessel from which it springs

In addition to the vascular changes already described, there may be hypertrophy of the media, and there is usually a suggestion of thickening of the adventitia Lung vessels are relatively free from change, on the other hand, they may be affected by nodular or other form of arterio-sclerosis

The important fact is that cell multiplication precedes degeneration, and from our knowledge of the function of endothelium and its behaviour under pathological conditions it is not, I think, open to question that the endothelial proliferation is evidence of inflammation, and further, as it precedes degenerative change, it must be a primary response to irritation and not the secondary effect of degeneration or necrosis of cells in its immediate environment

There is further evidence of the activity of the lesion in the frequent presence of areas of intense small-cell infiltration in the kidneys of patients who have died with arterio-sclerotic disease Fig I shows a patch of such infiltration, and similar foci of inflammatory reaction were scattered through the renal cortex, which, in its main extent, was relatively normal The signs of activity of the lesion are, indeed, so obtrusive that one is led to expect coincident symptoms and physical signs in a person whose vessels are affected by this lesion

SYMPTOMATOLOGY OF ARTERIO-SCLEROTIC DISEASE

In the attempt to identify the signs and symptoms due to activity of the arterio-sclerotic lesion, the best cases to examine will be those in which arterio-sclerotic disease is so severe in its incidence and rapid in its course that it overcomes resistance and forestalls repair The two outstanding examples of a fatal termination in this disease are cerebral haemorrhage and angina pectoris These two conditions provide the basic symptomatology of arterio-sclerotic disease, the cardinal sign is haemorrhage, the cardinal symptom is pain

Haemorrhage

The occurrence of haemorrhage in arterio-sclerosis is common experience, and cerebral haemorrhage is its outstanding illustration The significance of the haemorrhage has not, however, been adequately recognized It is either quickly dismissed as a complication of the vascular disease, without pause to consider the process responsible for its occurrence, or the sequence of thought is disturbed by consideration of the etiology of the lesion These matters are of such speculative interest that an important link in the chain of causation receives no adequate consideration, and the actual change in structure of the vessel wall which allows the escape of blood is hardly considered Thus high blood pressure, even when considerable and lasting over a long period of time, or even when suddenly increased above its normal level, is not responsible for haemorrhage unless the vessel wall is so damaged by disease as to permit the escape of blood The number of persons living with high blood pressure bears witness to this *Per contra*, cerebral haemorrhage is not uncommon in arterio-sclerosis with a normal blood pressure, and any series of cases of cerebral haemorrhage includes a fair proportion without cardiac hypertrophy *post mortem*, or raised blood pressure during life

The determining factor in cerebral haemorrhage is disease of the vessel wall, and the vascular lesion is as directly and primarily responsible for the haemorrhage in arterio-sclerosis as it is in the cases of gross haemorrhage sometimes seen in encephalitis lethargica

The importance of vascular disease in distinction from blood pressure in the causation of cerebral haemorrhage is brought out by what seems to me a fair comparison of cerebral haemorrhage with perforation of the stomach in gastric ulcer We are told that the immediate cause of

DESCRIPTION OF COLOURED PLATE

FIG I—This drawing is reproduced to show intense small cell infiltration of the renal parenchyma in a case of arterio sclerotic disease that died of cerebral haemorrhage without evidence of kidney disease Similar sharply defined patches were scattered throughout the kidney, intervening areas of the cortex being relatively normal It is from the same organ as Fig II (× 80)

FIG II—This figure shows hyaline swelling and fatty degeneration of certain capillary loops in a glomerulus, the rest of the glomerulus being practically normal At the left hand corner there is some proliferation of the epithelial cells of the capsule It is an early stage of the condition seen in Fig III (× 200)

FIG III—To the right of the centre is an intralobular artery in cross section Its lumen is greatly reduced by thickening of the intima The faint outline of proliferated endothelial cells with clearly defined oval nuclei are seen towards the inner surface Nearer the media the cell outlines are indistinct There is hyaline swelling and in places slight fatty degeneration The internal elastic lamina is duplicated in part of the circumference The glomerular artery cut longitudinally in its whole length is seen arising from its parent vessel The extreme fatty degeneration of its intima is in marked contrast with the relative integrity of the intimal cells of the parent vessel The faint outline of degenerate endothelial cells is still visible and at either end of the vessel the original lumen can be seen in longitudinal section The typical moniliform appearance of the arterial is well shown the capillary nexus in which the vessel ends has undergone degeneration This section shows all the histological features of diffuse hyperplastic sclerosis at a glance [Section prepared from kidney embedded in gelatin stained with haematoxylin and Sudan III (× 400) Camera lucida drawing by J R Lord]

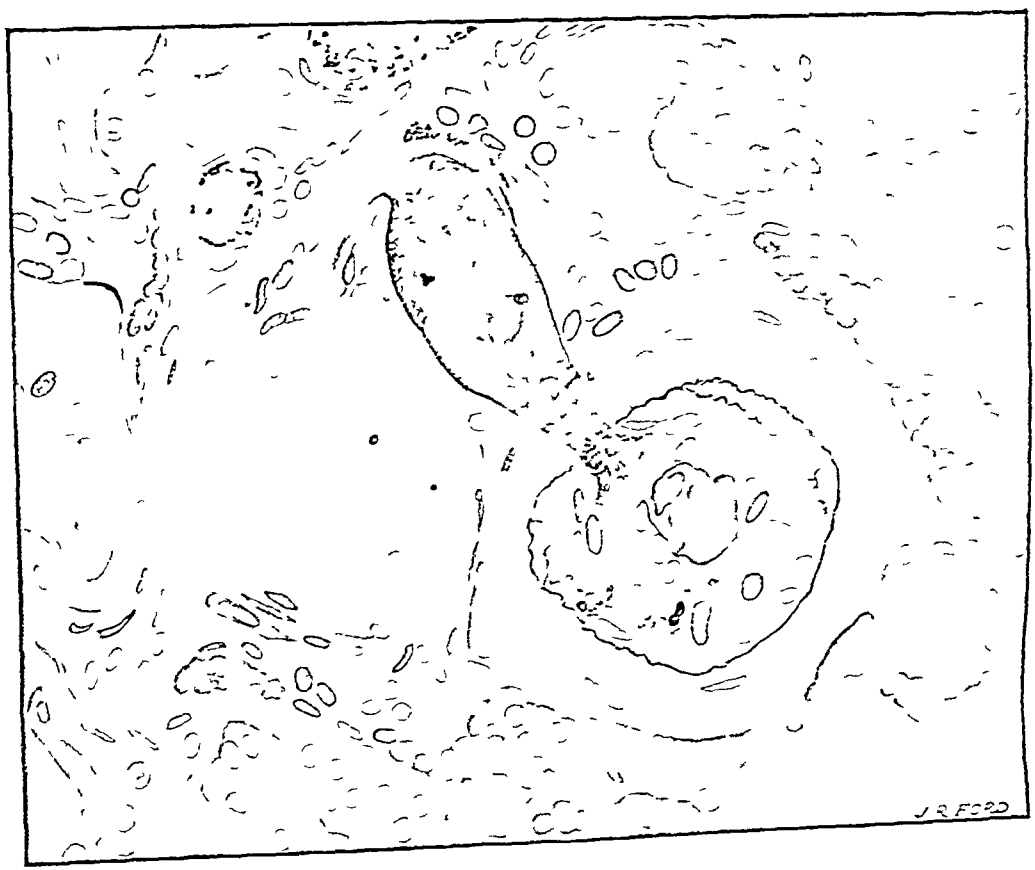
GEOFFREY EVANS: THE ESSENTIAL SIGNS OF ARTERIOSCLEROTIC DISEASE



Fig. I



Fig. II



the perforation of the stomach is separation of a slough or the spread of ulceration, but that it may occur from over-distension of the stomach or as the result of sudden strain. Mechanical influences in the causation of perforation of the stomach are of minor importance in comparison with the pathological changes that result from activity of the ulcer. Similarly in arterial disease I believe that as a cause of haemorrhage the height of the blood pressure or its variation from time to time is of minor importance in determining rupture of the vessel, compared with increase or activity of the process of arterial disease.

In short I suggest that haemorrhage in arterio-sclerosis is no evidence of activity of the vascular lesion, that, in other words it is no sign of arterio-sclerotic disease.

If the first haemorrhage is fatal, there is little clinical advantage in appreciating this significance of haemorrhage in a given case, but it frequently happens that the final and fatal haemorrhage is preceded at an interval of months or years by smaller haemorrhages, from which recovery occurs. There is, indeed, a group of cases in which the palsy or other cerebral disturbance is so frequently repeated, so slight in its manifestations or short in its duration, especially so completely recovered from, that it is regarded as due to vascular spasm. This opinion is difficult to disprove but the fact that in such cases death often occurs finally from a gross haemorrhage is evidence in favour of the view that the slight antecedent paroxysms are due to minute haemorrhages. I certainly incline to the opinion that there is a definite lesion in the majority of such cases, because my own experience is that brains which appear normal on careful naked eye examination frequently show numerous minute areas of capillary haemorrhage on microscopical examination. It is not uncommon to find the pons, for instance peppered with microscopical haemorrhages and spots of pigmentation, some of which appear to be due to old extravasations of blood, though there was no visible sign of the lesions on naked eye examination of serial sections made in the *post-mortem* room. This, and many other controversial matters which I refer to this evening are fully discussed by Sir Clifford Allbutt in his great work *Diseases of the Arteries, including Angina Pectoris*.[1]

Our great need as clinicians, and if possible from the point of view of advising curative or prophylactic treatment, and at any rate from the point of view of prognosis, is to be in a position to anticipate cerebral haemorrhage. If haemorrhage is accepted as evidence of activity of arterio-sclerosis, if it is accepted as a cardinal sign of arterio-sclerotic disease, haemorrhages elsewhere in the body acquire a new significance. This is already realized in the case of recurrent epistaxis, which is sometimes antecedent to cerebral haemorrhage. A similar significance attaches to haemorrhage from the lungs, kidneys, stomach, intestines, uterus, and other situations in the body where haemorrhage may occur. Not only should gross haemorrhages be considered from this point of view, but whenever arterio-sclerotic disease is suspected a careful search for minute haemorrhages should be conducted. The fundus oculi is of first importance in this connexion, and the work of Foster Moore provides one of the links between retinal and cerebral haemorrhage.

Another important site of haemorrhage in arterio-sclerotic disease—in fact perhaps the most important situation in which haemorrhage occurs—is in the kidneys, a careful examination of urinary deposits will often reveal the *presence of red blood corpuscles in the urine, when there* is a trace of albumin present although the guaiacum test for blood is negative. There are, of course, very numerous causes for hæmaturia, which require exclusion before the presence of red blood corpuscles in the urine is accepted as evidence of arterio sclerotic disease. It is however, unnecessary to make a differential diagnosis between chronic interstitial nephritis and arterio-sclerotic disease because the former includes the latter.

It is thus seen that the discovery of haemorrhage in the kidneys, eyes, brain, and elsewhere in the body may in the first place lead the way to the diagnosis of arterio-sclerotic disease in a patient whose symptomatology does not of itself suggest this disease, in this way it may be the crucial sign in the differential diagnosis between neurasthenia and arterio-sclerotic disease. Again, in a patient who has the physical signs of arterio-sclerosis, whether it be in the appearance of the retinal vessels, the thickening of the arteries, the condition of the urine, or *the level of the* blood pressure, the finding of haemorrhage will make the differential diagnosis between healed or quiescent and active disease.

But there is another side to the picture. If haemorrhage is realized as the critical sign of arterio-sclerotic disease local lesions will not be so readily accepted as the cause of haemorrhage until the presence of arterio-sclerotic disease has been reasonably excluded. In the somewhat obscure cases of *haemorrhage that* are not uncommon in practice the possibility of arterio-sclerotic disease requires the closest consideration, it may be responsible for such gross haemorrhage as to necessitate the removal of the organ from which the bleeding occurs. Thus it is the explanation of some cases of renal epistaxis and is not uncommon explanation of some cases of excessive uterine haemorrhage, in one year I saw four women in whom hysterectomy had been performed on this account and though the removal of the uterus was probably necessary the fact of its being due to arterio-sclerotic disease was not recognized, and it was on account of the exacerbation of the symptoms of this disease that further medical advice was sought after hysterectomy had been performed.

In concluding this part of the subject reference must be made to the controversial distinction between haemorrhage and thrombosis. It is quite possible that haemorrhage is preceded by thrombosis in many instances. I think, however, that it is immaterial to my thesis because the chief factor in determining thrombosis is disease of the vessel wall, and the occurrence of thrombosis is probably as much evidence of activity of this disease as is haemorrhage.

Pain

The question of pain as a symptom of arterio-sclerotic *disease is more difficult than that of haemorrhage* because it is often difficult to distinguish between pain due to arterial disease and pain due to the effects of arterial disease. This distinction may be chiefly of academic importance, it need nevertheless to be borne in mind.

There can be no doubt that painful sensation may be provoked by vascular disease. The local pain of arterial embolism is on occasion sudden and excruciating. There is often marked tenderness in phlebitis—as for instance tenderness on pressure over the affected vein in femoral thrombosis. Although arterio-sclerosis is in general a painless disease the superficial arteries are occasionally tender on light palpation. Thus I have on occasion found the temporal artery tender and I was once consulted by a patient simply on account of pain in this vessel. Recently I saw a man with arterio-sclerotic disease whose transverse cervical artery was tender on palpation he said it felt like a pin prick when it was touched. On the other hand the pain of intermittent claudication is an example of pain provoked by deficient blood supply a second type of vascular disease. The recent researches of Professor MacWilliam in this country have provided a rational explanation of the production of this pain. One of the most striking symptoms in medicine both owing to its severity its peculiar nature and its occasional fatal association is the pain of angina pectoris. Whether the pain has its origin in the aorta or in the heart there is a consensus of opinion that it is primarily due to vascular disease—that is by disease affecting the basis of the aorta or the coronary arteries. Angina pectoris [illegible] of the root of the aorta and though the disease more often associated with syphilis than any other is also angina pectoris may result from arterio-sclerosis of the aorta. There is no other pain than that of angina which points with such deadly directness to arterio-sclerotic disease, but there *are other pains* which are suggestive of it. There are pains for instance in the neck and occipital region which are closely associated with arterio-sclerotic disease, there are also pains in the shoulders and hips and in the arms and legs, which are directly due to arterial disease,

or which have their origin in fibrous tissues, joints, or nerves irritated by the poison or poisons responsible for the coincident arterio-sclerotic disease

After haemorrhage and thrombosis on the one hand, and pain on the other hand, which form the basis of the symptomatology of arterio-sclerotic disease, there follow a large group of signs and symptoms dependent on disturbance of vascular function It is, of course, appreciated that functional disturbance may occur without structural defect, nevertheless, functional disturbance is so frequently associated with structural defect that its presence suggests a lesion Common symptoms in arterio-sclerotic disease are flushings and blotchiness of the skin, in more marked cases there are Raynaud-like symptoms, and other circulatory disturbances The physical sign which has received most attention is an alteration in the blood pressure It is beyond the scope of this communication to discuss the significance of raised blood pressure in relation to arterio-sclerotic disease In general I think that a raised blood pressure is significant of arterio-sclerotic disease, but it may be that it has no such significance in those cases in which the blood pressure though raised maintains a steady level, little affected by exercise or by medical treatment

The Occurrence of Arterio-sclerotic Disease

In the previous paragraphs I have attempted to present arterio-sclerotic disease as the active phase of the lesion arterio sclerosis, and recognizable by certain signs and symptoms due to activity of the lesion It will give the condition greater distinctness if one considers the clinical entities of which it may form part

On the basis of its histology, diffuse hyperplastic sclerosis is the most active or acute form of arterio-sclerosis, and it is therefore in this form that one would expect the signs and symptoms of arterio-sclerotic disease to be most evident In previous communications[1] I have given reasons for the opinion that persistent hypertension is in itself evidence of diffuse hyperplastic sclerosis, and it is, therefore, in those clinical conditions in which persistent hypertension is present that one would expect to find arterio-sclerotic disease This in fact is the case, and the best examples of arterio sclerotic disease are to be found in hypertension, chronic interstitial nephritis, and chronic nephritis

There is reason to believe that the more chronic forms of arterio sclerosis also have their active phases which may be capable of clinical recognition In such cases, though there may be no alteration in the blood pressure, evidence of activity of the arterial lesion—that is, evidence of arterio-sclerotic disease—may be present in retinal haemorrhage and exudates, and in the presence of haematuria, either gross or only discoverable on careful microscopical examination of the urinary deposit In one such case, that of an old man with massive retinal exudates, there have been changes in the form of the electrocardiograms taken from time to time—at one time indicating a right bundle-branch lesion, and at another time showing its recovery, it is possible that these electrocardiographic changes are the result of vascular disturbance, or it may be that they result from the action of the poison responsible for the vascular disease It is in this direction at any rate—in the most careful examination of the cardio-vasculo-renal system, both in regard to its structure and function—that the signs and symptoms of arterio-sclerotic disease are to be sought

Types of Arterio-sclerotic Disease

In order to give the conception of arterio-sclerotic disease clearer definition, it may be usefully compared with diseases of the joints, thus, in a recent textbook of medicine Sir William Willcox divides disease of joints into two classes those of known causation and those of obscure causation In the first class are grouped (1) traumatic arthritis, to which there is a parallel in arterial disease in arterio-venous aneurysm, (2) specific infective arthritis, of which a number of examples are known in arthritis, and of which tuberculous and syphilitic endarteritis are the best examples in arterial disease Under the same heading is included gout, and its parallel in vascular nomenclature, by reason of its being a definite entity but of unknown causation, is thrombo-angeitis obliterans or periarteritis nodosa Again, there is the neuropathic type of arthritis, and with this may be compared the endarteritis present in the late stages, at any rate, of Raynaud's disease

The second main class—arthritis of obscure causation—has its parallel in arterio-sclerosis, and I would suggest that diffuse hyperplastic sclerosis in the most general way is comparable to the more acute forms of polyarthritis, known by such names as rheumatoid arthritis, subacute or chronic infective arthritis, while the senile type of arterio-sclerosis is again in a most general way comparable to the osteo-arthritic type of joint lesion

To my mind the subject of arterio-sclerosis is simplified by this comparison, and I think that some of the obscurity which has surrounded the subject in the past has been due to a failure to recognize the part that the process of inflammation plays in the production of the arterio-sclerotic lesion It has been due in part to the overemphasis of trauma as a cause of arterial disease, to the exaggerated importance attached to high blood pressure as an etiological factor Senility has also been overemphasized, and it probably plays a more important part in determining the form of the lesion than in determining its onset

At the present time the etiology of arterio-sclerosis is veiled in obscurity, but the opportunities of discovering its causation will be multiplied when we are in a position to recognize its onset and follow its course clinically To do this we must study the signs and symptoms of activity of arterio-sclerosis, we must, in fact, learn the symptomatology of arterio-sclerotic disease

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A British Medical Association Lecture.

NOTES ON MEDICAL PRACTICE.

BY

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On Prognosis

PROGNOSIS is one of the legs of the tripod when we are dealing with disease, the other legs being diagnosis and treatment The patient asks, "Am I going to get well?"

I have always been interested in the dogmatism of youth, which knows and seldom hesitates to give its opinion, of course the patient likes this Yet surely as a rule it is experience of cases, and constantly seeing them for years, that enable the doctor to give sound and wise advice in this matter of prognosis

Increasing age has its advantages and disadvantages to the doctor As regards active surgery there is a limit beyond which it would be foolish for a man to go Yet, providing that a man keeps up his reading and his powers of observation, also allowing at the same time that he is seeing cases, then age is a great advantage in prognosing the particular disease under his care A man who has watched carefully his work for forty or even fifty years ought to be, and must be, in a better position to give a sound prognosis than a man who has been in practice for a comparatively short period There is the exception—that one man may in a few years see and observe more than another man who has been longer at work Still, the rule I have laid down is a wise and sound one

On Diagnosis

I am inclined to the view that diagnosis is not thought of paramount importance, or perhaps it is more just to say that not sufficient time in thought, word, and deed is given to diagnosis There is a tendency of late, I have noticed,

among many men especially surgeons, to get on with the case—that is to say, treatment must be begun at once before the case is thoroughly considered There are patients in which a lightning diagnosis is absolutely necessary, such as the acute abdomen but let us remember that there is such a thing as a chronic abdomen, in which time and thought are required

There is another point worth thinking over—that is to use all our natural powers before using all the modern methods that are so much in vogue just now The older physicians took great notice of the appearance of their patients their history and the manual examination Quacks have often scored over us in these points The new modes are of great value often indispensable, but conditions still exist in which they are practically impossible of application on account of the expense skill, and time required The day may come, and probably will come when every doctor will have the opportunity of obtaining these requisites, but for the present many men must wait in patience, and meanwhile let us use all our natural powers to their greatest extent

Ophthalmoscopic and Laryngoscopic Examinations

The enormous strides that the medical and surgical specialties have made renders it almost impossible for the ordinary doctor to keep in line with all the diagnostic instrument now recommended Let it the big things were taught and the necessary instruments for complete diagnosis used comparatively few mistakes would be made in practice With the modern electric ophthalmoscope there is little or no difficulty in learning to examine the back of the eye, in my opinion it should be used by every practitioner, and the same remarks applies to the laryngoscope I can speak with some experience, for many years I have found that the use of these instruments has been of the greatest service to me in practice, and I have been able to teach my house-surgeons in a very short time the use and value of the ophthalmoscope

I am not advising that the operations that may be necessary to perform when the diagnosis revealed by the use of these two instruments has been made should be done by the practitioner, but rather that he should be able early to detect the condition, and then be able to place the case where the treatment can be skilfully carried out

Acidosis in Children—sometimes called Cyclical Vomiting

I do not consider that this is a common condition, but I believe that mild cases are often overlooked When one is called to see a child suffering from vomiting it is important to think of this condition The attack may last three or four days, and recur at intervals varying from three weeks to three months It may come on apparently in perfect health, and may be of an alarming character The vomit and the breath of the patient are characteristic Alkalis either by mouth or rectum, and 5 per cent glucose by the rectum should be given I mention this condition in order that a correct diagnosis may be made early and no suggestion for operation made

The Early Diagnosis of Appendicitis in Children

I know of few greater difficulties in practice than the early diagnosis of appendicitis in children Such symptoms as vomiting, furred tongue, constipation, rapid pulse, rigidity of right rectus, resistance in right iliac fossa, even superficial tenderness, are not the earliest symptoms and signs Sudden pain, beginning often over the umbilicus, then extending into the right iliac fossa with deep tenderness at McBurney's spot, with a rising temperature are the most valuable signs

One often meets with a general slight abdominal tenderness in children, or even acute abdominal pain occurring after some error in diet, for a short time the pain may be severe but it soon passes off, and there is rarely, if ever any rise of temperature Another important and significant point to be remembered is that this class of case is often accompanied with diarrhoea which does not occur in appendicitis I think it may be said that as a rule in children an appendicular abscess is less frequent than in the adult, and there is a practical point to remember in this connexion—that it is more important to operate early in children than in adults, so that the risk of a perforation may be avoided As I have already made note or in another article a prolonged operation is often avoided by operating at the earliest stage of the disease, for children cannot sustain a tedious and slow operation

Operations on Young Children

In watching operations for many years among patients of all ages I have been particularly struck by the fact that young children, as compared with adults, can ill stand serious and prolonged operations I mention this important fact, for surgical books seldom or never refer to it, it is important, when operations on children are undertaken, to remember that they should not be prolonged, and only such as is needful to the required relief Another point worth considering is whether it is right or wise to proceed with a serious operation unless immediately necessary

I have seen a great number of cases of acute appendicitis of all sorts and conditions My experience leads me to the conclusion that if the case is seen quite early say within twelve or twenty hours of the attack, the appendix should be removed but if seen when an abscess has formed I believe that the case will do better by simply draining the abscess with a tube, rather than prolonging the operation to take out the appendix Of course, I am speaking of children's cases

The Operation and After

When the operation is over the case is not then finished *No operation can be considered successful in the big meaning* of the word unless the patient is benefited Every surgeon when thinking about the advisability of the operation must and ought to take into account not only the direct and immediate effect but the ultimate benefit likely to follow I shall be told that this vision of the future is usually thought out but from a pretty *long experience* I think that often it is not However skilful a surgeon is much *more is required* of him than the time he spends on the operation

There is no need for me to fill in those important after-details it is sufficient to mention that they are most urgent from medical and nursing standpoints In fact very often more skill and real knowledge are required after than during the operation I have added this note on account of an observation made to me a short time back by a doctor He had had a colotomy done for malignant disease of the rectum it was quite successful but my friend said that the surgeon did not seem to take the same interest in the after-treatment as he had done in the operation In this particular instance it is understandable that this might happen What I am really driving at is this—that every surgeon should be in knowledge a physician as well as a surgeon

Treatment of Early Mental Cases

We are all in trouble when early mental cases come under our care It is always difficult to tell whether the mental condition is the beginning of a real chronic illness or whether it is only going to be a temporary state There are certain early mental cases—such as those associated with pneumonia puerperal states post-operative ones—in which we can generally give a good prognosis but we are constantly at a loss how and where to treat those connected with the so-called chronic manias such as lemon squeezing fusional insanity etc At present we have in this country no places or very few where such patients can be placed temporarily without certification but there should be observation and within reasonable proximity

We are hearing just now a good deal about detecting the earliest symptoms and signs of our patients diseases so that the disease may be treated at once before it becomes chronic although he private general practitioner is in a able to treat these early cases, yet his opportunities for doing are often hampered by the lack of means and method

In my opinion he should be able to watch these people, and also to treat them in institutions established for them, where the expense associated with their treatment does not exclude any class of patient America is far in advance of us in this matter

Rest in Rheumatic Fever

I should say that the tendency is to keep many of our cases for too long a period in bed, but there are some where prolonged rest is absolutely necessary, and I wish particularly to draw attention to rheumatic fever, when the heart is affected The reason is obvious, for when the valves or the walls are poisoned and weakened by the disease, they are not fit, nor are they capable of the extra exertion required of them, to maintain the body in the upright position for walking It is often difficult to get this rest carried out, whether in hospital or in private practice, for the patient often looks and appears well In hospitals the house-physician says that the bed is required for an urgent case, and in private the relations or friends often think that the patient is being coddled Still, there can be little doubt that for the future welfare of our patient we must use all our persuasive powers to enforce the rule

Should Patients be told of their Ill Condition?

This question is as old as the hills There are two extreme views—one is never to tell a patient when ill the real condition, except when the prognosis is in his or her favour, the second is given by the "conscientious" doctor who always tries to give what is, in his opinion, the exact state of the patient, whether bad or good However, we must not forget, when a patient consults us and asks us to give an accurate and honest opinion as regards his present and future health, that he really often only wants a favourable opinion, if the opinion is unfavourable he is annoyed and will very probably take further advice

Most of us, I suppose, would act in the following manner Considering hope to be one of the greatest helps to recovery from disease or operation, we should give this hope to the greatest possible extent to our patient I may say in passing that the quality of the hope given and its effect depend very largely on the doctor himself Some men have little or no way of expressing themselves for the help of their patient But there are exceptions to the rule When it is necessary that the patient should know the prognosis to be a bad one, for often he honestly desires to know this, for several reasons—these reasons may be religious or business—then an open and frank advice should be tendered

There is one other point we should never forget—namely, that we must not compare our student days' views on the subject of prognosis with those we gather from private practice Our private patients are in a much better health condition than are those met with in hospital practice We find in later life that the outlook in cases we are apt to condemn as serious when we enter practice is much more favourable than we had supposed

The Patient's Views on his Future Treatment

There are times and conditions in the conduct of a case when it is wise that the opinion of the patient should be taken It will be sufficient to name one or two instances in which I should always consult my patient

I will take perhaps rather an exceptional case, which I met with just lately—the presence of a cervical rib In such a case we should ask the patient whether symptoms are sufficiently irritating or painful enough to interfere with his work, and also if he wishes something to be done to relieve him Again, in a case of gastric or duodenal ulcer, if the patient bitterly complains of his symptoms seriously affecting his health and his work, then their presence may weigh down the scales in favour of operating

In speaking upon this point it is taken for granted that the case has been examined thoroughly, and all the pros and cons judiciously weighed In some urgent treatment, whether operative or otherwise, is at once demanded, but there are others in which operative or even ordinary treatment had better be suspended I am speaking of the borderland cases and it is often in these that the patients may assist us as to our treatment There is a tendency among some to recommend operative interference too lightly, as there may be also those who delay too long There is a chronic abdomen as well as an acute abdomen But let us remember that no operation is performed without some risk, and it has often happened that it was in the simple or expectant cases our misfortunes occurred

The Treatment of the Relations and Friends of the Patient

It is always remembered that the relations of the patient often require almost as much treatment as the patient The patient as a rule can be dealt with directly or through the nurse There are exceptions, but providing the doctor has the confidence of the patient—and without this he had better not undertake the case—the treatment can be honestly carried out, but where the relation or friend comes in with all his suggestions and his constant questionings, then the trouble to the doctor is doubled and the conduct of the case often seriously interfered with

I have often thought that the public do not always realize or understand what a professional fee includes It means not only the direct treatment of the patient, but also the thought for the future welfare of the patient at times when the doctor is at home, and also the interviews, letter writing, and telephone messages by the relations It is well sometimes that the public should be informed of these matters

On High Temperature

In a number of cases we find the temperature varying between 100° and 103°, without being able to discover a cause I believe that many of these cases are best explained by the absorption of poisonous material evolved during gastric or further intestinal digestion Our fathers and grandfathers knew better than we do the value of a blue pill or calomel, followed by a black draught in cases of what they called, I believe rightly, gastric fever, implying that these cases were due to absorption by the stomach or intestine—probably the colon—of some offending material which, acting through the circulation on the heat centre, set up fever To-day we call this intestinal toxæmia

The old treatment, although empirical, was antiseptic and eliminant, and the patients almost invariably said that they were the better for it A high temperature may or may not be deleterious, and certainly it is not to be knocked down on every conceivable occasion If we could always find out the cause, the treatment might then become easy, but often we have to wait, and it is not unreasonable to suppose that in some instances the extra heat produced in the body is protective

There is a point in connexion with high temperature to which I wish to draw particular attention, for it may easily be overlooked—namely, bacilluria, or the presence of *B coli communis* in the urine A short history of a case lately under my care in the Royal Victoria Hospital, Folkestone, will best illustrate this

A girl, aged 17, single, not pregnant, was sent in as a case of acute appendicitis Her past history was that she had suffered from frequency of micturition and pain during the act for three or four weeks, but, feeling quite well, had paid no attention to these symptoms

On admission there was rigidity and tenderness in the right hypogastric and iliac regions, also in the right loin, with vomiting, but these symptoms entirely disappeared the next day, and never reappeared I saw her two days after admission, and the only symptom or sign discoverable—apart from the urinary condition—was a high temperature, intermittent in character, reaching 104° at night This temperature condition lasted for four days The urine on examination was acid, albuminous, and some pus cells were present In view of this urine condition in conjunction with the case history, a provisional diagnosis of infection of the urinary tract was made On a catheter specimen being examined bacteriologically, a heavy culture of *B coli* was obtained

The pathology of this disease I need not enter into The treatment is simple, and as a rule the result is good Large doses of alkalis are given until the urine becomes alkaline, and when this occurs the temperature usually returns to

normal, when this takes place urotropine is given until the urine is free from bacilli. If the case is persistent—that is if the *Bacillus coli* can be obtained from a catheter specimen of the urine after the above treatment—then if an autogenous vaccine be used a permanent cure generally results.

The case I have quoted apparently quite cleared up. Its interest to me was to note how easily one might have missed it.

Tuberculous Peritonitis

As a rule there is little difficulty in diagnosing this condition—I am referring particularly to the form which occurs in children. I have seen a large number of such cases, and what has always struck me about them is the extraordinary recovery that takes place, even when the most extreme type of the disease has been present.

There is little doubt, I think, that the tubercle bacilli are of the bovine type, which does not seem to have the same destructive power as the human; or it may be the abdominal organs and their coverings do not afford a soil helpful for the growth of the bacilli, or, again, the protective properties of these organs may be antagonistic to the bacilli's growth. At any rate we know clinically that when bacilli attack any organs other than the lungs and brain, the prognosis is more favourable.

We meet this disease under two conditions, or rather two types—the ascitic and the plastic—the former characterized by a large amount of fluid, and the latter by tumours and irregular masses.

I am strongly in favour of medical rather than surgical treatment. I would trust to plenty of fresh air, good food, and particularly sun whenever possible. I rarely or never recommend laparotomy. I know that this is contrary to most surgical minds, but if we only have patience and allow sufficient time for rest under favourable conditions the reward will be a very large percentage of recoveries in the full sense of the word. I have not seen the surgical success which most of our books and surgeons suggest to us.

Acute Peritonitis following Wounds

We must have all seen universal scarlet skin rashes following on wounds, whether these have been produced by the surgeon or by infectious disease. Many years ago Mr. Howse, then assistant surgeon at Guy's Hospital, wrote a paper in the *Guy's Hospital Reports* attempting to prove—which he did to his own satisfaction—that these rashes were due to the infection of scarlet fever. The diagnosis between scarlet fever and the ordinary septic causes is, of course, most important, and a mistake may lead to disastrous consequences.

I have come to the conclusion that these rashes, although exceedingly like that of scarlet fever, are almost invariably due to septic causes, but I would make the proviso that where there was a possibility of any scarlet fever infection in the immediate neighbourhood of the patient, I would take all the ordinary precautions which are adopted in an infectious case. It is almost needless to say that it is when the rash first appears that the difficulty of diagnosis arises. In a few days the diagnosis settles itself, but then it may possibly be too late.

On Difficulty of Breathing in the Obese

In some cases we are primarily consulted for difficulty of breathing which does not improve until a general course of treatment is adopted. The cases I am thinking of occur both in women and men at ages between 50 and 70. These patients are stout, indolent, well-to-do and enjoy the good things of the table. It will be found on inquiry that the shortness of breath is not permanent, and is often associated with a particular increase or unsuitability of food. On examination the left heart seems enlarged, impulse feeble, and the pulse is quick and weak; the bowels are constipated, and albumin may be present in the urine. Such patients sometimes complain of tenderness and weight over the liver, and a general lassitude of mind and body; their nights are often sleepless or restless. At first sight one is tempted to give heart tonics and stimulants. I am not prepared to say that this is wrong, but under these without other means the patient does not improve. The diet requires to be very carefully regulated, food given in small bulk, solid rather than fluid, and about every three hours. The bowels must be kept free, perhaps the most valuable drug at this stage is calomel given frequently in small doses. It is advisable for the first few days if possible, to keep the patient in bed, as the free opening of the bowels may produce faintness and syncope if the patient is up and about. As soon as the patient is better, moderate exercise should be insisted on, and a general plan of moderation in all things enjoined.

I think that the breathing difficulty is brought about by the flabby condition of the heart setting up some dilatation, and that this is followed by pulmonary and liver congestion, the original cause being overloading of the abdominal organs from excessive or unwholesome foods together with the absence of exercise or good air, and the inability to dispose of the waste products. At any rate, my experience is that no amount of tonics whether cardiac, nervous, or intestinal, have any real effect until the patient adopts a rational system of living.

THE USE OF LIPIODOL IN THE DIAGNOSIS OF BRONCHIECTASIS

BY

P. F. ARMAND-DELILLE, M.D. PARIS

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AND

ALAN MONCRIEFF, M.B., B.S. LOND.

In certain cases presenting clinically the signs of a cavity in the upper lobe of one or other lung the persistent presence of tubercle bacilli from the sputum and a somewhat indefinite radiograph of the thorax suggest the probability of bronchiectasis rather than tuberculosis and the diagnosis is often extremely difficult. In children tuberculous cavities are not uncommon in the lower lobes of the lung, and on the other hand cases of hepatic abscess and of subphrenic abscess produce such obscure signs in the lungs that it is sometimes very difficult to determine whether suppuration is occurring above or below the diaphragm. Here again ordinary radiographs often give little or no help. By injecting lipiodol before employing x rays however a clear picture of the bronchial tree is obtained, bronchial dilatation of even slight degree is definitely shown, and localization of vague shadows becomes very much simplified.

Lipiodol, a vegetable oil containing 40 per cent. by weight of iodine, was first introduced into radiology by Sicard for the localization of tumours or the spinal cord, and Forestier who suggested that it might be used for the diagnosis of broncho-pulmonary affections, and it was later employed for this purpose in adults by Sergent and Cotten. Lipiodol has been used extensively by one of us (P. F. A. D.) in the case of children clinically supposed to be suffering from pulmonary tuberculosis in whom the diagnosis was not confirmed by other means—examination of putum, inoculation of the putum into guinea pig, complement fixation tests. Signs of a cavity in the middle or lower third of the lung in such cases might equally well be due to bronchiectasis, interlobar pleurisy communicating with a bronchus, pulmonary abscess or hydatid cyst; by the use of lipiodol definite diagnosis has been possible.

Cases of frank tuberculosis should not be submitted to this method, for the congestive action of the iodine may produce harmful effects, and even in doubtful cases may produce harmful effects and even in doubtful cases may clearly indicate a diagnosis. There remain a certain number of cases where as we have already remain a certain number of cases where as we have already

Method

The patient is placed in position on an x ray table so that a photograph may be taken immediately after the lipiodol is introduced. A preliminary injection of morphine is given half an hour previously. A pillow is placed under the shoulders so as to extend the neck, and the skin is prepared as in the ordinary tracheotomy operation. Two syringes of 2 c.cm. and 5 c.cm. capacity are prepared containing 1 per cent. novocain and the lipiodol is sterilized in a container in a water-bath. A strong syringe of 20 c.cm.

In my opinion he should be able to watch these people, and also to treat them in institutions established for them, where the expense associated with their treatment does not exclude any class of patient America is far in advance of us in this matter

Rest in Rheumatic Fever

I should say that the tendency is to keep many of our cases for too long a period in bed, but there are some where prolonged rest is absolutely necessary, and I wish particularly to draw attention to rheumatic fever, when the heart is affected The reason is obvious, for when the valves or the walls are poisoned and weakened by the disease, they are not fit, nor are they capable of the extra exertion required of them, to maintain the body in the upright position for walking It is often difficult to get this rest carried out, whether in hospital or in private practice, for the patient often looks and appears well In hospitals the house-physician says that the bed is required for an urgent case, and in private the relations or friends often think that the patient is being coddled Still, there can be little doubt that for the future welfare of our patient we must use all our persuasive powers to enforce the rule

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This question is as old as the hills There are two extreme views—one is never to tell a patient when ill the real condition, except when the prognosis is in his or her favour, the second is given by the "conscientious" doctor who always tries to give what is, in his opinion, the exact state of the patient, whether bad or good However, we must not forget, when a patient consults us and asks us to give an accurate and honest opinion as regards his present and future health, that he really often only wants a favourable opinion, if the opinion is unfavourable he is annoyed and will very probably take further advice

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The old treatment, although empirical was antiseptic and eliminant, and the patients almost invariably said that they were the better for it A high temperature may or may not be deleterious, and certainly it is not to be knocked down on every conceivable occasion If we could always find out the cause the treatment might then become easy, but often we have to wait, and it is not unreasonable to suppose that in some instances the extra heat produced in the body is protective

There is a point in connexion with high temperature to which I wish to draw particular attention, for it may easily be overlooked—namely, bacilluria, or the presence of *B coli communis* in the urine A short history of a case lately under my care in the Royal Victoria Hospital, Folkestone, will best illustrate this

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Lipiodol, a vegetable oil containing 40 per cent by weight of iodine, was first introduced into radiology by Sicard for *the localization of tumours of the spinal cord* and Forestier who suggested that it might be used for the diagnosis of broncho-pulmonary affections, and it was later employed for this purpose in adults by Sergent and Cotteno - Lipiodol has been used extensively by one of us (P F A -D) in the case of children clinically supposed to be suffering from pulmonary tuberculosis in whom the diagnosis was not confirmed by other means—examination of sputum inoculation of the sputum into guinea pig , complement fixation tests Signs of a cavity in the middle or lower third of the lung in such cases might equally well be due to bronchiectasis interlobar pleurisy communicating with a bronchus, pulmonary abscess or hydatid cyst, by the use of lipiodol definite diagnosis has been possible

Cases of frank tuberculosis should not be submitted to *this method, for* the congestive action of the iodine may produce harmful effects, and even in doubtful cases an ordinary radiograph may clearly indicate a diagnosis There remain a certain number of cases where its use is invaluable

Method

The patient is placed in position on an x-ray table so that a photograph may be taken immediately after the lipiodol is introduced a preliminary injection of morphine is given half an hour previously A pillow is placed under the shoulders so as to extend the neck, and the skin is prepared as in the ordinary tracheotomy operation Two syringes of 2 c cm and 5 c cm capacity, are prepared containing 1 per cent novocain and the lipiodol is sterilized in a container in a water-bath A strong syringe of 20 c cm

capacity is also sterilized, and a piece of flexible tubing and a metal connexion are attached to it When everything is ready the contents of the smallest syringe are injected subcutaneously in the region of the crico-thyroid space so as to render the parts anaesthetic A fine trocar and cannula of about 1 5 mm bore, curved like a tracheotomy tube and fitted similarly with a flange and with tapes for tying round the neck, is then passed strictly in the middle line into the trachea through the crico-thyroid membrane Instruments of varying sizes, as in the case of tracheotomy tubes, are employed according to the age of the patient The operator stands on the right of the patient and steadies the cricoid and thyroid cartilages with his left hand while he inserts the trocar with his right An assistant greatly facilitates working with the necessary speed As soon as the cannula is in place the patient coughs, the trocar is withdrawn, and a draught of air indicates that the cannula is in position in the trachea The novocain solution in the 5 c cm syringe is now injected into the trachea, the first few drops may provoke further coughing, but this quickly disappears

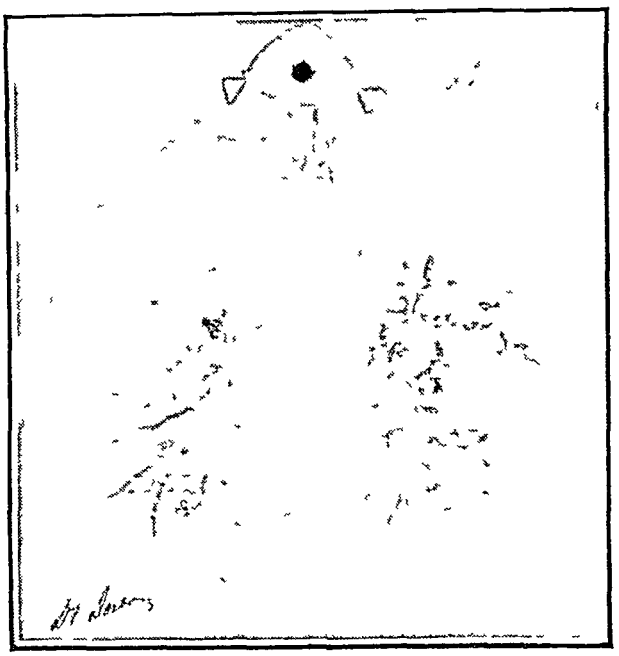


FIG 1.—Multiple small bronchial dilatations

The lipiodol has meanwhile been drawn into the largest syringe and it is now injected very slowly through the cannula at a rate of about 3 c cm a minute About 10 c cm are necessary to inject the bronchi of a child of 7 to 14 years, and after a little experience the amount required is easily judged By turning the patient to one side or the other the bulk of the oil can be caused to flow into one or other lung if one side of the thorax is particularly suspected

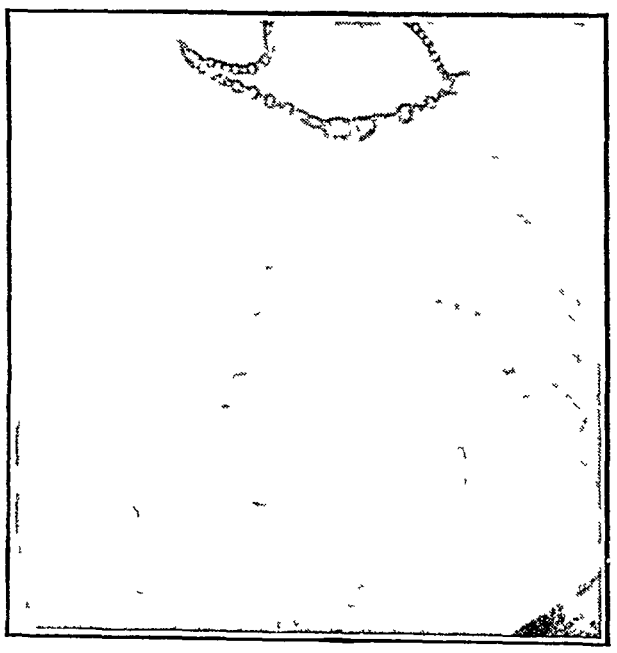


FIG 2.—Large dilatations of the bronchi

The cannula is now withdrawn and a radiograph of the chest is taken immediately in the horizontal position The patient can now be screened and photographed in a vertical position The patient suffers little or no inconvenience, in symptoms suggesting asphyxia occurred, but the red normal and the child recovered Symptoms lism including oedema of the larynx, have been another case, and it is suggested that in persons particularly susceptible to iodine this method should not be employed Otherwise the use of lipiodol has not so far been attended by any accident The oil remains in the bronchi for some time, as can be shown by later radiographs, but it gradually disappears Possibly lipiodol could be employed in this manner for its therapeutic effects

Radiographic Appearances

In the case of a normal chest the bronchi are seen as regular branching shadows gradually becoming smaller in size and less obvious, until finally a small series of fine points mark the pulmonary lobules scattered round the extremity of the finest tubes No signs of fusiform or circular shadows are seen in the normal chest Occasionally a bronchus may appear "end-on" and lead to confusion, but it can easily be distinguished from a dilatation by the fact that it is perfectly circular, regular in outline, and surrounded by a clear zone

The earliest signs of bronchial dilatation—as seen, for example, after whooping-cough—consist of small, irregular fusiform shadows in connexion with the medium-sized bronchi, while in the case of gross bronchial dilatations the radiographs obtained after the injection of lipiodol are very striking (Fig 1) In one case with a history and physical signs strongly suggesting bronchiectasis the ordinary radiograph was considered to be in favour of a diagnosis of tuberculosis After the injection of lipiodol, however, the clinical diagnosis of dilatation of the bronchi was completely confirmed (Fig 2) In a case of tuberculosis lipiodol was employed to inject a cavity at the apex, and a very striking picture was obtained (Fig 3) This is, however, as we have indicated above, not a practice to be followed

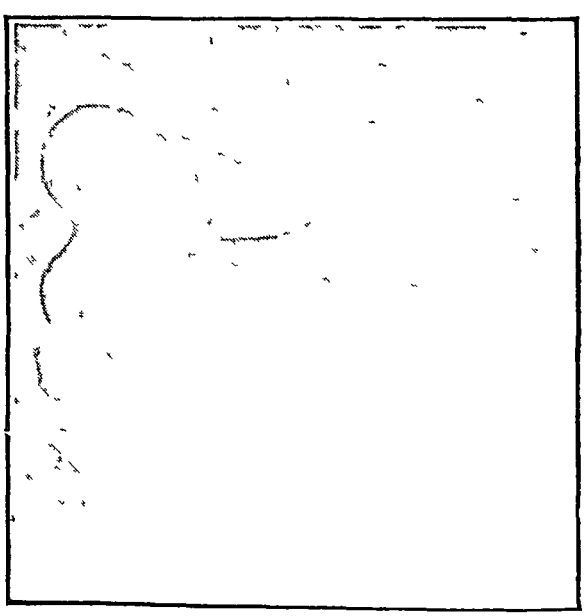


FIG 3.—Tuberculous cavity at the apex of the lung in a child of 15

We are indebted to Dr Dubois, radiographer to the Tenon and Debrousse Hospitals, for the x-ray photographs

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THE EFFECT OF BORON ON PLANT GROWTH

BY

WINIFRED E. BRENCHLEY, D.Sc.,

ROTHAMSTED EXPERIMENTAL STATION

Problems of plant growth and nutrition are frequently attacked by the method of water cultures, in which plants are grown in liquid nutrient media composed of the necessary inorganic salts dissolved in distilled water. In the course of long experience with this method certain species especially among the Leguminosae always failed to grow satisfactorily until, by accident, it was discovered that in the presence of a trace of boric acid broad beans completed their development. Repeated experiments made with nutrient salts examined spectroscopically for purity have shown that in the absence of boron the broad bean (*Vicia faba*) grows for a short time and then dies off in a characteristic manner. The growing point withers, the flower buds blacken and fail to open, the leaves become brittle at the point of junction with the stem and later fall off at a touch (Fig. 1). Associated with these external phenomena is a blackening of the interior of the stem from the tip downwards, which is correlated with disorganization of the vascular tissues and ultimately with breaking down and discoloration of the cells. *Pari passu* root growth is adversely affected, and the lateral become thickened and fail to branch or to increase in length in the normal way. All this is prevented by the addition of 1 part of boric acid (or even less) to 2,500,000 parts of nutrient solution. The smallness of the quantity required accounts for the fact that the phenomena are not observed in field culture, as all normal soils contain sufficient boron to supply the needs of the plant. On the other hand, too much boron is toxic, as 1 part boric acid in 5,000 parts solution causes the lower leaves to turn black and wither, while heavier doses seriously check growth.

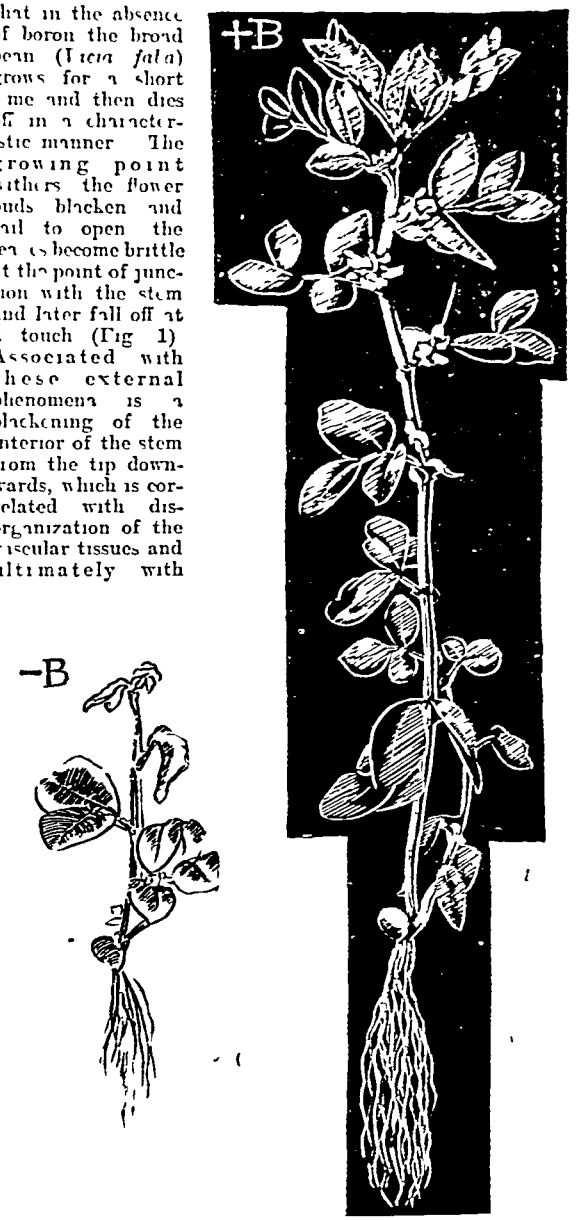


FIG. 1.—Left, *Vicia faba* grown without boron. Right, *Vicia faba* same age grown with 1 : 2,000,000 boric acid.

Analyses show that a considerable amount of boron is present in the seed, and it is probably due to this that the plant is able to make the initial healthy growth before dying off in boron-free solutions. It has been suggested by Agulhon that boron, when present in plants, may act as a catalytic agent. In the ordinary sense a catalyst would enable the organism to utilize larger quantities of other nutrients, the initial supply of boron remaining unfixed and available for continued use. This is apparently not the case here, a constant supply of boron being necessary to ensure complete development. If boron-starved plants, with dead main shoots, are transferred to solutions containing boron, the lateral buds grow out into strong healthy shoots which flower freely and show no sign of adverse conditions (Fig. 2). If, on the contrary, boron is withheld from healthy plants at any stage of life the characteristic signs of boron starvation begin to appear about three weeks later and become intensified the longer growth continues, thus proving the necessity of a constantly available supply of the element.

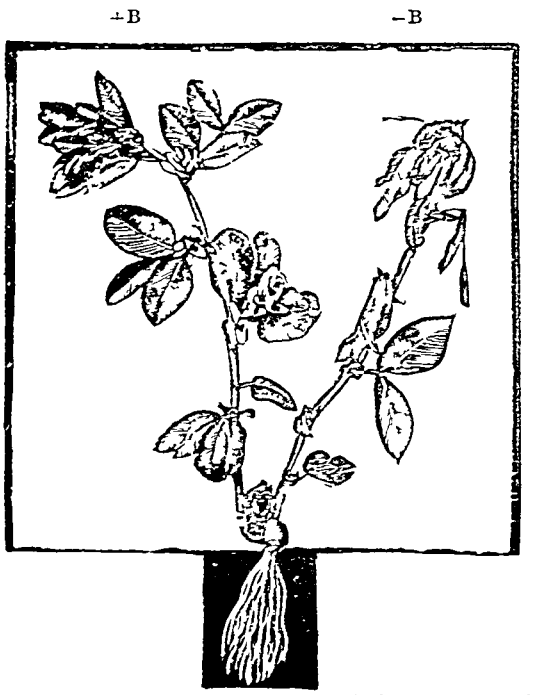


FIG. 2.—Right, *Vicia faba*. Main shoot dead owing to initial absence of boron from the nutrient solution. Left, *Vicia faba*. Healthy lateral shoot developed when 1 : 2,000,000 boric acid was added to nutrient solution after death of main shoot.

Other species of Leguminosae, including scarlet runner, dwarf bean, crimson clover and white clover, show a similar need for boron and die off at the growing points before flowering if it be not supplied. Curiously enough, peas do not seem to conform to this, but grow vigorously, flower, and ripen seeds in solutions to which no boron has been added. The same applies to barley, oats and rye, all of which are frequently used as experimental plants in water cultures. Barley grain grown under normal conditions in soil contains little or no boron, whereas it is present in appreciable quantity in the seeds of all plants found to need boron for growth. This suggests a selective absorption of the element by different species, and that certain plants, as barley and peas, are independent of boron for nutritive

purposes The bare possibility remains, however, that in reality all plants do require boron, but that some need such very minute quantities that they are able to obtain sufficient from extraneous sources such as the glass containers used for experiment, or from the air, the latter being most improbable Up to the present no other element has been found capable of replacing boron in the economy of the plant, though many still have to be tested

The physiological function of boron remains obscure The quantity requisite is exceedingly small, a total of 0 002 gram boric acid, supplied in fractions in successive changes of nutrient solution, being ample to ensure the complete development of a bean plant weighing 20 grams when dried The harmful consequences resulting from the absence of this small amount suggest that the action of boron on plants is in some way comparable with that of vitamins on animals, though at present our knowledge is too incomplete for a definite analogy to be drawn From the death of the growing points and flower buds it would seem that boron is in some way associated with the development of permanent from meristematic tissue This conclusion is supported by anatomical investigation and by the fact that root tubercles, which are developed after inoculation with *Bacillus radicicola* and are essentially centres of meristematic activity, tend to be abortive or abnormally developed in the absence of boron

Experiments are being conducted along various lines in this connexion and it is hoped that further results will soon be ready for publication Hitherto the bulk of the work has centred round *Vicia faba*, as it offers a favourable subject for experiment, but it is fully realized that a very wide field of investigation lies open and that the results to date must be regarded as preliminary and subject to possible modification as the physiological conditions connected with the action of boron on plants become better known

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A BLINDED SOLDIER RELEARNING TO SEE

BY

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LIEUTENANT COLONEL I M S (RET),

LONDON

TWENTY-SEVEN years ago I removed two Morgagnian cataracts from a Hindu fakir who had been totally blind for thirteen years, and I then noted vaguely the phenomena of gradually returning sight, but in those days I had not learned to speak Tamil fluently, and found it difficult to communicate freely with the patient, so that it was not possible to follow the visual development in his case In the following case this difficulty did not arise, and the facts are sufficiently striking to be worthy of placing on record

Captain F B attached to the military mission at Washington, lost the sight of both eyes by the bursting of a machine gun in February, 1918 From that time forward, until the end of 1923, he was absolutely blind

On examination it was found that the left eye had been enucleated The right eye was flattened and scarred, but there were two small and very peripheral areas of clear cornea—one to the outer and one to the inner side The outer was a little the larger and extended further toward the centre moreover, the chamber, which was very shallow indeed, was a shade less so here than on the inner side The iris, with the remains of the lens matted in a dense exudative mass, was adherent to the cornea over a large part of its centre, and effectively blocked vision The patient's past history, kindly furnished by the Deputies proved conclusively that the lens had been involved in trouble and had largely disappeared He was barely conscious of light and darkness, but when a powerful beam of light was thrown on his eye he could at once identify its direction, thus suggesting that his retina was healthy and in position He had been advised by various surgeons that operation was useless, but on being told there was a 'sporting chance" of the return of some small measure of vision he at once accepted operation

On December 3rd, 1923, a Ziegler's knife was introduced into the chamber opposite the clear portion of cornea on the outer side, and a very tiny opening was made through the dense membrane present It was an extremely difficult operation, and at one time it did not seem likely that it would succeed, but a sharp push backward of the point of the knife penetrated the obstruction, and left, as has been said, a tiny opening

From this time the interest of the case begins Immediately the operation was over he said, "I see a bright light', but that was all he was capable of That evening, as he lay facing the window, he said, 'I am sure there is a window in front of me" The next morning he said, 'There are three panes to that window' The same evening he counted fingers at a few feet distance Gradually he was able to see more and more, and he next discovered that there were houses on the other side of the road, that the ward sister had a patch of white on her dress, and so on A day or two later, his vision steadily improving, he saw a trap passing, and correctly made out that there were two figures in it, silhouetted above the line of the trap He went home at the end of six days, and his vision improved steadily On December 21st, 1923, he returned, and with a +28 D sphere could read two letters of 2 5/24

One of the most extraordinary features of the case has been what one may call the "patchiness" of his sight He would see things for a moment, and sometimes in the most astounding detail, and then lose them altogether On the other hand the impression given has been that, as a whole, his retina had forgotten to see, and was being re educated in a manner highly suggestive of the blind man of Bethsaida whose sight was restored

On his return on February 13th, 1924, he stated that there had been a great improvement in his vision, and with his own lens he read the full 18 m line at 5 5 m (5 5/18 vision) He is apparently steadily improving He can read advertisement signs, the names of stations, etc , he can find his own way about his house, can recognize his relatives, and do a number of other useful things for which sight is necessary No view of his fundus can be obtained even with a powerful light on an electric ophthalmoscope

The patient has not recently been able to come up for examination but he reported, on June 25th, 1924, that his vision is steadily improving in acuity, and that he is getting a wider field He can now read a newspaper, and is slowly 'relearning to write", he hopes shortly to write me a letter "entirely on his own," but wishes to perfect himself first A proof of this report of his case kindly submitted to me by the Editor, was sent to the patient, and he has read and reread it several times over from start to finish with the greatest interest

The importance of the case lies in the manner in which sight has gradually returned Allowance must be made for the clearing of the media following the operation, but the jerkiness of the improvement, and the extraordinarily erratic manner in which some of the advances in vision have taken place, suggest that the patient is really "relearning to see"

This case and that of the fakir recall the evidence of the blind man of Bethsaida whose sight was restored (was this founded on a couching for cataract?), that he first saw "men as trees walking," and later that "he saw every man clearly"

One is reminded of the way in which a foreign language learnt in childhood comes back gradually to a man when he revisits the country in which he learnt it The stored impressions of earlier years gradually reawake under the influence of the renewal of the old stimulations which originally evoked them storage in the cerebral cortex It is not often that our cataract patients in this country are long shut off from visual impressions derived from one or the other eye, but in those in whom two cataracts have progressed side by side, and the patients have been bidden to wait for full maturity before operation is attempted on either—to the writer's mind an unsound plan, though much in favour—we not infrequently find that it takes the patients long periods before they get used to seeing comfortably with appropriate correcting glasses It is admitted that there may be other causes for this besides the amblyopia ex anopsia, but that latter factor is one which cannot be wholly forgotten

THE INFLUENCE OF SUNLIGHT UPON THE BACTERICIDAL POWER OF HUMAN BLOOD

BY

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ASSISTANT BACTERIOLOGICAL DEPARTMENT MEDICAL RESEARCH COUNCIL

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It has recently been shown (Colebrook, Fidinow and Hill[1]) that when the shaved skin of a rabbit is exposed to sunlight, ultra-violet light, radiant heat, and certain other mildly irritant influences, the animal's blood quickly acquires an enhanced power of killing the ordinary pyogenic cocci—for example, staphylococci and streptococci. Both the serum and the leucocytes were found to contribute to this increased bactericidal effect. Exposure of human skin to ultra-violet light similarly produced an increased killing power of the blood.

An opportunity occurred in February last to determine the effect of exposure to the intense sunlight of the High Alps. By the kindness of Sir Henry Lunn and Dr. Bernard Hudson, to whom thanks are due, I was able to carry out two experiments at Montana, above the Rhone Valley. The first experiment, in which a normal man and a case of arrested phthisis were exposed, nearly naked, to the midday sun for half an hour, gave no result—that is, there was no appreciable change in the killing power of the blood of the subjects when tested by the "slide cell" method with staphylococcus.

On the second occasion the exposure to sun was for one hour, the subjects being the same normal man as before and another individual who was in poor health although without any recognized infection. Determination of the *bactericidal power of the blood before and after the sun bath* showed a definite change in each case, but in opposite directions. The normal man developed a quite exceptionally high power two hours after the sun bath, and the improvement was maintained for several hours. In the other subject, whose bactericidal power was considerably below the normal level before the sun bath, the change was from bad to worse, and after twenty-four hours her blood had not regained its previous level.

There was no decided change in the bactericidal power of the *serum* in either case, and it may therefore be inferred that the changes in bactericidal activity demonstrated in the whole bloods were referable to changes in the functioning of the *leucocytes*. This inference receives direct support from a recent experiment which showed that two hours after exposure of a normal individual to a carbon arc lamp the phagocytic efficiency of his leucocytes was increased by 50 per cent.

Several points of practical interest emerge from this experiment. In the first place there is the obvious suggestion that an improvement in the bactericidal efficiency of the blood may be largely responsible for the curative effects obtained in tuberculosis and other infections by heliotherapy.

Similarly it would seem natural to associate the fall of bactericidal efficiency in the second subject's blood with the well attested clinical observation that patients suffering from severe infections—in particular active pulmonary tuberculosis—may be made worse by incautious exposure to sunlight. It is too early to generalize upon the matter, but the facts at present available are (1) that a number of febrile patients with active phthisis showed a low bactericidal efficiency when the blood was tested by the slide cell method, whereas afebrile cases who were doing well showed a normal or high efficiency, and (2) that following exposure to a carbon arc lamp we have occasionally registered a fall of the bactericidal efficiency of a patient whose blood was already low in this respect before the treatment. We have *here, then, the suggestion that leucocytes which are functioning badly are easily harmed by the action of light upon the skin, while those which are functioning well are tolerant* of large doses and respond to them by [illegible] greater activity.

Finally it may be pointed out that we have at our command in the new methods of blood examination which have yielded these experimental results a valuable means of guiding and of gauging the effects of treatment.

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POST-ANAESTHETIC VOMITING: AN ATTEMPT AT PREVENTION

BY

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AND

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Many methods have been adopted to check the nausea and vomiting which so frequently follow upon operation under general anaesthesia. The accompanying table shows some results obtained by an attempt to eliminate the late effect of the anaesthetic by the administration of some pleasantly flavoured substance during the final stages of the operation.

The substances used were the oils of cloves, peppermint and lavender, all of which have a high molecular weight and therefore are absorbed but little. Acetic acid was also tried in some cases after ether, the interaction of the two producing the sweet smelling ethyl acetate—

$$(C_2H_5)_2O + 2CH_3COOH = 2CH_3COO(C_2H_5) + H_2O$$

The methods of administration were either inhalation through an open mask or swabbing out the mouth with a few drops on a sponge.

For purposes of classification every case in which the amount of vomit exceeded 10 oz. has been termed "severe." Nausea, being a subjective phenomenon, is obviously not measurable, but a fairly accurate estimate of its degree is generally possible by noting whether or not the patient enjoys his food.

No claims are made in favour of the method. Indeed the table at first sight appears to be a confession of failure. The cases of severe nausea and vomiting seem to be reduced when acetic acid and oil of cloves were used, but *the number of cases is too small to draw any very definite* conclusions.

In a separate part of the table is shown a comparison of results obtained by induction with ethyl chloride with other methods. It will be seen that the results compare favourably with those of the other anaesthetics.

We publish the table in the belief that negative results *have their own value and in the hope of stimulating others* to similar experiment.

	No. of Cases	Percentage Results		
		Vomiting and Nausea Severe	Vomiting and Nausea Slight	Vomiting and Nausea Nil
Acetic acid	21	4.8	52.2	43.0
Oil of cloves	61	5.0	50.8	44.2
Oil of peppermint	8	12.5	75.0	12.5
Oil of lavender	10	20.0	60.0	20.0
No flavouring agent	100	9.0	45.0	46.0
Ethyl chloride induction	128	7.9	41.2	50.3
Induction by other methods	72	6.9	54.1	39.0

Memoranda:

MEDICAL, SURGICAL, OBSTETRICAL.

SPASMODIC ASTHMA CAUSED BY FEATHERS

THE following case of spasmodic asthma presents some features of interest

A man, aged 37, had been suffering from asthma for about ten years He had an attack of varying severity nearly every night and usually had to burn powder for relief His chest had assumed the characteristic emphysematous shape Occasionally the attacks were very severe, were only slightly controlled by adrenaline injections, and necessitated the use of morphine The attacks seemed to be connected with digestive upsets, since in a bad attack his tongue was dirty, and after his bowels were open he was somewhat relieved but calomel and other medication was useless in averting attacks Nothing in his food could be found to account for its occurrence Cutaneous reactions with Allen and Hanburys's horse dandruff, feathers, and pollen proteins were negative

The clue, however, was given by the way in which the attacks were connected with houses The first occurred when he was staying at a farm, and the asthma was always severe during his visits there He had it fairly constantly in his own house, but was quite free from it when he revisited his old home On one occasion his wife was away for some weeks, and he stayed in the house next door but one in the same street He was quite free from asthma during his stay there, but had a severe attack the first night he went back home

The bad attacks always came on at the week-end when he spent more time at home and his wife was beginning to wonder if her presence excited them These facts suggested as a cause some thing in the furniture of the house, and further, that it was likely either to have come from the farm or to be similar to something there This fortunately was easily found The feather mattress and pillows were stuffed with goose and duck's feathers from the farm A flock mattress was substituted and the asthma stopped For about six months he was almost entirely free though occasionally in the mornings he had a little tightness of the throat, for which he burnt powder

He then went on his holidays, visiting first his old home, where he was in particularly good health, and next going on to the farm Here he immediately developed asthma, which incapacitated him all the time he was there When he returned home the asthma was better, but did not clear up as it had done before It was again worse during the week end, but now tended to be worse during the day Inquiry elicited the fact that the cushions in the sitting room were stuffed with feathers from the same source All the mattresses, cushions, and pillows stuffed with feathers from the farm were now taken out of the house The asthma at once stopped, and a year has now elapsed without any attack He has not found that eating duck or goose brings on asthma, but he believes they always give him indigestion

The interesting points about this case are

1 The precision of the exciting cause Duck and goose feathers from this particular source caused asthma, while ordinary feather pillows did not cause it This conclusion was borne out by the negative cutaneous reactions with feather protein

2 The increase in sensitiveness which was caused by exposure to the irritant after a period of comparative freedom from attack

3 The rarity of a case in which the cause can be so easily tracked down

Llandudno S D KILNER, M A, M D

GALL-STONE ENTEROLITHS

THE following two cases of intestinal obstruction due to gall-stone enteroliths seem worthy of record owing to the comparative rarity of the condition

Case 1—A woman, aged 65, an inmate of an asylum, was admitted to the East Suffolk and Ipswich Hospital, complaining of abdominal pain and vomiting which had lasted for three days, the vomiting was accompanied at first by diarrhoea, later by complete constipation, the vomit consisted at first of food, etc, but later developed a faecal odour The pain was present from the beginning and seemed to be generalized The bowels had been regular, and there was no history of jaundice or of the swallowing of foreign bodies The abdomen was distended and tender all over no tumour could be seen or felt, and there was no rigidity Operation was undertaken shortly after admission a mid line incision revealed small bowel congested and distended, a large hard body resembling a large bobbin of thread was felt in the small intestine about the jejuno ileal junction, and the bowel below was collapsed it was clamped above and below the body, incised longitudinally, and an enterolith removed the bowel was re Uninterrupted recovery ensued The enterolith in this 3 in by 1½ in

Case 2—A woman, aged 56, was admitted complaining of abdominal pain and vomiting of one week's duration The onset of the pain was sudden, the vomit consisted at first of foodstuff, but later became faecal, the bowels had been opened two days before admission, but since then there had been complete constipation and no flatus had been passed She stated that she had had indigestion for "some time" and a similar but less severe attack a year ago, which was relieved by enema She gave no history of jaundice The abdomen was distended and tender generally, with a suggestion of rigidity over the right rectus No tumour could be seen or felt On the same night a mid line incision was made and some free fluid evacuated from the abdomen, the small bowel was congested and distended, and a hard mass could be felt in the ileum, 3 inches from the ileo caecal valve, the bowel below the obstruction was collapsed The bowel was opened over this foreign body and an enterolith removed The bowel was re sutured, and uninterrupted recovery ensued The enterolith measured 2 in by 1 in

Both specimens were sent to Sir Arthur Keith, who reported that both were gall stones "which had protruded their heads for some time from the common bile duct"

In the first case the enterolith must have been of slow growth and have been present in the upper bowel for some time before attaining its present size, the interesting point is that so large a body, 3 in by 1½ in, had travelled so far down the small bowel without causing symptoms earlier In the second case the enterolith seems to have travelled further owing to its lesser size Careful inquiry elicited no previous history of jaundice or biliary colic

I am indebted to Mr Banks for permission to publish these cases, and to Sir Arthur Keith for his kindness in examining the specimens, which are now in the Museum of the Royal College of Surgeons, England

Ipswich ALEXANDER A M NICOL, M B, Ch B

DIABETIC GANGRENE TREATED BY INSULIN

IN view of the opinion held as to the uselessness of insulin in diabetic gangrene and in senility, the following account of a case of diabetes complicated by both these conditions, but completely cured by insulin may serve to show that even in such case insulin should always be given a fair trial

Mr L, aged 73, when first seen by me had been known to be suffering from diabetes for at least eighteen months His wife had previously died from the same complaint Insulin had been withheld on account of his age and because gangrene of a moist type was present from the base of the little toe to the heel, along the outer border and dorsum of one foot In one area the bone was becoming visible and the subjacent tendons were lying free and eroded in the open ulcer The patient could not put the foot to the ground because of pain, and the gangrene was advancing The urine was loaded with sugar

Treatment

I put the patient on the following diet

Breakfast	
Bacon, 1½ oz	= 230 calories
Two eggs	= 150 ,,
Lunch	
Meat, 2 oz	= 150 ,,
Egg custard	= 75 ,,
Tea A little diabetic bread	= 120 ,,
Supper	
Fish, 2 oz.	= 50 ,,
Cheese, 1 oz	= 130 ,,
In addition, green vegetables celery, tomatoes, rhubarb etc—a sufficiency	= 100 ,,
And also butter, 1 oz	= 225 ,,
	1,230 calories

He was at first given 4 units of insulin thrice daily by a relative at home The total daily dose was increased by 2 units every day, until eventually the urine became sugar free at 36 units daily after this the dose was not further increased No blood sugar examination was made, either then or previously, and no symptoms of hypoglycaemia were experienced

Early during the treatment he began to feel well and was soon able to put the foot to the ground, although at that time no improvement in the gangrene was visible to the eye But after a month the blackness was replaced by a dusky red hue and sloughs began to separate After two months the discharge was less and no longer offensive, and the ulcerated area was obviously filling up from the base and becoming narrower circumferentially After three months the ulcer is soundly healed and the patient can now walk about again, feeling no discomfort beyond stiffness in the knee-joint, owing to the long disuse of that joint prior to treatment

St Just, Cornwall W H DUPRÉ, M B, B S Lond

MYOCLONIC ENCEPHALITIS TREATED BY PATIENT'S SPINAL FLUID

I HAVE read with interest the memorandum of Dr R Wood Power (June 28th, p 1129) on the treatment of cases of encephalitis lethargica by intravenous injections of the patient's own cerebro spinal fluid I have been using this method with advantage and at present have under my care two patients in the Hull Royal Infirmary who have been treated in this way

One of these cases a man aged 28 was admitted in a deeply lethargic condition complicated by severe haematuria I did lumbar puncture and drew off about 20 c cm of clear fluid of which I injected 5 c cm intravenously The next day he had decidedly improved and continued to do so from day to day, seven days later I repeated the injection giving 10 c cm He is now leaving the infirmary for a convalescent home, the last injection having been given about a month ago

The other case that of a woman aged 22 with severe myoclonus and lethargy, was treated in the same way and improvement took place after a few days In this case a diffuse erythematous rash appeared the day after the injection was given, but gradually subsided She is now gradually improving and is much less lethargic

I propose to publish more detailed accounts of these cases later I obtained this method, as did Dr Power from Pitiarius's work, in Rumania, who stated that he had treated four cases (*Med Sci*, vol 7 p 454)

STANLEY L DENYER C M C, M D,
Hull F R C S M R C P

STAB WOUND OF HEART SUTURE RECOVERY

THE following case seems of sufficient interest to be placed on record

On April 23th 1924 a cobbler aged 22 crippled by infantile palsy of both legs tripped at work and fell forwards on to the knife he was using at the time The knife an instrument about 4 inches long and sharpened to a point entered his chest He pulled it out and considerable bleeding followed

On admission to the General Infirmary Leeds haemorrhage had ceased but the patient was collapsed extremely pallid and with a thin running pulse Examination revealed an incised wound half an inch long lying longitudinally in the fourth left intercostal space about half an inch from the edge of the sternum There was no increase of cardiac dullness and the heart sounds were normal and clear The presumption was that the haemorrhage came from the internal mammary artery

Operation—The whole operation was performed under local anaesthesia An incision including and excising the original wound was made extending from the middle of the sternum along the fourth space to a point just external to the nipple line The fourth and fifth costal cartilages were removed and a considerable length of the internal mammary artery thus exposed The artery was found to be undamaged but blood was oozing up through the anterior mediastinum The wound was enlarged by a 2 inch vertical incision passing down alongside the sternum The internal mammary artery was divided between ligatures The pericardium was carefully exposed thus revealing a wound a quarter of an inch long it was enlarged and the edge of the pericardium retracted by artery forceps A penetrating wound also a quarter of an inch long was then visible in the right ventricle with blood escaping at each heart beat All bleeding had evidently taken place externally as there was no free blood in the pericardium A fixation stitch was placed in the ventricle just internal to the wound By gently pulling on the stitch the heart's action was sufficiently steadied to allow of the wound being closed by two catgut stitches introduced on a Mayo needle by means of a needle holder The fixation stitch was then removed The pericardium was closed by interrupted catgut sutures and the skin incision closed without drainage

The patient experienced no distress during the whole operation He made an uninterrupted recovery and was discharged from hospital on the fifteenth day When seen again a fortnight later he was perfectly well Dr R A Veale kindly examined his heart for me and could find nothing abnormal except the signs of a few pericardial adhesions The electrocardiogram was normal

I am indebted to Mr J F Dobson under whose care the patient was, for permission to publish the case

J T BLACKBURN
Resident Casualty Officer General Infirmary Leeds

As the result of an inquiry carried out by the Austrian Public Health Office and based on 145 290 births between 1919 and 1921 it appears that the frequency of congenital syphilis since the war has increased by 25 per cent

Reports of Societies

OTO LARYNGOLOGICAL SUMMER MEETING

THE combined summer meeting of the Section of Laryngology and of Otology of the Royal Society of Medicine was held on June 26th, 27th, and 28th under the alternate chairmanship of Mr H J BANE DAVIS and Mr SIDNEY SCOTT, the respective presidents of the two Sections There was a large attendance of members of the Sections, and among the visitors were Professor MAGNUS and Dr DE KLEIJN of Utrecht, Dr HARTOG of the Hague and a number of other members of the Dutch Oto-Laryngological Society, and Dr T S KIRKLAND of Sydney late president of the Australian Laryngological Society

On the Thursday afternoon Dr A A GRAY gave a demonstration of stereoscopic lantern slides for teaching purposes, and Dr A BROWN KELLY discussed the tortuosity of the internal carotid in relation to the pharynx illustrating his paper with a number of drawings

Throat and Ear Defects in School Children

Miss I LOWRY read a paper entitled Throat and ear defects from the standpoint of an elementary school child She pointed out that while children were seen by the thousand at hospital the school doctors had to deal with tens of thousands of children and the conditions were very different The children were examined in a classroom a teacher's sitting room or even a hall, and the whole child had to be inspected within four or five minutes As regarded throats and ears there was no means of using mirror or specula and no digital examination was made for adenoids It was obvious that the presence of adenoids could only be inferred It was impossible to test for deafness by whispering tests The last report of the Board of Education gave 1 1 per cent as the number of deaf children, but this figure was probably far below the mark and so probably was the number of children with adenoids School inspection could only aim at selecting children with fairly obvious defects and referring them elsewhere for treatment The last report of the Board of Education stated that there were 89 education authorities with no provision for the treatment of tonsils and adenoids, and only five towns had aural clinics under the care of specialists Miss Lowry suggested that wider provision of expert treatment for children suffering from ear and throat defects was eminently desirable

Dr W S SYME discussed the treatment of atrophic rhinitis by displacement of the antro-nasal wall based on 25 cases he suggested that antrum disease was the probable cause of ozaena Dr LOGAN TURNER reminded the meeting that Grimwald had said that ozaena was due to antrum disease, but it had never been proved

Dr IRWIN MOORE read a paper on chondromata and chondro-osteomata of the larynx, illustrating his remarks with two pathological specimens and many drawings He had found records of fifty cases in the literature, and gave an analysis of them

Mr A LOWNDES YATES discussed methods of determining the activity of the ciliated epithelium in certain cases of sinusitis

Theories of Vestibular Function

On the Friday morning a paper was read by Professor MAGNUS on the experimental basis for theories of vestibular function He said that it was necessary to make a sharp distinction between the function of the canals and the function of the auditory apparatus ascribing to the canals all reactions to rotations and to the otolith apparatus all reactions depending on certain positions and the beginnings of rectilinear movements As to the possibility of ascertaining which reflexes were of the canals and which of the otolithic apparatus he said that if a guinea-pig were centrifugalized at high speed the otolithic membranes could be placed completely out of action the canal remaining normally responsive The experiments showed that the epithelium of the macula without any action of or connexion with otolithic membranes was able to produce in its own metabolism excitations Hence it must be assumed that the

function of the otolithic membrane was to increase or decrease the amount of excitation produced in the metabolism of the cells In the mucous mass of the otolithic membrane were embedded crystals of calcium carbonate, and the total weight of these crystals in a single otolith membrane was about one-fiftieth of a milligram Further careful experimentation showed that the utricles and the otoliths were connected with these reflexes, and that the maximal effect of the otolithic apparatus was not, as was formerly supposed, produced by shifting, but by pressing or pulling on the epithelium

DR DE KLEIJN discussed compensatory eye positions in patients, illustrating his paper with lantern slides, he described experiments which were still being continued in Utrecht to try to ascertain from which part of the labyrinth arose reflexes causing rotatory eye positions The results were more clear with regard to the vertical eye position If one labyrinth were destructed, vertical eye deviation occurred, and this eye deviation was found to depend on changes of the head position in space

MR A R TWEEDIE read a paper on vertigo in relation to the otolith and neck reflexes

Malignant Disease of the Naso-pharynx

SIR WILLIAM MILLIGAN opened a discussion on malignant disease of the naso-pharynx, and showed a number of lantern slides He observed that growths in the post-nasal space were not uncommon, but the cause of clinical symptoms for which patients applied for treatment was overlooked, and the growth frequently attained a considerable size before it was discovered The varying malignancy of many of these growths, their comparative inaccessibility, and the practical difficulties encountered in their complete eradication rendered the prognosis inevitably a grave one The principal varieties of growths were naso-pharyngeal fibromata, angiomata, sarcomata, endotheliomata, carcinomata, and chondro-sarcomata, but classification by microscopical examination of a small piece was frequently misleading Although naso pharyngeal fibromata were histologically benign, their clinical course was almost a malignant one The exact site of origin of a growth was not easily determined, and whether it was pedunculated or sessile was important from the points of view of treatment and prognosis Sir William Milligan's experience was that the growths which were most amenable to surgical interference were those springing from the vault, especially when possessing a pedicle Growths springing from the posterior surface of the soft palate were a group by themselves and were usually amenable to surgical removal The gradual enlargement of naso-pharyngeal fibromata was accompanied by considerable distortion of surrounding structures and sometimes by haemorrhage and ulceration A preliminary irradiation of the growth with radium materially lessened the risks of severe haemorrhage at the operation of removal and at the same time caused a marked shrinkage in its size It was best to insert emanation spicules with special throat needles into the growth, encircling it and allowing of "cross-firing" He used a long chisel to detach the growth and a strong forceps to pull it away, rather than a snare The route of approach was through the nasal passages or the mouth, but he was opposed to splitting the palate Diathermy presented certain advantages, and could be employed either before or after the use of the emanation spicules Angiomata sarcomata, endotheliomata, and carcinomata were best treated with radium Three symptoms pathognomonic of naso-pharyngeal carcinoma were as follows recurring spontaneous haemorrhage, recurring attacks of unilateral sero-mucous catarrh of the middle ear and persistent otalgia without objective signs of inflammatory reaction There were many cases of naso-pharyngeal malignant growths in which "otitic neuralgia" was the earliest symptom He believed that surgery offered less hope in these cases than irradiation or diathermy

DR DAN MCKENZIE read a paper on diathermy in the removal and treatment of pharyngeal cancer, giving details of the technique and indications

The papers were discussed by MR TILLEY, MR WOODMAN, MR NORMAN PATTERSON, and MR GIBB

Nerve Anastomoses

On the Friday afternoon SIR CHARLES BALLANCE read a preliminary note, with many illustrations, on the results obtained in some experiments in which the facial and recurrent laryngeal nerves were anastomosed with other nerves His researches, which were still in progress, were carried out in conjunction with Mr Lionel Colledge, Dr Bell, Sir David Ferrier, and the late Professor Shattock After anastomosis between the recurrent laryngeal and phrenic nerves, at the end of a few months both vocal cords were found to be acting normally and harmoniously, while a little later the anastomosed phrenic was acting a little too vigorously, so that the experiment in this case overdid what was aimed at Another experiment was to anastomose the recurrent laryngeal to half the phrenic, the results satisfied him that the phrenic nerve would energize and produce rhythmic movement of the vocal cord corresponding to the movement of the other cord Anastomosis between the glosso-pharyngeal and facial nerves had brought about recovery of movement in the face after the onset of paralysis there

Nasal Infection in Mastoiditis

DR P WATSON-WILLIAMS read a paper on the clinical importance of nasal sinus infection in mastoiditis, and quoted cases in which the treatment of an antrum infection had cleared up the nasal condition He suggested that exploration of the nasal sinuses might sometimes reveal the source of infection of the ear

Cases and Specimens

SIR STCLAIR THOMSON showed a case in which he had performed laryngo-fissure for suspected carcinoma of the larynx, but which turned out, after operation, to be tuberculosis He remarked that, as cancer of the larynx was slow growing, the patient should be kept long enough under observation before operation for the diagnosis to be certain He had remarked in this case at the operation on the softness of the tumour—another diagnostic point of importance MR TILLEY recounted a similar case

DR IRWIN MOORE showed a case, a medical man, from whom Mr James Berry had removed for him a chondroma of the larynx which originated from the outer side of the thyroid cartilage, the patient had completely regained his speaking voice DR Moore also showed a case of recurrent laryngeal nerve paralysis in tuberculosis of the lungs with calcareous degeneration of tuberculous tracheo-bronchial glands, and a case of recurring nasal mucous polypi in an infant aged 2 months

MR F J CLEMINSON showed a case, with radiograms of an oesophageal pouch in a man aged 39 SIR JAMES DUNDAS-GRANT showed a larynx removed for basal celled epithelioma, and a case of distortion of the larynx due to cicatricial contraction following an abscess MR E WATSON-WILLIAMS showed an interesting case of labyrinthine disease MR WILLIAM IBBOTSON showed four cases, including one of chronic traumatic non-suppurative labyrinthitis treated by labyrinthectomy

MR E D D DAVIS demonstrated, on behalf of MR H S SOUTTAR, a new type of bronchoscope

Otological Problems in Scarlet Fever and Measles

On the Saturday morning MR T B LAYTON opened a discussion on otological and rhinological problems in scarlet fever and measles MR Layton pointed out that while in the great majority of cases of otitis media the lesion was ushered in by pain in the ear, so that immediate attention was paid to the condition, in scarlet fever this was not the case It was therefore necessary to try to find some means whereby acute otitis media could be discovered at the earliest possible moment, so that treatment could be instituted before the drumhead burst Having discovered the lesion the next problem was that of treatment, which depended upon the condition of the ear and the state of the patient The proper treatment when a drumhead was bulging was obviously a paracentesis, but it was sometimes difficult to persuade the medical officer in charge of a fever case that this was so The difficult thing, however, was to find the unruptured drumhead just when it was ripe for incision An important point for discussion was the value of a secondary paracentesis of the drumhead

that had already burst Another line of treatment which was sometimes of value was that of sucking out the discharge by the aid of a Siegle's speculum Mr Dalton put forward for discussion the question of whether an operation upon tonsil and adenoids should be performed, and if so how long the discharge should be allowed to persist before operating He asked at what stage in the disease *the operation should be done and whether adenoids only* should be removed or both tonsils and adenoids It was the aim of the otologist to diagnose mastoiditis before any retro-auricular swelling was present but Mr Dalton suggested that it would be interesting to know how often this was done with accuracy in cases of scarlet fever He thought that in most cases it was the retro-auricular swelling from which the diagnosis of mastoiditis was made Inflammation of the bone did not spread through to the meninges nearly so rapidly in scarlet fever as in other forms of mastoiditis He had found the simple Wilde's incision of value in treatment

An interesting discussion followed in which many members took part Dr Kerr Love detailed the administrative problem of Glasgow and Mr J S Fraser pointed out that it was more difficult in Edinburgh to obtain parents' consent to an operation in the fever hospital than in voluntary hospitals Sir William Milligan made a plea for early paracentesis while the drum was merely hyperæmic and before there was any bulging Dr Dan McKenzie *preferred the simple draining of the* mastoid antrum to secondary paracentesis Dr Hartoch spoke of the value in the diagnosis of mastoiditis of stereoscopic x rays

POLYCYSTIC KIDNEY

At a meeting of the Section of Urology of the Royal Society of Medicine held on June 26th, with the President Dr W Langdon Brown, in the chair Sir Thomas Horder and Sir Bernard Spilsbury opened a discussion on polycystic disease of the kidney

Sir Thomas Horder dealt with the subject from the clinical aspect and described three cases which had been under his care within the last three years He said he had very little fresh light to throw on the subject two of the patients were admitted with signs of threatened uræmia one of whom died, and the third was a woman in whom the condition was at first thought to be an ovarian cyst In one case only was the liver thought to be affected and this was confirmed by finding a cystic condition of this organ at necropsy None of these three cases showed any developmental defect nor was the familial factor present He pointed out that only rarely was the disease strictly unilateral and the operative removal of one kidney was therefore not generally advisable He inquired if drainage of the cysts had been used at all as a means of treatment *With regard to the etiology of the disease Sir Thomas* Horder held that the current view of developmental origin was probably correct

The patnological aspect of the disease was dealt with by Sir Bernard Spilsbury who based his remarks on three recent cases, including the fatal case referred to by Sir Thomas Horder In each case both the kidneys and the liver were found to be cystic at *post-mortem* examination and he showed specimens of these organs describing their macroscopic and microscopic appearance In two of the cases the suprarenal bodies also showed some nodular hypertrophy He was unable to discover any signs of obstruction to the urinary tract in any of the cases Sir Bernard Spilsbury went on to discuss the etiology of the disease pointing out the similarity between this condition and the cystic kidneys met with occasionally in the newly born He considered that the cysts were caused by failure of union between the excretory tubules of the kidney and the renal pelvis during development The cause of death in these cases was he held, chronic interstitial nephritis a condition which he constantly found to be present With regard to the liver condition he considered Still's view of the excessive upgrowth of the bile ducts during fœtal life the most acceptable, and he laid stress on the complete absence of any signs of chronic inflammation in the liver in these cases

The President inquired as to the occurrence of hæmaturia in cases of polycystic kidney and described a patient in whom this symptom was present He also asked as to the frequency of developmental defects of other organs which are said to occur Dr Graham Forbes gave a detailed account of the pathology and clinical features of about 35 cases of this disease collected by him some years ago and said that he was much struck by the frequency with which the condition was unexpectedly revealed at a *post-mortem* examination Mr Swift Joly, in answer to the President described a case in which hæmaturia had been present and with reference to the familial factor told of a man suffering from polycystic kidney who stated that he had four brothers all with the same complaint He inquired as to the use of pyelography in this condition

Mr Gipling Ball Mr Cyril Nitch and Dr Papers Webb also took part in the discussion and Sir Thomas Horder and Sir Bernard Spilsbury briefly replied

Myelin Kidney

The discussion on polycystic kidney was preceded by a paper by Dr Papers Webb on the so-called myelin kidney He described the curious speckling of the renal cortex with a doubly refracting cholesterin ester which occurs in this disease and showed specimens illustrating the condition He emphasised the prognostic importance of finding doubly refracting casts in the urine in those cases in which the kidney lesion was always progressive Dr J W McNee gave some account of the pathology of this condition and pointed out that cholesterin esters rather than the usual glycerin esters were laid down when the cells of a part were damaged beyond repair

INSULIN

A meeting of the Aberdeen Medico-Chirurgical Society was held on June 5th and continued on June 10th when the President Dr C M Duncan, in the chair, when a discussion on insulin was held

Professor J A MacWilliam introduced the subject from the more purely scientific side He pointed out that for many years knowledge had existed of the part played by the pancreas in carbohydrate metabolism and that numerous workers had experimented with pancreatic extracts including Rennie and Fraser of Aberdeen who employed an extract made from the islet tissue of the pancreas of fishes Prior to the discovery of insulin however, these experiments had not been successful owing to the uncertainty of action of such extracts their toxicity, or their digestive impurities The introduction of a reliable method of estimation of the blood sugar had been a great advance and a most useful guide in the treatment Professor MacWilliam said that the introduction of insulin *could not* be regarded as having solved all our problems, in fact it had introduced more than it had solved He referred to these problems and the possible explanations, touching particularly upon the yet unsolved problem of the exact mode of action of insulin in carbohydrate metabolism and some of the theories advanced He then went on to discuss new facts which had come to light since the discovery of insulin—for example *the necessity of the presence* of sugar for the health of the nervous tissue It was now established that insulin was present in organs other than the pancreas—for example the salivary glands—and that insulin or a substance practically identical was widespread in the vegetable kingdom being present for example in extracts of lawn grass In conclusion Professor MacWilliam stated that the administration of insulin *by the mouth* was as yet quite unreliable and referred briefly to the problem of renal glycosuria and the importance of accurate diagnosis

Dr A Crichton Anderson dealt with the subject from the clinical side He said that accuracy of diagnosis had been greatly helped by the introduction of biochemical methods into clinical medicine He described the types of cases with sugar in the urine—the classical type of true diabetes mellitus the type of middle-aged obese patient, the arterio-sclerotic cases perhaps with gangrene the so-called renal glycosuria, and the miscellaneous glycosurias He then

described the glucose tolerance curve and its characteristics in these types of case In any discussion of the uses of insulin it was also necessary to discuss diet, the treatment of cases could be divided into three groups—the treatment in pre-Allen days, mainly by fasting, the Allen treatment, and the insulin treatment The theory, practice, and disadvantages of the Allen treatment were fully discussed, and Dr Anderson then described in detail the method of arriving at a basal metabolic diet with the exact procedure in the treatment of an actual case, if the patient remained sugar-free on a basal diet for ten days, the diet was then built up with necessary doses of carbohydrate and fat till he attained a sufficient diet to permit light work If he did not become sugar-free on a basal diet, he would not on any diet maintain his weight and have sufficient energy to do any useful work and at the same time remain sugar-free Insulin was then started, and Dr Anderson next described the dosage, precautions, and technique of administration, stating that in his opinion the patient should be maintained sugar-free The basal diet was adjusted according to Wilder's chart, which was the most convenient method, the carbohydrate, protein, and fat being adjusted from the amount of calories sufficient for basal maintenance Lastly, Dr Anderson referred to the dangers, symptoms, and treatment of hypoglycæmia, and to the emergency treatment of diabetic coma, both general and by insulin, heavy doses being required

Dr J A Innes then described the treatment of diabetes in general practice The general practitioner, he said, could not from the conditions of his work apply all the modern scientific methods and investigations, but it was nevertheless possible to use insulin simply, safely, and with good therapeutic results In general practice diabetic patients fell into three classes first, the diabetic showing both clinical acidosis and marked glycosuria, next, the diabetic with a large or small quantity of sugar in the urine but without acidosis, and lastly, the diabetic who could by careful restriction of diet keep himself sugar-free, but who hoped that with insulin he might diet himself more liberally There could be no doubt that the first type should be treated in an institution where all facilities were available But should this course be impracticable, such patients could be treated at home, provided that the practitioner had a knowledge of blood sugar estimations and their interpretation, quantitative estimation of the urinary sugar, tests for acetone and diacetic acid, of diets and their calorific values, and the use of insulin The simplest way to treat such cases was to put the patient on a diet of 14 calories per 1 lb of body weight, the blood sugar was then estimated and if above 0·2 per cent insulin was started in doses of 5 units twice daily As long as sugar persisted in the urine, as shown by daily tests, gradually increasing doses of insulin were given until the sugar showed as a trace only or disappeared When this occurred, another blood sugar estimation was done, and if the percentage had fallen to, say, 0·14 per cent, then with the same diet and the dose of insulin which allowed just a trace of sugar to appear in the urine the patient might carry on In Dr Innes's opinion this method of treatment was quite safe as long as the urine showed a trace of sugar The danger was hypoglycæmia, but the patient could be warned of the symptoms and instructed how to avert the condition The second type of case had to be treated on different lines, care being taken to distinguish between true diabetes and renal glycosuria the only safe and sure method being by doing a sugar tolerance curve Two methods of treatment were available First, the patient might be put on starvation diet to get the urine sugar-free, and then the diet gradually increased till the patient had a diet of sufficient calorific value for his age, weight, and work If this could be done without sugar appearing in the urine and the patient felt fit and well, he should be kept on that diet and insulin need not be used But if sugar reappeared before such sufficient diet were reached, then insulin had to be given the insulin being increased as required as the diet was built up to, say, 1,800 calories, a trace of sugar being kept in the urine In the second method of treatment the diet required was agreed upon and at once started the patient being given 10 units of insulin daily, and the dose increased till the urine contained only a trace of sugar The third type of case need not trouble the practitioner at all Dr Innes concluded by describing the emergency treatment of coma in general practice, and giving some practical points on the use of insulin by patients

The discussion being then thrown open, Dr Thomas Fraser stated that he had found the treatment by insulin in general practice quite useful and practicable If self-dosage was to be allowed, the patient must be known thoroughly, and frequent contact maintained The basal maintenance diet was, in his opinion, the safest and most useful Diet should always be tried first in general practice Mr G S Davidson referred to the various glycosurias of pregnancy and asked if it was known what effect insulin might have on the unborn child

Mr F K Smith briefly discussed surgery in diabetics There was first the emergency operation—for example, abdominal—where the urinary condition was unknown In such cases the risk must be taken, and appropriate treatment instituted after the operation In the case of deliberate operations on diabetics the great danger occurred in septic cases The ideal anæsthetic here was gas and oxygen or spinal Ether or chloroform should never be used, nor local anæsthesia in the presence of sepsis In cases of diabetic gangrene this was now thought to be associated as much with arterio-sclerosis as with diabetes, the risk here being that of renal insufficiency In all cases there must be the closest co-operation between surgeon and physician

Dr G Matthew Fell stated that in two years of pensions work he had found a large number of cases which on investigation turned out to be renal glycosuria Dr Clark Souter referred to cataract operations in elderly people with sugar in the urine

The President referred to those cases giving a chronic nephritic blood curve which often resembled the sugar curve, and asked how often this occurred whether there was a real association, and how the purely nephritic element could be separated out

Dr Anderson briefly replied to the points raised in the discussion, and referred to the great complexity of the problems which the use of insulin had introduced

MEDICO-LEGAL SOCIETY

Sir William Collins presided over the annual general meeting of the Medico-Legal Society on June 18th

The annual report, presented by one of the honorary secretaries, Mr Ernest Goddard, showed that during the past year twenty-nine new members had been elected and that twelve members had resigned The society had lost by death one of its most distinguished past-presidents in the person of Sir John Tweedy, who held office from 1908 to 1912 Another distinguished member whose death was deeply deplored was Sir Richard Muir Reference was made to the assistance the secretaries had received from Lord Justice Atkin, the president of the society, whose keen interest and ready counsel had been of the greatest value to them in the discharge of their duties The report was unanimously adopted on the motion of the Chairman, who recalled the first meeting of the society in 1902, and said the sixteen volumes of the society's proceedings reflected the success that had attended the venture

The following officers were appointed for the coming year President, Lord Justice Atkin, Vice-Presidents Sir William Willcox, Dr Nathan Raw, Sir Herbert Austin and Mr Justice McCardie, Honorary Treasurer, Sir Walter Schroder, Honorary Editor of Transactions, Mr W G Cooper-King, Honorary Auditors, Mr G C Gardner and Dr James Maugham, Council, Messrs G R Blanco-White, A M M Forbes, Major Brooke-Murray, and Dr S H Belfrage, Joint Honorary Secretaries, Mr Ernest Goddard and Sir Bernard Spilsbury

A paper entitled "Osteopathy in its medico-legal aspect" was then read by Dr N J Macdonald A discussion ensued in which Drs Finucane, W Atkinson, O Kenealy, Belfrage, Morley, and Bernard O'Connor, and Mr H B Wells and Mr A M M. Forbes (barristers) took part The Chairman said that the discussion exhibited the catholicity of the society

Reviews.

GYNÆCOLOGY WITH OBSTETRICS

With characteristic humour Dr J S Fairbairn claims as "extenuation for his rashness" in producing a new textbook — *Gynaecology with Obstetrics*[1] — that five-and-twenty years of teaching have given him certain ideals which presumably he wishes to inculcate in the rising generation of students and practitioners These ideals are elaborated in some degree in a "Prologue," consisting for the most part of a reprint of two or three of the author's papers with which his teaching colleagues are already familiar If we may endeavour to put his views into a few words they would seem to be that the two subjects of midwifery and gynaecology are really only different aspects of one greater science of the reproductive organs of woman that midwifery is, or should be, in the main regarded and practised as a branch of preventive medicine, while much gynaecology is but its therapeutic complement The author has had not a little influence in fostering the development of this philosophical conception in the minds of those who practise the specialty or specialties, and it is but fitting that he should be amongst the first writers to produce a textbook which endeavours to treat the subjects from this point of view

The first feeling of those who look into this book will probably be one of admiration for the author's high ideals of teaching He wants his students to know the subjects from the foundations upward, and he would have them realize how closely mortised they are into other branches of the science of medicine and of the healing art—that, in short, this greater gynaecology is an integral and important part of the fabric of medicine and not a separate and relatively unimportant sister subject to medicine and surgery This is a truth which is still too often unrecognized by some who adorn the higher walks of the profession in the "sister" subjects, and even by those who essay to mould the curricula of modern medical schools As Sir George Newman said "It is significant that the obstetrician and gynaecologist is the great example of the unity of medicine and surgery in actual practice Here is the full integration"

Dr Fairbairn has compressed the essentials of his subject into a convenient volume of 769 pages, and has done so without making any compromise with his ideals of teaching There is a prologue of 25 pages of close print in which the student who is not reading merely for examination purposes will find much that is of the greatest interest and suggestiveness, most freshly and humorously set forth There is, first, the author's lecture on the history of midwifery, which has too long been buried in the inaccessible recesses of the *St Thomas's Hospital Gazette*, we welcome its exhumation This is followed by a discussion of the relation of midwifery to general medicine, and by a fresh and stimulating call to view the new outlook on medicine which may be acquired by its study The prologue alone is sufficient to stamp this book with a rare and refreshing originality The historical part is so racy that it will certainly be read by the student, and we can but hope that the more serious portions will receive an equal degree of attention

Passing to the substance of the book proper, we find it arranged on familiar lines—anatomy, development and physiology of the reproductive organs, the physiology, diagnosis, and supervision of pregnancy, the pathology of pregnancy, normal and abnormal labour, the puerperium, the infant, infant feeding, and birth injuries Wherever occasion arises the medico-legal aspects of the subject are discussed, and this will be a convenience to many readers It is superfluous to say that the teaching is throughout absolutely sound and that the author deals faithfully with many minor details both of theory and of practice which are in reality but pious opinions or fads masquerading as truths

From midwifery the author passes directly to gynaecology, which is also taken up along more or less usual lines In his classification Dr Fairbairn follows Professor Fothergill, and on the whole the plan is satisfactory The discussion of the various gynaecological conditions is restrained and well balanced, and the description of the treatment, particularly of those conditions which the practitioner is called on to deal with directly and without the assistance of the specialist, is very clear The treatment of acute gonorrhoea is an example in point The last chapter in this section deals with conditions simulating or complicating disease of the reproductive tract, here, in discussing "temperament," "neurasthenia," and the like, the author is peculiarly at home, and correspondingly helpful and suggestive

The part of the volume devoted to operations, both obstetrical and gynaecological, is commendably brief, being confined to forty pages in all without a single illustration We suspect that their absence is due to the necessity for keeping the book within convenient limits of size, but so far as the student is concerned we should have welcomed some illustrations of the more commonly performed operations There are fully twenty pages on "public health, social and ethical aspects," in which the author deals *de omnibus rebus et quibusdam aliis*—maternity and child welfare services, vital statistics, venereal disease, eugenics, birth control, and so forth

If we regard this book as a textbook for students studying to "outflank and outwit" the examiners, as Dr Fairbairn, with a humour for once rather sardonic and misplaced, puts it, or for practitioners seeking help in a difficult case, we must frankly admit that there is a great deal that is unnecessary in it, and that some of the space so occupied might have been better occupied by helpful pictures On the other hand, all the apparently unnecessary matter is calculated to be useful on occasion, and if read cannot fail to be most instructive The modern medical student, however, has little time for reading round his subject, and we expect that much of the most original and some of the very best parts of this book will in fact waste their fragrance on a desert air We also recognize that, shorn of these portions, which bear most clearly the stamp of the author's personality, the book would lose much of its originality and character, and join the ranks of the more or less ordinary and commonplace textbooks

We would close with a renewed tribute to the high ideals of teaching which this book reveals, and we cannot but admire the author's refusal to make any compromise between them and the lines of a more ordinary textbook Dr Fairbairn is incapable of writing a commonplace textbook, and this volume contains all the novelty and freshness we have come to expect from his pen

The book is well printed on good paper and its general get-up is on the usual high level of the Oxford Medical Publications We congratulate Dr Fairbairn unreservedly, and welcome his textbook as a distinct addition to the literature of the subject

BLOOD PRESSURE IN EARLY LIFE

The volume on *Blood Pressure in Early Life* by Dr Percy Stocks and Mr Noel Karn is one of the Drapers' Company Research Memoirs It is a statistical study and the principal aims of the writers were to provide a continuous series of measurements of the blood pressure during the periods of puberty and adolescence in health, to ascertain the normal range of systolic diastolic, and pulse pressures at ages from 5 to 40 years, and to correlate these pressures with pulse rate, physical development muscular strength respiratory and psychological functions, social class and athletic habits of life

The authors have done well to take up an investigation that well merited the attention of expert statisticians It is true that much of the very technical information in this volume will not be of immediate interest or service to the clinician, whose concern is much more often with the detection of departures from the normal blood pressure in

[1] *Gynaecology with Obstetrics A Textbook for Students and Practitioners* By John S Fairbairn M A B M B Ch Oxon F R C P Lond F R C S Eng etc Oxford Medical Publication London Humphrey Milford Oxford University Press 1924 (Demy 8vo pp xxii + 769 129 figures 5 plates 25s net)

Blood Pressure in Early Life A Statistical Study By Percy Stocks M D D P H and Noel Karn Edited by M Noel Karn London Cambridge University Press and H K Lewis and Co Ltd 1924 (Medium 8vo pp 83 22 diagrams 12s 6d net)

individuals over 40 years of age, and even then with much graver and much more continuous departures than will be found in this volume There can be no doubt, however, that certain parts of this work will prove of inestimable value to insurance companies, for it provides means by which the blood pressures of the ages which commonly come for insurance may be corrected for age, weight, and pulse rate

Although the clinician may be disappointed by the fact that the observations on blood pressure are single—for, as he knows, single observations under varying conditions of excitement, posture, rest, and so on, give no indication of the true pressure present in each case—he will find help from this volume, for it is not always possible to keep patients in bed for continuous observation he has to rely on single observations, and if he carries them out as nearly as possible under the conditions mentioned by the writers, and makes certain corrections which are provided, he can compare his case with others of the same age whose blood pressures have been studied by the authors and those who have preceded them

It is usually considered that the normal systolic blood pressure for an adult varies from 120 to 130 mm taken in recumbency, allowing for pathological rigidity of blood vessels, which may absorb up to 25 mm of the reading of the sphygmomanometer, we are accustomed clinically to regard a rise of systolic blood pressure to 150 mm and over as pathological The authors show, however, that if the systolic pressure is determined by palpation and not by auscultation it is possible to report a normal pressure when really it is abnormal, the auscultatory observation gives in young male adults a reading of systolic pressure 13 to 14 mm higher than the palpatory The authors find that at the younger ages the difference between these two sets of readings may be much smaller—for example, only 3 mm at the age of 7 years

The rise in the systolic blood pressure on assumption of the erect posture in males is small, 3 27 mm , in females, curiously enough, a fall of about 0 81 mm occurs under the same condition instead of a rise The diastolic rise in males on assumption of the erect posture may vary from 35 to 14 mm , and the rise in females under the same condition varies from 20 to 11 mm , the authors advise that when the diastolic readings, after a change from the recumbent to the vertical position, are in excess of these figures, the persons under observation should be regarded with suspicion as being abnormal from some pathological cause The pulse pressure is smaller in the standing than in the sitting posture in about 72 per cent in males and females, and shows an increase in 10 per cent of males and 7 per cent in females Some races in warm climates have been shown to have lower pressures than others living in colder climates, as atmospheric heat and humidity lower the blood pressure The authors, however, have missed certain reported observations, showing that when races of foreign origin bring themselves to live in colder climates as the natives do their pressures approximate to those met with in the regular inhabitants of such colder climates, and vice versâ

The writers do signal service by making a strong attack upon the heresy taught by Faught and others—namely, that there is a regular rise of systolic pressure throughout life Extended observations by the writers and others show that the normal pressure for any age cannot be found, as has been suggested, by adding 1 to 120 mm for every two years above the age of 20, or by adding the age in years to 100 The truth is that the systolic pressure tends to reach a maximum about the age of 19 to 20 years, and after falling slightly remains level to the age of 40 years The rise of pressure up to the age of 11 years may be a simple function of increasing age, and probably is, but complex influences enter into play and govern the pressure during adolescence This is well shown in Fig 5 The authors have little doubt that one of the factors controlling the rise of blood pressure in adolescence is the passing into the blood of 'pressor substances" secreted by the various glands which commence to function actively about the time of puberty, and give as an example the adrenal gland It would appear to be ungenerous to carp at the authors' further statement that increased secretion from the thyroid and sexual glands can produce the same effect, but they cannot be spared, because by repeating such statements they simply help to perpetuate an error, for there are no "pressor substances" in the thyroid and sexual glands

We would commend to the medical officers of insurance companies the useful table on page 25, which shows the outside limits of systolic and diastolic pressures at varying ages up to 40 The authors insist that from 20 to 40 years of age systolic blood pressures below 98 mm should be considered to be pathological, and below 109 mm to be suspect Diastolic blood pressure does not reach its maximum at the same time as the systolic pressure does, but usually when adolescence is passed (see Fig 6) The pulse pressure from 7 years old to the beginning of adolescence has a mean value of about 43 mm , during adolescence it has a maximum of 52 mm at 17 to 18 years of age, and then falls to 45 mm till 21 years of age, after which it rises again Therefore between the ages of 15 and 19 the heart is producing at every beat a greater head of pressure in the arterial system than at any other period before middle life (see Fig 7) On page 61 most useful information is given, which is completed on page 65 here tables 30 and 31 will be found, and, if we are not greatly mistaken, much use will be made of them in the future It happens fairly frequently that unusually low diastolic and systolic pressures are found in young adults, owing to the fact that such individuals have no symptoms and may even be capable of carrying out considerable athletic exercise, some insurance medical officers consider these people perfectly healthy The writers of this book consider that by means of tables 30 and 31 the pressure normal for any age up to 30 may be found corrected for weight and pulse rate In the case of deviations of 30 mm or more from the systolic pressure as thus corrected, and 24 mm or more from the diastolic pressure, the person observed must be looked upon as abnormal Regular physical exercise tends to keep diastolic pressure at a lower level, whereas a sedentary mode of life tends to raise it, the systolic pressure being similarly affected, but to a less extent

Every page of this monograph is full of interest, this no doubt is as it should be, but authors do not always succeed, as they have done, in putting facts so graphically, in more senses than one, before the reader, the authors are right when they call attention to the ease with which Figs 17 to 20 point their lessons, and, as already indicated, tables 30 and 31 [illegible] to prove of the greatest assistance

BERI-BERI

THE volume of *Collected Papers on Beri-Beri*[3] by Drs H FRASER and A T STANTON contains contributions published by them since 1907 on beri-beri in Malaya In the abundant literature which is gathered about the subject of vitamins it is rare to find—as the authors remark in their preface—any adequate presentation of the facts elucidated in earlier studies on human diseases such as beri-beri In republishing their pioneer work the authors have performed a timely service, for their papers are as valuable to-day as they were when first they appeared, and the hope of the authors that later students of beri-beri "may find in them something of interest" can hardly fail to be fulfilled, since they are replete with interest and instruction Fraser and Stanton began their inquiries at a time when current views of the etiology of beri-beri were various—namely, (*a*) that it was a microbial infectious disease, (*b*) that it was due to nitrogen starvation (*c*) that it was caused by a toxin, the product of a saprophyte outside the human body To them is largely due the credit of having demonstrated that beri-beri has an intimate relation to diet They showed by studies on the structure of the rice grain and by animal feeding experiments that beri-beri was not caused by a pre-formed poison ingested with rice, but that its origin was to be sought in a dietary defect that beri-beri is a disorder of metabolism,

[3] *Collected Papers on Beri-beri* By H Fraser MD, D P H and A T Stanton M D M R C I D P H London John Bale Sons and Danielsson, Ltd 1924 (Cr 4to, pp xi + 105 10 figures on 7 plates 7s 6d net)

and that polished (white or over milled) rice as a staple of the diet is deficient in alcohol soluble substances, minute in amount but of high physiological value in nutrition, and that the causation of beri-beri is related to deficiency of these substances. Much of their work was done before, or concurrently with, the biochemical researches which have resulted in the discovery of vitamins, of the important part played by them in nutrition and by their deficiency in the food in the causation of beri-beri.

In the years which have elapsed since Fraser and Stanton made their classical contributions to the study of the disease the pendulum has swung from infectious or toxic theories of causation on the one hand to a purely vitamin deficiency theory on the other. The tendency at the present time is for it to come to rest in a mid position between these extremes and evidence begins to accumulate indicating that the basis of the malady is both nutritional and toxic. But whether or not the middle way will prove to be the true way, there can be no question of the notable success which has attended the application in practice of the scientific principles evolved by the researches which have established deficiency of a certain vitamin or vitamins as an essential factor in the causation of beri-beri. Fraser and Stanton's contribution to this result is large. We welcome the reappearance of their papers in this present handy form, for although some of their results may not be as generally applicable to other countries as they are to Malaya, yet it is by the elucidation of such differences as exist in different countries that the etiology of beri-beri-like diseases will ultimately be cleared up in all countries where they prevail.

R. McC.

SEXUAL CHARACTERS AND SEX GLANDS

PROFESSOR CHAMPY'S work on sexual characters and sex glands[4] is a monument of industry and an extremely valuable and stimulating contribution to comparative physiology. Its purpose is to give a complete summary of pre-entday knowledge of sex hormones. The author does not wish his conclusions to be accepted as definitive. His book has been prepared because he believes that work on sex and sex glands has reached such a stage that a general survey of the whole field is essential in order to give a proper perspective and to correct errors in detail.

In addition to verifying all the previous experimental work on the subject, Professor Champy presents much that has not hitherto been published. After a detailed examination of sexual characters and their relationships in a large series of animals—invertebrate as well as vertebrate—he gives an account of the actions of the thyroid and the sex gland. The action of the thyroid may be summarized as "all or none"—that is, it has either a full effect or none at all. It has no general action on metabolism, merely modifying the conditions of the division of nourishment between the different zones of growth, hastening some, retarding others. It does not determine the nature of the phenomenon of growth—only its speed—and seems to act as a catalytic agent. The sexual hormone (autocoid would be better) is sometimes excitatory, sometimes inhibitory, whether originating from the ovary or testis. It acts qualitatively on phenomena, the terminal form of which it does not control. Its action is accordingly comparable with that of the thyroid. There is no reason for locating the sexual hormone in any particular part of the sex glands such as the interstitial cells. That hypothesis has never been proved and is contradicted by comparative studies and by experimental work which eliminates the interstitial tissue as the source. There is no proof that any particular group of cells is the elaborator of the secretion.

The book is lavishly illustrated. There are 160 figures in the text, most of which, although some are a trifle crude, sufficiently illustrate their point, and seven plates containing nearly seventy microphotographs. There is unfortunately no index—a very desirable feature in a monographic type of work such as this—and the bibliography consists only of footnotes, which, however, are fairly extensive.

[4] *Les Caractères sexuels considérés comme phénomènes de développement et dans leurs rapports avec l'Hormone Sexuelle.* Par Ch. Champy. Paris: Gaston Doin. 1923. (Demy 8vo, pp. 310, 60 figures, 7 plates. Fr. 30.)

MONUMENTA MEDICA

AN account of the projected publication of a series of facsimile reproductions of medical works of historical interest under the title *Monumenta Medica* was given in the JOURNAL on February 2nd (p. 209) and the first of the series has now appeared. A great gap separates the figures on Byzantine mosaics from the drawings of the human figure by Italian painters and a greater gap still the squatting frog-like primitive diagrams found in mediæval MSS., from the delineation made from dissections by Vesalius.

Professor SUDHOFF of Munich has traced the source of the printed collection. The diagrams were found as sketches in medical MSS., and were also made use of for the almanacs or calendars, hung up in barber-surgeons' shops and bathhouses in Germany as aids to memory concerning uroscopy, the location of diseases and wounds, the sites suitable for phlebotomy, and as to the seasons for blood-letting, purging, and cupping. In the original Johannes de Ketham, Alemanus is stated to be already dead. No such person is otherwise known, there is no place named Ketham in Germany, but Alemanus must be taken to include German-speaking persons, the Latin of the MS. has in addition to words of Arabic origin some from German. About 1460 there was a teacher, Johan von Kirchem or Hans Kelner, of Kirchheim in Swabia, who may have been the person whose name was adopted by the Venetian printers to head their publication.

Dr. SINGER has arranged and published facsimiles and plates of the following types of these mediæval diagrams.

Uroscopy. Urine glasses arranged in a circle, coloured and with inscriptions to indicate the different appearances of urine and to connect these with diseases.

Phlebotomy. Diagrams which have several objects in various combinations there are markings indicating sites of superficial veins from which blood might be let—many more than the usual sites elbow, neck, temple or ankle—and others showing the location of diseases by the signs of the zodiac or of the planets to indicate the seasonal occurrence of diseases and pestilence, together with information as to the time most suitable for blood-letting, purging, and cupping.

Pregnancy. Figures of a woman exhibiting with other viscera a flask-shaped uterus, containing a mannikin upright or crouching with hand applied to the forehead. There are also markings indicating the sites of complications connected with pregnancy.

Surgery. Diagrams of wounds made by arrows, spears, sword, and also the sites for ligation of blood vessels.

Anatomy. Surface marking and outlines of the alimentary canal, heart, large blood vessels, and other viscera. Traces of this imaginary construction of the human body persisted long after anatomy had become based upon dissection.

The book is luxuriously produced, as is becoming

NOTES ON BOOKS

THE new number of *Brain* (vol. xlvii, Part 2) opens with a long paper on the fundamental nervous processes in the cortex of the cerebral hemispheres, by Professor J. S. Beritoff of the University of Tiflis (Georgia). There are also long papers by Dr. F. M. R. Walshe, of University College Hospital and the National Hospital, Queen Square, on the nature of the muscular rigidity of paralysis agitans and its relationship to tremor, and by Dr. Douglas McAlpine (London) on plastic tonus as a sequela of epidemic encephalitis. The other papers in this issue are by Dr. J. G. Paeder, from the University Hospital, Christiania, on partial trigeminal paralysis of the oculo-pupillary-sympathetic, and by Drs. Donald Paterson and E. Arnold Carmichael on a form of familial cerebral degeneration chiefly affecting the lenticular nucleus. The proceedings of the Section of Neurology of the Royal Society of Medicine on January 10th and March 13th are reported, and there are half a dozen pages of notices of recent publications.

Dr. L. A. BORRADAILE'S *Elementary Zoology*[5] one of the series of the Oxford Medical Publications, is intended for

[5] *The Fasciculus Medicinæ* [illegible] Venetian edition [illegible] the first (Venetian) edition [illegible] Translated and edited by [illegible] Vienna: Medicinischen [illegible] the general editorship of Dr. H. E. Sigerist. Zurich: Vol. I. Milan: Libreria Hoepli. London: H. Milford, Oxford University Press. 1924. (Royal folio, 6 full-page woodcuts, 13 pages of the hand-coloured, 0 other pages, 1 edition, limited to 1,000 copies, with certificate of authenticity.)

[6] London: Macmillan and Co. New York: The Macmillan Company. Price 6s. net; yearly subscription 25s.

Elementary Zoology for Medical Students. By L. A. Borradaile, M.A., D.Sc. Oxford Medical Publications. London, Henry Frowde and Hodder & Stoughton. 1923. (Cr. 8vo, pp. viii—368, 252 figures. 10s. 6d. net.)

medical students It deals with the usual types found in all such textbooks, a possible exception being the malaria parasite There is a useful chapter on embryology, and two chapters of a general nature—one dealing with the animal organism, including metabolism and reproduction, the other with such subjects as classification and evolution Dr Borradaile evidently believes in commencing with the study of a vertebrate, and takes the frog as his example Why not the rabbit? It is more nearly akin to the human anatomy The book is written in a pleasant style, easy of comprehension, and the numerous illustrations are good and clear It should prove useful to those students for whom it is intended

Two pamphlets recently received afford evidence that the therapeutic importance of insulin is coming to be understood by the German speaking profession, though there may still be some failure to appreciate in full measure the light the investigation of its action is throwing on the whole matter of carbohydrate metabolism One of the pamphlets to which we refer is by Dr STAUB of Basle,[8] and is founded on a series of articles contributed to the *Klinische Wochenschrift* The author has taken immense pains to make a classified collection of references to literature The other pamphlet[9] is a second edition of an essay on the treatment of diabetes mellitus by insulin, by Professor H STRAUSS and Dr M SIMON of Berlin It also contains a long list of references After a short historical introduction there is a discussion on the chemistry and biology of insulin, this is followed by notes on its clinical use and on the theory of its action

We have received a pamphlet entitled *Papers for Practising Midwives*,[10] which consists of a short series of articles by Miss Olive Haydon, a midwife member of the Central Midwives Board The papers are admirable alike in their practical nature and in their lucidity of expression, and we would recommend them to midwifery nurses for quiet reading and consideration in leisure hours The nature of the articles is sufficiently indicated by one or two of the titles "The discomforts of pregnancy," "The midwife and the nervous patient," "Management of labour that will avoid complications," "The midwife and the doctor," "Breast feeding and its difficulties in district practice" We would commend the pamphlet also to practitioners because it reveals something of the aspirations and ideals of the better trained and educated midwife, its perusal will lead to a better understanding and a more harmonious co operation between the two great branches of the maternity service of the country

OSKAR PFISTER'S work on *Love in Children*[11] is, as its subtitle states, a book intended for parents and teachers After an historical introduction the author deals with the normal and abnormal development of love in children, including love of the child for its parents, brothers, and sisters, and other persons and things outside the home, as well as for itself The second part reviews the various factors concerned in the moulding of love in the child, and the influence of special experiences and cycles of experience, such as corporal punishment, fright, and sexual influences In the third part the training of normal love in children, including reasonable self love and love of one's neighbour and the treatment of abnormal love, are discussed Numerous illustrative cases are related The translators have done their work well

[8] *Insulin Zur Einführung in die Insulintherapie des Diabetes Mellitus* By H Staub Berlin Julius Springer 1924 (Crown 8vo, pp 106 5 figure Bol 0 60)

Die Insulinbehandlung bei Diabetes Mellitus By Professor Dr H Strauss and Dr M Simon Berlin S Karger 1924 (Med 8vo, pp 62 M 2 80)

[9] *Papers for Practising Midwives* Edited by M Olive Haydon London Office of Nursing Notes 1924 (Sup roy 16mo, pp 60 1 net)

[10] *Love in Children and its Aberrations* A book for parents and teachers By Oskar Pfister Pastor in Zurich Translated from the German by Eden and Cedar Paul London George Allen and Unwin, Ltd 1924 (Demy 8vo pp 576 24s net)

PREPARATIONS AND APPLIANCES

Mocol

"MOCOL" is a preparation of colloidal aluminium hydroxide, which is precipitated in a jelly like form by acid at the same time adsorbing a certain quantity of acid The drug is recommended in the treatment of hyperchlorhydria in doses of about 15 grains its action is to reduce the hyperacidity of the stomach contents by adsorbing hydrochloric acid and to form a protective layer over the mucous pot of the stomach The drug can be supplied in powder and also in tablets from Messrs A Wander, Ltd, 75, Coleman Street, London, E C 1.

SOUTH AFRICAN MEDICAL CONGRESS

THE nineteenth South African Medical Congress was held at Grahamstown from April 21st to 26th last, under the presidency of Dr E G Dru Drury The meetings were held in the Science Block of the Rhodes University College, by the courtesy of the Council and Senate of the College

The Congress was officially opened by Professor Sir George Cory, M A , D Litt , who gave a delightful sketch of the medical history of the Cape Colony, particularly of the Eastern Province He described, amusingly, that "distinguished and extraordinary character" Dr "James" Barry (whom Taylor in his *Medical Jurisprudence* called perhaps the most extraordinary case of concealed sex on record), and added some hitherto unpublished facts concerning her He also mentioned the scale of fees fixed by one of the early Governors, and pointed out that the Eastern Province in those days did not offer much inducement to a medical man to settle unless he were actuated by philanthropy

The presidential address was entitled "Health and Happiness," Dr Drury's prescription for happiness being

"To be happy, you must be doing each job as it comes, just as unimpeded children do you must do what you want to do with your whole being, heart soul, strength and mind, not do what you imagine the sort of man you picture yourself to be ought to be doing You must lose yourself in your part just as certainly as does the actor who gets across the footlights, or convinces the experienced 'movie' producer"

BIOCHEMISTRY IN CLINICAL MEDICINE

Dr L G Irvine of Johannesburg gave a presidential address to the Medical Section on "Some recent applications of biochemistry to clinical medicine"

Dr Irvine confined his observations to certain points in the recent study of conditions associated with albuminuria, glycosuria, and alterations in the reaction of the blood

Conditions Associated with Albuminuria

At the present day in researches into nephritis and albuminuria, chemical investigations were no longer confined to the urine, but had been extended to the blood correlating the changes found in the one fluid with those found in the other Nephritis was no longer regarded as a local affection, but as an incident in a more general disturbance of infective, metabolic, or toxic origin A more exact knowledge of renal function had, moreover, been acquired, and it was now known that the several functions might be affected independently in the damaged kidney The important renal functions were three (1) The elimination of the end products of nitrogenous metabolism, (2) the elimination of fixed acid, more especially, from its practical importance, in the form of acid sodium phosphate, (3) the maintenance of the normal content of water and chloride in the blood and body fluids In the early stages of acute nephritis all three functions were more or less in abeyance, in chronic disease well marked differences in type occurred, depending on the particular function mainly affected In the parenchymatous type the predominant feature was a failure to eliminate chlorides and water, the chloride concentration of the blood and body fluids was raised, the blood became hydraemic and the tissues dropsical Such cases called for a restriction of salt and liquids in the diet, while proteins might be given in abundance and the administration of urea as a diuretic might be required Severe renal dropsy would often clear up within a month or so under this treatment A milk diet was quite unsuitable for these cases, and might readily increase the dropsy In the chronic interstitial type the predominant defect was a failure to eliminate nitrogenous end products, the other functions being more or less unaffected In this group the indications for dietetic treatment were also clear Protein must be cut down to a strict minimum maintenance requirement, and the necessary calorific value made up with carbohydrate and fat Such food as eggs, cheese, peas, or beans should take the place of meat It was evidently of great practical importance to distinguish between these two types, and a few simple tests made the necessary distinction easy Discussing tests of renal efficiency, Dr Irvine said that estimation of the blood urea was of great value as an indication of the degree of nitrogen retention in nephritis, and unsuspected cases of renal disease showing only gastric symptoms had often been detected by this means It was also an important guide to the surgeon in contemplated genito urinary operations, and to obstetricians in distinguishing chronic nephritis

from other toxic conditions of pregnancy. It was however likely to remain a laboratory test. The urea concentration test consisted in giving after the bladder had been emptied, 15 grams of urea in 100 c.cm. of water and in estimating by the hypobromite method the percentage of urea in the urine at the end of one, two and three hours. A concentration of 2 per cent. or over was taken as evidence of an efficient kidney. I was a simple procedure and every practitioner should include it in his equipment. The mark of chloride retention was oedema in the absence of which there could be no serious retention of salt. The estimation of chloride excreted was therefore not essentially essential. With regard to albuminuria, it need not be regarded as of serious import provided the functional tests showed the kidney in other respects efficient. Albuminuria per se was generally of little consequence and was frequently found in the absence of renal disease.

Condition associated with Glycosuria.

The glucose tolerance test with the history and clinical condition of the patient formed the most reliable method of differentiating diabetes from other conditions associated with glycosuria. It was based on the following facts. The blood of a normal fasting person contained from 90 to 100 mg. of glucose per 100 c.cm. (0·09 to 0·11 per cent.). This amount was closely regulated. On administering a test dose of glucose the blood sugar would rise rapidly to 160 or 170 mg. and almost as rapidly fall so that in 90 to 120 minutes the fasting level was again reached. *The rise in the concentration* of the blood sugar promoting the storage of carbohydrate in the tissues *and so preventing its accumulation in the blood.* It was practically impossible, whatever the dose of glucose administered, to force the blood sugar under normal conditions, above this level—spoken of as the normal threshold level—a concentration above which (hyperglycaemia) would lead to the excretion of sugar in the urine. The test consisted in estimating the blood sugar immediately before, and at half hourly interval for two and a half hours after a test dose of glucose (50 grams in 150 c.cm. of water) the patient fasting. In glycosuria without hyperglycaemia the ill judged administration of insulin was dangerous as tending to produce hypoglycaemia (reduction of the blood sugar below 70 or 60 mg. per 100 c.cm.). Insulin should not be administered in any case of glycosuria which did not exhibit a definite fasting hyperglycaemia. The glucose tolerance test would probably remain a laboratory test but in all doubtful cases of glycosuria it should be applied if possible. In the absence of facilities an examination of the urine alone after the administration of a test dose of glucose was of considerable value. Let the patient empty the bladder two and a half hours after the test dose and collect the next specimen of urine passed. If it contained no more than a trace of glucose the case was probably one of renal glycosuria.

The discovery of insulin has afforded the proof that, with very few exceptions diabetes was primarily due to a pancreatic defect. It was considered that the pancreatic secretion, insulin, acted by altering the molecular structure of the glucose absorbed changing it from an inactive to an active form in which alone it was capable of being converted to glycogen for storage or oxidized for uses in the tissues. In diabetes the internal secretion of the pancreas being deficient, part of the *absorbed glucose remained unaltered and circulated in increasing* quantities in the blood. Hence the persistent hyperglycaemia which was a *cardinal feature of the untreated disease,* and the glycosuria. Under the influence of insulin the hyperglycaemia was *reduced. The danger of persistent hyperglycaemia* was that by causing over stimulation of the pancreas it led to *deterioration of the gland* and the *general* condition of the patient. Hence the danger of overfeeding the diabetic and the importance of preventing hyperglycaemia. A second danger in diabetes was the disturbance of the metabolism of fat and proteins which were increasingly called upon to supply the energy no longer obtainable from the carbohydrate. The oxidation of fat, however, required the combustion of a corresponding quantity of sugar, and, in default of this intermediate products known as ketone bodies—*β* oxybutyric and diacetic acids and acetone—accumulated in the blood and appeared in the urine. The name of ketosis was now generally applied to this condition. If the accumulation of these substances became considerable, it led to acidosis and coma. Dr. Irvine laid down the following general principles in the dietetic treatment of diabetes:

1. To keep the urine free from sugar and the blood sugar at or near the normal level by an adequate reduction of carbohydrate in the diet.
2. To prevent ketosis by maintaining a due proportion between the carbohydrate the patient can use and the fat we feed him with.
3. To keep the total metabolism of the diabetic below the *normal* level by *maintaining* the body weight rather below the average, giving the lowest diet upon which the patient can keep reasonably fit.

In severe cases it might be impossible to supply sufficient calories to keep the weight at the desired level, and at the *same time keep him* sugar free without dangerously overloading the diet with fat. In cases such as these insulin treatment had produced its most dramatic results since it enabled the carbohydrate tolerance to be increased so that an unreasonably drastic restriction of the diet was unnecessary. The author proceeded to amplify these general statements by discussing their application in actual practice and indicating suitable formulas for the calculation of a maintenance diet. In commencing the treatment of an ordinary case it was a good plan to place the patient on a maintenance diet for one week. If by this time the urine was not sugar free the case was one for insulin treatment. If he became sugar free the same dietary should be continued for a week or two during which the sugar tolerance should be ascertained, existing foci of infection treated, and the planning of a permanent diet considered in relation to the amount of work to be done by the patient, his body weight, the possible presence of tubercle, and kindred matters. The majority of diabetics would be found not to require insulin treatment. Insulin made it possible to benefit cases which diet alone failed to control but it was no substitute for dietary treatment. To fly to insulin without a careful study of dietary requirements was to court disaster. The danger from insulin was from overdosage and the reduction of the blood sugar below 70 or 60 mg. per 100 c.cm. leading to symptoms of hypoglycaemia. For this reason insulin should never be given in untreated cases of glycosuria which showed no fasting *hyperglycaemia—for example in renal glycosuria.* The initial dose should be small (5 units twice a day for adults) and should gradually be increased until the glycosuria disappeared. At this point it was necessary to proceed cautiously unless the results were checked by estimations of the blood sugar. The final aim was to provide a diet just sufficient for the work the patient had to do. For each increase of carbohydrate, additional insulin would be required, and these must be carefully adjusted to each other. Symptoms of a hypoglycaemic reaction will indicate that the dose of insulin is too large; the dose should then be gradually decreased until a balance was again struck, and if the patient were taught to recognize the symptoms a few lumps of sugar in water afforded a ready remedy. By proceeding cautiously in this way it was not necessary to make estimations of the blood sugar although it was certainly much better to do so.

Ketosis.

Acidosis Dr. Irvine defined as a condition of actual or relative excess of acid substances in the body which produced a deviation of the reaction of the blood to the acid side of its normal point. The ketone acids decomposed the bicarbonate of the plasma combining with the sodium and setting free an equivalent amount of carbonic acid which was then present in simple solution in the plasma as free carbonic acid. The normal reaction of the blood accordingly shifted to the acid side. If the production of ketone acids continued the bicarbonate of the plasma remained permanently reduced and the only means of restoring the reaction of the blood was a compensatory reduction of the free carbonic acid. This was effected by the respiratory mechanism responding to the condition of diminished alkalinity of the blood, the breathing becoming deeper and thus causing an elimination of the free carbonic acid by way of the lungs. The concentration of free carbonic acid in the blood fell in proportion to the existing reduction in the concentration of the plasma bicarbonate. The kidneys also co-operated by increasing the elimination of the acid substances and of ammonia which was mobilized in the body for the purpose of neutralizing the fixed acids. Hence the pathognomonic indications of this type of acidosis were (1) decrease in the plasma bicarbonate (2) a decreased percentage of carbonic acid in the alveolar air corresponding to the decreased concentration of free carbonic acid in the blood (3) an acid urine with ketonuria and an increased elimination of ammonia. In moderate ketosis these mechanisms were adequate to maintain the normal reaction of the blood. In grave ketosis the accumulation of acids became too great for these processes to handle. The reaction of the blood shifted still further to the acid side and air hunger and diabetic coma supervened, the latter probably resulting from the toxic action of the diacetic acid. At the present day cases of actual or impending coma were treated by the bold administration of insulin and the results had in many cases been dramatic. The urine must be watched carefully but so long as glycosuria was present it might be given without danger. As much as 100 units or more of insulin might be required in twenty-four hours in doses of 20 units or so at a time. In favourable cases the ketone bodies disappeared from the blood and urine, hyperglycaemia and glycosuria were greatly reduced or abolished, the alkaline bicarbonate mounted to a more normal figure, and the dangerous

crisis was tided over In conclusion Dr Irvine discussed ketosis in conditions associated with uncontrollable vomiting He mentioned in particular three conditions—pernicious post anæsthetic vomiting, pernicious vomiting of pregnancy, and the grave ketosis which sometimes occurred in severe "cyclic" and persistent vomiting in children The breakdown in the carbohydrate and fat metabolism in these cases might possibly be referable to the liver, since the predominant change found in fatal cases was fatty degeneration of that organ The clinical feature common to all was uncontrollable vomiting, associated with ketosis The relative starvation resulting from the persistent vomiting rapidly led to exhaustion of the liver glycogen, and in the absence of further supplies of carbohydrate to ensure the metabolism of fat, ketosis and acidosis resulted The administration of glucose for the prevention and cure of post-anæsthetic vomiting had been widely adopted, and it seemed probable that there was a place for insulin in the treatment of the uncontrollable pernicious form In the treatment of the vomiting of pregnancy, in which, possibly, the initial fault consisted in a depletion of the liver glycogen by the demands of the developing foetus, striking success had recently been claimed for a similar carbohydrate treatment Cases of mild or moderate severity responded promptly, and here again it would appear that the use of insulin along with glucose promised to effect a speedier reduction of the ketosis in urgent cases than glucose alone Finally, the same considerations would appear to apply to the state of acidosis, with grave ketosis, which might supervene in cases of cyclic vomiting in children

ETIOLOGY AND SIGNIFICANCE OF MENSTRUATION

Dr S E Kark, in a suggestive paper entitled "Menstruation an evolutionary hypothesis as to its etiology and significance," advanced the view that menstruation represented a primitive reproductive cycle, dating back to a time when the form of reproduction was oviparous or ovo-viviparous, and the complete cycle occupied from three to four weeks

The hypothesis was supported by a comparison of the body changes occurring in menstruation with those observed in reproduction, and differences presented by the menstrual and reproductive cycles (the greater duration of the latter, for instance) were referred to the development of the viviparous form of reproduction and the readjustments of the vital functions of the body thereby necessitated To the three stages of reproduction—namely, gestation, delivery, and the puerperium—there corresponded three stages in the menstrual cycle—namely, the period of premenstrual changes, menstruation, and the period of reparation It would be found that the premenstrual changes showed a notable resemblance to those observed during gestation In both the objective symptoms were alike, there were heightened excitability of the vegetative nervous system, irritability, headaches, vomiting, malaise, and neuralgias No less remarkable was the similarity in the somatic changes The activity of the sebaceous glands increased, often with the development of a distinct odour, there was a tendency to pigmentation, as that occurring around the eyes, and proneness to skin troubles of a similar kind, such as urticaria, acne, and eczema The red cells and neutrophiles of the blood increased and the blood pressure rose General metabolism increased, as indicated by a higher level of temperature, the glycosuric action of adrenaline became intensified, and there was a retention of calcium Engorgement and swelling of the breasts and enlargement of the nipples were not infrequently observed during the premenstrual period, and, according to Falta, colostrum sometimes appeared, even in virgins, and in rare cases an actual secretion of milk, should menstruation fail to set in In the hyperactivity of similar groups in the endocrine system there was a marked parallelism In both cycles were found enlargement of the thyroid, increased function of the chromaffin tissues, and increase of the adrenal cortex, and, according to Glynn, the latter was frequently responsible for hypertrichosis and pigmentation Both in pregnancy and the premenstrual period the pituitary body was markedly enlarged, in both were found polyuria and increased frequency of micturition, probably of pituitary origin The most striking similarity between the two processes was seen, however, in the uterus Whitehouse, in a study of the changes occurring in the endometrium during the premenstrual period found that the hypertrophy of the stroma and glands presented an appearance similar to the decidua of an early pregnancy, "indeed the likeness was so striking that not a few investigators employed the same terms in describing it" With regard to the parallelism between menstruation and labour, both were actuated by the same mechanism Sir John Williams had shown that the uterus contracted during menstruation, and that the cervical canal was dilated by the force of the uterine contractions And just as the menses were accompanied by pain, which was of an acute degree in about 36 per cent of the cases and severe in 20 per cent, and was due, not to uterine contractions, but to the dilatation and stretching of the internal os With regard to the puerperium and post menstrual changes, in both the uterine tissues underwent autolytic changes, converting them into soluble nitrogenous substances It was significant that in both conditions a corpus luteum was formed, an essential particulars identical in the two cases, and developed, it might be assumed, in order to inhibit the further maturation of new ova and to promote the growth of the fertilized ovum With the introduction of the viviparous form of reproduction the primitive four weekly cycle necessarily became greatly prolonged, and the vital functions of the organism required new adjustments and co-ordinations, which were reflected in the disturbances frequently observed in the endocrine system With regard to the cyclical character of menstruation and its occurrence precisely at intervals of about four weeks, Dr Kark pointed out that the process was necessarily cyclical because it consisted of a definite series of changes, the series being repeated continuously without intermission or interval between them The fixed period of four weeks represented the time required for the development or maturation of the ovum, its passage through the genital canals and expulsion, and the subsequent regeneration of the uterus

Other papers in this section were "The beginnings of disease," by Dr H Bell Walker, "Insulin," by Dr F A Saunders, "Dysmenorrhœa," by Dr D H Wessels, "Rheumatism," by Dr Platt Johnson, "Embryotomy," by Dr Simpson Wells

SURGERY

Dr C C Elliott of Cape Town was the president of the Surgical Section, and his address was on "Surgery of the brain" He gave a short history of operative work, and then divided his subject into the surgery of injuries and the surgery of diseases He said that to him the most interesting of the cerebral cases were those in which the pituitary gland was involved, and outlined briefly the chief methods of operation in such cases

Other papers in this section were "Misleading leading symptoms," by Dr H E Griffiths, "Ureteral catheterization and pyelography as aids in the diagnosis and treatment of surgical diseases of the kidney," by Dr E B Fuller "Some local and general infections, probably due to focal lesions of the upper respiratory tract," by Dr Jones Phillipson, "Drainage of the peritoneal cavity," by Dr C de W Gibb, "Foreign bodies in the upper air and food passages," by Dr Andrew Campbell, "Some notes on the Gullstrand slit-lamp with corneal microscope," by Dr E A Seale

PUBLIC HEALTH

Dr Orenstein's presidential address to the Public Health Section was on prophylaxis He said that the Victorian idea that most ills were due to bad sanitation gave place in the early part of this century to the idea that such ills were due to close contact with an infected person, but that now there were signs that the pendulum was swinging back, and the belief that environment and heredity did not play an important part in the health of the community was again held The health of a nation must be built on the solid foundation of the right living of the masses, not only the classes, and right living meant right environment—pre-natal and post-natal The following papers were also contributed to this section "Infant mortality," by Dr J J Boyd, "Rhyncobothrium, a cestode found in edible fish," by Dr J P de Villiers and Professor Duerden, "Dental caries," by Dr Maughan Brown, "Milk," by Dr Reid, and "Water-borne sewage disposal," by Mr F W Jamieson

ENTERTAINMENTS

At a reception, which was followed by a dance, the Mayor of Grahamstown welcomed the members of the Congress to the city The council and senate of the Rhodes University College entertained the Congress at a soiree, and during the evening short demonstrations, of a semi-popular kind, were given in the zoological, chemical, physical, and botanical laboratories The congress dinner was a most successful function At the end of the Congress the members and their wives were taken to Port Alfred, where a golf competition was held on the Kowie links, said to be the finest in South Africa Numerous other entertainments were arranged during the Congress

British Medical Journal.

SATURDAY JULY 5TH 1924

THE CLINICAL ASPECT OF ARTERIO-SCLEROSIS

CAZALIS'S well known aphorism, "Man is as old as his arteries" has no doubt played some, though very possibly an unconscious, part in making arterio sclerosis a favourite subject for investigation, and, it may be added speculation, especially as to its etiology That it is more often seen in the aged, though not a necessary accompaniment of length of days, may be explained by the accumulated insults and infections to which the body has been exposed in the course of a long life and struggle with environment Sir Clifford Allbutt whose prolonged study of this subject was set out in his *classical Diseases of the Arteries, including Angina Pectoris*, recognized three forms of arterio sclerosis—the senile, disecrescent or involutionary, the high blood pressure or hyperpietic and the infectious or toxic—and insisted that it is not 'a disease,' but an anatomical result of several morbid processes One of his pupils, Dr Geoffrey Evans, devoted his Goulstonian Lectures[1] at the Royal College of Physicians of London last year to the nature of arterio sclerosis, and dealt mainly with the morbid processes in diffuse hyperplastic arterio sclerosis or the arterio capillary fibrosis of Gull and Sutton His general conclusion then was that arterio sclerosis is characterized by a pathological thickening of arterial coats, particularly of the intima, that inflammatory reaction is of first importance, that degenerative changes are an essential part of the picture and that hyperplastic and involutionary processes play a part No one factor he held, was responsible for its causation Its development in extent and form depended on a balance between the action of the toxic agents and the power of resistance of the vessel wall to their attack While fully recognizing that arterio sclerosis is first and foremost an anatomical rather than a clinical conception, Dr Geoffrey Evans has, in a British Medical Association lecture published this week (pp 1 4), carried on his study of the subject and correlated the knowledge of the structural changes with the clinical manifestations, hoping thereby to gain information as to the underlying causes, and thus to obtain a surer basis for preventive measures By his use of the term "arterio sclerotic disease" he does not connote a malady *sui generis* for, like endocarditis, arterio sclerosis forms part of many clinical pictures and has many different causes, but he argues that the underlying change is an active arterio sclerotic process of a proliferative and not of a degenerative nature His thesis is supported by some excellent drawings, which have been reproduced in colours to illustrate his lecture In one of these (Fig III) can be seen a longitudinal section of the whole length of an affected terminal arteriole, changes in the parent vessel from which it springs can also be seen, but the extreme fatty degeneration of the intima of the glomerular artery is in striking contrast with the relative integrity of the internal cells of the parent vessel This fortunate section shows, indeed, all the histological features of diffuse hyperplastic sclerosis at a glance

[1] BRIT. MED. JOURN., 1923 vol i pp 454 502, 548

As the two main forms of arterio sclerotic death are cerebral haemorrhage and angina pectoris Dr Evans regards haemorrhage as the cardinal sign and pain as the cardinal symptom of arterio sclerotic disease Though it may be obvious it is well to insist that leakage depends immediately on damage of the wall rather than on increased blood pressure inside its lumen, and Dr Evans further connects the occurrence of haemorrhages with activity of the vascular lesion In connexion with cerebral arterio sclerosis attention was specially directed some years ago (1911) by the late Sir William Osler and others to a group of cases, termed slight strokes in which frequent transient pareses, lasting twenty four hours or so occur, and have been explained by Pal and by Peacock as due to vascular spasm—a view which is certainly comforting to the patient Sir Clifford Allbutt however while admitting the seductive character of the vaso constrictor hypothesis, adopts the more sombre and, indeed, older view that these attacks are due to small haemorrhages, and on this point Dr Geoffrey Evans brings further confirmatory evidence—namely numerous capillary haemorrhages disclosed microscopically in brains apparently normal to the naked eye Haemorrhages in other parts of the body which may appear to be etiologically obscure—for example, from the kidneys and the uterus—may be really due to arterio sclerosis, and the occurrence of haemorrhage is stated to point to the existence of an active arterial change

Pain as a cardinal symptom of arterio sclerosis is a more difficult problem to elucidate, and it would be interesting to hear Sir James Mackenzie on the theory of this matter That pain is closely associated with arterial disease is only too familiar from angina pectoris angina abdominis and intermittent claudication, but, on the other hand, arterio sclerosis is so often painless that the secondary changes caused by arterial disease rather than the primary lesion, cannot be disregarded

THE ANALYSIS OF MORTALITY

IN that classic of medical statistics, the supplement to the thirty fifth annual report of the Registrar-General, Farr took up the question of what would be the effect on the duration of life of the extinction of any single disease He pointed out that the question was only determinate upon some assumption and that the simple one—namely that the extinction of a disease was pure gain not leading to any increment of mortality from other diseases—was only one of three possibilities He showed that making the simple assumption, the answer was given by constructing a life table based upon rates of mortality obtained by subtraction of the quota contributed by the particular disease and in this way estimated the saving effected (on the mortality experience of 1861 70) by the deletion of the zymotic diseases of phthisis or of cancer

This particular method has not been much used in official statistics of recent years but a distinguished actuary, Mr Eric B Nathan in a paper communicated to the Faculty of Actuaries on June 30th has provided abundant material for similar calculations, for he has computed and graduated the rates of mortality (probabilities of dying within a year) for no less than twenty groups of diseases as revealed by the mortuary statistics of England and Wales for 1911 12 This analysis leads to a suggestion of interest to physicians working for insurance companies It is well known that the rate of mortality of persons aged,

say, 40 in the first year of insurance is much less than that of persons aged 40 who have been insured ten years, owing to the effect of medical selection (not to speak of self selection) Mr Nathan suggests that the rate of mortality in the first year of insurance might be regarded as compounded of the separate rates due to epidemic diseases, influenza, accidents (including suicide), bronchitis, and pneumonia His tentative rates of select mortality are considerably lower than those of the standard select tables, but the latter are based on mortality derived from an experience considerably before 1911-12 Another point of interest is the success with which analysed tables—that is, tables in each of which only one group of diseases is considered—can be graduated by the Makeham-Gompertz formula This formula assumed that a rate of mortality at any age is compounded of two factors—one a factor independent of age, a "chance" factor, the other a function of age increasing in geometrical progression As might be expected, bronchitis follows this "law," but pneumonia, with other diseases of the respiratory organs, does not Tuberculosis, of course, does not follow it

Mr Nathan provides numerous useful diagrams showing the changes with age of the several rates of mortality His work in this field is not, however, so novel as a remark in the early part of his paper suggests that he supposes it to be There appears to be an atmosphere about the constants of a life table which intoxicates those who breathe it, even when they are actuaries and have that familiarity with the ritual which is supposed to breed contempt For the purpose of assessing the increasing (or decreasing) importance as age advances of a cause of death, the life table function called the rate of mortality, or probability of dying within a specified period from age x, has no special advantage over the death rate at age x, or central death rate, as the actuaries term it, which is used in medico statistical official reports The graduation of such rates—that is, the replacement of the discontinuous points which chart the death rates in any ordinary diagram by a smooth curve—pleases the artistic sense but has little other advantage, particularly when, as is usually the case, the process of graduation depends upon hypotheses without any biological foundation and merely chosen for reasons of practical (or artistic) convenience In the two cases of cancer and tuberculosis the Registrar-General has provided abundant data for the study of age influence, and indeed, reference to the annual report for 1913 will, in these particular cases, provide all and more than all the information deducible from Mr Nathan's investigation of this matter

The paper as a whole is one which medical statisticians will be glad to have, and they will realize how heavy must have been the labour which has gone to its preparation

MEMORIAL TO SIR WILLIAM MACEWEN

THE movement, which took formal shape a month ago, in favour of commemorating the life and work of the late Sir William Macewen was carried a stage further at a meeting of the general committee of the memorial fund held on June 26th in the hall of the Royal Faculty of Physicians and Surgeons, Glasgow At the original meeting, held on May 22nd, it had been remitted to the executive committee to consider and report on the form or forms which the memorial should take The executive was now able to present a unanimous report, which, with very slight verbal alteration, was adopted by the general committee Briefly it may be said that it is proposed to apply the funds that may be raised to three main purposes, in the following order (1) The provision of a bust of the late Sir William Macewen by a sculptor of eminence, with a replica for presentation to Sir William's family It is intended that the bust shall be placed in the University (2) The establishment of a memorial lecture or prelection, to be called the "Sir William Macewen Lecture, or Prelection", this lecture is to be delivered annually, or biennially, as funds may permit It is intended, further, that the lecture should not be merely a memorial oration, but should deal with any branch or aspect of surgical science (3) The foundation of a Macewen medal or prize in surgery, to be awarded annually The decision as to whether this should be assigned to the class of surgery at Glasgow University or should be given a wider application has been deferred for further consideration A preliminary report as to the probable cost of the bust and replica was made by Dr Freeland Fergus on behalf of the executive, and the general committee remitted to the executive to make such arrangements as may be required to carry through the scheme It was intimated that already a number of substantial subscriptions had been secured, though no circular has yet been issued In view of the present holiday season it was resolved that the executive should defer the issue of such circular until a little later in the year The committee is prepared, however, to receive subscriptions now, and such subscriptions should be sent to the honorary treasurer of the memorial fund, James MacFarlane, Esq, LL D, Wesleyan Street, Glasgow, who will be glad to acknowledge them The executive of the memorial fund consists of the following Dr A Freeland Fergus (chairman), Sir Hector C Cameron, C B E, Sir John Reid, Professor T K Monro, and Mr J H Pringle (vice-chairmen), Colonel J A Roxburgh, Mr William Gray, Professor Graham Kerr, Professor W K Hunter, Sir Archibald Craig, LL D, Dr J N Marshall, Dr George A Allan, Dr J G McCutcheon, James MacFarlane, LL D (treasurer), and Mr Archibald Young (secretary)

THE MAKING OF A MUSEUM

THE annual report on the Museum of the Royal College of Surgeons of England by the conservator, Sir Arthur Keith, F R S, opens with an interesting account of the cataloguing and arranging of the specimens, embodying a fine tribute to the late Professor S G Shattock Amongst the events that shaped the design and destiny of the Museum, one of the most important, Sir Arthur Keith says, was the engagement of James Paget in the beginning of 1842 to prepare a catalogue of its pathological collection An event of equal, if not of greater, moment was the appointment of Samuel George Shattock to the office of pathological curator in 1897 The office was then comparatively new In 1881, while Sir James Paget, assisted by the late Sir James Goodhart and Mr Alban Doran, was preparing a new edition (second) of the Pathological Catalogue, the Council of the time decided that a special officer should be appointed to take charge of the pathological collection The first occupant of the post was the late Sir Frederic S Eve, then a young surgeon with a special knowledge of tumours, in 1890 he was succeeded by the late Mr James H Targett, a young gynaecological surgeon and a student of pathological processes Their special duty was to bring out annually an appendix to the Pathological Catalogue, by which the collection was brought up to date and Fellows and Members kept informed of the additions and labours of the year To this office Mr Shattock was appointed in 1897 as successor to Mr Targett He was then 45 years of age and in the plenitude of his powers He brought to his task qualities of a new kind, in devoting his whole time and ability to the investigation of pathological processes he was a pioneer of his generation

For him an exact and systematic examination of isolated pathological specimens was but a means of unravelling the general processes which underlie morbid manifestations in all kinds of living matter whether that living matter be part of a plant, of an animal or of the human body Professor Shattock's wide outlook on pathology fitted into the scheme on which Hunter had founded his Museum For him as for Hunter, the healing of a wound of a plant and the healing of a wound of the human body were but variations of the same process The manifestations of malignant growth, whether in animal or vegetable tissues, he investigated as if they were the varying aspects of a single problem Hence it followed that Shattock, in making additions to the pathological series, took every opportunity of illustrating these basal conceptions He brought with him an expert knowledge of bacteriology, and one of the first additions he placed in the Museum was a series of cultures of pathogenic organisms How excellent was the technique he employed is seen from the fact that these cultures are as fresh and perfect to-day as they were when first mounted Every specimen which came into the Museum was submitted to an accurate and complete investigation, and the main memorial of Shattock's professional life is, as Sir Arthur Keith truly says, *the collection of* general pathology, the design of this great series was his, but in its execution he was fortunate in having as he was ever the first to insist, the valued help of Mr Cecil F Beadles The selection, arrangement, and cataloguing of the specimens occupied some twelve years Two years ago Professor Shattock set out on the task of recatalogu ing and rearranging the sections of special pathology, to assist him in this work the Council in 1922 appointed his son Mr Clement E Shattock F R C S, and very good progress had been made when Professor Shattock's health began to give way He gave his last demonstration on October 29th 1923, and died on May 11th, 1924 We published an account of his career, illustrated by a portrait on May 17th (p 889)

CONTAGIOUS BOVINE ABORTION AND UNDULANT FEVER

EXCEPTING only tuberculosis and the epizootic virus diseases such as foot-and-mouth disease, rinderpest, and pleuropneumonia, dairy herds of cattle lose more through contagious abortion than through any other cause Not only is the calf lost, but there is often a serious fall in the milk yield when the abortion takes place in early pregnancy The organism has been known since 1897, when Bang first described it under the name *Bacillus abortus* It causes a catarrhal metritis and is a tissue parasite, and occurs, usually in large numbers, in the gravid uterus The organism may be present *without causing any clinical* symptoms—and, indeed, the only generally recognized *symptom is abortion* Diagnosis is made by an agglutination or a complement fixation test The mode of transmission has not yet been definitely settled For a long time the bull was suspect, but this view finds less favour nowadays, and the suggestion is that infection is mainly, if not always, by ingestion Carpenter[1] is of opinion that the organisms are arrested by the lymphoid tissue of the throat and transferred by the lymph stream to the blood, and so to the various parts of the body The bacillus, in addition to reaching the uterus, is also very frequently excreted in the milk, which, being apparently unchanged in appearance, is used for human consumption It has been known since 1911[2] that milk thus infected, if injected into guinea-pigs, produces *macroscopic lesions closely resembling* those of tuberculosis, and it was suggested that such milk could not be wholly desirable for human use No definite connexion with human disease was, however, at that time suspected Meyer and Shaw,[3] working on the causal organism of undulant fever (so-called Malta fever), found that, although previously regarded as a coccus, it was in reality a rod with very pleomorphic tendencies Undulant fever is, of course transmitted to man mainly through goat's milk, and gradually the belief grew that *Micrococcus melitensis* was closely related to Bang's organism, and it is now generally admitted that both belong to the same species Burnet[4] concluded that the two organisms were identical, and that they could only be distinguished with certainty by *their pathogenicity in monkeys* He considered that there is less difference between them than between the Flexner and Shiga strains of *B dysenteriæ* or between the human and bovine strains of tuberculosis Some Continental physicians are now treating undulant fever in man with *abortus* vaccines Evans in a recent series of articles, agrees with Burnet in all essential particulars She points out that the correct name of the organism should be *Bacillus* (or *Brucella*) *melitensis* bovine (*abortus*) and caprine (*melitensis* A and B) varieties being distinguished She believes that *Bacillus bronchisepticus* one of the alleged causal organisms of distemper in dogs is closely related to it From a serological examination of a *series of strains of the bacillus from various sources*, Evans concludes that in some cases the bovine strain has been isolated from human cases of undulant fever Moreover, a number of cases have been reported in which it is impossible to implicate goat's milk, and although definite proof is lacking that cow's milk was the source of the infection the facts suggest that possibility The evidence available is to the effect that the *abortus* type is less virulent to man than the *melitensis* strains, which seem to have acquired an exalted virulence for man It is possible for the caprine strain to exist in man without any noticeable illness, and if a virulent strain such as this can infect man without producing symptoms it is probable that the less virulent *abortus* produces mild infections which are undiagnosed or are ignored by the patient Out of 500 serums selected at random by Evans from patients suffering from various diseases, nearly 12 per cent gave positive results when tested with *abortus* Larson and Sedgwick,[5] when examining 425 children for antibodies against *B abortus*, found 17 per cent were positive The same workers, using the serum of women who had aborted, found that a larger number gave a positive reaction when *abortus* was used than with the usual antigen of the Wassermann test It would not be wise to conclude that bovine contagious abortion is a *serious human menace*, but it certainly seems important that its possibilities in that direction should be more fully explored Its economic significance is already serious and the loss of milk and livestock has been the direct cause of a considerable amount of experimental work among veterinary bacteriologists Its public health importance also requires more detailed and careful examination in this country than has hitherto been attempted

RADIUM TREATMENT IN GYNAECOLOGY

THE annual report for 1923 on radium treatment at University College Hospital contains a general account of the work for the year, accompanied by the histories of the cases treated The author, Dr R T Lewis, deals chiefly with the radium treatment of carcinoma of the cervix and menorrhagia Patients suffering from carcinoma of the cervix often seek treatment only when the disease has advanced to a late stage and little can be hoped from surgical operations In such patients radium treatment may lead to a temporary improvement of short duration, but where considerable pelvic infiltration and gross spread of the

[1] *Cornell Veterinarian* 1924, xiv, p 15
[2] Twenty-eighth Annual Report of the Bureau of Animal Industry, p 140
[3] *Journ Infect Dis* xxvii, p 259
[4] *Arch Int Path Therap* 1923, xii, p 43
[5] Public Health Report, 1923, xxxviii, 1, 1923, 192 xxxix, 1, 571
[6] *Amer Journ Dis Child* vi, 1913, 26, x, p 162

disease to the fornices and vaginal wall has occurred only a slight prolongation of life can be expected from radium treatment Better results were obtained at University College Hospital when the ulceration was limited to the portio vaginalis and the growth had spread through the cervix, but without definite involvement of the pelvic wall The absence of sepsis in such cases may have accounted for these better prospects The treatment of recurrent cancer following hysterectomy showed that though the cancerous tissue in the immediate field of radiation could be completely destroyed and replaced by fibrous tissue, the growth beyond a distance of 3 to 4 cm continued actively to proliferate In less advanced cases the immediate results of the radium treatment of cancer of the cervix are often very striking Bleeding is usually arrested at once, discharge lessens, and such as persists is attributable to the resolution of the growth and the inflammatory reaction in the vaginal fornices For the amelioration of these two distressing and incapacitating symptoms the patients are profoundly grateful, and frequently, after being bedridden for many weeks, are able to resume their household activities The visible signs of growth may disappear and ulceration heal A thick greyish-white slough covers the diseased area the cervix shrinks, and the fornices become obliterated by fibrotic contraction Because of the stenosis of the cervical canal which follows the first treatment it may be impossible to introduce a tube into the lumen, this experience has led Dr Lewis to give large initial doses, since subsequent treatment must be applied from the contracted fornices, and therefore at a greater distance from the neoplastic tissues Pain usually means extensive pelvic infiltration, and no alleviation of this symptom can be hoped from radium treatment Summing up the experience of some fifty cases the author of this report concludes that some cases suitable for radium treatment are benefited to such an extent that they may almost be claimed as clinical cures, since they have done well for over two years But clinical examination alone gives no certain knowledge of the pathological processes at work in the deep tissues of the pelvis The intense local fibrosis effectively masks minor evidence of malignant invasion, to decide the extent to which the disease has been eradicated and prevented in its spread longer experience is necessary Radium treatment may be employed for the relief of menorrhagia at the menopause, for that due to fibroids, or for menorrhagia in young women who present no sign of pelvic disease—essential menorrhagia Haemorrhage at the menopause is seldom severe enough to call for treatment by radium, but it sometimes happens that the bleeding is so profuse as to produce anaemia shortness of breath, debility, and incapacity for work, treatment of some sort then becomes imperative Bleeding is usually arrested within a few days of beginning treatment by radium The cessation may be abrupt and complete in some cases one or two slight periods may precede amenorrhoea, and in others the flow of blood diminishes but is not completely arrested The changes consequent on radium treatment resemble those attendant on the natural menopause, and no disagreeable after effects seem likely to occur In menorrhagia due to fibroids the immediate results of radium treatment are more variable Definite and immediate improvement may be observed but in other instances treatment may appear to have failed altogether These corresponding cases can often be controlled by further treatment, a second and even a third application being required for this purpose An account of the history of twenty-three patients so treated is given in the report Finally, essential menorrhagia, an affliction of young women who show no other sign of pelvic disease, may be relieved by radium therapy This disease treatment should not be undertaken without careful thought for the menopausal symptoms are apt to be severe, and there may be permanent interference with the potential function of motherhood From time to time heroic measures become necessary on account of increasing ill health and the complete failure of all other therapeutic or surgical procedures short of hysterectomy In the small number of these cases treated with radium at University College Hospital the results were satisfactory

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TRUE HERMAPHRODITISM

DR HUGH H YOUNG has published in the *Bulletin of the Johns Hopkins Hospital* for June a preliminary report on a case of true lateral glandular hermaphroditism The patient had all the sex characteristics of the male, apart from the abnormalities of the genitalia described below. He had always had a preference for boys' games, and at the age of 12 began to have erections and show an interest in the female sex No attempt at sexual intercourse had ever been made, although the desire had been marked, a year ago he experienced one nocturnal emission, with a slight discharge of fluid There had never been any loss of blood from the urethra The patient was a strong, well built, and muscular young man of 18, about 5 ft 11 in in height The pubic hair was normal, the mammillary region typically masculine, and the voice of the male type The penis, although well developed, had a marked hypospadias The penile urethra was absent, and the urinary meatus situated in a cleft of the scrotum about 5 cm from the glans The orifice of the urethra was fully large, and the patient passed a good stream of urine Between the urinary meatus and the glans was a narrow fibrous cord, forming a bow to the markedly arched corpora cavernosa On the under surface of the glans was a small furrow representing the urethra, and a large hooded foreskin was present The right side of the scrotum was normal in appearance and size except for the presence of a small hydrocele, the left half of the scrotum was empty In the left inguinal region was a rounded movable mass, apparently in the inguinal canal, this increased in size on coughing, giving an impulse, and could be reduced by gentle pressure, the right inguinal ring was normal The prostate was difficult to outline from the rectum, but was apparently smaller than normal An incision was made over the swelling in the left groin, and the sac which measured 10 cm in length and 2 to 4 cm in diameter, was found to contain a normal ovary and tube, and what appeared to be an embryonic uterus The uterus blended with the peritoneum of the sac, and was about 3 cm in length and 2 cm broad at the fundus From the upper part of the fundus a normal Fallopian tube passed off, and the ovary, which measured 5 by 3 by 2 cm, contained a freshly ruptured corpus luteum At this stage Dr Young was confronted with a somewhat difficult problem If the scrotal contents on the right side were undoubtedly female, should they be allowed to remain outside in the scrotum? If a male, should the patient be allowed to continue through life with a functioning ovary and tube in the abdomen on the left side? It seemed imperative to make an incision in the right groin to determine the nature of its contents, and this was accordingly done The tunica vaginalis was normal Within the sac lay a body larger than the normal testicle, somewhat irregularly lobulated, with depressed, indurated, pale areas, the intervening bulging portions being softer than normal testicle The organ measured 5 cm in length and 2·5 by 3 cm in diameter It was invested by a tunica albuginea, and externally to it lay a tubule-like structure, loosely attached to the organ by a mesentery 1 to 2 cm in length This structure presented a club-shaped end, about 1 cm in diameter, and on its tip was a soft, red, sessile structure, in no way resembling a fimbriated extremity Nothing resembling a vas deferens could be found A portion of the glandular organ was removed, and on microscopical examination was found not to

resemble an ovary, it contained tubules and epithelial and interstitial cells, the latter being regarded as undoubtedly testicular It was decided to preserve the supposed masculine contents of the right scrotal sac, and it was, therefore, obviously desirable to remove the female contents of the left hernial sac During the removal of the ovarian tube was divided of exactly the size and consistence of the vas deferens taking a course downwards beside the bladder In a brief pathological report by Dr D M Davis it is stated that the organ from the left groin had definite ovarian structure ova and follicles being present In the gland in the right side of the scrotum there were very definite seminiferous tubules lined with undifferentiated cells, and showing no spermatocyte, spermatozoa, or spermatogonia Between the tubules were large masses, comprising the greater part of the section, composed of cells with rounded vesicular nuclei, it was considered possible that these were interstitial cells, although no well developed lutein cells were present It is not possible to discuss the problems involved in this remarkable case in the absence of figures illustrating the structure of the two glands and the detailed report will be awaited with interest

THE MEDICAL INSURANCE AGENCY

THE Committee of Management of the Medical Insurance Agency met at the house of the British Medical Association on Thursday, June 26th, 1924, when, in the absence of Dr G E Hastip owing to indisposition, the chair was taken by Dr P Langdon Down Other members present were Dr H A des Voeux, Lieut.-Colonel R H Elliot, Dr R V Gibbons, and Sir Dawson Williams The Secretary presented the audited balance sheet for the year ending December 31st, 1923 together with the Chairman's report thereon A supplementary and detailed statement showed that the great and rapid progress made by the Medical Insurance Agency during the eight years ending 1922 had been maintained The net premium income, which was £12,104 in 1915, had grown to £38,082 in 1922, and had still further increased to £47,823 in 1923, whilst the commissions, etc, earned rose from £1,950 in 1915 to £5,408 in 1923 For the fourth year in succession policies totalling over £100,000 in sums assured in respect of life and endowment assurance were arranged through the medium of the Agency, bringing the total sums assured under these heads through the Agency to well over three-quarters of a million sterling Business in combined household, in fire, and in motor car insurances had continued to increase, with regard to the latter it appears that the very special service now offered is meeting with considerable approval Motor car insurance is a highly specialized business which cannot easily be combined with other insurances Very attractive propositions can be, and are, placed before medical motorists from various quarters, but the difficulties begin to be experienced when the need for making a claim arises Complaints as to claims settlements have been reduced to a minimum in cases insured through the Medical Insurance Agency, so satisfactory a state of affairs is not general in the insurance world The Agency has now its own consulting engineers, who are prepared to give free expert advice and assistance in any difficulties or on problems referred through the Agency and have perfected a special scheme in connexion with the purchase or sale of cars Messrs Mann, Egerton, and Co, Ltd, also now hold authority to proceed immediately with repairs to the cars of doctors insured through the Agency without waiting for an estimate to be prepared and submitted to the insurance company concerned During the year 1923 a sum of over £2,000 was again returned by way of rebates to those doctors insuring through the Agency, thus effecting a direct saving on the amounts payable in premiums The surplus carried to the Medical Benevolent Fund was £1,595 14s, the balance of that account remaining unallotted at the end of the year was thus slightly larger than at the end of 1922 Interim grants amounting to 750 guineas were made to the Royal Medical Benevolent Fund (£210), the Royal Medical Benevolent Fund Guild (£210), Epsom College Benevolent Fund (£105), and the Royal Hospital and Home for Incurables, Putney (£52 10) A sum of £210 was added to the Educational Grants (Gold) Fund As a result of this distribution the total sum subscribed to medical charities by the Medical Insurance Agency since 1910 has reached £12,250 and, as Dr Langdon Down pointed out, this sum, gratifying as it is, could be considerably increased if all medical men would realize that by doing their insurance business through the Medical Insurance Agency they are directly benefiting themselves and indirectly the cause of medical charity It is satisfactory to note that the annual meeting of the Royal Medical Benevolent Fund, appreciative of the work done by the Agency for the medical charities, has decided to elect a representative of the Medical Insurance Agency to sit on the Committee of Management of the fund for a period of three years The secretary to the Agency Mr L Ferris-Scott, F C A, was nominated for election as the representative of the Medical Insurance Agency

INFANT WELFARE CONFERENCE.

THE third English-speaking Conference on Infant Welfare opened at Caxton Hall on Tuesday, July 1st Dr G F Still chairman of the National Association for the Prevention of Infant Mortality and of the National League for Health Maternity and Child Welfare, took the chair at the morning session There were present over 700 delegates representing thirty different countries The presidential address was given by the Right Hon John Wheatley M P Minister of Health, who said that there was no subject of public interest under Government jurisdiction so important as that of the welfare of the mothers and children of this country He referred to the well known, but none the less deplorable, fact that for the past thirty to forty years there had been no reduction in maternal mortality He gave great encouragement to the audience by stating that the crippling economy which had been the policy of the Ministry in recent years was now fortunately at an end Reference was made to the already wide powers given to local authorities under the Maternity and Child Welfare Act, and the minister stated that he was about to issue a circular to all local authorities asking for suggestions from them to improve the existing arrangements The importance of teaching mothercraft in the schools was emphasized Mr Wheatley paid a high tribute to welfare work throughout the country, and stated that human equality was, and should continue to be, the keynote of the movement The remainder of the morning session was given to a consideration of education in relation to maternity and child welfare In considering the training of midwives, Colonel R J Blackham, M D, presented a terrible picture of the barbarities practised in Indian homes by ignorant and superstitious dais (midwives) He was able to state, however, that there is a quickening of the public conscience on this matter, and attempts are being made in various parts of India to educate and supervise these women Dr Ethel Cadie then read a paper on the training of midwives in this country A short address on the training of health visitors was given by Dr Janet Lane-Claypon She emphasized the need of imagination and faith in the health visitor, and the fact that the right personality is her greatest asset Owing to the time occupied by the earlier papers and the intervening discussion, only a very few minutes were allowed for the discussion of the stimulating remarks of Dr Lane-Claypon The instructive paper by Miss C Stevenson (principal of the Pachel Macmillan Training Centre Deptford) on the training

Verbatim copies of the Conference papers may be obtained from the honorary secretary 117 Piccadilly W.1.

of nursery school workers was unfortunately crushed into the final ten minutes preceding the luncheon interval The afternoon session, when Mr Neville Chamberlain took the chair, was devoted to the consideration of the unmarried mother and her illegitimate child An able paper was delivered by Dr Letitia Fairfield, in which she compared the present legislation on this subject in various countries Dr Julius Levy (Chief of the Bureau of Child Hygiene, New Jersey) followed with an account of a scheme "to prevent foundlings," at present successfully in operation in New Jersey An account of the various kinds of residential accommodation for the unmarried mother was given by Miss J E Higson (warden of the Josephine Butler Memorial Home, Liverpool) After tea the subject of "toddlers' playgrounds" was introduced by Mrs Somerville, who first started these admirable and inexpensive institutions in Edinburgh Dr Macmaster and Dr Katherine Gamgee gave short papers on the reorganization of health visiting schemes, but the time allotted to such a wide subject was quite inadequate Dr Saleeby gave an evening lantern lecture at Carnegie House on sunlight and childhood The general feeling of the conference was that too much important matter had been concentrated into a very short time Many delegates had attended with the hope of returning to their local authorities with definite suggestions, but as time did not permit of adequate discussion on any of the points under consideration it was impossible to form conclusions of value It was also unfortunate that delegates who had come great distances—for example, Tasmania and the Malay States—should have their remarks limited to three or five minutes

A GERMAN BARBER SURGEON

JOHANN DIETZ was a German barber surgeon who, when young, lived an adventurous life, of which in his later days he wrote an account for the benefit of his descendants, describing how men went to war and went a-whaling in the last years of the seventeenth century, and afterwards lived peaceful citizens in the early part of the eighteenth Mr Bernard Miall has made an excellent translation into English, illustrated by over sixty reproductions of contemporary engravings and prints of the places mentioned, of battle scenes, of the regimental surgeon at work, and of whalers and whales The title of the book is *Master Johann Dietz*,[1] and the publishers are to be congratulated on their courage in issuing a volume so well got up at a price so moderate Johann Dietz, who was born at Halle in 1665, was the son of an enterprising citizen of that ancient town who, in addition to carrying on his proper trade as a rope maker, was a corn chandler or forage master, and became an alderman, a pillar of the church, and a beer inspector The son, who rose through all the stages of his craft, eventually became the master of the barber-surgeon guild As a young man he served with the famous Brandenburg Electoral foot guards, being assistant to the distinguished surgeon Master Andreas Horch, and this experience enabled him to give a vivid picture of the horrors and hardships a soldier underwent during the campaign in Hungary When the war was over Dietz took to the life of a civilian barber surgeon, cupping or bleeding his patients or trimming his customers' beards He assures us that he was highly successful, but he found existence so humdrum and irksome that he could not resist an offer to go a voyage to the Arctic seas as surgeon to a whaler So he started on what proved to be perhaps the most interesting period of his life, although the most dangerous and most disagreeable He had a remarkable gift for observation of matters great and small, a happy sense of humour, and a blunt, direct style which make his account of the hard life on a seventeenth century whaler entertaining to read Altogether this is a book that will please both the student of German life in the reigns of the Great Elector and King Frederick I, and the ordinary reader who is interested and amused by the vivacious account of the everyday doings of a middle-class craftsman of this period From the medico-historical point of view the book is full of interesting facts, many of which are to be found nowhere else Dietz eventually settled down, married (not wholly to his own satisfaction), became a prosperous citizen, and died at a ripe age

[1] *Master Johann Dietz, Surgeon in the Army of the Great Elector and Later to the Royal Court* Translated by Bernard Miall First published in Portugal London George Allen and Unwin, Ltd New York E P Dutton and Co 1923 (Med 8vo pp 315, illustrated 12s 6d net)

THE PRICE OF INSULIN

THE price of insulin was further reduced on July 1st by Messrs Burroughs Wellcome and Co, and by the British Drug Houses, Ltd (acting in association with Allen and Hanburys) The price is now 2s 8d for 100 units, or ten average doses Until this reduction it was 4s 8d, and a little over a year ago was 25s The price of insulin to-day is about one-third of the present price in America, and the British insulin is at least as good in respect of potency, consistency, and sterility as the American The British supply is abundant—much beyond the needs of this country There are large reserves, and the export trade is helping diabetics in very many other countries which are behindhand with their own supplies or have none at all This highly gratifying state of affairs is to be attributed to the policy pursued from the first in this country under the influence of the Medical Research Council The manufacturers were encouraged to begin, and were in part protected against underselling from America They were kept supplied with the results of research work as these were obtained and previous to publication, and the Medical Research Council refused to countenance a fixed selling price Only a maximum selling price was fixed, and it was arranged that this should be reviewed from time to time in the interests of the public The selling price has, however, continually fallen below the last maximum selling price fixed, and the results of this competition have made the question of the importation of foreign insulin an academic problem The results thus obtained may be compared with those reached with regard to neosalvarsan, for which the Board of Trade made a fixed selling price, this was to be a maximum price, but it quickly became the minimum price, with the result that its uncontrolled price in America is, we are informed, about one-tenth of its price here

THE WALLER MEMORIAL

A MEETING of subscribers to the fund which has been raised in memory of the late Dr and Mrs Augustus D Waller is to be held at the London (Royal Free Hospital) School of Medicine for Women (Hunter Street, Brunswick Square, W C 1) on Thursday, July 17th, at 5 p m In inviting contributions the organizing committee stated that the memorial should take the form of a fund for the encouragement of scientific research, to be administered by the council of the London School of Medicine for Women, and the final arrangements concerning the memorial will be decided at the meeting Those friends who wish to subscribe and have not yet done so are asked to send their subscriptions to the honorary treasurer, Professor John Mellanby, St Thomas's Hospital Medical School, S W 1, as soon as possible £1,820 has been subscribed, and it is hoped that this sum will be increased to £2,000 before the meeting

We would draw the attention of ophthalmic surgeons to the letter from the Chairman and Secretary of the Ophthalmic Benefit Committee, published this week at page 34 This committee, as many of our readers are already aware, has lately been formed in London in order to deal with the problem of ophthalmic benefit for insured persons Its object is to organize those ophthalmic practitioners who desire to take part in the carrying out of any scheme that may be agreed upon

Nova et Vetera.

THE EARLY HISTORY OF THE HARROGATE WATERS

The medicinal springs of Harrogate were first discovered about the year 1571 by a Mr William Slingsby of an ancient family seated at Knaresborough. Mr Slingsby's discovery was purely accidental: he found a spring in the then primeval forest of Knaresborough which resembled the Sauveniere Well at Spa in Germany which he had visited in his youth. Of the waters of this spring he drank throughout his life. Slingsby's discovery would probably have been forgotten but for the advocacy of Dr Timothy Bright (1550-1615), the inventor of modern shorthand. Bright, who in his youth had travelled abroad and visited Spa, was dismissed from the post of physician to St Bartholomew's Hospital in 1590 and was instituted rector of Methley near Leeds in 1591. His medical training and experience of travel made him an ardent advocate of the Harrogate spring, going there himself and sending patients thither. Further he was insistent with his medical brethren that the virtues of the waters should be made known. Bright died in 1615, but his efforts were slow in bearing fruit.

About Michaelmas 1625 a party of physicians from York visited Slingsby's spring called the Tewit Well from the number of peewits in the neighbourhood; they found it choked up, but cleared it out and performed sundry rough chemical experiments. They further visited the sulphur springs near by. The upshot of this excursion was the publication by Dr Edmund Deane of York, in 1626, of a work entitled *Spadacrene Anglica or the English Spa Fountain*.[1] In this treatise Deane describes the chalybeate and sulphur wells and the Dropping Well at Knaresborough, with their chemical properties and gives directions for their practical use. Another member of the party, Dr Michael Stanhope, in *Newes out of Yorkshire* (1626), gives an entertaining account of the excursion at the previous Michaelmas. Stanhope published a further treatise in 1632, entitled *Cures without Care*, in which he gives clinical details of a series of cases and describes another chalybeate spa discovered by him—the Sweet Spa—now called John's Well. The fame of the waters was now definitely established, and visitors continued to flock there.

In 1652 Dr John French published *The Northern Spaw*. French was in the north while physician to the Parliamentary army, he was an accomplished scholar, and deeply read in chemistry. This work most happily combined philosophical reflection with sound chemical knowledge. He describes the natural properties of the chalybeate and sulphur waters, and gives admirable directions for their therapeutic use. French died a young man while physician to the Protector's army at Mardyk near Dunkirk, in 1657. His writings show that the drinking of both chalybeate and sulphur waters was then a popular method of treatment.

The practice of bathing was introduced by Dr George Neale of Leeds, who, with his son, Dr John Neale of Doncaster, practised at Harrogate during the summer for sixty-seven years, *circa* 1656 to 1723. Dr George Neale wrote an account of the waters, entitled *Spadacrene Eboracensis*. This was never published, but a portion of the manuscript was obtained from the widow by Dr Short. From internal evidence this was written *circa* 1693. Dr Neale states that about 1663 he obtained a pattern of a bath such as was used beyond the sea; the method found such favour that at the time of writing there were above twenty bath houses. Dr Neale further instituted the use of vapour baths. The baths in which sulphur water was employed were beneficial in muscular pains and stiffness, sciatica in particular was notably relieved.

In 1734 Dr Thomas Short of Sheffield (1690-1772) published *at the request of the Royal Society his history of* mineral waters of Derbyshire, Lincolnshire, and Yorkshire. Short's history combines the most recent chemical knowledge of his time, complete with singularly accurate clinical observations and the most minute regard to topographical detail.

Dr Walker of Leeds in 1724 wrote a treatise calling particular attention to the beneficial action of the waters in diseases of the skin. This was followed in 1725 by a short treatise by Willan, one of the founders of the British school of dermatology. In 1783 a new spring of a different chemical nature, the Crescent Saline, was discovered and analysed and described by Dr Thomas Garnett in 1791.

Garnett was an expert chemist and an accomplished physician. His treatise on Harrogate waters and *comments* on their physiological action are so much in advance of his time as to form a connecting link between the dawn of chemical and biological science in the eighteenth century and the splendour of its rise in the succeeding decades.

The history of these waters is a curious commentary on *the effects of chance*. A travelled country gentleman finds by accident a chalybeate spring near his home and thereby founds a watering place and gives the word spa to the English language. The chalybeate spa is brought into knowledge by the writings of physicians. And then as it were in irony the chalybeate waters pass into a secondary place, and the sulphur wells, sparsely noticed by the pioneers of the movement, come to be regarded as among the most potent remedies afforded by natural water.

MICHAEL FOSTER, M.D., F.R.C.P., F.S.A.

[1] BRITISH MEDICAL JOURNAL, August 12th 1922, p. 272.

EPSOM COLLEGE

The annual general meeting of Epsom College was held on June 27th with Dr RAYMOND CRAWFURD in the chair.

The Treasurership

A communication was read from Sir Henry Morris announcing that he desired to relinquish the treasurership and to resign his seat on the College Council. The following resolution was carried unanimously:

> The Governors of Epsom College desire to record upon their minutes the deep regret with which they accept the resignation of the treasurership of the College by Sir Henry Morris, Bt., who for eighteen years has carried out the onerous duties of that office with untiring zeal and energy. Only those who have been closely associated with him on the Council can realize the extent of the time and labour which he has devoted so disinterestedly to the service of the College, not only as treasurer but also as chairman of the Works Committee, which additional office he has held for almost as long a period. In assuring Sir Henry Morris of their gratitude for all that he has done for the College, the Governors wish to endorse the expression of deep obligation which the Council has already conveyed to him, and they trust that he will live for many years to watch the continued progress of the College and of the Royal Medical Foundation attached to it, in both of which he has been so keenly interested.

Mr Herbert S. Pendlebury, F.R.C.S., surgeon to St George's Hospital, was elected treasurer in the room of Sir Henry Morris.

Annual Report

The annual report of the Council began by making reference to the loss the College had sustained by the resignation of Sir Henry Morris. For eighteen years it had enjoyed the great advantage of his untiring zeal and energy, and it was difficult to realize the extent of the time and labour he had devoted so disinterestedly to the service of the College, not only as treasurer, but also as chairman of the Works Committee. Regret was also expressed at the resignation of Mr Ernest Paget, K.C., who had been a zealous member of the Council for sixteen years, and at the deaths of Dr Charles Caldecott, who had served on the Council for seventeen years, and of Mr Aubrey F. Woodman. Since the last report Sir Herbert Jackson, K.B.E., F.R.S., Mr Aeneas Mackay, Mr Herbert S. Pendlebury, and Mr Squire Sprigge had been elected members of the Council. The income and expenditure account for 1923 showed a substantial surplus of receipts over payments. This gratifying result was mainly due to the allocation to the College of £4,500 by the will of the late Rev. J. W. W. Taylor of Reading, and the gift of £1,000 by Mr William Tinker. The Council had also received a further donation of £1,000 from Lord Rothschild towards the cost of completing the College chapel. The work of rebuilding the chapel has

made excellent progress, and the opening of the new building and the unveiling of the war memorial will take place in the autumn The War Memorial Fund had by July 25th, 1923, handed over to the chapel building fund £5,448, and the Old Epsomian Club was making special efforts to complete the balance Cheques, drawn in favour of the Epsom College War Memorial Fund, should be sent to Mr S Maynard Smith, C B , F R C S , 29, Wimpole Street, W 1 An additional master's house had been erected during the year, and it was hoped shortly to reconstruct and enlarge the chemistry block From the income of a sum of £10,800 bequeathed by the late Dr Henry John Strong an addition of £10 a year had been made to the pensions of the fifty recipients of £30 a year from the general funds It was also possible to undertake to provide additional annuities of not less than £40 for a number of aged or incapacitated medical men or their widows The work of the school has progressed satisfactorily, and the health of the boys has been very good The vacancy caused by the resignation of Mr W Douglas Crossley, who had been bursar for twenty-three years and connected with the College for thirty-five, was filled by the appointment of Major Walter L Gifford Information as to vacancies in the school can be obtained from the headmaster

Pensions, Annuities, and Scholarships

The scrutineers, Dr E Clinson Greenwood, Dr Seymour Taylor, and Dr Harold Spitta, reported the successful candidates to be as under

For Pensionerships	Votes
*Banks Henry	2 154
*Hayne Mary A	2,073
*Sinclair Augustine W	1,997
*Pinniger, Emma	1 986
*O Connor Jessie E M	1,969
*Hind Minna M A R	1 860
†Pike Louisa	1 700
‡Buncombe, Harriet M	1,675

* Ordinary Pensioner † Pugh Pensioner
‡ Sir Thomas Smith Pensioner

For Annuities	Votes
§Yate Catherine	4 790
‖Brittain, Anne	2 267

§ Morgan Annuitant ‖ Brodie Sewell Annuitant

For Foundation Scholarships	Votes
Gray, David H	13 040
Sheppard Guy	12,560
Trotter, C Robert I	11 298
Biggs R Derek	9 868
Taylor, Robert B	9,381

INSTITUTIONAL TREATMENT OF MENTAL DISORDER

New Reception Hospital at Northampton

A new departure has been taken by that famous institution for mental diseases, St Andrew's Hospital, Northampton in the establishment of a reception hospital for the treatment of early cases The foundation stone of the building was laid on June 27th Some account of this project was given in the JOURNAL of June 14th (p 1060) when it was stated that the intention is that all patients whether voluntary boarders or certified, who afford any hope of recovery shall be received in a separate hospital where they will be spared some of those detrimental associations of a mental institution which might aggravate their condition or hinder recovery In preparation for this new building all the mental hospitals of the country which separate to any extent the recently admitted from the confirmed insane have been visited and their methods studied and the subcommittee has also visited some neurological clinics abroad The treatment in the new building is to be definitely directed to recovery, chiefly by hydrotherapeutic means

The stone-laying was preceded by a luncheon presided over by Mr Christopher Smyth, J P , chairman of the committee of management of St Andrew's, who was supported by Sir Frederick Willis, chairman of the Board of Control Dr C Hubert Bond and Mr A H Trevor, Commissioners of the Board, Dr Nathan Raw, Lord Chancellor's Visitor, Miss Margaret Bondfield, member of Parliament for Northampton, Dr Doig McCrindle, and Dr C E Paget, medical officers of health for the town and county respectively, a large representation of the local medical profession, and Dr Daniel F Rambaut, medical superintendent of the institution A letter was read from Professor Dr Bouman, of the neurological clinic, Amsterdam, saying how much he regretted that he could not be present, and with what interest he had studied the plans of the proposed hospital, a similar letter from Professor Dr Winkler, of the neurological clinic, Utrecht, congratulating the committee upon a venture which would make St Andrew's pre-eminent in England, and other letters from some English psychiatrists

Sir Frederick Willis, in wishing success to the new hospital, referred to the quite remarkable history of St Andrew's whose reputation extended far beyond the Midlands, and even beyond the confines of the kingdom He thought that the reception hospital would mark a great advance in treatment and would assist the elucidation of the still inexplicable problems of insanity

Miss Bondfield, M P , congratulated the governors upon a piece of work which would help research and be of advantage not merely to the patients who came to that estate, but to all sufferers from mental illness To her mind the battle was almost won when the goodwill of the patient was secured and when he voluntarily accepted the measures necessary to his treatment

Mr Smyth said that this was the greatest day in his forty-five years' experience as a governor though possibly it might be eclipsed by a day, eighteen months hence, when the new hospital would open its doors He desired to take this opportunity of expressing the hearty thanks of himself and his fellow governors to those who pioneered this effort, chief among them two governors Sir Charles Gunning and Major Leslie Renton, the medical superintendent Dr Rambaut, and the architect of the hospital, Mr S F Harris During the last eighteen months these gentlemen had given a great amount of time and thought to the arrangements and had made many journeys in order that full advantage might be taken of experience elsewhere They had also been able to draw generously upon the help of Dr Hubert Bond, the late Dr Alfred Miller of Warwick, and Dr Lionel Culthrop of Harrogate

The party then proceeded to a portion of the park—a park of over 100 acres in which all these buildings are situated—where the foundations of this extensive new hospital have been laid Here, without further speech-making, Mr Smyth, in the absence of the Lord Lieutenant of the county, the Marquess of Exeter laid the stone It was stated that the cost of the building and equipment is expected to be about £100,000 The new hospital will be the largest of its kind in England and it is hoped to increase substantially the proportion of cures which already stands at 50 per cent for an average of 500 cases continuously under hospital care The new hospital will provide to begin with, for 32 patients 16 of each sex, but the plans have been so prepared as to admit of extensions, and it is also intended that those patients who benefit shall complete their treatment in separate villas, of which the hospital already has a number

New Mental Hospital for London

On June 20th the Minister of Health, Mr John Wheatley, M P , opened the West Park Mental Hospital at Epsom, the eleventh mental hospital for the County of London The plans of this hospital were prepared as long ago as 1909, but their execution was delayed by the war and by other circumstances, and even now the hospital is not complete, for four blocks for patients and a chapel remain to be built In its completed form the hospital will accommodate 2,096 patients and a resident staff of 285 It is designed in four sections the first an admission hospital, with villas for convalescent patients, the second the main hospital, the wards of which are connected by open-sided covered ways, the third a series of special hospitals, including an isolation hospital and male and female blocks for phthisis and dysentery, and the fourth a number of "open" villas for patients suitable for parole

and who are engaged in domestic duties and on the farm and gardens There are 28 separate buildings for the accommodation of patients each building complete with dining and sitting rooms dormitories sanitary annexe and bathroom A central hall has been arranged where patients can meet visitors The engineering arrangements include about 2½ miles of heating and hot water pipes and 650 radiators an internal telephone system with a 100-line exchange board and an electrical service of fire alarms by which a call to the hospital brigade can be given from any ward or building The architect and engineer of the hospital is Mr W C Clifford Smith municipal hospitals engineer to the London County Council and honorary member of the Medico Psychological Association

Mr WHITELEY in declaring the building open described the institution at West Park as one of the most magnificent of its kind in the country if not indeed in the whole world He understood that the sum spent was in the neighbourhood of £900 000—the official estimate was for over £1 000 000—and the grounds extended for 230 acres In such places and the manner the means of prevention as well as of treatment were learned and the result of the research carried on at West Park and elsewhere might well be to minimise the evil caused to the human race by mental disorder He reminded the meeting that the building magnificent as it was was only the shell which covered the work of West Park in the hope of the devoted service given by the doctors and nurses

England and Wales

HEALTH OF THE CITY OF LONDON 1923

THE City of London can no longer be regarded as a residential quarter as it was in the days of the Cheerible brothers or of the Chuzzlewits, and it is even a little surprising to find that at the last census there were nearly 14 000 persons residing in the City in 2 308 dwellings According to the report for 1923 of Dr W J Howarth, C B L, the medical officer of health, included in this number, apart from institutions such as St Bartholomew's Hospital and Poor Law institutions, there are a few reasonably satisfactory houses occupied by members of one family In these are the clergy, a few doctors and lawyers, and a decreasing number of the better class commercial workers There are a few business houses in which some of the staff "live in" and the top floors of some business premises are let off as residences This practice, which was common some years ago, was given up owing to the fact that the occupation of even a few rooms entailed the payment of inhabited house duty on the entire building but now that this duty is abolished the custom may perhaps be revived By far the largest number of residents are housed in blocks of buildings divided into tenements which were originally designed for the purpose, and at the date of Dr Howarth's report the sanitary committee of the corporation was considering a special report from him dealing with certain matters affecting the houses occupied by the working classes The systematic supervision of food and drugs sold in the City is reflected in the results obtained, which show improvement year by year Notably is this the case with respect to milk A few years ago it was said by the pessimist that every fourth glass of milk consumed in the City contained tubercle bacilli In 1923 *the percentage of samples examined showing tuberculous infection* was only 2 6 the lowest recorded since 1904 the date of the first examination for tubercle in milk in the City From a series of experiments by Dr Howarth in the sampling of milk there appears to be some ground for the contention of vendors that unless precautions are taken to ensure that milk is satisfactorily mixed variations *in the composition of that which is retailed must arise* In these experiments samples of milk were obtained from four sources from counter pans from which milk was being retailed during several hours from a churn which had been used to distribute milk about the City the churn itself being carried on a four-wheel "pram", from churns which had been in course of rail transit for several hours and from a churn of milk removed from a cold store

From the report of Mr T Dunlop Young O B E, veterinary surgeon at the Meat Market, which Dr Howarth incorporates in his report some idea may be gained of the important part played by the Central Markets *Smithfield*, in the distribution of meat throughout Great Britain the record amount of 470 000 tons passed through the market in 1923 or over 7 000 tons above that recorded for 1922 Nearly 100 000 tons came from Great Britain and Ireland, 105 000 tons from Australasia and 213 000 tons from South America It is disquieting—and moreover a serious reflection on the administration of local authorities—*to learn from* Mr Dunlop that judging from the amount of diseased home-killed meat surrendered or seized in the market there appears to be no improvement in the inspection of meat in country districts Many of the consignments were so obviously diseased that the consignor must have known that the meat was in a doubtful condition, but they did not trouble to have it inspected at place of slaughter"

From the early days of his appointment as medical officer of health Dr Howarth has actively interested himself in the question of rat repression and he is now able to report very satisfactory results from his activities The modus procedure of the rat officer is worth noting He first discovers which kind of rat is infesting a building If the black rat is the intruder the examination of the building begins at the roof whereas if it is the brown rat the inspection begins in the basement, and it is frequently found necessary to test the drainage system In 1923 there were inspected 1 161 buildings of which number 467 were found to be rat-infested whereas in 1922 rats were found in 655 of the 1 676 buildings inspected This result is encouraging

SMALL-POX IN LONDON

Small pox has reappeared in the London district after an interval of freedom lasting for thirty-eight weeks no cases having occurred since September, 1923, in the County of London proper there have been 11 cases only in the last eighteen months The present outbreak is in Harlesden and is confined at present to one house in which 9 out of 11 inmates have been attacked It is remarkable in other ways The first person to be affected was an unvaccinated boy aged 3 years, who had an attack so mild that he was not seriously ill his rash, which comprised about a hundred spots in all, left superficial scabs most of which had fallen off a fortnight after the appearance of the rash Not unnaturally it was taken for chicken-pox His rash appeared on June 12th, and on June 23rd other members of the household began to fall ill—namely his father, mother, brother and two sisters his aunt and two cousins on five of them the rash appeared on June 25th on two on June 26th and on one on June 27th One patient died on June 27th and one on June 28th of haemorrhagic small-pox Others have severe attacks Whence the infection was derived and why a boy 3 years old seldom left alone was the only one to be affected in the first instance, has not yet been ascertained clearly it is of the severe type Most prompt and thorough measures of prevention have been adopted Since this note was written a case of small pox has been reported from Kensington in the person of another contact with the original patient

CARDIGAN MEMORIAL HOSPITAL

The Cardigan and District War Memorial Hospital has now been at work for several years and on more than one occasion we have called attention to it as an example of the way in which a small local hospital can become the centre of the medical work of a district At the annual meeting held recently the chairman Mr John Evans of Cardigan stated that the hospital had received 112 in patients during the year and that 106 operations had been performed In the out-patient clinic 84 patients had been seen, 47 had received x-ray treatment and 8 radium treatment In addition the department afforded accommodation for the children's welfare clinic, the tuberculosis clinic and for the regional medical officer under the Welsh Board of Health Further, an arrangement had been made with the county

medical officer of health for the removal of tonsils and adenoids from school children The hospital had received subscriptions from sixty-six churches, and also the proceeds of special collections in several villages During Sir John Lynn-Thomas's absence in New Zealand, where he attended the annual meeting of the New Zealand Branch of the British Medical Association, the operating work had been done in the hospital by Mr Wade of Cardiff, and Mr Gabe of Swansea, who had not only not charged any fees, but had paid their own travelling expenses Mr Owen Rhys of Cardiff has joined the staff as honorary radiologist, and Mr Craig of Cardigan as dental surgeon Sir John Lynn-Thomas, in a short speech, spoke of the need of starting the sun-cure treatment in the hospital Sun-cure and open-air treatment, he said, were different, though they might be combined

The Growth of the Voluntary Hospital

On Hospital Sunday, June 22nd, at St Peter's, Bayswater by invitation of the Rev Dr Swinstead, Sir Alfred Rice-Oxley, C B E, M D, gave an instructive address dealing with the growth of the voluntary hospital system He said that in early times, up to the year 1150, Church and Medicine were one, the clergy being the only people possessed of sufficient learning to carry out the duty of tending the sick Pope Alexander III, in 1163, did, however forbid them to perform operations, he regarded the shedding of blood by the clergy as inconsistent with biblical doctrine It was natural that the Church should provide accommodation for the sick whom it had to look after, and every religious house was ready to take in and care for suffering people These places of accommodation were first called "houses of hospitality" were attached to religious houses, monasteries, etc, and were to be found on the old great ways along which pilgrims passed to visit the shrines of saints Two or three important monasteries, with hospitals attached, came into being in very early times St Bartholomew's, founded in the reign of Henry I by Rahere in 1123, St Thomas's, founded at first, where Southwark Cathedral now stands, by a woman who became rich by ferrying people across the Thames near London Bridge Then followed St Mary's of Bethlehem for the insane Broadly speaking, during the seventeenth and part of the eighteenth centuries, most physicians and surgeons were very ill fitted for their duties, treatment was based on superstition and tradition, not on reason and knowledge With the beginning of the wonderful eighteenth century —"the century of enlightenment"—the public conscience was awakened A wave of philanthropy spread over the country and numerous voluntary hospitals sprang into existence In 1719 the Westminster Hospital, the first to be erected and maintained by voluntary subscriptions in the British Dominions, in 1724 Guy's was erected by the munificence of Thomas Guy in 1732 St George's was built, in 1740 the London and in 1745 the Middlesex, but after these no more were founded in London until the nineteenth century The speaker then described the growth of voluntary hospitals in the provinces and of dispensaries, towards the end of the eighteenth century passing on to picture the state of the hospitals about the end of that century In these the stench was intolerable, the bedding filthy, there were no nurses but drunken women called "watchers" were hired to look after the patients in the day time The wonderful change in the hospitals since those days the speaker attributed to the help which had been given voluntarily by the public He concluded with an appeal for help in maintaining and supporting the voluntary hospital

Maternal Mortality

The Ministry of Health has issued a circular (517) to maternity and child welfare scheme authorities in England calling attention to the report by Dame Janet Campbell, D D of which we gave some account a few months ago (*ante* 12th p 652) Among other matters touched upon in the circular is the desirability of local authorities making arrangements for the institutional treatment of complicated midwifery and for the confinements of women whose homes are unsuitable for the purpose, and also for the isolation of infective cases Maternity homes, it is pointed out, may be established by the larger authorities, but the smaller local authorities should combine to provide a joint institution or arrange to send patients to an institution elsewhere It is added that consulting obstetricians may be required in connexion with maternity homes and to assist the general practitioner or midwife Of ante-natal supervision it is said that it cannot be adequately provided unless medical practitioners and midwives are willing to undertake the duty as an essential part of the treatment of every midwifery case they are engaged to attend, and every mother is willing to accept and follow the guidance of her professional attendant Ante-natal supervision may be given partly through the doctor or midwife engaged by the patient, but also by means of maternity centres established by the local authority There are now, it is stated, some 500 such centres organized either independently or in connexion with an infant welfare centre or maternity hospital

Scotland.

Edinburgh Royal Infirmary

At a meeting of the managers of the Edinburgh Royal Infirmary on June 23rd, it was reported that among other legacies recently received there was one by Miss Jessie Aitken of Glenbervie, Larbert, amounting to £20,000, which would form part of the permanent capital A letter was read from Professor Meakins, tendering to the managers his resignation of the post of physician to the Royal Infirmary, in consequence of his having accepted the position of Professor of Medicine at McGill University, Montreal Professor Meakins sails for Canada in August to take up his new duties

New School of Nursing in Edinburgh

The Royal Infirmary of Edinburgh for the past forty years has enjoyed a reputation for training of nurses similar to that of the medical school for teaching medical students During the past two months a new School of Nursing has been inaugurated in this institution The conditions of training and study for nurses have been considerably modified by the recent institution of State examinations, by which nurses, before they come under the State registration scheme, have to pass an examination at the end of eighteen months' training, and a final examination at the end of three years' training Nurses at the Royal Infirmary of Edinburgh are required to undergo training for four years, which is one year longer than that absolutely demanded by the State registration scheme, further, in order to obtain the special certificate granted by the institution, they have to undergo examinations at the end of various intensive courses of lectures given by members of the staff, in addition to the ordinary training in the wards The special feature of the new School of Nursing is, however, a short preliminary course which has just been instituted It is conducted by a sister-tutor, who is specially skilled in teaching as well as in ward work It consists of a six weeks' course upon general nursing, cookery, anatomy, and physiology, hygiene, weekly visits to the wards, and housekeeping A succession of these courses is held throughout the year, and, as some 12 to 15 probationer nurses are accepted for each course—allowing for failures to pass the examination at the end of the course—some 80 to 100 entrants to the four years' curriculum are provided in each year This scheme of preliminary training has already given excellent results It enables those who find themselves quite unsuited for nursing work to give up the idea of commencing training before they begin the very arduous duties of the regular nurse and it also ensures that the probationer nurse, before she enters upon ward duties, has a good general knowledge of the nature of these duties, and is, therefore, both more capable of rendering assistance to patients and of understanding the practical training that she receives

Medical Notes in Parliament

[FROM OUR PARLIAMENTARY CORRESPONDENT]

Liquor (Public Control) Bill

The Bill introduced into the House of Lords on June 24th by the Bishop of Oxford would give to the inhabitants of boroughs and counties the right to decide periodically whether there should be no change in the conduct of the liquor trade in the area, whether the trade should be reorganized or whether all licences should be abolished. A Central Board of Management would be appointed, whose duties would be limited to the production and distribution of intoxicants in areas which had voted for reorganization subject to the supervision of the justices of a central advisory committee and of local advisory councils. The latter would notify the Board of Management of the number of public houses required in the area and as to their situation, and the Board would make such structural alterations as might be desired for the supply of food and non-intoxicants. It would not take over hotels and clubs, but would supervise them so far as the sale of intoxicants was concerned. The profits of the Board of Management would be paid into a central compensation fund. The rejection of the bill was moved by Lord Banbury, who was supported by Viscount Long and the Earl of Denbigh and Lord Sumner criticised the financial provisions. The bill was supported by the Bishop of London and Lord Balfour of Burleigh. The discussion was resumed on June 30th by the Lord Chancellor, who expressed himself in favour of the broad principle of the bill. It was criticized by Lord Birkenhead and the Marquess of Lansdowne and supported by Lord Buckmaster.

Lord Dawson of Penn said that this country was not only becoming temperate but becoming so in an increasingly accelerated degree. If the conditions responsible for the improvement were only fostered and furthered the solution of the problem could be faced with greater ease of mind than in the past. It was true that the action of alcohol was in no way useful for those occupied in physical or mental labour, and that although it was a food it was an unsuitable and wasteful food. On the other hand the action of alcohol upon the nervous system was beneficial when taken in proper quantities and at the proper time. It was a matter of common knowledge that a glass of alcoholic liquor at the end of the day would lighten the mental horizon, brighten the outlook, and give ease of mind and happiness. Evidence of an increase in temperance was afforded by disease statistics at one large hospital the average number of cases of delirium tremens in three decades, beginning at 27·8 a year, went down to 17·6 in 1904-13 and finally to 10. During the same three periods the average admissions for cirrhosis of the liver numbered 61·4, 53·2, and 20. For a third disease more common amongst women perhaps than men—alcoholic peripheral neuritis—the figures were 23·8 in the first decade, 14·1 in the second, and 5 in the third. Side by side with these figures he put those of the consumption of beer for the same periods. In the first decade it was 29·52 gallons a head of the population, in the next 28·91, and in the next 26·65. Last year the figure was 15·80. As to spirits the figure of the first decade was 0·87 gallon a head of the population for the second 0·85, for the third 0·59, and at present 0.31. The improvement in the matter of spirits took place about the years 1909 to 1912—before the war and before the duty on spirits was raised. Lord Dawson next gave a comparative set of figures of a class of workers in a big insurance company representing people of small means, to show the extreme moderation that prevailed amongst them. He also claimed that the experience of all observers was that young soldiers were drinking less and less, and in many cases next to nothing. He held that the reasons for this accelerated improvement in temperance were education, improvement in the young man's outlook in life, better homes, and the fact that the barracks were made into homes. He would recommend restricted measures on the line which the investigations showed giving people better houses and increasing the number of recreation grounds. After presenting statistics to prove that the number of persons taking alcohol in restaurants was relatively small, Lord Dawson emphasized the social progress of the artisan class during the last two decades, touching particularly on the greater cleanliness of the home. In closing he said he depended upon education most of all to secure a better state of things.

Viscount Astor, who followed, said that Lord Dawson's views as to the social side of the drink question were very much the same as his own before he became a member of the Liquor Control Board. There were in all parties people anxious to solve this difficult question, could they not co-operate to find a national rather than a party solution? The debate was adjourned until Tuesday, July 8th.

Public Health Expenditure.—In reply to an inquiry as to the expenditure (other than out of loans) by local authorities in England and Wales on public health services, excluding services carried on by local education authorities, a table has been published in the official report summarizing the figures for the year 1921-22. Total expenditure (other than out of loans) was £58 603 000, of this amount £18 070 000 was raised from fees, tolls, and other receipts, and £4 278 000 from Government grants, the latter including grants made in respect of schemes of work for the unemployed. Expenditure in respect of lunatic asylums, mental deficiency, Poor Law infirmaries and other Poor Law institutions for the sick, and housing and town planning are not included in the statistics.

Voluntary Hospitals.—Mr. A. T. Davies inquired on June 25th, how many London and provincial hospitals received assistance from public funds, and the respective amounts allocated, whether 200 beds were now closed in two hospitals in London for want of funds, and that over 10 000 persons in London had been accepted by the hospital for operations or treatment, and could not be admitted. Mr. Wheatley said that the Voluntary Hospitals Commission completed the distribution of the grant from public funds administered by it at the end of the last financial year. No hospitals were now receiving direct assistance from public funds, but many received from local authorities contributions toward the cost of certain grant-aided services which were subsidized jointly from public and local funds. He was aware that two of the large London hospitals had closed beds, but more than half of the closed beds had at no time been occupied except by military patients during the war. He had no exact information as to the extent of the waiting list, but this was one of the questions now being investigated by the Voluntary Hospitals Commission, which had been asked to report on the extent of the additional accommodation required in voluntary hospitals and the best means of providing and maintaining it.

Public Health (Scotland) Bill.—On the motion for the second reading of the Public Health (Scotland) Bill, the terms and purposes of which have already been explained, the Secretary for Scotland said that in spite of the reductions in the price of insulin the treatment still costs 4s. and 5s. a week sometimes more. Insured persons received it as part of medical benefit; persons under the Poor Law as part of medical relief; and expectant and nursing mothers and their infants and children under maternity and child welfare schemes. The bill proposed to assist other needy persons by enabling local authorities to supply insulin either free or at such charges as the patient may reasonably be expected to defray. If equally effective remedies were discovered for other diseases the provisions of the bill could be extended to them.

The Royal Commission on Lunacy.—Mr. McEntee asked on June 26th if the Prime Minister would arrange that adequate facilities be given to the inmates of asylums to bring to the notice of the Royal Commission circumstances and conditions which, owing to the secrecy prevailing in lunacy institutions, did not usually come under the cognizance of the medical officers in charge thereof. Mr. Greenwood replied that it would rest with the Royal Commission to decide its own procedure. The Royal Commission would have full power to visit mental hospitals in order to become acquainted with the conditions prevailing.

Criminal Lunatic.—In answer to Mr. Compton on June 26th, Mr. Henderson said that a verdict of guilty but insane was technically one of acquittal, from which no appeal to the Court of Criminal Appeal could lie. The proper authority to consider representations in respect of such a case was the Home Secretary. Questions of criminal responsibility were he understood outside the scope of the Royal Commission on Lunacy. Mr. Mills inquired whether it would be possible for the Home Secretary to take one representative case, such as the person named, True, and examine whether or not this man was in a fit condition to be tried for his crime in view of newspaper statements as to his activities recently. Mr. Henderson replied it was very important he should have notice of a question of that sort.

Senior Surgeon Commanders.—Dr. Spero asked on June 30th whether the increased pensions granted to senior surgeon commanders R.N. were regarded as a measure of compensation for their compulsory premature retirement, and if they were liable to a reduction with the fall in the cost of living. Mr. Ammon replied that the earlier ages of compulsory retirement were introduced as part of the new scheme of pay and allowances, etc., in 1919. This scheme must be considered as a whole, and no particular item of it could be regarded as a set-off against another particular item. The answer to the last part of the question was in the affirmative.

Tuberculosis in the Navy.—Sir Bertram Falle asked on June 25th whether any of the tuberculous naval invalids included in the 97·9 per cent. for 1923 considered to be non-attributable to service had questioned the opinion reached by naval medical boards, and whether an opportunity would be afforded these men to appeal to an independent tribunal, and when the institution of such tribunals was approved. Mr. Ammon said the answer to the first part of the question was in the affirmative. As regards the second part the matter was still under consideration.

Venereal Disease.—Mr. Snell asked on June 25th whether the question of the assignment of the sum allocated for public enlightenment regarding venereal disease had yet been settled, whether the Society for the Prevention of Venereal Disease, whose valuable work was acknowledged, had received a share of such grant, and whether the Ministry of Health had accepted the recommendations contained in the recent report of the Committee of Inquiry on this subject. Mr. Wheatley said that the answer to the first part of the question was No. The recommendations contained in the report were still under consideration.

Notes in Brief

One new public mental hospital has been or will be opened this year. Mr. Greenwood stated this in reply to a question which contained the statement that vacancies in public asylums to the number of 18 000 beds had been reported in 1922 and these had apparently been filled up.

There are 3 181 children under the care of the Ministry of Pensions under the War Pensions Act. Of these 2 415 were boarded out in private homes and 766 in institutions because of mental or physical infirmities or for training or other reasons.

In Committee on the Finance Bill on June 30th an amendment to relieve from the entertainment duty those entertainments in respect of which the whole of the profits are devoted to philanthropic, charitable, or educational purposes was carried by 220 votes to 165.

Correspondence.

CARDIAC DELIRIUM

SIR,—I can assure Sir Clifford Allbutt (June 28th, p 1154) that psychiatrists have not failed to observe the cardiac delirium to which he drew attention many years ago, and it is briefly referred to in Clouston's textbook on mental diseases as "cyanotic delirium" The special feature to which Sir Clifford directs attention "of the patient believing himself to be in some other place than that in which he is," and which Dr Massini calls "travelling delirium," is common to all true delria

The fundamental psychic feature of delirious insanity, which is almost always due to a toxic cause or to exhaustion, is confusion, and this confusion may be of time, place, or person, a condition which is collectively designated by the convenient term "disorientation" The patient does not note the lapse of time, he does not recognize where he is, and he mistakes the identity of persons Of course, one of these failures of judgement may be more marked in a particular case than the others—for example, confusion as to locality—and one or other may apparently be absent In addition, the confusion is usually made worse confounded by the presence of hallucinations, so that the patient loses touch completely with his real environment if hallucinations of sight be present On the other hand, another well known feature of delirious insanity, to which Sir Clifford has referred, may also exist—namely, the *occurrence of occasional though transient lucid intervals* amidst the general clouding of consciousness recalling the unexpected clear patches that one sometimes meets in a fog

That the most delicate and sensitive structure of the body, the nerve cell, should not function normally when the supply of oxygen is deficient, and that confusion or delirium of the mind should result, is what one might expect The almost immediate effects of suffocation on consciousness are well known Still more remarkable, however, is the fact that, in those cases in which the heart ceases to beat but in which, after a brief interval, by manipulations or otherwise, it is again started successfully on its career, the patient invariably suffers afterwards from delirium, which is apparently due to the disorganization of the unstable protoplasm of the nerve cells owing to the cutting off of their supply of oxygen during the brief interval in which the circulation was at a standstill Delirium also results if the supply of sugar in the blood is reduced below a certain point by an overdose of insulin —I am, etc,

Edinburgh June 28th GEORGE M ROBERTSON

THE R A M C (T A)

SIR,—I am pleased to see that at last the question of the medical services in the Territorial Army is attracting some attention In this division, at any rate, the extreme shortage of medical officers does not reflect much credit on the medical profession of this great city and county of London We are very short, and most of the battalions are without a medical officer, though they are allowed two In the only field ambulance of the division all the officers have war service, which speaks well for those who have already "done their bit" and who, one and all, lead very busy lives in their civil capacities

But it is the younger men we want to join, and I agree with Colonel Wraith when he says that if they do they will never regret it Besides which, when the next emergency arrives they will have some years' seniority in their rank, which will benefit them in no small degree In a combatant unit the M O, in peace time, has a very good time, I know this from many years' experience, and when my battalion went across the water we were like one large happy family, for we had known each other for years

I thoroughly endorse what Colonel Wraith says about one field ambulance not being enough for a division It is not nearly enough My division for instance, is going to camp by brigades This means that the men will have to be split up As the ambulance is a reduced unit as well, the men will get very little field training, as most of their time will have to be spent in waiting on the sick

There are only two divisions in London Surely out of the thousands of medical men resident therein there must be some who can spare the small amount of time, and who are keen enough to fill the vacancies that exist —I am, etc,

A D DUCAT,
Colonel A M S (T A) A D M S,
London, W 4 July 1st 56th (1st City of London) Division.

PERIODICAL MEDICAL EXAMINATION

SIR,—A great deal of disease and ill health is preventable, or if not always preventable can, if discovered in time, be cured or greatly alleviated It would, I think, be a good thing if all medical men made it a habit to advise their patients to consult them at least once a year, and then thoroughly to overhaul them, giving advice or treatment if required It is particularly necessary in persons over 40 or 45, and especially in those engaged in strenuous work, mental or physical It has become the custom of the more educated classes to consult their dentist at least once a year, and the public could be taught to do the same with regard to their doctor, even though they felt quite fit at the time This might assist in discovering especially the early stages of lung, kidney, or arterial trouble, and would generally be the means of prolonging the working days of the individual —I am, etc,

HOWARD M STRATFORD,
London, W 8, June 7th I R C S Edin

OPHTHALMIC BENEFIT COMMITTEE

SIR,—The Ophthalmic Benefit Committee, which has recently been formed in London for the purpose of dealing with the problem of ophthalmic benefit for insured persons, has already secured the support of a considerable body of ophthalmologists who desire to participate in any scheme which may be formulated for this purpose

We desire to bring to the notice of all ophthalmic practitioners, both in London and in the provinces, the opportunity which is now afforded for common action The Committee is keeping in close touch with the Council of British Ophthalmologists on the one hand, and, on the other, the British Medical Association, who have for some years past been engaged in watching over the interests of ophthalmology in its relation to the public services and to the other branches of the profession

The Ophthalmic Benefit Committee is a body which seeks to organize the ophthalmic practitioners who desire to take part in the carrying out of any scheme which may be agreed upon The Committee believes that those immediately concerned in this work should have a voice in the terms upon which their services should be rendered and in the practical details which must be planned if any form of ophthalmic service for insured persons is to be carried into effect

The next meeting of the Ophthalmic Benefit Committee has been arranged for Monday, July 7th, at 5 30 p m, in the council chamber of the British Medical Association, which has been kindly placed at the disposal of the Committee

Ophthalmologists who join the Committee before that date or who are willing to join are welcome at that meeting, and representatives of the provinces are invited so that there may be the best opportunity for united action

Applications for membership forms, or for a copy of the statement of the Committee's programme already published (BRITISH MEDICAL JOURNAL SUPPLEMENT, May 10th, 1924), may be obtained from the Honorary Secretary, Ophthalmic Benefit Committee, 30, Finsbury Square, E C 2 —We are, etc,

HERBERT L EASON,
Chairman
CHARLES F HARFORD,
June 27th Honorary Secretary

THE LEFT-HANDED CHILD

SIR,—Dr Elder (June 14th) expresses the view that there can be no danger in patiently training a left-handed child to write with the right hand, while Dr Harford (June 21st), on the other hand, reminds us that there are many instances where such an attempt has apparently been the

cause of the condition and so he view with misgiving an attempt in elementary school to convert children from left- to right handedness It seems to me that both views may be correct but that the danger to the potential stammerer lies not in the education of his other hand, but in the fact that this education is carried out in a large class of right handed children may expose a shy child to constant public correction from his teacher and possibly ridicule from his schoolfellows, and make him thoroughly self conscious and hyper sensitive—the worst possible condition for a child of the type from which stammerers are made Every stammering child is to some degree of nervous temperament and he is generally shy and sensitive with a quite abnormal dread of being conspicuous The tragedy of his minor neurosis is its vicious circle—his shyness and anxiety lest he stammer increases his stammering and his stammering increases his shyness It would seem, therefore that constantly to draw attention to his one abnormality might well end the development of the other But I do not think that patient and enlightened education in private would have this effect, though the effort should be to make him strive not after normality (that is right-handedness) but after ambidexterity, which will appeal to him as a superior quality no person likes all

One must remember however when considering cases where stammering appears to have been caused by education of the right hand, that stammering though it frequently starts before school age, not uncommonly starts in the first year of school life, when the nervous left handed child may be exposed to many trials and strains apart from the attack on his left-handedness

Dr Drinkwater (June 21st) is of opinion that the left-handed child is quicker at learning to become expert with his weaker hand than is the right handed child If this is so it is because he is forced to be for, coming into a right-handed world he finds himself at a disadvantage with many right-handed instruments (for example scissors) and in many everyday actions arranged for the right hand He may not write from right to left, as he ought to, so if he uses pen and ink with his left hand he must either use an extraordinarily awkward grip or draw his following left hand over what he has written So he will probably even without persuasion, teach himself to be ambidextrous in many things that he finds awkward

Dr Drinkwater draws an interesting distinction between the entirely left-handed child, who is, he says, always mentally retarded, and the ambidextrous child, who may be mentally above the average But is it not possible that the mentally quicker ones teach themselves to be ambidextrous *and the others do not*?—I am, etc,

Southampton June 23rd. IAN S THOMSON

THE CAUSATION OF CANCER

SIR,—With regard to the half-dozen examples of tumours enumerated by Dr Leitch—namely, rodent ulcer, melanotic sarcoma, glioma of the eyeball, parotid tumour, chorion-*epithelioma*, and *cancer of the cervix uteri* (1) I *did not* say "they are all malignant tumours" I certainly presumed that he mentioned them as examples of cancer, as they all are, and all cancers are malignant What I did say was that I maintained they all could be due only to a single specific agent Dr Leitch, however, makes the assertion that of these six tumours "some are rarely or never" malignant It would be interesting to know which of these are never malignant or even rarely so, and if any pathologists or clinicians would agree with him (2) They are identical in onset," etc This I adhere to The exact point of attack must be indefinite to the extent that it is never seen, otherwise cure by immediate eradication would be easy, but that it must definitely exist is indisputable Regarding two points of origin, it is quite possible for two points to be simultaneously attacked, but both would be definite (3) "The termination in each case is fatal This is, unfortunately, true Cancer is inexorable (4) 'The course in each is the same" Although the course varies in duration and is influenced by circumstances and environment, the disease keeps the evil tenor of its way to its fatal termination Rodent ulcer is the slowest of all in its development, but it ends fatally no matter how It may last for twenty years producing horrible destruction of the face even destroying the base of the skull and membranes and exposing the brain Of the other examples some are more rapid than the others but the end is the same in all I do not take into consideration *the effect of surgical interference*, which may retard or accelerate the disease but refer simply to the natural evolution of the disease (5) The essential quality of the disease is the same in all' It is It is true that one thing they have in common is that they are all neoplasms they are indeed, all malignant new growths They have also many other things in common which have been already mentioned, so they need not be repeated

With regard to my frequently repeated dictum that cancer is a specific disease and therefore must have a specific cause I do not hesitate to reaffirm it It is the fundamental fact of the cancer problem It is probable that Dr Leitch and I do not employ the term specific in the same sense He uses it as a subdivision of genera (genus and species) My use of it has no relation whatever to species By specific I mean clearly specified definite-distinctive produced by a single micro-organism That cancer in this sense is a specific disease is proved by its auto-infection and its transmissibility, which in its turn is proved by intentional and accidental inoculation of the disease The cause, therefore must be a specific one Furthermore, it is and must be applicable in every case As a corollary to this no mechanical irritant can *per se* produce a specific disease in any circumstances

The success in obtaining cancers experimentally after certain irritants was undoubtedly due, as Dr Leitch suggests, to the *agent of cancer* "doing the trick" for the experimenters and I am not surprised that Dr Leitch should admit that he can think of no conclusive argument to dispose of this fact As regards the people who believe that disease in general is a product of the imagination being presumably one' they can only be one in their own estimation either so-called Christian Scientists or absolute idealists whose belief is that matter has no existence, is only subjective phenomena of the mind, and that mind only exists

Dr Leitch will never show, however much he tries that he can induce cancer by "prime causes" no matter how many experiments are successful All he can do is to prepare the tissues, thus irritated by him for the attack of the true and only cause, the specific agent of cancer —I am, etc,

A T BRAND, M D, C M

Driffield East Yorks June 23rd

THE USE OF THE MICROSCOPE AT SEA

SIR,—A microscope is regarded as a necessary part of the equipment of our regular surgeons in the Atlantic service In view of the large number of emigrants handled coming as they do from all parts of Europe, the occasions on which it is a valuable aid to diagnosis are of almost daily occurrence In the Atlantic service in addition to the conditions referred to by Dr Webber (June 28th p 1157) its use is frequently called for in the diagnosis of ringworm and favus, which are fairly common diseases among emigrants coming from certain parts of Europe Where either of these diseases affects the finger-nails it is often impossible to be certain of the diagnosis without a microscope Staining materials culture media incubators etc are all provided by the company as part of the surgeon's laboratory equipment

A ship's surgeon is often deterred from taking his microscope to sea with him by the fear that the sea air would have a rapidly ruinous effect on it but provided it is treated with the care and attention that such a delicate instrument demands whether on sea or land and not allowed to stand exposed for lengthy periods when not in use I have not found any reason to suppose that a microscope suffers unduly from the conditions which obtain at sea—I am, etc

A GARDNER M B
Medical Superintendent Colonial Seamen's Home

London S W 1 June 24th

SIR,—Like anyone in the Naval Medical Service, and like Dr H W Webber (BRITISH MEDICAL JOURNAL, June 28th, p 1157), I have found it possible to use a microscope at sea, although I do not think one ever emptied waste material directly into the ocean, as he does, or I should not have survived so long As many know when there is no incubator one can often get a culture on an agar slope, slipped into a draw-off-top round pencil box, and worn next the heart

But I would particularly like to mention an improvised centrifuge, quite useful, shown to me in the war by a laboratory assistant, Gibson, from the Botanical Laboratory, Newcastle-upon-Tyne, with whom I served in a hospital ship He took the arm carrying the buckets off a hand centrifuge and lashed it on to two opposing blades of a cabin electric fan, turned horizontal, and when the fan was set going he could quickly demonstrate blood corpuscles in urine, etc, or their absence This method of his should be useful to some of us at sea now and then —I am, etc,

W E HOME,
Fleet Surgeon, R N (ret)

Kew, June 28th

ACUTE PUERPERAL COMPLETE INVERSION OF THE UTERUS

SIR,—Mr Jordan's letter on acute puerperal complete inversion of the uterus (BRITISH MEDICAL JOURNAL, June 28th, p 1156) recalls to my mind the only instance in my experience of complete inversion of the uterus

In my student days, arriving at a case of precipitate labour before the midwife, I found, to my horror, the baby lying on the bed, and the mass of the inverted uterus with adherent placenta close beside In my inexperience I gently peeled off the afterbirth, bathed the uterus, and replaced it without the slightest trouble During the entire manipulation the mother was unaware of anything being wrong and showed no sign of shock whatsoever The puerperium was quite uneventful I need scarcely add that when the midwife arrived in the midst of my manipulations she was horrified

From this one case it would seem likely that the shock which occurs in most cases is due partly to fright and is increased greatly if the uterus is not promptly returned — I am, etc,

JOHN FINNEGAN, M C, M D

Sandertead, June 30th

LYMPHATICOSTOMY IN PERITONITIS

SIR,—The short notes of cases of lymphaticostomy in peritonitis by Mr Arthur Cooke (BRITISH MEDICAL JOURNAL, June 14th, p 1048) and by Mr Colin Mackenzie (June 21st, p 1114) must, surely, awaken the interest of every surgeon

It seems fairly certain, also, that as over a year has elapsed since Costain's original case was described, more of these operations—probably many—have been performed It is possible that many surgeons are waiting to collect a few cases before publishing them, or possibly, some may, like myself, have performed the operation once, without success with regard to the patient's recovery As it is likely that such operations would be performed chiefly, for the present, in the most serious cases, the percentage of successes would probably be small Should, however, even a small number of successes be recorded in otherwise apparently hopeless cases, a wonderful prospect would open up of reducing the heavy mortality of peritonitis For this reason alone, I think all medical men would welcome reports of even isolated cases

My own case was one of "ruptured intestine" of sixty hours' duration, with well marked loss of liver dullness It therefore offered a minute chance of success—if any The patient lived for twenty-four hours after operation, during which time the duct drained very freely The greatest difficulty I found in the actual operation was having to work practically behind the clavicle —I am, etc,

D A MITCHELL, L R C S Ed

Much Wenlock, June 22nd.

Universities and Colleges.

UNIVERSITY OF OXFORD

HONORARY DEGREES

AT the Oxford Encaenia, held in the Sheldonian Theatre on June 25th, the Vice Chancellor, who presided over a large assemblage, conferred the following honorary degrees D C L, on Viscount Cave, late Lord Chancellor, Lord Hugh Cecil, M P for the University, and Lieut General Sir Charles Harington, recently in Constantinople D Litt, on Mr Samuel Alexander, professor of philosophy in the Victoria University of Manchester D Sc, on Admiral of the Fleet Sir H B Jackson, and Sir Humphry Davy Rolleston, President of the Royal College of Physicians of London Each was presented in turn to the vice chancellor by the Public Orator, Dr A D Godley, who delivered introductory speeches in Latin

Of Sir Humphry Rolleston he said

Eum ad vos duco quem nomen ipsum huic conventui commendare debet, tantam laudem patri eius apud seniores nostros consecutus est, cuius ne nunc quidem quisquam obliviscitur Neque defuit ipse filius quin familiae suae tot meritis insignitae proprium decus adderet, nam cum medicinae totum se iuvenis dedisset et multis fuit utilis et scriptis quoque et lucubrationibus permultum in eo genere profecit Atque his rebus domi et in pace magno cum fructu operam dedit mox scientia sua et peritia cum in bello Africano, tum in eo quod nuper contra Germanos est gestum, ita est usus ut modo terra modo mari saucios et aegris curandis praefectus maximis muneribus fungeretur Itaque optimam eorum existimationem meruit qui in arte et scientia medicinae excellunt, cuius rei nullum locupletius testimonium exstare potest quam quod electus est qui Regio illi Medicorum Collegio Londini praesideret Proinde cum talem virum in ea potissimum urbe in qua sit natus ornari oporteat, praesento vobis medicum et factis et scriptis insignitum Humphreium Davy Rolleston, Baronettum, illustrissimi Ordinis Balnei Equitem Commendatorem, Medicinae Doctorem inter Cantabrigienses, ut admittatur ad gradum Doctoris in Scientia honoris causa

[*Translation*]

I am now introducing to you a man whose very name should commend him to this assembly His father obtained a reputation among the oldest of us here such as no one now is likely to forget, and the son has not failed to be himself an ornament to a family so often conspicuous for public services After devoting himself as a young man entirely to medicine, he has rendered assistance to many, and made great progress in this faculty both by his writings and researches He studied assiduously at home in time of peace, and with good results Later in the South African war and in the recent war against the Germans, he made such use of his knowledge and skill as to perform the greatest services to the sick and wounded committed to his care both by land and sea And so he has deserved to win the highest esteem from those pre eminent in the science and art of medicine, there is no more complete testimony of this than the fact that he has been elected President of the Royal College of Physicians Accordingly, since we ought especially to honour such a man in his native city, I present to you Humphry Davy Rolleston, a physician distinguished by his actions and his writings, Baronet, Knight Commander of the most illustrious Order of the Bath, Doctor of Medicine at Cambridge, to be admitted to the degree of Doctor of Science, *honoris causa*

The Vice Chancellor admitted Sir Humphry Rolleston to the honorary degree "as a man of a most humane character, the son of a most beloved father, who has added still greater honour to a name already honoured among Oxford men and who has brought relief to the pains and distress of men"

At a convocation held on June 26th the honorary degree of D C L was conferred on Lieut-Colonel Sir Charles Henry Bedford, M B, late I M S In introducing him the Public Orator said that he was among the foremost of those who had converted the discoveries of science to the service of humanity He was a distinguished student of chemistry, had done notable service in India, and had shown how the power of alcohol itself might be diverted from its use in convivial gatherings to the propulsion of machines Among other offices held by Sir Charles Bedford was that of chairman of the Alcohol Denaturation and Excise Restrictions Committees, and of the Empire Motor Fuels Committee (Imperial Motor Transport Council)

UNIVERSITY OF CAMBRIDGE

THE following candidates have been approved at the examinations indicated

M CH—E P Brockman A E Roche

THIRD M B B CH—Part I *Surgery Midwifery and Gynaecology* B E Ahiens A Barnsley C K Colwill W S C Copeman W I Daggett P O Davies G W S de Jersey J M Dobie H G English K Fletcher Barrett T F Fox J Gray F N Green P D Griffiths R F Guymer C C Hallwell N H R Hatfield E D Hendy R A Hickling A T Howell F H King G A Q Lennane W W McLean J P Marsden L M Maybury A W C Mellor, K F T Mills J D R Murray A V Pegge T M Preece T S Read, F W Roques, L Rudge B F Schlesinger T H Sims R S Starkey, G B W Walker N L White R E Wilson Part II *Principles and Practice of Physic Pathology and Pharmacology* N F Adeney R D Alexander H S Allen C V Brambridge W Brockbank F M Collins G J V Crosby D Cuffey A F R Darlington J R B Dearden H H Fisher C E Gautier Smith, N M Goodman, P D Griffiths C J P Grosvenor, H W H Holmes,

C A Horder A H Johns A R Ritter H D N Miller J Ness Walker C I Newman G G Lenman I A R Pritchard J A W Robertson W L Roberts R A M Scott R W Smith L V Snowman T R Thomson G A Thornton F C O Valentine M D Watt A J Walker I R Weaver Adams R Whillis N L White S I Wilson F R Winton

UNIVERSITY OF LONDON

Election of Vice Chancellor

At a meeting of the Senate held on June 25th Professor E A Gardiner F R S D Yates Professor of Archæology at University College was elected Vice Chancellor for 1924-5 in succession to Mr H J Waring M S F R C S A cordial vote of thanks was accorded to Mr Waring for the services which he had rendered to the University during his term of office as Vice Chancellor

Professor of Surgery

The title of Professor of Surgery in the University was conferred on Mr C C Choyce M D Ch B Edin B Sc New Zealand F R C S in respect of his appointment as Director of the Surgical Unit at University College Hospital Medical School

Degrees

The degree of D Sc in Physiology was conferred upon J A Hewitt (King's College) for a thesis on metabolism of carbohydrates (Part III) and J M R Walshe (University College and University College Hospital Medical School) for a thesis entitled (1) The Physiological Significance of the Reflex Phenomena in Spastic Paralysis of the Lower Limbs (2) on Certain Tonic or Postural Reflexes in Man with Special Reference to the so-called Associated Movements (3) on Variations in the Form of Reflex Movements, notably the Babinski Plantar Response under Different Degrees of Spasticity and under the Influence of Magnus and de Kleijn's Tonic Neck Reflex

Degree of M Sc

A degree of M Sc in the Principles History and Method of Science was instituted for both internal and external students

Maudsley Hospital

The Maudsley Hospital has been admitted as a School of the University in the Faculty of Medicine for the purpose of research in Psychological Medicine

UNIVERSITY OF DURHAM

At the convocation held in the Castle Hall Durham on June 24th the honorary degree of D Sc was conferred upon Dr William C McIntosh F R S Emeritus Professor of Natural History in the University of St Andrews

A further convocation was held in the King's Hall Armstrong College on June 25th when the honorary degree of D C L was conferred upon Sir Frederick W Andrewes M D F R S bacteriologist St Bartholomew's Hospital and late Professor of Pathology in the University of London and Sir Byrom Bramwell, M D consulting physician [illegible] late President of the

The following

M D—A Angus R W Locke Francis J Benjamin R N Craig R L Dagger W A Jaques T N N Potts

M D *(for Practitioners of Fifteen Years Standing)*—H H R Clarke

M B B S—J R Campbell O P Chapman T L J Coxon Ethel W Daniels Mary W Dewell G A Gilmour J C Hall Frances R Henegan Madge Hopper G E Hyden Ronald Keenlyside Nora W Kirk J W C Leech T H Meek W Meikle T D Miller G Punshon Margaret Lanken J H Saint Margaret Scoresby *Jack on Joseph* A Stobb T Strother W A Tweddle P L Stubbs E F D Walker T F Aynsley Elizabeth Bainbridge W N Booth J Carse S Curry A L Fairlie T Fraser J *Henderson G C Henry J M John on F J Lorriman K V* Milburn W C Murray J J D Naismith Elsie L Pee J Reay M Ryle A Swindale G G C Taylor

P H T AND D P H—Margaret B Herbert

DIPLOMA IN PSYCHIATRY—R E Illingworth

UNIVERSITY OF LEEDS

THE Council of the University of Leeds has decided to institute a lectureship in medical radiology and electrotherapeutics and to appoint Dr Scargill and Dr Cooper as joint lecturers

A new ordinance has been adopted for the degree of M Ch D Candidates for the degree must have held the degree of Bachelor of Dental Surgery at least one year previously and also obtained a registrable qualification in medicine and surgery

UNIVERSITY OF SHEFFIELD

THE following candidates have been approved at the examinations indicated

M D—R E Pickance

FINAL M B Ch B—G E Larks (with distinction in gynæcology) C A Lister A S Mushlin Amy D Baker W F I Castle G S Davidson E M Dearn Phyllis H C Eardley D A Grafton [illegible] W A Green (distinction in medicine) Edith W W Mathews H Mercer J O [illegible]

[illegible] Class II

UNIVERSITY OF GLASGOW

THE biennial service in commemoration of the benefactors of the University of Glasgow was held in the Bute Hall on June 25th As the occasion coincided with the celebration of the centenary of Lord Kelvin's birth Dr Alexander Russell Principal of Faraday House London delivered an oration on the scientist on whose statue in Kelvingrove Park Sir Donald MacAlister had earlier in the day laid a wreath Following the oration the honorary degree of LL D was conferred upon a number of distinguished persons including Mr Ramsay MacDonald the Prime Minister The degree was also conferred *in absentia* upon Sir Michael Watson senior district surgeon Federated Malay States Medical Service

The degree of M D with honours was conferred upon David Campbell and Robert Dick Gillespie

Among the recipients of the degree of D Sc was James Herbert Paul M B, for his thesis on studies in special crustacean physiology

UNIVERSITY OF DUBLIN

Trinity College

At the later summer commencements of Trinity term held on June 27th the following (among other) degrees were conferred by the University Caput in the presence of the Senate

M D *(honoris causa)*—Surgeon Vice Admiral Joseph Chambers C B C M G Medical Director General R N

M D—J G Holmes J M Holmes E C Smith *(ship could)* L O Vercnel *(in absentia)*

M B B Ch B A O—J S Armstrong J H Bowyer Eileen Brenan G A Cowan L D Dennard A L Dobbyn M D Fox M A Gerrard A Hawthorne D L Hemmingway W A Hopkins Lucy M Jolly D K Lyons K F Mackenzie A B Monk J Norris F W Pollard *(antea Lieut)* P L G Procter G Purdy G Robinson H Hubbard G A Sloan J L F Steele J L Stuart F J Swanepoel W A Taylor J K S Thompson S Wigode O G Wilde

Other honorary degrees included the LL D to the Right Hon T M Healy Governor General of the Irish Free State and the D Sc to Professor Edward Poulton F R S of Oxford

ROYAL COLLEGE OF SURGEONS OF ENGLAND

THE MUSEUM

As already announced specimens recently added to the museum were on view on Thursday July 3rd when the election of members to the Council was held Many of the additions are of exceptional interest and these along with some special exhibits will be kept on view until the end of August We refer elsewhere to the tribute to Professor Shattock's memory paid by the conservator Sir Arthur Keith in his annual report

An account of the pathological collection with special reference to additions made during the last twelve months has been contributed to the report by Mr Cecil F Beadles who holds the joint office of assistant pathological curator and curator of the army medical collection During the past year eighty new specimens have been mounted and described and all the specimens so far selected for the new catalogue of special pathology have been carefully examined and over 240 remounted The catalogue of general pathology has never been printed but it is proposed to place in the library a typed copy in the condition in which it stood in July 1923 As no further additions or alterations will be made it will remain a permanent record of Professor Shattock's work and will indicate in the future the state of surgical pathology and the nomenclature in use at the present day The army medical collection is now in the custody of the College which has constructed a new room for its permanent exhibition The conservator acknowledges the help Sir George Makins continues to give in arranging and cataloguing the series of original drawings which form part of the army medical collection The authorities of the Armstrong Medical College Newcastle-on-Tyne have been permitted to select for their museum such specimens as remained in the stores of the army medical collection these are now depleted and no further specimens are available for distribution Duplicates were supplied at an earlier date to the museum of the Royal College of Surgeons of Edinburgh The teratological collection has been rearranged and Mr Alban Doran continues to supervise the collection of surgical instruments and to keep his standard catalogue of it up to date

The conservator reports that the department of human osteology continues to increase The department was founded by Hunter and the care of a long line of conservators has made it the standard collection of its kind in the British Empire containing in particular a remarkable collection of skulls of all races and dates Miss Tildesley has continued her work in the cataloguing and arranging of the collection and has been appointed by the council for a fourth year Excavations at the Castle Hill Scarborough, had laid bare the foundations of a large Roman fort and of two churches of which no record was known Around the churches were numerous graves which had to be removed to expose the Roman foundations The people buried in these graves—men women and children—were representatives of the population of the East Riding of Yorkshire between the eleventh and sixteenth centuries The remains of 130 individuals were obtained through the exertions of Mr F Gerald Simpson a local archæologist and were presented to the Royal College of Surgeons for preservation and study by the town council of Scarborough They will afford the conservator an opportunity of examining the state of the teeth jaws and bones generally to ascertain whether they show those changes which are to be recognized in so large a proportion of the modern population of England and to study the racial characteristics of the people of the North of England The museum was also presented by the late Mr Reginald Hooper of Winchester with two skeletons from Worthy Down buried it is believed of the second or third century B C (La Tène period)

A feature of Hunter's museum was the grouping of preparations of comparative anatomy to illustrate physiological principles The collection has been kept up to date and is now being studied by Mr Burne who has also carried out the histological examinations required by Sir Charles Balance in the crucial experiments he is making on the anastomosis of nerves of different kind

Obituary.

WILLIAM BARRIE DOW, M.D., F.R.C.S.E., LL.D., Dunfermline

By the death of Dr. William Barrie Dow of Dunfermline, on June 22nd, Fife loses its oldest and one of its most respected medical practitioners. He was the son of Thomas Dow of Netherfield, Strathaven, in the county of Lanark, and was born on May 19th, 1836.

Dr. Dow received his medical education in Glasgow, partly in the old college in the High Street and partly in Anderson College. For clinical instruction he attended Glasgow Royal Infirmary, the birthplace of antiseptic surgery. At the age of 19 he went to the village of Carnock in Fifeshire to assist the local doctor, although not yet qualified, he carried on the practice and took the L.R.F.P.S. in 1857. He continued the study of medicine, and took the degree of M.D. St. Andrews in 1860, and the F.R.C.S.Edin. in 1880. While a very young man in Carnock he early established a local reputation by performing a daring operation. In one of the Oakley Iron Company's pits a miner had got his leg caught between the pinions of heavy machinery in the pit bottom. Dow descended the shaft, and on learning that it would take two days to dismantle the machinery, he, single-handed, and by candle light, amputated the miner from his thigh and saved his life.



WILLIAM BARRIE DOW

Dr. Dow remained ten years in Carnock and then established himself in Dunfermline, where he built up a large and important practice. He was frequently sought after as a consultant in the district. During his lifetime he witnessed the introduction of chloroform, antiseptic surgery, x rays, and vaccine therapy. He was keenly interested in everything new and its application to general practice. A surgeon of no mean capacity, he followed and practised the advanced methods of treatment, and was always ready to lend a helping hand to the younger members of the profession. Many a young practitioner performed his first major operation under his kindly guidance. He retired from general practice in 1906. At a large gathering of his patients he was entertained and received a presentation, there were many heartfelt expressions and appreciations of his worth and work.

Dr. Dow was a founder of the Dunfermline Cottage Hospital, which has since been twice enlarged, and he was a pioneer of ambulance work in Scotland. He was also one of the founders of the Fife Medical Association and became its president. He delivered the Harveian oration in Edinburgh during his term as president of the Harveian Society. Although a very busy man he interested himself in education, and in 1876 was elected a member of the first School Board in Dunfermline. He was a member of the Court of St. Andrews University for twenty-eight years, and in recognition of his services the honorary degree of LL.D. was conferred on him. A staunch supporter of the Established Church of Scotland, he was for fifty-three years an elder in the Dunfermline Abbey. There was no keener devotee of golfing and curling than Dr. Dow, and he enjoyed these games until quite recently.

Dr. Dow was a man of high character and striking personality—tall, erect, dignified, with clean-cut features and commanding presence, always genial and courteous and noted for his hospitality. His presence will be missed by many. He was buried from the Dunfermline Abbey on June 25th. The service was attended by many old friends and patients, members of the medical profession, and representatives from St. Andrews University.

In his address at the graduation ceremony at the University of St. Andrews Dr. J. C. Irvine, F.R.S., the principal, paid a tribute to Dr. Dow. He said:

> To this student generation Dr. Barrie Dow, of Dunfermline, may be recalled chiefly as the most picturesque figure at our public ceremonies, but those who were privileged to work with him on the University Court will remember him as a colleague who was impelled by that burning enthusiasm for St. Andrews which I have asked you to adopt as your own. Although fully engaged with professional duties, he yet found time to attend the Court meetings regularly for an unbroken period of twenty-eight years, taking a prominent part in developing the teaching of medicine and in the provision of a complete medical curriculum. All that concerned the welfare of the students was his especial care. We remember him with affection as a friend, as a dignified scholarly physician, as a loyal alumnus. We remember also that the spirit which kept him active in the interests of the University unto a ripe old age was one of enthusiastic effort. He felt that all things were possible for St. Andrews, and he worked for her with the sense of unlimited power which comes from a boundless faith and deep devotion.
>
> "I'll break and forge the stars anew,
> Shatter the heavens with a song
> Immortal, in my love for you,
> Because I love you, very strong."
>
> I look to you and ask that at least one may be found who will strive to step into that vacant place in our ranks.

DR. CHARLES BURLAND, who died at Southampton on June 29th, aged 63, was born at Arreton Vicarage, Isle of Wight, the son of the Rev. C. I. Burland. After qualifying as a cadet in H.M.S. *Conway* and serving from 1874 to 1879 as an officer in the mercantile marine, he studied medicine at Yorkshire College, Leeds, the University of Edinburgh, and Paris. He took the diplomas of L.R.C.P. and S.Edin. in 1884 and the M.D.Brux. in 1890. During the South African war he was in medical charge of invalided troops from South Africa. After serving as surgeon in several liners he was appointed, in 1906, Board of Trade Medical Inspector at Glasgow. In 1909 he was promoted to the office of senior medical officer and Government Medical Inspector of Emigration at the Port of Liverpool, and two years later appointed chairman of the Advisory Committee of the Board of Trade on the medical equipment of the mercantile marine. Dr. Burland was the author of *The Ship Captain's Medical Guide*, an official Government publication which has reached its sixteenth edition.

DR. FRANCIS W. LINDSAY, who died on June 10th, aged 76, was educated at Queen's College, Cork, and the University of Edinburgh. He took the diplomas of L.R.C.P. and S.Edin. in 1870, and served as house-surgeon to the Shropshire Eye, Ear, and Throat Hospital. He subsequently became surgeon to the Victoria Eye and Ear Hospital, Hereford, and retained that office for forty years. On his retirement from practice two years ago, when he removed to Leamington, the committee of the hospital adopted a resolution expressing appreciation of his unselfish and untiring work and assuring him that he would ever be regarded with gratitude as its founder.

Medical News.

A successful dinner of the Cambridge Graduates' Medical Club was held on June 27th at Cambridge in the hall of Trinity College with the Right Hon Sir Clifford Allbutt, K C B, Regius Professor of Physic in the chair It was preceded by the annual general meeting, held under the chairmanship of Sir Humphry Rolleston Bt K C B who on the proposal of Dr H Morley Fletcher was unanimously re elected president of the club The after dinner speeches were few and very brief Sir Clifford Allbutt proposed the King's health and that of prosperity to the club Sir Humphry Rolleston proposed the health of the chairman and acknowledged the courtesy of the Master and Fellows of Trinity in allowing the members and guests to meet under their roof The evening was fine and the courts and cloisters of Trinity, the river, and the boats were looking their best

AT the annual general meeting of the Durham University Medical Graduates' Association on June 26th the following were elected officers for the year 1924-5 President Dr G de B Turtle vice presidents Dr A Parkin and Mr C W Hope O B E F R C S honorary secretaries—for North, Dr S W Davidson for South Dr J W M Pratt, honorary treasurer, Dr W D Forrest

DR H O BRADFORD on resigning the post of medical superintendent of King Edward VII Sanatorium, Midhurst, has been presented by past and present patients with a cheque and an address as a mark of their appreciation and gratitude

THE fifth annual general meeting of the Society for the Prevention of Venereal Disease will be held at 12, Stratford Place, W, on July 10th, at 5 30 p m, when the president Sir Auckland Geddes, will deliver his first presidential address

THE Central Midwives Board for England and Wales met on Thursday, June 26th with Sir Francis Champneys in the chair A penal board was held first and was followed by the ordinary monthly meeting The Ministry of Health had forwarded a copy of a letter recently sent to the Under Sheriffs, in which the suggestion was made by the Home Office that pending legislation Under Sheriffs should not summon for jury service any certified midwife who had given notice to the local supervising authority of her intention to practise Dr Fairbairn reported the result of an interview which he and the secretary had had with the Ministry of Health as to the approval of Poor Law institutions A list of these was submitted and approved for the year ending March 31st, 1925 and also the terms of letters to be addressed to the institutions The Board recorded its deep sympathy with the family of the late Dr Smallwood Savage, and its appreciation of the valuable services rendered by him as presiding examiner at the Birmingham centre

THE following courses are announced by the Fellowship of Medicine and Post Graduate Medical Association A fortnight's course in ophthalmology will open on July 7th at the Royal Eye Hospital Southwark From July 21st to August 2nd the North East London Post Graduate College will give an intensive course in the general and special departments of the Prince of Wales's General Hospital Tottenham Courses have been arranged in children's diseases at the Queen's Hospital for Children, and in diseases of the chest at the Brompton Hospital from August 11th to 23rd and in neurology at the West End Hospital for Nervous Diseases from August 18th to September 6th Besides these special courses the general work as indicated in the Fellowship *Bulletin* is available and can be commenced at any time Full information may be had on application to the Secretary, Fellowship of Medicine, 1, Wimpole Street, W 1

A MEMORIAL to the late Sir Francis Farmer, for many years dental surgeon to the London Hospital was unveiled by Mr Asquith at the London Hospital Medical College on June 25th It consists of a mural tablet, which has been placed in the dental room and bears the following inscription 'Francis Farmer This tablet is put up in the place where much of his life work was done to keep alive the memory of a brilliant surgeon devoted to his profession and his patients, and never sparing himself when he could help others Most loyal of colleagues most helpful of colleagues most unselfish of friends" Of the £579 raised £7 10s has been expended on the tablet the remainder will be used to found a Francis Farmer scholarship

A POST GRADUATE course on diseases of children will be held at the Hopital des Enfants Malades, Paris, by Professor Nobecourt and M Lereboullet during July and August, beginning on July 24th Particulars can be obtained from Professor Nobecourt at the Hopital, 149, rue de Sèvres, Paris

THE reports on serological investigations presented to the Second International Conference on the Standardization of Sera and Serological Tests held at the Pasteur Institute in Paris in November, 1922 have just been published in a volume of some 300 pages by the Health Organization of the League of Nations The reports deal with the standardization of serums for diphtheria tetanus meningitis pneumonia and dysentery, and with the sero diagnosis of syphilis The volume can be consulted in the library of the British Medical Association

MESSRS MAYER AND PHELPS (59 New Cavendish Street, W 1) have issued in connexion with their exhibit in the Palace of Industry at the Wembley Exhibition a supplement to their catalogue with the title Chiron It contains illustrated descriptions of an operating table of a lamp for the operation theatre, and of numerous instruments manufactured by the firm

AN academy for medical post graduate instruction was founded at Dresden on May 19th Its cost will be defrayed by the state of Saxony and the city of Dresden

THE fourth annual meeting of the British Association of Dermatology and Syphilology will be held in London at the Royal Society of Medicine 1 Wimpole Street on July 8th, 9th and 10th, under the presidency of Dr H G Adamson The following programme has been arranged On Tuesday, July 8th after the annual general meeting at 10 a m a discussion on the skin affections associated with leukaemia and allied conditions will be opened by Sir Humphry Rolleston, P P C P, followed by Dr Jorgen Schaumann (Stockholm) In the afternoon there will be a demonstration of cases and in the evening a dinner at the Connaught Rooms The second day will be devoted to the reading of short papers and demonstrations of cases On Thursday morning July 10th, a discussion on the value of the various methods of examination of the body fluids in syphilis, other than the Wassermann reaction as a guide to diagnosis and treatment will be opened by Professor G Dreyer M D F R S, of Oxford, followed by Major A T Frost R A M C The honorary local secretary of the meeting is Dr H MacCormac, 23, Wimpole Street, W 1

THE fourth Congress of French speaking pediatrists will be held in Paris from September 29th to October 1st, under the presidency of Professor Marfan, when the following subjects will be discussed (1) Etiology and pathogenesis of rickets introduced by Dr Lesne (2) Prophylaxis and treatment of infantile syphilis introduced by Dr L Tixier (3) Treatment of empyema in children introduced by Dr Ribadeau Dumas Further information can be obtained from the general secretary, Dr H Barbier 5, rue de Monceau, Paris

AN English translation of an illustrated pamphlet by Dr Rollier of Leysin, giving a popular account of the treatment of tuberculosis by exposure to sunlight has been published by the People's League of Health (12, Stratford Place W 1) at the price of 1s post free 1s 1d

THE annual meeting of the Incorporated Lancashire and Cheshire Society for the Permanent Care of the Feeble minded was held under the presidency of the Lady Mayoress of Manchester in the Lord Mayor's parlour of the Manchester Town Hall on June 26th Miss Dendy the president said that the society was caring for 230 patients and the demand for admission was so great that if they had double their present accommodation they could fill every vacancy A new house would shortly be opened for the admission of twenty five children from a pathetically long waiting list In her opinion segregation was the proper way of dealing with the feeble minded by which means future generations would be protected She considered it would be dangerous to carry out the suggestion that docile and harmless cases should be left in their own homes as they would be almost sure to become parents with or without marriage with consequent damage to the offspring The annual report presented to the meeting stated that the occupations followed by the women and older girls, such as house work laundry work sewing and knitting showed satisfactory progress In the workshops for the men and older boys boot making tailoring mat and brush making and weaving were carried on Since none of the inmates of the institution were idle everyone was generally happy

IN Egypt 1,519 cases of plague with 725 deaths were notified during 1923

IT was announced at a meeting of the Board of the Middlesex Hospital on July 2nd that Mr S A Courtauld had given £20 000 for the endowment of the University Professorship of Anatomy in the Medical School

WE regret to learn that Dr P W Lovet the well known professor of orthopaedic surgery at Harvard, was taken seriously ill with septic pericarditis on his way to this country and died on July 2nd after a few days illness, at Sir Robert Jones's house in Liverpool

Letters, Notes, and Answers.

Communications intended for the current issue should be posted so as to arrive by the first post on Monday or at latest be received not later than Tuesday morning

CORRESPONDENTS who wish notice to be taken of their communications should authenticate them with their names—not necessarily for publication

ALL communications with reference to advertisements as well as orders for copies of the JOURNAL should be addressed to the Financial Secretary and Business Manager, 429, Strand, London, W C Attention to this request will avoid delay Communications with reference to editorial business should be addressed to the Editor, BRITISH MEDICAL JOURNAL, 429 Strand, W C 2

THE telephone number of the BRITISH MEDICAL ASSOCIATION and BRITISH MEDICAL JOURNAL is Gerrard 2630 (Internal Exchange) The telegraphic addresses are

EDITOR of the BRITISH MEDICAL JOURNAL, *Attiology Westrand, London*

FINANCIAL SECRETARY AND BUSINESS MANAGER (Advertisements etc) *Articulate Westrand London*

MEDICAL SECRETARY *Medisecta Westrand London*

The address of the Irish Office of the British Medical Association is 16, South Frederick Street, Dublin (telegrams *Bacillus, Dublin*, telephone 4737, Dublin), and of the Scottish Office, 6 Rutland Square, Edinburgh (telegrams *Associate, Edinburgh*, telephone, 4361, Central)

QUERIES AND ANSWERS

INCOME TAX

Discontinuance of Partnership

"C S" explains that at the end of September, 1923, his health compelled him to leave his work to his partner and he resigned from the practice at March 31st, 1924, subsequent to that date he has had no earned income, and inquires how he stands as regards the tax due on July 1st

*** If "C S" receives his full share of the practice profits for the six months ending March 31st, 1924 he is liable for the July instalment, which relates to income of the year 1923-24 If, on the other hand, he made some arrangement with his partner in accordance with which the partnership profits were shared on some different basis for that six months, then he may apply to the inspector of taxes for a re computation of his liability for 1923-24 The result of such a readjustment would be to increase his partner's share of the gross assessment and to decrease his own share and the consequential effect on the division of the July instalment of tax might be substantial

Appointment and Private Work

"M S" holds a sanatorium appointment and the committee has sanctioned his undertaking private work He inquires as to what allowance he can claim for use of his "study" and car

*** The amount allowable is, of course the actual out of pocket expenditure incurred on the private work, but in the circumstances this is a little difficult to compute With regard to the study we can only suggest that he makes an estimate as to the proportion of a maid's time spent on keeping the study clean dealing with callers, etc, and charge a similar proportion of the maid's total cost—wages *plus* board and lodging The simplest way of dealing with the car would be to charge the mileage rate allowed by the committee, an alternative, though somewhat more troublesome, method would be to calculate the total cost of the car and allocate it on a mileage basis between committee private professional, and personal use, charging the second against the private fees

Employment of Accountant

"SENEX" has been requested by the inspector of taxes (*a*) to supply detailed and certified accounts for the years 1923-4 and 1922-3, and (*b*) to produce his bank books for inspection

*** The position of inspectors of taxes in the matter is that while they have not legal authority to enforce such requests, they may report the facts to the Commissioners, by whom the profits are assessed, in which case neglect or refusal to comply with a request which was considered reasonable might lead to the raising of an estimated assessment, the Commissioners hearing an appeal against such an assessment have legal authority to require such particulars as they may think fit The practice of employing an accountant to prepare accounts for income tax purposes is extensive, but medical practitioners' accounts are frequently so simple that such professional aid is quite unnecessary If "Senex" feels he can prepare accurate accounts himself we advise him to do so in the hope that he will be able to deal successfully with any criticisms the inspector may bring to bear on them With regard to the production of Bank Books, if a special account is kept for the practice ("Senex" does not say whether his is a "sole" practice), we think the request may be justifiable, though perhaps unusual, if "practice" and "private" income is mixed together in one account, "Senex" might perhaps explain that the pass book without detailed analysis would not appear to give the inspector or any person concerned in income tax assessment appropriate information

Deduction for House

"T L" holds an appointment in respect of which he receives a salary, from which a certain sum is deducted as rent for the house which he is required to occupy Is he liable to account for income tax on the salary so stopped to meet the charge for rent? The inspector of taxes says that a law case is pending on the question

*** We have no knowledge of the case referred to, which may not have reached the High Court yet, perhaps "T L" can obtain some further information from the inspector of taxes as to the names of the respective parties There does appear, *prima facie*, to be a valid legal distinction between A who receives his full salary and pays thereout rent for the accommodation of himself and his family, and B who receives a salary and in addition the benefit of residing in certain premises B pays tax on his salary only, his circumstances being covered by a decision in the old leading case of Tennant *v* Smith, but "T L's" case is not quite on all fours with that because although he has no choice of residence it is open to argument that his full salary is something more than the net amount paid to him While we have doubts as to whether his claim would be sustained by the courts, it would seem advisable for him, in the circumstances, to give notice of appeal against the assessment to the inspector of taxes, explaining that he does so to safeguard his rights pending a decision in the case referred to, and that he is quite willing to pay tax on the undisputed amount as if notice of appeal had not been given

LETTERS NOTES ETC

ACRIFLAVINE IN TONSILLITIS

DR W A M STEWART (Sandy Beds) writes A middle aged woman suffering from exophthalmic goitre and heart disease contracted a virulent type of tonsillitis at the end of April She did not respond to various treatments, local and general, and her condition became precarious Before giving vaccines acriflavine in 1 in 1 750 was tried, the tonsils being painted daily Hydrogen peroxide was used to clean the throat before application Recovery was rapid

A LOCUMTENENT'S COMPLAINT

"EX SERVICE LOCUM" writes Will you grant me a small space in your widely read columns to suggest to those requiring the services of locumtenents that they extend towards applicants the same courtesy that they would themselves desire were their positions reversed I refer especially to the length of time elapsing between receiving and answering an application It is natural to suppose that an advertisement is answered the same day that it appears, or at latest next day, surely after, say, four days all applications would be in Why, then, does a fortnight, up to five weeks, so often elapse before the usual reply comes to hand? To a man dependent upon locumtenent work for a living this is a cause of much anxiety Many men are compelled to do this work because, by serving abroad in the war, they lost their practices and much besides

SIMMINS APPEAL FUND

SIR CHARTERS J SYMONDS (Honorary Treasurer, Royal Medical Benevolent Fund) writes Under the above heading (June 21st, p 1115) a remark occurs which might imply that the benefits derived from the Royal Medical Benevolent Fund are enjoyed by subscribers only and that in this sense the fund is a provident institution On the contrary, the annual report sets out the operation of the fund in the following words "The Fund is a general charity, the benefits of which are open to all deserving cases without restriction Other medical charities are for the most part local, and of the nature of provident clubs, the benefits of which are restricted to subscribing members"

TREATMENT OF MIGRAINE

IN the article on this subject by Dr Janet L Greig (June 21st, p 1089) a clause was omitted which was necessary for the correct reading of the subsequent sentences Following the word "individual" in the fourth line of paragraph 3 should be inserted "nor do we know when the physiological becomes pathological" In the second last line of the article, for "stage" read "state"

VACANCIES

NOTIFICATIONS of offices vacant in universities, medical colleges, and of vacant resident and other appointments at hospitals, will be found at pages 32 33 36, and 37 of our advertisement columns and advertisements as to partnerships, assistantships, and locumtenencies at pages 34 and 35

A short summary of vacant posts notified in the advertisement columns appears in the *Supplement* at page 8

EPITOME OF CURRENT MEDICAL LITERATURE.

Medicine.

1 Blood Transfusion in Pernicious Anaemia

A ZETTERQVIST (*Svenska Läkaresällskapets Handlingar*, March 31st, 1924, p 1) gives an account of 10 cases of pernicious anaemia and 6 of secondary anaemia in which intramuscular or intravenous injections of blood were given No great benefit was derived from this treatment in the cases of secondary anaemia due to causes such as malignant disease But in most of the cases of pernicious anaemia remarkable and even dramatic results were obtained, and though they were not always permanent there was great improvement for a considerable time In 4 out of 7 cases in which small intramuscular injections were given great improvement resulted in the blood picture as well as in the clinical condition All four patients had previously been treated with arsenic and iron without noticeable improvement In 3 cases large intravenous injections of blood were given and in one of these cases the patient was practically moribund when 500 c cm of her husband s blood were injected She was restored to comparatively good health for several months when she relapsed, another injection of her husband s blood had but little effect, a third injection was valueless and death ensued, the diagnosis of pernicious anaemia being confirmed at the necropsy

2. Epidemic Gangrene of Genitals in Children

W K STEPHANSKY (*Deut med Woch*, March 7th 1924, p 305) has observed as many as twenty cases of gangrene of the external genitals of girls at his hospital in Odessa between December, 1922, and June, 1923 In many respects the clinical picture differed from that of noma, as described by Hennig and Henoch, and it is probable that the two conditions are quite distinct Many of the author s cases ran a rapidly fatal course although the children were well nourished and their general health was satisfactory at the onset of the disease In the case of a girl, aged 12, there was no history of previous illness, but in the other cases there was a recent history of measles scarlatina or whooping cough The disease began suddenly with high fever and redness, oedema, and pain of the labia majora This local condition gave place to ulceration and then to gangrene, the disease spreading to the lining of the vagina and rectum, but showing a clear cut line of demarcation between living and gangrenous tissues The disease was much more fulminating, the temperature higher, and the deeper structures less involved than occurs in noma In no case could diphtheria bacilli be found, although a search was invariably made for them

3 Incubation Period of General Paralys s

F WIFSEL (*Hygiea*, March 15th, 1924, p 164) has ascertained the length of the period between the contracting of syphilis and the outbreak of general paralysis in 188 cases observed in the period 1907-20 in various Swedish hospitals The shortest incubation period was 2 years and the longest 39 years In most cases the incubation period was between 10 and 20 years, but there were as many as 51 cases, or 27 per cent of the total, in which the incubation period exceeded 20 years It was less than 10 years in 36 cases, or 19 per cent of the total The average incubation period was 16 6 years The author failed to establish any definite connexion between the length of the incubation period and such factors as the character of the disease when first contracted, the nature of the treatment given, hereditary influences, degenerative stigmata, physique, alcoholism or injuries to the head He observed that when the incubation period was short the disease often terminated fatally in a year

4 Polycythaemia

COUCHET (*La vie médicale*, February 1st, 1924, p 197) states that a very large number of conditions are associated with normal or pathological increase in red blood cells The former includes the polycythaemia of the newborn, in whom the blood always contains 5 or 6 million red cells, the polycythaemia of altitudes and that resulting from the use of Kühn's mask or stenosis of the upper respiratory tract Pathological polycythaemia includes cases due to loss of water, such as that caused by vomiting and diarrhoea, and tumours which may increase the number of the red cells Stenosis of the oesophagus and pylorus, by interfering with drinking, have the same effect Cardiac and pulmonary affections which determine stasis or cyanosis are also accompanied by a compensatory increase in red cells Many intoxications especially those due to arsenic, carbon monoxide, lead and mercury, have a similar action Finally, there are cases of plethora on the borderland between health and disease which have been attributed to disease of nutrition, such as gout or diabetes In Vaquez s disease, which is allied to this group the number of red cells may be as high as 13 million (Koester) or even 19 million (Alexander) As a rule it is about 8 to 10 million The haemoglobin is usually increased, and may be as high as 120 to 150 per cent The number of leucocytes is also increased being usually about 10 000 per c mm , and sometimes as high as 100,000 or 150 000 The leucocytes may show a large number of lymphocytes or otherwise exhibit a distinctly pathological tendency, their formula resembling that of myeloid leukaemia with more or less numerous myelocytes In addition to changes in the blood, the bone marrow is in an obvious state of excessive function On naked eye examination it is red and spongy and microscopically shows signs of active proliferation The patients complain of dyspnoea, nausea alternate constipation and diarrhoea, intense thirst, vertigo headache insomnia and a sense of fatigue The pressure of the cerebro spinal fluid is increased The urine frequently contains albumin and casts The heart is increased in size and often shows signs of muscular insufficiency The prognosis is not absolutely bad, as patients may live for thirteen years or more but it is not very good, as recoveries are very rare if they occur at all Treatment consists in administration of drugs and other measures which tend to destroy the red corpuscles such as benzol and phenylhydrazine and application of x rays or radium, and the removal of the marrow of the long bones

5 Stomach Changes following Syphilitic Peritonitis

J A R SMIT (*Nederl Tijdschr v Geneesk* March 1st 1924 p 899) remarks that peritonitis is a frequent occurrence in syphilis and may assume various forms It may be almost entirely serous so that the condition can readily be mistaken for tuberculous peritonitis The fibrous form, however is more frequent than the serous and may be primary or secondary to wounds of the peritoneum or other morbid processes such as wandering kidney In such cases it may give rise to all sorts of malformations of the various abdominal organs, including hour glass contraction of the stomach resembling that following gastric ulcer Smit records four cases of hour glass contraction of the stomach in syphilitic subjects, but with the exception of one patient who had a slight feeling of heaviness in the stomach after meals none had any gastric symptoms nor did any show evidence of gastric ulcer on x ray examination All however had a more or less characteristic hour glass contraction which at first was mistaken for gastric carcinoma In the three cases in which it was employed antisyphilitic treatment caused a disappearance of the hour glass appearance of the stomach

6 Tachypnoea in Lethargic Encephalitis

K MOTZFELDT (*Norsk Mag f Laegevidenskaben* March 192- p 225) draws attention to a comparatively rare sequel to lethargic encephalitis—short bouts of very rapid breathing These bouts may occur several times an hour, lasting only three to five minutes being characterized by noisiness and a rate of 40 to 50 to the minute There is no regularity in their sequence, and no sign of the Cheyne Stokes phenomena One of the author s patients could restore at will his breathing to the normal rate and character Discussing the mechanism of this type of respiration, instances of which have been recorded by other writers in connexion with lethargic encephalitis, the author suggests that it may indicate involvement of the thalamus and as Bailey and Bremer have shown (*Arch Int Med* 1921) experimental lesions of the hypothalamus of dogs often provoke violent but brief attacks of tachypnoea

7 Summer Diarrhoea of Infants.

A YLPPÖ (*Acta Paediatrica* vol 3 fasc 2, 192-, p 213) notes that for many years a controversy has raged over the etiology of summer diarrhoea in infants the view that it is due to bacterial contamination of the milk supply before it reaches the infant not being universally accepted There is another view according to which this form of diarrhoea is directly due to a high atmospheric temperature which raises the infant s temperature and thereby upsets the chemical reactions in the gastro intestinal tract In support of this view the author records experiments the basis of which was

an observation made on a warm day early in May, 1920, when several prematurely born infants in a hospital were exposed to sunlight for a considerable time They all showed a marked rise of temperature followed by diarrhoea and vomiting Following up this observation, the author investigated the acidity of the gastric juice of several children before and after artificial pyrexia had been induced This pyrexia was induced in some cases by hot baths and packs, and in other cases by the intracutaneous injection of a 1 in 10 dilution of calf lymph intended for vaccination In several cases it was found that pyrexia was associated with a definite reduction of the acidity of the gastric juice, and the author is therefore inclined to think that the summer diarrhoea of infancy may in many cases be due to an inadequate secretion of hydrochloric acid, the acidity of the gastric juice not being great enough to destroy the bacteria of the typhoid and dysentery groups

Surgery.

8 Ligature of the Popliteal Vein for Varicose Veins in the Leg

C BERTONE (*Acta Chir Scand*, May 7th, 1924, p 539) draws attention to Parona's publication in 1904 on the treatment of varicose veins in the leg by ligature of the popliteal vein He was convinced that superficial varicose veins were almost always secondary to varicosity of the deep veins in the leg, and that to effect a radical cure it would be most rational to ligature the popliteal vein His record of twenty six cases thus treated confirmed his theoretical considerations Bertone admits that this treatment is not always suitable Many cases are cured completely by resection, ligature, or artificial thrombosis of the saphenous veins, which can be operated on with greater ease and less risk than the popliteal vein But this should be ligatured when (1) no benefit has followed operations on the superficial veins, and painful ulcers and swellings persist, and when (2) there are deep varicose veins causing oedema of the calf and ankle and the persistence of large varicose veins in the skin The author describes five cases in which he successfully performed this operation.

9 Cystinuria.

A HARRIS (*Surg, Gynecol and Obstet*, May, 1924, p 640) points out that cystin is an intermediate product of metabolism, but it is not properly understood how cystinuria is produced The substance is an amino acid containing 25 per cent of sulphur It comes from the tissues of the body, since cystin given in the food does not increase the amount It is increased on a mixed diet containing nitrogen and sulphur Cystinuria is a rare condition and occurs about once in 30,000 analyses It occurs at all ages, but more commonly in young adult males Many cystinurics are of a neurotic type It appears that most cystin stones are opaque to the x rays There is a marked tendency in some to the re formation of stone only a more complete knowledge of the body chemistry will carry us to a point where calculi can be prevented, and will not recur after removal There appears to be a strong hereditary tendency to cystinuria and the formation of stones In the case of a girl, aged 16 years, five stones had been passed during a few months two other members of the family had cystinuria, and two others showed a marked excess of oxalates Later a pure cystin calculus was removed from the kidney by operation In spite of diet, alkali therapy, and other measures, urine analysis still shows the presence of cystin crystals

10 Mixed Tumours of the Pharyngeal Prolongation of the Parotid

HENRY PROBY (*Arch Internat de Laryng, Otol et Rhinol*, March, 1924, p 302) describes this prolongation as a conical process with its apex inwards, which lies in front of and above the stylo mandibular ligament and behind the spheno mandibular ligament Between these ligaments it passes inwards into the subparotid space, and has a covering of deep cervical fascia It has as anterior relations the internal maxillary and middle meningeal vessels, the pterygoid plexus of veins, and the branches of the mandibular division of the fifth nerve When the process is large it becomes an external relation of the tonsil, and it lies posteriorly on the stylo hyoid and stylo glossus muscles The mixed tumour occurs more frequently in males than in females, and more often in young subjects It appears at an earlier stage in the pharynx than on the surface, and presents between the pillars of the fauces, displacing the tonsil inwards When the tumour is palpable in the parotid region, and is moved, its movement is communicated to the pharyngeal tumour Speech, respiration, and deglutition may be affected, and the tumour may ulcerate into the pharynx There is usually no palpable glandular enlargement, and the diagnosis must be made from benign and malignant tumours The former are rare, sarcomata grow much more rapidly, the tumour is larger, and there are palpable glandular deposits Lymphadenoma is usually bilateral, the tonsils are much larger and grow more rapidly Secondary malignant glands in the neck must be differentiated from the mixed tumour, especially when they are secondary to a malignant ulcer of the pharynx When ulceration has taken place the diagnosis must be made from syphilis and tubercle On section the tumours show three types of tissue (*a*) connective tissue elements, such as mucous, fibrous, and cartilaginous, (*b*) epithelial elements, including masses of Malpighian cells, globular masses of epidermal cells with centres of degenerate keratinized cells, columns of basal cells, and gland like tubules, and (*c*) cells of an indifferent type The tumours as such can be classified, after Letulle and Nattan Larrier, as (1) monsters which contain recognizable organs, (2) teratoid tumours which contain all the three layers of the embryo, (3) mixed salivary tumour with myxo chondro epithelial tissue, and (4) simple tumours such as naevi There are three theories as to the origin of these tumours There is the nodal theory that when the fertilized ovum first divides each division has the power to produce an embryo Occasionally one of these divisions pursues an individual development and the result may be anything from an identical twin to a mixed tumour The second theory is that these tumours are due to the inclusion of epithelial and mesoblastic tissue at the time of disappearance of the branchial arches The third theory is that the tumours are formed in buds of epithelium which separate off from the buccal mucosa at the time when the salivary glands are being formed These buds become cut off from the surface, are developed by the growing gland, and later develop into one of the forms of mixed tumour This series of phenomena has not been proved, but a similar series takes place in the cases of the thyroid, kidney, and pancreas

11 Tumours of the Mediastinum in Children

J S STONE (*Annals of Surgery*, May, 1924, p 637) records two cases of tumour of the mediastinum in children Both had an acute onset, simulating pneumonia, and in both a secondary empyema was suspected, and because of that the patient was sent to hospital for operation In each case the left side of the chest was flat and dull over practically the entire extent, x rays showed diffuse shadows and the evidence of tumour was not definite The fluid removed by aspiration was blood stained, in one case—a teratoma—hairs were detected in the fluid withdrawn The difficulty of diagnosis is emphasized, and the need of careful examination One case was epithelial in origin and probably arose from the pleura, it occurred in a child 4½ years of age The second case was a teratoma, and probably arose as a blastomere which had become displaced in the course of development A review of 108 cases of mediastinal dermoids and teratomata previously reported is given only eight of these have occurred in children The only treatment of these conditions is surgical, if symptoms due to pressure are present In both the above cases operations were performed, but the children subsequently died

Neurology and Psychology.

12 Psycho neuropathic Complications of Otitic Disease

SPALAIKOVITCH (*Rev de Laryng, Otol et Rhinol*, April 15th, 1924, p 228) describes two cases in which symptoms of intracranial mischief followed suppurative otitis media of some standing, in both cases a mastoid operation had been performed some time previously The first patient was a girl who had had otorrhoea for nineteen years, and a complete mastoid operation had been performed Two months after the operation severe pain developed in the ear and the corresponding side of the head Later she passed into semi coma, lay motionless in bed, and was only roused with difficulty The ear was in good condition, there were no abnormalities in the nervous system, the temperature and pulse were normal, and her condition was diagnosed as psycho neuropathic No amount of suggestion was of any avail, and eventually, under general anaesthesia, a post auricular incision was made, sutured, and an enormous dressing applied The wound was elaborately dressed and the sutures removed a few days later The wound healed perfectly and the symptoms entirely disappeared, with no recurrence The author contrasts this case with one in which a large cerebral abscess gave rise to no symptoms other than a moderate degree of coma, and was only diagnosed because there was a history of a previous similar abscess in the same patient on the same side The first case was diagnosed by the lack of localizing symptoms, by the

normal pulse and temperature, by the normal cerebro spinal fluid, and the discrepancy between the acute pain in the ear and the very healthy condition of that organ. The second case of simulated endocranial symptoms was a man of 34 who had had a mastoid operation seven years previously. His symptoms suggested labyrinthine irritation and included spontaneous nystagmus, a tendency to fall to the left and backward, and some vertigo. Two months later he came back with much more pronounced symptoms of incoordination and ataxy, much deafness on the healthy side, considerable reduction of the visual fields of both eyes and very severe headache. Discrepancies between the severity of the symptoms and the amount of pathological change discoverable gave rise to the diagnosis of psycho neurotic simulation. He was given spectacles with glasses of different colours, and found that he retained his stability best with green glasses. These he wore for about a fortnight, after which he left the hospital cured of his intracranial symptoms. Such pseudo-complications are somewhat more common in the female sex and occur more often during adolescence, the patients show other signs of neurosis in many cases. These symptoms would not arouse much interest if they did not arise in association with a suppurative aural lesion which lends a very considerable gravity to their interpretation. It is stated that hysteria never completely simulates the symptomatology of a given lesion, but in some of the cases described the similarity is very close. *Careful examination* reveals some discrepancy—for example, in cases of mastoid tenderness when the attention has been strongly engaged, deep and forcible pressure on the mastoid evokes no attempts at resistance. The first rule in treatment is to obtain the confidence of the patient, and the second is to retain it.

13 Psychology of Childhood

YVONNE WINSLOW (*Internat Zeit f Individual Psychologie*, January, 1924, p. 35) insists on the great importance of childhood influences *their effect on the ensuing adult life*, and their ultimate influence on human happiness. Parents have to learn the importance of the study of their children's individuality, and must seek to encourage and develop this individuality rather than impress their own personality and authority on their children. "We have been hindering the young from a free and harmonious development of their natural powers to a complete and consistent whole, and this need not be. Children are shy and reticent while parents *too often forget their own experiences in childhood and fail* to give encouragement to their children. Children are also very impressionable and do not for many years escape from *the control of the opinions of their elders. They need to be* removed from the "family psychology," as it is most important, in order to obtain a broad and sane outlook, that children should not develop their ideas entirely under family influence. The spoiled child is as striking an example of this error as is the repressed child. Few adults (the author argues) are aware how the sensitive and talented child suffers from being misunderstood, from injustice and unrecognized longings and how dependent he is upon his elders' affections. Children of this kind often suffer mental and spiritual anguish because their emotions are much more developed than are their reasoning powers. For the same reasons they should be guarded against emotional strain and be protected from gruesome stories and pictures.

14 Mental Disorder and Intestinal Stasis

R. V. STANFORD and E. GOODALL (*Brit. Journ. of Radiol.*, February, 1924, p. 63) report on the examination of 24 patients suffering from mental disorders of different kinds by means of barium meals and radiograms taken at intervals during the succeeding forty-eight hours. The disorders included melancholia, delusional insanity, and exhaustion psychosis, of the 24 cases 19 were recent and acute, the others being of longer standing. Only 2 of the 24 cases seemed to be free from some abnormal state of the gastro-intestinal tract; this confirms the previous investigation of these authors in 1921, when out of 10 cases similarly examined 7 presented definite intestinal abnormalities. The evidence pointed in some cases to stasis to ptosis of the transverse colon—in some cases of the stomach also—and to spastic contraction in several instances. Four cases are described in some detail.

15. Occupational Psychology and Fatigue

W. NUTTALL (*Internat. Zeit. f. Individual Psychologie*, January, 1924, p. 12) considers that experimental research is of practical value in the study of occupational psychology, and more especially with regard to the choice of an occupation. Much has been accomplished in this way, but experimental tests and classification of reactions do not solve the problem completely. Even though these tests indicate an aptitude for a certain calling it does not follow that the individual will do that work properly, nor that he will be happy in that occupation, nor that he will be able to obtain the particular work for which he appears to be suited. There is much latent talent in children which may be developed by encouragement, or checked by the failure of parents or teachers to discover its existence. Attention should be directed not only to choice of occupation but also to the individual's attitude towards work in general. There are many disillusioned individuals in the world to-day who make no attempt to follow their calling and who furthermore discourage others. Nuttall concludes that it is highly important to encourage a courageous and adaptable outlook towards work and that the problem of industrial fatigue is wider and deeper than consideration of *physical environment* in mills and workshops—it is a problem of conflict between the world outlook of the individual and that of *the society into which he happens to be born*.

Obstetrics and Gynaecology.

16 The Placentas of Syphilitic Foetuses.

C. MONCKEBERG and M. AVILES (*Gynecol. et Obstet.* 1924, ix. 5, p. 419) have made systematic microscopic examinations of the placenta, cord, and membranes in 50 syphilitic foetuses in 41 cases the Wassermann reaction was positive. *The placentas were found macroscopically to be pale, friable, and* oedematous, they weighed from 25 to 51 per cent. of the foetal weight, in comparison with the normal figure of 14 to 16 *per cent. in non syphilitic cases*. Infarcts visible to the naked eye were present in 32 per cent., and one half of the whole series were characterized clinically by placental retention. Microscopically the authors noted hypertrophy of the villi, in which the cells of the syncytium and Langhans's layer shared irregularly, the contained veins and arteries showed very *considerable proliferation* in the tunica intima with intravascular thrombi. In the majority of cases the vessels were increased in number and dilated, giving an angiomatous appearance. Infarcts were microscopically demonstrable in 80 per cent. of cases. The vascular lesions with the exception of angiomatous formations were found also in the external portions of the placentas and in the thickened membranes. In the amnion the authors describe a leucocytic infiltration of the subendothelial connective *tissue, accompanied in certain cases by enormous hyper*trophy of the endothelial cells with formation of a pseudosyncytial tissue. In the cord the chief lesions noted were *intense panarteritis and phlebitis, with almost complete* arterial obstruction. In cases in which syphilitic changes in the villi were of slight intensity the morbid lesions were well marked in the remaining portions of the placenta and in the membranes. When stillbirth took place shortly before term placental changes were comparatively small, but the vascular lesions in the cord, on the contrary, were well marked. In none of their cases were the authors successful in finding the *Treponema pallidum* in the placenta.

17 Does Puerperal Disease Contraindicate Suckling?

H. RUNGE and A. LAUER (*Deut. med. Woch.*, May 9th, 1924, p. 602) have carried out investigations at the University Maternity Hospital at Kiel with a view to obtaining an answer to this question. As many as 54 women who were febrile in the puerperium were allowed to continue suckling their infants. In 14 cases, or 26 per cent., the infants thrived perfectly well. In most of these cases the fever was only of a few days' duration and was due to slight puerperal endometritis. In 25 cases, or 46 per cent., the infants suffered from a deficiency of milk, but only in one case were there signs of infection of the infant as indicated by a rise of temperature and an *unsatisfactory condition of the stools*. Apart from this case and the fact that supplementary artificial feeding was often required the experiment was satisfactory in this group also. The diseases from which the mothers suffered were infiltration of the parametrium, and endometritis, with periodic bouts of septic fever. In about half the cases the mother's fever disappeared and her milk-supply improved so soon that it was not necessary to resort to supplementary artificial feeding. In no case was the infant's life threatened. In 15 cases, or 32 per cent., the mother's disease was severe or moderately severe puerperal fever. In 12 of these cases *it was observed* that though the infant's supply of maternal milk was quite adequate the infant's lost weight on it *temporarily* and showed certain other morbid signs such as *enteritis and fever*, but in every case but one these manifestations were transitory, and the only infant that died of sepsis had been prematurely born, weighing *only 2,100 grams*. The authors conclude that suckling should not be continued when puerperal fever is severe and prolonged, not so much for the sake of the infant

as for that of the mother Slight puerperal conditions such as thromboses, localized inflammation of the parametrium, and ascending gonorrhoea do not warrant the discontinuance of suckling

18 Ethylene-Oxygen Anaesthesia in Obstetrics and Gynaecology

N SPROAT HEANEY (*Surg , Gynecol , and Obstet* , May, 1924, p 692) reports that since the discovery by Luckhardt and Carter in 1918 of the physiological effects of ethylene this gas has been given an extensive and successful trial as a general anaesthetic in the gynaecological and obstetrical departments of the Presbyterian Hospital of Chicago It is administered with oxygen in the apparatus used for nitrous oxide oxygen anaesthesia For diagnostic examinations it is preferable to ether in that it saves time both in the induction of anaesthesia and in the stage of recovery, and to nitrous oxide in that muscular relaxation is better Usually the patient can leave the room within ten minutes For vaginal operations ethylene is particularly satisfactory, and is preferred to nitrous oxide ether and to local anaesthesia in aged patients, the operations done included extensive plastic operations and interpositions For extensive pelvic operations by the abdominal route the additional administration of ether is sometimes necessary In labour ethylene has superseded in the author's practice nitrous oxide , analgesia is more quickly obtained, painlessness may be maintained for so long as eight hours, the strength of the uterine contractions is less affected than by ether, the foetal heart tone is not influenced, and the child breathes as quickly after birth as is the case with nitrous oxide anaesthesia One of the disadvantages of ethylene to which allusion is made is its extreme explosiveness

19 Blood Sedimentation Test in Obstetrics

FRIEDLAENDER (*Amer Journ Gynecol and Obstet* , February, 1924, p 125) has investigated the sedimentation time in 1,500 gynaecological and obstetrical cases, and comes to the conclusion that the test is of the greatest help in some cases The time taken for sedimentation in a healthy woman is about twenty hours, whereas in pregnancy and with infections it occurs in a few minutes The reaction is, however, uncertain during the first three months of pregnancy, but it is said to be of use after that time to differentiate between abnormal pregnancies and ovarian cysts, fibroids, etc Its greatest value is in cases of adnexitis with a normal temperature and blood count, when there is doubt regarding the desirability of operation, and the author states that sedimentation occurring in under thirty minutes means an acute infection, under one hour means latent infection (and operation should never be undertaken in such cases), whereas sedimentation taking two hours or more to occur excludes the possibility of any latent or acute infection and operation can be safely undertaken Friedlaender even goes so far as to state that no dilatation and curettage should be performed until latent infection of the genital organs has been excluded by the sedimentation test A *quick sedimentation*, he says, does not necessarily mean acute infection of the genital organs, as it is given in all acute infections such as appendicitis, cholecystitis, etc , and in some cases a previously unsuspected form of disease has been found at an operation owing to the evidence given by accelerated sedimentation and the operation being continued until its discovery

Pathology.

20 Beri-beri and Avitaminosis.

T OCATA, S KAWAKITA, S KAGOSHIMA, S SUZUKI, and H OKA (*Japan Med World*, February 15th, 1924, p 23), from observations upon avitaminosis (polished rice disease) caused by lack of vitamin B, conclude that it presents markedly different symptoms and tissue changes from beri beri, and that the two diseases are entirely different In avitaminosis the vitamin B content is much less than normal, whereas there is no marked difference between the content in beri beri and non beri beri cases Wide differences exist between the nervous systems in the two diseases, and, while circulatory disturbance is one of the cardinal symptoms in beri beri, in avitaminosis it is of an entirely different type In beri beri respiratory difficulty accompanies the increasing pulsation, whereas in avitaminosis respiration becomes slower The digestive disturbances in ber beri are not so marked as in avitaminosis, and, as regards blood findings, the hyperglycaemia and lymphopenia occurring in avitaminosis are not characteristic symptoms of beri beri While in beri beri there is some rise of temperature, in avitaminosis the temperature is often below normal Differences are seen in the pathological changes in the suprarenals, the cortex in avitaminosis being hypertrophied, and the medulla and adrenaline content being normal, whereas in beri beri the medulla is hypertrophied and the adrenaline content increased While the generative cells become atrophied in avitaminosis, no obvious change occurs in beri beri Resistance to infection is lowered in avitaminosis but not in beri beri, and from all these considerations it is concluded that the two diseases are radically different

21. The Kolmer Test for Syphilis

J A KOLMER (*Journ Lab and Clin Med* , April, 1924, p 468) discusses the advantages of his new method of performing the complement fixation test for syphilis, the full details of which will be found in the *American Journal of Syphilis*, 1922, vi, 89 He claims for it a high degree of sensitiveness and of specificity, and states that in a total of over 15 000 tests not a single non specific reaction has occurred M COHEN and S R HAYTHORN (ibid , p 476) have made a comparative series of tests on the serums of patients from diverse sources, using the new Kolmer method and their usual routine technique The latter is a modification of the original Wassermann sheep system, and is carried out with both a cholesterin saturated alcoholic extract of human heart and a pure lipoidal acetone insoluble fraction of an alcoholic extract of beef heart Besides the control tube for the detection of natural anti sheep amboceptor, a tube is also put up to measure the anti complementary properties of the serum Altogether 1,500 tests were made Disagreement between the two methods was found in 3 9 per cent of cases -that is, cases in which the reaction was definitely positive by one method and negative by the other A careful examination however, of these cases showed that they came mostly from patients in the later months of pregnancy or from patients receiving antisyphilitic treatment Minor disagreements were found in the partially positive test , but here the variations were rather in degree than actual contradictions Again, in fifteen of the tests a difference was found in the anti complementary titre of the serum On the whole, it was found that kolmer's test gave the larger number of positive results in treated syphilis, here the reaction persisted with his antigen after it had disappeared even with the cholesterinized antigen In the later months of pregnancy, too, Kolmer's test gave a higher proportion of positive results Summing up, Cohen and Haythorn conclude that the kolmer test is an excellent one, but that it appears to be open to most of the errors inherent in the routine method They reserve final judgement upon its value until they have extended their comparison W H KELLOG, A WELLS, and D BRAY (ibid , p 481) have likewise investigated the Kolmer method comparatively, and find that its delicacy is due to the particular antigen used, and to the adjustment between the volume of blood cells, the complement unit, and the total volume of the test Noguchi's antigen gives stronger reactions in definitely positive serums, but it is of less value in the weakly positive ones They conclude that the Kolmer test is of value as a standard of comparison, and seem to favour its introduction for general use

22 Local Skin Immunity to Anthrax

ACCORDING to Besredka, the skin is the only part of the body which is susceptible to anthrax, if the organisms are injected into the skin a progressive infection ensues If injected intravenously, intraperitoneally, or even subcutaneously, with adequate precautions against wounding the skin, no infection results and the animal remains well Moreover, just as the skin is the only organ which is susceptible to anthrax, so is the skin the only organ which can build up an immunity to anthrax After injecting the vaccine intracutaneously the animal becomes immune, but if it is injected in any other situation the animal remains susceptible To verify these statements S TADA (*Centralbl f Bakt* , April 30th, 1924, p 477) has conducted certain experiments on guinea pigs, taking care to arrange them in accordance with Besredka's technique In general the animals were given one tenth of a loopful of Vaccine 1, followed a week later by one tenth of a loopful of Vaccine 2, followed a week later by half a loopful of the same vaccine In some cases a third injection of this vaccine was given About ten days after the last dose of vaccine the animal was injected subcutaneously with one thousandth of a loopful of a living virulent culture of *B anthracis* In one series of experiments the animals were vaccinated cutaneously, in another subcutaneously, and in a third intramuscularly In each case 6 animals were used, together with 3 unvaccinated controls The results were quite clearly defined In each case 3 of the vaccinated animals died and 3 survived, the 3 control animals invariably succumbed He concludes therefore that the skin does not play any special role in immunity to anthrax , this immunity can be obtained equally well by cutaneous, subcutaneous, or intramuscular vaccination



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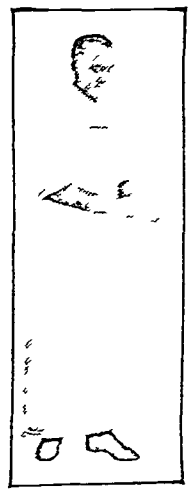
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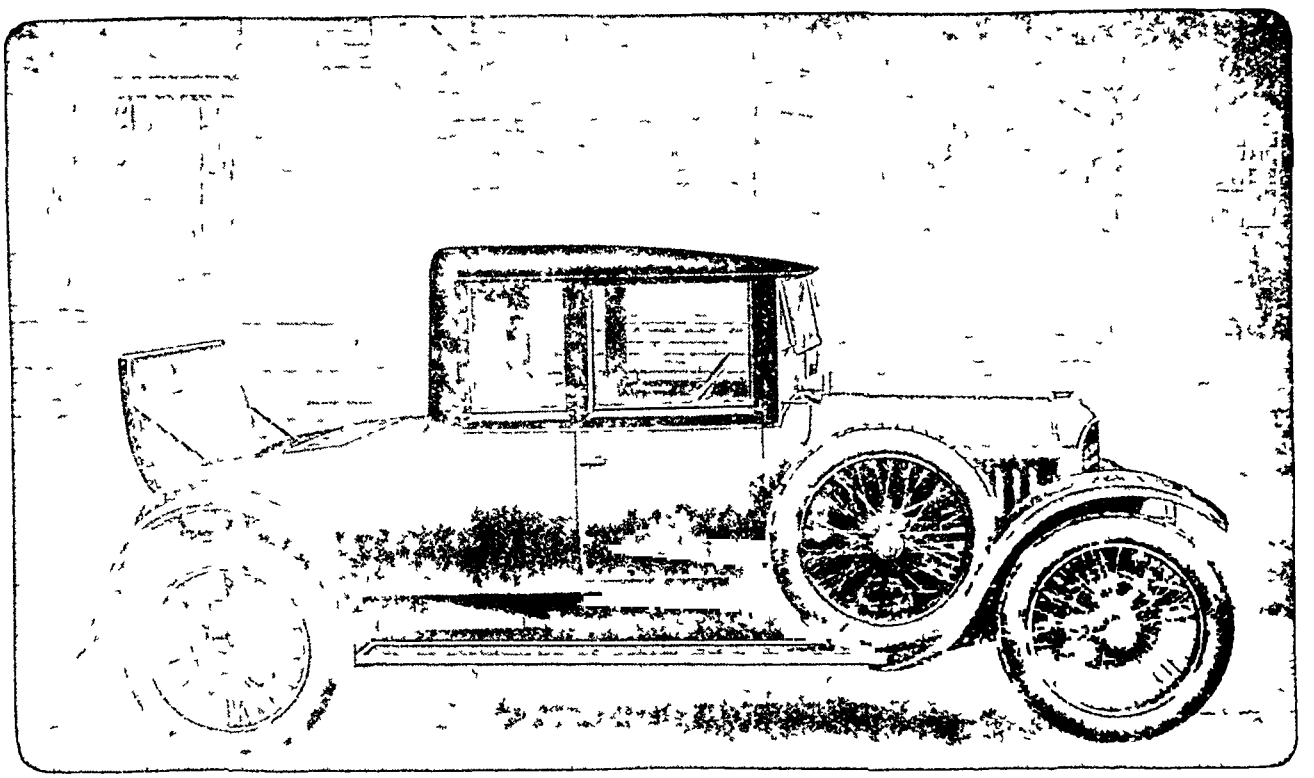
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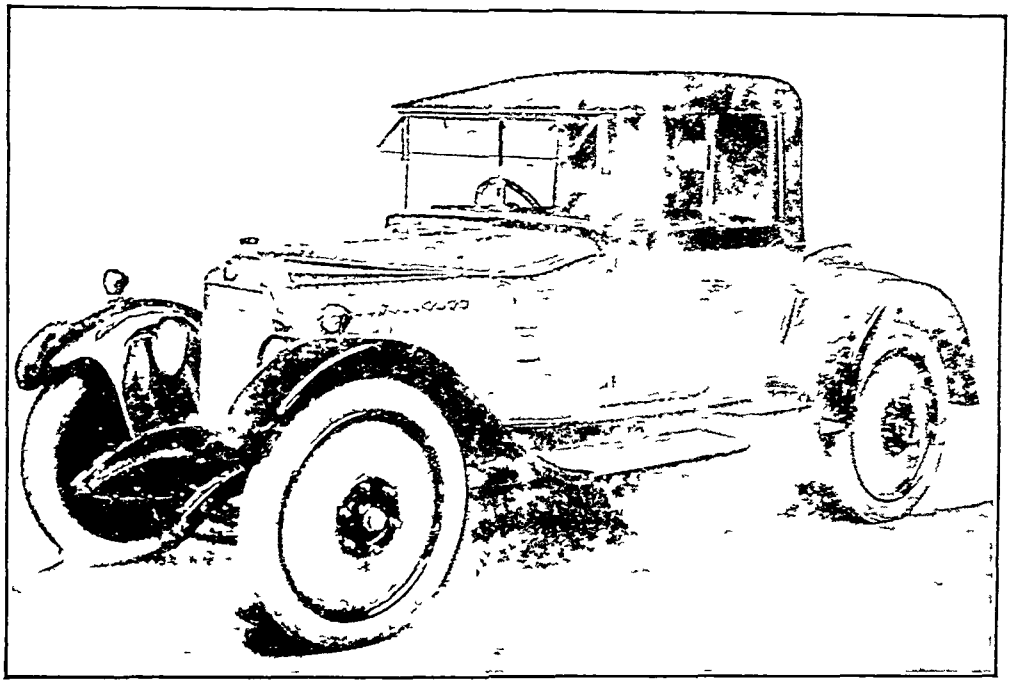
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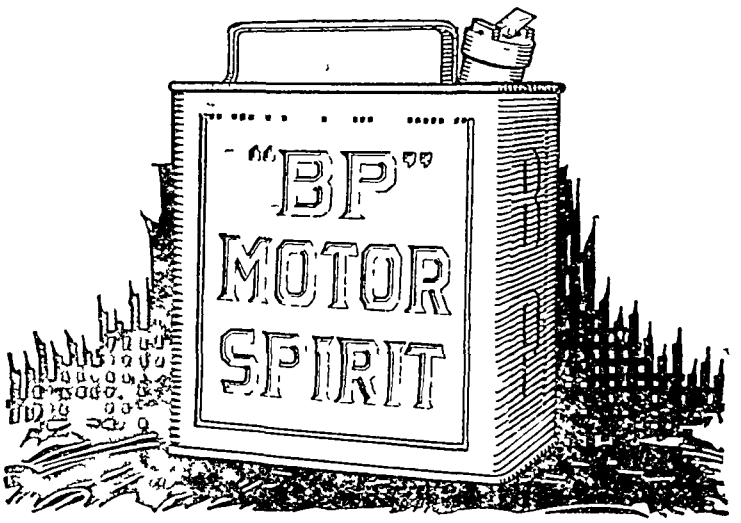
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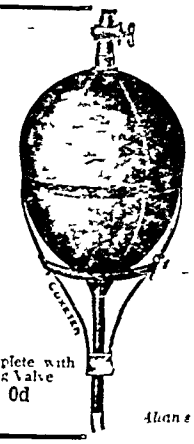
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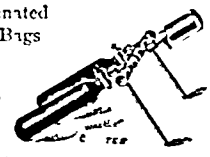
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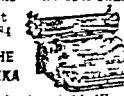
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BARNWOOD near GLOUCESTER

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Exclusively for PRIVATE PATIENTS of the UPPER AND MIDDLE CLASSES

This Institution is devoted to the care and treatment of persons of both sexes at moderate rates of payment

Voluntary boarders not under certificates are admitted

Under special circumstances the rates of payment may be reduced by the Committee

The MANOR HOUSE for Ladies only which is entirely separate from the Hospital and standing in its own grounds is utilised exclusively for voluntary patients

For further information apply to ARTHUR TOWNSEND M D the Medical Superintendent

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President The Right Hon the EARL MANVERS

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FOR MENTAL DISEASES,

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This Registered Hospital receives for treatment PRIVATE PATIENTS of the UPPER and MIDDLE CLASSES of both Sexes The Hospital, its branches (including a Seaside Home at Llanfairfechan, North Wales), and numerous villas are surrounded by over 1,000 acres of Park and Farm

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The Home stands in large grounds close to West Kensington Station

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For Mental Cases, with or without Certificates.

Ordinary Terms Five Guineas per week

Including Separate Bedrooms for all suitable Cases without extra charge)

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Telegrams "RELIEF OLD CATTON" *Telephone* 290 NORWICH

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NORWICH

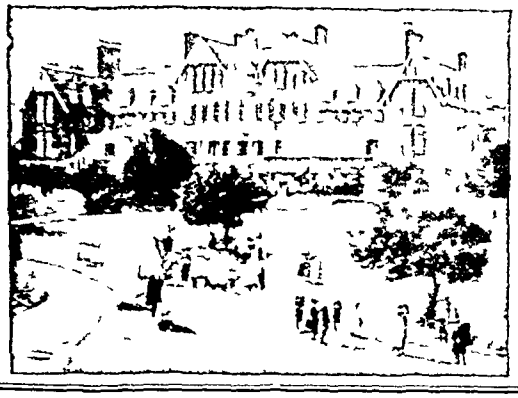
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The normal stay is four weeks but some wards are reserved for chronic cases requiring special treatment and for these a lengthened stay may under some circumstances be granted and the age limit raised to 14 for Boys and 16 for Girls

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Patients treated and classified according to their social and mental condition Terms from £2 2s. Od. Private apartments on special terms Established for 60 years Under the same management 55 years Recovery rate 50 per cent. Situated midway between MANCHESTER and LIVERPOOL, Two miles from Newton-le-Willows Station on the L. & N. W. Railway connecting it with all parts

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NORTHWOODS HOUSE,
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For PRIVATE TREATMENT OF MENTAL DISEASES,

Situated in a large park in a healthy and picturesque locality easily accessible by rail via Bristol Winterbourne, Patchway or Yate Station. Uncertified Boarders received.—For further information see Medical Directory page 2177, Terms moderate—Dr J D THOMAS and Dr J R P PHILLIPS O.B.E., Resident Physicians and Licensees

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Extensive Grounds Detached Villas Chapel Garden and Dairy Produce from own Farm.

Terms very moderate *Illustrated Brochure on application to The Secretary*

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A PRIVATE MENTAL HOSPITAL for the care and treatment of persons of the upper and middle classes of both sexes
The House is situated on an estate of 200 acres, and has extensive pleasure grounds and a Farm connected with it It lies between Bristol and Bath, 3 miles from Bristol Station, and within 2½ hours' journey from London
In addition to the main building there are several villas, completely detached and pleasantly situated in their own grounds, where there is accommodation for suitable cases Patients can be received without certificates as Voluntary Boarders,
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This Institution has now opened in an adjoining house a
PRIVATE NURSING HOME FOR CHILDREN
with the full equipment proper to a leading London Hospital, including THEATRE ELECTRICAL SUN BATHS, X-RAY TREATMENT, PATHOLOGY &c Terms £5 5s a week
For further particulars apply to the Secretary

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A first class Country Mansion especially adapted for the reception of a limited number of ladies and gentlemen mentally affected
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A HOUSE licensed for the reception of a limited number of ladies of unsound mind Both certified and voluntary patients received This is a large country house with beautiful grounds and park, 5 miles from Sheffield Station Grange Lane G C Railway Sheffield Telephone No 34 Rotherham Resident Physician—GILBERT E MOULD, L R C P M R C S Consulting Physician—CROCHLEY CLAPHAM M D F R C P E

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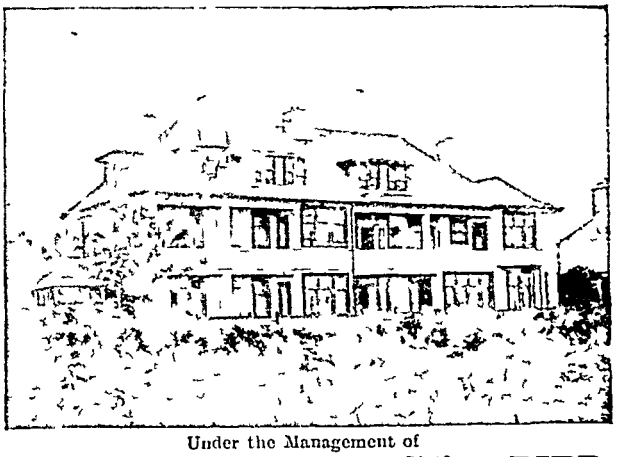
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Telephone & Telegrams Haynes Brentwood, 45"

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Large grounds. 400 ft. above sea. HOME for LADIES Mentally Afflicted Voluntary Boarders received Stations Brentwood, 1 mile Shenfield 1 mile Liverpool Street, 26 minutes —Apply Dr HAYNES

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Neurasthenic, Rest Cure and
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PRIVATE HOME for
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A PRIVATE HOME for elderly ladies and gentlemen or for delicate people requiring care and attention or patients recovering from operations or from non infectious illness Miss BIRD who has had hospital and other experience gives visitors her personal care and attention, and when required skilled nursing is provided Many of the bedrooms overlook the sea, and several have private balconies
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LARGEST AND MOST COMPLETE.

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Unrivalled suites of Baths for Ladies and for Gentlemen, including Turkish and Russian Baths, Aix and Vichy Douches, Massage, Plombières treatment, an Electric Installation for Baths and other Medical purposes, Dowsing Radiant Heat, D'Arsonval High Frequency, Nauheim Baths, etc Special provision for Invalids Milk from own farm Large Winter Garden Night attendance Rooms well ventilated and all bedrooms warmed in Winter A large Staff (upwards of 60) of trained Male and Female Nurses, Masseurs, and Attendants

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With finest Sun lounge and Marine Balcony on the South Coast
Every kind of Bath Plombière Lavage
Every kind of Massage
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Every kind of Diet.
Carlsbad and Vichy Waters, &c
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FULLY LICENSED
Terms as arranged with B M A

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All modern Baths Douches Massage and Electrical treatments. Resident Physician R. R COLLIS HALLOWES, B A., M B, B Ch B.A.O
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Electric Light Central Heating Electric Lift, three Billiard Tables Ball Room Winter Garden Swimming Bath Hard and Grass Tennis Courts Croquet Lawn Golf Course
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Wanted—Private Home,
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Famous Natural Brine Baths. Golf, Music, etc.
Illustrated Booklet etc free from Baths Manager
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COMPLIMENTARY FACILITIES TO MEDICAL MEN

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PRIVATE WARDS, 5 Gns per week, exclusive of Surgeons fees but inclusive of X Rays, splints, plasters massage and gymnasium.
A limited number of beds are available in the GENERAL WARDS at 2½ Gns per week inclusive
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Established in 1909 for Open air Treatment of Pulmonary Tuberculosis

Bracing situation 630 feet above sea level sheltered from north and east
All forms of recognized Treatment including Artificial Pneumothorax, available
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FOR THE OPEN-AIR TREATMENT OF

PULMONARY TUBERCULOSIS and ALLIED DISEASES

At BANCHORY and MURTLE.

Medical Director - - DAVID LAWSON, M A, M D F R S E

These Sanatoria are situated amongst **Ideal Surroundings** in **Middle Deeside**, the reputation of whose **Climate** in the treatment of Lung Diseases is well established

Both Institutions are well equipped with **Research Laboratory, Throat Room, Dental facilities,** and powerful **X-Ray Plant** **Full Day and Night Nursing Staffs** are employed

Special Treatment by artificial **Pneumothorax** (with X ray control), the various **Tuberculins,** and Autogenous **Vaccines,** etc, is available without extra charge.



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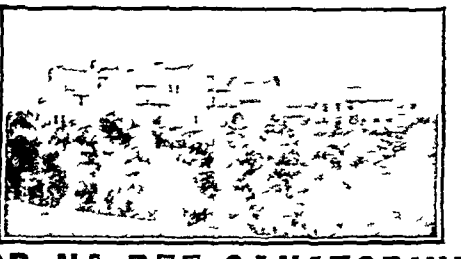
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Physician

Dr IAN STUTHEPS STEWART

Assistant Physician Dr J C LORRAINE

For particulars apply SECRETARY



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AT MURTLE, ABERDEENSHIRE

Senior Physician Dr J M JOHNSTON

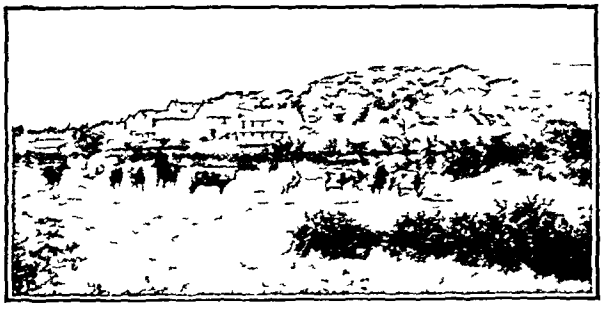
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The Scottish Branch of the British Red Cross Society is prepared to contribute towards payment of the fees of ex Officers and Nurses recommended by the Society and ex Officers and Nurses obtain priority of admission.

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Specially built for the treatment of Pulmonary and other forms of Tuberculosis Aspect S S W, on a carefully chosen site Pure, bracing air High sunshine record Heliotherapy Arc light treatment One mile from the coast Electric light throughout X ray installation Full day and night Nursing Staff

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This Sanatorium is established for the treatment of Tuberculosis of the Lungs and of the Pleural Cavities It is situated on the midst of a large area of park land at a height of 450 feet above sea level on the south west slopes of mountains rising to over 1 800 feet which protect it from north and east winds and provide many miles of graduated walks with magnificent views

Trained nursing staff day and night X Ray apparatus Treatment by Artificial Pneumothorax in suitable cases Electric lighting in every room Heating by Radiators

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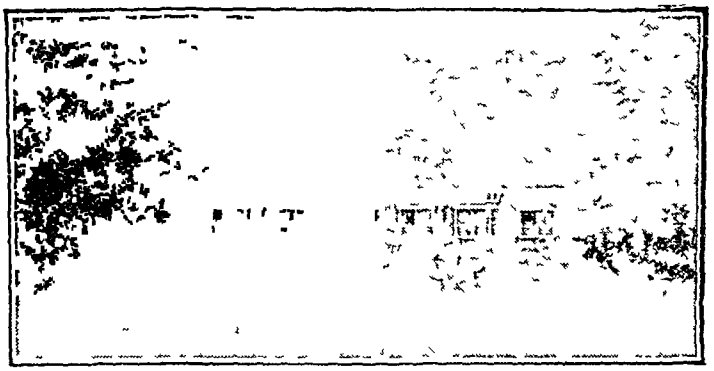
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All forms of treatment, including X-ray, Vaccines, and Pneumothorax in suitable cases Trained Nurses Individual attention

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PENDYFFRYN HALL SANATORIUM (EST. 1900)

Artificial Pneumothorax and all Modern Methods of Treating Tuberculosis available under Ideal Conditions
Insulin Administration (with Blood Sugar Control) available for Suitable Cases

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Matron Miss L HANSON, late King Edward VII Sanatorium, MIDHURST, assisted by a full Day and Night Nursing Staff

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Tuberculosis Cure Station, 5,000 feet high, SWITZERLAND.

Accommodation for 100 Patients

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Within easy reach of the Moor Radiographic Installation, Central Heating, Electric Light Efficient Treatment combined with Individual Comfort and Minimum Restrictions Res Phys C H BERRY, M R C S, L R C P, Miss M V SAUL, M R C S, L R C P —Illustrated Prospectus on request, C H BERRY, M R C S, Dartmoor Sanatorium, Chagford, Devonshire Tele 11 Chagford

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(University of London)

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SITUATION Between a large population providing clinical material and one of the best residential districts thus enabling students to live in close proximity to their work

CLINICAL UNITS IN MEDICINE AND SURGERY Certain members of the Medical and Surgical Staff devote their whole time to teaching and research

NEARLY 1 000 BEDS available for teaching—additional clinical material being provided by affiliation to the Paddington Hospital and other Institutions

ENTRANCE and RESEARCH SCHOLARSHIPS to the value of £1 200 are awarded annually

APPOINTMENTS varying in value up to £750 per annum open to students after qualification

For further particulars and illustrated prospectus apply to the School Secretary

C M WILSON, (M C) M D, F R C P *Dean.*

OAKLANDS SCHOOL,
Jersey, Channel Islands

PREPARATORY SCHOOL FOR BOYS.

Founders
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The School stands in its own magnificent grounds of 18 acres Own farm Beautiful climate healthy situation Every modern convenience Electric light

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SCHOOLS for BOYS and GIRLS, TUTORS for ARMY, and ALL EXAMS.

M[illegible] and TUT[illegible] be p[illegible] sending (free of charge) prospectuses and TRUSTWORTHY INFORMATION

T[illegible] preferred be given J & [illegible] Street London ts 143 Cannon Telephone 5053 Central.

Seamen's Hospital Society.

LONDON SCHOOL of TROPICAL MEDICINE
Endsleigh Gardens, N W 1

Next Session will commence 2nd September, 1924

For Prospectus and further particulars apply to The Secretary, London School of Tropical Medicine Endsleigh Gardens N W, or to the Head Office, Seamen's Hospital, Greenwich London S E

SCHOOL FOR THE DEAF.
Also for cure of speech defects in hearing children
KINGSFIELD HOUSE, Oxhey, Herts
Principal Miss BULLOCK (Qualified Teacher of the Deaf) Large House and garden Outdoor life games Close Bushey & Oxhey Stations L M S R & Bakerloo

North-East London POST-GRADUATE COLLEGE
PRINCE OF WALES'S GENERAL HOSPITAL

An INTENSIVE COURSE extending over a fortnight and comprising Lectures Demonstrations and Clinical Work will commence on July 21st Those proposing to take the Course should send in their names to the Secretary of the Fellowship of Medicine 1 Wimpole Street, W 1 if possible by Friday July 18th

Shropshire Orthopædic HOSPITAL Gobowen near Oswestry

COUNTRY OPEN AIR WARDS 300 BEDS

GIRL STUDENTS WANTED to learn Orthopædic Work and prepare for the Conjoint Examination of the C S M M G Three years training Salary, first year, £16 second year £20 all found, uniform —Apply, Miss HUNT, R R C

THE FELLOWSHIP OF MEDICINE AND POST-GRADUATE MEDICAL ASSOCIATION

1, Wimpole Street, London, W. 1. Telephone MAYFAIR 2236

(By kind permission of the Royal Society of Medicine)

Post Graduate Courses in the Associated General and Special Hospitals are arranged for August and September in the following subjects Diseases of the Chest Children Diseases Neurology Dermatology, Infants Diseases Ophthalmology Psychological Medicine and a fortnight's Intensive Course in Medicine and Surgery

Further particulars of the Courses with the *Bulletin* giving information of the clinical opportunities at the London Hospitals may be had from the Secretary HERBERT J PATERSON M C ARTHUR J WHITING M.D., Hon Secretaries

MIDDLESEX HOSPITAL MEDICAL SCHOOL, W.1.

Primary F R C S

Classes in ANATOMY and PHYSIOLOGY will commence on July 14th and 17th respectively There will be 4 weeks vacation (August–September) after which the classes will resume and continue until the date of the Examination

Anatomy
including Embryology

Mondays Tuesdays Wednesdays Thursdays and Fridays at 12 noon

Members of the Class will be able to use the Dissecting Room for the purpose of reading with dissected parts at any time during school hours

Physiology

From 3 to 5 days weekly throughout the Course beginning July 17th at 10 a m VIVA VOCE CLASSES, HISTOLOGY CLASSES

The inclusive fee for both subjects is £16 16s (for one subject £8 8s)

Intending candidates are reminded that it is desirable to join these classes at the commencement of the Course if possible

For further particulars apply to A E WEBB-JOHNSON (Dean) C B E D S O F R C S or to R A FOLEY School Secretary

POST-GRADUATE TEACHING
WEST LONDON HOSPITAL

Continuous Clinical Work in all Departments—

CLINICAL ASSISTANTSHIPS—F R C S (FINAL) COURSE.

For further particulars apply to Mr H J SIMSON Dean West London Hospital Hammersmith W 6

STAMMERING, SPEECH DEFECTS

BEHNKE METHOD Estab 1862 Case non resident treated at 39 Earl's Court Square S W 5 and in residence in the Summer holidays at Miss BEHNKE's house on the Chilterns

"Pre-eminent success in the education and treatment of stammering and other speech defects. —*The Times*

"Thoroughly physiological principles. —*The Lancet*

"The method is scientifically correct and perfectly effective. —*Guy's Hospital Gazette*

STAMMERING, CLEFT PALATE SPEECH LISPING, 39 of Miss BEHNKE, 39 Earl's Court Sq S W 5

DIPLOMA IN PSYCHOLOGICAL MEDICINE.
Diploma in OPHTHALMOLOGY

Short Intensive Postal Revision Courses in Preparation for these Diplomas —Apply to the SECRETARY Medical Correspondence College 19 Welbeck Street London W 1

MEDICAL COACHING
for STUDENTS & PRACTITIONERS

Are you preparing for any Medical Examination?
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Enrol for a Course of Postal Tuition for your Examination at the

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19, Welbeck Street, Cavendish Square, W 1

Courses always in progress for the

1st 2nd and Final M B B S London and all other Universities.
1st, 2nd and Final Conjoint Edinburgh Triple, and L.M.S S.A.
D P H (Cantab Lond Vict Dublin &c.)
M D London, M R C P London and Edinburgh
M D Durham for Practitioners of 15 years standing.
M D Thesis (all Universities British and Colonial)
F R C S of England Edinburgh, and Ireland M S Lond M C Cantab &c.
Diploma in Psychological Medicine.
Diploma in Tropical Medicine.
Diploma in Ophthalmology
Dental Examinations

DO NOT RISK FAILURE!

VALUABLE BOOK FREE!

Write at once for our Guide to Medical Examination" and a copy will be sent post free by return

ROYAL ARMY MEDICAL CORPS.

EXAMINATION FOR COMMISSIONS

An Examination for not less than 20 Commissions in the Royal Army Medical Corps will be held on 30th July 1924

Applications to compete should be made to THE UNDER SECRETARY OF STATE the War Office not later than 20 th July 1924 The presence of Candidates will be required in London from 2 th July

Students who have entered for their Final Professional Examination in July may submit ... will be subject ... registered

...tatement Service on ...ETARY OF

R A M C.
ENTRANCE EXAMINATION announced JULY 30th, 1924.
20 COMMISSIONS.

Prospective candidates should write for full details of Short Intensive Postal Revision Course The remarkable results obtained by our students in the past include FIRST PLACE (twice) SECOND F ... I

19 Welbeck Street London W 1

F.R.C.S (Edin)

A TUTORIAL CLASS for the next Examination commences shortly

Particulars from CHAS R WHITTAKER, F P C S Anatomical Department Surgeons Hall, Edinburgh

UNIVERSITY EXAMINATION POSTAL INSTITUTION.

17, RED LION SQUARE, LONDON W C 1
Telephone CENTRAL 3313

Principal Mr E S WEYMOUTH, M A. (Lond.)
POSTAL OR ORAL PREPARATION FOR ALL MEDICAL EXAMINATIONS
(Forty years' experience in Postal Tuition)

SOME SUCCESSES

M.D.(Lond.), 1901 23 (8 Gold Medalists during 1913 23) 271
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M.B ,B S.(Lond) *Final* 1906 23 (Completed Exam) 154
Primary F R C S (Eng.), 1906-23 - 112
Final F R C S (Eng) , 1906-23 79
M.R.C.P.(Lond.), 1914 24 76
D.P.H. (Various) 1906-24 - (Completed Exam) 219
F.R C S (Edin), 1918 23 - 21
M R.C S, L R C P *Final* 1910 24 (Completed Exam.) 224
M.D (Dur.) (Practitioners) 1906 23 32
M D Various By Thesis Numerous successes
M B (Cantab , &c), First Second and Final

Special Postal Courses for these Diplomas —

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D.T.M. & H | **D.O.M S.**

ORAL CLASSES for M D M.R.C P & F P C S also for M B B S and for Conjoint (Second and Final).

Medical and Surgical Clinics

Museum and Microscope work

For MEDICAL PROSPECTUS (52 pages) List of Tutors and particulars about any Medical Examination apply to the Principal Mr E. S WEYMOUTH

University of Cambridge

Diplomas in (a) PUBLIC HEALTH (b) HYGIENE (for foreign graduates) and (c) TROPICAL MEDICINE & HYGIENE

COURSES OF INSTRUCTION in the subjects of the examinations under the New Regulations will commence 10th October 1924 Full particulars to be obtained from Mr I E PURSE Public Health Chemical Laboratory Medical School Cambridge

Liverpool School of Tropical MEDICINE.

COURSES OF INSTRUCTION (lasting three months) for the Diploma, and also in Veterinary Parasitology commence about SEPTEMBER 1st and JANUARY 7th.—Prospectus from the Hon. DEAN School of Tropical Medicine University of Liverpool

Preliminary Examinations

The COLLEGE OF PRECEPTORS holds Preliminary Examinations for Medical and Dental Students in London and Provincial Centres in March June, September and December For Regulations apply to the Secretary College of Preceptors, Bloomsbury Square, London W C 1

Small Private Residential

SCHOOL established 21 yrs for the Physical and Mental Development of ABNORMAL and BACKWARD PUPILS Special Department Pupils over school age Under Medical supervision — Prospectus Mrs MERKLEJOHN Principal St Paul's House Upper Maze Hill St Leonards on Sea

Home School for Backward

and [illegible] CHILDREN (established 1901) Specialists educational methods and horticulture, garden games and occupations Extra charge if desired Elder girls admitted Terms moderate — Apply Principal Hatherley Brake Cheltenham

University of Hong Kong

FACULTY OF MEDICINE

PROFESSOR OF OBSTETRICS AND GYNÆCOLOGY

Applications are invited, from duly qualified medical men, of not more than 35 years of age, who have had the requisite experience, for the Chair of [illegible] ed by the Rock of Hong Kong, [illegible] sing by annual [illegible] imum, payable [illegible] In addition, [illegible] owance of $150 per mensem will be [illegible] University will also provide a first class passage (P and O) for the successful candidate, and his wife, if married, from London to Hong Kong, and will pay half sterling salary during the voyage to Hong Kong Similar passages will be provided on the termination of the appointment The Professor will be allowed to take part in the University Superannuation scheme A limited consulting practice is permitted Nine months leave will be granted after 1 years service A probationary period of three years will be required before permanent appointment The selected candidate will not be required to arrive in Hong Kong until early in 1925

Applications for the post should be addressed to the Chief Medical Officer, Ministry of Health, Whitehall, London, S W 1 (from whom further details may be obtained), before July 25th 1924

Countess of Dufferin's Fund

WOMEN'S MEDICAL SERVICE FOR INDIA

Medical Woman required in September as LECTURER IN PHYSIOLOGY for the Lady Hardinge Medical College Delhi Teaching experience in subject essential Emoluments Rs 750 p m [illegible] provident fund

Applications on [illegible] orm (sent on written request) with copies of three recent testimonials should reach the Honorary Secretary U K Branch, Dufferin Fund c/o Major General J B SMITH India Office Whitehall S W not later than July 18th 1924

Guy's Hospital Dental School

Applications are invited for the post of SENIOR DENTAL OFFICER AND CLINICAL TUTOR The duties include general administrative supervision of the Conservation Room and the giving of Practical Demonstrations The hours of attendance are from 9 a m until 12 30 p m daily

Commencing salary £300 per annum rising by yearly increases of £25 to £400 per annum

Applications to be lodged not later than Friday July 18th 1924 with the Dean Guy's Hospital Medical School London Bridge S E 1 from whom further particulars may be obtained

St Bartholomew's Hospital

MEDICAL COLLEGE

DEMONSTRATOR OF PHYSIOLOGY

Applications are invited for the post of Demonstrator of Physiology

Particulars may be obtained on application to the Dean, St Bartholomew's Medical College E C 1 to whom applications, with copies of testimonials, should be sent before July 12th, 1924

June 3rd 1924

Victoria Hospital for

CHILDREN

Tite Street Chelsea S W 3

The Committee of Management invite applications for the post of OPHTHALMIC SURGEON which falls vacant August 1st

Candidates must be Fellows of the Royal College of Surgeons of England (not practising Midwifery or Pharmacy) Candidates are expected to call on Members of the Medical Staff

Applications with copies of testimonials to be sent to the Secretary at the Hospital on or before Saturday July 12th 1924

By Order
D St JOHN BAMFORD
Secretary

Richard Murray Hospital,

Blackhill, Co Durham

RESIDENT MEDICAL OFFICER

Applications are invited for the post of Resident Medical Officer (male or female) at the above Hospital which has accommodation for 16 maternity cases and 16 surgical and medical cases The salary offered is £400 per annum rising by increments of £50 to £500 per annum with [illegible] ary in addition [illegible] d registered between the [illegible] nce in Mid [illegible] which of the Board [illegible] e [illegible] will be [illegible] vision of an adjacent small Convalescent Home for mothers and young children [illegible] included in the Superannuation County Council and a [illegible] t will be made from the salary in accordance with the provisions of the Local Government and Other Officers Superannuation Act 1922 and the appointment will be subject to passing the medical examination in connection therewith

The appointment will be terminable by three months notice on either side

Applications marked Resident Medical Officer together with copies of three recent testimonials must be received by the undersigned not later than July 11th, 1924

W T McDERMID
Shire Hall Secretary to the Joint Board
Durham June 3rd 1924

The Queen's Hospital for

CHILDREN

Hackney Road Bethnal Green E 2

Telephones Dalston 30e and 534

The Committee invite applications for the post of ASSISTANT SURGEON to the Ear Nose, and Throat Department

Attendance required on Thursday mornings for about three hours commencing at 9 30 Lunch provided and honorarium to cover travelling expenses

Candidates must be Fellows by examination of the Royal College of Surgeons England

Applications with copies of three recent testimonials which may be printed or typewritten, should be sent on or before August 30th to the undersigned, from whom further particulars may be obtained

T GLENTON-KERR, Secretary

June 20th 1924

Royal Hants County

HOSPITAL Winchester

Applications are invited for the appointment of MATRON

Candidates must hold a certificate of training at a General Hospital and should have experience in Hospital management the training of Probationers and the Direction of a staff of Private Nurses

Salary £300 per annum with board lodging, and Laundry

Applications with testimonials not exceeding five in number must reach the undersigned not later than Monday July 21st 1924

Canvassing strictly prohibited

HERBERT MASLEN Secretary

West Norfolk and King's

LYNN HOSPITAL

RESIDENT SURGICAL OFFICER required at an early date Salary £300—£350 The Hospital is an active surgical centre and the post offers opportunity for much major surgery

Applications stating age to be addressed to The Secretary West Norfolk and Kings Lynn Hospital King's Lynn

Leicester Royal Infirmary,

(420 Beds)

There is a vacancy for a HOUSE PHYSICIAN Appointment for six months salary at the rate of £125 per annum with board apartments and laundry

Applications with copies of three recent testimonials to be made by July 11th to the House Governor and Secretary of the Infirmary

Northampton County Mental

HOSPITAL Berrywood nr Northampton

LOCUM TENENS MEDICAL OFFICER (male) wanted for about ten weeks beginning July 28th Salary £8 8s per week together with residence board and laundry

Applications stating qualifications nationality and copies of recent testimonials to be forwarded to the Medical Superintendent

Senior Medical Officer

required for GILBERT and ELLICE ISLANDS COLONY Salary £650 per annum rising by [illegible] of £25 to £750 per annum [illegible] rnished provided and [illegible] wife and children not exceeding five passages in all Post is pensionable

Candidates should be between 25 and 35 with good medical qualifications and some op rating experience There are opportunities for original work and a taste for research is desirable

Intending applicants should write to the Private Secretary (Appointments) Colonial Office S W 1 who will furnish them with application forms and further particulars

Royal Sea Bathing Hospital,

Margate for Surgical Tuberculosis

A HOUSE SURGEON will be required in August The salary is at the rate of £200 per annum with board residence attendance and laundry

Candidates for the post must be legally qualified and registered The appointment is for six months but may be extended for a further period of six months

There are 260 beds for adults and children which afford special opportunities for the study of surgical tuberculosis

Applications stating age previous appointments with copies of three recent testimonials should be sent to the Secretary R S B H Offices 15 York Buildings Adelphi London W C 2

St Mary's Hospital W 2.

MALE CASUALTY HOUSE SURGEON

Applications are invited from duly qualified men for the post of Casualty House Surgeon

Candidates must have been House Surgeons for a full period of office to this Hospital or to some other [illegible] the board [illegible] ium with board and [illegible] nt is for six months

Applications with copies of testimonials not exceeding three in number should reach the undersigned (from whom particulars of the office may be obtained) on or before Thursday July 10th The successful candidate will be expected to take up his duties immediately

By order
W PARKES
June 28th 1924 Secretary

Metropolitan Hospital

Kingsland Road E 8

The General Committee are prepared to receive applications for the appointment of an ASSISTANT DENTAL SURGEON

Candidates must be Licentiates in Dental Surgery [illegible] and of the Staff

Applications with copies of three recent testimonials must reach the undersigned not later than Tuesday July 22nd 1924

HERBERT F RUTHERFORD
Secretary and House Governor

Norfolk & Norwich Hospital,

Norwich

ANÆSTHETIST (Woman) required Salary (living out) £300 per annum

Cer [illegible] cati [illegible] ens [illegible] to the undersigned from whom further particulars of the post can be obtained not later than Tuesday July 15th

FRANK INCH,
July 4th 1924 Secretary

Queen's Hospital for

CHILDREN, Hackney Road London E 2

Telephones Dalston 30e & 534

ASSISTANT CASUALTY HOUSE SURGEON required on September 1st Six months appointment Salary £100 per annum with board residence and washing Candidates should be doubly qualified

Applications which must be made on forms to be obtained from the Secretary should be sent in with copies of testimonials on or before August 9th

T GLENTON KERR
June 28th 1924 Secretary

The Middlesex Hospital, W 1.

Applications are invited for the post of RESIDENT MEDICAL OFFICER at a commencing salary of £250 with board residence and laundry and further emoluments

Candidates must be registered Medical Practitioners and not less than 25 years of age

Applications should be submitted not later than 12 noon on Tuesday July 15th 1924

For further particulars apply to the undersigned

WALTER REWLEY
Secretary Superintendent

APPOINTMENTS—Important Notice.

(a) British Islands.

Medical Practitioners are requested not to apply for any appointment referred to in the following table without having first communicated with the Medical Secretary of the British Medical Association, 429, Strand London, W C 2

Town or District	Town or District.	Town or District
CONTRACT PRACTICE.		
ENGLAND	**WALES** *(continued)*	**PUBLIC HEALTH** *(continued)*
CANNOCK CHASE AND DISTRICT *(Collieries Friendly Societies Appointments)*	TONDU & ABERKENFIG GLAMORGAN *(Workmen's Medical Scheme.)*	JARROW BOROUGH *(Medical Officer of Health)*
MIDDLESBOROUGH *(Medical Aid Associations or Workmen's Clubs)*	**PUBLIC HEALTH.**	LINCOLN CITY AND COUNTY BOROUGH. *(Medical Officer of Health)*
SOUTH BANK & LSTON *(Medical Aid Associations or Workmen's Clubs)*	ABERDEENSHIRE EDUCATION AUTHORITY *(Assistant School Medical Officer)*	LINCOLN CITY EDUCATION AUTHORITY *(Woman Assistant School Medical Officer)*
WALES.	ARGYLLSHIRE EDUCATION AUTHORITY *(Executive School Medical Officer)*	MIDDLESBROUGH EDUCATION COMMITTEE *(Assistant School Medical Officer)*
ABERTRIDWR GLAMORGAN *(Windsor Colliery (Medical Scheme)*	BARNSLEY COUNTY BOROUGH *(Assistant Medical Officer of Health and Assistant School Medical Officer)*	NORFOLK EDUCATION COMMITTEE. *(Assistant School Education Officer)*
EBBW VALE MON *(Workmen's Medical Society)*	FIFE EDUCATION AUTHORITY *(Assistant School Medical Officer)*	NORTHUMBERLAND COUNTY COUNCIL *(Woman Assistant Medical Officer of Health)*
GILFACH GOCH GLAMORGAN *(Workmen's Medical Scheme)*	GELLYGAER URBAN DISTRICT COUNCIL *(Medical Officer of Health)*	NOTTINGHAMSHIRE *(County Medical Officer of Health)*
LLWYNYPIA CLYDACH VALE PENYGRAIG GLAMORGAN *(Workmen's Medical Scheme)*	HUDDERSFIELD COUNTY BOROUGH *(Woman Assistant Medical Officer of Health.)*	SOUTHWARK METROPOLITAN BOROUGH *(Tuberculosis Officer.)*
MARDY GLAMORGAN *(Workmen's Medical Scheme)*	HUNTINGDON ADMINISTRATIVE COUNTY *(Assistant County Medical Officer and Assistant School Medical Officer*	STOKE ON TRENT EDUCATION COMMITTEE *(Assistant School Medical Officer)*
OAKDALE MON *(Medical Officer for Medical Aid Association)*		YORKSHIRE NORTH RIDING COUNTY COUNCIL. *(Assistant School Medical Officer)*
OGMORE VALLEY GLAMORGAN *(Wyndham Colliery Medical Aid Society) (Workmen's Medical Scheme)*		

(b) Colonial Medical Service.—WINDWARD ISLANDS MEDICAL SERVICE (Grenada with Carriacou St Vincent and St Lucia)

(c) Overseas Appointments.

Medical Practitioners are requested not to apply to any appointment referred to in the following table without having first communicated with the Honorary Secretary of the Division or Branch named in the second column or with the Medical Secretary of the British Medical Association 429, Strand, London, W C 2

Town or District	Hon Sec of Division or Branch	Town or District	Hon Sec of Division or Branch	Town or District.	Hon Sec of Division or Branch
NEW SOUTH WALES. *(All Friendly Society Appointments.)*	Dr R H TODD (Hon Sec New South Wales Branch) B M A. Building 30-34 Elizabeth Street Sydney N S W	QUEENSLAND *(Brisbane Associated Friendly Societies' Institute.)*	Dr R. MARSHALL ALLAN (Hon Sec Queensland Branch) Adelaide Street Brisbane	VICTORIA *(All Institute or Medical Dispensaries)*	Dr FRANK DAVIES (Hon Sec., Victorian Branch) Medical Society Hall East Melbourne, Victoria.
				WESTERN AUSTRALIA. *(Contract and Lodge Practices.)*	Hon Sec., Western Australian Branch No 6 Bank of New South Wales Chambers St Georges Terrace Perth

Address 429 Strand, W C 2.
July 2nd, 1924.

By order of the Council of the British Medical Association
ALFRED COX, Medical Secretary

Hampstead General & North-West London Hospital,

Hamm rsmith Road, W (160 Beds.)

APPOINTMENT OF GYNÆCOLOGIST

[illegible] the appointment of Candidates must be Surgeon. England, llege of Physician. London

Application stating age qualifications and experience accompanied by copies of no more three testimonials should reach the Hospital not later than noon on July 16th

Further particulars may be obtained on application to the Secretary

Northampton General HOSPITAL.

The Board of Management invite applications for the post of SECRETARY SUPERINTENDENT Salary commencing at £400 with residence fuel and lighting Candidates must not be under 30 nor over 45 years of age Previous Hospital experience essential

Apply stating age and experience with copies of testimonial not later than July 18th to the undersigned from whom full particulars of the appointment can be obtained Personal canvassing will disqualify

C S RISBEE
June 30th, 1924. Secretary Superintendent

Calderstones (Certified

Institution for Mental Defectives)
Whalley near Blackburn.

Wanted ASSISTANT MEDICAL OFFICER (male) under 30 years of age single Fully qualified and registered Hospital experience and ability to correct errors of refraction will be an advantage Salary £300 per annum plus a fluctuating bonus which is at present £140 16s. 11d together with board, apartments, and washing

Application with copies of three recent testimonials to be sent to the Medical Superintendent.

St Thomas's Hospital

VACANCY

The appointment of a VISITING ANÆSTHETIST will be made by election

Applications with testimonials should be forwarded to G Q ROBERTS, Secretary not later than July 25th 1924.

Canterbury Mental Hospital,

Canterbury

LOCUM TENENS ASSISTANT MEDICAL OFFICER required for months of August and September Terms 1 guinea a day and found.

Write with particulars to the Medical Superintendent.

West London Hospital,

Hammersmith Road, W (160 Beds.)

Applications are invited for the post of ASSISTANT ANÆSTHETIST Candidates are required to be registered under the Medical Act, to send applications with copies of testimonials so as to reach me by Wednesday July 16th, to attend the Medical Council on Friday July 18th at 4.30 p.m. and prior to that date to call upon and send copies of their applications and testimonials to the members thereof to assist in canvassing but nevertheless to send copies of the applications and testimonials to the members of the Board of Management, who will elect on Tuesday July 22nd, at 3 p.m. when candidates must be in attendance H A MADGE Secretary

Royal Chest Hospital,

City Road E C
(Royal Northern Group of Hospitals.)

A vacancy occurs for a PHYSICIAN with Charge of Out-patient Candidates must possess the degree of M D or M B obtained by examination at [illegible] and be Fellows or Members of [illegible] tion

Apply to the undersigned from whom full particulars can be had, to the office and with regard to the submission of testimonials etc may be obtained

GILBERT G PATTER.
Royal Northern Hospital Secretary
Holloway N 7

Wanted — Well qualified MEDICAL OFFICER for Private Institution that is being started in West End to make a Speciality of Ultra violet and other Rays in the cure of disease Able to put in several hundred pounds Receive Third of profits Unique opportunity for ambitious man with means Splendid prospects Send credentials but early interview imperative —Address No 3295, BRITISH MEDICAL JOURNAL Office 429, Strand W C 2

Wanted by large Company for their Eastern staff an unmarried MEDICAL OFFICER age not exceeding 35 years Liberal terms will offered to suitable Candidates Full particulars of school and college training and hospital and other experience together with professional references, should in the first instance be sent to Box No 418, SHAW & BLAKE, 8 Bell Yard, Temple Bar W C 2

Wanted —Assistant, with view to partnership, South Coast Town (Sussex) Must be capable Surgeon preferably F R C S —Address full details to No 3300 BRITISH MEDICAL JOURNAL Office 429 Strand, W C 2

Wanted —An Indoor ASSISTANT for panel and private practice in Yorks Must be British motor cyclist abstainer, and willing to sign usual bond —State address, age, references and all other essential particulars to No 3278, BRIT MED JOUR 429, Strand W C 2

Wanted.—Assistantship, outdoor or branch, for married man aged 39 years, no family Particularly fond of midwifery and panel work Healthy and active Englishman Some years of general practice experience —Address, No 3208 BRIT MED JOURN Office, 429 Strand W C

Wanted —Assistant, woman Doctor, near Cardiff Salary nominal Good home and experience State essential particulars —Address No 3284 BRITISH MEDICAL JOURNAL Office, 429, Strand W C 2

Wanted help in high-class country town Practice up to date Hospital University Graduate preferred, knowledge of refractions an advantage Excellent prospects for right man State essential details; personal interview necessary,—Add No 3296, B M J 429, Strand

Assistant wanted at once for general and panel Practice Birmingham district about 3½, reliable experienced and genial Abstainer preferred Comfortable bachelor's house with principal Good remuneration and excellent prospects for suitable man —No 3310 BRITISH MEDICAL JOURNAL Office, 429 Strand W C 2

Assistant wanted on Aug 1st, or earlier for working class practice near a large Midland City Work light Salary £220 monthly, together with furnished rooms, fire light, and attendance One testimonial only —Address, 3382 BRITISH MEDICAL JOURNAL 429 Strand W C

Assistantship wanted by single man in or outdoor Thoroughly reliable and steady; courteous to patients and loyal to principal Seven years' private and panel experience cyclist Disengaged and open to locum Good refs,—Add No 3303 B M J 429 Strand W C

Assistantship (indoors), or Locum wanted by M B B Ch keen energetic; abstainer willing to do midwifery Free immediately Excellent testimonials — Address No 3305 BRITISH MEDICAL JOURNAL Office, 429 Strand W C 2

Assistantship with view (outdoor preferred but not essential) required by M B B Ch (Belf) aged 23 Experience in practice—panel private and midwifery Good anæsthetist Excellent references —Address No 3381 BRITISH MEDICAL JOURNAL 429 Strand, W C

Assistantship or Locum wanted by Male aged 24 M B Ch B Edin (1923) Some experience in general Practice. Good anæsthetist —Address No 3289 BRITISH MEDICAL JOURNAL Office 429 Strand W C 2

Branch Management or OUTDOOR ASSISTANCY wanted by steady reliable man capable of sole charge Aged 40 married (one child) —Address No 3307 BRITISH MEDICAL JOURNAL Office 429 Strand W C 2

Can any doctor interested in Mental Cases OFFER EMPLOYMENT (e g, gardening spare-keeping) AND TREATMENT to man aged 35 and 40 Muscularly strong suffering from severe depression —Further particulars available —Add No 3287, B M J, 429 Strand W C

M R C S, L R C P Lond, desires ASSISTANTSHIP View to early Partnership or succession with practitioner in good middle class Practice Keen energetic capable, abstainer British, ex H S 18 months general practice Good accoucheur Excellent testimonials — Address No 3288 BRITISH MEDICAL JOURNAL Office 429, Strand, W C 2

M B., Ch B, experienced in general and panel practice desires ASSISTANTSHIP, London, with time for reading and some hospital work keen abstainer, moderate salary if indoor would consider part time work — Add No 3293 B M J Office, 429 Strand, W C 2

M R C S., L R C P, woman, aged 26, desires PART TIME WORK in or near London, or whole time work in any locality —Address No 3283 BRITISH MEDICAL JOURNAL Office, 429 Strand, W C 2

M B, B S.(Lond), M R C.S, L R C P, holding Hospital appt London (mornings), desires afternoon ASSISTANTSHIP (medical), in London [illegible] enced in Infant Welfare [illegible] —Add, No 3302, B M J [illegible]

Medical Student, final year completed, would act as DRESSER, DISPENSER, and MANAGE SURGERY B A British, sober, and hard worker Straightened financial circumstances —Address No 3280, BRITISH MEDICAL JOURNAL Office, 429, Strand, W C

Recently Retired Medical Officer, Colonial Service des res work abroad Much tropical experience D T M Excellent testimonials, references Would consider good ship SURGEONCY Exceptionally fit physically — Address, No 3252, B M J Office, 429 Strand W C

Time-expired, Regular, Royal Army Medical Corps Warrant Officer, seeks EMPLOYMENT with Country Practitioner Dispenser masseur and trained nurse — Address, No 3311 BRITISH MEDICAL JOURNAL Office, 429, Strand, W C 2

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Wanted — Lady Dispenser and BOOK KEEPER for Country Practice Board and lodging provided —Write giving full particulars and stating Salary required to Dr R FISHER Kings Langley, Herts

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Wanted —Locum, resident, experienced in Midwifery for 2 to 3 weeks middle of July to take charge Maternity Home Delightful situation outskirts of London Duties very light State experience age and other essential particulars —Add No 3384 B M J 429 Strand

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As Locum—An experienced doctor who has had own Practice desires further ENGAGEMENTS for Aug and Sept Terms 7 gns p w London preferred, not essential Does some 10 Locums annually Well rec md Add "Medicus c/o Dr BELL, 13 Claremont Sq Lond N

Dentist (1921) seeks Locum or other appointment London Manchester or Liverpool preferred 10 years experience Careful and attentive —Address, No 3218 BRITISH MEDICAL JOURNAL Office, 429 Strand W C 2

Englishman practising in Riviera will act as LOCUM in small good class London practice during end of July and August, in return for hospitality for self and wife No midwifery — Address No 3294 BRITISH MEDICAL JOURNAL Office 429 Strand W C 2

Experienced Locum (43) is free to act for a medical man at the Seaside from July 11th for two or three weeks Terms nominal —Address No 3281 BRITISH MEDICAL JOURNAL Office 429 Strand W C 2

Elderly, but active man, will act as LOCUM for the month of August Any reasonable terms accepted if work light and nice country —Address No 3304 BRITISH MEDICAL JOURNAL Office 429 Strand W C 2

Hospitality wanted —Doctor, 38 abstainer wishes to do Locum for board residence wife daughter aged 5 Ten years experience in public and general practice July August or September Own car Coast preferred —Address, No 3306 B M J Office 429 Strand W C 2

Locum wanted for August, by M B Ch B Edin (woman) Good testimonials South preferred —Address No 3308, BRITISH MEDICAL JOURNAL Office 429 Strand W C

M B, Ch B, woman, Scotch, desires LOCUMS July and August. Previous experience Good references and testimonials —Address No 3256 BRITISH MEDICAL JOURNAL Office 429 Strand W C 2

M B, F.R C S, while waiting for hospital appointment is willing to do LOCUM TENENCIES during next three months Excellent testimonials. —Address No 3379, BRITISH MEDICAL JOURNAL Office, 429 Strand, W C

Temporary Locum—Assistant required July, August September duties light Country Practice Only very moderate salary offered — Address No 3383 BRITISH MEDICAL JOURNAL Office 429 Strand W C 2

Partnership — Hants Coast, [illegible] old estab over [illegible] of private H S residential growing district [illegible] shares about 2 years purchase — Address No 3103 B M J Office, 429 Strand, W C

Wanted, Partnership, by a public school man M B M C Oxon ex H S married (in high-class) one requiring general practice (suited) in a non-un er 15 hou town such as Bournemouth Southport Torquay Harrogate or 1st class res sub of large city med st ed house rent only Net share £700 £800 p a Non-resents.—No 3270 B M J Office 4 Strand W C

Wanted, by Edinburgh Graduate aged 1 PARTNERSHIP with view to early succession in Country Town prefer ably South or East with scope for hospital work Class and age —Address No 3251 British Medical Journal Office 429 Strand, W C.

Wanted —Middle and working-class PRACTICE yielding from £1,000 to £3 000 a year in London or any good town Partnership en tailed —Apply PEACOCK and HADLEY 19 Craven Stree Strand W C (No charge unless sale effected.)

Wanted by M R C S Eng, aged 32, PRACTICE or PARTNERSHIP in suburban district or country or seaside town Income about £1 000 Capital available —Address, No 3280 British Medical Journal Office 429 Strand W C 2

Wanted by F R C S, aged 32 a PRACTICE or PARTNERSHIP in town in the S or Midlands with scope for surgery Income about £1 000 Now free and can pay cash —Please BLANDELL & Co — Craven Street, Strand W C.2.

Wanted —Private and Panel PRACTICE Town in or convenient to London Income of about £1,500 to £2 000 Good house and garage —Address LUCAS 3 Princes Avenue, Liverpool

Wanted in London or Suburb a PRACTICE yielding about £1,000 a year Capital available first class purchase Strict confidence observed —Address No 3297 British Medical Journal Office 429 Strand W C.2

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Cheshire.—For disposal, General PRACTICE in good residential district Average receipts £1 400 including Panel £650 Detached house garage garden Lease of house with option to purchase —LAW ON COPPOCK & HART Solicitors, 18 Tib Lane Manchester

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Death Vacancy —Within 12 miles of London About £1,000 a year Panel 600 House on lease or sale —Address, No 3301 British Medical Journal Office 429 Strand W C 2.

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West Midlands —Old-estab Town and Country PRACTICE in a County Town Receipts £1 574 Appointments Panel nearly 40 Minimum fee 5 Pupils small Hospital (20 beds) Purchaser would be appointed Physician or Surgeon Good house and garden Premium for practice £2 250 —LEE & MARTIN Ltd

North of England —Old- established Country Town PRACTICE Average receipts £1 460 Good panel Expenses small Good house garden tennis lawn and orchard.—LEE & MARTIN Ltd

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Kent —Unopposed Country PRACTICE in charming district Receipts £800 a year Scope for increase Good house large garden Rent £35 Premium £1,500 part deferred —Apply PEACOCK & HADLEY 19 Craven Strand W C

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Liverpool —General Practice recently established in growing suburb Good scope for increase Freehold residence in good position with garden Premium for house and practice £1 500 —Address No 3007 British Medical Journal Office 429 Strand W C.2

Medical Practice for Sale — The Medical Practice of the late Dr LACHLAN BURGESS 49 Dixon Avenue Cresshill Glasgow is for sale The Practice has been carried on by Dr Burges for 24 years The HOUSE No 49 Dixon Avenue is to be sold along with the Practice. The house consists of 7 rooms and kitchen bathroom hall &c. washing house coal cellar and all other usual accommodation The house is fitted throughout with electric light and is in excellent condition The house is admirably suited for a doctor's practice.

Offers should be made to THOM & HEADRICK Writers, 23 West George Street Glasgow Agents for the Executrix who will give any further particulars

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Nucleus in West of London Thickly populated district Good connection Excellent scope for energetic young man Present opposition Vendor obliged to give up practice on account of ill health Price very moderate for quick sale —No 3385 BRIT MED JOUR Office 429 Strand W C

Practices, &c, for Sale —(1) West end City (£1,800 p.a.) House and Premises £3,100 (2) Country (£1,000 p.a.) Rent £30 £1,500 (3) Country (£400 p.a.) with private house, (4) Nursing Home, unopposed Devon Riviera.— WESTERN TRIPOS AGENCY Woodwild Rd., Torquay

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To be Sold, small private and panel PRACTICE Price including small house £450 —Reply in first case to 3 Belgrave Place, Bradale.

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Gloucestershire — Old-estab Industrial and Mining PRACTICE. Average receipts £750 Panel 700 Cottage Hospital House rent £45 Good garden In residence.— LEE & MARTIN Ltd 71 Temple Row Birmingham

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Angmering-on-Sea —Good OPENING for Doctor or Nursing Home Pair freeholds containing 8 bedrooms Price £3 500 or separate.—HUMPHREYS "Beira," The Crescent Angmering-on-Sea

Bournemouth — In local Harley Street CONSULTING ROOM and use of Waiting Room, to Let. Dark Room available Suitable for Radiologist or other Specialist Address No 3226 BRITISH MEDICAL JOURNAL Office 429 Strand W C 2

Beautiful Consulting Room to Let Large private house Sorrento only entrance Attendance Light Heating use of waiting room 1 guinea per day —Write Principal Dr E BARNES, 132 Sloane Square London S.W.1

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Harley Street — Part-time CONSULTING ROOMS First floor back furnished newly decorated In street with basement Rent £200 p.a. Several floors unfurnished to let Also Consulting Room in centre —Address No 3292 BRIT MED JOUR Office 429 Strand W C.2

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Westcliff-on-Sea —100 feet above sea level Detached RESIDENCE, large grounds contains 20 rooms garage for 6 cars, ample room for extension Suitable for a Nursing Home or Institution Immediate possession Price £5 500 Freehold including well made furniture Sub Mortg —Apply, 41, High St , Southend on Sea.

Doctors' Testimonials printed for all posts Best work quick dispatch Send your testimonials for estimate of cost DOCTORS A/C FORMS printed in best style—also Letterheads, Post Card Heads Calling Cards &c R ANDERSON & SON, Printers 1, Hill Pl , Edinburgh

For Sale –Owner-driven Car, 1923 Dodge Coupé in perfect order, and just re painted An ideal car for a doctor —Address No 3285 BRITISH MEDICAL JOURNAL Office, 429 Strand, W C 2

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Hull City Mental Hospital.

APPOINTMENT OF SENIOR ASSISTANT MEDICAL OFFICER AND DEPUTY SUPERINTENDENT

Applications are invited from duly qualified gentlemen for the appointment of Senior Assistant Medical Officer and Deputy Superintendent at the above Mental Hospital The salary offered is £600 per annum rising by annual increments of £50 to a maximum of £850 per annum, with emoluments, valued now for pension purposes at £150 per annum, and subject to revision, as follows —Furnished Quarters, Coal, Light Vegetables for self wife and family, Laundry, and permission to buy provisions &c , out of store at contract price The salary does not carry bonus

The Mental Hospital is situate at Willerby, 7 miles from Hull

The appointment will be subject to the provisions of the Asylums Officers Superannuation Act, 1909

Canvassing, either directly or indirectly, will be a disqualification

Forms of application, to be delivered by 5 p m on Thursday, July 24th, can be obtained from the undersigned H A LEAROYD,
Guildhall Hull Town Clerk & Clerk to the
July 1st, 1924 Committee of Visitors

Edinburgh Hospital for

WOMEN AND CHILDREN, Whitehouse Loan

Applications are invited from qualified Medical Women for the posts at the above Hospital of —

1 SENIOR HOUSE SURGEON remuneration at the rate of £60 per annum, with board, residence and laundry

2 JUNIOR HOUSE SURGEON, non resident remuneration at the rate of £40 per annum Lunch provided

Appointments are for six months from October 1st.

Applications with copies of testimonials, to be sent to the Convener of the Medical Committee at the Hospital on or before Friday, July 18th

University College Hospital,

Gower Street, W C 1

The Committee will shortly proceed to the appointment of a TUBERCULOSIS OFFICER to take charge of the Tuberculosis Dispensary

Salary £300 per annum, non resident Part time duties

Duties comprise clinics on two afternoons and one evening weekly home visits, reports on cases the keeping of statistical records and co-operation generally with the Municipal Health authorities Full particulars can be obtained from the Secretary of the Hospital

Applications accompanied by such evidence of fitness for the post as candidates may wish to submit must reach the Secretary July 19th, 1924

St. Bartholmew's Hospital.

ASSISTANT ADMINISTRATOR OF ANÆSTHETICS (Non Resident)

Applications are invited for an Assistant Administrator of Anæsthetics (Non Resident)

Appointment will be made from August 1st 1924

Application and testimonials must be left with the undersigned on or before Monday, July 21st, 1924

THOMAS HAYES
June 30th, 1924 Clerk to the Governors

The Birmingham & Midland

THROAT AND EAR HOSPITAL

JUNIOR HOUSE SURGEON (qualified) wanted, with Clinical experience, non resident

Appointment for six months, and eligible for election as Senior Surgeon for a further six months Salary at the rate of £200 per annum, with part board Duties to commence October 1st 1924

Applications and testimonials to be forwarded on or before July 18th, to the undersigned
S G GREW Secretary

Aberdeen Royal Infirmary

There is a vacancy in this Hospital for an ASSISTANT PHYSICIAN Applications and testimonials (16 copies of each) should be lodged with the subscriber not later than Thursday July 17th current.

A SCOTT FINNIE,
343 Union Street, Clerk and Treasurer
July 1st, 1924

Victoria Eye Hospital,

Hereford

Applications (to be sent to the Secretary before July 14th) are invited for the Honorary Consultant Posts of GENERAL PHYSICIAN and GENERAL SURGEON

Wolverhampton & Stafford-

SHIRE HOSPITAL
(Incorporated by Royal Charter)

PATHOLOGIST and BACTERIOLOGIST £600 per annum percentage of fees received for all work other than Hospital together with the opportunity of private consultations

The Board of Management invite applications from suitably qualified men to undertake the duties of the above-named position There is a wide and growing field for work in the area served by the Hospital, and the opening is an exceptional one

Applications together with copies of testimonials, to reach the undersigned on or before July 21st 1924

Wolverhampton W H HARPER,
July 1st, 1924 House Governor & Secretary

Leeds Public Dispensary

Wanted SENIOR RESIDENT MEDICAL OFFICER (male) Must have held posts of Resident Physician and Resident Surgeon Salary £200 per annum, with board, residence and laundry Separate sitting room Applications, with copies of three recent testimonials to be addressed to the Secretary of the Faculty, Public Dispensary, North Street Leeds

Royal Aberdeen Hospital,

FOR SICK CHILDREN

Applications are invited for the post of HONORARY JUNIOR PHYSICIAN to commence duties on August 1st, 1924 These along with 25 copies of testimonials must be lodged with the Hon Secretary, Mr D M M Milligan 12 Dee Street Aberdeen on or before Friday July 18th 1924 from whom further particulars may be obtained

Aberdeen, July 1st 1924

Royal Free Hospital

Gray s Inn Road, W C 1

Applications are invited from duly qualified and registered medical men or women for the following resident posts :—

HOUSE PHYSICIAN vacant August 1st
HOUSE SURGEON , October 1st

Intending candidates should submit application, with copies of three recent testimonials, to the undersigned on or before July 14th

REGINALD R GARRATT Secretary

Coventry and Warwickshire

HOSPITAL Coventry (241 Beds)

HOUSE PHYSICIAN (Male) wanted Salary £150 per annum with board residence &c

JUNIOR HOUSE SURGEON (Male) wanted Salary £130 per annum with board residence &c

Candidates must be duly qualified and registered

Applications stating age experience &c and enclosing copies of recent testimonial , should be sent to the undersigned

(Miss) R HOOPER Secretary

The Hospice Maternity

HOSPITAL, High Street, Edinburgh

Applications are invited from qualified Medical Women for the post of RESIDENT MEDICAL OFFICER at the above Hospital Remuneration at the rate of £50 per annum, with board, residence and laundry

Appointment is for six months from October 1st

Applications, with copies of testimonials to be sent to the Convener of the Medical Committee at the Hospital, on or before Friday July 18th

Royal Mineral Water

HOSPITAL, Bath

A vacancy in the office of SURGEON to the Hospital will be filled on Thursday, July 31st

Candidates, who must be Fellows of one of the Royal Colleges of Surgeons of Great Britain or Ireland, are requested to send their applications stating experience and not more than three testimonials, to the Registrar of the Hospital, not later than Monday July 28th

Personal canvassing is prohibited

July 1st, 1924

York City Mental Hospital,

Fulford, York

Male ASSISTANT MEDICAL OFFICER required Salary £440 together with the *emoluments of lodging washing and attendance*, valued at £85 Candidates whose age must not exceed 35 must be fully qualified and registered medical practitioners The appointment is subject to the provisions of the Asylum Officers Superannuation Act, 1909

Applications stating experience and nationality, with copies of not more than three recent testimonials to be sent before the morning of July 12th to the Medical Superintendent.

Liverpool Royal Infirmary

The Committee invite applications for the post of HONORARY ASSISTANT PHYSICIAN to the above Institution.

Applications must be made in writing addressed to the Chairman of the Committee at the Royal Infirmary, Liverpool, and no candidate will be eligible whose application has not been received within twenty-one days of this date, namely July 11th 1924.

The election will be made by the Election Committee, a list of whom and particulars of the qualifications necessary for the appointment will be supplied on application (on the Secretary of the Hospital).

Law No. 19 states: Any candidate who advertises in the public press or canvasses in person or by writing any member of the Election Committee shall be disqualified, but candidates shall be at liberty to send to members of the Election Committee copies of their application, accompanied by not more than ten testimonials.

H. WADE DEACON,
Chairman.

June 20th 1924.

City of London Hospital for

DISEASES OF THE HEART & LUNGS
Victoria Park, E.2
(Dalston and Farnhill Cambridge Heath, L.N.E.R.)

A vacancy will occur in the post of RESIDENT MEDICAL OFFICER on July 7th 1924. The appointment will be for twelve months, subject to the rules and by-laws of the Hospital.

Applications should be sent to the Secretary on or before Monday, July 14th 1924. Two of the House Physicians are applicants for the post.

Applications for the post which would then be rendered vacant by the appointment of one of the House Physicians as above should be sent by the same date. Appointments of House Physicians are for six months. A Clinical Assistant at the Hospital is an interesting appointment.

GEOFFREY WATTS, Secretary.

Urgent—Jenny Lind

HOSPITAL FOR CHILDREN, Norwich.

[illegible]

qualified and registered. Duties to commence August 1st. Appointment to be for six months, and renewable for a similar term at the expiration thereof. Applications, stating age, nationality, and qualifications, together with copies of not more than four testimonials, should be sent to

MR. H. HARPER SMITH,
Honorary Secretary,
London and Provincial Bank Chambers,
Norwich.

June [illegible]th 1924.

Warrington Infirmary and

DISPENSARY

The Board of Management invite applications for the post of JUNIOR HOUSE SURGEON (Male). Applicant, who must be of British nationality, must be duly qualified Medical Practitioner.

Commencing salary £175 per annum with board, apartment, and laundry.

Applications, stating age, with copies of three recent testimonials, should be sent in at once to the undersigned.

By Order HENRY L. BOOT,
Supt. and Sec.

July 1st 1924.

Children's Hospital, Sheffield

EAST END BRANCH

Wanted immediately, Lady HOUSE SURGEON. Salary £125 per annum with board, residence and washing.

Applications, with copies of testimonials, to be sent to G. M. GILL, Secretary, 15 North Church Street, Sheffield.

Jessop Hospital for Women,

Sheffield.

APPOINTMENT OF SECRETARY.

Must be experienced and trained in present-day [illegible] and secretarial work.

[illegible] and work of the Jessop Hospital for Women, Sheffield.

Hospital for Consumption and

DISEASES of the CHEST, Brompton, S.W.

The Committee of Management invite applications for the Post of HOUSE PHYSICIAN (for which there are five vacancies). The duties in full work in the Out-patient Department as well as in the Wards; and one of the successful Candidates will be appointed Assistant to the Tuberculosis Officer for the Central Tuberculosis Dispensary at the Hospital.

Applications, with testimonials, must be sent in not later than Tuesday, July 15th, addressed to the Secretary. The appointment is for six months, commencing on August 1st, with an honorarium of £50.

FREDERICK WOOD, Secretary.

June 19th 1924.

Resident Medical Officer—

The Committee of Management of the HOSPITAL FOR CONSUMPTION and DISEASES OF THE CHEST, Brompton, invite applications for the POST of RESIDENT MEDICAL OFFICER. Salary £[illegible] per annum, [illegible] terms.

July 15th 1924. Candidates must be registered practitioners and qualified in Medicine and Surgery, single and not under 25 years of age.

FREDERICK WOOD, Secretary.

Brompton, June 19th 1924.

Registrar—The Committee

of the ORTHOPÆDIC HOSPITAL invite applications for a vacancy of Registrar and Clinical Assistant. Honorarium 100 guineas. Appointment for 12 months, renewable for a further 12 months on the recommendation of the Medical Board. Candidates must be doubly qualified. Applications, with copies of three recent testi[illegible]

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Sussex—A general Practice [illegible]. Fees [illegible]; [illegible]; 6 bedrooms, &c. Premium [illegible] yrs. purchase. Folio 593.

Glamorgan—General Practice in thickly populated district on Coast. Receipts £1,700. Fees 3s. upwards. Panel. Comfortable corner House containing 4 bedrooms, &c. rent £50 p.a. Premium £1,500.—Folio 887.

Derbyshire—A General PRACTICE situated in an industrial district with pretty country around. Receipts about £800. Panel 600. Good fees. Nice house containing 8 bedrooms, &c. at a rental. Premium £1,000.—Folio 653.

Yorks—A General Practice situated in an industrial district with pretty country around. Receipts over £2,000. Panel 1,100. Fees 3s. upwards. Nice house containing 4 bedrooms, &c. Rent £60 p.a. Premium 1 years purchase. Payable half down and balance by arrangement.—Folio 659.

Sussex—Partner required for Country Practice. Receipts £1,500. Scope for increase. Share value £1,000 for display and years purchase with view to succession.—Folio 888.

Notts—A middle and work-ing class PRACTICE. Receipts £1,200. Panel 700. Fees 3s. 6d. upwards. Ample confined corner house containing 3 bedrooms, &c. Rent £60 p.a. Premium 1½ years purchase.—Folio 662.

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NO CHARGE IS MADE TO PRINCIPALS FOR THE INTRODUCTION OF LOCUM TENENS OR ASSISTANTS

Accountancy and Legal services furnished by the Agency, where desired, at moderate inclusive charges

PRACTICES AND PARTNERSHIPS FOR SALE

1 SOUTH COAST —LARGE TOWN PARTNERSHIP A quarter or one third share in a middle and working class Practice Income over £4 000 with scope Panel of over 4,000 Fees 2/6 to 7/6 chiefly 5/- to 5/- No midwifery, and very little night work Purchaser should preferably be not over 35 Term 2 years purch

2 DERBYSHIRE —Old estab unopposed Country PRACTICE within 6 miles of a large town Cash receipts for the past 3 years £2 000 per annum including Union and Va cina patients Visits 2/6 to 7/6 Midwifery yearly Attractive Georgian residence standing surgery waiting room dispensary 2 reception rooms 4 large bedrooms 3 attics bathroom very nice garden garage Gas laid on Rent £50 Premium £2 000 including drugs fittings Educational facilities for boys Excellent hunting fishing shooting boating

3 WEST RIDING —HOSPITAL TOWN within easy reach of a University city Well established PRACTICE, producing an average of about £2 000 per annum Panel of over 4,000 Suitable house available Premium 1½ years purchase

4 DERBYSHIRE —HOSPITAL TOWN —Old established PRACTICE, held 13 years by present Incumbent of ill health Cash receipts for the per annum including about £1 5 £1/1/0 About 50 cases of midwifery a year at 2 to 5 guineas Centrally situated house (2 waiting rooms 4 bedrooms bathroo r Pre mium £5 000 Good sco on the Staff of the Hospital

5 SOUTH MIDLANDS —RESIDENTIAL TOWN Old es abli hed mainly better class no dispensing PRACTICE Income about £2 000 a year Small selected panel of 500 600 Fees 2/6 to 21/ mainly 7/6 to 21/ Midwifery 2 to 25 guineas, 10 cases last year House with 3 recep ion, 7 bedrooms, garden rent £100 a year Premium 2 years purchase

6 NORTH EAST COAST —FAVOURITE RESORT Small, old established non dispensing PRACTICE Income £400 with very large scope for young energetic well qualified man Fees 5/ and 7/6 Prominent corner house 3 recept on rooms 6 bed rooms garden Vendor's own freehold Premium for House and Practice £2 500

7 SOMERSET —Unopposed PRACTICE Old e tablished mixed class Practice Average income £1 283 including appointments and panel of over 1 000 Very nice house with 2 reception rooms professional rooms 7 bedrooms garage garden Rent £43 Spor of all kl

8 IMMEDIATI —Old e tablished good class non pane popular seaside resort on the North West Coast Average income £1 300 Very easily worke l and no conveyance requir d Visits 7/6 to £1/1/0 Goo l hou e facing sea on rental Premium 1½ years purchase, or r asonable offer will be entertained and su tab e terms of payment arranged

9 BRISTOL —Very sound middle and working class PRACTICE held nearly 2 years by present Incumbent who is relinquishing on account of ill health Average cas h receipts over £1 200 a year including several small appointments and a panel of over 1 300 Visits 3/6 to 10/6 Midwifery from 3 guineas about 30 case Very good house specially built for a doctor contains 2 reception rooms waiting room consulting room and surgery with separate entrance 5 bedrooms etc Garden Premium £1 800

10 LINCOLNSHIRE —Unopposed Country PRACTICE Very easily worke l average income over £1 100 Fees 2/6 to 10/6 Very litt e midwifery Good detached house in its own grounds Rent £80 on lease Premium £1 600 part by instalments

11 JUNIOR PARTNERSHIP —EAST COAST TOWN Over 1 000 inhabitant A gentleman who should be married under 30 years of age an l have held a hospital appointment can acqu re the fifth share (to commence wi h wh ch wi l produce over £1 000 per annum) in a leading and old-established non panel Practice Visits 5/- upwards Mi twifery from 2 gu neas 130 cases yearly Very good hou e available containing 3 reception rooms 5 bed rooms bathroom etc and garden Rent £60 o lease Prem um 1½ years purcha e l respects of sur ery

12 PARTNERSHIP —SURREY Residential Town (population over 20 000) in a beautiful district a two fifths share producing nearly £850 a year in an old established practically non-dispensing Practice held by Vendor 20 years is for di p o al Receipts average £2 110 per annum including appointments £93 and panel of about 1 700 Visits 4/ to 10/6 Midwifery 3 guineas upwards 30 cases yearly Premium 2 years purchase Ingoing partner should be well qualified under 35 years of age and if po sible a Gynecologist Good society golf tennis etc

13 YORKSHIRE —Large clean town Well established middle and working class PRACTICE Income £1 300 including £580 from panel and £350 from appointments Advice and medicine from 2/6 visits and medicine 3/6 upwards Very little midwifery lowest fee 2 guineas Good detached freehold house with small garden Electric light Garage Price £2 500 of which £1 500 could remain on mort age Pr mium £1 400 cash

14 CHESHIRE —Twelve months PARTNERSHIP introduction will be given to an old establi hed middle class and panel Practice (1 600 patients on list) wor h last year £2 100 Situated in a large to n close to seas de re ort Visits 2/6 mer about 100 cases yearly Car not r garage available at end of intro duction Premium 1½ years purchase

15 GLOUCESTERSHIRE —Very sound Country PRACTICE held by Vendor nearly 20 years Steady average income of £1 450 includ ing a panel list of 1 177 Practice is situated in extremely beauti ful country Good freehold house with garden Rent £65 Premium £1 800 £1 000 cash and balance by instalment

16 NORTH EAST MIDLANDS —Country PRACTICE within easy access to large town Very old e tablish d and held by the Vendor over 20 years Av rage income about £800 including appointments and panel of 180 Nearest oppo ition 3 mile Fees 3/6 to 20/ Large freehold house with 3 acres of garden Price £2 500 Premium for Practice £1 500

17 LONDON, WEST END —PARTNERSHIP —A quarter share (to commence with and up to one third in 2 years and one half in 4 or 5 years with ultimate succes ion if desired is for disposal in a first class general Practice Income for the immediate past year £3 020 Fees mostly 1 guinea upwards and a few at 10/6 Purchaser should be a Graduate or hold some higher qualification Premium for the quarter share £1 500

18 NEW ZEALAND (NORTH ISLAND) —Unopposed and increasing PRACTICE in a very beautiful district on main line about 76 miles from a large city and worth nearly £1 300 a year including easily worked appointment at £100 Visits into Township 10/ mileage 6/ midwifery 5 gns Good and up-to-date house (built by Vendor's predecessor) containing surgery 2 reception rooms 3 bedrooms and sleeping porch bathroom etc with an acre of ground tennis court etc Rent £120 on lease Premium £1 000

19 SOUTH SEA ISLANDS —In a capital city a well established lucrative and increasing PRACTICE averaging over £1,200 per annum Good climate malaria and sunstroke unknown Up-to date shops and educational facilities Consultation fees 7/6 to 10/6 Visits 10/6 upwards Midwifery from 5 guineas Dispensing optional Practice can be worked on foot Good bungalow resi dence in excellent position with ¼ of an acre of garden Electric light, cook Rent £10 a month on lease Premium £800 Income Tax 1/ in the £ over £500

20 LONDON, N —Old established PRACTICE producing an income of £1 400 a year, including appointments worth £320 Panel 320 but this can be largely increased if desired Visits and medicine 3/6 to 7/6 Practice is very easily worked with no conveyance Nice house in good decorative repair with fair garden Price £1 250, a good portion of which can be obtained on mortgage Premium £2,000

21 WEST CENTRAL —*Sound* easily worked PRACTICE of about £770 Very good scope, as the Vendor has suffered from ill health since the war Fees mostly 10/6 Very convenient Flat Rent £58. Premium £1,100

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Yorkshire.—About £1,700 a year. Panel 1,100. Visits 2/6 to 10/6, medicine extra. About 700 midwifery cases up to £5 5 0. Appointments £60. Good house with garden and garage for sale or would let on lease.—Apply No. 7559.

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London Suburb.—About £750 p.a. Old-established PRACTICE. Very [illegible] Detached house [illegible]

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Midland Town.—About £1,100 a year. Old established PRACTICE. Panel 550. Appointment £40. Very little midwifery. Large house and garden. Premium £1,600, including drugs, etc.—Apply No. 7534.

Norfolk Coast.—Nucleus for disposal in favourite Seaside Resort. Visiting fees 3/6 to 5/-. Good house, reception, 4 bedrooms, consulting room and small open air lawn, etc. Office rent £70. Small plot.—Apply No. 7524.

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Manchester.—Old-established PRACTICE of £800 with [illegible] and Apartments £320. A [illegible] off the practice. [illegible] House in main road. Premium [illegible] rent £45.

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Residential Suburb.—Middle and working-class PRACTICE, £1,300 [illegible] Panel 1,600 and good property [illegible] para. Surgery. Good house with [illegible] garden can be bought.

Yorks.—Practice of £1,450 in the town. Panel 850. Appointments £160. No midwifery has been done. House with pretty garden and [illegible] Country. Can be rented.

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East Coast.—Practice of £1,700 in beautiful [illegible] resort. Panel [illegible] Appointments £80. Good [illegible] Excellent house with garden. [illegible] £120.

South Coast.—Partnership. Half share £2,300 in popular town. Half of [illegible] Appointments £500. Good house with large garden. Rent £90. Premium £2,200.

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SOUTH OF ENGLAND —(5) PARTNER required in very sound old established Practice in Seaport Town Panel under 3 000 Share worth £700 to £800 at two years purchase I ir ner must be keen and energetic and not much over 30

NORTH OF ENGLAND —(6) Old established PRACTICE of £1 460 per annum in Country District Panel 810 Very good house (5 bedrooms) in charming grounds two acres Premium practice house, and grounds £4 000 Mortgage could be had on house

NORTH-WEST COAST —(7) Sound middle-class PRACTICE about £2 400 Conveniently situated hous to rent Premium £2 900 part by instalment

FAVOURITE RESIDENTIAL DISTRICT up the THAMES —(8) Pa tn r hip in le ter class Practice near y £2 900 per annum One third share at first at two years purchase

HOME COUNTY —(9) Old established PRACTICE, over £1 850 p a in a most desirable Residential Distric under 5 miles from London Panel about 600 Exce lent detached house (8 bed and dressing rooms) Nearly acre garden Rent £75, on long lease Cottage Hospital near Premium £3 000

EAST ANGLIA.—(10) PARTNERSHIP in middle and working class Practice averaging about £2 200 p a in picturesque district near popular Seaside Resort Panel nearly 1,200 Choice of hous s One third share at first at two years purchase

SHROPSHIRE —(11) PARTNERSHIP in Country Practice, about £1,400 per annum Detached house (6 bedroom) with nice garden Rent £60 Cottage Hospital Premium one half share £750

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EASTERN COUNTIES —(13) Very old-established Country PRACTICE over £1 400 p a Panel 670 Suitable hou e (o be is) Rent about £40 Mild climate Premium one and a half years purchase

EASTERN COUNTIES — (14) Old established unopposed Country PRACTICE of £826 p a Panel about 500 Very good house in 2 acres of garden also 18 acres of land attached to rent or pur chase Nearest opponent 5 miles Premium £1 500

LONDON, S E —(15) PARTNERSHIP in m ddle and working class Practice over £2 000 in pleasant outlying Suburban District Panel 2 000 House conta ns 3 bedrooms &c Rent £30 Premium o ie third share £1 200

SOUTH WALES —(16) Well-established PRACTICE nearly £1 250 p a in County Town Panel over 60 Fees 5/ to £2 2s Well situated double fronted house (6 bedrooms) with large garden R nt £60 Educational facilities Premium £1 800

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SOUTH OF ENGLAND —(19) Old-established unopposed Country PRACTICE about £1 350 in Manufacturing Village Panel 1 030 Nice detached hou e (5 bedrooms) with good gar len Price £1 200 Premium one and a half years' purchase

SOUTH WALES — (20) Old established working-class PRACTICE over £2 200 in good Town Panel 1 400 Detached house with 4 bedrooms to rent on lease Premium £2 500

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HOME COUNTY —(22) PARTNERSHIP in well established and increasing Practice over £2 200 in delightful Re idential Country Town within 30 miles of London Panel 800 Cottage Hospital P emium one third share £1 425 Great scope

HOME COUNTY — (23) O'd established Country PRACTICE £1 600 p a in beautiful part under 15 miles from London Very good house (5 be t and dressing rooms) with nice garden Price £2 200 Bracing climate Premium one an l a half years purchase

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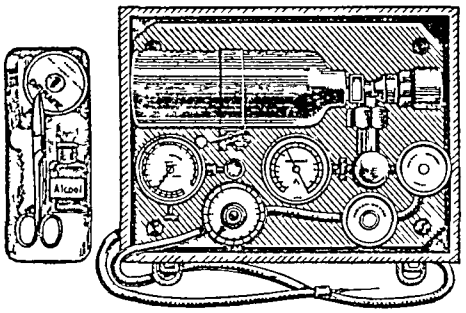
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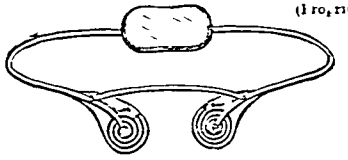
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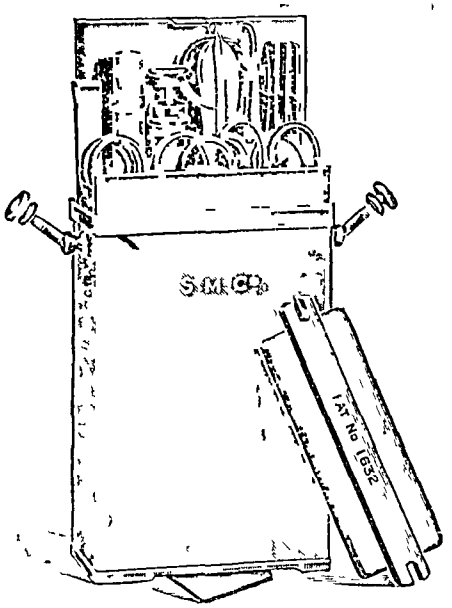
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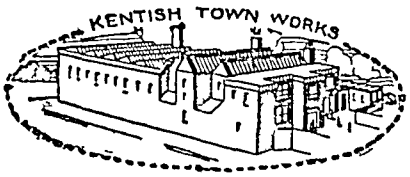
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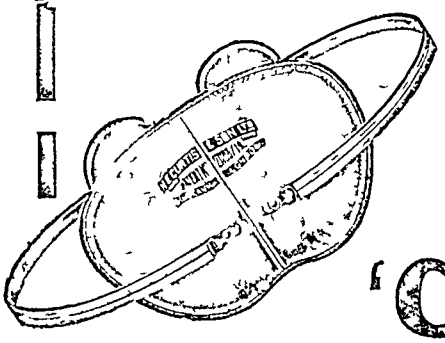
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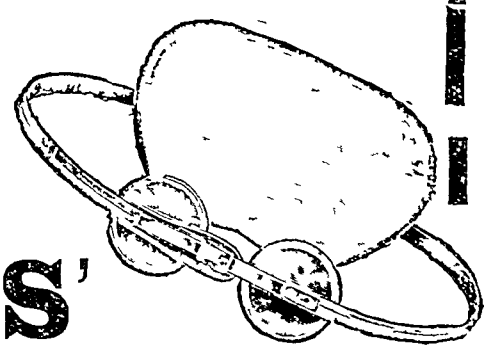
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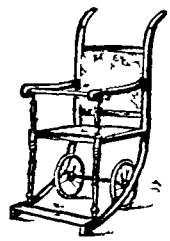
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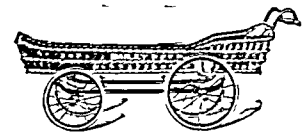


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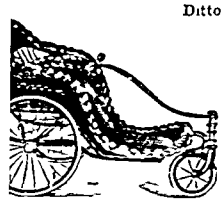
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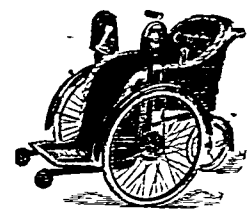
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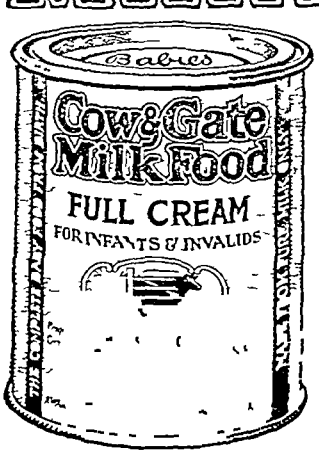
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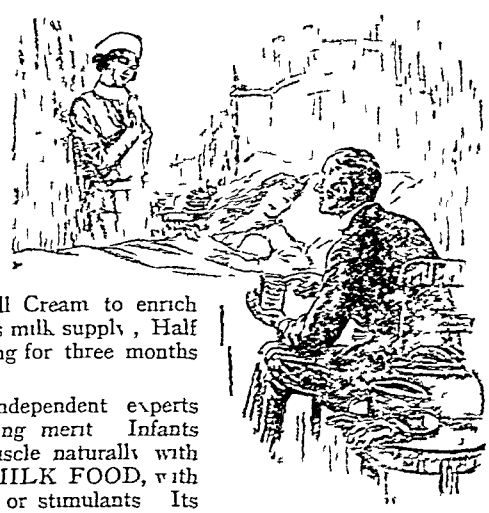
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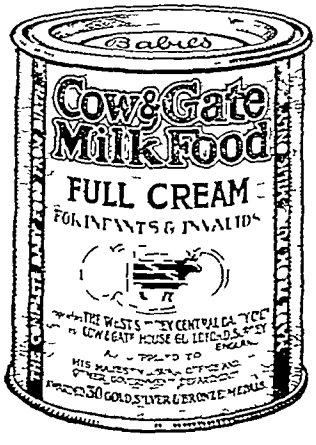
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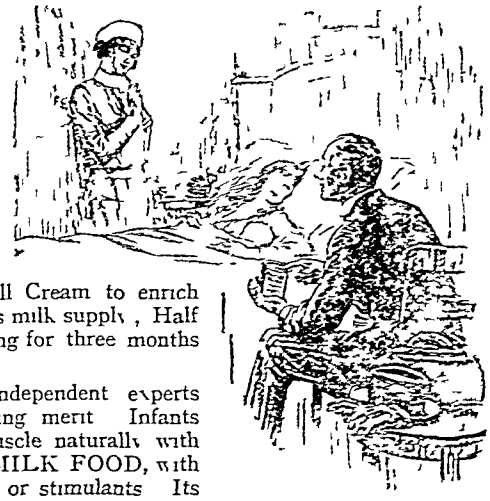
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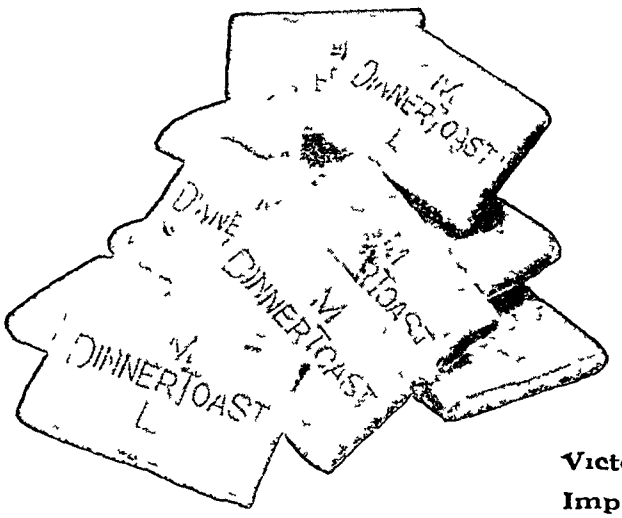
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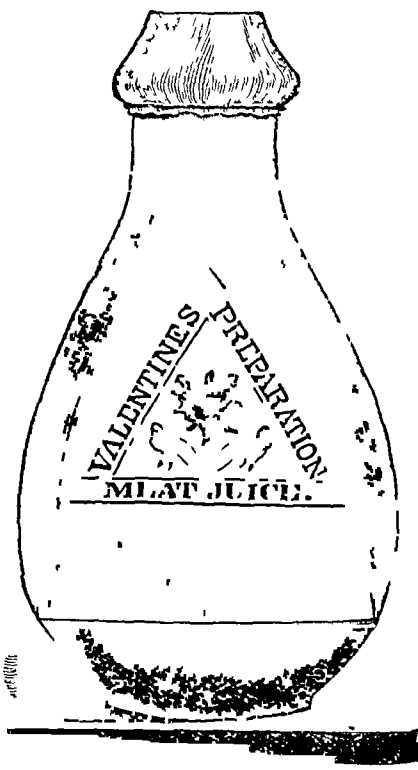
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Lancet, Nov 4th, 1922 *Tubercle*, May, 1923, May, 1924

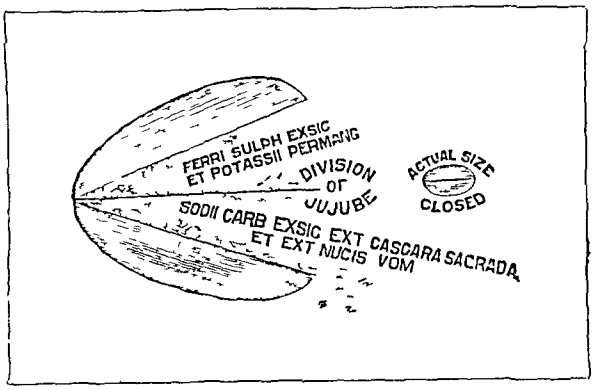
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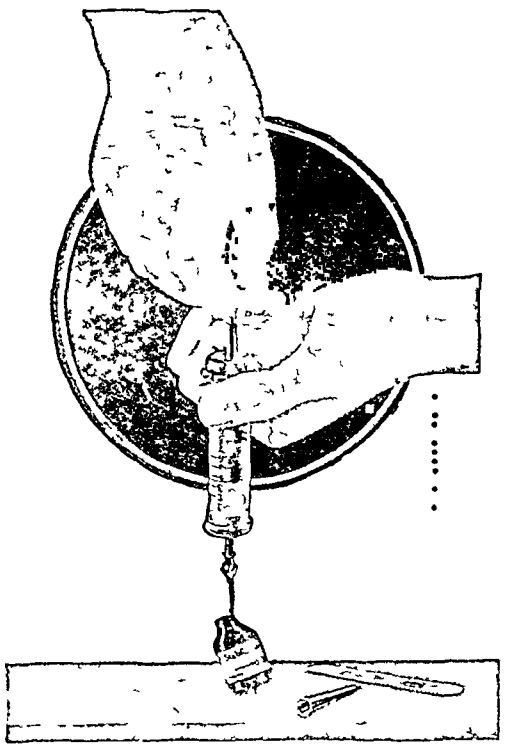
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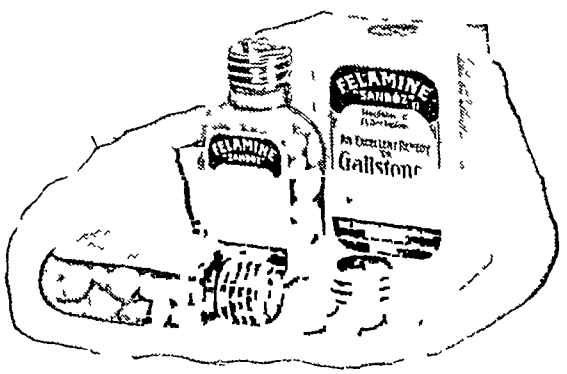
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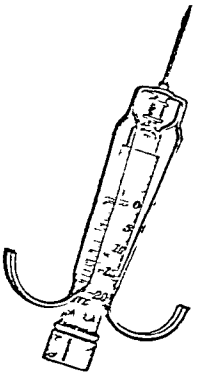
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PORTION OF A BAS RELIEF IN WHICH ARE DEPICTED THE GREAT DEEDS OF AN ASSYRIAN EMPEROR IN THE HUNTING FIELD—The chase was the favourite sport of the Assyrian empire builders Next to war it seems to have been their greatest passion In the remarkably fine bas relief here reproduced the emperor is represented as a sportsman hunting lions Galloping on horse back he is thrusting his long spear into the mouth of a lion which springs up at him The more common manner of hunting wild beasts was however from the chariot by means of the bow and arrow which weapon could be used at a safer distance From other scenes we discover that lions were not always hunted in their completely free state but were imprisoned in cages from which they were released when required for the hunt Largely occupied in war and sport the Assyrians were a virile people—albeit unrelentingly cruel to their foes It seems to have been chiefly owing to the character born of these conditions that they were able to build up in a comparatively short time so powerful an empire The use of iron weapons which they learnt from the Hittites was another factor Had their administrative ability equalled their genius for war and had they moderated their love of power, their empire might have been more enduring



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A Preliminary Report
ON
COCAINE, BUTYN TUTOCAIN, AND OTHER LOCAL ANAESTHETICS

BY

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(From the Pharmacological Laboratory, Cambridge.)

Introduction

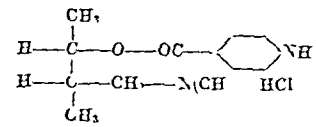
Few drugs are of greater importance at the present time both on account of their clinical interest and their habit-forming properties than the group of local anaesthetics. The object of the present experiments was the investigation of the properties of local anaesthetics already well known together with the action of such others as have not been thoroughly investigated with a view to deciding whether any of these drugs could be regarded as satisfying the ideal of what a local anaesthetic should be, while at the same time producing relatively little effect on the central nervous system such as might give rise to their abuse as habit-forming drugs.

The laboratory investigation of the action of these drugs, whilst all important and, indeed, conclusive in some respects is restricted in other—as for example by the difficulty in making reliable observations of subjective phenomena such as those of habit formation etc. Before proceeding to give my experimental results it is necessary to make clear the properties which the ideal local anaesthetic should possess, and these may be briefly summarized:

1. Powerful local anaesthesia.
2. Low toxicity in proportion to anaesthetic power.
3. No irritating action or power of causing local damage to tissues. This is another method of saying that it should possess a highly selective affinity for nerve fibrils and relatively none for other tissues.
4. Sufficient solubility, stability on keeping, not destroyed by boiling.
5. Absorption by mucous membranes, should not be precipitated by saline solution or tissue fluids.
6. Relatively no central stimulating effect on the cerebral cortex which is the property that induces habit formation.
7. Expense.

It must be remembered that a local anaesthetic suitable for one purpose may not be suitable for another, for special purposes other qualities are required. Thus, for the eye the anaesthetic should not cause lacrymation, smarting or desiccation of the cornea, for certain operations dilatation of the pupil is also undesirable. For nasal work the drug must cause shrinking of the nasal mucous membrane. It is certain that any local anaesthetic capable of fulfilling all these conditions will not merely supersede cocaine, it will also extend the field of local anaesthesia.

For the purposes of this investigation experiments were made on dogs, cats, rabbits, guinea pigs and mice with cocaine, beta-eucaine lactate, alypin, novocain, stovaine, *holocaine*, tropacocaine, apothesine, phenolamine butyn and also with a new cocaine substitute named tutocain, to which my attention was directed by Professor H. H. Dale. Tutocain is the newest of the substitutes, having some *chemical relationship with alypin*. It has the constitutional structure shown—



Tutocain is not decomposed by boiling and has the advantage over butyn that it can be dissolved in saline. It is prepared by the Bayer Company, who have kindly furnished me with a supply for experiments.

Surface Anaesthesia. Comparative Efficiency.

A good method for investigating "surface anaesthesia" for the rabbit's cornea is described by Sollmann[1] [2], I have slightly modified the method. Several tests must be made for each concentration using different animals, as individual differences in the animals sometimes occur.

The animal is confined in a comfortable stall, the head being free. All eyelashes and long hairs around the eye are clipped. The lower conjunctival sac is kept flooded with the solution for exactly one minute and subsequent tests for anaesthesia are made by touching and stroking the centre of the cornea with the blunt point of a pencil. Anaesthesia is considered to be complete when no winking reflex is obtained on moderately firm stroking. The time of onset and the duration of this complete anaesthesia are noted, and are considered to be a fair criterion of the depth of anaesthesia. In Sollmann's experiments the animals were released for ten minutes immediately after the application of the drug. This procedure considerably weakens the effect of the anaesthetic, as is shown by the following experiments.

Rabbit.—The right eye received one instillation of 1 per cent. butyn for one minute and the rabbit was then released *for ten minutes*. Result: Anaesthesia incomplete ten minutes after butyn. Immediately after the first experiment an equal quantity of the same solution of butyn was instilled into the left eye of the same rabbit for one minute after this the rabbit was kept confined. Very little winking occurred, the cornea thus receiving the full effect of the anaesthetic (as when eyelid retractors are used clinically). Result: Complete anaesthesia to firm stroking of the cornea up to twenty-nine minutes and passing off at thirty-*minutes*.

Table I gives approximately the duration of complete anaesthesia in minutes, the minimum effective concentra-

TABLE I.—*Anaesthetic Efficiency on Rabbit's Cornea.*

(Figures refer to the duration of complete anaesthesia in minutes.)

Drug	1/20 per cent.	1/10 per cent.	1/3 per cent.	1/4 per cent.	1/2 per cent.	1 per cent.	2 per cent.	5 per cent.	8 per cent.	10 per cent.	Minimum Effective Concentration	Comparative Efficiency Cocaine = 1.
											Per cent.	
1 Holocaine hydrochloride	—	I.A.	6	14	19	31	50	Over 40*	—	—	1.8	2½
2 Butyn	N.A.	I.A.	4	11	16	30	42	Over 30	—	—	1.8	2
3 Cocaine hydrochloride	N.A.	I.A.	I.A.	2	13	18	30	Over 30	—	—	1	1
4 Tropacocaine hydrochloride	—	—	I.A.	I.A.	8	14	19	25	30	—	1.2	¾
5 Alypin	—	—	—	I.A.	2	10	22	34	—	—	1.2	1/12
6 Eucaine	—	—	—	N.A.	I.A.	10	16	25	—	—	1	1*
7 Tutocain	—	N.A.	N.A.	I.A.	I.A.	6	15	24	37	—	1	1*
8 Stovaine	—	—	—	—	—	I.A.	12	18	—	—	2	½
9 Apothesine	—	—	—	—	—	—	7	—	—	—	2	—
10 Novocain	—	—	—	—	—	N.A.	I.A.	2	6	11	5	1/25

I.A. = Incomplete anaesthesia. N.A. = No anaesthesia. Sign marked * on Phenolamine tool—see foregoing work.

TABLE II.—*Anaesthesia of Cornea. Side Actions.*

DRUG	Vascular Reactions Rabbit	Drying of Cornea Rabbit	Sensory Irritation		Pupil Reaction	
			Rabbit	Human	Rabbit	Human
Severe Irritants						
Apothesine (2 per cent.)	Marked dilatation	Moderate drying	Very considerable		No effect	
Holocaine (1 to 5 per cent.)	Marked dilatation	Desiccation	Very considerable	Burning irritation	No effect	
Stovaine (2 to 5 per cent.)	Dilatation		Very considerable		No effect	
Phenolaine			Too irritant for cornea			
Irritants						
Alypin (1/2 to 5 per cent.)	Dilatation	Desiccation			No effect	
Butyn (1 to 5 per cent.)	Dilatation	Desiccation		Smarting at first, lacrymation	No effect	No effect
Cocaine (1/2 to 5 per cent.)	Primary dilatation then constriction	Moderate drying		Slight smarting 30 secs.	Dilated	Dilated
Eucaine (1 to 5 per cent.)	Dilatation	No drying			No effect	
Tropacocaine (4 to 8 per cent.)	Moderate dilatation	Moderate drying			No effect	
Mild Irritants						
Tutocain (2 to 5 per cent.)	Moderate dilatation	Moderate drying		Smarting lacrymation slight	No effect or slightly dilated	Slightly dilated 2 hours
Novocain (5 to 10 per cent.)	Moderate dilatation	No drying		No irritation	No effect	

tions, and the ratio of efficiency. Table II. shows the more important side actions. All solutions were made with distilled water for comparison with butyn, which is precipitated by Ringer's solution or saline.

Holocaine, stovaine, apothesine, alypin, and phenolaine are all too irritant for ocular anaesthesia. Tropacocaine, eucaine and novocain, although less powerful than cocaine, are useful for minor operations. They are mildly irritant and cause moderate vaso-dilatation, which can be controlled by adrenaline.

Tutocain has one-third the anaesthetic power of cocaine and seven times that of novocain, on the rabbit's cornea, but the anaesthesia is slow in onset. On the human cornea a few drops of a 2 per cent. solution of tutocain give complete anaesthesia in about four minutes, which lasts about five minutes to firm pressure with the eye spud, slight smarting and some lacrymation occur, but the irritant effect passes off in one minute. The anaesthetic efficiency of tutocain is less than that of eucaine and tropacocaine, and it shows less irritation and vaso-dilatation. The pupil dilates fifteen minutes after the application and remains slightly dilated for about two hours. Tutocain may be a useful anaesthetic for minor operations.

Butyn is twice as powerful as cocaine, and has no mydriatic effect, for which reasons it is preferred to cocaine by some surgeons. The disadvantages of butyn are the drying effect on the cornea, sometimes followed by desquamation, smarting and slight vaso-dilatation, and its expense. The choice for major operations must therefore lie between cocaine and butyn.

Effect on Nerve Fibres.

A simple method for determining the effect of these drugs on nerve fibres is to paint a definite length of the vagus nerve of an anaesthetized rabbit or other mammal with the various solutions. The vagus was then stimulated with the faradic current at intervals above the part painted, the duration of complete paralysis was determined by the absence of cardiac inhibition.

Table III. shows that holocaine, butyn, cocaine, stovaine, phenolaine, alypin, and tutocain all give prolonged anaesthesia when brought into direct contact with nerve fibres. Eucaine, novocain, apothesine, and tropacocaine give a much more evanescent anaesthesia. When the whole nerve is immersed in a solution of the drugs, as in Sollmann's experiments on frogs,[9] novocain and tropacocaine give as long anaesthesia as cocaine; obviously, however, such a method gives no information as to the rapidity with which the drug is absorbed from the seat of action, or whether the drug is destroyed by the tissues.[10]

Blood Vessels.

It is an advantage that local anaesthetics should constrict vessels, and certainly it is a grave disadvantage when they dilate them. I therefore tested the action of the various substances on the blood vessels of the limb and lung, using Dixon's artificial perfusion method[1] with defibrinated blood, the drugs were also injected intravenously into anaesthetized cats and rabbits, and the effect on blood pressure and on splanchnic vessels as determined by the oncometer was investigated.

By the perfusion method it was found that cocaine caused very marked vaso-constriction, and was the only local anaesthetic to induce constriction of vessels by a peripheral action. In these experiments all the other drugs, with the exception of butyn, acted as vaso-dilators, especially

TABLE III.—*Effect of Local Anaesthetics on Nerve Fibre.*
(Solutions painted on 0.5 cm. of nerve for 15 seconds.)

DRUG	0.1 per cent.		0.5 per cent.		2 per cent.	
	A	R	A	R	A	R
Holocaine hydrochloride	15	40				
Butyn	10–17	30–40	40	50	2 hours.	
Cocaine hydrochloride	12	30	More than 2 hours.			
Stovaine	10	23	24	50		
Phenolaine			30	45	35	60
Alypin	10–16	15–20				
Tutocain	10	16				
Beta eucaine lactate	1	3	12	20	20	30
Novocain	1	5	12	16		
Apothesine	0	0	8	15–20		
Tropacocaine	0	0	5	6		

A. Duration of complete paralysis in minutes.
R. Length of time for recovery in minutes.

stovaine, phenolaine, apothesine, alypin, holocaine eucaine, and tropacocaine, the effect being less marked for novocain and very slight in the case of tutocain. Butyn a drug which dilates vessels, especially those of the splanchnic area, behaved in all perfusion experiments like a vaso-constrictor, a result thought to be due to its precipitation by tissue fluids in the smaller vessels.

Equal small doses (5 mg.) injected intravenously into a cat caused with cocaine, a marked rise in blood pressure with some constriction of splanchnic vessels, with tutocain,

a much smaller rise in blood pressure, with no obvious effect on splanchnic vessels with butyn, a full of blood pressure followed by a more gradual recovery, with marked dilatation of the splanchnic vessels

Nasal Mucous Membrane

It has been found clinically that cocaine when applied directly to nasal mucous membrane will cause shrinkage, a property which is of much importance to surgeons, and which is not possessed by any well known substitute drug Nasal mucous membrane is not merely richly vascular, but it has almost the structure of erectile tissue Direct observation of changes in the condition of the nasal mucous membrane of animals is not feasible, and I therefore devised a special indirect method[19] which was found to be suitable—namely, that of perfusing the nares of a cat or dog through a frontal sinus with warm Ringer solution at a constant temperature and pressure A small brass tube is screwed into a trephine opening made into the frontal sinus, and by connecting this tube to a Mariotte's flask warm saline can be allowed to run through the nares, and collected and measured as it drips from the nose When the flow is constant the connecting rubber tube is clipped and the drug is injected through it into the frontal sinus, whence it percolates into both the nasal cavities After a given time usually fifteen minutes perfusion is resumed any swelling of the mucosa will retard while shrinkage quickly causes a marked augmentation of the flow

Using this method, only two local anaesthetics cause an increase in the rate of flow, cocaine and tutocain—that is these two only cause shrinkage Butyn causes marked swelling of the mucous membrane which can be partly removed by adrenaline and the swelling is less marked if the adrenaline be instilled into the nose five minutes before the application of the butyn Other drugs which have been tested by this method are stovaine novocain and tropacocaine and all cause marked congestion Cocaine has hitherto been unsurpassed in rhinology tutocain is the only substitute drug which causes shrinkage of the nasal mucosa if it should prove to be an effective anaesthetic and non-toxic it may become a substitute for cocaine Butyn is precipitated by sodium chloride, and its action is therefore uncertain The toxicity of butyn renders the application of 5 per cent solutions inadvisable and a 2 per cent solution only is recommended for the throat and nose [9]

Irritation

Le Brocq[11] has shown that stovaine eucaine and tropacocaine are too irritant to be used for subcutaneous injection, that cocaine is also irritant to tissues while novocain is altogether free from irritant properties I adopted le Brocq's method Rabbits were used for the experiments the abdomen was shaved and the skin washed with ether The drugs were injected in 10 per cent solutions freshly made with twice distilled water 0·5 c.cm of the solution being injected subcutaneously into the upper part of the shaved area a control injection of distilled water was made below Cocaine immediately caused hyperaemia and slight swelling followed later by ecchymosis and thickening for three days, and then by scab formation Phenoline caused hyperaemia ecchymosis and slight thickening immediately after injection lasting four days, and followed by scab formation Butyn caused slight hyperaemia lasting one day, but no thickening, there was no scab formation but some desquamation of the skin after five days Novocain caused no ecchymosis or thickening nor any signs of irritation, even after the injection of a 20 per cent solution Tutocain caused hyperaemia and slight thickening immediately after the injection The thickening lasted for two days and was followed by scab formation In the above experiments all the control areas were normal Cocaine and phenoline act as irritants to tissues when injected subcutaneously butyn has very little irritant action, and novocain none Tutocain is certainly as irritant as cocaine Experiments were made on three men subcutaneous injections being made with 2 per cent solutions Marked hyperaemia and thickening of the skin is caused immediately after the injection, and some ecchymosis and tenderness persist for about two days Tutocain would therefore appear to be quite unsuitable for subcutaneous injection the toxicity of butyn and cocaine renders the drugs also undesirable and for this purpose novocain most nearly approaches the ideal local anaesthetic

Specific Action on the Central Nervous System

One factor common to most local anaesthetics is that they stimulate the central nervous system Cocaine butyn, tutocain, and novocain all cause convulsions in rabbits after subcutaneous injection The convulsions are followed by muscular weakness or even by collapse if the dose has been large Small injections not sufficient to cause convulsions give rise to muscular twitchings especially of the head area and the general effect is very similar to the cerebral effects produced by tutin[18] and picrotoxin I have satisfied myself that these convulsions are due in each instance to stimulation of the cerebral cortex Under the influence of deep anaesthesia the convulsions do not occur If the animal be anaesthetized, and one cerebral hemisphere destroyed and if it be then kept lightly anaesthetized with ether the injection of one of these drugs causes convulsions which occur on the side opposite to the whole hemisphere, further convulsions cannot be obtained if the crura are divided There seems therefore little doubt that these drugs cause convulsions by stimulating some portion of the cortex of the brain and that this effect is followed later by depression When these drugs are injected subcutaneously in the amounts in which they are likely to be used as local anaesthetics, their convulsant action can be placed in the following order—cocaine butyn, tutocain Novocain is much less effective, and for practical purposes need not be considered This property of giving rise to powerful stimulation and excitement of the cerebral cortex is characteristic of one of the two main groups of addiction drugs represented by cocaine, a drug which excites the 'emotional and relatively lower centres in the cortex" (Dixon[5])

Butyn in relatively small doses temporarily depresses nerve ganglion cells throughout the body the splanchnic nerves are paralysed though post-ganglionic fibres remain active, the vagus and sympathetic in the neck are depressed after larger doses both vagi and sympathetic are temporarily paralysed The cells in the spinal cord are depressed in the anaesthetized cat by even a small dose of butyn such as 5 mg injected intravenously, and this dose antagonizes the action of strychnine, since much larger doses of this alkaloid are now required to cause convulsions

Relatively small doses of butyn injected intravenously may cause sudden arrest of respiration in anaesthetized cats or rabbits this is in contrast to cocaine and tutocain, which first excite respirations

Toxicity

Some observations were made with the object of determining the minimum lethal doses of cocaine butyn tutocain and novocain for rabbits guinea-pigs and mice and the results are given in Table IV By subcutaneous injection the toxicity of tutocain for rabbits is double that of novocain and for guinea-pigs and mice two to three times By rapid intravenous injection of 1 per cent solutions the toxicity of tutocain is four times that of novocain and nearly approximates to that of cocaine and butyn Table V gives the minimal doses required to produce mild convulsions lasting five to ten minutes in rabbits

TABLE IV.—*Minimum Lethal Doses Compared*

	Cocaine	Butyn	Tutocain	Novocain.
	mg. per kilo	mg. per kilo	mg. per kilo	mg. per kilo
Rabbit— Intravenous 1 per cent solution (1 c.cm in 13 secs.)	12	12	21	60
Subcutaneous 5 per cent solution	200	55*	300	600
Guinea-pig—Subcutaneous 2 per cent solution	Under 60	Over 70	120-150	Over 350
Mouse—Subcutaneous 2 per cent solution (dose in mg. for 20 gm. mouse)	6	3	13	22

* See Reference [8]

TABLE V.—*Minimum Convulsant Dose for Rabbits*

	Cocaine	Butyn	Tutocain	Novocain
	mg. per kilo	mg. per kilo	mg. per kilo	mg. per kilo
Intravenous Rapid injection of 1 per cent. solution into ear vein (1 c.cm. in 18 secs.)	4	4	10-15	45
Subcutaneous 5 per cent. solutions under skin of back	30	30	65	120

CONCLUSIONS

1. These experiments show that the best of the local anæsthetics for the eye are cocaine and butyn. Tutocain may also have a use. Tropacocaine, novocain, and cocaine are less valuable for deep anæsthesia.
2. For the nose, cocaine and tutocain are alone useful.
3. For subcutaneous injection novocain is much the best.
4. Besides cocaine, it is believed that the properties of butyn and tutocain may render them addiction drugs.

I desire to express my thanks to the Medical Research Council for the special grant it made for the expenses of this research, and to Professor W. E. Dixon, to whom I am greatly indebted for help and advice throughout the investigation.

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CAESAREAN SECTION*

BY

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This paper records an experience of 116 sections, the majority of which were performed to anticipate or relieve obstructed labour due to pelvic contraction, the others for less common indications.

The Operation

The abdominal incision is median and subumbilical unless Bandl's ring is present, when it is placed higher. The uterus is opened in the upper segment, and the hand, passed between the placenta and the uterine wall, ruptures the membranes and extracts the child. After removal of the placenta 1 c.cm. of pituitary extract is injected, and the uterus is closed with four to six interrupted catgut sutures taking up the whole thickness of the wall. A continuous suture or further interrupted sutures adjust the superficial layers and peritoneum, and the abdomen is closed. The operation takes from twelve to twenty minutes. The gaping mouths of sinuses seen while incising the uterus suggested that a safer method of approach must be adopted in septic or suspect cases.

Situation of Placenta

The placenta in 75 cases was posterior or anterior in position in a proportion of 4 to 3, but in patients who had had previous sections the proportion was 3 to 1, suggesting that the residual scar tissue contributed to this result. It is noteworthy that the placenta was anterior in the only case of rupture of an old scar.

Rupture of Old Scar

This risk is negligible. In many the uterus showed no trace of a previous incision, but in some there was definite scar tissue and the wall felt dense when incised. In no case was thinning evident, although in many instances the patient had been in labour a number of hours, and one at least has since been delivered without resort to section. The case which ruptured had had four previous sections and came in for her fifth. After several hours in labour the pain became very severe and she was operated on shortly after admission. The complete ovum was lying in the abdominal cavity, which contained much blood, and the placenta presented. The uterus, firmly contracted, appeared ready for a resuture, which was done. The mother made a perfect recovery.

Contracted Pelvis

A large number of the patients were definitely undersized and rachitic. Three had old hip trouble with, in two cases, the limb ankylosed in such marked adduction as to render delivery difficult if not impossible, but each in addition had marked flattening on the affected side of the pelvis.

The previous obstetric histories were instructive. A 10-para with a conjugata vera of 3 in. reported the survival of one child—the others died at birth following instrumental delivery—while a 6-para and a 4-para recorded a series of stillbirths preceding the successful Cæsarean section. In a number of cases when the child survived delivery it died some weeks or months later from "fits." One 7-para reported that her four children delivered alive with forceps died between six weeks and three months from this cause.

Primiparæ, having no antecedent obstetric history, are entirely dependent for their safety on a pre-maternity examination. The outstanding impression gained in dealing with these cases was the extremely obvious indication that something was wrong, gained in practically every instance by abdominal examination without resort to either pelvimetry or an internal examination. The problem, viewed purely as one of elementary mechanics, was obvious: the head was above the brim and actually overriding it, or sitting in the brim and no pressure from above could push it in, or the head was definitely engaged but a large amount was still above the brim. Since in a normal case merely the forehead can be felt above the brim some weeks before term, surely something must be wrong if more of the head is felt. Where there is the least doubt the patient should be anæsthetized, and with fingers—or even the whole hand—in the vagina, the exact relationship of the head (the ball) to the pelvis (the socket) should be decided on a purely mechanical basis. When the patient is in labour and it is believed that the head may come through, a careful watch should be kept on the mother for exhaustion, the child for distress, and the course of labour for the non-descent of the presenting part or the formation of Bandl's ring, with a view to performing an immediate section should occasion arise.

Contraction of the pelvic outlet is less common but more treacherous. In the majority the pelvis was small and the delay was at the brim or high up, but in some cases the abdominal examination suggested that all was well, and the head appeared to be well engaged. In such cases no difficulty was experienced at the operation in extracting the head from the pelvis. A certain number of cases invited the application of forceps, especially when the head was impacted in the mid-cavity in cases of funnel-shaped pelves, and in two cases where it was actually at the outlet. A thorough examination however, showed that the lower strait could not possibly allow the passage of a head in a condition consistent with the survival of the child, and without inflicting serious trauma on the mother.

Cæsarean section as an operation is often regarded as of sole interest to the specialist, and for use in cases of marked pelvic contraction. It has not yet come into its own in minor degrees of this condition.

Obstructed Labour

Peritoneum.—The peritoneal fluid was markedly increased in amount, and in one was blood-stained.

Uterus.—The presence of Bandl's ring as a shallow transverse groove was noted in a number, and frequently corresponded to the child's neck. In several cases the incision had to be prolonged into the lower uterine segment.

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to divide the ring before the head could be extracted The level of the ring varied, and in one or two late cases was almost up to the umbilicus The lower uterine segment was thin in cases of overdistension—sometimes not thicker than wet blotting paper—and in two cases blood was extravasated under the peritoneal coat, indicating that it was on the point of rupture The upper uterine segment in several very late cases was in a state of tonic contraction, the surface veins and uterine sinuses being flattened and empty, and merely a little dark blood trickled away on section The trauma to which the lower uterine segment, cervix, and vagina are subjected is recorded, but the damage which results in obstructed labour from natural forces is not sufficiently recognized

Intact membranes suggest that the child is fairly safe from undue pressure but this was disproved by finding meconium in the liquor, and marked moulding of the head before rupture of the membranes The lower uterine segment and cervix was nipped between the head and pelvic brim in most cases and in one this was so marked that the stillborn child had an area the size of a two-shilling piece on the post parietal showing bare bone The mother died later from general peritonitis following sloughing of the bruised lower uterine segment, which actually had a hole in it In another fatal case the child's head was bruised and ecchymosed over an area corresponding to the promontory One other case presented a laceration of the cervix extending to the vault although forceps had not been used

Placenta and Membranes.—It was very noticeable that in late cases obviously infected the chorion appeared yellow and pultaceous in the lower areas and could not be stripped off, suggesting that infection was tracking up in this layer outside the amnion In one this change in the chorion was almost universal and the placental site itself appeared septic

In late cases the liquor amnii was scanty and usually contained meconium In a number it was definitely offensive

Diagnosis of Infection

Many hours in labour, much interference, or the presence of Bandl's ring is strong presumptive evidence of infection A discharge developing during labour, after rupture of the membranes, with soreness and redness of the vulva, is almost certain proof, and a temperature is more likely due to sepsis than to exhaustion Offensive liquor found on opening the uterine cavity, or a positive culture from liquor obtained from the abdomen, is proof positive Cultures were taken in a few cases, and the results are instructive in showing how soon after rupture the liquor may become infected

Bacteriology

Membranes	Liquor	Result		Pyrexia (Days)
		Mother	Child	
Unruptured	No growth	Alive	Alive	0
	No growth			1
Ruptured 6½ hours	Diphtheroid bacillus	Alive	Alive	0
8	No growth			5
11	B coli and streptococci			11
16	Offensive	Dead		—
20	Streptococci			—
25	B coli and streptococci	Alive		5
26	B tetanoides		Dead	4
35	Offensive	Dead		—
43	Offensive			—
43	Offensive	Alive		11

Offensive lochia or the discharge of pus from the wound during convalescence is suspicious of antecedent infection During convalescence each day on which the temperature was above 100° F was noted, unless it could be attributed to some definite cause—the breasts, for instance The following average duration of pyrexia was met with

Membranes Unruptured—	
Labour under twelve hours (17 cases)	2 days
Labour over twelve hours (13 cases)	3
Membranes Ruptured—	
Labour under twelve hours (18 cases)	5
Labour over twelve hours (5 cases)	7

Results

Forty-three cases operated on early in labour with unruptured or recently ruptured membranes showed 100 per cent maternal and foetal survival With the exception of two deaths under anaesthesia the cases which died were all very exhausted and definitely infected

Maternal Deaths

Case 1.—A 2 para with a true conjugate of 3 in had been forty-eight hours in labour and the membranes ruptured for sixteen hours She was very exhausted the pulse being 132 and the temperature 97 2° F Attempts at forceps delivery had been made for two and a half hours on a head above the brim 1 c.cm of pituitary extract had been injected and this necessitated almost continuous anaesthesia for several hours until she was brought to the hospital On opening the uterus the liquor was found to be offensive and the placental site appeared septic The child survived but the patient died on the third day *Post mortem* septic endometritis suppurative peritonitis and toxaemic changes in the organs were found

Case 2.—A 1 para with a true conjugate of 2½ in had been in labour for forty-eight hours and the membranes ruptured for thirty-six hours She was very exhausted and the pulse was 144 Numerous attempts had been made at delivery with forceps on the head which was above the brim Finally the head was perforated The uterus was in tonic contraction and at operation the lower uterine segment was found to be extravasated with blood The upper uterine segment was bloodless and appeared on section like wet leather and a rapid subtotal hysterectomy was performed The patient died shortly after the operation was completed Cultures of the liquor grew streptococci and *B coli* *Post mortem* there was no peritonitis but the vagina was extensively lacerated Section of the uterine wall showed acute inflammatory oedema and necrosis with streptococci present in the musculature

Case 3.—A 1 para with a true conjugate of 3½ in and a funnel-shaped pelvis had been in labour with ruptured membranes for forty-eight hours and the child was dead Bandl's ring was present the head was above the brim and there was an offensive vaginal discharge At operation the peritoneal cavity contained blood-stained serum and the lower uterine segment was extravasated with blood The upper uterine segment was in tonic contraction and the veins were flattened and empty On opening the uterus the liquor was offensive and the placental site appeared septic. She died on the third day *Cultures of the liquor grew streptococci* *Post mortem* peritonitis was present and the lower uterine segment was gangrenous and pulpy The anterior vaginal wall was bruised lacerated and surrounded by gangrenous inflammation and there was a sloughing erosion on the posterior wall of the bladder An acute haemorrhagic inflammation extended through the left broad ligament up to the lower pole of the kidney Bronchopneumonia was present in both lungs and the other organs showed toxic changes

Case 4.—A 4-para with a true conjugate of 3 in had been in labour for twenty four hours and the membranes ruptured for twenty hours She was very exhausted the pulse was 120 and the temperature 99° F She had had a discharge for some days and the vulva was sore and excoriated The chorion appeared sloughy and cultures from the liquor grew streptococci She died but the child survived *Post mortem* there was no peritonitis but there was a slight purulent exudate over the uterine incision Septic endometritis was present especially about the site of the uterine incision Both lungs showed commencing bronchopneumonia and pleurisy

Case 5.—A 1 para suffering from eclampsia with a badly contracted pelvis had been in labour several days The child was dead and its scalp had sloughed owing to pressure on the promontory of the sacrum *Post mortem* general peritonitis and a hole in the posterior wall of the lower uterine segment were found

Case 6.—A 2 para with albuminuria had been in labour for three days and the membranes had been ruptured for twenty-one hours The head was above the brim and markedly moulded The child survived but the patient died of septicaemia and (?) peritonitis Neither cultures nor *post mortem* examination were obtained

Case 7.—Death under anaesthesia

Case 8.—Death under anaesthesia This patient was very exhausted and had had several previous anaesthetics and one attempt at forceps delivery

Case 9.—See placenta praevia

Case 10.—See occipito-posterior

Foetal Deaths Mother Survived

1 Infected case eighty four hours in labour membranes ruptured forty-eight hours much moulding

2 In labour for eleven hours membranes ruptured six hours head above brim vessels in cord thrombosed

3 Infected case membranes ruptured twenty-six hours Bandl's ring frequent forceps

4 Labour twenty four hours forceps before admission cord prolapsed

5 Labour seventeen hours head above brim cord prolapsed

6 Labour twenty hours, head above brim, macerated
7 Labour twenty nine hours, membranes ruptured twenty three hours, child had a spina bifida
8 Infected case, labour thirty one hours, membranes ruptured six hours, prolapse of cord

Foetal Deaths Mother Died

1 Child's head perforated before admission
2 Membranes ruptured thirty-six hours, Bandl's ring, frequent forceps
3 Obstructed labour and eclampsia, child's scalp necrosed owing to pressure
4 Central placenta praevia, patient blanched and collapsed

The deaths of babies could not be attributed to the operation, as, with the sole exception of one or two in the last stages of foetal distress, the others were known to be dead

The only point for discussion is whether, presuming the death of the child, the mother could have been delivered safely by any other method Delivery by forceps was out of the question apart from the fact that it had already been tried in a number Version was also contraindicated, either by the pelvic measurements or by the condition of the uterus, which in some cases was on the point of bursting or tightly gripped the child in a Bandl's ring Craniotomy is certainly not justifiable if the child is alive, but where the child is dead it might be considered on a head well down in the cavity

Caesarean Section or Craniotomy

The case for Caesarean section is as follows Let it be granted that the twelve babies were known to be dead when the patient was seen Eight of the mothers left the hospital alive and well, four died—each of the four was profoundly exhausted, and could not have stood an anaesthetic lasting many minutes Three patients were definitely infected, one of whom had a true conjugate of 2½ in, and one had eclampsia (see maternal deaths 2, 3, 5), the fourth was a case of central placenta praevia—a multipara who was blanched and had chronic nephritis

Craniotomy on a head above the brim of a contracted pelvis, with an os one-third to half dilated, would in itself tax the skill of an expert obstetrician Add to this a Bandl's ring gripping the child's neck, the lower uterine segment on the point of bursting, the tissues bruised and highly infected, the mother profoundly exhausted, and the procedure becomes sheer folly Craniotomy on live children has been recommended in septic cases with a view to avoiding Caesarean section The criticism of this is the difficulty of proving infection, and its wisdom as a procedure even in the presence of proved infection The bacteriological table contains nine proved cases of infection of these, five mothers recovered—the four who died would almost certainly have died in any case, five children have survived who might therefore have been craniotomized had the operation been practicable (see maternal deaths 1, 2, 3, 4)

Hysterectomy in Infected Case

A subtotal hysterectomy, presumably to remove the placental site after the risk of infection, is not indicated in suspect cases, and as a procedure in lite cases is merely playing with the fringe of the trouble, which by that time is deeply spread in the surrounding tissues The *post-mortem* reports are amply confirmatory This applies also to a total hysterectomy A

Technique in Infected Cases

The patient is put in the lithotomy position, and the vagina is douched out with eusol The uterus is eventrated and held well forwards, and after being packed round with swabs the edges of the abdominal incision are clipped together over the swabs Towels are wrapped round the uterus outside the abdomen, and are further protected by a layer of rubber sheeting The fundus is incised transversely and the child extracted An assistant holds the anterior and posterior walls apart, and thus prevents separation of the placenta until the muscular funnel lined by the placenta and membranes has been well douched out with eusol, the fluid escaping readily at the vagina The placenta and membranes are then pressed down into the vagina with swab pressure, and extracted from below The cavity is flushed again with eusol, and the uterus and abdomen closed as before The peritoneal cavity is well protected, and the uterine incision avoids the very vascular placental site, which is protected from infection until the membranes have been well flushed Extraction of the placenta from below prevents the more highly infected membranes in the lower pole from being dragged over the placental site and wound edges This is only possible if the os is half or more dilated

This technique has been adopted in five cases, but in one the placenta had to be extracted through the abdominal incision owing to insufficient dilatation of the os One very late case died (see maternal deaths, 4) All the cases were believed to be infected, although only proved by cultures in two, both of whom survived Four live children resulted, the fifth being dead at the time of operation One of the mothers has since had a Caesarean section at the time of election, with no evidence of thinning of the old scar

Certain Special Conditions

Placenta Praevia.—Section was performed on four occasions Three primiparae with placentae over the os were successfully delivered of live children (7½, 7½, 6½ lb) Two of them had been plugged before operation One, a 6-para, with chronic nephritis and general oedema, and blanched from loss of blood due to central placenta praevia, died shortly after the operation The child was stillborn The placenta in the former cases was definitely elongated, and suggested that it had undergone stretching in the long axis of the uterus during the development of the lower uterine segment The course of the operation gave rise to no anxiety from bleeding The operation should always be considered in the child's interests if the patient is near term, especially in primiparae and where the placenta is partially or wholly over the os

Prolapse of Cord.—If this is associated with pelvic contraction, and there is the least doubt about the safety of version, in the mother's interests, lest her uterus rupture, or the child's interests as its head comes through the brim, the wisest course is to leave the condition alone and make immediate arrangements for a section In the majority of cases the child is dead, and the sole concern is to arrange for the safe delivery of the mother

Occipito-posterior Presentation.—Obstructed labour resulted from this on three occasions, the head in each case being above the brim All were multiparae, and two gave a history of normal deliveries Bandl's ring was present in both and rendered a version impossible Live children resulted in each case, but one mother, with a badly bruised lower uterine segment, died of septicaemia and peritonitis The liquor was offensive, but no culture was taken or *post-mortem* examination performed

Pendulous Abdomen.—A woman with marked Pott's curvature was delivered through a fundal incision Her chest rested on her pelvis and compelled the uterus to grow horizontally forwards In labour the direction of force would have driven the child's head against the spine Undue importance is attached to pendulous abdomen as a sign of contracted pelvis

Tumours.—Five cases of obstruction were due to tumours (fibroids in three cases, ovarian tumours in two), some of the patients were seen late in labour after many examinations and attempts at forceps delivery In two cases the pelvic fibroid simulated the foetal head, and this caused delay in diagnosis The diagnosis in labour between an impacted ovarian and posterior fibroid is difficult The three fibroid cases were as follows

1 Elderly primipara with large multiple fibroids Caesarean section, followed by a subtotal hysterectomy
2 Large cervical fibroid Caesarean section, fibroid to be removed later
3 Large cervical fibroid, liquor offensive, uterus and abdomen closed Patient developed a large abscess which burst through the wound, and later required a secondary suture Six months later the abdomen was opened, and merely a few peritoneal adhesions indicated the previous infection The fibroid was enucleated the patient is now seven months pregnant

In dealing with fibroids where it is hoped to conserve the uterus, the question of accessibility and vascularity will decide whether to attempt removal at the time of section or postpone till involution is complete In infected cases the latter course is certainly the wiser one to adopt Both

cases of ovarian tumour required section before the ovarian cyst could be disimpacted and removed. Tapping such a tumour by the vagina does not commend itself owing to doubts as to its exact nature. It was quite out of the question to push the tumour past the pre-sternal part.

Cervical and Vaginal Stenosis.—A patient with cervical stenosis showed signs of obstructed labour: the os was closed, rigid, and difficult to reach. She had been twice curetted. A number of these cases met with have responded to incision of the fibrous ring, but this was not possible here. The vaginal stenosis could not be explained. An elderly multipara with a ring of contraction below the cervix was watched carefully in the later months of pregnancy and early in labour, but as the ring showed no relaxation a Cæsarean section was performed.

Eclampsia (two cases).—Both cases had, in addition, marked pelvic contraction and obstructed labour. One died later from sloughing of the lower uterine segment; the baby was dead. The other had a fit on the table and was operated on while unconscious; an anæsthetic was given when stitching up. Both she and the baby survived.

THE BACTERIOPHAGE IN THE TREATMENT OF TYPHOID FEVER

BY

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THE value of the administration of bacteriophage in the treatment of organismal infections in man has not yet been definitely established. *In vitro* the bacteriolytic principle, whether it be due to an ultramicroscopic living virus or some other property associated with organismal life, has a very marked effect on susceptible bacteria.

The extensive work of d'Herelle (1922)[1] has shown that the spread of avian typhoid and paratyphoid can be controlled and actual cases may in some instances be cured by the subcutaneous injection of a small dose of bacteriophage active for *B. gallinarum* and *B. pullorum*. In human beings affected with typhoid and dysentery d'Herelle (1922) has demonstrated repeatedly that a very active bacteriophage can be isolated from the faeces when convalescence commences. He has also treated seven cases of dysentery by giving 2 c.cm. of bacteriophage by mouth and apparently obtained good results. Brunoghe and Maisin (1921) have treated with success infections due to the staphylococcus and *B. anthracis* by subcutaneous injection of suitable bacteriophage. Beckerich and Hauduroy (1922)[2] have treated seven cases of typhoid fever and two cases infected with *B. paratyphosus* B by giving 1 c.cm. of a culture of active bacteriophage subcutaneously and 2 to 5 c.cm. by mouth. From all these cases the infecting organisms were isolated from the blood forty-eight hours previous to the administration of bacteriophage. In every case defervescence took place within forty-eight hours.

Methods

The bacteriophage employed in the treatment of cases of typhoid fever was isolated from the faeces of a normal individual who never had an intestinal infection. It was *obtained by the technique devised by d'Herelle*:

Five grams of faeces were added to 50 c.cm. of broth (*p*H 8·0) and incubated overnight. The broth was centrifuged to remove all coarse material, and the supernatant fluid was afterwards passed through an L. Chamberland candle. 2 c.cm. of the filtrate were then added to tubes containing 10 c.cm. of broth. Young agar cultures of strains of the coli-typhoid-dysentery group were now suspended in broth. Sufficient of each suspension was added to the broth tubes to give a turbidity corresponding to that in a standard tube containing 250 million bacilli per cubic centimetre. After a further period of incubation various degrees of turbidity were noted in the tubes. The broth tubes were now subcultured on to agar slopes, and after incubation the presence of plaques definitely indicated the activity of the bacteriophage culture for a particular strain.

A bacteriophage showing some power to cause lysis of *P. typhosus* having been obtained, its virulence was enhanced by filtering the broth culture through a bacterial filter and adding five drops of the filtrate to another broth tube along with a suspension of *B. typhosus*. The second broth culture was then incubated and afterwards filtered. By repeating this process fifteen times a bacteriophage of such virulence was obtained that it produced lysis in a broth culture of *B. typhosus* in from three to four hours.

In investigating the following cases, the faeces of the patient were examined for bacteriophage previous to the administration of the bacteriophage culture and again twenty-four hours after administration. Thereafter the faeces were examined every second day, so far as was possible for bacteriophage. The activity of the bacteriophage isolated from the cases was tested against the stock strain, and in the charts the degrees of virulence are thus expressed:

0 = No bacteriophage obtained.
− = Bacteriophage of slight virulence as shown by a few plaques on the agar slope.
++ = More numerous plaques.
+++ = Still more numerous plaques of bacteriophage.
−++++ = No growth on agar slope or only a few discrete colonies of *B. typhosus*.

CASE I.

A female aged 58 years was admitted to hospital eighteen days after falling ill. On admission she had no acute symptoms. The bacteriological examination showed that the blood serum agglutinated *B. typhosus* in a dilution of 1 in 240. No typhoid bacilli were obtained from the blood and urine, but the faeces contained

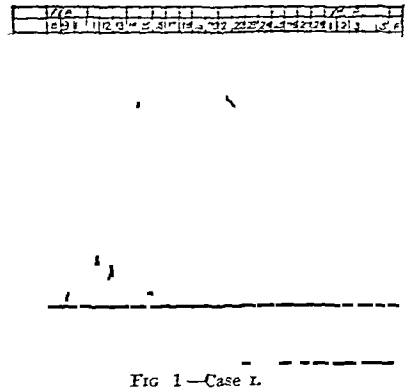


FIG. 1.—Case I.

B. typhosus. No bacteriophage was found in the faeces active for the stock strain or the patient's own strain. Six days after admission the patient was given 0.5 c.cm. of bacteriophage culture subcutaneously and 2 c.cm. by mouth. The temperature then subsided, and twelve further examinations of the faeces and urine were made with negative results for *B. typhosus*.

CASE II.

A. W., a male aged 33 years, was admitted after being ill for three weeks. *B. typhosus* was not obtained from the blood or urine, but the faeces showed numerous colonies on McConkey plates. The blood serum agglutinated *B. typhosus* in a dilution of 1 in 120. There was no bacteriophage in the faeces active for the stock strain.

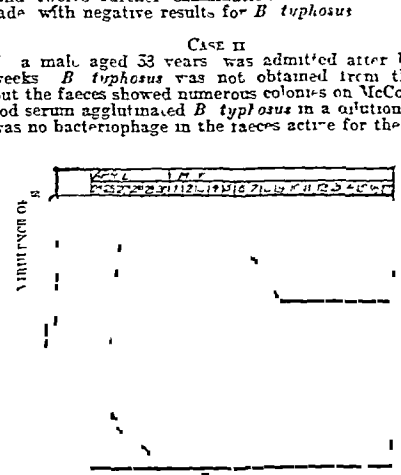


FIG. 2.—Case II.

or the patient's own strain of *B. typhosus*. On the day after admission 2 c.cm. of bacteriophage culture were given subcutaneously and 15 c.cm. by mouth. Thereafter the temperature became normal, and nine further examinations of the faeces and urine did not show *B. typhosus*.

CASE III

A D, a female aged 11 years, was admitted in a moderately ill condition after having been confined to bed at home for two weeks. The blood serum agglutinated *B. typhosus* in a dilution of 1 in 120. *B. typhosus* was *not found* in the blood, urine, or faeces,

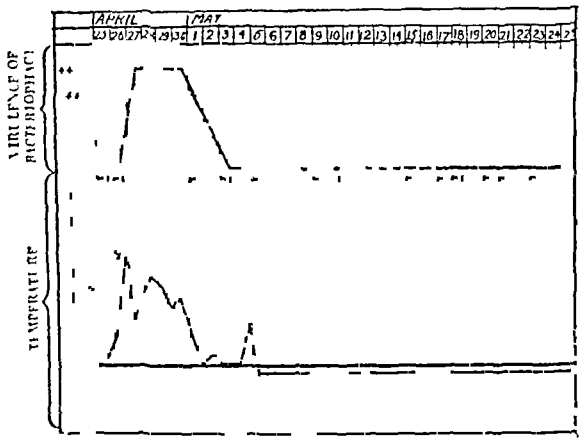


FIG. 3.—Case III.

and the faeces did not contain bacteriophage. Twenty-four hours after admission the patient received 2 c.cm. of bacteriophage culture subcutaneously and 15 c.cm. by mouth. Convalescence was uneventful. The faeces were examined twelve times and the urine ten times, with negative results for *B. typhosus*.

CASE IV

F. S., a female aged 8 years, had been ill for two weeks before admission. *B. typhosus* was found in the faeces, but not in the blood or urine. The Widal reaction was negative. The patient's faeces showed the presence of bacteriophage which was only slightly bacteriolytic for the stock strain and the patient's own strain. Bacteriophage culture was given subcutaneously and by mouth, and

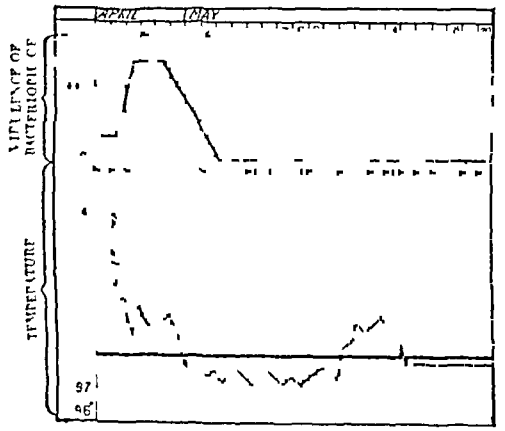


FIG. 4.—Case IV.

the patient became apyrexial. Seven days later, however, there occurred a slight rise above normal in the temperature. A blood culture remained sterile and thereafter the patient made excellent progress. Subsequent to the administration of bacteriophage the faeces were examined eighteen times and the urine nineteen times, but typhoid bacilli were not found.

CASE V

A. W., a female aged 20 years, was admitted after having been ill for ten days. The bacteriological examination showed that

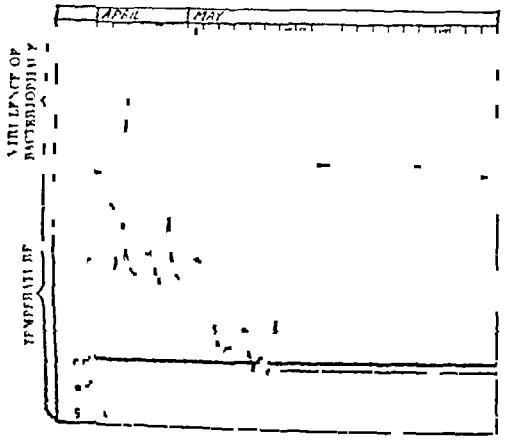


FIG. 5.—Case V.

B. typhosus was present in the blood, the urine, and the faeces. The faeces did not yield a bacteriophage active for *B. typhosus*. The day after admission the patient received 2 c.cm. of bacteriophage culture subcutaneously and 15 c.cm. by mouth. No immediate lysis occurred, but the patient made an uneventful recovery. The faeces were found to contain typhoid bacilli forty-eight hours after the administration of bacteriophage, but fifteen further examinations of the faeces and urine gave negative results for *B. typhosus*.

CASE VI

J. S., a male aged 20 years, was admitted after being ill for ten days. The Widal reaction was negative and *B. typhosus* was only found in the blood. No bacteriophage active for *B. typhosus*

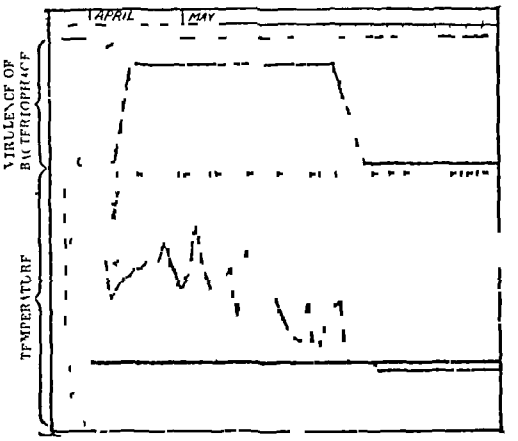


FIG. 6.—Case VI.

was obtained from the faeces. The patient received 2 c.cm. of bacteriophage culture subcutaneously and 15 c.cm. by mouth. Nineteen subsequent examinations of the faeces and urine proved negative for *B. typhosus*.

CASE VII

G. W., a female aged 36 years, was admitted after having been in bed at home for nine days. The bacteriological examination showed that the patient's blood serum agglutinated *B. typhosus* in a dilution of 1 in 240. The blood culture remained sterile and no organisms were present in the urine at the first examination.

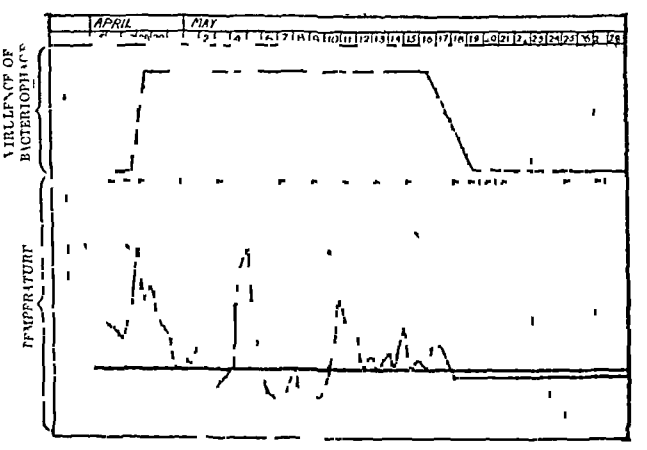


FIG. 7.—Case VII.

B. typhosus was found in the faeces, but no active bacteriophage was present. The bacteriophage was given subcutaneously and per os, and the patient's temperature fell by lysis immediately, but the course of the disease was complicated by an infection of the urinary tract. The urine showed the presence of many pus cells and *B. typhosus*. On two more occasions 4 c.cm. of bacteriophage were given subcutaneously, but this had no apparent effect on the infection of the urinary tract. Eventually the urine became sterile a month after the date of admission.

Discussion of Results

The results in these seven cases of typhoid fever treated with bacteriophage are of considerable interest. In five there occurred an immediate lysis after the administration of bacteriophage. The type of the disease, the stage of the illness, and the provision of hospital treatment may, however, be sufficient to explain this. It falls to be noted also that these five cases yielded sterile blood cultures. In the two remaining cases, in which the blood culture showed the presence of *B. typhosus*, the bacteriophage had apparently no effect in modifying the course of the disease. The strains of *B. typhosus* obtained from the blood, from the urine, and from the faeces of the various patients were equally susceptible to the bacteriophage *in vitro*.

In the faeces of only one case a bacteriophage of slight virulence for *B typhosus* was isolated previous to the administration of bacteriophage Within twenty-four hours of administration, however, an extremely virulent bacteriophage was obtained from all patients Coincident with the presence of an active bacteriolytic agent in the faeces there occurred a rapid disappearance of *B typhosus* from the faeces of six out of the seven patients The course of one case (Case VII) was complicated by an infection of the urinary tract due to *B typhosus*, and on several occasions when the faeces were obviously contaminated with urine *B typhosus* was found A sample of the urine obtained from this case within the first twenty four hours after the administration of bacteriophage was examined for the presence of bacteriophage, but no active bacteriolytic agent could be demonstrated The case had repeated subcutaneous injections of bacteriophage but this did not apparently influence the typhoid bacilli present in the urinary tract The disappearance of the bacteriophage from the faeces coincides very closely with defervescence except in Case VII, who had repeated doses of the lytic agent The administration of bacteriophage subcutaneously and by mouth has so far proved to be a perfectly harmless procedure

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1 D'Herelle F (1922) *The Bacteriophage* p 243 Idem ibid p 189
2 Brunaugh R and Martin J (1921) *Compt rend Soc de Biol* 1921 85 1118 Bokelich A and Haulurov P (1922) *Compt rend Soc de Biol* 1922 85 158

THE PRECIPITATION OF CRISIS IN THE TREATMENT OF PNEUMONIA *

BY

F M GARDNER-MEDWIN, M R C S, L R C P,

MEDICAL OFFICER TO THE ROYAL ALEXANDRA AND ALBERT HOSPITAL, EBBW VALE, AND THE DENBIGHSHIRE INFIRMARY

THE hypothesis is accepted that pneumonia, either secondary to influenza or primary from so-called chill, is a manifestation of a suddenly lowered resistance to a germ or germs, normally present in the respiratory tract, which, in consequence of that lowered resistance, suddenly become pathogenic

In 1922 I published with Dr James Graham Willmore[1] a paper founded on observations made in the 17th General Hospital in Alexandria in 1918 and 1919 during the great pandemic of influenza and towards its close We based our treatment on the fact that the white cell blood count of cases of influenza is low and remains low after the fever has ceased and for about five days after that, after which there is a sudden reactionary increase usually about the tenth day of the disease and the fifth day of convalescence

It is during this period of depression and lowered resistance, the result of or the cause of the leucopenia, that the danger of secondary infection exists and we showed that an injection, either subcutaneously or intramuscularly of sodium nucleinate in solution precipitates the reactionary increase of white cells in the peripheral circulation and so reinforces the patient's resistance Sodium nucleinate given in this way greatly increases the white blood count whether the patient has a leucopenia or not, and in a normal individual it about doubles the white cell count in twenty-four hours In cases of marked leucopenia in severe influenzal pneumonia counts have been seen to rise from 3,200 to 18,300 three days after a nuclein injection, with corresponding improvement in the patient's condition from a practically moribund state to one of convalescence in the same period The toxic symptoms of many of the cases suggested an acidosis and intensive doses of sodium bicarbonate were given either by mouth, bowel, or intravenous injection, together with glucose in the food or by bowel

The success which attended our efforts in the pandemic period was so marked that when I returned to general practice I invariably treated all cases of pneumonia on the same lines, with what I believe is an equally satisfactory result—that is, in every case of definite lobar pneumonia so treated a crisis has occurred about forty-eight hours or so after the first dose of sodium nucleinate was given, no matter what day of the disease it was administered

I have not made a regular practice of making blood counts in all my private patients, but in those cases in which I did I found the white count little more than normal with the patient seriously ill from pneumonia

The Egyptian cases were 32 in number and cover a period of some six weeks only, they are not selected but only one of us kept records, so that at least double that number were similarly treated within that period The English cases consist of 21 consecutive cases over a period of three and a half years Records of 53 cases in all have therefore been kept, all of which responded to treatment except 8 All the patients were seriously ill, all had pneumonia, all had definite lobar consolidation except 7 cases of bronchopneumonia, nearly all had blood stained sputum, this often appeared after the so-called crisis, indicating that the severity of the disease was arrested early Many showed signs of acid toxaemia All were treated as above described with sodium nucleinate injections Most of them had as much as *half* a drachm of sodium bicarbonate every four hours, some had a full drachm Those who had purulent sputum had an emulsion of creosote and potassium iodide Cardiac and respiratory stimulants were given if indicated

Of the 8 fatal cases, 2 were of patients with bronchopneumonia, the other 6 were war-worn soldiers in the pandemic period, 4 had nephritis to a marked degree which was not recent All were in a very toxic condition on admission to hospital Two were proved to have white blood counts under 4,000, one was as low as 1,900 Four had no special alkaline treatment, as they occurred before we appreciated its value, and therefore really ought not to be included in this series One had dysentery and two had malaria

Three of the patients who suffered from lobar pneumonia relapsed, sustaining a fresh invasion of lung area, but in all the temperature fell again by crisis within forty-eight hours after a further injection of nuclein All the English cases of lobar pneumonia responded to treatment and recovered

It will be seen that the cases of bronchopneumonia did not respond so typically as did those of the lobar type They fell by lysis rather than crisis It will be seen also that if we eliminate from the series all the cases of bronchopneumonia and also all the cases which did not receive intensive alkaline treatment, we also eliminate all the fatal cases but two, which were moribund on admission, and had chronic conditions of nephritis before contracting pneumonia

I do not for one moment claim that all these cases would not have recovered with ordinary expectant treatment, but I think it is at least worthy of note that in all the cases here reported of lobar pneumonia, fully treated the patient's condition began to improve at once after the nuclein injection, that all of them experienced a sense of well-being the next day, and that in every case the crisis occurred from forty-eight to sixty hours after the first injection of sodium nucleinate

The preparation used for intramuscular injection is a solution of sodium nucleinate put up by the Clin Laboratories of Paris in ampoules of 2 c cm containing 0 05 gram per cubic centimetre The British agents are F H Mertens, 64, Holborn Viaduct, London E C 1

The accompanying diagram shows the length or fever of forty successful cases of lobar pneumonia The vertical lines represent the duration of the pyrexia and the horizontal lines the nuclein injection showing that the effect of the treatment in precipitating devolution is independent of the duration of the illness In the three charts the heavy black line represents the temperature, while the dotted line represents the white cell count the normal count of about 7,000 corresponding with the line of *normal temperature* The leucocytic increase will be seen to be coincident with

* A paper read before the Liverpool Medical Institution April 3rd 1924

the fall of temperature and the general improvement in the patient's condition

Two typical cases are also reported in detail

CASE I

Sergeant F aged 29, was admitted from his unit on December 8th, 1918 he had felt unwell for three days His face was flushed and slightly cyanosed, there was general malaise and coughing but no expectoration The abdomen was tumid he complained of subcostal pain on both sides Temperature 102°, pulse 100 He was treated with sodium salicylate and stimulants Two days later his condition showed some improvement he had less pain temperature 100° On December 12th he was not so well the cough was more marked, and the cyanosis increasing The next day he was much worse—cyanosed toxic and stuporous On December 14th he looked as if he were going to die The white count was 3 200, temperature 104°, respirations 60 Sodium nucleinate was injected intramuscularly and 30 grains of sodium bicarbonate given every four hours Camphor was given hypodermically, alternating with digitalis 1/100 grain The day following this treatment he was somewhat more easy the white count was 7 200 Nuclein repeated On December 16th he was much better and was clear mentally he was expectorating blood-stained muco pus, temperature 101° On December 18th the temperature was normal he was breathing easily and slept well The white count was 18 300 He appeared to be convalescent He made an uneventful recovery

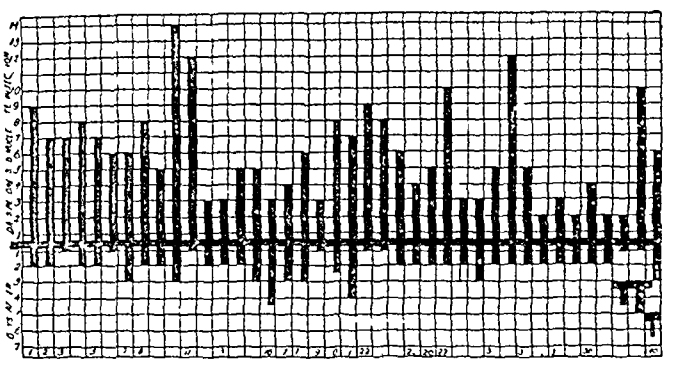


Diagram showing the duration of fever in forty case of pneumonia treated by sodium nucleinate Horizontal lines represent time of injection of sodium nucleinate vertical lines show duration of fever Cases 38 39 and 40 show relapses with extension of pneumonic area, treated with a second dose

CASE II

Private P aged 22 on admission from the detention hospital on January 25th, 1919 said he had felt ill for seven days His face was flushed and cyanosed lips deeply cyanosed, conjunctivae injected he complained of headache and general malaise Temperature 103° there was no malarial history He had vomited several times was not very clear mentally and was delirious The pulse was rapid and small there was definite congestion of both bases and slight friction in the right axilla Respirations 28, and very distressed he was tossing from side to side

On January 26th there were crepitant rales all over both bases, the sputum was purulent and blood stained Sodium nucleinate 0·05 grain was injected hypodermically and every four hours he was given sodium bicarbonate 1 drachm, ammonium carbonate 5 grains tincture of squill 7 minims alternately with the above he was given potassium iodide and creosote emulsion The day following the treatment there was a marked improvement in the patient's condition the respirations were easier, the pulse less rapid and he felt comfortable cyanosis persisted On January 28th the temperature was normal pulse 76 The patient said he felt well Cyanosis still persisted basal congestion was well marked The temperature did not rise again, and the patient has remained well

Dr Alfred Piney of Birmingham, in a critical letter to the editor of the *Lancet* (February 4th, 1922), pointed out that his own researches and also those of Muir and Andrews demonstrated that although a marked leucopenia occurs in influenza, yet the bone marrow of cases succumbing to influenza does not demonstrate any definite depletion or exhaustion of the marrow He says that one is not dealing with an acute aplasia of the bone marrow, and suggests that our method of treatment does not depend upon a direct stimulation of a leucopoiesis as we originally implied but upon the establishment of a leucocytosis at the expense of cells already ripe in the bone marrow, which respond to what he calls the "chemiotactic whistle"

How many times have all of us said to anxious relations of a patient suffering from acute pneumonia, cyanosed, dyspnoeic, sweating, poisoned, "I can do no more—it is a fight for life between his natural resistance and his disease, if anything can save him it will be nursing, we must wait for the crisis, but his strength is waning"?

I feel that nuclein converts the watching role of the physician into one of active combat, and for me at least it has robbed lobar pneumonia of some of its terrors Other conditions exhibiting a leucopenia may respond to similar treatment, and the importance of the role of the phagocyte increases if it will we can increase the strength of the phagocytic phalanx against invading armies of hostile bacteria

However that may be, I commend to your attention this somewhat unusual method of treatment, and wish to lay emphasis on its importance, because, at the risk of being dubbed an enthusiast or an empiricist, I hold that it is a weapon by which we can with some degree of certainty control a disease which at times assumes the proportions of a plague amongst us, and is at all times one of the principal contributors to the death rate of any nation

CONCLUSIONS

1 That pneumonia is the result of lowered resistance

2 That lowered resistance is coincident with, if not caused by, leucopenia

3 That leucopenia is the result of a toxin which temporarily paralyses the power of the system to respond to the chemiotactic call of bacterial invasion

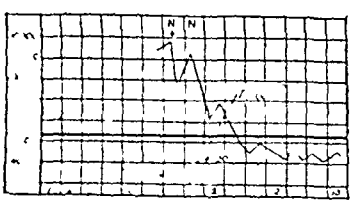


CHART 1—Case of right basal pneumonia—toxic cyanosed White count 1 for injection of sodium nucleinate, 3 000 after sodium nucleinate 11 800

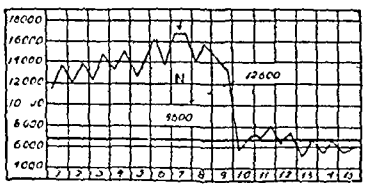


CHART 2—Case of influenza in a delicate man aged 37 complicated by pneumonia on the sixth day Sodium nucleinate on the seventh day crisis on ninth and tenth days White count increased by 4 000 in three days

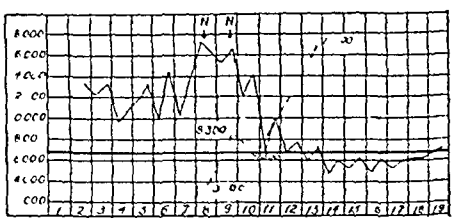


CHART 3—Man aged 26 admitted to hospital on the seventh day of illness cyanosed toxic, stuporous vomiting both bases pneumonic On the eighth day seemed moribund white count 3 200 Sodium nucleinate given he improved immediately Crisis on the eleventh day White count on the thirteenth day 17,500

4 That sodium nucleinate, injected intramuscularly, has the power to overcome this disability and to call out the reserves of leucocytes stored in the marrow, converting the leucopenia into a leucocytosis, thereby precipitating the devolution of the disease

5 That the effect of sodium nucleinate is independent of the duration of the illness, provided the patient is not in a dying condition before it is administered

6 That the action of this remedy is greatly facilitated by intensive alkalinization of the system by the administration of large doses of sodium bicarbonate

7 That lobar pneumonia reacts more typically and satisfactorily than does bronchopneumonia

Finally, my thanks are due to all those gentlemen with whom I saw cases in consultation, to Dr Alfred Piney for his kindly criticism of our original paper, and to my collaborator in Egypt, Dr J Graham Willmore

REFERENCE

1 Influenza Treatment by Direct Stimulation of Leucopoiesis, *Lancet* 1922 i, 116.

BLOOD INFECTION OF THE SUBMAXILLARY GLAND

BY

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An acute suppurative inflammation of the salivary glands is in most cases an ascending infection from the duct predisposed to by a diminished flow of the secretion, by fever, and by a depressed general condition So is it seen in most post-operative abdominal cases The condition is usually classed as an ascending infection when there are obvious signs of the duct being the source—as for example, a bright red protrusion of the duct mucosa or a string of cloudy mucus or pus exuding from the duct In this type of case the primary symptoms are those of recurring duct infections

A recent writer states that there is no absolute proof that a blood-borne infection is an occasional cause of acute suppurative inflammation of the salivary glands The following case seems to be worth recording as most probably a blood borne infection supervening on a duct obstruction inflammation

J S aged 37 was wounded on September 14th 1914 by a shell through the right elbow joint The joint was shattered and has discharged for several years without intermission In March 1915 the wound healed the joint having become ankylosed at a right angle the forearm was also fixed The wound after this frequently—every few months—was the site of an acute inflammation and abscess formation but at no time were there any definite sequestra visible on x ray examination or palpable by probe About 1920 he began to notice that at every acute exacerbation of the gunshot wound his right submaxillary region was the site of a tender swelling which caused pain on moving his jaw and headache He consulted his doctor at this time about it and was advised to have his teeth removed He had a complete clear-out of both upper and lower jaws but without any benefit

On July 26th 1923 I saw him in consultation He complained of a tender swelling under the right lower jaw pain on eating and headaches the present attack dating from May 1923 when he had an acute flare up in the elbow joint The pain is caused by the actual movements of eating but he states that the right of food makes no appreciable difference either in the pain or in the size of the swelling The present swelling came on just before he had an abscess in his elbow incised in May

There was a rather hard and nodular swelling about the size of a walnut in the right submaxillary triangle it was freely movable under the skin and on the underlying tissue but was slightly tender A string of pus was exuding from the oral exit of the submaxillary duct It was removed (1½ in long) and a piece of silkworm gut passed almost the length of the gland but no obstruction or anything suggesting stone was felt A ray examination showed no evidence of stone in the submaxillary gland

The elbow joint at this time showed a sinus of about 1 in but with no palpable dead bone There was no acute inflammation in this region The cast (string of pus) from the duct was retained in a sterile test tube and bacteriologically examined Pus was also taken from the sinus in the arm The report was as follows

In each case there was present a Gram negative bacillus fermenting glucose with the formation of acid but no gas and not *liquefying* gelatin in two days *The treatment advised* was excision of the submaxillary gland

On September 13th 1923 under a general anaesthetic the gland was carefully dissected and removed There was extensive fibrosis around the natural sequence of the recurring attacks of inflammation making the operation somewhat more difficult and rather obscuring the landmarks The wound healed by first intention

On sectioning the gland it was most interesting to find a small calculus about the size of a pea embedded in a part of the gland which had become much fibrosed

Inflammation of the salivary glands is usually divided into three classes—the primary inflammation or mumps the ascending duct infection common in abdominal conditions and the third that round a calculus The case recorded is typical of the third class and would be ordinary but for the interesting history and sequence of symptoms It would appear that this is a blood borne infection from the elbow wound, though it would have been interesting to know whether the same organisms could have been recovered from the blood

In reading some of the literature on inflammation of the salivary glands it is striking to note in the histories of several cases the occurrence in the obstructive type of another infective source in the body For instance in one case recorded by Blair and Padget the swelling followed the partial extraction of a tooth and recurred six months later when the roots which had been left and were septic were removed Another case followed on tonsillectomy In both these cases the so called focal infection was situate in the mouth, so that it was difficult to be sure that it was a blood infection, but in the case recorded there seems little doubt that the bacillus causing the bone trouble had also an elective affinity for the submaxillary gland, and that the infection was by the blood stream

AMIDOPYRIN IN THE TREATMENT OF MEASLES

BY

MAX LOEWENTHAL, M D WURZBURG,

M P C P Lond

In a trial extending over more than a dozen years I have come to the conclusion that amidopyrin,* in the treatment of measles, gives results which show it to have a specific curative action If given at the first appearance of the rash the results are as follows

1 Reduction of temperature to normal or nearly normal within twelve hours This effect is permanent

2 The development of the rash is sometimes entirely, always partly, inhibited if it has already affected the face, it will come out in only scanty spots on the trunk and extremities The spots which appear after its administration, moreover, are pale and evanescent In one case I succeeded in preventing the appearance of the rash altogether in an undoubted case of measles in a family other members of which were already affected

3 The most important effect to the sufferer is an immediate euphoria children who in the evening are prostrated and suffering great distress are cheerful and happy on the following morning The testimony of adult sufferers is convincing on this point

4 Cough, coryza, and conjunctivitis all clear up within a day or two

The average duration of the attack from the first show of the rash in untreated cases or cases treated by other methods is from two or four days I have never seen any serious or distressing symptoms in those treated by amidopyrin after the first twenty-four hours It therefore seems to me that this drug acts a prompter in measles as quinine does in malaria, or the salicylates in rheumatic fever A drug which checks the onward march of the symptoms, and particularly the development of the rash, surely has the right to be called a specific remedy

The dose for adults is 12 grains three times a day, with or without Dover's powder to alleviate the cough For children, I have employed the following formula

$$\frac{(\text{age} + 1) \times \text{dose}}{24}$$

I never have seen any untoward effects from the drug, and so larger doses may be given if they seem indicated

The following are my last seven consecutive cases treated as above

Case 1—D F a girl aged 9 felt ill on March 7th 192- Cough developed on March 9 h The following day her temperature was 104° There was a typical roseola on face and neck I gave amidopyrin ½ grains pulv ipecac co 2 grains thrice daily On March 11th the temperature was 99 2° the patient was free from pain and comfortable rash scanty and pale on trunk and limb On March 12th the temperature was normal and the patient absolutely well

Case 2—B C a girl aged 3 Illness began on March 11th with cough sneezing and conjunctivitis Probable diagnosis measles At 2 p m the following day the temperature was 104° 8 and there was a characteristic rash over the face and shoulders She was given amidopyrin 1½ grains pulv ipecac co ¾ grain three times daily On March 13 h at 5 p m the temperature was 99 6 the rash had not spread further and had faded The child was comfortable and was playing when I saw her Cough and conjunctivitis slight

Case 3—H S male aged 22 came home from Belgium on March 31 st with a temperature of 101 He was seen at 8 p m The upper half of the body was covered with a thick, deeply coloured roseolar rash a very characteristic one rash remitting He complained of a dreadful burning feeling of soreness on Koplik's spots were numerous and he had a severe cough and conjunctivitis He was given amidopyrin 12 grains three times On April 1 at 11 a m the temperature was 99 2° The rash had not spread he was free from pain and had slept through the night (after several sleepless nights) because he could not make to keep his attention on his breathing At 7 p m the temperature was 99 The following day the rash on the face had

* Amidopyrin is recommended in the British Pharmacopœia as an antipyretic and analgesic It is sold under various trade names, I remind

faded, it was pale but had slightly thickened on the trunk and was absent on the extremities Temperature 97 4°

Case 4—H M, a boy aged 10 was first seen at 7 p m on March 17th He had a temperature of 102 2°, and post nasal reseola He received no treatment on this day On March 18th at 4 p m, there was a rash on the face and chest—very scanty on the extremities temperature 101 4°, cough troublesome He was given amidopyrin 5 grains, pulv ipecac co 2 grains, thrice daily The following day, at 11 a m, the temperature was 98°, the rash had not increased on the extremities, and the patient was feeling well

Case 5—E C, a girl aged 5½ was first seen on March 20th She had been coughing and sneezing for four days The temperature was 102° in the night of March 19th when the rash first appeared It now extended behind the ears and on the face and forehead, it was scanty on the trunk and very scanty on the extremities Koplik's spots were present Temperature still 102° She was given amidopyrin 3½ grains pulv ipecac co 1½ grains, thrice daily On March 21st, after three powders had been taken, the temperature had fallen to 97°, the rash had faded on face and forehead, and had not spread on the body There was a slight cough

Case 6—F C aged 18 months sister of the previous case She had been coughing and sneezing since March 20th, and had had a temperature of 101° to 102° When first seen, on March 25th at 12 a m the temperature was 103° and a few Koplik's spots were present There was a typical rash behind and below the ears She was given amidopyrin 1½ grains pulv ipecac co 1/2 grain thrice daily At midday on March 26th there was still some rash on the face scanty on trunk very scanty on extremities Temperature 99 6° The next day the temperature was 99°, and the rash had faded on the extremities and trunk On March 28th the temperature was normal and the patient well

Case 7—A C aged 3 brother of Cases 5 and 6, in the night of March 27th 28th had a temperature of 101° At 1 p m on March 28th it was 100° and he was sneezing and had a little cough There was a rash on the face He felt well and his appetite was good He was given 2 grains of amidopyrin thrice daily At 11 a m on March 29th the temperature was 98 8°, the rash had not spread except for two extensive confluent patches in the groins The next day he had completely recovered

As I have been unable to find any reference in medical literature to the use of amidopyrin in the treatment of measles I have thought my observations to be of sufficient value to bring to the notice of the medical profession The early mitigation of all the symptoms promises a reduction in the frequency of dangerous complications, such as bronchopneumonia, and a parallel reduction of the mortality rate

Memoranda:

MEDICAL, SURGICAL, OBSTETRICAL.

RETURN OF PULSATION IN THROMBO-ANGIITIS OBLITERANS

THROMBO-ANGIITIS OBLITERANS is the name given by Leo Buerger to a disease, limited, as I believe exclusively to male Hebrews mostly of the middle period of life, and mostly immigrants from Poland, Russia, Rumania, and Central Europe* Formerly I termed it "non-syphilitic arteritis obliterans of Hebrews" The disease usually commences in one of the lower extremities and is a cause—perhaps the most frequent cause amongst the male Hebrew population—of intermittent claudication of extremities' I have had the opportunity of seeing a considerable number of cases in London and in them when pulsation in an artery had once been lost I had never hitherto been able to verify its return

M M a Russian Jew was one of my first cases and was demonstrated by me at the Clinical Section of the Royal Society of Medicine on December 13th 1907 when he was 42 years old, I described the case with references to several other cases in the *Quarterly Journal of Medicine* (1916 ix p 289) Soon after pulsation had disappeared from the radial artery at the right wrist The trouble had commenced in his left leg about 1902 Red tender diffused nodulous swellings due to multiple foci of superficial phlebitis of the lower extremities complicated the case from time to time since 1909 and there were periods of very painful ischæmic ulceration, when gangrene in one or other of the feet appeared imminent

Of late the arterial disease has been apparently non progressive and recently when he was again temporarily in hospital under my care for a new trouble which I regarded as a mild attack of gout at the base of both big toes I found to my astonishment (May 1924) that there was again fairly good pulsation in the left radial artery at the wrist The gout soon subsided with small doses of sodium salicylate and sodium bicarbonate He has likewise of late developed high blood pressure (the brachial systolic blood pressure is 185 mm Hg on the right side and 192 mm Hg on the left side), with a little albumin and a few granular tube casts in the urine

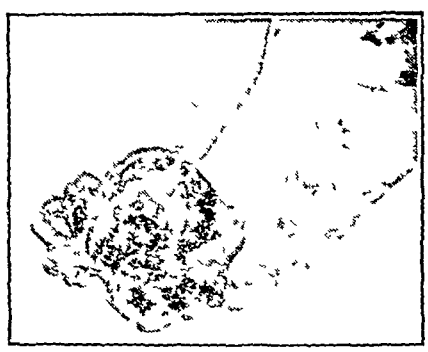
Regarding real or supposed return of pulsation in arteries that have become pulseless owing to thrombo-angiitis obliterans, Leo Buerger (*The Circulatory Disturbances of the Extremities*, 1924, p 269) writes that return of pulsation had been reported in arteries which had been seemingly obstructed He explains that pulsation cannot return in a really obstructed artery in this disease, but points out that dissections of amputated limbs have shown that the artery may be only more or less collapsed and that with improving circulation through collateral paths pulsation may become re-established, the blood flowing through devious channels in unmolested territory This might quite possibly be the correct explanation for the return of pulsation in the case here reported There can, however, be no doubt that pulsation really has returned, for the patient was under observation in the hospital during about the first two weeks of May, and was again examined a few days ago

London, W F PARKES WEBER, M D, F R C P

*Indigenous cases occur in China (C Duncan White) and Japan (Iboe) but I am not aware that any cases have been observed amongst the Chinese or Japanese in England.

A CASE OF ONYCHO-GRYPHOSIS

THE illustration shows the feet of a woman, aged 69, who was admitted to the Bedford County Hospital suffering from burns All her toe-nails were found to be very much enlarged, especially those of the great toes The nail of the left great toe was much thickened and curved so as to form nearly two complete circles and measured on its greater curvature 9 inches The nails commenced to thicken at the menopause at the age of 49, since then she has been unable to cut them



The nails of the four smaller toes were shed about once a year, and those of the great toes about every four or five years They were removed whilst in hospital by soaking in a solution of soda The nails have been sent to the Royal College of Surgeons Museum, London

Bedford W GIFFORD NASH, F R C S

STRANGULATED HERNIA IN AN INFANT OF THREE WEEKS

THE case of strangulated inguinal hernia reported below was admitted to the Wolverhampton and Staffordshire Hospital on May 24th, 1924

The patient a boy 3 weeks old, was taken ill on the previous day with pain and vomiting and the mother noticed that a swelling had appeared in the left groin During the day the child vomited after each feed On admission nothing abnormal was found during the examination except the swelling in the left groin, this was a hard tender, ovoid tumour about the size of a pigeon's egg in the position of the external abdominal ring The testicle on that side was not felt either in the scrotum or the inguinal canal

Postural treatment was adopted for a few hours, but in view of the fact that a small blood stained stool was passed and that the abdomen became somewhat distended, it was decided to explore the swelling The operation was performed by Mr Howard Dent The tumour proved to be a hernial sac containing much fluid, and a small knuckle of bowel which was constricted by the neck of the sac The obstruction was relieved and the bowel returned into the peritoneal cavity The sac which was of the congenital type, was removed after ligature of the neck Recovery has been uninterrupted

Strangulated inguinal hernia at the age of 3 weeks is sufficiently rare to make the case seem worthy of note, and I am indebted to Mr Howard Dent, honorary surgeon to the hospital, for his permission to make this report

F A H SIMMONDS, M R C S, L R C P,
Hon Surgeon, Wolverhampton and Staffordshire Hospital

Reports of Societies.

TREATMENT OF ECLAMPSIA

At a meeting of the Section of Obstetrics and Gynaecology of the Royal Society of Medicine on July 3rd with the President, Dr CUTHBERT LOCKYER, in the chair, Professor Stroganoff of Leningrad presented a paper on the treatment of eclampsia.

Professor STROGANOFF (whose paper was read by the secretary, Mr Eardley Holland) began by pointing out that more lives were now lost annually in Great Britain and Ireland from eclampsia than there were sailors killed and wounded at the battle of Trafalgar. He quoted numerous American authors to show that the position was even worse in the United States, while in the big capitals of Europe the mortality from this complication of pregnancy was alarmingly high, although in general lower than in America. He was convinced that a universal application of his method of treatment would reduce this mortality to a half or less. Eclampsia was first treated in this manner in 1897, and in the first 57 cases there were no deaths. Professor Stroganoff went on to describe the results of the introduction of this method into various important clinics, especially in Germany, and everywhere with big reductions in the mortality rate. In 1918 2,203 cases treated by Professor Stroganoff's method were collected from the literature, with a total maternal mortality of 9·8 per cent. By 1924 this total number of cases amounted to 3,202 with 357 deaths, or 10·8 per cent., while in his own hands in the ten years from 1910 to 1921 after some slight modifications, only 6 deaths had occurred (a mortality rate of 2·4 per cent.), and of these 3 cases were from other causes. He was convinced that death could be prevented in all but neglected cases. Apart from the reduction in the mortality rates from eclampsia the beneficial results of this method of treatment could also be seen from the following additional facts. The number of fits was much diminished. Psychical disturbances were only present in 4 cases out of 253, or 1·6 per cent. The child mortality was much reduced, being only 14·3 for the whole group of 253 cases, and if one excluded the cases in which the foetus was already dead before treatment was begun the number of deaths attributable to the drugs used became almost negligible. No deaths due to the treatment occurred amongst the 253 women, and the recovery of the patients was remarkably rapid. From a comparison of this group of 253 cases and 570 treated by less perfect methods Professor Stroganoff concluded that an absolutely favourable prognosis could be given in a case of eclampsia which had not been neglected. He said he required 47 more cases to complete the 300 necessary for statistical purposes, and he hoped that he might be given facilities for obtaining these cases and demonstrating his method in the next two months during his stay in London. He laid down certain conditions with regard to such demonstrations, amending slightly the classification of eclampsia suggested by Lden, and expressed a desire that a special committee be appointed to consider the results obtained.

Professor Stroganoff's Method

He then went on to describe his method of treatment of eclampsia, the cardinal principle of which is that the fits must and can be controlled.[1] The first necessity is the removal of all sources of possible irritation: the patient is placed in a darkened room and protected carefully during the fits, oxygen being administered if asphyxia occurs. An injection of morphine (1/6 grain) is given immediately, followed an hour later by 30 grains of chloral hydrate by mouth or per rectum according to the degree of sensibility of the patient. Two hours later another 1/6 grain of morphine is administered, and four hours after this the chloral is repeated (30 grains). Chloral in smaller doses (20 grains) is given thirteen and twenty-one hours after the beginning of the treatment. The doses can be increased if the condition is severe, and vice versa; and if the child is still undelivered at the end of twenty-four hours 15 to 20 grains of chloral should be given three times a day. If the fits recur in spite of this treatment venesection should be performed to the extent of 400 c.cm. The child is *delivered with forceps* if necessary, and care is taken to maintain the regular functions of the other organs. Hot bottles are applied to the feet and loins, and fluids in the form of weak tea or diluted milk are given to stimulate the kidneys. The mouth is kept carefully cleansed, the patient is kept on her right side, and oxygen is administered for asphyxia. The heart is supported by digitalis if the pulse reaches a rate of 110 or more, and camphor or caffeine is employed if signs of failure appear. In conclusion he stated that the application of this method would result in recovery for all mild cases and severe cases had an equally good prognosis if they escaped other disasters such as pneumonia.

The PRESIDENT expressed the thanks of the society and pointed out that Professor Stroganoff might have some difficulty in obtaining even 47 cases, as eclampsia was happily much rarer nowadays than previously. He emphasized the fact that one of the important principles of this method was that only small doses of morphine were employed, and that the important drug in the preventing of the fits was the chloral.

Mr EARDLEY HOLLAND inquired as to the indications for venesection in these cases, and asked if blood pressure readings were ever employed. Professor STROGANOFF replied that he had only employed venesection in 10 per cent. of his cases, and then only if three or more fits occurred after the treatment was commenced. If it was thought that the woman would be delivered within two hours venesection was not employed.

Mr BOURNE paid tribute to Professor Stroganoff's method, which, he remarked, was ultra-conservative in its conception. He stated that results could not be expected unless it was followed out in every detail, and he offered Professor Stroganoff every facility for demonstrating his method at Queen Charlotte's Hospital.

Professor STROGANOFF, in reply, emphasized the necessity for strict application to detail, and stated that it was just these details he wished to demonstrate. He reaffirmed his conclusion that death need occur only in neglected cases.

[1] BRITISH MEDICAL JOURNAL, July 12th, 1922, p. 85.

VISCEROPTOSIS

At a meeting of the Medico-Chirurgical Society of Edinburgh held on July 2nd the President Sir DAVID WALLACE being in the chair, Dr ROBERT HUTCHISON (London) opened a discussion on visceroptosis. He pointed out that this subject lent itself well to discussion because it was a very common condition, its genesis was still ill understood, and it gave rise to many practical problems in relation to diagnosis and treatment. The subject was therefore of interest to a wide field of medical men. The anatomist, the pathologist, the neurologist, the psychoneurologist, as well as the physician, the surgeon, and the gynaecologist, all had to deal with the condition from different angles, giving rise in many instances, to much diversity of opinion in regard to etiology and treatment. The genesis of visceroptosis was first of all considered, and the well known fact was noted of its greater frequency in women than in men. Dr Hutchison classified the condition under two heads from the point of view of its origin—namely (*a*) the so-called *congenital or virginal type, and (b) the acquired* or maternal type.

In regard to the first group he doubted very much if the condition was truly congenital because he had hardly ever come across the condition in children. He considered the usually expressed reasons for its greater frequency in women such as influence of poor muscular development due to insufficient exercise, bad posture, straining at stool, shallow pelvis, etc., as not quite adequate. He regarded the condition more as part of the general state of the patient who lacked tone, and showed other evidences than simply a dropping of abdominal viscera. He referred to Stiller's description of the "morbus asthenicus" or

"habitus ptoticus" as giving a fuller picture of the condition Reference was also made to Keith's theory In discussing the acquired form he referred to the stretching of the abdominal wall, weakening of the pelvic floor, absorption of abdominal fat, and unhealthy living as being the factors chiefly involved in the production of this form of visceroptosis The second point for discussion was the question of bands and kinks, and he expressed himself in favour of the view that these structures were of congenital origin and not the result of stresses The observations on abdominal operations on children should clear up this point, and he was anxious to hear the views of surgeons in regard to this matter Thirdly, certain points in the symptomatology were discussed and the question was asked, Does visceroptosis, *per se*, produce symptoms? It was common knowledge that from time to time cases were met with showing the acquired form on physical examination by *x* rays etc, and yet no symptoms were present, but the relief of symptoms during pregnancy in congenital cases favoured the belief that the mechanical results could not be ignored The maternal type might, however, exist for many years without giving rise to symptoms Dr Hutchison thought that in the majority of cases the dropping of the organ was only one factor in the production of symptoms, and pointed out that in addition there was functional incapacity in some organ, or organs, such as atony of the stomach or a deficiency of gastric juice, and the presence of bands or kinks He referred to Walton's view that possibly symptoms are only produced by bands or kinks He then raised the question as to whether division of these bands relieved the symptoms—they certainly did not in all cases Fourthly, the vast importance of the relationship of visceroptosis to neurasthenia and the neuroses was discussed The question was put, Does visceroptosis cause neurasthenia, or are both manifestations of the morbus asthenicus? There was no doubt that emotion lowered visceral tone, and this state of affairs might quite well react conversely on the nervous system by a lowered visceral tone producing a lowered nerve tone From the point of view of the general physician it was impossible to neglect the interaction which was bound to take place We were too apt to forget the mental side and the relationship between this abdominal ndition and psychoneurosis Many patients fostered aches l pains of an abdominal nature as a convenient arrangent for getting sympathy in an endeavour to get out of a fficult situation Their abdominal complaints were often cloak for some concealed mental conflict—an anxiety neurosis The speaker referred to a particular case of this kind whom he had sent to Dr T A Ross, with the result that recovery took place in about eight weeks under Dr Ross's treatment Discussing diagnosis, Dr Hutchison pointed out that to establish the presence of visceroptosis was easy, but the problem at the bedside was—Is visceroptosis the cause of the pain and other symptoms? Visceroptosis was a great mimic, but it was possible for a visceroptotic abdomen to be also the seat of organic disease, so that all the known means of physical examination must be fully used, including a consideration of the mental aspect of the case, and then, if there was still real doubt, surgical exploration might be carried out once and for all, and the patient fully informed of the result, it being previously explained to the patient the reason of this exploration Dr Hutchison considered that visceroptosis in itself did not induce organic disease in the abdomen, such as duodenal and gastric ulcers, except possibly gall stones Finally, treatment was touched upon, and the speaker insisted that the word "cure" should be reserved for those patients who had been free of symptoms for five years or more after operation or other form of treatment He said there was general agreement as to the ordinary medical lines of treatment Early detection was of vast importance The fattening cure was of much value, and it was well known how deposition of fat caused symptoms to clear up The usual physical treatments and abdominal supports had their definite use in dealing with such cases The speaker again laid stress on the necessity to treat the mental factor, which often was quite the most difficult detail in the case Surgical treatment was cited, such as explorations, divisions of bands, etc, and the questions were asked, Are fixation operations worth while? and What happens to patients after fixation operations—do they remain cured, or is the result only temporary?

Mr JOHN FRASER said that from his surgical experience with children he had no doubt whatever as to the congenital origin of the condition He pointed out that he had only seen acute intussusception in visceroptosis cases He referred to certain embryological points in the development of the intestine with reference to this condition He also said that the sympathetic nerve plexus was probably imperfectly developed in these visceroptotic cases

Professor WM RUSSELL said he had long felt there was a congenital type of visceroptosis, and referred to a case of a girl 12 years of age, who suffered from an enormously distended stomach, giving rise to gastric symptoms These symptoms were easily corrected, but the stomach remained enlarged and an opaque meal was retained in the stomach five hours, and it was found she had a congenital narrowing of the pylorus He agreed with the view that child-bearing induced the condition, and mentioned an athletic woman who developed the condition after two or three pregnancies He referred to the importance of testing the functional activity of the stomach by test meals, and treating the stomach on the basis of these findings, when there was evidence of dropping of the viscus He considered that dividing bands and "tacking up" operations had been tried and found wanting in Edinburgh

Sir HAROLD STILES agreed with Mr Fraser as to the congenital view of the origin of the condition He also referred to the fact that many such conditions are hereditary Much could be done by proper physical methods at an early age, and six months spent in this way were far more valuable than a similar time of mental work He regarded the visceroptotic patient as the last type he wished to operate on, and would only do so at the request of the physician when he was absolutely at his wits' end He referred to ptosis of the caecum, and described in detail the condition known as a "blue caecum", he considered resection advisable, as fixation was of no use in this localized condition He also referred to the lack of nerve balance between the vagus and sympathetic in many general visceroptotic cases

Dr HAIG FERGUSON agreed with Dr Hutchison as to the disappearance of symptoms during pregnancy He was against early rising after parturition, but did not agree with absolute rest in bed He encouraged his patients to move about in bed and increase the tone of their muscles by mild exercises in bed He considered surgical interference was always necessary in all gynaecological prolapses, because ligaments had been stretched and ptosis of pelvic organs caused much distress, and this ptosis gave rise to marked constipation He also noted that many women who had borne children had ptosis of the kidney and were very thin, but when fattening had been carried out the kidney returned to its place and symptoms disappeared

Professor EDWIN BRAMWELL was quite certain that visceroptosis was often present without symptoms In the production of symptoms he laid stress on the psychoneurological aspect of the condition, and he strongly deprecated the attitude of those who looked specially for the anatomical evidence and talked about it freely to their patients, who were not in a position to understand the significance of the facts observed As soon as patients became introspective about their abdominal symptoms they were well on the way to becoming chronic invalids

Mr WILKIE pointed out that the motile proximal caecum should be looked at from two points of view—namely, (1) a local condition, which could be dealt with surgically by removal, or (2) as part of a general visceroptosis in which fixation, etc, was not going to do much good With reference to exploration of the abdomen he would hesitate long before undertaking this, and only at the urgent request of the physician when other means had quite failed He also agreed with the views already expressed that the nervous factor was a vitally important one and little under the surgeon's control

Mr COCHRANE described his experiences in Boston at the reconstruction clinic, where over 3,000 cases of visceroptosis-like conditions had been studied from the anatomical

point of view and correction was attempted along certain well defined lines Dr FREDERICK PORTER also took part in the discussion

Dr ROBERT HUTCHISON, in his reply, adhered to the view that visceroptosis was uncommon in children He considered there was some unknown factor in this type of patient which had still to be cleared up It might be a question between vagal and sympathetic balance He agreed very much with Professor Bramwell's views about the mental side of the condition

Two patients were shown by Sir HAROLD STILES after operation for acoustic tumours The clinical picture on which the diagnosis was based was described and the technique of the operation explained The cases had been under the charge of Professor Edwin Bramwell before they were handed over for operation Specimens of brains showing similar tumours were demonstrated

Sir Harold Stiles also showed a case after operation for spinal root tumour For some time the case had been regarded as one of an atypical progressive muscular atrophy, and had received strychnine injections, later the patient came under the charge of Professor Bramwell, who diagnosed the tumour Before operation the patient was almost completely paralysed and passed urine and faeces involuntarily A vascular tumour was removed and the man walked into the room with the aid of two sticks quite unsupported by anyone Still further improvements might be anticipated

Mr J W STRUTHERS showed a young girl, aged 14 suffering from diaphysial aclasis (multiple exostosis) Many x-ray lantern slides of her bones were put on the screen and the essential bony lesions demonstrated He then showed specimens from a case of a patient who suffered from a fractured femur and paraplegia due to secondary growths consequent on a small malignant 'latent' kidney tumour He also demonstrated two patients after the removal of malignant tumours of the kidney One of these patients had been at work for two years following the operation He laid stress on the fact that both patients had developed short attacks of haematuria many months before more urgent symptoms had developed, and this first more or less transient, haematuria was not fully investigated

STILLBIRTH AND NEO-NATAL DEATH

AT a meeting of the Edinburgh Obstetrical Society held on June 11th, with the President Professor B P WATSON in the chair, Dr T J BROWNE read a paper entitled 'Further observations on stillbirth and neo-natal death their causes, pathology and prevention"

The paper comprised a summary of a second report to the Medical Research Council and was based on the results of an examination of 200 consecutive cases of stillbirth and neo-natal death occurring in the Edinburgh Royal Maternity Hospital, 127 being cases of stillbirth and 73 of neo-natal death Of ante-natal death—namely, death of the foetus before onset of labour—there were 60 cases and the most frequent cause of this was found to be syphilis which accounted for 15 cases or 25 per cent All these were spirochaete positive, and in 9 others the cause of death was probably syphilis, as shown by the so-called secondary signs of this disease The next most frequent cause of death was placental infarction (10 cases) in most associated with albuminuria Other less frequent causes of death were knots on the umbilical cord maternal glycosuria and eclamptic convulsions Dr Browne discussed the method of diagnosis of the cause of death in a macerated foetus and the value of enlargement of the liver spleen and placenta in the diagnosis of syphilis From his own statistics he concluded that the liver of a non-syphilitic macerated foetus might weigh as much as one seventeenth of the body weight Anything over this was probably syphilitic, but this did not help much because only three out of nineteen spirochaete-positive foetuses had a liver with a weight ratio over 17 A spleen with a weight ratio above 150 was probably syphilitic, and a placenta showing a weight ratio heavier than 4, provided the foetus had reached at least the eighth month of development and there was no marked degree of red or white infarction, was also strong evidence of syphilis Below the eighth month this rule did not apply because as one descended in the scale of foetal development the normal placental weight ratio increased rapidly until at the third or fourth month the placental weight might equal or even exceed that of the foetus The speaker had never found gross 'infarction" in the syphilitic placenta, and looked upon this as strong evidence that endarteritis obliterans of the foetal vessels, which was characteristic of the syphilitic placenta, was not an important factor in the causation of infarction

Of intra-natal death there were 67 cases, and by far the most frequent cause of this was asphyxia, which accounted for 36 cases, or more than half the total number The chief predisposing causes were primiparity, leading to prolongation of the second stage, and breech delivery the latter being found to be ten times as likely to give rise to asphyxia as delivery by the vertex Dealing with the hydrostatic test of live birth," it was pointed out that the test might prove fallacious it being not infrequently found that in cases of asphyxia in which the foetus was born dead the lungs might be sufficiently expanded to float buoyantly in water with the heart and thymus gland attached This was due to the fact that accumulation of carbon dioxide in the foetal blood so stimulated the respiratory centre that the foetus gasped, drawing air into its lungs if such were available, and partially expanding them The amount of expansion thus brought about was limited only by the quantity of air available and by the compression of the foetal thorax by the maternal parts The speaker pointed out the fallacy of the assertion that 'full expansion" of the lungs invariably indicated live birth, as one never found the lungs fully expanded even in a child that had lived for twenty-four hours and breathed and cried normally Numerous areas of atelectasis could always be detected on microscopical examination If then the lungs were never more than, say, 95 per cent expanded in a child that had lived for twenty-four hours and they might be 50 or 60 per cent expanded in a foetus that had been born dead where was one to draw the line and say, On this side of the line the child must have been born alive, and on that it must have been born dead? Obviously no such line could be drawn and expansion of the lungs however complete could be no longer looked upon as proof of live birth Cerebral haemorrhage accounted for 32 cases of intra-natal and neo-natal deaths, 14 being stillborn In 11 of the cases the haemorrhage was solely intraventricular In the entire series of 200 cases there were 35 cases of tearing of the intracranial dural septa or 18 per cent, and in 16 of these the tearing was associated with cerebral haemorrhage the tears being complete in 11 and incomplete in 5 Further, it was found that 50 per cent of the cases of cerebral haemorrhage were unaccompanied by tentorial tearing of any degree, that the same percentage of cases of tentorial tearing were unaccompanied by any degree of cerebral haemorrhage and that the latter was three times as frequent apart from tentorial tearing as with it The chief predisposing causes of both tentorial tearing and cerebral haemorrhage was breech delivery disproportion between the head and the pelvis and difficult forceps delivery Lastly, Dr Browne discussed the modern views upon the management of the after-coming head and emphasized the importance of prophylactic external version in all cases of breech presentation This should be performed at the beginning of the ninth month of pregnancy as if carried out sooner although version was easy the foetus frequently resumed its former position attempted later the operation was difficult or might even be impossible on account of the large size of the foetus and the relatively small amount of liquor amnii

The paper was illustrated by lantern slides and was discussed by the PRESIDENT, Drs FORDYCE, HAIG FERGUSON, YOUNG, and THOMSON

A Tumour of the Labium Majus

Dr HAIG FERGUSON read a communication on a pendulous tumour of the labium majus exhibiting unusual features

The patient an unmarried woman aged 40, was admitted to the Royal Infirmary in 1918 with a large pedunculated

fibroid tumour of the uterus about the size of a seven months' pregnancy and producing marked pressure symptoms The tumour was removed by supravaginal hysterectomy, both ovaries being conserved, the patient made an uneventful recovery In 1921 she had a severe fall on her coccyx and shortly there after noticed a swelling in the left labium majus This swelling gradually increased in size and caused considerable discomfort As the tumour presented certain unusual features the patient was placed in the care of a general surgeon, who attempted to remove the mass through a perineal incision, but found this impossible and concluded that the condition might be a variety of pudendal hernia possibly following the previous hysterectomy The abdomen was therefore opened, but no protrusion of bowel, omentum, or peritoneum through the pelvic floor could be found, nor by vaginal and rectal examination with one hand in the abdomen could any connexion be established between the labial swelling and any of the abdominal contents The patient made a rapid recovery and in a fortnight's time was transferred to Dr Ferguson's ward in the Royal Infirmary At operation a free incision was made over the tumour, which, after being separated from its skin covering, was found to be densely adherent to the surrounding parts, especially posteriorly In its lower part the growth was in close relationship to the anterior wall of the rectum, and it extended upwards and forwards until the upper limit lay well behind the symphysis pubis During the process of dissecting it out it gave the impression that one was pulling out, hand over hand so to speak, a piece of intestine, both from its appearance and from its consistence After removal the mass was found to consist of solid oedematous tissue, measuring 2 ft 2 in in length, at its lower part it measured 3 in in diameter, tapering off till it was about the thickness of a finger where it lay behind the pubes There was no evidence of any lumen The upper part was ligatured somewhere in the region of the bladder and severed as far up as possible A smaller portion of tumour substance was found lying near the rectal wall, apparently separate from the main mass, and this was also removed The cavity left after removal of the tumour was obliterated as far as possible with catgut sutures, and the wound closed without drainage The patient made an uninterrupted recovery

Laboratory investigation showed the fundamental structure underlying the different portions of the tumour to be a fibromyoma, with marked oedema and hyaline degeneration Sections from different parts all showed this fibromyomatous structure, but in some areas the unstriped muscle had undergone almost complete atrophy The pressure to which the growth had been subjected possibly accounted for the elongated form which it had assumed, growth having taken place along the line of least resistance In addition to the underlying basic structure secondary angiomatous formations—both capillary and angiomatous—had occurred No evidence of gland elements was found in the portions sectioned Dr Ferguson had been able to trace only two cases at all resembling the one he described (1) a myxoma of the vulva described by Simpson (*Journ of Obstet and Gynaec Brit Emp*, viii, p 393), (2) a teratoma of the labium majus reported by Duchaux and Herrenschmidt (*Bull de la Soc d'Anat de Paris*, 1905, lxxx, p 406)

The communication was illustrated by lantern slides and was discussed by the PRESIDENT, Professor DONALD, Drs LOCKYER and YOUNG

The following specimens were exhibited

Dr WILLIAM LOCKYER (1) Unusual fibroid tumour showing red degeneration, (2) puerperal uterus showing large fibroid tumour, (3) unusual pelvic tumour simulating ovarian cyst, (4) tubal pregnancy

Dr HALE FERGUSON Uterus showing squamoid metaplasia of gland epithelium with early malignancy and, in the same patient, ovary showing early sarcoma (with lantern demonstration)

The PRESIDENT (1) Ovary with chocolate cysts (2) large ovarian tumour removed from a patient six months pregnant, (3) uterus removed by vaginal hysterectomy from a case of complete prolapse showing great elongation of supravaginal cervix

THE Swiss Society of Medicine and Biology will hold its annual meeting at Lucerne on October 11, when papers on insulin will be read by Fleisch of Zurich, von Meyenburg of Lausanne, and Gigon of Basle

Reviews.

PERINEAL PRURITUS

DERMATOLOGISTS and proctologists have long been compelled to acknowledge that in dealing with pruritus of the perineal region they are "up against a tough proposition" Dr J F MONTAGUE, in the interesting study of the subject now before us, makes no claims to have discovered a specific Indeed, at the end of his volume entitled *Pruritus of the Perineum*[1] he writes very emphatically about the obstinate nature of the disease His investigations are exhaustive, and, not insensitive to the attractions of medical history, he informs us that as early as 1688 the subject attracted medical comment In 1694 Josephus Lanzonius sought to explain its origin and course on the then current astrological systems The reader will find a very useful summary of the literature of the subject down to the present time, and a useful bibliography of modern literature is provided Perhaps the most important part of the present volume is that which deals with pathology Pruritus can easily be set up without the invasion of the tissues by bacteria, although such invasion may subsequently take place and act as an aggravating factor Dr Montague dismisses the *Streptococcus faecalis* as a cause, and states that the only organisms he has been able to find actually in the tissues are the *Staphylococcus albus* and *B coli* He recognizes two classes—(1) direct pruritus, (2) indirect pruritus, terms which correspond roughly with the older method of description as of local or constitutional origin, but he considers his own terms to be more scientific He emphasizes very justly the importance of a thorough examination of the patient with a view to ascertaining the ultimate cause of indirect pruritus, and each of his patients is subjected to a most searching questionary His opinion is that localized pruritus is an early symptomatic warning of visceral disease, and he advises that every case of anal pruritus should be subjected to a sigmoidoscopic examination, for he has seen many cases of early carcinoma of the rectum associated with pruritus, although the fully developed growth does not cause this symptom so often While he emphasizes the importance of the constitutional treatment of indirect pruritus, his practical advice does not get much further than that bromides should be given, the section of the volume on treatment is indeed almost entirely devoted to the consideration of various local therapeutic devices He mentions with guarded approval various ointments and lotions, and has a word of recommendation for x rays in skilled hands, but seems himself to prefer to employ ionic medication with zinc, mercury, or iodine He also states that he has had good results from the administration of mixed vaccines of *B coli* and the *Staphylococcus albus* An interesting section of the chapter on treatment is devoted to the consideration of surgical methods for producing anaesthesia of the part Many operations have been devised with this end in view, and the author ends by giving a description of one of his own, founded on that of Sir Charles Ball, in which the undercutting of the skin is the important principle, he has designed special instruments for the purpose, and claims that in many cases surgical procedures yield good results As a complete and candid study of this distressing complaint and the means of dealing with it Dr Montague's book is worthy of careful perusal

ENDOCRINES AND COLOUR CHANGES

The Pigmentary Effector Response,[2] by Dr L T HOGBEN, is the first of a series of biological monographs and manuals edited by Drs F A E CREW and D WARD CUTLER, and published by Messrs Oliver and Boyd of Edinburgh Their

[1] *Pruritus of the Perineum* By Joseph Franklin Montague M D Foreword by George David Stewart M D New York P B Hoeber, Inc 1924 (Med 8vo pp xiii + 185 37 figures 3 50 dollars net)

[2] *The Pigmentary Effector Response A Review of the Physiology of Colour Response* By L T Hogben M A Cantab D Sc Lond I R S Edin Biological Monographs and Manuals edited by F A E Crew and D Ward Cutler Edinburgh and London Oliver and Boyd 1924 (Demy 8vo, pp x + 152 17 figures 10s 6d net)

appearance will be welcomed by all interested in the biological sciences, for the vast bulk of current scientific literature makes it impossible for anyone to keep in touch with the recent work in more than a single limited field, and authoritative monographs have become the only means of obtaining more general information as to recent advances in science This series of monographs will be of particular value, because it is an attempt to bridge the unfortunate division that has developed between animal morphology and physiology, a division that has done much harm to both branches of science

The monograph by Dr Hogben deals with the mechanisms by which colour changes are produced in reptiles, amphibia, fishes, crustacea, and molluscs, and it should prove of equal interest to physiologists and zoologists

The author devotes special attention to the colour changes in amphibia, and the results recorded under this head are based very largely upon his own work It is interesting to learn from him that the common grass frog possesses greater powers of colour change than the famous chameleon The frog turns pale under light, warm or dry conditions, and dark under dark, cold or moist conditions These changes are controlled chiefly by endocrine secretions, adrenaline turns the frog pale and pituitary extract turns it dark and in both cases a small fraction of a milligram is sufficient to produce the effect The statement on page 56 that 105 mg of fresh posterior lobe of the pituitary produces a complete darkening of a frog is presumably a misprint, since on page 72 results are recorded which show that 0 1 mg suffices to produce a colour change The author found that the pars intermedia of the pituitary of the ox contained most of the melanophore activator, that the posterior lobe contained about one-twentieth as much, and that the anterior lobe contained about one-fortieth These figures differ markedly from the distribution of the uterine stimulant of the pituitary, and probably melanophore activation and contraction of the uterus are produced by separate active principles Hypophysectomy caused permanent pallor in frogs and injections of pituitary extracts produced darkening in hypophysectomized frogs as in normal frogs Similar experiments upon axolotls produced the same effects as in frogs The melanophore activator substance was found to be present in the pituitary glands of mammals, reptiles birds, amphibia, and fishes, but not in the dorsal tubercle of tunicates

An examination of the mode in which colour changes are effected in other classes of vertebrates showed that a surprising variety of mechanisms existed In all cases the colour changes were produced by expansion or contraction of chromatophore cells, but the mode of control of these cells varied greatly In reptiles the melanophores are under endocrine control, for adrenaline causes contraction but pituitary extract appears to be inactive they may also be affected directly by light In amphibia the melanophores appear to be entirely controlled by endocrine secretions In fishes, however the melanophores are under direct nervous control through the sympathetic neurones the existence of endocrine control is uncertain, but pituitary extract produces contraction of the melanophores the reverse effect to that produced in amphibia Finally it appears that in crustacea the melanophores are directly stimulated by light

The results recorded in the monograph certainly make the function of the pituitary more mysterious than ever for apparently a specific melanophore dilator is present in the pituitary glands of all vertebrates but only produces an effect on the melanophores of amphibia and fishes, and the effects so produced in these two classes are opposite

extremely interesting and great importance of the for it reveals a surprising variety in the mechanisms which exist to produce a single simple physiological reaction Furthermore the facts established concerning the endocrine control of the melanophores suggest that a more extensive study of the endocrine systems of lower vertebrates might assist us to understand better the functions of these organs in mammals

SPASTIC HEMIPLEGIA

DR NILS SILFVERSKIOLD'S monograph on infantile spastic hemiplegia[3] forms the fifth supplement of the *Acta Chirurgica Scandinavica*, published at Stockholm, but written, as is so much Scandinavian scientific literature, in German

The author prefixes to his opening chapter the lines from *Richard III* which Dr W J Little quoted in the discussion on his epoch making paper read before the Obstetrical Society of London in 1861, but he does not seem to be aware of the fact that W J Little described cases of spastic talipes and noted its association with premature birth in his book on club-foot which was published in 1839 Dr Silfverskiold gives Little full credit for his work on this subject, but he is hardly justified in assigning spastic palsy as the cause of the club-foot from which the godfather of Little's disease himself suffered This attribution is somewhat remarkable seeing that he prints the following footnote

> E M Little consulting surgeon to the Royal National Orthopaedic Hospital a son of J W Little [*sic*] has informed me that his father's left arm was not affected and that he holds the associated foot deformity to have been probably poliomyelitic The annexed disease history seems to me to speak for a spastic affection

The desire to call the malady as he says 'with double right" Little's disease seems here to have carried the author too far We learn from Mr E Muirhead Little that he was told by his father himself that the disorder from which he had suffered was infantile atrophic paralysis and the son had ample opportunity of verifying this diagnosis by personal observation The case history referred to was translated by Stromeyer from Little's own history in his Latin thesis for the degree of M D Berlin and is characteristic of anterior poliomyelitis as also are the references to the deformity contained in Stromeyer's own notes of the progress of the treatment The illustration on page 4 which represents a plaster cast said to have been taken from W J Little's foot is of small value as evidence one way or the other Finally the opinion of W J Little on such a subject is surely entitled to consideration

Apart from these considerations however, Dr Silfverskiold's book is instructive and worth perusal His first illustration is a reproduction of the picture by Ribera which was used by Mr E V Lucas in his pamphlet "As the twig is straightened" noticed in the JOURNAL of May 3rd, it represents a characteristic hemiplegic beggar In summarizing his treatise Dr Silfverskiold says that in his experience of treatment tendo-muscular lengthenings and resections of motor nerves have given the best results, but that the somewhat uncertain nature of the morbid condition makes generalization difficult As regards the mental condition he makes the surprising statement that in 82 per cent of his cases the intelligence was good In the absence of a definition of good intelligence" it is difficult to compare this estimate with some others which would place the proportion of mental deficients much higher Thirteen per cent of the author's cases suffered from epilepsy Transplantation of the origins of muscles has given comparatively good results By this means muscles such as the hamstrings which acted upon two joints were limited to action on one joint only He concludes in the words of W J Little (whose initials he persists in transposing), that "surprisingly good results can be obtained by patience and rational therapy" The book is illustrated with 73 figures, some of which are from kinematograph films

OTO LARYNGOLOGY IN GENERAL PRACTICE

A NOTICE of Dr GEORGES PORTMANN'S handbook appeared in this journal in March, 1923 and Dr SCOTT STEVENSON now presents an English version with the title *Ear, Nose, and Throat Treatment*[4] The word "version" is used by design,

[3] *Acta Chirurgica Scandinavica* Supplementum V Aus der Orthopädischen Klinik des Karolinischen Med-Chir Institut Vorstand Prof Patrik Haglund Orthopädische Studien über Hemiplegia Spastica Infantilis von Nils Silfverskiöld. Stockholm 1924 Kungl Boktryckeriet P A Norstedt and Söner (Demy 8vo pp 272—ix.)

[4] *Ear Nose and Throat Treatment in General Practice* By Georges Portmann M D Translated and edited by R Scott Stevenson M D London William Heinemann (Medical Books) Ltd 1924 (Demy 8vo pp viii—180 26 figures 10s 6d net)

for Dr Stevenson has done far more than merely present a translation, which indeed would have had comparatively little value Realizing the value of Dr Portmann's little book, the translator undertook to present an English equivalent, and he has succeeded well Thus all the weights and measures have been replaced by their English equivalents and the ingredients of prescriptions have been replaced in some instances by those usual in England The same applies to various other details The translator therefore has faithfully reproduced the spirit of the original without any slavish adhesion to the letter The book contains a wealth of prescriptions and modes of treatment for all the conditions, not requiring operation, likely to occur in general practice, but it will be useful to the specialist as well as to the general practitioner

TOWN PLANNING AND HOUSING

THE housing problem is not going to be solved by any one of the many proposals put forward either by the Government of the day or by private individuals, and in the critical consideration of the schemes, each involving the financial support of the State, of Dr Addison, Mr Neville Chamberlain, and the present Minister of Health (Mr Wheatley), the powers contained in the Housing, Town Planning, etc Act, 1909, of Mr John Burns have not received the consideration they deserve The reason for this may possibly be that that Act is one of the worst examples of legislation by reference, and it has been made still more difficult to understand by amendments in subsequent legislation on housing It provides in the first place for the preparation by a local authority and the approval by the Minister of Health of a town planning scheme The task of preparation is not an easy one, and the official upon whom that duty falls may well be forgiven if at the outset he is in despair at accomplishing it with any satisfaction to himself or advantage to the local authority In such circumstances he will welcome the *Law and Practice of Town Planning*,[5] by Mr SYDNEY DAVIS, M A, LL B, of the Middle Temple, who has had the very capable assistance of Mr FRANCIS C MINSHULL, chief assistant solicitor to the corporation of Birmingham The difficulties attending the administration of the 1909 Act are not connected solely with the many references to other Acts of Parliament, for the Minister of Health has a general control over town planning schemes and may make regulations with respect to them Then too there are various phrases and expressions contained in the Act which are new to legislation For example "amenity" occurs more than once, and as might be expected soon called for a precise definition, which the authors state was given by a judge of the high court as "pleasant circumstances or future advantages," and he added "wide streets and plenty of air and room between houses seem clearly to be amenities, and a provision to secure them by setting back houses to a given line seems to me to be a provision with a view to securing amenity" Although only twelve town planning schemes have so far been approved—the first, in 1913, for Birmingham and the latest in 1922, for Luton—there have already arisen many points in procedure which could only be made clear by decisions of the law courts, and these are referred to by the authors with elucidatory comments Thus is especially noticeable in the chapter dealing with the acquisition of land which takes up nearly fifty pages of the entire volume Whether land is acquired by agreement or, as the law provides compulsorily, there are definite legal conditions each one of which must be fitted in as exactly as the pieces in a jigsaw puzzle In this chapter the way is made easier for those who have to advise a local authority on the question of land purchase It would perhaps be going too far to say that it would be possible to prepare a town planning scheme with the assistance of no other literature than the volume before us, but if such claim were made it would be difficult to refute it, for in addition to the many detailed references in the body of the work there are 120 pages of appendices containing the text of Housing Acts and Town Planning Acts, of Orders made by the Minister of Health and the Model Clauses of the Ministry of Health for use in the preparation of schemes The last named are skilfully and profusely annotated by the authors We can heartily recommend the work to that increasing number of public officials who are concerned with housing problems

The speculative builder of artisans' dwellings in the nineteenth century was rarely able to rise above the interminable street of houses, each house the counterpart of its neighbour with no deviation either in elevation or in plan—mass production at its worst Whatever adverse criticism may be levied against the post-war houses it must be admitted that we are no longer reproducing these long unbroken terraces, and that some advance has been made in the art of grouping small houses Whether as much can be said for the architectural features may be open to argument Those who desire to see erected in the future houses that are not only well planned and economically *built, but also of a pleasing appearance, will derive much* assistance from *Small Houses for the Community*,[6] by Mr C H JAMES, A R I B A, and Mr F R YERBURY, secretary of the Architectural Association, to which a foreword has been contributed by Mr RAYMOND UNWIN, F R I B A, a past-president of the Town Planning Association The six chapters of the work are devoted to a general survey of the housing problem, the selection of a site, the economics of building, site planning, design and materials, and the construction and internal arrangements and finish of the house There is a great deal of sound advice which is evidently the result of considerable experience in the construction of small houses, and the general impression a perusal of the volume leaves is that it is possible to erect houses and especially groups of houses economically, and at the same time pleasing to the eye The authors consider that single houses are to be avoided and are not enamoured of semidetached dwellings, and while "blocks of four make a unit of reasonable size and lend themselves to good architectural treatment, blocks of six—even of the most simple design—without a break in the front can look charming and give a feeling of restfulness seldom obtained in housing schemes" In the chapter on the selection of the site five main points are laid down as essential, including, for a rural area, the question of sewage disposal One important consideration has been omitted, as many medical officers in rural areas would be able to testify to their sorrow that is the provision of an adequate water supply In an appendix is given in detail a specification, bill of quantities, and detailed drawings of fourteen houses erected in Welwyn garden city A valuable feature of the work is the inclusion of 132 photographic reproductions of houses and groups of houses recently erected in various parts of England and Wales, in Holland, Sweden, and Denmark The sharpness of these photographs and the manner in which the details are brought out is beyond praise, and the publishers are to be congratulated on the excellence of the reproductions

THORPE'S DICTIONARY OF APPLIED CHEMISTRY

ONE of the most useful books for general reference on chemical matters is THORPE'S *Dictionary of Applied Chemistry* A long experience of its use confirms and increases this estimate of its value Whatever the subject sought, it always appears as though the question in the reader's mind had been directly anticipated, hardly any matter having a chemical aspect is missing Above all, the information is conveyed in terms devoid of pedantry or ambiguity

Volume V of the new edition has now reached us It contains an unusually large number of subjects of general

[5] *Law and Practice of Town Planning* By Sydney Davis M A LL B of the Middle Temple Barrister at Law and Francis C Minshull Assistant Solicitor to the Corporation of Birmingham London The Estates Gazette Co Ltd (Roy 4to pp xxvi + 257 + 40)

[6] *Small Houses for the Community* By C H James A R I B A and F R Yerbury, Secretary of the Architectural Association with a Foreword by Raymond Unwin, Dr Tech (h c) Prague, Chief Architect (Housing) Ministry of Health London Crosby Lockwood and Son 1924 (Royal 4to pp xi+32+lxi 140 plates 31s 6d net)

[4] *Dictionary of Applied Chemistry* By Sir Edward Thorpe C B LL D F R S assisted by eminent contributors Vol V revised and enlarged edition London and New York Longmans, Green and Co 1924 (Med 8vo, pp viii + 722, illustrated 60 net)

interest among them are photography photosynthesis proteins and radiology It is one of those books which when an inquirer resorts to it for some particular piece of information beguiles him into reading on and on Mention is found of the use of ozone for the purification of drinking water, and the municipalities where it has been adopted for that purpose are enumerated The monograph on petroleum covers a wide field besides the technology economics, and geographical occurrence it has attractive elements of history and romance We are shown in the oilfields of the Caucasus the natural origin of one of the mythical stories of Prometheus The magic oil which Jason received from Medea during his search for the golden fleece was the product of her father's property in oil springs The article on photography supplies recondite facts for the manufacturer of photographic plates as well as information for the practitioner of photography in its various applications The several causes of imperfection in the results are well elucidated An ably written treatise on radiology is followed by an article on the radish! The apparent incongruity of subjects only serves to exemplify the comprehensive character of the work The thoroughness of treatment is illustrated by the fact that a chemical description is given even of the colouring matter in the radish Every effort appears to have been made to keep the work abreast of modern advances in knowledge Much new matter has been added and many articles have been rewritten Thorpe's *Dictionary* not only maintains its old status but continues to grow in usefulness

AN ANTHOLOGY OF SCIENCE

Under the title *Cambridge Readings in the Literature of Science*[1] Mr W C Dampier Whetham sometime Senior Tutor of Trinity College Cambridge and his daughter have collected in an attractively got up volume passages from great writers on the milestones of science and have added admirably worded introductory and explanatory paragraphs containing some biographical touches The collection is intended to illustrate the development of scientific thought The three subjects treated in this volume are the structure of the universe (cosmogony) the nature of matter (atomic theories), and the development of life (evolution) and along these lines the editors try to trace the thoughts of man from the first and second chapters of Genesis, with which the section on cosmogony begins down to the latest revelations of the telescope and the laboratory such as Einstein's Sir Ernest Rutherford's Dr F W Aston's and the late H G J Moseley's researches The theory of evolution begins with a translation from Aristotle's *Historia Animalium* and before the extract from Darwin's *Origin of Species* we are given part of the first chapter of the Rev T R Malthus's *Essay on the Principle of Population* (1798), which, forty years later when Darwin read it in 1838, suggested the means of natural selection In the concluding note on present progress the editors remark that biology is now at a stage perhaps comparable with that of chemistry at the time of Lavoisier and that with the help of the experimental method advance is taking place in many directions, but that it is doubtful as Henri Bergson observes whether the forces which guide and control the evolutionary movement will thus be revealed

NOTES ON BOOKS

THE first volume of the *Practical Medical Series*[2] which is under the general editorial charge of Dr CHARLES L MIX, is devoted to general medicine and is divided into four parts The first, which deals with infectious diseases and endocrinology, is edited by Dr George H Weaver who gives a good account of recent progress in knowledge of acute infections and various other disorders and diseases in the lower animals In the second part Dr Lawrason Brown discusses diseases of the chest, excluding the heart but including a section on tuberculosis In the third part Dr Robert B Preble deals with diseases of the blood and blood making organs and diseases of the blood vessels heart and kidneys The fourth part which is under the joint editorship of Drs Bertram W Sippey and Ralph C Brown is concerned with diseases of the digestive system and metabolism The book is well illustrated and indexed and will prove a useful work of reference

In his little book on *Man's Mental Evolution*[10] which is an expansion of a paper read before the Ethological Society on April 9th, 1923, Dr HARRY CAMPBELL considers the factors which have determined man's mental evolution Those which have determined the evolution of intelligence are first discussed, and then the evolution of the feelings The three chief factors which increased the survival value of intelligence after the pre human ape left the forest to become a hunter, and which continued to operate up to a time when full humanhood was attained, are stated to be a hunting career, polygamy and intertribal warfare Dr Campbell maintains that there is no limit to the extent to which the human intellect may evolve if the conditions were again and continuously to be such as to ensure survival value and intelligence An appendix is devoted to a discussion of hedonism

Veterinary anatomy, although dealing with many subjects, has always adopted the horse and the dog as the standard animals A standard book on the dog already exists It is only with the publication of Dr Bradley's *Topographical Anatomy of the Head and Neck of the Horse*[11] however that a complete set of modern textbooks has become available for the student in the dissecting room This volume is the last of a trilogy on the Topographical Anatomy of the Horse Dr Bradley has adopted the B N A nomenclature and treated his subject in the light of comparative anatomy—giving the names used in the human science to corresponding structures in the horse The book is essentially a guide in dissection, but it is more than a mere compilation of dissecting notes In addition to a detailed description of each structure there are many admirably drawn illustrations by Mr James T Murray whose work in connexion with human anatomy is well known The author introduces many very valuable footnotes on the etymology of the terms used in anatomy—explanations which serve to connect the nomenclature of human anatomy with that of animals

The *Proceedings of the Third International Congress of the History of Medicine* held in London in July 1922 have just been published The volume contains sixty one papers dealing with the history of epidemiology, anatomy, obstetrics pharmacology and miscellaneous subjects Copies can be obtained, price one guinea, on application to the General Secretary, Dr J D Rolleston, 340, Upper Richmond Road, S W 15

[1] *Cambridge Readings in the Literature of Science* Being Extracts from the Writings of Men of Science to illustrate the Development of Scientific Thought Arranged by William Cecil Dampier Wetham M A F R S Fellow of Trinity College Cambridge and Margaret Dampier Wetham of Newnham College Cambridge Cambridge The University Press 1924 (Cr 8vo pp xi + 275 8 plates 75 figures 5s 6d net)

[2] *The Practical Medicine Series* Under the general editorial charge of Charles L Mix A M M D Vol I—General Medicine Series 1923 Chicago The Year Book Publishers 1923. (Cr 8vo pp 678 61 plates)

[10] *Man's Mental Evolution Past and Future* By Harry Campbell M D London Baillière Tindall and Cox 1923. (Cr 8vo pp v + 79 3s 6d net)

[11] *The Topographical Anatomy of the Head and Neck of the Horse* By O Charnock Bradley M D D Sc M R C V S Edinburgh W Green and Son Ltd 1923 (Roy 8vo pp xii + 228 66 figures 21 net)

MEDICAL AND SURGICAL APPLIANCES

A Radiant Heat Box for the Fingers

Mr P M HANDFIELD-JONES Assistant Director Surgical Unit St Mary's Hospital Paddington writes The use of radiant heat in the treatment of infected fingers and hands has been mentioned by several authors and Messrs John Weiss and Son have made a special box to my design for the hot air treatment of such cases The box is of wood lined with asbestos and measures 13 by 10 by 7 inches Four long cylindrical carbon filament lamps give the heat and these can be supplied at the desired voltage They are shaded by strips of asbestos to prevent any possibility of the lamp touching and so burning the hand A thermometer has been fixed into the top of the box so that the reading may easily be checked It consists of two halves equal in size and the whole apparatus is light and easy to use The hand is placed in the box which is then shut and securely fastened and any gap left round the wrist at the entrance to the box are closed with wool or a towel The current is switched on and the temperature allowed to reach 120° F — which it does in five minutes—and it is then kept at that level for twenty minutes The advantages of this box are that it provides a small light portable heat bath for the hand that it can be used anywhere where electric current is installed and it provides a method which gives admirable results in clearing up infection of the hand and preventing adhesion of tendons and stiff hand

MIGRAINE AND ITS TREATMENT

DR A F HURST'S SAVILL LECTURE

THE Savill Lecture, founded in memory of Thomas Dixon Savill, M.D., in connexion with the West End Hospital for Nervous Diseases, was delivered by DR ARTHUR F HURST on July 3rd, at the house of the Royal Society of Medicine, with SIR WILLIAM HALE-WHITE in the chair.

DR HURST took migraine as the subject of his lecture, and mentioned that his choice had been influenced to some extent by a desire to show how little scientific foundation there was for the greater part of the biochemical miasma by which this condition in recent years had been surrounded. There were two essential factors to be considered in the pathogenesis of migraine—one central, the other peripheral.

The Central Factor in Migraine

The central factor was a constitutional and usually inherited predisposition. Migraine, epilepsy, and asthma alike depended upon the constitutional tendency of certain parts of the brain to become "storm centres" under given conditions. These affections differed from one another in respect to the part of the brain concerned. The cerebral localization of the storm centre in epilepsy and asthma was comparatively simple, but in migraine it was more difficult to define. A biochemical factor in migraine had been frequently suggested, though there was little agreement as to its nature. DR HURST'S experience however, pointed to an ocular origin as being of importance in the great majority of cases, if not in all.

The theory that migraine was a kind of anaphylactic phenomenon like asthma was certainly attractive and required consideration. He could not help feeling, however, that the claims made in this particular were extravagant. He believed that a toxic idiopathy was very often present, but he had not been able to obtain any positive evidence that this was ever the exciting cause of the attacks of migraine. Most of what had been written on the relation between the internal glands of secretion and migraine was purely speculative. It was curious, also, to find the widespread adhesion to a theory which had so little evidence to support it as the uric acid theory of migraine. In many private cases in which he had had occasion to make a most careful examination he had found no evidence that migraine depended wholly or in part on gastro-intestinal toxaemia or metabolic disorder. He had found no justification for the view recently propounded by a writer in the BRITISH MEDICAL JOURNAL that migraine was due to recurrent attacks of dilatation of the stomach. In no case had he or those working with him found any abnormality of this kind, and the author in question had brought forward no evidence in support of the theory. Many of the severest cases of intestinal toxaemia occurred in people who had been poisoning themselves with aperients with a view to getting rid of the migraine. A psychical stimulus was occasionally brought into evidence, but this was comparatively unimportant. SIR JOHN HERSCHEL who, like a number of other astronomers, suffered from migraine, found that he could induce an attack by picturing in his mind the visual phenomena which usually accompanied it, and the lecturer himself had known a patient to get an attack on looking at a wall-paper which had a zigzag pattern. Many of the cases in which attacks occurred with a certain regularity—as for example, every Sunday morning, or on the first day of the menstrual period—might be due simply to expectation.

The Peripheral Factor

DR HURST next turned to the question of peripheral stimuli. Some modern writers on migraine ignored the ocular factor entirely, or gave it a minor importance, and he gave it the prominence which he was convinced it ought to have. During the early years of the war he had occasion to see a number of cases with Lieut.-Colonel R. H. Elliot, and his (the lecturer's) views as to the importance of the part played by the ocular factor dated from that association. With the ocular condition rectified he found in his treatment of migraine that the improvement was almost always considerable and that complete cures were common. Colonel Elliot had given him some brief details, which he read, of the ocular defects commonly associated with migraine. It appeared that very small errors of refraction were able to produce migraine, especially in highly strung clever people, with a very irritable migraine storm centre.

The typical attack of migraine was unmistakable, but attacks varied in some degree among different individuals, and even at times in *the same individual*. He had seen many cases in which the gastric symptoms were so pronounced that the diagnosis of some gastric disorder had been made. In most cases the diagnosis could only be made after a careful inquiry into the associated symptoms. The so-called bilious attacks in children were most frequently due either to migraine or to appendicitis. There did not seem to be any distinction between these so-called bilious attacks and the so-called psychical vomiting. Diarrhoea might replace vomiting in some cases of migraine, and the headache and nausea disappeared as quickly after the bowels were well opened as they did after vomiting. He thought that the possibility of migraine should be considered in every case of paroxysmal headache, even if such headache was not strictly unilateral.

Prophylaxis and Therapeusis

The only cure for migraine was "not to have it." The storm centre got out of practice as time went on. It was the same with epilepsy. If an epileptic had no fits for three years he could safely reduce his bromide, but the lecturer doubted whether it was wise for him to give it up entirely even after two or three years of further freedom. As for asthma, he knew a man who had had an attack of asthma as a lad of 14 while at Southampton. Afterwards he sailed with his family to South Africa where he remained for twenty-five years, and during all that time he was *free from asthma*. On *returning* to this country he landed at Southampton and immediately had a severe attack. Apparently other places in England, even seaports, did not affect him in the same way. In the case of migraine, after some years of freedom from attacks, if the general health was good and the vision for ordinary purposes satisfactory, the spectacles might be worn less constantly, but if the individual got fatigued the attacks were liable to recur, especially with the slightest eye-strain. In most cases the attacks became less severe with advancing years, and they were infrequent after 50.

The most important treatment was the correction of the eye-strain. Personally, he had never seen a case in which eye-strain was not present, and only two in which its correction did not either cure the patient or lead to considerable improvement. The reason why the importance of the ocular factor was not more widely accepted was that few oculists gave to the *patient with migraine* the attention that he required. Muscle balance defects were particularly difficult to correct. Moreover, many sufferers from migraine were proud of their good eyesight and unwilling to take to spectacles, and in the case of some patients vanity played a part in preventing proper treatment.

With regard to drug treatment, DR HURST said he had never been convinced that arsenic was of the slightest use. Bromide in small doses appeared to help some patients, it had no effect in migraine in the least comparable to that which it had in epilepsy. Luminal, as advocated by Wilfred HARRIS (BRITISH MEDICAL JOURNAL, October 28th, 1922, p. 786), was useful, given at the same time as the bromide. But if the ocular defects had been dealt with it was unlikely that drugs would have to be taken at all. Attempts to treat the supposed intestinal toxaemia by aperients, or digestive or metabolic disorders by fresh diets, were likely to upset the patient's general health without influencing his migraine, and they had the further disadvantage of making the sufferer from this paroxysmal

neurosis a prey to all kind of imaginary ill The examination and treatment of the eye in the case of migraine should only be undertaken by a specialist and by a specialist who was ready to devote much time and study to the subject

NATIONAL ASSOCIATION FOR THE PREVENTION OF TUBERCULOSIS

Annual Conference

The tenth annual conference of the National Association for the Prevention of Tuberculosis was held in London on July 3rd and 4th The Hon Sir Arthur Stanley presided, and the attendance which included delegates from many county and county borough councils, was very large The first day was devoted to a visit to the Burrow Hill training colony at Frimley, Surrey This is a colony with accommodation for about eighty ex-service men twenty of whom still require sanatorium treatment, while the remainder, having had such treatment are well enough to be taught market gardening light farming or rural carpentry The financial position of this project which was fathered by the association, is causing some anxiety

The Value of Training Colonies in Treatment

The principal discussion of the conference followed upon this visit to Frimley and concerned the part played by training colonies in the treatment of tuberculosis

Dr F N Kay Menzies (director of hospital and medical services Joint Council of the Order of St John and British Red Cross Society) recalled the history of training colonies the first mention of which he had found in the British Medical Journal of July 23rd 1892 in the course of a plea by Sir Robert Philip for the establishment of farms for tuberculous patient The farm colony was a natural evolution from the sanatorium and was included in the model tuberculosis scheme adopted and recommended by the Departmental Committee in 1913 The village settlement belonged to a different and far more ambitious category and the speaker felt that however admirable the work done by the Papworth and Preston Hall settlements which were the best examples of the kind in this country the capital expenditure involved and the heavy cost of maintenance ruled out the village settlement as a practical proposition for local authorities On the other hand vocational training centres like Burrow Hill which were an expansion of *sanatorium treatment were sound in their conception and he* thought hopeful in their results

Dr Alexander Sandison (Ministry of Pensions) thought that some harm had been done by the wide prevalence of the notion that the only occupations fit for tuberculous patients were on the land He wondered how many tuberculous patients sent to the land had dug their own graves Very many patients could be allowed to return from sanatoriums to their own homes and workplaces provided these were sanitary He pointed out the favourable position of the pensioner in comparison with the unpensioned civilian on entering a colony The success of the colony depended upon some financial provision being made—such as was made in the case of the pensioner—for the man's family whilst he was undergoing training

Dr Lissant Cox (Central Tuberculosis Officer Lancashire) said that 52 patients from his county had been sent to training colonies 12 of these were still in residence but of the 40 who had returned only 7 had completed their course of twelve months He thought that the name colony should be changed to sanatorium, and the institutions merged for at sanatoriums proper there was need for the provision of some purposeful work His experience of seventeen care committees in Lancashire—bodies which did extraordinarily good work—was that the positions that they were able to find for ex-institutional patients frequently bore very little relation to the work which those patients had been trained for in the vocational colonies

Dr T H Peyton (Chief Tuberculosis Officer Cheshire) considered that the results of the treatment of tuberculosis during the last twenty years had been disappointing except in so far as treatment itself had contributed to prevention Not the least disappointing thing was the reintroduction of the patient into employment Employers were unwilling to engage a tuberculous workman and therefore an attempt had been made in his locality to train the men to become productive on their own account but this had been a failure Dr Peyton drew attention to the progressive disappearance of tuberculosis In his administrative county the deaths from pulmonary tuberculosis had steadily gone down from 452 in 1919 to 344 in 1923 and the death rate was now 0·54 per 1,000 of the population In his view this decline was due to the careful shepherding of infective agents Tuberculosis prevention was no merely a matter of housing Formerly at Port Sunlight where housing conditions were ideal tuberculosis was rife but the incidence of new cases fell sharply after a policy was decided on whereby consumptives were separated out

Dr Noel Bardswell (Principal Assistant Medical Officer L C C) said that there were in London a number of men who had passed through these training institutions The training they had received though not of much value *qua* education had anchored the men to treatment for a longer period than ordinary sanatorium life would have held them and this might partly make up for the failure in other respects Dr E E Peest (Ayrshire Sanatorium) said that in his area a certain *number of cases had been sent to training colonies but none of* them had been successful Similar opinions on the whole unfavourable to the colonies as means of getting the men back into self supporting employment were expressed by one or two of the lay representatives present

The Minister of Health

The conference was addressed by the Minister of Health, the Right Hon J Wheatley, M P—an address which Sir *Robert Philip described as revealing the Minister as a* scientist, a philosopher, and a humanist

Mr Wheatley said that the fight against tuberculosis was a long one, but it was a winning one In 1847 the number of *persons per million of the population who died of this disease* was 3,189, in 1861 it was 2,675 in 1881 it was further reduced to 1,923 in 1901 it stood at 1,263 and in 1921 at 854 But there were still 70,000 fresh notifications every year The decline in the disease had a very close relation to the improvement in social conditions during the same period The sanatorium was of undoubted value in two ways it contributed to the education of the patient in rules of health and it prolonged his life The problem was how to deal with people after they left the sanatorium Every local authority should without delay organize an after-care committee this should not be left to voluntary effo although the members of the committee need not be members of the authority Village settlements were doing very well but even a third part of success they could not be expected to solve a problem of these dimensions They would provide at best for a few thousands and the people concerned were to be counted by hundreds of thousands He had often wondered whether there could not be evolved some system of workshops from *which the men could return to their own homes at night if these* were reasonably suitable, under conditions which would ensure safety to their families He referred with a wry face to the difficulty of extracting money from the Treasury which was equally *obdurate whatever the political complexion of the* Government He did not want to cast his burden on other shoulders but he would like to remind those present that his country was to a large extent under local government and that it rested with the local authority to evolve a practical scheme which would open the doors of the Treasury He promised that any scheme of the kind which was submitted to him would receive most careful consideration

Following on the Minister's address a motion by Sir Arthur Stanley was carried

> That what is most needed in the work of the prevention of tuberculosis is better provision for after care including workshop schemes and that the council of the association be instructed to give special consideration to this matter and submit definite proposals to the Minister of Health

Care Committee Work

The council of the association referred in its annual report to the increasing evidence that the lack of organization of care committees was the one weak link in the chain of tuberculosis schemes The council is now considering the most practical means of establishing care committees on a common principle all over the country and Colonel J A Ellis who has made a preliminary survey brought forward the results of his investigations at another session of the conference He said that the present apparent inactivity of many committees was due to two conditions—in the first place the committees were far too insular and in the second place there was not sufficient publicity

The personnel of the committees should be drawn from a less narrow area, and should include representation of employers and tradespeople, and of the local social, educational, and religious life. He thought that there were about thirty occupations suitable for the men with whom the committees would have to deal, and six suitable for the women.

A discussion followed in which many practical suggestions for the greater efficiency of care committees were made.

UNIVERSITY COLLEGE, LONDON

At the Assembly of Faculties last week Lord CHELMSFORD, Chairman of the College Committee, who was in the chair, implied that the Government has under consideration the propriety of instituting a scheme for the reform of the University of London which, he said, had received scant courtesy at the hands of the Governments which had been in office since the Haldane report in 1914. Action had already been taken on the report of the Royal Commission on Oxford and Cambridge issued in 1919, and it was the duty of any Government in power to deal with the University of London. Lord Chelmsford was understood to refer to the possibility of the appointment of a Royal Commission.

The Provost, Sir GREGORY FOSTER, said that the College was endeavouring to take full advantage of the many important developments of the last few years. He referred especially to the gift of the Rockefeller Foundation and to the new Ramsay Laboratory, which was organized on a post-graduate basis and was available for those who had already had training either in chemistry, physics, or engineering. The College had 1,568 full time students, of whom 1,195 were working for one of the degrees of the University of London. Adding the part-time students the total number registered was 2,847.

The Dean of the Faculty of Medical Sciences, Professor A. J. CLARK, made a special report on the faculty. The past year, he said, had been memorable in the history of the Faculty of Medical Sciences, for during its course the splendid new building, provided by the generosity of the Rockefeller Foundation, had been taken into use. The new buildings and the extra equipment thus available afforded unique opportunities for the advancement of teaching and research in the medical sciences. The excellent facilities the laboratories provided for original investigation had drawn a number of research workers from all parts of Great Britain and from all parts of the Empire, the Rockefeller Foundation and the National Research Council had sent nearly twenty of their research fellows, who come from all parts of the world, and in addition about ten other foreign graduates had come independently of these agencies. The resulting congregation of students from every quarter of the world, bringing with them a wide diversity of knowledge and interests, had produced an atmosphere very favourable to the vigorous prosecution of research. The advancement of the medical education of undergraduate students was, however, of equal importance for the progress of medical science, since progress in knowledge of medicine was fruitless unless medical men were trained in such a way as to permit them to take advantage of that progress in the treatment and prevention of disease. It was generally admitted that medical education called for reform in many respects, the chief reforms required had been very clearly pointed out by Sir George Newman in his reports on medical education in England. Since all branches of medical science were developing and expanding continuously, no system of medical education could be satisfactory which did not permit a continuous adjustment to the ever-changing form of the science taught. Teaching, moreover, was itself an experimental science, and progress could be made only by testing many things and holding fast to those which were good. Unhappily the present organization of medical examinations in the University of London was such as to hamper any attempt to develop the teaching of medical sciences along progressive lines. Teachers were tested by a rigid system of examinations, which was devised to ensure the attainment of a least common standard in a number of different schools, unfortunately this system, with even greater certainty, checked any advance beyond such a minimum standard. A movement within the University to bring the medical examinations more closely into line with modern teaching was in progress, and its effective realization was one of the reforms most anxiously looked for.

Mr. EDWARD WOOD, M.P. (special visitor), who was Minister of Education in the last Government, said that the existence of the University of London in the midst of a crowded population was a potent instrument for maintaining and advancing the whole standard of education throughout the country. Not the least important purpose and result of education was to give a sense of the limitation of human knowledge, to check rash assumptions, and to foster honest thought.

INFANT WELFARE CONFERENCE

We reported briefly last week (p. 27) the opening proceedings of the third English-speaking Conference on Infant Welfare, which was held in Caxton Hall, Westminster, on July 1st, 2nd, and 3rd.

At the morning session on July 2nd, when the chair was taken by Surgeon S. L. CHRISTIAN, the representative of the Government of the United States of America, the subject of the overseas settlement of children was introduced by Sir ARTHUR LAWLEY (chairman of the Child Emigration Society). He referred to the pioneer work of Kingsley Fairbridge, who started a farm school in Western Australia twelve years ago. All the boys and girls who had been sent there were now making good on the land. In addition to teaching a trade to these adolescents, a very serious endeavour was made to mould their characters so that the best type of citizen should be ultimately produced.

Mr. PERCY ROBERTS (Dr. Barnardo's Homes) took as his text a quotation from a speech by the late Dr. Barnardo. Well planned and wisely conducted child emigration, especially in Canada, contains within its bosom the truest solution of some of the mother country's most perplexing problems and the supply of the colonies most urgent needs. The first party of Barnardo boys sailed for Canada nearly forty years ago, and Canadian Government officials report that not 2 per cent. have failed. Dr. MILDRED THYNNE followed with a paper on the diet of children on ocean steamers. She pointed out that the Board of Trade Regulations on this subject (1908) were inadequate in the light of recent dietetic knowledge, but, fortunately for children, voluntary enterprise had outstripped official regulations.

After a heated discussion on the question of emigration the second subject for debate—child adoption—was introduced by Mrs. David MARGESSON (honorary secretary of the National Adoption Society). She claimed that every child should receive the upbringing planned for him by Nature—namely, that he should be one of a family. Out of 1,032 adoptions arranged by the society only 12 had proved unsatisfactory. Mr. HURST, K.C., stated in the paper which followed that public opinion had outpaced legislation on this subject. He compared and discussed the two bills now before Parliament.

At the afternoon session organized by the National Society of Day Nurseries, and presided over by the chairman (the Hon. Mrs. EUSTACE HILLS), Sir BRUCE BRUCE PORTER, who discussed the preventive side of day nursery work, stated that 35 per cent. of the defects of children entering school were preventable. He considered that day nurseries in urban areas were a potent means of preventing these defects. He emphasized also the educational value for the mothers. Dr. CRICHTON MILLER in dealing with the psychological benefit to children of being at a day nursery, contended that the daily companionship of other children soon weaned a child from his natural narcissism.

The discussion was opened by Lady ERLEIGH, who suggested a sun cure while the nursery children were having their after-noon sleep.

At a special meeting for members of Poor Law authorities Mr. THEODORE DODD discussed the incidence of maternal and infant mortality in relation to out-relief, and Mr. NATHAN STRAUS (U.S.A.) gave a lecture on milk.

At the morning session of July 3rd the available measures for securing healthy pregnancy and safe delivery were discussed. Dr. E. W. MORRIS, representative of the Commonwealth of Australia, presided, and Lady BARRETT urged that better practical training of both doctors and midwives was desirable, and that increased co-operation between them should be encouraged. She laid stress on the necessity for the fuller provision of maternity beds. Miss C. VAN BLARCOM followed with a paper describing the methods available in New York

A special meeting was simultaneously arranged by the Eugenics Education Society, whose secretary Mrs HODSON, introduced an interesting discussion on the importance of heredity as the basis of child welfare work To look upon welfare work from the point of view of its dependence upon the constituent parts of chromosomes was she thought illuminating

The National Baby Week Council organized the afternoon session when Lady RHONDDA, who presided introduced a discussion on the scientific principles of the most effective methods of propaganda on maternity and child welfare Mr C FEEN (University of Wales) dealt with the psychological aspect of propaganda and Miss BABBITT (American Child Health Association) instanced the differences between American and English methods of propaganda

The annual meeting of the Maternity and Child Welfare Group of the Society of Medical Officers of Health was held in the afternoon of July 3rd, when Professor MELLANBY gave an interesting account of his recent researches into dietetics with special reference to the effect of diet upon rickets He stated that it was his emphatic belief that wrong feeding was the most important factor in the production of rickets Dr DONALD PATERSON who also contributed a paper expressed the view that diet was only one factor in the causation of rickets The conference ended with an evening lecture by Sir MAURICE CRAIG on mental hygiene in relation to child training

On July 4th fifteen tours were arranged for delegates to visit various welfare institutions in London A mothercraft exhibition was held at *Carnegie House during the conference* days and attracted well deserved attention A bookstall with copies of literature published in relation to infant welfare was open at Caxton Hall A film on ante natal care, lent to the conference by the American representatives, was shown several times during the conference The social functions—a reception at the Forum Club Lady Helmsley s At Home and the garden party given by Lady Lawrence and Mrs Otter—were delightfully organized and well attended

Great credit is due to Miss Halford, the honorary secretary of the National League for Health, Maternity, and Child Welfare, for her admirable organization of the business of the conference, it was no fault of hers that too much was attempted, for we must repeat the criticism made last week that too many important subjects were treated in a short time Had fewer subjects been selected, or a range of interdependent subjects, with a few papers, and more time for discussion, delegates might have been able to arrive at some definite conclusion on debatable points

NON-PROFESSORIAL STAFFS OF UNIVERSITIES

A STATEMENT FROM EDINBURGH

A MONTH ago (June 14th, p 1068) we gave some account of the protest addressed to the University Grants Committee by the non-professorial staff of the University of Edinburgh with regard to the recent action of the University in proposing to reduce the rates of remuneration paid to the lowest grades of lecturers, and this has opened up the whole question of the status and remuneration of non-professorial teachers in the University A committee of the non-professorial teaching staff has been formed, with Mr John L Mackenzie, D Sc , Ph D , of the medical faculty, as convener, and consisting of five representatives of each of the faculties of arts, science, and medicine This committee has now put out a statement on the staffing of British universities with special reference to the position at Edinburgh The matter is undoubtedly one of great importance, it concerns all the universities in Great Britain to a greater or less extent We are not prepared at the present moment to discuss the matter in all its bearings, but we would desire at once to take exception to an argument which seems implicit in the statement now put out We are not prepared to admit that a salary of a *little* over £1,000 a year is too much for a professor on the contrary, it is too little But we of course agree that salaries averaging about £200 a year are far too small for persons to whom a university commits the responsibility of teaching its students With this reservation we believe the argument contained in the statement will command general approval The statement is as follows, omitting a short preamble

I

To understand the present position it is essential to realize the past In the earlier days of the University members of the non professorial staff, where such existed, were *considered rather* as the private assistants of professors *than as necessary* members of the University, appointed by the University Court More recently with the natural growth and development of subjects and in view of the increasing numbers who wish to avail themselves of a university education there has taken place a great extension of the lectureship system and particularly since about 1890 there has been a constant increase in the numbers of the non professorial teaching staff until at present as compared with 52 professors *there are* 248 *readers, lecturers,* and assistants

With this growth in numbers there has taken place a progressive change in the character of the work done by a large proportion of this staff Formerly the non professorial staff consisted of assistants *whose work was of a quite subordinate* character At the present time many lecturers give ordinary and honours courses, which qualify for degrees for which the lecturers themselves are responsible and on which they report directly to the University Court in other cases theoretical and practical courses are given by lecturers and assistants of which they are in fact placed in charge, although they may not report directly to the University Court in other cases lecturers and assistants give parts of theoretical courses and the bulk of the practical and tutorial instruction in co-operation with the professor It is clear, therefore, that without the non professorial staff many of the existing courses could not be given, nor could the degrees be taken with the same preparation

The great change in the character of the work done by a large *proportion of the non professorial staff has naturally* brought about *in practice* certain corresponding changes in the qualifications of these teachers and the length of time they continue in their offices In the case of the old assistantships there was no inducement for the assistant to continue in his offices for more than a short period and no strong reason for retaining the same person in office But in proportion as the work of a large section of the non professorial staff has become work of the same kind as that done by the professors and is work which, like theirs must be carried on in a continuous way from year to year, the position has been greatly altered Experience in teaching and examining and the growing knowledge acquired by continuous work at, and research in, a subject *have now the same importance in the case of the lecturer as* in that of the professor, while the specialized nature of the work tends to restrict the possibility of a person who has once taken it up obtaining employment in another sphere Moreover, although the non professorial teacher must have similar mental attainments to those of the professor yet *with the paucity* of chairs in all subjects, compared with the number of teachers necessary for efficient teaching there is a certainty that many members of the non professorial staff must anticipate spending the whole period of their active working life in that status

In view of these considerations it is clear that, while it is essential that the best candidates should be attracted to the academic teaching profession, they will only be induced to enter and remain in the profession by offering a career comparable to that obtainable in other spheres To effect this it is necessary that members of the non professorial staff should be given *reasonable security of tenure, adequate remuneration,* and *a share in the administration of the University,* determined by, and corresponding to, the character of the educational work with which they are entrusted The present disparity between the professorial and the non professorial staff will be appreciated in the facts that during the current session 52 professors have drawn approximately £57,000 in salaries as compared with a total of £65 000 obtained by the 248 members of the non professorial teaching staff

The necessity of improving the conditions of service of the non professorial staff in these respects has long been realized by *members* of that body, and has repeatedly been urged on the University authorities *The general equity of these claims* has also been admitted by several Royal Commissions and Government Committees, and was recognized at any rate in part by the modifications introduced by the University Court during the past generation At no time, however have the conditions of service of the non professorial staff approximated *to those of professors* Moreover such modifications as have been introduced have been largely nullified by the action recently taken by the University Court *in view of financial* difficulties

II

Whereas appointments to chairs have usually been made *ad vitam aut culpam* the appointments of members of the non professorial staff have for the most part been of an annual nature In practice, however reappointment from year to year has been almost automatic given efficient service and in many cases no notice of reappointment has been received During recent years, also appointments to the various grades of the non

but some amusement if the reader will take the trouble to understand where the fun comes in.

The important issue is whether civilization has been a single process ordered though often interrupted in which all the races of mankind have shared, some indeed to a very much greater extent than others, or has it taken origin among various peoples in several part of the earth and reached, from these different starting places results which everyone must admit are very similar? "It is" to quote the author "the fundamental problem of the nature of man's inventive powers that has to be solved." The hypothesis of the independent evolution among different races of similar customs and beliefs first put forward by William Robertson once Principal of the University of Edinburgh, who wrote a history of America (1778) was adopted by certain German writers and supported by Tylor, though with some doubts for he was too accomplished a man of science not to recognize that many facts pointed the other way. The earliest traces of civilization as expressed by art are probably the drawings in the French cave and the races who made them knew the elephant and the mammoth. Recent excavations prove that for the beginnings of civilization in Mesopotamia and Crete, as well as Egypt, we must go to the dark backward and abysm of time. Indian civilization and art seem to have come later, to have been influenced from Mesopotamia, and to have influenced countries still further east, including Cambodia. The pre-Columbian civilization of Central America and its arts are comparatively recent, covering the first ten centuries of the Christian era, but beginning perhaps a little earlier. The question is, Did this Central American civilization arise there independently or were its essential elements diffused across the Pacific Ocean? North American archaeologists defend the former alternative with amusing vehemence. Professor Elliot Smith has written his book to establish the latter.



FIG. 2.—Semidiagrammatic drawing of top of Stela B (Wood engraving by Gerrard after Maudslay.)

The body of facts now accumulated is large and the field of inquiry wide. It has even been urged that on this account useful discussion is impossible, but it was not to be expected that this pusillanimous excuse would be accepted. Professor Elliot Smith has taken one crucial example to test the hypothesis of Asian influence in Central America, and has we think, established his case.

The Maya civilization flourished in Central America between the fourth and twelfth centuries, but probably reached its highest development towards the end rather than the beginning of that period. The Mayas as is proved by their buildings and codices had attained an advanced stage of culture before the arrival of the Spaniards. At Copan in Honduras near the frontier of Guatemala is an imposing collection of ruins of stone pyramids, terraces, and walls enclosing great courtyards. They have been visited at various times during the last eighty years by several travellers and studied with minute care by Mr. A. P. Maudslay during the years 1881 to 1894. His account was published with numerous fine illustrations in Godman and Salvin's *Biologia Centrali-Americana* (1889-1902). The ornamentation presents in style and feeling an astonishing resemblance to Indian and Indo-Chinese sculpture. The inference that, in spite of the sundering Pacific the Maya sculpture was influenced in fact inspired, by Hindu culture is obvious, but is rejected with vehemence by American ethnologists.

To narrow the issue Professor Elliot Smith has taken a single crucial case, a single stela at Copan bearing a human figure with features, as he and others have recognized, distinctly of Mongolian type, it is surrounded by many ornaments, and the author lays special stress on one of these ornaments, which is an animal of some sort. He says an elephant, but some have thought a tapir, others a macaw, and others, again—Germans these—a tortoise. The last may be excluded as merely perverse and nobody seems to believe sincerely in the tapir, so that it lies between the elephant and the macaw. The last we may shrewdly suspect would never have been heard of but for the awkward fact for the theory of the aboriginal origin of the Central American cult, that there have been no elephants in America since Pleistocene times. About the resemblance of the sculptured beast to an elephant there can be no doubt. One American archaeologist has said that the identification is an exploded idea, but it keeps on reconstituting itself in the mind of everyone who looks on the drawings of the American stela for the first time with an unprejudiced eye.

The general character of the stela, which is 11 ft. 9 in. high is shown in Fig. 1 a woodcut by Mr. Horace Gerrard from one of Maudslay's drawings. The figure of Mongolian aspect will be recognized in the middle and at the top corners above its head two carvings of beasts with curving trunks, one of them, as it seems in the act of culling some leaves. If the reader finds this too great an act of faith let him examine the larger semidiagrammatic drawing (Fig. 2). There in the top corner on either side but badly broken on one he will see the carving which Professor Elliot Smith and his English colleagues saw as an elephant's head and trunk, carved by an artist who never saw an elephant in life, who mistook eye for nostril and ear for eye, and replaced the auricle of the ear by a tessellated pattern and the tusks by a spiral figure like an ammonite. On the head of the beast sits a turbaned mahout with a goad. It would seem to require more than the complacency of Polonius to see in it a kind of parrot—a macaw. The inference is that the Maya artist was working from an imported drawing or

carving that had caught his fancy There is direct evidence of the sort of carving, a makara, perhaps from Cambodia, with elephant head and curly tusk and all, from which he might have copied, and direct evidence too of how competent he was to delineate a macaw when he wished so to do

Figs 3 and 4, from another stela at Copan, are presumably by one and the same artist Fig 3 shows the elephant again, with indeed a tusk much more realistic than the spiral ornament in Figs 1 and 2 Fig 4 shows the artist's idea of a macaw, and this seems really to clinch the argument and to answer Professor Elliot Smith's crucial question in the way he would desire We cannot go into the reinforcing argument he draws from the story of the makara, the composite wonder beast with a crocodile's head which developed into the dragon, nor into the way in which the elephant's trunk and tusks appear as ornaments in many places from Greece to Yucatan through many centuries, nor into the matter of the spiral ornament to be seen just behind the elephant's jaws in Figs 1 and 2 But, as has been said, Professor Elliot Smith seems completely to have achieved the primary aim of his book, which is to establish the proposition that Indian culture was impressed upon Central America and Mexico and played an obtrusive part in shaping the early civilization that grew up in the New World He holds that, while that civilization is distinctly American, most of its ingredients came across the Pacific from the Old World





FIGS 3 AND 4.—From Stela D, at Copan To demonstrate the contrast in the mode of representation of the macaw and the elephant By the same sculptor (Wood engravings by Gerrard, after Maudslay)

We have not here to consider the relations of Indian culture to Western culture in Egypt and Crete Indo-China, which as is proved was the chief source of the cultural inheritance of Central America, derived its art from India Professor Elliot Smith concludes his book by claiming confidently as a demonstrable fact that "the stream of Western culture that was effecting such profound developments in Cambodia during the centuries from the fourth to the twelfth A.D., was not stopped at the Asiatic littoral, but spread to Oceania and America"

As has been implied already, the illustrations are numerous and of unusual quality With one exception they have been engraved from the originals in the publication indicated directly on to the wood by two young artists, Horace Gerrard and K Leigh Pemberton Wood engraving is a virile method, and in skilful hands is well adapted to the illustration of books and periodicals For this purpose, however, it has been almost wholly replaced by the process block made from a photograph It would be ungrateful not to admit that scientific publications, and therefore the progress of science, have been greatly helped by the photographic process block It was, in the first place, far less costly, and wood engraving had fallen into bad ways, the artist making a drawing, but the wood being cut by a craftsman whose methods were often very mechanical In the second place, it was assumed that for scientific work the photographic block could be better trusted to present the appearances truthfully and free from any bias the human observer might himself have and impart to the artist and engraver Reliance was placed on the untouched photograph to tell the truth and nothing but the truth Every photographer now knows that unless the object is properly placed and lighted the photographic lens may give a distorted picture, and that skill is needed to bring out details which, if blurred or faint, must be taken on trust From the point of scientific accuracy and fullness, therefore, the camera has not all its own way as against the cutting tool, and the latter certainly gives the clearer and crisper line The truth of this assertion can be judged from the woodcuts in this book, some of which we are able, by Mr Gerrard's permission, to print here The exception mentioned at the beginning of this paragraph is the frontispiece It raises a suspicion that someone at University College, possibly in the Slade School of Art there, has not been quite serious In this frontispiece we see, *safe within the gaping jaws of a ferocious crocodile*, the smooth-shaven face of a man regarding with a somewhat petulant expression an Indian elephant, who presents on his benevolent countenance a gentle smile which seems somehow to pervade the whole of his portly person These things are perhaps an allegory, but if there be any who doubt whether an elephant can smile, let them get this book and be convinced

THE ROYAL MEDICAL BENEVOLENT FUND

The annual report of the Royal Medical Benevolent Fund has been issued as a pamphlet, and we could wish that members of the profession would obtain copies from the office of the Fund, 11, Chandos Street, Cavendish Square, W.1 The Fund is much hampered for want of money, and though the application of no one of the 447 persons who applied was refused the amount granted was in most cases very inadequate in spite of the fact that the income showed an increase in 1923 over 1922 There were 153 annuitants (several of them over 80) who received annual payments of, in most cases, £20 or £26 This year it will be possible to add to the number of annuitants and to increase the value of twenty-two of the annuities to £30 The majority of the grants ranged between £10 and £20, less than a quarter being above the larger amount The Royal Medical Benevolent Fund Guild continues to do admirable work, and in many instances its members are able to render personal service It is represented on the Committee of Management and on the Case Committee of the Fund, and to it cases for inquiry, or needing help in education, are referred.

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THE ROYAL COMMISSION ON NATIONAL HEALTH INSURANCE

THE composition of the Royal Commission on National Health Insurance has been announced this week by the Ministry of Health, and the names of the members together with brief particulars of each, will be found in the SUPPLEMENT

The terms of reference of the Royal Commission have been previously announced its members are charged to inquire into the existing scheme of National Health Insurance, and to report what if any alterations, extensions, or developments should be made in regard to the scope of that scheme and the administrative, financial, and medical arrangements set up under it It will be remembered that the late Minister of Health, Sir William Joynson Hicks during the negotiations last autumn with the Insurance Acts Committee as to the terms of service of insurance practitioners, promised that an impartial Commission should be appointed to report on and inquire into the whole system under the Insurance Acts In accordance with another promise the draft terms of reference of the proposed Commission were forwarded by the Ministry of Health to the Insurance Acts Committee The Committee, in informing the Ministry that it had no objection to this reference drew attention to the undertaking given by the Minister that so far as the personnel was concerned it would be an impartial Commission In anticipation that this undertaking would be kept, in spirit and in letter, steps have already been taken to prepare the evidence to be given by the British Medical Association before the Royal Commission

The first question which members of the medical profession will ask themselves is whether the personnel of the Royal Commission, as now appointed is to be regarded as impartial that is not favouring one party or side more than another—a body of men and women unprejudiced and unbiased in regard to the matters under inquiry The Royal Commission consists of fourteen members—a large number too large, in our opinion Of these fourteen persons one alone the distinguished President of the Royal College of Physicians of London, is a member of the medical profession Of Sir Humphry Rolleston's impartiality there can be no question at all, and it may be assumed with confidence that he has no preconceived ideas on the subject, though with one aspect of insurance medical practice he is already familiar for he was chairman of the Ministry of Health's committee on medical records Several other members of the Royal Commission will be regarded as equally appropriate to serve on a body of this kind But of the members of the Commission as a whole the same cannot be said It contains the names of a number of people directly interested in the matters under inquiry, some of whom have publicly expressed their views on subjects with which they are now called upon to deal judicially The Commission is overweighted with sectional interests directly and indirectly trade unions and kindred institutions have undue representation, and there is a lack of persons with broad views on national health The Royal Commission is concerned with the relation of an insurance scheme to the public health The work and functions of the bodies which have been administering or acting under the existing scheme will be passed under review This will include the work of the central Government departments concerned and their professional advisers the work and position of local bodies such as Insurance Committees, the work of the medical profession and that of approved societies It is obviously improper that—if the Commission is to be of the impartial character promised—individuals who have been professionally responsible for this work should have a place on the Commission itself The sound principle upon which Sir Humphry Rolleston has been chosen as representing medicine in its widest aspect, has not been applied in appointing the Commission as a whole

It would seem that Mr Wheatley has failed to grasp a great opportunity, or else he has been singularly unfortunate in his refusals to serve In these circumstances the medical profession must consider seriously whether its desire to participate in a broad minded effort to review and possibly recast and extend the scheme of medical services for the community can possibly be fulfilled through a Royal Commission so constituted, and what its attitude should be with regard to the giving of evidence

COCAINE SUBSTITUTES

IT is remarkable that synthetic substitutes for natural alkaloids are invariably inferior to them in the essential properties by virtue of which they have come to be used in medicine The synthetic chemist has not improved upon morphine, strychnine atropine quinine, or adrenaline always the new derivatives are found wanting in some essential property and almost it appears as if Nature in her biological laboratory had said the last word

The report of Dr A J Copeland the Ernest Hart Scholar of the British Medical Association published in the present issue, seems to support this view as regards cocaine No single substitute possesses all the useful properties of cocaine though several exist which possess one or more of them and can be used instead of cocaine for certain specific purposes For subcutaneous injection novocain is unsurpassed because it is non irritant and the least toxic of all the synthetic products so far prepared this is true in spite of the fact that much larger doses of novocain are required than of the other derivatives Butyn can be used as a substitute for cocaine in the eye and tutocain perhaps in the nose Butyn is useless for the nose because of the swelling it induces in the nasal mucous membrane tutocain for subcutaneous injection because of its irritant properties and novocain is of little value for surface anaesthesia

The search for cocaine substitutes began as the result of a long list of accidents following its use these were no doubt due partly to what is termed idiosyncrasy in the patient and partly to the fact that the alkaloid was employed in unnecessarily strong solutions Idiosyncrasy of people towards cerebral stimulants is not uncommon it is for example an everyday experience with caffeine so that it is hardly surprising that a rapid and unexpectedly large absorption of cocaine may in certain people after a short cerebral stimulation produce the opposite effect—collapse This search has received fresh incentive in the last few years because during the war the habit of sniffing cocaine became prevalent in France and

Belgium and extended to England Administered in this way it acts as a rapid and exhilarating intoxicant, producing excitement and abandon Before the war the pure cocaine addict was very rare, nearly always the drug was taken as an addition to morphine The latter day devotees are not, however, for the most part addicts in the sense in which this term is generally used

Dr Copeland lays some stress on the fact that all the substitutes excite to a greater or less degree the motor cortex in the same way as cocaine, and he thinks that their possible employment for addiction or vice may be gauged by determining the facility with which they produce cortical convulsions in lower animals This conclusion is to be regarded as important, and judged in this way the liability to induce addiction for the four alkaloids cocaine, butyn, tutocain, and novocain is in that order Many other drugs produce similar convulsions—that is, by direct stimulation of the cortex—but these are not necessarily local anaesthetics, though they may be used for addiction purposes, we may instance picrotoxin (at one time used to fortify beer), absinthe, and nutmeg It may be noted that our official hypodermic injection of cocaine is a 5 per cent solution preserved with salicylic acid It is now recognized that this strength is unnecessary, and we have little doubt that it will be altered in a future edition, and directed to be made preferably without the irritant salicylic acid The French *Codex* has a solution of cocaine hydrochloride for hypodermic injection, but it is a 1 per cent solution sterilized by placing the bottle in boiling water for a quarter of an hour

The improved treatment of disease in modern times has been largely attained by the introduction of new synthetic drugs, active preparations of animal extracts, and a greater knowledge of dietetics In the first group Britain cannot be said to have taken hitherto any significant part In this country there are, so far as we are aware, no teams of chemists and medical men working together to obtain new chemical substances possessing certain desired properties, whether these are for the destruction of micro-organisms or the production of some definite physiological effect None of the cocaine substitutes have been prepared in England Novocain is German, stovaine French, butyn American, and the newest—tutocain—is the product of the well known Bayer laboratory in Germany The work of the Ernest Hart Scholia gives us from the point of view of the laboratory, a comparison of the action of these substances We hope that more work of this nature, directly useful to and required by the medical profession, will be undertaken in the future, and we may cite the need of some comparative and trustworthy figures on alimentary antiseptics

THE AMERICAN MEDICAL ASSOCIATION

THE annual meeting of the American Medical Association, held in Chicago during the week beginning June 9th, seems to have been in every respect a great success The total number of members who registered was 7 819—the largest number recorded since the meeting in Chicago in 1908, when the total was 6 446 Some 3,000 were present when the President, Dr William Allen Pusey, gave his address on some of the social problems of medicine, on the evening of Tuesday June 10th The sections began their meetings on the following day they were well attended, and though some of the halls provided seats for as many as 1,200, they were crowded The House of Delegates, which in its functions corresponds pretty closely with the Representative Body of the British Medical Association, met first on Monday, June 9th, when the secretary, Dr Olin West, reported that the membership on April 1st, 1924, was 90,056, or 1,537 above the number for the corresponding period last year The general work of the association during the year was reviewed in a report of the Board of Trustees, it recalled that the President, Dr Schweinitz, at the meeting in San Francisco last year, advised the association to expend greater energy in post-graduate medical work, and recommended the creation of a bureau or extension of graduate medical education at headquarters, under the direction of the Board of Trustees and the secretary of the association New quarters have been provided for the chemical laboratory, and through a special committee the association has provided funds for the encouragement of therapeutic research It has also provided funds, through a committee of scientific research, for original investigations in various directions The propaganda department has been more active in 1923 than in any previous year, and the medical profession and the general public have shown more interest in its educational work This work was carried on in various ways and in several directions, publicity was obtained both through the *Journal of the American Medical Association* and through the popular journal *Hygeia*, now published by the association The two volumes on *Nostrums and Quackery*, it was reported, continued to have a steady sale, and were finding their way into the libraries of schools and colleges The inexpensive pamphlets published by the department had been kept up to date, they were designed especially for distribution among laymen, and more than one million copies had been issued during the last fifteen years The report stated that a special reprint was issued during last year dealing with the Abrams cult The exploitation of Abrams's theories and practice, it was stated, had markedly changed in character "Whereas, at first, some of the more credulous but reputable members of the medical profession were disposed to give the Abrams theories serious consideration, the present disciples of this cult are to be found among the less reputable of the 'drugless healer' type and the more mercenary members of the medical profession" During the meeting Dr George H Simmons was entertained at dinner in honour of his twenty-fifth year as editor of the *Journal* and general manager of the association Dr William D Haggard, professor of surgery in the Vanderbilt University, Nashville, was chosen to be president-elect, he has long been an active member of the American Medical Association, was chairman of the surgical section in 1917, and was a member of the council on medical education from 1910 to 1920 The meeting next year is to be held at Atlantic City

SOCIETY OF APOTHECARIES

THE Master and Wardens of the Society of Apothecaries of London gave a dinner on July 8th at Apothecaries Hall in honour of the representatives of the medical profession from the Dominions now in this country The guests were received in the panelled court room by the Master, Dr Thomas Wakefield, and the Wardens, Dr A D Brenchley and Dr T Vincent Dickinson, and dinner was served in the handsome Livery Hall To mark the occasion the toast list departed from precedent The Master, from the chair, proposed the health of the King and that of the guests, and brief speeches were made in reply by representatives from India and the various Dominions In welcoming the visitors from overseas the Master said that their presence made that evening the most important event in the history of the Society since it received its charter from James I in 1617 He briefly traced the origins and growth of each of the Dominions during the lifetime of the Livery Hall, bringing out very agreeably the contrast between old and new Dr Wakefield especially

dwelt on the spirit of fraternity which bound together the medical profession of the British Empire. The responses to the toast were made by Lieut.-Colonel J. W. Grant, I.M.S., on behalf of India, by Dr. T. J. Costello (Alberta) on behalf of Canada, by Dr. T. Taylor Downie (Melbourne) on behalf of Australia, by Dr. Arnold W. Izard (Wellington) on behalf of New Zealand, by Mr. H. Temple Mursell (surgeon to the Johannesburg Hospital) on behalf of South Africa, and by Dr. W. T. Grenfell (Labrador) on behalf of Newfoundland. Each speaker acknowledged the abounding hospitality of this ancient medical corporation, and expressed his pleasure at taking part in a family gathering attended by so many distinguished figures in the medical world of London. Before leaving, every guest received a charming souvenir in the shape of an illustrated reprint from the *Builder* of December 7th, 1917, entitled "The Society of the Art and Mistery of Apothecaries of the City of London." The photographs in this pamphlet give an excellent idea of the interior and exterior of the ancient building in Water Lane, Blackfriars.

MYOPE CLASSES IN CANADA AND DENMARK

Dr. Donald D. Macdonald has recently published, in a thesis[1] for which he obtained the degree of Doctor of Pedagogy in the University of Toronto, an account of the method of instructing children with high myopia familiar in England under the name of "myope classes." Medical inspection has shown that there are many children with such defect of vision that although able to read school books and therefore not blind the continuous use of their eyes in this way may increase the defect of sight or possibly cause its loss. He estimates the proportion at about 1 to 1,000 in the larger communities and at 1 to 500 or even higher in the smaller communities. The number is two or three times as great as the number of blind children in corresponding communities. When these children are drafted into blind schools the teachers find "they have too much sight" and are unsuitable for the training given to totally blind children. Such a child can read Braille with its eyes and its efforts are divided between two systems of education—the sighted and the blind; the division means an imperfect training in each. Further, their mentality is influenced by constant association with the blind. Dr. Macdonald notes that the movement for the better care and training of children with defective vision began in England. "It dates," he writes, "from the International Congress of School Hygiene held in London in 1907. The movement in England centres about the person of Dr. N. Bishop Harman, the founder of myope classes in London. It is to him in particular that the success of this progressive step in elementary education is largely due. The enthusiasm and inspiration put into the project in England soon made their influence felt in other countries, and in a year or two we find that the United States was adapting the English plan to the needs of American schools." He gives a summary first of the English methods of managing these classes, next of the American methods and finally of his own experience in Toronto, where there are now three classes, and it is proposed to set up more. Mr. Harman's views are quoted with approval as follows: "(*a*) A suitable system of teaching myopes can be arranged. (*b*) Such classes should never be independent units nor be associated with existing blind schools. (*c*) Success depends almost wholly on the intelligence and initiative of the teachers. (*d*) The training of the children should be general, and not merely technical. (*e*) Classes should be small with an optimum number of twelve, but never more than twenty. (*f*) There must be a standard of visual acuity of 6/18. (*g*) The children must be under regular individual supervision for the whole of their school life." Dr. Macdonald gives details of the type and vision of children admitted to the Toronto classes, records of progress in work, and a very useful list of class equipment. This would appear to be the first graduation thesis to deal with the subject of myope classes, and the author has done his work well and sympathetically. Dr. Eiler Holm has published recently an account of special schools for children with defective vision in Denmark.[2] The methods used entered Denmark through Germany, after a visit of Dr. Lundsgaard to Germany and France in 1920. On his return to Denmark conferences were held with the authorities and ophthalmic surgeons of Copenhagen, with the result that all children whose vision could not be brought to exceed 6/24 were selected as being adapted for the special education, and those from the blind school whose vision was not below 1/60. In this way 26 children were collected out of a school population of 75,000—a low proportion. Two classes were opened, and Dr. Holm gives an account of the methods of education and of the nature of the eye defect and visual attainments of the children. In one of the classes the causes of the defective vision and the low visual acuity attained would probably have rendered the children better fitted for a blind school where a definite trade training is available. But it is possible that in a country almost wholly agricultural, such as is Denmark, persons with a low visual acuity are able to find employment more easily than in a highly industrial country. Reading is taught with large printed books and the aid of powerful magnifying lenses, but it is added, "The children get comparatively quickly tired of reading, and the teaching is therefore arranged so that the pupils take turns, and have a series of short lessons." Somewhat elaborate and expensive experiments have been made with optical lanterns. Attempts were made to use a reading desk below which is placed a lantern slide apparatus so that the picture is formed on a slab of frosted glass mounted in the table top of the desk. The school possesses an excellent epidiascope, by means of which the pupils are shown pictures drawn in clear lines on a black ground, ordinary pictures being useless. But it is added that instruction by means of lantern pictures is more and more replaced by drawing on the blackboard and simple printed cartoons on the wall. Dr. Holm states that the pupils like their school very much, and the parents are often heard to express their delight at the happy change brought about in the life of their children with this new school, at which they make much quicker progress than they did under the previous conditions."

HOUSING DIFFICULTIES IN SMALL TOWNS

WHEN replying to a question by Mr. Masterman on July 2nd the Minister of Health refused to consider a suggestion that local authorities might be empowered to build cottages (for which subsidies would be available) or larger floor space than was at present possible, and he backed his refusal by the statement that local authorities in the majority of cases were not utilizing the full powers they have at present. There is little doubt that he was right in his assertion, although it is not always the local authorities who are to blame for the inaction. Especially is this the case in some of the smaller towns and rural districts. Local authorities in these areas have made laudable efforts to improve the housing conditions of the poorer classes, but have found themselves handicapped almost at the outset by what appeared to them to be unnecessary and restrictive regulations of the Ministry, and at a later period, as in the case of the Addison Housing Act, by an entire change of policy, resulting in the sudden abandonment of building schemes which were well on the way towards completion. It is becoming a custom in some quarters to attribute a large portion of the preventable disease known to exist to

[1] *Sight Saving Classes in the Public Schools.* By Donald D. Macdonald, B.A., D.Paed. Toronto. pp. 80.

[2] "Special Schools for Children with Defective Vision in Denmark." By Eiler Holm. *Archiv für Ophthalmologie*, vol. i. Fasc. 3. pp. 273. Levin and Munksgaard: Copenhagen.

unsatisfactory housing conditions The incidence of tuberculosis and the rate of infant mortality, we are told, would both be reduced if better houses were provided, and in his presidential address to the third English-speaking Conference on Infant Welfare recently held in London Mr Wheatley, when deploring the high rate of childbirth mortality, referred to the great importance of having "homes in which it would be safe for children to be born" In these circumstances it is hardly a matter for surprise that medical officers of health and others concerned with public health administration view with concern the deplorable housing conditions which exist, and at times get out of patience with what they conceive to be uncalled for delays in effecting reforms We are led to make this observation by a recent report of Dr R Wright, medical officer of health for the town of Trowbridge, and we have reason to know that his strictures could be applied to many other towns and districts in the country There were, he said, many houses in the town which were totally unfit for habitation by man or by any other animal, and were a disgrace to any self-respecting community The owners could not obtain possession of them either to demolish them or to repair them The tenants were not frightened by the issue of a closing order, and still remained in occupation These conditions must remain until more decent dwellings are provided Dr Wright recommended, even as a more or less temporary measure, the erection of a block of wooden huts, and referred to his experience in Salonika after the great fire, when many thousands of persons were housed in this type of building We are not concerned with the desirability of carrying out this proposal There are at the present time very many more people living in wooden houses in this country than is usually realized, but whether such dwellings are suited to English habits is a question on which diverse opinions are emphatically expressed The reply of the Trowbridge District Council to its medical officer of health on his suggestion was that the Ministry of Health would not sanction a loan for the provision of a timbered colony In the course of discussion on the report it appeared that the council had met with great difficulties in the acquisition of land for housing purposes, while the allocation of £500 a year, equal to a rate of threepence in the pound, for several years is evidence that the members are alive to the need for reform One conclusion to be drawn from the discussion is that the district council does not appear to have been inactive or apathetic towards schemes tending to housing betterment, and if it will have the further effect of hastening those schemes Dr Wright will have been quite justified in the forcible expression of his views

TYPHOID CARRIERS IN ASYLUMS

CARRIERS of typhoid bacilli are a greater source of danger in institutions such as asylums than they would be in the outside world This is partly due to the closer contact of individuals in large institutions, and no doubt also to the more slovenly and dirty habits of asylum inmates Consequently typhoid fever lingers on in some asylums, is hard to eradicate, and has a disappointing way of breaking out once more when it appeared to be well in hand The difficulties of the problem are dealt with by Dr William Whitelaw in the fourteenth annual report of the Scottish Western Asylums Research Institute Two epidemics of typhoid fever occurred in the associated institutions in 1921, and the director of the laboratory remarked in the report for 1922 that since there had been no new cases in the last three months of the year it seemed that the end of the outbreak was in sight This proved to be true for only one institution in the case of the other the infection is still present, and new cases of typhoid have begun to occur at the rate of about two or three a month It was concluded that the infection was being spread by several healthy carriers of typhoid fever A bacteriological investigation was commenced, and up to the present eleven persons, all female patients, have been identified as chronic carriers of the typhoid microbe The difficulties of discovering a typhoid carrier are not always appreciated Two examples will illustrate how thorough the examinaion must be A woman had typhoid fever in May, 1922, and made a good recovery Before discharge from isolation her excreta were examined six times at weekly intervals, with negative results In July, 1923, a year afterwards, in consequence of new cases of typhoid appearing, this patient was examined again, and typhoid bacilli found on several occasions Thus, in spite of six negative examinations, this woman ultimately proved to be a carrier Another woman was discovered to be a carrier, and the typhoid bacillus was found in her excreta on seven occasions during September and October, 1922 From October onwards specimens of the excreta of this patient were examined at weekly intervals, but no infecting microbes were found until the end of the following March, when the bacillus was again isolated This intermittent type of carrier is the most dangerous of all because of the difficulty of discovery An administrative problem of considerable importance is raised by this experience Medical and surgical measures cannot be relied on to cure carriers, and all that can be done is to separate the typhoid carriers from the rest of the asylum inmates In many of the asylums of Scotland typhoid carriers are known to be present, and Dr Whitelaw suggests that the problem of dealing with these would be much simplified if all these patients could be gathered into one institution Such a plan would make administration easier and isolation more efficient The isolation would be less burdensome to the patients There are grounds for believing that the inmates of an asylum are more prone to become typhoid carriers after an attack of typhoid fever than are the sane

THOMAS HODGKIN

THE April instalment of the *Guy's Hospital Reports* contains a welcome historical article on the famous name but little known personality of Thomas Hodgkin by Sir William Hale-White, who describes him as having played the three parts of a scientific physician and morbid anatomist, of a reformer of medical abuses and medical teaching, and of a busy, active philanthropist In addition to the paper on the disease which bears his name, Hodgkin, in 1827, was "the first to write a proper account, both clinical and pathological, of aortic valvular disease," five years before Sir Dominic Corrigan's celebrated paper in the *Edinburgh Medical and Surgical Journal*, 1832, this seems to have been quite overlooked in spite of Sir Samuel Wilks's efforts to draw attention to it in the *Guy's Hospital Reports* on two occasions Although, with Bright and Addison, one of its ornaments, Hodgkin was never physician to Guy's Hospital, Benjamin Guy Babington being preferred before him in 1837 These two rivals for that post died in 1866 within three days of one another In the previous year Hodgkin, like his friends Sir James Clark and Dr Neil Arnott, declined the Fellowship of the Royal College of Physicians of London from "conscientious motives," the nature of which is not very obvious, unless, perhaps, it was because he belonged to the Society of Friends In 1822 Hodgkin read a paper to the Guy's Physical Society on the "Application of the stethoscope," soon after his return from Paris, where he had come under the stimulating influence of Laennec, it would appear that the introduction of the stethoscope in the medical wards at Guy's Hospital was thus largely due to him After failing to get on the staff at Guy's, he was in 1842 appointed lecturer on the theory and practice of medicine at St Thomas's Hospital and curator of the museum, but he held this post for a short time only, and Sir William Hale-White observes

that this would appear to have justified Benjamin Harrison Junior the great treasurer of Guy's Hospital, in his decision to appoint Babington instead of Hodgkin to the medical staff Hodgkin's scientific mind and industry provided him with excellent material, but he wrote diffusely, and thus his publications failed to become popular In fact, his fame is largely due to the chivalry of Sir Samuel Wilks, without whose advocacy his name would not be known in connexion with lymphadenoma His *Lectures on the Morbid Anatomy of the Serous and Mucous Membranes*, which contained 900 pages, and even then was not completed contains much careful observation and thought, but partly because it was diffuse and partly from the absence of illustrations it was never, in popular esteem, a rival to Matthew Baillie's older but more concise work on morbid anatomy Hodgkin covered a wide field of subjects, including ethnology and was the founder of the Aborigines Protection Society it is probable that had he concentrated on medicine he might have been even more distinguished

GERMANS AT INTERNATIONAL CONFERENCES

THE June number of the transactions of the Society of German Naturalists and Physicians contains some additional particulars with regard to the eighty eighth meeting of the society which is proposed to be held in Innsbruck in September next The section of surgery pathology and neurology will be opened with a discussion on goitre in which Professors Kraus Enderlen Wegelin will take part and Professor Pommer will introduce the subject of osteoporosis in the section of surgery and pathology Those who desire to attend the meeting are requested to communicate with Professor Defant Innsbruck Schopfstrasse 41, notices of communications to the sections should be addressed to Professor Steyrer Innsbruck Anichstrasse 35 not later than August 20th The forthcoming meeting of the society has evidently been regarded as affording a suitable opportunity for reviewing the general relations obtaining between German and foreign scientists at the present time Two articles in the transactions entitled respectively The participation of Germany in international congresses" and A new method of boycotting the Germans" are devoted to this subject and a long quotation is given from the presidential address of Professor Fritz Haber to the German Chemical Society *dealing with this question The Germans evidently feel* very keenly any attempt to exclude them from international scientific gatherings and two specific instances are mentioned for the consideration of foreign scientists The first relates to the conferences on tuberculosis held in Berlin in 1913 and at Paris in 1920 The president Professor Bourgeois in his opening address on the first occasion said Let us co-ordinate our researches and combine and centralize our efforts let us not allow anything to distract or divide us in this battle for in it unlike other conflicts every victory will entail not the loss, but the saving of many human lives' The complaint is that to the second congress, of which Professor Bourgeois was again president, the Germans were not invited and that this indicated a lamentable alteration in Professor Bourgeois's attitude Our comment is that Professor Bourgeois acted in the circumstances as any sane human being would have done whose human instincts had not been dried up The second instance is less easy of justification if the facts are as stated It is alleged that Germans have been excluded from congresses on several occasions by a trick invitations would be sent to the Germans in due form and the date of the congress would then be altered without withdrawing the original invitations Such a proceeding cannot be approved, but the Germans would, perhaps, have shown more sense of proportion had they abstained from allusion to the circumstance On the whole, and apart from these two instances, the articles referred to give the impression that the Germans have very little to complain of as regards their reception by foreign scientists

PREVALENCE OF NOTIFIABLE DISEASES

THE Health Section of the Secretariat of the League of Nations is now receiving current official reports on notifiable diseases from a considerable number of countries and the data are published in French and English each month, supplements being issued in special cases when necessary Although delay in the transmission of information has occurred in some cases, yet through the co-operation of the Ministries of Health and other agencies concerned in the various countries such delay is now being steadily lessened and the value of the reports correspondingly increased The population of each country is quoted from the latest official reports wherever possible In the March report which has just reached us there is an account of the sharp increase of influenza during the first two months of this year in Western Europe The greatest prevalence is shown by the current mortality statistics was in the British Isles *where the epidemic appears to have been more severe than* during 1923 though the number of deaths attributed to influenza was smaller than during the outbreak of December 1921, to January, 1922 In Germany and Austria, on the contrary, the incidence of influenza was decidedly lower this year, and no reports so far received have shown any marked epidemic prevalence of influenza in countries outside Europe The indications are that the maximum of the epidemic has been reached in nearly all the localities so far seriously affected The heaviest mortality throughout occurred among elderly people Other places in which an increase of influenza appeared during January and February of this year were Switzerland Scandinavia Moscow and the United States It is noteworthy that the influenza outbreak in Western Europe coincided with a large increase in the general mortality considerably in excess of the corresponding rates for last year No such increase had occurred however up to the beginning of February in Germany or Austria There has been a marked increase in diphtheria in Russia since August, and it appears likely that the rate for 1924 will exceed that of any year since 1919 although the prevalence of the disease is far below the pre-war level In the same country diseases produced or aggravated by malnutrition still occupy a prominent place during the first eleven months of 1923, 41 913 cases of scurvy were reported and the incidence of the disease this year is already higher in certain areas than it was in pre-war years The current reports of the prevalence of notifiable diseases are arranged in tabular form under the different countries

THE BRISTOL MEDICAL SCHOOL

THE University of Bristol has appointed Dr J A Nixon to be professor of medicine and director of clinical medicine By this appointment the medical department is brought into correspondence with the surgical, Mr Hey Groves having been appointed to corresponding positions in the surgical department two years ago Bristol therefore now has two professors of medicine (Dr F H Edgeworth and Dr J A Nixon) and two professors of surgery (Mr C A Morton and Mr Hey Groves) By adding to its professorial staff in these two departments the University has followed the example of many others both at home and abroad Dr Nixon who graduated M B B Ch at Cambridge in 1900 and M D in 1915 is physician to the Bristol Royal Infirmary He served in France during the greater part of the war, and at the armistice had been for some time consulting physician with the armies He held the rank of temporary colonel, and received the C M G for his military services

NINETY-SECOND ANNUAL MEETING

of the

British Medical Association,

BRADFORD, 1924

PLACES OF INTEREST NEAR BRADFORD.*

BY

JOSEPH HAMBLLY ROWE, M B , F S A , F S G , AND B WADE, L R C P , L R C S

THORNTON

THORNTON, with its old-world main street, from which radiate neat modern terraces of artisan dwellings, affords a kind of *multum in parvo* of old traditions and forgotten feuds and of modern toil and financial success

Leventhorpe Hall, built close to Leventhorpe Fulling Mill, mentioned as in existence in 1311, is a characteristic dwelling of the wealthy landowner of early Tudor days The family of Leventhorpe was of some consequence, as is indicated by the Leventhorpe Chantry in the Cathedral of Bradford Ultimately the family gravitated to Hertfordshire Thornton Hall was the home of the Thorntons, but passed by marriage to the Hortons, one of whom was Dr Thomas Horton, a commoner of Brasenose and a physician in London, who in 1685 married the daughter of Dr Wilmough and died in 1694

Close by is the old Bell Chapel, originally built as a chapel of ease In this place the four younger children of the Rev Patrick Bronte were baptized Charlotte was christened on June 29th, 1816, and Emily two years after, on August 20th Their father had been appointed incumbent of Thornton and ministered there until his removal to Haworth in February, 1820 The chapel fell into disuse and ruins when the more pretentious church was built in 1872, on the opposite side of the new through road In the old main road of the village is to be seen the old vicarage a double-fronted house, the right-hand side of which was many years ago converted into a bay-windowed shop Here the famous sisters were born Within the township in its eastern part faint traces may be seen of the Roman road that led from Manchester (Mancunium) to Ilkley (Olicana) and thence by Hampthwaite to Aldborough (Isurium) and along which tramped the sturdy Roman legionaries of a long bygone day

HAWORTH

Of Haworth and its associations much has been written, and the output shows no signs of lessening The home of the Brontes from their early infancy, it attracts an ever-increasing band of pilgrims from all corners of the earth Two causes appear to be concerned in the steady increase of interest in the Brontes one is the powerful appeal of their novels and the other is the moving story of the lives of these gifted sisters Probably to-day the latter is and henceforth will be the more dominant of these factors Mrs Gaskell's *Life of Charlotte Bronte* is a classic among biographies, and is almost as widely read as the novels themselves

A steep street curving to the right leads up from the banks of the little river Worth to the closely clustered inns church school and houses of the heart of Haworth The Bull's Head Inn, wherein the weak-willed brother wasted so much of his time and talents, first greets us, and the church with the vicarage, lie behind it The church of to-day is not the one in which the father ministered That was pulled down in the eighties to make way for a larger and better appointed structure All the members of the family save one are buried in the church Anne, the youngest, lies in the northern side of the churchyard at Scarborough, where she had been taken in the hope that the progress of her disease might be checked She arrived at No 2, the Cliff (where now the Grand Hotel is built), on May 25th, 1849, and died on the 28th

The vicarage lies on the slope of the hill south of the church, and has a dismal and depressing outlook on a multitude of blackened tombstones It is not quite the same as when the Brontes lived there, a part having been added to the right of the house Close by are the church schools, in which Charlotte taught and there are yet living those who remember her in the Sunday school The Bronte Museum is close by, and holds quite a large number of most interesting relics of the family The village, the house, and the museum all help one to form a picture of the surroundings under which the family existed, and to understand the atmosphere and local colour of their great novels A mile and a half away by the banks of a tiny moorland stream, with its little waterfall, is a hollowed rock, known as the Bronte chair, and here in the loneliness of wild nature the sisters used to come and meditate

Five years after the death of her last surviving sister Charlotte married her father's former curate, the Rev Arthur Bell Nicholls Seventy years ago (June 29th, 1854) the marriage took place quietly at Haworth Her married life was happy but very brief, for she died on March 31st, eight months after The certificate gives pulmonary tuberculosis as the cause of death, a dread disease from which she along with her sisters and mother had suffered On June 7th, 1861, the father died in the 85th year of his age, faithfully attended to the last by his son-in-law

TONG

Close to the great south road that leads from Bradford, some three or four miles from the centre of the town, lies the pretty village of Tong Its church, beautifully kept, is comparatively modern, having been built in 1727 on the site of one much older, and it is interesting to note that Nelson, the companion of John Wesley, in his earlier itinerant days, was the mason employed in building it Tong Hall, built in 1702, in an ancient deer park, is an excellent example of the square-sashed Italian house Of brick, three stories high, it has a stateliness which attracts one In it are many specimens of Spanish mahogany and oak furniture in fine condition, and there are good portraits of Charles I, William III, Prince Rupert, General Monk, and the Earl of Newcastle A bedroom contains an oak suite, all made from trees grown on the estate, and there is carving by Grinling Gibbons in the house

ILKLEY

As the crow flies, Ilkley lies nine and a half miles north-north-east of Bradford By road it is eleven miles, and once past lower Baildon, the route offers pleasant scenic effects, and after reaching the top of Hollings Hill one traverses the lowest point in the watershed between the Aire and the Wharfe, leaving Guiseley with its ancient

* The first article of this series giving an historical sketch of the city, was published in the BRITISH MEDICAL JOURNAL of December 8th 1923 (p 1111) The second article Bradford Yesterday and To-day appeared on March 22nd 1924 (p 541) and a third article on Bradford Medical Institutions appeared on May 31st 1924 (p 966)

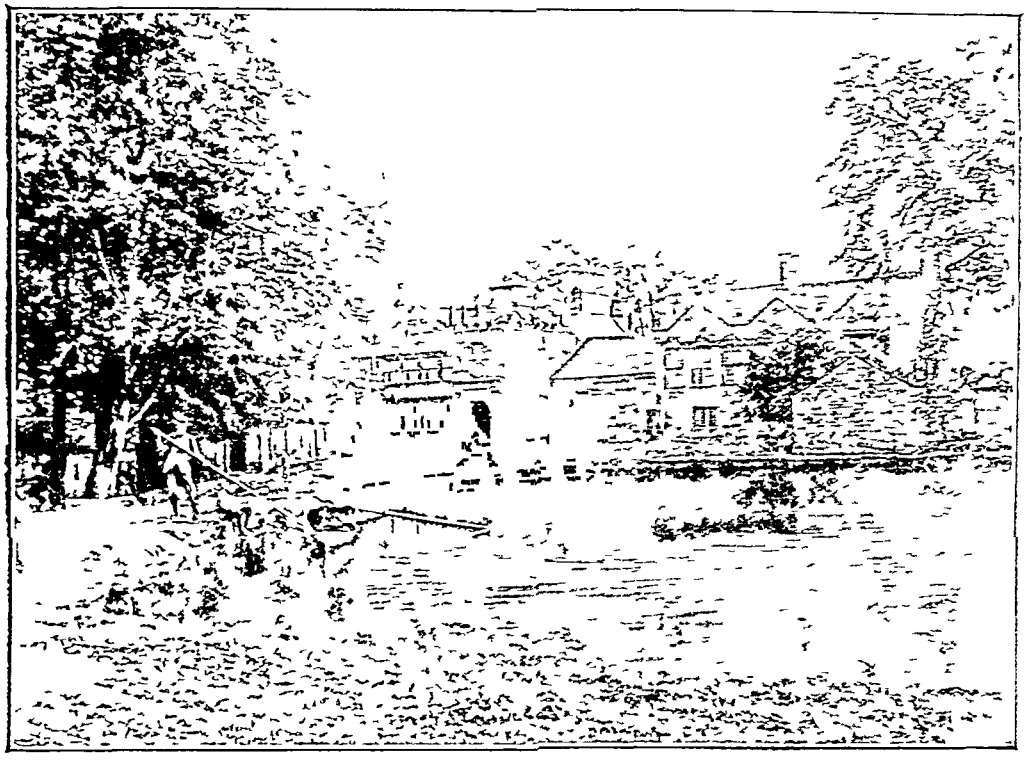


FIG 1.—Pudsey Town Hall Bingley

Church of St Oswald and its pleasant old vicarage to the right The second considerable turning to the left takes us through Burley-in-Wharfedale one of the prettiest villages in Yorkshire A winding road with glimpses of the beautiful river, takes us past Ben Rhydding into Ilkley

The fame of Ilkley as a health resort is spreading very by year and the council which governs its affairs is engaged in work which attracts more and more visitors to enjoy the bracing air which is so notably a supplementary feature to the beauty of the surrounding country Apart from rambles on the breezy moors north and south of the town and delightful walks along the Wharfe there is tennis and golf in abundance Ilkley, however possesses in addition, a wealth of historical and prehistoric remains unequalled by any other spa in England On the moors within easy walking distance over thirty different objects of prehistoric interest occur Ancient enclosures burial cairns, stone circles and cup and ring marked stones abound In regard to the last, there are more of these mysteriously marked stones on these moors than in any other place in England The council has taken steps to preserve some of them from injury and a very fine example can be seen railed off near St Margaret's Church A very notable rock marking is that of the so-called Swastika Stone believed to be the only example of the Swastika in England

Ilkley has been identified as the ancient Olicana of Roman days It must have been an important station at the crossing of two great trunk roads It has long been recognized as the site of a Roman fort, and excavations under the auspices of the Yorkshire Archaeological and Topographical Society within the last few years have fully confirmed this Many of the finds are housed in the Ilkley Museum, where they may be inspected with advantage

Ilkley Parish Church stands on the south side of the Roman Camp, and is of ancient foundation The south porch is early thirteenth century work, but the present building dates mainly from shortly before the Reformation The Middleton Chapel in it dedicated to St Nicholas was founded in 1474 In the churchyard are three Saxon crosses, the principal cross is 8 ft 4 in high and has on it representations of the four evangelists in symbolical figures—a man for St Matthew a lion for St Mark, a bull for St Luke and an eagle for St John

BOLTON ABBEY

Bolton Abbey is without a doubt one of the beauty spots of England Words fail to describe the appeal of its ruins or the charm of its setting The eye only can appreciate the delicate beauty of the scene

In 1121 a priory was founded at Embsay a few miles north east of Skipton and in 1151 Adeliza de Pumelli, who had married William Fitz Duncan nephew of David, King of Scotland by charter preserved at the Abbey granted to the canons of Embsay her manor of Bolton By the banks of the River Wharfe the monks built a stately abbey, wherein for centuries they worshipped The Augustinian canons were from fifteen to eighteen in number, and at the height of their worldly prosperity it is thought must have enjoyed an income about equal to £15 000 a year in modern money

The ruins of the Abbey present many features of much architectural interest There is a very fine early English western front and the Norman arcading is very much admired The south transept shows a window which retains some of its beautiful flamboyant tracery The west tower of late Perpendicular masonry begun before the Dissolution, was never finished There is to be seen too the gravestone of John de Clifford who was made a Knight of the Carter in 1421, and in the following year was killed at the siege of Meaux

BRADFORD TO LANGSTROTHDALE

Bradford to Langstrothdale is a matter of thirty odd miles and the road that lead there is one full of points of interest along its whole length The first mile out sees us abreast of Lister Park with the Cartwright Hall in all its architectural dignity dominating the scene Two miles or so further we pass through Saltaire a model village built over half a century ago by Sir Titus Salt by the banks of the Aire and hence its name We are soon in Bingley, a town situated on some moraine hills left by the retreating glacier of the Ice Age in a series of

mounds across the valley of the Aire, and well wooded on its outskirts. Many places in its immediate neighbourhood are well worth a visit. At the northern end of the town is the ancient parish church. The new main road cuts across the old churchyard, and from its length and breadth were disinterred some 3,000 skulls and bodies before the macadam was laid down.

Our road now runs on the left side of the valley, with the railway intervening between us and the river. Perched on the hillside to the right is the isolation hospital for Keighley, which was used during the war as a military hospital. On the left of the road as we come into sight of Keighley, is East Riddlesden Hall, a splendid specimen of the architecture of the Commonwealth period (see Fig. 1).

It was close to East Riddlesden that the Roman road from Manchester through Ilkley to Aldborough crossed the River Aire, and it is on record that a hoard of Roman coins was dug up at Elam in close proximity to the Aire.

Keighley, a considerable manufacturing town, is far from prepossessing, and need not detain us. It is mentioned in the Domesday survey as *Chicchelai*. At Steeton, on the right hand, is to be seen a tall, slender war memorial, one of the most beautiful in the county. Two or three miles bring us in sight of the Long Kirk of Craven. Kildwick Church contains a number of pre-Norman cross shafts, and a fine recumbent monument in Hazlewood stone of Sir Robert de Stirton, a contemporary of Edward I. Shortly after leaving Kildwick Farnhill Hall (see Fig. 2) on a knoll to the right, comes into view, portions of it are of the thirteenth century, and it was probably a peel or fortified structure so guarded because of the raids of the Scottish border clans in mediæval days.

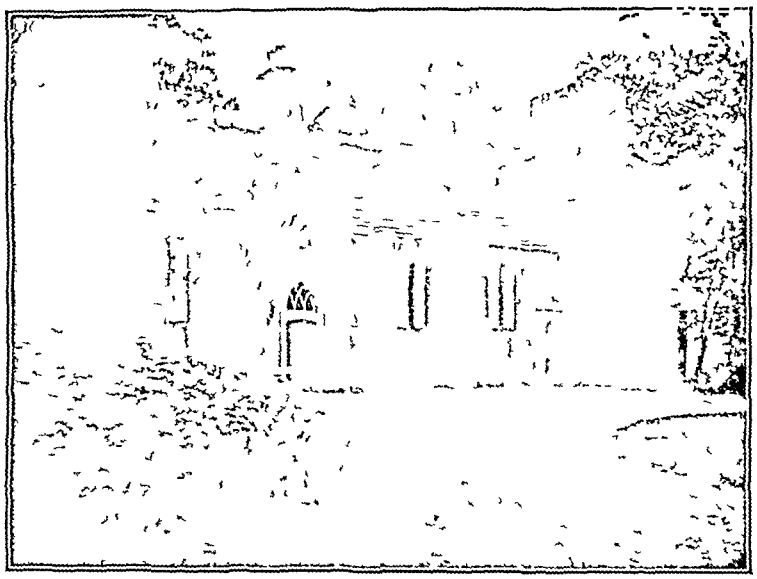


FIG. 2.—Farnhill Hall, Kildwick.

Skipton, the capital of Craven, is a real old market town with a wide space in the centre, wherein, century after century, stalls and booths have been set up every week to supply the large agricultural district of which it is the centre. Overlooking it is Skipton Castle, once the seat of the powerful Cliffords. It is in tolerable preservation, and well worthy of a visit. It was founded by the de Romilles, and subsequently passed by marriage to the de Meschines. Over the portal is carved the single word *DESORMAIS*, a motto the full significance of which is as yet not understood.

The Road to Settle.—At Skipton, after passing the fine old church, there is a forking of the roads, the one to the left takes us through the pretty village of Gargrave, whence in the south distance Pendle Hill is seen to loom up largely. It is the scene of Harrison Ainsworth's story of *The Lancashire Witches*. Further on to the right is Coniston Cold. Thence the road crosses the watershed between the Aire and the Ribble, and passing through Hellifield with its ancient peel and modern railway junction makes for Long Preston. Two dangerous corners having been negotiated, the traveller soon comes to the very ancient town of Settle. Divided by the river is Giggleswick, interesting as having a museum, wherein are housed some of the relics found in the famous Victoria Cave. The old church of St. Alkelda has many claims on the ecclesiologist, a statement that also holds good of Giggleswick Chapel, a magnificent piece of architecture, built by the late Walter Morrison, M.P., for his old school.

Giggleswick. Not far away is the famous Ebbing and Flowing Well. The rise and fall of the waters is caused by syphonic action in the underground waters of the limestone caverns.

The Road to Langstrothdale.—From Skipton, after passing the church, the right fork of the road takes us over Crookrise to Rylstone, a name familiar to lovers of Wordsworth. On the left is a massive line of fells, the chief of which is Rylstone Fell, marked by a cairn of stones. On a lower ridge are the ruins of Norton Tower. Cracoe, with its quarries of limestone, used largely for road mending, is the next object, and from thence, passing on our right Linton, we proceed to the narrow lowland by the Wharfe, where one road takes us to Grassington, *once* the centre of a lead-mining industry, now a summer resort, and where the Bradford Corporation has built a sanatorium. The other road turns to the left, up the right bank of the Wharfe and passing Chapel House, the ancient home of the Tennants, leads to Kilnsey. At the latter hamlet there is on the right a very fine limestone cliff, about 170 ft. high, that seems to overhang the road. To the left, across the river, is Coniston, with its church, probably the oldest ecclesiastical edifice in Craven (Fig. 3). Most of this district belonged to Fountains Abbey, which cultivated a considerable trade in wool from the sheep pastured on Fountains Fell. At the Dissolution these lands came into the possession of the Cliffords. Kettlewell is the chief village of Langstrothdale, the uppermost reach of the Wharfe. The valley is a beautiful one, right up to the springs of the Wharfe on Cam Fell. Oughtershaw, Yockenthwaite, Beckermonds, Hubberholme, Starbotton, and Buckden are the quaint names of the hamlets of Langstrothdale, and in the little church of Hubberholme is to be seen one of the very few original rood lofts of England. The iconoclastic spirit of the Puritans failed to reach this remote little kirk, and thus was spared a notable example of the decorative art of our forefathers.

PATELEY BRIDGE AND BRADFORD CORPORATION WATERWORKS

Large industrial towns demand a very large water supply, not only for the amenities of domestic life, but for the generation of steam power and for the cleansing of raw and manufactured material. To supply this demand cities like Birmingham and Manchester have had to go far afield, the latter indeed, has appropriated one or two of the Westmorland lakes. Bradford, owing to its proximity to the Yorkshire Dales, is more fortunate in that respect, and draws its main supplies from tributaries and headwaters of the Wharfe and Nidd.

The largest reservoir is situated in the upper reaches of the Nidd, and a journey to see the huge inland lake is well worth making, for the country traversed is some of the most beautiful in England. Alternating riverine, moorland, and sylvan prospects charm the eye and produce the keenest pleasure. The road to Otley must be taken and various points of interest are passed. Just past where the road for Ilkley branches off to the left we cross at right angles the site of the ancient Roman way that led from Ribchester through Skipton to Ilkley and thence under our feet away to the right making for Tadcaster. On the right the long escarpment called the Chevin makes a marked feature in the landscape. From Otley, *formerly a manor of the Archbishop of York*, a steadily rising road takes us through



FIG 3.—Clifton Church

Hubs, Weeton and Pannal to the bridge across the Crimple Beck up steep Humphry Bank into Harrogate Crossing the river at Nidd Bridge the road due north leads through Ripley On the left is Ripley Castle which Cromwell besieged Bearing to the left a good view is obtained of the beautiful country on the right bank of the Nidd Hampsthwaite the ancestral home of William Thackeray nestles amongst the trees and Birstwith church steeple peeps out of the foliage Beverley Hall is also to be seen with its gardens Pateley is soon reached a quaint old market town of the Dale with its one narrow steep street leading down to the bridge Across the bridge and straight on is the famous Greenhow hill road where the gradient is in places 1 in 3 and in others 1 in 4—a thousand feet rise in three miles

To reach the reservoirs one here takes the train owned and run by the Corporation of Bradford As the train runs along the single line the farms get fewer and the moorland gradually ventures nearer and nearer to the river The little chapelry of Ramsgill the birthplace of Eugene Aram, is passed with its comfortable old inn beloved of the angler Then comes Lofthouse and further up Middlesmoor, with its church dedicated to St Chad situated on the ridge which divides the Nidd from its first big tributary the How Stone Beck The Nidd derives its pure waters mainly from Great Whernside (2,246 ft) and Little Whernside (1,984 ft)

KNARESBOROUGH

A favourite excursion resort Knaresborough on the banks of the Nidd, offers ample attractions to the lover of the historic, the curious, and the beautiful Its ruined castle once the seat of powerful barons who held sway over large territories, its fine old church, St Robert's Cave the Dripping Well which encrusts any object placed in it with carbonate of lime, the beautiful views on the river, all serve to make a visit very pleasant indeed

ALDBOROUGH

This village is one of the centre spots of Roman interest in England Identified as the Isurium of the ancient itineraries it has yielded up many most interesting evidences of Roman occupation from time to time Most of the finds have happily found an abiding place in the local museum where they may be inspected at leisure Not far away but nearer Boroughbridge are the Devil's Arrows huge monoliths whose origin and use are shrouded in the mists of antiquity

TEMPLE NEWSAM

Within three miles of Leeds stands the noble mansion of Temple Newsam Given to Ibert de Laci Lord of Bois l'Eveque before the Conquest and owner of the Honour of Pontefract after, it passed to the de Vilers by whom it was given to the Knights Templars about the end of the twelfth century The decree which declared the Order of Knights Templars to be for ever abolished in England was promulgated by Archbishop Greenfield from Cawood (an old town on the Aire but a few miles away) on August 14th 1312 Thereafter the Crown took possession of Temple Newsam for a while and after various other owners the Darcys held it until Lord Darcy was beheaded on Tower Hill in 1537 Temple Newsam was then given to Mathew Stuart, fourth Earl of Lennox and Regent of Scotland in 1570 This earl married Margaret daughter of Margaret Tudor and niece of Henry VIII Thus it came about that in 1545 their son Lord Darnley afterwards the husband of Mary Queen of Scots was born within its walls Following the example of Bradford in their purchase of Bolling Hall, the City Fathers of Leeds acquired Temple Newsam recently at a very moderate figure, and with its beautiful old furniture undisturbed it forms to-day a pleasure resort for the people of Leeds of a most attractively educative type

RIPON

Ripon from many points of view is full of interest In the centre of the market square is the market cross which was erected in 1781 and the town hall occupies the centre of the south side of the square The ancient house with projecting gable is said to have been the original town hall

The principal object of interest in Ripon is the Minster Experts differ very much in their criticism of this cathedral, but three points strike one forcibly when seen for the first time its squat appearance caused by the lowness of the three towers, its marked severity of style, and the great width of the nave Storms were responsible for the first condition, and the history of the construction of the edifice explains the other points

The Minster shows examples of the following styles *Saxon*—Wilfred's crypt, *Norman*—portion of chapter house and crypt, *Transitional*—transepts, early English —west front and western tower, vaulting and circular windows of chapter house, *Decorated*—two bays of choir, *Perpendicular*—south and east sides of central tower, east side of main wall of transept, choir screen, two bays south side of choir, nave Wilfred's crypt is a relic of the first age of Christianity in Yorkshire A long narrow passage leads to a vaulted cell in every wall of which is a niche One of the distinguishing features of the cathedral is the wide nave, which is only surpassed by three Gothic cathedrals in England—York, Chichester, and Winchester The transept is of exceptional interest, being the most characteristic example of the work of Archbishop Roger The north arm presents very nearly the same appearance as it would when completed by the builders more than seven centuries ago, but the south arm is not so interesting, being late Perpendicular (1459) The choir is of admirable proportions, consisting of six bays with north and south aisles, and notice should be taken of the exquisite carving of the series of choir stalls (period 1489-1494) The bishop's throne is at the eastern end of the south range, and the dean's stall is on the right of the entrance There is also a stall for the canon in residence and one for the mayor, and adjoining stalls for the city council Externally the cathedral is beautifully situated on an eminence at a short distance from the confluence of the Ure and Skell rivers

STUDLEY ROYAL

Studley Royal and Fountains Abbey present a series of pictures unparalleled in this and probably in any other country Studley Royal is situate on the border of the "Vale of York" and is elevated so as to comprise views of this broad plain and of the Hambleton Hills A great variety of timber is a striking feature of the well wooded park, and in the centre of the main avenue drives meet forming what is known as "The Cocked Hat" At the north west corner of the park is the hall, which is not open to the public The landscape artist has harnessed the waters of the tiny river small cascades have been formed, finally entering a beautiful circular lake placed amongst the most perfect scenery imaginable The view known as "The Surprise" must not be missed, giving a picture which, in the opinion of good judges, is not surpassed in the world Proceeding down the beautiful avenue of beech trees the Church of St Mary the Virgin, on an elevated position in the park, should be noted We eventually arrive at the ruins of Fountains

FOUNTAINS ABBEY

This beautiful relic of former days is, like many other abbeys in this country, of Cistercian origin, being the fourth founded in England Its exquisite setting, its size, and its presentment of some of the finest examples of monastic architecture are its distinguishing features From whatever point the Abbey is approached one is struck by its beauty Founded about 1132, its erection was due to the ferment which was then present in the Benedictine Order This discord was marked in the Abbey of St Mary of York, and Serlo, an early monk of the Abbey, has chronicled how Fountains originated owing to the differences of opinion among the monks at York An adequate appreciation of the ruins can only be obtained by consulting treatises on the subject, and it must suffice here only to mention the chief points of interest Strangers' house, buttery, cellarium, refectory, cloister court, nave, transept choir, chapel of nine altars, chapter house, greater house, base court, cloister passage, great hall, storehouse chapel, kitchen Before leaving, Fountains Hall, a fine example of Jacobean architecture, should be seen

England and Wales.

THE CAMBRIDGESHIRE TUBERCULOSIS COLONY

THE annual report of the Cambridgeshire Tuberculosis Colony at Papworth for the year 1923 gives an interesting account of life in this growing settlement and is well illustrated with pictures of the model cottages and hostels, hospital and chalets, and farms and workshops of the colony In this institution every patient who enters has the opportunity of promotion As his health improves his liberty increases, his wages rise, until finally he becomes a full wage-earner, paying for his board and lodging without assistance This equality of opportunity is a great stimulus, for, as the ex-patient's skill increases, he has the opportunity to gain both financially and in status in his particular industry The management of the industries is in the hands of ex-patients, and there are no highly paid fit men acting as officials in the industries Dr Varrier-Jones, the medical director, believes this to be one of the secrets of the success of the colony "encouragement is a practical form of that abundant hope which is so characteristic of the consumptive"

A principle which governs the policy of this tuberculosis colony is that the unit to be dealt with is the family and not the individual alone Money and time are wasted when the consumptive wage-earner alone is considered, these are saved when the family is dealt with as a unit because the individual members of the family grow resistant to the disease and escape becoming a charge on public funds for treatment The children in the colony number 70, they are examined week by week and month by month, and hitherto not a single case of tuberculosis has been discovered amongst them This is a most gratifying and exceptional result considering the frequency with which consumptive parents hand on the infection to their children in the conditions which prevail in large towns During the eight years in which the colony has been in existence only one death has occurred amongst the settlers The number of patients is steadily increasing, in the first six months of 1923 the average was 159, and in the second six months it rose to 182

The annual report reviews the activities of the colony under the headings medical, economic, and social Medical work includes routine clinical and laboratory examinations As far as possible the patients' capacity for work, their "vocational therapy," is assessed on their response to effort and not merely by physical signs discovered with a stethoscope A research has been commenced to test the value of Professor Dreyer's T B antigen, of this it is too soon to speak The various economic activities of the colony cover a wide field There is a building department, a carpentry and joinery department, a poultry farm, a printing press, a horticulture section, a busy department for signwriting and window tickets, a cabinet making and upholstering department, a portmanteau and attache case factory, and sections for boot making and repairing and tailoring Patients are drifted to these various occupations according to their physical capacity and the demand in the particular trades for which they are suitable The flourishing state of business is illustrated by the fact that in the portmanteau department alone the turnover for the year amounted to £4,597 The social life of the residents is not neglected sports clubs (including tennis, cricket, and golf), amateur dramatic and horticultural societies, boy scouts, educational and religious activities all have their own workers, secretaries, and committees Bed-ridden patients listen-in to concerts broadcast from London

The most notable addition to the buildings of the colony has been the Sims Woodhead Memorial Institute for Research We gave an account of the opening of this institute (May 17th, 1924, p 879) by the Hon Sir Arthur Stanley, and reported the eloquent tribute paid by Sir Clifford Allbutt to the memory of Sir German Sims Woodhead, Professor of Pathology at Cambridge after whom the institute is named The general accommodation of the settlement has been increased during the year by

the purchase of twenty-eight cottages previously built by the county council and by the opening of a hostel with accommodation for eighteen women

London Spectacles Committee

The third annual report of the London Central Spectacles Committee, which is affiliated to the Invalid Children's Aid Association, shows the progress there has been in the provision of spectacles for school children The Committee has organized a series of local committees, which have collected funds for the purchase of spectacles in needy cases or for the loan of the money in others The report shows that there was a steady improvement in the work during 1923 A higher percentage of glasses ordered has been obtained, and more local committees have been able to work without a grant or with smaller grants During the year 23 577 spectacles were ordered and 21,357 are known to have been obtained This is 90 5 per cent , or 3 5 per cent higher than last year Self supporting districts have increased from seven to ten Loans on the whole are being well repaid though one committee reports The cancellations of bad debts have increased but this was to be expected in this year of unemployment " In spite of unemployment the experience for the whole of London has gone the other way, and parents payments have been well maintained There are cases in which parents refuse to obtain glasses for their children even after they have been prescribed, but on the whole the parents appear to realize now that glasses are only ordered where they are really necessary, and that if they have their child s welfare at heart glasses must be obtained as soon as possible The price of spectacles has now been reduced by all the opticians supplying glasses to the centres and hospitals under the London County Council scheme One singular effect of a local fund for spectacles is reported The girls in one school raised money for the fund by lending Sacker combs to their school fellows Two results followed the spectacle fund was advantaged and the subsequent visit of the school nurse showed that the children's heads had benefited

Scotland.

Chair of Medical Pediatrics in Glasgow

At a meeting of the curators of the Samson Gemmell Chair of Medical Pediatrics (Diseases of Children) held at Glasgow University on July 2nd it was decided to appoint as the first professor of this newly established chair Dr Leonard Findlay Dr Findlay took the degree of M B at Glasgow in 1900, that of M D in 1904 and that of D Sc in 1912, in 1914 he was admitted a Fellow of the Royal Faculty of Physicians and Surgeons, Glasgow He is physician to the Royal Hospital for Sick Children and since 1919 has held the University lectureship in diseases of infancy and childhood

Christison Chair of Therapeutics Edinburgh

Owing to the resignation of Dr Jonathan C Meakins, who has been appointed Professor of Medicine and Director of the Medical School at McGill University and physician-in-chief of the Royal Victoria Hospital in Montreal there is a vacancy in the Christison Chair of Therapeutics in Edinburgh Full particulars can be obtained from Mr William Wilson, secretary to the University of Edinburgh

Meat Inspection

The Scottish Board of Health has issued to local authorities in Scotland revised regulations, which come into force on August 1st, dealing with the inspection of meat and kindred matters The object of the regulations is to protect consumers from diseased or unsound meat In a covering circular the Board explains that the new regulations ("The Public Health (Meat) Regulations (Scotland), 1924 ") cover practically the same scope as the Meat Inspection Regulations issued in April 1923 with some adjustments designed to improve the machinery of administration and with some additions Among the matters the machinery for dealing with which has been adjusted are the inspection of the carcasses of animals slaughtered because of accident or for other emergency reasons, and the hawking of meat and meat food products from carts or other vehicles, or from barrows, baskets, booths, or stances among the new provisions is one prohibiting the hanging of carcasses intended for purposes of food in stables and similar places the carrying on of a butcher's business in premises used as living accommodation, and the storing of meat intended for sale in living and sleeping rooms Copies of the regulations can be obtained from H M Stationery Office, 120, George Street, Edinburgh, price 4d

Lethargic Encephalitis in Glasgow

Since the outbreak of lethargic encephalitis in Glasgow began in April there have been in all to the end of June, 313 cases, with a mortality of 24 During last week the number of cases under treatment was 203, while in the previous week the total was 200

Ireland.

Medical Registration in the Irish Free State

Speaking after the ceremony of enrolment of licentiates Mr R C B Maunsell President of the Royal College of Surgeons in Ireland, said

I regret that the Council of the College is at present very uneasy about the future Difficulties have arisen as to the validity of the registration of doctors in the Free State since the date of signature of the Treaty Previous to that date any man or woman who passed the qualifying examination in Ireland had the right to be enrolled on the *Medical Register* of Great Britain and Ireland and had the right to practise his or her profession in Ireland England Scotland Wales or the Colonies and Dominions, and in other countries with whom reciprocal relations existed Since the signing of the Treaty they no longer have this right This is particularly hard and unfair to students who commenced their studies under the old conditions and who naturally expected to be placed on the *Register* without question In order to restore this right it would be necessary for the British Parliament to pass an Act which would permit the General Medical Council to register our licentiates as heretofore but the British Parliament cannot do this unless the Free State Dail request that it be done otherwise Britain would be interfering without permission in a Free State concern I would not wish you to think that the council of your College and the councils of the other licensing bodies have been neglecting this vital matter Several months ago the Free State Government requested all the qualifying bodies within its bounds to report on the advisability or otherwise of setting up a separate Medical Register for the Free State Three representatives from each qualifying body were appointed to meet as a General Committee to advise the Government After many meetings and a most exhaustive consideration of the various issues that committee unanimously advised the Free State Government to allow us to remain on the existing *Medical Register* and pointed out that a separate Register for the Free State would mean the ruin of our medical schools and the ultimate deterioration of our profession, as admission to that Register would only enable a man or woman to practise in the Free State he or she would not be able to practise in the sister counties nor in any other part of the British Empire Some weeks ago the committee was received as a deputation by a Minister of our Government who discussed the question with us thoroughly and most sympathetically and promised to submit our views to the Executive Council Since then we have heard nothing although we pointed out the great urgency and vital interest of the matter to the future of our medical practitioners and to the health of the country The only people who are opposed to the last arrangement are those who I think have not fully studied the facts of the case As far as I can discern, they have two main objections to the recommendation of the Committee (1) it would be undignified to ask a favour of the British Parliament (2) it would be contrary to the rights of a citizen of the Free State to be judged by the General Medical Council

This latter objection refers to the penal powers of the General Medical Council which are necessary for the removal of undesirable members of the medical profession from the *Register* Neither of these objections can be maintained if examined calmly The first objection is met by the fact that the Free State has not to ask a favour but to assert a right as at present the British Parliament cannot authorize the General Medical Council to register our licentiates unless the Dail asks them to do so—in other words gives its permission The second objection is met by the fact that eight members

of the General Medical Council would be Irishmen, that cases of misdemeanour are considered by the Penal Cases Committee of the General Medical Council, and that no case from Ireland has ever been considered by the Penal Cases Committee unless it has been considered and reported on by the Irish representative on the Penal Cases Committee Surely this should be safeguard enough to ensure fair play to our licentiates? Furthermore, can anyone point to a case where an injustice has been done?

I mention these matters to you in order that you may see that the governing bodies of the several medical schools have not been neglecting their duty to their students, and also, remembering the fable of the mouse and the lion, in the hope that some of you may know members of the Dail and may be able to bring home to them the urgency of the whole question

THE COMMITTEE ON HEALTH INSURANCE AND THE MEDICAL SERVICES IN THE FREE STATE

The Committee of Inquiry on Health Insurance and the Medical Services in the Free State has held several meetings, at which the procedure of the Committee was agreed upon Professor W Magennis, T D (National University), has been appointed chairman Dr R J Rowlette, I R C P I, nominated by the Irish Medical Committee, has been appointed by the Government as representative of the Irish medical profession, Sir Joseph Glynn and Dr W J Maguire represent the Insurance Commission, and the Local Government is represented by Dr E J Stephenson and Mr J Thurston The following are the committee's terms of reference

(1) To inquire into and report on the advisability of the continued maintenance of the system of National Health Insurance in its present form and to make any recommendations which the Committee consider proper in that connexion

(2) To consider whether it is desirable to institute a system of medical treatment on a contributory basis and, if so, to advise as to the form which such system should take

(3) To examine into and report on the question whether the medical services at present assisted or maintained out of State or local funds can be improved as respects efficiency and economy and, if so, in what manner, due regard being had to any recommendations made under the preceding paragraph

BEIT MEMORIAL FELLOWSHIPS

The annual report presented to the Beit Memorial Trustees by the honorary secretary, Sir James K Fowler, M D records that the classification of the fellowships into junior, fourth year, and senior, with progressive emoluments, came into force in July, 1923, when the first senior fellow was elected In addition to the senior fellow the work of research under this trust has been carried on during the past year by one fourth year fellow and twenty junior fellows On the advice of the advisory board the junior fellowships not now expired have been renewed for a further period of one year Dr Louis Gross, having transferred his research to the Board of Health Laboratories of the State of New York, resigned his fellowship Two junior fellows, Dr Robert K Cannan and Miss Ethel M Luce, who had applied for an extension of their fellowships for a fourth year, have since withdrawn their applications on their appointment to Rockefeller Travelling Scholarships Dr T R Elliott, F R S, Director of the Medical Unit, University College Hospital, who has served on the advisory board of the fellowships, has been appointed assistant honorary secretary to the trustees

Election to Fellowships

The trustees have elected H Davenport Kay to a fourth year fellowship value £400 per annum, and have elected the following to junior scholarships, each of the value of £350 per annum

Alan Sterling Parkes B A Ph D, Sharpey Scholar in Physiology University College London, who is engaged in research on the factors governing the *proportion of the sexes* in mammals, by zoological methods of breeding experiments and observation, and by methods of experimental interference

Henry Cohen M D Samuels Research Scholar in Clinical Medicine Liverpool who is engaged on studies on the chemical composition of cerebro-spinal fluid, in the Biochemical Department of the University of Liverpool

Honor Fridge Bell B Sc, who proposes to undertake an experimental study of the nature of tumour growth at the Research Hospital Cambridge by the cultivation *in vitro* of cartilage, choroid skin, intestine, and other tissues

Margaret Averil Boas, B Sc, Grocers' Company Research Scholar at the Lister Institute of Preventive Medicine, who is investigating the action of antirachitic vitamin in diet and of light radiation in promoting retention of calcium and phosphorus by means of metabolic experiments with young growing rats

Henry Francis Holden, M A, a research worker in the School of Biochemistry, Cambridge, who proposes to study the optically active substances, other than glucose, in normal and diabetic protein free blood filtrates

ROCKEFELLER MEDICAL FELLOWSHIPS

THE Medical Research Council announces that it has awarded Rockefeller Medical Fellowships, tenable in the United States of America during the academic year 1924-25, to the following

Robert Keith Cannan M Sc Lond, Senior Assistant in Biochemistry, University College, London

John Josias Conybeare, D M Oxon, M R C P Lond, Assistant Physician and Warden of the College at Guy's Hospital, London

James Reginald Learmonth, M B Ch B Glas Assistant to the Professor of Surgery, Anderson College of Medicine, Glasgow

Ethel Marjory Luce, M D T C Dub, Lister Institute of Preventive Medicine, London

John William McNee, D S O, D Sc, M D Glas M R C P Lond, Senior Assistant in the Medical Unit, University College Hospital, London

William Robson, B Sc Lond, Chemical Assistant in the Department of Therapeutics, University of Edinburgh

Medical Notes in Parliament.

[FROM OUR PARLIAMENTARY CORRESPONDENT]

Scottish Board of Health

On the vote for the Scottish Board of Health Mr James Stewart, Parliamentary Under Secretary for Health (Scotland), reviewed the work of the year 1923 which was the healthiest on record The general death rate fell to 12 9 per 1,000, the lowest previous rate was 13 6, in 1921 The result was the more satisfactory when account was taken of the long continued period of unemployment and accompanying distress on an unparalleled scale The Government had removed the embargo on the development of health services, and local authorities had responded by submitting developments and extensions of schemes A bill dealing with smoke abatement in Scotland would be introduced at an early date There was increasing evidence that the shortage of hospital accommodation in Scotland was a serious gap in protective organization against disease and that steps must be taken to repair it by the provision of further hospital accommodation, and by securing closer co operation between voluntary hospitals and the Poor Law and public health hospitals Ground was being gained in the fight with tuberculosis In 1914 the deaths due to the various forms numbered 7,696, in 1923 they had fallen to 5 786 In 1894 the death rate in Scotland from pulmonary tuberculosis was 172 per 10 000 of population, in 1914 the rate had fallen to 104, and in 1923 to 81 It was now less than half what it was thirty years ago, and had been reduced by 22 per cent since 1914 In the same period the death rate from non pulmonary tuberculosis had fallen from 63 per 100,000 of the population in 1894 to 58 in 1914 and 36 in 1923, but Scotland still occupied the unenviable position of having the highest death rate of any of the three countries from non pulmonary tuberculosis In 1918 at the close of the war, the number of sanatorium and hospital beds reserved for the treatment of tuberculosis was 2 590 To day there were 3,953, and when extensions, particularly in connexion with Glasgow, were completed, the number would be over 4 800 The deaths of children under one year numbered 80 825 which was equivalent to a death rate of 78 9 per 1,000 births This was the lowest infantile death rate ever recorded for Scotland The deaths for 1923 among children over 1 year and under 5 numbered 4,926, or 12 3 per 1 000 This was the lowest on record for Scotland, but considerably higher than the rate for England In 1915 the number of infants who died under 1 year of age was 14,441, equivalent to a death rate of 126 5 per 1 000 births, and the number of children between 1 year and 5 who died was 9,120, equivalent to a death rate of 22 5 per 1,000 Unfortunately, while the process of reducing mortality amongst infants and children had been continuous it had been far from steady In the first quarter of 1924 the infantile mortality rate in Scotland rose to 132 per 1,000 births, against 98 for the corresponding quarter in 1923 In large measure this high mortality was due to widespread epidemics of measles and whooping cough, and to the other diseases such as pneumonia, which followed these infections A sum of £10 000 had been set aside as part of the maternity and child welfare grant to be distributed so as to encourage local authorities to take further measures for the preservation of children from the ravages of these diseases Mr Stewart referred to four wards in Glasgow—the Dalmarnock Ward with a density of 147 to the acre, the Mile End Ward, with a density of 140 the Kelvinside Ward, with 19, and the Whitevale Ward with 5 In 1923 the deaths from measles per million of these children were 1,118 in Dalmarnock, 1,173 in Mile End in Kelvinside, where the children got a decent opportunity for life, there were no cases, and in Whitevale partly industrial and partly well to do, the rate was 104 A special inquiry in 1908 revealed that measles was a poverty disease—that the death rate in one roomed houses from it was 92, in two roomed houses it was 46, in three roomed houses it was not

much more than half that (25) and in four roomed hou es and over it was down to 15 His department propo ed to make the disea e notifiable appoint a special staff of visiting nurses for infectious diseases increase hospital facilities and increase the service of health visitors Mr Stewart then referred to the report of the Committee on puerperal morbidity and mortality a full account of which was given in our issue of May 31st (p 961) On the development of maternity service and child welfare schemes otherwise no restriction would be placed provided that the Board of Health was satisfied with the proposals on their merits The rationing scheme for calculating grant on food and milk expendi ture had now been withdrawn and grant was paid at the full rate of 10s per £ on expenditure supported by the certificate of a responsible medical officer that he considered after examination, that additional nourishment was necessary for the maintenance of health

The opening up of new centres for treatment of venereal diseases was proceeding steadily It was disquieting to find that no fewer than 53 per cent of patients di continued treatment without the sanction of their medical officer This made it neces ary to consider whether local authorities did not require further powers

After mentioning that there had been an increase in lethargic encephalitis and that it had been impossible to trace any source of infection Mr Stewart said that during 1923 and the current year a number of cases of infective jaundice had occurred in East and Mid Lothian The majority of those affected were miners and all were in the neighbourhood of two contiguous pits There had been fifteen ca es with four deaths The disease was associated with a disease of rats due to the same organism and though it had not been definitely settled how the disease was conveyed from rat to man it was necessary that these animals *should as far as possible, be trapped and killed* Steps had been taken in this matter The need for investigation of the di ease had been put before the Medical Research Department and had now been referred to the Mines Department

Dr W E Elliot said the fact which stood out was that in the fourth winter of unemployment the health of the people of Scotland had been better than ever before It appeared that the figures of sickness benefit paid by insurance societies would how a slight decrease and so add encouragement The immediate problem in Scotland was that of infantile mortality The grant of £10,000 from the Treasury towards the campaign against measles was made by the late Government last year He asked what had been done to bring into practice the recommendations of the report of the committee on maternal mortality Scotland was in a better position as to hospitals than England there was a smaller deficit and a greater provision of beds But it was desirable that there should not be two inquiries one in Edinburgh and another in London with divergent reports and leading to a holding up of action while these reports were made to correspond

Mr R Spence thought that the previous speakers were wrong in giving the impression that the improvement in the health of Scotland was due entirely to legislative procedure or administrative measures He attributed it rather to the awakened social conscience of the general community towards health Mr Spence was still speaking when the debate was automatically adjourned at 11 o'clock

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Legacy and Succession Duty on Hospital Bequests

In Committee on the Finance Bill on July 2nd Viscount Ednam moved that legacy and succession duty should not be leviable on testamentary bequests made to hospitals carried on in the public interests The British Hospitals Association had asked him to renew the appeal he made last year for this comparatively small *concession He knew that the Chancellor of the Exchequer* was personally in favour of it as were al o the Prime Minister and the Financial Secretary to the Treasury becau e to the best of his memory they voted for it on the previous occasion The financial position of the voluntary hospitals of Great Britain remained extremely critical The total debt upon them last year amounted to £709 000 in the London area alone it was £171 000 He had been informed by the King Edward Hospital Fund which controlled the finances of hospitals in the London district and by the British Red Cross Society which controlled those hospitals outside that although unable yet to arrive at the total figure for this last financial year, they could say that the total indebtedness has not been reduced since last year The whole vexed question of voluntary versus state-controlled hospitals was germane to the debate but he was not going to raise it He contented himself with reading the statement made in the report of the Cave Commission on voluntary hospitals (1920) of which the present Postmaster General was a member The commission made thirteen recommendations most of which had now been carried out but one was the proposal he was now submitting At the present time the hospitals with the largest debts were the young institutions that had not been able to accumulate so large an amount of bequests and legacies as the old ones The Royal Northern of which he was chairman afforded an illustration The expenditure during the last two years amounted to £80 000 a year but the sure income was only £2 000 At pre ent the debt was £50 000 and last year 80 beds had to be closed He was also on the board of management of a large hospital in the Midland where the condition was similar it had a debt of £10 000 due to increasing cost during and since the war The cost of the concession had been carefully considered in consultation with the British Hospitals Association the Red Cro s Society and King Edward Hospital Fund and was estimated at between £80 000 and £130 000 a year It was sought only for a period until the hospitals had again found their feet Against the possible objection that if the Chancellor yielded in favour of the hospitals he would have to do so for other charities Viscount Ednam pointed out that a precedent distinguishing them from other charities existed in a special grant made by Parliament in 1920

Dr Fremantle seconding the motion suggested that one argument why Parliament should give to hospitals relief not given to other forms of charity was that hospitals were an absolute necessity of modern civilization If charitable efforts were to fail there would be an overwhelming demand for support and maintenance out of the rates and taxes At the recent conference on the voluntary hospital system summoned by the Labour party to which members of all parties were invited a statement was presented by the Labour party in which after declaring its belief that hospital provision should be through the municipality or the State it expressed its opinion that at the present moment voluntary hospitals were indispensable for nowhere could they be replaced at the present time or in the near future Speaking for the medical profession almost without exception he could say that if the voluntary system could be kept it must be retained because it was preferable to any other

Sir Charles Barrie as a past chairman of one of the largest hospitals in Scotland confirmed what had been said by the previous speaker It would be lamentable if this country allowed the hospitals to be put on the rates or the State exchequer Patients using the hospitals much preferred the voluntary to the State system Lieut Colonel Spender-Clay also strongly supported the motion

Mr Snowden asked the House to reflect that it was not then discussing the question of a voluntary or of a State system for hospitals The only question was whether hospitals should be free from legacy duty He was sure there was no honourable member not in agreement with every word that had been uttered in the course of the debate *in regard to the claims of these admirable* beneficial and necessary institutions The question must not be discussed from the sentimental point of view In effect this proposal for the remission of taxation was a concealed subsidy to hospitals If this concession were given it could not be confined to hospitals he did not hold it inadvisable that the State should make some contribution to hospitals, but if it were desirable to give a subsidy it should be done in an open and straightforward way Let the Government come to the House and say it was necessary *for relief of suffering in this country* that these voluntary hospitals should be kept alive and that their financial anxieties should be lessened or relieved Let a claim like that be put forward and the House of Commons would give it sympathetic consideration The remission asked when distributed over all the hospitals would be something like £80 to £100 each Hospitals would gain very little and the State would suffer a good deal it would lose £200 000 a year because that would be the cost even if extension to other institutions could be prevented

Viscount Ednam replying claimed that the benefit would be much more than the actual amount remitted because it would directly encourage bequests

Mr Masterman agreed with the Chancellor of the Exchequer in his attitude holding that if Parliament subsidized hospitals from the State it must also demand certain obligations to the State and he considered that this proposal would mean a subsidy

Sir Douglas Hogg denied that the proposal was one to subsidize hospitals out of public money without taking *public control* It was a proposal to take a little less of the money of hospitals for the public exchequer

Mr Pathbone recalled that a previous Chancellor of the Exchequer three or four years ago provided that anyone who liked to bind himself to pay a subscription to a hospital or education body or religious body might pay the subscription less the tax That was a concession equal to 4s 6d in the £ Further if he were a super tax payer he might set off the gross amount of the subscription It was quite easy in a large town to select a body like the Charity Organization Society or any other body which was free from duty to pay the guineas to that body and instruct it to pay the money into the hospital Therefore a very large concession was available—one not generally used—and the Chancellor of the Exchequer might employ the argument that until it was availed of he could not give any more

Dr Chapple stated that last year he voted for the motion but on this occasion he was concerned for the Budget as a whole and therefore supported the Government

On a division the proposal was rejected by 251 votes to 148

Sickness Benefits in Old Age—Mr W Henderson inquired on July 1st as to the position of workmen over 70 years of age who were in employment and paid their National Health Insurance contribution though they were not eligible for sickness benefit being afraid of losing their employment if they disclosed their age Mr Greenwood said that the Minister of Health was aware of the point raised The terms of reference of the Royal Commission would enable the question of the extension of the title to sickness benefit to persons over 70 years of age to be considered

Service Pensioners Convalescent Centre—Mr Muir (Parliamentary Secretary to the Ministry of Pensions) explained on July 3rd the new instruction as to the working week at convalescent centres of the Ministry of Pensions The object was not to lengthen the working week or even to lay down a definite number of hours of training to be performed by each man but to fix a uniform maximum number of hours for all centres The maxima had recently varied between the different centres from 27½ to 32½ hours a week The maximum is now fixed at 30 hours a week with a break each morning of 15 minutes the actual maximum thus being 28½ hours a week Within that limit the medical superintendent has full discretion to adjust how much time any individual shall work according to his physical capacity and the requirements of his medical treatment

Health Services.—Mr Black, on July 2nd, invited the Minister of Health to set up a Committee to inquire into the necessity for, and the advantages of establishing a minimum standard in the administration of all health services included in his Ministry, in order to secure that the health interests of the public should be conserved in areas where the local authorities might not be progressive, and asked whether the Minister would include expert medical officers of health upon such a committee. Mr Wheatley said that as at present advised he did not think the appointment of a committee would be of advantage.

Expenditure on Vaccination.—The Minister of Health stated, on July 3rd, that the sum of £172,558 (expenditure on vaccination for the year 1921-22) included £10,158 paid to public vaccinators out of the Exchequer Contribution Account of the local authorities, and £162,400 expended by Boards of Guardians out of the rates but he could not supply further details. The number of infants vaccinated by public vaccinators during the year ended September 30th, 1922, was 205,106. It was not possible to state the cost per infant vaccinated as the expenditure on public vaccination included also the cost of other vaccinations and re-vaccinations, and the necessary administrative expenditure.

Control of Liquor Bill.—The Bishop of Oxford's Control of Liquor Bill was refused a second reading in the Upper House on July 7th by 166 votes to 50. Lord Parmoor, Lord Milner, the Archbishop of Canterbury, and the Bishop of St. Albans endeavoured to meet criticism of provisions by urging that if referred to Committee the measure could be modified and changed. The Bishop of Durham spoke strongly against the bill, declaring that it enshrined the principle of prohibition, which he held to be unsound.

Home Treatment for Ex-Service Men.—Mr. Grove, on July 6th, called the attention of the Minister of Health to the working of the new circular 'M.P.A.C. Home Treatment," whereby Ministry doctors referred ex-service men to general practitioners under the National Insurance scheme for home treatment. The point of a lengthy question was that a certificate of the insurance practitioner that the man was unfit to work was not reckoned adequate to secure the man allowances. Mr. Muir, for Mr. Roberts, declined to accept the argument of the questioner, but said that the circular letter did not appear to be satisfactory, and would be reconsidered.

Medical Examination of Juvenile Offenders.—Mr. Birkett asked, on June 19th, whether the Home Secretary had received any report from the petty sessional divisions in England and Wales as to the desirability of a competent medical man being at the service of the probation officers in cases of young offenders who were suffering from epilepsy and kindred diseases. Mr. Henderson replied that he had not. Some juvenile courts made arrangements for the medical examination where necessary of young offenders who were brought before them, and attention was drawn to the desirability of such a practice in the report of the Children's Grants issued last year. The matter was receiving further consideration.

Impure Vinegar.—Mr. Hannon brought in a bill, on June 25th, to prevent the sale of liquid or products made in imitation of and purporting to be vinegar. It was, he said, one of the defects of the Food and Drugs Act that no provision was made for fixing the standard of vinegar. Imitation vinegar was prepared by diluting commercial acetic acid, and staining it to resemble pure vinegar. Sometimes sulphuric and other acids were added to give greater acidity. The bill followed in the main principles already adopted in similar legislation in the United States, New Zealand, South Africa, Australia, and Canada. Dr. Hamill of the Local Government Board in a report made in 1908, pointed out that vinegar lent itself to imitation, and when that happened became a dangerous drug. Still more recently, when an inquiry was made under the Profiteering Act, it was stated that brewed vinegar cost twice as *much as unbrewed, and so the latter was* sold by dealers at a much greater margin of profit.

Notes in Brief

The number of persons receiving treatment in residential institutions under the tuberculosis schemes of local authorities in England and Wales on June 1st was 18,245 and the number recommended for and awaiting such treatment on that date was 4,150. It is hoped that the circular issued by the Ministry of Health last February, promising grants in aid of approved proposals, will result in the substantial addition to the available accommodation for the treatment of this disease.

The Council of the League of Nations is in favour of locating the Far Eastern Epidemiological Intelligence Bureau at Singapore, and the Colonial Secretary has stated that the steps which can be taken to facilitate the carrying out of this proposal will receive consideration.

The number (uncorrected) of notifications in England and Wales during the twenty-six weeks ended June 28th: Small-pox, 2,196; diphtheria, 18,035; scarlet fever, 36,910; pneumonia, 41,321; enteric fever, 1,603; encephalitis lethargica, 3,620.

As soon as the investigations of the Ministry of Health in regard to proprietary and patent foods have been completed, the steps that should be taken will be considered.

The Minister of Health stated on July 2nd, that the terms of reference to the Royal Commission on Lunacy included inquiry into the certification, detention and care of persons under the Lunacy Acts, whether in public or private institutions or in single care. Witnesses summoned by the Commission to give evidence before it in London would be repaid their expenses in accordance with the scale prescribed by the Treasury.

Correspondence.

THE CANCER INQUIRY AT LIVERPOOL

SIR,—It is proper that I should bring to your notice a grave example of the harm that is accomplished by incompetent and irresponsible reporters. In an address at the congregation for the conferment of degrees in this university on Saturday last, reviewing the work being accomplished in our laboratories, I referred to the work of our Cancer Research Committee in the following words: "The matter is of such vast importance to the welfare of humanity that it is necessary to proceed with the greatest caution so as *not to encourage* false hopes. But through the co-operation of many of our staff and various laboratories steady progress is being made. We have reached the stage when we can cause the disappearance of some, *though* not all, internal cancers." Despite this preliminary warning of our anxiety *not to encourage* false hopes, a Liverpool evening paper quoted me as announcing that we have reached the stage when we can "cause the disappearance of some, *if* not all, internal cancers."

It is difficult to discover any excuse or explanation for such perversion of my words, as shown by my piteous correspondence during the last forty-eight hours, the perverted statement has been broadcasted through the press of Great Britain. It is true that the journal responsible for this error has published a very full correction and retraction, but unfortunately this correction is unlikely to be similarly broadcasted. I owe it to my colleagues and to the medical profession to emphasize that I made no such assured announcement as has been credited to me.—I am, etc.,

J. GEORGE ADAMI

The University of Liverpool,
July 8th.

THE LEFT-HANDED CHILD

SIR,—The case referred to by Dr. Drinkwater (June 21st) is of very great interest as an extreme example of bilateral synergia, as contrasted with the two extremes, sinistral and dextral pre-eminence.

Bilateral representation in the cerebrum was very ably discussed long ago by Broadbent, and his conclusions have sometimes been referred to as Broadbent's law.*

As regards the motor side of the nervous system the adductors of the vocal cords are examples of complete bilateral representation and the lower face and tongue of partial, whilst it is by a very partial bilateral representation of the hands that I have sought an explanation of mirror-writing. Probably the amount of this motor bilateral representation in the cerebrum varies in different individuals, but Dr. Drinkwater's case is abnormal in that not only was the *motor or efferent* side bilaterally represented to an extreme extent, but also the sensory or afferent side, ordinary sensation approaching to what one finds normally in the special senses of sight and hearing.

Dr. Harford's letter (June 21st) suggests the question whether any diseases, defects, or disturbances of function of the mind and nervous system are ever primarily or fundamentally psychogenic in origin. He says:

"If, then, it is found that left-handedness, in common with squint and stammering, is due to a temperamental difficulty, as scientific workers we must set ourselves to deal with the cause rather than the effect."

But which is the cause and which is the effect? What is meant by temperamental difficulty? Do not variations in temperament result from variations in anatomical structure and physiological associations, perhaps also variations in quality of the neurons in different individuals and at different times, these latter variations brought about by many factors (food, hormones, toxins, etc.)? The fact that Dr. Harford claims that these three disorders are related to similar phenomena in members of the same family justifies one in concluding that he would not disagree with the above because the only alternative seems to me to be that dis-

* His views will be found in the *British and Foreign Medico-Chirurgical Review*, April, 1866, and *Medico-Chirurgical Transactions*, 1872 (The Cerebral Mechanism of Speech and Thought), and are still well worthy of study.

orders of mentality or temperamental difficulties as such can be transmitted and inherited the psyche *qua* psyche in one individual begetting a similar psyche in another

If left handedness has an anatomical and physiological etiology we must patiently set ourselves to train the child physiologically educate him gradually to develop his body in the direction we think beneficial Suggestion must always take a prominent place in all forms of training and in this I agree with Dr Harford in his remarks at Portsmouth (BRITISH MEDICAL JOURNAL, November 24th 1923), but suggestion which to me is the basis of all psycho therapy, before it can be therapeutically beneficial must act physiologically If as he says, stammering is so apt to be associated with left-handedness (of this I express no opinion) is it not more reasonable to suppose that the stammering which may have come on during the training of a child to use the right hand is not the result of such training but rather the derangement often associated with left-handedness"—unless, of course, methods of compelling have been used which can hardly be described as patient gradual training I agree that such training is a difficult matter and caution is needed, but a child who is very decidedly left-handed belonging to Dr Drinkwater's first group is so handicapped in after life that it is very desirable that much trouble should be taken to educate him to become ambidextrous and thus transfer him to the second group to which as has been pointed out some of our most useful and highly trained citizens belong Most of those who are ambidextrous had originally a more or less tendency to left-handedness, and have either of their own accord or by assistance trained themselves to use both hands It cannot be too much emphasized how greatly handicapped an extremely left handed individual is Practically every machine and instrument of utility sport and amusement is primarily devised to be used by the right-handed Writing itself as we know it was devised for the right handed A left-handed person writing in the usual way from left to right has to make the general movement of his arm adductor in trend of abductor in character and cannot see clearly what he has written His facility in writing is thus interfered with and he is at a disadvantage

Besides it must not be forgotten that the kinaesthetic impulses resulting from specialized and skilled movements carried to the cerebrum play a part—perhaps not a small one—in stimulating the growth and development of the intellectual faculties The left handed because of more limited opportunities, are to some extent deprived of these stimulating influences, and it is little wonder therefore that many in the first group, if not originally feeble-minded or below the average in intelligence, as Dr Drinkwater says may ultimately tend to become so Manual exercises of all kinds are of course desirable but one of the most natural most helpful and most easily applied methods of training the right hand is to teach the child to write with it and the result if thoroughly successful leaves the individual much less handicapped in later life —I am, etc

Leith June 28th WILLIAM ELDER, M.D. F.R.C.P.E.

THYROID EXTRACT AND MANGANESE

SIR,—Having persuaded myself that the larger proportion of the community were in a subthyrotic condition and believing that this might account for some of the diseases and infections which have been considered as likely to arise from auto-intoxication, I began to use small doses of thyroid extract very freely This led to combining it with other treatment and lately with potassium permanganate

The results obtained in a limited number of cases under my own supervision during the past few months encouraged me to enlist the interest of some of my professional friends My own observations were confined to a few cases of chronic rheumatoid arthritis, a case of acute rheumatoid arthritis one of alopecia areata, angina minor, diabetes mellitus, acute tonsillitis, *Bacillus coli* infection phlegmasia alba dolens, and a case of chronic gout with erythema, all of which responded favourably

Dr McKenna of Liverpool has reported that in the space of three or four weeks he has found the treatment most useful in pemphigus foliaceus, septic dermatitis, and in a troublesome case of recurrent erythema Dr Taylor of Chester says he has used it very effectively in a severe case of cerebro-spinal meningitis

The treatment is being used by other observers and when their reports come to hand we shall hope to be able to publish a paper combining our several views and experiences —I am, etc,

Little Sutton near Birkenhead July 1st H. W. NOTT

THE CAUSATION OF CANCER

SIR,—It is the duty of a student in any department of scientific thought to pay heed to the views of others, more especially when they run contrary to conclusions to which his own investigations are apt to drive him To do otherwise is to incur the risk of perpetuating error and of hindering progress, and no one who cares more for truth than belief would scruple to abandon his most cherished convictions if their falsity or their weakness were demonstrated In science nothing is fixed and settled beyond dispute, and advance often comes by criticism of authoritative or generally accepted opinion

When, therefore, Dr A T Brand in his first letter expressed himself so strongly in favour of the idea that cancer is due to a single and invariable causal agent a micro-organism hitherto undiscovered and still more strongly in opposition to the views we have entertained, I had hoped by discussion to draw from him reasons and facts which would support his beliefs and might be expected to keep us from persisting in error That hope has been disappointed He merely repeats over and over again what he said originally, and it all comes to this cancer is a specific disease because it is obvious that it must be so being so, it must have a single specific cause because being indisputable, having a single cause this must be a specific extrinsic agent because it is a fair assumption, the extrinsic cause must be a micro-organism because micro-organisms generate toxins and all specific diseases and especially cancer, are due to toxin Well, it is not helpful I should hesitate to call it nonsense but I confess I do not understand it If experimenters find that cancer follows (sometimes in 100 per cent of cases) the prolonged use of certain things they call irritants they are, according to Dr Brand, wrong in assuming that such irritants are the causal agents of the effects because it is indisputable that they are merely predisponents, and predisponents cannot be prime causes Against such an inexorable bulwark of devastating assertions facts beat in vain and argument is useless

Dr G W I Paul (BRITISH MEDICAL JOURNAL, June 28th p 1156) argues that since the irritants we have used do not always cause the disease we must assume that there is some other condition or specific agent necessary Dr Paul will no doubt, admit that the diphtheria bacillus causes diphtheria in some people and not in others, though the latter may have the organism present The same thing applies to all pathogenic agents and to all disease but it does not invalidate our conception of what we agree to call "prime causes" Why disease results in one man or animal and not in another similarly exposed to the main causal agent we do not know, and we merely repeat the conundrum when we say that one is susceptible and the other resistant —I am, etc,

London S.W.3 July 5th ARCHIBALD LEITCH

*** While we shall be ready to receive any correction of fact, we consider that with this reply from Dr Leitch this correspondence may properly be brought to an end

CARDIAC DELIRIUM

SIR —It may be that unconsciously a man tries to probe more deeply into the circumstances surrounding those diseases in which he feels a particular interest and this is in the study of patients with heart disease I have met with a degree of self-revelation exceeding anything I have found elsewhere This may be due to the necessarily long attendance that many such patients demand and is more evident in private practice than in hospital, for in private practice the individuality of the patient is preserved and intensified

in the face of illness to a degree far beyond that encountered in hospital, and so the practitioner is not seldom faced with difficulties for the solving of which the literature at his disposal offers little aid

I call to mind one case of this type of delirium peculiar to heart disease in which it was never far away in the last few months of the patient's life On entering his room I have been met with the query, "How did you get here?" At various times he presented more than one of the delusions cited by Sir Clifford Allbutt in your issue of June 28th, and they were often intermixed with delusions of an "occupational" nature The patient was a railway guard—one of three railway servants I was attending simultaneously who betrayed during illness mental symptoms closely related to the responsibility of their occupation when in health—and, although the subject of extreme cardiac failure, would rise from his bed during the night and, easily overcoming the efforts of his relatives for he had great strength, would endeavour to "couple" his bed to the chest of drawers, under the impression that he had fallen asleep in a truck

Apart from mental symptoms resulting from the cardiac disorder there are perhaps few diseases where the efforts of the physician may be helped or hindered to so great an extent by the psychology of the individual In the former case the cheerfulness of the patient begets in his attendant a cheerfulness which works in his own favour In the latter I have found that close inquiry along lines not indicated in clinical textbooks may show that a melancholic or other adverse attitude is not wholly attributable to the patient's disease—that such an outlook on his condition is indeed concomitant with his lifelong outlook on the universe It is in this respect that our knowledge of the material facts of disease fails us, that our study of the psychological substratum of man's nature must come to our aid, and it is in heart disease that this substratum often becomes exposed by the eroding influences of continued ill health or of a fearful anticipation of this earthly journey's end—I am, etc,

Dundee, June 30th JAMES M STALKER

SIR,—I have read with interest Sir Clifford Allbutt's short note on the above subject He is evidently a diligent reader of the BRITISH MEDICAL JOURNAL when he derives inspiration from the Epitome, but surely the "Dr W B Richardson" to whom he refers is no less a personage than the late Sir Benjamin Ward Richardson The paper to which Sir Clifford Allbutt refers appeared in Richardson's monumental work the *Asclepiad*, vol i, p 289, 1884 In the second volume, 1885 (p 221), Richardson refers in very complimentary terms to Clifford Allbutt's description of cardiac delirium or *the delirium of place*" Richardson concluded the first article as follows

"In the subject broached in this paper a road is opened by working in which any industrious and observant student of medicine may win a golden harvest brightened by the hope of usefulness and putation Toiling in this field he must afford to wait patiently for the acknowledgement of his labours, assured, indeed from the outset that it will be many a long year before he will be understood but equally assured that when understood the appreciation superbly enviable will repay every stretch of industry however severe however prolonged My work must be accepted simply as a finger *pointing the way*

Sir B W Richardson only died in the late nineties of last century, but so ephemeral is the public, and even the professional recollection of the work of a really great man that we now seldom hear his name mentioned except by a few teetotal faddists—even Sir *Clifford Allbutt* transposes his initials, and the Editor of the BRITISH MEDICAL JOURNAL fails to detect and correct the obvious error

I have a vivid recollection of a discussion which I had with the late Sir William Broadbent on the merits of the works of Richardson whom I described as a genius, one of the very few who had adorned medicine Broadbent would not go so far but said that Richardson narrowly escaped being one

Richardson forestalled Ford Robertson and others in pointing out the relation of intestinal intoxication and disease processes Although he is dead and apparently forgotten he left us the *Asclepiad* work which will live and from which inspiration can be drawn for many a year to come Some of the young men of the present day who are ever anxious to make new discoveries in which they glory until they are found out, and then sulk in silence till the storm blows over, might find Richardson's numerous finger-posts worthy of consideration—I am, etc,

Liverpool, June 30th JAMES BARR

SIR,—At the present time I have under my care a middle-aged woman, who first consulted me in the last week of December, 1923 She was then suffering from auricular fibrillation with cardiac failure, evidence of which was pronounced Under appropriate treatment the ansasarca began to clear up and the fibrillation was checked Some days later she developed typical "travelling delirium" and had repeated angry arguments with her nurse, who endeavoured to dispel her hallucinations The delirium gradually ceased, and the patient continued to make good progress The fibrillation has recurred several times, yielding to renewed treatment, but the "travelling delirium" has not returned, though she suffers from mental confusion of varying degree during the bouts of fibrillation At the present time heart rate and pulse rate are 68 a minute, regular In this case there is no evidence of valvular lesion, but degeneration of the myocardium is probably present

The case seems worthy of mention, because (1) the delirium ceased without a fatal issue, (2) the onset of the delirium occurred after the gravest physical signs and symptoms had subsided—I am, etc,

Reading, June 30th GORDON LAMBERT

THE ADMINISTRATION OF OXYGEN

SIR,—In common with your correspondent, Dr Laing (June 14th, p 1074), I have felt dissatisfaction with the ordinary methods of giving oxygen, whereby it is delivered in front of the patient, only to be blown away by the expired air A more satisfactory method for the less severe type of case is to supply it through a simple tube, which delivers the oxygen somewhere near the angle of the mouth so that the oxygen will be drawn into, and mix with, the expired air The tube can be fixed by a safety pin to the pillow or the patient's night attire In more severe cases the plan suggested by Dr Laing is good, or in the case of a man who smokes the mouthpiece of a pipe or a cigarette holder can be fitted into the end of the oxygen supply tube

When giving oxygen continuously thus, it is of great importance to regulate its amount, and this can easily be done when bubbling it through water in a Wolff's bottle by listening to the rate at which the bubbles are breaking They should break at the rate of 4 or 5 a second—that is, almost as fast as possible, short of the stream being a continuous one If they fall to 2 or 3 a second the supply of oxygen will be less than is desirable Given at the suggested rate a large cylinder of oxygen will last more than twenty-four hours—I am, etc,

Birmingham, July 3rd T STACEY WILSON

IMMUNIZATION AGAINST DIPHTHERIA

SIR,—The following record of the work done at an infant welfare centre in connexion with the immunization of diphtheria may be of interest

From April, 1922 when the work commenced in Holborn (population 43,520) to April, 1924, a period of two years, 500 persons were tested at the infant welfare centre Of these, 149 gave a negative response and 351 a positive response to the test 271 positives completed the course of inoculation for immunization, 25 cases were still in progress of immunization In 2 cases owing to marked reaction the injections were postponed In 23 cases inoculation was not begun—4 were adults, but 19 were young children whose fathers refused to consent to their immunization, although susceptibility was demonstrated

In 30 cases inoculation was begun but not completed, often some external circumstance occurred to break the routine attendance, and the mother could not be persuaded again to form the habit of attendance Many of these children had been inoculated twice, and if they can at any time be retested will probably be found to give a negative response

Included in those who are counted as immunized is one child (8 months) who gave a negative response after one dose of toxin antitoxin One child (9 years) was given six doses and one (13 years) had 4 doses Retesting some weeks after the third inoculation was not very popular, but there is now less objection raised, owing to the growth of confidence in the whole procedure

The fundamental difficulties that have to be contended with in persuading parents to avail themselves of immunization against diphtheria are that they have a deeply rooted objection to inoculation They dread reaction to inoculation and fail to realize that any inconvenience or suffering so entailed is negligible as compared with that of an attack of an infectious disease Some parents have an almost unshakable belief in a malignant fate and as a consequence lack faith in the efficacy of preventive measures On the other hand we find that parents who object to vaccination against smallpox will have children inoculated against diphtheria

It is not expected that the number of cases of diphtheria or the number of deaths from this disease will be markedly lessened in Holborn yet but if the procedure goes on even at its present rate in time some effect must be produced We hope however that gradually more and more children will be immunized especially if other local authorities will take it up

It is probable that as the years go by parents will find their non immunized children developing diphtheria whilst immunized children living in the same house or locality escape the disease—we have already had instances of this and as the knowledge spreads that freedom from the disease has been produced by immunization this method of prevention will become increasingly acceptable to the parents

We can definitely say that no case of diphtheria has occurred amongst any of the children immunized at the Holborn centre—I am, etc,

London W C 1 June 25th C W HUTT

INSULIN AND INSULIN LIKE BODIES

SIR,—In what is otherwise an excellent report (BRITISH MEDICAL JOURNAL July 5th p 15) of some opening remarks made by me at the Aberdeen Medico Chirurgical Society on June 5th there is a misleading sentence bearing on the question of the occurrence of insulin or insulin-like bodies in tissues other than pancreatic islet tissue Whatever may be the significance of the reported finding of such bodies in certain other animal tissues of vertebrates and invertebrate there is no evidence that the substances ("glucokinins") in certain vegetable extracts (lawn grass etc) are really of the same character as insulin, though they have been found to be remarkably effective (like insulin) in cutting down the percentage of blood sugar—an influence that can be passed from one animal to another by the transference of very small amounts of blood It is highly improbable that these substances are essentially of the same nature as insulin—I am, etc,

Aberdeen July 5th. J A MACWILLIAM

THE ADMINISTRATION OF PLAGUE VACCINE

SIR,—Last February, while on leave in India, I had an occasion of seeing some persons who had been inoculated against plague The reaction (both local and general) in nearly every one of them was severe Each of them had the full dose (4 c cm) of the vaccine at one sitting

Last month I was detailed to inoculate the personnel in this hospital I divided the people to be inoculated into three groups, the classification being irrespective of weight, age, or physique

Group I was given the full dose at one sitting

Group II was given the initial dose of 2 c cm and the remaining 2 c cm six days latter

Group III was given the initial dose of only 1 c cm followed by the second dose of the remaining 3 c cm six days later This group included nursing sisters and a patient to whom I administered the initial dose immediately after opening an abscess in the axilla his temperature at that time was 102°

The results were as follows

Group I—More than 80 per cent developed severe reaction both local and general the temperature ranging from 101° to 103° Headache and general malaise were the most prominent symptom

Group II—Only about 10 per cent had slight fever The local reaction was moderate

Group III—Except just a little tenderness and a small zone of hyperæmia at the site of inoculation there was no local reaction None of them had the lightest general reaction Everyone went about their business and took part in the games in the evening as usual

The conclusion I came to was that the reaction was due to the absorption of the endotoxin of *B pestis* as well as the culture media (broth) in which the organisms were grown and suspended, that the reaction was directly proportional to the amount of vaccine introduced into the body and that injection of a small initial dose renders the system more tolerant to the succeeding dose, and thus the severity of reaction is mitigated

I would also like to mention that the year before last while recording a plague case at Peshawar I cast some doubts on the prophylactic value of the plague vaccine since then I have become firmly convinced of its efficiency so much so that I have been inoculated myself—I am etc

R MANSOOR M B Durh,
Lieutenant I M S (T C)

R A F Indian Hospital
Baghdad May 15th

LIFE INSURANCE WITHOUT MEDICAL EXAMINATION

SIR,—There is one point which the life insurance companies, which have in part or whole adopted the method of non medical life insurance, have overlooked—namely, the safeguard which a medical examination gave to those about to marry When parents have expressed to me doubts as to the health of a prospective son in-law and yet do not like to suggest openly to him that he should be vetted' I have always advised them to invite him to insure his life in a company which requires a strict medical examination This acts beneficially in two directions—by in the first place, setting their minds at rest as to his health, and also by providing some provision for the future maintenance of his wife-to-be Members of the medical profession are often consulted with regard to the choice of an insurance company and, without mentioning the name of any particular company a list might be kept containing the names of those insurance companies which require a medical examination in all ordinary cases the intending applicant being advised to select a company from that list—I am etc,

July 2nd MEDICAL REFEREE

Universities and Colleges

UNIVERSITY OF OXFORD

Radcliffe Scholarship in Pharmacology—The Master and Fellows of University College have awarded the Radcliffe Scholarship in Pharmacology in equal shares to T C Hunt Magdalen College and Alice D K Peters St Hugh's College whose work was reported by the Professor of Pharmacology to be of equal merit

Welsh Memorial Prize—Dr Lee's Professor of Anatomy has reported to the Vice-Chancellor that he has awarded the Welsh Memorial Prize for the best set of anatomical drawings in relation to human anatomy to P M F Bishop Trinity College

The following candidates have been approved at the examination indicated

FIN [illegible]

Aldred Brown E N A Jot H N Bradbrooke A [illegible]
Clover L O F Fysh T C Hun R Leverthwaite P C Malam
M J W Minshull P Morton G P
Roxburgh J de la M re Savag P S
Wordsworth *For nsic Medici* [illegible]
M M Baird L J Barford R J Brocklehurst C W Carter H N K
Elphick E J Franklin C J Fuller J R B Hern P H Martin
J D Mills H W Pearson A A F Peel D I Rees A W [illegible] Pow
T E Ryves J G S Thomas E C Whitehall Cooke G P Wright
Medicine Surgery Midwifery G R P Aldred Brown W B
Boone W H Bradley R F D Cargill C W Carter T H Catford
J L Cox C L Elgood E J Franklin A T Fripp C J Fuller
D R Gawler C A H Green E H Koern r W J Lupton H W
Pearson A A F Peel T E Ryves I M Sidley G L Wilson
G P Wright

At a congregation held on July 5th the following medical degrees were conferred

D M—J F Venables G K Stone H H Sanguinetti
B M—D R Gawler A A F Peel G P Wright K I Franklin C W
Carter C J Fuller G I Wilson W J Lupton H W Pearson
W H Bradley P E D Cargill C A H Green G I Aldred
Brown

UNIVERSITY OF LONDON

Research Grants

AT the meeting of the Senate held on June 25th grants out of the Dixon Fund for the year 1924–25 were made as follows

£50 for research on the physiological factors governing the proportions of sexes in mammals to Alan Sterling Parkes (Institute of Physiology University College) £50 to Eric Arthur Spaul Ph D to continue experiments with the anterior lobe pituitary gland and to gain further knowledge of the properties of the active principles of this portion of the gland and also its biochemical properties (Zoological Laboratory Birkbeck College) £50 to Florence Mary Wood for chemicals and apparatus in connexion with research upon the chemical nature of the cellulose membrane £20 to Muriel Bond M Sc for research into the dietetic factors influencing reproduction (London School of Medicine for Women)

LONDON HOSPITAL MEDICAL SCHOOL

Prize Distribution

The prizes and certificates gained by students of the London Hospital Medical College were distributed on June 30th by Sir Arthur Keith, M D , LL D , F R S , in the Library of the College Lieutenant Colonel W Marlborough Pryor, D S O Chairman of the College Board, presided The Dean (Professor William Wright) in his report said that among the changes which had taken place in the College the most important was the discontinuance of the teaching of what were formerly the subjects of study during the first year of the medical curriculum—namely, elementary chemistry, physics, and biology, and the General Medical Council had now removed elementary chemistry and physics from the medical curriculum and made them the subjects of a pre medical examination The change had provided increased accommodation for the teaching of the purely medical subjects, while funds had been released for improving the teaching arrangements in connexion with more particularly, the clinical subjects The appointment of in addition to the staff of the medical unit, five surgical and four medical whole time assistants, selected from the ablest of the younger men, was a new departure in the organization of clinical teaching, and should, with the unrivalled clinical facilities at the London Hospital, ensure that in the spheres of clinical teaching and research they would more than maintain their already high position among the medical schools of the country The trustees of the late Sir William Dunn had recently presented the hospital, at a cost of £8,000 with a series of clinical laboratories, and the Goldsmiths' Company had given £15 000 for the endowment of the Goldsmiths' Chair of Bacteriology

After presenting the prizes and certificates to the successful students Sir Arthur Keith said that to get a good reputation was the easiest thing in the world and with that object everything they did must be unselfish The unforgiveable sin which would never be forgotten was that of selfishness—that of playing entirely for one's own hand In aid of a good reputation came absolute honesty of purpose speaking as near the truth as they could when the occasion called for it They should not mislead their patients No medical man was honest who was not familiar with what was happening in the best medical circles in the way of discovery and advance in medicine They could not be honest unless they continued to be medical students all through their lives It was necessary for them to read constantly the medical papers The particular kind of unselfishness which appealed to him more than any other was that which led men to devote their energies and their time to the discovery of fresh facts which made medicine a better equipped tool in the hands of medical practitioners

LONDON SCHOOL OF MEDICINE FOR WOMEN

Research Fellowships in connexion with the Obstetrical and Gynaecological Unit have been awarded to Miss Olive Rendel M D and Miss Alfreda Baker M D A "1916" bursary, of the value of £50 a year for five years, will be awarded to a student who has matriculated and who wishes to enter the school in October, 1924 to begin a full course of study for a medical degree Particulars may be had from the warden and secretary, 8, Hunter Street W C 1

UNIVERSITY OF BIRMINGHAM

THE following candidates have been approved at the examination indicated

FINAL M B Part I.—Class II Mary F Appleby F J Bailey P A V Farford *I R B Barne C H G Belcher J K Bostock D M Brown H I Burtt H Capran Doris M J Carrington Olive G Collico A J Davies Elsie C Davies H W Donovan T S Donovan Dorothy M Herton Dorothy K Elliott Vera Fellowes J W Field E I Gould Irene D F C Hestilow F H Healy L O Hill W C O Hill A B Holt on H F Jukes D Magrath Evelyn D May A Navar Muriel I H Naylor A Phipp J D Pike C J Polson Jessie L Robb A G Taylor P Thomason, Eileen M Vale A G Williams I F Wilson

* Distinction in medicine
† Distinction in midwifery and diseases of women
‡ Distinction in surgery

The following appointments are announced *Inaleby Lecturer for 1925* Sir Gilbert Barling Bt, F R C S *Professor of Midwifery and Diseases of Women* Mr H Beckwith Whitehouse M S, F R C S *Lecturer in Pharmacology and Therapeutics* Dr J Lacture Smellie *Assistant to the Chair of Surgery* Mr Bernard G Goodwin, F R C S

UNIVERSITY OF DUBLIN

SCHOOL OF PHYSIC, TRINITY COLLEGE

THE following candidates have been approved at the examinations indicated

FINAL M B Part I.—*Materia Medica and Therapeutics Medical Jurisprudence and Hygiene Pathology and Bacteriology* *R L Forsyth J E M Cauley, P MacN Allardyce Annette K Wood Martin V St G Vaughan R G Keays G T L Archer B P Pienaar Elspeth V D Hewat M A W Roberts H O Clarke

PART II.—*Medicine* *R F J Henry G Purdy J K S Thompson, J L Stuart J S Armstrong J E Beatty G W Garde J R Bradshaw E Harvey, J Crawford, C J du Plessis J H Fowler, L D Dennard R A Webner R G F Thompson L M Whitsitt G A Sloan A Hawthorne, H W Strong A J Head L S Levitt, T J Swanepoel *Surgery* G Purdy J K S Thompson D L Hemmingway M A Gerrard R E Steen I Rosin, D K Lyons, J V Morris G A Cowan A J Mooney G Robinson T J Swanepoel, C Wilson L D Dennard, J Morris, J L F Steele O G Wilde, Eileen Brangan A B Monks Sylvia B Wigoder G A Sloan S Wigoder S M Dermott M J Bradla A L Dobbyn K F Mackenzie R L Armstrong W A Hopkins M D Fox *Midwifery* *T W MacDowell J V Taylor T C Foster R V Franklin, K A Cronin, Annie A Deane Mary C Livingston, W C G Potts T J Marais E A Bennet, W G Maule J St Clair, P Wallace, H Waters W A Hopkins O Chance, E C Dudgeon, R H M Keag G J Joubert G A A Powell, E T S Rudd C L Taylor T V Duke C P Wallace D N Power T G B Crawford Margaret O Neil W O Warrington E S A Crawford G F Gillespie L D Dennard

DIPLOMA IN PUBLIC HEALTH PART I.—*Chemistry Bacteriology, Physics, and Meteorology* Alice M A Downing, W E Hutchinson, E Parker

PART II.—*Sanitary Engineering Practical Sanitary Report Hygiene and Epidemiology Vital Statistics and Public Health Law* B W D Fayle W E Hutchinson Alice M A Downing R S M Elroy A E Campbell, Mary M Galvin Ruth Lemon N M I Falkiner, Iris P Nelis

DIPLOMA IN GYNAECOLOGY AND OBSTETRICS.—Sylvia G de L Chapman

* Passed on high marks

ROYAL COLLEGE OF PHYSICIANS OF LONDON

AN extraordinary comitia was held on Thursday, July 3rd, at 5 p m , the President, Sir Humphry Rolleston, being in the chair

A report was received from the treasurer on the commemoration of the tercentenary of the death of Thomas Sydenham at the Académie de Médecine de Paris, held on May 20th last

The quarterly report of the College Finance Committee was received and adopted

Dr A J Hall was reappointed a representative of the College on the Court of Governors of the University of Sheffield

After some further formal College business the President dissolved the comitia.

ROYAL COLLEGE OF SURGEONS OF ENGLAND

AT a meeting of the Fellows on July 3rd three Fellows were elected into the Council in the vacancies occasioned by the retirement in rotation of Mr Haslam, Mr Openshaw, and Mr Raymond Johnson The result of the poll was as follows

	Votes	Plumpers
WILLIAM MCADAM ECCLES	463	32
WILFRED TROTTER	371	20
SIR CHARLES GORDON WATSON, K B E C M G	359	23
Victor Bonney	312	4
William Ernest Miles	258	13
Arthur Henry Burgess	235	30
Herbert John Paterson C B E	232	8
Hugh Lett C B E	221	20
George Grey Turner	219	8
Thomas Percy Legg C M G	142	8
Philip Turner	123	19

In all, 1,150 Fellows voted (including 195 Fellows resident out of the United Kingdom), 1,142 sending their ballot papers through the post and 8 voting in person Four voting papers were found to be invalid There were no substitute numbers this time

Final Fellowship Correction

The name of Mr J M Craig (St Andrews and Guy's) was accidentally omitted from the list of successful candidates at the Final Fellowship examination published in our issue of June 21st (p 1116)

ROYAL COLLEGE OF PHYSICIANS OF IRELAND

AT the monthly meeting of the College held on July 4th Sir James Craig M D , Fellow and ex President of the College was unanimously elected King's Professor of the Practice of Medicine for a further term of seven years

The following successful candidates at the Final Examinations under the Conjoint Scheme held in June were duly admitted to the licences in medicine and midwifery of the College

P M Banim T G Boyle Dorothy L Campbell E J Daly W O Dunwoody T T W Eaton V D Gordon Attracta Halpenny, A Heron J J Hogan J A Kennedy G A Moorhead, W M Curry A S ffrench O Carroll E Orr T R O Shiel Muriel V Prentice, J Shiel, R A M E B Simpson A W P Smyth M J Walsh

ROYAL COLLEGE OF SURGEONS IN IRELAND

THE following have been elected examiners for the ensuing year

Court A for examinations under the management of the Conjoint Committee namely Conjoint Licence Diploma in Public Health and Preliminary — Anatomy Surgery Mr L G Gunn, Professor Histology Professor J A Scott Boxwell Midwifery and Biology Professor MacD Cosgrave Mr R D Joyce Chemistry and Physics for Diploma in Public Health only Dr S Young Materia Medica Pharmacy and R J Rowlette Forensic Medicine and Public Synge

Obituary

R W LOVETT, M D,

Professor of Orthopaedic Surgery Harvard U S A

We had the sorrow to record last week the death in Liverpool immediately after landing from America of Dr R W Lovett, of Boston, Massachusetts He had for many years been one of the outstanding personalities in orthopaedic surgery In Boston, which boasts of many well known names in this specialty, his was by no means the least

Robert Williamson Lovett was born at Beverley, Massachusetts on November 18th, 1859 He graduated B A Harvard in 1881 and M D in 1885 He began to practise when he was 26 years of age, and after a short experience in New York settled in Boston where he soon became known as a progressive and skilful surgeon He was an original member of the American Orthopedic Association in which he often held office and to the success of which he largely contributed He was a member of the British Orthopaedic Association and of the Societe Internationale de Chirurgie When the American College of *Surgeons was constituted he* became one of its Fellows



He was at the time of his death professor of orthopaedic surgery in Harvard University, and for many years had been surgeon to the Children's Hospital in Boston he was also surgeon-in-chief to the Massachusetts Hospital School for Crippled and Deformed Children, and consulting orthopaedic surgeon to the New York State Board of Health During the war he held a commission as major in the Medical Corps of the U S Army

Probably Lovett's best known work was done in the study of scoliosis His book on this subject represented the results of years of study and inquiry into the pathology and treatment of this baffling disorder It ran through several editions and remains one of the best, if not the best work on the subject in any language

Lovett joined with Dr Bradford in the authorship of Bradford and Lovett's *Orthopedic Surgery*, several editions of which have appeared and have maintained the reputation of their authors In 1923 he shared with Sir Robert Jones in writing the work on *Orthopedic Surgery* in two volumes which holds the field as the latest authority on the subject It was reviewed in our columns on April 14th 1923 (p 634) The severe and widespread epidemics of anterior poliomyelitis which occurred in New England furnished Lovett with material for valuable reports on the spread, causation and treatment of that disease, to which he devoted much laborious attention

Dr Lovett was a frequent visitor to Europe, and he missed scarcely any congress or international surgical meeting at which his specialty was discussed He took part in the meeting in London of the International Society of Surgery last year, and he was on his way to this country when he was attacked by his fatal illness He was brought ashore in Liverpool suffering from septic pericarditis and died in the house of his old friend and fellow worker, Sir Robert Jones on July 2nd, in his 65th year He leaves a widow and a married daughter His friends in this country among whom many must have pleasant memories of the charming hospitality of his house in Boston and at Lincoln Massachusetts, will long miss his winning personality and will sympathize sincerely with those whom he has left behind him

A memorial service was held at the Presbyterian Church, Liverpool, on Sunday, July 6th, it was attended by the Vice-Chancellor of the University, Dr Adami, and by a representative gathering of medical men in the city The Rev J S Macdonald gave a brief address in the course of which he alluded to Dr Lovett's life work as an orthopaedic surgeon, and said that although he had died in a strange land he had been among friends, who did for him all that human skill could devise The pulpit was draped with the American and British flags, and from it the U S Consul General, the Hon Horace Lee Washington, read the first lesson, and Sir Robert Jones the second The choir sang J G Whittier's poem "When on my day of life the night is falling" and Tennyson's "Sunset and evening star" The embalmed remains are being conveyed to Boston

We are indebted to Sir Robert Jones for the following tribute to his friend's memory

The death of Professor R W Lovett will be deeply felt by our profession the world over He sailed for this country with his family, intending to enjoy a much needed rest he arrived in Liverpool desperately ill and died in four days No words can convey the pathos and tragedy of so overwhelming a catastrophe He represented the highest ideals of our art and brought to bear upon it the rich powers of a cultured mind An indefatigable worker, a keen and critical observer, he sought and paid unswerving fidelity to truth His thoughts were expressed in clear, incisive English—always the product of analytical study and logical acumen He has enriched the literature of orthopaedic surgery by many classical contributions and his work on scoliosis and infantile paralysis will have a lasting value As professor of orthopaedic surgery at Harvard he showed his great gifts in organization and teaching, and it was always an inspiration to accompany him round his wards His demonstrations were models of lucid and judicious statement, whether in complete agreement with him or not one never found his point of view obscure He was a great teacher who, by the combination of character and ability, secured the affection and respect of the student and he was one of a small band of surgeons who formed a school of disciples His reputation was international and almost at any time distinguished foreign surgeons could be met at his hospitable board Although 64 years of age, his mind was actively productive to the end and showed not the slightest trace of deterioration—even on his death bed he wished to explain a new solution of the problem of scoliosis It may be truly said of him that he died in harness

How difficult it is for a close friend and intimate colleague to strike a personal note under the bewilderment of so recent a remembrance and bereavement! I cannot attempt it He had a heart of priceless gold, only fully revealed to those he loved His end was peaceful, surrounded by his family in a country which he liked best next his own and all that skill and affection could suggest was done by his physicians Our thoughts will be with his wife who nursed him with tender devotion in the home of a friend

CHARLES HUNTER STEWART, M B, D Sc,

Professor of Public Health Edinburgh

PROFESSOR CHARLES HUNTER STEWART, M B, D Sc, F R S Edin, died at his residence in Edinburgh on June 30th He was born in Edinburgh in September, 1857 He first underwent a training in pharmaceutical chemistry and materia medica but soon decided to pursue a career in experimental chemistry He took the degree of B Sc in the University of Edinburgh in 1882 and graduated in medicine in 1884 While an undergraduate he devoted special attention to organic chemistry, and in 1880 was awarded the Hope Prize Scholarship in that subject Upon graduation in medicine he gained the Mackay Smith Scholarship in Chemistry Afterwards he enlarged his knowledge of experimental chemistry by working in various laboratories at Munich, Amsterdam, and Paris On returning to Edinburgh he was appointed assistant to Professor Sir Douglas Maclagan, taking special charge of the Public Health Laboratory at the University which had just been established in connexion with the chair of medical jurisprudence To him were, in the main, committed the equipment and organization of this laboratory and the important work which it immediately began to carry out For several years he was accustomed to spend his annual holiday in visiting and working in various laboratories on the Continent, and in particular he spent a period of study with

Pasteur at the Pasteur Institute in Paris In 1894 he proceeded to the degree of D Sc, choosing chemistry as his special subject A great deal of work in the developing science of hygiene was carried out in his laboratory, and many papers of great importance issued from his pen At the instance of the Corporation of Edinburgh he carried out an inquiry, in 1893, into the state of the air in the board schools and other public buildings, and in 1902 conducted an elaborate research upon the ventilation of the wards and side rooms of the Edinburgh Royal Infirmary Numerous contributions to the transactions of the Royal Society of Edinburgh stand to his credit, for example, one upon variations of the amount of carbonic acid in ground air, and another upon the method of estimation of carbon and nitrogen in potable waters, published in 1894 He was the author of the article "Air" in the *Encyclopaedia Medica*, and made a number of communications to current medical literature, such as an article upon sterilization of milk in the BRITISH MEDICAL JOURNAL of 1896

When the University Court instituted the Bruce and John Usher Chair of Public Health in 1898, Dr Hunter Stewart's work as a hygienist was already well known, and as he had been intimately connected with the chair of medical jurisprudence and public health for fourteen years, the choice of the University Court fell upon him As a lecturer Professor Hunter Stewart possessed a clear and impressive style His keen interest in his subject attracted many graduates to work in his laboratories, and the distinctions which these attained in later life were a great tribute to his teaching and encouragement His keen sense of humour and his skill as a raconteur made him welcome at social gatherings and his devotion to fresh air made walking and cycling his favourite recreations For many years he had been a strong supporter of the Church of Scotland, and an elder in St Cuthbert's Parish Church, Edinburgh In 1888 Professor Hunter Stewart married the eldest daughter of the late Mr George Gordon Gibson, civil engineer of Edinburgh, but she died in 1905 seven years later he married the youngest daughter of the late Mr Robert Summers of Thrush Hill, Stirling, by whom he is survived The interment took place in Warriston Cemetery, Edinburgh on July 2nd, after a service at St Cuthbert's Parish church

The well known Dutch gynaecologist, Dr C H STRATZ, has died recently at the Hague

The Services

ROYAL NAVAL MEDICAL SERVICE

The half yearly promotions by selection to captains to fill vacancies in the various branches of the navy were announced by the Admiralty on June 30th There were two vacancies on the surgeon captains list and Surgeon Commanders Harold J Chater and Robert W G Stewart O B E, M B D P H, were promoted to fill the vacancies The former has been for the last four years one of the assistants to the Medical Director General at the Admiralty, in which position he is to be relieved on promotion by Surgeon Commander Alexander K Smith Shand M B who has been in charge of the South Queensferry Naval Hospital for the last two years The latter has been serving at the Chatham Naval Hospital since April, 1922 on his return from the Mediterranean station

NAVAL MEDICAL COMPASSIONATE FUND

At the quarterly meeting of the directors of the Naval Medical Compassionate Fund held on July 8th when Surgeon Vice Admiral Joseph Chambers C B, C M G Medical Director General of the Navy was in the chair, the sum of £65 was distributed among the several applicants

R A M C WAR MEMORIAL FUND

The General Committee of the Royal Army Medical Corps War Memorial Fund will meet at the War Office (Room 219) on Thursday, July 17th at 4 45 p m, to decide as to the final disposal of the balance of the fund

DEATHS IN THE SERVICES

Colonel S duncan Glenn Allen Army Medical Staff (ret) died suddenly at a public meeting at Folkestone on June 4th He was born in Fort Attock in the Punjab, where his father was then serving in the A M D on March 30th 1863 educated at Wellington College and at St Mary's Hospital and took the M R C S and L R C P Edin in 1884 and the D P H of the London College in 1895 After filling the posts of assistant pathologist and clinical ophthalmic assistant at St Mary's, he entered the army as surgeon on August 1st, 1885, became lieutenant colonel after twenty years' service and full colonel on March 1st 1915 when some eighty lieutenant colonels of the R A M C were promoted to colonels He retired on June 15th, 1919 He served in the Sudan campaign of 1898, receiving the British and Egyptian medals, and in the late war as A D M S of the 27th Division in France he was invalided home and became President of the Travelling Medical Board in the Eastern Command, later on he was A D M S at Shornchiffe After his retirement he settled at Folkestone where he took an active interest in municipal affairs, and in 1921 was elected to the Town Council as one of the candidates put forward by the Ratepayers Association He was appointed a member of the Finance, Watch, and Health Committees of the Town Council and later of the Education Committee He was about to address an education meeting when his sudden death took place In 1900 he married the eldest daughter of the late Colonel H S S Watkins, C B R A, and leaves a widow and two sons—the elder a lieutenant in the Royal Navy the younger in business in London Resolutions of regret for his sudden death, probably accelerated by his strenuous devotion to public work, were passed by the Town Council, the Guardians, the Education Authority, and the Ratepayers' Association The Mayor and Corporation, as well as a large crowd of friends, attended the funeral service at the parish church

Brigade Surgeon James Joseph McCarthy, R A M C (ret) died on March 23rd He was born at Killarney on April 27th 1835, and after graduating as M D in the Queen's University, Ireland, in 1858 entered the army as assistant surgeon sixty six years ago He became surgeon major in 1873 and retired, with an honorary step as brigade surgeon, in 1883 He served on the staff in the China war of 1860 was present at the capture of the Taku Forts and surrender of Pekin and in the operations against the Taeping rebels in 1862, receiving the medal and also the Legion of Honour, and in the Afghan war of 1878 79 when he was mentioned in dispatches and gained the medal From 1866 to 1872 he served as a regimental medical officer in the 5th Foot, the Northumberland Fusiliers

Medical News.

A SPECIAL post graduate course will be given by the North East London Post Graduate College at the Prince of Wales's General Hospital, Tottenham, from July 21st to August 2nd, from 10 30 a m to 5 30 p m each day It will include demonstrations of clinical and laboratory methods, clinques in the wards, out patient demonstrations, and operations Each afternoon at 4 30 there will be a clinical lecture, free to members of the Fellowship of Medicine Luncheon will be obtainable in the neighbourhood, and tea will be provided daily On Saturday mornings, demonstrations will be given at the North Eastern Fever Hospital by Dr Frederic Thomson on the early diagnosis of the infectious fevers The fee for the course is 3 guineas, or 2 guineas for either week A two weeks' course in ophthalmology is being arranged at the Royal Eye Hospital, Southwark, during the latter part of July, fee £1 1s In August, courses in special subjects have been arranged at the Brompton Hospital for Consumption and Diseases of the Chest, at the Queen's Hospital for Children, and at the West End Hospital for Nervous Diseases Further information may be obtained from the Secretary of the Fellowship of Medicine, 1, Wimpole Street, W 1

A NEW operating theatre at the David Lewis Northern Hospital, Liverpool, was formally opened on June 26th The funds for the new addition presented by the sons of the late Alderman Louis S Cohen were received from a legacy left them by their father for charitable purposes In asking Mr Monsarrat to accept the theatre in the name of the trustees and committee of the hospital, Mr Harold Cohen recalled the fact that it was twenty eight years ago since his uncle, the late Mr Benn Levy, provided the funds for the rebuilding of the hospital With the approval of the committee it had been decided to call the new addition the Louis Cohen theatre in memory of their father, who took such great interest in the work of the institution Mr Monsarrat, in accepting the gift, said that the donors had rendered a great service to Liverpool

OWING to the illness of Dr T W Naylor Barlow the annual provincial meeting of the Society of Medical Officers of Health will not be held at Wallasey on July 14th as arranged A short business meeting to deal with matters on the agenda for the annual provincial meeting will be held at 2 30 p m on Friday, July 18th, at the University of Liverpool

A COURSE of thirteen lectures and demonstrations on the treatment of osteo articular and glandular tuberculosis and other subjects connected with practical orthopaedics will be given at the Hôpital Maritime at Berck from July 15th to 30th by M L Sorrel, senior surgeon to the hospital, and his colleagues Further information can be obtained from M Parin, Hopital Maritime, Berck, Pas de Calais

THE centenary of Charcot's birth and the twenty fifth anniversary of the foundation of the Société de Neurologie of Paris will be celebrated in June, 1925, when the following subjects will be discussed (1) Charcot's disease or amyotrophic lateral sclerosis, introduced by Vincenzo Neri of Bologna, who will deal with the clinical aspects, and von Bogaert of Antwerp and I Bertand of Paris, who will discuss the pathological features (2) Migraine introduced by Professor Viggo Christiansen of Copenhagen (clinical aspects) and Pasteur Vallery Radot of Paris (pathological features)

THE first of ten small hospitals, whose erection is being rendered possible through the generosity of the Italian Red Cross, was recently dedicated with much ceremony at Tokyo The type of construction is that found most useful after the Messina earthquake some years ago, and is best adapted to resist earthquakes

THE following medical men have been called to the Bar by the Middle Temple Thomas Bullough Calland M B, Ch B, Isaac Llywelyn Morris, M R C S, George Brebner Scott, M D, C M

THE new buildings of the National Institute for Research in Dairying (University College Reading) at Shinfield will be opened on Saturday, July 19th

THE British Dyestuffs Corporation, Limited, has issued a new price list of its fine chemicals for research work, and of indicators, microscopic stains, and medicinal and photographic chemicals These products are offered in the purest condition possible, but the corporation is also prepared to supply technical qualities, at reduced prices which can be obtained on application to it at 70, Spring Gardens, Manchester

THE *Journal of Nervous and Mental Disease* attains its jubilee this year, and the managing editor, Dr Smith Ely Jelliffe of New York, has prepared an index of its fifty volumes It is an index of subjects, and if one hundred subscribers can be found the price will be fixed at 5 dollars If it be found feasible an index of names will be prepared later Communications may be addressed to Dr Jelliffe at 64, West 56th Street, New York

THE Spanish magazine Laboratorio is organizing an expedition of Spanish doctors to visit Wembley Exhibition during the last fortnight in July It is hoped that visits may be paid to the hospitals and medical institutions of the United Kingdom

THE thirty third French Congress of Surgery will be held in Paris from October 6th to 11th under the presidency of Professor Tuffier, when the following questions will be discussed (1) treatment of simple fractures of the upper extremity of the femur and their remote results, introduced by Dujarier of Paris and Imbert of Marseilles (2) indications for operation in uterine fibroids, introduced by Labey of Paris and Tixier of Lyons, (3) pre and post operative treatment and choice of the anaesthetic in gastro intestinal surgery, introduced by Landret of Lille and Lardennois of Paris Surgeons wishing to take part in the congress should send a request signed by two members of the association to the general secretary, 10, rue de Seine, Paris, before August 1st

A CONFERENCE of modern churchmen will be held at Somerville College and St Hugh's College, Oxford, from August 25th till September 1st, when the subject of the scientific approach to religion will be discussed Full particulars can be obtained from the honorary secretary, Miss Dora Nussey, Westfield, Ilkley

ON the occasion of his recent visit to Berlin Professor Recasens, the well known gynaecologist and dean of the Madrid medical faculty, was elected an honorary member of the Berlin Medical Society

A SECTION has been added to the United States Education Law providing that a specialist shall assist the State medical inspector when he makes eye and ear tests on public school pupils

THE island of Tai Kam, off the shore of Canton, is about to be converted into a leper colony for 2,000 lepers by the Chinese Government The American Mission to Lepers has undertaken the construction of the first sixteen buildings of the leprosarium at a cost of 65,000 dollars

FOUR prizes ranging from 500 to 2,500 lire are offered by the Italian Felix Mantovani Foundation for the four best monographs published in 1924 on the physiology and pathology of infant feeding Three copies of their monographs should be sent by the candidates to the Italian Pediatric Society Hospital A Meyer 115, via Mennelli, Florence, before December 31st, 1924

ON the occasion of Professor Adolf Lorenz's seventieth birthday the *Wiener Medizinische Wochenschrift* dedicated its issue of June 7th to orthopaedic surgery

Letters, Notes, and Answers.

CORRESPONDENTS who wish notice to be taken of their communications should authenticate them with their names—not necessarily for publication.

ALL communications with reference to advertisements as well as orders for copies of the JOURNAL should be addressed to the Financial Secretary and Business Manager, 429 Strand London W C Attention to this request will avoid delay Communications with reference to editorial business should be addressed to the Editor BRITISH MEDICAL JOURNAL 429 Strand W C.2.

THE telephone number of the BRITISH MEDICAL ASSOCIATION and BRITISH MEDICAL JOURNAL is Gerrard 2830 (Internal Exchange) The telegraphic addresses are

EDITOR of the BRITISH MEDICAL JOURNAL, *Aitiology Westrand, London*

FINANCIAL SECRETARY AND BUSINESS MANAGER (Advertisements etc) *Articulate Westrand London.*

MEDICAL SECRETARY *Mediocera Westrand London*

The address of the Irish Office of the British Medical Association is 16 South Frederick Street Dublin (telegrams *Bacillus Dublin* telephone 4737, Dublin) and of the Scottish Office 6 Rutland Square Edinburgh (telegrams *Associate, Edinburgh* telephone 4361 Central)

QUERIES AND ANSWERS.

'Y M J H.—Diphtheria is not a water borne disease It is not therefore likely to be caused by drinking water the spring or source of which arises in a bog

VASOMOTOR RHINITIS

DR P J MCNICHOLAS (Liverpool) asks for advice in the treatment of two cases of vasomotor rhinitis, in both the condition persists winter and summer Each patient is seized immediately after getting up, with nasal irritation followed by violent and prolonged sneezing and a free flow of watery mucus from the nostrils The attack lasts about half an hour Our correspondent supposes that in both cases the nasal mucous membrane is hypersensitive to certain substances and that the condition is similar to bronchial asthma He has prescribed a lotion containing potassium chlorate and bicarbonate sodium biborate and carbolic acid and a mixture containing calcium chloride (gr 15) This treatment has seemed to prolong the intervals but the attacks continue

DIAGNOSIS OF SORE THROAT

'A G N' writes in reply to *Perplexed* (*June 14 h p 1078*) to point out that where several discrete spots —that is exudation of pus from the follicle —are present the case is one of follicular tonsillitis The temperature will usually be from 100° to 102° and there will be a febrile (full bounding) pulse Such a case cannot be mistaken for diphtheria The line of treatment 'A G N' considers should be an antiseptic gargle and a mixture containing sodium salicylate Such cases do not call for antidiphtherial serum though its administration may benefit When in place of spots there is a massed accumulation of purulent looking matter at two or more places on the tonsils patches produced may be due to the running together of pus from adjacent follicles or to early diphtherial infection In the latter alternative the temperature is lower (about 100°) but the pulse rate is out of proportion and the pulse is not full and bounding If the practitioner inclines to a diagnosis of diphtheria he is not 'A G N' holds justified in withholding antidiphtherial serum because if the condition is no diphtheria the injection will do no harm while if it is early injection will render unnecessary large doses later on By taking a smear and staining it the diagnosis can be confirmed in a few minutes If the practitioner instead of doing this himself sends a specimen to the laboratory he should not hesitate to use the serum in the meantime If the patient is sent to hospital the practitioner should write a note stating the quantity of serum already used

'A G N' adds that no protein food should be given during ten or fourteen days as frequently a rash comes on and he has seen some very severe reactions *In his opinion no question of negligence* can arise from the use of serum but in some cases failure to use it might be considered negligence Cases of severe septic throats with gangrenous edges may give rise to difficulty in diagnosis It is to be remembered that a positive result from the examination of the swab is not always to be taken as evidence of diphtheria since a carrier may have tonsillitis

INCOME TAX.

J G S 'has been refused more than two thirds of his motor expenses including cost of renewal of car on the ground apparently that he makes substantial use of the car for private purposes

It would seem that in this connexion as also in connexion with the purchase of private motor cars questions suffering from lack of definite information on with regard to the private use of the car until he is in a position to supply definite data he will find it difficult to displace the assumption We think therefore that he might endeavour to get out mileage figures for the last year or so failing that he should keep careful mileage records (professional and private) in future

LETTERS, NOTES, ETC

ACUTE PUERPERAL INVERSION OF THE UTERUS

WE have received the following further notes upon this subject —

DR W M STEPHENSON, *M C* (Marshfield, Chippenham), writes With regard to Dr Jordan's apparent fear (June 28th, p 1156) that reinverting the uterus may have hastened the collapse of his patient, the following may be of interest I was called to a midwife's case in Coventry in June, 1914, and found her patient unconscious, with acute, complete inversion of the uterus, the placenta being adherent over three fourths of its area, Less than two ounces of blood had been lost The patient died while I was dissolving a strychnine tablet for hypodermic injection—less than half an hour, according to the midwife, after the accident occurred No attempt to reinvert the uterus was made I differ from Dr Jordan in thinking that these cases contrast with war experience Soon after landing in France I saw an officer fall within a few yards of me He died, certainly within five minutes The entrance wound, made by a bullet, was about two inches below the umbilicus and the exit wound was in the left buttock Assuming an important artery had been opened I enlarged the anterior wound to investigate, and found no blood in the abdomen at all Without reciting other cases, further experience proved to me that penetrating wounds in the lower abdomen, even when loss of blood is a negligible *factor, usually cause profound shock, and are often very rapidly* fatal This is not, in my experience, the case with wounds in the upper abdomen Does the peritoneum in the two areas differ in sensitiveness or in nerve supply?

DR ADAM MOSS (West Kirby) writes When in Ladysmith, about 1900, I was summoned to the country, a distance of ten miles, to see a woman who had complete inversion of the uterus after childbirth I was surprised at the ease with which it was reduced The patient made an uninterrupted recovery

DR V S HODSON (Khartoum and Omdurman Civil General Hospitals) writes from London as follows The following instance of native methods in midwifery may be of interest, and is sent as a contrast to the note in the BRITISH MEDICAL JOURNAL, May 31st (p 955) A young native primipara was delivered normally when, after expression of the placenta, with the help, no doubt, of a pull on the cord, complete prolapse of the inverted uterus occurred The midwife took a razor and removed as much of the protruding mass as was possible with one sweep of the weapon, and as much more as she could manage with a second cut The patient died without undue delay

DR H C WILSON (Ramsgate) writes I was called by a midwife to a case she was attending, the child was born, but it was owing to trouble with the placenta that she sent for help I found the patient a primipara, to have the uterus completely inverted, outside the vulva, with placenta at fundus, adherent, there was considerable haemorrhage She was suffering from shock and in a somewhat collapsed state I peeled off the placenta with some difficulty, owing to its adherence, some shreds remaining I scraped away with a sterilized tablespoon I was able to replace the uterus without difficulty as soon as this was done, the patient rallied considerably The puerperium was practically normal I attended her subsequently on the occasion of her next confinement, the birth of the child was comparatively easy, but the placenta was firmly adherent and had to be removed manually

VOICE PRODUCTION

DR LITZJAMES MOLONY (Porlock Somerset) writes The *Morning Post* lately published an appeal from the Archbishops of Canterbury and York for funds to teach voice production and singing to clergymen and divinity students It is a consummation devoutly to be wished, but it is to be hoped that the teaching will be entrusted to men who really know how to train the voice Those of us who heard Sims Reeves and Patti when well past their prime can remember that there was no tremolo or shakiness in their voices Nowadays many of the comparatively young voices that we hear at concerts or by wireless have so much tremolo as to be almost painful to listen to In almost every case this is due to training the voice to sing notes above or below its natural compass, and in all cases beyond its natural strength If we take middle C as representing 512 vibrations in the second, a voice with a tremolo will range between 500 and 520 vibrations in the second Consequently such voices can never be quite true The damage to the throat by faulty teaching has probably something to do with the deafness that seems more frequent with singers than with other people The number of fine voices that are ruined [illegible] his destruction of the singing voice should be [illegible] on of Laryngology and Otology of the British [illegible] might do worse than discuss voice production in all its bearings at the Annual Meeting

THE CAUSATION OF CANCER

DR SIDNEY DAVIES (Buckhurst Hill) writes *It will be of surpassing interest if* Drs Arthur and Sidney Smith *(June 21st, p 1114)* prove to have discovered the specific organism of carcinoma But however valuable such discovery may be it hardly seems likely to help very much in the prevention of this disease—by itself Isolation of the tubercle bacillus has undoubtedly assisted in the cure of consumption, but how much has it done for its prevention? I venture to say that in this respect preventive medicine owes far more to Cobden and Peel than to Koch Cheap food better housing, shorter hours in healthier workshops, the open air cult, etc, have done more—much more —in the war against tubercle than has knowledge of its specific cause It is more than probable that the same will be the case with cancer Its parasite or microbe—if such exists—must be widespread and not easily avoided Like the tubercle bacillus, it is probably innocuous, except under the influence of certain (?) secondary causes These have been proved to be very frequently some kind of irritation The external irritants of the skin are easily determined It remains to discover what are the exciting causes which determine cancer of the breast, uterus, and digestive organs There is some reason to think it may be a product of our excessive and unnatural diet Inquiry on these lines will, I think, prove more profitable than search for a specific cause, however successful the latter may be

COMPLICATIONS OF ACUTE MASTOIDITIS

DR ALEX W STIRLING (Atlanta) writes In the JOURNAL of May 24th (p 909) Dr Drybrough Smith relates some details of a case of paralysis of nerves related to acute mastoiditis This seems to have been an instance of "Gradenigo's triad," of which about a hundred cases have been recorded, it is due to some form of lesion, generally an inflammation of the dura, or of the petrous portion of the bone Recovery seems to take place in about 70 per cent of cases

PERIOSTITIS OF FEMUR SIMULATING SCIATICA

DR D MINTZMAN (London, N) writes I was called in *to see a man, aged 52, who had been confined to bed for six weeks* on account of severe pain in the left thigh and leg He was treated for sciatica and had consulted a physician and two surgeons All agreed to the diagnosis of sciatica The history was that he woke up one night with a sharp pain in his thigh shooting down his leg along the course of the great sciatic nerve Temperature was normal all the time, pulse varied from 75 to 90 When I saw him the posterior aspect of his thigh and leg were blistered by tr iodi fortis I noticed marked wasting of the gluteal muscles Reflexes and sensations were normal There were some limitations of hip movements I found tenderness over the region of the great trochanter of the femur and some fluctuation I called in Mr A S Blundell Bankart and we diagnosed periostitis of upper end of the femur with abscess formation X ray examination confirmed the diagnosis The Wassermann test was negative Mr Bankart operated the following day and withdrew a quantity of pus The patient made an uninterrupted recovery Staphylococcal periostitis is very rare at this age, and one can only explain the case as one of latent infection The patient had had periostitis of the other leg in childhood

CONTROL OF INEBRIATES

DR F S D HOGG, medical superintendent of Dalrymple House, Rickmansworth, in his last annual report makes the following reference to the need for powers of control over inebriates and other narcomaniacs

'I have continued to receive many appeals from various persons for advice as to the possibility of placing drug and drink victims in whom they are interested under control, and have had to explain that, apart from employing financial or domestic pressure, they can do nothing but try persuasion I have, from time to time, drawn attention in my reports to the urgent need of an amendment to the Inebriates Act to allow non criminal inebriates to be compulsorily placed under supervision and treatment These persons may be in a chronic condition of alcoholic or drug poisoning, or periodically unfit for decent society, but so long as they commit no offences against the laws and cannot be certified as insane they are free to continue to degrade and ruin, not only themselves, but their families and dependants Some, of course, are at times in a certifiable condition, but relatives and friends usually hesitate to place the stigma of insanity upon one whose sanity will return in a few hours or days, and especially when the detention can be only for a period too short to be of any permanent benefit Too frequently it is only when such persons have exhausted their resources, have hopelessly lost their positions, and have ruined their constitutions, that they consent, usually at someone else's expense, and often still unwillingly, to place themselves under treatment Had it been possible to have placed them earlier under control they would have stood a good chance of keeping position and fortune and of being useful members of the community"

TONGUE TIE

DR CHARLES J HILL AITKEN (Kilnhurst, near Rotherham) writes I used to wonder why mothers were so keen on having their infants' tongues cut, the more so as I had read in a medical work that the tongue took no part in suckling I persuaded one mother not to have her baby's tongue cut, showing her at the time she consulted me the printed statement in the book Later she asked me to watch her baby suck The tongue was protruded from the mouth and embraced the nipple She told me she had seen kittens' tongues round the nipple when they were sucking Possibly the tongue has nothing to do with sucking, but mothers see the protruding tongue in some cases *and presume protrusion is necessary*

VACANCIES

NOTIFICATIONS of offices vacant in universities, medical colleges, and of vacant resident and other appointments at hospitals will be found at pages 35 38, 39, 40, and 41 of our advertisement columns and advertisements as to partnerships, assistantships, and locumtenencies at pages 36 and 37

A short summary of vacant posts notified in the advertisement columns appears in the *Supplement* at page *16*

EPITOME OF CURRENT MEDICAL LITERATURE

Medicine

23. Serum Therapy in Pneumonia

G LEFFAF and M BRAUN (*Pr Med de l'Est*, April, 1924, p 211) are convinced of the efficacy of serum therapy in pneumonia They record 25 cases treated by a serum of the Pasteur Institute prepared by M Cotoni In 13 lobar pneumonias so treated there was a rapid resolution of fever by crisis in from one to seven days—twice by a single fall of temperature and three times with intermediate rises The ages of the patients ranged from 17 to 63 years, and all were suffering from marked pneumonia, with grave symptoms in most instances In 2 cases the first injection acted almost immediately, in others a steady fall by lysis was observed, whilst in one case although there was no effect on the temperature the general condition strikingly improved The serum injections were instituted from the second to the fifth day In 6 cases of bronchopneumonia rapid lysis was produced in 4 instances generally in four waves, and commenced within thirty six hours in 3 cases Treatment was begun from the second to the sixth day and, in one patient, on the twenty first day Several of these cases were of a profound toxic type—one girl of 17 years seemed moribund when first seen but recovered Four types of reaction to the injections of serum were noted (1) reduction of temperature by crisis in 54 per cent of the cases (2) early fall of temperature by lysis in 30 per cent —these were the earlier observed cases treated with doses obviously too small (3) early fall of temperature followed by defervescence in a series of large oscillations, (4) the general condition markedly improved without obvious effect on the course of the fever It is noted that favourable modification of the symptoms was general and was often even the initial and most striking result observed it occurred within twelve hours in 5 of the cases The authors particularly stress the constancy of the effect on the blood From the first injection the leucocyte count rapidly fell and this steadily continued An accompanying lymphocytosis was regarded as of favourable prognostic import The authors regard the diminution in the number of leucocytes as corresponding to a reduced call on the defensive mechanism of the body They note the apparent discrepancy between the general improvement and the fact that the local lesion remained practically unaltered in the majority of the cases In their series there was only one fatal case and the results in bronchopneumonia were as good as in the lobar type They would employ the treatment in all cases of the former, whilst they do not consider it should be reserved only for very serious cases of the latter and when danger is threatening In their experience immediate reaction is by no means certain in fact, it did not occur till as late as sixty hours in some of the cases A dose of 80 c cm is recommended, or in less severe cases 60 c cm smaller doses do not produce such a rapid fall of temperature Daily injections should be given, according to the effect obtained, sometimes for two or three days If reduction of fever is slow another injection is advised Where relapse occurs after ten days apyrexia further injections have been found to produce a favourable serum reaction without anaphylaxis

24 Insulin Treatment of Diabetes

C VON NOORDEN and S ISAAC (*Klin Woch* April 22nd, 1924, p 720) record further experiences of insulin treatment in diabetes mellitus The most striking results of insulin are to be found in cases of pre coma and commencing diabetic coma By fasting and large doses of alcohol von Noorden was formerly able to check many cases of commencing coma but insulin gives much better results In coma large doses of insulin are required Each dose should usually not exceed 30 units, and three hours should elapse between them Dextrose injections may be required as emergency treatment at any moment, and the practitioner must therefore be prepared The authors have so far lost no case of coma treated with insulin An endeavour should be made to obtain the good results in the usual insulin treatment with small doses As a temporary measure doses of 80 to 120 units daily may be necessary for treatment extending over long periods of time 40 to 60 units An introductory course of dieting with insulin, should be given for three to six weeks to regulate the sugar metabolism then a permanent diet and insulin treatment which the patient can carry out at home In the latter treatment under the influence of insulin as a more liberal diet and a suitable amount of fat may be allowed, the patients increase in weight and general health The insulin injections may be restricted to twice daily In the most severe forms of diabetes it is too early to judge what the value of the insulin treatment will prove to be In cases of medium severity, by careful dietetic treatment a decidedly better condition of metabolism is often produced, or further advance of the disease is checked These are the cases (apart from coma) in which insulin has been of the greatest service Astonishing results are obtained not infrequently by a long continued combination of dietetic and insulin treatment In some cases, though the diet has remained approximately the same as had been taken for months or years, the insulin treatment in spite of persisting glycosuria (scarcely diminished), has improved the general condition and the bodily and mental activity in a surprising manner In mild, and especially in early, cases of diabetes dietetic treatment alone, before its combination with insulin, is to be preferred for a time

25 Mechanism of Peripheral Stasis in Myocardial Insufficiency

E P BOAS and G DOONEIEF (*Arch Intern Med* April 15th, 1924, p 467) have found in several cases of myocardial insufficiency a low capillary blood pressure they therefore disagree with the hypothesis that with failing heart action there is a rise in pressure in the right auricle which impedes the venous flow to the heart, followed by venous engorgement and a rise of venous and capillary blood pressure They agree with Mackenzie that the primary cause of a failing circulation is weakness of the heart muscle Dropsy and venous and hepatic engorgement are usually spoken of as signs of back pressure but they are probably due to an inefficiency in the driving power The blood passes through the capillaries at a slow rate impairs their nutrition, and allows transudation to take place Boas and Dooneief have made repeated observations in 19 patients, noting clinical signs and symptoms and measuring the venous and capillary pressures The former was first estimated by means of a manometer filled with 2 per cent sodium citrate solution connected with the interior of a vein by a needle which remained *in situ* for a considerable time The capillary pressure was measured from thirty to sixty minutes later The authors found that when certain patients showed significant variations of venous pressure there was no constant parallel alteration of the capillary pressure Full details of the observations are given The authors found also that a venous pressure as high as 39 cm of water might have no effect on the capillary pressure Boas has previously reported (ibid , July, 1922) cases of high capillary pressures associated with hypertension the present observations demonstrate conclusively that these high readings were not determined by a high venous pressure

26 Treatment of General Paralysis with Malaria

V ASKGAARD (*Ugeskrift for Laeger*, April 10th, 1924, p 307) has treated with tertian malaria 37 patients suffering from general paralysis, the observation period since the completion of treatment ranging from two months to a year The first two patients were sent from Denmark to Vienna to be inoculated with tertian malaria and the strain thus obtained was kept alive at the St Hans Hospital in Denmark by human passage Sometimes early cases of general paralysis suitable for treatment with malaria were not available and in order that the strain should not die out advanced cases of general paralysis were employed as human thermostats, their presence in the series of treated cases tending to obscure the good results Of the 37 patients 12 were restored to complete fitness for work and showed no serious psychic symptoms, 8 were bettered, becoming partially fit for work 12 were unaffected, 1 became worse 2 died, and 2 were readmitted to hospital By withdrawing from his series the 6 patients who were unsuitable for this treatment and who were given it mainly in order that they might serve as thermostats, the author shows that good results were obtained in about 65 per cent , and that complete fitness for work was restored in over 38 per cent Though he often observed transitory ill effects, such as flagging of the heart partial loss of consciousness, pain in the left side of the body (due, perhaps to enlargement of the spleen), he had to record no death or attack of pneumonia in connexion with this treatment, which he continued in each case until there had been ten bouts of fever, provided the patients were strong enough When they were not he had to be satisfied with

only six to eight bouts He was invariably successful in eradicating the malaria by intermittent treatment with quinine He adds the warning that this treatment should not be attempted till it has been shown that the patient does not suffer from quinine idiosyncrasy

27 Gastro-intestinal Haemorrhages in Tabes

S POLIAKOFF (*Nederl Tydschr v Geneesk*, March 29th, 1924, p 1396), who records an illustrative case, states that only a few examples of gastric crises in tabes associated with haemorrhage have been recorded Neumann in 1915 could find only ten examples in the literature, and even some of these were doubtful As none had received surgical treatment, it could not be ascertained whether an ulcer was not the cause of the gastric crises In view of the fact that tabetic patients have a special tendency to develop gastric ulcer, the diagnosis of gastric crises with haemorrhage should be made with caution As regards rectal crises in tabes, Poliakoff, from a study of the literature and his own observations, distinguishes the following varieties (1) ordinary rectal crises, with pain and tenesmus, (2) parenchymatous haemorrhages, as described by Bensaude and Singer, resulting from syphilitic changes in the blood vessels, and (3) haemorrhagic rectal crises, which are presumably a combination of (1) and (2) While in the cases described by Singer and Bensaude the blood vessels had undergone such extensive changes that normal variations in the blood pressure were sufficient to cause haemorrhage, in Poliakoff's case the high blood pressure was responsible Poliakoff is of opinion that there may be a similar condition in the stomach to that in the rectum, and that syphilitic changes in the blood vessels of the stomach may be the cause of gastric crises, with or without haemorrhages

Surgery.

28 Traumatic Gastric Ulcer

K MATTISSON (*Hygiea*, May 31st, 1924, p 321) has investigated the records of two Swedish hospitals and has found 25 cases, or 1 5 per cent of all the cases of gastric ulcer, with a history of injury occurring directly or a few days before the first appearance of symptoms of gastric ulcer In as many as 12 of these cases the interval between the injury and the symptoms was less than two days, and in most of these cases there was hardly any interval between the two events A classification of the injuries inflicted showed that 6 consisted of blows on the epigastrium, and as many as 14 were straining injuries such as might be caused by lifting or extreme positions of extension or flexion In one case the development of a gastric ulcer was traced to a fish bone The author discusses the possibility of a gastric ulcer having existed in such cases without giving rise to symptoms before an injury, but he does not consider that this explanation is sufficient altogether to discredit the view that an injury may give rise to a gastric ulcer

29 Statistics of Strangulated Hernia

G W ARTHOW (*Zentralbl f Chir*, May 17th, 1924, p 1090) states that from January 1st, 1905, to January 1st, 1914, 1,231 cases of hernia, of which 174 were strangulated, were treated in the hospital at Penza (Russia) In 172 cases the strangulation was unilateral, in one it was bilateral, and in one it occurred first on the right side and a fortnight later on the left side Among 176 cases 131 were inguinal, 33 femoral, 11 umbilical and one was a ventral hernia following operation In 22 the hernia was congenital The ages of the patients ranged from 1 to 45, six were under 10 Peritonitis occurred in 12, usually four or more days after strangulation, in one case peritonitis developed as early as twelve hours after operation 138 patients submitted to operation, the remainder were admitted to hospital moribund or refused operation, and all but one died The results of operation were as follows The mortality in strangulated hernia of twelve hours' duration was 4 9 per cent, of nine days duration 40 per cent, and of longer duration 30 per cent Attempts at taxis before admission to hospital led to the following complications extra and retro peritoneal reduction in 3 cases, reduction of a gangrenous gut in 3, partial reduction with perforation in 2, and damage to the bowel in 2 The author urges that attempts at taxis in strangulated hernia should therefore be avoided except when operation is refused and the strangulation is of recent occurrence Among 138 cases the gut was unaffected in 87, necrosed and grey in places, without thrombosis of the mesenteric vessels, in 20, while changes in the gut and mesenteric thrombosis were found in 27 Post operative complications were as follows suppuration of ligatures in 10 cases, cellulitis in one case, bloody stools in one case, abortion fourteen days after operation in one case, and bronchopneumonia in one case Damage to the vas deferens occurred in two cases, and wounding of the bladder in another two Out of 87 cases in which no special changes in the gut were found at the operation 8 ended fatally, the causes of death being bronchopneumonia, embolism, cardiac failure, or peritonitis Of 16 cases in which intestinal resection was performed 6 were fatal—3 from peritonitis and 3 from progressive cardiac failure In 7 neglected cases of gangrenous hernia and cellulitis of the abdominal wall, of which 5 were fatal, the hernia and gut were merely incised

30 Osteomyelitis of the Ilium in Children

C BEARSE (*Boston Med and Surg Journ*, May 22nd, 1924, p 883) describes this disease in detail Its gravity is due to the proximity of the ilium to the hip joint and peritoneal cavity The causal organism is usually the *Staphylococcus aureus* The onset and reaction range, in suddenness and severity, from an extreme systemic reaction, which may mask the local condition, to a slight limp of insidious appearance Usually there is pain in the region of the hip, fever (104° or more), rigors, vomiting, night cries, local tenderness behind the great trochanter, and leucocytosis In chronic cases the tenderness may be slight, but swelling accompanied by oedema is frequent in the groin both above and below Poupart's ligament There is muscle spasm and pain on moving the hip, but with care mobility of the joint can always be demonstrated, showing that the process is extra articular Malignant disease, scurvy, and meningitis must be excluded Perforation of the bone, which may be multiple, occurs early owing to its being a flat bone, and appears on the skiagram as a punched out area, or a mottled appearance if multiple, in acute cases there is no skiagraphic evidence Treatment takes the form of early operation, which may include trephining of the bone, removal of sequestra, and, if the condition is extensive, partial or total resection of the ilium, followed by free drainage

31 Haematoma of the Rectus Abdominis in Hepatic Disease

P CARNOT (*Paris med*, May 17th, 1924, p 464) states that this condition was first described by Devé of Rouen in 1923 Only five cases were collected by Devé's pupil, Poulain, in his Paris thesis of 1924, to which Carnot adds two of his own The condition, however, is probably more frequent than the small number of cases published would suggest The diagnosis is based partly on the fact that the tumour does not move on respiration, but moves on contraction of the muscles of the abdominal wall A more certain sign is the late appearance of a subcutaneous ecchymosis at the lower part of the tumour In Carnot's first case the haematoma appeared in association with other haemorrhages in the last stage of cirrhosis of the liver The second case occurred in a man, aged 50, who was suddenly seized with violent pain in the right hypogastric region after an attack of coughing A large tumour rapidly developed beneath the false ribs on the right side The diagnosis of hydatid cyst or gumma was first considered, but as the tumour was superficial, did not follow the respiratory movements, and took part in the movements of the abdominal wall, haematoma of the rectus was suspected This diagnosis was confirmed the following day by the appearance of an ecchymotic area at the lower end of the tumour The swelling gradually subsided Since then the patient has had some slight digestive and hepatic disturbance and still has a subicteric tint of the conjunctivae

32 Injections of Defibrinated Blood in Surgical Tuberculosis

E KISCH (*Deut med Woch*, May 23rd, 1924, p 668) reviews the experiences of the 250 bed hospital at Hohenlychen, near Berlin, during the first ten years of its existence This hospital was established in the lowlands by Professor Bier, who, in addition to practising passive congestion, immobilization, actinotherapy, and other well known procedures in surgical tuberculosis, has found the intravenous injection of defibrinated blood remarkably beneficial The author, who is in charge of this hospital, states that the donors of this blood were sheep, cattle, horses, and pigs, the blood of the last named provoking the severest reaction, and that of sheep the mildest This consisted of fever up to 40° C, rigors, pain in the small of the back and head, prostration, flushing of the face, nausea, vomiting, cyanosis, and a rash Collapse rarely occurred and was never alarming The dose varied from 1 to 5 c cm Six injections were given to each patient, who, in the course of this treatment, received blood from several different animals Altogether 47 patients were thus treated, the indications for the treatment being great and persistent loss of weight and other signs of severe tuberculosis Except in the most hopeless cases this treatment not only arrested the loss of weight, but turned the scales so much in the patient's favour that the average gain of weight was between 11 and 12 lb

Ophthalmology

33 Observation on Phaco anaphylactic Endophthalmitis

A N LEMOINE and A E MACDONALD (*Arch of Ophthalmol*, March, 1924 p 101) report on 168 patients whom they tested intradermally for hypersensitiveness to lens protein It has been shown, they say, that about 8 per cent of persons are hypersensitive to lens protein, and the importance of this observation is most marked in cases of traumatic rupture of the lens and in cases of immature cataract In these persons who are hypersensitive to lens protein the presence of lens matter free in the anterior chamber will produce an inflammatory reaction which may destroy the eye this inflammation is called phaco anaphylactic endophthalmitis It is possible to discover this hypersensitiveness, and also its degree, by intradermal tests It has been found that the lens protein of pig's eyes will act in the same way as human lens protein the intradermal injection of pig's lens protein will produce a local reaction at the site of injection in hypersensitive persons, and by varying the strength of the protein injected the relative hypersensitiveness can be determined The degree having been determined it is possible, by graduated injections of pig's lens protein, to overcome this hypersensitiveness This observation the authors suggest, will probably be of great service in dealing with immature cataracts, as in those cases a large amount of lens matter is often unavoidably left behind and in hypersensitive eyes will cause trouble It should be useful also in traumatic cases in which the lens capsule is opened and lens matter extruded into the anterior chamber

34 Conditions Modifying Refraction

WM CAMPBELL POSEY (*Amer Journ Ophthalmol*, April 1924, p 270) reviews certain extraneous factors which may have an important bearing on the refraction of the eye, but which are not sufficiently stressed in textbooks Inflammatory swellings in the lids and conjunctiva, and abnormal conditions in the orbit may by pressure cause much alteration in the refractive state of the eye Chronic thickening of the retrotarsal fold, enlarged conjunctival follicles and deposits of lime salts in the conjunctiva come into this category A pterygium may cause much distortion of the cornea Growths of the lids the most common being chalazia, often produce a marked *degree of astigmatism, and after surgical treatment of the* chalazion this astigmatism disappears Pressure from an ethmoidal mucocele, from intraorbital growths and from tumours of the optic nerve may produce increasing hyper *metropia The ciliary muscle is exceedingly sensitive to* toxic influences, and the amplitude of accommodation may be much diminished in toxic conditions Vascular hypertension and arterio-sclerosis have been noted as causes of ciliary weakness A change in the accommodation occurs in the prodromal stage of glaucoma, and the effects of disordered sugar metabolism upon the accommodation and refractive state of the eye are perhaps even more generally known

35 Action of the Sympathetic on the Ocular Blood Vessels

F H ADLER, E M LANDIS and C L JACKSON (*Arch of Ophthalmol*, May, 1924 p 239) describe experiments upon the action of the sympathetic on the intraocular pressure These experiments have particular interest in that it is held by some that the sympathetic is intimately connected with the etiology of glaucoma Normally, when there is a slow rise of blood pressure the intraocular pressure also rises in proportion This increase of intraocular pressure is, however, controlled normally by a local vaso constriction of the ocular blood vessels by means of the cervical sympathetic—a protective mechanism safeguarding the eye from sudden rises of intraocular pressure When the cervical sympathetic is cut no effect is seen on the intraocular pressure at normal blood pressures but as the general pressure rises the intraocular pressure goes up much higher than when the sympathetic is intact These experiments therefore afford experimental proof that there is in the eye a mechanism which can control changes in the general blood pressure as affecting the intraocular pressure, and that this mechanism is innervated by the sympathetic

36 Unilateral Paralysis of Accommodation

H J FLIERINGA (*Nederl Tijdschr v Geneesk*, March 22nd, 1924, p 1302) records a case in a girl, aged 10 years who had been sent to him because her writing at school had suddenly changed for the worse On examination she was found to have paralysis of accommodation in the right eye, while the left was normal She had had a sore throat about six weeks previously Although a throat culture taken at that time and again by Flieringa proved negative, it was probable that the child had had a mild attack of diphtheria, especially as another child living in the neighbourhood developed bilateral paralysis of accommodation following sore throat six weeks previously Moreover, no other cause could be found to account for the condition, such as influenza, diabetes or lethargic encephalitis Although post diphtheritic paralysis of accommodation, as a rule, is not complete, it is usually the same in both eyes Among 100 cases reported by Pemick there was not a single example of unilateral involvement On the other hand difference in the action of the diphtheria toxin on the two eyes is shown by the case reported by Wiegmann of a boy, aged 12, in whom paralysis of accommodation in the right eye persisted for three years, whereas that in the left eye cleared up much earlier The question why the right eye alone was affected in Flieringa's case is difficult to answer According to Edinger's theory toxic paralysis is most likely to occur in the nervous area which does most work, but this theory is not applicable to the eyes, which are both accommodated to the same extent Recovery took place in about eight weeks without special treatment, beyond forbidding the patient to write

Obstetrics and Gynaecology.

37 Paroxysmal Hypertension following Eclampsia.

J HEITZ (*Arch Mal du Cœur, des Vaisseaux et du Sang* May, 1924 p 295) states that after eclampsia there may occur every stage between permanent vascular hypertension and typical "hypertensive crises" in which the blood pressure rises abruptly and returns to the normal at the end of the crisis The majority of such crises spring from a more or less definite condition of hypertension, and the paroxysm frequently coincides with some attack of severe pain, particularly angina pectoris Several French and English authors have reported variations of blood pressure, sometimes amounting to 60–80 mm, coinciding with the crisis and terminating with it, and H Paillard has recently recorded eight cases of this kind in the course of renal colic Paroxysmal hypertension has also been observed in biliary colic, and in the gastric crises of tabes dorsalis In pregnancy associated with albuminuria or toxaemia, eclampsia is always preceded by a sudden rise of blood pressure If the patient survives, the blood pressure falls to normal more or less rapidly in the majority of cases The patients should be kept under observation, however, since it is often found that ten or fifteen years afterwards there is permanent hypertension with or without albuminuria and evidence of renal disease It is not so well known that patients who have survived eclampsia, and who exhibit symptoms of hypertension after apparent cure, remain subject to sudden crises of hypertension resembling those of chronic lead poisoning in their sudden onset and the coexistence of secondary cerebral lesions Heitz records two such cases (1) A woman of 47 had suffered from eclampsia in two pregnancies at the ages of 32 and 33, and after the latter there was slight intermittent albuminuria Some fourteen years later she had two attacks of severe headache and right hemiparesis with partial aphasia The systolic pressure varied from 160 to 180 mm of mercury Heitz saw her while she was taking a course of baths at Royat, and a few days later she had a sudden attack of severe headache, followed by vomiting Her systolic blood pressure was 250 mm and diastolic 130 mm The urine contained only a trace of albumin In a week her blood pressure fell to 160–110 mm, and there was no increase of the old hemiparesis (2) A woman, aged 50, had had eclampsia in her first pregnancy at 27 years and several subsequent pregnancies with albuminuria but without eclampsia On arrival at Royat her blood pressure was 225–130 mm of mercury, but next day it had fallen to 160–85 mm Eleven days later she felt fatigued and in the night was awakened by violent headache She vomited after breakfast and the headache persisted with tinnitus and vertigo The blood pressure was 220–120 mm The urine, as usual contained a trace of albumin Five days later the blood pressure had fallen to 170–105 mm

38 Incarcerated Retroflexion of the Gravid Uterus with Rupture of the Bladder

T S KLOPS (*Nederl Tijdschr v Geneesk*, May 3rd, 1924, p 1942), who reviews the literature, including the case reported by Flower (JOURNAL, August 2nd, 191–), records a case in a Javanese woman, aged 35, the mother of two children who had incarceration of the uterus in the fourth month of pregnancy The remarkable features of the case were as follows (1) There was complete retention of urine for about five days without overflow or signs of uræmia (2) The anterior incurvation of the tip of the coccyx was the apparent cause of the impossibility of spontaneous reduction of the retroflexed uterus (3) The extraordinarily benign

course of the peritonitis after intraperitoneal rupture of the bladder, although the abdomen was full of infected urine for at least twelve hours That the urine was infected was to be presumed from the fact that the bladder showed an area of gangrene At the operation the retroflexion was reduced, the rupture of the bladder sutured, and the abdominal cavity drained Expulsion of a macerated foetus took place the next day The patient was discharged completely recovered three weeks after the operation Klots attributes the high mortality from intraperitoneal rupture of the bladder to operation being performed too late

39 The Menorrhagias of Puberty

J DE TORRE BLANCO (*Arch de med, cir y esp*, April 12th, 1924, p 95) states that disturbance of the menstrual function, both in rhythm and quantity, especially in the form of menorrhagia, often occurs soon after menstruation has commenced in the growing girl The cause of the menorrhagia is, he considers, to be found in endocrine disturbance, and the situation of the endocrine lesion varies in different cases In some patients there is a thyroid insufficiency, which responds readily to treatment by thyroidin, while in others there are symptoms of defective pituitary function or of a pluriglandular syndrome The majority of cases, he finds, are due to ovarian disturbance, and in particular to lutein insufficiency In such cases ergot and its derivatives are useless, and the menorrhagia should be treated by lutein opotherapy

40 Leiomyoma of the Cervix

D NAPOLEÃO (*Ann Paul de med e cir*, April, 1924, p 73) states that the black race and mulattoes are more predisposed to fibroids than the white race According to Fernando Vaz, in a maternity hospital at Rio among 746 women examined in 1915, 98 had fibroids, among 766 in 1916 there were 57 cases, and in 1917 among 865 women 39 cases so that the average for the three years was 9 3 per cent Fibroids of the cervix are rare Anatomically they may be divided into submucous, interstitial, and intraligamental varieties Clinically they may be grouped as supra and infra vaginal Napoleão records an illustrative case in a white woman, aged 40, the mother of five children, who had suffered from almost daily metrorrhagia and irregular menstruation for the last four years The case was remarkable for the large size of the tumour, which measured 12 by 15 by 22 cm, and weighed 1 420 grams, and for its spontaneous expulsion In large fibroids spontaneous expulsion rarely takes place, and practically only when the tumour is contained in the uterus which, simulated by its contents, enters into contractions and gives birth, as it were, to the fibroid The expulsion of the tumour in the present case is probably to be attributed to the efforts which the patient made to expel it and to the lack of resistance offered by the flaccid pelvic floor as the result of multiparity Histological examination showed that the growth was a submucous leiomyoma of the cervix

Pathology.

41 Transmission of Infection in Tonsillitis

A L BLOOMFIELD and A R FELTY (*Bull Johns Hopkins Hosp*, April, 1924, p 115) have made experiments to ascertain the manner in which the streptococci associated with acute tonsillitis are transmitted from one patient to another Cultures taken from an individual suffering from acute tonsillitis showed that the haemolytic streptococci were confined to the region of the pharynx, cultures from the lips, tongue, and buccal mucosa gave negative results, suggesting that even in the acute stage of the infection the mouth itself did not become contaminated This was tested by smearing the growth from an agar slant of *B coli* over the posterior part of the tongue, palate, and tonsils of a healthy subject and instructing him to talk, cough, or sneeze, while plates of 25 per cent bile agar were held for varying periods of time at different distances in front of his mouth The results showed that it was quite unusual for positive cultures to be obtained in these circumstances, though cultures made direct from the site of inoculation were uniformly positive, those made even from the cough spray were generally negative In other words, bacteria which are implanted on the posterior portion of the buccal cavity are not expelled in droplets Similar experiments were then conducted on patients with acute tonsillitis, except that no artificial inoculation was performed Plates of blood agar were held in front of the mouth while the patient talked, sneezed, or coughed and the number of haemolytic colonies counted after incubation Here again it was found that it was unusual for streptococci to be expelled by these respiratory manœuvres The question arose as to the possibility of the organisms being brought forward by hawking and expectoration Experiments made to test this point showed that though large numbers of streptococci were found in the expectorated material, there was very little contamination of the anterior part of the mouth It was clear, therefore, that droplet infection could play but little part in the spread of infection in tonsillitis Even objects, such as wooden spatulae, placed in the mouth after the patient had hawked and expectorated were only occasionally and quite lightly contaminated The conclusion was drawn that the common mode of infection in this disease is by direct contact with the patient or with freshly contaminated objects

42 Plasma Protein Concentration in Old Age

THE retarding effect of the blood plasma of an aged animal on the proliferation of fibroblasts is known to be due to a diminution of certain activating substances, and to a modification in the proteins which renders them more inhibitory It is probable that the increase in the quantity of these proteins and the change in their quality react unfavourably on the tissues, which in their turn secrete a plasma of gradually altering composition There is an intimate relationship between the activity of the tissues and the composition of the plasma which they secrete It is justifiable to suppose that if the quantity of the proteins in the plasma were diminished —and in consequence the amount of inhibitory substances contained in it—the tissues would regain some of their lost activity, and would secrete a plasma containing a lower proportion of inhibitory substances In this case the process of senescence would be to a certain extent reversible To test this hypothesis A CARREL (*C R Soc de Biologie*, April 18th, 1924, p 1005) has carried out certain experiments on old dogs, the general purpose of which was to diminish the protein content of their plasma and to maintain it in this diminished state for considerable periods of time The dogs, aged from 8 to 14 years, were bled from the carotid artery, about 40 per cent of the total blood being removed The plasma was separated and replaced by an equivalent amount of Tyrode's solution, which was then injected with the blood cells into the animal again As the proteins regenerate themselves in about twelve days, the operation had to be repeated at frequent intervals to prevent the titre of the inhibitory substances in the plasma from rising to normal If the operation was repeated too often the plasma became too low in proteins and the animal died The experiments with the other animals were more successful, but it was not found possible to prevent a return of the protein content to its former figure The inhibitory action of the plasma on the growth of fibroblasts was tested, but no appreciable change occurred The plasma of an old animal regenerates itself with the same characteristic properties that it possessed previously It is clear, therefore, that the inhibitory substances contained are not the result of the progressive accumulation of toxic products in the circulation, but are secreted continually by the tissues Carrel concludes that the duration of the experiments was too short to allow of an alteration in the tissues consequent on the change in their environment

43 Shortening of the Coagulation Time of the Blood

N ROSENTHAL and G BAEHR (*Arch Int Med*, May, 1924, p 535) investigated the shortening of the coagulation time of the blood after intravenous administration of sodium citrate, and conclude that it is due to the blood platelets being withdrawn from the circulation and destroyed by the spleen, or elsewhere, with a gradual liberation of their thromboplastic contents into the blood From 3 to 6 c cm of a 30 per cent solution of sodium citrate (3 to 6 grams) is the usual dose, given intravenously very slowly over a period of fifteen minutes By shortening the coagulation time it has a marked effect in arresting secondary haemorrhage in gastric ulcer, phthisis, cerebral haemorrhage, typhoid, teeth extraction, and tonsillectomy The increase in cytozyme and the shortening in coagulation time follow the diminution in platelets, and the maximum shortening in coagulation time occurs some time after the numbers of platelets have become normal, and lasts for hours The characteristic shortening in coagulation time does not occur in animals (ducks) in whose blood there are only a few platelets, neither does it occur in haemorrhagic blood diseases in which there is a numerical deficiency in platelets Consequently the intravenous administration of sodium citrate is contraindicated in purpura and haemophilia since by causing a prolongation of the coagulation time in these diseases an increased tendency to bleeding occurs Too hasty injection is dangerous, but this can be guarded against by injecting continuously over at least fifteen minutes, using a well diluted citrate solution, its administration in from 200 to 500 c cm of blood in the form of the citrate transfusion of Lewisohn is the best No tendency to intravascular thrombosis has ever been observed during repeated administrations over a period of four years

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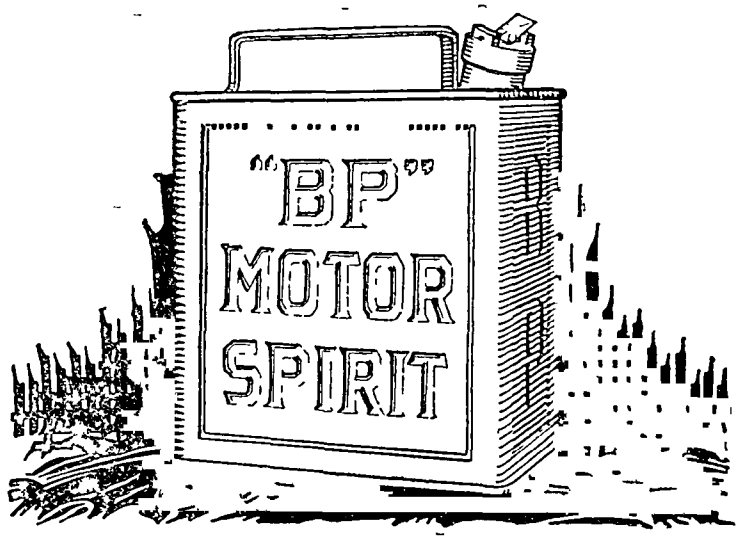
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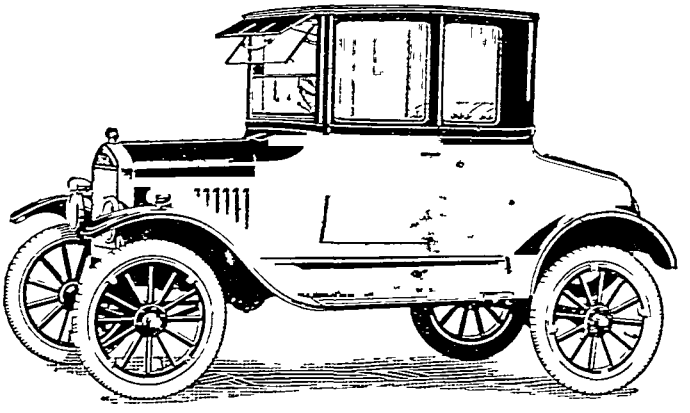
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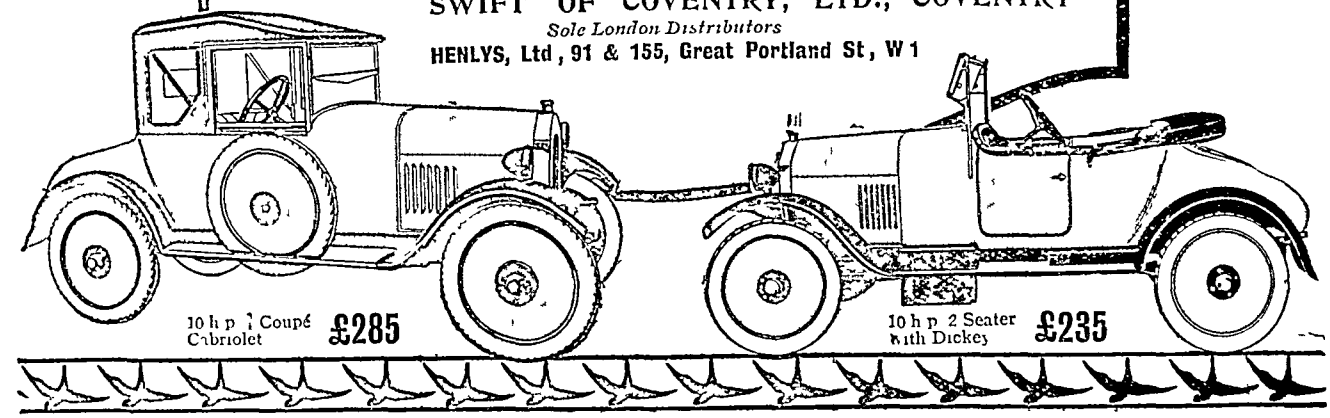
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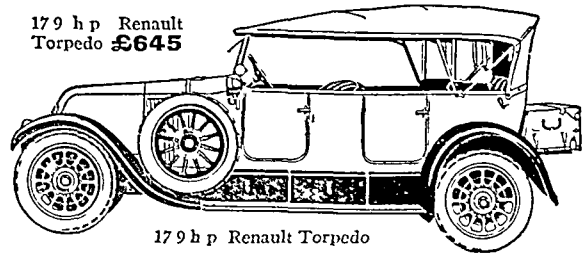
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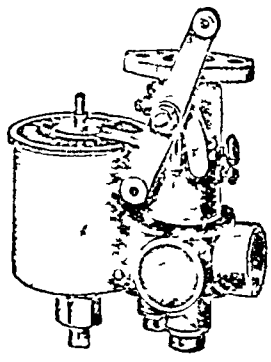
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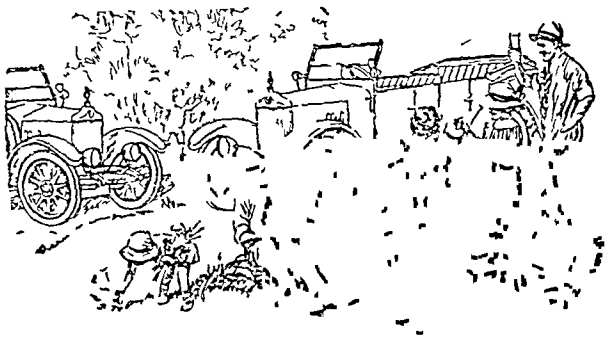
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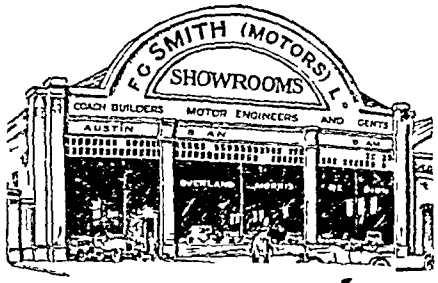


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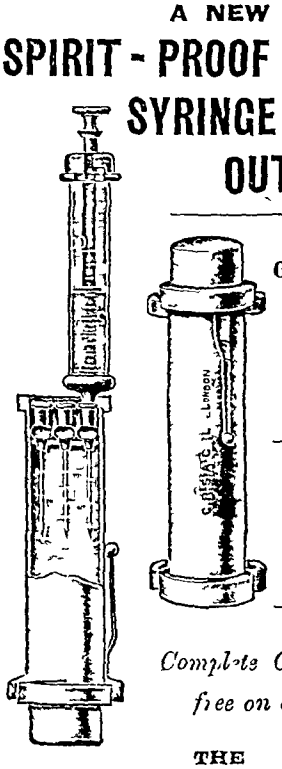
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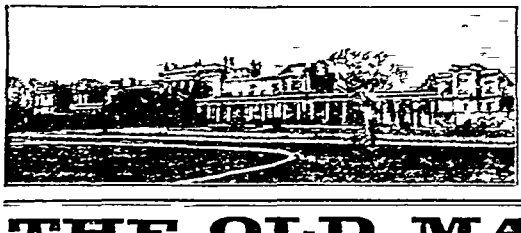
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Established 1898 for the treatment of Tuberculosis Radiators and Electric Light throughout. Hot and cold water and shower bath in nearly all rooms Powerful X ray Plant Full Nursing Staff All forms of treatment available Farm of 120 acres, including 40 acres of wood Herd of Tuberculin-tested Guernsey cows kept

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Accommodation for 100 Patients.

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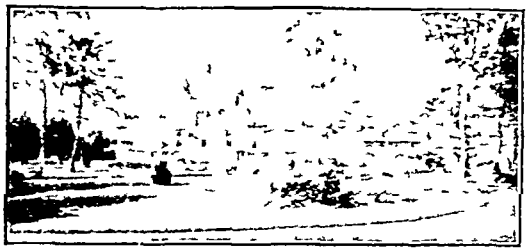
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Special Treatment by artificial **Pneumothorax** (with X-ray control), the various **Tuberculins,** and Autogenous **Vaccines** etc is available without extra charge.



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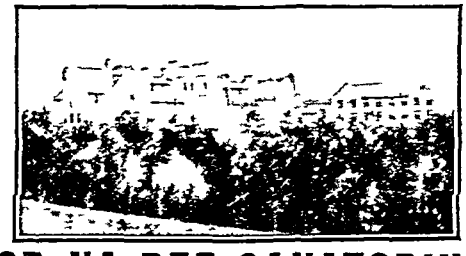
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Physician

Dr IAN STRUTHERS STEWART

Assistant Physician Dr J C LORRAINE

For particulars apply SECRETARY



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Senior Physician Dr J M JOHNSTON

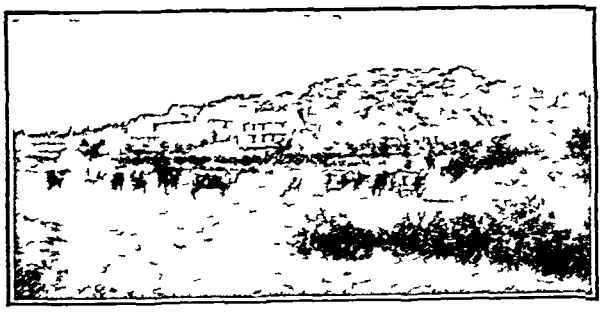
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Classes in ANATOMY and PHYSIOLOGY will commence on July 14th and 17th respectively. There will be 4 weeks' vacation (August–September), after which the classes will resume and continue until the date of the Examination

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Members of the Class will be able to use the Dissecting Room for the purpose of reading with dissected "parts" at any time during school hours

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Intending candidates are reminded that it is desirable to join these classes at the commencement of the Course if possible

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An INTENSIVE COURSE extending over a fortnight, and comprising Lectures, Demonstrations, and Clinical Work, will commence on July 21st Those proposing to take the Course should send in their names to the Secretary of the Fellowship of Medicine, 1 Wimpole Street W 1., if possible by Friday July 18th

The Principal (Newnham
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Reference kindly permitted to—
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Applications are invited from duly qualified medical men of not more than 35 years of age, who have had the requisite experience for the Chair of Obstetrics and Gynæcology endowed by the Rockefeller Foundation at the University of Hong Kong
The salary is £800 per annum rising by annual increments of £25 to £1,000 per annum payable while in the Colony at 2 to the Dollar In addition, an unfurnished house or house allowance of $150 per mensem will be provided The University will also provide a first-class passage (P and O) for the successful candidate and his wife if married from London to Hong Kong, and will pay half sterling salary during the voyage to Hong Kong Similar passages will be provided on the termination of the appointment. The Professor will be allowed to take part in the University Superannuation scheme A limited consulting practice is permitted. Nine months leave will be granted after 4 years service. A probationary period of three years will be required before permanent appointment. The elected candidate will not be required to arrive in Hong Kong until early in 1925
Applications for the post should be addressed to the Chief Medical Officer Ministry of Health Whitehall London S W.1 (from whom further details may be obtained) before July 25th 1924

The Middlesex Hospital

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Applications are invited for the above part time Scholarship. Applicants must have medical qualification and may specify a line of investigation they wish to pursue.
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Applications should be sent to the Secretary to Council not later than July 21st.

London Hospital E1
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Applicants, who must be fully qualified, should send in their applications not later than first post on Monday July 14th

Medical Department

SANITARY BRANCH.

AMENDED NOTICE.

Applications are invited from Ceylonese who possess British qualifications in Medicine and Public Health for appointment as MEDICAL OFFICERS OF HEALTH
There are two grades in the service and the emoluments and qualifications necessary are as follow —

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Qualification —D P H. or B.Sc. (Public Health) of any British University or other Examining Body in the United Kingdom.
Emoluments —£500—£775 per annum by eight annual increments of £30 and one of £35 and Motor Transport allowance of Rs.85 Rs.70 or Rs.60 per mensem accordingly to weight of car house allowance according to station for officers not in occupation of Government quarters. Officers occupying Government quarters will be charged 10% of their salaries as house rent, if stationed in Colombo Kandy or Nuwara Eliya and 6% if stationed elsewhere.
Efficiency Bar —Before £650

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Same allowance as in Grade I.
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RESIDENT SURGICAL OFFICER required at an early date. Salary £300—£350 The Hospital is an active surgical centre, and the post offers opportunity for much major surgery
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New Sussex Hospital,
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Wanted—Well qualified ASSISTANT with view to early Partnership (Senior partner retiring) Old established Practice, over £4 000 per annum (private and panel) Considerable scope for increase Particularly nice town (with good educational facilities) within 100 miles London Exceptional opportunity for energetic man with necessary capital—Address stating full particulars, age qualifications experience etc, and enclosing references and copies of testimonials No 3494 BRIT MED JOURN Office 429 Strand, W C 2

Wanted by large Company for their Eastern Staff an unmarried MEDICAL OFFICER age not exceeding 35 years Liberal terms will offered to suitable Candidates Full particulars of school and college training and hospital and other experience, together with professional references should in the first instance be sent to Box No 418 SHAW & BLAKE 8, Bell Yard, Temple Bar W C 2

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Assistantship or long Locum TENENS wanted by M B aged 29 keen worker Excellent references Free at present—Address No 3476 BRITISH MEDICAL JOURNAL Office 429 Strand W C 2

Experienced Medical Officer, has own Practice with panel desires LIGHT WORK from July 12th and September Nominal Fee—Address No 3527 BRITISH MEDICAL JOURNAL Office 429 Strand, W C 2

Secretary (lady), good Shorthand typist accurate at figures, experience in Military Hospital requires WORK Mornings only or what offers—Address No 3492 BRITISH MEDICAL JOURNAL Office 429 Strand, W C 2

Can any doctor interested in Mental Cases OFFER EMPLOYMENT (e g, gardening store-keeping) AND TREATMENT to man between 35 and 40? Muscularly strong suffering from severe depression—Further particulars available—Add No 3287 B M J, 429, Strand W C

Gentleman, well-qualified, reading F R C S wishes PART TIME Employment ASSISTANTSHIP, etc Sept and onwards London Ex Casualty Officer H S H P, Res Anæsthetist Priv and panel practice (London Teaching Hosp)—Add, No 3482, B M J, Strand

M B, Ch B, aged 27, married, desires outdoor ASSISTANTSHIP Experience in private and panel Practice Hospital appts Good anæsthetist minor operator, and accoucheur Well received by patients Excellent testimonials and refs—Add, No 3493 B M J 429 Strand, W C

Medical Officer required for Holiday Camp on CALDEY ISLAND of Boys of Besford Court Mental Welfare Hospital for Children Worcestershire Duties nominal Return travelling expenses and hospitality Would suit a young, single practitioner desiring a pleasant holiday—Apply Rt Rev MONSIGNOR NEWSOME Besford Court Worcestershire

Nurse, Missionary—Qualified Nurse holding C M B certificate wanted for CHARTERIS MEMORIAL HOSPITAL, Guild Mission, Kalimpong India Hill Station excellent climate Applications, with testimonials, to Mr GEO MCALPINE, 22, Queen Street Edinburgh

Required by Medical Woman ASSISTANTSHIP or LOCUM Ex resident London Teaching Hosp Special exp, midwifery, gynæcol V D, children and anæsthetics Willing to do night work Small salary for good exp in G P Free Sept 1st—Add, No 3468 B M J, Strand

Radiographer, fully trained, DESIRES POST, preferably Scotland Testimonials—Write first Box H S, at SCRIPPS'S Advertising Offices, 13, South Molton Street, W 1

Urgent—Wanted Assistantship, view to Partnership, by M B, D P H aged 36 married, abstainer Good general experience special T B anæsthet and mental Excel testimonials; keen healthy Well recd Irish C of E Free now—Address No 3486 B M J 429, Strand

Woman Doctor, experienced, wishes AFTERNOON WORK in London—Address No 3526 BRITISH MEDICAL JOURNAL Office 429, Strand, W C 2

Dispenser–Book-keeper, &c (Male), late R A M C, requires RE ENGAGEMENT 30 years civil and military experience Good testimonials—J L DRIVER, 9 Leigham Court Drive Leigh on Sea

Dispenser–Book-keeper wanted Lancashire—House, coal light State wages References required—Address, No 3461, BRITISH MEDICAL JOURNAL Office, 429, Strand, W C 2

Dispenser - Chauffeur (Lady), wanted in Country Practice Apply, stating age salary and experience, to Dr HAMILTON, Stratton St Margaret, Swindon

Dispenser (lady), Hall Cert, desires POSITION, Doctor or Institution preferred experienced Excellent recent testimonials—Address No 3472 BRITISH MEDICAL JOURNAL Office 429 Strand W C 2

Doctors requiring Lady DISPENSERS should write to Mr J E WALDEN Westminster College 112 St George's Road S E 1 (only address) No fees to Doctors 25 years experience Daughters and other relatives of medical men always in training

Qualified Dispenser, thoroughly experienced in Surgery routine and Secretarial work seeks POST Excellent references Drive car if required—Miss PILGRIM, 41 Barkston Gardens S W 5

As Locum G P 15 years' experience locum work disengaged August Recent reliability references Fees by arrangement—Address Locum c/o Dr MANNING Croft End, Kendal, Westmorland

Locum or Assistantship wanted by M B Ch B, woman 26, experienced in general practice sanatorium and midwifery—Free August 9th—Address No 3490, BRITISH MEDICAL JOURNAL Office, 429 Strand, W C

LOCUM TENENS
PROVIDED
Without fee to Principals
Apply to
Mr. W. S. ATKINS
(Late of ARNOLD & SONS, London)
43, BEDFORD STREET, STRAND, W.C.2.
Telegraphic Address:
"Positions Westrand, London."
Telephone Regent 229

Wanted a reliable Locum, for private and panel Practice in nice district (London) No midwifery very little night work Some experience in panel work necessary Reference and essential particulars—Address No 3496 BRITISH MEDICAL JOURNAL Office, 429, Strand W C

Wanted by experienced M B, aged 32 years, two weeks hospitality LOCUM (wife and one child 5 years) London or near, 2 weeks in August Anxious to acquire soon, practice with good panel, London or near—Address, No 3484, BRIT MED JOUR 429, Strand W C 2

Hospitality Locum—City practitioner would undertake work of country practice, preferably near golf links, for two or three weeks on or about July 25th No fee or expenses in return for hospitality to Self Wife, and two daughters (ages 15 16) Refs given—Apply, M R C S, L R C P, 30 Bath Row, Birmingham

Hospitality Locum offered to doctor wife and one child, end of July Country near London Work average two hours daily No mids Cyclist or petrol for own car—Address No 3491 BRITISH MEDICAL JOURNAL Office 429 Strand W C 2

Hospitality — Medical man, aged 32 with own Practice and experienced in locums, requires LOCUM with hospitality for small family and part fee during August, preferably near Sea Could bring own car—Address No 3466 BRIT MED JOUR, Office 429 Strand W C 2

Locum wanted — Use of furnished House Seaside (Kent) August offered to Family Medical Man in return for services Light duties—Address No 3528 BRITISH MEDICAL JOURNAL Office 429 Strand W C

Locum—Doctor retired from own Practice free from now to July 30th and after August 16th Fees by arrangement according to work minimum 5 guineas per week and 3rd return from London—Dr BAKER 18, Grosvenor Avenue E Sheen, S W 14 Phone Putney 1613

Locum desired, 1st week August in or near London preferred Woman, in general practice, is free July 31st—August 8th Good dispenser Midwifery—Address No 3471, BRITISH MEDICAL JOURNAL Office 429, Strand W C

Woman Graduate is at liberty to do LOCUM WORK Experienced in general practice Highest testimonials—Address, No 3470 BRITISH MEDICAL JOURNAL Office 429 Strand, W C 2

FOR LOCUM TENENS APPLY TO
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Wanted, at once, Partner, in growing town in North Wales Very good opening Panel over 500 Poor Law appointments Must be good at Obstetrics—Address No 3485, BRITISH MEDICAL JOURNAL Office, 429 Strand W C

Edinburgh (near) — Wanted PARTNER one of three in old and extensive Practice present share about £1,250 with good prospects premium £1 500 Must be qualified man about 40 with good experience State age and personal and professional qualifications—Address No 3473, BRIT MED JOUR Office, 429, Strand, W C

LANCS. Town —Partnership Old es abl hed Practice Senior re iring Good hou e garage &c £85 Receipts £2 400 Panel 2 140 Population 13 000 Oppo ition poor Price half share £1,800 part deferred —MANCHESTER MEDICAL AND SCHOLASTIC AS OCIATION 8 King Street

MB, MRCS, desires PARTNERSHIP country practice share abou £1,000 afte a st ant ship of abou a year £800 down at end of year rest ins alments Fully experience l panel and private —Addres No 8525, BRIT MED JOUR. Office 4 9 Strand W C

Partnership, in country or semi-country dis ri t, required by M R C S L R C P Lond Near town pre erred Share wo th £1 000 p.a. at least Short preliminary t is ant ship Ex H S Eighteen months general practice Capable accoucheur Excellent testimonials —Addres s No 3495, BRITISH MEDICAL JOURNAL Office 429 Strand W C 2

Partnership —Hants Coast, large town Partner leaving o d-estab over £2,000 La f panel and appo s half private H S experience necessary Good e ass residential grow ing dis trict Half share about 2 years purchase —Addre s, No 3103 B M J Office 429 Strand W C

Partnership offered in West of England Spa Prac tice £500–£600 share a 2 years purchase beginning increased share after 12 months Practice worth £1 800 and s eadily increa ing —Ad ires No 3474 BRITISH MEDICAL JOURNAL Office 429 Strand W C 2

Wanted —Englishman, Church of England to take over Country PRACTICE [illegible] £ [illegible] [illegible] the same hou e No premium but one-eighth of the t tal profi s to be paid to the di poser per annum —Add No 3462, B M J Office 4 9 S rand W C

Wanted by F R C S, aged 2 a PRACTICE or PARTNERSHIP in town in the S o Midlands, with scope for surgery Income about £1,000 Now free and can pay cash —c o BLUNDELL & Co 22 Craven Street S rand W C 2

Wanted, a small Practice or NUCLEUS returning about £400 £600 per annum in Southern or South Western counties Hou e with 4 6 bedroom garden and garage desired —Address No 3465 BRITISH MEDICAL JOURNAL Office, 429 Strand W C 2

Wanted —Practice or PARTNERSHIP yielding from £800 to £1,500 a ye r in any p easant residential district House on le se —Apply PEACOCK & HADLEY 10 Craven Street Strand W C 2 (No charge unle s sale effected)

Wanted —Practice of £400–£1,000 within easy access of London North preferred —Addre No 2481 BRITISH MEDICAL J URNAL Office 4 9 Strand W C

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Wanted in Autumn, a Panel of 1 500 to 2 000 in Southern Counties Hants preferred. — c o BLUNDELL & Co 22 Craven Street Strand W C 2

City Practice wanted, with Appointments, by M R C P Lond Capital available at once —Addres s No 3479 BRITISH MEDICAL JOURNAL Office 429 Strand, W C 2

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For Disposal —A good Prac- TICE is not always to be had directly but Mr PERCIVAL TURNER can generally offer applicants something suitable Nearly all the best Practices are old by him without being advertised —Full information free on application to 4 Adam St. W C.2

Birmingham —Old-estab Panel Indu trial and Lower Middle-class PRACTICE Small private practice and number on panel 1 040 Plenty of scope Introduction Hou e rent £36 Premium for practice £450— LEE & MARTIN Ltd.

Dorsetshire – Old-established PRACTICE Partnership with prelimina y Assistantship and ultimate Succession Receipts £1,112 Panel 1 440 Scope —Further particulars from LEE & MARTIN Ltd

West Midlands —Old-estab Town and Country PRACTICE in a County Town Re eipts £1 574 Appointments Panel nearly 400 Minimum fee 5 Expen es small Hosp tal (50 beds) Purcha er would be appointed Physician or Surgeon Good house and garden Premium for practice £2 250 —LEE & MARTIN Ltd

North of England —Old- established Country Town PRACTICE Average receipts £1,460 Good panel. Expen es small Good house garden tennis lawn and orchard —LEE & MARTIN Ltd

Staffordshire —Old-estab Town and Coun ry PRACTICE —Re eipts £1 190 Panel over 500 Appointments. Scope Freehold house on lea amp'e accommodation good garden —LEE & MARTIN Ltd 71 Temple Row Birmingham

Gloucestershire — Old-estab [illegible] Average rece pts Ho pital Hou e ndition — LEE & MARTIN Ltd 71 Temple Low Birmingham.

Home County —About £800 a year Small panel Good fees and appoint ment Introduction as required Excel ent house and gar len —Apply No 7522 c o Mr PERCIVAL TURNER 4 Adam Stree Strand W C.2

Liverpool —General Practice recently established in grow ng suburb Good cope fo increase Freehold residence in good position with garden Premium for hou e and practice £1 500 —Address No 3007 BRITISH MEDICAL JOURNAL Office 429 Strand W C.2

Lake District — Well established PRACTICE in small industrial Country Town Rece p s (average three years) over £1,000 Panel over 700 Freehold hou e good position Premium for pract ce £1,250 —Address No 3477 BRIT MED JOUR. 429 Strand W C.2

Midland City —Old-estab- li hed PRACTICE Panel nearly 800 capable of increase Receipts over £1,000 Commodious hou e with garden eparate surgery entrance and pecially fitted rooms Introduction as desired — Xylot SOUTHALL BROS & BARCLAY Birmingham

North-West Coast — Over £2,000 p.a For disposal old-e tabli hed PRACTICE in favourite Seaside Resort Visiting fees 3 6 5 – 10 6 and upward Abou 30-40 mid wifery cases p.a Detached hou e 2 reception, 5 bed dressing servants rooms &c. Consulting and waiting rooms. Garage and garden. Rent £75 on lease Moderate premium part by instalments — Apply No 7544 Mr PERCIVAL TURNER 4 Adam Street, Adelphi, W C 2

Notts —Good and middle- class PRACTICE Excellent corner hou e garage &c £60 Rece pts over £1 200 Good panel Great s ope Price 1½ years purcha e part of which may be deferred —MANCHESTER MEDICAL & SCHOLASTIC ASSOCIATION Ltd 8 King Street.

Practice wanted, in nice district £1,000–£1,500 by graduate ex H S H P M O fevers and Public Health Good panel and hou e with garden essential Send particulars in confidence.—Address No 3488 BRITISH MED JOURNAL Office 429 Strand W C.2

To Purchasers —Do not Buy without expert ass tance With 40 years ex perience Mr PERCIVAL TURNER can advi e in all cases. Terms free on applica ion to 4 Adam Street, Strand W C.2 Telephone Gerrard 3 0 Telegrams Ep omian London."

Wolverhampton —Small PRACTICE with convenien hou e in good neighbourhood for Sale Immedi te posses ion —Apply No 3464 BRITISH MEDICAL JOURNAL Office 429 Strand W C.2.

Yorkshire —Valuable middle and working-class General PRACTICE non panel and Hou e for Sale Established nearly three years mod fee P ceipts increasing 12 months nearly £1 000 Splendid pos tion. Good opening for panel.—Add No 3478 B M J 429 Strand W C

Yorks —Old-established; good hou e garage £60 unless Receipts over £2 000 panel 1 140 Excellent oppe Vendor on Hospital staff to which buyer can succeed Price £3,000 half-down.—MANCHESTER MED & SCHOLASTIC A OCIATION Ltd 8 King St

Yorks —Town Practice of £1 500 pe annum Increa ing Panel Appointments £160 Good house available. Premium 1½ years or offer consid red. Partner ente-tained with view to ult mate sale — Apply F PRINCE, 32 Charing Cross London S W.1

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Rare opportunity offered to acquire FREEHOLD PROPERTY in South Coast Resort facing Sea, a pre ent conducted as Nursing Home Thirty bedroom many with balconies Every convenience Electric lift, 2 acres of grounds Could be adapted for school boarding house or other purpose. Very ea y terms to prompt buyer —Apply No 7563 Mr PERCIVAL TURNER, 4 Adam Street Strand W C.2

Beautiful Consulting Room to Let Large private house Specials only entertained. Attendance light heating use of waiting room, 1 guinea per day —Write, Principal" c o E. BARKER, 123, Salisbury Square London E C 4

Bournemouth — In local Harley Stree CONSULTING ROOM and use of Waiting Room, to Let Dark Room available Suitable for Radiologist or o her Specialist Addres No 3487 BRITISH MEDICAL JOURNAL Office 429 S rand, W C 2

Cavendish Square — Four LARGE ROOMS to Le on Ground Floor — Write M" c o SMITH'S BOOKSTALL, Bakerloo Station Oxford Circus W 1

Radiologist desires to Let half-time use of large CONSULTING ROOMS in best position with use of first-class apparatus.—Address, No 3475 BRITISH MEDICAL JOURNAL Office 429 Strand, W C 2

Wimpole Street — Ground Floor Consulting Room with use of Furnished Waiting Room to ge her with Malcolme te on thi d and fourth floors To be Le Rent £350 p.a. inclusive —Apply ELLIOTT SON & BOYTON 6 Vere Street W

West End, best part Use of WAITING ROOM and CONSULTING ROOMS to Le part or who e-time £170 to £100 respectively Specialist or Dentist.—Write, Box B 256 WILLING 57 Knightsbridge

Med and Surg Sundries (new and second hand) Mas. Op. Outfit £10 Sy ringes fr 10 Spencer Wells Forceps 2 6 Wool 2 oz. comp pkt. 1/4 lb Record Syringes fr 5 Iod. Ca gut 6 tubes 1/6 Sterile silk or Catgut 1 tubes 1/— A W AUTY 57 Swinderby Rd. Wembley

Tennis —Splendid set stout ash post fitted with brass racket winder solid iron ground ockets and screws 36 6 worth 75 stout 42 f tarred and bound ne 15 both unused. Approval post-dated cheque —MANSELL, 133 Hither Green Lane, Lewisham, S.E.13.

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Wanted to Purchase — British Medical Journal 1922 and 1923, Edinburgh Medical Journal 1916 to 1918, 1920 — Priced offers to W MULLER, 26, Hart Street, London W C 1

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Applications are invited for the post of ASSISTANT MEDICAL OFFICER at the ISLE OF WIGHT COUNTY MENTAL HOSPITAL Salary if single £300 per annum with apartments board washing and attendance valued at £150 per annum If married arrangements can be made and possibly salary adjusted The appointment will be subject to deductions under the Asylums Officers Superannuation Act 1909

Applications which must be received by July 23rd 1924 to the Medical Superintendent, Whitecroft Newport Isle of Wight

Locum Tenens Assistant MEDICAL OFFICER required by the London County Council at MAUDSLEY HOSPITAL Denmark Hill S E 5 £8 10s a week no emoluments Previous experience in mental institutions essential Preference given to candidates who served with H M Forces during the late war — Apply in writing to Medical Superintendent at Hospital. Canvassing disqualifies

City of Liverpool

APPOINTMENT OF MEDICAL OFFICER OF HEALTH

The Corporation of Liverpool invite applications for the position of Chief Medical Officer of Health of the City and Port and Education Department, at a salary of £1 800 per annum The duties will be those prescribed by Statute subject to such variations in administration as the City Council may from time to time direct

The gentleman appointed will be required to devote his whole time to the duties of the office and will not be allowed to engage in private practice and all emoluments out of public moneys which may be payable to or received by him will have to be paid to the Corporation

He will also be required to contribute to the Corporation Superannuation Fund

Canvassing of members of the Council is prohibited

Particulars of duties may be obtained on application to the Town Clerk

Applications stating age and qualifications with copies of testimonials (not exceeding three) endorsed Medical Officer of Health addressed to the Chairman of the Health Committee under cover to the Town Clerk Municipal Buildings, Liverpool, must be delivered at the Town Clerk's Office, Liverpool not later than July 31st 1924

By Order

Town Clerk's Office, July 8th 1924 WALTER MOON, Town Clerk

Kingston Union.

APPOINTMENT OF SECOND ASSISTANT RESIDENT MEDICAL OFFICER (MALE)

The Guardians of the Poor of the Kingston Union require a duly qualified medical man (not over thirty years of age) for the post of Second Assistant Resident Medical Officer at the Kingston and District Hospital

The apartments provided are only suitable and sufficient for a single person and applications will be considered only from single men or married men who may be willing to reside in such apartments

The appointment will be for six months in the first instance and may be extended subject to satisfactory service

The salary will be at the rate of £300 per annum, with apartments rations [illegible] (valued at £100 for [illegible] but will be subject to the Poor Law Officers Superannuation Act 1896

Applications for the post, stating age experience and nationality together with recent testimonials should be sent at once (and in any event so as to be delivered by first post on the 14th instant) to the Medical Superintendent, Kingston and District Hospital, Kingston on Thames

W TAYLOR (Solicitor) Clerk.

Union Offices, Kingston on Thames

July 8th 1924

Chesterfield and North DERBYSHIRE ROYAL HOSPITAL (170 Surgical and Medical Beds)

RESIDENT SURGICAL OFFICER

Applications are invited from a fully qualified man for the above post, which will be vacant about August 28th

There are four Residents

The appointment is for twelve months Salary £300 with board, apartments and laundry Candidates must have held a previous Hospital Resident appointment

There is ample scope for good operative work

Applications stating age with copies of three recent testimonials should be sent to the undersigned

July 8th, 1924 G SUNNUCK Superintendent and Secretary

The Royal Infirmary, Sheffield

A MEDICAL REGISTRAR is required at the Royal Infirmary

Candidates are invited to send in their applications addressed to the Secretary with copies of not more than three testimonials before Friday, July 18th 1924

The appointment is made for one year, but may be held for a further agreed period

Salary and emoluments value £400 per annum

JNO W BARNES Secretary

Cornelia Hospital, Poole

The Committee of Management invite applications for the post of HONORARY MEDICAL OFFICER to out patients

Applications accompanied by three recent testimonials to reach the Hon Secretary before July 18th 1924

HERBERT KENDALL, Hon Secretary

Scottish Asylums, Pathological SCHEME

Applications are invited for the post of PATHOLOGIST to the above Scheme and SUPERINTENDENT of the Asylums Laboratory, situated in Edinburgh Whole time appointment The University of Edinburgh will appoint the successful applicant Lecturer on Neuropathology Combined salary commencing at £600 per annum.

Applications with 8 copies of testimonials to be addressed, on or before July 15th to the Honorary Secretary and Treasurer, Dr R B Campbell Stirling District Mental Hospital Larbert from whom further particulars may be obtained

Queen's Hospital, Birmingham

SURGICAL REGISTRAR (non resident) wanted Candidates to be fully qualified and registered The appointment is tenable for one year and the holder is eligible for re election Honorarium £100 per annum, together with lunch, tea and dinner daily, applications together with diplomas certificate of registration and copies of testimonials, to reach the undersigned by July 23rd

HEDLEY LUCAS House Governor

University College Hospital, Gower Street W C 1

A vacancy occurs for a part time Non resident HOUSE ANÆSTHETIST at a salary of £100 per annum

Duties require attendance daily from 9 a m to 1 p m (Sundays excepted)

Applications, accompanied by not more than three recent testimonials must reach the Secretary of the Hospital by noon on Wednesday July 23rd 1924

The Royal Infirmary, Sheffield (363 Beds)

The Weekly Board of Management invite applications for the post of OPHTHALMIC HOUSE SURGEON

The salary attached to the appointment is £60 per annum with board and residence

There are 52 ophthalmic beds and the post offers exceptional opportunities of gaining experience in Ophthalmology

Applications with copies of testimonials, to be addressed to the undersigned

Board Room JNO W BARNES

July 4th 1924 Secretary

Resident Medical Officer — The Committee [illegible] HOSPITAL FOR [illegible] OF THE CHEST for the POST of R

Salary £500 per annum (including £100 as Registrar) with board and residence Applications with testimonials to be sent in on or before Wednesday July 16th 1924 Candidates must be registered practitioners and qualified in Medicine and Surgery, single, and not under 25 years of age

FREDERICK WOOD Secretary

Brompton July, 1924

Hull Royal Infirmary

Wanted ASSISTANT HOUSE PHYSICIAN Male Must be fully qualified and willing to hold office for not less than six months and should give and receive one month's notice to terminate engagement Salary at the rate of £130 per annum with Board and Lodging Applications with testimonials to be addressed to the undersigned not later than Monday the 21st instant

BENJAMIN BROOKS, Secretary

Norfolk & Norwich Hospital, Norwich

ANÆSTHETIST (Woman) required Salary (living out) £300 per annum [illegible]

[illegible]

to the undersigned, from whom further particulars of the post can be obtained, not later than Tuesday July 15th

FRANK INCH, Secretary

July 4th 1924

Queen's Hospital for CHILDREN, Hackney Road London, E 2 Telephones Dalston 300 & 534

ASSISTANT CASUALTY HOUSE SURGEON required on September 1st Six months appointment Salary £100 per annum, with board residence and washing Candidates should be doubly qualified

Applications which must be made on forms to be obtained from the Secretary should be sent in with copies of testimonials on or before August 5th

T GLENTON KERR Secretary

June 28th, 1924

APPOINTMENTS—Important Notice.

(a) British Islands.

Medical Practitioners are requested not to apply for any appointment referred to in the following table without having first communicated with the Medical Secretary of the British Medical Association, 429, Strand, London, W C 2

Town or Distric	Town or D s rict	Town or Dis r c.
CONTRACT PRACTICE.		
ENGLAND	**WALES** *(continued)*	**PUBLIC HEALTH** *(continued)*
CANNOCK CHASE AND DISTRICT (G ... Appointm ...)	OGMORE VALLEY GLAMORGAN (Workmen's Colliery Medical Aid Society) (Workmen's Medical Scheme.)	HUNTINGDON ADMINISTRATIVE COUNTY (Assistant County Medical Officer and Assistant School Medical Officer)
MIDDLESBOROUGH (Medical Aid Associations or Workmen's Clubs.)	TONDU & ABERKENFIG GLAMORGAN (Workmen's Medical Scheme.)	LINCOLN CITY EDUCATION AUTHORITY (Woman Assistant School Medical Officer)
SOUTH BANK, & ESTON (Medical Aid Associations or Workmen's Clubs)	**PUBLIC HEALTH.**	MIDDLESBROUGH EDUCATION COMMITTEE (Assistant School Medical Officer)
WALES.	ABERDEENSHIRE EDUCATION AUTHORITY (Assistant School Medical Officer)	NORFOLK EDUCATION COMMITTEE (Assistant School Medical Officer)
ABERTRIDWR GLAMORGAN (Workmen's Medical Scheme.)	ARGYLLSHIRE EDUCATION AUTHORITY (Executive School Medical Officer)	NORTHUMBERLAND COUNTY COUNCIL (Woman Assistant Medical Officer of Health)
EBBW VALE MON (Workmen's Medical Society)	BARNSLEY COUNTY BOROUGH (Assistant Medical Officer of Health and Assistant School Medical Officer)	NOTTINGHAMSHIRE (County Medical Officer of Health)
GILFACH GOCH GLAMORGAN (Workmen's Medical Service)	FIFE EDUCATION AUTHORITY (Assistant School Medical Officer)	SOUTHWARK METROPOLITAN BOROUGH (Tuberculosis Officer)
LLWYNYPIA CLYDACH VALE, PENYGRAIG GLAMORGAN (Workmen's Medical Service)	GELLYGAER URBAN DISTRICT COUNCIL (Medical Officer of Health)	STOKE ON TRENT EDUCATION COMMITTEE. (Assistant School Medical Officer)
MARDY GLAMORGAN (Workmen's Medical Scheme)	HUDDERSFIELD COUNTY BOROUGH (Woman Assistant Medical Officer of Health.)	YORKSHIRE NORTH RIDING COUNTY COUNCIL (Assistant School Medical Officer)
OAKDALE MON (Medical Officer for Medical Aid Association)		

(b) Colonial Medical Service.—WINDWARD ISLANDS MEDICAL SERVICE (Grenada with Carriacou S Vincent and S Lucia)

(c) Overseas Appointments.

Medical Practitioners are requested not to apply to any appointment referred to in the following table without having first communicated with the Honorary Secretary of the Division or Branch named in the second column or with the Medical Secretary of the British Medical Association, 429, Strand, London, W C 2

Town or Di rict	Hon Sec of Divi ion or Branch	Town o D trict	Hon Sec of Division or Branch.	Town or Dstrict	Hon Sec of Division or Branch
NEW SOUTH WALES (All Friendly Society Appointments.)	Dr R H TODD (Hon Sec New South Wales Branch) B M A Building 30-34 Elizabeth Street, Sydney N S W	QUEENSLAND (Brisbane Associated Friendly Societies' Institute.)	Dr R MARSHALL ALLAN (Hon. Sec Queensland Branch) Adelaide Street Brisbane	VICTORIA (All Institute or Medical Dispensaries.)	Dr FRANK DAVIES (Hon. Sec., Victorian Branch) Medical Society Hall, E Melbourne Victoria
				WESTERN AUSTRALIA. (Contract and Lodge Practices)	Hon. Sec Western Australian Branch No 6 Bank of N S South Wales Chambers, St Georges Terrace Perth.

Address 429 Strand, W C 2.
July 9th 1924.

By order of the Council of the British Medical Association
ALFRED COX, Medical Secretary

West London Hospital,
Hammersmith Road W 6 (160 Beds.)

Applications are invited for the post of ASSISTANT ANÆSTHETIST Candidates are ... be Medical Act to stimonials so as 16th to ttend July 18th at 4.30 p m and prior to that date to call upon and send copies of their applications and testimonials to the members thereof to abstain from canvassing but nevertheless to send copies of their applications and testimonials to the members of the Board of Management who will elect on Tuesday July 22nd at 5 p m when candidates must be in attendance H A MADGE Secretary

Metropolitan Hospital
Kingsland Road E 8

The General Committee are prepared to receive applications for the appointment of an ASSISTANT DENTAL SURGEON

Candidates must be Licentiates in Dental Surgery of the Royal College of Surgeons in England and shall by preference also hold a medical qualification.

Candidates will be required to call upon members of the Staff

Applications with copies of three recent testimonials must reach the undersigned not later than Tuesday July 22nd 1924.

HERBERT F RUTHERFORD
Secretary and House Governor

University College Hospital,
Gower Street W C 1

The Committee will shortly proceed to the appointment of a TUBERCULOSIS OFFICER to take charge of the Tuberculosis Dispensary

Salary £300 per annum non resident. Part time duties

Duties comprise clinics on two afternoons and one evening weekly home visits reports on cases the keeping of statistical records, and co-operation generally with the Municipal Health authorities Full particulars can be obtained from the Secretary of the Hospital

Applications accompanied by such evidence of fitness for the post as candidates may wish to submit must reach the Secretary July 16th 1924

Edinburgh Hospital for
WOMEN AND CHILDREN
Whitehouse Loan.

Applications are invited from qualified Medical Women for the posts at the above Hospital of —

1 SENIOR HOUSE SURGEON remuneration at the rate of £60 per annum with board residence and laundry

2. JUNIOR HOUSE SURGEON non resident remunerated on a the rate of £40 per annum Lunch provided

Appointments are for 12 months from October 1

Applications, with copies of testimonials to be sent to the Convener of the Medical Committee at the Hospital on or before Friday July 18th.

Royal Aberdeen Hospital,
FOR SICK CHILDREN

Applications are invited for the post of HONORARY JUNIOR PHYSICIAN to commence duties on August 1st 1924 These along with 6 copies of testimonials must be lodged with the Hon Secretary Mr D M Milligan 12 Dee Street Aberdeen on or before Friday July 11th 1924, from whom further particulars may be obtained.

Aberd en July 1st, 1924

Leeds Public Dispensary

Wanted SENIOR RESIDENT MEDICAL OFFICER (male) Must have had post of Resident Physician and Resident Surgeon Salary £200 per annum with board residence, and laundry Separate sitting room Applications with copies of three recent testimonials to be addressed to the Secretary of the Leeds Public Dispensary North Street, Leeds

Aberdeen Royal Infirmary

There is a vacancy in this Hospital for an ASSISTANT PHYSICIAN Applications and testimonials (12 copies of each) should be lodged with the subscriber not later than Thursday July 17th current.

A. SCOTT FINNIE
343, Union Street Clerk and Treasurer
July 1st, 1924.

Manchester Union

ASSISTANT MEDICAL OFFICERS

The Guardians of the Manchester Union invite applications from Medical Practitioners for the appointment of Junior Resident Assistant Medical Officers at the

Withington Hospital (1 200 beds) and Institution (1 150 beds Nell Lane West Didsbury Manchester and

Crumpsall Infirmary (1 700 beds) and Institution (1 150 beds including 600 beds for mental patients) Crescent Road, Crumpsall Manchester

The Withington Hospital and the Crumpsall Infirmary are recognized Training Schools for Nurses and are equipped with all modern Hospital requirements

The appointments are entirely separate and the salary for each will be at the rate of £275 per annum with rations and furnished apartments subject to the usual deductions under the Poor Law Officers Superannuation Act 1896

The successful candidates will be required to commence duty on September 1st 1924

Applications endorsed Medical Appointment stating at which establishment —Withington or Crumpsall—an appointment is desired accompanied by not less than three testimonials must reach me not later than Wednesday July 23rd

If a candidate wishes to apply for both appointments applications must be sent in duplicate

By order
J MACDONALD
Clerk to the Guardians

Union Offices
All Saints Manchester
July 2nd 1924

County Borough of East Ham

ASSISTANT MEDICAL OFFICER OF HEALTH

TEMPORARY APPOINTMENT

The Corporation of East Ham invite applications for the appointment of a whole time Assistant *Medical Officer to act under the supervision of the* Medical Officer of Health and Chief Tuberculosis Officer for a period of twelve months from commencement of duties

Candidates must be between 25 and 45 years of age have held Hospital Appointments and be specially experienced in the diagnosis and treatment of Tuberculosis The Candidate appointed will be required to act as Medical Officer at Harts Sanatorium Woodford Essex (50 beds) and also to undertake duties at the Tuberculosis Dispensary East Ham

The salary inclusive of War Bonus will be at the rate of £500 per annum with the addition of a residence fuel and light valued at £100 p a

Sealed applications endorsed 'Asst Medical Officer" must be made on forms to be obtained from the undersigned accompanied by not more than three recent testimonials and must reach me not later than first post on Saturday July 19th 1924

The Appointment will be subject to the approval of the Ministry of Health

Canvassing members of the Council either directly or indirectly will be a disqualification

C LUSIACL WILSON
Town Clerk

Town Hall East Ham E 6 July 1st 1924

Manchester Royal INFIRMARY

HOUSE SURGEON (Male)
Aural Gynaecological & Ophthalmic Department

The Board of Management of the Manchester Royal Infirmary invite applications for the above appointment which will become vacant on *August 11th 1924*

Applicants must be registered and hold a Medical and Surgical Qualification

The appointment is for six months (three months as Junior and three months as Senior) subject to the provisions of the Bye laws as to notice

Salary at the rate of £50 per annum with board residence and allowance for laundry

Applicants must state age and address their applications to the Chairman of the Medical Board by July 25th 1924

By order
FRANK G HAZELL
Gen Supt & Secretary

July 5th 1924

Applications are invited for

the post of JUNIOR RESIDENT MEDICAL OFFICER (male) at the DUMFRIES & GALLOWAY ROYAL INFIRMARY The Institution which contains over 100 beds is one of the premier Provincial Hospitals in Scotland and offers exceptional opportunities of gaining experience in all branches of the profession Period of engagement two months from August 1st next.

Salary £125 per annum

Applications with testimonials to be forwarded to the Treasurer Dumfries and Galloway Royal Infirmary 81 Irish St Dumfries by July 19th 1924

County Borough of ROTHERHAM

APPOINTMENT OF ASSISTANT MEDICAL OFFICER OF HEALTH MEDICAL OFFICER TO THE VENEREAL CENTRE AND MEDICAL OFFICER TO THE MATERNITY AND CHILD WELFARE CENTRE

The Rotherham Corporation invite applications for this appointment from fully qualified medical practitioners holding a diploma in Public Health Applicants must have had experience in Venereal and Maternity and Child Welfare duties

Salary £700 per annum

The Officer appointed will be required to devote the whole of his time to the duties of the office and to act under the direction of the Medical Officer of Health The appointment will be determinable by three months notice on either side and will be subject to the provisions of the Rotherham Corporation Superannuation and to the appropriate Form of can be obtained from Dr A Robinson, 12 Frederick Street Rotherham

Applications stating age experience and qualifications together with copies of not more than three recent testimonials and enclosed in envelopes marked 'Assistant Medical Officer should be sent to me not later than July 26th, 1924

Canvassing either directly or indirectly is strictly prohibited, and will be regarded as a disqualification

CHAS L DES FORGES
Town Clerk

Town Hall Rotherham July 1st 1924

Assistant Medical Officer

WANTED

The Guardians of the Poor of the PARISH of ST MARY ISLINGTON require immediately a legally qualified Medical Man as Assistant Medical Officer at their Infirmary Highgate Hill

The appointment will be for six months in the first instance and may afterwards be continued Salary at the rate of £350 per annum with residential allowances *subject to deductions under* the Poor Law Officers Superannuation Act 1896

Preference will be given to Candidates who have had experience of a residential appointment at a General Hospital or Infirmary and are good in administering anæsthetics and at pathological work

The appointment will be made subject to the production of Birth Certificate and satisfactory Medical Examination

Written applications must be made on forms which can be obtained at these Offices and must be sent to me on or before the 9th instant accompanied by copies of not more than three testimonials as to competency and evidence of qualification Selected Candidates will have notice when to attend

Personal canvassing of the Guardians will be held a disqualification

ALBERT KING
Clerk to the Guardians

Guardians Offices,
St John's Road
Upper Holloway N.19 July 1st, 1924

City of Birmingham

RUBERY HILL AND HOLLYMOOR MENTAL HOSPITAL Northfield Birmingham

Applications are invited for the post of ASSISTANT MEDICAL OFFICER at the above Hospital Candidates must be qualified and registered male under 30 years of age and single *Commencing* salary £350 per annum rising to £400 at the end of a year's service satisfactory to the Committee together with board apartments and laundry subject to the provision of the Asylum Officers Superannuation Act 1909

The Hospital situated amongst the Lickey Hills, 8 miles from centre of Birmingham by tram route, is equipped with X ray Ear, Nose and Throat Gynecological and Dental Departments together with a Research Laboratory for the study and treatment of Mental Disease on modern lines and is recognized by the University of London for the D P M and M D degree in Mental Diseases

Applications, in envelopes marked 'Assistant Medical Officer should be addressed to and reach the Medical Superintendent not later than July 31st next

The Royal National Hospital

FOR CONSUMPTION AND DISEASES OF THE CHEST, Ventnor, Isle of Wight

A Male SENIOR RESIDENT MEDICAL OFFICER required of British Nationality The appointment will be for six months in the first instance Salary £300 per annum, with board and residence in the Hospital

Candidates must be doubly qualified registered and unmarried Previous hospital experience essential and knowledge of tuberculosis work and laboratory bacteriology desirable Applications stating age and qualifications with one copy of three recent testimonials may be sent to the Medical Superintendent Royal National Hospital for Consumption Ventnor Isle of Wight

July 7th 1924

Birmingham Union,

DUDLEY ROAD HOSPITAL

X RAY APPARATUS FOR THE TREATMENT OF CANCER

The Guardians invite tenders for the installation of up to date deep X Ray therapy apparatus in the X Ray Department at the above hospital

Particulars as to accommodation set apart for the apparatus and any other information may be obtained upon application being made to the Steward at the hospital

Sealed tenders endorsed 'X Ray Apparatus must be delivered at my office not later than first post on Saturday, the 19th July 1924

JAMES CURTIS
Clerk to the Guardians

Union Offices
Edmund Street,
Birmingham July 3rd 1924

Seamen's Hospital Society

The Committee of Management invite applications for the appointment of SURGEON at the *Hospital for Tropical Diseases, Endsleigh Gardens* N W 1

Candidates must be Fellows of the Royal College of Surgeons of England

The appointment carries with it a seat upon the Medical Council

The elected Candidate will be appointed for *twelve months, but will be eligible for re election*

Applications with copies of not more than three recent testimonials which should be printed or typewritten to be sent in on or before 26th inst, to the undersigned from whom further particulars can be obtained

By Order
P J MITCHELL,
Secretary

Seamen's Hospital Society,
Greenwich
July 7th 1924

Metropolitan Asylums Board

ASSISTANT MEDICAL OFFICER (JUNIOR) REQUIRED at the Downs Hospital for Children, Sutton Surrey (under the Metropolitan Asylums Board) 300 beds Salary £500 per annum Must be experienced in administration of anæsthetics in diseases of ear nose and throat, and in the performance of operations for the removal of tonsils and adenoids

Forms of application may be obtained by sending stamped addressed envelope to the Clerk Metropolitan Asylums Board by whom applications must be received not later than 10 a m , on Tuesday, July 22nd 1924

By order
G A POWELL
Clerk to the Board

Office of the Board
Victoria Embankment
E C 4

Royal Sea Bathing Hospital,

Margate for Surgical Tuberculosis

A HOUSE SURGEON will be required in August The salary is at the rate of £200 per annum with board residence attendance, and laundry

Candidates for the post must be legally qualified and registered The appointment is for six months, but may be extended for a further period of six months

There are 265 beds for adults and children which afford special opportunities for the study of surgical tuberculosis

Applications stating age previous appointments, with copies of three recent testimonials should be sent to the Secretary R S B H Offices 15, York Buildings Adelphi London W C 2

Hampstead General & North-West LONDON HOSPITAL,

Haverstock Hill, N W

APPOINTMENT OF GYNÆCOLOGIST

Applications are invited for the appointment of Gynecologist to the Hospital Candidates must be Fellows of the Royal College of Surgeons England, or Members of the Royal College of Physicians, London

Applications stating age, qualifications and experience accompanied by copies of not more than three testimonials, should reach the Hospital not later than noon on July 16th

Further particulars may be obtained on application to the Secretary

Urgent—Jenny Lind

HOSPITAL FOR CHILDREN, Norwich

Appointment of RESIDENT MEDICAL OFFICER (Male) Salary £150 per ann with board furnished apartments and laundry Candidates must be fully qualified and registered Duties to commence August 1st Appointment to be for six months and renewable for a similar term at the expiration thereof Applications stating age, nationality and qualification together with copies of not more than four testimonial should be sent to

MR H HARPER SMITH
Honorary Secretary,
London and Provincial Bank Chambers
Norwich

June 25th, 1924

Hull City Mental Hospital

APPOINTMENT OF SENIOR ASSISTANT MEDICAL OFFICER AND DEPUTY SUPERINTENDENT

Applications are invited from duly qualified gentlemen for the appointment of Senior Assistant Medical Officer and Deputy Superintendent at the above Mental Hospital The salary offered is £600 per annum rising by annual increments of £50 to a maximum of £800 per annum with emolument valued now for pension purposes at £150 per annum subject to revision as follows —Furnished Quarters Coal Light Vegetables for self wife and family Laundry and Pension to buy provisions &c. out of store at contract price The salary does not carry bonus

The Mental Hospital is situated Willerby 7 miles from Hull

The appointment will be subject to the provisions of the Acts

Canvassing

disqualification

Forms of application to be delivered by 6 p.m. on Thursday July 24th can be obtained from the undersigned

H A LEAROYD
Guildhall Hull Town Clerk & Clerk to the
July 1st 1924 Committee of Visitors

Royal Chest Hospital,

City Road E C
(Royal Northern Group of Hospitals)

A vacancy occurs for a PHYSICIAN with Charge of Out patients Candidates must possess the degree of M D or M B obtained by examination at a British University and be Fellows or Members of the Royal College of Physicians of London

Applications should be sent by July 14th to the undersigned from whom full particulars of the office, and with regard to the submission of copies of testimonials etc may be obtained

GILBERT G PANTER
Royal Northern Hospital Secretary
Holloway N

The Birmingham & Midland

THROAT AND EAR HOSPITAL

JUNIOR HOUSE SURGEON (qualified) wanted with Clinical experience non resident

Appointment for six months and eligible for election as Senior Surgeon for a further six months Salary at the rate of £200 per annum with part board Duties to commence October 1st 1924

Application and testimonials to be forwarded on or before July 15th to the undersigned

S G GLEW Secretary

Royal Free Hospital

Grays Inn Road W C 1

Applications are invited from duly qualified and registered medical men or women for the following resident post —

HOUSE PHYSICIAN vacant August 1st
HOUSE SURGEON October 1st

Intending candidate should submit application with copies of three recent testimonials to the undersigned on or before July 14th

REGINALD R GAPRATT Secretary

The Hospice Maternity

HOSPITAL, High Street Edinburgh

Applications are invited from qualified Medical Women for the post of RESIDENT MEDICAL OFFICER at the above Hospital Remuneration at the rate of £50 per annum with board residence and laundry

Appointment is for six months from October 1st

Applications with copies of testimonials to be sent to the Convener of the Medical Committee at the Hospital on or before Friday July 18th

Royal Mineral Water

HOSPITAL, Bath

A vacancy in the office of SURGEON to the Hospital will be filled on Thursday July 31st.

Candidates who must be Fellows of one of the Royal Colleges of Surgeons of Great Britain or Ireland are requested to send their applications stating experience and not more than three testimonials to the Registrar of the Hospital, not later than Monday July 21th

Personal canvassing is prohibited.

July 1st 1924

The Gloucestershire Royal

INFIRMARY AND EYE INSTITUTION
Gloucester

There is a vacancy for a PHYSICIAN on the Acting Medical Staff of this Institution By the rules of the Hospital the Members of the Acting Medical Staff shall

Candidates should

diploma and test

Secretary on or before Monday July 28th next

Gloucester G HURFORD
June 24th 1924 Secretary

MR. HERBERT NEEDES,

31 BEDFORD ST., STRAND W C 2.

Gerrard 3) (E ub 13)

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No Charge to Purchasers All Business received Mr NEEDES personal attention

1 IN ONE OF THE MOST CHARMING DISTRICTS in S o Scotland well established PRACTICE of about £1 500 a year Panel 9 Good fishing golf hunting &c Excellent house with surgery and waiting room attached garage &c Further details on application
2 UNOPPOSED PRACTICE in charming district within 2 miles and averaging £1 200 a year including panel and appts Good port and excellent Old fashioned residence with land on lease Premium £1 800
3 OLD EST LONDON —PRACTICE conducted at Lock up in S E Income £1.300 No midwifery panel or night work Convenient house at low rent Efficient introduction and moderate premium
4 PARTNERSHIP in good-class Country Practice within an hour of Town and returning about £3 000 a year with excellent scope for an active Third Partner Quarter Share rising to a third Short preliminary Assistancy arranged
5 DEATH VACANCY — Good-class non panel PRACTICE of over £2 500 a year in East Coast Town Staff Appointment assured Nice house on lease at moderate rental LT In charge Full details given
6 CONFINES OF CITY —General PRACTICE of £1 250 a
mall panel
venient r
Premium £1 500
7 BIRMINGHAM —General PRACTICE over £800 a year with panel and great scope as Vendor has held same 19 years and has returned all midwifery and night work Convenient house and garden on lease at low rental
8 SEAPORT TOWN (N W Coast) Average income £1 500 Panel and appts £600 Good scope for active man Vendor health very indifferent Well situated residence and garden on lease Price £2 300

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Telegrams Assistiamo London

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TRAINED NURSES FOR MENTAL MEDICAL, SURGICAL AND FEVER CASES

Nurses reside on the premises and are available for urgent calls, Day or Night.

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(In conjunction with the MALE NURSES ASSOCIATION)

29, York Street, Baker Street, London, W 1

(Mrs) MILLICENT HICKS Superintendent.
W J HICKS Secretary

ST. LUKE'S HOSPITAL.

ESTABLISHED 1 51

PRIVATE NURSING STAFF DEPARTMENT

TRAINED NURSES for MENTAL and NERVOUS CASES can be had immediately Apply to LADY SUPERINTENDENT 19 Nottingham Place London W 1 Telephone Mayfair 5 1

NORTHERN BRANCH —Apply LADY SUPERINTENDENT 5 Clarendon Rd Leeds Phone Leeds 2 165

York Road (General Lying-IN HOSPITAL) Lambeth S E —Established 1 6

Patron H M THE QUEEN and H M QUEEN ALEXANDRA Medical Students and Qualified Practitioners admitted to the Practice of this Hospital Telephone 4 Central Fo rules fees etc. apply POLLE WHITE, Secretary

ESTABLISHED 1863

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LOCUM TENENS and ASSISTANTS supplied

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1 MIDLANDS —Small Industrial Town Pleasant surrounding Long-established PRACTICE returning about £2 500 a year Panel 1 Convenient doctor residence with good garage &c Rent £40 on lease Premium £3 500
2 HOME COUNTY —Beautiful district Country PRACTICE Receipts £1.550 p a No resident opposition Good commodious House for sale Premium to practice £2 400
3 SUSSEX COAST TOWN —PARTNER wanted for middle and working-class Practice receipts £4.000 a year large Panel Premium two years purchase to third or quarter share
4 DEATH VACANCY — Outlying Western suburb Middle-class PRACTICE receipts about £1.000 p a Conditions likely to increase Good residence to let on Office investment
5 LANCS —Manufacturing Town Long-established General PRACTICE Receipts £1 250 Small house £36 p a Premium £1 650
6 SOUTH WALES —Coast town General PRACTICE yielding £1 700 a year Small but convenient house Rent £50 Premium £1.500
7 NEWFOUNDLAND — Unopposed Town and Country PRACTICE Receipts £1 650 a year Good house Plenty of scope for increase Easy terms of payment
8 WESTMINSTER (near) —PARTNERSHIP with view to succession Total receipts £1 300 a year two-third to be known remainder as above Premium two years purchase In new district where his own residence is the first
9 LONDON N —Lock up surgery Cash and Panel PRACTICE receipts attending over £400 p a Rent of Surgery 30 per week Whole house would be let or sold if desired Premium £800

No charge to purchasers or for inquiries

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Proprietors

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J J LOWNDS (B A Cantab L R C P)
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(A few doors from The London Office)
Telegrams Position Westrand London
Telephone Regent 4

LOCUM TENENS and ASSISTANTS supplied

FOR DISPOSAL

London — A good-class PRACTICE situated in a rapidly growing district Receipts £600 Panel Fees 2 6 upwards No midwifery Very convenient house Premium £3 000 Prem for Practice £800 — Folio 6

Norfolk —A General PRACTICE situated in a country district Receipts £1.600 Panel nearly Fees Nice house with excellent garden etc. Rent £35 per annum. Premium £2 500 —Folio 600

Scotland —A General PRACTICE, situated in a good district Receipts £1.500 Panel Fees 2 6 upwards Plenty of sport—fishing shooting etc Excellent house etc. Premium 1 years purchase Folio 665

London, W —A general PRACTICE producing nearly £1 000 Panel 1,200 Fees 5 upwards no midwifery Nice house containing 4 bedrooms &c rent £1 Premium £1,800 —Folio 801

Sussex —A general Practice situated in charming district Receipts £1.400 Fees 4 to 21 County hospital and golf near Excellent double-fronted house containing 3 bedrooms &c. Premium 3 years purchase Folio 593

Glamorgan —General Practice in thickly populated district Receipts £1 700 Fees 3 upwards Panel Country house containing bathroom etc rent £50 p a Premium £1.500 Folio 887

Derbyshire —A General PRACTICE situated in district Receipts about £800 Panel Good house containing bathroom etc rental Premium £1 000 —Folio 653

Purchasers stating their requirements can have details of other Practices not advertised

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Printed Prospectus of Terms, etc., post free on application.

North of England.—Eye, Ear Nose, and Throat PRACTICE at present returning about £1 000 a year In important Town of about 70,000 inhabitants Hospital Appointment which is considered transferable—Apply, No 7567

Gloucestershire—About £750 p a. Country town Old established Panel 700 Fees 3/6 up Appointments about £100 p a Good detached house with large garden, garage etc To rent Premium moderate—Apply, No 7566.

Near Manchester—Nearly £2 000 p a Panel worth about £600 p a Moderate house with separate surgery to rent Premium 1½ years purchase easy terms Good schools near—Apply, No 7565

Eastern County Partnership. About £2 200 p a Panel about 2 000 and other appointments Fees 3/6 p a One-third share for disposal with succession in about 3 years Apply No 7564

London, W—About £1,100 a year Non-dispensing Very small panel Fees 5 upwards Very few midwifery cases Corner house to rent—Apply No 7561

London, S W—Partnership and succession £2 000 a year Half share for disposal immediately Panel 1 800 Old established Good fees Excellent house and large garden Prem 2 yr purchase—Apply No 7560

Yorkshire—About £1,700 a year Panel 1 12> Visits 2/6 to 10/6 medicine extra About 30 midwifery cases up to £5/5 0 Appointments £60 Good house with garden and garage for sale or would let on lease—Apply No 7559

North Vacancy—£1,000 a year Favourite Riverside Resort Very old established Same hands over 30 years Small and select panel Night work mostly refused Good house with garage and garden on lease Excellent opportunity for prompt purchaser Personally known and recommended—Apply, No 7556

Home County—Old-estab Country PRACTICE of nearly £1 600 a year Panel 7 [illegible] Fees 3/6 to 10 6 [illegible] acre of ground tennis

Lancs—University Town About £700 p a Panel over 700 No midwifery ample scope Good house and garden Mod price for Practice and house—Apply No 7553

New Zealand—About £1 800 a year Country Town in N Island near sea Agricultural district Premium £1 500 including furniture of house etc—Apply No 7551

Notts—Nearly £1,300 Panel 700 increasing Opposition less than usual Corner house to let on lease—Apply, No 7549

Cheshire—Nearly £4,000 a year Old established Practice HALF SHARE for Sale at 1½ years purchase Panel about 1 400 Appointments £45 Good fees Good house and garden to rent—Apply No 7536

South County—Over £1,000 p a Panel 610 other appointments £120 Practically unopposed Excellent house elec light, etc Good garden. All sport—Apply No 7535

Midland Town—About £1 100 a year Old established PRACTICE Panel 750 Appointment £40 Very little midwifery Large house and garden Prem £1 600 including drugs etc—Apply No 7534

Norfolk Coast—Nucleus for disposal [illegible] Visiting fees 3 6 t 4 bed rooms consul n etc One-third rent £70 Small panel—Apply No 7524

Near Birmingham—£2,250 p a Old established Opposition light Good fee Panel 1 5 0 Appointments worth £500 (about) Good family house with garden tennis etc. to let—Apply, No 7501

JOHN BELL and CROYDEN, LTD.

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LOCUM TENENS provided at short notice.

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MANCHESTER—NUCLEUS, General Practice situated in busy quarter Small house (5 bed rooms) Panel and cash Income over £600 per annum Premium £1,450 to include house

SOUTH WALES (Not Colliery)—Old established General PRACTICE Panel nearly 2,600 Income over £2 700 Fees 5/ upwards Excellent house Partnership or sell outright Premium one and a half years purchase

KENT—Very old established Country G P Aver income £1 600 Panel nearly 800 Two appointments Excellent house situated in charming surroundings Premium £4 650 Mortgage arranged

LONDON S W—Old established Cash and Panel Income £1 000 Panel 800 Small house low rental long lease Premium £1,850 to include lease

MANCHESTER—Old established Panel 1,000 Income over £3 000 (South) excellent house Suit two in Partnership Premium £4 000

NORTHUMBERLAND—Old established, non panel Income over £4 300 Scope for surgery Premium 1½ years purchase House for sale or would let Lengthy introduction

LANCS—Old established G P, situated in country town Very pretty country Large house garden and garage Panel 800 2appointments Income £1 460 p a Premium to include house £4 000

YORKS—Old established country town Panel 1 500 Income £2 500 3appointments Detached house with garden and garage, to let on lease Premium £3,500

YORKS—Old established G P Panel 1 290 Two appts Average income £1 297 p a Nice detached house (freehold) Scope for surgery Premium Practice £1 400, House £2 500 Part can remain

LONDON, S W—PARTNERSHIP in old established G P Panel about 1 000 Income over £3 000 3appointments Premium two years purchase, £2 500 down

Purchasers, stating their requirements will be sent particulars of other suitable Practices and Partnerships for sale free of charge

Please address all communications to the Manager, Mr W H. GRANT, Medical Transfer and Insurance Department.

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Home County—Partnership, Half share of about £2 500 in beautiful country town Good class non panel practice Fees 3/6 to 1 guinea Good house and garden can be bought cheaply

Manchester.—Old-established PRACTICE of £600 with great scope Panel and appointments £340 Active man could soon double the practice Vendor retiring House in main road Prem 1½ years purchase

Within 80 miles—Old-established PRACTICE of £1 280, in nice town Panel 1,500 Nice house with good garden Rent £70 Schools Society, &c

South Coast—Middle-class *PRACTICE of £800, for Sale at the end of* the year Panel 9 0 Detached house with nice garden Rent £75 Prem 1½ yrs purchase

Residential Suburb—Middle and working-class PRACTICE of £1,300, increasing Panel 1,050, and good proportion of cash at separate Surgery Good house with nice garden can be bought

Yorks—Practice of £1,450 in fine town Panel 800 Appointments £160 No midwifery has been done House with pretty garden and separate entrance to surgery Can be rented

West Coast—Nucleus of £550 including £90 from panel in wealthy seaside place Premises in prominent position

Home County—Partnership Half share of £2 000 in beautiful country town Panel 700 Appointments £260 House can be rented

Ear, Nose, and Throat PRACTICE of £2 000 Fees 1 to 3 gns Transferable appointment Low rent

Midlands—Town and country PRACTICE of £1 200 including 700 panel Good corner house with garage *Rent £60*

Home County—Partnership with succession to middle-class Practice of £1 850, in residential district The place is *growing and has a cottage hospital* Panel 1 210 Appointments £180 Very few midwifery Rent £70

Home County.—Unopposed PRACTICE of £1 600 Panel and appointments £500 Beautiful district Station Well built house with very nice garden and tennis court Can be bought

Yorkshire—Practice of £1 500 in prosperous town Panel 1 550 Rent £80 Premium 1½ years purchase

East Coast—Practice of £1 700 in beautiful seaside resort Panel 800 Appointment £80 Good schools Excellent house with fine garden Rent £140

South Coast—Partnership Half share of £2 300 in pleasant town Panel 1,000 Appointments £500 Good house with large garden Rent £90 Premium £2 200

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2 CHANNEL ISLANDS —Old-established PRACTICE held 11 years by present Incumbent who is relinquishing on account of ill health Cash receipts for the past three years average nearly £750 per annum including an appointment worth £30 Visits 7 6 to 10 6 in the Town extensive Midwifery 3 to 5 guineas 8 to 10 cases yearly Car is required House contains 4 reception 6 bedrooms bathroom etc large garden Must be purchased by valuation but mortgage can be obtained Premium 1 years purchase Excellent educational facilities and sport of all kinds

3 IMMEDIATE SALE owing to ill health —Old-established good class non-panel PRACTICE situated in a popular east coast resort on the North West Coast Average income £1 300 Very easily worked and no conveyance required Visits 7/6 to £1 1 0 Good house facing sea on rental Premium 1 years purchase or reasonable offer will be entertained and suitable terms of payment arranged

4 SOUTH MIDLANDS —RESIDENTIAL TOWN Old-established mainly best class non-dispensing PRACTICE Income about £2 000 a year Small selected panel of 600 Fees 2 6 to 21 mainly 7 6 to 21 Midwifery 2 to 25 guineas 10 cases last year House with 3 reception bedrooms garden rent £100 a year Premium 2 years purchase

5 SOUTH COAST —LARGE TOWN PARTNERSHIP A quarter or one-third share in a middle and working-class Practice Income over £4 000 with scope Panel of over 4 000 Fees 2 6 to 7 6 chiefly 3 6 to 5 No midwifery and very little night work Purchaser should preferably be not over 3 Prem 2½ years purch

6 LINCOLNSHIRE —Unopposed Country PRACTICE Very easily worked average income over £1 100 Fee 2 6 to 10 6 Very little midwifery Good detached house in its own ground Rent £80 on lease Premium £1 600 part by instalments

SOMERSET —Unopposed PRACTICE within easy reach of the east Practice is an old-established mixed class one the average income is £1 283 including appointments and panel of over 1 600 Very nice house with reception room professional room bedrooms garage garden Rent £55 Sport of all kinds Premium £2 250

7 JUNIOR PARTNERSHIP —EAST COAST TOWN Over

per annum) in a leading and old-established non-panel Practice [illegible] cases yearly rooms bed Premium

9 BRISTOL —Very sound middle-class PRACTICE owing to the ill health of the present Incumbent who is relinquishing on account of ill health Average income over £1 200 per annum including several small appointments and a panel of over 1 600 Visits 3 6 to 10 6 Midwifery from 3 guineas about 30 cases yearly Very good house especially built for a doctor contains 2 reception rooms waiting room consulting room and surgery with separate entrance 5 bedrooms etc Garden Premium £1 800

10 DERBYSHIRE —HOSPITALTOWN —Old-established PRACTICE held 13 years by present Incumbent who is relinquishing on account of ill health Cash receipts for the past 3 years average £3 372 per annum including about £1 500 from panel Fees 3 6 to £1 1 0 About 50 cases of midwifery a year at 2 to 5 guineas Centrally situated house (2 rooms 4 bedrooms bathroom Premium £3 000 Good scope Staff of the Hospital

11 NORTH EAST MIDLANDS —Country PRACTICE with near access to large town Very old established and well-known for over 20 years Average income about £800 including position miles Fees acres of garden Will

1- established middle and 10 including £580 from panel and £350 from appointments Advice and medicine from 2 6 visits and medicine 3 6 upward Very little midwifery lowest fee 2 guineas Good detached freehold house with mall garden Electric light Garage Price £2 500 of which

13

(1 600 patients on list) worth last year £2 100 Situated in a large town (population nearly 100 000) close to seaside resort Visits 2 6 to 5 Midwifery 2 to 3 guineas about 100 cases yearly Car not required Good house with garage available at end of introduction Premium 1½ years purchase

14 NORTH EAST COAST —FAVOURITE RESORT Small old established non-dispensing PRACTICE Income £400 with very large scope for young energetic well-qualified man Fees 5 and 7/6 Prominent corner house 3 reception rooms 6 bedrooms garden Vendor's own freehold Premium for House and Practice £2 500

15 PARTNERSHIP —LANCS Large Town The third share of an old-established lucrative and money-making Practice worth for the last financial year £3 722, can be acquired by a young unmarried man Panel list of over 1 600 and patients operative class Visits 2 to 5 Midwifery 2 to 3 guineas Ingoing partner could reside with Vendor or unfurnished rooms are available Calls to be had Premium 1 years purchase

16 LONDON WEST END —PARTNERSHIP —A quarter share (to commence with and up to one-third in 2 years and one half in 4 or 5 years with ultimate success in sight if desired) is to dispose in a first-class general Practice Income for the immediate past year £3 020 Fee mostly 1 guinea upward and a few at 10 6 Purchaser should be a Graduate or hold some higher qualification Premium for the quarter share £1 500

17 LONDON EAST —Old-established panel middle and working class PRACTICE Income over £1,150 Panel 1 600 Surgery fees 2/6 visits 3 6 upwards No midwifery Can be much increased if desired Small house suitable for bachelor Will be on lease Practice would suit lady doctor Premium £1 750

18 NEW ZEALAND (NORTH ISLAND) —Unopposed and increasing PRACTICE in a very beautiful district on main line about 6 miles from a large city and worth nearly £1 300 a year including easily worked appointment at £100 Visits into Township 10 mileage 6 midwifery 5 gns Good and up-to-date house (built by Vendor's predecessor) containing surgery reception room 3 bedrooms and sleeping porch bathroom etc with an acre of ground tennis court etc Rent £120 or lease Premium £1 000

19 SOUTH SEA ISLANDS —In a capital city a well established lucrative and increasing PRACTICE averaging over £1 200 per annum Good climate malaria and sunstroke unknown Up-to-date shops and educational facilities Consultation fees 7 6 to 10 6 Visits 10 6 upward Midwifery from 5 guineas Dispensing optional Practice can be worked on one Good bungalow residence in excellent position with half an acre of garden Electric [illegible] Premium £800 Income

20 PRACTICE producing an income appointments worth £320 established Visits easily worked with no extra reports with [illegible] of which can be obtained on mortgage. Premium £2 000

21 WEST CENTRAL —Sound, easily worked PRACTICE of about £770 Very good consulting Vendor has suffered from ill health since the war Fees mostly 10 6 Very convenient Flat Rent £58 Premium £1,100

22 FAR EAST —Wanted in November a young unmarried ASSISTANT on a two years agreement with possibility of future position and engagement. Return passage paid Personal interview in London essential Salary £800 to £1 000 a year Apply BOVRIL MEDICAL AGENCY LTD

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SURREY —(1) PARTNERSHIP in good middle class compact practice over £2 650 in Residential District easy distance of London Panel 1,200 Two fifths share at first at two years purcha e

SOUTH MIDLANDS —(2) Well-established unopposed PRACTICE averaging £1 181 per annum, in good Agricul tural District Panel 800 Detached house (5 bedrooms) Rent £70, on lea e Premium £1 700

SOUTH-WEST OF ENGLAND —(3) PARTNERSHIP in well established Practice between £5 000 and £6 000 in important S aport Town No panel One fourth and one third share at first Incoming Partner should be young energetic and with a leaning towards medicine

MIDLANDS —(4) Unopposed Country PRACTICE over £1 150 in beautiful part Panel about 720 Detached house (4 bed rooms) with half an acre garden Mild climate Premium £1 750

SOUTH AFRICA — (5) PRACTICE about £1,000, in small Town in Cape Province Very comfortable house to rent Living very cheap Premium £750

EAST COAST —(6) Old-established good class PRACTICE £1 700 per annum in pleasant Seaside Town and favourite Resort No panel Nice modern double fronted house (6 bedrooms) Rent £75 on lease Premium £2 000

SOUTH OF ENGLAND —(7) PARTNER required in very sound old established Practice in Seaport Town Panel under 3 000 Share worth £700 to £800 at two years purchase Partner must be keen and energetic and not much over 30

NORTH OF ENGLAND —(8) Old established PRACTICE of £1 460 per annum in Country District Panel 810 Very good house (5 bedrooms) in charming grounds, two acres Premium, practice house, and grounds £4 000 Mortgage could be had on house

NORTH-WEST COAST —(9) Sound middle-class PRACTICE about £2 400 Conveniently situated house to rent Premium £2 900 part by instalments

FAVOURITE RESIDENTIAL DISTRICT up the THAMES —(10) Partnership in better class Practice nearly £2 900 per annum One third share at first at two years purchase.

HOME COUNTY —(11) Old-established PRACTICE, over £1 850 p a , in a most desirable Residential District under 25 miles from London Panel about 600 Excellent detached house (8 bed and dressing rooms) Nearly acre garden Rent £75, on long lease Cottage Hospital near Premium £3 000

EAST ANGLIA —(12) PARTNERSHIP in middle and working class Practice averaging about £2 200 p a. in picturesque district near popular Seaside Resort Panel nearly 1,200 Choice of houses One third share at first at two years purchase.

SHROPSHIRE —(13) PARTNERSHIP in Country Practice, about £1 400 per annum Detached house (6 bedrooms) with nice garden Rent £60 Cottage Hospital Premium one half share £750

DEATH VACANCY —(14) Old-established PRACTICE about £1 000 p a in Town of over 30 000 within 15 miles of London

EASTERN COUNTIES —(15) Very old-established Country PRACTICE over £1 400 p a Panel 636 Suitable house (5 beds) Rent about £40 Mild climate Premium one and a half years purchase

EASTERN COUNTIES —(16) Old-established unopposed Country PRACTICE of £826 p a Panel about 500 Very good hou e in 2 acres of garden also 18 acres of land attached to rent or pur chase Nearest opponent 5 miles Premium £1,500

LONDON S E —(17) PARTNERSHIP in middle and working class Practice over £2 000, in pleasant outlying Suburban District Panel 2 000 House contains 3 bedrooms &c Rent £30 Premium one third share £1 200

SOUTH WALES —(18) Well-established PRACTICE nearly £1 250 p a in County Town Panel over 900 Fees 5/ to £2 2s Well situated double fronted house (6 bedrooms) with large garden Rent £60 Educational facilities Premium £1 800

SPECIAL OPHTHALMIC PRACTICE —(19) About £1 400 in high class inland Health Resort Operative and acute cases refused of late years Considerable scope for increase Premium £2 000

SOUTH OF ENGLAND —(20) PARTNERSHIP in well-estab good-class Country Town Practice over £4 000 per annum in delightful district Panel 1 400 Choice of houses Premium one fourth share two years purchase Good Cottage Ho pital

SOUTH OF ENGLAND —(21) Old-established unopposed Country PRACTICE about £1 350 in Manufacturing Village Panel 1 (?) Nice detached hou e (5 bedrooms) with good garden Price £1 200 Part could remain on mortgage Premium one and a half years purchase

SOUTH WALES —(22) Old ... Working-class PRACTICE over £2 200 i Detached house with 4 bedroom to rent on lease

HOME COUNTY —(23) PARTNERSHIP in first-rate Prac ice £7 000 £8 000 p a in one of the best Residential Districts Hou e (7 bedrooms) to rent Premium one sixth share two years purchase Partner should be aged over 30 and have held hospital appointments

HOME COUNTY —(24) PARTNERSHIP in well established and increasing Practice over £2 200 in delightful Residential Country Town within 30 miles of London Panel 800 Cottage Hospital Premium one third share £1 425 Great scope

HOME COUNTY — (25) Old established Country PRACTICE £1 600 p ... es from Londo Very good house (6 bed and Price £2 200 Bracing climate Premium

YORKSHIRE (WEST RIDING) —(26) Well-established PRACTICE £1 650 p a in Indu trial District easy reach of Sheffield Panel 600 Convenient 8 roomed house Rent £48 Premium one and a half years purchase

SOUTH OF ENGLAND —(27) PARTNERSHIP in old established PRACTICE £1 500 p a , in town of nearly 30 000 inhabitants Panel 450 No midwifery House contains 5 bedrooms Premium one half share one and a half years purchase

YORKSHIRE (WEST RIDING) —(28) PRACTICE over £1,500 p a in thriving Industrial Town Panel 1,550 Good house (5 bedrooms) Rent £80 Premium £2 250

HOME COUNTIES —(29) PARTNERSHIP in good-class Practice (chiefly X ray and Electrical) £2 200 p a in first-rate Residential Town One third share at first with ultimate succession Partner must be experienced in X ray work Excellent Hospital and chance of appointment.

MANCHESTER —(30) PARTNERSHIP in old-established £4 500 in Residential District Small panel old for £2 115, with option to increase up to bout 30 and preferably M D or F R C S

WEST MIDLANDS —(31) PARTNERSHIP in old estab lished Country Town Practice over £3 600 p a Panel 2 183 Rent £60 Partner should be aged 30 to 40 with some Surgical experience Well equipped Cottage Hospital Premium one third share two years purchase

MIDLANDS —(32) PARTNERSHIP in very old-established Practice over £4 300, in good Country Town Panel 2,000 House containing 5 bedrooms &c , for sale Prem um for one third share can be paid partly by instalments

YORKSHIRE (EAST RIDING) —(33) PARTNERSHIP in well established Practice nearly £2 500 p a , in pleasant Country Town Panel about 1,000 Good house (5 or 6 bedrooms) in acre of ground Rent £40 Premium one-half share £1 500 Partner aged about 40, preferably with experience in Major Surgery Fine Hospital in Town

KENT —(34) PARTNERSHIP in ... better District middle-class Practice over £2 000, Panel 900 Very good society Golf Premium one third (or one half) share two years purchase Partner must be gentleman, Public School or University man for preference

NOTTINGHAMSHIRE — (35) PRACTICE averaging £1 200 p a , in Residential Town Panel 700 Corner house (3 bedrooms, &c) Rent £60 Premium one and a half years purchase

FAR EAST —(36) Excellent opportunity for well-qualified man to acquire a PRACTICE in one of the principal Cities Varsity man (30-40) accustomed to good class practice preferred Prem required £800

SOUTH COAST —(37) PARTNERSHIP in Panel and Private Practice, over £4 000 p a in popular Seaside Resort Panel 1 150 Premium one-third share two years purchase (Partner must be energetic and not over 35

EASTERN COUNTIES —(38) Old-established PRACTICE £1 855 p a in pleasant Market Town Panel 1 100 No midwifery Excellent detached house (7-8 bedrooms) Very good garden Cottage Hospital Premium one and half years purchase

SOUTH COAST —(39) Good class PRACTICE of £1,350 per annum Excellent house Premium £1 250

YORKSHIRE (W RIDING) —(40) Old-established PRACTICE over £1 700 in clean Manufacturing Town Panel 1 100 House contains 3 bed and 2 dressing rooms Garden half an acre Pretty surrounding country Prem £2 000 to include book debts tenant s fittings &c.

LONDON, N —(41) PARTNERSHIP in Cash and Panel Practice of £1 800 in Residential District Panel 2 450 House con tains 5 bedrooms &c One third share at first Premium £1 200 Incoming Partner must be married

ESSEX —(42) NUCLEUS of Practice in Industrial Village Panel and Midwifery refused Detached house (4 bedrooms and 2 attics) with garden Premium Practice and House £1 000 Plenty of scope

SPECIAL OPHTHALMIC PRACTICE —(43) About £600 in Seaside Town South of England Would suit elderly practi tioner retiring and wanting quiet practice with small expenses in healthy place Premium £700

MIDDLESEX —(44) PARTNER required in very old established and lucrative practice over £4 500 per annum in Industrial district Panel 4 000 Small house (4 bedrooms) Rent £52 Premium one third share two years purchase

MANCHESTER —(45) Old-established and increasing middle-class P... per annum in Suburb with Hospital and opport panel Good house (8 bed rooms) in excellent po ... Rent £90 Premium one and a half years purchase

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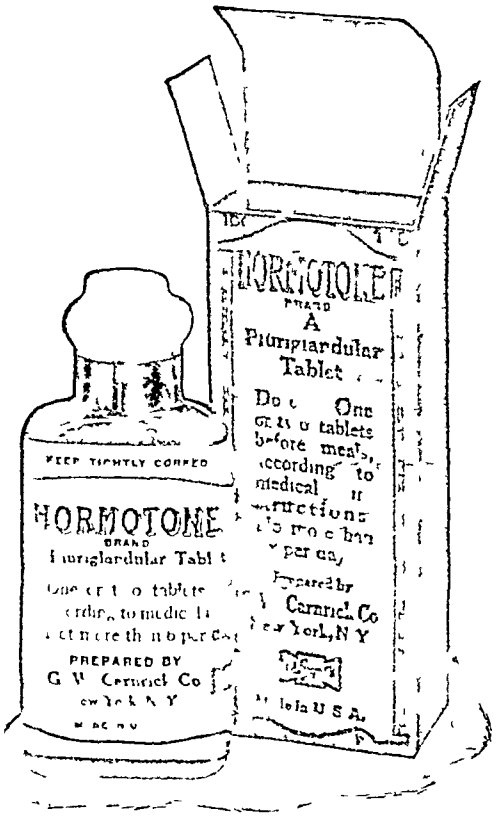
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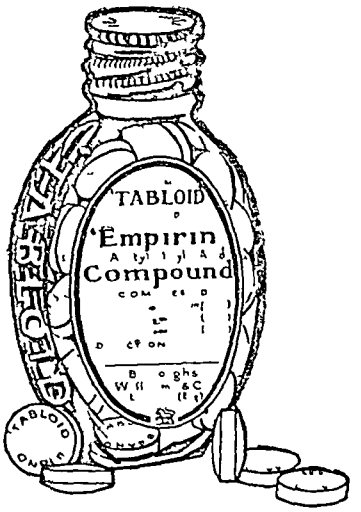
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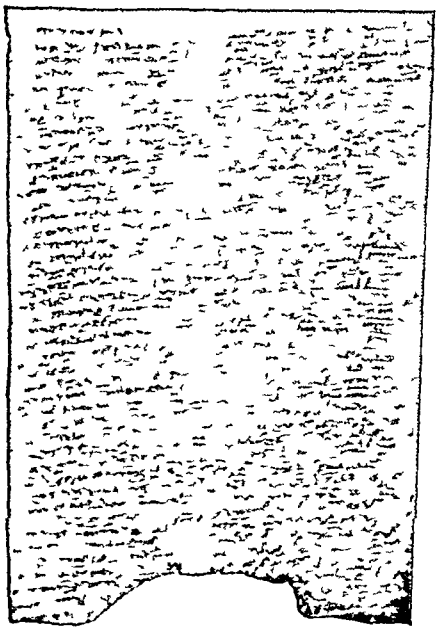
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Date c 668-626 B C.

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British Medical Journal

JULY 19TH, 1924.

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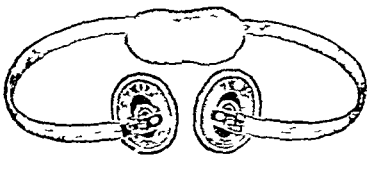
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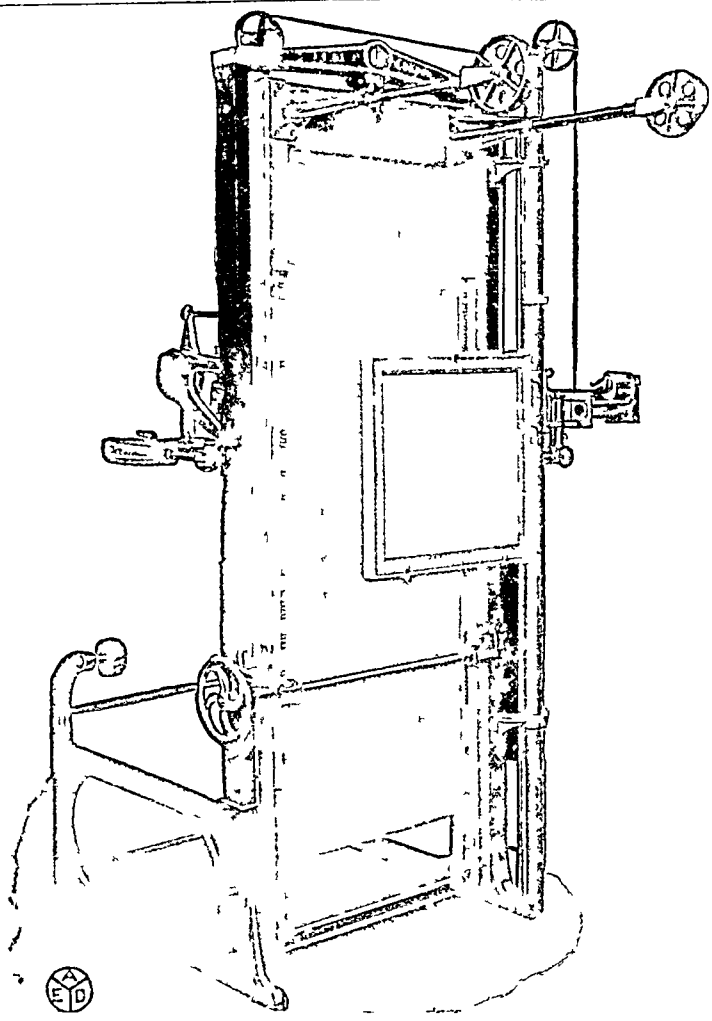
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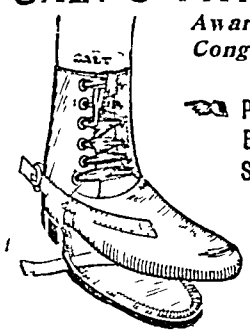
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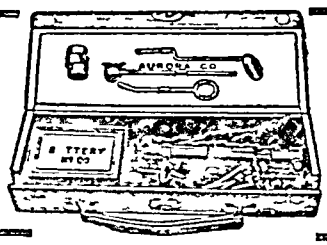
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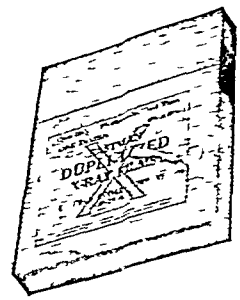
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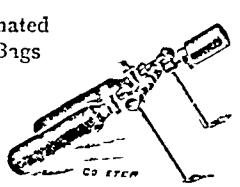
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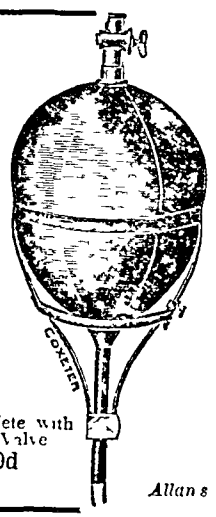
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DRUGS AND MEDICAL SUNDRIES
BY ALL THE LEADING MAKERS

A few prices selected at random from a comprehensive catalogue containing more than

FIVE THOUSAND ITEMS.

MEDICAL SUNDRIES

Catgut (Iodised or Chromicised) (Davis & Geck Verson Van Horn Flanders etc)	3d per tube
Water Beds 72" × 36"	30 each
Ear Syringes No 4 oz	6
Dispensing Scales	1s per set
Crutch Shoes (Thick)	3d & 6d
Plaster R.A. Rubber Adhesive × 10 yards	6d per spool
Plaster R.A. Rubber Adhesive 1 × 10 yards	9d
Plaster R.A. Rubber Adhesive 2" × 10 yards	1 6
Plaster R.A. Rubber Adhesive 4 × 10 yards	2 6 "
Plaster R.A. Rubber Adhesive 7" × 1 yard (in tins)	1 6 "

X-RAY APPARATUS

	£ s d
Tubes "T T	2 0 0 each
6" T T	3 10 0
6" Platinum	2 0 0
Illiampereme ers	2 0 0
Protective Aprons (half body)	1 0 0

(will be tested before dispatch)

SURGICAL INSTRUMENTS

	Description	Price		Description	Price	
		s d			s d	
Forceps	Swell 5	2 0	pair	Scissors Confat 5 SP	2 6	pair
	do 8"	4 0		do do 5" BP	2 6	
	Artery Criles	3 0		Needles Aneurism	1 0	each
	do Fenestrated	3 6		Needle Holders Universal	7 6	"
	Lane's Tissue 5	4 6		Spuds Eye DE	2 6	
	do do 8	6 6		Direc o Hernia	2 0	"
	Dressing 5"	2 0		Bistouries Hernia	2 6	"
	Sinus 5"	2 0		Rougines Faraboeuf	3 6	
	do 8	4 0		Gouges Flat Steel	3 6	"
	Dissecting plain 5	1 0		Hooks (sharp and blun)	2 0	"
	do 1 in 2	1 6		Holders Sponge	1 6	
	Sponge "	5 6		Elevators Dura Mater	3 6	"
	do 10"	7 6		do Durham's DE	3 6	
	Plate holding	6 6		Trephines e of 3 with handle	20 6	e
	Screw holding	6 6		Probes 5 6" and 5" 1 13 and 1	9	each
	Mayo Ochne "	7 0		Clamps Doyen s	8 6	
	Pedicle	9 0		do Moynihams	18 6	"
	Uterine Dressing	7 6		Syringes Record 5 c c	6 0	
	Bone cutting "	7 6		do do 10 c c	7 6	
	do do S	8 6		do do 20 c c	10 0	
	do holding Fergus ons 7"	7 0		Osteotomes	5 0	
	do holding Ferguson 9"	9 0		Ward Dressing Cases c mp e	10 6	"
	do holding Davey 9"	9 0		Cases Hypodermic 1915 pattern comple e	8 6	"
	do holding Lanes 12"	12 6		Clips Suture (Michel) per 1000	8 0	
	Cheatle Sterilizer	5 6		do Towel Vulcan	1 6	pair
	Gouge Hoffman	10 0		do do Bachaus	2 0	
	do De Vilbis	30 0		Catheters single Silver	3 0	each
	Tongue Guys	6 0		Inhalers Schimmelbusch	2 6	
	Necrosis straight "	5 0		do Shipways comple e	50 0	
	do curved	7 6		Apparatus Saline Sou ta e complete	1s 0	
	Skull Lanes Parro Bill	10 0		Chiropody Se complete in mahogany cases "	18 6	se
	do Horsley 8"	10 0		Knives Amputation 6"	5 0	each
				do Ankle Join (Symes)	8 6	"

Send all your inquiries to

GEORGE COHEN & ARMSTRONG
DISPOSAL CORPORATION

(MEDICAL STORES DEPARTMENT)

C.S.D. Depot No. 5, Wood Lane, Shepherds Bush, London, W.12

Telephone Park 5303 Ex 25 *Telegrams Medstrong, Shepherds London.*

BRAND'S

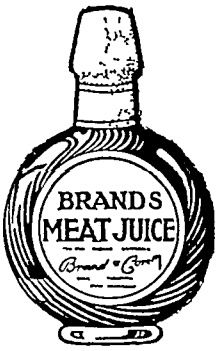


ESSENCE OF BEEF.

Recognised by Medical Men for nearly a Century as a **marvellous stomachic** without an equal in the treatment of cases of **Gastric Trouble, Fevers, Impaired Digestion, Nervous Prostration,** and similar diseases.

MEAT JUICE.

Described by "THE LANCET" as **"a powerful, nourishing and stimulating fluid"** Rich in uncoagulated proteid, extractives and salts derived from the fresh muscle juices of the finest British Beef.



BRITISH MADE and prepared at the Dietetic Laboratories of

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A Reliable Preparation

for the relief of pain in chronic or acute Rheumatism, Gout, various forms of Neuralgia and Neuritis, Sciatica, and Lumbago

Free Sample and Literature forwarded on request

SERIC OPOTHERAPY

AMPOULES Hemosyl AMPOULES
PURE HÆMOPOIETIC SERUM
Anæmia D'ROUSSEL'S Hæmorrhage

for Anæmia, Neurasthenia, General Weakness In Serum or Syrup form

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Dr Bengue & Co, who originally introduced Ethyl Chloride into this country, will be pleased to forward their illustrated pamphlet on Bengué's Ethyl Chloride for use in local and general anæsthesia

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Agents in Bombay Messrs RUTTONSHAW & Co Oak Lane Esplanade Road Bombay



The Natural Mineral Waters of

CARLSBAD

SPRUDEL, MUHLBRUNNEN & SCHLOSSBRUNNEN.

These Waters act,

(1) By immediate contact with the mucous membrane of the stomach and alimentary canal, allaying pain and spasms in these organs, and stimulating the digestive organs into activity

(2) Through the blood That is, they change its condition by increasing the proportion of alkali in the blood as well as in all derivative secretions (gall, urine, &c)

Largely Prescribed in cases of

Chronic Gastric Catarrh, Hyperæmia of the Liver, Diabetes, Gout, Gall-stones, Renal Calculi, Diseases of the Spleen and of the Kidney and Urinary Organs

Bottled under Official Supervision at Carlsbad and regularly imported by the Sole Agents—

INGRAM & ROYLE, LTD.,

Bangor Wharf, LONDON, S.E. 1. And at LIVERPOOL and BRISTOL

Samples and Descriptive Pamphlet forwarded on application



"MIST. PEPSINÆ CO. C. BISMUTHO"

(HEWLETT'S).

COMPOSITION—Pepsin, Bismuth, Sol Opii Purif, Hydrocyanic Acid (P B), Tinct Nux Vomica, &c.

An elegant preparation, miscible with water, invaluable in Gastric Catarrh, Pyrosis, Carcinoma, and all forms of atonic and Irritative Dyspepsia

DOSE HALF TO ONE FLUID DRACHM DILUTED

Packed, for dispensing only, in 10, 22, 40, and 90-oz Bottles.

PRICE IN ENGLAND 12/6 per lb

Physicians will please write "Mist Pepsinæ Comp. (Hewlett's)."

This preparation is also supplied "sine Opio," the dose and price remaining the same

INTRODUCED AND PREPARED ONLY BY

C. J. HEWLETT & SON, Ltd., Wholesale & Export Druggists, 35 to 42, Charlotte Street, **LONDON, E.C. 2.**

In cases of Dermatitis Calorica apply Antiphlogistine *cold*



IN cases of Dermatitis Ambustionis Erythematosa, where there is redness, accompanied with more or less heat of the affected part and slight swelling apply Antiphlogistine as a cold dressing

The hygroscopic properties of Antiphlogistine

are particularly valuable in cases of Dermatitis Ambustionis Bullosa. Aside from excluding the air, and relieving the smarting, the vesicular eruption and bullae are reduced, the serous exudate is deposited in the dressing and the reparative process is greatly aided.

Antiphlogistine is an important "first aid" in all forms of inflammation, superficial or deep-seated. It absorbs the water from swollen tissues, relieves the pain, and acts in a physiological manner to re-establish normal circulation in the inflamed part.

When Antiphlogistine is used in time, suppuration following destruction of tissue, is often prevented.

Over 100,000 Physicians use Antiphlogistine regularly, it may be obtained at any Pharmacy

Let us send you our free sample package and literature about Antiphlogistine, the world's most widely used ethical proprietary preparation.

The Denver Chemical Mfg Company,
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Laboratories New York Sydney Berlin Paris Buenos Aires Barcelona Montreal, Mexico City

Antiphlogistine
TRADE MARK

"Promotes Osmosis"



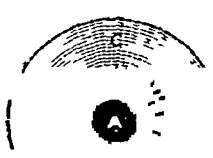


Diagram represents inflamed area. In zone "C" blood is flowing freely through underlying vessels. This forms a current away from the Antiphlogistine, whose liquid contents, therefore, follow the line of least resistance and enter the circulation through the physical process of endosmosis. In zone "A" there is stasis, no current tending to overcome Antiphlogistine's hygroscopic property. The line of least resistance for the liquid exudate is therefore, in the direction of the Antiphlogistine. In obedience to the same law exosmosis is going on in this zone, and the excess of moisture is thus accounted for

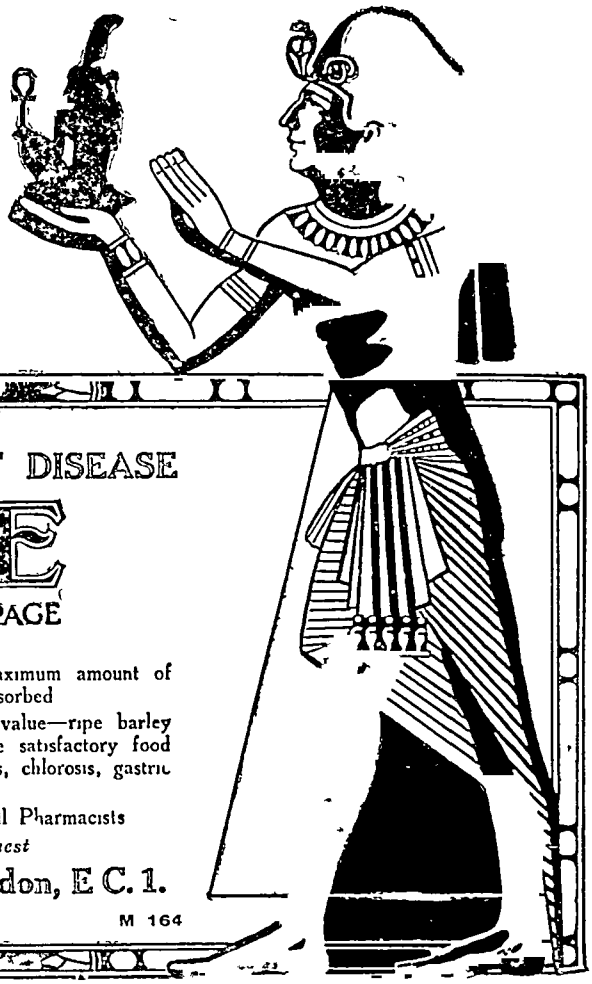


Antiphlogistine poultice after application. Center moist. Periphery virtually dry



SETIY I

The Second King of the 19th dynasty, Father of Ramses II



IN THE DIETETIC TREATMENT OF DISEASE

OVALTINE

TONIC FOOD BEVERAGE

"Ovaltine furnishes the system depraved by illness with a maximum amount of approved nutriment in a form that is easily digested and wholly absorbed

The nutritive constituents of 'Ovaltine are of unquestionable value—ripe barley malt creamy milk and fresh eggs flavoured with cocoa No more satisfactory food could be prescribed for use in the dietetic treatment of tuberculosis, chlorosis, gastric or duodenal ulcer, neurasthenia insomnia etc

This delicious and nourishing food beverage is obtainable from all Pharmacists

A liberal supply for Clinical Trial sent free on request

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Works KING'S LANGLEY, HERTS M 164

Valentine's Meat-Juice

In **Vomiting** of **Pregnancy,** in the **Exhaustion** following **Hemorrhage** or **Prolonged Labor,** and before and after **Abdominal Operations** the **Ease** of **Assimilation** and **Power** of **Valentine's Meat-Juice** to **Restore** and **Strengthen** has been **Demonstrated** in

Hospitals for Women.

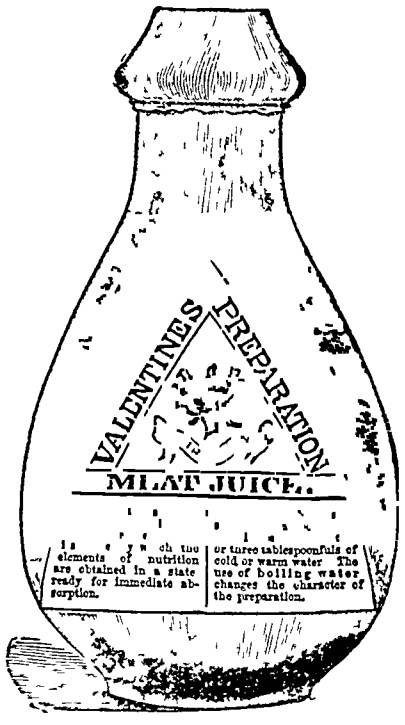
The quickness and power with which **Valentine's Meat-Juice** acts, the manner in which it adapts itself to and quiets the irritable stomach, its agreeable taste, ease of administration and entire assimilation recommend it to physician and patient

Physicians are invited to send for Clinical Reports

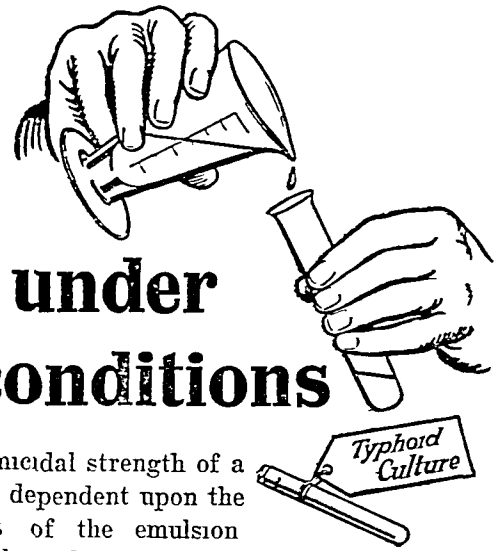
For sale by European and American Chemists and Druggists

VALENTINE'S MEAT-JUICE COMPANY,

Richmond, Virginia, U. S. A.



519



A reliable Germicide under practical conditions

THE efficiency and germicidal strength of a disinfectant in use are dependent upon the permanence and stability of the emulsion And these in turn are dependent upon the emulsifying material and the fluids with which the disinfectant is required to mix in practice Natural waters, urine, fæces and other organic fluids contain electrolytes which precipitate the emulsifying material (soap) of the ordinary thick oily disinfectants

Izal emulsion is resistant to the action of electrolytes and coagulation of the oil globules is therefore prevented and the germicidal strength of IZAL is unimpaired

The germicidal oil in Izal is a mixture of the polymethyl phenols, which, whilst possessing high germicidal properties, are non-poisonous in use

IZAL is 6 times the germicidal strength of standard Lysol. It is cheaper and safer

IZAL

In Bottles - 1/9
Small size - 1/3

KILLS GERMS

The officially adopted disinfectant at the British Empire Exhibition

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After a Surgical Operation

Malunion, delayed healing, low-grade infections, and other interruptions to recovery can often be forestalled by building up the tissues with

Compound Syrup of Hypophosphites "FELLOWS"

a continued course of which, after a surgical operation, will often accelerate the patient's recovery.

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Baby's birthright— Clean Milk

"I consider MILKAL to be of the highest quality and my own baby took to it at once and with undoubted benefit" (*Ref* 65)

"I consider MILKAL to be the very best Dried Milk that I have ever used It retains its sweetness after the water has been added longer than ordinary milk" (*Ref* 63)

"I have much pleasure in testifying the particular high quality and nutritive value of MILKAL I have not met with any other preparation of milk so thoroughly satisfactory in every respect" (*Ref* 61)

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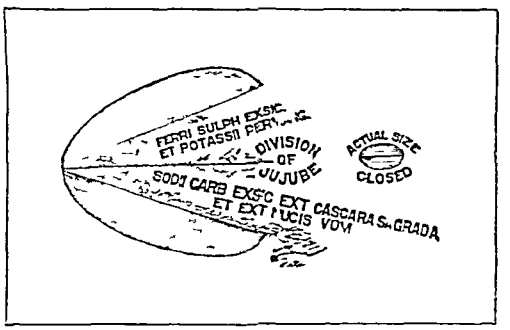
1 The fat is retained in its original globular form
2 Practically none of the albumen is coagulated
3 100% soluble in cold water to give a milk practically indistinguishable from raw cow's milk
4 In most dried milks when mixed with hot water the fat separates out—and usually appears in a yellow oily mass on the surface—but not so with Milkal

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Obtainable from all Chemists
6 pint size 2 9 3 pint size 1/5

Produced and packed in Devon (England) by MILKAL Ltd London and Devonshire

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ALKALINE CARBONATE + SULPHATE OF IRON

=NASCENT FERROUS CARBONATE

This occurs in the stomach when the two reagents are brought together by the dissolution of the gelatin covering and dividing wall

BI-PALATINOIDS

thus solve one of the greatest difficulties known in therapy, i e the production of Nascent Ferrous Carbonate in the stomach Bi-Palatinoids are successful in the most obstinate cases of anæmia, as an ever-increasing number of - - doctors will confirm - -

Ferrous Carb
Bi Palatinoid
No 500 gr 1
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Ferrous Carb c
Soda Arsenate and
Nux Vom
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Ferrous Carb 1 and 1½
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Clinical Sample and Literature on request

OPPENHEIMER, SON & CO., LTD.,
179, Queen Victoria Street,
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The Management of an Infant's Diet

DIARRHŒA OF INFANTS

Three suggestions are made:—

Stop at once the giving of milk
Thoroughly clean out the intestinal tract
Give nourishment composed of food elements capable of being absorbed with minimum digestive effort

A diet that has been proved to meet this last condition is prepared as follows:—

MELLIN'S FOOD 4 level tablespoonsful WATER (boiled, then cooled), 20 fluid ounces Feed small amounts at frequent intervals.

Mellin's Food

It is further suggested —As soon as the stools lessen in number and become more normal in character, gradually build up the diet by substituting one ounce of skimmed milk for one ounce of water until the amount of skimmed milk is equal to the quantity of milk usually advised in the direction for the age of the infant. Note that no milk fat be given until the baby has completely recovered.

Samples, etc. free to members of the medical profession

MELLIN'S FOOD Ltd.
LONDON, S.E.15

DOCTORS! SEND FOR THESE FREE FULL-SIZE SAMPLES.



ON receipt of your professional card we will send you absolutely free of all charge the following full-size samples of Sphagnol Preparations :—

1 Stick Sphagnol Shaving Soap.
1 Tablet Medical Soap.
1 Tablet Toilet Soap
1 Tin Sphagnol Ointment.

Sphagnol

SOAPS & OINTMENT

have been awarded the Certificate of the Institute of Hygiene They are invaluable in cases of **Acne, Alopecia, Anal Fissure, Blepharitis, Dermatitis, Eczema, Erysipelas, Hæmorrhoids, Impetigo, Chilblains, Insect Bites, Prickly Heat, Psoriasis, Falling Hair, Scabies, Septic Wounds, Urticaria,** and **Burns**

For Dispensing Sphagnol is obtainable in 1 lb Jars and Tins at special terms

This remarkable offer enables you to make a careful test of Sphagnol, and prove to your own satisfaction its wonderful powers Don't delay Make use of the coupon below and accept this offer to day !

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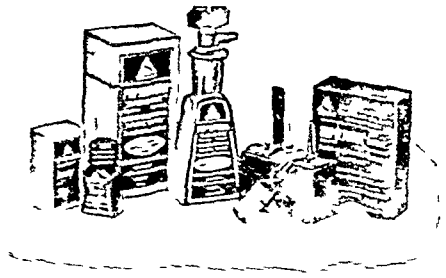
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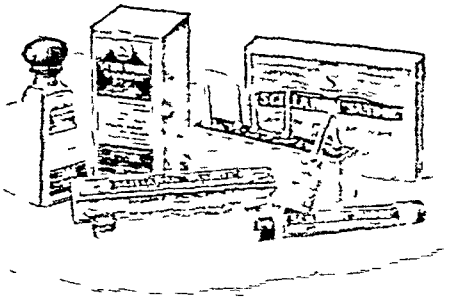


FEMERGIN

(ERGOTAMINE STOLL)

The pure active specific alkaloid of ergot

Ampoules (1 1 c c) box of 3	2 3
6	3 9
12	6 6
50	18 0
Solution bottle (15 c c)	5 0
box of 20 × 15 c c bottles	84 0
Tablets bottle (15)	4 0
(100)	13 6

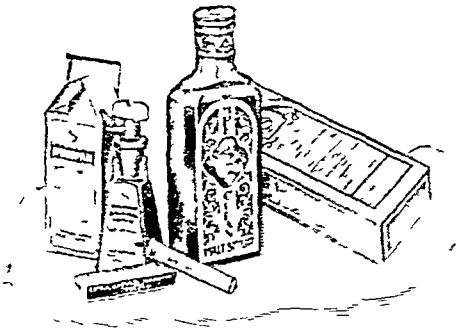


SCILLAREN

CARDIAC TONIC DIURETIC

The pure active principle of squill

Tablets tube (20)	2 10
bottle (100)	9,6
(250)	22 0
Solution bottle (20 c c)	3 9
(200 c c)	24 0
Ampoules (1 1 c c) box of 6	2 10
20	7'6
100	35'0



IPECOPAN

SEDATIVE EXPECTORANT

The therapeutically active ingredients of Dover's Powder in a pure state

Solution bottle (15 c c)	3 0
(½ lb)	32 0
Malt Syrup bottle (100 g)	3 2
tin (28 lbs)	£14
Tablets (D D A) tube (15)	2'3
" " bottle (100)	10 0



FELAMINE

CHOLAGOGUE AND INTESTINAL DISINFECTANT

Salt of Hexamine with the bile acids

Tablets bottle (50)	6 6
" (250)	21,6

Our Stand at the Exhibition in connection with the British Medical Association Meeting at Bradford is No 4

THE SANDOZ CHEMICAL CO., LTD.

(Pharmaceutical Department), **BRADFORD**

Opium . . .

should always be prescribed in the form of

NEPENTHE

A preparation derived *entirely from Opium* by a process which, whilst eliminating those constituents that give rise to disagreeable after effects, retain in the fullest degree the unrivalled sleep-producing and pain-allaying properties of the drug

Preparations which make various claims to unique merit are continually being offered to the profession they often prove exaggerated and ephemeral

The reputation of **Nepenthe** is based not on our advertisements but on the experience of thousands of practitioners of successive generations

Nepenthe is sent out in 2 oz, 4 oz, 8 oz, and 16 oz. bottles.

DOSE FIVE TO FORTY MINIMS

SOLE MAKERS AND PROPRIETORS

FERRIS & CO. Ltd. Wholesale and Export Druggists, **BRISTOL.**

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Patients requiring LIQUID PARAFFIN or AGAR as an Electuary should receive the combined treatment in the form of

"PARAFFAGAR."

Note also, the Preparation is a most valuable Lubricant in BRONCHIAL AFFECTIONS. It is palatable, and makes a change from the customary Emulsions

Samples, with pleasure, forwarded by return

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IDEAL PASTE FOR THE MEDICAL PROFESSION

Always ready to spread evenly and smoothly
The thinner you spread it the tighter it sticks
Never becomes lumpy
Perfectly clean paste in a clean container, complete with brush



Aluminium Container 6 oz size as shown, 1/6 *On sale at all good class Stationers*

F. K. ROTARY CO. LTD., Grove Park, LONDON, S.E.

The FOOD VALUE *of*

Mackintosh's Toffee de Luxe

MACKINTOSH'S TOFFEE DE LUXE is made from Butter, Sugar, and Cream—three real *foods*, which obviously do not cease to be foods because they are combined into a most delicious sweetmeat

That MACKINTOSH'S TOFFE DE LUXE has a definite dietetic value is, of course, no news to the Medical Profession We frequently receive grateful letters from the public telling of the good Toffee de Luxe has done in certain cases where it has been prescribed by doctors The following letter is a case in point —

LONGLEY AVENUE, PITTSMOOR, SHEFFIELD, 29/1/24

Gentlemen,

Having had to call the doctor in to my little boy (aged 1 year 8 months), who was suffering from an infected stomach, I thought you might be interested to know that the ***ONLY THINGS THE DOCTOR WOULD ALLOW HIM TO TAKE*** *were barley water, white of egg in water, and* ***MACKINTOSH'S TOFFEE***

I am pleased to say the youngster is quite well again, and, needless to say, his sweets in the future will be " ***MACKINTOSH'S*** *"*

Yours etc, G—— P——

This letter is remarkable confirmation of the results of Laboratory researches we have recently carried out into the food constituents of Toffee de Luxe

The analysis herewith of its percentage composition will demonstrate more clearly than any words of ours can, the wealth of warmth giving and energy producing material it contains

Percentage Composition and Food Value of MACKINTOSH'S TOFFEE DE LUXE

Moisture	5 8%
Fat	20 0%
Carbohydrates	69 4%
Proteids	3 0%
Mineral Matter ..	1 8%
	100 0%

MEDICAL CONGRESS AT BRADFORD. Medical Men visiting the Congress are heartily invited to join the party which is visiting "Toffee Town" to see the Toffee de Luxe actually being made. If you are unable to come in person let us send you FREE a SAMPLE TIN.

WRITE TO "SALES DEPT"

JOHN MACKINTOSH & SONS, Ltd, "TOFFEE TOWN," HALIFAX, ENGLAND

INSULIN

"BOOTS."

Further Reduction in Price

Improvements in manufacturing methods enable us to make another striking reduction in the retail price of Insulin

INSULIN "BOOTS"

IS NOW SOLD AT THE FOLLOWING PRICES:—

PHIALS:— 5 cc (100 Units or 10 doses) **2/8** each.
10 cc (200 Units or 20 doses) **5/4** each.

Ample supplies of INSULIN "BOOTS" are available Every batch is made in Boots own Fine Chemical Laboratories, tested and standardised in their own Pharmacological and Bacteriological Laboratories, then before issue, is passed by the Medical Research Council for potency and sterility

Research work on Insulin is still in progress, and as further improvements in method are discovered, the benefit will at once be passed on to the public

Supplies may be obtained through any Branch of Boots the Chemists or direct from Wholesale Sales Dept, Nottingham

BOOTS PURE DRUG CO. LTD.,
NOTTINGHAM.

TRADE MARK **"STABILARSAN"** BRAND

Dioxydiaminoarsenobenzol—Glucose

British Patent No 177283

BOOTS

British Patent No 177283

Approved by the Ministry of Health.

STABILARSAN—BOOTS possesses an extremely good Therapeutic Index—the curative power is high and the toxicity very low

The solution is constant in composition and not readily oxidised on exposure to air

The low toxicity of the preparation is reflected in the remarkable freedom from untoward reactions following its use in clinical practice

After being carefully tested in our own chemical and biological laboratories, every batch is finally tested and passed for issue by the Government Director of Biological Standards

STABILARSAN is supplied in solution form ready for use—no filtration is required

Special Literature on application

SOLE MANUFACTURERS

BOOTS PURE DRUG Co. Ltd.,

Manufacturing Chemists and Makers of Fine Chemicals,

STATION STREET, NOTTINGHAM

Telephone 7000 Nottingham *Telegrams Drug Nottingham*

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STRAITS SETTLEMENTS
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111 121 MARKET STREET
SINGAPORE

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TORONTO

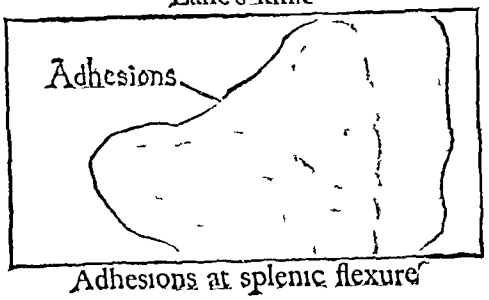
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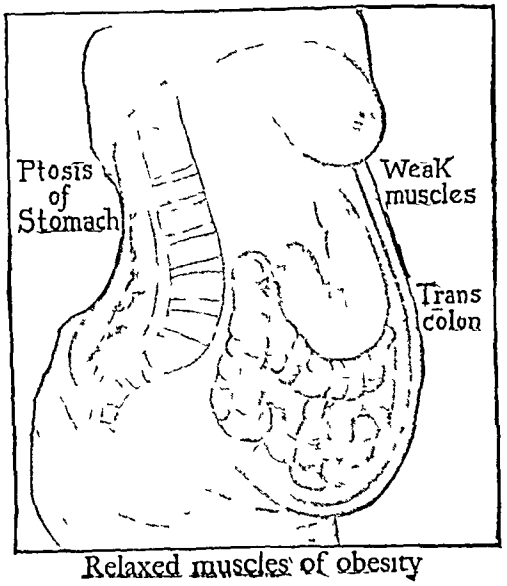
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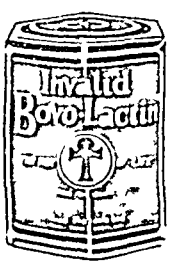
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The Mackenzie Davidson Lecture

ON

THE INFLUENCE OF RADIOLOGY UPON OUR CONCEPTIONS OF DISEASE

BY

SIR THOMAS HORDER BT MD, FRCP,

PHYSICIAN TO ST BARTHOLOMEW'S HOSPITAL

THE Mackenzie Davidson lecture commemorates annually the life and work of a distinguished pioneer in the field of radiology. It was thought by those who founded the lecture that it was an additional and an appropriate tribute to the memory of the man they sought to honour, who combined a true scientific spirit with the exercise of the healing art that the lecturer should be alternately a pure scientist and a member of some branch of the medical profession. This rather than any merit of my own, explains why the honour and the obligation of delivering the lecture have fallen to me. I am here to carry on however unworthily, the tradition which you have established, and I follow humbly in the footsteps of such distinguished men as Professors Rutherford Halliburton, and George and Drs Aston and Kaye. This explanation will, I am sure, entitle me to your indulgence.

As a physician it has been my privilege to be very closely associated with the students and exponents of radiology ever since the science had its birth. I have therefore had full opportunities of watching its progress, from the small beginnings of the nineties to the great developments of the present time. I am probably more indebted to my colleagues in this branch of our profession for help and guidance in diagnosis, and for treatment of my patients than to any other single branch, not excluding the pathologists and the surgeons. I only say this to emphasize my interest in radiology. But this close association and its practical results are not the subject of my lecture. Neither is it a consideration of all those individual diagnostic and therapeutic achievements of which the radiologist may well be proud and upon which physicians become so dependent in the ordinary pursuit of their daily practice. I wish to deal with a larger aspect of the subject, and to mark down some of the ways in which, as the result of the e almost breathless strides that your science has taken, our ideas about certain diseases have changed.

In the first place, let us consider just where radiology stands in relation to other parts of the scheme of medical study. In our conception of the nature and extent of disease processes clinical medicine is capable of contributing admirably clear pictures as the result of careful examination of the surface of the body. And by the exercise of the trained hand and ear we are able to elicit physical signs of lesions lying beneath the surface. But for ocular demonstration of any disease process which affects deeper structures we are dependent upon three methods: there is the experience of the *post-mortem* room, there is the brief and limited observation afforded by surgical operations, and there is the valuable help given by x rays. Of the enormous value of the *post-mortem* room in controlling our imaginations and in teaching us the gross and the minute structural changes produced by disease I need say nothing more. I am, however tempted to utter an exhortation to radiologists amongst others to remember what a bed-rock of fact is provided by this fundamental institution in the science of medicine, and what a salutary control it exercises over the natural tendency of the human mind to dogmatize. In reference to operations may I, in passing, share the lament of Sir James Mackenzie that hitherto so little has been done by way of systematic study when the living abdomen is opened and when the thoracic or when the cranial contents are exposed to view—proceeding that are becoming more and more common now that the surgery of the chest and skull is receiving more careful attention. But in the *post-mortem* study of disease, the great element of *function* is missing, and observations during operations upon the living are necessarily very limited so long as the procedures are, as needs must, so rapid, and the surgeon acting in the patient's best interest, guards so jealously the wound which constantly invites infection. Neither of these deterrents applies to the third process the radiologist is able in many cases to study both structure and function, he has ample time for his observations, and he can submit the e to such of his colleagues as are competent to offer suggestions and interpretations resulting from their own special experience of disease in other fields.

Against these obvious advantages we have to set the disadvantage that the radiologist's observations are much more difficult and therefore his interpretations of what he sees are much more liable to error. He deals with shadows rather than with substances, and this fact alone places a serious limit, if not to the range of his methods, at least to the rate of his progress. Despite this and other obstacles, radiology is probably at the present time the branch of medical science which is most responsible for changing our views in regard to disease processes in a number of directions, confirming some important hypotheses eliminating others, and suggesting new lines of thought. So far as time and your patience allow I will touch upon a few of these things.

Focal Sepsis

One of the most helpful conceptions in modern times in connexion with the pathogenesis of disease is that known as *focal sepsis*. We may say with confidence that the doctrine of focal sepsis has passed out of the realm of mere hypothesis and has become, in many instances an established fact. The various clinical manifestations which we group together under the generic term "fibrositis" form some of the most common expressions of focal sepsis. True it is, there is still a considerable divergence of opinion as to the relative degree to which the microbic and the metabolic factors operate in the production of this condition, but it is demonstrable again and again that in many instances of this morbid process there is close association with a septic focus, drainage of which leads to cure of the disease without any other form of treatment. Radiology has given great help in establishing the truth of this doctrine. In the diagnosis of sinus infection, for example, it has enabled us to visualize the morbid condition of an antrum or of some other accessory nasal cavity, in mastoid infection the same experience often obtains, whereas in connexion with dental sepsis it has become our chief standby for exact knowledge wherewith to establish the diagnosis. Bacteriological researches led us some fifteen years ago to the conception of chronic toxic processes set up by subinfection of certain tissues by streptococci of comparatively feeble virulence. We theorized about these processes and were led to the idea that in some way or other these streptococci colonized in (amongst others) the periodontal tissues very frequently, and thus constituted a form of focal sepsis which gave rise to fibrositis as well as to several other pathological effects. Then came the revelations of dental radiography, and the progressively clearer and clearer views which we were given of the state of the periodontal membrane. At once our theory was confirmed: we had ocular demonstration of a chronic painless, sclerosing inflammation, without pus formation, yet capable of causing all manner of remote disturbances sometimes as trivial as housemaids' knee and sometimes as lethal as ulcerating endocarditis. The specific focal lesion caused by salivary streptococci was exposed, and we found our lives justified in having sent out patients to their dentists with a statement of our doubts, only to receive too often the familiar assurance that "there was no pyorrhoea." Such assurance nowadays gives us no more comfort of mind than it gives the patient comfort of body: for we know that teeth may be firm and gums dry, yet x-ray examination may reveal a thickened membrane and apical abscesses—adequate causes for toxaemia and a chain of resultant troubles. I may perhaps be forgiven for quoting from a paper which I read before the Odontological Society in 1914 where I was dealing with this question:

> The pathological process going on at the root of the dead tooth leading to clerosis of the tissues hereabouts is exactly similar to that which is taking place in the joint where two

muscular fascia, and the sheaths of the nerve trunks There may be very little suppuration throughout all this pathological change accompanying the chronic streptococcal infection, quite often there is no suppuration at all To the naked eye there is nothing to see that indicates infection, unless it be the dense fibrosis All the same, a sterile platinum loop, applied to the adherent sac as the dental surgeon holds the tooth in his forceps, and bringing away a mere droplet of blood, as it seems, is capable of giving, when smeared over an agar slope, a copious and pure culture of streptococcus This question of suppuration has been the bugbear of many practitioners for a long time past, and even now underlies many fallacies connected with our ideas of infective processes No suppuration, no infection is a rough and ready rule, than which no graver error was ever conceived There are two conditions in which, as modern bacteriology has taught us, suppuration may be quite absent though micro organisms, ordinarily pyogenic, are saturating the tissues with their toxins, and are directly leading to serious disease (*a*) The first condition is one in which the infection is a fulminating one, the micro organism unusually virulent, and the tissues are overpowered before their resistance can show itself (*b*) The second condition is one in which the micro organism is one of feeble virulence of long standing action and the tissue response to the prolonged infection is constructive rather than destructive It is this latter condition which is present in so many cases of dead teeth, the roots of which are infected by *Streptococcus hæmolyticus*"

Even to-day this old notion that infection, and even gross infection, together with severe toxæmia, cannot exist without suppuration, has not died out The confirmation of the fact given by radiography has been overwhelming, and the influence of such confirmation has been wide spreading

I need only mention the chronically inflamed appendix and the chronically inflamed gall bladder as other instances of focal sepsis established frequently by radiography In the case of the gall bladder I have little doubt that by improvement in technique we shall soon be able to establish the diagnosis of chronic sepsis in addition to mere concretions

RADIOLOGY OF THE HOLLOW VISCERA

Let me turn now to a very different subject The influence of radiological investigations upon our knowledge of the anatomical relations and upon the motor functions of the *hollow viscera*, both in health and in disease, has been epoch-making Physiology owes no less than pathology to these investigations, indeed, it is scarcely an exaggeration to say that the whole of our present conception of the neuromuscular mechanism of the alimentary canal is the result of the x-ray revelations Granted that a study of the shadows cast by the opaque meal give us one aspect only of this complex mechanism, it still remains that this is the only exact and consistent set of visible phenomena at present available to us in this connexion And the study of these phenomena has advanced and clarified our ideas to an astonishing degree When we remember the notions we were taught and were ourselves accustomed to teach, concerning the physiology of the stomach movements, for example, and what we now *know* as the result of studying the x-ray, even the recollection almost brings the blush to the cheek What we really had any exact knowledge at all on the matter I cannot now remember no doubt that formidable Canadian Alexis St Martin, with his exposed stomach and its valvular observed, had a lot to answer for, the unfortunate incident was probably given a much heavier load than it could be expected reasonably to carry Today we stand upon much surer ground The "lie" of the stomach and transverse colon, the position of the cæcum, the appendix and the hepatic and splenic flexures are now matters of common knowledge The variations, too, in the position of all these organs variations which are not incompatible with good health despite all the gloomy forebodings of the advocates of colo and cæco-pexy—we are familiar with these and they find us for the most part unconcerned, though the knowledge of them is apt to leave their owners much perturbed We are passing through the stage of attributing on the score of disease to that of tolerance on the score of variability in individuals and we may yet arrive at the stage of indifference on the score of a changed conception of the standard of health—all as the result of greater familiarity with the facts as they steadily accumulate from the numbers of radiographic records In other words, as to what is happening with regard to our ideas about the hollow viscera has happened with regard to our ideas about the kidneys Even moderate degrees of nephroptosis were at one time regarded as signs of a morbid state, capable of explaining most of the functional disabilities met with in the neurasthenic, and not excluding, in the opinion of some, even grave forms of psychosis The dropped organ was supported by pads, was "stitched up," was even removed To-day none of these treatments is considered necessary, the most that we do is to advise some sort of general abdominal support Enteroptosis, its significance and its treatment, would seem to be passing through the same phases But just as a kidney may be fixed in an aberrant and in an awkward position, justifying surgical treatment, so, no doubt, a cæcum may be tied down in the pelvis, be incapable of emptying itself and may justify a surgical procedure to restore its function But this difference—between mere ptosis from lack of tone and support on the one hand, and mechanical handicap from fixation on the other hand—constitutes the very essence of the matter, and it is a difference which radiography, and that alone, is able to distinguish in any given case

But it is not only in the matter of the mere "lie" of the hollow viscera, and the presence or absence of fixation, that radiography has given us such clear ideas, a good many points connected with the motor function of these organs have also been established I do not propose to deal in detail with the series of events that is now recognized as constituting the normal diorama of the passage of the opaque meal through the alimentary canal, though this is probably the most illuminating discovery of all But I wish to refer to a few points in which radiography is still giving great assistance to our ideas and enabling us to understand more clearly the nature of some of the problems presented to us by the patient To put my conclusions first and discuss them briefly afterwards, I would say that x-ray investigations of the alimentary tract seem to me to indicate that although there is a general average of results which may conveniently be taken as representing normal functions, there are many variations within this general average to which it is very important not to attach too much pathological significance (1) These variations are as between individual and individual and they are probably part of the personal equations of the particular subjects examined, as much as are their facial expression, their gait, and their speech But our experience of the posture and movements of the hollow viscera is a new experience—it is little more than half a generation old—whereas our experience of face and gait and speech is very old No wonder that we lack unanimity in our views as to what is normal and what is abnormal There being no rigid standard of health in this particular respect, it is not to be wondered at that our interpretations of what we see differ so much Up till the present I doubt if we can say much more of large numbers of opaque meal skiagrams than that they are all of them representations of the alimentary tract of genus Homo, and that they do not reveal any evidence of gross structural defects

How can we, by means of radiology, get further along this particular line? I suggest that one hopeful way is by departing somewhat from the fixed routine at present employed There is surely room for some play of the imagination and some experimentation with the method It was a great advance when the radiologist began to supplement his stereotyped methods of examination by varying the posture of his patient, it was a still greater advance when he began to combine palpation of the abdomen with the use of the fluorescent screen Such combined methods were, I believe, almost resented by certain clinicians, who thought their own sphere of activity was being thereby invaded, but such resentment, though inevitable, was justly disregarded I am not one of those who regard the radiologist as a mechanic, or as a photographer, though I am aware that some radiologists aim at little else There is no reason why the radiologist should not be a clinician in spirit, indeed there is every reason why he should be, for to divorce clinical medicine and radiology is to impoverish both This leads me to say that I think a closer co-operation between the clinician and the radiologist, and more exchange of views, are desirable factors in the advance of knowledge of the diagnosis and treatment of those diseases which have points of interest to them both

Such co-operation might easily result in new methods of combined radiographic and clinical investigation as well as in more consistent results from radio-active treatment

I have said that I think the ideal radiologist should be a clinician in spirit, and I have inferred at the beginning of my remarks that he is a pathologist in spirit also But I think it very important that he should know the limits of his method or rather that he should not strain his method past its possibilities in his interpretation of results If he does this he is no longer giving us the valuable help of his technique and of his powers of observation —he is theorising Let me illustrate by reading the conclusions of a report upon the opaque meal examination of a patient whom I saw a week ago They read as follows

The elongation of the pelvic colon and the kink of the iliac colon constitute *the primary abnormalities in the alimentary tract* There is pronounced catarrh shown by increased sacculation of the caecum ascending and transverse colon and by persistent narrowing from tonic spasm of the latter portions of the transverse colon and of the descending iliac and pelvic colon *The appendix* is also catarrhal The ileo-caecal valve is incompetent The terminal coil of the ileum is hypertrophied There is spasm at the ileo-caecal entrance There is delay in the stomach but no organic disease or mechanical abnormalities of the stomach or duodenum

The severe catarrh of the large intestine and the iliac stasis due to spasm at the ileo-caecal entrance lead to profound *toxaemia*

Now I should be the last to put a limit to the radioscopic method of demonstrating anything whether it be 'catarrh" or "toxaemia," but I am not aware that up to date either of these processes is amenable to the opaque meal method Though I say it with less assurance I am doubtful if "hypertrophy" is any more demonstrable than 'catarrh" No doubt the argument is sound enough if we add to the radioscopic evidence the collateral facts elicited by clinical and clinico-pathological methods But not otherwise If forbearance be not exercised in these things and the radiologist really 'lets himself go' he is apt to bring his science into disrepute I have received reports of a much more committal kind than the one I have just read It is by no means uncommon to be told that a child has active and extensive pulmonary tuberculosis because the hilum shadows are conspicuous, and the glands obviously enlarged, after some febrile illness I have even been rung up on the telephone, so intent was the radiographist to let me know the seriousness of such a situation I was able to assure him that the boy was already convalescing rapidly at the seaside I am, of course, alive to the fallacy in these remarks that the child might be suffering from pulmonary tuberculosis after all But experience must be the final guide in such cases and experience cautions us very definitely not to make exact diagnoses in the absence of clinical data Why need we? There is no necessary parallelism between change in structure and change in function and the essence of disease is a *functional* rather than an anatomical change Radioscopy itself has helped us greatly in this conception How many instances we see in which there are quite extensive bony changes in the hip-joints and in the spine but little or no pain or other disability On the other hand, how severe may be the symptoms of hip-joint disease, without any demonstrable change seen in the radiograms One patient may have a large collection of gall stones and be in excellent health, another may have no actual concretions and yet be the subject of severe gall bladder dyspepsia These examples might easily be multiplied

To return to the question of the opaque meal and its help in establishing variations in the position and in the functions of the hollow viscera (2) Not only are these *variations seen in skiagrams resulting from the examination* of different healthy individuals there are also variations of no great moment considered pathologically, and yet of great physiological significance in the same individual at different times and under different conditions I have proof of this fact, and no doubt not a few others present have proof also But as "repeat" investigations are not often undertaken the evidence is not so abundant as in the case of different individuals Certain fortuitous observations, however, are pertinent A radiological colleague of mine recently told me that he was on one occasion screening a nervous patient just after the opaque meal had been swallowed It was before the time of the fixed screen In moving this upwards to get a view of the cardiac orifice the top inadvertently struck the patient under the chin It was immediately noticed that the *stomach, which had previously* been observed to be in a good position, and to be actively motile, dropped suddenly a distance of several inches, and at the same time all active peristalsis ceased This excellent demonstration of the sensitive response made by this organ to a sudden shock points a moral to the story that I am, by comparison, labouring in the telling It is sometimes inevitable that, though no such physically painful stimulus as this takes place, the novel and somewhat alarming noises which of during a radioscopic examination must have a somewhat similar effect There is little doubt that when a patient says he has a sinking sensation in the abdomen the sensation is accompanied by a relative and temporary degree of gastroptosis and I think it quite likely that if we were able to screen a person during the play of various emotions, we *should find that when* his "heart was lifted up," and when his "heart sank within him," it is in reality not his heart but his stomach that changes its position in this manner, as the result of increased and of decreased tone respectively I do not know if the cinematograph method has ever been applied to the transit of the opaque meal, but it is not at all unlikely that a series of pictures taken in this way would reveal many facts at present only guessed at, especially if the observations were made to cover some of the emotional states just referred to If the stomach is so sensitive to emotions, to pain and to reflex action through the special senses, it is not likely to be less sensitive to general fatigue I think this may perhaps explain some of the discrepancies between the clinical examination of the stomach and the radiographic results It was formerly not at all an uncommon experience of mine to conclude as the result of my examination of a patient in the afternoon, that he had a dilated and atonic stomach, and to feel somewhat mystified when my radiological colleague demonstrated to me next morning that the organ was of a natural size and possessed of good motility I now feel confident that it is the difference between afternoon and morning that accounts for the apparent disparity of the results, though I think that there are other factors which enter into the causation of the "splashing stomach" that is so common on the couch of our consulting rooms and yet which so often finds no equivalent expression in the observations of the radiologist

There are two or three further points in connexion with the important subject of enteroptosis where radiology has been illuminating in two senses of the word One of these is the difference in level of the stomach, and especially of the colon, with posture Radioscopic investigations certainly confirm the advice which we usually give patients *suffering from this trouble to interrupt the erect posture* of the greater part of the day by lying for a certain time in the semi Trendelenburg position, for the difference of levels of the viscera in the two positions can be shown to be well worth the while Again, examination during the wearing of a properly fitting support, such as special corsets which take their purchase from the hips and from the spine, proves that, in some cases at all events the support really does assist in keeping the organs in better position Lastly, it can be demonstrated that the effect of a walk which is not too fatiguing is to raise, and not to lower, the levels of the hollow viscera For these demonstrations I am indebted to my friend Dr Dudley Stone whose skiagrams I hope to show you at the close of these remarks

Before leaving this matter of enteroptosis I wish to refer to one other point, partly because of its pathological interest and partly as a warning It is common knowledge that we are often able by a carefully devised programme of treatment properly carried out, to improve the health of the subjects of this condition very considerably, even to the extent of hearing them declare that they are "cured" of their symptoms If now we examine them again radioscopically by the opaque meal method we find in quite a number of cases, that the 'lie" of the stomach and colon is practically unchanged The moral is obvious to the patients whose intelligence is able to bear the news we

explain that it was not the mere ptosis of their organs that caused their discomforts and their general inefficiency, but the associated nervous asthenia, and even more (as I myself think probable) the congestive state of these same organs. To the majority of such patients, however, it is wiser to avoid the repetition of the examination altogether—not a very difficult situation to negotiate in actual practice in view of the present cost of a complete opaque meal investigation. The experience that I have just recorded serves well to confirm the principle that many diseased conditions are complexes made up of anatomical defects, together with nervous, vascular, metabolic, and infective associations. Radiology shows us one part of the picture, and a very important part—still, only one part.

In the history of its progress radiology must, of necessity, have first concerned itself with gross structural points, both normal and abnormal. It was essential to get certain rough criteria established. The method has now passed this stage in most regions of the body, though not in all. It is now contributing help of a more important, though more subtle, kind: it is helping us to study function, again both normal and abnormal. It is helping us to realize more vividly the fact that for a long time the patient does not suffer from diseases but from a tendency to disease, that later, when disease is established, the dis-function is not a fixed state, but an ebb and flow. I should like to make it clear that to me this is the kind of help that seems of vital importance. I doubt very much if those radiologists who are trying after "standards" may not be missing some more important things—I do not speak of physical standards, but of health standards. One such radiologist friend of mine with whom I was discussing a case of mutual interest said recently, "I wish we had a standard measurement for the breadth of the mediastinal shadow." Comment is unnecessary, but that is the outlook which I regard as likely to stultify some of the great possibilities of his science in the near future.

Radiology in Diseases of the Lymphatic Glands

Upon our knowledge of diseases of the lymphatic glands radiology has thrown a flood of light. The discovery of enlarged nodes by x-ray methods was for a time such a revelation that it not only gave confirmation to the view that tuberculosis of these glands was a very common disease, it led many radiologists to give quite unwarranted and pessimistic opinions concerning the patients examined by them—an error of judgement that even to-day is by no means rare. If I may add that it is also by no means rare for patient to be given possession of their own or their children's radiograms, it is readily seen how easy it is to create, quite unwittingly, situations full of apprehension and alarm but which can be avoided by a little care and tact on the part of the radiologist. With improvement in technique the frequency with which shadows are detected in the regions where glands are known to exist—such as the roots of the lungs—becomes greater year by year. It is no longer necessary that a node shall be calcified or even caseous to throw a shadow by modern radiological method. The standards of health are therefore in this respect changing. On the one hand we realize that whereas formerly did that there is an ebb and flow of lymph glands in the thorax as there is in many parts of the body that are open to palpation, to whom it therefore the significance of demonstrating enlarged glands in the former situation is not so serious as was supposed. On the other hand radiology has given evidence to the fact that in certain diseases of the lymph glands here we thought the lesions were confined to the superficial nodes many cases the intrathoracic glands are also diseased. An important example of this is Hodgkin's disease, where such a discovery at one and the same time alters the prognosis not yet enables us to diagnose much more promptly and effectively the occurrence of this disease in which period its course of an quite in the dark as to where the primary process which led to the fever was situated. We were told the glands in the neck, axilla, groin, or mediastinum were diseased. We suspected the visceral glands, and therefore kept the spleen and liver under observation, but had no clue. A good x-ray picture solved the mystery by its revelation of the rise and fall in the breadth of the shadows in the hila of the lungs. No doubt in some of these cases we shall in the future, with improved methods, get similar demonstrations in regard to the abdominal lymph nodes in lymphadenoma. In the case of carcinoma of the breast a similar demonstration of the fact that the zone of lymphatic infiltration is more extensive than would otherwise be supposed is often given by radiological examination. And the significance of this finding is much the same as was seen to be the case in lymphadenoma on the one hand our conception of carcinoma mammæ as a disease has changed in that we now know it to be often a more extensive affair than was formerly supposed, and, on the other hand, we are able to set against this serious consideration knowledge that leads to much earlier and therefore more effective treatment.

It is not only in relation to lymph nodes that our conception of carcinoma has changed as the result of radiological findings: the same remarks are applicable to the bones. We now know that osseous metastases are much more common than was thought to be the case before the era of radiology. *The clinical picture presented by a woman who has undergone excision of the breast for cancer two, four, six, or even ten years ago, and who now complains of severe pain in the back, hips, or legs, due to cancerous infiltration of the bodies of the vertebræ, or of the pelvic bones, is all too familiar.* Such cases were usually thought to be severe examples of fibrositis until one or more of the lesions led to local prominence or to spontaneous fracture. It is possible that such cases are more common to-day than formerly, it is even possible that they are relatively more common in patients who have had radical operations done for the primary growth, but it is certain that as the result of x-ray investigation we are able to diagnose them much earlier, and it is highly probable that many are brought to light to-day which would never be discovered at all. Further, it is not a very uncommon experience to find these tell-tale lesions overlooked in a good radiogram, even by the radiologist, and I think the reason is, either that he is not warned of the possibility of neoplastic disease, or because his attention is distracted from the infiltrations by some osteo-arthritic changes at the periphery of the vertebræ. I have recently dealt more fully with this subject of carcinomatosis in the Purvis oration. I pointed out there that in not a few of the cases the appearances may be equivocal. For there is a condition now and then met with in carcinoma in which good radiograms reveal a state of diffuse rarefaction of several of the bones, the nature of which is difficult to determine, and which is almost certainly different from the more localized deposits that I have just referred to. I regard this change as part of the general toxic or nutritional disturbance that occurs in carcinoma, and which leads eventually to the so-called malignant cachexia. It is sometimes asserted that malignant cachexia is due to secondary microbic infection of the growth, but this is probably only so in part, these bony changes go to show that there is something specific in the carcinomatous cachexia, for we have no knowledge of them in chronic pyogenic infections. I was interested to hear from my colleague, Dr. Gilbert Scott, that he had met with this same appearance, and that he felt sure it was not due to actual cancerous infiltration, however widespread this undoubtedly is at times. I purpose showing lantern slides, taken from skiagrams kindly lent to me by Dr. Gilbert Scott and by Dr. Robert Knox, which illustrates this condition. I find that this peculiar form of mollities has been noticed by one or two observers before, particularly by Roger Williams, but I have not come across any radiographic examples of it.

Radiotherapy

Thus far I have dealt only with some of the ways in which radiology has influenced our ideas of disease by *revealing to us changes in structure and function that we previously knew nothing about or merely guessed at.* I turn now to a few examples of modifications in our views of disease resulting from the experience of radiotherapy. And it is a natural transition from the radiographic aspects of carcinoma to which I have just referred to the radiotherapeutics of malignant disease. The surgical treatment

of malignant tumours has advanced very little during the past generation, and such advance as it has made is to be attributed almost entirely to advance in the means of diagnosis whereby operative procedures offer better hope of radical cure The practice of aseptic methods once established, and the importance of the anæsthetist's contribution to the success of the operation once fully recognized, the limits of the surgeon's possibilities in this direction seemed to be reached Handley's important work upon the lymphatic spread of cancer of the breast is now just twenty years old Stiles's and Halstead's classical papers advocating widespread removal of infected tissues are ten years older The work of these men has not been materially altered up till to-day Perhaps the only important advance in the operative treatment of carcinoma during the past two decades is the abdomino perineal operation for cancer of the rectum for the present improved technique of which credit is to be given in this country to W E Miles If we turn to the medical side of the question, and ask what advances the physician has made towards the treatment of malignant disease, we are met almost with silence The evidence that the injection of the heavy metals materially benefits the subject of malignant disease is I think, very slight, although I consider that they have a definite value when used in conjunction with radio-active treatment The fact that various sorts of serums and antigens, even including Coley's fluid, have completely fallen into disuse, goes to show that in this field nothing is being accomplished Certain ancillary helps, it is true, the physician can give, both to the surgeon and to the radiologist, but I know of nothing he does, any more than the surgeon, in the direction of therapeutics which affects our conception of the neoplastic process

If we now turn to the sphere of the radiologist, we find an entirely different state of things I am not to-day concerned with the results, still less with the methods, of treatment of malignant growths by x ray or by radium But the bearing of such treatment upon our ideas of the course and even the pathogenesis of such growths is very close It is fairly safe to predict that the many observations now in actual progress will very shortly yield important facts the knowledge of which will not only help to crystallize our ideas upon some of the causative factors, but will also enable us to control our remedies more hopefully One great change in our ideas about cancer, or so it seems to me, as the result of radio-active treatment, is the abolition of the notion that there is anything necessarily and inevitably progressive about the disease Once we have seen—as which of us here has not?—a patient's general condition of health restored, and his growth greatly reduced in size, by radio-active treatment, we can never again look upon cancer in quite the same light It is true that, with our present limited knowledge, working in the dark to a large extent as we are such restoration to health, and such resorption of the tumour, are but of temporary duration But my point is this—that in such cases we have a demonstration of the fact that *cancer is controllable*, using a word that I regard as more applicable to diseases in general and more scientific in its connotation than the more popular word "cure" If we consider the matter for a moment, do we cure tuberculosis? We do not, but we are perhaps getting the disease slowly under control We have certainly added nothing specific to our means of "cure" in this disease, we are even using specific methods less and less Syphilis is more definitely controlled to day than twenty years ago, but there are many cases that still resist curative treatment, *syphilis of the central nervous system we are still* almost powerless to deal with by any of our present methods Ulcerating endocarditis we neither cure nor even control, and of certain forms of rheumatic infection of the heart unfortunately the same thing may be said

The senior surgeon of a large London hospital recently said publicly that he regarded the exploitation of radio-therapeutic methods as a menace to the effective treatment of cancer, asserting that he considered such efforts prevented patients from receiving the early benefits of radical surgical measures Such an extraordinary indictment calls for some comment If radiotherapy really did this I should agree with him But of course it does not No reputable radiologist dreams of denying a patient with an operable malignant tumour the advantages of surgery, in every case the surgeon has the "first call", and a firm conviction that in the treatment of malignant disease to remove the diseased organ cannot be more than a method *faute de mieux* does not, in the present stage of our knowledge, cause us to swerve for an instant from this invariable rule of practice Unfortunately there are all too many cases in which, even at the earliest moment of the diagnosis, modern surgical technique is unavailable, the growth is so situated anatomically that it cannot be reached or is already disseminate Appropriate material for the radio-therapist is therefore not lacking, though he is, by virtue of the rule already mentioned, denied the very sort of material with which he could probably do the best work But even with this handicap it is possible to mark a steady change in the course of cancerous diseases as the result of the radiologist's efforts, and the outlook for sufferers from the dreaded scourge was never so hopeful as now Many cancer patients live longer to-day, and live less painfully, both in body and mind, than ever before, and this is very largely on account of radio-active therapeutics

Do these facts throw any clear light upon the etiology of cancer? Perhaps not But the more successful application of radiotherapy to lymphadenoma is to me significant in this connexion There are many similarities between these two diseases If, as I think is not unlikely, the lymphadenomas are proved to be caused by a group of protozoal parasites, then the increasing success that we find attending the combined treatment of these affections by arsenic and x rays does seem to suggest that we should be premature in considering that cancer is not an infective disease as has been recently asserted, and asserted semi-officially, by some workers But this is too large a question for the purpose of this lecture Like many other questions connected with cancer, the answer can only come from concentrated labour and constructive thought I am optimistic about combined methods of research—radiologist, clinician, and pathologist working in team fashion Research combined with treatment is not popular with scientific advisory committees, but we must do our best to make it popular, and no doubt the more contributions it makes to knowledge, the less unpopular will it become "Why," said a colleague to me recently, "why *do* they call it research when *they* put radium into a mouse but not when *we* put it into a man?" No answer seems possible unless it be that the radiologist, the clinician and the histologist are not considered to be capable of observation or experiment Let us demonstrate that this is not true, and let those who disburse public funds help us to explore this fertile ground of research combined with treatment I have often remarked that every piece of treatment properly devised and carried out is a piece of research I am no prophet, but I hazard a prediction that the effective control of cancer will come by other means than by a direct attack upon the essential *materies morbi*, even if it does not come before we know what that *materies morbi* is And I think that research combined with radiotherapy will have been a conspicuous factor in bringing the control about

I must not stay to deal with other diseases in which our conceptions have been influenced by the experience of radio-therapy In the leukæmias, in exophthalmic goitre, in various skin diseases, and to a less degree in several other fields, our ideas about pathology have been modified I think the modifications would have been even more striking if the work had been more thoroughly controlled by combined clinical and histological methods But there are, as I have said hopeful signs that such control will be sought and will be given in the future

Conclusion

I am all too well aware that in this address I have brought coals to Newcastle For a physician to talk to radiologists about a subject so special as theirs is must lead of necessity to not a few bizarre expressions and demonstrations of his own ignorance But the point of view of one who is an outsider in all matters of radiological technique, and yet an insider in all matters of pathological interest, may not be without its suggestiveness to your minds And surely it is pathology (I use the word its

old and truest sense) that links together all our diverse interests We must never lose sight of the essential *unity* of pathological processes Though clinical medicine sees one aspect of a disease, and radiology another, and morbid anatomy a third, and parasitology a fourth, the disease is one and the same, and our best conception of it is obtained, not by undue insistence upon any one of these aspects, but by a proportionate mingling of the pictures presented by all He who achieves the most complete conception of a disease in his mind is the most likely to envisage the appropriate treatment and get the best result None of us can afford to neglect the facts elicited by the methods of others Indeed, our own methods will yield us more facts and a clearer vision, in exact proportion as we allow them to be guided and controlled by the methods of others It is of the utmost importance that we keep our minds alert and free from stereotyped ideas, yet bound always, fettered even, by the principles of science and reason, with a healthy scepticism withal—that saving grace so essential to the scientific mind Let us remember that our present notions of diseases, even when we think them very complete, are probably extremely crude We have already ample experience that this is so Not only are they crude in respect of the extent and the complexity of the disease process, as instanced earlier in this address, but in respect of the course diseases run and their response to our efforts at treatment The problems of pathology become more elusive and yet more fascinating the closer we study them It is a glorious contribution to such study that you are making to-day by means of radiology, both in its diagnostic and in its therapeutic values The memory of him in whose name we meet together to-day is, I feel sure, being well served by you who follow him I wish to congratulate you upon the fine work with which you are supplementing his and other pioneer achievements and I shall have justified myself if anything I have said serves to stimulate you to further efforts and yet greater results

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Hunterian Lecture

ON

CANCER OF THE CERVIX

(*With Special Plate*)

DELIVERED BEFORE THE ROYAL COLLEGE OF SURGEONS, JANUARY 25TH, 1924,

BY

SIDNEY JORSDIKE B.S., F.R.C.S., M.D.

(*Abridged*)

Etiology of Cancer

Modern methods of experimental research have resulted in the production of cancer in animals at will This result, [illegible] Rous's observations upon the culture of tissues [illegible] *in vitro* are notable steps in the solution of the [illegible] of cancer Already theories which have held sway for [illegible] years have been demolished The vague conception [illegible] tumours is no longer tenable and the behaviour [illegible] cells during growth *in vitro* shows [illegible] that Hansemann's theory of anaplasia is untenable [illegible] it confirms the view that tumour formation [illegible] upon chronic irritation The production of tar [illegible] shows that there is a variable latent period between [illegible] application of the irritant and the appearance of [illegible] from which some interesting conclusions [illegible] Post-mortems of cancer in human beings frequently [illegible] no evidence of true irritation, nevertheless [illegible] irritant may have produced cell changes which [illegible] recognizable at the time but long after [illegible] to exhibit malignant [illegible] by Leitch's experiments with tar [illegible] though he stopped the applications [illegible] any sign of malignant change, [illegible] and malignant evolution took [illegible]

[illegible] seem that tumours which are apparently benign may develop into malignant growths, and that injury, which of itself is not capable of producing cancer, will greatly accelerate the development of cancer after the application of a suitable irritant Finally, there is the important fact established by Murray, that mice which have developed tar cancer will not develop a second tumour despite continued irritation, which observation offers an explanation of the rarity of multiple carcinomata in man It shows that the mouse acquires immunity to the growth of further tumours, which is also borne out by the observation that certain inoculated tumours, after a period of growth, came to a standstill and were finally absorbed Attempts to reinoculate the same mice with the same tumour completely failed, and they showed greater resistance than normal mice to other tumours Bashford and Murray have shown that this resistance is of the nature of an active immunity

Precancerous Conditions

I agree with Lenthal Cheatle that this description is more exact than precancerous or precursory Erosions, fissures, lacerations, and chronic cervicitis are described as forerunners of cancer of the cervix, but as one or more of these lesions are invariably present in parous women, and as 90 per cent of this disease occurs in that group, the evidence is not too convincing Since, however, experimental cancer is shown to be dependent upon irritation, it is possible that any of these lesions is an indication that the irritant is present, and where it happens upon favourable ground malignant growth ensues I investigated a large number of uteri of some of the more prolific domesticated animals—the cow, sow, bitch, and cat—with the object of ascertaining whether any of these lesions could be found in them The cervices of the cow and sow are formed of a rosette of protuberant cervical mucosa, and it was not possible to detect by naked-eye examination whether minor tears and lacerations were present or not, but in none of the organs examined was there any gross lesion, and on microscopic examination there was no evidence of cervicitis In the cat and bitch the cervix has a less complicated structure and is therefore more satisfactory for examination No evidence of laceration or chronic inflammatory lesion was found Professor Wooldridge informs me that carcinoma of the uterus is exceedingly rare in any animal, nevertheless, it is of interest to note the rarity of both types of lesion which are so frequently associated in cancer of the cervix in women

Erosions.—There is suggestive evidence that the papillary erosion stands in some sort of relation to cancer, four cases of interest have been under my observation

One had been an in-patient for chronic cervicitis with a papillary erosion She came under my observation nine months later with an extensive carcinoma of the cervix

Another was treated similarly and a piece removed for section, which showed no malignant change fifteen months later she came under observation with an inoperable growth of the cervix

A third was regarded as an erosion, but as it bled a little more than usual she was entered for admission, with a view to exploration She escaped observation for five months, and then returned with an inoperable cancer

The fourth had been treated as a cervicitis, and seven months later came under my care with advanced cancer

There is another type of lesion of which I have met three cases in all, and for want of a better description it may be called the "bleeding cervix"

Bleeding Cervix.—The whole cervix is soft and spongy, dark red in colour, bleeds persistently when swabbed, and a probe sinks into its substance The haemorrhage resembles that which takes place from the surface of a granulating wound—numerous minute drops of blood ooze out, run together and form a stream It differs from the haemorrhage of the papillary erosion, for that ceases at once with a little pressure, but this persists and may require a gauze plug to enable the patient to get home

In one of these cases the bleeding persisted daily for a week, and I finally amputated the cervix This patient died twelve months later from carcinoma of the stump of the cervix

A second became malignant, and I removed the uterus

The third I now under observation and as the microscopic examination did not justify the radical operation I treated her with radium The microscopic appearances are those of angioma The deep part of the section shows evidence of cervicitis, the epithelium is squamous and shows no evidence of proliferation the striking feature being the number of blood vessels in the section

There is little doubt that apart from local lesions, anything which tends to lower the resistance of a patient is a contributory cause to the development of cancer It is a curious fact that cancer of the womb is very largely a disease of the hospital class of patient, who have large families and are more prone to suffer from neglected infections than the well to-do class In addition to which, environment malnutrition, and alcoholism play no small part in depriving the organism of the natural power of resistance

In 200 cases of cancer of the cervix there was no evidence of hereditary influence There were seven cases between 20 and 30 years of age forty-one over 60, the majority occurring between 45 and 55 The incidence in nulliparous women was 12 per cent Twenty-seven of these cases had undergone some form of operation subtotal hysterectomy 5, amputation of cervix 1, cervical polypi 1, dilatation and curettage 5, ovariotomy 6 miscellaneous operations 6 Ten of the cases were associated with some degree of prolapse, for which a pessary had been worn for some time and three were associated with fibroids

Symptoms

The signs and symptoms of cancer of the cervix are entirely dependent upon the conditions of the growth and the extent to which it is protected from infection Carcinoma begins as a proliferation of tissue cells with the formation of a microscopic tumour Ulceration of that tumour only takes place when the supply of nourishment fails to keep pace with the new growth, and it is with the advent of ulceration that symptoms first appear These symptoms may be so slight as to remain unnoticed or appear so trivial as to be ignored until the ulcer becomes infected The importance of infection of a malignant growth cannot be exaggerated for two results ensue—increased rapidity of growth and increased rapidity of necrosis with the consequent foul discharge and haemorrhage In this connexion it is well to recall the experiments of Bashford and Murray, who found that mice could support enormous tumours without showing any disturbance, even though metastases had formed, but with the appearance of ulceration and infection emaciation and death soon followed The cervix is situated at the upper end of the vagina, and so long as that canal is anatomically intact and does not function infection may be long delayed This is well borne out in elderly women who are past sexual life, and in whom the vagina is a narrow atrophic cavity There were forty such cases in this series, all over 60 years of age, four of which were submitted to operation, the remainder being inoperable The analysis of the duration of symptoms in these cases is as follows

4 weeks	4	9 weeks	4
5	2	10 ,,	3
6	2	12 ,,	4
7 ,,	4	16 ,, ,,	3
8	3		

It is clear from this table that any attempt to gauge the age of the lesion from the initial appearance of symptoms is liable to a large margin of error, and any deduction based upon such a foundation is fallacious Friability is regarded as almost pathognomonic of cancer, and undoubtedly it is in an extensive growth, but in a recently formed ulcer the degree of friability is small and as a sign of early cancer its value is greatly exaggerated

Histological Type in Relation to Malignancy

Krompecher first pointed out that many tumours which grow in the skin and are derived from it are different in structure and biologically behave in a different way from squamous epithelioma He regarded them as being derived from the basal layers of the skin, for which reason they show no tendency to keratinization or pearl formation These tumours, which include rodent ulcer, are relatively benign and are described as basal-cell cancer Continental observers lay stress upon this division and recognize (*a*) basal-celled, (*b*) spinous (squamous epithelioma) (*c*) an intermediate group having some characters of both types They hold that the basal-cell type is relatively benign and highly radio-sensitive, whereas the spinous-cell type is very malignant and relatively radio-resistant

Martzloff (Johns Hopkins Hospital) investigated the histology of 257 cancers of the cervix in an attempt to correlate the type of malignant cell with the subsequent clinical history of the patient He classified the growths as (1) spinal cell type (squamous epithelioma), (2) transitional type, (3) fat spindle type, which corresponds to the basal-cell cancer His observations suggest that the fat spindle type was the most malignant despite its correspondence with the relatively benign basal cell cancer of the skin The transitional type was next in order of malignancy and the spinal-cell type was relatively least malignant He further noted that inoperability was most frequently associated with the transitional and fat spindle types

Here are two directly opposed views on what appears to be a definite issue, the difference being due to the difficulty of classifying these tumours in the way which the opponents have done My experience shows that these divisions are highly artificial, for sections taken from different parts of the same tumour might place the growth in Group 1 2 or 3 and of twelve sections from different tumours two would belong to Group 1 two to Group 3 and of the other eight a difference of opinion would exist amongst competent histologists as to whether they belonged to the one or the other, or whether they should form a third group The division of these tumours into twelve subgroups based upon the numerical predominance of one type of cell appears to me to offer little profit for much labour, and no conclusions of value can be deduced from it Looking through the sections of my cases in the light of subsequent clinical history, I find myself quite unable to correlate the type of malignant cell with the degree of malignancy With the exception that a very cellular growth is an acute lesion while a tumour which shows fibrous reaction is more chronic little information as to the future is to be gained from the type of cell We are accustomed to the uncertainty attending tumours which present almost identical features under the microscope—how one tumour grows rapidly and kills the patient quickly, whereas another may take years to compass the same end The laboratory propagation of mouse tumours has shown that histological structure is a poor gauge of biological character, and experiment has closed the interval between normal tissue and undifferentiated tumour tissue by the production of a series of tumours with increasing differentiation

Diagnosis

Early diagnosis depends upon digital examination and visual inspection through a speculum at the onset of symptoms and the removal of a piece of tissue for section This operation is best done under anaesthesia, for the vagina and cervix can be properly cleansed and the wound closed with a catgut suture The tissue removed must include a part of the growth and some of the underlying healthy tissue Asepsis is vital, for once a growth becomes infected it is impossible to sterilize it Attention has already been drawn to the association of papillary erosions with cancer, and the imperative necessity of microscopic diagnosis This applies to polypi, and to ulcers which do not heal rapidly under treatment, cases of syphilitic and tuberculous lesions are recorded as having been excised as cancerous growths

Is the Growth Operable?

In answering this question we must bear in mind that the real question is 'Can the growth be completely removed with a margin of healthy tissue?' In estimating the clinical signs we must allow for the microscopical tumour being some distance in advance of the clinical tumour, and that in 25 per cent of cases which are clinically limited to the cervix malignant cells are present in the parametrium

Induration of the surrounding tissue is not essentially malignant, but may be an inflammatory oedema associated with an ulcerated growth tending to disappear with appropriate treatment

Fixation of the uterus is the first point to decide which is best done by the bimanual examination Limitation of movement may be due to an old inflammatory lesion or to the ramification of the growth, and it is often impossible

to decide between them When due to growth complete removal is impossible, and when due to inflammatory lesion the difficulties attending the radical operation are greatly increased, and the operative mortality proportionally higher The utero-sacral ligaments are best examined through the rectum, for the finger reaches a higher level, and the side wall of the pelvis can be explored at the same time When the anterior lip of the cervix is involved cystoscopic examination of the bladder is imperative, and the ureters should be catheterized if necessary, for in comparatively early cases the base of the bladder is frequently infiltrated, and may show an elevation behind the trigone or an asymmetrical prominence of the trigone itself, on the summit of which is placed the ureteral orifice

The appearance of a diffuse oedema, or more frequently a bullous oedema, due to infiltration of the veins and lymphatics of the base, is not uncommonly present The oedema may be limited to the ureteral orifice, which presents a gaping mouth—an appearance which suggests that the ureter is compressed by growth The left ureter is much more frequently involved than the right, which I believe is accounted for by Brasch's description of the relations of the ureter to the cervix and vagina The majority of abandoned operations are due to infiltration of the bladder, which is the type of case where an antecedent cystoscopy would have obviated the operation With the diagnosis of cancer of the cervix any of these appearances contraindicate the radical operation, for involvement of the base of the bladder and ureter is an absolute bar, in my opinion, to any attempt at removal of the tumour For although resection of these organs is commonly successful in vesical tumours, cancer of the cervix is so extensive as to involve them is too extensive to eradicate Involvement of the rectum is rare, except in the late stages of the disease, and rectal symptoms are more often due to pressure than to infiltration by growth

TREATMENT

The operative treatment of cancer of the cervix has undergone great change in the last twenty-five years—local excision of the disease by knife or cautery, supravaginal amputation of the cervix, vaginal hysterectomy, and, last of all the radical abdominal operation The limits of this last operation vary with the individual surgeon, from panhysterectomy with excision of as much parametrial and vaginal tissue as possible to resection of bladder, ureters, rectum and more or less of the pelvic fascia and glands The mortality in the more extensive operations is as high as [illegible] and probably is rarely below 30 per cent, in the best 20 per cent, and for early cases The radical operation has now been practised for many years and for early cases it has gained a increasing number of surgeons in the form of applying this operation to cases clinically extended into the parametrial tissues the results are deplorable, and of those who [illegible] operation less than 10 per cent are alive Mr Bailey further writes it is disputed whether the radical operation shows any great improvement over the vaginal operation

Some surgeons treat all operable cases of cancer of the cervix by vaginal hysterectomy, and claim that them patients enjoy freedom from recurrence over five years comparable to that of the Wertheim operation, while the mortality is only 20 to 25 per cent of the latter It would appear that the time has come to estimate the results of the abdominal operation and numerous writers notably Kelly and Burnham in America Bumm, Pankow Hellman and Reifferscheid in Europe—have begun by abandoning the radical operation for cases that exceed the limits of the cervix The reason for this attitude, inasmuch as many undesirable end-results occur in the vaginal cases, is the mortality and results of operation with the most favourable of cancer cases Cancer is a local disease and if the growth can be completely removed [illegible] the converse is equally true—that tissues not clinically to have involved the pericervical tissues it is rarely or never completely removed, and few patients remain free for any length of time If the operative results are to improve, our aim must be to get cases at an earlier stage of the disease rather than to strain operative technique to breaking point in an endeavour to deal with advanced cases

In the discussion of treatment it is necessary to have some clinical division, and the following method seems convenient

Early Cases—Cases where the growth is limited to the cervix, in a minority of these only a part of the cervix is involved, and after the radical operation a large proportion of these should remain cured In a majority of early cases the cervix is extensively infiltrated, yet no extension to the surrounding tissues can be made out, and the uterus is free These cases are operable, but it is well to remember that in 25 per cent of them cancer cells can be shown in the parametrial tissue removed, and with more efficient methods they would probably be found in a higher percentage of cases This class of growth contributes a number of recurrences, but the operative mortality from these two divisions should not be more than 6 to 7 per cent

Borderline Group—Cases where one or both broad ligaments are infiltrated, and there is some fixation of the uterus, the growth may involve the vaginal wall or the patient may have a persistent frequency of micturition

Advanced Cases—These all surgeons regard as inoperable, with an extensive tumour fixing the uterus, involving the pelvic floor, base of the bladder, and maybe with recognizable secondary deposits

The *early groups* are universally accepted as being proper operative risks, and if surgery were limited to them the operative mortality would be as low as 6 to 7 per cent and a curability rate of 70 to 75 per cent of operated cases would probably be obtained

The *borderline group* forms the battle-ground where issue is joined by the advocates of the radical operation and the advocates of radiation The term "borderline" denotes doubt in the surgeon's mind whether he can remove the growth entirely, so offering the patient some chance of cure The problem is not whether the growth can be removed as a surgical feat, but whether it can be removed at a reasonable risk and with a reasonable chance of cure Two schools of surgeons answer this question in different ways One takes up the position that every case of cancer of the cervix in which there appears any chance, however small, of removing the growth, should be submitted to operation This policy leads to a high operative mortality, a number of abandoned operations, a number of cases of incomplete removal of the growth, and a few cases which remain well over a variable period of time Martzloff found that less than 10 per cent survived for a year after operation, and that the mortality reached 70 per cent in one year and was never less than 25 per cent—a prohibitive rate from which that clinic recoiled The other school has answered the question by placing the borderline case in the inoperable class and treating it by radiation

I have notes of 50 borderline cases treated by the radical operation in which the parametria were infiltrated by growth, many of which came under my observation for treatment of recurrence of the growth The most striking feature of this study is the large number of early recurrences and the consequent relief was so transient as to be negligible

Of the 50 cases, 10 are living and 40 dead

Of the 10 alive, 6 remain well over periods of 5½, 4½, 4, 4, 3½ and 3 years 2 remain well between one and two years, 2 are alive with recurrence under twelve months

Of the 40 dead, 8 recurred in two to six months, 14 recurred between six and eleven months, 7 recurred at the end of twelve months 7 recurred between one and two years, and 4 between two and three and a half years

Some of the earlier recurrences were probably cases of incomplete removal of the growth The high mortality, rapid recurrence, and poor end-results must cast grave doubt upon the wisdom of radical operation in this group, nevertheless, it might be justified if there was no alternative There is, however, ample evidence, from various clinics in different countries, to show that better results are

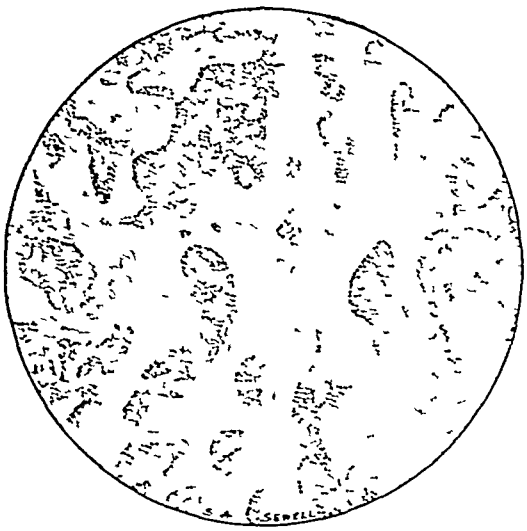


FIG 1—Section of tissue removed after radium showing active necrotic growth down to firm tissue

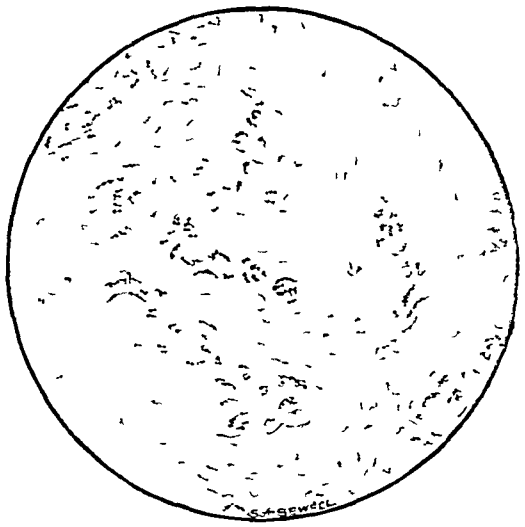


FIG 2—Section removed four weeks later after two exposures to radium The mass of growth is broken up into scattered islets of malignant cells There is a great development of young fibrous tissue

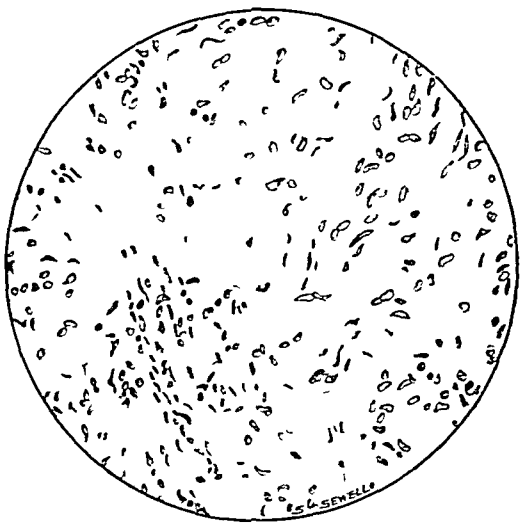


FIG 3—Section removed two months after No 1 after three exposures to radium No malignant cells can be identified even under a high power



FIG 4—Left ovary Death after eight days Radium at a distance of 2 cm for twenty four hours × 200

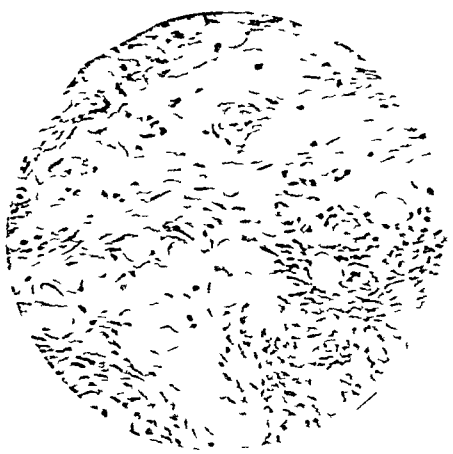


FIG 5—Right ovary of the same animal as No 4 but painted with copper sulphate in addition to radium at a distance of 2 cm for twenty four hours Survival eight days × 200

J J LEVIN AND L E ELLIS HERNIA INTO THE INFERIOR DUODENAL FOSSA

DESCRIPTION OF FIGURES BY L ERASMUS ELLIS

Figs 1 and 2 were taken before operation Figs 3 and 4 after operation All skiagrams are antero posterior with the patient lying on his back

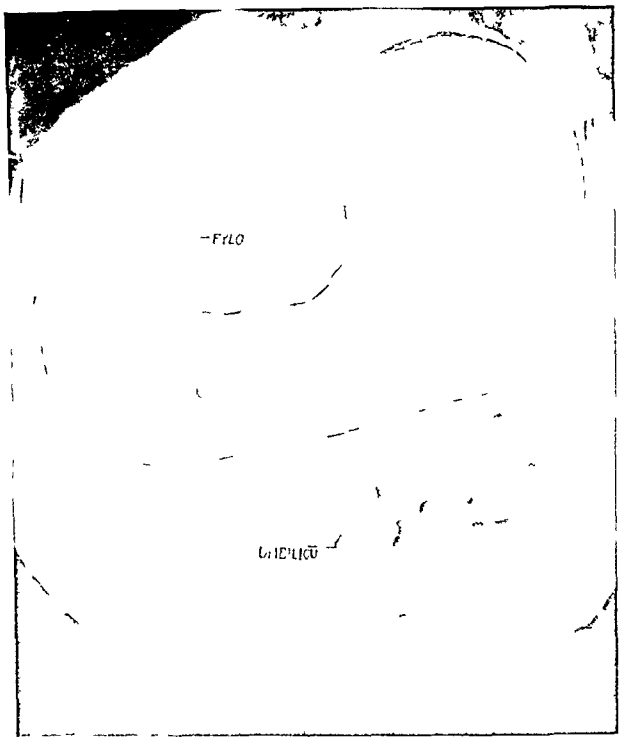


FIG 1 taken thirty three hours after ingestion of the opaque meal shows about one third of the meal still in the stomach and this organ is enormously dilated and extending across the whole upper abdomen Its lower border is within one inch of a transverse line joining the iliac crests

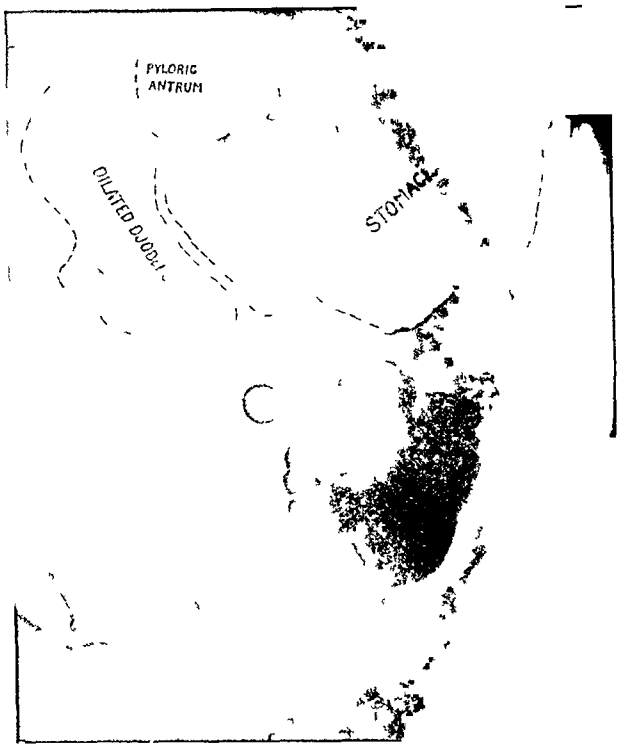


FIG 2, taken fifty hours after ingestion of the meal (before operation) shows the cardiac end of the stomach outlined by opaque food and the pyloric end visualized by its contained gas Its huge dimensions are evident On the left of the pyloric end of the stomach the greatly dilated descending portion of the duodenum is shown



FIG 3 (double meal) taken immediately after ingestion of the second meal shows the stomach (after operation) of normal size being only one third of the size of the stomach before operation as shown in Fig 1 It does not extend beyond the middle line the pylorus lying over the vertebral column The lower border of the stomach is three inches above the transverse iliac crest line The gastric tone is good the stomach being well contracted down upon its content The first meal taken seven and a half hours before the X ray examination is shown to be in the colon



FIG 4 shows a normal condition seven hours after ingestion of an opaque meal The stomach and practically the whole of the small bowel are empty, while the meal is in the colon

obtained from radium than operation in the group, and the following are worth consideration

Lumm Of 81 borderline cases 23 per cent and of 127 advanced cases 7 per cent were free five years later
Dederlein Of borderline cases 36 per cent and of advanced cases 11 per cent were free five years later
Kelly who classifies these two groups as inoperable had 69 cases (21 per cent) free from disease 7 of which were for five years and over
Heyman Of 26 inoperable cases 7 (23 per cent) were free five years later
Adler Of 52 inoperable cases 13 (25 per cent) were free five years later
Van Seuffer Of 62 inoperable cases 14 (22 5 per cent) were free five years later
Burrows Of 100 inoperable cases 6 (6 per cent) were free from three and a half to four years later

Treatment by Radiation

The treatment of cancer of the cervix by radium is so recent and the methods of using it are so varied, that the optimum technique is not yet agreed The present radiological methods in cancer are comparable to the surgical practice of twenty five years ago—namely, amputation of the cervix With improved technique and research we may assuredly look forward to better results It is necessary to inquire what radium can do and the answer is that, directly or indirectly, it destroys all tissue cells if the dose be large enough Secondly some cells are more vulnerable to radiation than other —for example Graafian follicles are easily destroyed, whereas lutein cell stroma cells, muscle, and cartilage require from four to six times the dose to produce destructive effect and therefore, relatively to the Graafian follicle they are resistant In the same way malignant cells are more vulnerable to radiation than normal tissue cell and therefore theoretically radium is capable of curing cancer This desirable result is dependent upon the application of the lethal tumour dose to every bit of the tumour, a difficult condition to attain, for the radius of action of radium is small and this action deteriorates in accordance with the law of inverse square

How radium acts is another question of importance, the answer to which remains unknown We know that it acts most surely upon rapidly dividing cells, and that the first histological change seen is in the nucleus of the cell, but the structure of the cell offers no help in solving the problem, and we shall probably have to wait until we learn more about the chemistry and physics of cell life before the question is answered The change in the nucleus appears as loss of staining power, shrinking, and fragmentation and vacuolation Concurrently with the nuclear changes an extensive formation of connective tissue takes place in the stroma, this fibrous tissue pushes its way into the alveoli of malignant cells, breaking them up into isolated clusters It finally surrounds them and the cancer cells fade away, until finally no trace of malignant cells can be found in the section This formation of fibrous tissue is remarkably like that seen in atrophic scirrhus of the breast (See Figs 1 to 3) Clinically radium is suitable for 90 per cent of advanced cases, the contraindications being

(*a*) Cases complicated with an old pelvic peritonitis
(*b*) Cachectic case
(*c*) Fistulae or where the vesico-vaginal or recto vaginal septa are massively infiltrated
(*d*) Cases with extensive secondary deposits and nerve root pain

All cases, with the above exceptions, are worth treating, for the amelioration of symptoms is incredible to anyone who has not had experience of it, and the comfort of a woman no longer suffering from constant haemorrhage and foul discharge is a striking contrast to a woman whose offensive discharge is noticeable to those around her The improvement is so great, even after one exposure, that some patients disappear for a time under the impression that all is well, only to return later when the symptoms recur One of the drawbacks of radium is that it requires several exposures, each one of which means an anaesthetic, with which patients become disheartened Another difficulty is to know when to stop irradiation The ulcer is healed and the cervix looks normal, though red, a piece of tissue removed at this stage shows no malignant cells There is thickening in the vault of the vagina and the fornices Is it fibrous tissue or growth? Too often it turns out to be growth, but further irradiation at this stage produces no change in the irradiated area and may produce a burn

Adjuncts to Radium

Copper and selenium have been used empirically in the treatment of cancer for a considerable time I tried collosol selenium in a series of cases, but did not find any influence exerted *on* the tumour I then tried a series of cases with collosol copper in addition to radium and after a lengthy trial was satisfied that in some way or other it assists in the destruction of the growth Malignant ulcers, which had contracted but became callous and refractory to further irradiation, would tolerate further exposures, and the healing process was resumed after the injection of collosol copper I undertook some animal experiments exposing the ovaries of cats to radium with and without the application of copper salts, and the results bear out the clinical observations The large follicles are so quickly destroyed by radium that it is necessary to study the primary follicles these in the copperized ovary show a greater extent of destruction than those of the opposite side the change consisting in diminution of size, poor staining reaction, and disappearance of the ovum, with loss of definition of follicular contents These changes are gradual but were consistently found in all the experiments Figs 4 and 5 show these changes in an animal which survived eight days

Pre- and Post-operative Radiation

The policy of irradiating a tumour before operation is limited by the formation of dense fibrous tissue, which may render the dissection of the ureters impossible If however the operation be proceeded with in ten to twelve days this difficulty is anticipated The advantages of pre-operative radiation are that it diminishes the pyogenic infection and cleans up the growth, and, secondly it destroys malignant cells which may remain in the unexcised parametrium I have found degenerating cancer cells in sections removed from the pelvic tissues just beyond the line of excision, after exposure to radium

Post-operative radiation is a difficult problem, for it is not easy to avoid the bladder and rectum after the removal of the uterus Professor Adler places radium tubes on either side of the pelvis at the time of operation, deep x rays to the pelvic tissues after recovery, and finds that 61 per cent have remained free from recurrence after three years' observation, as against 52 per cent of non irradiated cases I am treating all my operative cases by pre- and post-operative irradiation, but it is yet too early to consider results

I have notes of fifty cases of cancer of the cervix treated by radium and colloidal copper more than nine months old, and I propose to consider them in detail, for reference to cases of a lesser period would have little value

All the cases were clinically and microscopically carcinoma, all except three were inoperable and referred to me with a view to relieving their misery by radium The growth was extensive, sometimes crowding the pelvis minor, the uterus fixed broad ligaments involved and the floor of the pelvis a solid plaque of growth with pressure on the bladder, rectum and veins They were all given radium, provided there were no contraindications and even though no permanent result ensued the relief obtained from haemorrhage, fetid discharge and foul ulcer was an inestimable boon in their last phase It will be realized that the utmost expected in such cases was palliation of symptoms nevertheless I think in some cases life was prolonged as well

The three exceptions mentioned were comparatively early cases in which the disease was clinically limited to the cervix but their general condition was too poor to allow of the radical operation being undertaken The three were referred to me by one or other of my colleagues for treatment by radium One of them died, a month after the initial exposure from an acute toxaemia of doubtful origin The other two remain alive and well two years and seven months and two years and six months after treatment, one of them was treated by x rays in addition to radium, the other by radium alone

Of the 50 cases, 38 are dead and 12 living The 12 living are well and free from symptoms and so far as physical examination can tell are free from growth for 2_{12} 2^{r} 2^{r}_{12}, 1_{12} 1^{r}_{12}, 1_{1} 1_{12} years 1 year, 1^{r}_{12}, 1^{r}, 1^{r}_{2}, 1^{r} year

Of the 38 cases dead, 27 were relieved of all symptoms, 3 abandoned treatment, 8 were unrelieved, 5 of whom were recurrences following operation, and 3 were so extensive that only one exposure was given owing to the risk of fistula formation

Of those with complete relief of symptoms, 9 lived between one and one and three quarter years, 8 between six and twelve months, and 10 between two and six months

Symptoms

Haemorrhage, which varied from slight irregular losses to severe flooding, ceased within a few days of the first exposure In two cases the haemorrhage returned after several exposures and was so free that ligature of the internal iliacs was undertaken in order to control it These two cases were probably examples of irradiation of a tumour which had become radio-resistant I had also to ligature these vessels in a third case, but here the haemorrhage was a true secondary haemorrhage occurring in an extensive and virulently infected growth, and, following the exposure, a massive necrosis of tissues took place

Bloody Discharge—This undergoes rapid improvement, the blood ceasing within a few days, the discharge becoming thinner and losing its offensive character in three weeks, concurrently with the cleansing and healing of the ulcer At the end of a month it is watery and small in quantity with a musty odour, and at the end of six weeks has ceased

Pain—In some form or other pain is usually present, but is either of the nature of a long-standing backache, which remains uninfluenced, or a dull ache in the pelvis due to infection and oedema of the cellular tissues This type of pain is commonly relieved, and patients who have been taking phenacetin and bromides at night are able to do without after the first exposure The late pains due to involvement of nerve roots or secondary deposits in the spine are not influenced in any way

Local Ulcer—The ulcer which at the first exposure admitted the tips of two fingers will, at the end of a month, barely admit one tube of radium in its metal and rubber screens, which is equivalent in thickness to the ordinary lead pencil, and at the end of six weeks the cervix, though red, is covered with epithelium and has a normal appearance The general condition improves with the disappearance of the infected focus, the colour, appetite, and general well-being undergo a great change for the better

A serious limitation to treatment by radium in early cases is that short of opening the abdomen it is *not* possible to say whether the glands are involved or not, and, if they are, the irradiation of the primary growth is merely palliative The glands are found to be infected with growth in 30 per cent of cases that come to operation, which should exclude the advocates of radium for early cases until they are able to show how they deal with these deposits effectively Daels has introduced an ingenious operation for dealing with these deposits by passing radium from the iliac fossa to the caecum on a chain In this way he irradiates a variable area of the pelvic cavity This operation does not meet the fundamental rule that the radium must be placed in contact with the growth, for its power diminishes in accordance with the law of inverse squares, and while the tube may be placed opposite the sacro-iliac synchondrosis the infected gland may be some distance away from it

Opening the abdomen and implanting the radium in the growth is the only way of being certain that it is placed where it should be, and this, while very satisfactory up to a point, is limited by the fact that it may have to be repeated several times The Paris method of deep x-ray therapy was originally proclaimed as a cure for cancer of the cervix, but its value was soon assessed, and it is now reserved for the *palliation of symptoms* in inoperable cases, prophylactic irradiation after operation, and the irradiation of pelvic tissues in conjunction with radium to the cervix

CONCLUSIONS

1 That for cases of carcinoma clinically limited to the cervix the only treatment is operative

2 That for cases which have clinically invaded the pericervical tissues the treatment is by radium to the cervix and x rays to the pelvic tissues

3 That salts of copper play an important though subsidiary part in treatment by radium

4 That pre- and post-operative irradiation is of considerable value

I am indebted to Professor Bisch for permission to use his diagrams and slides

A CASE OF HERNIA INTO THE INFERIOR DUODENAL FOSSA.

BY

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WITH X-RAY PLATES AND REPORT

BY

L ERASMUS ELLIS, M D,

RADIOLOGIST, TRANSVAAL MEMORIAL HOSPITAL FOR CHILDREN

(*With Special Plate*)

THERE seem to be certain minor differences in the classification of the fossae round about the duodenum Walton refers to an inferior duodenal fossa, a superior duodenal fossa, and a paraduodenal fossa This also appears to be Cunningham's classification Moynihan, according to Makins, in *Burghard's System of Operative Surgery*, classifies them as right duodenal hernia and left duodenal hernia His right duodenal hernia apparently corresponds to both the superior and inferior ones in the classification of the other writers, and his left duodenal hernia corresponds to the paraduodenal variety, although he calls it a hernia into the duodeno-jejunal fossa Beesly and Johnston mention four fossae—namely, superior, inferior, paraduodenal, and retroduodenal

E H B born December 15th 1914

History—The mother states that she had an easy labour but was taken to the hospital immediately after the birth of the child because she had fits and because there was something wrong with her kidneys The baby (the subject of the present paper) was left with a nurse He vomited practically from birth and the vomiting was of a projectile character He was fed on sherry, whey, and brandy and white of egg for the first month or so then various patent foods were tried, but he vomited them all When he was 5 months old the doctor advised nutrine At first he vomited this but after about five weeks he kept it down and did not vomit again, except when he was given anything else Up to the age of 2 years he could keep nothing else down He gained a little weight but lost it again His weight went up and down never very much up, and at 2 years of age—as far as his mother can recollect—he was 6 lb under the weight for his age At this age he would be lying in his mother's arms and suddenly he would go into a fit The doctor had prescribed two powders a day for him, and the mother thinks that these powders kept his bowels moving, for when she stopped them he did not seem so well and was a little constipated When he was 2 years old his sisters contracted measles, but he did not contract the disease He vomited continuously, however, and was fed on brandy and egg flip Although he did not contract measles another doctor who saw him later said that he was getting over an attack of pneumonia When the boy was in his third year he seemed to improve in health, and he had no other disease or illness beyond vomiting when he was given anything except bread and butter and a little jam, strained soup, and porridge If the soup were not strained, he vomited it Oranges, bananas grapes, currants and raisins, or cake containing currants and raisins, seemed specially to cause him to vomit He always had a bad breath and his stomach made a rolling gurgling noise at night, more especially immediately before a vomiting bout If he ate any of the above-mentioned things he rolled on the floor in pain until he vomited He was active and played about like any ordinary child, and was an average child at school His mother gave him Epsom salts every Sunday, and thought they kept him more or less in health He was brought to me when 8½ years old (November 21st 1923) some days after a birthday party at which he had had, amongst other things, fruit and ice cream in large quantities

Family History—The families of the father and mother are healthy This boy was the fifth of five children, the eldest was a full-time child, but died two hours after birth, cause unknown the second is a girl 15 years old and healthy, the third is a girl 12 years old and healthy, the fourth was a girl who died at the age of 11 days, because she could not feed properly owing to some deformity

He was a small, "pot-bellied" boy, who seemed wasted but whose abdominal muscles seemed to be over-developed He did not complain of pain anywhere in the abdomen, nor was there any tenderness in the abdomen The stomach was obviously enlarged on percussion, but no tumour could be felt over the pyloric region There was a good deal of gurgling in what I took to be the caecum He was admitted to the Memorial Hospital for Children, put on ordinary diet, and kept under observation from November 22nd to 30th, 1923 and during that time he did not vomit He did not even vomit the aperient which was given him twenty-four hours before x-ray examination On the majority of days definite full peristaltic waves were observed, commencing in the left hypochondrium and passing over the epigastric region into the right hypochondrium.

X Ray Report

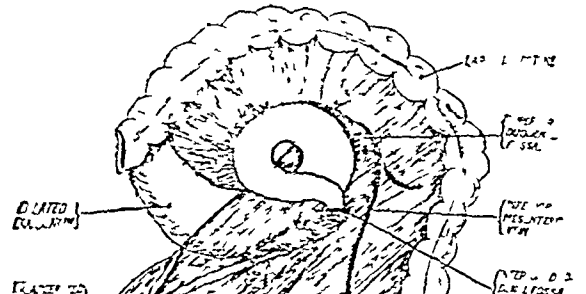
Dr Fra nus Fli reported as follow

A series of seven skiagrams was taken the first eight hours and the last seventy four hours after ingestion of the opaque meal (See plate)

The stomach is hugely dilated extending practically across the whole abdominal cavity in its upper portion The duodenum is also immensely dilated Vigorous peristaltic movements are seen, but the stomach fails to empty for many hours

Nine hours after ingestion about one tenth of the opaque meal is seen in the colon none in the small bowel This suggests that some food escapes and then the stomach fails to empty further for a considerable time Twenty six hours after ingestion about one third of the food has escaped from the stomach and is seen partly in the small and partly in the large bowel Thirty three hours after ingestion (Fig 1) about two thirds of the opaque meal have escaped from the stomach and four fifth after fifty hours (Fig 2) this latter being partly in the colon distal to the splenic flexure and partly in a viscus overlying the descending colon (probably in the light of the subsequent operative finding the herniated portion of the early jejunum) Seventy four hours after ingestion a trace of the opaque meal is still in the stomach and a little in the colon but most has been evacuated

It was obvious that the boy could not go on as he was and that a laparotomy was strongly indicated From the history, signs, and symptoms, and the appearance of the skiagrams, a tentative diagnosis of persistent congenital hypertrophic pyloric stenosis was made, and on November 30th I operated, assisted by Dr D J Dauth (Honorary Surgical Registrar, Johannesburg Hospital), Dr B



Diagrammatic Representation of Hernia (adapted from Cunningham)

Weinbren (anaesthetist to the Johannesburg Hospital) gave the anaesthetic

Operation

A right pararectal incision was made extending from just below *the costal margin to about an inch below the umbilicus and on looking into the abdomen after the peritoneum had been opened* the stomach and duodenum round about the pylorus seemed to be inflamed but as things lay without being disturbed the *stomach did not seem to be much enlarged* When however, one *put in one's hand to pull down the stomach one found that* it was enormously dilated and that the greater part of it was pushed well up under the left costal margin The duodenum when traced round was found to be dilated to about five times its normal size this dilatation extending right up to the duodeno jejunal flexure Here one got lost and could not at first find the commencement of the jejunum On handling the small intestine and its mesentery however one saw a tumour in the mesentery to the right of the vertebral column which turned out to be bowel shining through the mesentery It was decided to incise the peritoneum over this bowel When this had been done there lay what subsequently turned out to be the first fifteen or eighteen inches of the jejunum By tracing this bowel up to a point where one expects to find the duodeno-jejunal flexure one came to a constricting ring composed of peritoneum When this ring had been cut through the loop of small intestine which had been imprisoned in the mesentery and which was the first fifteen to eighteen inches of jejunum was free and the jejunum could be traced up to the duodeno-jejunal flexure in the one direction and down on to the jejunum and so on in the other direction This loop of small intestine was dilated lightly —not nearly as much as the duodenum but from a point where the distal end of the loop emerged through the constricting ring the small intestine was collapsed as also was the large intestine The inferior mesenteric vein was seen in its normal situation and was not associated with the neck of the sac anywhere but was well to the left of the constricting ring (see diagram) After *the loop of bowel had been released from its sac* the continuity of the peritoneum of the mesentery was restored by means of a purse string suture As the margin of the inferior duodenal fossa which formed the restricting ring had been cut through there seemed no further danger of another hernia The boy in addition to this condition had a general visceroptosis His caecum was completely surrounded by peritoneum and had a long mesentery and the caecum could be placed anywhere in the abdomen The pancreas was also completely surrounded by peritoneum and had a mesentery It was not considered wise however to do anything further as the boy's condition was not too good The abdomen was closed in three layers and subcutaneous saline were continued for two days Except for the vomit subsequent to anaesthesia he has not vomited Stitches were removed on the ninth day the boy was allowed up on a couch on the tenth day From the third day onwards he was given solid food including fruit baked apples peaches etc and liquid paraffin three times a day His bowels have moved well without the assistance of enemas his pot belly is gradually disappearing and he says that he feels entirely different from what he felt before the operation

He was x rayed again on December 11th by Dr Erasmus Ellis, who reported as follows

"A series of x ray plates taken with opaque food in the gastro-intestinal tract eleven days after operation show practically a normally functioning alimentary canal (Figs 3 and 4)

The child was kept in hospital over Christmas and apart from restricting fluids no other restrictions were made in his diet He ate what all the other children ate in large quantities yet did not vomit, nor did he even feel sick He was discharged from hospital on January 1st, 1924, looking well, feeling well, and eating everything without any discomfort or subsequent vomiting

In thinking over this case I have unconsciously borne in mind Walton and Cunningham's classification, and in my opinion the case was one of a hernia into the inferior duodenal fossa—that is a right duodenal hernia according to Moynihan I think so because the neck of the so-called "sac" looked upwards and to the left In this Dr D J Dauth agrees with me In any case I do not see how the incarcerated bowel could have got into the position in the mesentery in which we found it if it had not got there through the inferior of the two right fossae Makins states, in his discussion of the operation for the relief of strangulation of a right duodenal hernia, that the neck of the sac is situated to the right of the vertebral column at the left end of the sac, and that the *superior* mesenteric artery occupies a similar position in the anterior boundary of the neck of the sac that the *inferior* mesenteric artery occupies in a paraduodenal or left duodenal hernia but goes on to say that the wandering of the neck of these herniae appears to be responsible for some of the rare varieties of retrome enteric herniae which have been observed In this particular case I am quite certain that there was no vessel in the anterior boundary of the neck, for after I had made my incision over the "tumour" *I slipped my finger into the constricting ring* and cut through it there was no bleeding Therefore there could not have been a vessel of any size in the neck Possibly the superior mesenteric artery was behind the incarcerated bowel in this case, certainly it did not get in my way at all in relieving the strangulation Dr R A Ross (Honorary Surgeon to the Transvaal Memorial Hospital for Children), who was present at the operation, is doubtful about this from an anatomical point of view At the time of the operation he suggested a search for the superior mesenteric artery, but I was naturally a little excited in dealing with such an unusual case and did not pay sufficient attention to his suggestion and therefore *I am unable to clear up this point* It is certain however, that the incarcerated bowel was in the mesentery and that the opening of the sac was in the situation of the *inferior duodenal fossa and that it looked upwards and* to the left It was, however, not to the right of the vertebral column It was a little to the left, if anything *I am unfortunately* unable to lay my hands upon Sir Berkeley Moynihan's writings on the subject of internal herniae, and therefore am handicapped in the discussion of this case I learn however, from Makins that Moynihan collected seventeen cases of right duodenal hernia as against fifty-seven of left This case should, I think, be classified among the rarer right variety

In conclusion I should like to express my thanks to Miss D M Gordon for the excellent diagram which she has made for me, and also to Drs Dauth and Weinbren for their assistance

Note—Since writing the above note the December issue of *Surgery, Gynecology and Obstetrics* has come to hand containing an article entitled Duodenal hernia—a misnomer by Dr Edmund

Andrews of Chicago, which rather emphasizes the handicap of not having access to Sir Berkeley Moynihan's book on the subject of duodenal hernia My case seems to support Dr Andrews's theory that these cases are of congenital origin

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THE TREATMENT OF HAEMORRHOIDS BY SUBMUCOUS INJECTIONS OF CHEMICALS

BY

H GRAEME ANDERSON, M B E, M D, CH B, F R C S,

SURGEON TO ST MARK'S HOSPITAL FOR DISEASES OF THE RECTUM, CONSULTING SURGEON TO THE ROYAL AIR FORCE, SENIOR ASSISTANT SURGEON TO THE BELGRAVE HOSPITAL

WITH A *DESCRIPTION OF THE PATHOLOGICAL CHANGE PRODUCED*,

BY

CUTHBERT DUKES, O B E, M D, M Sc, D P H,

PATHOLOGIST TO ST MARK'S HOSPITAL

I—By H GRAEME ANDERSON

THE method of treating piles by the injection of chemicals into their substance was first brought to my notice in 1907 by my teacher and friend Mr Swinford Edwards

Since that time I have treated by this method quite a large number of haemorrhoid cases, experimenting with various types of chemicals of varying strength, and endeavouring in many ways to improve the technique During the same time I have collected and studied almost all the contributions published on the subject Further, during 1923, to settle the question of the pathological changes involved, I injected a series of haemorrhoid cases and then excised the piles—with uninjected control piles from each case—at daily intervals These specimens were submitted to Dr Dukes for microscopical examination, and the results of his investigation are recorded below

History of the Injection Method

This method did not originate in America as is generally recorded, but was first carried out by Mr Morgan in Dublin in 1869 He used a solution of iron persulphate, and so applied a method to haemorrhoids that had been used in the treatment of naevi since 1836

William Colles, another Dublin surgeon, in 1874 injected a case of piles, using iron perchloride He had seen Mr Cusack treat piles by the introduction of a needle coated with silver nitrate into the centre of each Colles thought that a better result could be obtained by hypodermic injection In 1871 carbolic acid was first used as the injecting agent by Mitchell of Clinton, Illinois At first his method was kept a secret, but knowledge of it soon spread The secret was sold to various unqualified people who were known as travelling pile doctors These itinerants began to sell the secret remedy to others, who traversed the country in all directions "till their handbills fluttered on the shores of the Pacific Ocean" Professor L Andrews of Chicago in 1876 discovered the secret from one of the "quacks" and carried out an exhaustive investigation of the whole subject He collected the results of 3,300 cases Mitchell used one part of carbolic acid to two parts of olive oil Most of the "irregulars" used strong solutions of carbolic, ranging from 27 to 95 per cent

Once the secret was laid bare many qualified medical men—eminent and otherwise—gave the method a trial, and it took some twenty years before three definite schools of opinion on the subject were established The first school, headed by such authorities as Allingham senior, Mathews, and the Andrews, considered the method unsafe and dangerous The second school, the chief exponents of which were Abney Shuford, Adler, and the Martins, believed in injecting strong solutions of carbolic acid—that is, over 20 per cent and ranging to 95 per cent They aimed at removing the piles by sloughing them off The third school believed in using weak solutions of carbolic acid—that is, from 5 to 20 per cent, injecting small quantities, and aiming at producing mild irritative changes with ultimate fibrosis and shrinking of the tumours This school had as its advocates Hoyt, Yount, Wright, and others For the past thirty years the "strong" school has been dying out, and it has few advocates at the present day On the other hand, the "weak" school with succeeding years has become more firmly established, and is the one most generally followed by those who use this method at the present time Personally, I use very rarely any carbolic solution over 10 per cent

Selection of Cases

The injection method, in my opinion, is a very useful one indeed, and in quite a large proportion of cases excellent results can be obtained External piles should on no account be injected Internal piles, complicated by fissure, fistula, or large external skin tags, and those that are inflamed, ulcerated, or gangrenous should not be injected, but submitted to ligature or clamp and cautery operation Similarly, where the piles are very large and numerous, of old standing, and with much fibrotic change, these cases are unsuitable for injection and speedier and better results are obtained by operation Patients with haemorrhoids who have long anal canals, hypertrophy or spasm of the sphincters are not suitable for injection

Uncomplicated internal piles are the only ones that should be treated by injection, and I agree with Albright, who says that "the idea of universal applicability should never have been advanced for this treatment" Pennington, in the latest edition of his book, states that "it is estimated by advocates of the injection method that not over 50 per cent of cases in America are suitable"

Technique

The rectum, of course, should be empty, and this is usually so in the majority of patients if the bowels have acted in the morning If constipation is a symptom, then it is better to order a purgative to be taken two nights before the visit Confection of senna or castor oil will be found the most suitable Enemata are better avoided as they increase the congestion of the haemorrhoids Glycerin suppositories act just as quickly and the local effects are less drastic

The patient should be placed on his side lying partly over on the abdomen with the lower leg only slightly flexed and the upper leg fully flexed at hip and knee I use a strong projection lamp, as good illumination is most essential There is no objection to injecting the piles while they are prolapsed, but on the completion of the injection the piles must be instantly reduced and returned above the sphincters

In the majority of cases a speculum has to be used I use one of two types, either the ordinary 3 in Kelly's proctoscope with a smooth metal collar, or one which I have devised—a modification of the Hirschman speculum, a little longer and with a smooth metal collar (Fig 1) A speculum with a slide is one to be avoided, especially if it has a closed end The piles will be found to prolapse into the lumen of the speculum and by gently and slowly withdrawing the latter for about half an inch and then pushing it gently inwards again a good idea will be obtained of the size of the piles

The pile to be injected is then gently caught at its upper end by a long pair of angled forceps which I have devised for the purpose (Fig 2) The instrument is allowed to hang on to the pile, and by its own weight it steadies the latter by gentle traction and renders easy the insertion of the needle I use a special syringe with a glass barrel of fine calibre which can only hold 10 minims of the solution The syringe is metal bound, and has thumb and finger rings The needle is two inches long, of not too fine a calibre, and has a bulbous shoulder half an inch from the tip This syringe is a safe one for beginners to use, as even if the total contents are injected into one pile no harm can accrue, and again, the shoulder on the needle prevents the latter from being inserted more than half an inch into the substance of the pile (Fig 3)

The injection is made into the upper part of the pile about half an inch to an inch above the level of the anal valves or papillae This is an important point The rectal mucosa is insensitive to pain or light touch and if the injection is made at the right level the patient should be entirely unconscious of it No local anaesthetic is required With nervous people it is as well to smear the speculum

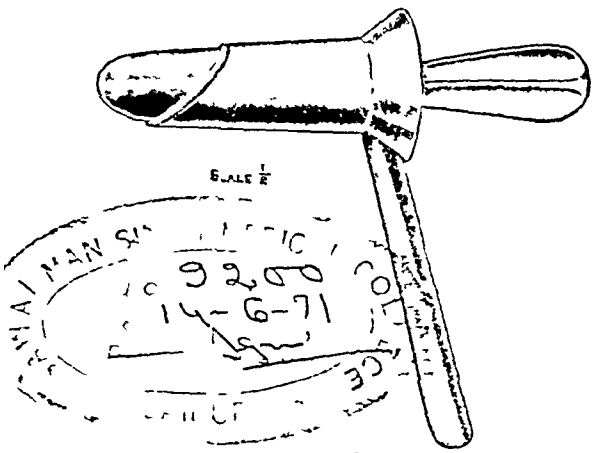


FIG 1

with a lubricant containing 10 per cent cocaine Should the *insertion of the needle* or the injection of the fluid cause pain it is certain that the injection has been made at too low a level The lining of the anal canal is extremely sensitive to pain The injection method requires a fair amount of skill in its performance and the beginner before

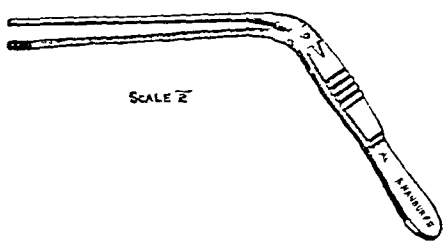


FIG 2

attempting it would be well advised to see the procedure carried out by a competent proctologist

The injection of the fluid should be done slowly when it will be noticed that the injected pile swells up and in some cases obscures from the view the other piles that are present It has often been stated that as the pile swells it becomes whitish in colour This very rarely happens and if it does a slough is very liable to form later On many occasions at St Mark's Hospital while a patient was under an anaesthetic and about to undergo an operation, I have injected 5, 10, and 20 minims of 10 per cent carbolic solution, on

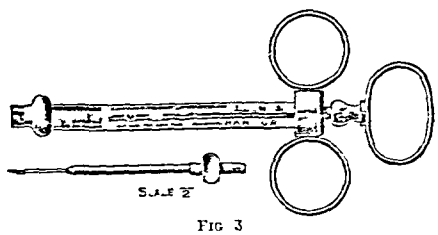


FIG 3

other occasions the same amounts of a 20 per cent solution and have demonstrated to onlookers that no such blanching occurs as a rule On the other hand the injected pile often becomes much deeper in colour and this may be due to traumatism from the needle with a slight haemorrhage into the pile substance It is interesting to note in connexion with this fact that Mitchell, the originator of the carbolic acid injection method in America partly abandoned the method and adopted the plan of tearing the interior of the piles to pieces by means of angular needles set in handles An injection of 3 to 5 minims of the solution is made into smaller piles, and 5 to 7 minims into larger piles The needle is left *in situ* for about a minute and then withdrawn Sometimes there is a slight oozing of blood from the puncture but the application of a little adrenaline solution on a swab soon arrests this The pile clip is unfastened and the speculum is withdrawn A little adrenaline and chloretone ointment is then squeezed into the rectum to act as a protective dressing to the injected piles Should the injected pile prolapse it is immediately replaced

The patient can go about his ordinary business immediately the injection procedure is over He should abstain from exercise or heavy work for two or three days He instructed to replace the piles immediately should they prolapse Liquid paraffin is ordered and the bowel should be allowed to act forty-eight hours after the injection is made As a rule I examine my patients forty-eight hours after injection to make sure that all is well The injected pile is then felt to be swollen and firm in consistence with the induration running upwards and gradually diminishing In a week's time the injected pile has begun to shrink and another injection may be given into the same pile, or another pile may be then treated in a like manner One two or three piles may be injected at the same time but as a rule I only inject one or two on each occasion The number of injections into each pile varies with the case two to four injections are usually required Haemorrhage is arrested like magic from the first injection, and as the shrinking proceeds the prolapse ceases or becomes much less Although haemorrhage and prolapse may disappear after one or two injections the piles may still be visible through a speculum, but much smaller in size Some patients at this stage are so pleased with the result that they discontinue treatment To obtain a good cure it is better to go on injecting each week till the piles no longer project into the speculum

The Chemicals used in Injection

At St Mark's Hospital I have experimented with the following chemicals carbolic acid quinine and urea, iron perchloride, ergot lead acetate, alcohol, and formalin There is no doubt that carbolic acid is the best of all, though quinine and urea gives almost as good results The latter should be used in 5 or 10 per cent solutions I was disappointed in the results when using ergot and also lead acetate Iron perchloride gives quite good results At one time at St Mark's I was using alcohol injecting it subcutaneously *around the anal margin for the treatment of* pruritus, and I tried it as a submucous injection in the treatment of piles The results were disappointing as pain occurred and small sloughs formed I was tempted to try formalin in the hope that it might aid in shrinking and hardening the pile substance At first I used 10 per cent, which was much too strong as it produced in three cases great pain, localized sloughing and marginal abscess, although ultimately the piles were cured by slouging Later I used 1/2 per cent formalin, but even this caused pain Then for a time I used 1/4 per cent formalin in the 10 per cent carbolic acid glycerin solution For the past few years I have confined myself to the use of carbolic acid When this was used in strength over 20 per cent in all cases sloughs were produced and in some cases marginal abscesses, and although the piles were ultimately cured it was only at the expense of time, pain sloughing and abscess formation

I am of the opinion that 10 per cent carbolic acid in equal parts of glycerin and distilled water is the best solution to use With this solution injected at the proper site, the best and safest results are obtained and no complications such as pain, haemorrhage sloughing ulceration and abscess formation should occur I am aware that a great many use 20 per cent carbolic but with a solution of this strength one can never be sure of avoiding sloughing In many cases mild sloughing occurs and the ulceration produced may give rise through imperfect drainage to some

distress than the piles The latter may be ultimately cured, but the healing process may be unduly prolonged In my opinion the whole object of the injection method is defeated by using strong solutions

Recurrence

There is no doubt that recurrences do take place, and they usually become evident in from three to five years' time The Martins treated by injection 4,200 cases, and estimated the recurrence rate at 15 per cent Even if recurrence does take place, patients are quite happy to return for a further course of injections

In treating a case of piles by the injection method it is advisable to keep a systematic record of the date, site, and amount of injection solution used at each sitting I have a diagram stamped in my case book and record the injection made in different coloured inks

II —By CUTHBERT DUKES

The pathological changes provoked by carbolic acid injections have been studied microscopically in ten patients, in each of whom one haemorrhoid was injected in the usual way, and this injected haemorrhoid, together with a control not injected was subsequently removed by operation—in one patient in one day, in the remainder after 2, 3, 4, 5, 6, 7, 12, 14, and 21 days The pieces of tissue were fixed, embedded in paraffin, and serial sections cut from the injected haemorrhoid and control haemorrhoid of each patient

The haemorrhoid removed one day after injection showed the vessels dilated and engorged with blood and the surrounding tissues oedematous, containing much extravasated blood, and infiltrated with polymorphonuclear leucocytes There was clear evidence of active emigration of these through the vessel walls into surrounding tissues No signs of thrombosis were seen The chief feature at this stage was the close packing of the oedematous tissues with innumerable polymorphs

The haemorrhoid removed two days after injection showed no pathological changes to distinguish it from the uninjected control It is probable that in this case the piece of tissue removed was not reached by the carbolic acid

The haemorrhoid removed three days after injection did not show any noteworthy change in the vessels themselves, but the surrounding tissues were still oedematous, contained extravasated blood, masses of polymorphonuclear leucocytes, some lymphocytes, and very many large mononuclear cells The abundance of these large mononuclear macrophages was the characteristic feature at this period Many were actively phagocytic and had ingested red blood cells or leucocytes They appeared to be playing the part of scavengers Proliferation of the fixed connective tissue cells was noticed at the margin There was no evidence of thrombosis in any of the vessels

The haemorrhoid removed four days after injection presented much the same appearances as its predecessor, but the leucocyte infiltration was less conspicuous and the macrophages were relatively more numerous These large mononuclear cells were arranged in clusters round the blood vessels There was clear evidence of proliferation of fibroblasts No sign of thrombosis was detected

The haemorrhoid removed five days after injection showed commencing thrombosis in many vessels No intravascular clotting was seen in the control injected haemorrhoid from the same patient The polymorph infiltration of the surrounding tissue had almost disappeared, but large mononuclears and young connective tissue cells were plentiful

The haemorrhoids removed six and twelve days after injection showed very little change as compared with the control

In the haemorrhoids removed seven, fourteen, and twenty-one days after injection thrombosis was found in each case, but apart from some increase in fibrous tissue and the building of new capillaries no other significant change was noted

Manner of Action of Carbolic Acid

Carbolic acid being a powerful irritant to the tissues, initiates an aseptic inflammation, characterized by dilatation of the vessels, emigration of leucocytes, and transudation of lymph By these means the alien liquid is diluted and removed, thereafter the inflammation quickly subsides All the changes observed microscopically represent the effort of the tissues to repair an injury

The curative effects of injections of carbolic acid do not depend upon any specific action of this chemical substance The mere introduction of a needle into the haemorrhoid results in damage to many blood vessels, and in these thrombosis is likely to follow Moreover, the cellular injury which this poison inflicts on the delicate lining cells of the capillaries is also likely to contribute to intravascular clotting It is possible also that the contraction of newly formed fibrous tissue may constrict blood vessels or even occlude them, but little sign of this was noticed in this histological study Perhaps, after longer periods, this would have been more evident

The early inflammatory changes which occur in the first three days do not play any important part in the cure of haemorrhoids, it is the secondary changes, in particular the intravascular clotting, and subsequent fibrosis, to which any beneficial effect must be ascribed

AN ATTEMPT TO VACCINATE CHILDREN AGAINST TUBERCULOSIS

(A Preliminary Note)

BY

NATHAN RAW, C.M.G., M.D., M.R.C.P. LOND.,

LORD CHANCELLOR'S VISITOR, HONORARY CONSULTING PHYSICIAN, PRESTON HALL TUBERCULOSIS COLONY

IN the BRITISH MEDICAL JOURNAL of April 23rd, 1921, I described a new tuberculosis immunizing vaccine, which I had prepared from dead cultures of tubercle bacilli that had become attenuated after continuous subculture in my laboratory for a period of fourteen years

The immediate results of treatment of a large number of cases of all forms of tuberculosis have been very encouraging, but the final results cannot be estimated for another two years

I am now directing my attention to the even more important problem of protecting children against infection, on much the same lines as the use of an antityphoid vaccine against typhoid fever, which was such a brilliant success during the war

The problem of tuberculosis resolves itself into the question of immunity The protection of the community by some safe scientific method of active immunization is the only effective way by which this preventable scourge can be eradicated

Animal Experiments

In the attempt to produce some active immunity in animals I have inoculated five series of rabbits and guinea-pigs, extending over a period of fourteen years

I

The *first series* of animals was inoculated with Koch's old tuberculin Four weekly injections were given, followed in another month by a subcutaneous injection of 1/2 mg of human tubercle bacilli of virulent culture All these animals became infected with generalized tuberculosis and were apparently not influenced by tuberculin

II

The *second series* was given large doses subcutaneously of Koch's bovine tuberculin (bacillary emulsion) A weekly injection was given for four weeks, and after an interval of one month they were given 1/2 mg of living bovine bacilli All these animals developed acute generalized tuberculosis and died in four months No protection appears to have been established against the laboratory dose of virulent bacilli

III

In the *third series* I attempted to produce active immunity in the animals by giving them subcutaneously four weekly doses of living bacilli of attenuated cultures of fourteen years' growth These cultures, although growing luxuriantly, were non pathogenic to animals None of these animals developed tuberculosis, and on examination in six months showed no trace of infection

The animals were then given the usual laboratory dose of virulent bacilli and carefully watched for six months The loss of weight was not nearly so pronounced as in the other series but on being killed all the animals were found to be infected but to a very much less extent than the preceding ones—in some cases only a few glands in others a more or less generalized infection

IV

In the *fourth series* one half of the animals were given subcutaneously four weekly doses of living human attenuated bacilli, and the other half were given the same doses of living bovine attenuated bacilli None of these animals showed any sign of infection in six months The animals which had received the protective doses of human bacilli were then given 1/2 mg of living virulent bovine bacilli and the animals which had received bovine attenuated bacilli were given 1/2 mg of virulent human bacilli In six months the whole series of animals was most carefully examined and the results were much more encouraging Two of the animals showed no infection but all the others were more or less positive from a few isolated glands to a mild generalized infection but to a decidedly less extent than in any of the preceding ones In all probability these animals would have recovered from this laboratory dose

V

Fifth Series.—The object of this experiment was to show if it was possible to protect animals against a virulent infection by giving them two prophylactic injections of a tubercle vaccine prepared from the dead cultures of human tubercle bacilli which had been attenuated by continuous subculture for sixteen years which represented the 212 th generation Five rabbits were given two injections of 0 01 mg of vaccine subcutaneously and were kept under observation for a month No reaction followed the vaccine they gained weight and were apparently unaffected Five control rabbits and the rabbits which had been vaccinated were then given 1/10 mg of a virulent culture of bovine bacilli supplied to me by Dr Schütze Very careful observation were made The five animals which had not been protected steadily lost weight and they all died within four months They all showed generalized tuberculosis in all organs

The five animals which had received protective vaccine are *all alive to-day and in apparently good health, and* I propose to keep them alive for another few months before they are examined These animals have been protected from bovine infection by means of a vaccine prepared from human attenuated bacilli

In my next series I propose to attempt to immunize guinea-pigs in the same way, but this may be more difficult owing to their great susceptibility to tuberculosis

Conclusions

1 It appears to be possible to immunize animals against tuberculosis by means of a protective vaccine prepared from attenuated bacilli

2 The duration of the immunity is not yet known

3 It seems to be probable that we may be able to protect children against infection in the household We must wait for some years before this can be finally established All children over the age of 1 year who are living in the same house with a tuberculous member of the family *ought to* be protected against infection, and it is in the early years of life that such infection usually occurs

Vaccination of Children

Encouraged by these results, I have treated 412 children, varying in age from 1½ to 14 years, one of whose parents was suffering from pulmonary tuberculosis, with two prophylactic doses of a vaccine prepared from dead cultures of attenuated bovine bacilli The injections were given at an interval of two weeks No reactions were observed and in no case has there been any untoward symptom All the children were treated at the request of a parent

Up to the present I know of no child who has developed tuberculosis, but we must wait for at least ten years before a final judgement can be given of its efficacy in all cases

From a long observation of tuberculosis I am convinced that infection takes place most commonly in early life and if we can with complete safety give some active immunity to those children who are directly exposed to infection at home, we will have taken a long step in the direction of prevention, which, after all, is the key to the problem

Memoranda:

MEDICAL, SURGICAL, OBSTETRICAL

PARTIAL HEART-BLOCK COMPLICATING AORTIC INCOMPETENCE FOLLOWING RHEUMATIC FEVER

THE case here reported is of interest because the condition is apparently rare, and also because the symptoms were more than usually severe in so small a degree of heart-block Though, in mitral stenosis, acute inflammatory changes are common in the myocardium, causing heart-block, Heatherley in his recent book states that he has not yet seen the condition complicating aortic incompetence

A man aged 23 was admitted to the Royal Mineral Water Hospital Bath on May 5th 1924 complaining of pain and stiffness in the hands shoulders knees, and ankles following an attack of rheumatic fever in February

He stated that he suffered from palpitation was breathless on exertion and easily exhausted and found himself sweating profusely even when at rest From time to time he felt very giddy and had fainting turns The man presented the typical picture of aortic incompetence There were no signs of accompanying mitral stenosis Electrocardiographic tracing revealed the P R interval lengthened measuring 0 24 sec diastolic period were much shortened averaging 1/8 sec the P T interval was normal—namely 0.32 sec The T waves in all leads were much flattened and corresponded to the height of the P waves which showed a deflection amplitude of 3-4 millivolts There were no signs of dropped beats

Bath H C NIXON, M D

KNOCK-KNEE AND SCOLIOSIS

MANY causes are contributory to the deformity of scoliosis, but I cannot recollect having read in any textbook a description of the following sequence The conditions having been noted recently on several occasions in the course of school medical inspection, a brief description may be of interest

When told to stand up, a knock-kneed child seldom assumes an erect posture with knees together and heels several inches apart, instead, he places his heels together, keeps one leg straight (perhaps the right), and allows the knee of the left to come to rest in front of it The left leg of necessity remains flexed, and as artificial shortening results scoliosis of a postural nature must follow Constant repetition of the faulty attitude, aided by the muscular and other defects resulting from the rickets which caused the knock-knee, will soon make the deformity permanent

It is important to remember this point in the etiology of lateral curvature, for the most painstaking remedial measures will hardly be successful if it is ignored

A H SHENNAN, M B, D P H,
Assistant Medical Officer of Health
Louth Line County of Lindsey

DISCHARGE OF ASCARIS LUMBRICOIDES THROUGH A HERNIOTOMY WOUND

A NATIVE of Nigeria, said to be 79 years of age was admitted to the *Colonial Hospital, Lagos, in October, 1922, suffering* from a strangulated inguinal hernia on the right side

I operated immediately and reduced a loop of small intestine 6 inches in length from the hernial sac this intestine was deeply congested but had nowhere obviously lost its vitality although it was evident that in a very short time it would have become gangrenous The operation was completed in the usual way

The old man recovered well but on the fourth day complained of some tightness in his wound the removal of the dressing disclosed a small swelling in the region of the wound without redness or pain no fluctuation could be elicited but the feel of the swelling was peculiar and unusual A pair of dressing forceps was inserted through the healthy looking incision the expected discharge not having appeared the opening was enlarged a finger introduced and three full sized *Ascaris lumbricoides* pulled out These worms had been lying between the skin and muscle no communication could be found with peritoneal cavity or bowel and there was only a trace of sero-sanguineous fluid in the pocket in which the worms lay The general condition of the patient was quite unaltered by this local occurrence Santonin was now administered, and many more ascarides were passed by the anus The wound healed quickly without further complication Six weeks later the patient who had been kept in hospital on account of his debilitated condition contracted pneumonia and died

At the *post mortem* examination the ileum was found to be attached to the peritoneal aspect of the hernia-tomy scar by a single fine adhesion, otherwise the bowel was normal and the peritoneal cavity intact

The strangulated bowel, after reduction, had become adherent to the under surface of the wound, and at this point the worms had forced their way through what must have been a damaged and softened area of the bowel wall, the interesting point is that they should have done so without causing an infection of the peritoneal cavity or of the wound This is, I should imagine, a rare complication of strangulated hernia

QUINTIN STEWART, F R C S E,
Nigeria West African Medical Service

SURGICAL EMPHYSEMA DUE TO PARTURITION

In view of the apparent rarity of this condition, I have been prompted by Dr Harvey's note (June 21st, p 1089) to record particulars of a precisely similar case that came under my care ten days ago

A young and healthy primipara, whilst having strong and regular pains, complained that her right eye was becoming swollen This gradually increased, and the swelling extended all round the neck, upper part of the chest, and down the right arm It had the typical crackling feeling characteristic of surgical emphysema The labour was somewhat delayed owing to the presenting part being a face, and it was ultimately terminated with the assistance of forceps

The emphysematous area was very tender for several days, but the whole condition completely subsided in about a week

Bradford, Yorkshire A W HANSELL

OEDEMA OF LARYNX PRODUCED BY POTASSIUM IODIDE

THE following case shows the extraordinary susceptibility of some individuals to potassium iodide My patient, a female, had only taken some 20 grains, in 5-grain doses, when she complained of a feeling that her throat was closing up I found marked oedema of the right ary-epiglottic fold, but there was no sign of any inflammatory mischief

On discontinuing the drug, and giving large doses of sodium bicarbonate with a laryngeal spray of 2 per cent cocaine and 1 in 2,000 adrenaline, the trouble disappeared in twenty-four hours

London W G A GARRY SIMPSON

RUPTURE OF AORTIC ANEURYSM IN A YOUNG WOMAN

post mortem examination on the body of a woman, æt 29, revealed the following pathological features

The aorta was ruptured on its posterior wall, inside the pericardium The vessel walls were thin and atheromatous (opaque white patches in its first part, which on section showed thickening of the tunica intima but *no* calcareous deposit) A small pale infarction situated in the upper pole of the left kidney The left ventricle was hypertrophied There was no history of syphilis

The age and sex, and also the site of rupture, make this case of sufficient interest to justify record

R MACKINNON, M B, Ch B,
Honorary Pathologist Oldham Royal Infirmary

UNCOMMON FORM OF DISLOCATION OF THE PATELLA

ALTHOUGH dislocations of the patella are common, yet the "vertical" dislocation described below, with complete rotation of the bone is sufficiently rare to be of interest

In March last a young Indian *soldier* (driver in the R I A) was admitted to my wards with a diagnosis of fractured patella There was a history of his having fallen off his horse about an hour previously After having been given first aid on the spot, he had been sent to hospital in an ambulance

I found that the left patella was lying over the anterior surface of the external condyle of the *femur* and was completely rotated on its vertical axis so that the *posterior* aspect now looked forward and the anterior surface was in contact with the condyle of the femur Reduction was easily effected by slight pressure on the outer edge of the patella once complete relaxation of the quadriceps extensor muscle had been obtained

Mild synovitis of the knee joint resulted which subsided in about a week The patient was discharged to duty with a normal knee joint in 4 days later

Bangalore South India E G KENNEDY, Major I M S

Reports of Societies.

PROCTOLOGY

JOINT CLINICAL MEETING IN LONDON

A VERY successful joint meeting of the Subsection of Proctology of the Royal Society of Medicine and the American Proctologic Society was held on July 9th, 10th, and 11th The latter society was under the presidency of Dr RALPH JACKSON (Boston), with Dr J F Montague (New York), the present secretary, and about fourteen other members

The proceedings were opened on the morning of July 9th, when Mr ASLETT BALDWIN, President of the Subsection of Proctology, received the American visitors at the Royal Society of Medicine, and, after bidding them a very hearty welcome, outlined the arrangements which had been made for the next few days Dr JACKSON replied, and was followed by Dr WILLIAM M BEACH (Pittsburg), who read a paper entitled "The evolution of proctology in America" After a consideration of the evolution of specialism in the United States, Dr *Beach described the origin of the* American Proctologic Society He described the peculiar difficulties that were encountered in the early days, owing to rectal practice being then almost entirely in the hands of non-qualified charlatans, and showed how the society was finally successfully launched in 1898, with Dr Joseph H Matthews as its first president and himself the first secretary Since then the society had steadily gone ahead until at the present time its membership was about fifty The present occasion marked their twenty-fifth anniversary

Injection Treatment of Haemorrhoids

An interesting programme of formal discussions and hospital operation demonstrations had been arranged The first discussion, on the injection treatment of haemorrhoids, was opened on July 9th by Mr GRAEME ANDERSON After giving a history of the injection treatment Mr Anderson described his present technique, and insisted on the applicability of the method only to uncomplicated cases his personal preference was for the dilute 10 per cent carbolic solution rather than for stronger solutions Dr CUTHBERT DUKES showed some histological preparations illustrating the intravascular clotting which he had found to take place in the substance of the piles after injection with 10 per cent carbolic, and the discussion was then continued alternately by English and American speakers (A paper by Mr Graeme Anderson and Dr Dukes, giving an account of their views and experience, is printed in the JOURNAL this week at page 100) The general opinion was that in selected uncomplicated cases definite improvement could be promised in some cases permanent cure was effected, but the likelihood of recurrence in perhaps 50 per cent of cases indicated the necessity for periodical re-examination and further injection as required The American speakers showed a marked preference for quinine and urea as the injection fluid, and as a rule injected only one pile at a time Dr JELKS (Memphis) and Dr SAMUR (New York) condemned the method, and described some lamentable after-results that they had seen in the way of haemorrhage and septic complications after injection no precise details were forthcoming as to the injection fluid used in these cases, and subsequent speakers, including the opener of the discussion, considered that these bad results were due most probably to faulty technique and application of the method to unsuitable cases The English speakers showed a unanimous preference for carbolic in 10 to 20 per cent solution in water and glycerin The immediate arrest of bleeding after even the first injection was agreed upon

Pruritus Ani

On Thursday, July 10th, a discussion on the treatment of rectal prolapse was opened by Dr HIRSCHMANN (Detroit), with a description of his method of fixing the colon by an abdominal operation Dr MONTAGUE (New York) gave a most interesting and beautifully worked out cinematograph demonstration on pruritus ani he showed in this film the various histological changes which he had noticed in the perianal skin, leading finally

to a sclerosis of the connective tissues of the corium, and a cellular infiltration in the papillae round the end bulbs of Meissner. In considering the treatment he described the undercutting operation which he has devised as a modification of those of Sir Charles Ball, Lynch, and others, he performs this operation under local anæsthesia, and undermines the perianal skin and mucous membrane of the anal canal through eight separate incisions. He demonstrated the special thin bladed scissors which he has devised for this operation. Dr. Montague also gave a diagrammatic representation of his conception that anal pruritus might be evidence of visceral disease due to misreference of sensation, and emphasized the necessity for thorough general and local, including sigmoidoscopic, examination in every case of pruritus ani. Sir CHARLES GORDON-WATSON, continuing the discussion, mentioned the relief that in many cases of pruritus ani followed the cauterization of anal papillae, and Dr. DUKES, in confirmation of his statement that these anal papillae were highly sensitive structures, showed some microscopic sections prepared by the gold chloride and osmic acid methods, showing nerve fibres and tactile corpuscles in anal papillae. Time did not allow for the debate on this subject to be completed.

Operation for Rectal Cancer.

On Friday, July 11th, an important discussion on the operative treatment of cancer of the rectum was opened by Mr. ERNEST MILES and Mr. J. P. LOCKHART-MUMMERY. Mr. Miles gave a lantern demonstration illustrating the lymphatic spread of rectal carcinoma, and maintained his uncompromising attitude in favour of abdomino-perineal excision in all cases. Mr. Lockhart-Mummery agreed that this was the operation of choice for a growth in the upper third of the rectum, but preferred a perineal excision for growths within reach of the finger for the following reasons: the smaller operation mortality, the applicability of the operation to a greater number of cases, and the satisfactory after-results. He described the perineal operation as he now performs it, and stated that his operation mortality in 153 private and hospital cases was 9 per cent., with 47 per cent. of five-year cases. The discussion was continued by Sir CHARLES GORDON-WATSON, Mr. SWINFORD EDWARDS, and Mr. GREY TURNER, each of whom agreed with Mr. Lockhart-Mummery in limiting the abdomino-perineal excision to high growths. Mr. GREY TURNER urged the need for earlier diagnosis so that, if possible, a colostomy might be avoided, and he demonstrated a specimen of local excision of a small malignant ulcer from a patient who had now been free from recurrence for more than five years. Dr. KIGER (Los Angeles) showed a water-cooled speculum and large electric cauteries with which he had treated several rectal carcinomata by Percy's cold cautery method, with, he claimed, some good results, and Dr. YEOMANS (New York) referred to the need for information regarding the end-results of radiation in the treatment of cancer of the rectum. The American speakers expressed their real appreciation of the operative work that they had seen over here. In winding up the discussion Mr. MILES referred to the importance of the microscopical appearance of the growth in estimating prognosis, the papillary type having a much better prognosis than the highly malignant colloid variety. Mr. LOCKHART-MUMMERY gave it as his opinion that cancer of the rectum in patients under 30 almost invariably recurred rapidly, no matter what operation was done.

Operations were arranged at the Cancer Hospital and at St. Mark's Hospital. At the former Mr. Miles performed two abdomino-perineal excisions of the rectum and gave demonstrations of specimens illustrating his arguments. At St. Mark's Hospital each member of the full staff—Mr. Lockhart-Mummery, Sir Charles Gordon-Watson, and Mr. Graeme Anderson—performed a perineal excision of the rectum, followed by typical operations for the minor rectal diseases which showed the general technique of the hospital. A visit to the museum of the Royal College of Surgeons was arranged on July 10th, at which Sir Arthur Keith very kindly conducted the visitors round the museum and showed them a large number of specimens of special interest.

A full programme of social events was arranged for the benefit of the American guests and the ladies accompanying them. A reception was held by Mr. and Mrs. Aslett Baldwin, at 6, Manchester Square, on the evening of July 11th, and on the succeeding days a number of private lunch and dinner parties were given, with visits to Ranelagh, Hampton Court, and the river. The proceedings terminated on Friday evening, July 11th, when the members of the Subsection of Proctology entertained their American confrères at their annual dinner, held at the Langham Hotel. The successful organization of the joint meeting was due to the work of Mr. Cecil Rowntree, secretary of the Subsection of Proctology.

LETHAL DOSES OF X RAYS AND RADIUM FOR TUMOURS

At a conjoint meeting of the Section of Electro-therapeutics of the Royal Society of Medicine with the Rontgen Society, held at Oxford on July 5th, Professor SIDNEY RUSS read a paper on experimental studies upon the lethal doses of radium and *x* rays for human and other tumours. The chief experimental points of this paper may be summarized as follows.

Professor Russ defined the normal lethal dose of *x* rays for animal tumours as that dose which it is necessary to give the tumour outside the body so that when it is inoculated into susceptible animals it fails to grow. A dose less than this slows up the rate of growth of the tumour, and in fact gives a reduced percentage of successful inoculations compared with non-irradiated tumour. It was found that, if a certain time of exposure to *x* rays produced 50 per cent. reduction in tumour growth, this time had to be increased about 33 per cent. in order to be lethal. Tumours irradiated to a less extent than was needed for lethal action acquired a resistance to the rays which became very pronounced in the course of repeated irradiation; evidence was given of a strain of tumours which had had repeated exposures, requiring 2·5 times the ordinary exposure to *x* rays before a lethal action was obtained. A comparison was given between the dose of *x* rays required for lethal action on a tumour and for producing definite reactions of the skin of the rat bearing the tumour; these data showed that a lethal dose for the tumour was a dose which could not with impunity be given to the skin. The exact ratio of these doses could not be given without reference to the wave-lengths of the *x* rays, because it had previously been shown that both the skin of the rat and the tumour in these experiments reacted differently to identical amounts of energy if this energy were given as rays of different wave-lengths. Under many conditions of *x* ray therapy, the skin got more intense irradiation than the tumour beneath it (avoided by cross-fire to some extent) and the facts summarized above made it very doubtful if under therapeutic conditions a lethal dose was at all frequently given to the tumour irradiated. If this were the case, it pointed to the part which the tissue reactions of the host played after irradiation and here knowledge was rather scanty. Experiments, supplementary to those carried out some years ago, were made by which it was shown that the resistance of rats to tumour growth is enhanced by giving the animals repeated small doses of *x* rays. This was in contrast to the lowering of their resistance which followed the administration of large doses. Experiments were made upon the lethal doses of the gamma rays from radium. Tubes containing from 1 to 90 mg. of radium bromide were introduced into tumours and after remaining in position for periods of 1 to 17 days they were cut down on, and portion of tumour at a distance from the centre of the tube removed and inoculated into susceptible animals. In this way the lethal ranges of radium tubes such as were frequently used clinically had been determined. The lethal action did not strictly follow the intensity curve of radiation, but this was hardly surprising as there must come a time when the effective dose of radiation was no longer represented by such a simple function as the product of the intensity and the times of exposure.

Reference was made by Professor Russ to certain facts acquired as a result of an immunity operation which had been carried out upon a number of patients. This consisted in the irradiation by *x* rays of tumour removed surgically and then reintroduced into the body. This had

been done in a wide variety of malignant growths, and it was found that, wherever these tumours had been given twice the lethal dose which was effective for animal tumours they failed to grow The factor of two had been decided on as a measure of safety, but it was quite likely that less radiation might have been given with the same result It did, however, set an upper limit to what was necessary for the purpose There was little doubt that the vulnerability of cells varied according to the phase of their life-cycle, and it had been shown by other observers that, in the actual dividing stage, some cells were especially vulnerable Attempts had been made to model radiotherapy on these lines so that advantage might be taken of this fact Professor Russ then analysed the factors entering into the problem He concluded that certain experimental quantities were not yet available whereby anything like a rigid specification could at present be made as to the best method of combining intensity of radiation and time of exposure for the many varieties of tumours met with clinically

Reviews.

JOHN HUNTER'S CHILDREN

In some two centuries ago a eugenically minded philosopher had passed by the farm of Long Calderwood and noted how amply John Hunter (senior) and Agnes Paul had filled their quiver—John (junior), tenth and last, appeared in 1728—he would have drawn the very natural conclusion that the name and blood of Hunter had an assured future When we turn to the memoir of the Hunters,[1] on which its author, Dr GEORGE C PEACHEY, has spent many years of painstaking research, we find that the Long Calderwood family has, in point of numbers and after two centuries of endeavour, done little more than hold its own The ten Long Calderwood children are represented by fourteen living individuals, all of whom come through Matthew Baillie the grandson of John Hunter (senior) Matthew's granddaughter, Miss Hunter Baillie, the present owner of Long Calderwood, we are glad to know, is still alive, and Dr Peachey makes acknowledgement of the free manner in which she has placed her treasury of documents at his disposal Miss Hunter Baillie is great-grandniece of the celebrated John Hunter, and has a remarkable resemblance to him in body and in mind—facts which would be difficult to explain if Mendel's laws did not hold true in the breeding of human types The other thirteen survivors of the Long Calderwood family are represented by the children and grandchildren of Miss Hunter Baillie's two sisters Henrietta and Agnes

Dr Peachey's researches throw a new light on the hard fate which dogged the children born in Jermyn Street, London, to John Hunter and Anne Home, who were married at St James's, Piccadilly, on July 22nd, 1771 "The marriage," says Dr Peachey, "had probably been postponed in consequence of the disease (syphilis) which Hunter had inadvertently communicated to himself in May, 1767 the complete cure of which, he says, occupied three years" It can hardly be said that "inadvertently" is the right adverb to use here, John Hunter inoculated himself designedly to prove a certain thesis, and by a strange chance the virus he selected was from a case which we now know must have been one of mixed infection

At the date of marriage Anne Home was 29 and John Hunter 43 Within twelve months a son was born to them —John Banks Hunter—whose career Dr Peachey has followed at St John's College, Cambridge, and in the army, by records preserved in the War Office In the *London Gazette*, April 24th, 1810, Dr Peachey found the following announcement

> 103 Regt Major Hunter retires in favour of Capt E J McGregor Murray promoted Major from 52nd Foot, by purchase

Why Major Hunter sold out we do not know, but it was for a reason which brought pain to his devoted mother, who wrote "before I became acquainted with the situation of my poor unhappy son" In his youth she had doted on her son Her portrait, which Dr Peachey reproduces, shows her to have been a strikingly handsome woman, with the air and dress of a lady of fashion and of leading, she was a poetess of standing, she wrote birthday odes to her son, when she published her volume of poems in 1802 she dedicated it to "John Banks Hunter, Esq, Captain in the 2nd Batt of Royals, stationed at Gibraltar" By 1810 this son had done something which turned his mother's flaxen locks to grey He had himself in the South of France, where he died in 1838 at the age of 66, leaving no issue

Such was the fate of John Hunter's eldest son, we now turn to his other children Eighteen months after the first child was born there came Mary Ann, "a weakly child," who died in her third year, then followed "a fine boy," James, who died a few months after birth Fourth and last, on January 9th, 1776, came Agnes Margaretta, who, starting away under the happiest of auspices, had a troublous and ill-starred journey through life Dr Peachey introduces his readers to her two husbands In 1794, six months after her father's death and when she was still in her teens, the accomplished young Agnes Hunter married James Campbell, who in due time became Governor of the Ionian Islands, for his services he was knighted in 1817, whereby Agnes Hunter became Lady Campbell If this marriage brought her a title, it brought happiness neither to her nor to her elderly husband, for Dr Peachey finds that in a codicil to his will, made in 1813, her husband describes her as "an ungrateful and unprincipled woman" In 1819 Sir James Campbell, having been made a baronet, died, and was buried in Westminster Abbey Two years later his widow married Lieut.-Colonel Benjamin Charlewood of the Grenadier Guards, and brother of the Duchess of Roxburghe Mrs Matthew Baillie has recorded in her diary "that the devotion of Colonel Charlewood made amends to Lady Campbell for the unkindness of her first husband" She died childless in 1838 at Brighton—a few months before her brother passed away at Toulouse Thus in 1838 the progeny of two richly gifted parents, John Hunter and Agnes Home, came to an abrupt end with the first generation

We have picked from Dr Peachey's memoir only a few details to illustrate the interesting nature of its contents Although Dr Peachey may not have succeeded in painting a living picture of the two Hunters, nor in giving his readers a reason for their greatness, yet he has produced a work which no student of our medical history can afford to neglect, and which will prove of infinite service to Hunterian Orators of future generations

MEDICAL HISTORY OF THE WAR

WE do not know whether it be the intention of the historical section of the Committee of Imperial Defence to cause to be completed a general *Official History of the Great War*,[2] but such undertaking is suggested by the main title of certain volumes relating to the doings of the medical profession during the period The preparation and publication of these medical volumes were authorized at an early date, and most of the volumes then in view, twelve in number, have already appeared Eight of them relate to the strictly professional aspects of the work of the medical services in the great war, and four to those of a more essentially military character To the second of the latter attention was drawn in this JOURNAL as recently as last February by two extensive notices, and a third volume has since been published

Like its predecessors, its contents, so far as their final wording is concerned, are exclusively the work of Sir WILLIAM MACPHERSON, but the preface indicates that, as in the case of the two earlier volumes, certain parts are in the nature of an abstract of accounts supplied by some officer who in each case took a leading part in the events described

The present volume covers very wide ground, since its precise subjects are the events in France from the end of the year 1915 to the end of the war, the operations on the Italian Front, including the arrangement and working of

[1] *Memoir of Walter and John Hunter* By George C Peachey Pp William Brendon and Son Ltd (Printed for the Author) 1924 (Demy 8vo, pp viii + 313 8 plate 21)

[2] *History of the Great War based on Official Documents* Medical Services General History Vol III By Major General Sir William G Macpherson KCMG CB DSO London HM Stationery Office 1924 (Demy 8vo, pp viii+556 illustrated £1 1s net)

the long Taranto Cherbourg evacuation route from the Middle East, the occurrences in Egypt during the progress of the fighting on the Gallipoli Peninsula, for which Egypt was the base, and subsequent events down to the time when demobilization began the operations on the western frontier of Egypt against the Senussi, and deep in the Sudan far below Khartoum, against the Sultan of Darfur the work involved in the Sinai Peninsula, and, finally, the events in the Palestine campaign

As the whole text consists of less than six hundred pages parts of which are often occupied by photographs and sketch maps it will at once be clear that the accounts supplied of the long list of subjects that have just been mentioned must be very compressed The reason appears to be that limitations of time and space were imposed on the author, and that consequently all he has attempted is "to provide a basis on which those desirous of studying more closely the medical situation during the various battles and phases of the war may be able to reconstruct with the aid of the maps the chief features of the work of the medical services"

This being the case it seems right, on the whole, to refrain from anything in the nature of a deliberately critical review or an attempt to assess the degree of success attained It will suffice to say that throughout the volume the writing, while always conspicuously clear varies a good deal both in quality and kind In some of the accounts it is of narrative type, the writer giving relatively few facts, but bringing into strong relief details which he presumably considers of special importance In others the reader is not infrequently faced by a formidable array of facts which he must more or less collate for himself, naturally the pages of this type form somewhat hard reading but they are by no means the least interesting and are perhaps most likely to repay close study by those the author has been chiefly anxious to assist

Naturally it is the operations in France that receive the lion's share of attention, but, curiously enough, very little is said as to work at the bases or on the lines of communication, and we find no reference to the tutorial work in new methods of wound and fracture treatment which was thought desirable late in 1917, though initiated earlier, and which was so admirably carried out in a forward casualty clearing station of the First Army almost up to the moment when the Germans swept over the original British front line On the other hand, throughout the whole volume the work of forward units receives a considerable amount of attention, and in this connexion may be mentioned a report by Colonel J Poe on the medical work of his Division during the advance towards the Hindenburg line, which the author wisely quotes in full So far as the strictly military work of medical men during active operations is concerned it is by far the most illuminating statement we have anywhere yet read

Sundry passages in the volume make it clear that there was a tendency, at all events in France, for the Directors of Medical Services of armies to approve of departures from the strict teaching of the R A M C *Manual* in regard to the respective uses of casualty clearing stations advanced dressing stations, and main dressing stations, the latter being not infrequently relegated into the background The author seems to think that this was usually if not always a mistake, but the impression left by the volume as a whole is that the elasticity of mind shown in this connexion by *those in medical charge of corps and armies was rather a* happy circumstance

Since casualty clearing stations must always be the hinge of the whole evacuation arrangements of an army, and as undoubtedly in the late war it was the type of unit on which mainly depended the great success of the professional work of the medical services, it is satisfactory to note that the doings of these units receive very full attention throughout the volume Yet despite this circumstance its students will probably remain in some doubt as to the lesson the war taught as to the extent of the casualty clearing station accommodation necessary In other words, we do not get a clear answer to the question For what percentage of the total force of which he is in medical charge should a cautious Director of Medical Services endeavour to secure casualty clearing station accommodation when an offensive is about to be launched? This must always be a point of extreme interest, and the volume shows it to be one on which there was difference of opinion between two such experts as the D D G M S and the D M S of one of the armies just after the beginning of a series of very important operations The D M S wanted to increase his casualty clearing station accommodation by getting more marquees than had been allotted to him, but the D D G did not think this was necessary It is clear that the author holds the desire of the D M S to have been justified, but the facts supplied do not enable the reader to judge whether he would share this opinion if fully informed

In this connexion it may be said that commanding officers, either of medical units or of a collection thereof who when active operations are in view are ready to express themselves content with the extent of their allotted equipment and personnel, and never ask for more than they know themselves positively to need were in the late war somewhat rare and a D M S is the last person who can well be blamed for pressing claims in this relation How fatal may be an opposite attitude on the part of such an officer was shown by earlier wars, and in at least one campaign of the late war

The extent of casualty clearing station accommodation desirable must in particular be peculiarly difficult to compute Modern battles tend to last weeks rather than days, and subsequently it may easily be shown that in the course of a given number of days the casualties reaching a group of casualty clearing stations were a long way within the number it could have successfully handled, or that had been successfully handled by other groups on other occasions But this does not prove that the accommodation was in fact excessive on any one day, indeed, it may have been far below immediate needs Flooding due to an unexpected degree of success in the work either of regimental stretcher-bearers or of field ambulance units or of both, and blockage due to a temporary breakdown on the evacuation line, are both difficulties to which casualty clearing stations are liable

In addition the medical and the military forecasting of casualties are not identical or even commensurate tasks The commander of an army may conceivably estimate correctly to three points of decimals the total man-cost of any operation he has in view, but how much of this man-cost will represent casualties from the point of view of his D M S, as also the rate they may be thrown on the latter's hands are quite different questions The variable factors include, for instance, the proportion of killed and missing to total losses, the proportion of walking cases to severely wounded the number of attack waves successful in reaching their objective, the distance of the latter, the state of the weather and of forward evacuation roads, the activity of the enemy in shelling back areas and the success or otherwise of the arrangements for collecting the wounded and passing them to the rear

Other debatable points of much interest in connexion with casualty clearing station work are the right degree of the proximity of these units to the front line, and the extent to which a D M S should provide for the contingency of a successful action by the enemy In both these relations the D M S already referred to is definitely blamed by the author It is possible, of course, that the D M S was disposed to take too many risks, but it cannot be said that the facts mentioned in support of either condemnation are really convincing The group of casualty clearing stations whose position the author holds to have been wrong certainly came under shell fire one day about three weeks after the opening of the operations already mentioned and might have done so much earlier But meanwhile in those same three weeks, several groups at a considerably greater distance from the line, and who e sites were never in dispute, had suffered much more severely from enemy action in the shape of bombing and a third-line casualty clearing station of a neighbouring army had been shelled out of its position though situated approximately twenty miles from the nearest enemy trenches In fact, the beginning of the British offensive in question was also the beginning of the time when medical units in general began to suffer from enemy action and in some cases, though situated far outside army areas, seem to have been intentionally attacked

In the earlier stages of the war anything of the kind had been very rare, and it was then that the principal medical officers of armies, with the laudable intention of meeting as far as possible the professional needs of the service, got into the habit of pushing up their casualty clearing stations closer towards field ambulance areas than was perhaps militarily desirable. Among other things these units were much larger and infinitely more complex in their organization than had been designed by pre-war regulations. Obviously, also, closeness to the front may spell undesirable proximity to legitimate objects of enemy attack—such, for instance, as ammunition dumps—though this does not necessarily follow.

As regards inadequate preparation for a possible defeat, the D.M.S. in question was somewhat unfortunately situated when the occurrences on which the author dwells took place, and when the enemy captured a good deal of casualty clearing station equipment, but not whole units, including many patients and much personnel, as was the case later on in another command elsewhere. This part of the line that his army occupied had only recently been taken over from the French, and consequently—unlike the case of the other armies still occupying old-established parts of the British front—there were in its rear no already allotted and organized sites to which he could immediately send his casualty clearing stations when the push back commenced. In addition he had been assigned an office at a relatively immense distance from his front, and he was attached to an army commander who, though he certainly had prepared second and third lines of defence, did so on what proved to be an inadequate scale, and who probably would have laughed at the idea of his being driven back a distance of about forty miles in the course of a few days. Indeed the vastness of the success of the German offensive beginning in March, 1918, was not anticipated by anybody either in France or elsewhere. Towns and villages which for years had been regarded as not much more dangerous places of residence than London itself were practically in a moment either swept out of existence altogether or brought within the reach of continuous light artillery fire, while others at a somewhat greater distance were subjected to constant bombing attacks and heavy gun shelling.

Readers should not overlook the account of the work of the medical services during the final advance, as, apart from its intrinsic interest and the fact that the operations described led to as many as 250 casualties among medical officers, and to 1,920 among other ranks of the medical service, the style of the work then done conformed perhaps more closely to pre-war anticipations of field operations than at any other period in France, with the possible exception of advance towards the Hindenburg line. By way of contrast the equally interesting record of the small but exceedingly trying operations against the Sultan of Darfur should also be studied.

In the narrative of the work in Egypt those who late in the year 1917 were disposed to claim that the Medical Department did not always employ its commissioned personnel to the best advantage are likely to note with interest that three medical officers of field rank were successively employed at Alexandria in the conduct of a splint factory. It is true that one of them had as a civilian long been known for his ability in the matter of devising splints, but he was also so expert a surgeon that his employment in the fashion stated may well be deemed rather a waste of good material.

The sketch maps freely provided throughout the volume are admirable, but of course, they usually show not true but crow-fly distances in respect of the position of medical units. There are also a large number of excellent photographs, but conceivably some of these may be rather deceptive to future students, inasmuch as the date at which they were taken is not always indicated. It is also the case that the moments at which the habitats of front-line formations are in their most truly typical condition are rarely available for photographic purposes.

In giving the foregoing account of the contents of the volume it has been thought right to dissent from some of the opinions of the author, but this, it need scarcely be said, in no wise implies any dissent from the admiration expressed in the notices of the earlier volumes for the great ability brought to bear by Sir William Macpherson on a task of immense difficulty.

THE VEGETATIVE NERVOUS SYSTEM

THE second edition[1] of Professor MÜLLER'S work on the vegetative nervous system is a textbook of a high order of merit. It has been written in collaboration with many other authors, mostly from the Erlangen school, and is a mine of information on the anatomy, physiology, and disorders of the involuntary nervous system. It is a fairly complete exposition of the whole subject, though anatomy and physiology receive more attention than other subjects.

The earlier chapters comprise an account of the general anatomy, physiology, and histology of the sympathetic and parasympathetic systems. Profusely illustrated by plates and figures, many of them coloured, this section provides a detailed description which it would be hard to better. Then follow chapters dealing specifically with the innervation of the various organs and glands, and with many of the disorders of function to be observed clinically. The innervation of the heart, of the blood vessels, and of the bronchi is fully described and illustrated, and under the title of functional nervous disturbances of the heart is included an account of electrocardiography and of polygraph methods of examination.

The chapter on the influence of the vegetative nervous system on the skin is useful and informing, and will appeal to the clinician, it has a valuable series of illustrations.

The book can hardly be regarded as one for the student, it is rather a work of reference for the neurologist and physician, both of whom may find here under one cover much for which search might have to be made through many volumes. The type is good and the illustrations deserve especial praise, the coloured plates and the microphotographs are admirable and the anatomical diagrams are clear and helpful.

THE LABORATORY DIAGNOSIS OF SYPHILIS

A PERUSAL of NOGUCHI'S *Laboratory Diagnosis of Syphilis*[2] fills the reader with admiration for the author's energy and industry, but raises inevitably some doubt as to whether he is quite serious when he describes his book as "a manual for students and physicians."

Approximately the first half of the book deals with serum diagnosis, a lucid account is given of haemolysis, which is explained as due to the interaction of amboceptor and complement, their respective actions are well shown in Figs. 2, 3, and 4. The nature of complement—a matter about which there is so much uncertainty—is unfortunately almost neglected. In the third chapter, which deals with antigens and antibodies, the mechanism of the fixation of complement is discussed, and the Bordet-Gengou phenomenon, on which the theory of the Wassermann test depends, is illustrated by two diagrams. This leads us on to an account of the application of complement fixation to the test for syphilis. Many of the methods of different writers are detailed, but this is a matter largely of historical interest.

After dealing with inactivation of serums, about which many interesting experiments are related, the author describes his own method. The source of complement, and a number of useful ways of preserving it, are given, a notable omission is the simple method of freezing it solid. The author uses a fixed amount—0·1 c.cm. of a 40 per cent. dilution—and does not vary it according to titration, as many serologists do. No doubt he has his own good reasons, but the plan is risky, for some complements are much inferior in titre to others, and this is notably the case when working in tropical countries.

The section devoted to antigen is comprehensive and irreproachable. Noguchi, as is well known, favours the

[1] *Die Lebensnerven.* Dargestellt von Dr. L. R. Müller. Zweite Auflage. Berlin: J. Springer. 1924. (Sup. roy. 8vo, pp. xi + 614, 352 figures, 4 plates. 8·35 dols.; bound, 8·70 dols.)

[2] *Laboratory Diagnosis of Syphilis.* A Manual for Students and Physicians. By Hideyo Noguchi, M.D., M.S., Ph.D., D.Sc. London: Humphrey Milford, Oxford University Press. 1923. (Demy 8vo, pp. xiii + 392; 59 illustrations of which 13 are in colour. 36s. net.)

acetone insoluble extract, and thus no doubt gives the most reliable results, but it is a question whether greater delicacy is not obtained by using a simple alcoholic extract reinforced with cholesterin as recommended by McIntosh and Fildes. The risk of "false positives" is alleged against this but the event is so rare as to be negligible.

For his haemolytic system Noguchi favours human red cells (and the corresponding amboceptor). No doubt this has many advantages but evidently Noguchi has been more skilful or more fortunate than many who find it very difficult to obtain an amboceptor of good titre by injecting a rabbit with human red cells. Many of the animals die prematurely, and when they survive often a titre of 1 in 500 is not reached. The diagnostic value of the serum test is discussed in Chapter XI. The tables given would be more valuable if, for example, in computing the number of primary cases yielding a positive reaction the age of the disease were stated. It is well known that primary syphilis will usually give a negative reaction in the first week, but that most cases give a positive after two or three weeks.

The discussion of the effect of treatment on the reaction is neither up to date nor up to the standard of the rest of the book. In order to appraise the value of treatment it is necessary to know the stage at which it was commenced, the actual amount of each drug given, and the length of time occupied in giving it. These facts are frequently omitted. In dealing with specific complement fixation Noguchi writes with undeniable authority, since it was he who successfully cultivated the *Spironema pallidum* in 1910-11. A detailed account of his technique for cultivating the spironeme would have been an interesting and useful addition.

Passing from the serum test, the author describes the luetin or cutaneous reaction, and here he is perhaps at his best. The description is full and clear, and the coloured plates beautifully reproduced. The reaction has been somewhat neglected in England, and a study of this part of the book is strongly recommended to all syphilologists.

In a chapter devoted to the cerebro-spinal fluid the author rather stresses the test for globulin, which, after all, is not diagnostic, since it is given in other diseases. The Nonne Apelt and Pandy tests are simple and reliable, and sufficient for all diagnostic purposes. The description of Lange's gold test is good, but might well have been rather fuller, since many encounter difficulties in carrying it out. Some account of other colloidal tests, such as the mastic and benzoin, might with advantage have been included.

The section on the detection of spirochaetes is extremely good, though it may be noted that the name "treponema" is retained in contradistinction to "spironema," which appears to be more correct. The description and figures of *Spironema pallidum* and allied organisms are all that could be desired, and the dark-ground method is given the prominence it deserves. This is the best method for diagnostic purposes—it is so easily and so quickly carried out once the technique is mastered—but it presents many pitfalls to the uninitiated. The pages devoted to staining methods are largely of historical interest, for no one nowadays would attempt to make a fixed preparation for diagnosis if the dark-ground method were available, with the staining method such valuable characteristics as motility and regularity of spirals, which are so typical of *S. pallidum*, are missed. One point in the differential diagnosis of spirochaetes seems to have been overlooked—namely, that *S. pallidum*, though very active, shows little or no movement of translation.

The book concludes with a bibliography of about 600 references, and a very valuable list of definitions of terms used in immunology—such as agglutinins, amboceptor, complement, sensitization, etc. To sum up, it may be said that Noguchi has given as clear and comprehensive an account of all a worker is likely to require for the laboratory diagnosis of syphilis as is to be found in any one book. The volume of work on which the book is founded must be stupendous. Few syphilologists will fail to add to their knowledge by a study of the book, and all will be interested. If the author seems dogmatic at times, he has at least a great reputation and a vast accumulation of knowledge to support him.

NOTES ON BOOKS

THE *Guide Pratique d'Analyses de Chimie Biologique*, by Dr RENÉ CLOGNE, of which a second edition[1] appears after three years, is pre-eminently a book for the bench. It may be wondered, therefore, whether its paper cover and its general format are the best calculated to recommend it to those to whom it is so obviously addressed. It would not appear to be that hardy sort of book which alone survives the maltreatment of a chemical laboratory. Its scope is very wide, and on this account alone it should be useful to many by enabling them to effect a casual analysis of an unusual nature without laborious search in an uncritical literature. Apart from descriptions of analytic methods for the determination of all the usual physiological and pathological constituents of blood, urine, faeces, and secretions in general, there is a chapter devoted to the analysis of water and another to the detection of drugs in the urine. The somewhat original plan has been followed of arranging the material in the alphabetical order of the substances examined. This seems to have some merit in a book intentionally designed as a handbook. The methods recommended are in general the familiar ones. Descriptions are clear, though condensed to the minimum of words, and no attempt is made to give warning of the many "snags" which attend the use of unfamiliar methods. The price should recommend the book to many who would not otherwise be attracted by its exterior.

A recent addition to the many publications relating to *Urine Examination* is a manual[2] on this subject by Mr FLORIN J. AMPHLETT, an assistant professor of chemistry at a school of pharmacy in Boston, U.S.A. It is intended for the benefit of students of nursing and pharmacy, but, as is often the case in American publications having analogous aims, it deals with its subject much more fully than might be expected in the circumstances. The volume, in fact, supplies quite as much information as practitioners usually require, and the habitual clearness of the description of methods is only occasionally marred by the use of laboratory slang.

The little book on *Impotency, Sterility, and Artificial Impregnation* by Dr FRANK P. DAVIS, which has now reached its second edition, contains a fairly full account of the causes, symptoms, and treatment of impotency and sterility, including two interesting chapters on the relation of the sense of smell to the sexual function. The author is convinced that the majority of cases of failing sexual power are due to psychic causes and can be relieved by bringing the patient into the proper environment together with suitable treatment. The chapter on artificial impregnation gives a brief historical account of the practice and describes the author's method. The least satisfactory part of the work are the two chapters devoted to drug treatment. We have noted an unduly large number of misprints.

The issue for July of *Medical Science, Abstracts, and Reviews*[3] contains, in addition to abstracts classified under systematic headings, special articles on certain periodicals. Those so treated in recent issues have been *Heart, Journal of Experimental Medicine, British Journal of Experimental Pathology*, the *Journal of Pathology and Bacteriology*, the *Annales de L'Institut Pasteur*, and the *Beiträge zur pathologischen Anatomie und zur allgemeinen Pathologie*. Most issues contain also reviews on some particular subject: thus in the April issue is such a review on the histopathology of epidemic encephalitis, and in the July issue a review on blastomycotic infection of the nervous system.

It may be doubted if in these studious days medical men share social occupations as largely as sundry lay writers would seem to think; but there must be some at any rate who play bridge with more or less regularity. These may be glad to know that "Bascule's" book on *Advanced Auction Bridge*[4] for some time out of print has now been reissued. Its reappearance was delayed by the apparent imminence of a form of the game which would have put the auction variety out of court; but this anticipation has been falsified. The rules adopted by the Portland Club in January this year are set out and the statements in general brought up to date.

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[1] *Guide Pratique d'Analyses de Chimie Biologique*. Par Pere Cognet. Preface de M. le Prof. agregé J. Castaigne. Deuxieme edition. Paris: Librairie le Francois. 1924. (Imp. 16mo, pp. 222, 20 figures. Fr. 12.)

[2] *A Manual of Urine Examination for Students of Pharmacy and Nursing*. By Florin J. Amphlett. Philadelphia and London: W. B. Saunders Company. (Cr. 8vo, pp. 201. 10s. net.)

[3] *Impotency, Sterility, and Artificial Impregnation*. By Frank P. Davis, Ph.B., M.D. Second edition, revised and enlarged. London: Henry Kimpton. 1923. (Post 8vo, pp. 168. 6s. net.)

[4] Oxford University Press. Price 2s. a month, or a year.

[5] *Advanced Auction Bridge*. By Bascule. London: Longmans, Green and Co. 1924. (Cr. 8vo, pp. 271. Price 7s. 6d. net.)

Vetera et Nova.

PRESENT-DAY TEACHINGS ON HELMINTHOLOGY IN RELATION TO PUBLIC HEALTH *

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THE intense activity with which research has been pursued during recent years has resulted in knowledge which, if properly applied, ought to ensure the control and eventual eradication of the infestations of man with parasitic worms.

To be in a position to utilize the knowledge we now possess concerning the parasitic worms, the medical officer of health should have some acquaintance with the morphology of the principal helminths of man, their normal habitat and geographical distribution, the manner in which their progeny leave the body, the method of collecting samples and the means by which the various species can be identified from microscopical characters of the eggs and embryos, the after-history of these eggs or embryos outside the body, the intermediate hosts which, in certain cases, are essential, the exact part that these intermediate hosts play in procuring the re-entry of the parasite into the human body, the particular route of entry of the infective stage, the local reactions set up by the invading form at the seat of entry and in its course of migration through the body previous to attaining its normal habitat as an adult, and finally the value of the various anthelmintics in the treatment, not so much of those suffering from helminth disease, as of those healthy persons with slight infections who act as carriers and disseminators.

On these questions the medical officer of health is as a rule lamentably ignorant. The reason is not far to seek, for our textbooks on hygiene, written by recognized authorities and designed for the use of candidates for the Diploma of Public Health, not merely deal with the subject in a perfunctory and disjointed manner, but contain statements that are grossly inaccurate and frequently incomprehensible. In none does one find any attempt to expound the general principles governing the control of entozoal infestations.

Textbook Teachings

The recent decisions of the General Medical Council give the subject of Parasitology a place of much enhanced importance in the curricula for Public Health diplomas. This lays it a public duty to call attention to the present unsatisfactory exposition of the subject by the recognized teachers and authorities in public health, this defect cannot better be illustrated than by a series of extracts taken verbatim from the most recent editions of such standard works as those of Parkes and Kenwood, 1923, Notter and Firth, 1921, and Whitelegge and Newman, 1917. All these authors claim to have thoroughly revised the edition and brought it up to date. It will be seen from the extracts that the nomenclature used is antiquated and inconsistent, that the morphology is vague and has no relation to classification, that the life histories are inaccurate and confused, and that the methods of prevention based thereon are futile.

Of the common *Ascaris lumbricoides* it is stated:

"The ova of the females are discharged with the faeces of the host, and then they become capable of furnishing embryos a power not hitherto possessed. The embryos probably have an independent existence (possibly in water or in some intermediate host—such as worms or insects) before again entering the human body, '—Parkes and Kenwood, 1923.

'The common roundworm, or *Ascaris lumbricoides*, is very like an ordinary earthworm. How and where the eggs develop is not known, but it is supposed to be in some intermediate host, possibly an aquatic host; it is chiefly through water that they appear to reach man"—Notter and Firth, 1921.

Apart from size there is little similarity between the common roundworm and the earthworm. In structure they differ completely. The development of the eggs of *Ascaris lumbricoides* outside the body is very fully known and has been minutely studied by many workers. The unsegmented ovum develops into a larva which is retained within the original eggshell. The eggs are thick-shelled and designed to withstand partial drying. Within a month the larva has developed to the infective stage. If the egg is then taken into the body as a contamination of food (this often occurs as a contamination of vegetables manured with human excrement) the larva is released by the digestive juices. Thereafter it pierces the gut wall, passing to the liver, and thence by the blood stream to the heart and lungs. Here the larvae enter the air sacs, causing haemorrhages as they leave the capillaries, they pass up the bronchi and are eventually swallowed. On reaching the intestine for a second time, having developed in their migration, they gradually attain adult form. There is no free stage and no aquatic or other intermediate host is involved. Oxygen and a slight degree of moisture alone are essential. The infection probably occurs from stale faeces and is not water-borne.

"*Ascarides*.—Under this name is included a large family of intestinal parasites. Of those affecting man there are three chief varieties, namely, the lumbricus or roundworm, the threadworm, and a tropical kind called *Trichocephalus dispar*'—Notter and Firth, 1921.

The term "ascarides" is a collective term similar to ankylostomes and has been used especially by the French, for the family Ascaridae, which is the correct nomenclature for the family. The roundworm *Ascaris lumbricoides*, the threadworm *Oxyuris vermicularis*, and the whipworm *Trichuris trichiura* (*Trichocephalus dispar*) are members of three families—Ascaridae, Oxyuridae, and Trichuridae—which differ from one another fundamentally in morphology.

The whipworm, of all the intestinal worms, has perhaps least claim to be described as a tropical form. Infection is direct and results from the contamination of food with stale faeces or soil contaminated with faeces. The egg is thick-shelled and retains the embryo, which develops slowly and has no free stage.

Concerning the whipworm and hookworm it is affirmed—

"The life histories of *Trichocephalus dispar* (whipworm) and *Sclerostomum duodenale* (common in Egypt and Brazil) have not yet been definitely ascertained. It is not certain by what vehicle the ova of the females (which develop in man) infect their host, or whether in either case there is an intermediary stage of development of the parasite '—Parkes and Kenwood, 1923.

We are informed that—

"*Anchylostoma duodenale* causes anaemia, internal haemorrhages, etc., and occasions great mortality in Brazil, West Indies, and Egypt, where it is thought to be sometimes due to infected water."—Parkes and Kenwood, 1923.

The following description given of the hookworm is also worth quoting:

"*Anchylostoma*.—This is a short worm, about half an inch long. In the warm damp earth the parasite leads a free existence, and assumes a slightly different shape to that which it presents when in the human bowel, instead of being rather short and stumpy, it is long and thin '—Notter and Firth, 1921.

Although intense infestations do cause death hookworm does its chief harm by lowering the working efficiency of the infected and rendering them more susceptible to intercurrent bacterial infections. The parasite occurs throughout the tropical and subtropical belts extending into Japan and Europe.

The life-history has been more completely investigated than that of any other helminth. It is known, as a result of Looss's researches, that drinking water is an unimportant source of infection and that the vast majority of cases are due to skin invasion.

The adult worms live in the small intestine, where they lay large numbers of eggs. These are not infective but hatch in the faeces some days after they are passed, the larva undergoes its essential metamorphosis in damp contaminated soil. The larva is, of course, microscopical, and the differences between it and the adult can scarcely be dismissed with the statement that it is long and thin rather than short and stumpy. The comparison is meaningless. The preventive measures recommended against hookworm infection appear somewhat harsh, for:

"The separation of the diseased from healthy persons is necessary"—Whitelegge and Newman, 1917.

As 90 per cent. of the population in many of our colonial possessions suffer from hookworm infection it

* Lecture read at the congress of the Royal Institute of Public Health at Portsmouth, June 1924.

might be wiser to segregate the healthy, more especially as reinfection is continually taking place from the soil

The early history of the familiar but now relatively unimportant *Trichina spiralis*, which occupies much valuable space in public health treatises, is regarded for some reason as of especial interest to the reader, who will also be surprised to learn that

> This parasite has been found in the flesh of many different animal (pigs pigeons eels etc) The long slender head and blunt tail are two characteristics which serve to distinguish these worms from parasites which otherwise resemble them such as *Dracunculus* and *Filaria sanguinis hominis* —Parkes and Kenwood 1923

Many different nematodes become encysted in flesh of animals and were many years ago regarded as trichina forms, but it is now known that in most cases these are the larvae of a variety of nematodes which do not inhabit man The *Trichinella spiralis*, as it is now properly named, occurs in the pig, rat, and man The adult is a minute form, measuring about 3 mm long, and inhabiting the crypts and submucosa of the small intestine It is impossible to compare it with the enormous *Dracunculus*, which measures from two to three feet in length, or the *Filaria bancrofti* larva, which lives only in the blood stream and is a microscopical form In any case "a long slender head and blunt tail" scarcely conforms with helminthological standards, but as a description it might easily mislead the student into confusion with some bacteria

Of tropical forms occasionally met with in this country the authors naturally say little Of the *Dracunculus medinensis* we are simply informed that—

> The embryo guinea worm *Filaria dracunculus* is aquatic and finds its way into the human body through the alimentary canal by means of drinking water, —Parkes and Kenwood 1923

Dracunculus medinensis resembles the filaria worms only in habitat, for some of these live in the connective tissues The worm has long since ceased to be known as *Filaria medinensis* The combination of two generic names *Filaria dracunculus* is quite unjustifiable

The larva is aquatic and enters in drinking water, but it does so only within the body of an almost microscopic crustacean of the genus Cyclops, in which it has previously undergone a metamorphosis The embryo as it leaves the human body is not infective to man

The transmission of *Filaria bancrofti* is related with equally inaccurate brevity

> The embryos of *Filaria sanguinis hominis* are sucked from the blood of infected persons by mosquitos and after developing in the body of that insect are then transferred to water by means of the larvae —Parkes and Kenwood 1923

The embryos of *Filaria bancrofti* undergo metamorphosis in mosquitos and migrate to the proboscis, whence they return to man during the act of biting by the mosquito, the infecting larva enters the skin around the site of the bite The supposition that filariasis is water-borne dates from before Low's demonstration of the migrating forms in the proboscis and was the view put forward by Manson when he traced the essential stages of development in the mosquito

> The parasite is found chiefly in the East and West Indies but occasionally in England even among persons who have never left the country —Whitelegge and Newman 1917

This curious distribution cannot be explained on zoological grounds, as *Filaria bancrofti* and its carriers occur in most countries in the tropical and subtropical belts But regarding its reputed occurrence in England, which is based on a single case recorded from Devon, I may add that I personally examined the original film and pointed out at the time that the filaria embryos" were contaminations with cotton wool an opinion which was accepted at the time by the recorder

The flukes and tapeworms are not ignored, for we are told that

> The trematodes or flukes furnish two human parasites the *Bilharzia haematobia* and the *Distoma hepaticum* whereas of the Taeniada It has been said that as many as a dozen forms of tapeworm occur in man —Whitelegge and Newman 1917

There are of course a considerable number of common and important flukes in man notably *Clonorchis sinensis*, *Fasciolopsis buski*, *Heterophyes heterophyes*, *Metagonimus ovatus*, *Paragonimus ringeri*, and *Gastrodiscoides hominis*, all of which are much more prevalent in man than *Fasciola hepatica*, which is only an accidental form

The important tapeworms are *Taenia saginata*, *Taenia solium*, *Dibothriocephalus latus*, *Hymenolepis nana*, and the larval stage of the *Taenia echinococcus* of the dog The other records are of scientific interest only We are told that

> The life histories of *Taenia mediocanellata* and *Bothriocephalus latus* are similar to that of *Taenia solium* but the bladder worm of the *Bothriocephalus latus* is supposed to inhabit some species of fish (perch pike and almon trout?), or possibly a freshwater mollusc —Parkes and Kenwood 1923

The life-histories of *Taenia mediocanellata* (now called *Taenia saginata*) and *Taenia solium* are very similar, as they are closely allied species of the same genus From these the *Dibothriocephalus latus* differs fundamentally in its life history as in its structure Whereas the taenias require only one intermediate host and have a cystic larval stage, the Dibothriocephalus worms require two intermediaries—a species of freshwater crustacea and afterwards a freshwater fish of the family Salmonidae The larval stage is not cystic

The necessity for two intermediaries was demonstrated by Rosen The Mollusca take no part in the spread of any of the tapeworms of man

Concerning the bilharzia worm the reader is informed that

> The bilharzia worm probably gains access to the human body through water either by drinking or by direct infection of the urinary and alimentary tract during bathing The larva becomes encysted in the body of aquatic crustaceans —Whitelegge and Newman 1917
>
> The bilharzia probably gains access to the human body through drinking water as we can follow the ova in their escape by way of the urine from the body of the primary host In water these ova hatch into minute ciliated embryos which have been traced into the bodies of certain freshwater arthropodes which appear to play the part of intermediate hosts for them in the same way as certain freshwater crustaceans do for the embryos of the guinea worm If the water be drunk containing these arthropodes the transference of these embryos of the bilharzia to man is as simple as it is certain —Notter and Firth 1921
>
> Probably the embryo becomes attached to some freshwater mollusc (or possibly some fish) and developing into a cercaria form infects man through the skin or mucous membrane of the mouth and throat, —Parkes and Kenwood 1923

The suggestion that an arthropod is the carrier of bilharzia is an old one and has no foundation even in analogy Without exception every known digenetic trematode undergoes its metamorphosis in a mollusc, although after leaving the mollusc the infective stage in a few species encysts in crustacea (for example, Paragonimus)

It was definitely proved in 1915 that *Bilharzia haematobia* or more accurately *Schistosoma haematobium*, requires certain freshwater molluscs as intermediate host, that the infective stages after leaving the intermediary host can only survive in water for about one to two days, and that during this period it can infect man by piercing the skin during ablution Direct infection from man to man cannot occur, the passage through the mollusc is essential, and this phase occupies about a month

Little is said about the liver fluke (*Distoma hepaticum*), so, to the dismay of his examiners, the student is not likely to forget that

> It may infect persons consuming affected livers and may be found in the tissues and particularly in the portal system —Whitelegge and Newman 1917

The liver fluke occurs so seldom as a parasite of man that its interest resides, for the sanitarian, chiefly in its frequency in the liver of sheep slaughtered for food Infection of man when it does occur takes place exactly as with sheep—that is, the parasite in its infective stage, encysted upon grass is swallowed This infective stage has resulted from the infection of a freshwater mollusc within which a very considerable multiplication has occurred

As man is not a normal host for this parasite it occasionally happens that the fluke does not reach the normal habitat in the bile ducts but may be found in abscesses in the tissues Such an occurrence is of extreme rarity

It is evident from the above extracts that the medical

officer of health must look elsewhere for reliable information on the Entozoa, and wishing to end on a helpful note I turned to what are perhaps the most ambitious efforts of American sanitarians Vaughan makes a real attempt to deal systematically with the Entozoa and their eradication Among the infestations which receive attention is *Clonorchis sinensis*, the common Asiatic liver fluke The preventive measures recommended by him are

"Avoid unnecessary familiarity with cats and dogs drink only boiled water eat only well cooked food The possibility of the contamination of vegetables which are eaten raw should always be borne in mind, especially as this of importance in countries where fresh faecal matter is largely used for the enrichment of garden soil"—Vaughan, 1923

All of this is, of course, admirable advice, but it does not seem to have any particular application to a parasite which is transmitted by a freshwater fish

Unnecessary familiarity with cats and dogs is good prophylaxis against certain tapeworm infestations, of which hydatid is the most dangerous The boiling of water would appear unnecessary wherever a medical officer of health is responsible for the water supply, I cannot think of any circumstances where it would be a necessary preventive against helminth infection To eat well cooked food is of course a valuable precaution against parasitic worms, in the specific case of *Clonorchis sinensis* a word of warning should be added against sauces, which might contain infected fish as an ingredient

The warning against vegetables in this connexion would seem to have reference to salads which might be served with the fish and might give the diner a hyperinfection with *Ascaris lumbricoides* This view is strengthened by the allusion to the enrichment of garden soil The whole paragraph illustrates well the degree of confusion which exists in the minds of sanitary experts on the subject of helminthiasis

Rosenau made incorrect statements in his edition of 1916, as the following extracts will show

Trichina—"In the case of trichinæ, for instance, man pollutes the soil with feces containing the eggs Hogs devour this infection and return the disease to man"—Rosenau, *Preventive Medicine and Hygiene*, 1916

Many statements have been amended in his 1921 edition, but it may be well to note that the trichina worm lives in crypts in the mucosa of the small intestine It gives rise, not to eggs, but to embryos The vast majority of these enter the circulation and are carried to the musculature of the host, where they encyst Some of the embryos escape into the lumen of the bowel and are discharged in the faeces The normal host is the pig, and man acquires infection from the eating of encysted larvæ in pork The pig acquires infection from scraps of pig flesh in the swill-tub Rats also become infected, and it is just possible that pigs may also become infected from food contaminated with rat faeces containing the discharged embryos as well as from the eating of flesh of infected rats Man is an accidental host and the larvæ encysted in his muscles are "side-tracked" After some months they become calcified

Hookworm—It is fairly well established that the eggs of the hookworm may be taken into the stomach through drinking water, and the same is assumed of the similar parasite of Cochin China diarrhœa—Rosenau, 1916

The eggs of the hookworm are not infective, but the larvæ enter the body through the skin, passing by the blood stream to the lungs and thence by the trachea and œsophagus to the intestine

Bilharzia—The *Bilharzia haematobia*, and very possibly other intestinal parasites may likewise be transmitted through drinking water—Rosenau, 1916

In this case also infection is through the skin, and, as has already been pointed out, passes from one person to another only through the intermediary of a freshwater snail

Lung Fluke—"*Paragonimus westermanni* a fluke (distome) common in Japan and other countries produces very serious lesions in the lungs clinically resembling tuberculosis The parasite is contracted through a microscopic shrimp, or raw fish containing the shrimp—Rosenau, 1916

The Asiatic lung fluke produces eggs which appear in the sputum, but are usually swallowed and pass in the faeces The embryo, after hatching, invades a freshwater mollusc of the genus Melania and therein undergoes an asexual multiplication The resulting larvæ, leaving the mollusc, enter the bodies of certain large freshwater crabs and prawns and encyst The cysts are afterwards eaten in the flesh, but it is possible that some escape from the gills and are swallowed by natives drinking crude water

It may be maintained in excuse that the subject-matter of parasitology is so abstruse and inaccessible to the writers of general textbooks on hygiene that its proper presentation cannot be reasonably expected In reply it may be pointed out that the General Medical Council recognizes for the D P H tuition under medical officers of health in the tropics—for example, deputy assistant directors of hygiene in certain army headquarters, as in Iraq—and that although many of the infestations due to parasitic worms are not peculiar to the tropics, the medical man who has taken a post-graduate course at either of the schools of tropical medicine in England and has obtained the Diploma of Tropical Medicine and Hygiene is usually well grounded in this subject When occasion arises he is able to place his hands on adequate and up-to-date information, for (thanks to the influence of Manson's life-long interest in parasitology, and to the periodical publication of summaries of the world's literature on helminthiasis in the *Tropical Diseases Bulletin*) the subject is treated comprehensively in nearly every British textbook on tropical medicine

General Summary of Ascertained Facts

From the public health standpoint the following are the significant facts concerning helminth transmission in general

1 *The parasitic worms do not multiply within the human body*—Although they produce innumerable eggs or embryos, these are unable to develop within the body into a new generation of adults

2 *The eggs or embryos must first leave the human body which harbours the parents*—The great majority leave in the faeces In one case the eggs appear in the sputum, but as the bulk of the sputum is swallowed they also are mainly passed in the faeces In another instance the eggs are voided in the urine The embryos laid by the intestinal worm Strongyloides are passed in the faeces but those of the Filaria worms which circulate in the blood can only leave if sucked up by a biting insect The guinea-worm is peculiar, for the female discharges her young through a breach she makes in the skin, in the hope that they may reach water

3 *The eggs or embryos are not infective to man at the moment of leaving the human body*—A period of delay is essential before this non-infective stage can become infective (save in the case of *Hymenolepis nana*, with the larvæ of which man can also become infected)

4 *Developmental changes occur during the period of delay outside the body and are essential to the formation of the "infective" stage*—These changes in some instances result only in individual alterations, in others there is an asexual multiplication with the formation of numerous infective forms from the single embryo

5 *The environmental conditions requisite for the developmental changes outside the body vary with different species*—It is rare for the extracorporeal phase to be able to withstand drying, and it may be accepted that helminth infections are not blown about in dust Owing to the relatively long period of delay necessary for development the mechanical transmission of helminth eggs by flies may be ignored as of no practical significance In some instances (as in Oxyuris, Ascaris, Trichocephalus) moisture is sufficient, in others water is necessary, in others still the egg must first enter or the embryo pierce some other animal, usually invertebrate (arthropod or mollusc), more rarely another mammal There are cases where the parasite in its developmental stage leaves this "intermediate host" and secretes itself in another host, in the tissues of which it is then swallowed by man

6 *The parasite in its infective stage* enters the body in most cases by the mouth in food or its contaminations of

food but in certain instances actively pierces the skin—in hookworm and Strongyloides from a moist surface in bilharzia during immersion in infected water Drinking water (except as a vehicle for some encysted flukes and for Cyclops the intermediate host of the guinea worm) may be regarded as an unusual medium by which helminth infections gain access to the human body If considered safe bacteriologically it may be regarded as also safe from the helminthological standpoint

7 *After entry in the infective stage* the parasite has in many species to undertake an extensive pilgrimage within the body—in some cases through the blood stream in others through the tissues or serous spaces—before it can successfully attain to sexual maturity in its normal habitat These migrating forms may cause serious damage to the tissues they are traversing (for example, pneumonic changes follow upon the migration of ascaris larvae through the lung)

8 Few of the parasitic worms are specific to man (an instance is *Ancylostoma duodenale*) It more frequently happens that the same species is also prevalent in one or other of the domesticated animals These additional 'reservoir' hosts may play an important role in spreading infection (for example, *Schistosoma japonicum* the cause of bilharziasis in man in the Far East, occurs in dogs cats and cattle in the endemic regions)

9 *Control*—The spread of helminth infection can be controlled by breaking the life-cycle at certain vulnerable points

(1) The adults may be killed by anthelmintics while within the human body (This applies to intestinal forms)

(2) The eggs or embryos may be killed while within human tissue by therapeutic agents (This applies so far only to the bilharzia eggs, but a similar remedy against the filaria embryos is being eagerly sought)

(3) The eggs and embryos, when passed in the body discharges, may be "side-tracked" by conservation" measures or in many cases simply by lack of access to water necessary for the hatching of the eggs

(4) Re-entry of the parasite in its infective stage may be prevented by

(*a*) Avoidance of exposure to infective soil (for example, by the use of boots and clothing to protect the skin in the case of hookworm)

(*b*) Avoidance of open bathing in canals and ponds liable to be contaminated (for example, bilharzia)

(*c*) Avoidance of raw unfiltered water for drinking (Infection by free eggs or embryos in such water can however occur but seldom as these rapidly sink to the bottom owing to their weight)

(*d*) The cooking of fish, meat, and shell-fish (including in this term freshwater prawns and crabs) and of vegetables upon which eggs may have been deposited (Ascaris Trichocephalus) or infective larvae become encysted (for example, *Fasciolopsis buski*) This involves the avoidance of salads and of Oriental sauces of which uncooked fish may be an ingredient

(5) Where an intermediate host is essential a knowledge of its bionomics or susceptibilities may suggest means by which it can be eradicated—for example

(*a*) The use of chemicals such as copper sulphate which have a specific lethal action even in high dilution against freshwater molluscs

(*b*) The introduction of ducks

(*c*) The sudden exposure of the molluscs to drying as has been suggested for the control of bilharziasis in Egypt

(*d*) The reduction of numbers by hand collection as has been tried against the Melania molluscs responsible for the spread of lung fluke in Asia

(*e*) The application of antimosquito measures for the control of filariasis

For details concerning individual species the reader is referred to the recent edition of Brumpt's *Precis de Parasitologie*

PREVENTION OF VENEREAL DISEASE

THE fifth annual general meeting of the Society for the Prevention of Venereal Disease was held on July 10th at 12 Stratford Place, London

The Right Hon SIR AUCKLAND GEDDES GCMG, KCB, MD, in his presidential address paid a tribute to the work of his predecessor, the late Lord Willoughby de Broke Remarking that many in this generation were frightened of the subject of sex Sir Auckland Geddes insisted that it was necessary to face the facts Sexual appetites were strong in youth and could only be controlled and kept in check without moral and mental harm when there was understanding and frank recognition of their existence and normality The policy of hush was often fatal He agreed that to determine the age at which childish innocence should end was difficult no doubt it was essential to preserve it in childhood but highly wrong and dangerous to allow it to continue too long Whatever age line was drawn must be arbitrary—for some too late, for some too early But considering all things he thought that 18 years of age was a fair average for complete knowledge in the case of males Females should be dealt with much more individually, but certainly information should be available for them on request at any time after 18 He recognized the dangers There was some risk of encouraging in young unbalanced minds the belief that all young persons should indulge in promiscuous sexual intercourse But in the case of normal young men, if they had not met that idea by the age of 18, they would certainly meet it at 19 or 20 The remedy for this danger, in so far as it existed, was not to withhold knowledge, but in the years before, by the proper influence of religion and training to build stronger and better balanced characters He had no patience with those who claimed on moral grounds the right to withhold knowledge from adults Morality based on ignorant fear was no morality The Society was not, therefore engaged in attempting to corrupt childhood On the contrary, it sought to protect childhood and through knowledge to make adolescence stronger, not only morally, but physically Children formed the section of the community which would gain most from the stamping out of venereal disease, and then adolescents next in order would not only gain physically but morally It appeared to him that much of the controversy that had existed was based upon a failure to recognize that there were two sides to the question, as there were to the problems of all organismal diseases—the human side and the organismal side In practically all diseases there were questions of human knowledge self-control, care of others, and so on, in short morals entered To exterminate venereal disease, ceaseless and relentless war must be waged on causal organisms wherever they were or might be suspected to be The policy of the Society was to wage war without quarter on the organisms which, so far as could be judged, were wholly impervious to moral considerations

Their simple philosophy is to multiply Ours with regard to them can be equally simple—to kill That does not mean that we are not fully alive to the human problems involved but it does mean that we find it difficult to understand the minds of people, if there be any such left who declare it to be their desire to combat venereal diseases and then try to secure complete protection and assistance for the organisms at their most vulnerable and yet if not attacked most dangerous moment If we had one strong society recognizing equally the two sets of problems—the human and the organismal—I should be glad But it is no use having union with our sister society unless the two sides of the problem are to be recognized fully by the new united society Personally though there is an appeal in unity I see no case for union either in reason or sense if the result is to be to diminish the weight of the attack on the causal organisms of the venereal diseases The whole technique and practice of disinfection is an essential weapon and arm in the struggle against venereal diseases. Let that be frankly recognized and union is at once possible

On the motion of the President the following resolution was adopted

> That this meeting respectfully requests the Minister of Health to allocate to the Society for the Prevention of Venereal Disease an equitable proportion of any sum made available for the education of the public regarding venereal disease and its prevention and draws his attention to the acknowledgement of the value of the educational work of the Society for the Prevention of Venereal Disease by former Ministers of

Health, by the Committee of Inquiry recently held under the chairmanship of Lord Trevethin, and also by eminent leaders of religious thought of all denominations, and further desires to emphasize the fact that while in the past financial assistance out of public funds has been granted to an organization specially interested in moral prevention and treatment after infection education in the important aspect of medical prevention has hitherto been left to the Society for the Prevention of Venereal Disease to carry out without any such assistance from public funds

Mr WANSEY BAYLY, in presenting his report as honorary secretary, spoke of the splendid work Lord Willoughby de Broke had performed as President of the Society At every meeting of the liaison committee of the National Council for Combating Venereal Diseases and the Society for the Prevention of Venereal Disease the two societies got more and more into line, and they had very great hopes of a successful issue to their negotiations Mr Bayly then laid before the meeting the details of the Society's work during the past year Mr HARRY MACHIN in the absence of Sir William Arbuthnot Lane, the senior joint treasurer, presented the treasurer's report, and congratulated the Society on the efficient and economic way in which its funds were administered Lady ASKWITH chairman of the Women's Committee of the Society, appealed for greater energy on the part of all interested in the campaign against these diseases Dr J H SEQUEIRA chairman of the Executive Committee, urged the necessity for official recognition of the work of the Society The sailor and the soldier, he said were taught the principles of self disinfection and it was equally necessary to educate the civilian Mr FRANK SOUTER, vice-chairman of the Executive Committee briefly indicated the value of the work of the Society from the point of view of a non-medical member Dr WALTER LIDDLE, M.P., speaking from the parliamentary point of view, urged the need for the alteration of the law which was stated by Mr Neville Chamberlain when Minister of Health, to be necessary in order to permit of the sale by chemists of approved disinfectants, accompanied by printed instructions

OXFORD OPHTHALMOLOGICAL CONGRESS

UNDER the mastership of Sir Anderson Critchett, Bt., K.C.V.O. the Oxford Ophthalmological Congress held its fifteenth annual meeting at Oxford on July 2nd, 3rd, 4th, and 5th With a membership of 380 the expectation that it would be well attended was realized, for the number closely approached that of last year, which stands as a record The proceedings were held as before in the Department of Human Anatomy, through the kindness of Professor Arthur Thomson, whilst the hospitality of Keble College was again available for board and lodging

Work of the Congress

On July 3rd the Congress was opened by the Master with an address of welcome in which, after a few allusions to the programme he expressed pleasure at the presence of Dr. J. Landolt of Paris and Dr. G. de Schweinitz with others from America This was followed by a discussion on the general principles of the treatment of convergent concomitant strabismus (excluding the description of details of operations) the openers being Dr. E. Landolt of Paris and Dr. Ernest Thomson of Stirling Dr. G. E. de Schweinitz (Philadelphia) Dr. J. Harrison Butler (Birmingham), Mr. R. Bruce Hird (Birmingham) Mr. Ernest Clarke (London) Mr. A. J. MacCallan (London), Mr. Claud Worth (London) Mr. Angus MacGillivray (Dundee), Dr. Stewart Barrie (Glasgow) and Dr. Marion Gilchrist (Glasgow) contributed to the discussion

In the afternoon demonstrations were given in the Scientific Museum Dr. George Young (Colchester) described his operation of double sclerectomy by trephining without communication with the anterior chamber, and showed a specimen illustrating the success of the procedure Dr. Rayner Batten (London) showed with the episcope a valuable collection of drawings of fundi from cases of cardio-vascular disease macular, cerebro-macular and congenital diseases with a number of others unclassified He also demonstrated models of fundus conditions the hydrophthalmoscope, special rigid spectacles for ptosis with a case showing their value a fixation fork for the insertion of sutures in advancements and tension experiments with balloons Dr. Thomson Henderson (Nottingham) showed a good series of pathological sections including a number to illustrate the evolution of ciliary muscle in mammals Dr. H. M. Traquair (Edinburgh) gave a demonstration of his method of perimetry Mr. J. H. Tomlinson (London) showed (1) Pulfrich's illusion, (2) independence of colour perception of the two eyes, (3) quick summation of brilliance value of the two eyes Mr. A. F. MacCallan (London) gave a short account of the treatment of trachoma Mr. P. H. Adams showed some interesting specimens of secondary carcinoma of the choroid and other conditions Dr. Harrison Butler (Birmingham) demonstrated Hess's apparatus for the investigation of muscle paresis, and Mr. Arthur Greene (Norwich) showed a pair of double scissors for use in the lengthening of muscles by partial section

On Friday morning Dr. Howard F. Hansell (Philadelphia) opened the session with a paper describing four cases of atypical retinitis pigmentosa associated with developmental abnormalities and occurring in members of one family, and was followed by Professor H. Friedenwald (Baltimore), who dealt in an interesting contribution with the relationship between chorio-retinitis juxtapapillaris (Jensen's disease) to other forms of chorio-retinitis After a short interval Dr. Harrison Butler delivered the Doyne Memorial Lecture, his subject being focal illumination of the eye with special reference to the clinical use of the Gullstrand slit-lamp As a pioneer in the subject in this country the lecturer was closely followed, much interest being shown in the admirable series of original pictures illustrating various pathological conditions as seen with the corneal microscope and the slit-lamp[1] At the close Dr. Butler was presented by the Master with the Doyne Memorial Medal The morning session closed with a short address by Dr. Park Lewis on preventive ophthalmology as an organized movement, in which he urged the value of international co-operation

The afternoon session was held at the Oxford Eye Hospital, where a demonstration of the corneal microscope and Gullstrand slit-lamp was held under the direction of Dr. Harrison Butler, assisted by Mr. R. J. Coulter and Mr. B. Cridland Four instruments were in use, and a good number of patients were available for examination through the help of the Deputy Master, Mr. P. H. Adams

On Saturday morning a paper was read by Mr. H. Holmes Joy, K.C., dealing with such legal matters and procedure as might especially concern the medical man in general and the ophthalmic surgeon in particular Containing much useful advice to the expert medical witness and the specialist medical referee, the paper was well received and greatly appreciated by a good audience In conclusion, Mr. Joy raised the question as to whether one attack of coalminers' nystagmus gave rise to an increased susceptibility to future attacks, and stated that it would be of considerable assistance with regard to compensation cases under the Workmen's Compensation Act if some unanimity of opinion could be expressed by the Congress upon the point A good discussion followed in which the following took part Messrs. C. F. Harford, Arthur Greene, B. Cridland, Colonel A. H. Tubby, Messrs. R. J. Coulter, R. Jaques, G. H. Pooley E. Park Lewis, A. S. Percival, Angus Macgillivray, and Lister Llewellyn

In the Commercial Museum fourteen firms of ophthalmic instrument makers exhibited models of the newest appliances and apparatus used in ophthalmic work, whilst an exhibit which attracted a good deal of attention was that of the manufacture of artificial eyes, in which the process could be followed from the beginning to the finished product

Social Functions

On the afternoon of Thursday, July 3rd, a garden party had been arranged in the Gardens of University College, but owing to the weather the members of the Congress and their friends were received in the Hall of the College—Dr. Ainley Walker, Dean of the Medical Faculty of the University, and Mrs. Walker acting as host and hostess The annual dinner of the Congress was held on the same day in the Hall of Keble College, and was well attended, amongst those present being Sir T. Herbert Warren, the President of Magdalen College, Dr. Ainley Walker, Dr. de Schweinitz, Sir George Berry, Dr. Gibson, Dr. Howard F. Hansell, Dr. Park Lewis, Professor Friedenwald, and others

No meeting of the Congress will take place in 1925 on account of the Convention of English-speaking Ophthalmological Societies, which will be held in London in July of that year

[1] See BRITISH MEDICAL JOURNAL, May 31st, 1924, p. 945

British Medical Journal.

SATURDAY, JULY 19TH, 1924

WORMS AND OTHER PARASITES

THE establishment of the various diplomas in tropical medicine was in effect a recognition that animal as well as vegetable parasites play a part in causing disease in man. Although medicine was quick to recognize the importance of these in the warmer parts of the world it has to a large extent failed to realize their significance in the more temperate climates.

Parasitology strictly interpreted might be held to include bacteriology, the virus diseases, and mycology, and in France and some other countries its connotation is extended to the last named. In this country the term is generally confined to the study of the animal parasites. The three great groups of animal parasites—protozoa, arthropoda, and the parasitic worms—are the subjects respectively of the sciences of protozoology, entomology, and helminthology. Each group while flourishing more luxuriantly in the tropics is by no means to be neglected in the colder regions. Under *protozoology* for example fall the parasites of malaria (and ague was in the past a common disease in England including London), the various protozoal organisms producing that form of dysentery and possibly also the spirochætes although modern opinion is in favour of relegating the latter to bacteriology. Within the domain of entomology are found a diverse array of human pests: the house fly (or better, the typhoid fly), the various biting flies so common in summer in parts of the country, the gnat or mosquito the carrier of malaria and other diseases which is found even in the Arctic regions, the humble and ubiquitous louse with its dangers of trench fever and typhus, the fleas with their array of parasites—plague among others, the bed bug with its potentialities, the ticks and mites which produce various diseases and poisons, are but a few examples. The significance of the arthropods is as carriers rather than as actual causes of disease. Under helminthology is an enormous array of parasites including the common roundworm with its curious life cycle *through the lungs* and the attendant pneumonia, the hookworms, which have been shown to be the cause of most of the depression of health among the inhabitants of the southern United States, the pinworms and whipworms so common in children, the notorious hydatid—not a very rare parasite in this country—and many others.

The first duty of a public health official is to prevent disease. Because a disease is not at the moment rampant, or is not diagnosed, is no reason why he should not be well acquainted with the fundamental principles of some human ailments which are both important and serious. Parasitology is largely a science of prevention rather than of cure. Fortunately the General Medical Council has recognized the claims of the subject and it may be expected that, as a result of this recognition, its teaching will be placed in the hands of experts and will be accorded a position worthy of its importance. The attainment of this desirable end will no doubt be accelerated by the establishment of the London School of Hygiene and the amalgamation with it of the London School of Tropical Medicine. Professor R. T. Leiper in our present issue (p. 110) has in an expansion of a paper contributed by him to the recent congress at Bordeaux of the Royal Institute of Public Health revealed certain insufficiencies and inaccuracies to be found in leading British and American textbooks in their manner of dealing with helminthology, and in a recent number of *Parasitology* Professor Nuttall has emphasized the lack of accurate modern knowledge among teachers, and—what is hardly less important—among examiners also. The explanation, perhaps, is that though a great deal of new knowledge has been gained in recent years, most of it has been scattered through periodicals not generally available. On the other hand, Professor Leiper points out that practically all has been abstracted in the *Tropical Diseases Bulletin*. So far as this country is concerned periodicals devoted solely to the subject, although few, are good. We have the *Journal of Helminthology* the only journal devoted entirely to a study of the parasitic worms, *Parasitology* more general and including all branches, and the publications of the Imperial Bureau of Entomology. The failure to obtain the services of efficient teachers is perhaps more difficult to explain. It may be that the demand has been small, but it has become essential that parasitology should be properly taught, yet at present the student during the ordinary medical curriculum hears very little about it after he has passed his examination in zoology. Lack of material cannot be considered a valid excuse, for, though specimens of human parasites may not be easy to obtain, closely related species of practically all may be found in the domestic and laboratory animals. The subject is essentially a department of comparative pathology, and much information is to be gathered from the parasites of the animals in contact with man. While candidates for the Diploma in Public Health, or for that in Tropical Medicine and Hygiene should be specially trained in the subject, every medical student should have a knowledge of the essential facts of parasitology. No public health service can be efficient without the active co-operation of the general practitioner, and if his knowledge of parasites is confined to what is generally taught on the subject progress is impossible. The mistakes made in the course of diagnosis by otherwise very efficient workers would be ludicrous if they were not so lamentable. Thus pieces of undigested banana fragments are mistaken for tapeworms, immature earthworms in tap water are diagnosed as ascarids, and so on.

In France all medical students attend a course in parasitology during one academic year. Is it too much to expect that we should at least not be behind our Continental neighbours in this respect?

DIET IN MENTAL HOSPITALS

THE recently published report of the Departmental Committee appointed by Sir F. J. Willis, chairman of the Board of Control, to consider the dietaries in county and borough mental hospitals, and to report what changes, if any, are desirable, and whether a minimum dietary scale should be fixed,[1] is a document of considerable importance from both the scientific and the practical point of view. The recommendations made by the Committee are based upon a comprehensive inquiry into the existing mental hospital dietaries. These showed a physiological sufficiency in

[1] Report of the Departmental Committee appointed to Inquire into Certain Matters Relating to the Dietaries in County and Borough Mental Hospitals. London: H.M. Stationery Office; through any bookseller. 1924. 6s. 6d. net.

a large proportion of cases, but they were found to be capable of improvement in many directions There was a lack of uniformity in the principles governing feeding arrangements generally, and the construction of institution dietaries, marked monotony in very many cases, here and there some suggestion of inadequacy, with evidence, on the other hand, in certain instances, of excessive supply, especially of particular articles, and too little ground for belief that sufficient attention had been paid to the adequate provision of those accessory food factors (vitamins) that are now regarded by the majority of food experts as essential to the maintenance of vigour and of power to resist disease The inquiry having thus revealed the fact that the dietaries are (or rather, were when the circular letter from the Board of Control was issued in March, 1922) in some instances inadequate when examined from the standpoint of modern knowledge of the physiology of nutrition, the report will be a valuable guide to those who are concerned with the care of the insane It deals fully with the question of accessory food factors, provides valuable suggestions for the most efficient methods for the supply, preparation, cooking, and distribution of food, and concludes with a number of recommendations which will no doubt be generally adopted in mental hospitals Indeed, the report contains so much useful information that, though it is primarily concerned with the dietetic requirements of the insane, it merits the attention, not only of the authorities of mental hospitals but of the governing bodies of any institutions who are confronted with the difficult task of providing an adequate varied, and appetizing diet for a large number of inmates

The diet of the insane is, however, a problem in itself factors have to be taken into account which do not operate in normal persons, because the subjects of mental disorder exhibit in a large number of instances, biological changes or inferiorities, both inherent and acquired, which have to be taken into account when diet is under consideration In assessing the general state of nutrition of the population of mental hospitals it must be borne in mind that this population differs from the general population in a peculiar way It is certain that the average anthropometric characters of mental hospital patients are unlike those of the general population This subject is dealt with in Appendix B of the report by Dr Major Greenwood, whose investigations lead him to support the conclusion, long held that a mental hospital population is, on the average organically differentiated from the general population Apart however, from these inherent factors as the report shows, there is an interrelation between psychological and physiological disturbances In support of this view, which can scarcely be disputed the following remarks of Allers are cited "In long continued states of depressive affect, the whole of the processes of digestion are seriously impaired, although we cannot assert positively that it is the state of melancholia which causes the digestive inertia, perhaps both factors, the physiological anomaly and the disturbance of digestion are produced by a third common factor That the common hypochondriacal delusions of melancholics are associated with digestive disturbances is hardly doubtful Again, the multifarious hypochondriacal fancies of neurasthenics may be in part associated with real (secondary) changes in the abdominal viscera, it is admitted, of course, that for the most part they are purely conceptual'

It may be said in a general way that in all cases of acute mental disorder, and in a large number of chronic cases, there are biochemical changes and metabolic disorders This view is adopted by the Committee, and the model dietary, which is described in detail, takes into account the quantitative and qualitative composition of a diet which should be provided for a population admittedly prone to metabolic disturbance and admittedly subject to bodily disease In formulating a diet for a mental hospital the difficult problem arises as to how far the extreme variations in the expenditure of energy by patients should be met by variations in diet The question arises more particularly in relation to the worker and non-worker, it being customary in many mental hospitals to supply supplementary food to the former, partly as a reward for work done and partly on account of the increased expenditure of energy during manual work It is shown in the report, however, that the formulation of a large number of different scales regulated by the amount of energy expended by the various types of patient is an impossible task, as the line of demarcation between workers and non workers is so ill defined and variable from day to day In these circumstances it was decided to regard all inmates of mental hospitals as falling within one or other of two categories from the dietetic point of view (1) the physically fit, including the workers of all classes, and the non workers who, though physically fit, decline to work or who are unfit to do so for reasons due to mental disease, which renders them unfit to be trusted with implements of any kind, or which exhibits itself in excitement, resulting in expenditure of energy equivalent to hard or moderately hard work, and (2) the sick and infirm, including those patients who pass their time in a state of inactivity, as in the case of idiots, profound melancholics, and dements While, however it is obviously necessary that the diet should be strictly regulated according to the physical needs of the patient, and not according to his value to the community life of the hospital as a worker, it is equally necessary, especially in view of the therapeutic value of occupation, to offer rewards to the patients for work done In some ways the insane patient does not differ from the normal person, like the latter, he does not commonly employ himself from the love of work, from an urge within, but from external inducements which add to his material comfort Experience has shown the value for increasing the output of work of the token system and the provision of facilities for the purchase of luxuries such as tobacco, sweets, or articles of any description likely to afford pleasure, and some such system is advocated in the report

There is much in this report deserving of comment, but it will no doubt receive the careful attention of all those responsible for the care of the insane, and we regard it as a contribution of considerable value to the literature of asylum administration

FOOT-AND-MOUTH DISEASE IN MAN AND ANIMALS

ALTHOUGH, as we stated in our issue of May 24th (p 925), the validity of the Dahmen Frosch bacillus as the cause of foot and mouth disease would seem to have been confirmed by the German committee set up to investigate it, many points have to be settled before we can be satisfied that the disease can, in consequence, be controlled on scientific lines For example, the status of the Pfeiler virus requires to be ascertained Professor Pfeiler of Jena obtained two strains of what he considers to be the virus of the disease, and although he has not yet published

any details of his method, vaccines prepared from both strains have been tested in Holland. Experiments made with the vaccine from the first strain (A) have not given satisfactory results, but those obtained with the second (B) are considered to render it worthy of further trial, and such trials are being made. The possibility of the plurality of viruses is of course not a new idea. Titze[1] in 1921 suggested this, and Vallée and Carre in the following year discovered that two types existed—one of German (A) and one of French (O) origin—distinguished by the absence of cross-immunity. Later workers have been led to believe that there exist an aphthous and a para-aphthous fever, very similar or identical clinically, it has been suggested that only one of these forms is capable of infecting man.

Records of the disease in man are gradually being accumulated. One of the most interesting of these is reported by Gerlach[2] as occurring in his own daughter aged 5½ years. Two days after drinking infected milk the child began to suffer from violent headache and rigors with a temperature of 103° F., and vesicles appeared on the following day. The symptoms gradually subsided, and had disappeared in ten days from the onset. The nature of the disease was confirmed by inoculation of guinea-pigs on the foot, and it is suggested that these animals should be used for diagnosis of human infections. Although the disease is comparatively benign in man, its diagnosis is of importance in order to avoid the transmission of the disease to animals.

French workers have recently drawn attention to several important bacteriological points. They have shown that the blood of an infected animal is virulent as soon as the fever sets in and well before the eruption of the vesicles. This virulence extends to all the liquids excreted or secreted, they become active agents of transmission long before any suspicious symptoms can be observed. The virus is quickly destroyed, however, and within four or five days of the first rise of temperature the animal is not infective. This observation may have a very important bearing on the prevention of the disease. The mode of contagion and the means of spread of the virus however, are still very far from being understood. The essential sources of infection are the infected animals, especially (possibly only) at the period of invasion and the commencement of the eruptions. The appearance of the disease in unsuspected quarters is difficult to understand. Certain outbreaks can be explained by the persistence of the active virus in the horn of the feet, certain others by transference on shoes, carts, cattle trucks, hay, and other inanimate but movable objects, and many more by the existence of the disease in abnormal hosts—man, birds, dogs, and rats and other rodents.

Another line of investigation of urgent importance is into the methods of inoculation, preventive and curative. Much work has been done abroad on this subject, but it also presents many unsolved problems. The French authorities are very hopeful of good results from a method of sero-vaccination. An injection of virulent blood is given simultaneously or shortly after an injection of blood from a recovered animal. A modification of this method, using a virus of known virulence prepared from the cultured organism, has been suggested by Lignières[3] in the course of an exhaustive review of this branch of the subject.

We understand that the Committee of the Ministry of Agriculture has two representatives in Germany studying the Frosch-Dahmen method in order to undertake confirmatory tests in this country. Recently in reply to a question in the House of Commons, the Minister of Agriculture stated that arrangements had been made for the supply of the virus and for investigations on small animals at several laboratories under the direction of the Committee. Moreover, an experimental station for investigations on farm animals had been approved and plans drawn up for its equipment. The Committee does not desire to restrict laboratory investigations to persons working under its direction, and it has therefore drawn up regulations under which independent research might be carried out. These regulations are designed to remove any risk of infection.

We are glad to note this change of attitude on the part of the Board of Agriculture and venture to think that the criticisms we felt bound to make six months ago may have had something to do with its present chastened state of mind. No exception need be taken to the decision of the Committee not to permit investigation on farm animals except under its immediate direction.

[1] *Arch. f. wiss. u. prakt. Tierh.*
[2] *Wchnschr. klin. Wschr.*, February 28th, 1924.
[3] *Rec. Méd. Vét.*, 1924, pp. 383 et 409.

MEDICINE'S DEBT TO RADIOLOGY

WHEN Roentgen first showed that radiations, which he named "*x* rays," could penetrate substances opaque to ordinary light, and could impress upon a photographic plate shadows of such substances according to their density, the medical profession was prompt to apply this property of the rays to diagnostic uses. Immediately on the publication of Roentgen's paper early in 1896, James Mackenzie Davidson perceived the importance of the discovery to medical and surgical practice, and began to experiment with the new rays. He died in April, 1919, and his pioneer work is commemorated each year in a lecture, delivered alternately by a pure scientist and a member of the medical profession. The war provided an object-lesson in the value of *x* rays in the diagnosis of bone injuries and the localization of projectiles, and in other directions medical radiology has made astonishing progress during recent years. In his Mackenzie Davidson Lecture (published this week at page 89) Sir Thomas Horder discusses the influence of radiology upon our conceptions of disease, indicating some of the ways in which the rapid advance of this science has led to a revision of our ideas about certain functions and structures in health and disease. He points out that radiologists, although working with shadows rather than with substances, are, unlike morbid anatomists, often able to study both structure and function, and, unlike operating surgeons have ample time for their observations. In his view radiology more than any other branch of medical science is changing our attitude towards disease processes—confirming some important hypotheses, eliminating others, and suggesting new lines of thought. Thus the confirmatory evidence given by radiology has carried the doctrine of focal sepsis out of the realm of hypothesis into that of established fact; radiological investigations have revolutionized our knowledge of the anatomical relations and motor functions of the hollow viscera both in health and disease; and knowledge of disease of the lymphatic glands has been illuminated from the same source. So too he predicts that the treatment of malignant growths by radium and *x* rays will soon yield important facts the understanding of which will help to crystallize ideas upon some of the causative factors and enable remedies to be controlled with better prospect of success. In discussing how radiology might do even more in some of the various directions, Sir Thomas Horder endorses the opinion often expressed in these columns, that it is the duty of rate-

logists, not only to take good skiagrams, but to interpret them, and to co-operate generally in diagnosis There is, he says, every reason why the radiologist should be a clinician in spirit, for to divorce clinical medicine and radiology is to impoverish both Hence closer association between clinician and radiologist, and more exchange of views, are desirable But at this point Sir Thomas warns his radiological colleagues not to strain their method past its possibilities in their interpretation of results—in other words, not to theorize, and there are many who will think that this word of caution is needed Timely, also, is his insistence, towards the close of the lecture, on the essential unity of pathological processes "Though clinical medicine sees one aspect of a disease, and radiology another, and morbid anatomy a third, and parasitology a fourth, the disease is one and the same, and our best conception of it is obtained, not by undue insistence upon any one of these aspects, but by a proportionate mingling of the pictures presented by all"

BLASTOMYCOTIC INFECTION OF THE NERVOUS SYSTEM

THE large group of yeast-like fungi receive little attention in textbooks of human pathology and bacteriology because but few diseases are caused by them, and even these are rare The biologist finds the yeast-like fungi a troublesome genus, for the more they are studied the more diversity appears, and reliable tests for identification are not easy to find They have received most attention from microbiologists working at industrial fermentations, in particular brewing and alcoholic fermentation, the practical trend of these investigations has not led them far beyond the point of distinguishing between the types that are useful and those that are harmful to industrial processes We find, therefore, little order in the classification of these microscopic organisms That yeast-like fungi co-operate in a helpful way in plant life and play an important part in the decomposition of carbohydrate foods is well known, few of them are capable of living as parasites within the tissues of warm-blooded animals To man the yeast-like fungi have been notable benefactors, witness bread-making But there exist a small group of yeast-like fungi, usually referred to as pathogenic yeasts, which have been proved to originate human disease Little is known of the conditions which determine the infectivity of these pathogenic yeasts, and they remain pathological curiosities In the current number of *Medical Science, Abstracts and Reviews* (vol v, No 4, July, 1924) Dr J G Greenfield contributes a review of the literature on blastomycotic infection of the nervous system He begins by calling attention to the fact that infection of the central nervous system by yeast-like organisms, although of rare occurrence in Europe, has been reported with increasing frequency in both America and Australia This is borne out by the fact that none of the references he quotes are books or periodicals published in the British Isles Symptoms of cerebral disease have most frequently appeared in the final stage of systemic or subcutaneous blastomycosis, but in a few instances the disease has either been limited to the central nervous system, or signs of brain disease have preponderated He gives an account of the way in which these yeast-like fungi have been arbitrarily classified in four groups, and records the pathological characteristics of each infection In the majority of cases abscesses occurred in the brain and the lesions resembled those of tuberculosis, from which they could only be distinguished by histological methods of study In some cases there was a tendency to the formation of gelatinous cystic cavities with little cellular reaction and absence of pus The clinical picture of these blastomycotic infections of the nervous system varies greatly, but usually there have been symptoms of cerebral tumour, with headache and often vomiting and occasionally mental symptoms In many of the reported cases yeast cells were not found in the cerebro-spinal fluid in the first examination, and in others their appearance either in the fluid or on culture was considered to be due to contamination Dr Greenfield remarks that the frequency with which these sporadic cases of blastomycotic meningitis were originally diagnosed as tuberculous meningitis suggests that infection of the meninges with this kind of organism is much more common than is generally supposed But the duration of symptoms in most of the cases is too long for tuberculous meningitis, and loss of sight or of hearing is rarely seen as an early symptom in that disease It is to be hoped that if cases of such infection are met with in the future cultures will be sent to some central laboratory, such as the National Collection of Type Cultures at the Lister Institute so that they may be carefully examined and correlated with other organisms of the same class

MILK ACIDIFIED WITH LEMON JUICE

ONE important difference between cow's milk and human milk, often neglected in tables comparing their chemical composition, is that cow's milk, being richer in buffer constituents, requires much more acid to acidify it in the stomach than human milk Because of the larger quantities of these buffer substances in cow's milk more of the acid stomach secretion is rendered inactive with cow's milk than with human milk Some pediatricians who have realized the significance of this distinction have suggested that cow's milk for infant feeding should first be acidified with an inorganic acid or with lactic acid, on the assumption that such acid milk would be more easily digested Acid buttermilk has been used for infant feeding for many generations, and, though the use of cow's milk treated with inorganic or organic acid has not yet received sufficient trial to establish any clinical advantage, sufficient experience has accumulated to show that these acid milks are well received, especially by marasmic infants To secure sufficient of the antiscorbutic vitamin the diet of an infant fed on cow's milk is often supplemented with some acid fruit juice, such as orange juice, as a routine, but it is the usual practice to give this between meals and not with the milk Dr A E Hess and Dr M J Matzner[1] aim at killing two birds with one stone by adding sufficient antiscorbutic acid fruit juice to acidify the milk, thereby supplying vitamin C and also diminishing the buffer substances which would have rendered much of the gastric secretion inactive Preliminary tests having shown that both orange juice and tomato juice, though rich in vitamin C, were feeble in acidity, they turned to lemon juice, which is an even more efficient acidifying agent of cow's milk than normal hydrochloric acid They recommend the following formula milk, 24 oz (710 c cm), water, 12 oz (355 c cm), sucrose, 1/2 oz (15 grams), lemon juice, 21 c cm This quantity of lemon juice imparts a pleasant taste but barely detectable acid flavour to the milk, it is well tolerated by infants, and occasions no alteration in the urine or faeces The method has been thoroughly tried by Drs Hess and Matzner in the children's wards of their hospital, and they state that they have observed no signs or symptoms that make it advisable to change the formula To secure adequate antirachitic elements in the diet of infants the addition of one egg yolk to a quart of milk has been found to be of decided therapeutic value The egg yolk can be added to milk acidified with lemon juice, thereby ensuring a food rich in both vitamins—A and C It is claimed that this mixture is more easily digested than simple cow's milk because of the reduction of the buffer action by the acids of lemon juice Furthermore, the egg yolk supplies additional iron to the diet—an element in which cow's milk is deficient This combination of egg yolk with milk acidified with lemon juice is easily assimilated by delicate children also

[1] *Journ Amer Med Assoc*, May 17th 1924

THE PUBLICATIONS OF THE AMERICAN MEDICAL ASSOCIATION

THE *Journal of the American Medical Association* is the organ by which its members are kept in relation with each other and with the central organisation. It is a medical journal of the highest standing, it publishes original articles both clinical and scientific, many of them of great merit, editorial articles of comment on both social and scientific questions, and an analysis of the principal medical journals of the world, which is conducted on a somewhat different plan and larger scale than the Epitome of the BRITISH MEDICAL JOURNAL. A Spanish edition of the *Journal* is published also, and in financing this the American Medical Association has the assistance of the Rockefeller Foundation. Its circulation is a little over 4,000 copies, and if we understand correctly the statement in the report of the Board of Trustees, over half is gratuitous. It is, however, hoped in time to establish the Spanish edition on a firm financial basis. The American Medical Association also publishes five special journals—the *Archives of Internal Medicine*, the *American Journal of Diseases of Children*, the *Archives of Surgery*, the *Archives of Neurology and Psychiatry* and the *Archives of Dermatology and Syphilology*. Taken together the five journals rather more than pay their way. The Board of Trustees has decided to publish another special journal, the *Archives of Oto-Laryngology*. Its first number will be issued on January 1st, 1925, like the other special journals it will be conducted by an editorial board. The chairman of the board of the new journal is Dr George E. Shambaugh of Chicago, and there are five other members selected from nominations made by a large number of Fellows of the Association who specialize in oto laryngology. It is not expected that the circulation of any one of the journals will ever be large, though it is hoped eventually to make each pay its way. But these special journals are considered of such advantage and importance to the medical profession and to American medicine that they will be continued even though there may be a money loss in publishing them. We have on more than one occasion called attention to the *Quarterly Cumulative Index to Medical Literature* issued by the American Medical Association, its circulation in 1923 was 1,201—a gain of 72 over the previous year. The foreign subscribers in 1923 numbered 147, and it is believed that as the value of the *Index* becomes better known the number of medical libraries outside the United States which will subscribe for it will increase. At present it is issued at a loss, but it is recognized to be one of the means by which the Association promotes scientific medicine and indicates to the world what the American profession is doing in medical science. The abstracting department of the Association has been amplified in order to make available better abstracts for the *Journal* and the special journals, and to provide better facilities for Fellows and members. The library also has been developed. Finally, the American Medical Association issues a popular monthly journal—*Hygeia*—which in 1923 attained a circulation of 23,687, among the subscribers were 9,512 laymen. It is attractively got up and copiously illustrated. It has not yet covered its expenses, in fact, it is at present a costly venture, but it is looked upon as a means of educating the public in personal hygiene and the principles of public health, and in the achievements of modern medicine.

WESTMINSTER HOSPITAL

THE enlargement and renovation of Westminster Hospital are now complete. When the need for these improvements was first realized, the proposal to build a new hospital on another site further from the centre of London was carefully considered, but, as we have previously stated, it was found that the cost would have been very much greater than that entailed by a thorough modernizing of the present building, and it was believed that by severing the long association of the hospital with the City of Westminster its appeal to the citizens would be prejudiced. The total sum expended on alterations is £72,000, and the whole has been received from the public. The reconstruction has enabled provision to be made for a second operating theatre for in-patients, for an operating theatre and a recovery room for out-patients, and for an enlarged electrical and x ray department, improvements have been made in the dispensary and surgery. New kitchens have been constructed on the top floor, and bathrooms and ward kitchens in the children's ward, in the ward for incurable patients, and in the Hallett ward. A maternity ward and special wards for male and female ear, nose, throat, and eye patients have been formed. The pathological laboratory has been extended and improved accommodation provided for the resident medical staff. There are now fourteen beds for the reception of sick nurses or paying patients, and a new nurses' home has been equipped in Queen Anne's Gate. In addition there have been installed electric lifts, radiator heating apparatus and an efficient hot water service through the wards and departments, an internal telephone system, and an electric fire alarm system. The whole of the changes have been made with a keen sense of what is required to give the hospital the highest efficiency without ornateness, and the improvements are highly appreciated by the medical staff. On Tuesday, July 15th, an At Home was held at the hospital, and Sir James Purves-Stewart, senior physician, met a party of journalists and pointed out to them the gains all round. The hospital has been closed nearly a year, but the out-patient department was maintained in the medical school in Caxton Street, it has now been restarted in the hospital. Owing to the builders' strike there has been a slight delay in the finishing touches, and the hospital cannot be fully reopened this week. The first in-patients will be admitted on Monday, July 28th. Sir Edward Pearson, chairman of the hospital, and Lady Pearson, received the many guests at the informal ceremony on Tuesday. Sir H. Mallaby-Deeley, who made the conditional gift of £16,000 to assist the final appeal, was present with Sir Robert Hudson, treasurer, and Lady Hudson. The proceedings had their complement in a service of thanksgiving and commemoration of founders and benefactors, which was held in the Abbey. A procession of representatives of the hospital, headed by the porter, followed by the medical school, the nursing staff (to the number of ninety), the house staff, the administrative staff, the officers of the hospital, the lecturers of the medical school, the visiting medical staff, the house committee, the treasurers, and others, made a picturesque line, hoods and orders and uniforms being worn. The Mayor and Corporation of Westminster also attended. Bishop Ryle, Dean of Westminster, conducted the service, and instead of a sermon read the commemoration, recalling, with gratitude, the bounties which had led up to the present foundation. Afterwards the Te Deum was sung.

THE STAR AND GARTER HOME FOR PARALYSED MEN

AT an early stage of the war it was realized that it would be necessary to make special provision for the men whose wounds had produced paraplegia or other forms of permanent paralysis. In the autumn of 1915 the Auctioneers' and Estate Agents' Institute raised a fund and bought the old Star and Garter, at Richmond on a beautiful site overlooking a famous reach of the Thames. The late Sir Frederick Treves took great interest in the project, and the building was soon equipped and taken into use. Although it served the purpose in an emergency it was not really well adapted for it, and it was decided that no structural alterations of the building could make it a satisfactory permanent place for the reception of paralysed men. The British Women's Hospital Committee took the

matter up, and with the assistance of the Navy League, the British Farmers' Red Cross Fund, the Merchant and Allied Trades' Red Cross Fund, and the United Provinces of India (War) Fund, raised sufficient money to rebuild the hospital. Sir Edwin Cooper gave his services as architect, and Sir Arthur Stanley had the satisfaction of announcing to the King and Queen when they visited the new building last week that it had been opened free of debt. It supplies accommodation for 180 men, and there is also a house at Sandgate, to which patients for whom sea air is desirable can be sent. The Mayor of Kensington presented an address to the King, who in reply expressed his deep sympathy with the patients and his high appreciation of the efforts of those who had made the erection of the home possible. Dame May Whitty, chairman of the British Women's Hospital Committee, traced its history from its formation in July, 1915, and said that the total sum actually paid over as the result of its efforts was more than £220,000. The title-deeds were then handed, amid loud cheers, to the Queen, and afterwards Their Majesties made a tour of all the departments, including the operating and x-ray theatres. Finally, twelve men in their reclining couches and wheeled chairs, were brought to the entrance to witness the departure of Their Majesties, who spoke to each man, shaking him by the hand. It may be remembered that during the war Lady Parker of Waddington made an appeal for a special memorial to four R A M C officers who died while treating British prisoners during the terrible typhoid outbreak at the prisoners' camp established by the German authorities at Wittemberg. Out of the funds subscribed a room has been built in the Star and Garter Home, and a tablet fixed to its wall on which the names of the R A M C officers are recorded.

NATIONAL PHYSICAL LABORATORY

The publication of the annual report of the National Physical Laboratory (1923)[1] has followed hard upon the annual inspection, of which we gave some account a few weeks ago (June 28th, p. 1161). The report shows that there has been a steady growth of the work the laboratories have been called upon to do. This has been due in particular to the requirements of other Government departments, submitted through the Co-ordinating Research Boards of the Department of Scientific and Industrial Research. Owing, it is believed, to the general business depression there was a slight falling off in the work for firms as compared with the preceding year, but towards the end of the year it showed a tendency to increase. Much of the work done, though of fascinating interest, has no direct connexion with medicine. Such work, for example as the application of x rays for the detection of flaws in metals has a far-reaching commercial importance, and may eventually solve many of the difficulties which at present entail risks of accident. Radiographs will show the presence of flaws in metal structures up to 4 centimetres in thickness, but they do not detect fine flaws. The most valuable piece of work from the medical point of view is that dealing with the x-ray installations of hospitals, with special regard to the protection of the workers. Protective tube boxes, if constructed of lead, have to be of dimensions sufficiently generous to prevent sparking between the bulb and the box. If, however, the tube box is required to be in close proximity to the bulb, it commonly takes the form of a lead glass bowl, or alternatively a wooden box with several layers of lead-rubber lining or wrapping. The open glass bowl is not satisfactory, it is constructed of lead glass, usually affording a total protection of from 0·5 to 0·7 mm. of lead, but in many directions owing to its design, it affords no protection whatever. Where this type of shield is alone employed it is often possible to take a radiograph of the hand in any part of a room where a tube is working. The bowl should be provided with some kind of cover and the material increased in effectiveness. The type of hemispherical shield supplied for Coolidge tubes is much better in that it completely encloses the tube. The whole of the report of the X-ray and Radium Protection Committee, of which Sir Humphry Rolleston was chairman, is worthy of careful study by workers in radiological departments.

[1] The National Physical Laboratory. Report for the year 1923. London: H.M. Stationery Office: or through any bookseller. (Pp. 228. 13. 6d. net.)

THE MEDICAL WOMEN'S INTERNATIONAL ASSOCIATION

THE Medical Women's International Association has been meeting in London this week. The reception room was opened at the Royal Society of Medicine on the afternoon and evening of Monday, and on Tuesday, morning and afternoon, council meetings were held. Miss Aldrich-Blake entertained a party at luncheon at the London School of Medicine for Women, there was a tea party at Lambeth Palace by the invitation of the Archbishop of Canterbury and Mrs. Davidson, and private receptions in the evening. On Wednesday morning there was a general meeting of the Medical Women's International Association, followed by luncheon at the Botanical Gardens. In the afternoon the visitors, who represented seventeen countries, were received at the Royal Free Hospital, which is claimed to be the mother hospital of medical women, since it was the first general hospital to admit women students to surgical and medical training in its wards. It was announced that the American Women's Hospital and American friends had decided to endow a bed in the hospital in memory of Dr. Elizabeth Blackwell, the first Englishwoman to obtain a medical degree, which she took in America because it was not open to her to do so in England. In the afternoon a reception was given by the Prime Minister and Miss Ishbel MacDonald at 10, Downing Street. On the morning of Thursday, July 17th, there was a discussion on maternal morbidity, its causes and prevention. In the afternoon the members took tea at the House of Commons by invitation of the Prime Minister and other members of Parliament, and in the evening the British Medical Women's Federation gave a banquet to the foreign members attending.

CONVENTION OF ENGLISH SPEAKING OPHTHALMOLOGICAL SOCIETIES, 1925

THE Ophthalmological Society of the United Kingdom, together with its affiliated societies, has decided to hold in London in 1925 a Convention of English-speaking Ophthalmological Societies and Associations, from July 14th to 17th inclusive. Invitations have been sent to the presidents of all such bodies in the different parts of the British Empire and the United States of America asking them to appoint official delegates. The convention will be opened by a reception given by the President and Council of the Royal College of Surgeons of England on the evening of July 13th at their house in Lincoln's Inn Fields. Four mornings, two afternoons, and one evening will be devoted to the scientific work of the convention. After a reception of delegates there will be an address by the President (Mr. E. Treacher Collins, F R C S.). The Bowman Lecture will be delivered by Sir John Parsons, F R S., there will be a discussion on the microscopy of the living eye, and a symposium by selected speakers on the evolution of binocular vision. Visits will be made to various institutions of ophthalmic interest, and there will be a banquet, a garden party, and other receptions. The registration fee for those who are not members of the Ophthalmological Society of the United Kingdom will be £2, and for ladies accompanying members of the convention who wish to become associate members, 10s. The general secretary is Mr. C. B. Goulden, O B E., M Ch., F R C S., 42, Welbeck Street, W. 1.

THE MEDICO CHIRURGICAL SOCIETY OF BOLOGNA

THE Medico-Chirurgical Society of Bologna celebrated its centenary on June 10th, and among the institutions which sent congratulations to it on the occasion was the British Medical Association As permanent memorials of its first hundred years the Society has struck a medal (here illustrated) and has issued a very fine volume containing over 1 000 pages and numerous illustrations



The Society had its beginnings as a private organization in 1802, but was formally constituted by a bull of Leo XII promulgated in August, 1824 It suffered in common with most institutions in Italy, during the revolutionary movements which followed but in spite of some interruptions has continued its scientific labours down to the present time and with renewed vigour since 1880 During its century of existence it has gathered about it many memorials of its distinguished members which are piously preserved in its house a fine old building with an arcaded courtyard

The first part of the volume is a history of the Society, written by Dino Sighinolfi with addenda by various hand giving lists of names of publications by members of the Society and of medals in its possession There is a special chapter on the Bolognese school of surgery, which includes an account of the foundation of the orthopaedic institute to commemorate the great services of Professor Rizzoli Among the illustrations are photographs of the room in which the Society meets, of a special room devoted to memorials of illustrious members who have passed away and of the library and reading room, a very fine apartment ornamentated by frescoes and many busts

The second part contains a series of reviews of the contributions of Bologna, and of its Medico-Chirurgical Society in particular, to the progress of medicine Among the articles in this part is one by Dino Para on Jennerian vaccination it mentions that a translation of Edward Jenner's *Inquiry* (1789) was published in Italy in 1800 and recalls the interest Napoleon immediately showed in the subject The Bolognese Society soon afterwards gave special attention to the matter It fully appreciated the importance of Jenner's discovery, consecrated the room now used as a library as a memorial to him, and eventually established a special commission on vaccination The final article in the volume gives an account of the interest the Medico-Chirurgical Society has shown in veterinary medicine The commemorative medal here reproduced is a beautiful specimen of the numismatist's art, which reproduces, as we gather the seal of the Society, as will be seen it shows the staff of Aesculapius in an unusual position, but it brings out very clearly its rough hewn form We called attention a short time ago to the significance of this

THE HEALTH OF SCOTLAND

THE Annual Report of the Scottish Board of Health[1] for 1923 presents features of exceptional interest and importance It contains six heads (1) sanitation (2) medical and allied services, (3) national health insurance, (4) housing and town planning (5) Poor Law and public assistance and (6) miscellaneous

In a brief introduction it is said that though the general policy of economy has prevented all but the most urgently necessary developments in the health service, yet reductions of local expenditure have not necessarily meant equivalent reductions in efficiency, and some services have been not only maintained but improved The general death rate in 1923 was 12 9 per 1,000 of population, this being, for Scotland, the lowest on record, the previous minimum having been 13 6 for 1921 The Board does not attempt to analyse the causes of the reduction, "but the improvement has marched with the development of the social conscience on health" and one of the main factors has been "the expression of that conscience in the measures which the community has taken to prevent disease" Infantile mortality in 1921 was 90 3 per 1,000 births (the lowest rate up to that time), and in 1922 it was 101 4, but in 1923 it fell to 78 9, which constitutes a very striking diminution, though the Board, with wise if not divine discontent, does not regard even the new minimum as satisfactory

Comparative Mortality of England and Scotland

Last year (BRITISH MEDICAL JOURNAL, vol ii 1923, pp 528 and 540), basing our remarks on the valuable report for 1922 of Dr A K Chalmers, M O H Glasgow we made some observations on the higher general death rate of Scotland as compared with England, and on the differences, unfavourable to the northern kingdom, of the rates in the great cities of the two countries—London Birmingham, Manchester, and Liverpool on the one hand and Glasgow, Edinburgh, Dundee, and Aberdeen on the other Particular attention was called to the changes in infant mortality north and south of the Tweed—how, looking back through sixty years, England for long had a definitely higher death rate than Scotland, how there has been in recent times a gratifying lowering of the rates in both countries, and how the fall has been much more notable in England In 1861-70, England had 154 deaths per 1,000 births, and Scotland only 121, when figures for 1911 20 are compared, England has for the first time a lower rate than Scotland, the respective figures being 106 for Scotland and 100 for England In calling attention to these facts our purpose, as stated, was to ask questions, not to answer them, and to suggest that there is abundant occasion and opportunity for valuable research into the health problems of Scotland

Students of vital statistics will find with pleasure in the new volume of the Scottish Board of Health a thoughtful and suggestive study of this subject It is noted that for the purposes of the Registrar-General's reports, England and Wales are divided into North, Midlands, South Wales, and London The North is composed of Cheshire, Lancashire, Yorkshire, Durham Northumberland, Cumberland, and Westmorland This area, it is pointed out, is in many respects capable of fair comparison with Scotland including climatic and other conditions In respect of infant mortality the county boroughs of North England are contrasted in the Board's report with the larger burghs of Scotland, the urban districts of North England with the smaller burghs of Scotland, and the rural areas of North England with the county districts of Scotland In the first and second of these three compared groups, it is agreed that there has been a more rapid decline in North England than in Scotland, but the original level was higher, while in the third group it is claimed that on the whole the county districts of Scotland compare favourably with the rural districts of North England The English Registrar-General's Report for 1920 is quoted to show the differences of mortality between north and south of that country and that "the constancy as well as the degree of the decrease in mortality from the north to the south of England is very great" The importance of these considerations and their relevance to health comparisons between the two kingdoms are manifest, though they do not, of course exclude other factors—housing overcrowding, standards of cleanliness, temperance, and so forth Incidentally, indeed, they deepen the mystery why Scotland, under its climatic disadvantages, should until quite recent years have had a lower infant mortality than England as a whole, and why,

[1] H M Stationery Offices. 1924 (Med 8vo pp 27+ 8 maps)

the climate being unchanged, the relative position of the two countries should be so altered notwithstanding all the excellent work that is being done in Scotland (as well as England) for child welfare

Dealing specially with infant mortality in Scotland the report calls attention to observations by the English Registrar-General on the influence of temperature—"Whatever tends to protect the newborn as well as the older infant against the added risk of winter will evidently tend to reduce mortality"—and the Board goes on to point out the importance of remembering this statement when the death rates in the colder northern latitudes are compared with those further south On this point we are given a careful analysis of the mortality at different periods of infant life—under one week, under one month, under three months, three to six months, and six to twelve months Under one week the deaths in the two countries run much on the same level, and that statement applies also to the total under one month "The late Dr Ballantyne," it is noted, "looked upon the first month of life as rather a continuation of the prenatal life than a beginning of the post-natal life" From one to three months the death rate in both countries shows a very slight tendency downwards From three to six months the tendency is quite definitely downwards, though in the last two years the English decrease is somewhat the more rapid, and this remark is emphasized for the period six to twelve months In concluding its analysis the Board says "In this detailed comparison England has little advantage in the earlier periods, a recognizable advantage in the middle period, and a distinct advantage in the last period The levels in England seem now to be shifting more rapidly than the levels in Scotland Probably this means that the leading causes of death in England are more variable and depend upon more manageable factors"

Unemployment and its Effects

Another subject of present-day interest is a survey of unemployment and its effects The Board's inspecting staff including its medical officers, was instructed to make special inquiries as to the effects of the prolonged period of unemployment on the physical welfare, morale, and technical skill of the workers, and on the effect of idleness as reflected by increase in crime or social unrest The persons consulted included employers, officials of trade unions and of local authorities, medical officers, chief constables, ministers of religion, and persons engaged in the administration of voluntary funds Though different views were expressed the Board thinks that a reasonably true picture can be presented The number of insured persons totally unemployed or on systematic short time was over all industries, fully 13 per cent of the workpeople of Scotland, the worst rate being in ship building and repairing where 39 per cent were unemployed On the other hand, employment in the coal industry was particularly good Opinions as to physical welfare were based mainly on impressions formed in attending patients at home or in hospital, and also on statistical data obtained in the examination of school children over a series of years The view, both lay and medical, is that the measures for relief of unemployment have prevented any widespread physical distress The position has been much more satisfactory than in previous severe trade depressions, especially in the case of unskilled and casual workers who have had available, like the rest, a regular weekly income sufficient to procure the necessities of life Nearly all medical opinions refer to improvement in physical condition resulting from this regularity of income Skilled artisans have suffered more owing to their greater reluctance to apply for relief While undernourishment of the family has been preventable, distinct signs of nervous strain have been noted, owing to depression of the husband on account of the apparent hopelessness of the position, while the wife becomes depressed through anxiety for her husband In the Clyde Valley a rapid medical survey led to the following view regarding children under school age and their mothers

'Summing up the position as a whole with regard to the physical condition of mothers and children in the three areas in which we have been able to make inquiry in the time at our disposal, it seems that, among the class of mother that attends the child welfare centres, there is a lower standard of health and less satisfactory clothing than in former years Children under 1 year do not appear to have suffered In Glasgow and Paisley the children between 1 and 5 are apparently less well nourished and clothed than in previous years, but in Lanarkshire and, so far as we could ascertain, in Renfrewshire (exclusive of Paisley) they do not appear to have suffered to any appreciable degree'

In children of school age the weight and height are not so good in 1923 as they were in 1920, but as to nutrition strange to say, and at the same time gratifying, "The striking fact brought out by the table on nutrition is the steady diminution, among both boys and girls, of the numbers classified as suffering from 'Bad' and 'Very bad' nutrition, and a corresponding increase in the numbers classified as having 'Good' and 'Fair' nutrition The percentage of 'Bad' and 'Very bad' taken together was in 1920 approximately 15, and in 1923 approximately 5 3" Similarly, in clothing and footgear there is actually an improvement in 1923, as compared with 1920, an improvement which has been steady throughout the four years 1920-23, and no practical change is observable in 1923 as to state of repair and cleanliness Concerning the discrepancy between loss of height and weight on the one hand and improved nutrition on the other, the Board is inclined to attach more importance to the exact tabulations of the former than to what are necessarily the personal impressions of observers as to the latter, though they are disposed to think that the reduction in the number of children of "Very bad" nutrition is a reality due to regularity of income School medical reports, however, show a tendency towards increase of minor ailments (enlarged tonsils, adenoids, etc), and, balancing all the data, the Board concludes "It would appear that, while there were in 1923 fewer children suffering from actual malnutrition than in 1920, the evidence as a whole points to a slight falling off in vitality and physique, though such evidence as is forthcoming is not very striking"

Following discussion of effects of unemployment on physical welfare, the Board, in a series of interesting paragraphs, considers its effects on the technical skill of workers, on morale, on the exhaustion of private savings and of trade union benefits, and on social unrest and increase of crime These subjects, however, are not specially appropriate to a medical journal and their discussion is forbidden by want of space

National Health Insurance

The following notes, taken from the section of the report dealing with this subject, will be of interest to insurance practitioners

Consolidation of Acts Needed—The Board regrets that the National Health Insurance Acts have not yet been consolidated but a bill has been drafted, and it is hoped that Parliament will be in a position to deal with it soon

A Misunderstanding—Insured persons whose money benefit is discontinued after examination by a district medical officer frequently fail to realize that the decision to discontinue benefit is that of their society and not of the medical officer who merely advises Some societies are in part to blame for this misapprehension In their desire to avoid dissatisfaction the intimation to discontinue benefit is so phrased as to imply responsibility on the part of the medical officer The Board regrets that any societies should act in this fashion

Additional Benefits—Dental benefit is becoming very popular and much sought after An erroneous impression is widespread that it is universally provided, and complaints arise on its refusal Mitigation of the alleged grievance is largely in the hands of societies who do not provide such benefit, but a number of them are financially unable to do so The amounts available per annum for the purpose of additional benefits, and the number of centralized societies and branches giving such benefits are as follows hospitals and convalescent homes, £14 255, by 12 societies and 27 branches dental benefit, £15,227, by 16 societies and 8 branches nursing £3,830, by 5 societies and 12 branches, optical, £4,897, by 12 societies and 10 branches, medical and surgical appliances, £5,173, by 6 societies and 9 branches, other additional benefits, £4 200, by 2 societies and 1 branch Some societies and branches desirous to provide dental benefit but unwilling to do so by trenching on additional benefits already given have taken advantage of Section 21 of the 1911 Act to make donations to "charitable institutions," which in return provide dental benefit The full extent of such arrangements is not known, but (in Scotland) 14 societies with a membership of 180,000 do so, and some 40 societies besides have subscribed to voluntary hospitals and nursing associations to the amount of about £16 000 in the year the expenditure being sometimes in excess of the sums disposable for the purpose The societies have been warned accordingly

District Medical Officers—The district medical officers scheme is being increasingly resorted to by societies the number of cases referred by them having increased from 16,618 in 1922 to 19,04

in 1923 In addition 297 cases were referred by practitioners Of the total cases the opinion of the certifying practitioner was upheld in 44 per cent reversed in 23 per cent and 33 per cent were not examined 13 per cent having declined before examination 16 per cent failing to attend while 4 per cent are described as other cases In the Highland and Island the Board's own headquarters staff carried out the work as opportunity offers 240 cases having been examined in the year Excluding the Highlands and Islands there are five districts and the five officers have made progress in establishing friendly and helpful relations with panel committees and insurance practitioners a growing desire being manifested to obtain their advice

The experiences of the district medical officers briefly to the following effect

1 The standard of certification is improving but numerous cases of laxity still come under notice

2 There is great diversity in the range of treatment The work of many practitioners is of the very highest quality but in some isolated instances the care and attention given seem definitely below the average of the service

3 There is urgent need for increased hospital accommodation for the insured though the fullest advantage is not always taken by practitioners of the availability of specialist advice at these institutions

Complaints —Formal complaints against practitioners have been even fewer than in previous years In six instances complaints were lodged by societies as to irregularities in certification but the offences were generally not serious and the total grant withheld was only £28 8 Failure to attend was found in three cases and the sums withheld amounted to £175 In one of the cases prescriptions had been issued without seeing the patient In two cases the list numbers were in excess of the prescribed maximum without an assistant and £155 was withheld One other case involved an inquiry which resulted in the practitioner's name being removed from the Insurance Committee's medical lists and in the fact being reported to the General Medical Council The offence consisted mainly in the lax issuing of certificates and prescriptions the filling in of these forms being left on occasion to the discretion of the practitioner's clerkes

Two appeals were taken by practitioners against insurance committees one was allowed and the other dismissed Two appeals were taken by societies against the decision of Insurance Committees on complaints against practitioners regarding certification one was sustained and the other dismissed An appeal by an insured person against the decision of an Insurance Committee in dismissing a complaint against her panel doctor was dismissed

Necessitous Districts Grant —The grant for necessitous districts in the Lowlands (which are really Highland localities outside the boundaries of the area technically constituting the Highland) was devoted to various purposes—to payment of practitioners for undertaking necessary removals to hospital subvention of income means of conveyance, maintenance of dispensaries in remote places and difficulties of access With regard to one item the Board writes We have been impressed with the importance of medical practitioners keeping in touch with the latest developments in the science of medicine and resolved as an experiment to afford certain practitioners living in the more remote districts the opportunity of taking a post graduate course of study in general medicine Of the doctors whom we approached three were able to attend a course arranged by the University of Edinburgh In expressing their recognition of the facilities which were afforded they reported that the instruction had been of the greatest benefit to them This is a departure of much interest and its development will be well worth watching

In conclusion, without making any mention of the other important matters dealt with in the volume—not even of Housing and Poor Law nor of an interesting memorandum by Sir Leslie Mackenzie on the relation of weather in the Hebrides to present social and economic conditions—it is permissible to congratulate the Scottish Board of Health on the whole scope and value of its report for 1923

SMALL-POX IN CANADA

THE STAMPING-OUT METHOD IN ACTION

THE BRITISH MEDICAL JOURNAL of March 29th of this year (p 584) reproduced a circular issued by Dr John W S McCullough, chief officer to the Provincial Board of Health of Ontario, on the subject of an epidemic of very severe small-pox—in many cases haemorrhagic—in the border cities of Canada The disease was still current at the date of that circular The story has now been completed in a report by Dr F Adams, D P H, medical officer of health for the Essex Border Municipalities The total number of cases was only 67 Of 45 who had never been successfully vaccinated 32 died Of 10 who had been successfully vaccinated years before, and of 12 others successfully vaccinated in the incubation period, all recovered

The extraordinary severity of the disease—not its mildness, as in this country at present—made diagnosis exceedingly difficult, and the story of the manner in which it was stamped out is graphically told by Dr Adams There are six border cities and their combined population is about 70,000 The Board of Health is composed wholly of doctors, each of whom had been at some time a medical officer of health When the danger became apparent to them they met on a Saturday night and first of all provided for the care of the sick and the maintenance and supervision of families in quarantine Being unanimously of opinion that the one thing which would stamp out the epidemic was wholesale vaccination, they proceeded as follows

Then and there three of our nurses using three phone lines called up every doctor in the Border Cities that could be reached and asked him if in the emergency he would consent to vaccinate any person who came to his office free of charge it being understood that the Board of Health would supply vaccine and pay for vaccinations at the rate of 25 cents apiece Within half an hour we had the consent of about three-fourths of our doctors The rest could not be reached but we assumed their consent and telephoned them Sunday morning Before midnight a statement of the situation was prepared and sent out to every clergyman in the Border Cities with a request that it be read from the pulpit at every service on Sunday The gist of the announcement was that an epidemic of exceedingly severe small pox was present in the Border Cities that there had already been a number of deaths and that everyone was advised to be vaccinated at once and to have all the members of his household vaccinated finally that arrangements had been made with every doctor in the Border Cities under which he would vaccinate anyone who came to his office free of charge On Sunday at our request the secretary of the Chamber of Commerce called up every large employer of labour in the Border Cities explained the situation to him and asked him to urge vaccination upon all his employees Monday morning Monday afternoon a full page advertisement of the Board of Health setting forth the situation appeared in the local paper The effect of these measures was all that we could have asked for There are some seventy doctors in the Border Cities and we had simply created seventy free vaccination stations The doctors offices began to be crowded with applicants for vaccination on Sunday morning and within the next six days we estimate that well over 95 per cent of our population was vaccinated There was nothing compulsory about any of our methods We simply took the public into our confidence told them the situation as it really was advised general vaccination and made provision for it without charge The antivaccinationist usually so noisy and troublesome gave us no trouble at all As far as checking the epidemic was concerned the effect of these measures was a hundred per cent perfect We had one big plaque of cases and then silence and that silence has continued without interruption right up to the present moment—almost three months

Dr Adams's report as to the small pox cases is not confined to statistics, but contains many details of human interest Here are some of them

In Windsor there is a family named M consisting of ten persons All of them were exposed to small pox and about equally Nine of them had been vaccinated successfully in previous years and none of these contracted small pox The tenth person had never been vaccinated contracted the disease and died inside of four days of the haemorrhagic lobster rash type of small pox

During the epidemic we had to employ a large number of nurses to look after the sick and we had also to expose to the disease orderlies ambulance drivers clergymen and others We made it an absolute rule that no one should be exposed to small pox through our action unless that person had a vaccination car already and was also freshly vaccinated by us The result of this precaution was that not a single person who was exposed to the disease through any action on our part came down with small pox

Of course when a case of small pox developed in a household we vaccinated every other person in the house Contacts of this kind which in Maidstone Amherstburg and the Border Cities run into the hundreds—all as far as I know, escaped small pox as a consequence of timely vaccination

Mrs J D of Walkerville 52 years of age never vaccinated developed small pox and died after an illness of eight days Her husband with a history of exposure many times in excess of that of his wife had a trifling attack of small pox He had been successfully vaccinated twelve years ago

The proprietor of a laundry came down sick with small pox and on investigation it was found that out of a total staff of twenty five persons at the laundry he alone was unvaccinated and he was the only one who contracted the disease

A D aged 50 and his son R D aged 25 neither having been successfully vaccinated died of small pox Mrs A D vaccinated successfully thirty two years before took small pox also but it was a trifling illness

G D the man who had the original illness that was small pox but was not diagnosed as such had a daughter Josephine 12 years old She was exposed to her father through the whole course of sickness and later on to her mother and aunt who developed small pox but he has not had one of the days illness of her If Six years ago she was vaccinated to go to school and she has on her left arm a scar about the size of an old fashioned Canadian five-cent piece Twenty-one close relatives of this little girl all unvaccinated are dead of small pox

Dr Adams concludes as follows

"It is when one has had close personal experience with incidents such as these, when one has had to send nurses by the dozen up against the most virulent small pox with nothing to protect them except vaccination, and they nurse the disease week in and week out without contracting it, when one has seen a community of thousands of persons threatened with decimation by small pox and one has seen wholesale vaccination pull the disease up short and weeks and weeks go by without any fresh cases at all, then and then only does one fully appreciate the marvellous gift which Jenner made to science and to humanity"

Dr Adams and his colleagues of the Border Cities Board of Health are to be congratulated on their triumph over virulent small-pox, so also are the clergymen who intimated the position from the pulpit, the employers and employees and the public generally who accepted the advice that was given them, and the seventy doctors who vaccinated, as estimated, over 95 per cent of the population within a week Under the same measures the same result can be achieved to-day in respect of the mild small-pox which continues to prevail in Middlesbrough, Chesterfield, Derby, and wherever else the disease exists in Britain

THE ROYAL SANITARY INSTITUTE CONGRESS AT LIVERPOOL

THE thirty-fifth annual Congress of the Royal Sanitary Institute opened in Liverpool on July 14th, when some 1,250 delegates from all parts of the world were in attendance

President's Address

The presidential address was delivered in St George's Hall by the MARQUESS OF SALISBURY, K.G., who spoke on the progress of sanitation within the last three quarters of a century, and its bearing on the housing question to which he devoted considerable attention The Factory Acts, National Health Insurance, and the extensions and improvements of hospitals and sanitoriums represented a solid achievement A great benefit had been conferred on child and on adult as far as their life outside the home was concerned, but the clamant question now was—In what kind of houses did they live? A great debt of gratitude was due to the pioneers of the garden city movement, and in all housing schemes we could not do better than follow their good example and thus avoid the mistakes of the past He thought every house should be provided with three bedrooms if overcrowding was to be prevented Municipalities should own a number of assorted houses Dry walls, smokeless chimneys, window sills low enough for the womenfolk to view the street from their chairs were essential comforts The necessity of a parlour he questioned, and thought that if the occupier required one the rent should be increased Our forefathers, from the highest to the lowest, did not believe that bathrooms were essential, and he ventured the diffident suggestion that in this matter we ought not to go ahead of public opinion of the locality In proportion as housing was made unduly expensive provision essential from a sanitary point of view might be difficult if not impossible to secure In conclusion, Lord Salisbury emphasized the importance of a spiritual ideal being constantly kept before the public mind Sanitary perfection alone would not produce the best examples of human nature

The Vice Chancellor of the University (Dr J. G. ADAMI), in proposing a vote of thanks, alluded to the work accomplished by the medical officer of the city (Dr E. W. Hope), who, on the eve of his retirement from the post, could look back with pride on the disappearance of slum areas which at one time had made the city a byword Dr Adami also pointed out that Liverpool was the first university to set up a department and professorship of civic design and town planning Dr S. MONCKTON COPEMAN (Ministry of Health) seconded the proposition, which was supported by Surgeon S. L. CHRISTIAN (United States Public Health Service) and Mr H. P. MODE (President of the Corporation of Bombay) Lord SALISBURY, amid the acclamation of a large and representative gathering, acknowledged the thanks in felicitous terms, and wished the Congress every success

There are five sections Sanitary Science, Engineering and Architecture, Maternity and Child Welfare, including School Hygiene, Personal and Domestic Hygiene, and Industrial Hygiene In addition, conferences are arranged for representatives of sanitary authorities, port sanitary authorities, medical officers of health, engineers and surveyors to sanitary authorities, veterinary inspectors, sanitary inspectors, and health visitors

The Sections

The President of the Sanitary Science Section (Lieutenant General (Sir WILLIAM LEISHMAN) delivered his address, on the relation of pathology to preventive medicine, on July 15th He thought that at present the relation between these two important subjects was not as intimate as it used to be, and the benefits derived from such intimacy were nowadays not accruing to their mutual advantage In military affairs it was far easier to preserve this relationship than in civil life The fascination of pathological research was so engrossing that side issues or observations made by the hygienist were apt to be overlooked or their importance not fully appreciated The test tube was not a town, and unwarranted optimism might be avoided were the pathologist in closer touch with the practically minded hygienist Team work between the two exponents would be the best solution of many of the difficulties The trained bacteriologist might with advantage be more intimately associated with the public health authority in matters connected with isolation, disinfection, sewage disposal, water supplies, and the control of epidemics and epizoötics Active pathology was as much concerned with the investigation of the mysterious beginnings of disease processes as with the effects which they ultimately produced on the body

The Health Exhibition

The exhibition of the Congress was opened by the Lord Mayor of Liverpool on July 14th, who described it as a "Wembley of Health" The Liverpool Corporation Health Department shows by models, charts, photographs, and other illustrative methods, what has been accomplished in clearing away insanitary areas, in the erection of municipal dwellings, and the waging of relentless and increasing war upon rats The Electricity Department shows for what domestic purposes electricity can be used by a household The Liverpool Gas Company vies with its competitor in attaining the same happy results in making domestic duties attractive Food and drink occupy a considerable space in the exhibition Foods for the young, middle aged, and old, and various kinds of clothing, invalid furniture easily manipulated, disinfectants for personal and general use, are to be seen by all interested in sanitation In short, everything that makes for health and comfort—personal and general—is displayed, and the exhibition is well worthy of more than one visit

England and Wales.

SMALL-POX IN LONDON

No further cases of small-pox have occurred in the London area since we last referred to the subject on July 5th Although it is yet too early to speak positively, there seems good reason to hope that the preventive measures we described have been successful in checking the spread of the disease There were ten cases in the Willesden area, all members of two families in one house, three deaths occurred There was also one case in Kensington The eight surviving patients are all reported to be progressing favourably The origin of the outbreak has not been traced It may be that the infection, conveyed in some undiscovered manner to the most unprotected member (a boy of 3) of the two families was derived from a case of a mild type now prevalent in the North and Midlands of England, and suddenly developed a degree of virulence sufficiently high to kill three persons with haemorrhagic small-pox On the other hand, it is conceivably possible that infection of a severe type was passed to the original patient from one of the sources of infection recently imported from the East The fact remains that the outbreak occurred in a small-pox-free area without the slightest warning, thus emphasizing once more the necessity for the vigilance which is continually maintained by the respective preventive services

A striking feature of the outbreak was the defencelessness of the people attacked Nine members of the two families were closely exposed to infection from the original case and all nine of them took the disease That is an indication of the catastrophe which an epidemic would mean The task of protection assigned to the public health officers, with which virtually the whole medical profession is now associated, is therefore most onerous and can hardly succeed without an ample measure of public support

Another lesson is the renewed evidence of the value of vaccination Every outbreak, of course, gives this It is one of the strangest instances of the ineptitude of those who deny any value to vaccination that every single outbreak of small-pox that occurs—and there have been well over 4,500 cases in

the last eighteen months—gives conclusive evidence of the protective influence of vaccination Here is a case of small-pox of severe type and a committee of civic representatives who are responsible for dealing with it, a committee containing staunch anti-vaccinators What is the committee going to *do*? The stricken patient cannot be left unattended Who is to nurse him? For a bad case it may be necessary to send six nurses—two for day duty, two for night duty, and two others to be ready to relieve And it is practically certain that if six nurses unprotected by vaccination be so sent to a case of virulent small pox several of them will have attacks, moderate or severe, two of them probably very severe, from which one may possibly recover with her face scarred, disfigured for life, and one will die When that has happened there will be seven patients instead of one waiting to be nursed and the committee will again be faced with the question, What is it going to do? Is it now going to send six more unvaccinated nurses, and the six more, until enough of them have recovered to carry on with their duties? The fact is that when anti-vaccinators have to tackle a problem like this on the spot they realize at once that they must bow to the truth and either order or to save their face, permit the employment of vaccination That is what happens again and again When it is considered that this applies not only to nurses, but to doctors, disinfectors, sanitary inspector, health visitors, and all the relatives and friends, it becomes obvious how every outbreak of small pox—in the suppression of which vaccination is absolutely the sheet anchor—furnishes evidence of the protective value of vaccination

A further lesson from this June outbreak lies in the fact that there is absolutely no knowing to what member of our profession will come the sudden summons to answer the question, "Can this be small pox" Every single case at any stage has to be recognized by every practitioner who sees it, immediately That is our task at present if small pox is to be kept out

There is also this reflection for the lay directors of the public health the exceedingly narrow margin of safety which they permit to exist between a condition of things in which small-pox is absent, and therefore out of mind and imagination and a suddenly supervening condition of disaster to important interests, such as a business, school, watering-place, or other big concern completely wrecked by small pox Common business prudence requires that employees should be properly protected by vaccination and revaccination to the satisfaction of responsible officers, as is done in the English Post Office service and other enlightened industrial or business institutions

Last, but not least, is the lesson for the respective preventive services which centre round the officer upon whom the main responsibility for prevention falls—namely, the medical officer of health He requires all the support, help, and co-operation that can be given, for he forms the central pivot in the medical administration which alone safeguards the whole community at present from the calamity of a small-pox epidemic

SMALL-POX IN THE PROVINCES

In the BRITISH MEDICAL JOURNAL of May 10th (p 826) the weekly prevalence of notified small pox for the first third of the year was summarized The Registrar General's reports now yield the figures for the first twenty-six weeks—down to June 28th, or the first half of the year For the last nine weeks of the period the returns of notifications were 132, 82, 116, 101, 75, 69, 56, 58, and 65, a total of 754 which, added to the 1,424 for the first seventeen weeks, gives 2,178 for the half-year In the whole of 1922 the cases in England and Wales numbered 973, and in 1923 they totalled about 2,500 There is, therefore, no indication of decline, but rather of increase, though in the last three or four weeks a downward tendency is visible A disturbing factor is the occurrence within the last week of the period of the outbreak of severe type at Willesden, close to London, as reported in the JOURNAL of July 5th In the provinces generally, the areas principally affected remain more or less as before In Cumberland the infection has obtained no serious hold, and the outbreak is being kept well in hand The large towns chiefly affected in the North of England are Chesterfield with 169 cases in the last nine weeks of the half year, and Middlesbrough with 97 The county borough of Derby has had 48 notifications in the last seven weeks The disease continues with remarkable persistence in Ashington in Northumberland, where there have been in the nine weeks 85 cases, and it is not yet eradicated from Hucknall in the county of Nottingham

HEALTH OF LONDON

A volume, containing the reports for 1923 of the Medical Officer of Health and School Medical Officer, London County Council, has been issued

Sir William Hamer, in his report as medical officer of health, states that the year 1923 was remarkable for having the lowest death rate (11·4) ever recorded in London The infantile mortality rate was even more exceptional, as it was only 61 per 1 000 births—a considerable fall from the rate of the preceding year (75) which was itself a record rate The comparatively low mortality from influenza bronchitis, and pneumonia, the low rate from measles and the improvement as regards the rates from scarlet fever and diphtheria upon those of 1922 account in large measure for the very low general death rate of 1923 Diarrhoea and enteritis, and cancer, were registered as causes of death in rather larger numbers than in 1922 There was throughout 1923, great risk of spread of small pox to London The number of cases notified in England and Wales had not reached 150 annually during the war years in 1919, and again in 1920 it exceeded 200 in 1921 the number was over 300 in 1922 it was 907 and in 1923 it was 2,461 Fortunately the mischief caused by the disease in London was kept within very narrow limits As was reported in our columns at the time the small pox introduced into London came not from the Midlands or from other counties where prevalence of small pox was more or less established but from Spain

Only 331 cases of typhoid fever were notified, and of the cases admitted to the Metropolitan Asylums Board hospitals the diagnosis was not confirmed in 60·9 per cent Special inquiry was made in 1923 as to the bacteriological diagnosis made if any and replies were forthcoming in 253 cases the presence of *B typhosus* was recorded in 93 instances, 27 were returned as paratyphoid 2 as paratyphoid A, 42 as paratyphoid B 11 as paratyphoid A and B 35 as typhoid not otherwise described and 57 were returned as not typhoid fever Information as to the probable origin of the disease was obtained in 173 instances in 34 it was believed to have been contracted outside London in 59 instances fish or shellfish was held to have been at fault, other foods were suspected in 34 instances Among the sufferers were 17 nurses in 9 of these *B typhosus* was found and 4 were reported as suffering from paratyphoid B

The volume now issued also contains the report of Sir William Hamer as school medical officer The proportion of children found to be suffering from ailments for which treatment was necessary continued to fall Parents are showing an increasing interest in the inspection of their children 197 327 were inspected during the year, and the inspections were attended by no fewer than 133 240 parents The improvement in the conditions of health of London school children is very striking when studied over a period of years the greatest advances have been in general cleanliness and in dental conditions, but in both much still remains to be done

MENTAL HOSPITALS ASSOCIATION

The sixth annual meeting of the Mental Hospitals Association was held at the London Guildhall on July 11th under the chairmanship of Alderman Francis Bate The report of the executive committee referred with regret to the fact that the Mental Treatment Bill had not been reintroduced into Parliament It was to be feared that the appointment of a Royal Commission on lunacy and mental disorder would delay the introduction, but the committee affirmed its *strong opinion* that it was of the utmost importance that a bill incorporating the provisions of the former Mental Treatment Bill, with certain amendments which the Association had previously proposed should be introduced as expeditiously as possible Delegates were appointed to represent the Association on a joint deputation with the County Councils Association to wait upon the Minister of Health with a view to inducing him to meet the urgent want of legislation in this particular The principal discussion at the meeting related to the wage scale of mental hospital workers, and the claim that the bonus should now *be merged* into wages This matter was remitted to the executive committee for consideration Among other matters similarly remitted were the question of children in wards with adults, and a proposal by Alderman D J Davis of West Ham, that wider powers should

be given to visiting committees to undertake the after-care of patients Alderman Davis said that in his area there were an unusually large number of relapses, especially amongst young women Much depended on the environment into which the patient returned on discharge, and in West Ham the environment was often unfortunate, but he thought that much could be done to prevent relapses and consequent readmissions if visiting committees had wider powers It was promised that the executive committee should give early consideration to the matter Alderman J Godwin King of East Grinstead was elected chairman of the Association, and Sir William Hodgson, M D , of Crewe, vice-chairman for the ensuing year

WELSH NATIONAL MEDICAL SCHOOL

We mentioned a few weeks ago the difference of opinion that existed with regard to the future constitution of the Welsh National Medical School The Royal Commission of 1918, over which Lord Haldane presided, recommended that the school, while it should continue to be conducted in Cardiff, should be a college of the University of Wales and not a department of the University College of South Wales and Monmouthshire The arguments advanced by those who accept the recommendation of the Royal Commission are that the school should be independent of any local college and controlled by the University in the same way as the other constituent colleges, that the proposal made by the Cardiff College that the Medical School should be a department of that College, administered by a Board of Medicine and a Faculty of Medicine, was unnecessarily complicated, and could not produce a truly national school of medicine, and that the modified scheme contained in the new draft charter was still too complicated When the matter came before the Court of Governors on July 4th, the Principal of the Cardiff College spoke strongly in favour of retaining the Medical School as part of that College, and argued that it would not discharge its duties towards the whole of Wales any better as a separate college of the University than as a separate department of the Cardiff College A resolution to the contrary effect, proposed at the meeting of the Court of Governors, was supported by Mr A W Sheen, professor of surgery, and was opposed by other speakers, including Sir Isambard Owen When put to the vote the proposal to proceed with the new supplemental charter was carried by a very large majority Apparently the matter now goes back to the Privy Council

Scotland.

CANADIAN STUDENTS IN EDINBURGH

A party of over 200 Canadian students, travelling under the auspices of the Overseas Education League, spent last week in visiting Edinburgh The students, over 150 of whom are women, came from seven different Canadian universities, and were met by a party of Edinburgh University men and women One day was spent in a visit to the Sir Walter Scott country in the south of Scotland On July 10th they were entertained to a reception by the Lord Provost, Magistrates, and Council in the Edinburgh City Chambers, and various parties were conducted to points of interest in the city and surroundings Professor Sir Harold Stiles delivered a lecture to the party in the surgery department of the university upon Edinburgh as a school of surgery in the past Beginning with the grant of a Charter of Incorporation to the Barber Surgeons by the town council in the year 1504, he traced the development of anatomical teaching and surgery through the seventeenth century, when the Guild of Surgeons had first taken a Convening House and had later built a Surgeons' Hall that still survived The very valuable work done by John and Charles Bell in the introduction of surgical anatomy at the end of the eighteenth century was commented upon The lecturer then proceeded to the important days for surgery when Liston and Syme were teaching in Edinburgh, and introducing new surgical operations, which had had an important bearing upon the development of this study in more modern days The lecture was illustrated by lantern slides of various buildings and other features, so that the Canadian students could subsequently go and inspect these for themselves A large number of pictures dealing with the old Edinburgh Medical School and of appliances such as the Listerian spray and personal relics like Syme's walking stick were also shown, and provoked great interest among the visitors After leaving Edinburgh at the end of the week the party was to proceed to York, Birmingham, and one or two other places in England, thereafter to cross to France and visit some of the principal towns, including Paris, finally, before leaving Europe, the Canadians are to pay a visit to the Empire Exhibition in London The party is under the personal conduction of Major and Mrs Ney

DENTAL EDUCATION IN EDINBURGH

The prizes to students attending the Edinburgh Dental Hospital School were distributed on July 11th by Sir Harold J Stiles, K B E The Dean of the School, Mr William Guy, F R C S , who presided, said that in the session which had just closed there had been a considerable diminution in the number of students This was due to two principal causes The first was the completion of the courses of instruction by ex-service students, whose fees had been paid under the scheme for the higher education of officers and men who had served during the war The second was the coming into operation of the new rules of the General Medical Council regarding the registration of dental students, these included a pre-registration examination in chemistry and physics, which had had the effect of delaying the entrance upon the study of dentistry of those who intended to take up that profession This, however, would rectify itself in a year or two, and he anticipated a large increase in the number of students In view of this prospective increase plans had already been prepared and would immediately be put into effect for an extension of the Dental Hospital and School to accommodate 200 students

GENETICS IN CATTLE BREEDING

The Scottish Cattle Breeding Conference met in Edinburgh on July 8th, Sir Robert Greig, Chairman of the Board of Agriculture, presiding at the forenoon session, while in the afternoon the chair was occupied by Professor Raymond Pearl of Baltimore Professor J Cossar Ewart, of the Natural History Department of the University of Edinburgh, gave the opening address on the origin of cattle He said that the Etruscan ox was the oldest ox of which anything was known The male of this particular type had its horns somewhere between the top of the head and the eyes The date of its domestication was uncertain, but it survived many thousands of years, and in the early Bronze Age found its way into England, where remains had been found with collections of that period Horned cattle first found their way into Scotland from Norway in the ninth century The Celtic Shorthorn, which was to-day represented by typical short-horned cattle, was not descended from a wild ox, but was mainly from the little Etruscan ox Professor James Wilson of Dublin said that all breeds had had their origin in crossing between varieties which were themselves the descendants of previous crosses No pure breeding was possible until 1600, when owners began to fence in their cattle Herd and stud books made unimportant characters important, handicapping breeds with characters they would have been better without, and preventing them from obtaining characters which would have increased their value Most breeds were comparatively pure in the external character, but by crossing most breeds could be improved in economic characters, because most breeds possessed something that other breeds would be the better of—for example, there was not a Frisian cow in Holland that had more than 4 2 per cent of fat in the milk, and he doubted whether these cows could be raised to the 5 per cent which was obtainable from shorthorns, Aberdeen Angus, and other breeds Major E N Wentworth, director of Armour's Livestock Bureau, Chicago, discussed the relation between genetics and practical breeding He said there were many problems in animal husbandry to-day which were dependent for solution upon the geneticists, and many others on the full-hearted co-operation of the geneticist and breeder Professor J A S Watson of Edinburgh University gave the results of actual breeding experiments, which had been carried out in collaboration with Lord Forteviot between

1909 and 1919, to determine the mode of inheritance in crosses between Aberdeen Angus and West Highland cattle of the horned and polled conditions The polled and horned conditions formed a simple Mendelian pair the polled condition being completely dominant in the female while in the male horn development was inhibited but not always suppressed black was dominant to red, and the colours behaved as a simple Mendelian pair

School of Social Study in Edinburgh

Professor Sir Richard Lodge, LL D presided at the annual meeting of the Edinburgh School of Social Study, which was held on July 10th in the Senate Hall of the University The chairman stated that this school had recently stiffened its course by introducing a certain portion of the graduation classes within the University, a gratifying result of this was that the school had brought a number of promising graduation students to the University The requirements of the practical side had, however, been carefully maintained and in connexion with this the University Settlement played a prominent part He appealed to the citizens of Edinburgh to support the great work done through the Settlement by providing for it a secure income The adoption of the annual report was moved by Professor J C Mealmns, who said that every practically minded individual must be anxious to see the removal of the discontent which at the present day led to endless disputes and reduced our wealth producing capacity The connexion which now existed between departments of social study and the University was of great value in this connexion It was evident from the report of the work of the school during its past session that the executive committee had aimed at providing a course of a really high academic standard for those who desired and were able to devote their lives to the larger social questions at the same time it provided a special course suitable for those who aimed at specializing on health questions and who had already been through the long and arduous course of training to qualify them as hospital nurses It had also special courses for persons already engaged in any of the more important branches of social activity, such as the civil and local administrative offices He thought that social study must advance in the correlation of theoretical and practical work An example of this was found in the starting of hospital social service in connexion with the Royal Infirmary of Edinburgh The social visitor, seeing the trained skill of the physician being wasted through the impossibility of carrying out the treatment he suggested, brought all her forces to bear upon altering home circumstances so as to make them more nearly harmonize with the recommendations of the medical expert Social work was becoming a science The Factory Acts which limited the hours of workers, specially those of children, had demonstrated that the child was frequently the victim of his home surroundings, and efforts to raise the housing standard generally followed factory legislation The problem of the mentally defective and of their children had to be faced This was one of the points where the universities came in, and where those who believed in social study claimed their aid The progress recounted in the present report was encouraging, but development was necessary and required practical help Social problems which seemed at first to baffle all attempts at solution were solved gradually when the fundamental facts had been discovered Trained workers were necessary, and this training could only be obtained from schools qualified to teach the subject

Cholera in the Nineteenth Century

During recent excavations for new houses at Leith a number of coffins were found Dr Robertson, M O H Edinburgh, has reported to the town council that the remains are probably those of victims of a cholera outbreak which occurred in 1832 It began in some of the coal-mining villages of East Lothian and spread widely to Glasgow, Edinburgh and Leith, and Ayrshire In Glasgow, during the year 1832, there were as many deaths from cholera as there were births in that year, the total number of cases being 6,208, while in Edinburgh the deaths numbered 1 886 In the autumn of 1832 the epidemic had passed to the North of Scotland, and in some villages the inhabitants had been practically entirely wiped out This cholera epidemic had carried no fewer than 10,000 deaths over the whole of Scotland, for in those days the influences of "carriers" and impure water supplies, as means of spreading disease, were not recognized, nor was quarantine practised as it now is

Edinburgh Royal Maternity Hospital

Dr Fordyce and Dr Johnstone will do duty as physicians during the current summer at the Edinburgh Royal Maternity and Simpson Memorial Hospital with Dr Davidson and Dr Browne as assistants, during the autumn term Dr Johnstone and Dr Haig Ferguson will act as physicians, with Dr Browne and Dr Young as assistants Two male residents (Dr J Chassar Moir and Dr James Hovell) and two female residents (Miss Dorothy Potter, M B, and Miss Jessie Eeles, M B) were appointed for the quarter commencing July 1st, 1924 Dr W J Browne and Dr W F Theodore Haultain were appointed to take charge of the ante-natal department

Nursing Service in Fifeshire

A garden fete was held at Broomhall Fifeshire the seat of Lord Elgin in aid of the funds of Broomhall District Nursing Association A largely attended meeting was opened by the Rt Hon W Adamson, M P, Secretary for Scotland, who expressed his appreciation of the good work which was being accomplished in all parts of the country by nursing associations He pointed out that nearly 600 nurses were doing district work in various parts of Scotland, and that in the course of the past year they had dealt with nearly 160 000 cases necessitating approximately one and a half million visits In the county of Fife alone 67 nurses were doing work but he believed that those who were organizing this service considered that a staff of at least 80 nurses was necessary to overtake the work which might be done In the mining industry the thirty branches of the Fife, Kinross, and Clackmannan Mine Workers' Association were contributing systematically, week by week, to the funds of the nursing associations The movement was also supported by the coal-owner, and, in the case of the Wemyss Coal Company, the contribution was at the rate of £35 in respect of each nurse appointed in the area covered by the operations of the company He considered that the work of these nurses was one of the phases of public health welfare which everyone must desire to assist to the greatest degree possible

Ireland.

Local Government and Public Health Bill (Irish Free State)

A meeting of the Executive Subcommittee of the Irish Medical Committee was held at the Irish offices of the British Medical Association, 16, South Frederick Street, Dublin on July 7th Dr J M Day F R C P I, was in the chair and Drs W W Murphy, H Pavertv, P Magner, J P Shanley, and T Hennessy, and Mr C H Gick were also present Dr R J Rowlette was unable to be present owing to his being on holiday A report of the proceedings of a conference of medical corporations and organizations held recently in the Royal College of Physicians, Dublin, was considered Its recommendations with regard to amendments to be brought to the notice of the Minister of Local Government and Public Health in connexion with the Local Government and Public Health Bill were discussed at length and adopted with some alterations and additions The following is a summary of the more important amendments to be urged on the Minister for acceptance

1 A ministry of health to be established for the Free State
2 A central health council to be established with the constitution and powers recommended by the Irish Public Health Council
3 The constitution of the county health board should be as recommended in the report of the Irish Public Health Council
4 It is essential for efficiency that the administration of public health matters should be on a county basis
5 The county medical officer of health should be a whole-time officer whose qualifications in public health should include the holding of a diploma in public health and of having practical experience in public health matters

6 The medical officer of health should not himself be expected to carry out medical examination or treatment such as is done by a tuberculosis medical officer, child welfare officer, or medical inspector of schools

7 In section 12, that at least one half of the expenses for public health administration should be contributed by the central government

8 In section 29, as in the Local Government Act, 1919, the granting of a pension should be compulsory, and not permissive as in the bill

9 In section V, part I and part II, that the present system of adding years for professional and meritorious service should be maintained as the basis of calculating the amount of pensions for medical officials

10 That section 32 (1) (2) (3) be not applicable to pensioned medical officials

At the conference of the medical bodies held in the Royal College of Physicians it was agreed that representations to the Government be made through the Irish Medical Committee

THE ROYAL MEDICAL BENEVOLENT FUND SOCIETY

The annual meeting of the Royal Medical Benevolent Fund Society was held in the Royal College of Surgeons, Dublin, on June 23rd, under the chairmanship of Sir Conway Dwyer. The annual report stated that the income of the general fund from all sources was £1,849, no legacies were received during the year. There were increases of £9 odd in subscriptions transmitted by branches, £2 2s in subscriptions paid through the British Medical Association, and £12 4s 6d in those paid through the treasurer. In proposing the adoption of the report Dr. Kirkpatrick regretted that the society was not so well supported as it deserved. A resolution of thanks was recorded to the provincial branches for their hearty zeal in the society's work and urging the profession to make a moderate annual contribution to the fund in order to relieve more adequately the distressing appeals received for assistance.

QUEEN'S UNIVERSITY OF BELFAST

The summer graduation ceremony was held in the Assembly Buildings, Belfast, on July 9th, when the Chancellor (Lord Londonderry) presided over a large attendance. The new Vice-Chancellor (Richard W. Livingstone, M.A., Fellow of Corpus Christi College, Oxford) received the honorary degree of Doctor of Literature. Dr. Livingstone has always shown a lively sympathy with the medical faculty and a keen interest in its ambitions and development. The degree of M.B., B.Ch., B.A.O. was conferred on 74 candidates, of whom 17 were women. Miss Pauline Heron was the only one who gained first-class honours. 8 candidates obtained the D.P.H., 3 the L.D.S., and 6 the M.D. The large number of M.B. graduates is due to the huge entry of five years ago.

After the graduation ceremony the Belfast Division and the Ulster Branch of the British Medical Association combined to hold a short reception of the new medical graduates in the Students' Union. Tea was served, and short addresses were given by Professor Thomson, Professor Johnson, Dr. Darling of Lurgan, Dr. Leslie (Representative) and Dr. Storey. All advocated the claims of the Association, related the advantages it afforded to members, and explained its objects. The speakers welcomed the newcomers, congratulated them on their success, and wished them God speed in their sphere of life. A similar reception was held by the Women Graduates' Association for all the new women graduates of all faculties, and was largely attended.

MEDICO-PSYCHOLOGICAL ASSOCIATION

The eighty-third annual meeting of the Medico-Psychological Association of Great Britain and Ireland was held in Belfast on Tuesday, July 1st, and the following days, under the presidency of Dr. M. J. Nolan, Downpatrick Mental Hospital. It was the first time in the history of the association that it had met at Belfast, and the Minister of Home Affairs for Northern Ireland, the Lord Mayor and Corporation of Belfast and the University joined to extend a most hospitable welcome to the members. On Wednesday, July 2nd, the Lord Mayor entertained the association and various members of the Corporation at lunch in the City Hall. Afterwards Dr. Nolan delivered the presidential address and subsequently the Purdysburn Asylum was visited. In the evening a reception was held by the Vice-Chancellor and Medical Faculty of the Queen's University, at which many friends from the town also attended. The association was also entertained at lunch during its visit by the Minister for Home Affairs (Northern Ireland), who was regrettably absent though illness, but sent a message extending a most hearty welcome to the association. The annual dinner was held, by permission of the University, in the Examination Hall on Thursday evening. On July 4th Downpatrick Mental Hospital was visited and the meeting was entertained at lunch by the Right Hon. R. D. Perceval-Maxwell, D.S.O., and the Committee of Management, and subsequently Mrs. Nolan received the visitors at a garden party. On Saturday, July 5th, a most enjoyable excursion was organized to the Great Northern Hotel, Rostrevor.

Medical Notes in Parliament.

[FROM OUR PARLIAMENTARY CORRESPONDENT]

Royal Commission on Lunacy Laws

MR. GREENWOOD, the Parliamentary Secretary for the Ministry of Health, on July 11th moved

"That it is expedient that a tribunal be established for inquiring into a matter of urgent public importance—that is to say

(1) The existing law and administrative machinery in England and Wales in connexion with the certification detention and care of persons who are or are alleged to be of unsound mind

(2) The extent to which provision is or should be made in England and Wales for the treatment without certification of persons suffering from mental disorder"

The Minister said that the object of the resolution was to give to the Royal Commission set up to inquire into the administration of the Lunacy Laws the power of summoning witnesses and of hearing their evidence on oath, and also to give to the witnesses themselves the privilege enjoyed by witnesses in courts of law. Ordinarily a Royal Commission has no power of summoning witnesses or hearing evidence on oath, and the privilege enjoyed by witnesses who voluntarily come to give evidence before a Royal Commission, so far as action for libel and slander are concerned, is at most a qualified and not an absolute privilege. To remedy this state of things the Tribunal of Enquiry (Evidence) Act, 1921, was passed with a view to securing these powers for a Royal Commission. Section 1 of that Act provides that—

"where it has been resolved by both Houses of Parliament that it is expedient that a tribunal be established for inquiry into a definite matter described in the resolution as of urgent public importance and in pursuance of the resolution a tribunal is appointed for the purpose either by His Majesty or a Secretary of State, the instrument by which the tribunal is appointed or any instruments supplemental thereto may provide that this Act shall apply, and in such case the tribunal shall have all such powers rights and privileges as are vested in the High Court, or in Scotland the Court of Session or a Judge of either such Court, on the occasion of an action in respect of the following matter"

These matters included the summoning of witnesses and their examination on oath. The Chairman of the Commission on Lunacy Laws had represented to the Government that it was essential they should be vested with the powers conferred by the Act of 1921.

Mr. Pringle asked what the exact effect would be. Would this body cease to be a Royal Commission and become a tribunal under the Act of 1921? Mr. Greenwood replied in the negative. The body became a Commission when it was set up. The motion was agreed to.

Research Scholarships.—In Committee on the Finance Bill, on July 8th, Sir Geoffrey Butler moved a new clause to exempt income arising from a studentship or fellowship for research studies at any British university from taxation. The average income was about £250 a year and not more than 250 persons were affected. Mr. Graham replied that two classes of exemption already existed and it would be very difficult for any Chancellor of the Exchequer to make a further departure without a serious inroad upon recognized income tax practice. The more exemptions given to particular callings the greater was the tendency to break down the whole structure and to create a mass of anomalies. The amendment was rejected by 185 votes to 100.

Lunacy Accommodation.—In reply to Mr. R. Richardson on July 9th, Mr. Wheatley said that only one scheme for the building of a new mental hospital was in contemplation, but further accommodation would be needed in the near future. On January 1st last there were only 4,754 vacant beds. As the average annual increase of certified patients during the last two years had been at the rate of 3,265 it was obvious that further provision was necessary. The question whether provision should be made for the early treatment of cases of mental disorder without certification was one of the principal matters referred to the Royal Com-

ission recently appointed Mr Richard on asked if the attention of the Minister of Health had been called to the remark of Lord Justice Scrutton on the occasion of the appeal again Harnett in regard to the need for a thorough examination into the ground on which an alleged lunatic was imprisoned as well as the desirability that he should at intervals during detention have the opportunity of demanding an independent investigation of his case Mr Wheatley said the point mentioned came within the terms of reference of the Royal Commission

Dissection of Paupers' Bodies—Mr Wheatley stated on July 9th that the application by the Ministry of Health to the Kingston Board of Guardians *with a view to arrangements for that authority* to hand over the bodies of dead friendless paupers to the London Hospital for dissection was made with his authority In this matter he had followed the invariable practice of his predecessor and of successive Home Secretaries with whom the responsibility under the Anatomy Acts rested prior to the transfer of this duty *to the Ministry of Health* He recognized the very natural objections which such a proposal must at first sight excite but he was satisfied that there was no alternative which would not have disastrous effects on surgical and medical education and ultimately on the treatment of the sick The effective teaching of anatomy and operative surgery would become impossible unless the necessary subjects could be made available for practical instruction If anatomy could not be taught by the examination of the dead it would have to be learned by experiment on the living and except in the case of the comparatively small number of students who could afford to go abroad for their anatomical study young practitioners would be compelled to acquire by experimenting on their patients the knowledge which it would have been impossible to impart to them in the medical schools Many unions throughout the country including those adjacent to Kingston were co-operating in this matter It was generally recognized by the guardians that the poor would be the first to suffer if medical students could not obtain the necessary teaching without going abroad for it The Anatomy Act contained detailed provisions as to the conditions under which bodies were to be used for this purpose and those provisions were enforced under the constant supervision of His Majesty's Inspector of Anatomy All bodies used for this purpose were duly interred within the prescribed period after a religious service appropriate to the denomination to which the deceased belonged The place of burial was carefully recorded

The Spahlinger Treatment—Mr Wheatley said on July 9th that all such inquiries as were practicable in the absence of a supply of M Spahlinger's preparation for scientific investigation had been made by the Ministry of Health The results of these inquiries did not enable him to pronounce an opinion as to the efficacy of the treatment but they were sufficient to indicate the *desirability of a scientific investigation whenever a supply of the* preparation was forthcoming He was still without information when it would be available

Eyesight Test for Bus Drivers—Mr Henderson on June 26th replying to Mr G Locker Lampson, said that for many years certificates of physical fitness had been required from bus drivers and these certificates covered vision He would look into the suggestion whether men who could drive safely with spectacles should be tested wearing spectacles

Admiralty Automatic Promotion—Giving a list of the ranks and ratings of officers and men in the Admiralty who now receive automatic promotion subject to certain conditions being fulfilled Mr Ammon on July 9th included the following Surgeon lieutenant to surgeon lieutenant-commander at six years subject to service qualification and recommendation Surgeon lieutenant commander to surgeon commander at six years subject to service qualification recommendation and passing necessary examination Surgeon lieutenant (D) to surgeon lieutenant-commander at six years subject to recommendation

Notes in Brief

According to the provisional figures received by the Registrar General the deaths registered in England and Wales in the quarter ended March 31st included small pox 3 measles 1741 scarlet fever 263 diphtheria 742 encephalitis lethargica 259 No separate figures are at present available of deaths from pneumonia or from influenza in the period The returns from the second quarter ended June 30th are not yet available

In reply to a series of questions regarding Craigleith Pensions Hospital and the possibility that patients would be removed thence to Bellahouston, the Minister of Pensions said that comprehensive arrangements are being made for hospital accommodation in Scotland and that he hoped to make a statement a fortnight hence He stated also that the accommodation at Roehampton Hospital is ample and no unavoidable delay occurs in fitting or repairing artificial legs Every pensioner has been supplied with a duplicate leg to be used while the first limb is under repair and necessity for personal attendance at hospital is thus for the *most part avoided after the first fitting*

The Minister of Health is making every effort to persuade local authorities to offer adequate salaries to nurses He has already reminded a deputation however, that the matter rests with the local authorities

The ages of the seven persons registered as having died from small pox in England and Wales during 1923 were as follows 1 month, 10 months 5 years 53 years 28 years 55 years and 17 years The first four named all resided at Gloucester the others at Neasden (Willesden) Battersea and Chester respectively

Mr Wheatley on November 9th said that while he favoured the employment of women medical officers to take charge of antenatal clinics he was not prepared to require that this should be done in all cases

Correspondence.

ARTERIO SCLEROSIS

SIR,—In your leading article[1] on the clinical aspect of arterio-sclerosis, you state you would be interested to hear my views on the pain associated with arterio-sclerosis As it happens, I am at this moment deeply interested in this question, and read Dr Evans's article with much interest As I approach the subject from a somewhat different aspect some of my observations may throw little light on the problems which he discusses

The source of the essential signs of arterio-sclerosis can be identified by a simple process of reasoning

The *functional efficiency of organs* is dependent upon the blood supply, and when the blood supply is insufficient the functional efficiency will become impaired As arterio-sclerosis interferes with the blood supply, the essential signs of this disease are to be found in the evidences of impaired function of the organs whose blood supply is defective Moreover, all organs have periods when they are relatively quiescent and periods of greatly increased activity, so the amount of blood required varies The effects of the impaired supply will first be shown when the organs are exercised to their full functional capacity

In passing I may mention that this is the basis of the principle of the "response to effort" which we employ in the investigation of symptoms at this institute

There are certain organs, such as the muscles, whose periods of activity show a great increase as compared with their quiescent periods When the blood supply is defective there may be no sign when the muscles are at rest, but when effort is made they may become speedily incapable of contraction, producing a sense of fatigue and pain When the blood supply to the muscle of a limb is diminished or cut off, as in blocking of an artery by an embolism movements of the limb produce such pain as to compel the cessation of effort The same thing happens in sclerosis affecting the arteries of a limb

A man for several years had been gradually becoming less able to walk distances on account of weakness and pain in his legs Occasionally, some hours after walking a good distance with many stops, he suffered great pain in the legs when resting Latterly he began to be pulled up sometimes by pain in his chest, and sometimes by pain in his legs Now he has no trouble with his legs because he can only walk a short distance on account of the pain in his chest He has had to give up writing because the exercise produced pain in his arm The conclusion drawn is that this individual *has got arterio-sclerosis of* the leg of the heart, and of the arm

In a series of patients with angina pectoris carefully observed at the institute during life, and whose hearts have been investigated after death, it is possible to correlate the morbid condition with symptoms during life A healthy coronary artery is a very distensile vessel I had always been puzzled to account for the occurrence of angina pectoris in some patients who had disease of the aortic valves, and its absence in others In one of these hearts the reason was found The sclerotic process which had affected the valve had extended up the aorta and embraced the mouths of the coronary arteries so that they were considerably reduced in size and very rigid When we considered the evidences which were present during life the only sign was pain in response to effort In several other hearts the walls of the arteries in patches were thickened and the lumen narrowed or obliterated In two cases a large mass of the heart muscle was degenerated During life the only symptom was pain on exertion

I do not discuss here the processes concerned in pain, but merely record the fact As a result of my investigations into pain extending over forty years wherever there has been very severe pain arising from an internal organ—that is to say, by organs not supplied with cerebro-spinal nerves—and the source of the pain could be traced, it was invariably found to be a muscular organ I am not suggesting that all such pains are muscular in origin for it

[1] BRITISH MEDICAL JOURNAL July 5th 1924 p 23.

is not always possible to demonstrate the source of pain, but where it has been possible to demonstrate this it has been a muscular origin

Dr Evans refers to the tenderness of arteries and veins The hyperalgesia which is of common occurrence in the structures of the external body wall, skin, muscles, glands, arteries, veins, etc, have a different origin from pain Such hyperalgesias may follow attacks of pain, but they are more frequently present independently of pain unless when the structures are pressed upon Hyperalgesia is a problem of another kind

During the many years I have been studying arteriosclerosis I have watched its progress in a goodly number of people, and I have come to the conclusion that arteriosclerosis is secondary to an obliteration of the capillaries

Of all organized structures in the body the capillaries are the easiest to develop Of all organized structures of the body the capillaries are the easiest to destroy The obliteration of capillaries leads to a great variety of phenomena according to the function and constitution of the structure The obliteration in the skin leads to that thinning which is so apparent in the elderly, when the skin may resemble and be nearly as bloodless as tissue paper In other structures the obliteration leads to fibrosis, fatty degeneration, and calcification

I am inclined to the view that all degenerations of arteries are the result of obliteration of the capillaries of the arterial wall There are various agents which produce this obliteration There are those which accompany old age There are those which arise in inflammations, as inflammation subsides, the agents of disease destroy the capillaries and leave behind fibrotic tissue in place of the original cells

This view enables us to grasp the meaning of a great many forms of disease which have hitherto been difficult to understand One of our endeavours at St Andrews is to classify the phenomena of disease according to their affinity in nature In achieving this there is one line we pursue—namely, to group diseases according to the morbid process which produces them If, for instance, we take a series of diseases which are usually looked upon as separate and distinct, such as valvular disease, myocardial disease, angina pectoris, auricular fibrillation and heart-block, and look carefully at the origin of these so-called diseases, we find a close relation In the elderly the valve disease is due to the shrinking and thickening of the valves as the result of obliteration of the capillaries The same cause accounts for the fibrotic degeneration of heart muscle and the narrowing of the lumen of the coronary arteries which result in angina pectoris The active structures in the conducting system, like the sino-auricular node and auriculo-ventricular node, suffer from obliteration of the capillaries, and these structures become fibrotic, resulting in the one case in auricular fibrillation and in the other in heart-block Occasionally we get both these conditions in the same individual

We have seen in the individual above mentioned that it was the same condition which limited his legs and his heart in walking and his arm in writing His brain becomes easily fatigued on reading, and his memory is becoming impaired, and his digestion is not nearly so robust

From such illustrations one can see that a great variety of symptoms may all be due to the same morbid process, the variety being dependent upon the organ or the part of the organ whose blood supply is impaired I should not be surprised if the time will come, that in place of authors describing their books as "diseases of the heart and aorta," they will substitute the title "disease of the capillaries of the heart and blood vessels," and that old saying that "a man is as old as his arteries" will be changed into "a man is as old as his capillaries"

A few weeks ago, being in a medical library, I turned up a number of pathological textbooks to see what was said about diseases of the capillaries, and was surprised to find the subject barely mentioned in some and not mentioned at all in others But this is not surprising, for, simple as the capillaries are, the manner in which they function is not understood, and consequently the part they play in the economy cannot be recognized The work, on capillaries, of Krogh and of Dale, and our attempts, are opening a new field in physiology, pathology, and clinical medicine—I am, etc,

J MACKENZIE

The St Andrews Institute for Clinical Research,
St Andrews, Fife, July 8th

CARDIAC DELIRIUM

SIR,—We have to thank Professor Robertson for his valuable aid in the discussion of cardiac delirium and its causes But my point was not that delirium of place was any rarity, or confined to cardiac disease, but that it was particularly the delirium of cardiac disease, and then apt to occur without other delusions or much other mental aberration save such as pertain to any mortal strife I spoke not of a general clouding of the faculties with lucid intervals, but of an alternation of this consistent delusion with comparative sanity

Mere deprivation of oxygen occurs in other states without these features, and in cyanosis a similar reflection arises, both these conditions are frequent this particular delirium in heart disease is infrequent

It gave me pleasure to read Sir James Barr's appreciation of Benjamin Ward Richardson, of whom he says not a word too much And I would thank Professor Stalker for his interesting contribution to the subject, but I am led to trouble you again in order to report very briefly two cases of cardiac delirium sent to me by that well known authority in heart diseases, Dr Carey Coombs

"I have seen," he writes, "several striking instances of the condition you describe—for example, in an elderly man who suffered from myocardial break-up, as he grew worse, a confusion of place, which he had shown for some time occasionally, increased He disbelieved us when we assured him that he was at home Again, a medical colleague, who died of cardiac disease, was under a continual misapprehension as to place We were in league to deceive him, and wherever he supposed himself to be—'Tunbridge Wells, Cambridge, London'—he was puzzled to find in his bedroom the same furniture to which he was used to at home I have thought these cases partly toxic, and possibly associated with acidosis, which is to be detected in the final states of such cases, or partly due also to degenerative changes in the cerebral arteries"—I am, etc,

Cambridge, July 10th CLIFFORD ALLBUTT

GOITRE

SIR,—I share with Dr Chalmers Watson (June 14th, p 1071) the high opinion which he expresses of the work of Lieut.-Colonel R McCarrison on the etiology of goitre When Colonel McCarrison's book on the thyroid gland appeared in 1917, I began at once to treat cases of goitre with intestinal antiseptics I selected for this purpose small recent parenchymatous goitres where symptoms were comparatively trivial and indications for surgical treatment were absent I used thymol, beta-naphthol, salol, and kerol for periods up to twelve months, and in all cases I pushed the dosage of these drugs up to or beyond those generally recommended

I have now treated upwards of a hundred cases from all parts of London and the provinces in this way (including both endemic and sporadic varieties of goitre), and my conclusion is that these drugs have no curative effect whatever on such goitres Furthermore, several cases while under treatment increased sufficiently in size to produce pressure phenomena, and to need operative treatment, while over twenty others have grown noticeably—though not at present needing surgical intervention A few cases have diminished slightly in size, but certainly not more than occasionally follows the use of such drugs as iodine, arsenic, etc

The explanation of such failure to obtain results comparable with Colonel McCarrison's may be (1) that the type of goitre which one has to deal with in this country has a different cause from that on which Colonel McCarrison worked while in India, or (2) that intestinal antiseptics are not so efficient in their action on the intestinal bacteria of

the European Whichever explanation is true, it seems to me proper that the matter should be fully investigated in view of the very great interest which Colonel McCarrison's work has aroused in the problem of the prevention and cure of goitre —I am, etc,

Lond n W 1 July 8th CECIL A JOLL

LIFE INSURANCE WITHOUT MEDICAL EXAMINATION

SIR —The letter from "Medical Referee" which appears in the JOURNAL of July 12th (p 83) contains so much that is admirable that one is reluctant to draw attention to a certain confusion of thought in the conclusions he draws

There can be nothing but praise for the advice to a prospective bridegroom to seek the safeguard of a medical examination before marriage and to assure his life in order to make provision for his wife-to-be It would not be seriously contested that the present satisfactory state of the leading life assurance companies is due in no small measure to the skill of those medical men who have examined applicants for life assurance and to the skill of the actuaries who have based their calculations upon the results of those examinations

But it may fairly be assumed that those companies which now dispense in whole or in part with special medical examinations do so from business motives and upon actuarial advice based upon experience, and that they have not concerned themselves in any way with the convenience or otherwise of those about to marry

Just as it would be unwise to base a diagnosis upon one symptom without regard to any others, so it would be most undesirable for any doctor to recommend to a patient any assurance company or group of companies merely because it or they insist upon a special medical examination Life assurance is an intricate and specialized business, and many things must be considered before advice can be given as to the suitability of any particular policy to any particular case

As, largely through the efforts of yourself and the editor of the *Lancet*, an agency has been established here to give free and expert advice on insurance to medical men and women, I would suggest that no doctor should take out or recommend to a patient any policy of assurance without first consulting the Medical Insurance Agency —I am, etc,

L FERRIS-SCOTT,
Secretary

Medical Insurance Agency
429 Strand W C 2 July 12th.

THE R A M C (T A)

SIR —As you have already extended the hospitality of your columns to Captain Goodbody and my "opposite numbers" Colonel Arnold Wraith of the 46th Division and Colonel Ducat of the 56th Division, may I in turn be permitted to urge the claims of the 47th (2nd London) Division *in a similar direction*?

Particular stress has been laid on the difficulty which is being experienced in obtaining a sufficient number of young medical men to fill the many vacancies in the commissioned ranks of the R A M C (T A) Many of the units of the Division will attend annual training this year without a medical officer This means that the medical charge of such a unit will have to be undertaken by a medical officer belonging to another more fortunately situated

The peace time establishment of a territorial battalion allows two medical officers, but only one of these is paid at annual training By this arrangement only one need attend During the remainder of the year the work at headquarters is usually shared by them This means, of course, that with anything like a full establishment the duties are extremely light Most units have in ordinary times certain evenings on which officers meet for their various duties, and a medical officer is expected to be available some time during the course of the evening for the examination of recruits The officers' mess is open and there are abundant opportunities for very pleasant social intercourse A well run Territorial officers' mess is usually regarded by its members as a club with all the amenities of such an institution I make a special point of this because I do not think it is fully realized how very enjoyable it is to drop in to the mess after a day's work and have a yarn and a drink and possibly a rubber In this way one makes friendships which last a lifetime The 'Doc" is generally everybody's friend, and it is entirely his own fault if he does not have a thoroughly good time

I speak with the experience of many happy memories of my Volunteer and Territorial days I well remember that I was first impelled to enrol myself when I sat at the feet of a famous professor of anatomy in a northern university It will no doubt be remembered by all who had a like privilege that in each year after his description of the spinal column he always urged his class to 'join the Volunteers" so that they might continue to stand and walk erect A good deal of water has flowed under the Forth Bridge since then, and one can look back on many changes in our corps Its achievements in the great war should surely be an inducement for the younger members of our profession to come forward and carry on those wonderful traditions which were gained at the cost of many and valuable lives —I am, etc,

M B RAY,
Colonel A M S (T A)
A D M S 47th (2nd London) Division (T A)

Duke of York Headquarters
Chelsea S W 3 July 15th

THE GOVERNMENT FACTORY BILL

SIR —It appears to be extremely unlikely that the Government Factory Bill will get its second reading this session The Home Secretary, earlier on, apparently believed that by visiting factories himself and by allowing joint meetings of masters and employees in the textile industries to settle details of required legislation he could produce a non contentious measure which would get through its various stages very smoothly This optimistic view may or may not have been modified, but certainly the bill cannot be regarded as non-contentious It seems to have been compiled with somewhat insufficient regard to the circumstance that Factory Acts are primarily concerned with health matters and that the views of the medical profession are of some consequence when existing provisions involving these are to be cast into the melting pot Since the first reading was taken it is becoming increasingly evident that certain of its clauses are regarded as distinctly retrograde by two separate branches of the profession Medical officers of health have been intimately associated with the securing of sanitary conveniences in both factories and workshops since the passing of the Public Health Act, 1875, and under the Factory Act of 1891 they took over the administration of all the sanitary provisions affecting workshops The factory inspectors have always had over-riding powers to secure the carrying out of obligations by local authorities in these directions, and these were strengthened by the Factory Acts of 1895 and 1901 The present bill proposes to take away all these statutory powers with one insignificant exception in the case of certain factories attached to or forming part of a dwelling house or shop, and, in substitution, to hand back the present control, with any modifications thought fit by Secretary of State's orders This indicates a very big change, the actual necessity for which is somewhat difficult to understand Granting the many difficulties experienced by the Factory Department in keeping a number of authorities up to the mark, it should surely be possible to deal with these bodies by regulations whether their administrative powers are exercised by statute or by Secretary of State's orders It would also be very interesting to know how this change would affect the local building by-laws At present the local authority is the *only body* which has any powers to review the plans *of a new factory* or workshop and which can *insist on* certain sanitary requirements being fulfilled as a *condition* of erection Obviously this is a phase of the question which demands some consideration

It is proposed to deal with certifying surgeons in a very drastic fashion This branch of the profession has been judged by a Departmental Committee, the constitution of which gave rise to a preliminary objection from those to

whom the inquiry was of such intimate concern Apart from being badly constituted, this committee did its work too hastily It is, therefore, not surprising that the results should be unsatisfactory, and, judging from the more drastic treatment meted out by the bill itself, even the Government could not have been satisfied with the main recommendation It is a very curious feature of the treatment proposed for certifying surgeons that, although the fault of the present system is said to lie in the divergence of standard of examinations among certifying surgeons, and that this complaint is exactly on the same lines as that laid against local authorities in their dealings with sanitation of factories and workshops, the actual method to be adopted is diametrically opposed to the one laid down for local health departments Whilst the latter are to be dealt with by centralizing control the same type of fault on the part of the certifying surgeon is to be cured by introducing local control To the ordinary individual this would appear paradoxical The present certifying surgeon is to be deprived of his statutory position and to lose his identity by becoming one of a class, whilst his successor is to be appointed and controlled by any or every local authority at the discretion of the Secretary of State, subject only to such regulations as to duties as may be made by order Granting, as in the previous case, that the fault be correctly diagnosed, it again becomes somewhat puzzling to understand why it should be regarded as necessary to turn things upside down to find a remedy Uniformity of practice throughout the whole country can be obtained with certainty under central control if this be properly exercised Why not look at the matter from the point of view of the young person? His requirements are an effective examination and uniformity in certification in whatever area he seeks employment The processes at which young people work and the conditions attendant on these are regulated by industrial necessities and not by local requirements, and any attempt to act contrary to this dictum would certainly result in confusion

The bill contains many valuable provisions which ought to become law, and the official desire to get them through Parliament as smoothly and expeditiously as possible can easily be appreciated Should the Home Secretary still be desirous of shepherding a non-contentious measure, he might with advantage seriously consider how his bill is being taken by the medical profession —I am, etc,

July 14th PUBLIC HEALTH

NON-PROFESSORIAL STAFFS OF UNIVERSITIES

SIR,—My attention has been directed to the observations made by you in introducing the Edinburgh statement, which you were so good as to publish in your issue of July 12th (p 63) I need hardly say that it was not the intention of the Committee of the Non-Professorial Staff to suggest that the professorial staff is overpaid The statistics on which your inference is apparently made were inserted solely in order to show clearly the existing disparity between the salaries of the professorial and those of the non professorial staffs The intention of the statement was to emphasize strongly the view that, corresponding to the character of the educational work entrusted to them, members of the non-professorial staff should be paid salaries more closely approximating to those paid to members of the professoriate than is at present the case —I am, etc,

JOHN E MACKENZIE,
Convener
Non Professorial Staff Committee

Medical Chemistry Department
University of Edinburgh July 12th

POST-ANAESTHETIC VOMITING

SIR,—If Drs Cave and Edwards, the writers of the interesting note on post-anaesthetic vomiting (July 5th, p 11) will try washing out the stomach with plenty of alkaline fluid before the patient leaves the table, they will be pleased with the results It is easy and safe, and almost entirely abolishes vomiting —I am, etc,

Derby, June 9th V T CARRUTHERS

Universities and Colleges.

UNIVERSITY OF LONDON

UNIVERSITY COLLEGE

Centenary

THE hundredth anniversary of the foundation of University College, London, is to be celebrated in 1926, and a history of the college is being prepared It will include a chapter on the contribution of the college to medical education and research The Provost, Sir Gregory Foster, asks for the loan of documents likely to be of use for this purpose Communications (marked "Centenary") should be sent to him at the college

Sharpey Physiological Scholarship

An appointment will shortly be made to the Sharpey physiological scholarship (value £160), founded in memory of Professor William Sharpey The scholar has full opportunities for research in physiology, and takes a small share in teaching and demonstration Applications, with full particulars should be sent to the secretary of University College, Gower Street, W C 1, not later than Saturday, July 26th

GUY'S HOSPITAL MEDICAL SCHOOL

The following scholarship awards have been made War Memorial Scholarship in Arts John W Crow (Charterhouse) £200 Open Scholarship in Arts John W Oliver (Felsted) £100 Scholarships in Junior Science Confined Scholarship, William D G Jones (Sexey's School, Bruton and Guy's Hospital Medical School), £100, Open Scholarship, William L M Bigby (Cranleigh and Guy's Hospital Medical School) and Walter P Roe (University College School and Guy's Hospital Medical School), equal £50 each

UNIVERSITY OF LIVERPOOL

THE following candidates have been approved at the examinations indicated

M D—H Cohen M J Cohen, B L McFarland

I H D—T Southwell

M B, Ch B—‡C B Bamford * Helen S H Brown *‡A Pool *‡E Scott *‡Gwennie Williams *Part III* Mary G B Allen R V Berrington C H Bradley J S Bradshaw R S Brock Alison M Brummitt A Coole J W Cowen J D Craig M M Datnow Edwina M Davies L Davies R V Dawbarn Eileen M Deane W T Donovan H Duff J B Lilleraz H W Iell H R Fisher F F Fuller G A Garrett Susan Gluck T A Griffiths D C G Hanlon T Hale Fannie S Holt G P Huws L L Johnson R W Jones R Jones A L Kerr D Kippax J Leggate W E Lishman J H M Little G Lowe G Macdonald Margaret S Macdonald Phyllis Marsh G A Moulden A Newton R J Prydderch Gwendolen H ff Roberts E Rowlands J A Scott G V L Taylor Marjorie A Unsworth Mabel J Watterson N Weinberg H S Welton *Part I* R M Ainsworth M A E Azzam H E Barrow C Baxter B H Buckman A S S Brown D Cohen J Katz Alice M Luck J W Melville E L Murphy Irene M Neal J J O Donovan, Mary T Penrice W J Pierce Mary A Silcock W L Webb *Part II* R M Ainsworth H W Altschul A T Ashcroft Ethel Barrow E I Bieber ‖C A Birch H M Boston B H Buckman W G Brookes N L Corkill R F Corlett D E Davies P V Dillon J L Donnelly, ‖L Farlam J C Edwards Sybil O Edwards ‖C J S Garton M Goldberg Dorothy A Gough, Frances M Greenhalgh R I Greenshields Gwyneth Griffith C A Harris ‖J Hatton Beryl M Hawthorn J C Heal R E Horsfall E Hughes ‖T Hughes S M Katz C Kaufman B Kay J E S Lloyd W J Lloyd ‖L J A Loewenthal T R F Longton H McGrath ‖G McNichol K N Mawson J W Melville F Musgatroyd E L Murphy Winifred A Nicholson H F Pearson H Peaston J W Reid §Miriam Roskin J C Ross Ruth Simpson N P Slade, I Thomas Margaret E Thomas E F Thompson C E Unsworth J Unsworth Rosalind Vacher J E Walker F W Yates

D P H—W J Birchall R W Brookfield B L Chopra H M Cohen F S Fowweather E S Gawne Annie R Niven, C J de V Shortt J F D Shrewsbury

* Honours second class
‡ Distinction in medicine
‡ Distinction in obstetrics
‖ Distinction in forensic medicine and toxicology
§ Distinction in public health

VICTORIA UNIVERSITY OF MANCHESTER

THE following candidates have been approved at the examinations indicated

FINAL M B AND CH B—Margaret A Bromhall W C V Brothwood T A Brown *J A Crowther Madge F Edwards R Ellis A G Forbes P Gregory E Holmes ‡Winifred L Horton W G Howson *Phyllis I Kaufman D Kemp *‡Hilda M Linford F R Lockhart Gladys F A McLean Alice M Orrell T Pearson S Pope L J Prosser A Riley W M Roberts Eileen Sheehan Dorothy Simmons J Sims G S Smith J Troup H M Turner C L Wallet E White side ‡C Wilcocks G Williamson *Surgery and Obstetrics* A R Addey Redfern J K Ball C V Brown Stella H Brown Elsie Catlow W Chadwick S F Clegg Jenny D Craig S Devine Florence M Duckworth C Eccleston J D Farquhar R A Ferguson J Haslam G H Hayle ‡A H Heyworth Elizabeth G Humble A M MacGill W Mottershead Ethel Morris H Penman T W Rothwell H T Simmons A B Slack R Slater, H C Smith R Walshaw S E Ward S Whalley R M Williams S P Wilson K K Wood P B Wood F Yates *Forensic Medicine and Hygiene and Preventive Medicine* R S Adam W Chadwick T E Davies C R Fielding A H Heyworth J N Hudson T W Rothwell R I Stubbs J M Yoffey *Forensic Medicine* S Bernstein J W Graham R Slater A R Somerford *Obstetrics* C T Marshall J Shlosberg F J Warburton J M Yoffey *Surgery* P G Johnson R F Stubbs *Medicine* J M Yoffey *Hygiene and Preventive Medicine* Anne H Glancy E J Warburton

* Second class honours ‡ Distinction in obstetrics
‡ Distinction in medicine § Distinction in forensic medicine

DIPLOMA IN PSYCHOLOGICAL MEDICINE *Part II*—I C F Chevens H D Cormac T W Davidson W J Lynch W R McClashen
D I H *Part II*—F R Fergus on Marjorie V Grant Gladys J C Rundell Enid F Stowell Ethel White

UNIVERSITY OF SHEFFIELD

DR G A CLARK has been appointed to a lectureship in physiology.

UNIVERSITY OF LEEDS

AT a congregation of the University the Duke of Devonshire the Chancellor of the University conferred the following degrees in Medicine and Surgery

CH M—D Chamberlain
M B CH B—T H B Bedford *A M Clayson *H Edelstein H Ross J C Ward
M B CH B—W C Abell H Brue A Cannon I Cargill Allen V Clayson F Clegg Maria L Grant C D Gordon Muriel D Graham M Hutchinson J W Richard Kathleen M Potter I V Lynch V A Lymer V A Spadding G H Sellers I L A Simpson G R Stanley D M Sutherland H Taylor W Thistlethwaite L W Vincent Hester I Woodcock D Yates

* Honours second class

UNIVERSITY OF ABERDEEN

AT the graduation ceremony held on July 10th the honorary degree of I L D was conferred upon Dr Michael C Grabham I C P Lond The following were among the other degrees and diplomas conferred

D Sc—H E Magee
M D—W Corner O B E (*in absentia*) *R J Duthie *R Forgan W I Gerrard A P Grant V M Maclennan J Rannie R Rannie H J Thomson I S Thomson
CH M—R D Lockhart F H B Norrie O B E
M B CH B—† A M Hendry C C Chitty P B Henderson *J A Innes *D West R Anderson J H Arthur A H Benton Kathline Booth F Buchan A S Burn W Chisholm Annie V Clark Mary Coutts Edith Crombie Firene V Croll J Crombie J G Currie F R Daniel D Duncan J C Forbes S Forres R M Fraser Edith L R Galloway A D Garden V C Gorrod J Hutcheon Lennel M Inness C Joiner D W Kirk Flora H G Macdonald I M eDonald T J C Macdonald R H Mackay R Mackay R Mackay A L McLeod D McLeod Christine Macrae C I Murray I W Philip A Reid A Reid W M Ritchie A Rose C J Sandiford W V Simpson J M Smith A Stalker V Taggart G J MacA Tennon W G Watson H M Wright
D P H—Catherine J Clark Eleanor M Henderson Charlotte S Hendry Roberta McLeish Bethia M Newland Violet M G Smith J S Taylor Gladys M West

* Awarded commendation for thesis
† With first-class honours
‡ With second class honours
‖ Completed final examination with much distinction
§ Completed final examination with distinction

ROYAL COLLEGE OF SURGEONS OF ENGLAND

A QUARTERLY Council meeting was held on July 10th, when the President Sir John Bland Sutton was in the chair

President and Vice-presidents and Council

Sir John Bland Sutton was re-elected President and Mr H J Waring re-elected and Mr W G Spencer elected Vice-presidents for the ensuing year Mr W McAdam Eccles Mr Wilfred Trotter and Sir Charles Gordon Watson duly elected at the meeting of Fellows on July 3rd were introduced and took their seats as members of the Council

Licences and Diplomas

Licences in Dental Surgery were granted to 63 candidates

At the Primary examination for the Fellowship concluded on June 18th 100 candidates were examined of whom 31 were approved The names were published in the JOURNAL of June 28th (p. 1160)

Diplomas in Public Health were granted jointly with the Royal College of Physicians to 31 candidates

Diplomas in Psychological Medicine were granted jointly with the Royal College of Physicians to 5 candidates

Diplomas in Laryngology and Otology were granted jointly with the Royal College of Physicians to 5 candidates

Pathological Department of Museum

Mr C F Beadles was reappointed Assistant Pathological Curator of the Museum and Mr C E Shattock was reappointed Pathological Assistant in the Museum for the ensuing year The office of Pathological Curator of the Museum is to be left vacant for the present and Mr T W P Lawrence F P C S was invited to advise and assist Mr Beadles and Mr Shattock during the ensuing year in rearranging and revising the series of Special Pathology in the Museum

Library

The Library will be closed in August as well as in September for cleaning and redecoration

Lister Medal

The Lister Medal for distinguished contributions to surgical science with the honorarium of £500 has been awarded to Sir W Watson Cheyne who in accordance with the conditions of the trust has undertaken to give an address at the Royal College of Surgeons on a day in 1925

Lectures

The following were elected to give lectures during the ensuing year

Hunterian Professors—Sir Arthur Keith Six lectures on the evolution of the higher primates P L Knaggs One lecture on osteitis deformans and its connexion with osteitis fibrosa and osteomalacia V Zachary Cope One lecture on extravasation of bile A H Tod One lecture on syphilitic arthritis V E Negus One lecture on disorder of the mechanism of the larynx H J Walsham White One lecture on the pathology of hydronephrosis S Cade One lecture on regional anæsthesia

Arris and Gale Lecturer—C P G Wakeley One lecture on the etiology pathology and treatment of ectopic and imperfect descent of the testis G Scott Williamson Two lectures on the anatomy and physiology of the thyroid apparatus

Erasmus Wilson Lecturer—G W de Poulton Nicholson Three lectures on the nature of tumour formation

Arnott Demonstrator—Sir A Keith Six demonstrations on the contents of the Museum

Appointment and Reappointments

Mr R H Burne was re-elected *Physiological Curator* and Sir F Colyer was re-elected Honorary Curator of the Odontological Collection for the ensuing year Mr D Kennedy Cameron B A Cantab was appointed Assistant to the Secretary during the ensuing year

ROYAL FACULTY OF PHYSICIANS AND SURGEONS OF GLASGOW

THE following have after examination been admitted Fellows of the Faculty W K Anderson, J T H Madill

LONDON SCHOOL OF TROPICAL MEDICINE

THE following candidates passed the examination of this school held at the termination of the seventy-fifth session (April–June 1924)

A W Grace (winner of Laleaca and Duncan medals) B B Yorke W Rae *T Greaves R B Wallace G C Ramsay *R Dick, Miss K. S Captain M L C Irvine V D Wyborn Miss S Tuse J P Fehily W Dunlop Mrs E M Gittins S Nag P G Cochrane J A Waterman R F Bliss H G D Maitland K Ando F A T Bateman F T Fisher K/T K Wallington Miss E K Mackay C G Timms Miss H Keer Miss C B Kibble P V C Ling A E Iles R J Gittins R MacGregor Miss R Scott W S Nealor R H Stanbridge Miss D Mitchell S F Allason D I Nayar H W Torrance G R Waller F K. Dixon Miss G Webster I E Meier I J Caffrey C L S Ewart C R Edibam T Chan Taik T Balmukand G F T Saunders G Khalsa G Pope G E Thot.

* With distinction

The Services

ROYAL ARMY MEDICAL CORPS

Examination for Promotion

IT IS announced in Army Orders that with effect from April 1st 1925 the examination of majors of the Royal Army Medical Corps for promotion to lieutenant-colonel will consist of a written examination in army medical organization and administration in peace and war and of a medical staff tour

DEATHS IN THE SERVICES

Lieutenant Colonel Adam Rivers Steele Anderson Bengal Medical Service (retired) died at Branksome Park Bournemouth on July 5th He was born on March 3rd 1863 and educated at Cambridge where he graduated B.A with honours in 1882 and M B in 1886 he was a student at St Mary's and took the M P C S in 1885 and the D P H in 1889 After holding the office of resident medical officer at St Mary's he entered the I M S as surgeon in 1889 became lieutenant-colonel after twenty years service and retired in 1918 After four years military duty he was appointed surgeon naturalist to the Indian Marine Survey in March 1895 and served on the Royal Indian Marine ss *Investigator* In October 1900 he became senior medical officer at Port Blair in the Andaman Islands the great Indian penal settlement for life convicts recently abolished as such In May 1906 he was transferred to civil employment in Bengal and in April 1912 became civil surgeon of Dakka then the prize station of Bengal In January 1916 he returned to military duty for service in the late war and remained at that duty till his retirement two and a half years later

Lieutenant Colonel Anthony Lennon Brown P A M C (retired) died at Pinhoe Exeter on July 6th aged 81 He was educated at the Ledwich School, Dublin and after taking the L K Q C P and L R C S I in 1866 entered the army as a lieutenant surgeon in 1868 He attained the rank of brigade surgeon lieutenant-colonel in 1891 and retired on December 15th 1897 He served in the Ashanti war of 1873-74 was present at the battle of Amoaful and in the advance on Kumasi was mentioned in dispatches and received the medal with a clasp In the South African war of 1878-79 in the operations against the Galeka and in the Zulu campaign he was present at the battles of Kambula and Ulundi was mentioned in dispatches in the *London Gazette* of May 7th and August 21st 1879 (medal with clasp) in the Sudan campaign of 1884-85 with the Nile column (medal with clasp and bronze star) and in the Sudan in 1885-86 with the Frontier Field Force, when he took part in the action at Ginnis

Obituary.

SIR SYDNEY RUSSELL-WELLS, M D, F R C P,
M P for the University of London

To the great sorrow of a wide circle of friends and colleagues, Sir Sydney Russell-Wells, M P, died suddenly, as the result of a heart attack, on the afternoon of July 14th He had been engaged in his consulting room up to within an hour of the fatal seizure Although always of frail appearance, and giving an impression of lack of physical vigour, his energy in many fields, not limited to his profession, was so marked that his death at the comparatively early age of 54 was totally unexpected

Sydney Russell-Wells was born in London in 1869, and received his early education at the Dorset County School He entered University College, London, and graduated B Sc in 1889 He pursued his medical studies at St George's Hospital, and obtained the Pollock prize in physiology, the Brackenbury prize in medicine, and the William Brown exhibition Afterwards he became successively house-surgeon, house-physician, and medical registrar at St George's He settled in London and was appointed physician at the Seamen's Hospital, Greenwich, and to the National Hospital for Diseases of the Heart

One of the features of his career was the service which he gave in many capacities and over a long period of years to the University of London He became a senator many years ago, and was for a period chairman of the council for external students In 1919 he was elected Vice-Chancellor, and held that office until his election to Parliament as member for the University at the end of 1922 in succession to Sir Philip Magnus His ability as an administrator steered the university through the difficulties attending the reconstructive period which followed the war His speeches on innumerable academic occasions showed his sympathy with and his intimate knowledge of every department of the university's work, and not medicine alone One matter in which he particularly interested himself and brought to fulfilment was the establishment of a degree in commerce Commerce is a field in which some members of his family have attained conspicuous success, and Sir Sydney could speak on commercial subjects with a knowledge rare in a medical man He was also very keen on upholding every jot and tittle of university dignity and precedence In 1923 he was again returned to Parliament with a majority over the combined total of his Liberal and Labour opponents He was not exactly the kind of figure which fits in with parliamentary life and whether he was quite happy in it was known only to himself Once he jestingly compared the House of Commons to an asylum for mental disorder where the warders were known as whips, and where the inmates were allowed out only in pairs But he attended his duties in Parliament with zeal, and his speeches on all academic and medical questions were listened to with respect His action with regard to the Dangerous Drugs (Amendment) Act will be remembered with gratitude by his profession On the day he was first elected to Parliament he told the writer that he intended to consider himself particularly the 'member for Medicine,' in view of the large number of medical graduates of the University he represented

He was a member of the British Medical Association, and many will recall his encouraging speech at the Annual Panel Conference dinner last year, when he expressed his conviction that in the insurance crisis then impending the profession had only to stand united, to trust its leaders and to persevere in its struggle, and it would win the day

Sir Sydney Russell-Wells had represented London University on the General Medical Council since the end of 1918 There he took an active part in the debates on the educational side of the Council's work and was a diligent member of its committees

In private life he was a very unassuming gentle man, readily approachable, and keenly interested in many subjects but especially in science and mechanics, which were his recreations He married, in 1896, the daughter of the late Mr Stephen Smith and Lady Russell-Wells survives him, with a son and two daughters

The Medical Secretary of the British Medical Association writes In Sir Sydney Russell-Wells the medical profession and the Association have lost a very good friend, who used his position in Parliament to advance their interests to the best of his ability He took his responsibilities as a member of Parliament very seriously He was always ready whenever approached to advise us on parliamentary procedure, to put a question in the House, to go and see a Minister or a departmental head, to sit on a committee, or in fact to do anything which he thought was likely to make him more useful to his profession The news of his death came as a great shock, for one always associated with him the idea of intense activity and vivacity, and it is difficult to think of all that energy being suddenly lost We on the staff will miss him very much as an adviser on parliamentary matters

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Dr Duncan MacFadyen, a well known and highly respected practitioner of Inverness, died on June 29th Born seventy-eight years ago in Argyllshire, he received his medical education at the University of Glasgow, and took the diploma of L R C S Edin in 1869 He was able to carry on his professional work in town and country until a few weeks before his death He was a dresser under Lord Lister in the old Royal Infirmary, Glasgow, in 1867 He commenced practice in Dalmally, Argyllshire He was there for some years, and from there went to Ullapool and Beauly, and settled in Inverness forty-three years ago During the time he was there he held several important appointments, civil and military, besides conducting a busy practice Dr MacFadyen was for more than forty years medical officer to the Inverness-shire militia, latterly the 3rd Cameron Highlanders For over thirty years he acted as one of the medical officers to the Inverness parish council and as medical officer to the Inverness post office Dr MacFadyen completed his jubilee as a member of the medical profession in 1919, he was entertained to a complimentary dinner and presented with an illuminated address by his medical brethren in the North A keen sportsman he was often to be seen on some of our Highland lochs, and nearly always returned with a full basket He was also a keen curler Horticulture was one of his hobbies He was a keen supporter of the Established Church, and a Conservative in politics He is survived by two sons the elder of whom, Dr Duncan MacFadyen, *M C*, joint honorary secretary of the Northern Counties of Scotland Branch of the British Medical Association, is in practice in Inverness

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Dr Alfred Mantle, a well known Harrogate practitioner, who died suddenly on July 10th, aged 69, was educated at the London Hospital, where he won both medical and obstetrical scholarships He obtained the diploma of M R C S Eng in 1879, and graduated M B Durh in 1880 and M D in 1882 Before going to Harrogate he practised in Halifax, where he was consulting physician to the Halifax Royal Infirmary, and represented the Halifax Division at the Representative Meetings of the British Medical Association from 1904 to 1907 He was an ex-president of the Harrogate Medical Society, and one of the trustees of the Holt Holiday Homes at Harrogate for Halifax people He recently won the international prize essay competition with a contribution on the treatment of rheumatism, and published many other papers on this and kindred subjects He had been a member of the British Medical Association since 1881, he was chairman of the Harrogate Division from 1916 to 1918, and was formerly a member of the Yorkshire Branch Council A funeral service was held at St Peter's Church, Harrogate, on Saturday, July 12th, at 3 p m, previous to interment at Harlow Cemetery, Harrogate

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Two leading members of the Leningrad Academy of Military Medicine, the physiologists Professor N P Krawkow and Professor Slowzow, have recently died

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Dr A Jalaguier, a well known Paris surgeon and member of the Academie de Médecine, has recently died at the age of 70

Medical News.

THE Maudsley Hospital has now been recognized by the Universities of London, Oxford, and Cambridge and the Conjoint Examining Board of the Royal Colleges of Physicians and Surgeons as an institution where undergraduates may take the course in mental disease preparatory to the qualifying examination. The University of London has also recognized the hospital for the post-graduate work for the M.D. examination in psychological medicine subject to the condition that an advisory committee should be appointed. It consists of two members of the teaching staff, elected by the staff, the medical superintendent of the hospital the director of the pathological laboratory and a member of the hospital subcommittee, who will act as chairman. Patients who leave the London county mental hospitals on trial or on discharge are to be given a card of instruction as to the facilities which exist at the Maudsley Hospital for obtaining advice and if necessary treatment.

NEGOTIATIONS have been completed for the purchase of a site on which to rebuild the Royal Ear Hospital, Dean Street, Soho. This site is situated on the corner of Huntley Street and Pancras Street, Bloomsbury, W.C., and is adjacent to University College Hospital and the new Rockefeller buildings. The chairman, Mr. Geoffrey Dureen, made it possible to commence this scheme by a gift of £15,000 to the hospital, as a memorial to his late father, Mr. Henry J. Dureen.

DR. DOUGLAS MCALPINE has been appointed physician to the department for nervous diseases at the Middlesex Hospital, in succession to Dr. H. Campbell Thomson, who had served on the honorary staff of the hospital for twenty-four years.

THE library of the new house in London of the Oxford University Press in Warwick Square (between Ludgate Hill and Newgate Street) is open to the public and has a librarian in charge who will supply any information required.

THE Inter-State Post-Graduate Assembly, directed by the Tri-State District Medical Association contains, we are informed, about 55,000 members in the United States. Some 300 intend to visit this country and Paris in June, 1925, under the leadership of Dr. W. J. Mayo and will hold their annual congress in London. They will be in London from June 1st to 6th, and afterwards make a tour of England, Scotland, and Ireland. While in London they will visit various clinics. The general arrangements have been placed in the hands of Mr. Philip Franklin, F.R.C.S. (27, Wimpole Street, W.1), who is being advised by a committee consisting of Sir Humphry Rolleston, Bt. (President of the Royal College of Physicians), Sir William Hale-White, K.B.E. (President of the Royal Society of Medicine), Sir StClair Thomson, M.D., and Mr. H. J. Waring, M.S., F.R.C.S. The number of visitors to any hospital will be prescribed, and a series of lectures will be given at the house of the Royal Society of Medicine on June 2nd, 3rd, and 4th. It is expected that the party will consist as to one-fourth of specialists, and that the remainder will be surgeons and physicians in equal proportions. The party will go to Dublin on June 7th and will spend the two following days there, the arrangements are in the hands of Sir William de Courcy Wheeler. From Dublin the party will go to Belfast and then to Glasgow and Edinburgh, where arrangements are being made by Sir Harold Stiles. From Edinburgh they will go to Liverpool, arriving there on June 18th. The party will then divide, some remaining in Liverpool, where arrangements have been made by Sir Robert Jones, others proceeding to Manchester, where Sir William Milligan will be in charge, and others to Leeds, where they will be under the guidance of Sir Berkeley Moynihan. Instead of going to Liverpool members may select to go to Newcastle, where Mr. Grey Turner is making plans for them. The party will return to London on June 21st and then proceed to Paris, where Professor Tuffier is making arrangements for their reception.

DR. JAMIESON B. HURRY, in honour of his daughter's wedding, has presented the royal borough of Reading with another historic picture dealing with Reading Abbey. This picture, painted by Mr. E. Board, shows Edward IV. and his Queen, Elizabeth Woodville, at the Abbey Church on Michaelmas Day, 1464. The presentation of the picture to the town was made on July 1st at the meeting of the Reading Town Council. In asking the Corporation to accept the picture, Dr. Hurry said he did so in the hope that it might please the townspeople of Reading as a work of art, and that it would be of interest to the children in the schools. This is the ninth picture presented to Reading by Dr. Hurry whose researches and archaeological enthusiasm are known not merely to his fellow townsmen, but to many members of his profession.

DR. DAVID MCPHAIL, assistant physician to the Royal Infirmary, Edinburgh, has been appointed Christison Professor of Therapeutics in the University of Edinburgh in succession to Dr. J. C. Meakins, who has become Professor of Medicine at McGill University, Montreal, and director of the new university medical clinic established by the gift of the Rockefeller Foundation in connexion with the Royal Victoria Hospital, Montreal.

LIEUT.-COLONEL E. D. W. GREIG, C.I.E., late I.M.S., has been appointed lecturer in tropical medicine in the University of Edinburgh. Colonel Greig graduated at Edinburgh in 1895, afterwards became assistant to the professor of pathology, University College, London, and entered the Indian Medical Service in 1899. He served on the Sleeping Sickness Commission of the Royal Society in Uganda and was appointed a Director of Medical Research, India, in 1921.

TO meet the difficulty explained by Mr. Maunsell, President of the Royal College of Surgeons in Ireland, last week (p. 77) there has been introduced into the Free State Dail a bill to continue the authority of the General Medical Council and the operation of the Medical Acts for one year, in order to afford time to make such arrangements as may seem best.

THE Queen's University, Belfast, will receive under the will of Mr. J. C. White, formerly Lord Mayor, the sum of £60,000—£45,000 for the department of biochemistry, and £15,000 for the department of bacteriology.

IN connexion with the appeal for the Sir Malcolm Morris Fund, published in our columns of May 10th (p. 841) we are informed that the sum received up to July 14th is £409 8s. 2d. Further subscriptions will be gratefully acknowledged if forwarded to the honorary treasurers, Sir Malcolm Morris Memorial Fund, 12, Stratford Place, London, W.1.

DR. J. R. WHITWELL, on the occasion of his retirement from the post of medical superintendent of St. Audry's Hospital for Mental Diseases, Melton, Suffolk, which he held for twenty-seven years, has been presented by the members of the committee of the hospital with a handsome present of table silver, each article being inscribed with the name of one member of the committee of twenty-four. Dr. Whitwell was president of the Suffolk Branch of the British Medical Association for 1923-24.

A LARGE party of medical students from Bristol University visited the bathing establishment at Bath on July 11th to study the practical application of medical hydrology at the hot mineral baths. They were received by Mr. John Hatton, director of the baths, and after going over the establishment and seeing various demonstrations heard a lecture from Dr. Vincent Coates on the types of diseases chiefly treated at Bath.

MR. W. H. S. JONES has edited the earliest Greek, Latin, and Arabic MSS. of the "Hippocratic Oath" the famous medical oath upon which the ethical rules of the profession have been based. In addition to the MSS. the volume will contain translations, an essay, and an appendix. It will be entitled *The Doctor's Oath. An Essay in the History of Medicine*, and will be published by the Cambridge University Press.

AN Italian league for combating venereal diseases has recently been founded at the suggestion of Professor Ettore Levi.

THE twenty-third Flemish Congress of Natural Science and Medicine will be held at Aalst on August 9th and 10th.

A COURSE in cutaneous and venereal diseases will be held at Strasbourg from September 22nd to November 8th, under the direction of Professor Pautrier. The fee is 200 francs.

THE next award of the Umberto I. prize of the Rizzoli Orthopaedic Institute in Bologna will be made next year. Full particulars can be obtained on application to the president of the Instituto Ortopedico Rizzoli, Bologna.

THE German Pediatric Society will hold its annual meeting at Innsbruck from September 18th to 20th, when the following subjects will be discussed: Immunobiology of tuberculosis, by Bessau of Leipzig. The pathological anatomy of tuberculosis in children, by Koch of Freiburg. The clinical aspects of tuberculosis, especially of the lungs and bronchial glands, by Engel of Dortmund. Roentgenology of the thoracic organs, by Hans Wimberger of Vienna. Roentgenology of the abdominal organs, by Rupprecht of Leipzig.

THE Société d'Anthropologie of Paris which was founded in 1859 by Paul Broca has recently celebrated the centenary of his birth.

A BUST of the late Professor Blanchard, the well-known parasitologist and authority in tropical medicine, has recently been unveiled at his birthplace, Saint-Christophe, in Touraine.

THE late Mr. Forbes Fleet, C.B.E., of Bath, who died on May 23rd, has left property of the value of £19,454, net personalty £13,383.

Letters, Notes, and Answers.

Communications intended for the current issue should be posted so as to arrive by the first post on Monday or at latest be received not later than Tuesday morning

THE telephone number of the BRITISH MEDICAL ASSOCIATION and BRITISH MEDICAL JOURNAL is Gerrard 2630 (Internal Exchange) The telegraphic addresses are

EDITOR of the BRITISH MEDICAL JOURNAL, *Attiology Westrand, London*
FINANCIAL SECRETARY AND BUSINESS MANAGER *Articulate Westrand, London*
Medisecta Westrand London
Office of the British Medical Association, 429 Strand, London, telephone Gerrard 8930, telegrams Attiology, Westrand, London, Office of the British Medical Association, 7 Dorset Street, Dublin (telegrams 4737, *Dublin*), and of the Scottish Office of the British Medical Association, 7 Drumsheugh Gardens, Edinburgh (telegrams *Associate, Edinburgh*, telephone 4361 Central)

QUERIES AND ANSWERS

EMULSIFICATION OF COD LIVER OIL

"PHARMACY"—There is no more efficient or cheaper method of emulsifying cod liver oil on a small scale than that of trituration of the oil with gum acacia and water For success it is necessary that the oil should be subdivided while the viscosity of the mixture is high, after dilution of the mixture with water the oil globules cannot be further subdivided in a mortar Favoured proportions of the mixture for the trituration are eight, two, and three parts respectively of oil, gum, and water, in the order named After emulsification is complete the mixture may be diluted with water *ad libitum* With larger quantities comminution of the oil may be effected by the use of a garden syringe fitted with a nozzle for fine spraying the mixture being diluted for this purpose with a larger proportion of water Good emulsification by the latter method requires the application of considerable muscular strength Manufacturers use engine power for the corresponding operation

INCOME TAX

Cash Basis

"INNOCENT" puts two questions with regard to the results of a change in proprietorship of a practice, the profits of which have been assessed on a cash basis, the tenor of the inquiries may be sufficiently clear from the following replies

*** We must first emphasize the fact that an assessment on a medical practice relates to the profits earned in the year of assessment, the method of taking those profits as being the excess of the cash receipts over the cash payments is only a convenient though theoretically incorrect way of arriving at a reasonable amount to be assessed From this it will be clear that when tax has been paid in respect of a series of years to, say, April 5th, 1924, then tax has been accounted for in all the earnings to that date whether those earnings have been received in cash or remain on the books If 'Innocence" will bear this principle in mind he will see that the answers to his two questions must be as follows (1) A cannot deduct as an expense what he paid for the outgoing partner's book debts—that was a capital transaction purely, neither is the latter liable to tax in respect of those debts which represent past earnings (2) The new proprietors may, of course, discard the cash basis and base their returns on (average) bookings less bad debts, but if they wish to continue the cash basis they must bring in the whole of the receipts, otherwise the result would be an index of something less than the full earnings of the practice for the year of assessment, and for that year the whole of the earnings are divisible between *Innocence* and his partners The outgoing partner is not liable to tax on the debts recovered and handed over to him

"X Y N B" explains that when he retired on October 3rd, 1922, he settled his liability with the inspector of taxes on the basis of paying on money received by the firm up to the date of his retirement Another inspector now seeks to reopen this settlement

*** If—as we presume was the case—the Schedule D liability was based on past average profits the result of deducting from that average sum an amount based on the actual transactions of the year might be to leave too large a residuum to fall on the shoulders of his partner or successor The correct basis of settlement would have been for "X Y N B" to account for his liability as being on one half of what it would have been if he had remained in the practice to April 5th, 1923—less, of course, the appropriate allowance In any case he is not liable to pay tax on book debts after October 3rd, 1922, as such—see reply to 'Innocence' in this issue If "X Y N B" can call on the inspector he might be able to arrive at some reasonable settlement on these lines

MOTOR EXPENSES

DR RUPERT B HICK (Peckham) writes With reference to the inquiry of "J G S" re allowance for car expenses (July 12th p 87), he will find the *Motor Car Log Book* what he wants for keeping accurate records of the use of his car It is obtainable from Mr L A H Stovell, 11, Alexandra Terrace, Exeter, price 1s 1½d post free It is extremely simple, a couple of minutes a day being sufficient to record all running expenses of the car, including mileage, petrol, oil, tyres, repairs, etc I have one in use which I started at the commencement of the current financial year for income tax purposes, and I do not think any inspector could refuse to recognize it

LETTERS NOTES, ETC.

THE CANCER INQUIRY AT LIVERPOOL

"ANOTHER REPORTER" writes I am bold enough to break a lance in defence of my craft Because a Liverpool journalist reported him as saying, "some, if not all" when he actually said, "some, though not all," Dr Adami (July 12th, p 80) speaks harshly of "incompetent and irresponsible reporters," and is at a loss to discover any excuse or explanation for such perversion of his words Compared with the misreportings which occur daily in the press the Liverpool reporter's fault seems venial, however unfortunate the consequences Reporters should be impeccable, of course, but would it not be more just in this case to say that both the reporter and Dr Adami were the victims of misfortune in that a vital distinction was made to depend entirely upon a conjunction in a single sentence without, apparently, anything else in the speech to support it? It is perhaps no defence to plead that the shorthand forms of "if" and "though" are similar, but the reporter might urge some support (see *Century Dictionary*) for the view that the words are interchangeable—that is to say, "*if not all*" *may have the force* of "though not all" Mr Gladstone was once misreported in like manner, and the offending journalist told me with what trembling he awaited the next speech of the great man But Gladstone was too magnanimous—perhaps too wise—to blame '*incompetent and irresponsible reporters*" He passed the error by, although his mangled speech had raised the dust, by saying, "A slip of the pen, or a slip of the tongue, no matter which" In my experience medical orators are similarly indulgent, though not all of them would go the length of a certain President of the British Medical Association whom I heard tell the journalists at the Annual Representative Meeting that he did not mind what they made him say, he asked only one thing of them, that they should spell his name correctly!

CARDIAC PHYSIOLOGY

DR MICHAEL B SHIELS (Erdington, Birmingham) writes Sir J Mackenzie (June 28th, p 1122) says the "law of all or nothing" is not true for the heart contracting in certain circumstances I pointed this out in a booklet I wrote three years ago, I there stated that the heart at times in disease contracts only 1/2 or 1/6 or 1/10 etc, of a "full contraction" Sir J Mackenzie calls this the "law of fluctuation" He may call this truth by whatever name he likes, but I think he should acknowledge the full force of my statements I do not agree with his (1) "the stimulus for contraction of the ventricle arises as impulses thrown out by the sino auricular node", (2) 'these impulses are not electrical" I hold contrary views, elaborated elsewhere In passing, might I point out that full contraction (systole) and full diastole are very vague terms, if we compare the heart to a thermometer that expands to 100° F and contracts to 25° F at each beat when utilized to their utmost limits, then the amplitude of those beats in the same heart must vary according to exercise, age, meals fevers, etc, and the hundred other causes that influence the mechanical elastic heart muscle

UNREGISTERED DENTAL QUALIFICATIONS AND DESCRIPTIONS

THE Registrar of the Dental Board of the United Kingdom writes to say that, as many dental practitioners will shortly be revising the entries of their names in telephone and other directories, he is directed to draw attention to clause 4 (*b*) of the Dentists Act, 1921, which states that a person registered under the principal Act—

> (*b*) shall not take or use, or affix to or use in connexion with his premises any title or description reasonably calculated to suggest that he possesses any professional status or qualification other than a professional status or qualification which he in fact possesses and which is indicated by particulars entered in the Register in respect of him

The Registrar adds that under the Dentists Act, 1878, foreign (for example, American) qualifications cannot be registered by British subjects unless they have practised for over ten years elsewhere than in the United Kingdom and membership of an institute of hygiene is not a registrable qualification

VACANCIES

NOTIFICATIONS of offices vacant in universities, medical colleges, and of vacant resident and other appointments at hospitals, will be found at pages 35 36, 37, 40, and 41 of our advertisement columns and advertisements as to partnerships, assistantships, and locumtenencies at pages 38 and 39

A short summary of vacant posts notified in the advertisement columns appears in the *Supplement* at page 24

EPITOME OF CURRENT MEDICAL LITERATURE.

Medicine.

44 Tuberculous Meningitis simulating Epidemic Encephalitis

M BERNSTEIN (*Journ Amer Med Assoc*, June 14th, 1924, p 1915) points out that in actual practice the differential diagnosis between tuberculous meningitis and epidemic (lethargic) encephalitis is frequently impossible, especially in previously healthy adults In the report of a case of a woman, aged 22, with symptoms of multiple cranial nerve involvement, lethargy, absence of Kernig's sign and of neck rigidity, the diagnosis was only cleared up by the finding of tubercle bacilli in a second examination of the cerebro spinal fluid This shows the importance of repeated examinations for tubercle bacilli in patients with symptoms of epidemic encephalitis A comparison of the symptoms of the two diseases brings out the close clinical similarity which may arise and, as in the case reported, the value of frequent examinations of the cerebro-spinal fluid for tubercle bacilli by smears and animal inoculation as the only means to a correct diagnosis Both infections may occur at any age although tuberculous meningitis is more usual in childhood in both the onset may be insidious with gradually increasing lethargy, ocular palsies, Kernig's sign, and rigidity of the neck muscles The reflexes are variable in both In tuberculous meningitis the cerebro spinal fluid is usually under pressure clear or turbid, showing a pleocytosis with large proportion of lymphocytes In epidemic encephalitis it is usually clear and under normal or slightly increased pressure, with a pleocytosis in about two thirds of the cases

45 Specialized Subendocardial Muscle Fibres

D PACE (*Arch des Mal du Cœur, des Vaisseaux et du Sang* April, 1924, p 193) states that, prior to the discoveries of Tawara, Stanley Kent and His, Paladino (1876) described certain bundles of cardiac muscle fibres which run from the auricles to the ventricles, to the auriculo-ventricular valves and to the papillary muscles They are quite distinct from the bundle of His, in structure and function, although some of them are contiguous with it Kent described two kinds of muscular bundles (1) perivalvular conducting fibres, and (2) communicating fibres (auriculo-ventricular), which he regarded as establishing continuity between the musculature of auricle and ventricle. Pace denies that these "communicating fibres" exist, but he has traced strands of striped heart muscle fibres from the auricles to the venae cavae and the pulmonary veins these do not convey impulses to the auricles, as there is no trace of nodal tissue, this is found only in the sinus node (Keith and Flack) and in Tawara's node—"these are the true automatic centres of the heart" Pace states that a stimulus arises in the sinus node, travels rapidly to the two auricles, "certainly to the right auricle slightly more quickly than to the left" Then directly, without following any particular route it reaches the node of Tawara, thence the stimulus rapidly traverses the bundle of His and its branches, the right branch is shorter than the left, and consequently the right ventricle contracts more quickly

46 Diet and Growth

G MOURIQUAND, P MICHEL, and L BARRE (*Journ Med de Lyon*, February 20th, 1924, p 95) review the present state of knowledge of the nutritional factors of growth as follows An adequate diet for a growing child must provide (*a*) a sufficient number of calories, (*b*) the three categories of foodstuffs—protein, fat, and carbohydrate, (*c*) certain amino-acids which are indispensable for the formation of new tissues ("aliments plastiques"), (*d*) accessory food factors—that is, vitamins and mineral salts The number of calories required per kilo of body weight is highest in infancy and gradually decreases with age For a breast fed child the number is put at 90 for one artificially fed at 100 When the age of 2 years is reached the number of calories required for health has gone down to 67 per kilo body weight, by the age of 5 it is reduced to 62, at 10 it is 54, at 14, 48, and in the adult it is about 37 A certain balance must be maintained between the quantities of protein, fat, and carbohydrate, each element being necessary to the most advantageous employment of the other two by the body The proteins furnish material for the formation of new tissue, but are not all of equal value The amino acid groups lysin, tryptophane, cystine, arginine, histidine, are all necessary for sustenance and growth, and a protein like gelatin, which does not contain these groups in its molecule, cannot further growth, and can only be utilized by the body when these groups are provided by other proteins The proteins of milk contain all the necessary amino acid groups

47 Fragilitas Ossium Congenita

CASTELLI (*La Pediatria*, March 15th, 1924, p 351) records a case of fragilitas ossium congenita When first seen, a few days after birth, the child was found to have fracture of the right and left humerus, of the left femur, and of the left tibia and fibula X ray examination was not undertaken till the baby was 3 months old, seventeen fractures in all were then revealed—one in each of the right third, fourth, and fifth ribs, one in the left humerus, and two in the right, one in each radius and in each ulna, four in the femurs, one in each tibia, and one in the left fibula The characteristic blue colour of the sclerotics was present, but no other abnormalities were found The mother was a primipara and seemed normal and there had been nothing unusual about the gestation No mention is made of the father

48 Complications of Insulin Treatment

K FABER (*Ugeskrift for Laeger* March 27th, 1924 p 265) has observed several cases of sepsis following injections of insulin, although the greatest care was taken to give them under aseptic conditions In one case, in which a benign mitral stenosis had existed for a long time acute sepsis following an injection of insulin was associated with ulcerative endocarditis, which proved fatal In two other cases one abscess after another developed, but the infection was ultimately arrested In addition to these hospital cases there were others in which abscesses developed when the treatment was continued at home after discharge from hospital In the case of a patient who had been treated for four months in hospital without abscesses developing eight abscesses formed after discharge Another patient was admitted to hospital with a severe phlegmonous gangrene in the region of the hip, which had developed as a sequel to the injections The author notes that there is considerable reticence with regard to such cases, and he advocates greater publicity Probably the frequency of insulin abscesses is dwindling, some time ago comparatively "raw" insulin was injected in the hope that its action would be more prolonged than that of purer preparations Another complication to which the author refers is pulmonary oedema, a case of which he has observed It is due to retention of water occurring early in insulin treatment which has suddenly counteracted severe acidosis Reference is also made to the well known symptoms of hypoglycaemia following insulin treatment

49 Enuresis and Spina Bifida

A J A ARNESEN (*Norsk Mag f Laegevidenskaben*, April, 1924, p 299) has carried out *x* ray examinations of most of the children admitted to his hospital during 1922 and the first half of 1923 A few adults were also examined in the same way, and altogether skiagrams of 63 persons were available for a study of the connexion between enuresis and spina bifida Of the 63 persons 28 suffered from enuresis (nocturnal, diurnal, or both) and 35 did not Of the 28 persons suffering from enuresis 15 showed signs of spina bifida and 13 did not of the 35 persons not suffering from enuresis only 7 showed signs of spina bifida and 28 did not Hence the author's conclusion that there is a definite connexion between enuresis and spina bifida He records in detail a case of enuresis and spina bifida in a male, aged 21 on whom laminectomy of the first sacral vertebra was performed with success the enuresis which had been refractory to conservative treatment, not recurring during an observation period of three months after the operation

50 Oxaluria simulating Renal Colic.

E BERNHEIM (*Deut med Woch*, April 11th 1924 p 462) gives an account of three cases simulating renal colic due to calculi Two were men, and the ages of the three were 23 22 and 50 In each case there was a history of bouts of pain referred to one side or other of the abdomen and described in one case as excruciatingly severe, the patient requiring an injection of morphine On the same side as the pain there was unilateral tenderness in the kidney or ureter region The urine contained no sugar or albumin, but in the sediment there were a few leucocytes, epithelial cells, red blood cells, and much calcium oxalate Functional tests of the kidneys cystoscopic examinations and skiagrams failed to show any sign of renal disease or of calculi in the urinary tract Treatment directed

to the oxaluria was completely and permanently successful, no recurrence of the symptoms being observed during an observation period, in the most recent case, of a year and a half The author notes that all three patients showed signs of neuropathy, and he suggests that there is a connexion between a neuropathic and an oxalate diathesis It may be that the excretion of oxalates by robust persons gives rise to no symptoms, whereas the neuropathic experiences sensations very difficult to distinguish from those of a calculus in the urinary tract

Surgery.

51 Late Recurrence of Appendicitis

K KOCH (*Zentralbl f Chir*, March 1st, 1924, p 340) records a case, in a man aged 22, who had been operated on for suppurative appendicitis at the age of 5 The treatment at that time consisted merely in opening the abscess, as radical operation was too difficult and subsequent appendicectomy was refused by the parents The wound did not close until after six months' suppuration, but during the next seventeen years the patient remained free from any abdominal symptoms He was then suddenly attacked by retching and abdominal pain He was admitted to hospital four days later with the diagnosis of appendicitis, and an operation was at once performed On opening the peritoneum an encapsulated abscess on the outer side of the caecum was found from which pus with a faeculent odour was evacuated The stump of the appendix, measuring 2 cm in length and 1 cm in thickness, was then discovered bound down by adhesions with a minute perforation at its gangrenous tip, and a faecal concretion, the size of a pea, at its coecal end The appendix was removed with some difficulty and complete recovery took place Koch has found two similar cases recorded by Bode in which the patients died of diffuse peritonitis originating from an appendix stump about ten years after evacuation of an appendix abscess Like Koch's patient, both had been free from abdominal symptoms in the interval between the two attacks The late occurrence of the relapse in Koch's case was probably due to the presence of the faecal concretion In a postscript, Koch alludes to a paper by Reschke, who records 37 cases of appendicular abscess, of which no fewer than 16, or 43 per cent, had a recurrence Twelve of these occurred in the first, two in the second, and one each in the fourth and fifth years after the operation, which had always consisted in a simple evacuation of the abscess In only one case had the whole appendix been destroyed by the abscess

52 Carrel-Dakin Irrigation for Acute Osteomyelitis

P HEDLUND (*Acta Chir Scand*, May 7th, 1924, p 513) finds that the usual treatment of acute osteomyelitis of the long bones consists in opening the bone, plugging its cavity, and removing necrotic bone later by sequestrotomy The disadvantages of this procedure are the pain, the delay entailed by the necrosis of the bone, and the necessity for a second operation Since 1917 the author has treated twenty one cases by irrigation with Dakin's solution, on the lines laid down by Carrel A comparison of the length of stay in hospital between cases treated (1) with Dakin's solution, and (2) without it, showed that it was on the average only 101 days for the first class, as compared with 261 days for the second class After opening the bone freely and removing all the diseased tissue, the author introduces several Carrel tubes for thorough irrigation Drainage is provided for abscesses in the soft tissues, and care is taken to arrest haemorrhage On the eleventh or twelfth day the irrigation with Dakin's solution is discontinued and the drains are removed This procedure shortens the treatment, renders it practically painless and usually prevents necrosis of bone A further advantage is that the scar formed is comparatively narrow and loose The author insists that the hypochlorite must be of the desired strength one of his failures was traced to the fact that the ready made solution used contained only 0 07 per cent of hypochlorite instead of the 0 475 per cent

53 Acute Appendicitis in Children

G P MULLER and I S RAVDIN (*Journ Amer Med Assoc*, June 7th 1924, p 1852), from an operative experience in 58 consecutive cases of acute appendicitis in children, conclude that operation is indicated in every case regardless of the stage of the disease or of the condition of the patient Prognosis is similar to that in adults and is always good, provided that the case is diagnosed early before inflammation has spread to contiguous structures Expectant treatment is wrong, since acidosis from starvation occurs early and is intensified by sepsis, while the resistance of the peritoneum is less and the danger of metastatic infection greater Diagnosis is often complicated by the fact that the classical symptoms of tenderness, vomiting, involuntary rigidity, and fever frequently occur in children who are not suffering from appendicitis, but these signs, together with a marked leucocytosis, and the results of rectal examination, are important in differentiating between diseases that may simulate it—for example, pneumonia, pyelitis, Pott's disease, gastro-enteritis, faecal impaction, and intestinal obstruction While in infants severe appendicitis may be unaccompanied by any of the classical symptoms, in older children the inflammatory reaction may be more severe than in the adult Pending diagnosis purgation must be avoided and the bowels opened, if necessary, by enemata, a total leucocyte count is most important in establishing a diagnosis, since this is almost invariably high Operation through a muscle splitting incision is advised as affording easy access without exposing large areas of the small intestine, and in many of the cases the abdominal wall was not sutured, thorough drainage being preferable to insufficient drainage through a partially closed incision A resulting hernia is rare

54 Epigastric Hernia

H WILLEMSE (*Nederl Tijdschr v Geneesk*, April 26th, 1924, p 1863) states that in 10,000 cases of hernia of all kinds there are 137 cases of epigastric hernia, 120 of which occur in men and 17 in women The majority are found in men between the ages of 30 and 45 who are engaged in hard physical labour Of twenty five patients operated on by Willemse only one was a female, three were below 20, nine were between 20 and 30, eight between 30 and 40, and four between 50 and 60 Three were employed in work above ground and all the rest below, so that the majority were engaged in very hard physical labour There was no history of direct trauma or of loss of flesh The complaint made by all the patients was pain in the stomach, but in only one case was this localized in the site of the hernia, in all the others it was situated one or two fingerbreadths below the xiphoid process—that is, at a higher level than the hernia The duration of the symptoms ranged from fourteen days to years At first the pain did not radiate to the back, while pressure on the pyloric region did not cause any pain radiating to the mid line as in pyloric ulcer Diet did not appear to have any influence on the pain In most cases there was gastric hypoacidity In twenty two of the twenty five cases the pain in the stomach returned very quickly after the operation, in most within six weeks, so that Willemse came to the conclusion that there was no connexion between the gastric pain and the hernia Spontaneous pain at the site of the epigastric hernia itself appeared to be the only symptom peculiar to the condition

Radiology and Electrology.

55 Lipiodol in Urethral Radiography

SICARD and FORESTIER (*Bull et Mem Soc Med des Hopitaux de Paris*, February 28th, 1924, p 207) refer to the great utility of this oily solution of iodine, which is quite fluid, non irritating, and opaque to x rays Injected into various cavities or canals, it furnishes valuable information in regard to their size, shape, and any anatomical abnormalities Sicard and Forestier refer to its usefulness in examination of epidural and subarachnoid cavities, as well as in skiagraphy of the bronchial tubes They have also utilized it in urethral skiagraphy, as it is non irritant, whereas 10 per cent solutions of collargol, although opaque to x rays, are very irritating to the urethral mucosa The technique is quite simple The patient having completely emptied the bladder, the conical nozzle of a glass syringe of 10 to 20 c cm capacity is inserted into the meatus and the orifice is compressed upon the nozzle After slowly injecting a few cubic centimetres a sensation of resistance is felt this indicates that the anterior urethra has been fully distended Then, while pressure is maintained in order to overcome the contraction of the sphincter, a skiagram is taken Pressure being maintained, a further quantity of 4 to 6 c cm of lipiodol is injected, and on taking a second skiagram, an image of the entire urethra, the meatus, and the neck of the bladder is obtained If necessary, a further quantity (4 to 6 c cm) may be injected into the bladder prior to taking another skiagram Results show that, when distended, the urethra has a diameter of more than 15 mm Contrary to anatomical measurements obtained when the urethra is empty, the membranous portion appears to have the largest diameter The normal urethra from meatus to prostate, when fully distended, shows a very smooth and regular contour On the other hand, from the prostate to the neck of the bladder, the urethra appears as a flattened canal In cases of prostatic hypertrophy the prostatic urethra is characteristically elongated and distorted in structure this appearance is still more instructive, in recent cases the canal is sinuous and dilated, but in more chronic cases the general calibre is greatly reduced and the contour very irregular

56 **Lipiodol in Spinal Radiography**

A RADOVICI, S DRAGANESCO, and A COPOLESCO (*Bull et Mem Soc Med des Hopitaux de Bucarest*, February, 1924, p 27) observe that the discussions at the Neurological Congress in Paris in June, 1923 only confirmed once more the difficulty of making an accurate diagnosis of compression of the spinal cord Numerous clinical observations have not resulted in a classification of pathognomonic signs of compression While examination of the cerebro spinal fluid before and after the onset of paraplegia often gives valuable information, radiography of the compressing tumour is seldom useful, unless there is a bony lesion or a psammoma Hence the importance of Sicard and Forestier s method of epidural or subarachnoid injection of lipiodol—a solution of iodine in a vegetable oil, which is opaque to *x* rays and being heavier than water, falls to the bottom of the dural sac unless arrested by some obstacle—for example tumour cyst, Pott s disease pachymeningitis, etc A few minutes after injection of a drop of lipiodol in the atlanto-occipital or cervical region it may be seen at the level of the first sacral vertebra or the limit of the dural sac unless arrested at some point, which coincides generally with the upper limit of the compression The authors give details of ten cases in which this technique has been employed in Marinesco s clinic They conclude that Sicard s method of intra arachnoid injection of lipiodol is quite harmless in one case only (syphilitic myelitis) the injection was followed by pains in the legs, persisting for a few days In four of their ten cases of paraplegia subsequent radiography confirmed the clinical diagnosis of compression of the cord, while in three cases they were able to exclude the existence of subarachnoid obstruction which had been diagnosed clinically in one of these cases an exploratory laminectomy failed to reveal any tumour In their three last cases lipiodol confirmed the clinical diagnosis of myelitis without compression of the cord

57 **X-Ray Treatment in Exophthalmic Goitre**

G M GOODWIN and W B LONG (*Amer Journ Med Sci*, January 1924, p 38) refer to the differences of opinion as to the etiology and treatment of this disease The risks and uncertainty of operative measures encourage many patients to submit readily to *x* ray treatment The authors give details of nine patients whom they have treated all of whom were of the toxic exophthalmic type with the usual symptoms They received a weekly treatment of approximately two fifths of an erythema dose filtered through aluminium and directed to alternate sides of the neck each week between the upper level of the thyroid and the third rib (in order to include the thymus) A uniform distance of 35 cm from the target to the skin was maintained the aluminium filter was 3 mm thick, the potential was 140 000 volts, and 5 milliampères of current were used for five minutes Such a dose given weekly on alternate sides of the neck may be continued for months without danger of dermatitis, but after six or eight such treatments faint tanning is seen Definite improvement usually commences after five months The most striking feature is the gain in weight in the first five cases one gained 42 lb , one 27 lb , and all the others 15 lb or more The pulse rate showed a fall but was more variable than the other curves There was a striking improvement in the appearance of the patients save for the prominence of the eyes In Case vi there was marked subjective improvement but little visible change The patient in Case vii received twenty two treatments (a larger number than usual) with no improvement She lost 14 lb , became discouraged, and asked for operation, a subtotal resection was done , the gland was adherent to adjacent structures, but no particular difficulty resulted from this In Case viii there were thirty four treatments, with temporary improvement but subsequent relapse In Case ix improvement resulted, but the treatment had to be interrupted The authors conclude that in 5 cases the result has been satisfactory, in 1 case the result is doubtful, and in another treatment was interrupted In the 2 remaining cases the toxaemia seemed to increase in spite of prolonged treatment Full summaries and charts are appended

58 **Gonorrhoeal Arthritis treated by Radium**

A COYON and J GAGEY (*Bull Soc de Ther*, March 12th, 1924, p 85), who record five illustrative cases, state that though radium is not a panacea, in some cases of gonorrhoeal arthritis its application may produce very rapid improvement and almost instantaneous disappearance of pain, so that a complete cure can be effected in a relatively short time through early mobilization of the joint The action of the radium is most marked in early cases When once fibrous ankylosis has occurred the treatment is no longer efficacious The authors suggest that the action of the radium is to be explained by the infiltration of embryonic cells which has been observed in cases of keloid treated by radium

Obstetrics and Gynaecology

59 **Adenomyoma of the Recto vaginal Septum.**

M T GOLDSTINE and S J FOGELSON (*Surg , Gynecol and Obstet* , June, 1924 p 753) describe four cases of adenomyoma of the recto vaginal septum The first patient a married woman aged 31, complained of severe pain and menorrhagia the uterus and adnexa were normal but after division of the peritoneum a cystic tumour containing fluid similar to that of ovarian chocolate cysts was enucleated from the recto vaginal septum The epithelial lining of the cyst was like that of the uterus near the internal os The chief complaint of the second patient, aged 27, was dyspareunia one ovary contained an endometrial chocolate cyst, and sections taken from the recto vaginal septum contained scar tissue and glands composed of a single layer of columnar epithelium In the third case the pelvic findings were negative save for the septal adenomyoma, and serial sections of the uterus failed to reveal adenomatous tissue The fourth patient a nullipara aged 51, complained of recurrent attacks of abdominal pain and vomiting At operation numerous signs of chronic pelvic peritonitis were found, endometrial cells and granulation tissue were demonstrated in islets of tissue removed from the ileum From a study of these and other cases the authors discuss the etiology of endometrial cysts and conclude that the balance of evidence favours the view that they are of inflammatory origin, as maintained by P Meyer and von Franqué In the first case described above the demonstration of mast and plasma cells in the tumour is taken as supporting this view, notwithstanding the fact that the presence of tissue in situations where it is not normally found may cause an aseptic inflammatory reaction

60 **The Pregnancy Reaction of Frank and Nothmann**

A FOYER (*Nederl Tijdschr v Geneesk* , May 17th, 1924, p 2225) states that Frank and Nothmann in 1920 (*Muench med Woch* , No 50) found that administration of 100 g of glucose by mouth on an empty stomach in the first three months of pregnancy produced glycosuria, while the blood sugar content during the excretion of the sugar did not rise above 1 per mille The sign was not present in non pregnant women Nurnberger (*Deut med Woch* , 1922, No 1) who repeated the test in 70 women, confirmed these results He found that 18 women in the first three months of pregnancy all gave a positive reaction and emphasized the value of the test in extrauterine pregnancy, as a positive reaction in doubtful cases made early operation possible Foyer tested the reaction in 155 women, and obtained positive results in 10 out of 18 in the first three weeks of pregnancy, in 56 out of 60 in the first three months of pregnancy later than the first three weeks, and in 12 out of 32 who had been pregnant for more than three months In 43 non pregnant women the test was negative, and in two it failed because the glucose was vomited Foyer concludes that the occurrence of glycosuria with a blood sugar content below 1 9 per mille after administration of 100 grams of glucose is an almost certain sign of a pregnancy which is of longer duration than three weeks and less than three months On the other hand, a negative result—that is, the absence of glycosuria or the presence of glucose with a blood sugar content above 2 per mille—does not exclude pregnancy (in 8 per cent of cases)

61 **Conservative Treatment of Eclampsia**

A C BECK (*Amer Journ of Obstet and Gynecol* , June 1924, p 677) states that up to six years ago the first consideration in treating eclampsia at the Long Island College Hospital was immediate delivery the results were so unfavourable in comparison with those reported by Tweedy, Stroganoff and others, that conservative treatment has since been tried with striking improvement in the mortality An early and large phlebotomy—as a rule 1 litre, immediately after the first convulsion occurring in hospital—is the most important measure gastric lavage has been abandoned, and colonic irrigation reduced to once in twenty four hours for it is believed that these procedures are apt to induce convulsions Morphine is the only sedative drug used—half a grain being given on admission, and a quarter of a grain at hourly intervals until the convulsions cease or the respiration frequency is markedly lowered Much importance is attached to keeping the patient protected from sensory stimuli in a quiet darkened room As a rule eclamptics go into labour spontaneously during treatment or shortly after recovery but if after waiting for several days labour does not commence the author believes that it is right to induce it, in order to avoid a second attack of eclampsia In pre eclamptic toxaemia he advocates induction of labour if no improvement follows the use of eliminative measures

62 Pregnancy and Toxaemia

L E BUNZEL (*Amer Journ of Obstet and Gynecol*, June, 1924, p 686) publishes statistics relating to the incidence, character, and prognosis of pregnancy with toxæmia, defined briefly as a complication of pregnancy manifested by headache, disturbances of vision, oedema, hypertension, and albuminuria, either with or without convulsions The cases considered number 465, being 6 3 per cent of hospital deliveries, and 65 per cent were admitted from the ante partum clinic or from private practice They are classified as—(1) mild, with systolic blood pressure less than 145 mm , slight oedema, and albuminuria not greater than 10 per cent , (2) moderately severe with blood pressure from 145 to 165 mm , pitting oedema, and albuminuria of 10 to 20 per cent , (3) severe, with over 165 mm , massive oedema, and albuminuria over 20 per cent , and (4) convulsive The four divisions made up respectively 23, 35, 31, and 11 per cent Experience is increasingly in favour of conservative treatment in all the groups, and operative induction of labour after the fifth month was performed because of toxæmia in only 14 per cent In the 54 convulsive cases the maternal mortality was 11 per cent and foetal mortality 51 per cent , there were no maternal deaths in the 16 cases of post partum convulsions In the entire series the maternal mortality was 3 per cent , and 72 per cent of the babies born left the hospital in good health An examination of 133 of the mothers was made from ten to twenty two months after labour , of these, 37 6 per cent had a systolic blood pressure of 140 mm or more, and 39 8 had albuminuria Ninety two of these patients showed distinct impairment of renal function as tested by phenolphthalein injections , and of those who while in hospital had had papillary oedema, retinitis, or haemorrhage into the fundus oculi, 31 per cent showed persistence of morbid retinal conditions when examined in the "follow up clinic" No fewer than 41 4 per cent of patients thus re examined are described as showing signs of "cardio vascular renal disturbance"

Pathology.

63 The Virus of Encephalitis and that of Herpes

G ALBIAC and P E FLYE SAINTE MARIE (*C R Soc de Biologie*, June 13th, 1924, p 46) contribute some experimental work towards solution of the problem of the identity of the virus in both herpes and epidemic encephalitis The cerebro spinal fluid of a patient with Parkinsonian symptoms, who had suffered from encephalitis three years previously, was inoculated on to the scarified cornea of a rabbit The animal remained well, and was killed after four months *Post mortem*, it was found to have a slight meningeal reaction, diffuse lymphocytic infiltration beneath the ependyma of the lateral ventricles, oedema around the vessels, and nodular masses of lymphocytes in the neighbourhood of the ventricles A second rabbit inoculated from the first, killed in perfect health after two months, showed perivascular oedema and an abundant lymphocytic infiltration beneath the ependyma In a rabbit inoculated from a case of labial herpes, keratitis developed after two days, and the animal was killed after three weeks Diffuse inflammatory lesions were found beneath the ependyma of the ventricles, including masses of lymphocytes and general perivascular oedema In a rabbit inoculated from a case of facial herpes, kerato conjunctivitis developed on the following day, with convulsions, and death on the seventh day At the necropsy there was found congestion and lymphocytic infiltration of the meninges, infiltration beneath the ependyma of the ventricles, and in the white matter perivascular cuffs of lymphocytes From these experiments they conclude that the cerebro spinal fluid of patients suffering from chronic encephalitis may remain virulent, even though its virulence may be attenuated, that both the viruses of herpes and of encephalitis may give rise to chronic lesions of the brain without the appearance of any clinical symptoms of disease, and that if these two viruses are different there is no way of distinguishing between them by inoculation of rabbits

64 Physiological Leucocytosis in Man

A KOBRYNER (*C R Soc de Biologie*, June 6th, 1924, p 1475) has made a total of 722 observations on himself and others with a view to determining the degree of physiological leucocytosis The capillary blood was examined in individuals subjected to all kinds of dieting, such as total fasting, fasting with ingestion of fluids carbohydrate and fat dieting, mixed dieting, excess of proteins, and dieting exclusively with extractives Moreover the subjects under observation were examined in different postures, and when their mode of life had been altered in various ways His results lead him to conclude that the adult man presents a leucocytic curve which is composed of large waves, in their turn made up of smaller undulations This curve is independent of all the dietetic, postural, and other features mentioned above Ingestion and digestion of food have no influence on this curve or on any of its phases There is no such thing as alimentary hyper leucocytosis or hypoleucocytosis, the particular count that is recorded depends entirely on the moment chosen, if this happens to be during the rise of the curve, then a hyperleucocytosis will be recorded, if, on the other hand, it happens to be during the decline, then a leukopenia will be found It is therefore clear, according to the author, that the method of estimating hepatic insufficiency by the enumeration of leucocytes during the so called haemoclasic crisis is quite untrustworthy

65 A New Method for the Prevention of Bovine Tuberculosis

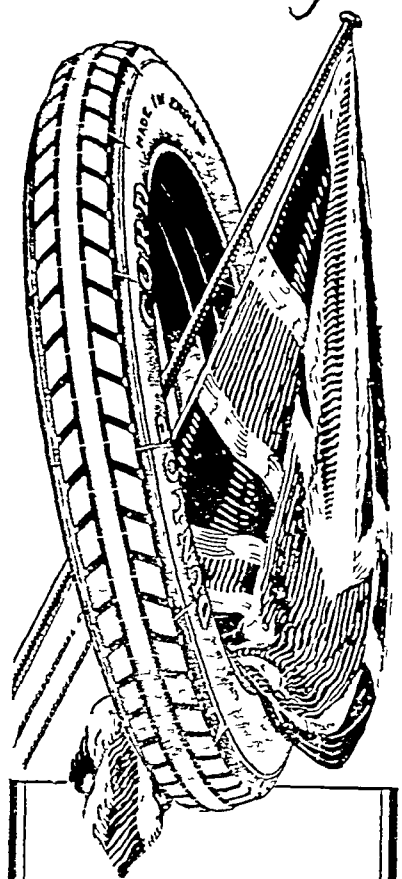
A CALMETTE and C GUERIN (*Ann de l'Inst Pasteur*, May, 1924, p 371) record interesting results obtained in the vaccination of heifers against tuberculosis The organism used was a bovine strain, which, after being grown on glycerin bile potato medium for thirteen years, had become completely avirulent to all species of animals When injected subcutaneously in doses of 50 to 100 mg into the dewlap of a heifer, it gave rise to a non suppurating local lesion which persisted for ten to eighteen months The animal was no worse for the injection Tested by tuberculin it was found to give a positive reaction, which disappeared, however, in six months to a year Having ascertained the harmlessness of injecting these bacilli in the living state, they arranged an experiment in which 20 heifers, aged 7 to 8 months, were taken and divided into two groups In the first group were placed 12 animals , 6 of these received a subcutaneous injection of 50 mg , and 6 a subcutaneous injection of 100 mg of living virulent bacilli The second group of 8 animals served as controls In the case of the vaccinated animals there was a local reaction at the site of injection similar to that described above, a general reaction occurred in three animals with a five days' bout of fever starting on the fifteenth to the eighteenth day All reacted positively to tuberculin At varying periods after injection—namely, 1, 3, 6, 12, 15, and 18 months—two of the animals, together with one unvaccinated control, were given an intravenous injection of 5 mg of virulent bovine bacilli All of the control animals died within two months Of the vaccinated animals, which were killed for examination at periods varying from two to eleven months after the injection of virulent bacilli—including one which died of strongyloid infection of the bronchi—all except one were found to be absolutely free from tuberculosis The exception was one of the animals which was tested eighteen months after vaccination, it was found to have a sclerotic lesion in both lungs, without any definite tuberculous nodules From these experiments it appears that animals vaccinated with an avirulent strain of tubercle bacilli acquire an immunity to tuberculosis which persists for at any rate fifteen months They are able to withstand an intravenous dose of virulent bacilli, fatal to control animals in fifty days, without apparently suffering any ill effects The authors consider that for practical purposes it would be best to revaccinate the animals every year They are now revaccinating herds of normal cattle which have been placed at their disposal

66 Living Defatted Tubercle Bacilli

R ARIMA, K AOYAMA, and J OHNAWA (*Deut med Woch*, May 23rd, 1924, p 666) have investigated since 1916 the possibilities of converting tubercle bacilli into comparatively avirulent germs by robbing them of their fats and lipoids This they succeeded in doing by growing ordinary tubercle bacilli on saponin containing media to which a lipase had been added The bacilli thus cultivated were found to be no longer acid and alcohol fast, but when they were again cultivated on glycerin agar they resumed the properties of ordinary tubercle bacilli Among fifty different strains the authors found seven which on cultivation could be easily robbed of their acid and alcohol fast properties Inoculation tests were carried out on 101 rabbits and 79 guinea pigs The saponin cultures proved to be much less virulent than the ordinary glycerin agar cultures of tubercle bacilli, and it was found that when the experimental animals were given a preliminary injection of the saponin cultures they were much more resistant to cultures of virulent tubercle bacilli, injected some time later, than were the control animals The authors call their emulsion of saponin cultured bacilli "AO," and though they consider its sphere of usefulness to be greatest in the prophylaxis of tuberculosis they have found "AO" beneficial also in early and latent forms of the disease They do not give details as to dosage, and they speak only in general terms of the combined harmlessness and efficacy of their remedy

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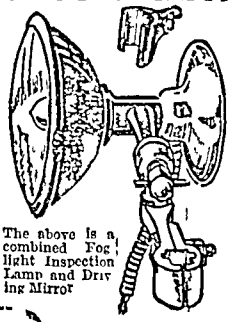
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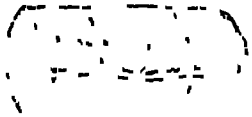
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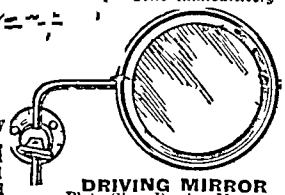
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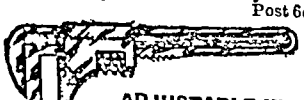
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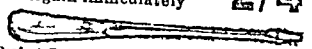
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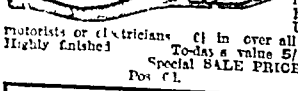
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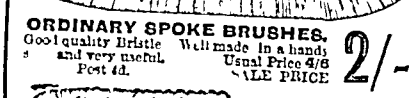
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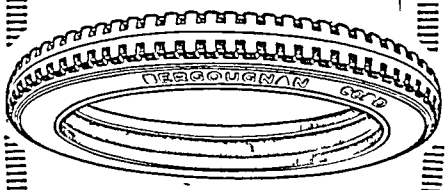


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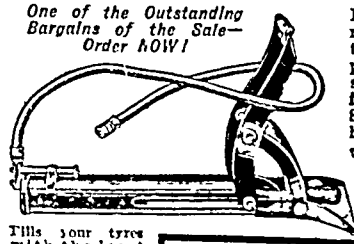
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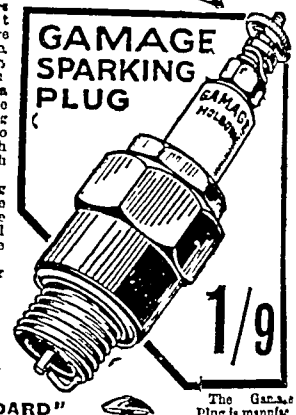
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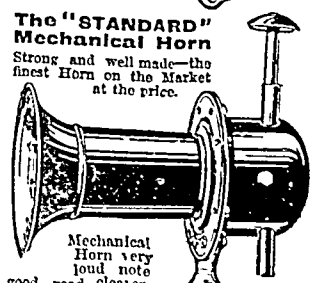
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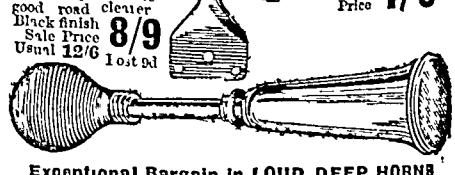
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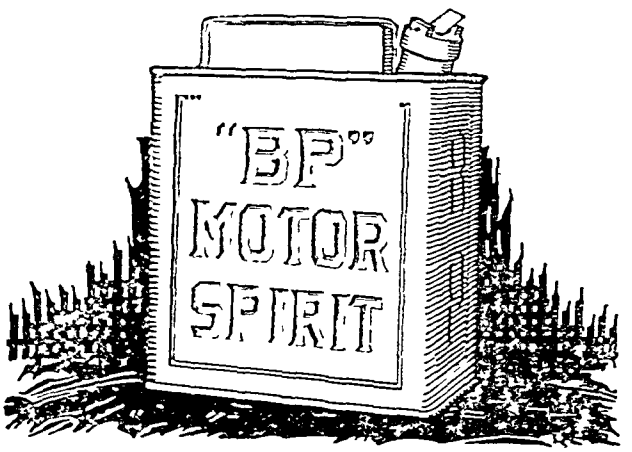


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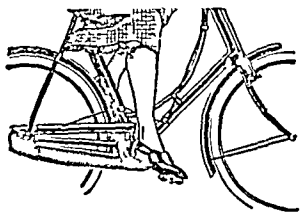
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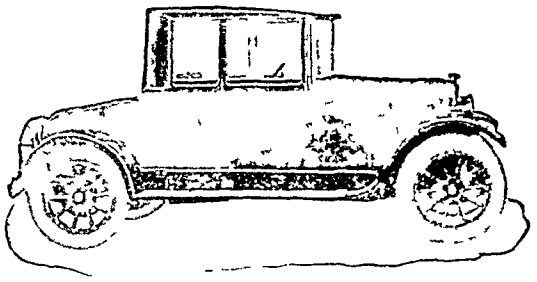
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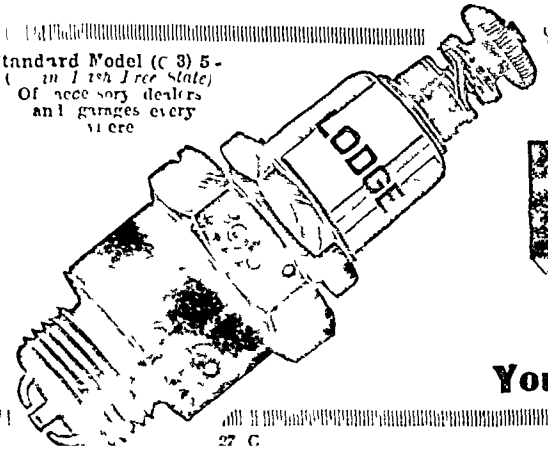


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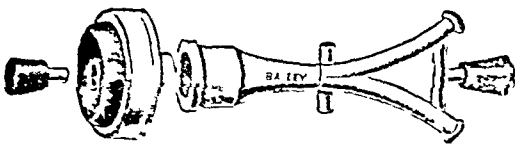
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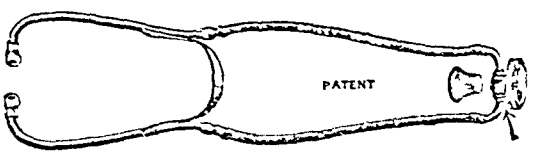
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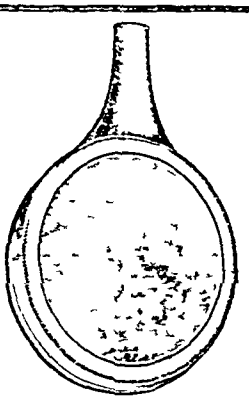
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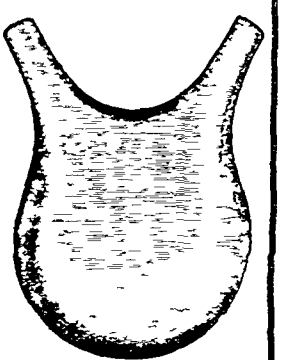
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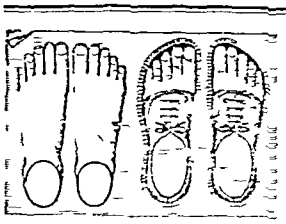
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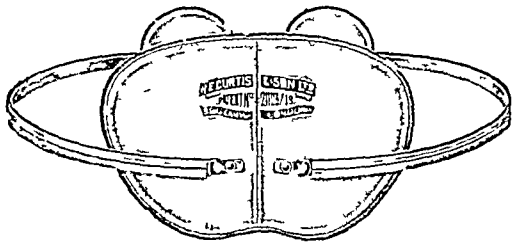
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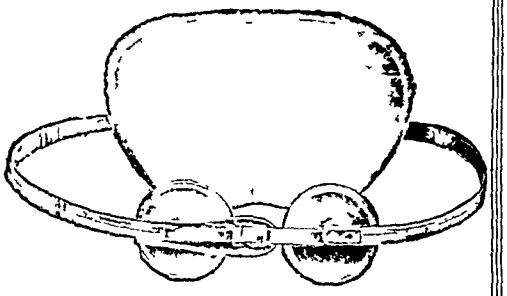
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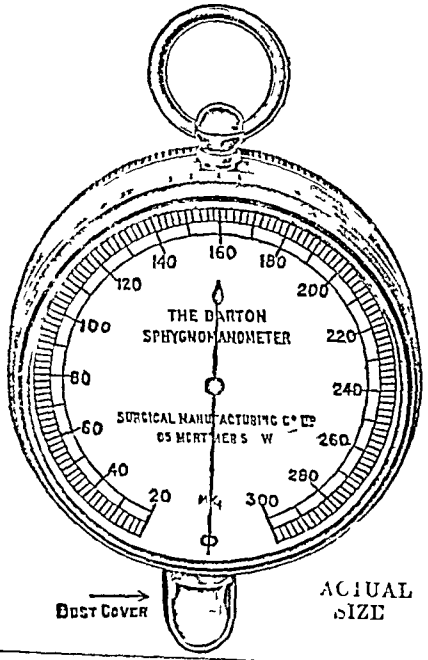
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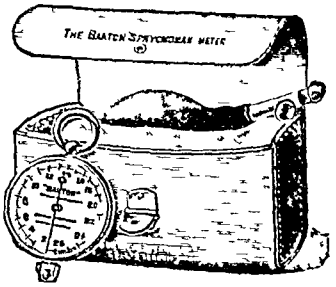
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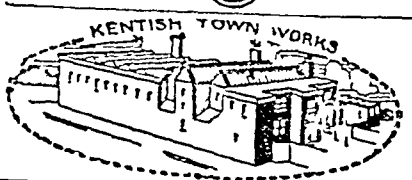
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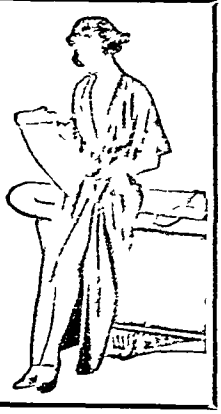
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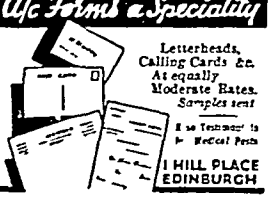
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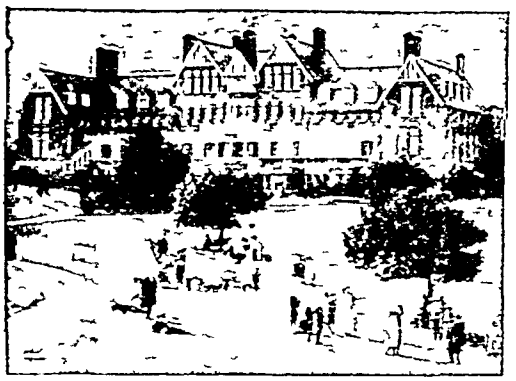
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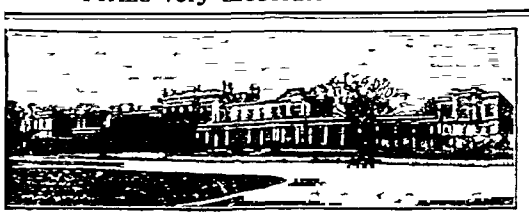
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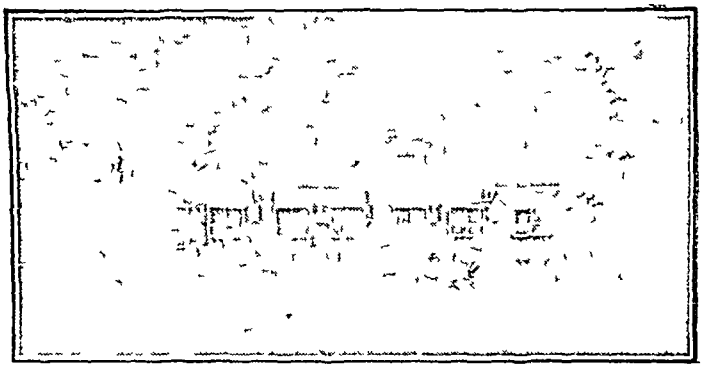
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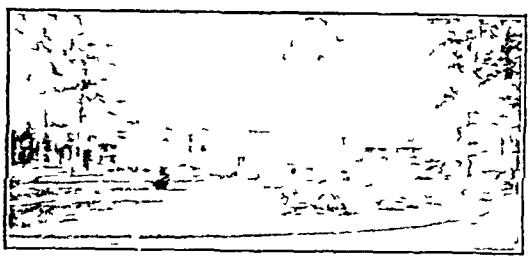
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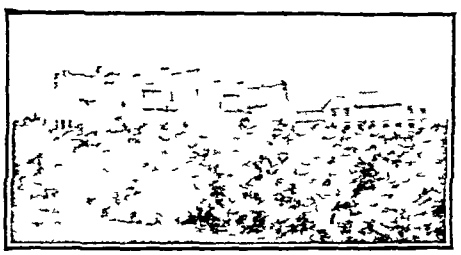
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Assistant Physician Dr J C LORRAINE

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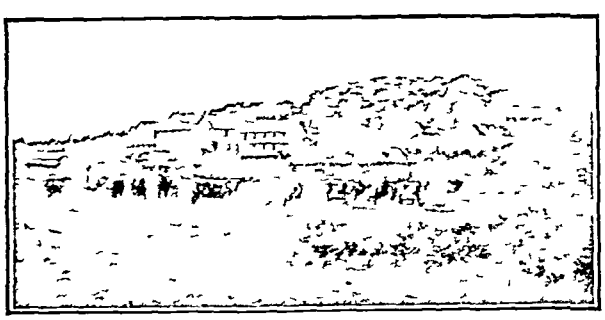
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D.T.M. & H. | **D.O.M.S.**

ORAL CLASSES for M.D., M.R.C.P. & F.R.C.S., also for M.B. B.S., and for Conjoint (Second and Final).

Medical and Surgical Clinics.
Museum and Microscope work.

For MEDICAL PROSPECTUS (32 pages) List of Tutors and particulars about any Medical Examination apply to the Principal, Mr. E. S. WEYMOUTH.

University of Cambridge
DIPLOMA IN MEDICAL RADIOLOGY AND ELECTROLOGY

Six Months' Courses of LECTURES and PRACTICAL INSTRUCTION in Part I. (Physics and Electro-technics) and in Part II. (Radiology and Electrology) will be given in London beginning October 1st 1924 and in Cambridge and London beginning January 7th 1925 for Examination at the end of the Courses.

For further particulars of the London Courses

University of Cambridge

Diplomas in (a) PUBLIC HEALTH (b) HYGIENE (for foreign graduates) and (c) TROPICAL MEDICINE & HYGIENE

COURSES OF INSTRUCTION in the subjects of the examinations under the New Regulations will commence 10th October 1924. Full particulars to be obtained from Mr. I. E. PURVIS, Public Health Chemical Laboratory, Medical School, Cambridge

Medical Department

SANITARY BRANCH

AMENDED NOTICE

Applications are invited from Ceylonese who possess British qualifications in Medicine and Public Health for appointment as MEDICAL OFFICERS OF HEALTH.

There are two grades in the service and the emoluments and qualifications necessary are as follows —

GRADE I

Qualification —D.P.H. or B.Sc. (Public Health) of any British University or other Examining Body in the United Kingdom.
Emoluments —£500—£775 per annum by eight annual increments of £30 and one of £35 and Motor Transport allowance of Rs.85, Rs.70 or Rs.60 per mensem accordingly to weight of car hour allowance according to station for officers *not in occupation of Government* quarters. Officers occupying Government quarters will be charged 10% of their salaries as house rent, if stationed in Colombo, Kandy or Nuwara Eliya and 6% if station elsewhere.
Efficiency Bar —Before £650.

GRADE II

Qualifications—D.T.M. and H. of London, Cambridge, Liverpool, or Edinburgh or Certificate in Tropical Medicine and Hygiene of the London School of Tropical Medicine.
Emoluments —£360—£460 per annum by annual increments of £25.
Same allowance as in Grade I.
Efficiency Bar —Before £500 (i.e. before promotion to Grade I.)
Conditions of Service —First year in Grade II. Probationary.
For admission to Grade I. three years satisfactory service in Grade II. is required.
Applicants possessing on admission to the Service the qualifications required for both Grades will receive an initial salary of £400 per annum and the allowances mentioned above.

Medical Officers of Health are eligible for promotion to an Assistant Sanitary Commissionership. There are at present two such appointments. Salary £800-£960 per annum and house allowance.

For further particulars apply to the Principal Civil Medical Officer and LG.H. Colombo, Ceylon.

National Health Society,
53, Berners St., Oxford St. London W.1.

SPECIAL TRAINING LECTURES
for Health Visitors, Infant Welfare Workers, Women Sanitary Inspectors etc.

SHORTENED COURSE FOR TRAINED NURSES
Recognized by the Board of Education and accepted by the Ministry of Health.

THE NEXT COURSES COMMENCE SEPTEMBER, 1924
Apply The Secretary, National Health Society, 53 Berners Street, W.1.

Shropshire Orthopædic
HOSPITAL, Goldoven, near Oswestry.

COUNTY OPEN AIR WARDS 30 BEDS

GIRL STUDENTS WANTED to learn Orthopædic Work and prepare for the Conjoint Examination of the C.S.M.M.G. Three years training. Salary first year £16, second year £20, all found, uniform.—Apply Miss HUNT, R.R.C.

Small Private Residential
SCHOOL, established 21 yrs. for the Physical and Mental Development of ABNORMAL and BACKWARD PUPILS. Special Department. Pupils over school age. Under Medical Supervision.—Prospectus Mrs. MERKLEJOHN, Principal, St. Paul's House, Upper Maze Hill, St. Leonards-on-Sea.

Barnwood House Hospital
FOR MENTAL DISORDERS
near Gloucester

Required JUNIOR ASSISTANT MEDICAL OFFICER. Salary £350 per annum with board, residence and laundry. Application with copies of three recent testimonials to be sent to the Medical Superintendent.

Indian Medical Service.

The Secretary of State for India announces that Vacancies in the Indian Medical Service continue to be filled by direct appointment

For EUROPEAN OFFICERS of British Nationality to be [illegible] immediate future special terms [illegible] with free £1 000 after [illegible] return passages for those who no longer desire to remain in the Service

Candidates must be under 32 years of age at the time of application and must possess qualifications registrable in Great Britian and Ireland under the Medical Acts now in force

Further particulars can be obtained on application to the Secretary Military Department India Office Whitehall London S W 1 Letters should be marked Recruitment for I M S

The Sudan Medical Service

A MEDICAL INSPECTOR is required immediately for the Sudan Medical Service Candidates must be single and under 30 years of age

They must have held a resident appointment in a large General Hospital Pay commences at £[illegible] 7-0 a year rising to £E 1 200 after 13 years On confirmation in his appointment, the selected candidate will be eligible for pensionable service

Applications in writing, with copies of recent testimonials, should be made to Dr Acland 19, Bryanston Square London W 1, from whom further particulars can be obtained, or from the Secretaries or Deans of the principal Medical Schools

Borough of Jarrow

APPOINTMENT OF MEDICAL OFFICER OF HEALTH

The Jarrow Borough Council invite applications for the above appointment from duly qualified Medical Practitioners who hold the Diploma of Public Health Sanitary Science or State Medicine, with special experience in Public Health work

The person appointed will be required to devote his whole time to the duties of Medical Officer School Medical Officer, Superintendent of the Isolation Hospital and of the Maternity and Child Welfare Centre such duties to commence on October 1st, 1924

The Education Committee will provide him with the assistance of a full time School Medical Officer, for three or four months in each year and a Sp[illegible] of [illegible]

Sealed applications on forms to be obtained from me endorsed Medical Officer' accompanied by copies of three recent testimonials must be sent to me not later than noon on July 31st 1924

GLORGE JOHNSON,
Town Clerk's Office Town Clerk
Jarrow on Tyne July 11th, 1924

Evelina Hospital for Children,

Southwark, S E

The Committee of Management require a HOUSE SURGEON (male) for eight months (during first four months duty in Casualty and O P Dept), and HOUSE PHYSICIAN (male) for six months (during first two months duty in Casualty and O P Dept) both from August 12th Salaries at £120 per annum with board residence and washing Candidates should send applications stating age and qualifications (with dates) together with copies of four testimonials t[illegible] before July 28th registered) will b[illegible] interviewed by the Medical Committee Selected candidates mu[illegible] Time and place o[illegible] under signed from[illegible] lars relating to the post may be obtained

By Order of the Committee of Management,
H O STANILAND SMITH
July 12th 1 4 Secretary

County Mental Hospital,

Mickleover near Derby

Applications are invited for the post of SENIOR ASSISTANT MEDICAL OFFICER (male) Salary £450 per annum rising by four annual increments to £550 per annum with emoluments (furnished apartments board laundry and attendance)

Appointment subject to the provisions of the Asylum Officers Superannuation Act 1909

Applications stating age date of registration qualifications experience, &c with copies of three recent testimonials should be received by the Medical Superintendent by July 30th 1924

Derby County Mental

HOSPITAL Mickleover near Derby

Wanted immediately LOCUM TENENS MEDICAL OFFICER, £8 8s per week, with board &c

Written applications with recent testimonials should be sent to the Medical Superintendent

The Queen's Hospital for

CHILDREN
Hackney Road Bethnal Green E 2
Telephone, Dalston 30o and 31

The Committee invite applications for the post for ASSISTANT SURGEON to the Ear, Nose, and Throat Department

Attendance required on Thursday mornings for about three hours commencing at 9 30 Lunch provided and honorarium to cover travelling expenses

Candidates must be Fellows by examination of the Royal College of Surgeons England

Applications with copies of three recent testimonials which may be printed or typewritten should be sent on or before August 30th to the undersigned from whom further particulars may be obtained.

T GLENTON KERR, Secretary
June 26th 1924

Manchester Royal Infirmary

BARNES CONVALESCENT HOSPITAL,
Cheadle (130 Beds)

RESIDENT MEDICAL OFFICER, to commence duty September 1st 1924

The Board of Management of the Manchester Royal Infirmary invite applications for the above appointment which is tenable for twelve months, subject to the provision of the By laws as to notice

Remuneration is at the rate of £250 per annum, with board and residence

Applicants must state age and send twelve copies of their application and testimonials to the undersigned, by Friday July 25th 1924

FRANK G HAZLLL
July 12th, 1924 Gen Supt & Secretary

[AMENDED NOTICE]

Edinburgh Hospital for

WOMEN AND CHILDREN
Whitehouse Loan

Applications are invited from qualified Medical Women for the posts at the above Hospital of —

1 SENIOR HOUSE SURGEON remuneration at the rate of £60 per annum with board, residence and laundry

2 JUNIOR HOUSE SURGEON non resident remunerat on at the rate of £40 per annum Lunch provided

Appointments are for six months from October 1st.

Applications with copies of testimonials, to be sent to the Convener of the Medical Committee at the Hospital on or before *Friday July 25th*

Birmingham Cripples' Union

Wanted HOUSE SURGEON for the Woodlands Open Air Orthopædic Hospital (97 beds) Salary £250 per annum with board and residence Preference will be given to candidates with previous experience in an Orthopædic or General Hospital The appointment, which is for a period of six months is renewal at the discretion of the [illegible] has [illegible] of [illegible] by July 31st

Birmingham MISS CHRISTINE COX
Cripples Union, General Secretary
42 Islington Row,
Birmingham

City of Birmingham

MUNICIPAL BACTERIOLOGICAL LABORATORY

The Public Health Committee will shortly proceed to the appointment of an ASSISTANT BACTERIOLOGIST and ASSISTANT VENEREAL DISEASES OFFICER at a combined salary of £600 per annum subject to deductions under the Birmingham Corporation Superannuation Scheme

Candidates who must be fully qualified medical men should have had experience in Bacteriological routine more particularly in regard to venereal disease diagnosis and should be capable of assisting in the clinical work of the Venereal Diseases treatment centre

Applications with copies of testimonials should be sent to The Director City Laboratory Lodge Road Hockley, Birmingham, on or before August 1st 1924

Willesden General Hospital,

Harlesden Road N W 10

Applications are invited for the appointment of SURGEON to Out-patients

The appointment is an Honorary one and candidates must be Fellows of the Royal College of Surgeons (England)

In addition to Surgical Out Patient duties the successful candidate will be expected to perform operations when called upon

Applications accompanied by copies of three recent testimonials should be sent before Saturday, August 2nd addressed to the Secretary

Salford Royal Hospital,

(200 Beds)

HON ASSISTANT SURGEON FOR DISEASES OF THE EAR, NOSE AND THROAT

There is a vacancy for the appointment of an Honorary Assistant Surgeon for the Ear Nose and Throat Department and the Board of Management invite applications for the office

All candidates for the appointment must be on the Medical Register and shall not practise midwifery or pharmacy

Applications accompanied by certificates of age and of registration and by not more than six testimonials must be delivered to the undersigned on or before Friday August 1st 1924

Particulars of duties may be obtained on application

By Order of the Board
GEO RUDDLE
July 18th, 1924 General Supt & Secretary

County Borough of Brighton,

RESIDENT MEDICAL OFFICER AT THE BOROUGH SANATORIUM

The Council invite applications for the above appointment from duly qualified unmarried male medical practitioners

The salary will be at the rate of £350 per annum together with board and lodging at the Borough Sanatorium

Forms of application and particulars of the duties to be performed, and of the conditions upon which the appointment will be made may be obtained on application to the undersigned

Applications (with copies of three recent testimonials enclosed) endorsed 'Application for the appointment of Resident Medical Officer' must be delivered at my office before 10 o clock in the forenoon on Tuesday, the 5th day of August, 1924

Canvassing members of the Council either directly or indirectly will disqualify any applicant for the position JAS H ROTHWELL,
Town Hall, Town Clerk.
Brighton July 12th 1924

County Hospital, Lincoln,

(130 Beds)

Wanted JUNIOR HOUSE SURGEON (male), unmarried Salary at the rate of £150 per annum rising to £200 per annum at the conclusion of six months approved service Board, residence, and washing will also be provided

Every candidate for the appointment must be duly registered under the Medical Acts

Applications, stating age and other particulars with copies of testimonials (not more than three), are to be sent to the Secretary Superintendent

Further particulars may be obtained from
ARTHUR MOORE
Lincoln July 10th 1924 Secretary Supt

Rochdale Infirmary

MEDICAL OFFICER required to take charge of the X ray and Electro therapeutic Department A new department is to be erected and new apparatus installed

The successful candidate will be required to confine his practice to Radiology and Electro therapeutics and to reside in the town An honorarium will be paid at the rate of 300 guineas per annum subject to reconsideration after twelve months Special consideration will be given to candidates holding Cambridge diploma

Applications together with testimonials to be addressed to the Secretary Infirmary Office Rochdale

The Royal National Hospital

FOR CONSUMPTION AND DISEASES OF THE CHEST Ventnor Isle of Wight

A Male SENIOR RESIDENT MEDICAL OFFICER required of British Nationality The appointment will be for six months in the first instance Salary £300 per annum, with board and residence in the Hospital

Candidates must be doubly qualified registered and unmarried Previous hospital experience essential and knowledge of tuberculosis work and and bacteriology desirable Applications stating age and qualifications with one copy of three recent testimonials may be sent to the Medical Superintendent Royal National Hospital for Consumption, Ventnor, Isle of Wight.

July 7th 1924

Bedford County Hospital.

Wanted for a term of not less than six months an ASSISTANT HOUSE SURGEON unmarried male duly qualified to act in Medicine and Surgery Salary £130 with board lodging and laundry

Applications stating age qualifications medical school together with three recent testimonials must be sent to

BEAUCHAMP WADMORE
July 14th, 1924 Secretary

APPOINTMENTS—Important Notice.

(a) British Islands.

Medical Practitioners are requested not to apply for any appointment referred to in the following table without having first communicated with the Medical Secretary of the British Medical Association, 429, Strand, London, W C 2

Town or District	Town or District	Town or District
CONTRACT PRACTICE.		
ENGLAND	**WALES** *(continued)*	**PUBLIC HEALTH** *(continued)*
CANNOCK CHASE AND DISTRICT, *(Club and Friendly Societies Appointments)*	OGMORE VALLEY, GLAMORGAN *(Wyndham Colliery Medical Aid Society)* *(Workmen's Medical Scheme)*	HUNTINGDON ADMINISTRATIVE COUNTY *(Assistant County Medical Officer and Assistant School Medical Officer)*
MIDDLESBOROUGH *(Medical Aid Associations or Workmen's Clubs)*	TONDU & ABERKENFIG GLAMORGAN *(Workmen's Medical Scheme)*	LINCOLN CITY EDUCATION AUTHORITY. *(Woman Assistant School Medical Officer)*
SOUTH BANK & ESTON *(Medical Aid Associations or Workmen's Clubs)*	**PUBLIC HEALTH.**	MIDDLESBROUGH EDUCATION COMMITTEE *(Assistant School Medical Officer)*
WALES	ABERDEENSHIRE EDUCATION AUTHORITY *(Assistant School Medical Officer)*	NORFOLK EDUCATION COMMITTEE. *(Assistant School Medical Officer)*
ABERTRIDWR, GLAMORGAN *(Windsor Colliery Medical Scheme.)*	ARGYLLSHIRE EDUCATION AUTHORITY *(Executive School Medical Officer)*	NORTHUMBERLAND COUNTY COUNCIL *(Woman Assistant Medical Officer of Health)*
EBBW VALE MON *(Workmen's Medical Society)*	BARNSLEY COUNTY BOROUGH *(Assistant Medical Officer of Health and Assistant School Medical Officer)*	NOTTINGHAMSHIRE *(County Medical Officer of Health)*
GILFACH GOCH GLAMORGAN *(Workmen's Medical Society)*	FIFE EDUCATION AUTHORITY *(Assistant School Medical Officer)*	SOUTHWARK METROPOLITAN BOROUGH *(Tuberculosis Officer)*
LLWYNYPIA CLYDACH VALE PENYGRAIG GLAMORGAN *(Workmen's Medical Scheme.)*	HUDDERSFIELD COUNTY BOROUGH *(Woman Assistant Medical Officer of Health)*	STOKE ON TRENT EDUCATION COMMITTEE *(Assistant School Medical Officer)*
MARDY GLAMORGAN. *(Workmen's Medical Scheme)*		YORKSHIRE NORTH RIDING COUNTY COUNCIL *(Assistant School Medical Officer)*
OAKDALE MON *(Medical Officer for Medical Aid Association)*		

(b) Colonial Medical Service.—WINDWARD ISLANDS MEDICAL SERVICE (Grenada with Carriacou St Vincent and St Lucia)

(c) Overseas Appointments.

Medical Practitioners are requested not to apply to any appointment referred to in the following table without having first communicated with the Honorary Secretary of the Division or Branch named in the second column or with the Medical Secretary of the British Medical Association, 429, Strand, London, W C 2

Town or District	Hon. Sec. of Division or Branch.	Town or District	Hon Sec of Division or Branch.	Town or District	Hon Sec. of Division or Branch
NEW SOUTH WALES *(All Friendly Society Appointments)*	Dr R H TODD (Hon Sec New South Wales Branch) B M A. Building 30-34 Elizabeth Street Sydney N S W	QUEENSLAND *(Brisbane Associated Friendly Societies' Institute.)*	Dr R MARSHALL ALLAN (Hon Sec. Queensland Branch) Adelaide Street Brisbane	VICTORIA *(All Institute or Medical Dispensaries.)*	Dr FRANK DAVIES (Hon Sec., Victorian Branch), Medical Society Hall E Melbourne, Victoria
				WESTERN AUSTRALIA. *(Contract and Lodge Practices.)*	Hon Sec., Western Australian Branch, No 6 Bank of New South Wales Chambers St George's Terrace, Perth

Address 429 Strand, W C 2
July 16th 1924.

By order of the Council of the British Medical Association
ALFRED COX, Medical Secretary

City of Liverpool

APPOINTMENT OF MEDICAL OFFICER OF HEALTH

The Corporation of Liverpool invite applications for the position of Chief Medical Officer of Health of the City and Port and Education Department, at a salary of £1 800 per annum The duties will be those prescribed by Statute subject to such variations in administration as the City Council may from time to time direct

The gentleman appointed will be required to devote his whole time to the duties of the office and will not be allowed to engage in private practice and all emoluments out of public moneys which may be payable to or received by him will have to be paid to the Corporation

He will also be required to contribute to the Corporation Superannuation Fund

Canvassing of members of the Council is prohibited.

Particulars of duties may be obtained on application with

endorsed Medical Officer of Health "addressed to the Chairman of the Health Committee under cover to the Town Clerk Municipal Buildings Liverpool must be delivered at the Town Clerk's Office Liverpool not later than July 31st 1924

By Order
Town Clerk's Office WALTER MOON
July 8th 1924 Town Clerk

Seamen's Hospital Society

The Committee of Management invite applications for the appointment of SURGEON at the Hospital for Tropical Diseases Endsleigh Gardens N W 1

Candidates must be Fellows of the Royal College of Surgeons of England.

The appointment carries with it a seat upon the Medical Council

The elected Candidate will be appointed for twelve months but will be eligible for re-election

Applications with copies of not more than three recent testimonial which should be printed or typewritten to be sent in on or before 20th inst to the undersigned from whom further particulars can be obtained By Order
Seamen's Hospital Society P J MITCHELLI
Greenwich Secretary
July 7th, 1924

The Royal Infirmary, Sheffield.

A MEDICAL REGISTRAR is required at the Royal Infirmary

Candidates are invited to send in their applications addressed to the Secretary with copies of no more than three testimonial before Friday July 18th 1924

The appointment is made for one year but may be held for a further agreed period

Salary and emoluments value £400 per annum
JNO W BARNES Secretary

The Royal Infirmary, SHEFFIELD (581 Beds.)

There is a vacancy at the Royal Infirmary for an ASSISTANT SURGEON and notice is hereby given that in accordance with Rule No 39 the Election Committee with whom the appointment rests will proceed to fill up the vacancy at a Special Meeting to be held at the Royal Infirmary on Wednesday July 23rd 1924 at 11.30 o'clock

The appointment will be for seven years only subject to re-election on the expiration of such term

Candidates are requested to forward applications with diplomas and testimonials to the Secretary on or before Monday July 21st instant

Board Room JNO W BARNES
July 9th 1924. Secretary

The Royal Infirmary, Sheffield (633 Beds)

The Weekly Board of Management invite applications for the post of OPHTHALMIC HOUSE SURGEON

The salary attached to the appointment is £60 per annum with board and residence

There are 32 ophthalmic beds, and the post offers exceptional opportunities of gaining experience in Ophthalmology

Applications with copies of testimonials to be addressed to the undersigned

Board Room, JNO W BARNES
July 4th 1924 Secretary

Wanted—Assistant with view to Partnership Age about 30 Married or about to marry Industrial practice North England town doing £2 300 cash 2 400 panel Strictly temperate energetic and conscientious Three rooms and kitchen provided at Surgery £400 per annum Other things considered preference to one with little capital State experience nationality, &c Usual bond —Address No 3552 BRITISH MEDICAL JOURNAL Office 429 Strand W C 2

Wanted by large Company for their Eastern staff an unmarried MEDICAL OFFICER age not exceeding 30 years Liberal terms will offered to suitable Candidates Full particulars of school and college training and hospital and other experience, together with professional references, should in the first instance be sent to Box No 418 SHAW & BLAKE, 8 Bell Yard, Temple Bar W C 2

Wanted—Assistantship, with view to early partnership by M B, Ch B, aged 24½ Scotch Good experience in practice, panel, private, and midwifery Good anæsthetist Excellent refs Free at present—Address No 3556 B M J Office, 429, Strand, W C

Wanted—Assistantship by M B, B S (Lond) M R C S, L R C I aged 30 British nationality Hospital appointments surgical and medical Good anæsthetist and accoucheur Excellent testimonials—Address, No 3576, B M J Office 429 Strand W C 2

Wanted, by medical woman, ASSISTANTSHIP or LOCUM Qualified 1920 Ex H S, and ex H P, at London teaching hospital and provinces Special exp children and anæsthetics English strong, keen Excel testmls Free now—Address No 3571, B M J 429, Strand

Wanted—Assistant, with view to partnership South Coast Town (Sussex) Must be capable Surgeon preferably F R C S—Address full details to No 3498 BRITISH MEDICAL JOURNAL Office 429 Strand, W C 2

Wanted—Assistant, in general practice in small country town in Cheshire In or Outdoor—Address, No 3557 BRITISH MEDICAL JOURNAL Office 429 Strand W C

Wanted—Part time Assistant, 3 days a week—Apply personally between 11 and 12 any morning—103 Bethnal Green Road E 2

Assistantship wanted by M B B Ch (woman)—country or town—preferably near University Experienced one year general practice (panel and private) energetic cyclist &c Locum considered—Address No 3563 BRIT MED JOURN Office 429 Strand, W C 2

Assistantship wanted by M B Ch B Young energetic abstainer Free immediately salary £200 (indoors) Address, No 3711 BRITISH MEDICAL JOURNAL Office, 429, Strand W C 2

Attendant & Valet combined wanted very shortly West of Scotland delightful surroundings for gentleman (dipsomania) Must have good reference total abstainer middle aged Situation permanent—Address No 3546 BRITISH MED JOURNAL Office 429 Strand W C 2

Nurse Secretary to Doctor.—London Hospital [illegible] early autumn 2 years Aged 28 Typewriting to keeping Patients [illegible] MACKLIN, Forest Hospital Buckhurst Hill Essex

Pathological and Bacteriological LABORATORY ASSISTANTS ASSOCIATION—Pathologists and Bacteriologists requiring SKILLED CERTIFICATED LABORATORY ASSISTANTS are invited to communicate with H P HUDSON Hon Secretary, Panama Villa, Trumpington Camb—No Fees

Physiology, M A, M B, Ch B Woman Scotch passed Final B Sc exam in Physiology and done two years chemistry WISHES POST permanent or vacation medical or otherwise—Address No 3562 BRITISH MEDICAL JOURNAL Office 429 Strand W C 2

Secretary-Receptionist seeks POST with London doctor or dentist Experienced Excellent testimonials—Address No 3574 BRITISH MEDICAL JOURNAL Office 429 Strand W C 2

Wanted—Lady Dispenser and BOOKKEEPER experienced in surgery routine State age salary required, and all other particulars—Address, No 3578 BRITISH MEDICAL JOURNAL Office 429 Strand W C 2

Dispenser-Book-keeper wanted Lancashire—House coal, light State wages References required—Address No 3461 BRITISH MEDICAL JOURNAL Office 429, Strand, W C 2

Dispenser-Book-keeper. Young Lady requires POST quick neat Excellent testimonials 5 years one post—Address, No 3549 BRITISH MEDICAL JOURNAL Office, 429, Strand W C 2

Dispenser Bookkeeper (Lady) DESIRES POST with Doctor (Resident) Three years experience and excellent testimonials Address No 3561 BRITISH MEDICAL JOURNAL, 429, Strand, W C 2

Dispenser (Male) seeks position with Doctor Anywhere Could keep books—MILLS, 17, Wrotham Road, Barnet, Herts

Doctors requiring Lady DISPENSERS should write to Mr J E WALDEN Westminster College 112 St George's Road S E 1 (only address) No fees to Doctors 25 years experience Daughters and other relatives of medical men always in training

Lady Dispensers supplied, qualified experienced, and also trained in Bacteriological Laboratories of the LONDON COLLEGE OF PHARMACY FOR LADIES Preparation for Examinations Blood sugar estimation before and during Insulin treatment can be carried out by those Dispensers recently qualified from the College—Secretary, 7, Westbourne Park Road W 2

Lady Dispenser, qualified and fully trained by Doctor, seeks re engagement N H I Bookkeeping and typing £75 resident but would live out if preferred Doctor's reference—Address No 3547 BRITISH MEDICAL JOURNAL Office 429 Strand W C 2

SCALE OF CHARGES FOR ADVERTISEMENTS

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Note—It is against the Rules of the Post Office to receive *poste restante* letters addressed either in initials or numbers

Lady Dispenser (Hall), book keeper Typewriter partly trained nurse experienced free now DESIRES POST with Doctor, Locum or permanency—Address, No 3565, BRITISH MEDICAL JOURNAL Office, 429, Strand W C 2

Qualified Dispenser, thoroughly experienced in Surgery routine and Secretarial work seeks POST in London Excellent references Drive car if required—Miss PILGRIM, 41 Barkston Gardens S W 5

Wanted by experienced M B, aged 32 years two weeks hospitality LOCUM (wife and one child 5 years) London or near, 2 weeks in August Anxious to acquire soon, practice with good panel, London or near—Address No 3484 BRIT MED JOUR 429 Strand W C 2

LOCUM TENENS
PROVIDED
Without fee to Principals
Apply to
Mr. W. S. ATKINS
(Late of ARNOLD & SONS, London)
43, BEDFORD STREET, STRAND, W C 2.
Telegraphic Address
'Positions Westrand, London
Telephone Regent 249

FOR LOCUM TENENS APPLY TO
Mr. PERCIVAL TURNER,
The Oldest and only Agent who for 40 years has supplied substitutes at short notice without fee to principals
4, ADAM STREET, STRAND, LONDON, W C 2
Teleg: "Epsomian London Phone Gerrard 2

As Locum—Lady Dispenser, experienced (Hall Cert), desires further engagements for July and August High references—Address No 3544 BRITISH MEDICAL JOURNAL Office 429 Strand, W C 2

Englishman practising in Riviera, will act as LOCUM in small good class London practice, during end of July and August in return for hospitality for self and wife No midwifery—Address, No 3704 BRITISH MEDICAL JOURNAL Office 429 Strand W C 2

Holiday Exchange.—Practitioner, Yorkshire two miles from seaside resort and moors wishes EXCHANGE WITH LONDON DOCTOR, late August or September about a fortnight—Address No 3575 BRITISH MEDICAL JOURNAL Office 429 Strand W C 2

Holidays.—G P, with family, inland country town, beautiful district would exchange for August, with doctor and family, South west seaside place—Address, No 3570 BRITISH MEDICAL JOURNAL Office 429 Strand, W C 2

Hospitality—Medical Man, aged 34 with own practice, requires LOCUM with hospitality for wife child and nurse from September 1st, for 2 weeks, at the seaside Small fee in addition—Address, No 3567 BRITISH MEDICAL JOURNAL Office 429 Strand W C 2

Hospitality Locum—Experienced medical man, recently disposed of Practice, will undertake Locum work Terms £4 4s Od per week, and hospitality for wife Willing to drive own car by arrangement—Address No 3577 BRIT MED JOUR Office 429 Strand W C

Hospitality Locumcy in Cotswolds offered to doctor (and family) Duties light Beautiful country Comfortable house and garden—Address No 3702 BRITISH MEDICAL JOURNAL Office 429 Strand, W C 2

Locum Engagements wanted by an M B Ch B of Aberdeen Has wide experience of general practice private panel, and midwifery Free to engage from August 1st Terms moderate especially so if the work is light—Address No 3701 B M J Office 429 Strand W C

Locum wanted, in pleasant position near Cathedral from Aug 23rd for about three weeks Cycle or petrol for own Car Hospitality for wife (or wife and child) by arrangement if desired—Reply to Dr DARBYSHIRE, Attn Place, Lincoln

Locum wanted for July, August and September, by M B, Ch B Edin (woman) Good anæsthetist Good testimonials South preferred—Address, No 3705 BRITISH MEDICAL JOURNAL Office 429 Strand W C 2

Locum work required, August and September by experienced G P, ex (T) R A M C Moderate fee—Address, No 3707 BRITISH MEDICAL JOURNAL Office 429 Strand W C 2

Locum Tenens—Practitioners desirous of engagements should register with the MEDICAL AGENCY 24, London Road Manchester

M B, C M (Edin), is now at liberty to act as Locum Has had ten years experience Is steady and well received—Address No 3560 BRITISH MEDICAL JOURNAL, 429 Strand W C 2

Wanted by M A, M B., [illegible] aet 33 PARTNERSHIP in [illegible] in easy access [illegible] annum Ample [illegible] BRITISH MEDICAL

Wanted, half share Partnership with early view to Succession in Country Practice Market town preferred, receipts £1 500 or over panel about 1 000 house with garden large enough to contain a tennis court—Apply, No 1604 REYNOLDS & BRANSON Ltd 13 Briggate Leeds

Wanted, in a few months' time a PARTNER in an old-established practice in Cornwall. Must be keen on surgery, as there is scope for a competent operator. Hospital and Nursing Home. Visiting fees up to one guinea (a few). Appointments. Panel over 2,000. Not much midwifery. Dispenser and book-keeper kept. Average receipts for the past three years £3,500 p.a. One-third share for disposal to begin with at once, an additional half-share purchasable at ultimate success on. Outgoing Partner's share available. Call 10 mins. —Address No. 3559, B.M.J. Office, 429, Strand, W.C.

Wanted —Partnership in West End, £1,500 upwards. No house required. Available immediately. Aged 27.—Address No. 3558, BRITISH MEDICAL JOURNAL Office, 429, Strand, W.C.

Edinburgh (near) — Wanted PARTNER, one of three in old-established extensive Practice for present hard-working Partner, £1,250 with good prospect; premium £1,500. Must be qualified man about 40 with good experience. State age and personal and professional qualifications.—Address No. 3173, BRIT. MED. JOURN. Office, 429, Strand, W.C.

Partnership in Yorkshire Practice near coast; excellent house with large garden, etc.; can be purchased or rent £40 p.a. Railway station near and town of 6,000 population two miles distant with Cottage Hospital. Half share offered premium £1,500.—Apply No. 2132, REYNOLDS & BRANSON, Ltd., 13, Briggate, Leeds.

Partnership —Large Midland Town. Panel, Private and Appt. Half share for disposal. Gross Fees about £1,500.

G. M. A.
19, Victoria Street,
NOTTINGHAM.

Partnership introduction to Practice in pleasant Yorkshire town of about 7,000 population; good railway communication; receipts of practice about £1,600.—Apply No. 2131, REYNOLDS & BRANSON, Ltd., 13, Briggate, Leeds.

Partner wanted, in 30 years established Practice, Lancashire Town; 1 years purchase premium £1,500; view to succession.—Address No. 3568, BRITISH MEDICAL JOURNAL Office, 429, Strand, W.C.

Wanted — Small Practice income £700 to £1,000. Riverside Suburb of London or S.E. or S.W. Coast town. Must have good house; not less than 5 bedrooms (more better). Purchaser is well qualified capable surgeon and good occulist. Could take over November.—Address No. 3708, BRITISH MEDICAL JOURNAL Office, 429, Strand, W.C.2.

Wanted by well-qualified practitioner a PRACTICE situated in the West End of London. Income to be £1,000 upwards; preferably without panel. Medium-sized house to rent. Full details (in confidence) to Mr. W. H. GRANT, 50, Wigmore Street, W.1. (No charge unless sale effected.)

Wanted —Private and panel PRACTICE or PARTNERSHIP yielding £1,000 to £3,000 a year in or near London or large Provincial town. Necessary capital available.—Apply PEACOCK & HADLEY, 19, Craven Street, Strand, W.C.2.

Wanted in Birmingham or district a sound PRACTICE, income of £1,000 up with panel. House to rent. Full details (in confidence) to Mr. W. H. GRANT, 50, Wigmore Street, W.1. (No charge unless sale effected.)

Wanted —Self-contained Panel and General PRACTICE in or near London producing £1,000 to £1,200 per annum. Cash available. Particulars in confidence.—Address, No. 3706, BRITISH MEDICAL JOURNAL Office, 429, Strand, W.C.2.

Wanted by F.R.C.S., aged 35, a PRACTICE or PARTNERSHIP in town in the S. or Midlands with scope for surgery. Income about £1,000. Now free and can pay cash.—F., c/o BLUNDELL & Co., 22, Craven Street, Strand, W.C.2.

Wanted in London or Suburb, a PRACTICE returning from about £800 to £1,200 a year. Can pay cash down. No Agents.—Address No. 3566, BRITISH MEDICAL JOURNAL Office, 429, Strand, W.C.2.

Wanted —Practice of £1,000 to £1,500. House on lease, no panel, and non-dispensing practice preferred.—Address No. 3569, BRITISH MEDICAL JOURNAL Office, 429, Strand, W.C.

Wanted, in London or Suburbs, PRACTICE with panel of from 1,500 to 2,500. Immediate capital available. Small house preferred.—Apply No. 4832, c/o Mr. PERCIVAL TURNER, 4, Adam Street, Strand, W.C.2.

Wanted in Autumn, a Panel of 1,500 to 2,000 in Southern Counties. Hants preferred.—P., c/o BLUNDELL & Co., 22, Craven Street, Strand, W.C.2.

City Practice wanted, with Appointments, by M.R.C.P. Lond. Capital available at once.—Address No. 3479, BRITISH MEDICAL JOURNAL Office, 429, Strand, W.C.2.

Co. Durham —Old-established PRACTICE. Good house, garden, stabling. Receipts £750 (£700 from panel). Much scope. Price £850, part deferred. House (freehold) £1,000 (£300 on mortgage).—MANCHESTER MED. & SCHOLASTIC ASSOCIATION, Ltd., 83, King Street.

For disposal — Panel and Private PRACTICE in large Lancashire Town. Panel over 1,100. Private fees from 2/6. Room for extension. House on lease or freehold. Vendor selling owing to ill-health.—Address No. 3710, BRITISH MEDICAL JOURNAL Office, 429, Strand, W.C.2.

For Disposal —A good Prac- TICE is no always to be had directly but Mr. PERCIVAL TURNER can generally offer applicants something suitable. Nearly all the best Practices are sold by him without being advertised.—Full information free on application to 4, Adam St., W.C.2.

For Sale —Monmouthshire In the [illegible] p.a. Panel [illegible] Good house [illegible] good Practice [illegible] requiring locum work, please communicate —GRIFFITHS Medical Agents, Tredegar Chambers, Newport, Mon.

For Sale —(1) W. Country Practice (over £1,000 p.a.). Rent £36. Price £1,500. (2) Cash offer (£400 p.a.) with or without house. (3) W. City Partnership (£1,200). House available. (4) Nursing Home unopposed, Devon Riviera. —Western Triple Agency, Woodfield Road, Torquay.

F.R.C.S.E., experienced in all- round surgery wants PRACTICE or PARTNERSHIP in nice town of about 100,000 population or over with prospective chance of junior surgical appointment to good hospital. Scotch, 30, single, necessary capital available.—No. 3548, B.M.J., 429, Strand.

Hampstead, Hammersmith, Payswater a PRACTICE of £1,000 to £1,500 is required by a practitioner of considerable experience in either of these districts. There must be a panel of 1,000 and very little night work. The house should have at least 4 bedrooms and to be let at a reasonable rental with a good lease. Full details (in confidence) to Mr. W. H. GRANT, 50, Wigmore Street, W.1. (No charge unless sale effected.)

Home County — Beautiful district. Country PRACTICE. Receipts £1,550 p.a. No resident opposition. Commodious house, good garden. Premium £2,400.—Apply PEACOCK & HADLEY, 19, Craven St., Strand, W.C.2.

Manchester Suburb —Old- established. Pleasantly situated corner house (specially built); garage &c. £90 on lease. Receipts £1,400. Great scope for increase. 1½ years purchase part deferred.—MANCHESTER MED. & SCHOLASTIC ASSOCIATION Ltd., 83, King Street.

Midland City —Old-estab- lished PRACTICE. Panel nearly 800, capable of increase. Receipts over £1,000. Commodious house with garden, separate surgery entrance and specially fitted room. Introduce (as desired —Xylot," SOUTHALL BROS. & BARCLAY, Birmingham.

Midlands —Small industrial town PRACTICE returning about £2,500 a year. Panel 1,500. Convenient residence with garden, garage &c. Rent £40. Premium £3,500. —Apply PEACOCK & HADLEY, 19, Craven Street, Strand, W.C.2.

Moderate-sized Practice or good PARTNERSHIP wanted on South Coast by middle-aged active Medical man, with long London experience. Hove or Bournemouth districts preferred but not essential. Able to negotiate at once. All replies treated in strict confidence.—A 1 reference, No. 3542, B.M.J., 429, Strand.

Yorkshire —Well-established working class. Panel and Private PRACTICE in good district. Receipts £2,000. Panel 2,0[illegible]. Partnership introduction. Fine old house, garage and 1 acre adjoining cottages for sale.—LEE & MARTIN, Ltd., 71, Temple Row, Birmingham.

Gloucestershire — Old-estab lished Industrial and Mining PRACTICE. Average receipts £750. Panel 700. Cottage, Hous[illegible] House rent £45. Good garden. Introduction —LEE & MARTIN, Ltd.

Dorsetshire —Old-established Practice. PARTNERSHIP with preliminary Assistantship and ultimate Succession. Receipts £1,112. Panel 1,400. Scope.—Further particulars from LEE & MARTIN, Ltd.

West Midlands —Old-estab lished Town and Country PRACTICE in a County Town. Receipts £1,574. Appointments. Panel nearly 400. Minimum fee 5/. Expenses small. Hospital (20 beds). Purchaser would be appointed Physician or Surgeon. Good house and garden. Premium for practice £2,250.—LEE & MARTIN, Ltd.

North of England —Old- established Country Town PRACTICE. Average receipts £1,460. Good panel. Expenses small. Good house, garden, tennis lawn and orchard.—LEE & MARTIN, Ltd.

Staffordshire — Old-estab lished Town and Country PRACTICE.—Receipts £1,190. Panel over 500. Appointments. Scope. Freehold house on lease; ample accommodation; good garden.—LEE & MARTIN, Ltd., 1, Temple Row, Birmingham.

Pleasant Lancs Town —Old- established Private house, good garden, garage. £56. Receipts over £500 with great scope. Panel nearly 400, increasing easily worked. Price 1 years purchase.—MACHETTE MEDICAL & SCHOLASTIC ASSOCIATION, Ltd., 83, King Street.

Practice for Sale, Scotland, west coast, amidst delightful scenery, 1 hours Glasgow. Desirable practice in residential district affording good income; easily worked; little midwifery; excellent house; all modern conveniences.—Address No. 3554, B.M.J., 429, Strand, W.C.

Scotland or North-East Coast.—Wanted General PRACTICE preferably bracing Climate about £1,000—£1,200 Now or later.—Address No. 3545, BRITISH MEDICAL JOURNAL Office, 429, Strand, W.C.2.

To Purchasers —Do not Buy without expert assistance. With 0 years experience Mr. PERCIVAL TURNER can advise in all cases. Terms free on application to 4, Adam Street, Strand, W.C.2. Telephone, Gerrard 3[illegible]. Telegrams, Epsomian, London."

Urgent —Wanted, Nucleus or PRACTICE up to about £900 a year in nice town. Good house and garden to be obtained. Capital available.—Address, No. 3709, BRITISH MEDICAL JOURNAL Office, 429, Strand, W.C.2.

Westminster (near) — Cash and panel PRACTICE. Total receipts £1,300 p.a., two-thirds to be sold now, remainder later. Premium 1½ years purchase.—Apply PEACOCK & HADLEY, 19, Craven Street, Strand, W.C.

Will any doctor help another less fortunate to acquire PRACTICE abroad for Wife's health. Repay with interest (Proceeds about half yearly takings.) Or advise regarding Riviera. Or offer Country Partnership, by arrangement or Assistantship. Aged 31, ex-service, T.T., Grad., next week.—Add., No. 3584, B.M.J., 429, Strand.

Yorkshire, Seaside Practice, popular Health Resort. Excellent house, semi-detached, six rooms, rent £75, lease with option of purchase. Average receipts for three years over £1,700; no panel; part garden sealed; obtained if desired. Good scope for Orthopædic practice on work. Moderate premium.—Apply No. 2113, REYNOLDS & BRANSON, Ltd., 13, Briggate, Leeds.

Yorkshire —Valuable middle and working-class General PRACTICE, non-panel and House for Sale; established nearly three years; most fees. Receipts increasing; 12 months nearly £1,000. Splendid practice. Good opening for panel.—Add., No. 3[illegible]78, B.M.J., 429, Strand, W.C.

Yorkshire — O'd-established Country PRACTICE with Cottage Hospital (6 beds); receipts about £1,070; conducted by Vendor for 20 years, who is retiring owing to ill-health. Premium £1,650.—Apply No. 2139, REYNOLDS & BRANSON, Ltd., 13, Briggate, Leeds.

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Ashton-under-Lyne Union

LAKE HOSPITAL

The Guardians invite Tenders for the supply and erection, at their Hospital of a STERILIZER, with internal dimensions of the inner chamber of about 24 inches diameter and about 36 inches long, with an approximate gross internal capacity of 16 250 cubic inches to be used with steam only, provided from an existing [illegible]

Specification and [illegible]

Clerk to the G

Ashton under Lyne, not later than Wednesday July 23rd, 1924

Dudley Road Hospital,

BIRMINGHAM

There is for disposal in the X Ray Department at above hospital a quantity of X ray apparatus

Particulars of the same may be obtained from the Steward of the Hospital to whom offers to purchase should be addressed

Med and Surg Sundries (new and second hand) May Op Outfits £10 Sterilizers fr 10/ Spencer Wells Forceps 2/6 Wool 2 oz comp pkts 1/4 lb Record Syringes fr 5/ 1od Catgut 6 tubes 1/6 Sterile silk or Catgut 12 tubes 1/- —A W AUTY 97 Swinderby Rd, Wembley

Microscope 2 oculars, triple nosepiece objectives ⅔ ⅙ 1/12 oil Abbe condenser and iris cabinet new £13 13s —Address No 3543 BRITISH MEDICAL JOURNAL Office 429 Strand W C 2

Offers invited —LANCET 1904—1910 incl bound PRACTITIONER 1905, Jan —June bound 1907 year bound 1908 Jan —June bound 1917—1923 incl unbound MEDICAL MAGAZINE 1906—1910 incl bound 1911—1915, incl unbound B M J 1911—1923 incl unbound Mar 2 th 1911 Aug 13th & 20th 1921 missing —Address No 3550 B M J Office 429 Strand W C

Bournemouth — In local Harley Street CONSULTING ROOM and use of Waiting Room to Let Dark Room available Suitable for Radiologist or other Specialist — Address No 3572 BRITISH MEDICAL JOURNAL Office 429 Strand W C 2

Cheltenham — For Sale, substantially built freehold family RESIDENCE about 5 minutes walk of three railway stations 4 reception rooms and ground floor kitchen and offices full size billiard room 8 bed and dressing rooms bathroom and linen room Well stocked kitchen garden Lawn for two tennis courts Good garage Area about 1½ acres Very suitable for Doctor or Mental Home —WYATT, Essex Place Cheltenham

Inverness-shire —Ideal BUNGALOW to Let, furnished complete plate and linen any period 2 bedrooms sitting room bathroom w c, etc Wonderful scenery, suit medical man — holiday — Address No 3555 BRITISH MEDICAL JOURNAL Office 429 Strand W C

Beautiful Consulting Room to Let Large private house Specialist only entertained Attendance light heat use of waiting room 1 guinea per day —Write Principal c/o E BARKER 133 Salisbury Square London E C 4

Nursing Home, returning about £2 000 a year —Excellent freehold property on South Coast 30 bedrooms many with balconies Electric light lift 2 acres of grounds Very easy terms to prompt purchaser The property is in an excellent position facing the sea —Apply No 7563 c/o MR PERCIVAL TURNER 1 Adam Street Strand W C 2

Radiologist desires to Let half time use of large CONSULTING ROOMS in best position with use of first class apparatus —Address No 3475 BRITISH MEDICAL JOURNAL Office 429 Strand W C 2

Thorpe Bay —For sale or let Large HOUSE in best position 8 bed 3 recep [illegible] equipped with mod[illegible] man as Home for [illegible] Immediate possess[illegible] Full particulars from H 14 Devonshire Street W 1

Victoria Street, opposite Underground Station WAITING AND CONSULTING ROOM to Let £150 per annum —Address No 3551 BRITISH MEDICAL JOURNAL Office 429 Strand W C 2

Coupé 17 h p Maudslay — Thoroughly overhauled coachbuilder painted five wire wheels new tyres shock absorbers dampers gaiters, autovac Suit Doctor £150 or exchange small car and cash —NEDD G 9 Hornsey Lane Gardens Highgate N 6

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Cardiff City Council

RESIDENT MEDICAL SUPERINTENDENT, ISOLATION HOSPITAL AND ASSISTANT MEDICAL OFFICER OF HEALTH (MALE)

Applications are invited for the above appointment at a salary of £700 per annum rising to £800 by annual increments of £50 with in the case of an unmarried man board, lodging, and laundry, or in the case of a married man free house, fuel and light

Candidates must not be over 40 years of age must have experience of infectious diseases and, in addition, hold a Diploma or Degree in Public Health

The officer appointed, will be required to contribute to the Cardiff Corporation Superannuation Fund

Forms of application and further information as to the conditions of appointment may be obtained from the undersigned, to whom applications should be returned (in sealed envelopes marked "Medical Superintendent) with copies of not more than three recent testimonials on or before August 2nd

Canvassing directly or indirectly will disqualify

City Hall, RALPH M F PICKEN,
Cardiff Medical Officer of Health
July 14th 1924

North Middlesex Hospital,

Edmonton N 18

MALE ASSISTANT MEDICAL OFFICER required A well qualified [illegible] Good hard work is [illegible] over 1 000 sick bed [illegible]

As experience is very extensive the candidate should have previously held a House appointment

The appointment is a whole time one living in Duties commence about the end of August

Salary £200 per annum

Applications in writing should be sent immediately to the Medical Superintendent and Surgical Director stating age experience and qualifications with dates

Addenbrook's Hospital,

Cambridge

Applications are invited for the post of Clerk ALIX [illegible] (Male) [illegible] month at an earlier date by one month's written notice on either side Salary £130 per annum with Board, residence and Laundry

Candidates who must be duly registered are requested to forward their applications stating age qualifications etc together with copies of not more than four recent testimonials to the undersigned at the Hospital, on or before Thursday July 31st 1924

W H HEAD
Secretary Superintendent.

Brentwood Mental Hospital,

Brentwood Essex

JUNIOR ASSISTANT MEDICAL OFFICER required Commencing Salary £510 per annum rising to £610 by annual increments of £25 subject to deductions under the Asylums Officers Superannuation Act, and to a charge of £2 2s per week for board lodging and washing Opportunities are afforded Medical Officers to attend Lectures in London preparing for the Diploma in Psychological Medicine

Applications accompanied by copies of 3 recent testimonials to be sent at once to the Medical Superintendent Applicants must be under 30 years of age

Mansfield & District Hospital

The Board of Management invite applications for the post of HOUSE SURGEON (male) at the above Hospital Salary at the rate of £175 per annum, with board, residence and laundry

The appointment will be for six months the duties to commence on the 1st September next

Applications accompanied by copies of not more than three testimonials are to be sent to the undersigned

A H LIMB, Secretary

Dated this 14th day of July, 1924

The Gloucestershire Royal

INFIRMARY AND EYE INSTITUTION
Gloucester

There is a vacancy for a PHYSICIAN on the Acting Medical Staff of this Institution By the rules of the Hospital the Members of the Acting Medical Staff shall be duly registered Practitioners. Candidates should send in their applications diplomas and testimonials under cover to the Secretary on or before Monday July 28th next

Gloucester G HURFORD
June 26th 1924 Secretary

Hull Royal Infirmary

Wanted ASSISTANT HOUSE PHYSICIAN Male Must be fully qualified and willing to hold office for not less than six months and should give and receive one months notice to terminate engagement Salary at the rate of £130 per annum, with Board and Lodging Applications with testimonials to be addressed to the undersigned not later than Monday the 21st instant

BENJAMIN BROOKS
Secretary

Stroud General Hospital.

THE GOVERNORS will on July 30th 1924 open applications for the appointment of HONORARY ASSISTANT SURGEON

Candidates who must be fully qualified are requested to send in their applications with diplomas to the Hon Secretary at the Hospital, not later than Tuesday July 29th 1924

W F B WARMAN, Hon Secretary

Leeds Public Dispensary

Wanted SENIOR RESIDENT MEDICAL OFFICER (male) Must have held posts of Resident Physician and Resident Surgeon Salary £200 per annum, with board, residence and laundry Separate sitting room Applications, with copies of three recent testimonials to be addressed to the Secretary of the Faculty Public Dispensary, North Street Leeds

Locum Medical Officer (male)

wanted at once for three months at the MIDDLESEX COUNTY COUNCIL SANATORIUM for TUBERCULOSIS Must have had Sanatorium experience Salary £7 per week board lodging, and laundry Applications with testimonials to be addressed to the Medical Superintendent County Sanatorium, Harefield Middlesex

City of Birmingham

RUBERY HILL AND HOLLYMOOR MENTAL HOSPITAL Northfield Birmingham

[illegible] the post of ASSISTANT [illegible] the above Hospital [illegible] and registered male under 30 years of age and single Commencing salary £350 per annum rising to £400 at the end of a year's service satisfactory to the Committee together with board apartments and laundry, subject to the provision of the Asylum Officers' Superannuation Act 1909

The Hospital situated amongst the Lickey Hills 8 miles from centre of Birmingham by tram route is equipped with X ray Ear Nose and Throat Gynæcological and Dental Departments together with a Research Laboratory for the study and treatment of Mental Disease on modern lines and is recognised by the University of London for the D P M and M D degree in Mental Disease

Application in envelopes marked "Assistant Medical Officer" should be addressed to and reach the Medical Superintendent not later than July 21st next

Freemason's Hospital and NURSING HOME

237 Fulham Road Chelsea, S W 3

The post of RESIDENT MEDICAL OFFICER (Male) will be vacant at the beginning of September Salary at the rate of £250 per annum with board residence and laundry The appointment is for six months with a possible extension

Candidates should have passed the primary Fellowship Examination of the Royal College of Surgeons and must have held House appointments in other Hospitals

The Institution (42 beds) is for paying patients of both sexes of modest means unable to afford ordinary Nursing Home treatment etc The Resident does not operate

Applications stating full particulars to be sent to the Honorary Secretaries from whom further information may be obtained

Royal Sea Bathing Hospital, Margate for Surgical Tuberculosis

A HOUSE SURGEON will be required in August The salary is at the rate of £200 per annum with board residence attendance and laundry

Candidates for the post must be legally qualified and registered The appointment is for six months but may be extended for a further period of six months

There are 200 beds for adults and children which afford special opportunities for the study of surgical tuberculosis

Applications stating age previous appointments with copies of three recent testimonials should be sent to the Secretary R S B H Offices 15 York Buildings Adelphi London W C 2

County Borough of Oldham

Applications are invited from medical women for the post of ASSISTANT MEDICAL OFFICER OF HEALTH at a salary of £450 per annum together with board and residence at the Borough Hospital The person appointed must devote the whole of her time to the work and act under the direction of the Medical Officer of Health and reside at the Hospital

The chief duties are in connection with the Infectious Diseases Hospitals and with Maternity and Infant Welfare work

Canvassing any members of the Council will disqualify Applications must be returned not later than July 31st 1924

For form of application and list of duties apply to the Medical Officer of Health Town Hall Oldham

London Temperance Hospital, Hampstead Road N W 1

Applications are invited from duly qualified men for the post of CASUALTY OFFICER The salary is £150 per annum with board and residence and the appointment is for six months

Applications with copies of testimonials not exceeding three in number should reach the undersigned (from whom particulars of the office may be obtained) on or before Saturday July 26th

The successful candidate will be expected to take up his duties on August 1st

By order A C ADAMS Secretary

July 16th 1924

University College Hospital, Gower Street W C 1

A vacancy occurs for a part time Non resident HOUSE ANÆSTHETIST at a salary of £100 per annum

Duties require attendance daily from 9 a m to 1 p m (Sundays excepted)

Applications accompanied by not more than three recent testimonials must reach the Secretary of the Hospital by noon on Wednesday July 23rd 1924

Willesden Urban District COUNCIL (Health Department)

APPOINTMENT OF DENTIST

The Willesden Urban District Council require the services of a Dentist

The duties attached to this post include the Dental Inspection and Treatment of School

the Council or Medical Officer of Health may require to be undertaken

The Dentist will work under the administrative control of the Medical Officer of Health

The appointment is terminable by a months notice on either side and is subject to the Council's Regulations concerning Officers of the Council

Candidates must possess a registrable qualification in Dentistry and devote their whole time to the duties of the office

Salary £350 to £450 per annum by annual increments of £25 with Civil Service Bonus in addition which Bonus fluctuates according to the rise or fall in the cost of living revised on being made every six months namely March 1st and September 1st At the present time the commencing salary and bonus is at the rate of £504 13s per annum

Travelling expenses within the district paid by the Council

Application forms may be obtained on application by letter (enclosing stamped addressed foolscap envelope) from the Medical Officer of Health Health Department Town Hall Dyne Road Kilburn N W 6 and should be returned to him duly filled in by applicant together with copies of three testimonials not later than 4 p.m. July 24th 1924

Town Hall E A PRATT
Dyne Road Clerk of the Council
Kilburn N W 6

County Borough of FOTHERHAM

APPOINTMENT OF ASSISTANT MEDICAL OFFICER OF HEALTH MEDICAL OFFICER TO THE VENEREAL CENTRE AND MEDICAL OFFICER TO THE MATERNITY AND CHILD WELFARE CENTRE

The Rotherham Corporation invite applications for the above Hospital
medical
Health
Venereal

The Officer appointed will be required to devote the whole of his time to the duties of the office and to act under the direction of the Medical Officer of Health. The appointment will be determinable by three months notice on either side and will be subject to the provisions of the Rotherham Corporation Superannuation Scheme and to the approval of the Minister of Health

Form of application and list of duties can be obtained from the Medical Officer of Health Dr A Robinson 12 Frederick Street Rotherham

Applications stating age experience and qualifications together with copies of not more than three recent testimonials and enclosed in envelopes marked Assistant Medical Officer should be sent to me not later than July 29th 1924

Canvassing either directly or indirectly is strictly prohibited and will be regarded as a disqualification

CHAS L DES FORGES
Town Clerk

Town Hall Rotherham July 1st 1924

Hartlepools Hospital, Friar Street Hartlepool

Applications are invited for the post of HONORARY RADIOLOGIST

Applications to be addressed to the Secretary not later than *July 29th 1924*

ST. LUKE'S HOSPITAL.

ESTABLISHED 1751

PRIVATE NURSING STAFF DEPARTMENT

TRAINED NURSES for MENTAL and NERVOUS CASES can be had immediately Apply to LADY SUPERINTENDENT 19 Nottingham Place London W 1 Telephone Mayfair 2420

NORTHERN BRANCH—Apply LADY SUPERINTENDENT 9 Clarendon Rd Leeds Phone Leeds 31165

THE

NEW MENTAL NURSES CO-OPERATION,

139, Edgware Road, Marble Arch, W

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Telephone Langham 2728
Telegrams 'Assistiamo London.

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(In conjunction with the MALE NURSES' ASSOCIATION)

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(Mrs) MILLICENT HICKS *Superintendent*
W J HICKS *Secretary*

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South Scotland—A General PRACTICE situated in a good district Receipts £1,500 Panel 700 Fees 26 upwards Plenty of sport—fishing shooting etc Excellent house etc. Premium 1½ years purchase Folio 685

London—City Practice Receipts £1,250 Panel ages tariff 100 Fees 36 upwards Very lucrative Ample scope Excellent house in centre position at rental Premium £2 000 Folio 667

Norfolk—A General PRACTICE situated in a country district Receipts £1,600 Panel nearly 600 Good fees Nice house with excellent garden etc Rent £35 per annum. Premium £2 500—Folio 600

Glamorgan—General Practice in thickly populated district on Coast Receipts £1 700 Fees 3 upwards Panel Confidential scope House containing 4 bedrooms etc rent £50 p.a. Premium £1,500 Folio 887

Derbyshire—A General PRACTICE situated in an industrial district Receipts about £800 Panel 600 Good fees Nice house containing 8 bedrooms &c a rental Premium £1 000—Folio 653

Midlands—General Practice situated in small Country Town Receipts £1 200 Panel 500 Fees 3s 6d upwards Excellent house containing 6 bedrooms &c Premium 1½ years purchase—Folio 617

Purchasers stating their requirements can have details of other Practices not advertised

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North of England — Eye, Ear Nose and Throat PRACTICE at present returning about £1 000 a year In important Town of about 70,000 inhabitants Hospital Appointment which is considered transferable — Apply, No 7567

Gloucestershire —About £750 p a. Country town Old established Panel 700 Fees 3/6 up Appointments about £100 p a Good detached house with large garden, garage etc To rent Premium moderate —Apply, No 7566

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Eastern County Partnership About £2 200 p a Panel about 2 000 and other appointments Fees 3/6 p a One-third share for disposal with succession in about 3 years Apply No 7564

London, W —About £1,100 a year Non dispensing Very small panel Fees 5/ upwards Very few midwifery cases Corner house to rent —Apply, No 7561

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Yorkshire —About £1,700 a year Panel 1 120 Visits 2/6 to 10/6 medicine extra About 30 midwifery cases up to £5/5/0 Appointments £60 Good house with garden and garage for sale or would let on lease — Apply No 7559

Death Vacancy —£1,000 a year Favourite Riverside Resort Very old established Same hands over 30 years Small and select panel Night work mostly refused Good house with garage and garden on lease Excellent opportunity for prompt purchaser Personally known and recommended —Apply, No 7556

Home County — Old-estab Country PRACTICE of nearly £1 600 a year Panel 750 Other appointments £130 Fees 3/6 to 10/6 Excellent house with half an acre of ground tennis lawn etc —Apply No 7554

Lancs —University Town About £700 p a Panel over 700 No midwifery ample scope Good house and garden Moderate price for Practice and house —Apply No 7553

North-West Coast — Over £3 000 p a For disposal old established PRACTICE in favourite Seaside Resort Visiting fee 3/6 5 10/6 and upwards About 20 30 midwifery cases p a Detached house 2 reception 5 bed dressing, servants rooms &c Consulting and waiting rooms Garage and garden Rent £75 on lease Moderate premium part by instalments — Apply No 7544

Cheshire —Nearly £4,000 a year Old established Practice HALF SHARE for Sale at 1½ years purchase Panel about 1 400 Appointments £45 Good fees Good house and garden to rent —Apply No 7536

South County —Over £1,000 p a Panel 640 other appointments £120 Practically unopposed Excellent house elec light etc Good garden All sport —Apply No 7535

Midland Town — About £1 100 a year Old established PRACTICE Panel 750 Appointment £40 Very little midwifery Large house and garden Prem £1 600 including drugs etc —Apply No 7534

Home County —About £800 a year Small panel Good fees and appointments In reduction as required Excellent house and garden —Apply No 7522

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LONDON, S W—Old established Cash and Panel Income £1 000 Panel 800 Small house low rental long lease Premium £1,850 to include lease

LANCS—Old established G P, situated in country town Very pretty country Large house garden and garage Panel 800 2 appointments Income £1 460 p a Premium to include house £4 000

YORKS—Old established country town Panel 1 500 Income £2 500 3 appointments Detached house with garden and garage, to let on lease Premium £3 500

YORKS—Old established G P Panel 1,200 Two appts Average income £1 297 p a Nice detached house (freehold) Scope for surgery Premium Practice £1,400 House £2 500 Part can remain

LONDON S W—PARTNERSHIP in old established G P Panel about 1 000 Income over £3 000 3 appointments Premium two years purchase £2 500 down

Purchasers stating their requirements will be sent particulars of other suitable Practices and Partnerships for sale free of charge

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Midlands —Practice of £1,800 in prosperous town Panel 2,200 Appointments £110 Great scope for anyone attending more to the practice House with garage Rent £50, on lease

Liverpool —Practice of £1,400 in suburb Appointments £110 Panel 1 100 Opposition weak Rent £50

Colonial Appointment Salary £800

Lincs —Unopposed Practice of £900 Panel and appointments £500 Very good house with two acres, can be rented Station in the place

S W County — Old-established PRACTICE of £750, in small town, with hospital Appointments £160 Panel 700 House, with large garden and orchard, rent £45

Home County —Partnership Half share of about £2 500 in beautiful country town Good class non panel practice Fees 3/6 to 1 guinea Good house and garden can be bought cheaply

Within 80 miles — Old established PRACTICE of £1 280 in nice town Panel 1 400 Nice house with good garden Rent £70 Schools Society, &c

South Coast — Middle class PRACTICE of £800, for Sale at the end of the year Panel 900 Detached house with nice garden Rent £75 Prem 1½ yrs purchase

Residential Suburb —Middle and working class PRACTICE of £1,300, increasing Panel 1 050, and good proportion of cash at separate Surgery Good house with nice garden can be bought

Yorks.—Practice of £1,450 in fine town Panel 800 Appointments £160 No midwifery has been done House with pretty garden and separate entrance to surgery Can be rented

West Coast —Nucleus of £550 including £90 from panel in wealthy seaside place Premises in prominent position

Home County —Partnership Half share of £2 000 in beautiful country town Panel 700 Appointments £260 House can be rented

Ear, Nose, and Throat PRACTICE of £2 000 Fees 1 to 3 gns. Transferable appointment Low rent

Midlands —Town and country PRACTICE of £1 200 including 700 panel Good corner house with garage Rent £60

Home County —Partnership with succession to middle-class Practice of £1 850 in residential district The place is growing and has a cottage hospital Panel 1 240 Appointments £180 Very few midwifery Rent £70

Home County.—Unopposed PRACTICE of £1 600 Panel and appointments £500 Beautiful district Station Well built house with very nice garden and tennis court Can be bought

Yorkshire —Practice of £1 500 in prosperous town Panel 1 550 Rent £80 Premium 1½ years purchase

East Coast —Practice of £1 700 in beautiful seaside resort Panel 800 Appointment £80 Good schools Excellent house with fine garden Rent £140

South Coast — Partnership. Half share of £2 300 in pleasant town Panel 1 000 Appointments £500 Good house with large garden Rent £90 Premium £2 200

Within 25 miles —Middle and working class PRACTICE of £1 700 Panel 1 700 Vendor retiring Opposition slight. Rent £42

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An Accountant's certified report is required in respect of every practice or partnership the disposal of which is undertaken by the Agency.

The commission chargeable in respect of any practice in Great Britain placed exclusively in the hands of the Agency for transfer has been fixed on an exceptionally favourable scale, the maximum chargeable on any transfer being £50. In the case of Foreign and Colonial practices similarly placed the maximum is £75.

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Accountancy and Legal services furnished by the Agency, where desired, at moderate inclusive charges.

PRACTICES AND PARTNERSHIPS FOR SALE.

1. MIDLANDS.—SMALL TOWN. PARTNERSHIP. A one-third share to commence with is for disposal in a very old established mixed general practice. Income nearly £5,000. Panel of about [illegible]. Also private and medicine from 2/6 visits 3/6 to 21/. Well situated freehold house with 5 bedrooms, garden. Price £1,600. Good position and choice Cottage Hospital and Incoming Partner (who should not be over 35 years of age) will be appointed to the Staff. Premium 1½ years purchase.

2. SUFFOLK.—Private Suburban PARTNERSHIP. A half share in an old established non-panel practice chiefly among well-class Practice is for immediate disposal, owing to ill health. Average income about £1,600. No appointments. Advice and medicine 3/6 to 7/ visits 5/ to 21/, with medicine extra. Very little midwifery. House contains 3 reception rooms, 5 bedrooms, etc. Electric light. Garden. On lease at a rental of £65 p.a. Sport: good society, hous[illegible] etc. Premium 1½ years purchase.

3. CHANNEL ISLANDS.—Old established PRACTICE held 11 years by present Incumbent, who is relinquishing on account of ill health. Cash receipts for the past three years average nearly £750 per annum, including an appointment worth £35. Visits 7/6 to 10/6 in the Town, extra outside. Midwifery 3 to 5 guineas 8 to 10 cases yearly. Car not required. House contains 4 reception, 5 bedrooms, bathroom, etc., large garden. Must be purchased by valuation, but mortgage can be obtained. Premium 1½ years purchase. Excellent educational facilities and sport of all kinds.

4. QUASI DEATH VACANCY.—Old-established good-class non-panel PRACTICE situated in a popular seaside resort on the North West Coast. Average income £1,300. Very easily worked and no conveyance required. Visits 7/6 to £1/1/0. Good house facing sea on rental. Premium 1½ years purchase or reasonable offer will be entertained and suitable terms of payment arranged.

5. SOUTH MIDLANDS.—RESIDENTIAL TOWN. Old established mainly better-class non-dispensing PRACTICE. Income about £2,000 a year. Small selected panel of 400-500. Fees 2/6 to 21/, mainly 7/6 to 21/. Midwifery 2 to 25 guineas. Lease[illegible] a year. House with 3 reception, 6 bedrooms, garden, rent £100 a year. Premium 2 years purchase.

6. SOUTH COAST.—LARGE TOWN. PARTNERSHIP. A quarter or one-third share in a mixed and working-class Practice. Income over £4,000 with open panel of over 1,000. Fees 2/6 to 7/6, chiefly 3/6 to 5/. No midwifery and very little night work. Purchaser should preferably be not over 35. Rem 2 years purch[illegible].

7. LINCOLNSHIRE.—Unopposed Country PRACTICE. Very easily worked average income over £1,100. Fees 2/6 to 10/6. Very little midwifery. Good detached house in its own ground. Rent £80 on lease. Premium £1,600, part by instalments.

8. SOMERSET.—Unopposed PRACTICE within easy reach of the sea. Practice is an old-established mixed-class one, the average income is £1,283 in visiting appointments and panel of over 1,600. Very nice house with reception room, professional room, 7 bedrooms, garage, garden. Rent £55. Sport of all kinds. Premium £2,250.

9. JUNIOR PARTNERSHIP.—EAST COAST TOWN. Over [illegible] room, bathroom, etc., and garden. Rent £60 on lease. Premium 1 years purchase. Prospect of urgent [illegible].

10. BRISTOL.—Very convenient middle and two King-class PRACTICE held nearly 25 years by present Incumbent who is relinquishing on account of ill health. Average cash receipts over £1,200 a year including several small appointments and a panel of over 1,000. Visits 3/6 to 10/6. Midwifery from 3 guineas about 50 cases. Very good house, specially built for a doctor, contains 2 reception rooms, waiting room, consulting room and surgery with separate entrance, 5 bedrooms, etc. Garden. Premium £1,800.

11. DERBYSHIRE.—HOSPITAL TOWN.—Old-established PRACTICE [illegible] account [illegible] about [illegible] and a year at 2 to 3 guineas. Centrally situated house (3 reception rooms, consulting and waiting room, 4 bedrooms, bathroom, etc.) on lease at £100 a year. [illegible] Good scope for surgery and [illegible].

12. NORTH EAST MIDLANDS. [illegible] access to large town. Very old established and [illegible] held by Vendor for over 30 years. Average [illegible] appointments and panel of 400. 3/6 to 20/. Large freehold house [illegible] to be sold or let on rental. Premium £1,500.

13. [illegible] and 580 [illegible] income [illegible] ferry [illegible] mail [illegible] hich.

14. [illegible] will [illegible] [illegible] £2,100. Situated in a large [illegible] one to [illegible] easily re-[illegible] or Visits [illegible] about 100 cases yearly. Car not required. Good house with garage available at end of introduction. Premium 1½ years purchase.

15. NORTH EAST COAST.—FAVOURITE RESORT. Old-established non-dispensing PRACTICE. Income £400 but very large scope for young well-qualified man. Good fees. Corner house with 3 reception, 6 bedroom, garden. Freehold. Premium for House and Practice £2,500.

16. PARTNERSHIP.—LANCS. Large Town. The third share of an old-established lucrative and money making Practice worth for the last financial year £3,722, can be acquired by a young unmarried man. Panel list of over 1,500 and patients of operative class. Visits 2/ to 5/. Midwifery 2 to 3 guineas. Ingoing partner could reside with Vendor or unfurnished rooms are available. Golf to be had. Premium 1½ years purchase.

17. LONDON WEST END.—PARTNERSHIP.—A quarter-share (to commence with) and up to one-third in 2 years, and one-half in 4 to 5 years, with ultimate succession if desired, is for disposal in a first-class general Practice. Income for the immediate past year £3,020. Fees mostly 1 guinea upwards, and a few at 10/6. Purchaser should be a Graduate or hold some higher qualification. Premium for the quarter share £1,500.

18. SOUTH WEST OF ENGLAND.—COUNTY TOWN.—A ONE THIRD SHARE producing £800 is offered in a good-class [illegible] with a considerable amount [illegible] Hospital in the town and the [illegible] F.P.C.S.) will eventually [illegible] sum £1,600.

19. [illegible] ND).—Unopposed and increasing [illegible] on main line about [illegible] miles from a large city and worth nearly £1,300 a year, including easily worked appointments at £100. Visits in Town ship 10/ mileage 6/. Midwifery 5 gns. Good and up-to-date house (built by Vendor predecessor) containing surgery, 2 reception rooms, 3 bedrooms and [illegible] ping porch, bathroom, etc., with an acre of ground, tennis court, etc. Rent £120 on lease. Premium £1,000.

20. SOUTH SEA ISLANDS.—In a capital city a well-established lucrative and increasing PRACTICE, worth over £1,400 per annum including an exclusively worked appointment of £200. Good climate, malaria and consumption unknown. Up-to-date hospital and educational facilities. Consultation fees 7/6 to 10/6. Visits 10/6 upward. Midwifery from 5 guineas. Dispensing optional. Practice can be worked on foot. Good bungalow residence in excellent position with [illegible] of an acre of garden. Electric light, etc. Rent £10 a month on lease. Premium £800. Income Tax 1/ in the £ over £500.

21. FAR EAST.—Wanted in November a young unmarried ASSISTANT (not over 30 years of age) on a two years agreement with possibility of succession at end of engagement. Female [illegible] required. Interview in [illegible]. Salary £500. Large [illegible] house available. Salary [illegible].

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MIDLANDS.—(2) PARTNERSHIP in very old-established Practice, over £4 300 in good Country Town Panel 2,000 House contains 5 bedrooms &c Premium for one third share, one and a half years purchase

SOUTH OF ENGLAND.—(3) PARTNERSHIP (with view to Succession) in old established good-class Country Practice £2 890 p.a. in delightful Residential District under 60 miles from London Panel 800 Very few midwiferies House (7 bedrooms) with about half acre garden One half share at first at two years purchase

WEST MIDLANDS.—(4) PARTNERSHIP in old established Country Town Practice over £3 600 p.a. Panel 2 183 Rent £60 Partner should be aged 35 to 40 with some Surgical experience Well equipped Cottage Hospital Premium one third share one and a half years purchase

LONDON, S.W.—(5) Well-established PRACTICE of £650 to £700 p.a., in favourite Residential Suburb Panel 795 Not much midwifery Excellent detached house (6 bedrooms) with good garden, for Sale Ample scope Premium one and a half years purchase

SOUTH OF ENGLAND.—(6) Unopposed Country PRACTICE nearly £500 per annum Panel 420 House (3 bedrooms, 3 attics) with well stocked garden Rent £25 Premium £650

SURREY.—(7) PARTNERSHIP in good middle class compact practice over £2 650 in Residential District easy distance of London Panel 1,200 Two fifths share at first at two years purchase

SOUTH MIDLANDS.—(8) Well-established unopposed PRACTICE averaging £1 181 per annum in good Agricultural District Panel 800 Detached house (5 bedrooms) Rent £70, on lease Premium £1 700

SOUTH-WEST OF ENGLAND.—(9) PARTNERSHIP in well established middle and working class Practice between £5 000 and £6 000 in important Seaport Town No panel One-fourth and one third share at first Incoming Partner should be young, energetic and with a leaning towards medicine

MIDLANDS.—(10) Unopposed Country PRACTICE over £1 150 in beautiful part Panel about 720 Detached house (4 bedrooms) with half an acre garden Mild climate Premium £1 750

SOUTH AFRICA.—(11) PRACTICE about £1,000, in small Town in Cape Province Very comfortable house to rent Living very cheap Premium £750

EAST COAST.—(12) Old-established good-class PRACTICE £1 700 per annum in pleasant Seaside Town and favourite Resort No panel Nice modern double fronted house (6 bedrooms) Rent £75 on lease Premium £2 000

SOUTH OF ENGLAND.—(13) PARTNER required in very sound old-established Practice in Seaport Town Panel under 3 000 Share worth £700 to £800 at two years purchase Partner must be keen and energetic and not much over 30

NORTH OF ENGLAND.—(14) Old-established PRACTICE of £1 460 per annum in Country District Panel 810 Very good house (5 bedrooms) in charming grounds two acres Premium, practice, house, and grounds £4 000 Mortgage could be had on house

NORTH-WEST COAST.—(15) Sound middle-class PRACTICE about £2 400 Conveniently situated house to rent Premium £2 900 part by instalments

FAVOURITE RESIDENTIAL DISTRICT up the THAMES.—(16) Partnership in better class Practice nearly £2 900 per annum One-third share at first at two years purchase

HOME COUNTY.—(17) Old-established PRACTICE, over £1 850 p.a. in a most desirable Residential District under 25 miles from London Panel about 600 Excellent detached house (8 bed and dressing rooms) Nearly acre garden Rent £75, on long lease Cottage Hospital near Premium £3 000

EAST ANGLIA.—(18) PARTNERSHIP in middle and working class Practice averaging about £2 200 p.a. in picturesque district near popular Seaside Resort Panel nearly 1,200 Choice of houses One third share at first at two years purchase.

DEATH VACANCY.—(19) Old-established PRACTICE about £1 000 p.a. in Town of over 30 000 within 15 miles of London.

EASTERN COUNTIES.—(20) Very old-established Country PRACTICE over £1 400 p.a. Panel 636 Suitable house (5 beds) Rent about £40 Mild climate Premium one and a half years purchase

EASTERN COUNTIES.—(21) Old-established unopposed Country PRACTICE of £826 p.a. Panel about 500 Very good house in 2 acres of garden also 18 acres of land attached, to rent or purchase Nearest opponent 5 miles

LONDON S.E.—(22) PARTNERSHIP in middle and working class Practice, over £2,000, in pleasant outlying Suburban District Panel 2 000 House contains 3 bedrooms &c Rent £30 Premium one third share £1 200

SOUTH WALES.—(23) Well-established PRACTICE nearly £1,250 p.a. in County Town Panel over 700 Fees 5/- to £2 2s. Well situated double fronted house (6 bedrooms) with large garden. Rent £60. Educational facilities Premium £1,800

SPECIAL OPHTHALMIC PRACTICE.—(24) About £1 400 in high class inland Health Resort. Operative and acute cases refused of late years Considerable scope for increase Premium £2 000

SOUTH WALES.—(25) Old-established working class PRACTICE over £2 200 in good Town Panel 1,400 Detached house with 4 bedrooms to rent on lease Premium £2 500

HOME COUNTY.—(26) PARTNERSHIP in first-rate Practice £7 000/£8 000 p.a. in one of the best Residential Districts. House (7 bedrooms) to rent Premium one sixth share two years purchase Partner should be aged over 30 and have held hospital appointments

HOME COUNTY.—(27) PARTNER[illegible] and increasing Practice over £2 200 in Town, within 30 miles of London Panel 800 on third share £1,425 Great scope

HOME COUNTY.—(28) Old-established Country PRACTICE £1 600 p.a., in beautiful part, under 40 miles from London Very good house (6 bed and dressing rooms) with nice garden Price £2 200 Bracing climate Premium one and a half years purchase.

YORKSHIRE (WEST RIDING).—(29) Well-established PRACTICE £1 650 p.a. in Industrial District easy reach of Sheffield Panel 650 Convenient 8 roomed house Rent £48 Premium one and a half years purchase

SOUTH OF ENGLAND.—(30) PARTNERSHIP in old established PRACTICE £1 500 p.a., in town of nearly 30 000 inhabitants. Panel 450 No midwifery House contains 5 bedrooms Premium one-half share one and a half years purchase

YORKSHIRE (WEST RIDING).—(31) PRACTICE over £1 500 p.a., in thriving Industrial Town Panel 1,550 Good house (5 bedrooms) Rent £80 Premium £2 250

HOME COUNTIES.—(32) PARTNERSHIP in good class Practice (chiefly X ray and Electrical) £2 200 p.a., in first rate Residential Town One-third share at first with ultimate succession Partner must be experienced in X ray work Excellent Hospital and chance of appointment

MANCHESTER.—(33) PARTNERSHIP in old-established good-class Practice over £4 500 in Residential District Small panel One fourth share would be sold for £3 115, with option to increase up to one-half Partner should be about 30 and preferably M.D. or F.R.C.S.

YORKSHIRE (EAST RIDING).—(34) PARTNERSHIP in well established Practice nearly £2 500 p.a. in pleasant Country Town. Panel about 1 000 Good house (5 or 6 bedrooms) in acre of ground Rent £40. Premium one-half share £1 500 Partner aged about 40 preferably with experience in Major Surgery Fine Hospital in Town.

KENT.—(35) PARTNERSHIP in well-established good better middle-class Practice over £2 000 in delightful Residential District Panel 900 Very good society Golf Premium one-third (or one-half) share two years purchase Partner must be gentleman, Public School or University man for preference.

NOTTINGHAMSHIRE.—(36) PRACTICE averaging £1 200 p.a., in Residential Town Panel 700 Corner house (3 bedrooms, &c) Rent £60 Premium one and a half years purchase

SOUTH COAST.—(37) PARTNERSHIP in Panel and Private Practice over £4 000 p.a., in popular Seaside Resort Panel 4 150 Premium one third share two years purchase Partner must be energetic and not over 35

EASTERN COUNTIES.—(38) Old-established PRACTICE £1 855 p.a. in pleasant Market Town Panel 1 100 No midwifery Excellent detached house (7-8 bedrooms) Very good garden Cottage Hospital Premium one and half years purchase

SOUTH COAST.—(39) Good class PRACTICE of £1,350 per annum Excellent house Premium £1 250

YORKSHIRE (W. RIDING).—(40) Old-established PRACTICE over £1 700 in clean Manufacturing Town. Panel 1 [illegible] House contains 3 bed and 2 dressing rooms Garden half an acre Pretty surrounding country Premium £2 000, to include book debts tenant's fittings &c

LONDON, N.—(41) PARTNERSHIP in Cash and Panel Practice of £1 800 in Residential District Panel 2 400 House contains 5 bedrooms &c. One third share at first Premium £1 200 Incoming Partner must be married

ESSEX.—(42) NUCLEUS of Practice in Industrial Village Panel and Midwifery refused Detached house (4 bedrooms and 2 attics) with garden Premium Practice and House £1 000 Plenty of scope

SPECIAL OPHTHALMIC PRACTICE.—(43) About £600 in Seaside Town, South of England Would suit elderly practitioner retiring and wanting quiet practice with small expenses, in healthy place Premium £700

MIDDLESEX.—(44) PARTNER required in very old established and lucrative practice over £4 500 per annum in Industrial district Panel 4 000 Small house (4 bedrooms) Rent £52 Premium one-third share two years purchase

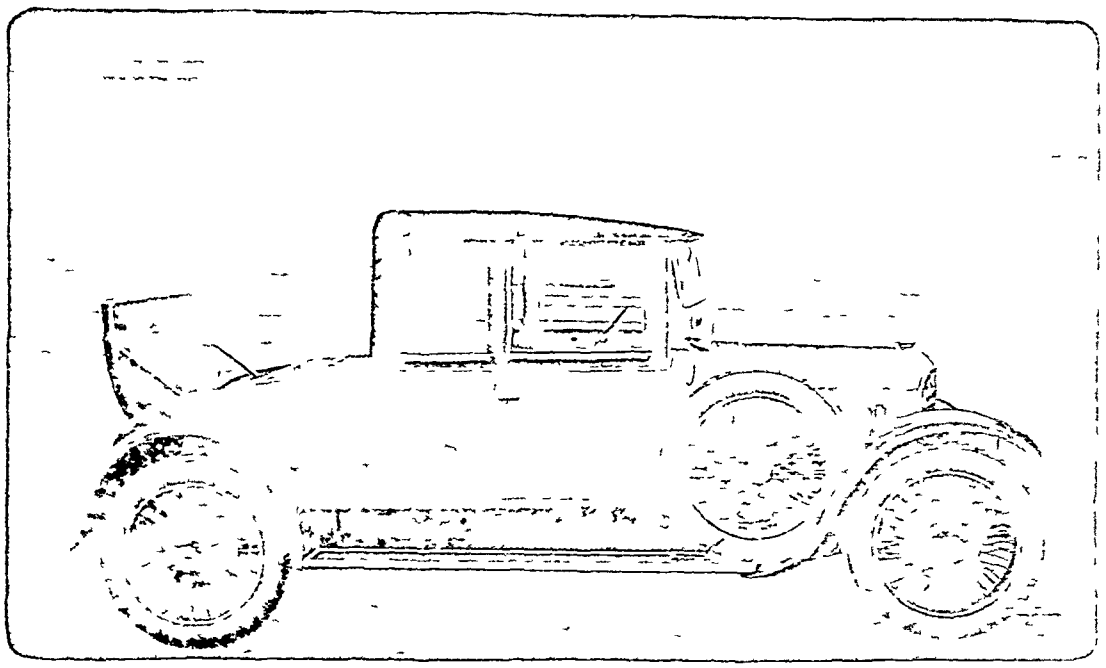
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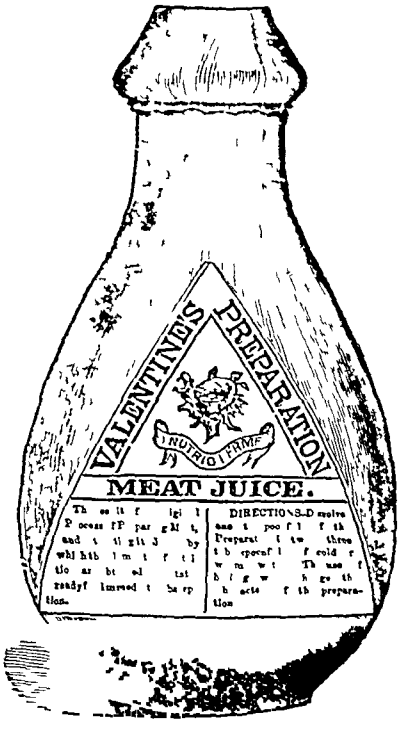
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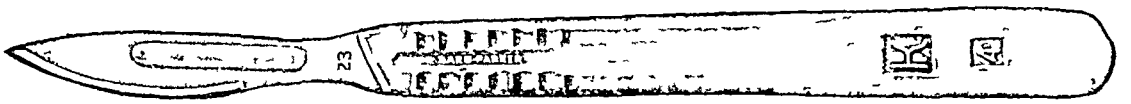
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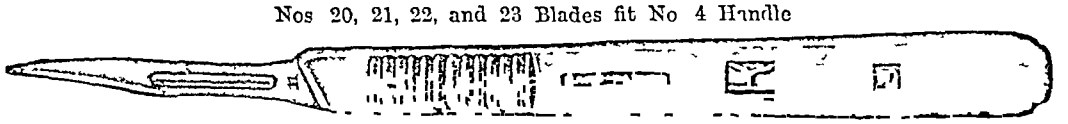
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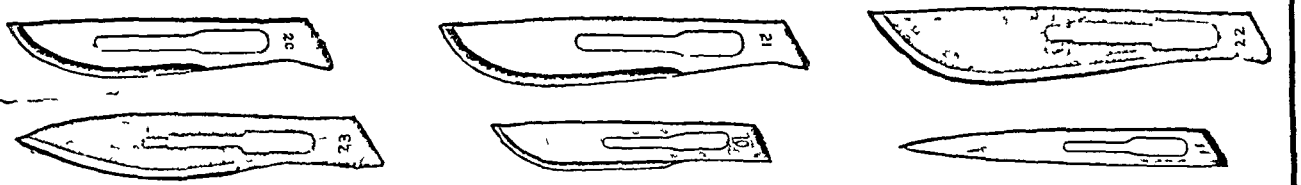
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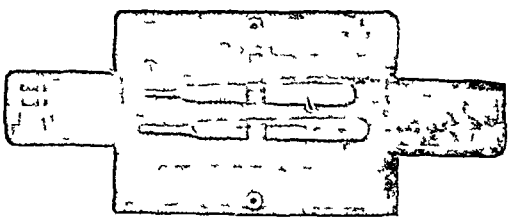


Nos 20, 21, 22, and 23 Blades fit No 4 Handle



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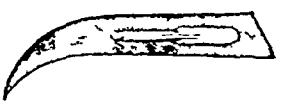




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Handles, 5/-
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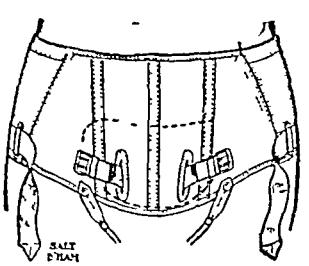
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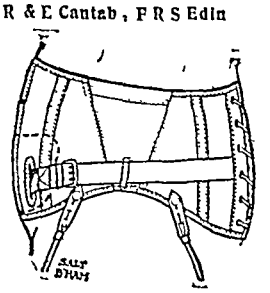
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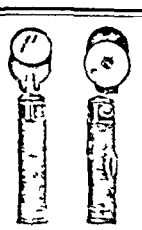
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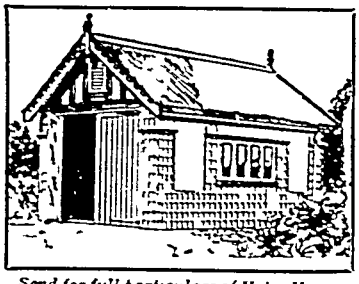
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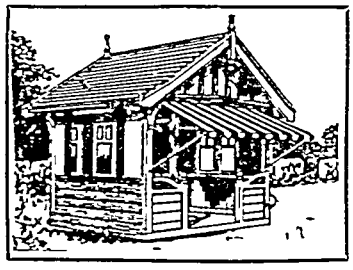
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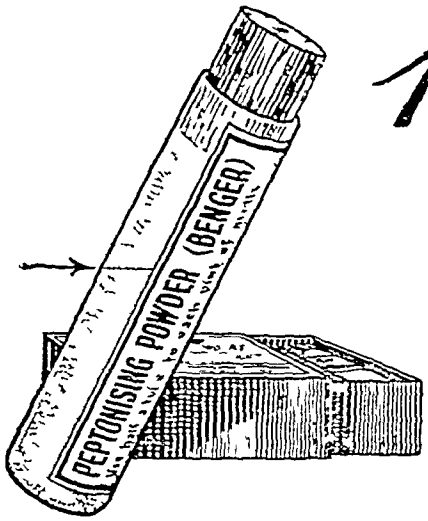
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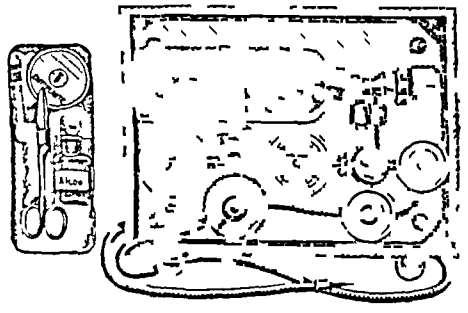
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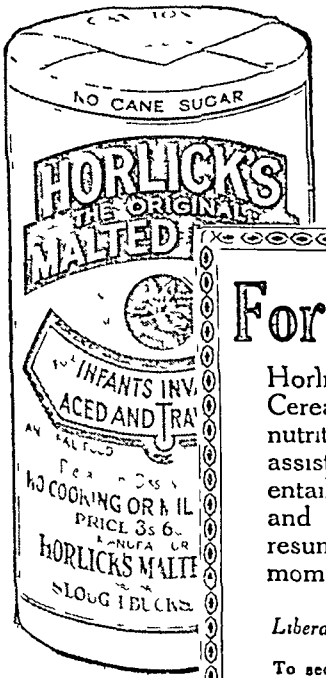
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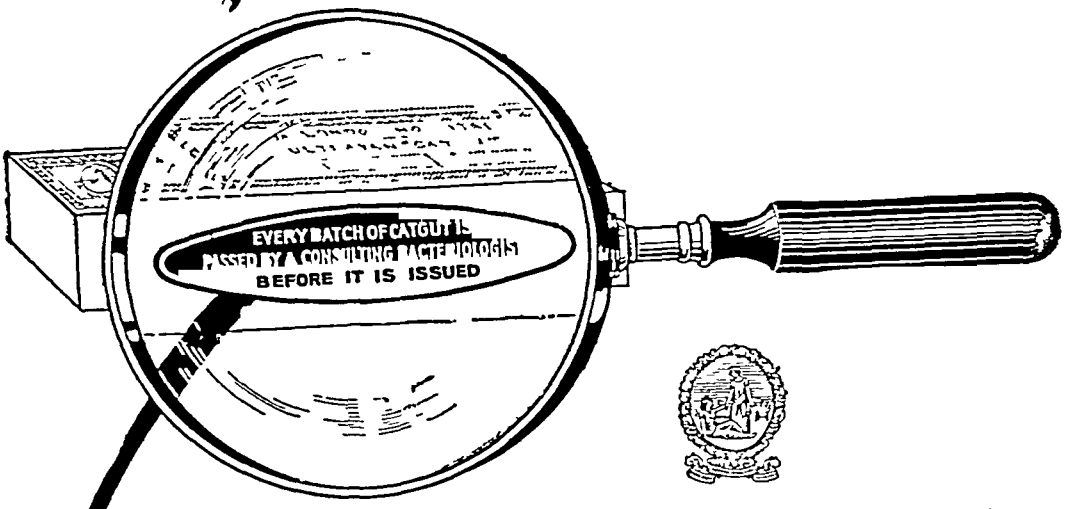
Compound Syrup of Hypophosphites "FELLOWS"

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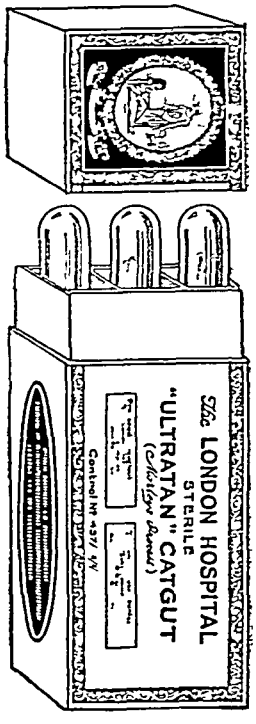
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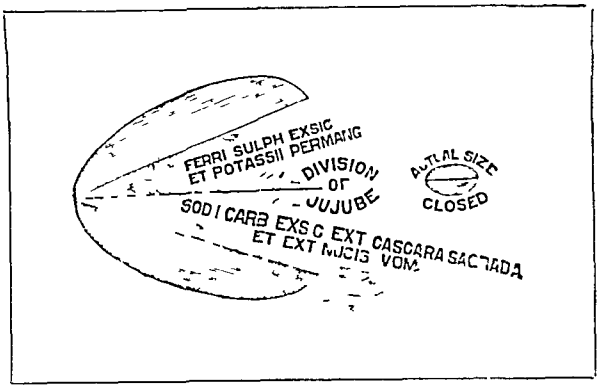
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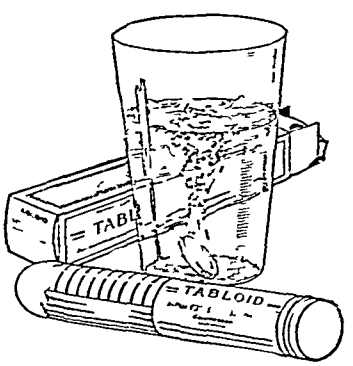
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A VERY FINE EXAMPLE OF THE ANIMAL SCULPTURE OF THE ASSYRIANS.—The outburst of imperial splendour which marks the reign of Ashurbanipal synchronises with a supreme effort on the part of the artists employed by the Assyrian empire builders to decorate the walls of their palaces with bas reliefs illustrating their activities. The fine pioneer work done by the sculptor at this time can be realised by a comparison of his reliefs with those executed by his predecessors. He achieved his highest success in the representation of animals. Here he was freer from the conventions which ruled in the portrayal of men and women. The human faces all resemble each other and show no trace of feeling; the forms are stiff and unvaried, though the details of their dress are perfect in execution; the embroideries for instance being a marvel of workmanship. The extended bas relief a portion of which is here reproduced is sufficient in itself to immortalise the unknown artist whose work it is. It is free, realistic and well observed; we feel we are present at the scene not looking at a picture. Nothing equal to it had ever been done before in sculpture; some of the many horses' heads depicted rival even those of the Greeks. In the present reproduction, the horse turning its head either in solicitude for the foal behind or in fear of the hunter is nobly portrayed. The hunted animals whose movements are instinct with fear and anxiety contrast realistically with the earnest confidence of the dogs. The figures are modelled with great delicacy and refinement.



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Ambulatory Treatment of Fractures of the Limbs;

Tuberculous and Arthritic Disease of Joints.

By CAREL A. HOEFFTCKE

7, HARLEY STREET, LONDON, W 1

Extract from the MEDICAL PRESS AND CIRCULAR, *April 9th, 1924, pages 293—296*

RHEUMATICS

BY AN EMINENT PHYSICIAN

"GENTLEMEN—The subject you have chosen for discussion is one which, though of the greatest importance, happens to be, at the moment, very obscure and difficult

" Thus one finds as one blunders about in this swamp of 'Rheumatics' that each stone you try to step upon tilts you up and plays you false

" Lastly, there is one method upon which I would like to say a few words, though I must deal with it cautiously There are cases of severe arthritis in which the disease has become quiescent, but in which, either owing to the initial severity, or from lack of knowledge, or the character of the patient, severe contractures have resulted, one or both knees, for example, have become fixed at a right angle and the patient has been unable to walk, possibly for years These are sometimes dealt with by forcible extension and elaborate splints—a treatment associated with the name of Mr Hoefftcke No one, I think, is more afraid than I am of forcible wrenching of joints, or more cognisant of the amount of suffering that patients have to face in the course of this method of treatment I am, moreover, not a surgeon, and have not the requisite knowledge to appreciate how much value the element of traction possesses This, however, I must say, that in three out of four cases, all of the worst type, in which I followed through the results, they were eventually remarkable The fourth case, a hip-joint affected with osteo-arthritis, was a failure, but I am not prepared to alter my mental attitude because this was a failure, for the cases I am dealing with are most difficult, and there must be failures I can only repeat that I have seen three remarkable successes When I am faced by a patient with contractures of long standing, unable to walk or earn his living, I ask myself What method other than this is open to use? Gradual extension is out of the question, at least I have never seen a great success If, then, forcible extension has to be undertaken, is this splint the best, or is it unnecessary, complex, and expensive? Can we deal with these extreme cases any other way? Is the traction an important factor in eventually restoring function? I have had conflicting answers, and yet it seems to me that it is of importance, and, if so, any splint that can achieve this must, I imagine, be complicated and expensive"

Two of this Physician's cases are described and illustrated in my book, entitled "The Ambulatory Treatment of Fractures and Diseased Joints," published by Messrs Heinemann, Medical Books, Ltd, London, price 10s

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Extract from the MEDICAL PRESS AND CIRCULAR, *May 14th, 1924, page 406*

RHEUMATICS

BY CAREL A HOEFFTCKE

" The danger of injury does no doubt exist if the wrenching is done without extension Under such conditions the joint surfaces are pressed together by strong muscular tension, and as the surfaces are usually eroded there is serious danger of injury If, however, the joint surfaces are kept separated while the manipulation takes place this danger is avoided Such separation can only be obtained satisfactorily by an extension table or extension splint Further, the suffering which the patient has to face is in a large measure due to the contact of the diseased joint surfaces and is, accordingly, greatly reduced by suitable extension Cases treated by my ambulatory extension method in arthritic or tubercular disease need not be quiescent, in fact, the earlier the extension treatment is applied the sooner a good result can be expected "

"The Lancet," *January 5th, 1924 review* —

one who "And it should be stated clearly that he works only with the medical profession and not as a substitute for medical services"

British Medical Association.

NINETY-SECOND ANNUAL MEETING, BRADFORD, 1924

President's Address

ON

YESTERDAY, TO-DAY, AND TO-MORROW.

BY

J BASIL HALL, M A , M C CANTAB ,

HONORARY CONSULTING SURGEON BRADFORD ROYAL INFIRMARY

MY LORD BISHOP, LADIES AND GENTLEMEN —As a Bradford citizen, my first words to-night must be those of very warm welcome to the British Medical Association As the President of that Association, on the other hand I can truly say that I, and every other member of it, have greatly appreciated the very cordial and hospitable reception which the citizens of Bradford have given to us Although our Association has existed for upwards of ninety years without visiting this city, I can assure you that it was recognized long ago that Bradford had only to be asked, and a generous response would be forthcoming

There is an incident in the history of this city which coincides with the birth of the British Medical Association In 1832 the Association came into being and almost simultaneously the town of Bradford was granted the privilege of returning two members of Parliament Whether this privilege proved a boon to the city, or otherwise, I do not know, because I am ignorant of the political views which those members held I can only say that I hope they coincided with my own

As regards the birth of the British Medical Association, however, I have no doubts That great body has done an unspeakable service in binding together the great mass of the medical profession into one solid professional unity At its inauguration in Worcester by Sir Charles Hastings, some fifty original members were enrolled To-day its membership numbers 27,000, scattered over the whole world, and it can justly claim that its voice is the voice of a profession throughout an empire upon which the sun never sets

I am not going to weary you by recording all that this great Association has accomplished during its long existence, but I cannot refrain from mentioning what I regard as its greatest achievement When war broke out in 1914 our army was served by the Royal Army Medical Corps That is a very small body—large enough to give medical service to our soldiers in times of peace, but totally inadequate to meet the requirements of a great war The British Medical Association promptly established a Central War Committee and through it provided for our army a regular and organized supply of medical officers throughout the whole campaign The cost of that patriotic service amounted to twenty thousand pounds, and it is the proud boast of this country to-day that the care of the sick and wounded has never been equalled in the previous history of the world If the Association had never done anything else its war record has more than justified its existence

Before proceeding further I want to express my very sincere thanks for the loyal and unstinted help which has been so generously given in order that this meeting the first of its kind in Bradford, should prove a success When I look back upon the past twelve months and try to realize all the generous service which has been so willingly rendered, I feel that I cannot adequately express my thanks To name some and omit others would appear invidious but I must mention our Lord Mayor and others who represent the Corporation of this city, and I would especially thank the ladies committees, who have done such yeoman service Even in the Garden of Eden Adam was a failure till Eve came along and although she let him down very badly to begin with she has since earned his eternal gratitude and we recognize to-day that without her co-operation our Annual Meetings must prove a failure

A gathering like this is not merely a national conference It is something which knits together a professional brotherhood which extends throughout the world It brings together representatives from all parts of the British Isles from our overseas dominions and from the great continents of Europe and America It accepts representatives of all those who work with a common object from nations outside our empire and it welcomes them as members of a great medical fraternity There is no such word as "foreign" in the world of medicine Politicians talk about a league of nations but in medicine nations count as nothing The fight against disease is carried on wherever the human race exists, and we recognize that each does his best according to the knowledge vouchsafed to him I was told recently that Bradford had no medical traditions and its reputation had still to be made I accepted the insult with equanimity because I felt I was in the company of several to whom I could bow the knee without humiliation My mind went back to Dr Sharpe and to the first Dr Meade, both Fellows of the Royal Society and then to the late Dr John Bell Dr Govder, and others who demonstrated that wool orters' disease was due to the anthrax bacillus Also to the late Sir Thomas Stevenson, who became adviser to the Home Office in medical jurisprudence, and who by his expert evidence, brought many criminals to justice Then to the most kind hearted little man I ever knew the late Dr Major, an expert in mental disease one who e whole desire in life was to help everybody In later days there remains with us the memory of Dr James Kerr, who left Bradford to become the medical officer of the London School Board—a brilliant scholar who never realized how brilliant he was even when it was impressed upon him by others Perhaps I ought not to say anything about tho e who still remain with us, but I am tempted to express my admiration for the long and patient work which has been given to the effort to discover a sure means of disinfection of wool without destroying its commercial value and *I hope that this will* one day obtain success and a well deserved recognition

Bradford is essentially a commercial centre, and its citizens respect everyone who advances commercial prosperity They are enthusiastic in promoting education which has a practical and not merely an academic value Nevertheless it is a curious fact, if history be true that the city owes much of its prosperity to a clergyman The invention of the power loom emanated from Dr Cartwright a

Fellow of Magdalen College, Oxford, afterwards incumbent of Brampton in Yorkshire and Prebendary of Lincoln Cathedral. Incidentally, he married an heiress, and perhaps she too did much to make that invention possible. Thanks to the late Lord Masham's father, his memory is perpetuated by the Cartwright Memorial Hall in Lister Park.

My predecessor has handed on to me the difficult task of delivering a presidential address, and my only comfort is that you will not be allowed to express any criticisms upon my efforts. Reflections on the past and prophecies about the future are time-honoured but very hackneyed topics, but I am going to say something to-night about "The Yesterday, the To-day, and the To-morrow" of medicine.

I think that we are tending to lose our veneration for the past, perhaps we are too conceited about our present, and expect too much of the future. It is only human nature when most of us smile superciliously at the lack of scientific knowledge of our early medical ancestors and fail to appreciate the magnificent courage and perseverance with which they fought a losing battle against disease. Rudyard Kipling accurately described our modern mental attitude when he wrote:

> Wonderful little, when all is said,
> Wonderful little, our fathers knew,
> Half their remedies cured you dead,
> Most of them teaching was quite untrue.

But having written it, he pays them just tribute by adding:

> Yet when sickness was sore in the land,
> When neither planet nor herb assuaged,
> They took their lives in their lancet hand,
> And, Oh, what a wonderful war they waged!
> Yes, when the crosses were chalked on the door,
> Yes, when the terrible death cart rolled,
> Excellent courage our fathers bore,
> Excellent hearts had our fathers of old,
> None too learned, yet nobly bold
> Into the fight went our fathers of old.

The whole world of medicine has so completely changed that we can obtain no true perspective of those early times. The medical student of to-day cannot visualize the conditions against which his predecessors fought. In our eagerness to obtain scientific knowledge and our confidence in modern methods we are losing sight of the traditions of the past. Some of them may be quite untrue in the light of modern knowledge, but many of them still remain as a sure and solid foundation of good practice. Moreover, whatever we may think of the lack of knowledge in the early periods of medicine, there has been handed down to us a precept which everyone of us might well adopt as a guiding principle in professional life. Two hundred years ago there lived a great French surgeon, Guy de Chauliac. His epitaph remains to-day as a motto for us all. He lived in a decadent period. He fought and successfully overcame many foolish and superstitious doctrines which were then in vogue. His life was a stormy one—a fight against prejudice and superstition—and when it ended his service was recognized by an epitaph which he had truly earned:

> Bold when sure,
> Cautious in danger,
> Kind to the sick
> Friendly with fellow workers,
> Not greedy of gain.

Knowledge is a priceless possession, but the mere acquirement of it derived from the labour of others goes a very short way towards the formation of a career which will give a lasting benefit to mankind. Moreover, it has an ever-varying and ever-changing value. What we take pride in to-day will be regarded as crude and foolish to-morrow, but that indefinable quality, character, and wisdom in the application of knowledge will make our memory live.

During the Victorian era two great discoveries were made which paved the way for the surgical triumphs of to-day. Strictly speaking neither of them were discoveries, but rather the wise application of scientific knowledge to a practical use. The properties of nitrous oxide gas had been known long before it was suggested that its use might enable surgical operations to be performed during a period of unconsciousness. Pasteur's researches suggested to Lister that their practical application in surgery had great possibilities, and by his wise application of those researches he handed down to us an unspeakable blessing to humanity. It has been truly said that Lister, by his teachings, has saved more lives than Napoleon destroyed, and the introduction of the use of anaesthesia has given us the greatest of God's gifts—the relief from pain. Anaesthesia in surgical operations abolished the dread of pain, and Lister's application of the germ theory destroyed the spectre of septic infection. Every civilized nation pays homage to Lord-Lister to-day, and no less to Pasteur. Their names are known and revered throughout the whole world.

It is a curious fact, however, that the circumstances of the birth of anaesthesia have been almost forgotten. Horace Wells, a dentist in Hartford, Connecticut, first conceived and put into practice the principle of inducing unconsciousness during dental operations by the inhalation of nitrous oxide gas. In December, 1844, he induced a friend to administer the gas to him for the extraction of a tooth, and, encouraged by success, he repeated the experiment on others. He subsequently gave a demonstration in Boston of his methods, but whether from nervousness, or from some other cause, the demonstration proved unsatisfactory, and he was pronounced an impostor. Disheartened at length by the failure of repeated attempts to establish his claims, his mind became unhinged, and for a time he wandered about the streets in New York. On January 4th 1848, he was arrested on a charge of vitriol throwing, and while he was in gaol he committed suicide. Thus closed, at the age of 32 years, the career of Horace Wells, to whom at least belongs the credit of having first shown the practicability of producing unconsciousness by nitrous oxide gas, and of having thus, in his own words, established "the principle of anaesthesia."

The use of ether as an anaesthetic was introduced in 1846 by Morton, Horace Wells's partner. It was suggested to him by Charles Jackson, a chemist in Boston. Disputes as to priority arose, and Morton died bankrupt and broken-hearted after repeated efforts to secure recognition. Jackson, like Wells, became insane, and died in an asylum. Such is the tragic history of the birth of one of the two greatest benefits which have ever been bestowed on suffering humanity.

It is recorded that the great American surgeon Bigelow, after witnessing one of the early experiments in operating under anaesthesia, rushed out into the street exclaiming, "I have seen something to-day that will go round the whole world!" His prophecy has proved correct, but I doubt whether he realized the full extent of the meaning of his words.

A short time ago it was proposed that a public memorial should be raised to Horace Wells in New York, but the municipal authorities declined to entertain the suggestion. This year the Lister memorial block of the infirmary in Glasgow is being pulled down to make room for extensions and alterations! Am I not justified in saying that we are losing our veneration for the traditions of the past? It may be argued that Glasgow is only a very small corner of the empire, and Lister's memory will always be revered throughout the whole universe. Nevertheless, while we boast to-day about all the wonderful feats we can and do perform, how many of us give a thought to the poor little dentist who first conceived the possibility of bringing them within our range?

The recent war introduced a period in the history of medicine during which everything was subordinated to the requirements of military service. It was a service which presented special problems and conditions of which we had no previous conception. No one had fully realized the enormous power of high explosives and the destructive capacity of all the devices of modern warfare. During the first few weeks of the war our confidence in the principles of our routine surgical practice was rudely shaken, and it was speedily recognized that special methods of wound treatment must be devised to meet the extraordinary conditions with which we had to deal. Those special methods were not long delayed. At the outset, tetanus and gas gangrene threatened to produce an appalling mortality amongst the wounded. In a very short space of time,

thanks to the adoption of preventive inoculation deaths from tetanus became a negligible quantity At the same time a special surgical technique almost grotesque in its extravagance, was devised to prevent the occurrence of gas gangrene and thus most terrible and fatal form of wound infection soon became little more than a nightmare of the past I had the privilege of serving in the Mediterranean force during the second and third years of the war I never saw a single case of tetanus and I can only remember one fatal case of gas gangrene Our victory over these scourges of every army in past history was gained by methods which were inspired by the teaching of two men—Pasteur and Lister If there is nothing else which should bind England and France together in a bond of everlasting friendship, surely the memory of these two men is sufficient to make us realize that humanity owes a great debt to both nations—a debt which the world can never forget

During the Boer war of twenty four years ago enteric fever was responsible for more disablement and death amongst our troops than the wounds received in fighting The Boer war was a mere bagatelle compared with the war with Germany, but I think I am right in stating that there were fifty thousand cases of enteric fever during the former campaign *In the great war with Germany, thanks to* preventive inoculation, enteric fever was responsible for a very insignificant proportion of sickness on every front The disease ceased to be a matter of any serious moment in the presence of modern medical knowledge

I do not think, however, that our recent military experiences have done much to advance our usefulness in dealing with sickness in civil life The demands of war service the urgent necessity for getting men back into the firing line, or of discharging them from hospital in order to make room for others, created a perfect orgy of exaggerated methods of treatment Mr Hamilton Russell of Melbourne truly wrote a few years ago

> The present methods of wound treatment have arisen largely by reason of the special character of war injuries as distinguished from those seen in civil practice The injuries of civil life however remain what they were before and it is necessary to exercise a wise discretion in introducing methods appropriate to war injuries into the much milder type of cases usual in civil life

The whole war period brought into focus an exaggerated idea of the importance of surgical technique, and cramped the development of surgical judgement The treatment of every injury and every disease became standardized, and each was passed through the same mill without consideration of qualifying circumstances It was a bad training for the newly qualified student of medicine he was forced to deal with cases and not with patients, and my own personal experience convinced me that the loyal service which our young men so gladly gave to the nation impaired their subsequent usefulness in civil life Each became a mere cog-wheel in a great machine designed to fulfil a special purpose During the most impressionable period of their career they worked amongst all the sensational excitement associated with military service, and "the daily round, the common task" of civil practice is now an irksome experience for them Hence is largely derived the widespread desire to practise some form of specialism Specialism has become an idol which all and sundry worship Not very long ago a well known teacher in a great London school deplored this modern tendency in medicine He said

> Everything is becoming divided into special classes and clinics and the lecturer deals with his students as embryo specialists in the subjects in which he himself is expert The necessary solid foundation of general knowledge upon which specialism should be built is receiving too scant attention and the rising generation is being taught to run before it has learnt to walk

The late Sir William Macewen, whose recent death we deplore, once said, "No one can become a good surgeon unless he is first a good physician" It is an axiom which we should never forget, and it behoves everyone to equip himself with a wide knowledge of general medicine before attempting to launch his boat upon the stormy sea of operative surgery To the layman the term "specialist" has become a cabalistic word which he repeats upon every possible occasion There is, however, one specialism which he frequently fails to appreciate at its proper value—the specialism of general practice It requires more knowledge of human nature and more experience over a wide field of observation to make a really first-class general practitioner than the public has any cognizance of

It would be absurd to depreciate the value of the many scientific methods of investigation which are available at the present time but I am sure that a too ready appeal to them is doing much to destroy the initiative in the younger generation to think for themselves Clinical observation threatens to become a lost art Radiography and all the modern scientific methods are good servants but bad masters There is a whole world of wisdom in an anecdote I heard recently A patient presented himself before a surgeon armed with a bundle of *x* ray photographs and reports of various kinds The surgeon put them all on one side and said, "We will look at these presently, but in the meantime just get on to that couch and I will endeavour to find out what you are suffering from After that, all these things *may* help to prove whether I am right or wrong"

I would insist, therefore, that our present failing is an overconfidence in modern technique and a lack of appre*ciation of the value of that wisdom* which can only be obtained by personal observation and experience I would urge those of the younger generation to think more and observe more for themselves, as their forefathers did, and not be so ready to bow the knee in a fanatical worship of so-called scientific methods of investigation and treatment I would ask them to reflect on all the special methods which have been put forward during the past thirty-five years, from tuberculin down to deep *x*-ray therapy for cancer, to realize how many have failed to stand the test of experience, and to reflect on all the bitter disappointments which have been inflicted by the thoughtless optimism with which each has been advocated Our scientific knowledge has been greatly advanced, but knowledge avails us very little unless we cultivate the wisdom to gauge its practical value and apply it usefully

> Knowledge and wisdom far from being one
> Have oft times no connexion knowledge dwells
> In heads replete with thoughts of other men
> Wisdom in minds attentive to their own
> Knowledge is proud that he has learned so much
> Wisdom is humble that he knows no more

What of the future? The day is coming when it will cease to be said that

> We are afflicted by what we can prove
> We are distracted by what we know

because we shall obtain presently a truer perspective of the scientific methods of to-day Experience begotten by patient observation, will teach us their real value, and their limitations Some will be discarded, some *may* become a sheet-anchor in times of doubt Each will add its quota to our knowledge if it be wisely used, and not merely applied empirically just because it appeals to the popular craze of the moment We must each play our part by developing our personal observation and experience and not be content to invoke specialisms to solve those problems which we ought to decide for ourselves If we do that we shall each add something to the sum of human happiness and that after all, is the one thing worth living for Then when we have grown old, and the world has forgotten what we have done in the past, we shall find comfort in that consolation which has been given to everyone who has striven to do his best

> When earth's last picture is painted and the tubes are twisted and dried
> When the oldest colours have faded and the youngest critic has died
> We shall rest and faith we shall need it lie down for an æon or two
> Till the Master of all good workmen will put us to work anew
> And only The Master shall praise us and only The Master shall blame
> And no one shall work for money and no one shall work for fame
> But each for joy of the working and each in his separate star
> Shall paint the things as he sees them for the God of things as they are

An Address
ON
THE METHOD OF TISSUE CULTURE AND ITS BEARING ON PATHOLOGICAL PROBLEMS *

(*With Special Plate*)

BY
ALEXIS CARREL, M D
(From the Laboratories of the Rockefeller Institute for Medical Research New York)

THE attempts made during past years to apply the method of tissue culture to pathological studies did not meet generally with great success This must not be attributed to the method itself, but merely to the fact that the techniques were not adapted to the requirements of physiological and pathological investigations The early procedure, which was derived from the experiments of Ross Harrison and is still widely used, consisted merely in placing a fragment of embryonic or adult tissue in a drop of lymph, plasma, serum, saline solution, or other media, hanging in a sealed hollow slide While surviving under these conditions, the cells are subjected to complex and obscure influences such as those of necrotic cells of their own type, living and dead cells of other types, and a medium which deteriorates spontaneously within a short time Obviously, the factors responsible for the morphological or dynamic changes observed in the tissues cannot be analysed accurately It is as impossible to study a problem of cell physiology with a fragment of fresh tissue in a hanging drop of plasma, serum, or other fluids, as it is to investigate the properties of bacteria cultivated in a medium of spontaneously varying composition and contaminated by other bacteria It could hardly be expected that such imperfect procedure should lead to important results Before a study of complex problems could be properly undertaken more elaborate methods had to be developed by which the interactions of pure strains of cells and the humours could be elucidated and expressed quantitatively, whenever feasible

'When you can measure what you are speaking about and express it in numbers," wrote Lord Kelvin, "you know *something* about it and when you cannot measure it, when you cannot express it in numbers, your knowledge is of a meagre and unsatisfactory kind It may be the beginning of knowledge, but you have scarcely in your thought advanced to the stage of a science"

These words by one of the greatest of modern physicists apply as well to pathology as to physics, chemistry, or physiology Biological phenomena must be reduced to their simplest terms, in order that their fundamental principles may be unveiled, and qualitative conceptions be replaced as far as possible by quantitative relations Therefore I shall confine myself to speaking of the methods permitting the measurement of the interactions of the tissues and their medium, and, wherever practicable, the description of experiments made by the early procedure with impure cultures of tissues will be omitted, because these experiments have often led to erroneous conclusions In this paper I shall briefly review the new techniques developed during the last few years, and some of the results already obtained

Pure Strains of Cells

The isolation and maintenance of pure strains of various types of tissues was the first and most indispensable step in the adaptation of the method of tissue culture to physiological research The first pure culture of fibroblasts originated over twelve years ago from a fragment of the heart of a chick embryo and was cultivated in embryonic tissue juice, which was discovered at about the same time to have the property of giving to fibroblasts an unlimited proliferating capacity Pure strains of fibroblasts can be obtained easily from practically every tissue of fowls, dogs, etc, as connective tissue cells multiply *more* rapidly than the other cell, which spontaneously disappear within a few weeks The fibroblasts grow as a dense tissue which doubles its volume in about forty-eight hours The cells are polygonal or spindle-shaped, with long, sharp processes, and with an oval nucleus containing generally two nucleoli (Fig 1) The strain, now over twelve years old, has produced a very large number of cultures and has been used in many experiments as a physiological reagent for detecting in serum and other fluids the presence of substances promoting or inhibiting cell multiplication

Strains of lymphocytes and large mononuclears were obtained from cultures of white blood corpuscles The polymorphonuclear leucocytes, endowed with greater activity, occupy the peripheral area of the culture The inner zone is covered chiefly by lymphocytes and monocytes After a few days the polymorphonuclear leucocytes progressively disappear They are generally taken up by the lymphocyte and digested Finally, the mononuclear cells alone remain (Fig 2), multiply in the medium, and wander through it isolated or in columns, but never aggregate in a tissue When they accumulate in large numbers, or are packed together by contraction of the medium, they generally die or become transformed into fibroblasts The growth of the cultures is slow and the cells are less resistant than epithelial and connective tissue cells No strain has lived for more than three months But, as cultures of lymphocytes and macrophages free from polymorphonuclears are obtained from blood cells in a very short time, it is unnecessary to maintain the same strain indefinitely

A strain of cartilage cells has been isolated from the para-cartilago scleræ of the eye of chick embryos by Fischer, and cultivated for more than three months The hyaline substance disappeared and the small lymphocyte-like cells became transformed into large spindle-shaped cells, which formed thin membranes The rate of growth was slower than that of fibroblasts and epithelium

The isolation of a strain of epithelial cells was attempted many times without success As the epithelium was always contaminated by a few fibroblasts which grew at greater speed, pure cultures could not be obtained Finally, in this laboratory Fischer succeeded in growing a strain of epithelium from the few cells of the iris which adhere to the lens of a chick embryo When multiplying on the surface of a plasma clot in a thin layer of embryonic juice, the cells assume the appearance of a continuous membrane (Fig 3) Their rate of growth is slower than that of fibroblasts, and the cultures double in size in about three days A strain of epithelial cells isolated by Ebeling almost two years ago has lost none of its characteristics It does not dedifferentiate The cells grow as a thin mosaic at the surface of the medium and manufacture a large amount of black pigment, similar to that of the cells of the iris Ebeling and Fischer have observed them forming finger-shaped processes, like those found long ago by Burrows and myself in cultures of kidney and of thyroid gland more or less contaminated with fibroblasts, and those recently described by Drew Fischer also showed that keratinization of the epithelial cells, attributed by Drew to the presence of fibroblasts, takes place in pure cultures When epithelium is allowed to grow in contact with pure cultures of fibroblasts, it gives rise to gland-like structures, as has been shown by Ebeling and Fischer

For several years attempts to isolate strains of thyroid, Malpighian, renal, and other epithelial cells remained unsuccessful Our technique consisted in extirpating by section with a cataract knife small islands of epithelial cells, growing from embryonic tissues, and, in some cases, groups of cells uncontaminated by fibroblasts could be transplanted into a fresh medium In order to obtain pure cultures of renal epithelium Drew used an ingenious technique, which consists in protecting an island of epithelium with a drop of mercury and in killing the other cells by the rays of a quartz mercury lamp The main objection to this procedure is that dead cells are left in contact with living cells, and that necrotic tissues may set free substances which modify the living structures more or less profoundly

Important progress in the cultivation of epithelium has been made recently, when Ebeling isolated a pure strain of thyroid cells from a chick embryo and maintained it in active condition Thyroid cells from a five months old strain grow equally well at the surface of the medium (Fig 4) or in its depth They easily digest the fibrin of the coagulum, but they multiply at a more rapid rate and are more resistant than pavement epithelium Sometimes

* Delivered for the Section of Pathology and Bacteriology at the Annual Meeting of the British Medical Association Bradford 1924

A CARREL TISSUE CULTURE AND ITS BEARING ON PATHOLOGICAL PROBLEMS



FIG 1—Pure culture of fibroblasts from a 12 years old strain



FIG 2—Pure culture of large mononuclear cells twelfth passage



FIG 3—Pure culture of pavement epithelium from a 19 month old strain



FIG 4—Pure culture of thyroid epithelium from a 6 months old strain

WAGGETT AND FYFFE TOOTH PLATE REMOVED FROM RIGHT BRONCHUS

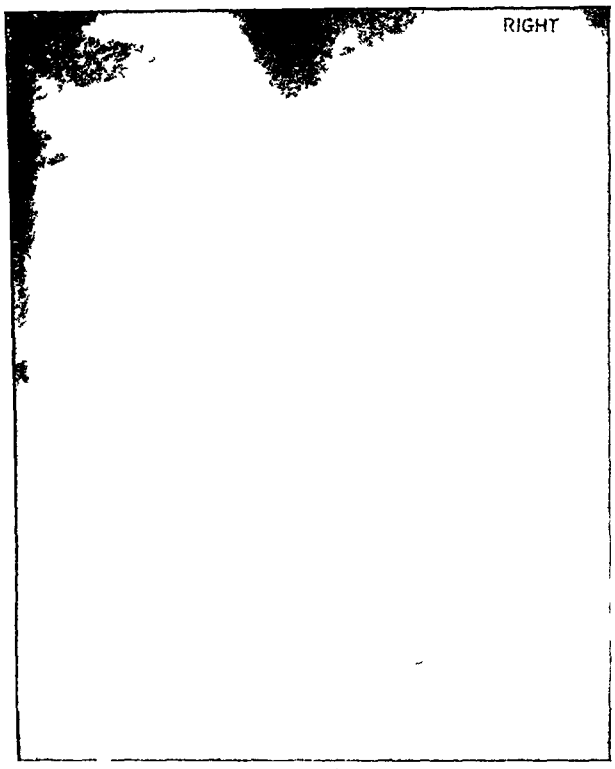


FIG 1

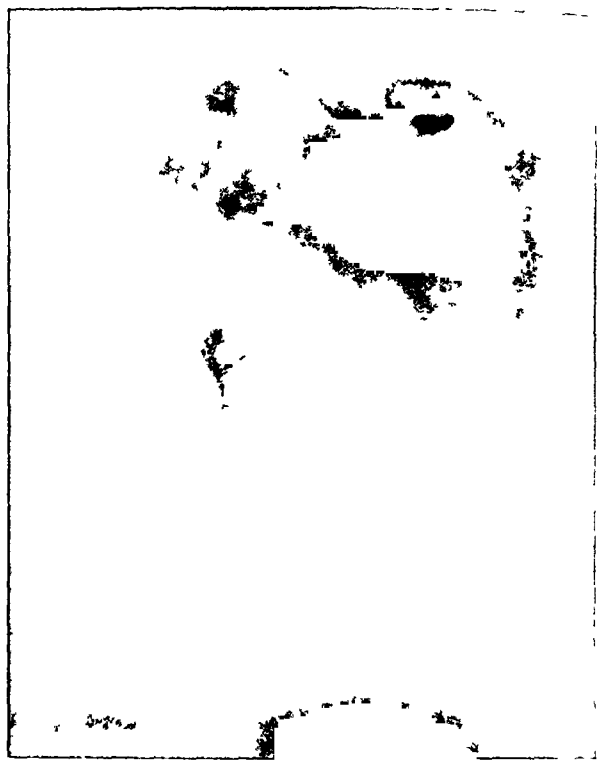


FIG 2

W. L. COOKE. FIBROSIS OF LUNGS DUE TO INHALATION OF ASBESTOS DUST

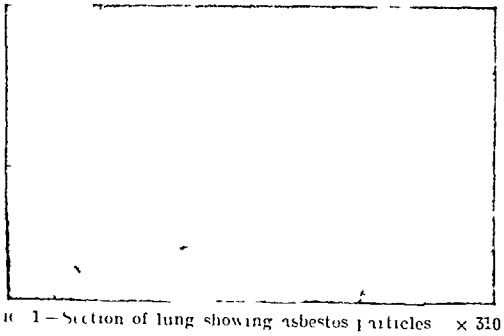


FIG 1.—Section of lung showing asbestos particles. × 310

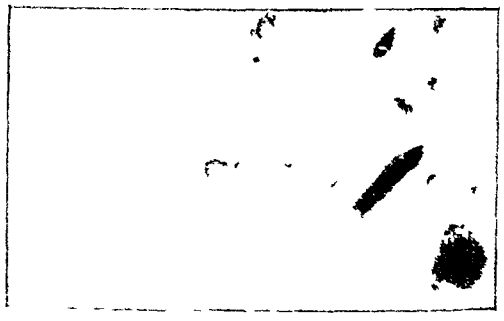


FIG 2.—Asbestos dust. × 310

H. H. MPLE MORSELL. AN UNUSUAL CASE OF BILATERAL RENAL CALCULUS

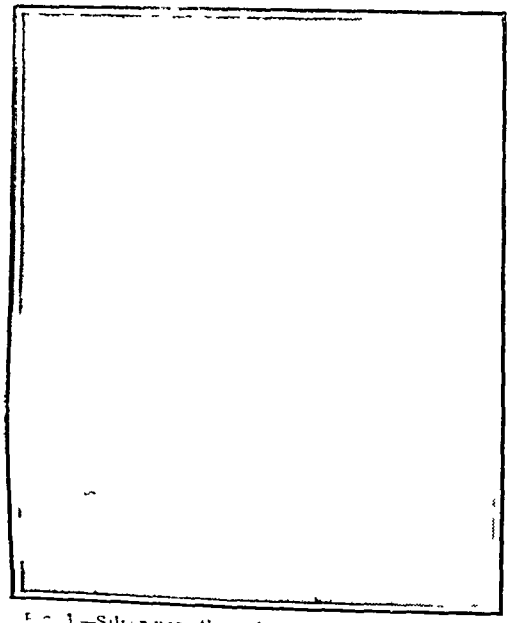


FIG 1.—Silver wire through spinous processes of third and fourth cervical vertebræ. Superior articular process of fourth cervical removed. 1915.

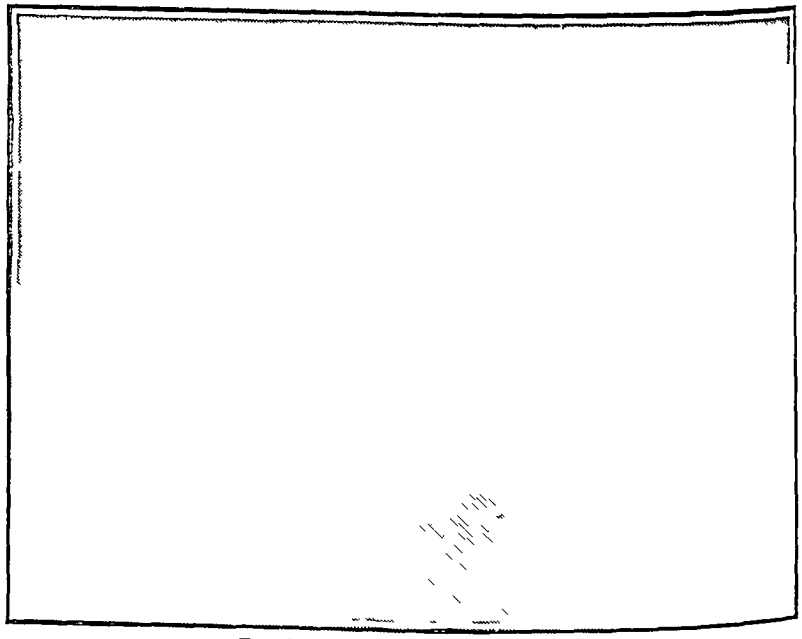


FIG 2.—Bilateral renal calculi. 1923.

they form acini with colloidal material in the centre Generally they are more or less irregularly spread in the coagulum and some drops of colloid substances with their characteristic appearance can be seen within the cells or near them in the medium When pure cultures of fibroblasts are added to thyroid tissue the fibroblasts soon surround the thyroid epithelium, which organizes in a small gland showing acini filled with colloid substance The inclusion of a fragment of thyroid strain in a pure culture of fibroblasts accelerates the proliferation of the fibroblasts during a number of passages It is obvious that thyroid cells *in vitro* have the property of secreting substances which stimulate the growth of fibroblasts Possibly these substances are identical with those contained in thyroid extracts, whose action on connective tissue I observed long ago, *in vivo* as well as *in vitro*

The behaviour of this strain of thyroid cells and the persistence of their characteristics in spite of the absence of connective tissue have an important bearing on the theories of Champy and Drew regarding dedifferentiation of tissues *in vitro* Long ago Champy observed that *epithelial cells which migrate from fragments of kidney* surviving in a drop of plasma lose most of their characteristics and return to an indifferent stage where epithelial and connective tissue cells cannot be distinguished from one another He found also that the specific secretion of the guinea pig prostatic cells soon disappeared when they were cultivated in serum When connective tissue was present dedifferentiation of epithelial cells did not occur He concluded that epithelium cultivated *in vitro* is bound to dedifferentiate when no connective tissue is present More recently the same theory was defended by Drew It was hardly possible to infer from those experiments, which were made according to the early technique and with impure cultures, that cells cultivated *in vitro* necessarily dedifferentiate In Champy's experiments the tissues were not even in a condition of cultivation, but merely of survival, and the duration of the survival was very short Dedifferentiation of epithelial cells in tissue cultures is far from being a necessary consequence of life *in vitro* Since it is proven that pure strains of pavement epithelium and of thyroid epithelium maintain their essential characteristics after a long period of cultivation, the theory of Champy and Drew must be definitely abandoned

Pure Strains of Cells from Sarcomas

Some years ago several attempts were made to obtain pure cultures of malignant cells from Rous sarcoma, but no strains could be kept permanently Losee and Ebeling tried also to obtain a pure strain of human sarcoma After a few days the cultures were composed of apparently normal fibroblasts which ultimately died Fischer recently published a procedure by which tumour cells cultivated with small fragments of muscle proliferated *in vitro* and kept their malignant characteristics Cultures from a six months' old strain grafted into chickens brought about the growth of malignant tumours During the past year I obtained pure cultures of cells from malignant tumours of different types—Rous sarcoma, spindle-cell sarcoma from the thoracic wall, round-cell sarcoma from the eye, and ovarian sarcoma

As fibroblasts and amoeboid cells possess different cultural properties pure cultures of both types of cells could be isolated from Rous sarcoma The strains of fibroblasts were kept for more than five months in order to ascertain whether their malignant nature would persist Cultures were inoculated into fowl at different intervals The malignant characteristics generally disappeared after from two to four passages—that is from four to seven days A strain remained slightly malignant for several months in only one instance

Wandering cells in pure cultures had the appearance of monocytes They spread slowly into the medium always remained isolated during their migration and never formed a tissue The inoculation of these cells into fowls gave rise to tumours which had the characteristics of the original tumour An eighteen day old culture composed exclusively of amoeboid cells produced a rapidly growing sarcoma in a short time So far it has not been possible to isolate polymorphonuclear cell from sarcomas and test their power of producing tumours

Preservative and Nutritive Media

By the study of cells in pure cultures it was determined whether a given medium is nutrient or only preservative In the early experiments the tissues were supposed to live on the constituents of the lymph or plasma used as a culture medium But soon Lewis found that proliferation of embryonic tissues takes place as readily in saline solution as in serum and that the tissue fragments cultivated in plasma do not increase in mass Although the minute fragment of embryonic heart from which originated the first pure strain of fibroblasts proliferated for more than three months in plasma, it progressively decreased in volume But as soon as embryonic juice was added to the medium the tissue began to grow These and other experiments led to the conclusion that cells cultivated in plasma do not feed on the serum constituents but on substances contained in the tissue itself Recently, the function of plasma and serum in the nutrition of fibroblasts was certained in extensive series of experiments made on pure cultures of fibroblasts with both techniques, repeated passages of the tissue in the medium, and changing the medium while the tissue grows undisturbed in a flask These experiments rendered evident the fact that fibroblasts live no longer in Tyrode containing different dilutions of serum than in pure Tyrode solution When the amount *of serum is large the cells die sooner than in saline solution* If a small quantity of embryonic tissue juice is added to the medium the growth of fibroblasts and duration of their life is in no way influenced by the presence or absence of serum Even if embryonic juice contains some growth-stimulating hormones these hormones fail to enable the fibroblasts to use the nitrogenous constituents of serum But fresh embryonic heart can live in plasma much longer than a pure culture of fibroblasts because the disintegrating tissues, as Burrows has shown, set free substances which are used by fibroblasts for the synthesis of protoplasm The proliferation of cells cultivated in plasma depends on some nitrogenous material stored within the cells and the tissues themselves Serum proteins are not used by fibroblasts and epithelium as a source of nitrogen Therefore plasma and serum cannot be considered as a culture medium for those cells, in the proper sense of the word

Several other fluids were supposed to be nutrient for tissues *in vitro* Chicken bouillon is a part of the medium called Locke-Lewis solution but it cannot be used by fibroblasts any more than serum In some experiments made with the early technique the action on fragments of embryonic heart of a number of amino-acids was found to be toxic But it was disclosed recently that amino-acids under the same concentration as in the blood have no poisonous effect on fibroblasts and epithelial cells in pure cultures and that some of them increase the rate of cell migration and multiplication But they are not used as a source of nitrogen by the tissues which die as rapidly as in pure Tyrode solution Egg white allows a longer survival of the cells and sometimes the fragments of tissue increase slightly in size Crystallized egg albumen in a concentration similar to that of albumin in the serum does not allow an increase in mass of the connective tissue

These experiments definitely proved that fibroblasts and epithelium do not *synthesize protoplasm in vitro* from nitrogenous constituents of plasma, serum, bouillon, or amino-acids, and that in these media they are in a condition of survival and not of cultivation

Fibroblasts and epithelial cells may be considered as in a true state of cultivation only when embryonic tissue juices are present in the medium Whenever embryonic juices are added to the medium of fibroblasts or epithelium the mass of the tissue begins to increase As long as the cells are supplied with embryonic juice they synthesize new protoplasm and build up unlimited amounts of tissue

This explains why the medium recently advocated by Drew as nutrient According to my early experiments and also some recent ones it seemed that extracts of sarcoma adult muscle and glands leucocytes and even of heterologous tissues were endowed with a growth promoting action similar to that of embryonic juices In a recent article we reported the results of a study of the action of the juices from homologous and heterologous tissues on pure cultures of fibroblasts not only for a few days but for long periods of time The effect of these juices which may be practically similar for a few days differs widely when their action is prolonged Extracts of adult chicken organs like embryonic tissue juice at first determine an increase in the mass of the pure cultures of chicken fibroblasts but after a few passages the fibroblasts cease multiplying and ultimately die It is probable that adult tissues as well as serum contain substances which are toxic for the homologous cell and progressively overcome the effect of the growth promoting compound The activating effect attributed recently to adult gland and sarcomatous tissue by Drew entirely corroborates our early experiments There is no marked difference between homologous and certain heterologous adult tissue extracts in their effect on fibroblasts demonstrated lately by Ebeling and myself By contra heterologous embryonic

juices may act on chicken fibroblasts in the same manner as chick embryo juice It appears that fibroblasts can synthesize protoplasm from substances contained in certain foreign embryonic juices

Several years ago aqueous extracts of sarcoma were found by Burrows and myself to enhance cell multiplication, apparently in the same [illegible] tissue juice does This fact has recently been [illegible] But the action of extracts of sarcoma is mo[illegible] as thought at first When the cultures are kept under observation for several passages, the rate of cell multiplication, which is at first increased, becomes slower and the fibroblasts may ultimately die Therefore the action of the juices from tumours can be compared only in a superficial way to that of embryonic tissue juices

While fibroblasts and epithelial cells remain in a true condition of cultivation only in homologous and certain heterologous embryonic tissue juices, lymphocytes behave differently In embryonic tissue juices they display great activity at first, but die after a short time On the contrary, if the medium is composed of diluted serum, they remain alive and spread over a large area for more than a month It is obvious that they build up protoplasm from some constituents of serum, while neither fibroblasts nor epithelial cells possess this property

But it is not proved that such striking differences exist within the organism Tissues within the organism may continuously receive substances which circulate in very high dilution in the blood, while *in vitro* these substances are soon exhausted and cannot manifest their action However, there is some reason to believe that in the adult animal connective tissue does not find in plasma the substances necessary for its multiplication If endothelial cells were capable of proliferating in blood plasma, they would soon fill the lumen of the vessels Connective tissue is at rest in practically every part of the adult organism, probably because it does not find in interstitial lymph and plasma the necessary growth promoting substances Although fibroblasts do not proliferate spontaneously *in vivo*, they may multiply around foreign bodies or regenerating structures, when leucocytes secrete, or necrotic cells set free substances similar to those which are found in tissue juices These substances would be the substratum of the formative stimulus which is supposed to impart growth energy to regenerating tissues

The nature of the nitrogenous compounds present in embryonic juice and used by epithelial and connective tissue cells in the building up of protoplasm is still unknown But some of their properties have been studied during the last twelve years Embryonic tissue juice loses its growth-promoting effect after it has been shaken for several hours, or heated at a temperature of 65° C for a few minutes The substances which promote cell multiplication are as sensitive to heat as alexin and sensitizer They are partly destroyed at 56° C in thirty minutes, and when left in an incubator at 38° C for forty-eight hours their action is greatly weakened They are unstable and easily destroyed by agents other than heat They are sensitive to the action of radium and *x* rays Spontaneous deterioration occurs also under the influence of still unknown factors The decrease in the *p*H, which occurs spontaneously even at low temperature, prevents their stimulating action But even when the *p*H does not vary, embryonic juices which have been kept in the refrigerator for one or two weeks lose some of the growth-promoting power Filtration through a Berkefeld filter partly deprives the juices of their growth-activating substances, and these substances disappear completely after filtration through a Chamberland filter These facts have recently been confirmed by Drew Many attempts have been made to isolate from the embryonic tissue juices the substances used as a nitrogenous food by fibroblasts Fractional precipitation by alcohol, acetone, and other substances did not lead to the separation of a more active moiety The growth-promoting substances always remain with the protein precipitate They may consist of some growth-stimulating hormones of the class called by Gley haimozones, and of other substances which supply fibroblasts and epithelium with the nitrogen required for multiplication, or only of the latter These nitrogenous compounds, secreted by certain cells and used as food material by other tissues, are called trephones—from τρεφω, I feed

It is obvious that the osmotic tension and the concentration in hydrogen ions of the medium must be similar to those of the humours of the organism A convenient method was developed by Walton for measuring the hydrogen ion concentration of the medium The optimum *p*H for the growth of pure cultures of fibroblasts was determined by Fischer It was found to be between 7·4 and 7·8 for chicken fibroblasts But the cells could live for four or five passages at a *p*H of 5·5 and for eight or nine passages at a *p*H of 8·5

Methods for the Preparation of the Cultures

It is well known that embryonic tissue may grow on the fibrin network of a plasma coagulum, on the surface of the cover-glass in a drop of lymph, serum, or saline solution, and on agar But even in a fluid containing all the substances necessary for cell multiplication no growth occurs if the cells do not find the proper support on which to creep The finest details of the cells spreading on a cover glass in a saline solution may easily be observed, and this technique is excellent for cytological studies, as shown by Lewis When the rate of growth of tissues must be accurately measured, and when the cultures must be transferred from medium to medium with as little disturbance of their structure as possible, the cells require a scaffold which offers sufficient resistance to handling with instruments

Fibrin makes an excellent support for cells, which grow incomparably better and more regularly than on agar The transfer of the tissues from medium to medium is possible without disturbing the cells, as they are embedded in and protected by the fibrin The main objection to the use of fibrin is that in the early technique it could be obtained only from plasma, and the serum constituents could not be removed Therefore it was impossible to observe the effect of simple saline or other solutions on the growth of cells This disadvantage has been overcome by a method for obtaining and keeping fibrinogen suspension or solution, which is added to the fluid medium At first the digestion of the fibrin prevented the use of serum-free media, but this obstacle was met by adding traces of sodium linoleate or egg yolk to the fluid A fibrin coagulum deprived of serum may also be obtained by washing a thin plasma clot in the bottom of a flat flask with Ringer or Tyrode solution

A medium prepared according to the early technique deteriorates spontaneously within a short time As the activity of the cells depends in a large measure on the composition of the pericellular fluid, no precise relation between a given factor and the changes in the morphology or the growth energy of a tissue can be established if the medium undergoes progressive and unknown modifications The deterioration of the medium is due to the spontaneous destruction of thermolabile growth-promoting substances contained in tissue juices and serum, and to the accumulation of waste products from the tissues This deterioration could be prevented by the cultivation of the cells in a continuous stream of oxygenated medium But although Burrows succeeded in circulating serum at the surface of a plasma clot, no practical method has been evolved from those early experiments The first technique by which cells could be kept indefinitely in a condition of constant activity consisted in removing the tissue fragment frequently from its medium, washing it in Ringer solution, and transferring it to a fresh medium As the nutritive substances contained in the medium do not undergo marked disintegration in forty-eight hours, and as the accumulation of waste products has but a very slight action on the growth of the tissues during that period of time, the cultures, when transferred from medium to medium, live under practically unchanged conditions This method has several disadvantages—for example, it is laborious and requires training to extirpate the tissues from the medium and transfer them to a new medium, only a small amount of tissue can be handled, and some tissues do not stand the passages well While strains of fibroblasts and epithelial cells can be maintained indefinitely in an almost constant condition of activity, lymphocytes do not resist the frequent passages as well as other cells Furthermore, cell secretions which require the cultivation of large amounts of tissue under constant conditions cannot be studied

A second technique has been developed by which the culture medium may be renewed frequently without mechanical disturbance of the tissues or danger of bacterial contamination Special containers have been made in the form of flat round flasks with oblique necks They belong to different types, some being used for measuring the rate of growth of tissues, and the others when cytological examinations are required The size of the flasks varies from 5 to 8 cm in diameter, which makes possible the use of large amounts of tissues and medium By means of spatulas the tissues may

be handled conveniently inside the flasks The principle of the method is to use a medium composed of two parts, one solid and the other fluid, the latter being renewed as often as necessary The solid medium is composed of coagulated plasma in which the tissues are embedded and which covers the bottom of the flask in a thin layer The fluid medium, which bathes the solid medium continuously or not as desired, is composed of Tyrode solution in which are dissolved the substances whose action on the tissues is being investigated The fluid medium diffuses its nutrient principles in the coagulum and also receives the katabolic products of the tissues As it can be changed every day, the tissues grow on the bottom of the flask without being disturbed, in a medium which varies but little in composition With this technique epithelial cells, fibroblasts and leucocytes can be observed in a condition of uninterrupted growth for about a month, after which they must be transferred into a fresh medium

Methods for Measuring the Rate of Growth of a Tissue and Detecting Growth-promoting or Inhibiting Substances in a Fluid

As the action of a given substance on a tissue must be measured by its effect on the growth of a pure strain of cells it was ascertained whether two parts of a tissue fragment may be caused to grow at identical rates in identical media

A minute study was made of the technical conditions which are required for the uniform growth of pure cultures of fibroblasts When the technique is carefully carried out the differences in the rate of growth of fibroblasts in identical media are slight But the technique is delicate and in untrained hands the experimental errors are of such magnitude as to render the results worthless

The measurement of the rate of growth is made in the following manner The slides are placed in a projectoscope and the outlines of the tissues are drawn immediately after the preparation of the cultures, and after forty eight hours' incubation (Fig 5) The areas of the original fragment and of the new growth are measured with a planimeter and the ratio of the area of the new growth to that of the original fragment is calculated This relative increase of

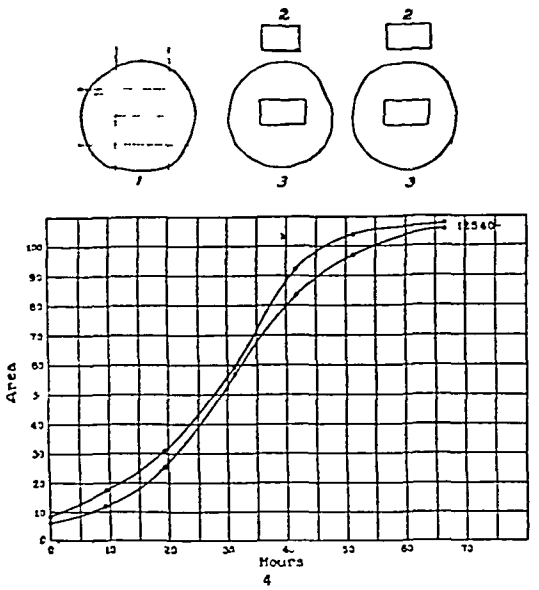


FIG 5—1 Division of a pure culture of fibroblasts into two fragments of equal size 2 Tracing of the fragment in the projectoscope immediately after preparation of the culture 3 Tracing after forty eight hours showing the area of growth 4 Curve expressing the growth of two fragments of fibroblasts during sixty seven hours

pure cultures of fibroblasts and epithelium in forty-eight hours expresses the rate of growth The rate of growth, the increase in mass of the tissues in a number of passages and the duration of life of the cultures indicate whether the medium is nutrient, non-nutrient, or growth-stimulating without being nutrient When the tissues are cultivated in large flasks, the increase is measured in the same way, and as the growth is uninterrupted, it may be expressed graphically in a simple manner The curve expressing the rate of growth of fibroblasts and epithelial cells in a nutrient medium is a parabola (Fig 6) If the medium is non-

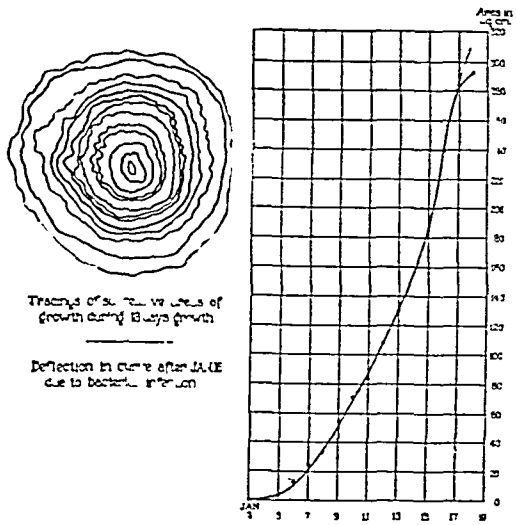


FIG 6—Tracings and curve showing the growth of a pure culture of pavement epithelium in a D 5 flask

nutrient, the curve is S-shaped Modifications in the form of this curve indicate whether the medium contains substances which activate or depress the rate of cell multiplication The technique cannot be used for measuring the activity of lymphocytes because they never grow as a tissue but always remain at certain distances from one another and invade the culture medium on several planes It is possible to use strains of epithelial and connective tissue cells as physiological reagents in order to detect in the humours the presence of substances promoting or depressing cell multiplication, and to express the action of these substances in terms of unit area of growth

Methods for Ascertaining the Growth Energy of a Tissue

The inherent growth energy of a given tissue can also be ascertained It is obvious that the growth energy of a tissue *in vivo* may undergo wide variations under the influence of several factors, and chiefly of age The curves of Minot demonstrated this long ago The growth energy of the fibroblasts of a given organ is greater in an embryo than in a young animal and fibroblasts in a nutrient medium are more active after twenty-four hours than after seventy-two hours It is also known that a tissue may increase in growth energy by cultivation in a medium containing a large amount of embryonic substances Therefore the inherent growth energy of a tissue at a given instant is a function of several independent variables its growth energy at the preceding instant and the concentration in the pericellular fluid of the substances which increase or decrease cell activity It could be ascertained by the activity displayed during an instant by the cells in a medium containing neither activating nor retarding substances if such a measurement were possible But the

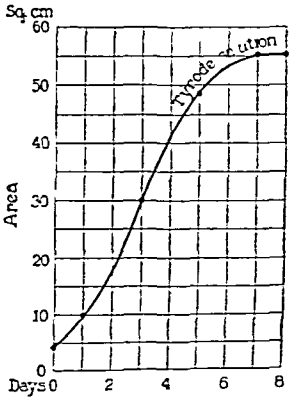


FIG 7—Residual activity of a pure culture of fibroblasts

residual energy, which was found to vary at the same time as the inherent energy, may be used as a measurement of the latter The residual energy (Fig 7) is expressed by the duration of life and the proliferative activity of the cells in Tyrode solution

Applications of the Methods to the Study of Physiological and Pathological Problems

The method of tissue culture, although still in its infancy, is already a powerful instrument for the investigation of the relations of the tissues and the humours It is capable of reducing certain phenomena to their simplest terms, since the action of a given substance on a given type of cells and the interactions of known types of cells can be studied for long periods of time Thus it offers possibilities for the study of some problems which are beyond the reach of any other methods of research

The behaviour of pure strains of tissues under various cultural conditions has shown that the rate of cell proliferation is not determined by the energy derived from the ovum, but is a function of the concentration in the pericellular fluid of substances which have the power of promoting or inhibiting cell proliferation As long as the proper amount of food material is given to connective and epithelial tissues and the katabolic products are removed, cell proliferation goes on Its velocity increases or decreases according to the composition of the medium, and remains constant in a medium of constant composition

The strain of fibroblasts, which I obtained more than twelve years ago, is fully as active to day as at the end of its first year There is no change in the rate of growth of the strain of pavement epithelium isolated by Ebeling eighteen months ago These tissues can be considered as potentially immortal But the accumulation of katabolic products, the disappearance of the nutrient principles the presence of toxic substances etc, may bring about some morbid changes in the cells and eventually their death It is probable that within the organism the pathological processes, which involve a resumption or decline of cell activity, are due to similar causes

The methods used for measuring the amount of tissue produced under the influence of a given factor have permitted the detection and study of two classes of substances which probably play an important role in pathology These substances that promote and restrain the growth energy of tissues are found in blood serum and in embryonic and other tissues

Growth Depressing Action of Serum

Serum not only fails to supply fibroblasts and epithelial cells with the substances necessary for multiplication, but it inhibits their proliferation and shortens their life *in vitro* Although lymphocytes find in serum the substratum for multiplication, their activity is depressed by a large amount of this fluid in the medium

The apparent acceleration of growth which occurs when plasma is diluted with a saline solution is caused merely by a decrease in the inhibiting action of serum under the influence of dilution Although this phenomenon was studied long ago by Burrows and myself by Lambert and by Ebeling, its mechanism has remained unknown until the discovery of the growth inhibiting action of serum on the multiplication of fibroblasts and epithelium

As a rule, the restraining action of serum becomes more pronounced after serum has been shaken or heated The agents which inactivate serum also render it more inhibiting for homologous fibroblasts It seems that serum contains certain growth-promoting substances which, like alexin sensitizer, and embryonic trephones, are destroyed by shaking and heating, and oppose the inhibiting effect on fibroblasts of other substances that resist heat and shaking The study of the properties of a precipitate obtained by bubbling CO_2 through serum showed that serum contains two antagonistic substances, the growth-promoting ones always being weaker in their action than the growth-inhibiting

The growth-restraining power of serum varies with the age of the animal Serum never activates the multiplication of fibroblasts, even when obtained from a very young animal, but does not depress growth in the latter case However a short time after birth the serum becomes slightly inhibiting The rate of cell multiplication and the duration of the life of a pure strain of fibroblasts in plasma decrease in function of the age of the animal from which the plasma is obtained, at first very rapidly and in later years very slowly (Fig 8) The curve expressing this phenomenon resembles the growth curves of Minot, and that of the variations of the index of cicatrization in du Noüy's formula in function of the age of the patient As no growth-activating power can be detected in the serum of very young animals, it appears that, during the whole life, the growth-inhibiting substances contained in plasma have a stronger effect on fibroblasts than the growth-activating ones, and that the effect of the latter is entirely shielded by that of the former The increase of the inhibiting action of serum in the course of life is due to complex causes which were submitted to an experimental study The conclusion of these experiments was that the increased inhibiting action of serum from old animals is due to the loss of growth-promoting substances and, at the same time, to the enhanced power of the growth-inhibiting factors The growth-promoting substances probably come from gland secretions which decrease in old age The enhanced growth-restraining effect may be due to the change in the properties or the quantity of the serum proteins Hatai has shown that the concentration of proteins in rat serum increases with the progress of age The same phenomenon occurs in fowls But when the serum of an old fowl is diluted so that its protein concentration is practically equal to that of a young fowl, its growth-promoting power, which has decreased markedly, is still higher than that of the young animal While increase in protein concentration is one of the mechanisms by which age acts on the inhibiting power of serum, other factors certainly play a part in the phenomenon

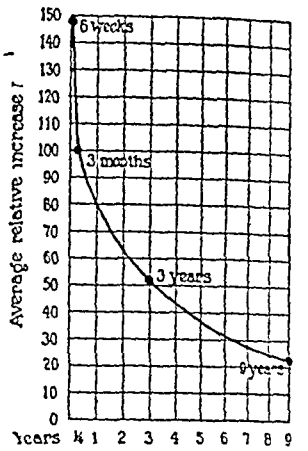


FIG 8.—Curve showing the variations of the pure cultures of fibroblasts in serum from fowls of different ages

The property of the blood serum of becoming more growth-inhibiting with advancing years was used as the basis of a technique for measuring age The ratio of the rate of cell proliferation in serum to that in Tyrode solution is called growth index It seems that it varies as an exponential function of the time The value of the growth index decreases rapidly during the first months of life and slowly in old age As chicken fibroblasts respond to the inhibiting power, not only of homologous, but also of certain heterologous serums, they may be used as a reagent for the detection of the modifications brought about by age in the blood of dogs

When the growth index is adjusted to be 1 00 in dogs about two weeks old, it becomes rapidly lower, and variations from 1 00 to 0 70 and even 0 50 can be observed within two years On the contrary in old animals the variations of the growth index are small In animals 8 or 9 years old its value varies generally between 0 2 and 0 1 In still older dogs the technique is not sensitive enough to show differences larger than these which may be due to experimental errors

The growth index varies under the influence of conditions other than age The serum becomes more inhibiting in the course of a general infection, after the spontaneous development of an abscess, or after an injection of turpentine, and returns to its normal condition when the animal recovers The serums of animals which reach the cachectic stage of a malignant tumour may show an increase in their growth inhibiting action The variations of the growth index give an indication of the condition of the humours and of their possible action on the leucocytes and tissues It is probable that some relations will be found between certain diseases and the growth-inhibiting properties of blood serum in adult and old organisms

Embryonic and Leucocytic Trephones

Embryonic tissue juice contains certain substances which give to fibroblasts and epithelial cells the power of proliferating indefinitely *in vitro* This fact indicates that embryonic cells have the property of transforming some

material of the egg or the blood serum of the mother into growth promoting substances These substances are also found in extracts of leucocytes and of adult tissues such as thyroid, brain, kidney, etc They are called trephones because they are used by certain cells as food material They differ from the hormones that stimulate cells to activity without possessing any nutritive property Both trephones and hormones may be required for the growth of tissues Epithelial and connective tissue cells that do not obtain from blood serum the material necessary for the synthesis of protoplasm demand for that purpose the trephones contained in embryonic tissues lymphocytes, and other cells Leucocytic trephones undoubtedly have an important function in physiological and pathological processes We found that extracts of leucocytes contain growth activating substances, and that serum obtained from cultures of leucocytes promotes cell multiplication Leucocytes secrete *in vitro* and *in vivo* substances that determine the multiplication of fibroblast Since lymphocytes are capable of multiplying in serum they probably synthesize growth activating substances from certain constituents of serum They can be considered as mobile unicellular glands which bring to connective and epithelial cells the principles necessary for the synthesis of protoplasm

This function of the lymphocytes was clearly understood by Renaut More than thirty years ago he wrote that lymph cells bring to fixed cells the food material that they require and that the life of the organism depends on their function Jolly also believes that lymphocytes store important chemical substances which are used by the organism The observations of Cramer Drew and Mottram have added a great deal to the evidence of the role of the lymphocytes in the nutrition of the body It is shown by our experiments that lymphocytes retain through life the property of storing embryonic growth promoting substances or trephones which may cause a resumption of cell activity when needed

The white cells of the blood are evidently endowed with a double function—defending the tissues against bacteria, foreign substances, and necrotic material, and promoting cell proliferation

It is well known that pathological processes are often characterized by a resumption of activity of tissues that are more or less in a resting condition In the healing of wounds and repair of fractured bones, and in the development of tumours, cells that have ceased multiplying possibly for many years, recuperate their embryonic growth energy

There has been much speculation concerning the mechanism that determines an increase of the inherent growth energy of a tissue when it is needed But the explanation of this phenomenon was essentially incomplete as the conditions responsible for cell multiplication were unknown Although all the causes of tissue growth are far from being understood we already know from observations of pure cultures of cells that growth energy depends on certain substances present in the pericellular fluid Within the adult organism fibroblasts are not supplied with these substances Since they do not obtain from serum the substances required for the synthesis of protoplasm they must receive them from another source It is difficult to understand how an inflammatory irritant that according to Virchow would be responsible for the resumption of cell activity in pathological processes could furnish the cells with the material needed for proliferation The decrease in tissue tension which Ribbert thought was the cause of the increased growth energy of a cicatrizing tissue does not explain the production of new tissue Weigert while rejecting the hypothesis of Virchow could not give any satisfactory explanation of the fact that injury of a group of cells is followed by proliferation of other cells

Since cell growth energy depends on the concentration of growth promoting substances in the pericellular fluid, it is probable that pathological tissue growth can be attributed to the presence of certain chemical substances, as foreseen by Welch many years ago The substratum of formative stimulus may consist of trephones secreted by leucocytes or set free by dead muscle or gland cells and capable of supplying tissues with the food material required for cell multiplication

This hypothesis satisfactorily explains the mechanism of wound healing and of several other phenomena It is known that an aseptic wound begins to cicatrize after two or three days But a wound completely free from debris of tissue and blood clots and absolutely protected from outside irritation does not heal Thus regenerative stimulus does not depend on a release of tissue tension Neither does it come from tissue injury It seems that Virchow was right in attributing cell growth to an inflammatory irritant But when a wound instead of being protected against external irritation is covered with a slightly irritating dressing such as turpentine a few staphylococci or dry gauze cicatrization may start in less than two days The action of the irritant on the cells is not direct Gauze turpentine or bacteria have never been observed *in vitro* to produce an increase in the rate of multiplication of fibroblast They probably set in motion a mechanism which determines cell proliferation The effect of every mild irritant is to bring about the invasion of the tissue by leucocytes which are known to have the power of promoting cell proliferation We may assume that the resumption of cell activity in wound healing is due to the trephones set free by the leucocytes Then Virchow's opinion was not entirely correct since an inflammatory irritant initiates cicatrization not directly but by the intermediary of the leucocyte

Regeneration in lower organisms may also be determined by trephones Jacque Loeb observed that in Tubularia endodermic cells gather at the end where a new polyp is about to form and probably set free substances required by proliferating cell The rapid growth of limbs in metamorphosing tadpoles is aided according to Jordan and Speidel by the presence of lymphocytes Although it is certain that regeneration takes place through more than one mechanism the trephones set free by leucocytes and other cell undoubtedly contribute to the resumption of cell activity within the adult organism

When cells degenerate and die as in myocarditis or interstitial nephritis for example they are replaced by fibrous tissue Fibrosis is known to follow gland and muscle cell destruction Since these cells set free substances that can be used as food material by the fibroblasts the process of cicatrization appears to be automatic The fibroblasts may synthesize new protoplasm from the principles diffusing from dying or dead cells and from leucocytes The activation of fibroblasts observed by Leo Loeb under the influence of thyroid cell during regeneration of the gland *in vivo* was probably due to the secretion of trephones In many instances the resumption of cell activity that brings about adaptation in certain pathological processes can be satisfactorily explained by the presence of trephones in tissue fluid The ways of cicatrization is that in Duhring's experiments follow the waves of pyrexia initiated by the injection of a foreign protein are caused probably by substances set free by the dying cells

The growth restraining effect of serum and interstitial lymph, which does not allow fibroblasts to proliferate within the adult organism, must disappear when cell multiplication is needed Leucocytic and other trephones probably bring to resting tissues the substances required for growth, and oppose as is the case *in vitro*, the inhibiting influence of serum

CONCLUSIONS

It was not my intention in this report to give a description of all the applications of the method of tissue culture to pathological problems, but simply to show how certain technical improvements, such as the use of pure cultures of tissues and the development of procedures permitting a quantitative study of the interactions of the tissues and their medium, have led to the discovery of some previously unknown properties of the humours and of the cells The growth restraining action of blood serum, the growth-promoting properties of certain substances synthesized by embryonic and other cells, and the nutritive function of the white blood cells have been revealed by the new procedures Although its technical methods are still in their infancy and very crude the method of tissue culture will have an important bearing upon our understanding of pathological problems because it can reduce complex phenomena to simpler terms, and bring to light some of their underlying principles

TOOTH PLATE REMOVED FROM THE RIGHT BRONCHUS BY INFERIOR BRONCHOSCOPY

BY

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AND

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MAJOR, R.A.M.C.

SURGICAL SPECIALIST, QUEEN ALEXANDRA MILITARY HOSPITAL, MILLBANK.

(*With Special Plate*)

THIS case is worthy of record on account of the extraordinarily large size of the foreign body there are not many records of an unbroken dental plate recovered from a bronchus

NOTE BY MAJOR FYFFE

Bandsman S. was admitted to Queen Alexandra Military Hospital Millbank on April 26th 1924 with the following history On the previous day (April 25th) he was having a discussion with some men in a barrack room when one of them hit him in the mouth thereby dislodging a tooth plate and knocking it down his throat thereby immediately had a sensation of choking and feeling that the he immediately had a sensation of choking and feeling that the tooth plate had stuck in his throat he put his finger into his

mouth and endeavoured to push it on, as he felt it had gone too far to bring it up into his mouth again, he succeeded in getting the tooth plate on down his windpipe and, having done so, his sensation of choking passed off and he felt easier at once On admission to hospital at Cosham soon after he complained of pain in the right side of the chest, and a certain amount of dyspnoea with expulsive cough A radiogram taken at once showed the shadow of a tooth plate on the right side of the chest at about the level of the sixth rib He was transferred to Millbank and arrived the following day

A further radiogram was taken and revealed the tooth plate still in the position described at Cosham (Fig 1, special plate) Operation was decided upon at once, and the patient was placed under general anæsthesia and a bronchoscope introduced with great difficulty into the trachea the difficulty being due to the oedema of the arytæno epiglottidean folds and surrounding tissues, this oedema, together with the large amount of secretion in the trachea, decided me to do a low tracheotomy and thereby obtain a clearer view This was done at once, and on introducing a medium size tube, the tooth plate was located in the right bronchus about three quarters of an inch beyond the bifurcation of the trachea, alligator forceps were introduced and one edge of the tooth plate gripped, but on pulling it was found that the hook on the tooth plate (shown in the radiogram) had perforated the bronchial wall, and the bronchus came up with the foreign body several further attempts were made to rotate the plate but failed and as the patient's condition was not too good he was put back to bed with a tracheotomy tube left in the trachea

Mr Waggett, consulting laryngologist to the hospital, was called in to see the case when further radiograms were taken and showed that the foreign body had been moved about an inch and now lay in a position nearer the mid line and more vertically than in the first radiogram

NOTE BY MR WAGGETT

On April 28th the patient was in good condition the temperature had fallen to normal after a post operation rise He had no dyspnoea while sitting quietly in bed and breathing by the mouth An antero posterior skiagram taken a few hours previously showed the tooth plate lying in an almost vertical position a little to the right of the middle line at the level of the spinal articulations of the fifth and sixth ribs—a picture very suggestive of impaction in the oesophagus Screening in the left antero lateral posture proved Major Tyffe's diagnosis to be correct, and the skiagram (Fig 2) showed the foreign body lying well in front of the oesophagus and obviously in the right bronchus With the assistance of Major Tyffe and Mr E D Davis I operated in the sitting posture and without general anæsthesia On removal of the long rubber tube which had passed into the right bronchus alongside the foreign body about an ounce of foul pus was coughed up After cocainization of the carina and allowing the bronchoscope passed through the tracheotomy wound, to remain for a minute while tolerance was established it was easy after swabbing, to see the tooth plate with its single false tooth lying just below the level of the top of the right bronchus, and the gold wire hook hidden for half its length in the upper lobe bronchus The mucosa was red and velvety but not greatly swollen There was no sign of trauma With a bean bronchoscopic forceps the foreign body was rotated readily on its long axis, disengaged, and withdrawn, the chief difficulty arising at the tracheotomy wound

Recovery was free from fever or serious pulmonary symptoms

COMMENT BY MR WAGGETT

The plate measured over an inch and a half (4 cm) in length over three quarters of an inch (2 cm) in breadth, and almost the same in height (Fig 3) The patient, a man of slight build and about 5 ft 10 in in height, showed me, when examined a week later, a larynx not at all remarkable for size The epiglottis was strongly curved, concealing the glottis during normal respiration The patient reported that he felt the dental plate pass into the throat, stick there, and render breathing impossible descended too far for extraction he decided to push it down with his finger I have little doubt that his finger reached no further than the epiglottis, pressure upon which pushed the large hook- and tooth-bearing portion through the glottis As I learnt from the self-control and tolerance which he displayed at the time of the extraction, the patient was a man quite capable of performing this trying feat, which presumably saved his life, for as soon as the foreign body had passed the glottis all difficulty of breathing ceased

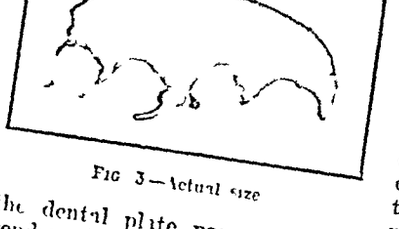


FIG 3—Actual size

The practical value of a record such as this is to draw attention once more to the danger inherent in the wearing of dental plates of small size Such plates not uncommonly are swallowed, and, becoming impacted in the oesophagus, have to be removed through the oesophagoscope It is true that this method is a good deal safer than oesophagotomy, but it is by no means free from danger, involving, as it frequently does, the disengagement of sharp wire-hooks from the damaged wall of the gullet Occasionally such plates have to be severed *in situ* with a cutting instrument before extraction is possible, and that manœuvre can be extremely difficult if grave damage is to be avoided In the case here recorded nothing but an unusual degree of presence of mind on the part of the patient prevented immediate death by suffocation

AN UNUSUAL CASE OF BILATERAL RENAL CALCULUS

BY

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HONORARY SURGEON, JOHANNESBURG HOSPITAL

(With Special Plate)

THE following case presents many features of unusual interest, and may therefore be worthy of record

The patient, a young man, aged now 27, came first under notice in 1915, when he was admitted to No 1 General Hospital, Wynberg, South Africa, from German West Africa, where he was serving as a private in a Natal field hospital Six weeks prior to his admission to Wynberg Military Hospital he dived into the sea at Luderitzbucht into shallow water, struck his head on the sandy bottom, and sustained an injury to his neck, which subsequent investigation proved to be a dislocation between his third and fourth cervical vertebrae

On his admission to Wynberg he had a complete paralysis involving all the nerves below the level of injury Breathing was solely diaphragmatic, there were paralysis of bladder and rectum and extensive bedsores over the sacrum There was dribbling of urine and severe cystitis The condition seemed wellnigh hopeless However, Dr Lindsay Sandes of Cape town and the writer came to the conclusion that operative measures offered the only chance of recovery, and they carried out the following operation An incision was made in the mid line of the neck as for laminectomy, and the condition previously shown in the skiagram was found—namely, a dislocation forward of the neck between the third and fourth cervical vertebræ An attempt was made to reduce this, but without avail and accordingly the superior articular processes of the fourth cervical vertebræ were removed, and thereafter the reduction was easily effected A stout silver wire was passed through the spinous processes of the third and fourth cervical vertebræ and tightly twisted up The wound was closed and the head and neck immobilized Complete recovery slowly took place, and three months later the patient was walking about and rejoined his unit for discharge in Natal He subsequently served again in German East Africa, and also with a unit in Europe

The case up to this point was well worthy of record, but the subsequent developments in the urinary tract are those with which this record is more immediately concerned

In October, 1923, the patient was sent to me by the Military Pensions Board, Pretoria, on account of pus and blood in the urine and a certain degree of lumbar pain, but there was no history of true renal colic A skiagram was taken of the cervical region, which showed the wire still in position fixing the third and fourth cervical vertebræ There was free movement of the neck in all directions without pain or discomfort, and the patient was actively employed up to this time in the engineering department of the South African Railways in Bloemfontein This skiagram is reproduced (Fig 1)

The patient was admitted to the Johannesburg Hospital under my care on October 19th, 1923 A skiagram of the lumbar region by Dr William Steuart, who also took the cervical skiagram, showed large masses of calculi in both renal areas (Fig 2) The urine contained pus, but not in great quantity, was faintly alkaline, 0 77 per cent urea, and about 65 oz were passed in twenty four hours

Cystoscopy showed a moderate degree of cystitis Indigo carmine was delayed in its appearance, taking three hours for the first indication from the left side, and on a subsequent catheterization of the right ureter was still more delayed, but the actual time was not accurately determined Operation was advised, and the patient left hospital for a while, to be re admitted on November 2nd, 1923 On this occasion the urine showed a specific gravity of 1004, was alkaline, with a trace of albumin, glucose absent, pus and erythrocytes, urea 0 8 per

cent The blood urea was 46 mg per 100 c cm There were no clinical symptoms of renal inadequacy, no thirst or headache, and the tongue was fairly clean The patient though thin was in fair condition, and had been at work till shortly before admission

On November 8th, the left kidney being judged the better of the two nephrolithotomy was done on that side through an oblique lumbar incision, and masses of branched phosphatic calculi were removed through a cortical incision in the kidney through pouched and thinned-out tissue, opening into the calyces which contained the calculi, 5½ drachms were thus removed, and the renal area drained The upper third of the kidney was that chiefly involved, and the remainder showed sound secreting tissue The patient made an uneventful recovery from this operation, and left hospital feeling well on December 11th

He returned to his home in Bloemfontein, and was re admitted to hospital on January 11th, 1924, for operation on the right side The left lumbar wound had healed well On this occasion the urine from the bladder showed 1 2 per cent urea—a marked improvement upon the previous occasion, the left kidney urea was 1 1 per cent, the blood urea was as before 46 mg per 100 c cm Cultivations from the left kidney showed no organisms there was a scanty growth of a streptococcus from the bladder urine Indigo-carmine appeared from the left in thirty minutes with a free urinary secretion From the right side there was a rapid arrhythmic secretion of a purulent urine, indigo carmine appearing in fifty minutes

On January 23th a right lumbar oblique incision was made, and a much sacculated kidney was exposed, the sacculation being mainly in the upper pole Masses of phosphatic calculi, weighing 11 drachms 50 grains, were removed through a cortical incision in the thinned-out upper pole pouch This left a big flabby upper sac leading to the calyces which had contained the calculi As the walls of this sac showed no evidence of secreting tissue, and as it seemed only too probable this portion of the kidney would never heal, and only leave a persistent fistula the sac was completely resected longitudinally some deep mattress sutures of catgut being used for haemostasis, and the edges then approximated as accurately as possible, but room for drainage being allowed for The kidney area was drained, the tube passing down to, but not into the renal substance The tube was removed in forty eight hours and replaced by a small gauze drain Hardly any leakage occurred

Except for an attack of malaria and dysentery from which the patient had previously suffered in East Africa, no untoward event marred his recovery On March 1st the patient walked a distance of a mile to report himself he had then no urinary symptoms, and the urine contained only a very small amount of pus, and under hexamine and acid sodium phosphate was acid in reaction

The case can be taken to be definitely an ascending urinary infection from the original cervical injury, with resultant formation of calculi on both sides There is no positive evidence to show exactly when calculi were first formed, but as a medical board, held in 1917 in England, stated that the patient had bilharzia, one can assume he then had haematuria, though there was no evidence adduced to prove that he had bilharzia—that is, there was no statement that ova had been found It seems rather to have been assumed because the patient came from South Africa

The resection of the upper pole of the right kidney proved quite successful, and is well worthy of adoption in cases of similar type The chances of recurrence of calculi are considerable, but there is reason to hope that this may be prevented by keeping the urine acid by means of drugs and diet

FIBROSIS OF THE LUNGS DUE TO THE INHALATION OF ASBESTOS DUST

BY

W F COOKE, M D, F R C P Ed, D P H,

PATHOLOGIST VICTORIA INFIRMARY

(*With Special Plate*)

THE following case is of importance because it is the first in English medical literature to be definitely proved

Medical men in areas where asbestos is manufactured have long suspected the dust to be the cause of chronic bronchitis and fibrosis, and Professor J M Beattie has shown that the dust causes fibrosis in guinea-pigs Asbestos contains, amongst other compounds, calcium and magnesium silicates, and 40 per cent of SiO_2 silica The mineral fibre is quite translucent except at the fractured ends, where some change takes place, the fibre becoming blackened and fragmented Asbestos dust, no matter from what part of the process it is collected, contains these blackened particles in large amounts (see photo micrograph)

A woman, aged 33 years had worked in asbestos factories since the age of 13, but for five years previous to her finally ceasing work in July 1922, her attendances at the factory had been intermittent She died on March 15th, 1924 Mr E N Molesworth, coroner for Rochdale, at the suggestion of Dr Mackichan, who performed the necropsy, sent the lungs for further examination

An x ray plate showed extensive fibrosis, more marked in the right lung, two calcareous glands at the root of the left lung and two small calcareous particles in the base of the left lower lobe

Macro copical Appearances

Right Lung—The pleura is thickened over the entire surface of the lung and shows the remains of dense adhesions to the chest wall and pericardium The lung is firm and small The glands at the root of the lung are larger than normal and on section are black, show a thickened capsule, and some calcareous particles On section, the lung is seen to be fibrosed and to a large extent airless, the lung tissue being replaced by fibrous tissue In the apex there is a large cavity the size of a *peeled Tangerine orange The middle and lower lobes show* numerous small areas—varying in size from a hazel nut to a pin's head—of caseation, some of which have proceeded to cavitation The bronchi are dilated

Left Lung—The pleura is thickened and shows the remains of adhesions to the chest wall The thickening and adhesions are not so marked as in the right lung The lung is firmer than normal At the root of the lung are two large calcareous masses one the size of a large hazel nut the other about half that size—calcified tuberculous glands The other glands are black and show a thickened capsule On section the lung tissue cuts with greater resistance than normal In the left apex there is an area of old scar tissue about the size of a sixpenny piece and a cavity the size of a walnut Scattered throughout the lung are small areas of denser consistence than the rest of the lung some of which show definite calcareous particles, others small areas of caseation There is a considerable increase in the fibrous tissue

Micro copical Appearances

The right lung shows extensive fibrosis caseous foci and cavities with thick fibrous walls Giant cells are numerous around the caseous areas and tubercle bacilli are present

The left lung shows the same condition, but the fibrosis is not so extensive

In sections of both lungs, in the caseous areas and in the fibrotic parts are seen particles of mineral matter These are of various shapes but the large majority have sharp angles The size varies from 393 6 to 3 microns in length The photomicrograph illustrates the sizes and shapes The lymphatic glands show periadenitis and fibrosis

The bronchi are dilated the lining epithelium has disappeared and there is extensive peribronchial fibrosis

Memoranda:

MEDICAL, SURGICAL, OBSTETRICAL

LYMPHOSARCOMA OF THE TONSIL REMOVED BY SLUDER'S GUILLOTINE ENUCLEATION

LYMPHOSARCOMA of the tonsil grows so rapidly, and when removed so commonly returns, or gives rise to multiple leukaemic tumours, that I wish to report one case where removal has so far been followed neither by local recurrence nor by remoter metastatic disaster, though twenty months have passed since the operation

In October 1922 I was asked to see a lady aged 72 who was able to swallow fluid only and complained of pain in the throat shooting to the left ear severe enough to prevent sleep The left tonsil was enlarged and almost touched the opposite side of the fauces It was very hard and smooth and was covered with a net of tortuous vein which contrasted vividly with the almost ivory pallor of the underlying growth At the upper pole of the tumour there was a ragged crater shaped exquisitely tender ulcer the size of a threepenny piece The tumour was very movable and no gland could be felt

She told me that in 1877 when 27 years of age a sharp fragment of mutton bone became fixed in her left tonsil causing much pain swelling and inflammation Various practitioners attempted its removal but at the end of several weeks it came away without

professional aid and was in her own words, just like a tin tack She had no further trouble for forty five years—that is, until 1922

The appearance of the tumour was so suggestive of extreme malignancy that I doubted the wisdom of interference, but in view of its mobility and the plain need of expert pathological opinion I removed it by Sluder's method on October 31st, 1922, at the Leigh Infirmary, and at once submitted it to the pathologist, who reported "Sections made from this specimen show the structure of a lymphosarcoma of the endotheliomatous type" In spite of the plexus of veins the operative loss of blood was negligible Two months later she had wasted to a skeleton, and had three severe attacks of bowel haemorrhage for which I was unable to account but thereafter she recovered and has done well I have seen her within the last few days, and find her in excellent health with the tonsil bed cleanly healed

F PEARCE STURM, CH M ABER,
Surgeon and Otologist Leigh Infirmary

Reviews.

THE LEUCOCYTE

IN his interesting book on *The Leucocyte*[1] MR C J BOND has added in no small degree to our knowledge, and has indicated a simple method by which the variations in the activity of the leucocyte can be studied under varying conditions The observations recorded are the outcome of several years of continuous study, and they enable the author to survey the life-history of the leucocyte in considerable detail He recognizes three phases in the existence of the cell—namely, those of inactivity and activity, and a lethal phase preceding the death of the cell

While circulating in the blood stream the leucocyte, as is known, assumes the spheroidal form characteristic of the resting condition When, however, it comes to rest in contact with the capillary wall or the tissue cells in an injured area, or with blood clot or the surface of some foreign substance, it enters a phase of heightened activity its surface becomes "sticky" and it adheres to surrounding objects, its granules exhibit rapid movements, both cell contents and granules undergo partial solution, and definitely characterized substances (iodophil and diffusion substances) are formed and escape into the surrounding medium, pseudopods and filamentous dendrites are protruded, the cell moves as a whole, and foreign bodies are ingested, after these have been acted on by the cell secretions If the stimulation has been intense a lethal phase is entered, during which the cell may disintegrate and shed its contents and remaining granules into the surrounding medium, or, dying more slowly, may assume the spheroidal form characteristic of the resting, as of the dead, cell

The individual phenomena of this complicated series of changes are submitted to further scrutiny, and other facts of interest emerge Thus, the mechanism that brings the leucocyte into effective contact with particles, preparatory to ingestion, is found to depend, not only on the cell's response to chemical disturbances in the medium, but also to its peculiar sensitiveness to changes in surface tension, or, again, the "stickiness" of the cell is found not to be a constant and independent characteristic, but to depend on alterations in the surrounding medium, giving rise to the phenomenon of leuco-agglutination, which appears to play an important part in phagocytosis Again, in the process of ingestion of red cells, the contact of a leucocytic dendrite with a red cell is shown to induce an agglutinative character in the latter (leuco-erythro agglutination) These and many other facts in the life-history of the leucocyte are not merely described, but, in the large series of fine micro-photographs which illustrates the work, may be said to be demonstrated in Mr Bond's book

Mention has not been made of what is, perhaps, the most important part of the work—that which deals with the influence of disease and other abnormal conditions on the functional activity of the leucocyte, his conclusions on some of these matters have been presented fully by him in papers published in our columns during the last few years What is here said will be sufficient to show that we are indebted to Mr Bond for a work of great interest As the author points out, there is a growing volume of evidence tending to indicate the outstanding importance of the leucocyte as an essential factor in the problem of defence against microbial disease, his observations will contribute to a fuller understanding of the part these cells play in the defensive mechanism of the body

[1] *The Leucocyte in Health and Disease being an Enquiry into Certain Leucocytic Activity* By C J Bond C M G F R C S London H K Lewis and Co Ltd 1924 (Roy 8vo, pp viii + 84, 48 figures on 24 plates 12s 6d net)

TISSUE CULTURE

DR T S P STRANGEWAYS has published simultaneously two books[2] founded on experience in the cultivation of tissues outside the body, gained during the last ten or twelve years at the Cambridge Research Hospital The one is a laboratory book giving in forty-seven sections minute instructions for preparing various media, starting cultivations and examining them It is entitled *The Technique of Tissue Culture "in Vitro"* Dr Strangeways recommends the beginner to start with saline solution and the embryonic heart muscle of the fowl, and strongly advises him not to modify the methods recommended unless and until he has succeeded in cultivating tissues by means of them The methods which must be used are very delicate, and minute attention must be given to the sterilization of apparatus and fluids

The second book is sufficiently described by its title, *Tissue Culture in Relation to Growth and Differentiation* The first chapter, on growth *in vitro*, is illustrated by some beautiful drawings which the publishers have wisely reproduced in collotype The second chapter, on mitosis in relation to cell physiology, brings us to the kernel of the essay The third chapter is on redifferentiation, and leads up to the conclusion that the abnormality observed in cells growing *in vitro* is only superficial, since in appropriate environmental conditions the characteristic morphology and function of the original tissue may at any time be resumed The fourth chapter deals with alterations in the cell produced by experimental methods—by, for example, the *x* rays, the ordinary process of mitosis is disturbed, but the degree of disturbance varies in different cells Though the cells appear to be permanently modified, they can, unless the changes are too violent, continue to live and to grow In the final chapter tissue culture is discussed in relation to inflammation and repair The general conclusion is that the course of events during the final stages of tissue repair in the body is exactly parallel to what happens in cultures when grafted into the living animal This volume is very free from technicalities and can be perused with interest by the general medical reader

[2] (1) *Technique of Tissue Culture in Vitro* and (2) *Tissue Culture in Relation to Growth and Differentiation* By T S P Strangeways Cambridge W Heffer and Sons Ltd 1924 (1 Demy 8 o pp viii + 83 31 figures 7s 6d net 2 Cr 8vo, pp x + 50 4 plates 5s net)

NOTES ON BOOKS

THE work on the functional value of the endocrine glands[3] by MM JACQUES PARISOT of Nancy and GABRIEL RICHARD of Royat is divided into three parts The first is devoted to a discussion of the anatomy, physiology, and pathology of the glands and their relation with the cerebro spinal and sympathetic nervous systems In the second part the writers describe the various methods of investigation, which are classified in two main groups according as they are applied directly by clinical or pharmacodynamic procedure or indirectly by examination of the metabolism In the third part, which forms the most important section of the book, the application of these methods to each of the endocrine glands or pluriglandular syndromes is considered, with a critical estimation of the value of the various tests The work contains the description of several instructive cases from the practice of the writers, who have made numerous previous contributions to endocrinology

In a volume entitled *Women, Children, Love, and Marriage*[4] MRS C GASQUOINE HARTLEY has brought together some thirty brief essays on the subjects indicated A considerable number relate to aspects which only of late years have been considered suitable for public discussion, but the author's treatment of them, though frank, is free from offence and morbid suggestion She is an advocate of the legalization of the adoption of children, holds boys and young men to require at least as much protection as girls and women, if not more, and adduces reason to believe that the true education of the young inevitably begins in the very earliest childhood

[3] *Les Glandes endocrines et leur valeur fonctionelle Méthodes d'exploration et de diagnostic* By Jacques Parisot and Gabriel Richard Paris Octave Doin 1923 (Dem, 8vo pp ix + 247, 8 figures Fr 15)

[4] *Women, Children, Love and Marriage* By C Gasquoine Hartley London Heath Cranton, Ltd 1924 (Cr 8vo, pp 190 7s 6d net)

THE ROYAL SANITARY INSTITUTE CONGRESS AT LIVERPOOL

(Continued from page 124)

THE thirty-fifth annual Congress of the Royal Sanitary Institute, the opening of which in Liverpool on July 14th was recorded in last week's issue, came to an end on July 19th. During the mornings sections and various conferences held their meetings, and many excursions took place in the afternoons. On July 16th the Lord Mayor gave a garden party in Calderstones Park, the most recent addition to the city's parks. A reception at the Walker Art Gallery took place on the previous evening, when an excellent programme of music was carried out, and the delegates, numbering over a thousand, had the opportunity of seeing the city's works of art.

Professor Kenwood's popular lecture on modern civilization from the health point of view was well attended. He insisted on the important rule: "to live as healthily as possible we must live as naturally as possible." Civilized communities were tending towards an artificiality of living which threatened human health in many ways. Man had in abundance of food, the bulk of which was not fresh and was impregnated with chemical preservatives. Bread could now scarcely be called the staff of life, as the most valuable parts of the flour were thrown to the pigs.

The National Temperance League gave a breakfast to the delegates, to whom afterwards the Rev. Courtenay C. Weeks, a medical man, gave an address. He stated that prohibition in New York and St. Louis had been accompanied by a remarkable fall in the death rate from pulmonary tuberculosis, and trusted that the delegates would bear in mind the benefits accruing to the community through abstinence. The visit of the King and Queen on July 19th in connexion with the consecration of the completed portion of the cathedral may be said to have admirably rounded off the Congress.

At the conference of sanitary authorities Mr. A. J. MARTIN, of London, introduced a discussion on economy in relation to public health. He said in the first place that there was a wide field for saving in water consumption, and then observed that vast sums were spent in sweeping away insanitary property instead of devoting money to preventing the development of slums. The time was ripe for overhauling regulations and by-laws in the light of recent experience. Dr. J. JOHNSTONE JERVIS, M.O.H. Leeds, criticized adversely sanatorium methods. The voluntary system was a spent force. The obsolescent Poor Law system should receive its quietus, and a man who lost his health in the service of the community should be able to claim as a right relief out of public funds without the stigma of pauperism. Suitable occupations should be found for those tuberculosis patients who could work. Many sanatoriums might be described as the loungers' paradise. The guiding principle of all schemes of treatment ought to be the maintenance of working capacity. Dr. W. ALLEN DALEY (Blackburn) put forward a plea for public health propaganda by pictorial display, carefully worded advertisements, health exhibitions, and suitable cinema films. He mentioned that many excellent posters had been designed by Blackburn school children for use in schools.

The Schick Test and the Control of Diphtheria

At the Sanitary Science Section Dr. R. A. O'BRIEN opened a discussion on the value of the Schick test and its use in immunization against diphtheria. In New York during the last three years as a result of its use deaths from diphtheria had been reduced by one-half. He gave results of the experience, on a small scale, gained in this country by himself and colleagues. His conclusion was that a considerable degree of immunity could be conferred on a majority of school children within a fortnight and upon almost all within six weeks. The system founded on the Schick test and immunization was now so firmly established that every public authority should see that full facilities were available to the public as was the case with vaccination for small-pox. Dr. C. PUNDLE, medical superintendent of Lazakerley Hospital, Liverpool, said that few of the nursing staff developed diphtheria, and questioned whether it would be worth while to perform such a test with the object of preventing a disease so rarely met with among the nurses. Dr. MONCKTON COPEMAN (Ministry of Health) while thinking that considerable difficulty would be experienced in inducing the public to accept the suggested protection against diphtheria expressed the opinion that it might be possible to carry out the Schick test in hospitals among the nurses which would ensure those only being employed in diphtheria wards who were immune.

(To be concluded.)

IMPERIAL CANCER RESEARCH FUND

THE annual meeting of the Imperial Cancer Research Fund was held at the Examination Hall, Queen Square, on Wednesday afternoon, the DUKE OF BEDFORD, K.G., presided.

Dr. SIDNEY MARTIN, F.R.S., Chairman of the Executive Committee, proposing the adoption of the twenty-second annual report, said that it had previously been the custom for the Chairman of the Executive Committee to give a summary of the report of the Director, but he proposed to take a somewhat wider view and, on the basis of the contents of the eighth scientific report to survey the varied aspects of the cancer problem. The clinical study of cancer in man was represented in the eighth scientific report by the monograph of Dr. Scott on the paraffin dermatoses and paraffin cancer. The Executive Committee authorized its inclusion in the report because of its unique feature—the long-continued and careful observation of a fairly large body of workmen exposed continuously to a peculiar form of chemical irritation known, for a long time, to induce cancer. The acute and chronic skin lesions in workers in crude paraffin were described and figured in a series of beautiful plates made from Dr. Scott's own photographs. The relation of these lesions to the subsequent development of cancer was studied, the individual histories of the workmen and the whole body of facts being surveyed with a masterly grasp of detail. Attention was drawn to the absence of any close relation between the intensity of the acute early lesions and the later development of cancer, so that in some individuals only extremely slight indications of skin irritation preceded its development. Another point noted was the number of years never less than fifteen to twenty, after which the disease began. The proportion of the workers in which cancer developed was found to be less than 2 per cent. per annum of those engaged, and Dr. Scott had shown that it was mainly in the men engaged in certain stages of the preparation of paraffin oil from shale that these cases occurred. On the basis of his findings a very complete, and it might confidently be hoped an effective, preventive regime had been instituted by the Scottish Oils Company. This had already reduced the incidence of the acute irritative disturbances in the operatives, but its effect on the occurrence of cancer in them could only be seen after a longer lapse of time. The Executive Committee desired to thank Dr. Leitch, the director of the research department of the Cancer Hospital, for allowing the publication in Dr. Scott's paper of a summary of his results in testing the crude and refined oils supplied by Dr. Scott for their carcinogenic powers on animals. These results confirmed the importance of the unrefined oils incriminated by Dr. Scott, and showed the harmlessness of the refined product, a reassuring fact for those who had been using refined paraffin medicinally and might have become alarmed by these reports of the production of paraffin cancer.

In the domain of experimental pathology there were three papers in the report—two by Dr. Passey and one by Dr. Murray. Experimental pathology might be regarded as an extension of the methods of clinical study to disease as it occurred in animals under controlled conditions. Dr. Russell's papers dealt with the production of sarcoma in mice and rats by the subcutaneous inoculation of tar and his observations emphasized the fundamental unity of the cancer process occurring in connective tissues (sarcoma) and in epithelial tissues (carcinoma). Dr. Murray's paper dealt with the meaning of the long period—ten to twenty years in man, five to twelve months in mice—during which cancer-producing agents must act before the disease set in, and the paradoxical result that once an animal had become cancerous there was an apparent incapability to react anew with cancer development to fresh applications of tar to another part of the body. These observations illuminated the rarity of multiple primary cancer. The space devoted

to histological details in these papers was merely an expression of the importance of the microscopical control which entered at every stage of what was essentially a clinical or biological study of new growths Dr Begg's paper on dissemination in the cancer belonged more strictly to the province of pathological histology It was entirely descriptive and dealt with peculiarities in the mode of spread of epithelioma, particularly along the sheaths of the nerves Experimental cytology was represented by the work of Dr Drew on tissue culture His work cleared up to a great extent the hitherto enigmatical departures from the normal histological picture met with in malignant new growths, showing how this phenomenon could be duplicated in normal tissues, or, on the other hand, how atypical undifferentiated malignant new growths could be made to assume the normal form without loss of their fundamental malignant characters He had also shown the close relationship between the processes of growth in malignant cells and those responsible for the repair of injury

The remaining papers were biochemical in nature Biochemical investigations were of two kinds those which applied the methods and reactions of chemistry to the study of the behaviour of living organisms, and those in which, for want of test-tube reactions, the reactions of living organisms were used to demonstrate the presence or absence of chemically active substances or to elucidate their role in the animal economy Dr Russell's papers on carbohydrate metabolism of normal and cancer cells belonged to the former category, Dr Cramer's work on vitamins to the latter Dr Russell's investigations, which grew out of a study of cell respiration, had led to the discovery of certain sugar reactions (analogous to those used in the separation of nearly related bacterial species) which were apparently peculiar to cancer cells They were being made the starting-point of chemotherapeutic experiments Dr Cramer's vitamin work dealt objectively with an aspect of cancer growth which had led to a great deal of loose speculation He showed that, when put to the test of direct experiment, no degree of vitamin deficiency compatible with life had any effect on malignant proliferation The work in the laboratory embraced a very comprehensive series of investigations touching varied aspects of the cancer problem, all of fundamental importance The achievements of the ist warranted sober optimism

Sir JOHN BLAND-SUTTON, President of the Royal College f Surgeons, seconded the motion, which was adopted

The PRESIDENT, proposing a vote of thanks to the members of the Executive Committee, the subcommittees, the honorary treasurer, the scientific staff, and others who had assisted in the work of the Fund during the past year, referred to the loss sustained by the death of Sir John Tweedy who was a member of the General Committee and had taken the greatest interest in the Fund for many years and welcomed Sir George Newman, the chief medical officer of the Ministry of Health, who had joined the General Committee The honorary treasurer was to be congratulated on ending the financial year in a satisfactory manner, there had been a substantial increase in the subscriptions and donations, including a grant of £500 from the Worshipful Company of Goldsmiths During the past year their activities had considerably increased, and they might look forward to still greater activity in consequence of the approaching completion of the Strond Laboratory at Mill Hill, which had been provided, free of cost to the Fund, by the executors of the late Mr Augustus C Strond At the last meeting the attitude of the Fund to the British Empire Cancer Campaign had been considered It was satisfactory to know that the provisions then thought necessary by the Fund had been adopted—namely, the appointment of an advisory committee consisting of members of the Royal Society and of the Medical Research Council to advise on the allocation of funds for scientific research, and the appointment of representatives of the Imperial Cancer Research Fund on the Council of the Campaign

A cordial vote of thanks to the Duke of Bedford for presiding at the meeting having been adopted, on the proposition of Sir Humphry Rolleston, Bt, K C B, President of the Royal College of Physicians, the proceedings terminated

THE FORBES FRASER HOSPITAL, BATH

MEDICAL OPENING CEREMONY

ON May 16th H R H the Duke of Connaught formally opened the two hospitals at Combe Park, Bath, which have been established in connexion with the Royal United Hospital, and in our issue of May 24th (p 915) we reported the opening ceremonies and gave an account of the two new institutions—the Royal United Private Hospital (as it was then known) and the Children's Orthopædic Hospital In order to commemorate the very large part played by the late Mr Forbes Fraser, F R C S, in its foundation, the former has now received the name of the "Forbes Fraser Hospital"

On the afternoon of July 16th the Bath Division of the British Medical Association held a largely attended meeting, which took the form of a medical opening ceremony for the Combe Park hospitals, with Lord Dawson of Penn, G C V O, K C M G, M D, as the principal guest The visitors, who included medical men from many parts of the West of England, were received by Dr Rupert Waterhouse, chairman of the Bath Division, and Mrs Waterhouse

Lord Dawson's Address

In his introductory remarks Dr Waterhouse described Lord Dawson as one of the greatest living authorities on all matters connected with hospital organization and administration, and welcomed him on behalf of his colleagues of the Bath and Bristol Branch

Lord Dawson said that to witness the fulfilment of a great achievement, and to have a share in what he might call its dedication, was a great privilege That simple group of buildings would not only bring health to the inhabitants of Bath and district, but it enshrined ideals which promised, by their realization to open up new paths of advance in the care of the sick It was thus pointing the way of progress to others Among the attributes that gave the undertaking at Combe Park its distinction was the appropriateness of the site, away from the hustle and din of city life, with plentiful sunshine and fresh air Another advantage was the ample space for future expansion, for the most far seeing among them could not predict with any measure of accuracy what the demands for hospital accommodation were likely to be within the next five years It was a curious reflection that the sick nowadays were supplied with a far larger amount of pure air and sunlight than those who were well Not so very long ago the appearance of sickness was the signal for surrounding the patient with clothes and shutting out both air and light Even now that attitude persisted in many parts of the country At Combe Park there was the complete contrast These simple buildings, constructed on the single-story system, answered their purpose well, at something like half the initial cost of the many-storied hospitals to be found in larger cities

A further advantage was that the buildings could be scrapped or modified or altered quite easily, whereas a hospital on the older lines had to stand for at least a generation before anyone felt justified in interfering with it Thus they not only got cheaper construction, but greater flexibility When the site was further developed it might be worth while considering whether future blocks should not consist of two stories instead of one, because of the distances to be covered in getting from end to end of a large area

In regard to the more professional aspect of the hospital problem, Lord Dawson remarked that the scheme had among its aims the bringing of the doctors of Bath and district into closer contact with hospital life The immense recent developments of medicine, and of the sciences on which it was based, rendered organization of fabric more and more essential He himself had no doubt that illness would in future be more often treated in institutions like that than in the home That institution was meeting the new conditions because it laid down that any medical man could attend his patients there, and regulations had been drawn up by the medical committee to ensure a high standard of work It was most necessary in organizing institutional treatment not to interfere with that personal freedom between patient and doctor which was so essential for

successful management of the sick As regards cost of upkeep, the managers ought not to be satisfied until the greater part of such an institution was economically self-supporting To this end various methods had been suggested One way was the contributory system, which was certainly better than nothing, it was a beginning but he could not see that it would end there It seemed to him that the principle of insurance would have to be extended to a wider section of the community—a class with incomes above the income limit of the National Insurance Act He believed that some system of sick insurance would have to be instituted whereby, just as they insured against burglary and motor car accidents they would insure themselves and their families against sickness He thought it quite sound, and in the public interest, for municipalities to give grants to hospitals, just as they did to museums and to schools, but he would always make a distinction between fabric and personnel Municipal grants towards personnel meant the thin edge of municipal control of doctors, grants towards fabric were quite another matter

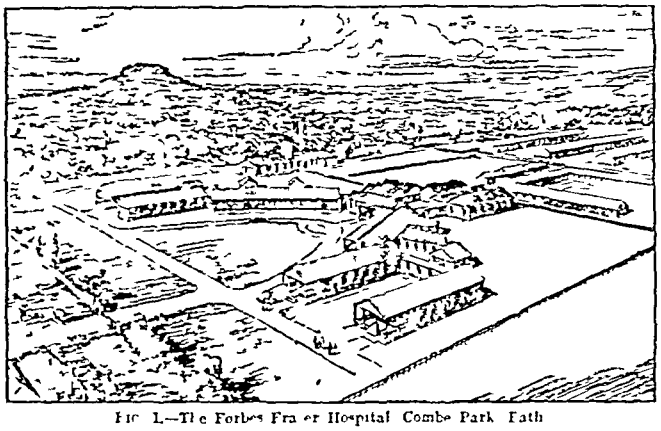


FIG 1.—The Forbes Fraser Hospital Combe Park Bath

In conclusion Lord Dawson made very sympathetic reference to the man who had worked so greatly towards the realization of that project Forbes Fraser, he said, was distinguished in body, mind, and spirit, in his varied qualities there was a wonderful harmony and running through his life a great purpose He was one of those who not only dreamed noble things but achieved them His radiant energy, the largeness of his friendship, and his pervading kindness were, with his intellectual gifts, the source of his strength That scheme would be a lasting witness to his foresight and devotion and an abiding token of their thankfulness for a great life nobly run

Lord Dawson's address was briefly discussed in very appreciative terms by the chairman, by Mr I W Hey Groves F R C S (Bristol) by Sir Percy Stothert (chairman of the Royal United Hospital Management Board), and by Dr C E S Flemming (Bradford on-Avon), who spoke of the particular pleasure given to him by the presence of Lord Dawson many of whose ideas were embodied in the present scheme The visitors afterwards inspected the wards theatres and administrative arrangements, and were entertained by Dr and Mrs Waterhouse to tea on the lawn in front of the orthopaedic block

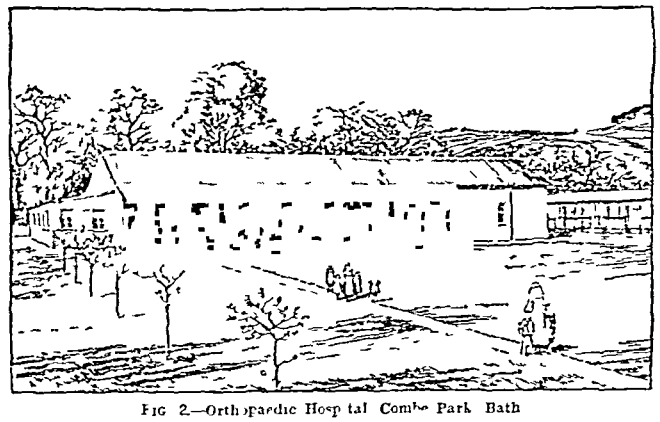


FIG 2.—Orthopaedic Hospital Combe Park Bath

The New Hospitals

The site of the new institutions is an open park a mile and a half from the centre of the city about 180 ft above sea level sheltered on the north by the Lansdown Hill The existing Pensions Hospital under the control of the Ministry of Pensions is on the east side of the park, the Forbes Fraser Private Hospital is on the south and west, and 100 yards to the north of this has been built the orthopaedic block The buildings are surrounded by lawns with flower beds shrubs and trees The wards are grouped around a horseshoe shaped lawn with the administration block in the centre The private room blocks branch from the administration building to the south east and south west, and from each southern extremity the two wards run north and south There are sun balconies the whole length of the ranges of private rooms and at the south ends of the wards The wards and rooms are connected by a continuous corridor linking them up with each other and with the theatre block and the kitchen The one storey plan of construction provides the maximum amount of light and air for the wards The buildings are lighted throughout by electric light, generated in the power house whose chimney is seen in the accompanying sketch (Fig 1) and is heated by the low pressure hot water system Subject to certain rules any of the beds in the Forbes Fraser Hospital may be used by any duly qualified medical practitioner and arrangements have been made by which the services of the medical staff of the Royal United Hospital may be available for consultations in necessitous cases at reduced fees At the present time 72 beds in all are provided 24 of these being in separate rooms

The orthopaedic block for the treatment of surgical tuberculosis in children consists of one large open air ward, 80 ft long by 30 ft wide, with accommodation for 37 patients The funds for its erection were provided by Alderman C Chivers Mr W E Mallett and a few friends It faces due south, and is open throughout its entire length but has a sun balcony in front partially covered by a lean to glass roof (Fig 2) Its high open roof and series of ventilating windows along the back wall, ensure a continuous through draught from the open front to the back The surgical staff consists of members of the Royal United Hospital staff, and there is a specially trained nursing staff Children while undergoing treatment are educated by a qualified schoolmistress It is proposed that this orthopaedic hospital shall be the central unit of an organization covering the area served by the parent hospital in parts of Somerset Wiltshire and Gloucestershire Local clinics will be established at suitable centres throughout the area, where out patient treatment will be given, outdoor cases inspected periodically and new cases examined An orthopaedic after care sister from the central hospital will visit the local clinics regularly and members of the surgical staff will attend at stated intervals The clinics will be controlled by local committees in co operation with the medical men practising in their neighbourhood

Both institutions are under the control of the Board of Management of the Royal United Hospital but special committees have been appointed for each The committee of the Forbes Fraser Hospital has on it representatives of the staff of the central hospital and of the general practitioners in the town and surrounding district all strictly professional matters will be referred to a special advisory committee

A Modern Hospital Service

It is a great satisfaction to all concerned to feel that the scheme outlined by Mr Forbes Fraser is actually being carried out When all the buildings are completed there will be established a complete central hospital, which it is hoped will be associated with the various cottage hospitals in the area now served by the parent hospital There will then be a hospital service for all kinds of cases providing for patients of every class the most modern treatment in the conduct of which all medical men—general practitioners, consultants, and specialists—can take part

British Medical Journal.

SATURDAY, JULY 26TH, 1924

MAKING HISTORY

In the spirited Presidential Address, commendably short, with which he opened the general proceedings of the Annual Meeting of the British Medical Association at Bradford, Mr Basil Hall spoke of the Annual Meeting as not merely a national conference, but as an occasion which knits together a professional brotherhood that extends throughout the dominions, commonwealths, and colonies that form Greater Britain, and affords an opportunity for offering hospitality to the fraternity of medicine which works with a common object in all civilized nations

The part of the address most likely to arouse discussion and opposition is the passage in which the President expressed the opinion that the war experiences of young members of the profession had tended to encourage them to take to the practice of some form of specialism, to the neglect of that wider medical culture which the general practitioner requires Undoubtedly he was justified in saying that the public encourages this tendency by its readiness to demand a specialist in every emergency and for almost every serious disorder, failing in the stress of the moment to appreciate at its proper value what the President called "the specialism of general practice" This is a paradox, but it is certain that for general practice a man needs a special training, which he cannot begin too soon after completing hospital work, and that for any considerable success he must possess wisdom and learning, an understanding of man, and a disposition to keep acquaintance with the progress of science and advances in all departments of medicine, for what the less well advised call academic to day may be the routine of to morrow

The British Medical Association is not a general practitioner body but a general medical institution it was founded by a physician and has often been aided in its development by physicians, surgeons, and specialists But it is a democratic body, and the immense majority of its members have always been general practitioners The object of the last reorganization which produced the constitution under which we now live was to ensure, as far as a constitution can ensure, that the policy of the Association shall be determined in accordance with the wishes of the majority This has been, indeed, the object all along, but it is an object more easy to state and approve than continuously to carry out in an association which is steadily increasing the number of its members The story of the development of the constitution of the Association is of considerable general interest, and a better acquaintance with it might have avoided some mistakes in the past, but down to the present day, when it is approaching its centenary it has been too busy making history to take any special trouble to record its own, even its jubilee, forty-two years ago, was allowed to pass without any particular ceremony An account of its first fifty years was, however, compiled by the late Dr Alexander Henry, a devoted member who gave the best years and the best work of his life to the Association—as assistant editor of its JOURNAL for thirty-four years, and for twenty six years honorary secretary of the Metropolitan Counties Branch Conscientious, accurate, and painstaking almost to a fault, he was not a lively writer, and the document he produced, which was published in the BRITISH MEDICAL JOURNAL on June 10th, 1882, has probably been read by few It remains, however, a mine of information for any industrious inquirer who wants to know how the Association was brought to the stage of development at which the formative processes which began to stir at the end of last century could have their full effect—could, indeed, have the material on which to work Dr Henry* related the events of the first fifty years, year by year, quoting documents, names, and dates

Dr J C McVail, in the series of articles published last month in the BRITISH MEDICAL JOURNAL, had a rather different object in view, and has pursued a different method The task he set himself, at the request of the Organization Committee, was to write a narrative of the growth of the constitution, tracing the stages through which it has passed, the difficulties its builders had to overcome, and the manner in which the democratic ideal which has all along been aimed at has at the present time been attained He passes rapidly over the earlier part of the story, and begins to go into detail with the movement which began in 1896 and achieved its object in 1902, when the new constitution was approved, and with a few minor alterations has continued in force to the present day

After Dr McVail had finished writing his historical survey, and while it was being published, an event happened in Canada which, had it happened a little earlier, would certainly have been deemed worthy of mention in it As is not surprising, the constitutional machinery evolved by the Association for the home countries has not proved in all respects directly applicable in detail overseas Arrangements satisfactory to both parties were recently made to meet certain administrative difficulties in Australia, the South African Committee is taking steps to consolidate and extend the influence of the Association in the Union, and on June 18th, at its annual meeting at Ottawa, the Canadian Medical Association unanimously adopted a scheme of affiliation with the British Medical Association presented to it on behalf of the parent Association by the two delegates, Sir Jenner Verrall and Dr Alfred Cox, who visited Canada for that purpose The scheme was presented to the Annual Representative Meeting at Bradford and approved by acclamation, all the members standing, as may be read more at large in the SUPPLEMENT for this week (pp 53 55 and 65 68)

Under one constitution or another the British Medical Association, as Mr Basil Hall aptly says in his Presidential Address, has done an inestimable service in binding together the great mass of the medical profession into one solid professional unity

TISSUE CULTURE

Dr ALEXIS CARREL may perhaps be considered the leader of the small band of workers who have given much time to a line of inquiry which is not only of obvious importance to biologists in general and to followers of medicine and pathology in particular, but also of curious interest to the general reader with any tincture of science That the cells of complex animals can be persuaded to live and multiply for indefinite periods under a cover-glass, and that this should be

* Dr Henry was at work on the proof pages of the JOURNAL for the current week when he was seized with aphasia on September 16th 1886 he died in June, 1893

true even of warm blooded animals, is certainly astonishing, and was not suspected until a few years ago

Dr Carrel, whose laboratory is at the Rockefeller Institute, New York, has been good enough to pay a visit to this country in order to give an address on tissue culture to the Section of Pathology and Bacteriology of the Annual Meeting of the British Medical Association It is published, with illustrations, in this issue and, as will be seen, is concerned very largely with the methods of obtaining pure cultures of various tissues, and, to a lesser extent, with the bearing of such investigations on various pathological problems The whole subject is still young and this part of it, indeed, in its infancy Dr Carrel describes in some detail the variations in methods found necessary for the satisfactory cultivation of different tissues He begins with that for the culture of fibrous tissue cells, with which the first successes were obtained he still has going a pure culture of fibroblasts started over twelve years ago from a fragment of the heart of a chick embryo When it was sought to cultivate leucocytes and the characteristic cells of organs and tumours it was found necessary to modify the method White blood corpuscles can be cultivated with relative ease, but the mononuclear cells crowd out all others, and the cultures do not survive for more than three months Cartilage cells seem not very difficult to grow, but epithelial cells give more trouble—the fragment used always contained some fibroblasts which outgrew the epithelial cells The object was finally achieved by using the few cells of the iris which adhere to the lens of a chick embryo The cells of such a culture, started two years ago are still living and producing black pigment that is to say, they have not de differentiated —a hideous term devised to express the fact that the cells in the culture have retained their specific quality and have not become indifferent cells have not lost their differentiation—as may happen to other cells in other circumstances

Recently cultivations of thyroid cells have been obtained by Ebeling from chick embryo When pure culture of fibroblasts is added the fibrous cells surround the thyroid epithelium, which organizes a small gland showing acini filled with colloidal substances

Cultures were at first placed in lymph or plasma, but Lewis found that they grew as well in saline solution as in serum, and that the tissue fragments did not increase in mass It was next ascertained that the addition of embryonic juice enabled the tissue to grow *On the other hand, the leucocytes not only* remain alive, but spread over a large area in diluted serum, it appears, therefore, that they are able to build up protoplasm from some constituents of the serum These substances, which are in part arrested by a Berkefeld filter, always remain associated with the protein residue They are secreted by certain cells and used as food by other tissues for this reason they have been termed trephones' (from τρεφω I feed) They differ from hormones, which stimulate cells but have no nutritive value but both may be required for the growth of tissues The introduction of a fragment of a thyroid strain into a pure culture of fibroblasts accelerates their proliferation, it would seem that the thyroid cells secrete substances which stimulate the growth of fibroblasts

One conclusion of general interest is that the white cells of the blood must possess a double function they defend the tissues against bacteria and remove foreign substances and necrotic material but they also promote cell proliferation It seems justifiable to conclude also that the quality of a cell growing in an artificial culture depends upon its original impulse as is evidenced by the continued production of pigment epithelium by the cells of the iris and by the effort at *the formation* of acini and colloidal substance by the thyroid cells, but that the survival of the isolated tissue and its rate of growth is determined by the success obtained in supplying the cell growing *in vitro* with suitable nutritive material The rapidity of growth increases or decreases according to the composition of the medium and remains constant in a medium of constant composition

Many members of the Association have had the opportunity, at the Annual Meeting at Cambridge or since of seeing the experiments by Dr Strangeways on the cultivation of tissues outside the body He has published his results from time to time in papers contributed to the Royal Society and has now brought together the observations and conclusions of many years in an essay of some fifty octavo pages which may be read with ease and understanding in an hour [1] He first describes the phenomena of division (mitosis) observed in the living cell under the conditions of experiment the whole process from the first faint change in the nucleus until there are two cells takes about an hour First the nucleoli become shadowy and hazy granules are seen in the nucleoplasm these changes take ten minutes or less and by this time the cell has become rounded or oval The granules in the nucleus run together into threads which are in writhing movement and then the nucleus vanishes suddenly its substance (the nucleoplasm) becomes intermixed with the rest of the cell (the cytoplasm) and presently the writhing threads have become the chromosomes these gather together about the equator draw apart perhaps into two separate groups gather together again and once more separate This stage takes rather less than ten minutes and at about this time the cell begins to assume an hour glass shape preparatory to division The chromosomes become surrounded by a clear zone in which they become dissolved and in their place in either cell is a small nucleus The daughter nuclei are clearly seen about twenty eight minutes after the chromosomes first drew apart These observations as Dr Strangeways says emphasize the fact that the cell is essentially dynamic—alive with a life of its own Even in the vegetative stage no cell is wholly at rest mitosis marks a paroxysm of activity No one who follows his observations can fail to be impressed like him with a belief in the independence of the cell even though it has existed in close functional association with other cells for untold generations of individuals

The summary with which Dr Carrel concludes his address shows that the method is still in what may be called the physiological stage It is proved that blood serum possesses a growth restraining action that embryonic and other substances have growth-promoting properties and that the white blood cells possess a nutritive function The applications of the method to pathology have only just begun Some interesting results have been obtained from attempts to cultivate the sarcoma cell *in vitro* Difficulties were encountered owing to the fact that the fibroblasts overgrew the other cells, but eventually cultures of sarcoma tissue were obtained by adding small fragments of muscle Evidence was obtained that though the fibroblasts soon lost the power of conveying sarcoma, other cells which had the appearance of monocytes, retained their malignant qualities or their

[1] See Reprint page 12

inoculation into fowls gave rise to tumours which had the characteristics of the original growth A sarcomatous culture eighteen days old composed exclusively of amoeboid cells produced a rapidly growing sarcoma in a short time

Dr Strangeways has done some work with the x rays, from which it appears that in a certain dose they cause profound modifications in the process of division of the cells Mitosis becomes irregular, and long exposure causes the cells to break up and die Both he and Dr Carrel have made some suggestive observations on inflammation and repair, but we do not think it can be said that a stage has been reached at which it would be safe to dogmatize The new method, however, presents many hopeful possibilities

ANNUAL MEETING NOTES

THE REPRESENTATIVE MEETING

THE general impression conveyed to an onlooker by the first day's debates in the Representative Body (reported fully in the SUPPLEMENT this week) was one of quiet progress, and, on the whole, of economy in time as well as effort This was due, in the first place, to the character of the agenda, which contained items of sufficient interest to ensure general attention, though it should perhaps be said that the chairman declined to record one resolution shortly after lunch, on the ground that the representatives were for the moment irresponsible through "lack of interest or somnolence"! Only two items seemed likely to arouse acute controversy—namely, those dealing with lunacy law and with medical charities In both these cases the decision to be taken was rather for reference to the Council than for immediate action, a fact which saved protracted and unprofitable discussion The formal business with which the meeting opened was broken by two items of direct personal interest—the resolution of condolence on the death of the late respective President-Elect (Mr Forbes Fraser) and the new nomination from Bath, and the much regretted resignation by Dr Haslip of the post of treasurer, which he has held for more than seven years with great advantage to the Association and its finances The consideration of finance was distinguished by an unusual absence of criticism and question, interest concentrated on those items concerning the Association's new premises, and under this head the representatives were evidently prepared to appreciate rather than criticize

The formal vote of thanks to the Chairman of Council was the only possible expression of the collective and individual feeling of the representatives for Dr Bolam's great services in this matter The Mayor's address of welcome was signalized by an appeal to more medical men to come forward as members of public bodies—a salutary reminder Under the heading of "medico-political" interest was less sustained, but no enthusiasm could be evoked on the threadbare subject of midwives and the administration of opium, in face of the assurance of authority that no effective action is possible It may be hoped that the discussion on medical witnesses cleared the minds of some representatives, for it accomplished little else, that on the scale of fees for doctors called in by midwives evoked an unexpected flash of feeling The discussion on fees for ambulance lectures resulted in a minor verbal amendment, while the Manchester suggestion that the regulations for provision of first-aid facilities in factories should be considered by the appropriate committee was definitely useful The debate on medical examination for membership of approved societies was similar in spirit (and result) to those which have occurred in the Council Reason prevailed, with misgivings on the part of those who gave way Far greater feeling would have been evoked by the motions on medical charities if anything beyond a reference to the Council had been possible This debate was enlivened by Dr D'Ewart's customary vigour of expression The one real item of importance was the discussion of the law as it affects medical certification of insanity Here Dr Hawthorne's masterly handling of the situation as it exists in fact met with deserved success, and saved a position which had in it elements of real danger The discussion also served to elicit one of Dr Hawthorne's happy phrases in appreciation of the general attributes of the legal profession On the whole it may be said that the representatives had earned their release by 5 30 p m

Saturday's agenda, opening with the Organization Report and closing with the Hospitals Report, proved far more controversial than Friday's, interest steadily growing from the point at which Dr Irvine of the Witwatersrand Branch made his statement on the position in South Africa to that at which the hospitals controversy was resumed with the usual vigour The progress actually made under the latter head was disappointing, though it may be hoped that the protracted discussion served to clear the minds of the large number of representatives whose activities were confined to voting After the sympathetic reception of Dr Irvine's statement, some time was spent over the question of approving signatures on applications for membership Whilst local practice in this matter is, as Dr Morton Mackenzie pointed out, left to local decision, the Darlington motion served a useful end in allowing a comparison of the several methods found effective in different areas Dr Christine Murrell's concise presentation, on the Croydon motion, of the attitude of medical women in the matter of sectional representation was a model of simplicity and directness, and would have served as an effective piece of propaganda had such been needed Dr Hawthorne's interpolations, even as points of order, received the usual measure of appreciation then and throughout the day The vexed question of individual medical defence, referred to the Council for consideration and the production of a definite scheme, remains much where it stood before a debate which marked the persistence of a general desire for what those with most experience consider impracticable The case for the formation by the Association of a locum tenent bureau in each teaching centre lost much of the force which Dr Fairbairn Murray would have lent it had he been present On the Science Report, the Sheffield motion to refer for reconsideration the question of problems of vision relating to combatant service, as raised by the Section of Ophthalmology at Portsmouth last year, was carried by a small majority on an inconsiderable vote On the National Health Insurance Report Dr Brackenbury accepted the substance of the Darlington motion that the memorandum of evidence before the Royal Commission should be referred to the Divisions of the Association, subject to the limitations imposed by the shortness of the time available for its preparation, and the report was accepted almost without discussion The morning session closed with a full and lucid exposition by Dr Le Fleming of the serious position in respect of the funds available for the support of medical candidates for Parliament, discussion of the subject being postponed to allow the representatives time for adequate consideration The whole of the afternoon session was devoted to hospital policy, with the following meagre result One motion accepted by a majority insufficient to secure its adoption as the policy of the Association, and one, after much verbal readjustment, accepted by the requisite two-thirds majority In none of the motions debated at such length was any question of principle involved, yet the three hours were not wasted time if they served to dispel any misapprehensions regarding the hospital policy of

the Association Two attempts were made to show the representatives how confusion had arisen and to point the way out—one by Dr Brackenbury and one by the Chairman of Council The latter's statement that there was notwithstanding all appearance to the contrary, no attempt to go back on the accepted policy of the Association was at once a tribute to the obvious sincerity of the opposition voiced by Mr Lucas and Dr McGregor-Robertson and others and an appeal for amendment of the attitude of suspicion which contributed so largely to the general confusion For the rest, he argued that what was at stake was a question of procedure rather than of principle Dr Fothergill and Dr Hawthorne made useful contributions to the redrafting of one of the motions which secured its acceptance, and Sir Richard Luce clearly explained what had led him to modify his own attitude with regard to the paragraph in the hospital policy in which that motion proposed amendment One prominent debater went perhaps most clearly to the root of the matter when he complained that the representatives did not know what the hospital policy now was and that any change in any part of it would involve consequential changes These two circumstances seem to have determined the course of the whole discussion They made it possible for the able spokesman of a determined minority to see in every verbal amendment a veiled threat to their independence of action, and to reconte t points of principle already decided against them That was one reason why we had, on Saturday, a general debate upon staff funds and the payment of medical staffs when all the Representative Body was asked to do was (1) to bring the statement of the Association's policy into line with the actual facts of the case as they stand to-day (2) to supply a more comprehensive heading for one section of the Association's policy, (3) to substitute a term in more general for a term in less general, and also (as shown in the course of the debate) le s accurate, use and (4) to provide a wider choice of method in carrying out the implications of accepted policy But there were other contributory reasons

The outstanding features of Monday's proceedings were the report of the Canadian visit, presented by Sir Jenner Verrall and Dr Cox, the affiliation resolution, and the proposed message of welcome to Canada, which were received with acclamation The meeting appreciated the main points—regret at the necessity for a looser bond than that linking the parent Association with the Dominion Branches, and recognition of the imperial aspect of the liaison now proposed, and Dr Johnson's ability to speak for Canada as a Canadian supplied the one further factor needed to complete the impression of good work well accomplished for the profession and for the public in the Dominion and in this country The report of the Scottish Committee (signalized this year by a noteworthy increase in membership), the report of the Journal Committee (on which the Hastings attempt to exclude advertisements of a 'commercial character" found no support), and the adjourned discussion on the Medical Representation in Parliament Fund, occupied a relatively short space of time in the morning and afternoon sessions The urgent need for a rehabilitation of the fund was scarcely challenged, and the speeches were, in the main, vigorous and to the point But there were too few speakers, and the general acquiescence of the representatives was too passive to augur well for the future The two practical suggestions made were put forward by Dr Morse of Bournemouth in a good maiden speech, and by Dr Peter Macdonald The former urged that if every representative would charge himself with the task of awakening his Division to the urgency of the case apathy would disappear Adoption of this plan would render an appeal to the Medical Defence Fund unnecessary On the other side Dr Rose, though most of his argument was more applicable to a local than to a parliamentary election, succeeded in conveying a clear impression of the attitude which militates against the success of any scheme to secure medical representation in Parliament The greater part of the day was occupied by the adjourned discussion on the Hospitals report On the whole, the time was spent to better purpose than on Saturday, partly, perhaps, because so much latitude had been granted in the preliminary discussion that it was difficult now to find sentiments unexpressed, and partly because the items were taken in more effective order A new paragraph was adopted, laying down clearly and directly the principle of recognition of the service of visiting staffs in all cases where contributions are accepted from individual patients The only new element in the debate was supplied by Dr Lipscomb's comment from an Australian point of view To this Dr Brackenbury's statement that the policy would not apply in the Australian Branches, and Mr Bishop Harman's exposition of the difference between the Australian and the British position, gave a sufficient answer Dr Fothergill seemed to epitomize the greater part of the two days' debate when he implied that the formula drawn up by the Hospitals Committee as the best obtainable compromise must be unsatisfactory to those whose real desire was a definition of their own wishes The opinion of the patient and the opinion of the too reticent hospital staffs were freely cited on either side, but the weight of the speaking seemed throughout to be on the side of the Committee's recommendations Outstanding speeches in support of the Committee's policy were those of Mr Souttar and Dr Brackenbury the latter given with all the force of a recent convert Lastly may be mentioned Dr Fothergill's tribute to Mr Harman's services as Chairman of the Hospitals Committee paid at the moment when the issue for which Dr Fothergill and his school of thought had contended throughout the two days' debate was definitely decided against them, also the subsequent acceptance by Mr Harman of verbal amendments by Dr Fothergill and Dr McGregor-Robertson

THE ARCHBISHOP OF YORK'S SERMON

The official religious service took place at the Cathedral, Bradford, on Tuesday afternoon A large number of members of the Association, headed by the President and President-Elect, the Past-Presidents, the Chairman and Deputy Chairman of Representative Meetings, the Treasurer, and the Secretaries, walked in procession, wearing their academic robes, to the church Another procession was formed by the Lord Mayor of Bradford and the members and officials of the Corporation The Cathedral was entirely filled A Nonconformist Principal E Griffith-Jones, of Yorkshire United College, Bradford read the lesson, the parable of the Good Samaritan The anthem, rendered by a large choir, was Hail gladdening light" (Martin) The proceeds of the offertory were placed at the disposal of the President of the Association for distribution among medical charities The sermon was preached by the Archbishop of York, who chose his text from Ecclesiasticus 'From the Most High cometh healing" The main channels through which the gift of healing came to mankind, said his Grace, were recognized by this old Hebrew writer to be the prayer of faith and the skill of the physician Each of these had its place in the divine economy The Archbishop believed we had come to a time when, through both these channels of healing gifts in an abundance seldom if ever known before were ready to reach suffering mankind There was no need for him to speak of the marvellous achievements of medical and surgical science These had resulted in an immense liberation of mankind from the imprisonment of pain and disease and premature death Even if the causes of a few diseases were still wrapped in mystery the search for them was continuous, unbaffled, unwearied, and confident

Within our own time surgery had accomplished results which, a few years ago, would have been regarded as miraculous The reverent man would regard Pasteur and Lister and the other great masters of healing as in truth the servants of God, inspired by Him On the other hand there might soon be a revival of healing through the other channel—the channel of the spirit, of active faith, of self-discipline, and prayer Again and again, through the power of great personalities or the association of hallowed places or sacred rites, or even through enthusiastic expectation, the mind and spirit of man had been so elevated that the body had been freed from disease Within the last few months the British dominions and the United States had seen on a truly remarkable scale a revelation of this ancient potency of the spirit Whatever explanation of these phenomena might be given, the facts could not be denied No unprejudiced mind could refer them to mere fancy or mere fanaticism It would surely be a great misfortune if these two lines of healing, the one moving along *the plane of the body and the other along the plane of the* spirit, were to be jealously kept apart If they were streams arising from the same source they ought not to flow through exclusive channels Such separation would involve danger The movement which took the plane of the spirit might soon degenerate without sympathy from the other side into a matter of excitement, superstition, and magic, to which many minds were prone He begged the physician—and the same remark applied in some cases to the surgeon—not to brush these things aside as though they were no concern of his He would carry the acquiescence of every thoughtful person in that congregation with him when he said that it was not through the material but rather through the spiritual that Nature was to be understood and interpreted And was not the trend of medical and even of surgical science towards recognizing more and more fully the influence of mind and spirit alike in creating and in curing bodily ills? Might it not be that we stood at the threshold of a new epoch in the study of health, the aim of which would be the recognition of the close interpenetration of the claims of body, mind, and spirit, and that this spiritual healing would be brought into a new scientific synthesis? On both sides there was danger, practical and real, in keeping the two channels of healing apart from one another, and he suggested that the time had come when high medical authority—say, the Council of the British Medical Association—should inaugurate a full and impartial inquiry into the relation of body and mind and spirit in the cure of disease There was ample material—essays, papers, inquiries—available, but he did not know of any considerable and sustained scientific inquiry into a matter which demanded, for the sake of the human race, that such an inquiry should be conducted If it were undertaken, the facts of healing through the power of faith and prayer would be stated, not with suspicion, but with that open-mindedness and freedom from prejudice which marked the scientific temper He was confident that the result would prove that the spirit, quickened by faith and strengthened by discipline, possessed, like medicine and surgery, true and great powers of healing His Grace went on to say that there had always been true personal co-operation between the ministers of medical and surgical science and the ministers of religion It had been fostered by such agencies as the Guild of St Luke, and a witness to it was the place which the service that afternoon had in the Annual Meeting of the British Medical Association He pleaded for the co-operation he had suggested, not merely personal and individual, but thoroughly scientific, so that science itself should discover, set forth, and explain the place of the spirit in the uplifting, healing, and strengthening of the body He concluded an impressive sermon by saying that with deep admiration, gratitude, and sincerity, thinking of all the desires, endeavours, patience, and self-sacrifice represented by the assembly he was addressing, he besought the Most High, from whom all healing came, that He would prosper them in giving relief and healing for the maintenance of life

LUNCHEON TO OVERSEAS REPRESENTATIVES

On Friday, July 18th, the first day of the Annual Representative Meeting, the officers of the Association and the chairmen of the Organization and Dominions Committees entertained to luncheon at the Great Northern Victoria Hotel, Bradford, the representatives from Overseas Branches of the Association The chair was taken by Dr R Wallace Henry (Chairman of the Representative Body), who was supported by the principal officers of the Association, the chairmen of several committees, and the chief officials The guests who were welcomed on this informal occasion represented many distant parts of the empire—Australia, South Africa, Malaya, Ceylon, East Africa, and Mesopotamia Their names and constituencies were Dr T W Lipscomb (New South Wales), Dr R Humphrey Marten (South Australia), Mr P N Vellacott, O B E (Orange Free State and Basutoland), Dr R T Harrison (Cape of Good Hope, Western), Dr L G Irvine (Witwatersrand), Dr A L Hoops (Singapore), Dr W H Kruntze, M B E (Kenya), Dr J B Davey (Tanganyika), Dr A N Coomaraswamy (Ceylon), and Dr G W Spencer (Mesopotamia) After the loyal toast had been honoured, the chairman proposed the health of the Dominion visitors, asking each in turn, as he named him, to stand up so that the others present might make his acquaintance In offering a very warm welcome to the guests, Dr Wallace Henry spoke with pleasure of the continued progress and growing activities of the Overseas Branches, and the efforts that were being made by headquarters to maintain and extend contact between the medical practitioners of the mother country and of the daughter nations Dr Lipscomb, in responding, expressed the thanks of his Australian colleagues for their friendly reception in this country Dr Vellacott said that in spite of the difficulties known to his hearers, the British Medical Association in South Africa was holding its own Dr Spencer, on behalf of Mesopotamia, acknowledged the insight and sympathy shown by headquarters in dealing with the distant Branches, and Dr Coomaraswamy expressed the thanks of Ceylon members for the courtesy with which the Association dealt with their difficulties and troubles Various other Dominion representatives spoke briefly to the same effect and expressed appreciation of the reception given to them by the Representative Body and the officers and officials with whom they had come into touch The South African representatives remained to discuss with Dr Morton Mackenzie (Chairman of the Organization Committee) some of the problems of medical organization in the Union of South Africa

THE ANNUAL EXHIBITION

The annual exhibition of foods, drugs, surgical appliances, and other materials and apparatus of interest to the profession was housed in the Windsor Hall, Morley Street, only two or three minutes' walk away from the buildings in which the sectional and other meetings were held, and adjoining the reception room The Windsor Hall is the principal of the Bradford Corporation Baths, but some little adaptation made it answer excellently the purposes of an exhibition building In addition to the large floor covering in the swimming bath, the small contiguous theatre had been opened in such a way that the whole made one uninterrupted space Even then the area was smaller than that which was available at Portsmouth or Glasgow, but the utmost use was made of every recess and corner, and sixty-five stands were accommodated Although

it might be supposed that the whole business of exhibiting this year had been concentrated at Wembley, a first look round at Bradford showed that most of the firms which had supported this exhibition in the past were again in evidence, as well as some newcomers, and the general impression was of extremely attractive stands and many novel features A detailed review must await another issue Stand No 1 was devoted to medical charities—the Royal Medical Benevolent Fund and Epsom College A note on the formal opening of the exhibition by the new President appears in the SUPPLEMENT

PSYCHOLOGICAL TESTS IN EDUCATION

In July, 1920, the Board of Education instructed its Consultative Committee to examine and report on the use that could be made in the system of public education of psychological tests of educable capacity The committee appointed a subcommittee of six, with Dr Adami as chairman, and co-opted Dr P B Ballard, Dr C S Myers, and Professor C E Spearman to give the necessary expert assistance Nineteen witnesses were examined and many psychologists from various countries contributed written statements In 1922 the subcommittee presented a report to the full committee to serve as a basis for the final report Additional scientific educational, and statistical memoranda were collected visits were paid by members of the committee to educational institutions to observe the various tests in operation special laboratory experiments were made, and part of the evidence, together with the conclusions reached, has now been published by the committee in a report[1] which affords a very valuable survey of the whole question We propose to publish later a detailed review of this volume, which contains a large number of examples of the tests employed in different countries, a compendium of the opinions of expert psychologists, and a useful list of recent publications on psychology and psychological tests It may here be said that the title, *Psychological Tests of Educable Capacity*, is interpreted as including (1) intelligence tests, (2) standardized scholastic tests in certain school subjects, such as writing and arithmetic, (3) vocational tests, including tests of manual ability, (4) tests of such specialized mental activities as perception, memory, attention, imagery, and association, (5) certain physical tests suggested as a means of assessing educable capacity, and (6) tests of such aspects of temperament and character as are directly concerned This scientific study of the principles on which examinations should be based is without doubt a most valuable contribution to the advancement of the general intelligence of the nation It will pave the way for the very considerable improvements, both in giving instruction and in testing its practical value Without such a scientific basis much education of the past has failed in its objective

FOETAL AGE AND THE WEIGHT OF FOETAL ORGANS

A REPORT issued this week by the Medical Research Council with the title *Child Life Investigations*,[2] deals with the estimation of foetal age, the weight and length of normal foetuses, and the weights of foetal organs It is a careful biometric study of the healthy human foetus in the later months of pre-natal life and at term It consists of three papers—the first and second by Dr J N Cruickshank and Dr M J Miller of Glasgow, and the third by Dr F J Browne of Edinburgh All deal with the same subject and in the same way, attempting to lay down mean, maximum, and minimum standards in length and weight of the body as a whole, and similar standards of weights for all the important organs, the data are derived from *post mortem* examinations of healthy foetuses Such standards, and especially the minimal and maximal figures, are of obvious value both in medical jurisprudence and in clinical medicine, and we congratulate the authors on their patient, laborious investigation, on the strict selection and testing of their material, and on the value of the results obtained The material which is the basis of the report is large as well as carefully selected In the Glasgow investigation it consisted of 470 foetuses, of which 301 were full term (tenth lunar month or over), and in the Edinburgh study of 218 foetuses, of which 117 were full term In this there were included no macerated foetuses, monsters, infants mutilated by operation, or infants surviving more than one day Some of the results may be briefly indicated The age of the foetus cannot be estimated with certainty but there is much more likelihood of error during the eighth and ninth lunar months than in the seventh and tenth months In the tenth month the best results are obtained by combining the body length and the state of ossification Radiography is available in living children for determining the ossifying centres The body weight is of less value than the body length The stem length (sitting height) gives disappointing results The weights of all the important organs of the body were carefully taken, and the results are set out in a series of tables showing the mean, maximum, and minimum weights in three age groups—the tenth month, the eighth-ninth months, and the seventh month these data are given for each sex and for both sexes combined The results are also stated as weight ratios for all these groups—that is, as the relation between the weight of the organ and the weight of the whole body When it is stated that all the e data are given for brain, liver, spleen, heart, thymus, thyroid both kidneys both lungs, and other organs, it will be realized what a valuable collection of standards has been made for the anatomist, the physician, and the medical jurist It is curious to be told that the liver of the female is actually heavier than that of the male, both through the later months of intrauterine life and at term The average female thyroid at term is a little heavier than the male, the female thymus a little lighter, and the spleen practically the same, these are actual mean weights and not weight ratios The authors show great restraint in their deductions They remark that "in the last three months of intrauterine life the weight of the foetus increases at a proportionately greater rate than that of any of the organs studied except the spleen and the thymus It is during these months that most of the fat is laid on, and this may explain the greater proportionate increase of the body" (Cruickshank and Miller) Attention may be drawn also to the maximal and minimal weights of the organs of apparently healthy foetuses Dr Browne points out how an unusually heavy liver or spleen in a full-term foetus may be used as evidence of syphilis unless these maximal figures are known and remembered The report is likely to become a standard work of reference on the subject of the weights of the organs of the full-time foetus it is based on material so abundant and so carefully selected as hardly to require confirmation Therefore, on the completion of this herculean labour, the authors, like jurymen at the conclusion of an arduous trial, ought to be released from further service of this kind for a period of years

EARLY MEDICAL BOOKS

THE auction year now about to close has already been remarkable for the variety of the medical books which have been sold and for the rarity of some of them, the choicest collection of all is that included in the coming sale at Sotheby's on July 28th, when over fifty medical incunabula

[1] *Psychological Tests of Educable Capacity* London H.M. Stationery Office Price 2s. by post 2s. 2½d

[2] *Child Life Investigations* The Estimation of Foetal Age the Weight and Length of Normal Foetuse and the Weights of Foetal Organ Medical Research Council Special Report Series No 86 H M Stationery Office or through any bookseller (Pp 87 Price 2s. 6d. net)

(books printed not later than 1500 A D) will be dispersed Almost all of them present points of interest, and a few of the most important may be mentioned There is, for example, a Spanish translation by Padre Vincente de Burgos of a book by an English author, Bartholomæus de Glanvilla, printed at Toulouse in 1494, it is entitled "De las Propriedades de las Cosas," and is illustrated by sixteen large woodcuts, one of which represents a demonstration on the anatomy of the abdominal contents Surgery is poorly represented in comparison with other branches of medical science—a natural consequence of its primitive condition in the fifteenth century there is a treatise by Guy de Chauliac of 1498, and one by Petrus de Argellata dated 1480—both published at Venice Medicine, on the other hand, is the subject of a large proportion of these incunabula There are two works by Savonarola, grandfather of the great reformer one a comprehensive textbook, the other dealing especially with fevers, the pulse, the urine, and balneology Two editions (1493 and 1500) are included of Johannes de Ketham's treatise, both enriched by spirited woodcuts, one of which shows a physician feeling the pulse of a sick old man while with his left hand he holds a sponge to his own nostrils, three females with bowls are evidently nurses, and two male attendants hold torches and a jar of electuary The question whether nocturnal seminal emissions ought to disqualify the clergy from celebrating mass seems to have been a burning topic of the day, for three books, all published before 1480, deal with it solely Several books bear the then common title of "Regimen Sanitatis", they were published in Ulm (1482), Strasbourg (1491), and Lyons (1495), and a "Hortus Sanitatis" (undated) may possibly be ascribed to 1470 The undated "Sermo Medicinalis" of Nicolaus Falentius, judged on internal evidence to be from the press of Octavianus Scotus at Venice, is regarded as unique no other copy has been recorded by any of the authorities Equally desirable is the "Arzneibuch" of [illegible]loff of Bavaria, published at Augsburg in or about [illegible] and with this may be coupled the "Commentary" [illegible]fredus Apollinaris, Milan, 1474 The "Opera Medicinalia" of Johannes Mesue (Naples, 1478) is a fine copy of fine old book, three others almost as excellent are the "Liber Urinarum et de Pulsibus" of Gilles de Corbeil (Salamanca, 1486), the 'De Secretis Mulierum" of Albertus Magnus (Leipzig, 1490), and the first edition of the "Liber Servitoris" of Albucasis (thus spelt), published by Jensen of Venice in 1471 These are the outstanding items in a collection which contains nothing but fine copies of rare and interesting medieval books In the sale of the following day (July 29th) is a mid-fifteenth century English medical manuscript on vellum, 'in the whiche is contayned many sundry medicynes bothe off physike and surgery greatly profitable to the helth off man and woman" The modern spelling of "surgery" is especially noticeable in comparison with the obsolete flavour of almost every remaining technical term A copy of Sir Thomas Elyot's 'Castell of Helth" (1541) is included in the same sale

THE WALLER MEMORIAL

JUST over a year ago a meeting was held in London under the chairmanship of Sir Edward Sharpey Schafer to raise a fund to commemorate the memory of Professor Waller and his wife The executive then appointed reported to a meeting held last week (July 17th), which was again held under the chairmanship of Sir Edward Sharpey Schafer Dr Waller was at one time lecturer in physiology at the London School of Medicine for Women, and Mrs Waller was first a student, then demonstrator, and later, until her death a member of the Council It was therefore resolved that the major part of the fund should be devoted to some purpose in connexion with that school The fund collected amounts to £1,911, and it may eventually reach £2,000 It is proposed to earmark the sum of £100 as a contribution to a Waller Memorial Research Laboratory at St Mary's Hospital, with which Dr Waller was long connected as lecturer in physiology, if that project materializes The remainder will be handed over to the Council of the London School of Medicine for Women as a trust to be known as the Augustus and Alice Waller Memorial Research Fund It is intended that the fund shall be used for the purchase of apparatus and materials, and for the provision of mechanical assistance and the publication of results, it is not to be regarded as in the nature of a scholarship or salary The fund will be administered by the Council of the London School of Medicine for Women, with the advice of the School Committee The meeting on July 17th was addressed by the chairman, who spoke of the connexion both Dr and Mrs Waller had had with the London School of Medicine for Women, by Professor J S Macdonald, Professor J Mellanby, Miss Aldrich-Blake, and Professor Collingwood of St Mary's Everyone who knew the Wallers and their work will be glad that their memory is thus to be perpetuated

THE DEATH OF MRS ARGYLL ROBERTSON

A LINK with a past age of British ophthalmology was broken by the death, in June last, of Mrs Argyll Robertson, the widow of the late Dr Argyll Robertson, whose name will be for ever associated with the phenomena first observed by him in the eye After the death of her husband in 1909, Mrs Argyll Robertson settled at Dinan in Brittany, where she won the respect of all with whom she came into contact Her kindness of heart and the great charm of her manner brought her hosts of friends, and when she was laid to rest in the cemetery at Dinan a large concourse of people of all classes did honour to the memory of the kindly lady who was always ready to be a friend to those in distress The Sous-Prefet of the Department, in a speech at the graveside, paid a touching tribute to those great qualities of heart which had endeared her to all, and especially to her work during the war, when she established at Dinan, at her own cost, a hospital and convalescent home for French soldiers Many of those connected with ophthalmology in this country will remember with pleasure that grace and charm which were the distinguishing features of the wife of Dr Argyll Robertson

THE HALF YEARLY INDEXES

THE usual half-yearly indexes to the JOURNAL and to the SUPPLEMENT and EPITOME have been prepared and will be published shortly, they will, however, not be issued with all copies of the JOURNAL, but only to those readers who ask for them Any member or subscriber who desires to have one or all of the indexes can obtain what he wants, post free, by sending a post-card notifying his desire to the Financial Secretary and Business Manager, British Medical Association, 429, Strand, W C 2 Those wishing to receive the indexes regularly as published should intimate this desire

THE attendance at the Annual Meeting at Bradford promises to be good, the actual number of registrations down to midday on Wednesday was 650

OWING to the great amount of material coming from the Annual Meeting of the Association at Bradford it has not been possible to publish the Epitome this week We are also compelled to hold over a number of articles and letters which had been prepared for press

Scotland.

Edinburgh University Alumni Association

An association, whose purpose is the joining together of graduates and others who have been students at the University in order to provide for future needs of university education has for some years been projected the scheme was brought to fruition at a meeting on July 17th, in the McEwan Hall, when the Vice-Chancellor, Principal Sir Alfred Ewing, presided over a large company, and speeches outlining the objects of the association were made by the Lord Advocate, Mr H P McMillan, K.C., Sir Frederick White, Professor Sir Harold J Stiles, and Mr Sherwood Calver Sir Frederick White said that the University of Edinburgh, like all the Scottish Universities had only within comparatively recent times awakened to the necessity of providing something more than the pure training of the mind, and the institutions which made the social life of the University had been founded within the memory of many of those now living The object of the Association of Alumni was to create a new family tie between the Alma Mater and those who had passed beyond her gates The needs of modern universities were so great that every one of them was being driven to seek new sources of revenue the seats of learning might have to turn more and more to the support of H M Treasury, and if so, the University would have to consent to an increasing measure of control from an authority which was not primarily concerned with its welfare The Lord Advocate said that there was no principle of the law of Scotland more firmly founded than this that it was the duty of the child to support its parent when that parent was in necessitous circumstances The law was, after all, only a somewhat chilly bond, and he ventured to think that the Association of Alumni would link them together with warmer and happier cords It was intended to foster and encourage a centripetal instinct on the part of those who had gone out into the world from the University, and to afford those who felt it an opportunity for giving practical expression to what they felt Sir Harold J Stiles said that he thought it might be claimed that the Edinburgh Medical School had played a very large part in building up the reputation of that University If that reputation was to be maintained the University must not only teach the best that was already known, but must supply its quota of new learning To do this it was absolutely essential that the University should be provided with funds for expenses, for equipment for research, and for the adequate remuneration of a sufficient number of highly trained assistants The revenue from fees, which used to amount to about one-third of the total revenue, had fallen off considerably, and it was not possible to rely on revenue from bequests from wealthy commercial magnates of whom, he was afraid there were too few in Edinburgh, which was an academic rather than a commercial city An important part was played by Alumni Associations in the universities of America and the efficiency of those great institutions was in a very large measure, due to them If graduates would translate the sentiments of gratitude and reverence which they had for their University into material assistance, he believed there need never again be anxiety regarding the efficiency and reputation of that great seat of learning Mr Sherwood Calver secretary of the association, explained its organization, and pointed out that the association included all those who had studied at the University in any capacity, whether for graduation or otherwise The entrance fee to the association is 5s, and the minimum annual subscription 5s

Chair of Surgery at Edinburgh

The chair of surgery in the University of Edinburgh, vacant by the death of Professor Alexis Thomson, has now been reorganized on a whole-time basis, with permission to the professor to do private practice on two afternoons a week within the city of Edinburgh The post was, in the first instance, offered to Mr John Fraser, M.Ch., F.R.C.S., who, however, declined it on account of the conditions attached to its tenure The curators have now appointed Mr D P D Wilkie, M.Ch. F.R.C.S., for a period of ten years, from October 1st next The appointment for a period of ten years only is a new principle in Scottish Universities Mr Wilkie is 41 years of age, and was educated at Edinburgh Academy and Edinburgh University, where he had a distinguished career, graduating in the year 1904 In 1907 he obtained the degree of M.D. and in 1909 that of M.Ch. receiving a gold medal for his thesis He became F.R.C.S. Edin. in 1907 and F.R.C.S. Eng. in 1918 He has made numerous contributions to surgical literature, and his name is particularly associated with important research work in abdominal surgery This was recognized in the year 1918, when he obtained the Victoria Jubilee Liston Prize, awarded every three years by the Royal College of Surgeons of Edinburgh for original research resulting in the greatest benefit to practical surgery For several years he has been joint lecturer in surgery in the extra-Mural School at Edinburgh He may be trusted to promote the advancement of surgery and of research, and to prove a popular and successful teacher

An Olympic Winner

At the graduation ceremony at Edinburgh, on July 17th, over 400 degrees were conferred including 248 Masters of Arts, of whom 82 graduated with honours, 23 graduands received the recently instituted Bachelorship of Commerce, and 93 the degree of Bachelor of Science An interesting feature of the ceremony was the graduation (B.Sc. in pure science) of Eric Henry Liddell, who recently won the 400 metre race at the Olympic Games in Paris His appearance was the signal for a great ovation, after being capped he was presented by the Vice Chancellor with a Greek ode, which had been composed by the University in his honour, and crowned with a chaplet of wild olive

Ireland.

Medical Registration (Free State)

The Minister for Industry and Commerce (Mr McGilligan, National University) introduced the Medical Bill (1924) to authorize the General Council established by the Medical Acts to continue to exercise jurisdiction and authority under those Acts in respect of medical practitioners in Saorstat Eireann The measure he said, arose in peculiar circumstances, and the passage of the bill might have to be hastened The General Medical Council had been set up under the Medical Acts, and it was believed that its operations had been continued by the cumulative effect of an Article in the Constitution and the Adaptation of Enactments Act passed in the Dail It was found, however, that owing to certain action taken on the other side the scope of the General Medical Council was no longer believed to extend to the Free State If such were the case, certain medical graduates registered or purporting to be registered since 1922 might not in fact be legally registered, and in order to validate those people and in order to continue the authority of the General Medical Council until such time as the medical profession in the Free State, in conjunction with or under the supervision of the Government had had time to establish a council of its own, this bill was necessary The only reasonable course in the circumstances was to continue the authority of the General Medical Council in the Saorstat for a temporary period That period was limited by the bill to one year during which time it was believed there would be an opportunity to have a proper authority established for the country either separate or having full reciprocity with the other side

The Minister in reply to questions stated that the bill might be continued after the first year by Act of the Oireachtas but being limited as it was it ought not to be taken that after a year there would necessarily be a change from the present circumstances It only meant that a period of twelve months would be granted so that the matter would be inquired into With regard to any change the Minister stated he could not speak for the medical profession

Sir James Craig, M D (Dublin University), in the course of the debate, said

Some time ago the Government asked for a conference with the universities and licensing bodies to consider the matter That conference met and spent several months discussing it The conference was composed of fifteen members, representing the Universities Colleges of Dublin, Cork, and Galway, Trinity College, the Royal Colleges of Physicians and Surgeons, and the Apothecaries' Hall, and it sent a unanimous report to the Government pressing that no change should be made There had been three alternatives before the conference The first was the establishment of a separate *Medical Council* and *Medical Register*, with control of the medical examinations and practitioners of the Free State, without relation to the existing Council of Great Britain Under this practitioners qualified and registered in the Free State would not be allowed to practise in Great Britain or its Colonies Medical students who had no hope of employment in the Free State would naturally seek to get qualified in England, Scotland, or Northern Ireland, so that they could be placed on the general register To get on the colonial list they would have to apply to the Privy Council for recognition, and to the General Council for registration There were at least 1,000 medical students in the Free State, and they were spending £150 a year each and if they were going to spend their money elsewhere on their education a large sum of money would be lost to the Free State The second alternative discussed at the conference was the establishment of a separate Medical Council and a separate register for the Saorstat, and to seek to obtain from the Medical Council of Great Britain a reciprocity similar to that which obtained between Great Britain and the colonies It was not compulsory upon the Council to recognize all the institutions of the Free State, and it would be quite within its right to refuse to give recognition to certain licensing institutions They had nothing to offer the English Medical Council in giving reciprocity to the Free State, and he did not think there was any doubt whatever that if they asked and were able to obtain reciprocity, so that all their graduates would be placed on the *Register*, the colonies would come in and endeavour to claim similar reciprocity, and the General Medical Council had always set its face against that The establishment of a General Council and *Register* here would cost a considerable sum of money, and practitioners throughout the country would have to pay to run the Council As far as the distribution of those qualified in the Free State was concerned, on the *Register* of 1922 there were 6,599 students who had qualified in the Free State, and of these there were resident outside of Ireland 52 per cent, resident in Northern Ireland 12¹ per cent, and resident in the Free State 35 per cent, so that more than 50 per cent of the students who qualified in the Free State were living outside Ireland The point made during the conference was that the number of Irish practitioners on the *Register* was only 7 per cent, whereas the percentage of representatives on the General Medical Council, so far as Ireland was concerned was 21 so that they had at the present time a great deal more control than the number of practitioners would entitle them to The conference, which represented all the licensing bodies in the Free State, was unanimous that it would be a very serious thing for any change to be made at the present time It considered that the third proposition put forward would be the ideal thing but would be very slow indeed to give up existing conditions unless perfectly satisfied that the reciprocity spoken of was assured before anything was given up He had pleasure in supporting the second reading of the bill

The bill was passed through all its stages on July 17th

Correspondence.

THE PURITY OF CARBON TETRACHLORIDE

SIR,—I am writing, after consultation with Dr Charles Todd of Cairo, to call attention to a matter which is likely to be of serious practical importance in the treatment of ankylostomiasis During the past few years carbon tetrachloride has established itself as the most effective remedy yet applied to this condition When the powerfully narcotic and poisonous action of this substance, inhaled as a vapour, is borne in mind, its freedom from toxic action when swallowed is remarkable The fact that it is, practically, not absorbed from the alimentary canal, when given with proper precautions in effectively anthelmintic doses, is a point of great pharmacological, as well as practical, interest The question has been dealt with very fully in a paper by Lamson and others,[1] who have shown that relatively enormous doses of the pure substance can safely be given by the mouth to dogs, but that absorption from the alimentary canal, and consequent poisoning, can be produced by the concomitant administration of alcohol or fat Lack of precaution with regard to such points may possibly have been responsible for some of the relatively few cases, already on record in which dangerous and even fatal symptoms have followed its administration to man

On the other hand Dr Todd who is chairman of the Ankylostoma and Bilharzia Consultative Committee of the Egyptian Government, and Dr Khalil, who is in charge of the investigation work of the committee, formed the suspicion that the occurrence of bad symptoms was related to certain consignments of carbon tetrachloride, and was presumably due to an impurity They decided to test each consignment on monkeys before putting it into use, and the result confirmed their suspicion By fractional distillation they located the poisonous constituent in the fraction with the lowest boiling point They tell me that they also noticed that this fraction had a smell suggesting carbon bisulphide, already known as the commonest impurity of carbon tetrachloride

At this stage Dr Todd communicated with the Medical Research Council and with the firm from whom he had drawn his supplies, and asked whether investigations could be made to identify the impurity and secure its elimination I communicated with the suppliers, who readily undertook to fractionate a large volume of the carbon tetrachloride known commercially as "pure," and submitted the earliest distilling portion for further examination to my colleague Dr Harold King The small amount of sulphur present in the original sample was accumulated in this fraction, and Dr King found that it was all present in the form of carbon bisulphide No other significant impurity was detected

It cannot be claimed that the evidence is yet complete It is known that from samples of carbon tetrachloride, which for ordinary purposes would be regarded as very pure, Drs Todd and Khalil found the earliest distilling fraction to be very toxic, further, that the only impurity found in such a fraction was carbon bisulphide, which is a highly toxic substance It cannot be stated that absolutely pure carbon tetrachloride has never caused bad symptoms, or that precautions in its use are unnecessary, or even that carbon bisulphide is the only toxic impurity Others are known, but their practical significance is more in doubt

The evidence is sufficient, however, to make it desirable, and even urgent, that all those concerned should have the information which will enable them to eliminate one possibly serious source of danger from this important method of treatment

Pending the publication, in full detail, of the observations and experiments still in progress, all who order carbon tetrachloride for internal administration may be advised to stipulate that it shall be *free from sulphur*, and to test each consignment to ensure that it is so When once the manufacturers are made familiar with the requirement they will have no difficulty in meeting it the purification is a simple process, and not a costly one One simple and moderately delicate test is the copper xanthate test This is described in the *B P Codex*, but the tolerance there proposed, of 1 part of CS_2 in 1,000 parts of CCl_4, is certainly much too high for present needs I understand that a paper fully reviewing the existing tests, and proposing a new one of great delicacy, is to appear in this week's issue (July 26th) of the *Pharmaceutical Journal* So far as I am aware, there is no good reason for permitting the presence of any perceptible trace of the bisulphide in carbon tetrachloride intended for internal use —I am, etc,

London, N W 3, July 21st H H DALE

CARDIAC DELIRIUM

SIR,—Sir Clifford Allbutt, in his interesting letter on cardiac delirium (June 28th, p 1154), states that he agrees with Dr Massini that recovery from the "travelling delirium" of heart disease (that is, the patient believing himself to be in some other place than that in which he is) is unknown to him I have at the present time under treatment a lawyer of 86 suffering from auricular fibrillation who recently has had two attacks of cardiac failure, in both of which he nearly died The second attack was accompanied by very pronounced "travelling delirium," the patient thinking himself in different hotels or houses in which he had previously stayed This lasted about a fortnight He has now completely recovered from the delusion and is perfectly rational His general condition has improved so much that he is able to walk about and get out

[1] *Journ Pharm and Exp Therap* xvii p 215 1923

in a bathchair I have also heard from a friend of a similar case in which recovery took place—I am, etc,

Hove July 19th L A PARRY

SIR,—In view of the more detailed statement by Sir Clifford Allbutt of an interesting symptom occurring in a particular and infrequent type of cardiac delirium—namely, a confusion or disorientation limited to ideas of place, with comparative sanity on other subjects, such as the lapse of time and the identity of persons—may I be allowed to offer a suggestion?

The majority of delria (toxic infective-exhaustive insanity) are of the anxious type, and apart from those "such as pertain to any mortal strife" the prevailing anxiety of the person suffering from cardiac failure is related to muscular effort and chiefly to the effort of getting from place to place Is it then unreasonable to suggest that such confusion as he suffers from will relate in a peculiar way to one of the chief sources of his anxiety—namely, his relation to place? To note the lapse of time or to recognize the identity of persons does not distress the sufferer from cardiac disease any more than other persons

If there be any truth in the suggestion made, it affords another example of the view that mental symptoms are *usually the product of two factors—a physical one such as* occurs in cardiac failure, and a psychic one The first may account for such derangement of cerebral function as results in the production of a delusion the other helps to explain the content of the delusion or the particular form it takes, in this instance relating to place and not to time or person —I am, etc,

Edinburgh July 19th GEORGE M ROBERTSON

SMALL-POX IN LONDON

SIR,—The recent cases of small-pox in London—which were directly due to an extremely mild unrecognized attack in an unvaccinated child aged 3 years—afford an instructive commentary on one of Dr Killick Millard's arguments in support of his views on infantile vaccination In some correspondence which Dr Millard and I had in the BRITISH MEDICAL JOURNAL in July, 1920, he contended that such mild cases in the unvaccinated were unimportant, because, as they are only caused by an exceptionally mild strain of small pox they 'breed true" and only give rise to cases of a similar mild type There appears to be no doubt that a very mild and comparatively harmless type of small-pox has been present recently in various parts of the country So far this type has "bred true," but I have never been able to accept Dr Millard's assumption that because a mild type of small pox occurs in an unvaccinated person it necessarily follows that subsequent cases will be of a similar type

The fallacy of this assumption is strikingly shown by the present series of cases, and I think it was also indicated in one of my previous letters, in which I referred to about 400 mild cases—of which nearly half were under 10 years of age—in unvaccinated persons

The great majority of these occurred in epidemic periods, a fact which contributed materially to their recognition They were associated with other cases of all grades of severity and there is no reason to suppose that if they had not been recognized they would have given rise only to similar mild cases

I imagine that if Dr Millard had seen the first case of the present series before the subsequent cases occurred it would have given him very little anxiety, until, instead of the anticipated mild cases, he found himself unexpectedly confronted with a severe and fatal form of small-pox—I am, etc,

Gravesend July 11th ARCHIBALD KIDD

TREATMENT OF TRYPANOSOMIASIS (SLEEPING SICKNESS)

SIR,—As you have previously published articles from us on the subject of the treatment of trypanosomiasis[1] we feel it but right that we should give the final results of our method of treatment through your columns

During the past two and a half years we have, to the best of our ability, followed up cases of sleeping sickness treated by intrathecal serum, as well as by various other methods on a comparatively large scale, in the Madi district of the Nile valley, where the incidence of trypanosomiasis is a severe one

We must frankly admit that the cases which we treated in this area did not react favourably, and the mortality among those treated was little if any lower than among untreated cases

We hope shortly to submit for publication a fuller report of our investigations, with details of cases which have been treated by "Bayer 205" and tryparsamide, and trust that the comparative results obtained will prove of interest—We are, etc,

London W 1 July 15th CLAUDE H MARSHALL
S M VASSALLO

[1] Treatment of sleeping sickness by alvarsanized serum (Marshall) May 22nd 1920 Further report on the treatment of sleeping sickness (Marshall and Vassallo) May 28th 1921 Further report on the treatment of trypanosomiasis (Marshall and Vassallo) February 10th 1923.

The Services

ROYAL ARMY MEDICAL CORPS

PROMOTION EXAMINATIONS

THE King's Regulations have been amended so as to provide that as from April 1st 1925 a major of the Royal Army Medical Corps *before promotion to lieutenant-colonel will be* examined in the subjects laid down in Appendix X of the Regulations The examination in these subjects may be taken at any time after an officer's promotion to the substantive rank of major provided that the candidate can produce a certificate from a D D M S or an A D M S to the effect that he has received instruction in the subjects covered by the examination and that he is considered fit to present himself for examination

In order to assist officers in their preparation for this examination all necessary arrangements will be made for the adequate instruction of majors R A M C in army medical organization and administration hygiene and the employment of the medical services in peace and war This instruction will be carried out by means of lectures followed by discussions war games and field exercises by the attachment of officers to the different departments in hospital and where possible to the offices of administrative medical officers for instructional purposes

NORTH PERSIAN FORCES MEMORIAL MEDAL

WING COMMANDER HAROLD E WHITTINGHAM Royal Air Force Medical Service has been awarded the North Persian Forces Memorial Medal for the year 1923 for his paper Observations on the life history and bionomics of *Phlebotomus papatasii* published in the BRITISH MEDICAL JOURNAL December 15th 1923 (p 1144) written in conjunction with Flight Lieutenant A F Rook Royal Air Force Medical Service

This is the first award of the medal which in accordance with the terms of the trust deed of the Memorial Fund is awarded annually for the best paper on tropical medicine or hygiene published in any journal during the preceding twelve months by any medical officer of under twelve years service of the Royal Navy Royal Army Medical Corps Royal Air Force Indian Medical Service, or of the Colonial Medical Service provided the Memorial Committee considers the papers published have attained a standard of merit justifying an award

Universities and Colleges

UNIVERSITY OF CAMBRIDGE

THE following candidates have been approved at the examinations indicated

D M R AND E—*Part I (Physics and Electrotechnics)* J Lavelle W M Levitt F Moor C J K O Malley J R K Paterson J V parks M Weinbren *Part II (Radiology and Electrology)* A P Colyer C R Entecknap A C Fowler S G Gal taun P S. Khosla J Lavelle W M Levitt A G MacLeod T D Overend J R K Paterson G D Thomson K F Vickery J Wall Barbara G Wood

VICTORIA UNIVERSITY OF MANCHESTER

Certificate in School Hygiene

THE following candidates have qualified for the certificate in school hygiene

Enid F Stovell M B Ch B D P H Ethel White M B Ch B D P H.

CONJOINT EXAMINING BOARD IN ENGLAND

WE are informed that as several English medical students have wished recently to continue their medical studies in the medical faculty of Vienna the faculty has decided to allow such students to enter and they have further decided to recognize the studies already attended in English medical schools Similarly there will be recognition of the examinations passed in England which correspond to the Austrian First Professional Examination (physics biology chemistry anatomy histology and physiology) but exemption will not be granted from the First Rigorosum Examination unless a candidate has passed in all of these subjects in England as they constitute one examination in Austria

Medical News.

THE University of Wales has conferred the honorary degree of M Sc on Dr H Drinkwater of Wrexham, in recognition of his research in genetics and of his work on the British flora, and that of LL D on Sir Donald MacAlister, Bt, on account of his distinguished services to medical science and as a university administrator.

DURING the second week of the intensive course at the Prince of Wales's General Hospital, Tottenham, which begins on July 28th, in addition to the clinical work there will be a lecture daily at 4 30 p m, free to members of the Fellowship of Medicine On successive days there will be a lecture on "Puerperal sepsis," by Mr Victor Bonney, "X ray examination of diseases of the digestive tract," by Dr J Metcalfe, "Gall stones and their complications," by Mr H W Carson, "The treatment of the heart failure of auricular fibrillation and flutter," by Dr A J Whiting, and "Retroversion," by Mr A Goodwin There will also be a demonstration at the North Eastern Hospital by Dr F Thomson on Saturday morning, on the early diagnosis of the infectious fevers The fee for the week's course is £2 2s On August 11th will begin two special fortnight courses—one on diseases of the chest at the Brompton Hospital and the other on diseases of children at the Queen's Hospital, Hackney Road The fees for these courses are £4 4s and £3 3s respectively From August 18th to September 8th there will be a course on the diagnosis and treatment of common diseases of the nervous system at the West End Hospital for Nervous Diseases, for which the fee is £1 1s Copies of each syllabus, together with the Fellowship *Bulletin*, may be obtained on application to the Secretary, 1, Wimpole Street, W 1

SIR ROBERT JONES gave an address at the sixth annual general meeting of the Association of Certificated Blind Masseurs last week He said the work done by the members of the association was excellent, and expressed the desire that its sphere of usefulness should be still further extended

A POST GRADUATE course will be held at Addenbrooke's Hospital, Cambridge, from Tuesday, September 30th, to Friday, October 3rd, inclusive There will be no fee A syllabus will be supplied later on application to the secretary, Dr J Aldren Wright, 2, Corpus Buildings, Cambridge

THE house and library of the Royal Society of Medicine will be closed during the whole of August for cleaning and repairs

SIR WILLIAM MACEWEN left personal estate valued for probate at £13,446

CIVIL LIST pensions of £100 have been granted to the widow of Dr W Ford Robertson, in recognition of the services rendered by her husband to science, and to the two sisters of Dr W H R Rivers, F.R S, in recognition of his services to anthropology, physiology, and psychology

THE Cambridge University Press will publish shortly a new and cheaper edition of the late Dr W H R Rivers's *Instinct and the Unconscious*, this will be the third edition within four years

THE *Nederlandsch Tijdschrift voor Geneeskunde*, the official organ of the Dutch Medical Association, which was founded in 1849, devoted its issue of July 5th to a retrospect of medicine in Holland during the last seventy five years

A HYGIENIC exhibition will be held in Vienna from October 1st to December 1st It is intended to afford visitors an insight into the present state of hygienic achievements and necessities Lectures will be given and cinema films displayed The Austrian Federal Government desires to interest foreign medical and philanthropic persons in the exhibits

A POST GRADUATE course in otology and neurology will be held by Professor Barany at Upsala, Sweden, from September 8th to 18th

THE board of management has appointed Mr R W Harris to be the secretary of the London School of Hygiene and Tropical Medicine Mr Harris was formerly an assistant secretary at the Ministry of Health

THE third annual conference of cremation authorities will be held at Wembley (Conference Hall) on Friday, August 1st, at 3 p m

IT is proposed to raise a memorial to the late Mr G P Newbolt, surgeon to the Royal Southern Hospital, Liverpool, whose unexpected death last March was recorded in our columns at the time (p 553) A Newbolt Memorial Committee has been formed, and a commission has already been given to Mr Frank Copnall to paint a portrait of Mr Newbolt, which will be hung in the committee room of the hospital The committee, however, hopes to raise a sum sufficient to carry out certain improvements in the hospital which Mr Newbolt had much at heart, these are the extension of the x ray department and the provision of additional accommodation for the nursing staff Donations may be sent to the treasurer of the fund, Mr Lyon H. Maxwell, at the hospital

Letters, Notes, and Answers.

CORRESPONDENTS who wish notice to be taken of their communications should authenticate them with their names—not necessarily for publication

ALL communications with reference to advertisements as well as orders for copies of the JOURNAL should be addressed to the Financial Secretary and Business Manager, 429, Strand, London, W C Attention to this request will avoid delay Communications with reference to editorial business should be addressed to the Editor, BRITISH MEDICAL JOURNAL, 429, Strand W C.2.

Communications intended for the current issue should be posted as to arrive by the first post on Monday or at latest be wired not later than Tuesday morning

THE telephone number of the BRITISH MEDICAL ASSOCIATION and BRITISH MEDICAL JOURNAL is Gerrard 2630 (Internal Exchange) The telegraphic addresses are

EDITOR of the British Medical Journal, *Attiology Westrand, London*

FINANCIAL SECRETARY AND BUSINESS MANAGER (Advertisements etc), *Articulate Westrand, London*

MEDICAL SECRETARY *Mediocera Westrand London*

The address of the Irish Office of the British Medical Association is 16, South Frederick Street Dublin (telegrams *Bacillus Dublin* telephone 4737, Dublin) and of the Scottish Office, 6 Rutland Square Edinburgh (telegrams *Association, Edinburgh*, telephone 4361 Central)

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LETTERS NOTES, ETC.

ACUTE PUERPERAL INVERSION OF THE UTERUS

DR J REIDY (Stepney) writes that he was called to a woman who had been taken in labour during the night, while she was in the erect position the foetus and placenta were delivered into a pail On examination he found the uterus protruding outside the vulva, it was reduced and a hot intrauterine douche given The patient made an uneventful recovery The points to be noted in the case were the little or no haemorrhage, the absence of profound shock, and the ease with which the uterus was replaced

STRANGULATED HERNIA IN AN INFANT

DR J G M MOLONY (Truro) writes I was very interested to read in the JOURNAL (July 12th, p 52) the case of strangulated inguinal hernia in a child 3 weeks old, reported by Dr F A H Simmonds On July 11th I had a similar case in a baby 18 days old It was operated on by my partner, Dr H C Sharp Operation revealed a large strangulated knuckle of bowel Since operation all sickness has stopped and the baby's bowels have acted twice I may add that a few weeks ago I had a similar case in a baby a little over 12 months old

A DISCLAIMER

DR W THOMSON BROWN (Levtonstone) writes, under date July 20th An article appears in *John Bull* this week, written by a medical man, in the course of which a note of mine in the *Lancet* is quoted verbatim and my name is given I wish to state that my name was thus used without my knowledge or consent, and that I do not associate myself with the opinions expressed in the article in question

VACANCIES

NOTIFICATIONS of offices vacant in universities, medical colleges, and of vacant resident and other appointments at hospitals, will be found at pages 34, 35, 38, and 39 of our advertisement columns and advertisements as to partnerships, assistantships, and locumtenencies at pages 36 and 37

A short summary of vacant posts notified in the advertisement columns appears in the *Supplement* at page 72

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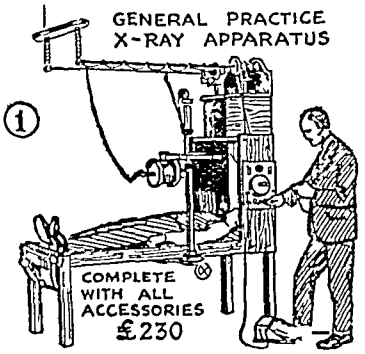
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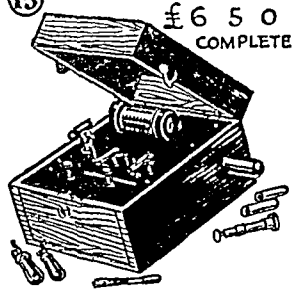


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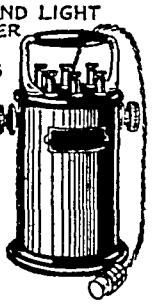
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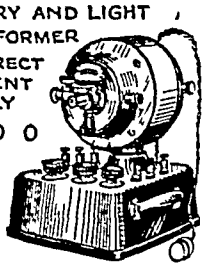
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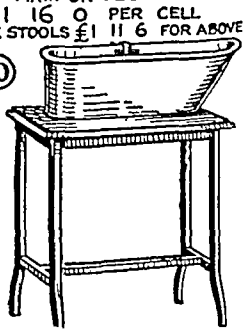
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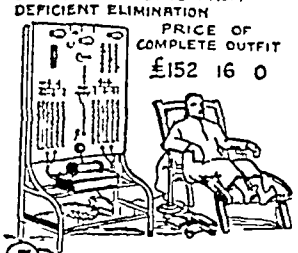
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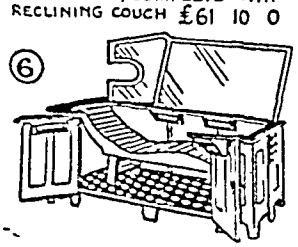
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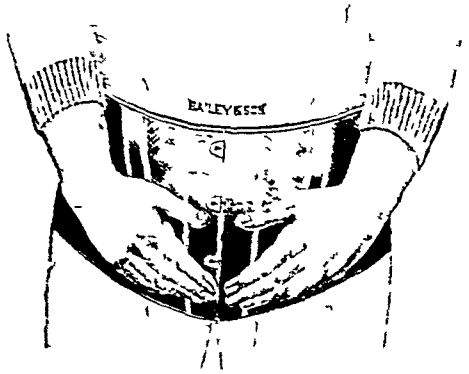
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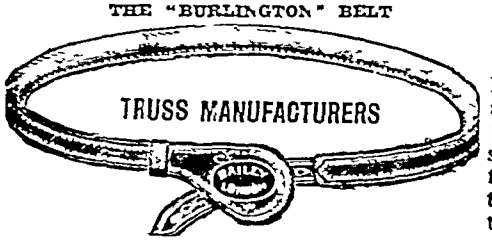
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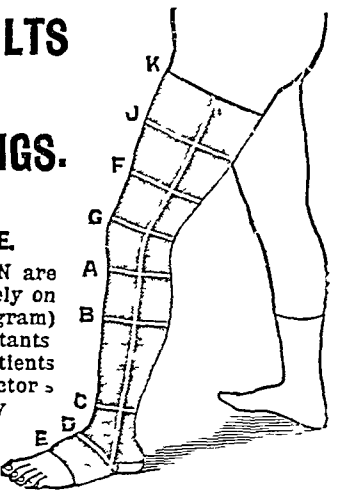


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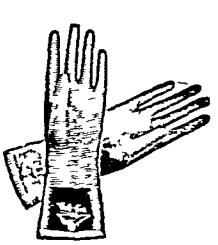
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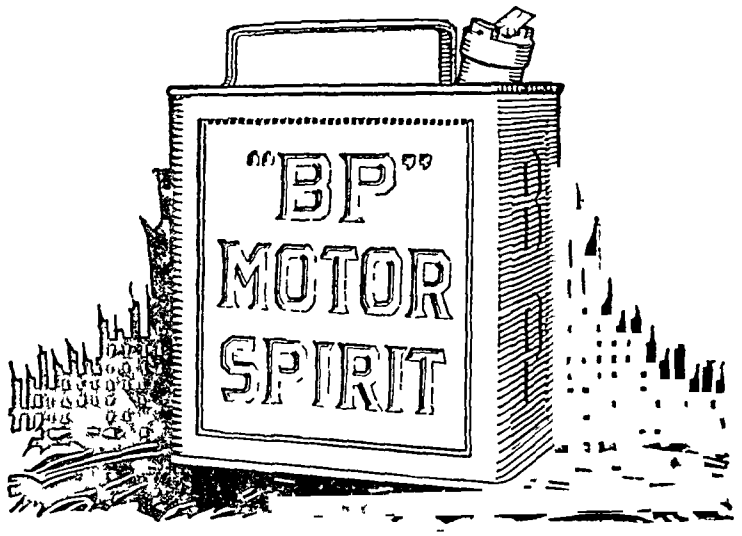
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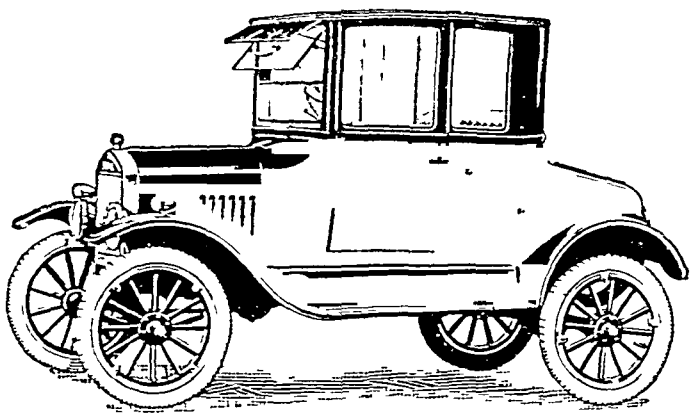
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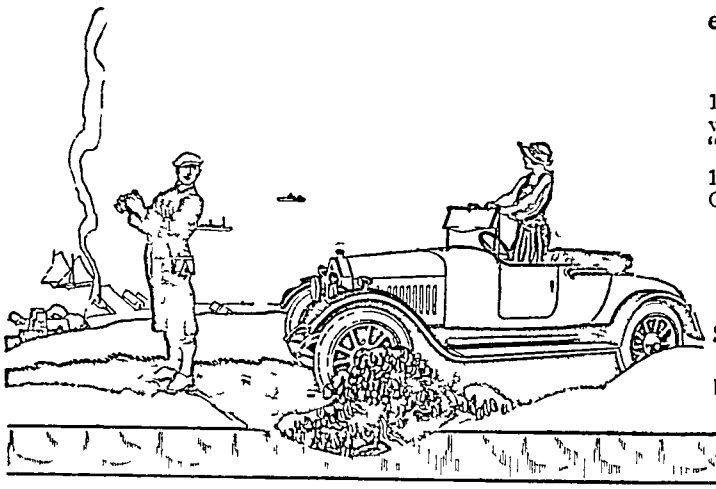
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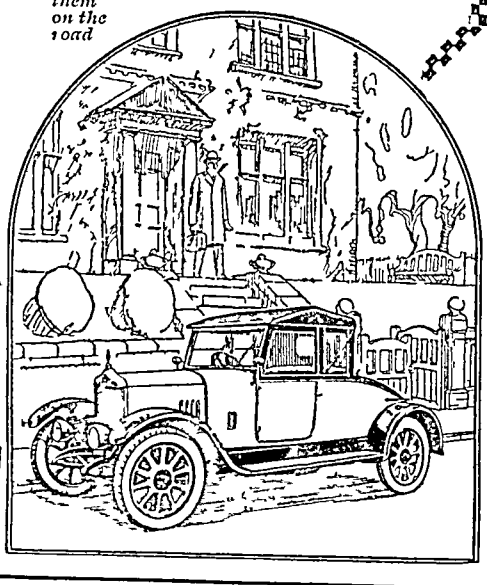
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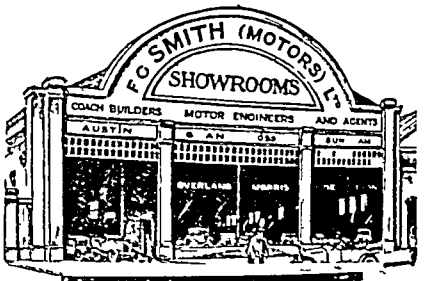
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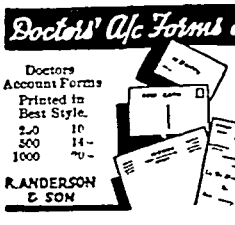
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TELEPHONE No 56

Dr RAMBAUT can be seen by appointment on Wednesdays at 39, Harley Street, W 1
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BARNWOOD HOUSE
HOSPITAL FOR MENTAL DISEASES
BARNWOOD near GLOUCESTER

Telephone: No 7 Barnwood

Exclusively for PRIVATE PATIENTS of the UPPER AND MIDDLE CLASSES

This Institution is devoted to the care and treatment of persons of both sexes at moderate rates of payment

Voluntary boarders not under certificates are admitted

Under special circumstances the rates of payment may be reduced by the Committee

The MANOR HOUSE for Ladies only which is entirely separate from the Hospital and standing in its own grounds is utilised exclusively for voluntary patients

For further information apply to ARTHUR TOWNSEND M D the Medical Superintendent

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Established 1816 For the TREATMENT of a few LADIES suffering from NERVOUS and MENTAL DISORDERS Voluntary patients received

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For Mental Cases, with or without Certificates.

Ordinary Terms Five Guineas per week
including Separate Bedrooms for all suitable Cases without extra charge)

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A High-class Private Nursing Home for Ladies desiring **Curative Treatment** for Nervous Affections **Hysterical** and **Borderland Cases** in the early stages and those suffering from **Incipient** mental trouble are received as **Voluntary Boarders.** Apply to the Misses MCLINTOCK, or to Dr S BARTON, 34, Surrey Street, Norwich Visiting Physician

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A HOUSE licensed for the reception of a limited number of ladies of unsound mind Both certified and voluntary patients received This is a large country house with beautiful grounds and park, 5 miles from Sheffield Station, Grange Lane G C Railway, Sheffield Telephone No 34, Rotherham Resident Physician—GILBERT E MOULD, L.R.C.P., M R C S Consulting Physician—CROCHLEY CLAPHAM, M D F R C P E

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which is now opened as a PRIVATE HOSPITAL for sufferers from any non-infectious INTERNAL DISEASES who need investigation or treatment

Special arrangements are made for carrying out the preliminary tests needed for the proper administration of INSULIN in Diabetes

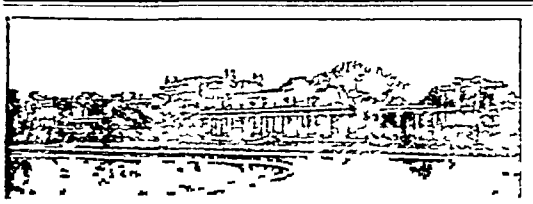
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Telegrams "Alleviated, London" Telephone New Cross 576

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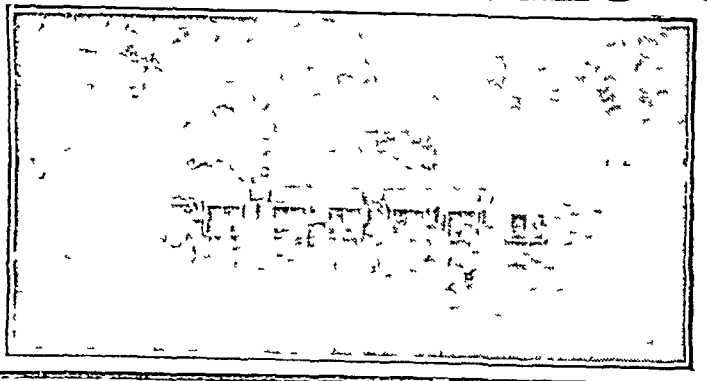
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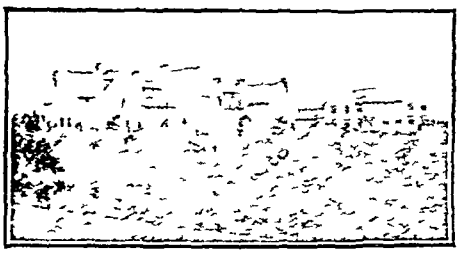
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Physician

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Assistant Physician Dr J C THORPAINE

For particulars apply SECRETARY



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AT MURTLE, ABERDEENSHIRE

Senior Physician Dr J M JOHNSTON

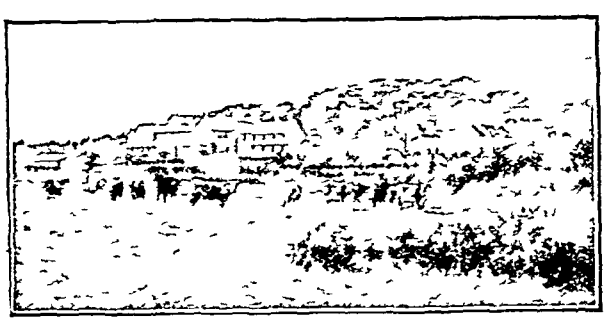
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FACULTY OF MEDICINE

(Associated with the General and Queen's Hospitals for Clinical Teaching).

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LONDON SCHOOL of TROPICAL MEDICINE

Endsleigh Gardens, N.W.1.

Next Session will commence 22nd September 1924

For Prospectus and further particulars apply to The Secretary London School of Tropical Medicine, Endsleigh Gardens, N.W. or to the Head Office Seamen's Hospital Greenwich London S.E.

MIDDLESEX HOSPITAL MEDICAL SCHOOL, W.1.

Primary F.R.C.S.

Classes in ANATOMY and PHYSIOLOGY commenced on July 14th and 17th respectively There will be 4 weeks' vacation (August–September), after which the classes will resume and continue until the date of the Examination.

Anatomy

including Embryology

Mondays Tuesdays Wednesdays, Thursdays and Fridays at 12 noon.

Members of the Class will be able to use the Dissecting Room for the purpose of reading with dissected parts" at any time during school hours.

Physiology

From 3 to 5 days weekly throughout the Course beginning July 17th at 10 a.m. VIVA VOCE CLASSES, HISTOLOGY CLASSES

The inclusive fee for both subjects is £16 16s. (for one subject, £8 8s.)

Intending candidates are reminded that it is desirable to join these classes at the commencement of the Course if possible.

For further particulars apply to A. E. WEBB-JOHNSON (Dean) C.B.E. D.S.O. F.R.C.S. or to R. A. FOLEY School Secretary

POST-GRADUATE TEACHING

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CLINICAL ASSISTANTSHIPS—F.R.C.S. (FINAL) COURSE.

For further particulars apply to Mr. H. J. SIMSON Dean, West London Hospital Hammersmith W.6

LONDON HOSPITAL MEDICAL COLLEGE.

F.R.C.S.

A COURSE of INSTRUCTION for the FINAL FELLOWSHIP EXAMINATION will begin on Monday, Sept 1st, as follows —

Examination of Clinical Cases Messrs R Howard and E C Lindsay
Systematic Tutorial Classes Messrs R Milne, A. J Walton, H S Souttar, and W S Perrin.
Commentaries Messrs R Milne and H S Souttar
Surgical Pathology and Museum Work Mr R Howard
Morbid Anatomy: Prof H M Turnbull
Bacteriology: Dr P Fildes
Surgical Anatomy: Professor William Wright.
Operative Surgery Mr R Howard
Ophthalmic Surgery Messrs C B Goulden and H R Jeremy
Aural Surgery Messrs N Patterson and F F Muecke

Fees (exclusive of Operative Surgery), 20 gns
Operative Surgery 5 guineas

A separate entry can be made for all Classes other than those of a strictly Clinical character (Men students only are eligible for admission)

Further particulars may be obtained from Prof WILLIAM WRIGHT M B D Sc F R C S, Dean London Hospital Medical College Mile End E 1

LONDON HOSPITAL MEDICAL COLLEGE.

PRIMARY FELLOWSHIP EXAMINATION

A COURSE OF INSTRUCTION for the above Examination will begin on Monday, Sept 22nd
The Fee for the Course is 15 guineas
Further particulars may be obtained from —
Profes or WILLIAM WRIGHT
M B D Sc, F R C S, Dean
Mile End E 1

CONSUMPTION SANATORIA OF SCOTLAND,

Bridge of Weir.

A POST GRADUATE COURSE IN TUBERCULOSIS FOR GENERAL PRACTITIONERS will be held during September
For particulars apply JAMES CROCKET M D, F R C P E Medical Superintendent

STAMMERING, SPEECH DEFECTS.

BEHNKE METHOD Estab 1882 Cases non resident treated at 39 Earl s Court Square S W 5 and in residence in the Summer holidays at Miss BEHNKE s house on the Chilterns

Pre eminent success in the education and treatment of stammering and other sp e h defects —*The Times*
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HOSPITAL Gobowen, near Oswestry

COUNTRY OPEN AIR WARDS 300 BEDS

GIRL STUDENTS WANTED to learn Orthopedic Work and prepare for the Conjoint Examination of the C S M M G Three years training Salary: first year £16 second year £20 all found uniform Apply Miss HUNT R R C

University of Glasgow.

ST MUNGO CHAIR OF SURGERY

The Board of Curators propose to consider the — — the above vacant (temb r may be obtained on application to the Secretary of the Univer ity Court The University Glasgow
July 1924

Liverpool School of Tropical MEDICINE

COURSES OF INSTRUCTION (lasting three months) for the Diploma and also in Veterinary Parasitology commence about SEPTEMBER 15th and JANUARY 4th —Prospectus from the Hon DEAN School of Tropical Medicine University of Liverpool

Home School for Backward

and DELICATE CHILDREN (e tab 1904) Specially t Patients received Modern educational methods and handicraft training Horticulture, garden games and occupations Entire charge if desired Little girls admitted Terms moderate — Apply Principal Hatherley Brake Cheltenham

Royal Southern Hospital,

Liverpool

NEWBOLT MEMORIAL FUND

In compliance with a wish expressed by many of his friends and colleagues it has been decided to open a Fund having for its object the establishment of a Memorial at the Royal Southern Hospital, Liverpool to perpetuate the memory of its distinguished Senior Surgeon, the late Mr G P NEWBOLT O B E, F R C S, who died on the twenty sixth anniversary of his appointment

As part of the Memorial, the Organizing Committee has commissioned Mr Frank Copnall to paint a portrait which will be hung in the Committee Room of the Hospital Photogravure copies will be available

It is felt, however that in recognition of his long and devoted service to the Hospital and the community at large it would be desired that a Memorial of greater magnitude should be founded to his memory

With this object in view the Committee hopes that a sufficient sum will be subscribed to permit of the carrying out of certain improvements which Mr Newbolt had at heart at the time of his death, namely —

1 The extension of the X Ray Department and
2 The provision of additional accommodation for the Nursing Staff, both of which are most urgent necessities

Donations to the Fund will be gladly received by any of the members of the Memorial Committee or by Mr LYON H MAXWELL at the Hospital who has kindly consented to act as Honorary Treasurer

NEWBOLT MEMORIAL COMMITTEE

Thomas Woodsend, Esq J P, Chairman D Douglas Crawford, Esq, F R C S Vice Chairman Lyon H Maxwell Esq Hon Treasurer J R W Armour Esq, F R C S (Edin) John Lea Esq Charles J Macalister Esq M D I R C P (Lond) J H Mather Esq M B Ch B D M R L J Ernest Nevins Esq, M B M R C S Percy L Rimmer Esq Henry L Wrathall Esq Miss Agnes Bagnall Matron

Medical Department

SANITARY BRANCH

AMENDED NOTICE

Applications are invited from Ceylonese who possess British qualifications in Medicine and Public Health for appointment as MEDICAL OFFICERS OF HEALTH

There are two grades in the service and the emoluments and qualifications necessary are as follows —

GRADE I

Qualifications —D P H or B Sc. (Public Health) of any British University or other Examining Body in the United Kingdom
Emoluments —£500—£775 per annum by eight annual increments of £30 and one of £35, and Motor Transport allowance of Rs 85 Rs 70 or Rs 60 per memsem accordingly to weight of car [illegible]
station for office
ment quarters
quarters will be charged 10% of their salaries as house rent if stationed in Colombo, Kandy or Nuwara Liya and 6% if stationed elsewhere
Efficiency Bar —Before £650

GRADE II

Qualifications—D T M and H of London Cambridge Liverpool or Edinburgh or Certificate in Tropical Medicine and Hygiene of the London School of Tropical Medicine
Emoluments —£360 £460 per annum by annual increments of £25
Same allowance as in Grade I
Efficiency Bar —Before £500 (i e before promotion to Grade I)
Conditions of Service —First year in Grade II, Probationary
For admission to Grade I three years satisfactory service in Grade II is required
Applicants possessing on admission to the Service the qualifications required for both Grades will receive an initial salary of £400 per annum and the allowances mentioned above

Medical Officers of Health are eligible for promotion to an Assistant Sanitary Commissionership There are at present two such appointments Salary £800 £960 per annum and house allowance

For further particulars apply to the Principal Civil Medical Officer and I G H Colombo Ceylon

The University of Liverpool

DERBY CHAIR OF ANATOMY

The Council invite applications for this Chair
The duties of the Professor will begin and the [illegible]ary 1st 192

the names of at least candidate (e desires) twelve copies of testimonials should be sent to the Registrar not later than October 1st 1924 from whom further particulars may be obtained
EDWARD CARLY Registrar

Glasgow Post-Graduate

MEDICAL ASSOCIATION

The following arrangements have been made for Post Graduate Teaching in Glasgow during the Summer of 1924 —

(a) A GENERAL MEDICAL AND SURGICAL COURSE from August 4th to September 13th Fee £10 10s, or £6 6s for first or second fortnight
(b) SPECIAL COURSES IN VARIOUS SUBJECTS
(c) CLINICAL ASSISTANTSHIPS

Syllabuses and any other information may be had on application to the Secretary Post Graduate Medical Association The University, Glasgow

Nottinghamshire County

COUNCIL RANSOM SANATORIUM

APPOINTMENT OF ASSISTANT RESIDENT MEDICAL OFFICER

The Nottinghamshire County Council invite applications from duly qualified and registered Medical Practitioners for the appointment of Assistant Medical Officer at the County Sanatorium Sherwood Forest (130 beds)

The salary attaching to the position will be [illegible]

The person appointed will be required to reside at the Sanatorium and will act under the direction of the County Medical Officer and Resident Medical Superintendent and perform such duties as may be prescribed Experience in the treatment of Surgical Tuberculosis and X ray work will be considered an advantage

The successful candidate will also be required if necessary to assist in the Medical Work at one or more of the County Tuberculosis Dispensaries.

Applications, stating age qualifications and experience accompanied by copies of not more than three recent testimonials must reach me not later than Saturday August 16th 1924

County House, Shire Hall Nottingham
July 17th 1924

H. TWIBDADE MEABY Clerk of the County Council

The Gloucestershire Royal

INFIRMARY & EYE INSTITUTION Gloucester (140 Beds)

HOUSE SURGEON SENIOR (Male) fully qualified required Salary £175 per annum with board residence and laundry Candidates who have had previous experience as Resident Medical Officer preferred

Applications stating age qualifications and nationality with copies of not more than three recent testimonials to be sent to the undersigned not later than Thursday August 7th The elected candidate will be required to enter upon his duties on August 2 th

G HURFORD Secretary
Gloucester July 24th 1924

County Borough of South

AMPTON

ASSISTANT MEDICAL OFFICER OF HEALTH

The Corporation invite applications for the position of Assistant Medical Officer of Health at a salary of £600 per annum to carry out duties in connection with the Port including the operation of the Aliens Order 1920 Regulations under the Public Health (Regulations as to Food) Act 1907 and the Regulations with respect to Cholera Yellow Fever, and Plague etc and any other duties connected with the public health service as required

The appointment will be subject to the approval of the Ministry of Health

The gentleman appointed will be required to devote the whole of his time to the duties of the office and to act under the direction of the Medical Officer of Health

Forms of application may be obtained from the Medical Officer of Health Municipal Offices Southampton

Applications on the prescribed form endorsed "Assistant Medical Officer of Health" and stating age qualifications experience etc together with copies of not more than three recent testimonials must be delivered at the Town Clerks Office Municipal Office Southampton before 12 o'clock at noon on the 9th August 1924

R R LINTHORNE Town Clerk
July 18th 1924

Bedford County Hospital

Wanted for a term of not less than six months an ASSISTANT HOUSE SURGEON unmarried male [illegible] and Surgery Salary [illegible] indry medical
Appl school together with three recent testimonials must be sent to

BEAUCHAMP WADMORE Secretary
July 14th 1924

APPOINTMENTS—Important Notice.

(a) British Islands.

Medical Practitioners are requested not to apply for any appointment referred to in the following table without having first communicated with the Medical Secretary of the British Medical Association, 429, Strand, London, W C 2

Town or District	Town or District	Town or District.
CONTRACT PRACTICE.		**PUBLIC HEALTH** *(continued)*
ENGLAND	**WALES** *(continued)*	LINCOLN CITY EDUCATION AUTHORITY *(Woman Assistant School Medical Officer)*
CANNOCK CHASE AND DISTRICT *(Club and Friendly Society Appointments)*	ODMORE VALLEY GLAMORGAN *(Wyndham Colliery Medical Aid Society)* *(Workmen's Medical Scheme)*	MIDDLESBROUGH EDUCATION COMMITTEE *(Assistant School Medical Officer)*
MIDDLESBOROUGH *(Medical Aid Associations or Workmen's Clubs)*	TONDU & ABERKENFIG GLAMORGAN *(Workmen's Medical Scheme)*	MIDLOTHIAN EDUCATION AUTHORITY *(School Medical Officer)*
SOUTH BANK & ESTON *(Medical Aid Associations or Workmen's Club)*	**PUBLIC HEALTH.**	NORFOLK EDUCATION COMMITTEE *(Assistant School Medical Officer)*
WALES	ABERDEENSHIRE EDUCATION AUTHORITY *(Assistant School Medical Officer)*	NORTHUMBERLAND COUNTY COUNCIL *(Woman Assistant Medical Officer of Health)*
ABERTRIDWR GLAMORGAN *Windsor Colliery (Medical Scheme)*	ARGYLLSHIRE: EDUCATION AUTHORITY *(Executive School Medical Officer)*	NOTTINGHAMSHIRE *(County Medical Officer of Health)*
EBBW VALE MON *(Workmen's Medical Society)*	BARNSLEY COUNTY BOROUGH *(Assistant Medical Officer of Health and Assistant School Medical Officer)*	SHEFFIELD EDUCATION COMMITTEE *(Assistant School Medical Officer)*
GILFACH GOCH GLAMORGAN *(Workmen's Medical Society)*	FIFE EDUCATION AUTHORITY *(Assistant School Medical Officer)*	SOUTHWARK METROPOLITAN BOROUGH *(Tuberculosis Officer)*
LLWYNYPIA CLYDACH VALE PENYGRAIG GLAMORGAN *(Workmen's Medical Scheme)*	HUDDERSFIELD COUNTY BOROUGH *(Woman Assistant Medical Officer of Health)*	STOKE ON TRENT EDUCATION COMMITTEE *(Assistant School Medical Officer)*
MARDY GLAMORGAN *(Workmen's Medical Scheme)*	HUNTINGDON ADMINISTRATIVE COUNTY *(Assistant County Medical Officer and Assistant School Medical Officer)*	YORKSHIRE NORTH RIDING COUNTY COUNCIL *(Assistant School Medical Officer)*
OAKDALE MON *(Medical Officer for Medical Aid Association)*		

(b) Colonial Medical Service.—WINDWARD ISLANDS MEDICAL SERVICE (Grenada with Carriacou St. Vincent and St Lucia)

(c) Overseas Appointments.

Medical Practitioners are requested not to apply to any appointment referred to in the following table without having firstcommunicated with the Honorary Secretary of the Division or Branch named in the second column or with the Medical Secretary of the British Medical Association, 429, Strand, London, W C 2

Town or District.	Hon Sec of Division or Branch	Town or District	Hon. Sec of Division or Branch	Town or District.	Hon Sec of Division or Branch
NEW SOUTH WALES. *(All Friendly Society Appointments.)*	Dr P H TODD (Hon Sec New South Wales Branch) B M A. Building 30-34, Elizabeth Street Sydney N S W	QUEENSLAND *(Brisbane Associated Friendly Societies' Institute.)*	Dr R MARSHALL ALLAN (Hon Sec Queensland Branch) Adelaide Street Brisbane	VICTORIA *(All Institute or Medical Dispensaries.)*	Dr FRANK DAVIES (Hon. Sec. Victorian Branch) Medical Society Hall, E Melbourne, Victoria.
				WESTERN AUSTRALIA *(Contract and Lodge Practices.)*	Hon Sec Western Australian Branch No 6 Bank of New South Wales Chambers, St. George's Terrace Perth

Address 429 Strand, W C 2
July 23rd 1924

By order of the Council of the British Medical Association
ALFRED COX Medical Secretary

Birmingham Cripples' Union

Wanted HOUSE SURGEON for the Woodlands Open Air Orthopædic Hospital (9 beds) Salary £250 per annum with board and residence Preference will be given to candidates with previous experience in an Orthopædic or General Hospital The appointment which is for a period of six months is renewal at the discretion of the Medical Board and is terminable by one month's notice on either side Applications with copies of three testimonials to be sent to the undersigned by July 31st

Birmingham MISS CHRISTINE COX
Cripples Union General Secretary
421 Islington Row
Birmingham

Rochdale Infirmary

MEDICAL OFFICER required to take charge of the X ray and Electro therapeutic Department A new department is to be erected and new apparatus installed

The successful candidate will be required to confine his practice to Radiology and Electro-therapeutics and to reside in the town An honorarium will be paid at the rate of 300 guineas per annum subject to reconsideration after twelve months Special consideration will be given to candidates holding Cambridge diploma

Application together with testimonials to be addressed to the Secretary Infirmary Office Rochdale.

Royal Devon and Exeter HOSPITAL Exeter

ASSISTANT PHYSICIAN

Applications are invited for the post of Honorary Assistant Physician at this Hospital Candidates must be Fellows or Members of the Royal College of Physicians of London, and Graduates in Medicine of some University of the United Kingdom

Particulars as to duties &c may be obtained [illegible]

The Committee desire that there should be no canvassing by or on behalf of any candidate

Signed on behalf of the Committee
S S COLE Secretary

Dated July 21st 1924

The Hospital for Sick CHILDREN Newcastle-upon Tyne

The Committee of Management have declared a vacancy for an HONORARY ASSISTANT SURGEON

Applications stating age and qualifications are invited for this appointment and should be sent to the Secretary Mr NEIL BRODIE 18 City Road Newcastle-upon Tyne accompanied by three testimonials on or before September 10th 1924

Canvassing disqualification.

County Borough of Oldham

Applications are invited from medical women for the post of ASSISTANT MEDICAL OFFICER OF HEALTH at a salary of £450 per annum together with board and residence at the Borough Hospital The person appointed must devote the whole of her time to the work and act under the direction of the Medical Officer of Health and reside at the Hospital

The chief duties are in connection with the Infectious Diseases Hospitals and with Maternity and Infant Welfare work

Canvassing any members of the Council will disqualify Applications must be returned not later than July 31st 1924

Forms of application and further particulars may be had on application to the Medical Officer of Health Town Hall Oldham

County Mental Hospital, Mickleover, near Derby

Applications are invited for the post of SENIOR ASSISTANT MEDICAL OFFICER (male) Salary £450 per annum rising by four annual increments to £550 per annum with emolument (furnished apartment board laundry and attendance)

Appointment subject to the provisions of the Asylum Officers Superannuation Act 1909

Applications stating age date of registration qualifications, experience, &c with copies of three recent testimonials should be received by the Medical Superintendent by July 30th 1924.

Wanted by M.B., B Ch. (Hons.) outdoor ASSISTANTSHIP, with view to early Partnership. Young keen and conscientious worker. About 5 years exper. of general practice (private and panel). Good anæsthetist and accoucheur. Some capital available.—No. 3821, BRITISH MEDICAL JOURNAL Office, 429, Strand, W.C.

Wanted by M.B., B.Ch., D.P.H., outdoor ASSISTANTSHIP. Aged 36; late T. Capt. R.A.M.C. Very keen on midwifery. Eight years experience of private and working class Practice.—Address No. 3817, BRITISH MED. JOURNAL Office, 429, Strand, W.C.2.

Wanted.—A Gentleman as ASSISTANT, with a view to Partnership, in a Country Practice. Must be a good Anæsthetist, and have capital.—Address, No. 3815, BRITISH MEDICAL JOURNAL Office, 429, Strand, W.C.2.

Wanted.—Immediately, a well qualified ASSISTANT (male) in a large panel and private practice; must be well up in midwifery and preferably a motor cyclist. Write giving essential particulars, with copies of testimonials to—No. 3814, B.M.J. Office, Strand, W.C.

Wanted for October 1st ASSISTANTSHIP of 6 months, followed by partnership in London by young Glasgow graduate. Has had two years experience in large mixed practice in West Riding. Abstainer. Keen.—Address No. 3813, B.M.J., 429, Strand, W.C.2.

Wanted, Assistant (British), to take SOLE CHARGE of small, mixed PRACTICE on outskirts of large Yorkshire town. Small furnished house. Usual bond. Please state essential particulars.—Address No. 3810, BRITISH MEDICAL JOURNAL Office, 429, Strand, W.C.2.

Wanted.—Assistant, with view to partnership. South Coast Town (Sussex). Must be capable Surgeon, preferably F.R.C.S.—Address full details to No. 3498, BRITISH MEDICAL JOURNAL Office, 429, Strand, W.C.2.

Wanted.—Indoor Assistant (male). Would suit a recently qualified man. In reply state age and full essential particulars. Must be Protestant.—Address No. 3803, BRITISH MEDICAL JOURNAL Office, 429, Strand, W.C.

Assistantship or Locums wanted by M.B., Ch.B., aged 27, married. English Hospital appointments. Experience in private and panel practice. Excellent testimonials and references.—Address No. 3823, BRITISH MEDICAL JOURNAL Office, 429, Strand, W.C.2.

Assistantship wanted by reliable and conscientious medical man of good experience and address, aged 36. Sound knowledge of work. Strict abstainer, cyclist. Would entertain prelim. locum. Excel. refs. and testimonials. Mod. terms.—Add. No. 3818, B.M.J., 429, Strand.

Secretary-Receptionist seeks POST with London doctor or dentist. Experienced. Excellent testimonials.—Address No. 3574, BRITISH MEDICAL JOURNAL Office, 429, Strand, W.C.2.

Traveller, with first-class experience of Medical Stores in general, and Surgical Instruments in particular, required for TEMPORARY APPOINTMENT. Salary £6 per week with expenses.—Write to Box 574, DORLAND AGENCY, Ltd., 14, Regent Street, S.W.1.

Qualified Dispenser, thoroughly experienced in Surgery routine and Secretarial work, seeks POST in London. Excellent references. Drive car if required.—Miss PILGRIM, 41, Barkston Gardens, S.W.5.

Wanted.—Locum for 3–4 weeks September by Doctor having own practice. Hospitality for wife and child. Seaside preferred. No fee required.—Address No. 3830, BRITISH MEDICAL JOURNAL Office, 429, Strand, W.C.

LOCUM TENENS
PROVIDED
Without fee to Principals
Apply to
Mr. W. S. ATKINS
(Late of ARNOLD & SONS, London)
43, BEDFORD STREET, STRAND, W.C.2.
Telegraphic Address
"Positions Westrand London."
Telephone Regent 429

FOR LOCUM TENENS APPLY TO Mr. PERCIVAL TURNER.
The Oldest and only Agent who for 40 years has supplied substitutes at short notice without fee to principals
4, ADAM STREET, STRAND, LONDON, W.C.2
Telegs: Epsomian London. Phone: Gerrard 399

Wanted.—Locum, by retired Medical man many years experience in general practice. Now free.—Dr. MARTIN, Scorton, Yorkshire.

As Locum.—An experienced Doctor who has had own Practice desires further Engagements for September and October. Terms 7 Gns. p.w. London or country town. Does some ten Locum annually. Well received.—Add., "Medicus," c/o Dr. BELL, 13, Claremont Sq., N.1.

An Edinburgh Graduate, aged 33, experienced in Panel Practice and Midwifery, is at liberty for LOCUM WORK. An industrial practice preferred. English. Recent references.—Address, No. 3819, BRITISH MEDICAL JOURNAL Office, 429, Strand, W.C.2.

Hospitality Locum.—M.D. will take Charge from end of September, on or near Sea, in return Hospitality and return fares wife and daughter. Good class practice only.—Address No. 3832, BRITISH MEDICAL JOURNAL Office, 429, Strand, W.C.2.

Hospitality Locum offered, country Somerset. Light work. Golf, tennis, stag hunting. Two or three weeks after August 8th.—Address No. 3807, BRITISH MEDICAL JOURNAL Office, 429, Strand, W.C.2.

Hospitality Locum.—L.R.C.P. M.R.C.S. (retired) is open for Engagement during August in pleasant country or at the coast.—Address No. 3816, BRITISH MEDICAL JOURNAL Office, 429, Strand, W.C.2.

Holiday Engagement.— Hospitality offered to Doctor and wife in return for fortnight's light work. Seaside.—Address Dr. MORONY, Porlock, Somerset.

Locum Work required by M.R.C.S., L.R.C.P., for three weeks from August 10th. Young, single, well received. Had four years Hospital experience and five in private practice. Excellent testimonials.—Address No. 3812, BRIT. MED. JOUR. Office, 429, Strand, W.C.2.

SCALE OF CHARGES FOR ADVERTISEMENTS

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All remittances by Post Office Orders must be made payable at the General Post Office, London. No responsibility will be accepted for any such remittance not being so safeguarded.
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Note.—It
Post Office to receive *poste restante* letters addressed either in initials or numbers.

Locums wanted for August and September, by M.B., Ch.B., D.P.H. Edin., woman. Good anæsthetist. Good testimonials. South preferred.—Address No. 3829, BRITISH MEDICAL JOURNAL Office, 429, Strand, W.C.2.

Locum, free from August 17th. Experienced in panel and general practice.—Write Dr. W. ANDREW, c/o Dr. BIRKS, Roche, Cornwall.

Medical man with over twenty years experience of Private Practice desires LOCUMS. References if desired. Steady and reliable. 8 gns. Country or Seaside. 10 gns. Town.—"LOCUM," 29, Wyse Cliff Road, Handsworth, Birmingham.

M.R.C.S., L.R.C.P. (woman), would do LOCUM or ASSISTANT WORK in a general practice for August and part of September in return for hospitality and experience.—Address No. 3805, BRITISH MEDICAL JOURNAL Office, 429, Strand, W.C.2.

Pathologist & Bacteriologist, experienced, well qualified. Free Sept. 1st, requires work as LOCUM or otherwise one month. London preferred. Also free to do part time work in London after Oct. 1st.—Address No. 3820, BRITISH MED. JOURNAL Office, 429, Strand, W.C.2.

Wanted.—Partnership, half Share or to take over General Practice with income of £1,500 p.a. Liverpool or London area (including East End). by M.B., Ch.B. (Edin.), 1913, age 35, ex Captain R.A.M.C. (S.R.), to purchase out of income. Applicant is in possession of good car and furniture. Highest testimonials.—Add. No. 3802, B.M.J. Office, 429, Strand, W.C.

Wanted.—Partner, or Assistant with view to partnership, young, keen, and energetic for practice in agricultural town in Midlands, cottage hospital. Share £800 to £1,000 for sale. House available to rent. Full particulars on applicat on.—Address No. 3828, BRITISH MEDICAL JOURNAL Office, 429, Strand, W.C.

Wanted by M.R.C.S., L.R.C.P. Guy's, married, half share PARTNERSHIP with [illegible] PRACTICE after case preliminary. Capital available.

Wanted, small Practice of about £600 in Home County or residential suburb of London, North preferred.—Address, No. 3826, BRITISH MEDICAL JOURNAL Office, 429, Strand, W.C.2.

Lancs. Town.—Partnership Old established Practice. Senior retiring. Good house, garage, &c., £80. Receipts £2,400. Panel 2,110. Population 13,000. Opposition poor. Price half share £1,800, part deferred.—MID-CHESHIRE MEDICAL AND SCHOLASTIC ASSOCIATION, 83, Lwn Street.

North Wales.—Welsh- speaking PARTNER wanted, in pleasant district near Coast. Excellent scope for rapid increase. No premium, but small car required. Abstainer preferred. House available.—Give essential particulars.—Add. No. 3824, B.M.J., 429, Strand.

Partner wanted, in 30 years established Practice, Lancashire Town. 1½ years purchase premium £1,500. View to succession.—Address, No. 3568, BRITISH MEDICAL JOURNAL Office, 429, Strand, W.C.2.

Partnership or Practice required in City by M.D. Lond. Appointments essential. Free at once.—Address No. 3809, BRITISH MEDICAL JOURNAL Office, 429, Strand, W.C.

Wanted by well-qualified practitioner a PRACTICE situated in the West End of London. Income to be £1,000 up, preferably without panel. Medium sized house to rent. Full details (in confidence) to Mr. W. H. GRANT, 50, Wigmore Street, W.1. (No charge unless sale effected.)

Wanted.—Practice or PARTNERSHIP. Income from £800 (with scope) to £2,000 a year. Town or country. Purchaser has ample capital.—Apply, PEACOCK & HADLEY, 19, Craven Street, Strand, W.C. (No charge unless sale effected.)

Wanted, by experienced and well qualified practitioner, a Country PRACTICE or PARTNERSHIP in Sussex or neighbouring country. Good house and garden required. Capital available.—Address No. 3811, BRITISH MEDICAL JOURNAL Office, 429, Strand, W.C.2.

Wanted.—Self-contained Panel and General PRACTICE in or near [illegible] per annum. [illegible]e.—Address, Office, 429, Strand, W.C.2.

Wanted in Birmingham or district a sound PRACTICE. Income of £1,000 up with panel. House to rent. Full details (in confidence) to Mr. W. H. GRANT, 50, Wigmore Street, W.1. (No charge unless sale effected.)

Wanted by F.R.C.S., aged 30, a PRACTICE or PARTNERSHIP in town in the S. or Midlands, with scope for surgery. Income about £1,000. Now free, and can pay cash.—F., c/o BLUNDELL & Co., 22, Craven Street, Strand, W.C.2.

By M.D., C.M., D.O.M.S., ex H.S., aged 31, ex R.A.M.C., married, with considerable experience in Ophthalmic Operations, an OPHTHALMIC PRACTICE or Partnership in a practice where Ophthalmic work could be done.—Address No. 3808, B.M.J. Office, 429, Strand, W.C.

Cheshire—Practice for Sale, in pretty district. Detached house with large garden (flower and vegetable), orchard, lawn, and garage. Receipts £500. Excellent copyholds house and practice £1,500, part deferred.—MANCHESTER MED. & SCHOLAST. C.A. SOC. LTD., 88, King St.

Midlands —Pleasant County Bor ugh O t es ab in ustrial an l mid le cla s PI ACTIC Average receipts £2 5-18. Panel 2,2 . Appointmen s prota le transf rable Good hou e Pre liminary Partnership or A sistant hip LEE & MARTIN LTD 1 Temple Row Birmingham

Yorkshire —Well-established PRACTICE in good distric Average re ce p s £2,045 Panel 1 Good h use in excellent position. Partnership introduction — LEE & MARTIN L d

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Gloucestershire — Old-estab In dustrial and Mining PRACTICE Average receip s £1,50 Panel 700 Co tage Ho pital Hou e ren £45. Good garden Introduction — LEE & MARTIN Ltd

Dorsetshire —Old-established Practice PARTNERSHIP with preliminary Assistantship and ultima e Succession. I ceip s £1,112. Panel 1 00. Scope —Further particulars from LEE & MARTIN L d

West Midlands —Old-estab Town and Country PRACTICE in a County Town Receip s £1,574 Appointments. Panel nearly 400 Good fees Lxpen es small Hos pital (90 beds) Purcha er would be appointed Phy ician or Surgeon Cot house and garde Premium for prac fee £2,250 —LEE & MARTIN L d.

North of England —Old- e tab ished Country Town PRACTICE Average rece p s £1,460 Good panel. Expenses small. Good h use garden, tennis lawn and orchard.—LEE & MARTIN Ltd.

Staffordshire —Old-estab Town and Coun ry PRACTICE —Receip s £1,190 Panel over 00 Appointments S ope Freehold hou e ou leas ample accommodation good garden.—LEE & MARTIN L d. 1 Temple Row Birmingham

East Coast —Seaside Practice, popular Health Resort Excellent house semi-detached six room rent £75 lea e with option of purcha e Average rece pts for three years over £1,700 no panel pane patients ea ily ob ained if desired. Moderate premium.—Apply No 2113 I EYNOLDS & BRAN ON Ltd 13 Briggate Leeds

For Disposal —A good Prac- TICE is not always to be had directly but Mr PERCIVAL TURNER can generally offer applicants something suitable Nearly all the bes Practices are sold by him with ut being advertised —Full information free on application to 4 Adam St. W C.2

For disposal —Old-established PRACTICE with panel and appointments Suit doctor with good experience in mental work Excellent hou e and position in important South Coast Town. Low price —Address No 3801, BRITISH MEDICAL JOURNAL Office 429 S rand W C

Hampstead, Hammersmith, Bayswater a PRACTICE of £1,000 to £1,500 is required by a p actitioner of c nsider able experience in either of these di tricts There must be a panel of 1 000 and very little night work The hou e should have at least 4 bedrooms and to be let at a reasonable rental with a good lease Full de ails (in confidence) to Mr W H GRANT 50 Wigmore Street W 1 (No charge unless sale effected)

Non-panel Practice or PARTNERSHIP wanted. Mu t be within [illegible] —Address No 3851, BRITISH MED JOURNAL Offic 429 Strand W C 2

Scotland —For Sale or Ex- CHANGE [illegible]

To Purchasers —Do not Buy without expert assi tance With 40 years ex perience Mr PERCIVAL TURNER can advi e in all cases. Terms free on application to 4 Adam Street Strand W C.2 Telephone Gerrard 399 Telegrams Epsomian London."

Urgent —Wanted, Nucleus or PRACTICE up to about £900 a year in nice town Good hou e and garden to le or leave Capital available —Address No 3709 BRITISH MEDICAL JOURNAL Office 429 Strand W C.2

Yorks —Old-established, [illegible]

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Messrs BEDFORD & CO (C E BEDFORD F S I. F A.I.) Surveyors, Auctioneers, and Estate Agents, 10 WIGMORE STREET CAVENDISH SQUARE, W 1. SPECIALISTS IN PROFESSIONAL HOUSES AND CONSULTING ROOMS IN HARLEY STREET AND LEADING MEDICAL POSITION *Telephone £.1* Puddington

Beautiful Consulting Room to Le Large private hou e Specialist only re tained Attendance light brea fast use of waiting room 1 guinea per day —Write Principal" c o F HARRIS, 1 7 Salisbury Square London E C 4

Bournemouth — In local Harley Stree CONSULTING ROOM and u e of Waiting Room to Le Dark Ro m avail able Suitable for Ra diologist or other Specialist.— Addre s No 3572. BRITISH MEDICAL JOURNAL Office 429 Strand W C

Consulting room and use of Waiting room to Let near Grosvenor Square whole or part time from £100 per annum Suit Specialist Dentist.—Write A.D k WILLING'S 57 Knightsbridge

Cheltenham —For Sale, substantially built freehold family RESI DENCE about 5 minutes walk of three railway [illegible] kitchen garden Lawn for two tennis courts Good garage Area about 1¼ acres Very suitable for Doctor or Mental Home —WYATT Ex ter Place Cheltenham

Ear and Throat Specialist can SHARE HOUSE with general practitioner in good suburban district No other specialist in area —Address No 3833 BRITISH MEDICAL JOURNAL Office 429 Strand W C 2

Harrogate — "Archway HOUSE" Swan Road the residence of the late Dr ALFRED MANTLE, is owing to his recent death for Sale, with early vacant posse sion. The house is in excellent repair and decorative condi tion and is fitted with every modern improve ment, and ready for imm di te occupation without any expense and is particularly suitable, owing to its position for a Doctor desirous of engaging in Consulting Practice.—F r particulars apply to Mr L P CROSS 4 Princes Street Harrogate Solicitor for the Executors

Mayfair —To be sold A Bargain a BIJOU RESIDENCE for private or professional use 8 bed bath 5 recep. rooms, gar age lease 13 years Price £2 000 part on mort gage. Apply—H LEY CLARK & BARFF 3A, Wimpole Stree W 1

Stoke Newington — Vacant, beautifully re-decorated ready for immediate occupation, 8 large rooms h. & c bath etc., large garden side entrance about 14 feet ample room for garage. Electric light modern drainage — Apply Mr FISHER 20 Wormwood Street E.C —

Sanatorium or Nursing Home, wanted to purchase or a share in a such con cern. Capital £4.000 —P co BLUNDELL & Co 2. Craven Street, Strand W C 2

Park Lane — Unfurnished SUITE OF ROOMS to Le suitable for Consulting Rooms £275 p.a.—Messrs STUART HUGHES Limited, 6 a St James s Street, S W 1

TO MEDICAL MEN REQUIRING QUIET QUARTERS FOR STUDY

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Wanted, X-ray Couch, under and over head attachments Dental Gas Tube Stand Po ter Bucky Diaphram, Fluorescen Screen 10 x 12 —Address No 3806 BRITISH MEDICAL JOURNAL Office 429 Strand W C

For Sale —Dispensing CABINET by Ferri The Bristol, com plete with bottles but no drugs Very little used Sent carefully packed on receipt of £35—about half cost —Apply Dr W L WYATT Hornsea, Yorks.

Handsome pair of genuine £5 5s square polished ASH TENNIS STANDARDS complete with heavy ground plates powerful fixing screws and brass worm gear Net winder 45/- Also regulation size heavy weather proof NET with steel headline 18/- Both guaranteed perfect condition and never used Approval willing on receipt of post dated cheque — GILYARD Darley Street Bradford

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X-Rays —The apparatus of the late Dr HUGH WALSHAM must be removed without delay 16 in coil mercury break couch &c complete Works on 20 volts d c. Also portable coil and accumulator Cheap to prompt buyer —EXECUTOR, 114 Harley Street, W

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Pontypridd Union

LLWYNYPIA HOSPITAL

APPOINTMENT OF SUPERINTENDENT MEDICAL OFFICER

The Guardians invite applications from duly qualified Medical Practitioners for the position of Superintendent of the Llwynypia Poor Law Hospital which has at present, accommodation for 150 cases but which is being increased to 300 to 350 beds

The salary offered is £700 per annum, rising by increments of £25 to £900 per annum with house in the institution grounds, together with coal and light

The appointment will be subject to the provisions of the Poor Law Officers Superannuation Act 1896, for which purpose the value of the emoluments of the office has been fixed by the Guardians at £70 per annum

Preference will be given to candidates who have held responsible posts at General Hospitals

The person appointed will be required to devote his whole time to the duties of the office which will include the general medical and surgical control of the institution under the direction of the Guardians and he will be debarred from private practice He will be reponsible for the training of the Nurses in accordance with the requirements of the General Nursing Council and the carrying out generally of the Orders of the Ministry Among his earliest duties will be that of advising the Guardians as to the extension and development of the present Hospital He will further be required to act as referee in doubtful cases where applicants have been certified for relief

Preference will be given to applicants who have a knowledge of Welsh and who are graduates of a British University

Applications stating age experience and qualification, accompanied by copies of three recent testimonials and stating date when applicant (if appointed) can take up his duties must be received by me not later than Saturday the 16th day of August 1924

Canvassing will be considered a disqualification

Union Offices, Pontypridd. WILLIAM SICKERT, Clerk

July 12th 1924

Chesterfield & North Derby-

SHIRE ROYAL HOSPITAL

(140 Medical and Surgical Beds)

CASUALTY ORTHOPÆDIC HOUSE SURGEON

Applications are invited from fully qualified men for the above post There are four Resident

The appointment is for six months at a salary at the rate of £150 per annum with board, apartments and laundry

Applications stating age with copies of three recent testimonials should be sent to the undersigned G SUNNUCK

July 22nd 1924 Supt and Secretary

Mansfield & District Hospital

The Board of Management of the above Hospital (100 beds) invite applications for the post of SENIOR HOUSE SURGEON (male)

The appointment is for six months the duties commencing on September 1st next

Salary at the rate of £175 per annum, with board apartments and laundry

Candidates must have held a previous hospital resident appointment

There is ample scope for good operative work

Applications with copies of three recent testimonials should be sent to the undersigned

A H LIMB Secretary

Dated this 22 day of July 1924

City of London Hospital for

DISEASES OF THE HEART AND LUNGS

Victoria Park E

(Bus rail or tram Cambridge Heath L N E R)

The Committee of Management are desirous of appointing a RADIOLOGIST (Senior to attend at least once weekly

An honorarium is attached to the appointment

Applications accompanied by copies of testimonials are invited to be sent to the Secretary not later than the first post Monday August 18th 1924

GEORGE WATTS Secretary

Required for Company in the

LAST fully qualified DOCTOR must be F R C S Eng or Edin Salary £1 000 per annum with free furnished quarters and free passage Out and Home Three years agreement — Write with full particulars to Box D c/o THE REGENT ADVERTISING SERVICE Ltd, 4 London Wall Buildings London E C 2

Wanted —Medical Officer

and PUBLIC VACCINATOR for the Parish of STRONSAY Orkney to take up duties on September 1st 1924 Salary £275 per annum with free house or part hand panel practice Applications along with copies of testimonials to be lodged with D L KEMP Clerk Shapinsay Parish Council

Borough of Jarrow

APPOINTMENT OF MEDICAL OFFICER OF HEALTH

The Jarrow Borough Council invite applications for the above appointment from duly qualified Medical Practitioners, who hold the Diploma of Public Health Sanitary Science or State Medicine, with special experience in Public Health work

The person appointed will be required to devote his whole time to the duties of Medical Officer School Medical Officer Superintendent of the Isolation Hospital, and of the Maternity and Child Welfare Centre such duties to commence on October 1st 1924

The Education Committee will provide him with the assistance of a full time School Medical Officer for three or four months in each year and a Specialist will also be engaged for the treatment of enlarged tonsils and adenoids in school children

The salary will be £800 per annum

Sealed applications on forms to be obtained from me endorsed "Medical Officer" accompanied by copies of three recent testimonials, must be sent to me not later than noon on July 31st 1924

GEORGE JOHNSON

Town Clerk's Office Town Clerk

Jarrow on Tyne July 11th, 1924

Cardiff City Council.

RESIDENT MEDICAL SUPERINTENDENT, ISOLATION HOSPITAL AND ASSISTANT MEDICAL OFFICER OF HEALTH (MALE)

Applications are invited for the above appointment at a salary of £700 per annum, rising to £800 by annual increments of £50 with in the case of an unmarried man board, lodging and laundry, or, in the case of a married man free house, fuel and light

Candidates must not be over 40 years of age must have experience of infectious diseases and, in addition, hold a Diploma or Degree in Public Health

The officer appointed will be required to contribute to the Cardiff Corporation Superannuation Fund

Forms of application and further information as to the conditions of appointment may be obtained from the undersigned, to whom applications should be returned (in sealed envelopes marked "Medical Superintendent) with copies of not more than three recent testimonials on or before August 2nd

Canvassing directly or indirectly will disqualify

City Hall, RALPH M F PICKEN,

Cardiff Medical Officer of Health

July 14th 1924

County Borough of Brighton

RESIDENT MEDICAL OFFICER AT THE BOROUGH SANATORIUM

The Council invite applications for the above appointment from duly qualified unmarried male medical practitioners

The salary will be at the rate of £350 per annum, together with board and lodging at the Borough Sanatorium

Forms of application and particulars of the duties to be performed, and of the conditions upon which may be obtained on

three recent testimonials enclosed) endorsed "Application for the appointment of Resident Medical Officer must be delivered at my office before 10 o'clock in the forenoon on Tuesday the 5th day of August, 1924

Canvassing members of the Council either directly or indirectly will disqualify any applicant for the position JAS H ROTHWELL

Town Hall, Town Clerk

Brighton July 12th 1924

County Hospital, Lincoln

(130 Beds)

Wanted JUNIOR HOUSE SURGEON (male) unmarried Salary at the rate of £150 per annum rising to £200 per annum at the conclusion of six months approved service Board residence, and washing will also be provided

Every candidate for the appointment must be duly registered under the Medical Acts

Applications stating age and other particulars with copies of testimonials (not more than three) are to be sent to the Secretary Superintendent

Further particulars may be obtained from

ARTHUR MOORE

Lincoln July 10th 1924 Secretary Supt

The Miller General Hospital

FOR SOUTH EAST LONDON

Greenwich Road London S E 10

SENIOR RESIDENT MEDICAL OFFICER required (unmarried) Salary £250 per annum, with board lodging and laundry

Applications stating age nationality qualifications and experience, accompanied by copies of not more than three recent testimonials to be sent to the Secretary There are three other Residents

Applications to be received not later than Monday August 11th next

City of London Hospital for

DISEASES OF THE HEART & LUNGS

Victoria Park E 2

(Bus, tram & rail Cambridge Heath L & N E Rly)

Applications for the post of HOUSE PHYSICIAN (Male), with copies of recent testimonials are invited to be sent to the undersigned by Monday, August 11th, 1924

The appointment will be for six months from August 15th 1924

Salary at the rate of £125 per annum with board residence and laundry provided

GEORGE WATTS Secretary

Croydon General Hospital

Wanted JUNIOR HOUSE SURGEON (Male) Salary £150 per annum with residence board and laundry Candidates must hold registered qualifications in Medicine and Surgery The appointment will be terminated by one month's notice

Applications stating age and accompanied by copies (which will not be returned) of recent testimonials to be sent to the undersigned from whom further particulars may be obtained if desired

The successful candidate will be required to commence duties on September 1st next

GLORGE H DAMS Secretary

Croydon July 21st 1924

Acton Hospital

Appointment of RESIDENT MEDICAL OFFICER salary £150 per annum with board, residence and laundry Candidates must be fully qualified and registered Duties to commence as soon as possible

Applications stating age nationality and qualifications together with copies of three recent testimonials should be sent to the Secretary Acton Hospital Gunnersbury Lane Acton W 3

London Temperance Hospital,

Hampstead Road N W 1

Applications are invited from duly qualified men for the post of CASUALTY OFFICER The salary is £150 per annum with board and residence as the appointment is for six months

Applications with copies of testimonials not exceeding three in number should reach the undersigned (from whom particulars of the office may be obtained) on or before Saturday July 26th

The successful candidate will be expected to take up his duties on August 1st

By order, A C ADAMS Secretary

July 10th 1924

Jersey General Hospital and

POOR LAW INFIRMARY

RESIDENT MEDICAL OFFICER

Applications are invited for the above post (male) Applicants must be duly qualified practitioners in Medicine and Surgery Salary £200 per annum with board residence in the Hospital, and laundry

The appointment is for one year and is renewable Applications with testimonials must be sent in on or before Saturday, August 9th, 1924 addressed to the undersigned from whom further particulars may be obtained

G H de la HAYE Secretary

Freemason's Hospital and

NURSING HOME

237 Fulham Road Chelsea, S W 3

The post of RESIDENT MEDICAL OFFICER (Male) will be vacant at the beginning of September Salary at the rate of £250 per annum with board residence and laundry The appointment is for six months but he would be eligible for re election for a further period of six months, He must be registered and must have held a resident appointment in a General Hospital

The Institution (42 beds) is for paying patients of both sexes of modest means unable to afford ordinary Nursing Home treatment &c

Applications stating full particulars, to be sent to the Honorary Secretaries from whom further information may be obtained

Leeds Public Dispensary

Wanted SENIOR RESIDENT MEDICAL OFFICER (male) Must have held posts of Resident Physician and Resident Surgeon Salary £200 per annum, with board, residence and laundry Separate sitting room Applications with copies of three recent testimonials to be addressed to the Secretary of the Faculty, Public Dispensary North Street, Leeds

Barnwood House Hospital

FOR MENTAL DISORDERS

near Gloucester

Required, JUNIOR ASSISTANT MEDICAL OFFICER Salary £350 per annum, with board residence and laundry Applications with copies of three recent testimonials to be sent to the Medical Superintendent

City of Birmingham

RUBERY HILL AND HOLLYMOOR MENTAL HOSPITAL, Northfield Birmingham

Application are invited for the post of ASSISTANT MEDICAL OFFICER at the above Hospital Candidates must be qualified and registered male under 30 years of age and single. Commencing salary £350 per annum rising to £400 at the end of a year's service satisfactory to the Committee together with board apartments and laundry, subject to the provision of the Asylum Officers' Superannuation Act 1909

The Hospital situated amongst the Lickey Hills, 8 miles from centre of Birmingham by tram route is equipped with X-ray Ear Nose and Throat Gynecological and Dental Departments together with a Research Laboratory for the study and treatment of Mental Disease on modern lines and is recognized by the University of London for the D P M and M D degree in Mental Diseases

Applications in envelopes marked "Assistant Medical Officer" should be addressed to and reach the Medical Superintendent not later than July 31st next

City of Birmingham

MUNICIPAL BACTERIOLOGICAL LABORATORY

The Public Health Committee will shortly proceed to the appointment of an ASSISTANT BACTERIOLOGIST and ASSISTANT VENEREAL DISEASES OFFICER at a combined salary of £600 per annum subject to deductions under the Birmingham Corporation Superannuation Scheme

Candidates who must be fully qualified medical men should have had experience in Bacteriological routine, more particularly in regard to venereal disease diagnosis and should be capable of assisting in the clinical work of the Venereal Diseases treatment centre.

Application with copies of testimonials should be sent to The Director City Laboratory Lodge Farm Hockley Birmingham on or before THURSDAY July 31st 1924

W H HEAD
Secretary Superintendent.

Addenbrook's Hospital,

Cambridge

Applications are invited for the post of CASUALTY OFFICER, and RESIDENTAL ANÆSTHETIST (Male) The appointment will be for a period of six months from August 25th 1924 but is terminable at an earlier date by one month's written notice on either side Salary £130 per annum with Board residence and Laundry

Candidates who must be duly registered are requested to forward their applications stating age qualifications etc together with copies of not more than four recent testimonials to the undersigned at the Hospital on or before THURSDAY July 31st 1924

W H HEAD
Secretary Superintendent.

Addenbrooke's Hospital,

Cambridge

Applications are invited for the post of HOUSE SURGEON (Male.) The appointment will be for a period of six months from September 1st 1924, but is terminable at an earlier date by one month's written notice on either side Salary £130 per annum with board residence and laundry Candidates, who must be duly registered are requested to forward their applications stating age qualification etc together with copies of not more than four recent testimonials to the undersigned on or before Tuesday August 12th 1924

W H HEAD
Secretary Superintendent

The Royal Infirmary,

Sheffield

A MEDICAL REGISTRAR is required at the Royal Infirmary

Candidates are invited to send in their applications addressed to the Secretary with copies of not more than three test monials before Friday July 18th 1924

The appointment is made for one year but may be held for a further agreed period

Salary and emoluments value £400 per annum

JNO W BARNES Secretary

The Royal Infirmary,

Sheffield (303 Beds)

The Weekly Board of Management invite applications for the post of OPHTHALMIC HOUSE SURGEON

The salary attached to the appointment is £60 per annum with board and residence

There are 92 ophthalmic beds and the post offers excep tional opportunities of gaining experience in Ophthalmology

Test monials to be

W BARNES
Secretary

July 4th 1924.

MR. HERBERT NEEDES,

31, BEDFORD ST., STRAND W C 2.

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1 DEATH VACANCY (London N W) —Receipts £1 100 a year Panel £800 Held by deceased 40 years Corner house on lease at £90 Very pleasant district. Efficient L T in charge

2 ISLE OF MAN —Small PRACTICE of £400 in charming little Resort Panel £100 Unopposed Receipts could be doubled by active man Nice house available Price only £400

3 NORTH OF ENGLAND —PRACTICE of £1 400 a year including Panel of £550 in good business centre Very low rent Fees from 3 6 Good corner residence for sale with goodwill Price for latter £2 000

4 IN CHARMING COUNTRY TOWN within 20 miles of Carlisle General PRACTICE of about £1 800 a year including panel and appointments of over £750 Excellent port Good residence and garage on lease at £60 Price £2 400

5 UNOPPOSED PRACTICE in charming district within 25 miles and averaging £1 200 a year including panel and appts Good sport and society Old family residence with land on lease Premium £1 800

6 PARTNERSHIP in good-class Country Practice within an hour of Town and returning about £3 000 a year with excellent scope for an active Third Partner Quarter Share rising to a third Short preliminary Assistancy arranged

7 CONFINES OF CITY —General PRACTICE of £1 250 a year including £550 from appts and small panel No midwifery Fees good Convenient residence on long lease at £125 Premium £1 500

8 SEAPORT TOWN (N W Coast) Average income £1 500 Panel and appts £600 Good scope for active man Vendor's health very indifferent Well-situated residence and garden on lease. Price £2 300

Telephone Langham 2728
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LOCUM TENENS and ASSISTANTS supplied

FOR DISPOSAL

Yorks —An old-estab General PRACTICE near coast Receipts £1,500 Panel 700 Fees 2 6 upwards Excellent house 5 bedrooms etc ½ acre of garden Rent £30 Premium 1½ years purchase —Folio 624

London, N —A General PRACTICE situated in a thickly populated district Receipts £2 500 panel 2 700 ample scope Vendor retiring Charming house etc Premium 1½ year purchase —Folio 670

London — City Practice Receipts £1 250 including appts £500 Panel 100 Fees 3 6 upwards Vendor retiring Ample scope Nice house in central position at rental Premium £2 000 —Folio 667

Norfolk —A General PRACTICE situated in a country district Receipts £1,600 Panel nearly 600 Good fee Nice house with excellent garden etc Rent £35 per annum Premium £2 500 —Folio 600

Glam —General Practice in thickly populated district on Coast. Receipts £1 700 Fees 3 upwards Panel 600 Considerable scope House containing 4 bedrooms etc rent £50 p.a. Premium £1.500 Folio 687

Derbyshire —A General PRACTICE situated in an industrial district. Receipts about £800 Panel 500 Good fee Nice house containing 8 bedrooms &c at rental Premium £1,000 —Folio 653

Midlands —General Practice situated in small Country Town Receipts £1,200 Panel 500 Fees 3s 6d upwards Excellent house containing 6 bedrooms &c Premium 1½ years purchase —Folio 617

Purchasers stating their requirements can have details of other Practices not advertised

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FOR SALE.

1 MIDLAND TOWN —PARTNERSHIP with view to Succession Total receipts £1 500 p.a. Panel 1 400 Suitable house available to Let Half share for sale now

2 MIDLANDS —Pleasant residential town. Middle class PRACTICE Receipts £1,300 a year Panel 700 Fees good. Corner house with surgery attached Rent £60 long lease Premium 1½ years purchase

3 SMALL SEASIDE RESORT NORTH —Unopposed PRACTICE yielding £400 a year Scope for more Good house Premium £400

4 HOME COUNTY —Beautiful district Country PRACTICE Receipts £1,550 p.a No resident opposition. Commodious house good garden Premium £2,400

5 NORTH WALES —PARTNER wanted for middle and working-class Practice Country district Total receipts £3.300 p.a. mainly from panel and appointment. Good house and garden Rent £40 Opposition light Premium for a third share £1,700

6 MIDLANDS —Small Industrial Town PRACTICE returning about £2,500 a year Panel 1,400 Convenient residence with garage &c Rent £40 Premium £3,500

7 SUSSEX COAST TOWN.—PARTNER wanted for middle and working-class Practice receipts £4,000 a year large panel Premium two years purchase for third or quarter share

8 WESTMINSTER (near) — Club and panel PRACTICE Total receipts £1 300 p.a. two-thirds to be old now remainder Low Premium 1½ years purchase

9 LONDON N —Look up Surgery Club and Panel PRACTICE yielding over £400 p.a. Pension of Surgery 30 per week Whole house can be had if desired. Premium £600

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PRACTICES AND PARTNERSHIPS FOR SALE.

1 DEATH VACANCY —BLACKPOOL —Very old established, non panel PRACTICE Average income last three years £1 311. Very easily worked and no conveyance required Visits 7/6 to 21/ Good house facing sea Rent £150 Premium £1 000 (to include good stock of instruments, drugs, etc), payable half by instalments Locum in charge

2 DEATH VACANCY —In a pleasant detached London suburb a good middle-class PRACTICE is for immediate disposal Certified cash receipts for past three years show an average of £1 500 per annum including 550 panel patients Visits 5/ to 10/ Midwifery fees 3 to 5 guineas Excellent freehold residence (built by late Incumbent) with ample accommodation garden, etc Price £3 000 of which £1 500 can remain on mortgage Premium for practice £2 000 Locum Tenens in charge

3 SOUTH MIDLANDS - Exceptionally attractive residential town Old established non dispensing and mainly better class PRACTICE Income about £2 000 a year Small selected panel of 500-600 Fees 2/6 to 21/ mainly 7/6 upwards Mid wifery 2 to 25 guineas Ten cases last year House with 3 reception 7 bedrooms garden Rent £100 Prem 2 years purchase

4 INDIA —ASSISTANTSHIP with view to PARTNERSHIP A single man (about 30 years of age and not over 36 who must be an F R C S Eng , of good appearance and a sportsman) is required on a two years engagement to commence next March, in a practice producing £7 000 a year Salary 650 Rupees a month plus board and lodging (the total equals £800-£850 p a) At termination of engagement a one sixth share will be sold if satisfactory at one years purchase with increase ultimately up to one third Premium payable out of receipts One of the Partners is in England at present and a personal interview during the next month is essential

5 MIDLANDS —SMALL TOWN PARTNERSHIP A one third share to commence with, is for disposal in a very old established mixed general Practice Income nearly £5 000 Panel of about 3,500 Advice and medicine from 2/6 visits 3/6 to 21/ Well situated freehold house with 5 bedrooms garden Price £1 600 Good sport and schools Cottage Hospital and Incoming Partner (who should not be over 30 years of age) will be appointed to the Staff Premium 1½ years purchase

6 SURREY —Riverside Suburb PARTNERSHIP A half share in an old established non panel chiefly middle class Practice is for immediate disposal owing to ill
£1 600 No appointments Advice
5/ to 21/ with medicine extra
contains 3 reception rooms 5 b
Garden On lease at a rental of £65 p a Sport good society, schools etc Premium 1½ years purchase.

7 LINCOLNSHIRE —Unopposed Country PRACTICE Very easily worked average income over £1 100 Panel of over 800 Fees 2/6 to 10/6 Very little midwifery Good detached house in its own grounds Rent £80 on lease Premium £1 500

8 CHANNEL ISLANDS —Old established PRACTICE held 11 years by present Incumbent who is relinquishing on account of ill health Cash receipts for the past three years average nearly £750 per annum including an appointment worth £35 Visits 7/6 to 10 6 in the Town extra outside Midwifery 3 to 5 guineas, 8 to 10 cases yearly Car not required House contains 4 recep
n Must be purchased
4 Premium 1½ years
and sport of all kinds

9 SOUTH COAST —LARGE TOWN PARTNERSHIP A quarter or one third share in a middle and working-class Practice Income over £4 000 with scope Panel of over 4,000 Fees 2/6 to 7 6 chiefly 3 6 to 5/ No midwifery and very little night work Purchaser should preferably be not over 35 Prem 2 years purch

10 SOMERSET —Unopposed PRACTICE within easy reach of the sea Practice is an old established mixed class one the average income is £1 283 including appointments and panel of over 1 000 Very nice house with 2 reception rooms professional rooms 7 bedroom garage garden Rent £55 Prem £2 250

11 JUNIOR PARTNERSHIP —EAST COAST TOWN Over 18 000 inhabitant A gentleman who should be married, under 3 year of age and who holds a hospital appointment can acquire the fifth share (to commence with which will produce over £1 000 per annum) in a leading and old-established non panel Practice Visits 5/ upwards Midwifery from 2 guineas 130 cases yearly Very good house available, containing 3 reception rooms, 5 bed rooms bathroom etc and garden Rent £60 on lease Premium 1½ years purchase Prospects of surgery

12 BRISTOL -Very sound middle and working class PRACTICE held nearly 25 years by present Incumbent, who is relinquishing on account of ill health Average cash receipts over £1 200 a year, including several small appointments and a panel of over 1 000 Visits 3/6 to 10/6 Midwifery from 3 guineas about 30 cases Very good house specially built for a doctor contains 2 reception rooms waiting room consulting room and surgery with separate entrance 5 bedrooms etc Garden Premium £1 800

13 DERBYSHIRE -HOSPITAL TOWN -Old-established PRACTICE held 13 years by present Incumbent, who is relinquishing on account of ill health Income for last year £3 372 including about £1 500 from panel Fees 3 6 to £1 1/0 About 50 cases of mids a year at 2 to 5 guineas Centrally situated house (2 reception rooms consulting and waiting rooms 4 bedrooms bathroom etc), on lease at £100 a year Premium £5 000, £1,500 by instals Good scope for surgery and Vendor is on the Staff of the Hospital

14 PARTNERSHIP —LANCS Large Town The third share of an old established lucrative and money making Practice worth for the last financial year, £3,722, can be acquired by a young unmarried man Panel list of over 1 800, and patients operative class Visits 2/ to 5/ Midwifery 2 to 3 guineas Ingoing partner could reside with Vendor or unfurnished rooms are available Golf to be had Premium 1½ years purchase

15 SOUTH WEST OF ENGLAND —COUNTY TOWN —A ONE THIRD SHARE, producing £800 is offered in a good class non panel and non dispensing practice, with a considerable amount of surgical work There is a good Hospital in the town and the incoming partner (who must hold the F R C S Eng) will eventually be elected on to the staff Premium £1 600

16 LONDON WEST END —PARTNERSHIP —A quarter share (to commence with) and up to one-third in 2 years and one half in 4 or 5 years with ultimate succession if desired is for disposal in a first class general Practice Income for the immediate past year £3 020 Fees mostly 1 guinea upwards and a few at 10 6 Purchaser should be a Graduate or hold some higher qualification Premium for the quarter share £1 500

17 YORKSHIRE —Large clean town Well-established middl and working-class PRACTICE Income £1 300 including £580 from panel and £350 from appointments Advice and medicine from 2/6 visits and medicine 3/6 upwards Very little midwifery, detached freehold house with small
Garage Price £2 500 of which
Garage Premium £1 400 cash

18 —Country PRACTICE within easy access to large town Very old established and held by Vendor over 20 years Average income about £800 including appointments and panel of 480 Nearest opposition 5 miles Fees 3/6 to 20/ Large freehold house with 3 acres of garden. Will be sold, or let on rental Premium £1,500

19 CHESHIRE —Twelve months PARTNERSHIP introduction will be given to an old established middle-class and panel Practice (1 600 patients on list) worth last year £2 100 Situated in a large town to seaside resort Visits 2/6 about 100 cases yearly Car not a available at end of introduction Premium 1½ years purchase

20 NEW ZEALAND PRACTICE from a large easily worked appointment at £100 Visits into 10 mileage 6/ midwifery 5 gns Good and up to-date house (built by Vendor's predecessor) containing surgery 2 reception rooms 3 bedrooms and sleeping porch bathroom etc with an acre of ground tennis court etc Rent £120 on lease Prem £1 000

21 NORTH EAST COAST —FAVOURITE RESORT Old-established non-dispensing PRACTICE Income £400, but very large scope for young well qualified man Good fees Corner house with 3 reception 6 bedrooms garden Freehold Premium for House and

22 young unmarried ASSIST two years agreement with ragement Return passage before ultimate engagement

Profits accruing to Bovril, Limited, from the Agency will be allocated amongst recognized Medical Charities.

Full Schedule of Terms and Conditions will be forwarded on application

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London, N—About £450 p a Small non-residential PRACTICE Panel about 2 0 Fees first year 2 6 to 7 6 Good premises on lease No appointments or midwifery —Apply No 7574

London, S E—Over £1,4 0 per annum PARTNERSHIP with succession within 12 months Panel about 1 6 Good fees Very few midwifery cases Excellent house with good garden to rent—Apply No 7572

Gloucestershire—About £750 p a Country town Old established Panel 0 Fees 3 6 up Appointments about £100 p a Good detached house with large garden garage etc To rent from immediate or moderate—Apply No 7566

Near Manchester—Nearly £2 000 p a Panel with about £600 p a Moderate house with separate surgery to rent Premium 1½ years purchase easy terms Good schools near—Apply No 7565

Eastern County Partnership About £2,200 p a Panel about 2 0 and other appointment Fees 3 6 p a One-third share for disposal with succession in about 3 years Apply No 7564

Nursing Home, returning about £2 000 a year—Excellent freehold property on South Coast 0 bedrooms many with balconies Electric light 1lit 2 acres of ground Very easy terms to prompt purchaser The property is in an excellent position facing the sea.—Apply No 7563

London, W—About £1,100 a year Non-dispensing Very small panel Fees 5 upwards Very few midwifery cases Corner house to rent—Apply No 7561

London, S W—Partnership and succession £2,000 a year Half share for disposal immediately Panel 1 0 Old established Good fees Excellent house and large garden Prem 2 yrs. purchase—Apply No 7560

Yorkshire—About £1,700 a year Panel 1 12 Visits 2 6 to 10 6 medicine extra About 30 midwifery cases up to £5/5 0 Appointments £60 Good house with garden and garage for sale or would let on lease.—Apply No 7559

Death Vacancy—£1,000 a year Favourite Pyrenean Resort Very old established 5 medical hands over 30 years Small and select panel Light work mostly refused Good house with garage and garden on lease Excellent opportunity for prompt purchaser Personally known and recommended.—Apply No 7556

Home County—Old-established Country PRACTICE of nearly £1 600 a year Panel 7 0 Other appointments £130 Fees 3 6 to 10 6 Excellent house with half an acre of ground tennis lawn etc—Apply No 7554

Lancs—University Town About £700 p a Panel over 00 No midwiferyample scope Good house and garden Moderate price for Practice and house—Apply No 7553

North-West Coast—Over £2 000 p a For disposal old-established PRACTICE in favourite Seaside Resort Visiting fees 3/6 5 10 6 and upwards About 20-40 midwifery cases p a Detached house 2 reception 5 bedrooms Possession ulting and Rent £75 on Instalments—

Cheshire—Nearly £4,000 a year Old-established Practice HALF SHARE for Sale at 1½ years purchase Panel about 1 400 Appointments £45 Good fees Good house and garden to rent—Apply No 7536

South County—Over £1,000 p a Panel 640 other appointments £120 Practically unopposed Excellent house electric light etc Good garden All sport—Apply No 7535

Midland Town—About £1 100 a year Old established PRACTICE Panel 750 Appointment £40 Very little midwifery Large house and garden Premium £1 600 including drugs etc—Apply No 7534

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LOCUM TENENS provided at short notice

FOR SALE.

LANCS—Old established G P situated in manufacturing town Income nearly £800 Small panel (cope) Fees 3 up D F house to rent or sell Premium for Practice £800 (to include Drugs etc)

LONDON N—Old established G P situated in thickly populated district Small house to rent Good fees Panel over 1 00 Two appointments Premium £1 700 cash

WEST COAST—Small PRACTICE situated in Seaside Resort suitable for semi-retired man Income £400 (with small panel) Good fees Premium £400

WEST COUNTRY—Practically unopposed old established small country town G P Income over £1 400 p a Panel 1 000 Two appointments Excellent D F detached house 5 bedroom 2 dressing Modern drainage 21 years lease Rent £60 p a Premium £2,200

KENT—Old-established country G P Panel 600 Two appointments Income £1 600 Excellent house Premium to include house £4 650 (Mortgage can be arranged)

SOUTH WALES (Not Colliery)—Old established G P situated in excellent surroundings Panel 2 800 Income over £2,700 Splendid house etc Suitable for husband and wife in partnership Opposition negligible Premium 1½ years purchase

MANCHESTER—NUCLEUS General Practice situated in busy quarter Small house (6 bedrooms) Panel and cash Income over £600 per annum Premium £1 450 to include house

YORKS—Old-established country town Panel 1 00 Income £2 500 3 appointments Detached house with garden and garage to let on lease Premium £3 500

LONDON S W—PARTNERSHIP in old established G P Panel about 1 000 Income over £3 000 3 appointments Premium two years' purchase £2 500 down

Purchasers stating their requirements will be sent particulars of other suitable Practices and Partnerships for sale free of charge

Please address all communications to the Manager Mr W H. GRANT Medical Transfer and Insurance Department.

THE MANCHESTER MEDICAL AND SCHOLASTIC ASSOCIATION, LTD.

88 KING STREET

Telegraphic Address STUDENT MANCHESTER"
Telephone 6570 CENTRAL

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ASSISTANTS & LOCUM TENENS SUPPLIED
PRACTICES for sale Particulars on application

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Telephone 4145 GERRARD
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Cable Address (via Eastern) RECALLABLE, LONDON"

LOCUMS SUPPLIED

Death Vacancy — Middle-class PRACTICE in Residential District within 10 miles Receipts about £1 600 Panel 60 Fees 3 6 up Very nice house specially built Freehold and practice can be bought cheaply

Surgeon under 35, required as PARTNER in first-class Practice in country town with cottage hospital Quarter share of £8 000 House can be rented

Yorks—Middle and working-class PRACTICE in fine town Receipts £1 750 Panel 1 S 0 For Sale owing to ill-health Fine house can be rented

Near Peak District—Old-established PRACTICE of about £1 000 held by Vendor for about 40 years in beautiful district Panel 00 Appointments £100 Excellent house with large garden rent £75 Premium 1½ years purchase

Midlands—Practice of £1,800 In prosperous town Panel 2 00 Appointments £110 Great scope for anyone attending more to the practice House with garage Rent £50 on lease

Liverpool—Practice of £1,400 In suburb Appointments £110 Panel 1 10 Opposition weak Rent £50

Colonial Appointment Salary £800

Lincs—Unopposed Practice of £900 Panel and appointments £500 Very good house with two acres can be rented Station in the place

S W County — Old-established PRACTICE of £750 in small town with hospital Appointments £160 Panel 00 House with large garden and orchard rent £45

Home County—Partnership Half share of about £2 500 in beautiful country town Good class non panel practice Fees 3/6 to 1 guinea Good house and garden can be bought cheaply

Within 80 miles — Old-established PRACTICE of £1 280 in nice town Panel 1 00 Nice house with good garden Rent £70 School Society &c

Yorks—Practice of £1,450 in fine town Panel 8 0 Appointments £160 No midwifery has been done House with petty garden and separate entrance for surgery Can be rented.

West Coast—Nucleus of £550 including £90 from panel in wealthy seaside place Premises in prominent position

Home County—Partnership Half share of £2 000 in beautiful country town Panel 70 Appointments £260 House can be rented

Ear, Nose, and Throat PRACTICE of £2 000 Fees 1 to 3 gns. Transferable appointment Low rent

Midlands—Town and country PRACTICE of £1 200 including 00 panel Good corner house with garage Rent £60

Home County—Partnership with succession to middle-class Practice of £1,850 in residential district The place is growing and has a cottage hospital Panel 1 20 Appointments £180 Very few midwifery Rent £70

Home County—Unopposed PRACTICE of £1 600 Panel and appointments £500 Beautiful district Sanation Well built house with very nice garden and tennis court Can be bought

Yorkshire—Practice of £1 500 in prosperous town Panel 1 00 Rent £80 Premium 1½ years purchase

East Coast—Practice of £1 700 in beautiful seaside resort Panel 1 00 Appointment £80 Good school Excellent house with fine garden Rent £140

Purchasers stating their requirements can be put in possession of other Practices not advertised

THE

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Practices and Partnerships for Disposal. No charge to Purchasers.

DEATH VACANCY —(1) Borders of Epping Forest PRACTICE averaging £1 500 p a Panel 550 Modern corner residence (5 bedrooms) with garage etc

SOUTH MIDLANDS —(2) PARTNERSHIP in old-estab Practice about £6 000 p a, in Country Town Panel about 2,000 Excellent house to rent Premium one fourth (or smaller) share, two years purchase

FIRST-RATE RESIDENTIAL DISTRICT up the THAMES —(3) PARTNERSHIP in good-class Practice averaging about £1 550 p a Not much Midwifery Good house with garage, to be sold Premium one half share £1 200 Scope for Surgery

LONDON, E C —(4) PARTNERSHIP in Special City [illegible] 30-35) specialising in [illegible] Disorders Share £

ISLE OF MAN —(5) Seaside Resort Unopposed PRACTICE of £400 p a, including £100 from panel Good house Premium £400 Scope for increase

NORTH OF ENGLAND —(6) Celebrated Health Re ort. Nucleus of old established PRACTICE, at present doing about £350 p a No Midwifery Good corner house, to be sold Price to include practice £5 000 Good opportunity to develop Consulting Practice

LONDON, S W —(7) Recently established Lock-up PRACTICE in outlying Suburban District Rent of Consulting rooms £40 Premium to include lease, furniture and fittings £250

MANCHESTER —(8) Old-established and increasing middle class PRACTICE, averaging £1,550 per annum, in Suburb with Hospital and opportunities for Surgery Small panel Good house (8 bed rooms) in excellent position Rent £90 Prem one and a half years purchase

SCOTLAND, NORTHERN HIGHLANDS — (9) PRACTICE averaging over £1 600 p a, in a Town No panel. House (5 bedrooms etc) in best residential part Ample scope for midwifery and panel Premium £1 200

LONDON, S W —(10) ASSISTANTSHIP, with view to Partnership in well established Suburban Practice No midwifery Share worth about £800 to suitable man who should for preference be married

SOUTH OF ENGLAND —(11) PARTNERSHIP in very old established Country Town Practice, over £3 670 per annum, in beautiful part within 10 miles of the Coast Panel over 1,300 Well appointed house (8 bedrooms &c), with garden and lawn, to rent on lease Cottage Hospital and scope for Surgery Premium one half share two years purchase

MIDLANDS —(12) PARTNERSHIP in very old-established Practice over £4 300 in good Country Town Panel 2 000 House contains 5 bedrooms &c Premium for one third share, one and a half years purchase

SOUTH OF ENGLAND —(13) PARTNERSHIP (with view to Succession) in old established good class Country Practice £2 890 p a, in delightful Residential District under 60 miles from London Panel 800 Very few midwiferies House (7 bedrooms) with about half acre garden One half share at first at two years purchase

WEST MIDLANDS —(14) PARTNERSHIP in old-estab lished Country Town Practice over £3 600 p a Panel 2 183 Rent £60 Partner should be aged 35 to 40 with some Surgical experience Well equipped Cottage Hospital Premium one third share one and a half year's purchase

LONDON, S W —(15) Well-established PRACTICE of £600 to £700 p a in favourite Residential Suburb Panel 200 Not much midwifery Excellent detached house (5 bedrooms), with good garden, for Sale Ample scope Premium one and a half years purchase

SOUTH OF ENGLAND —(16) Unopposed Country PRACTICE nearly £500 per annum Panel 420 House (3 bedrooms, [illegible] attics) with well stocked garden Rent £25 Premium £650

SURREY —(17) PARTNERSHIP in good middle class compact practice over £2 650 in Residential District easy distance of London Panel 1,200 Two fifths share at first at two years purchase

SOUTH MIDLANDS —(18) Well-established unopposed PRACTICE averaging £1,181 per annum in good Agricul tural District Panel 800 Detached house (5 bedrooms) Rent £70 on lease Premium £1 700

MIDLANDS —(19) Unopposed Country PRACTICE over £1 150 in beautiful part. Panel about 720 Detached house (4 bed rooms) with half an acre garden Mild climate

SOUTH AFRICA —(20) PRACTICE about £1,000, in small Town in Cape Province Very comfortable house to rent Living very cheap Premium £800

EAST COAST —(21) Old-established good-class PRACTICE £1 700 per annum in pleasant Seaside Town and favourite Resort No panel Nice modern double fronted house (6 bedrooms) Rent £75 on lease Premium £2 000

SOUTH OF ENGLAND —(22) PARTNER required in very sound old established Practice in Seaport Town Panel under 3 000 Share worth £700 to £800 at two years purchase Partner must be keen and energetic and not much over 30

NORTH OF ENGLAND —(23) Old established PRACTICE of £1 460 per annum in Country District Panel 810 Very good house (5 bedrooms) in charming grounds two acres Premium, practice, hou e and grounds £4 000 Mortgage could be had on house

NORTH-WEST COAST —(24) Sound middle class PRACTICE about £2 400 Conveniently situated house to rent Premium £2,900 part by instalments

HOME COUNTY —(25) Old-established PRACTICE, over £1 850 p a. in a most desirable Residential District under 3 miles from London Panel about 600 Excellent detached house (3 bed and dressing rooms) Nearly acre garden Rent £75, on long lease Cottage Hospital near Premium £3 000

EAST ANGLIA.—(26) PARTNERSHIP in middle and working class Practice, averaging about £2 200 p a. in picturesque district near popular Seaside Resort. Panel nearly 1,200 Choice of h us s. One third share at first at two years purchase.

EASTERN COUNTIES —(27) Very old established Country PRACTICE over £1,400 p a. Panel 6 6 Suitable house (5 beds) Rent about £40 Mild climate Premium one and a half years' purchase.

EASTERN COUNTIES — (28) Old-established un opposed Country PRACTICE of £826 p a. Panel about 500 Very good house in 3 acres of garden, also 18 acres of land attached, to rent or pur chase Nearest opponent 5 miles

SOUTH WALES —(29) Well-established PRACTICE nearly £1 250 p a in County Town Panel over 500 Fees 5/ to £2 2s Well situated double fronted house (6 bedrooms) with large garden Rent £60 Educational facilities Premium £1,800

SPECIAL OPHTHALMIC PRACTICE —(30) About £1 400 in high-class inland Health Resort. Operative and acute cases refused of late years Considerable scope for increase Premium £2 000

SOUTH WALES —(31) Old-established working-class PRACTICE over £2 200 in good Town Panel 1,400 Detached house with 4 bedrooms to rent on lease Premium £2 500

YORKSHIRE (WEST RIDING) —(32) Well-established PRACTICE £1 650 p a in Industrial District easy reach of Sheffield Panel 650 Convenient 8 roomed house Rent £48 Premium one and a half years purchase

SOUTH OF ENGLAND —(33) PARTNERSHIP in old established PRACTICE £1 500 p a in town of nearly 30 000 Inhabitants Panel 450 No midwifery House contains 5 bedrooms Premium one half share one and a half years purchase

YORKSHIRE (WEST RIDING) —(34) PRACTICE over £1 500 p a, in thriving Industrial Town Panel 1,500 Good hous (5 bedrooms) Rent £80 Premium £2 250

MANCHESTER —(35) PARTNERSHIP in old-established good class Practice over £4 500 in Residential District Small panel One fourth share would be sold for £2 115 with option to increase up to one-half Partner should be about 30 and preferably M D or F R C S

YORKSHIRE (EAST RIDING) —(36) PARTNERSHIP in well established Practice nearly £2 500 p a in pleasant Country Town. Panel about 1 000 Good house (5 or 6 bedrooms) in acre of ground Rent £40 Premium one half share £1 500 Partner aged about 40 preferably with experience in Major Surgery Fine Hospital in Town

NOTTINGHAMSHIRE — (37) PRACTICE averaging £1 200 p a, in Residential Town Panel 700 Corner house (3 bedrooms, &c) Rent £60 Premium one and a half years purchase

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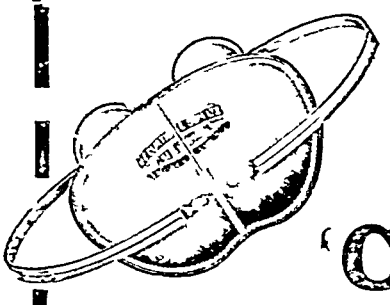
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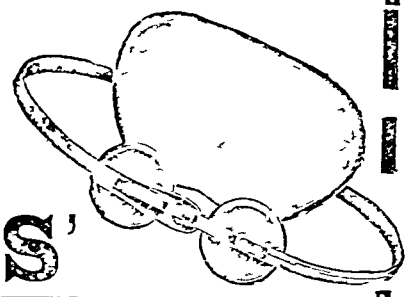
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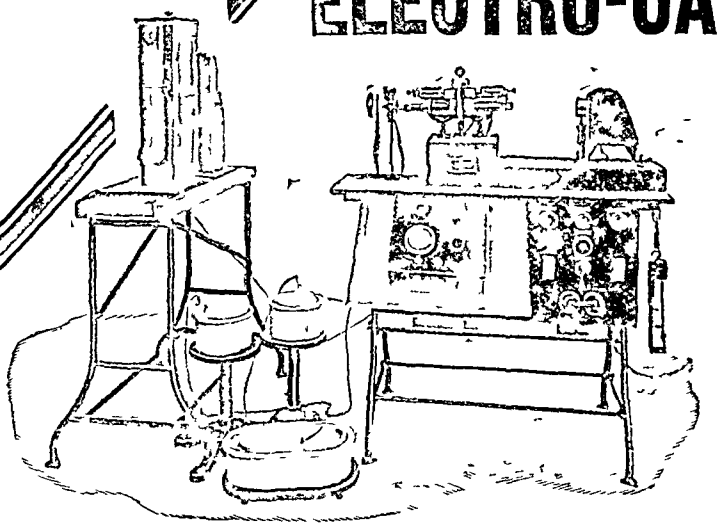
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By ALBERT E DAVIS F R C S Ed L R C P Late Hon Phy to the Liverpool Psycho-Therapeutic Clinic

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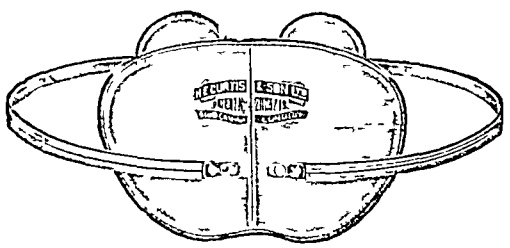
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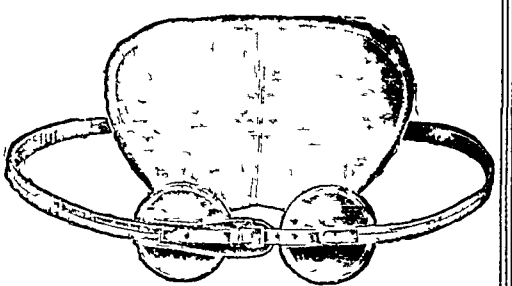
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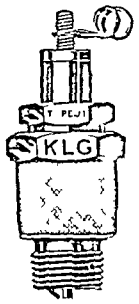
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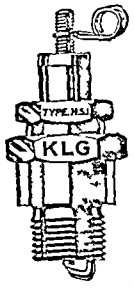
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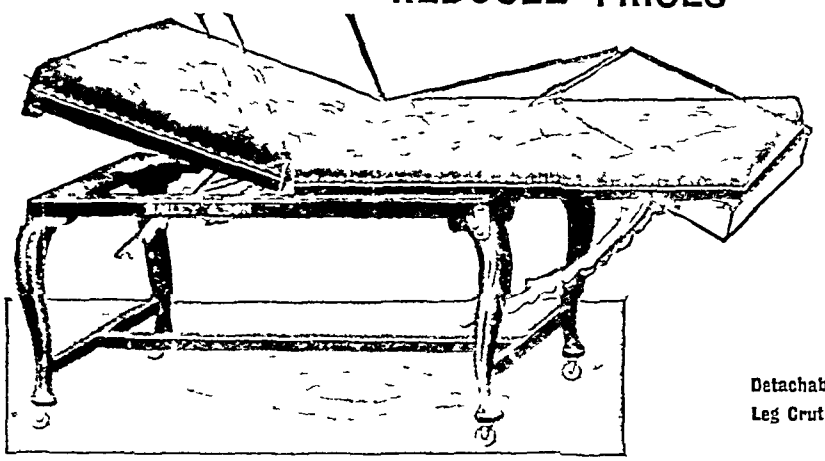


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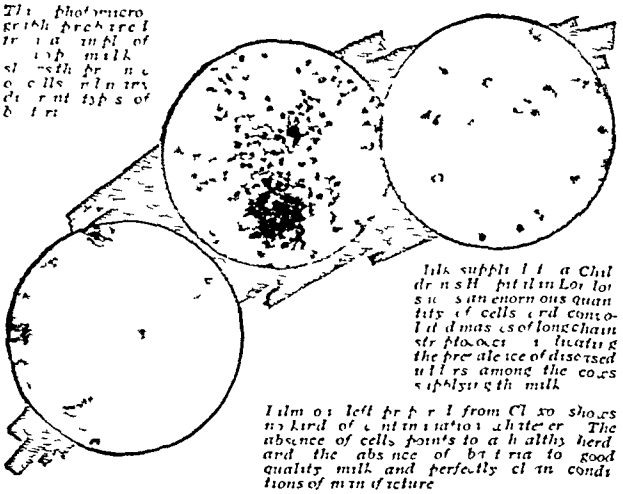
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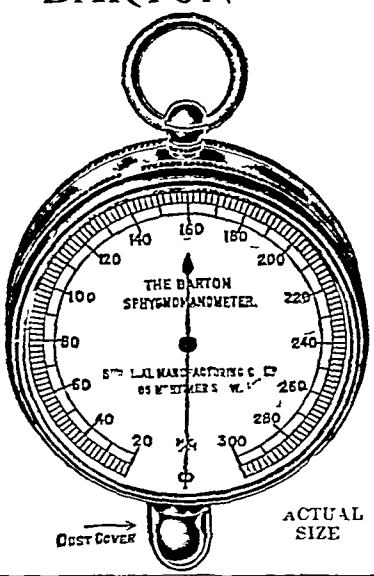
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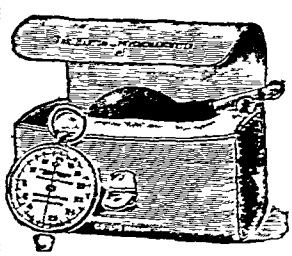
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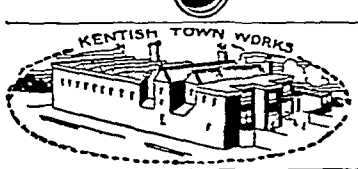
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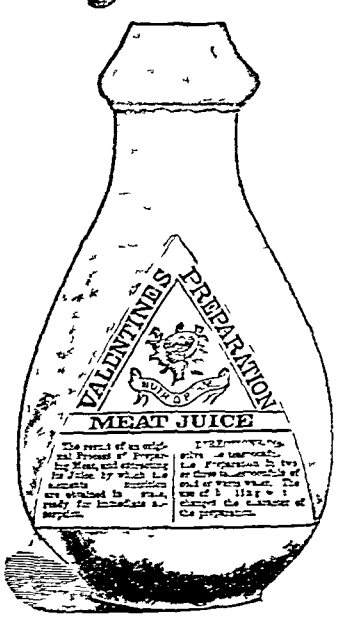
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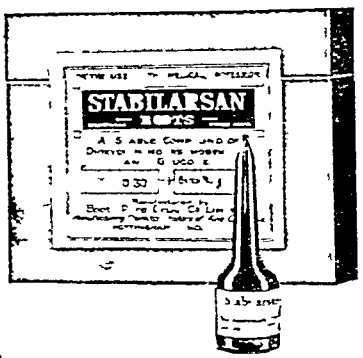
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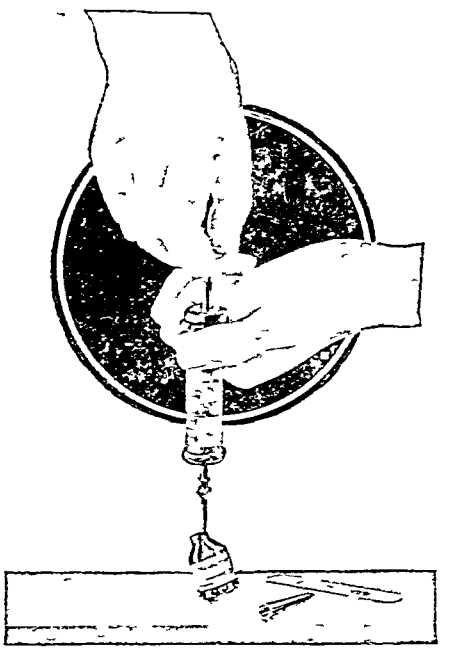
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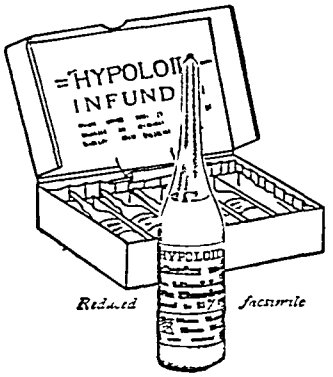
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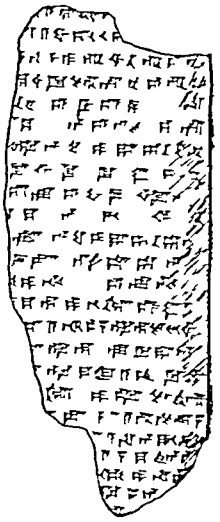
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British Medical Journal, Jan 14th, 1922, p 53, Aug 12th, 1922, p 283, Dec 29th, 1923

Lancet, Nov 4th, 1922 *Tubercle*, May, 1923, May, 1924.

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A British Medical Association Lecture

ON

BILIARY INFECTIONS

WITH SPECIAL REFERENCE TO DIAGNOSIS

BY

D P D WILKIE, M.CH., F.R.C.S.,

PROFESSOR OF SURGERY IN THE UNIVERSITY OF EDINBURGH

ACCURATE diagnosis and appropriate treatment must ever rest on a sound knowledge of pathology. In the case of some abdominal maladies diagnosis and treatment would appear to have advanced somewhat hastily beyond the controlling limits of ascertained pathological fact, not so in biliary infections. To the frequency of such infections all pathologists and surgeons will bear witness. We are only beginning to realize how much chronic ill health is attributable to such infections and how many fatal complications may supervene in the neglected cases. Our aim should be to prevent the development and establishment of such chronic infective processes in the biliary tract, and where this is not possible, to reach an early diagnosis and recommend appropriate treatment before complications have developed and irretrievable damage has been done.

ANATOMY, PHYSIOLOGY, AND PATHOLOGY

Certain points in the anatomy, physiology and pathology of the biliary tract require emphasis as they form the essential basis for a correct interpretation of symptoms.

Anatomy

The striking feature of the biliary duct system is that large diverticulum the gall bladder with its thin wall containing elastic tissue and a small amount of unstriped muscle fibre, its narrow eccentrically placed outlet, the spiral fold of mucous membrane in its duct, its generous blood supply, and its free lymphatic drainage. The main bile ducts are thin walled and possess but a thin layer of unstriped muscle except at the lower end of the common duct, where there is an aggregation of circular muscle fibres, sphincteric in function as first described by Oddi. The intimate relationship of the main pancreatic duct with the bile duct is important, but not more so than the free anastomosis between the lymphatics draining the gall bladder and ducts and those of the head of the pancreas. The nerve supply of the biliary passages is a complex one and goes far to explain the diversity of symptoms met with in biliary disease. It consists of sympathetic fibres from the coeliac plexus corresponding to the lower six thoracic segments of the cord, fibres from the vagus and occasionally sensory fibres from the phrenic. Herein lies the explanation of the pain and constricting sensations round the lower ribs, the gastric symptoms, and the shoulder pain met with in gall-bladder affections.

Physiology

The secretion of bile with its contained pigments and bile salts and its cholesterin in colloidal emulsion is a continuous process. Between meals, however, little bile escapes into the duodenum, and it is the storage and concentration of bile in the gall bladder during the fasting period and its ejection following the succeeding meal that form the characteristic and significant features of the biliary mechanism. Whilst the lining membrane of the bile ducts secretes a fluid which dilutes the bile, the gall bladder has remarkable powers of absorption and concentration. It is no mere passive cul de-sac, the storage capacity of which is measured by its size; on the contrary it is an active concentrating chamber in which the bile may be concentrated ten times within twenty-four hours. In this absorptive function lie its virtue and its danger, for, when infection supervenes, not only does its inspissation of content tend to favour concretion formation but the absorption of toxic products may lead to poisoning of the other tissues, notably the heart muscle. The synchronous emptying of the gall bladder with relaxation of the sphincter of Oddi, produced by stimulation of the sympathetic or of the central end of the vagus and shown to follow the introduction of concentrated magnesium sulphate into the duodenum, is not so perfect a co-ordinated action as was at one time believed, and it is probable that the gall bladder empties much more from outside pressure consequent on respiratory and other efforts than from an active contraction of such unstriped muscle as is present in its walls.

Pathology

Infection reaching the biliary passages might be expected to lodge and obtain a foothold more readily in the gall bladder where stasis is a physiological property than in the conducting channels and this is notorious by the case. Further, the gall bladder has been shown to be one of the seats of election for the lodgement of certain forms of bacteria which may gain entrance to the blood.

The experiments of Rosenow have shown how certain strains of streptococci injected into the blood stream may infect the wall of the gall bladder in preference to all other tissues. Typhoid bacilli may continue to live in the gall bladder for years after the primary intestinal infection. The colon bacillus, carried to the liver by the portal circulation may escape in the bile or by way of the hepatic lymphatics and so reach the gall bladder, where under certain conditions it finds a favourable habitat. Graham has demonstrated the frequent association of a hepatitis with a cholecystitis, and has brought forward considerable evidence to show that the infection spreads from the liver to the gall bladder, either directly or through their free lymphatic connexions. Anything which causes an unusual degree of biliary stasis will favour the inception of biliary infection. Thus we find that persons in middle life who have begun to put on weight, to take less exercise, and to allow their abdominal muscles to become merely a casing for their omental fat, are peculiarly liable to biliary infection and stone formation. The association of biliary infection with pregnancy and the puerperium is known to all. Three factors probably contribute to this special liability. First, biliary stasis; secondly, increased cholesterol content in the blood and bile, and thirdly and I think of most importance, *constipation with B coli infection of the portal blood*, a cholecystitis developing along with or independently of a *B coli* pyelitis of one or both kidneys. The portal of entry of the organisms invading the gall bladder may be a recognizable focal infection, such as a root abscess of a tooth or an appendicular infection; in many cases however the primary source will be sought for in vain. That biliary infection is an essential and inevitable precursor of gall-stone formation is, I consider, unproven. The single cholesterin stone may quite possibly be an aseptic gall stone. It is unlikely to remain indefinitely so. Sooner or later the lowered vitality of the gall bladder consequent on repeated obstruction of its outlet will permit of infection settling in its wall, and we get a cholecystitis secondary to stone. All evidence points, however, to the other sequence—infection, then gall stone formation—being infinitely the more common one.

CLINICAL PICTURE

We are now in a position to approach the subject from the purely clinical standpoint. It may be stated at once that the diagnosis of a biliary infection, especially when associated with gall stones, can usually be made by ordinary clinical methods—that is by a careful and painstaking history and a purposive physical examination. Mayo Robson first laid emphasis on the importance of recognizing the inaugural symptoms of biliary infection. In the majority of cases the patient's complaint is of stomach trouble. The gastric symptoms are of two kinds. Most frequently the complaint is of a *flatulent type of dyspepsia*—of discomfort and distension coming on shortly (half an hour) after food relieved by belching up wind. The patient may on occasion have to loosen the clothing in the endeavour, often vain, to get relief. This discomfort is worse after certain kinds of food particularly fats, pastry and vegetables. In other cases, however, the discomfort is delayed for an hour or more after food, when acid eructations and heartburn indicate that a gastric hyperacidity is present. Such symptoms should always suggest biliary trouble, and if the patient be a stout middle-aged multiparous female they form strong

presumptive evidence of gall-bladder mischief So obsessed may the patient be with the stomach symptoms that, unless asked directly, she may fail to tell of definite attacks of colic, lasting for some hours, or of soreness under the right costal margin, lasting for days As in the majority of cases the infection and calculus formation are mainly confined to the gall bladder, jaundice is not likely to be a symptom The absence of a history of jaundice must never be taken as evidence against the presence of gall-bladder disease

The *seat of pain* in the marginal stages of gall-bladder disease is very varied As a rule it is referred to the "pit of the stomach", not infrequently it is more pronounced on the left than on the right side, and, as it is often accompanied by palpitations, may suggest cardiac disease The aching in the right shoulder and right side of the neck may suggest rheumatism, or when down the right arm, neuritis In the majority of cases, however, it is referred to the right costal margin and round the lower ribs on the right side to the *lower angle of the right scapula* It is a notable fact that in quite 15 per cent of cases the pain is felt as low down as the iliac fossa *on the right side, so as to raise* suspicions of appendicitis, suspicions not always unfounded, for coincident appendicular disease is by no means rare Some patients will seek advice for pain in the right breast, when the absence of local pathology will render the gall bladder suspect Any of the above symptoms should lead to a close cross-questioning of the patient as to a history of short attacks of severe pain, for a surmise may become a certainty if such a story be obtained

The varied character and wide distribution of symptoms associated with an infected gall bladder are readily explained when, first, we reflect on the different nerve paths along which impulses may travel to centres whence they are referred to the periphery as pain, and, secondly, on the fact that the gall bladder may be a focal infection and *toxic absorption from it may involve muscles* and joints throughout the body and lead to a definite degeneration of the heart muscle The "*cholecystic heart*" is now recognized by many as a clinical entity, and certain cases muscular rheumatism and of rheumatoid joints have been cured to be dependent on a gall-bladder infection in so that all rheumatic symptoms have disappeared after cholecystectomy

Acute Cholecystitis

Acute inflammation of the gall bladder may present one of two clinical pictures according to whether the cystic duct is occluded or not In the *simple unobstructive type* the onset is gradual, characterized by nausea, loss of appetite, a rise of temperature, possibly preceded by a slight rigor and by aching pain across the epigastrium and under the right costal margin, acute colicky pain is usually absent The patient looks ill and poisoned, with a coated tongue and heavy breath, and definite tenderness and rigidity of the upper part of the right rectus muscle are present Such an attack will usually subside in a few days under expectant treatment Occasionally, however, a peculiarly virulent infection may lead to gangrene with perforation of the gall bladder, followed by a localized abscess or a generalized peritonitis Such attacks are undoubtedly very common, but as acute pain is not a striking feature the medical man may not be called in and they pass as "congestion of the liver"

In the other form, *acute obstructive cholecystitis*, so well described recently by Morley, the picture is typical and should be unmistakable The onset is associated with pain across the epigastric region, radiating round to the back Tenderness and rigidity of the upper part of the right rectus muscle are almost invariable A premonitory attack of diarrhoea, associated with flatulence and nausea, is not unusual vomiting may occur but is not the rule Some frequency of micturition and pain across the lower ribs behind may lead to an examination of the urine and the discovery of a bacilluria which is probably eliminative in origin even if due to a coincident pyelitis The catch in breathing from diaphragmatic spasm may lead to the detection of diminished breath sounds and some crepitations at the base of the right lung—a common finding in acute biliary infections These secondary manifestations must not be allowed to obscure the real primary condition, the signs of which are nearly always patent The rigidity and tenderness below the right costal margin usually prevent the enlarged gall bladder being felt, sometimes, however, it presents as an obvious, tense, rounded swelling The initial acute pain may suggest biliary colic, and morphine and atropine may be given When the effect of the drugs has worn off, however, the pain and tenderness persist and the temperature remains up When seen after the first twenty four hours the symptoms may at first suggest an intestinal obstruction, for the patient (usually elderly) may complain of a feeling of distension on the right side of the abdomen, an inability to pass flatus, even after an enema, and examination may reveal a dilated caecum This pseudo-obstruction is due to the adhesion of the hepatic flexure of the colon to the inflamed gall bladder and must not be allowed to deflect attention from the primary seat of mischief To adopt an expectant attitude in these cases is to run a needless risk, for, whilst in younger subjects the gall bladder may withstand the tension and the obstruction may right itself, in the more elderly gangrene is liable to result with serious consequences *In prompt diagnosis* and immediate operation lies the only safe course in these obstructive cases

Secondary Pancreatic Infection

My experience has been that in over 9 per cent of patients showing signs of acute biliary infection there is a coincident subacute pancreatitis Such patients present a clinical picture which has three main distinguishing features (1) They look more ill and grey than do those with a simple cholecystitis (2) They complain of great epigastric distress rather than acute pain (3) Tenderness is elicited over the whole of the upper part of the abdomen, which may show a definite fullness, and the local rigidity of the right rectus muscle is not so striking as where pancreatitis is absent When the abdomen is opened in these cases the striking feature is a bile-stained oedema of the cellular tissues over the head of the pancreas with possibly some fat necrosis, but no haemorrhage The gall bladder, although infected, does not show the same gross changes which we meet with in obstructive cholecystitis, and the pathological findings point to the pancreatic infection as being the immediate cause of the patient's symptoms The spread of infection from gall bladder to pancreas is probably by way of the lymphatics, at least it is the exception in such cases to find any clear evidence of a cholangitis Whilst the mortality in such cases is not high—probably not more than 15 per cent—the convalescence from operation is slow, post-operative complications, including subphrenic abscess, not uncommon, and, in some cases, chronic ill health with glycosuria follows

Chronic Grumbling Cholecystitis

A distinct group of cases may be classed under this heading In this group the patient suffers from a more or less constant sense of fullness and weight under the right costal margin, instinctively shrinks from any pressure on that region, and feels a sharp stabbing pain on stooping or on stretching upwards with the right arm If exposed to wet or cold she develops a more pronounced aching in the right lower costal margin, usually attributed to a "chill on the liver" Occasionally a slight tinge of yellow appears in the skin and she is said to be looking liverish Such symptoms may persist for years, until finally an acute obstructive attack or a pancreatitis supervenes and converts a state of chronic ill health into one of acute and immediate danger By timely interference in this class of case much chronic disability may be avoided and final disaster averted

Recurring Cholangitis

Inflammation of the common and lesser bile ducts is usually secondary to gall-bladder disease and associated with the presence of one or more stones in the common duct In many cases the clinical picture is too obvious to escape detection A history of recurring attacks of colic, with rigors, fever, jaundice, and loss of weight, leaves little doubt as to the diagnosis In other cases, however, the sharp outlines of the classical picture are wanting No history

of colic is obtained, merely recurring chills with fever, nausea, loss of appetite a faint tinge of yellow in the skin, and signs of basal pulmonary congestion As such attacks frequently follow exposure to cold the pulmonary signs are liable to receive undue attention and the primary biliary infection to be overlooked The marked loss of weight so characteristic of a chronic cholangitis and due, in some measure at least, to the associated pancreatitis is apt to suggest malignant disease Physical examination will reveal little except some tenderness in the mid epigastric region just to the right of the mid line and on the history the diagnosis must be based

When the patient is seen for the first time when deeply jaundiced accurate diagnosis will be more difficult Having excluded malignant disease of the liver advanced cirrhosis, haemolytic jaundice and the acute catarrhal type we wish to decide whether the cause is an impacted stone in the common duct or a chronic pancreatitis—for both of which surgery has much to offer—or whether it is malignant disease of the pancreas or bile duct or still worse malignant disease of the gall bladder with secondary glandular involvement in the portal fissure A history of remissions of fever and of colic will point to a gall stone, a painless progressive course with an enlarged gall bladder to the malignant In many cases, however only an exploratory operation will decide the issue I have found that the general aspect of the patient is the surest clinical guide to a diagnosis in these cases The clear orange yellow tint usually gives hope of a non malignant cause, the grey-green and bronzed give no such hope Van den Bergh's test has unfortunately, not proved of great practical value in this class of case because just in the case where help is most required its findings are indeterminate

SPECIAL AIDS TO DIAGNOSIS

X Rays

Considerable help may be obtained by radiography in doubtful cases, but, whilst positive evidence may be conclusive negative is to be discounted Three forms of evidence are available from *x*-ray examination First direct evidence, in the shape of shadows either of gall stones or of an enlarged and thickened gall bladder may be obtained Secondly, indirect evidence, as when after a barium meal a *persistent deformity of the duodenum from pressure* by or adhesion to the gall bladder is demonstrable Thirdly, eliminative evidence where either the definite demonstration of a gastric or duodenal lesion which would account for the symptoms is made, or where no gastro intestinal lesion is shown and the gall bladder rendered the more suspect Occasionally where a gall stone is lodged at the lower end *of the common duct some barium will enter the duct* and outline the stone

Test Meal

Biliary infections may be associated with either a decrease or an increase of the free acid in the gastric secretion but usually the former Walton has found that in practically 50 *per cent of cases free acid is absent If therefore* in a stout subject with suggestive symptoms free acid is diminished or absent the diagnosis of biliary trouble is supported on the other hand, Cheney found hyperacidity present in quite a large group of gall stone cases, so that by itself the test meal evidence is valueless

Duodenal Tube

Valuable evidence of the presence of infection in the biliary passages may sometimes be obtained by withdrawing samples of bile through the duodenal tube after the injection of magnesium sulphate into the duodenum Whilst the accurate location of the infection in the gall bladder or ducts as described by Lyon is usually impracticable the finding of lymph, pus cells and organisms in the bile withdrawn gives positive evidence that a biliary infection is present and may thus confirm a tentative diagnosis Further, the nature of the infecting organism is ascertained and if active surgical treatment be contraindicated an opportunity for autogenous vaccine therapy is opened up The course of the infection may also in this way be observed and the repeated use of the tube with the introduction of a half-saturated solution of magnesium sulphate into the duodenum is not without therapeutic value

Test for Bile in Blood Serum

In many cases of cholecystitis there is a slight biliary obstruction from pressure on the common bile duct Even when no jaundice is detectable in the skin and conjunctiva bile pigments may be demonstrated in the blood serum If 5 c.cm of blood be drawn into a syringe containing 1 c.cm of sodium citrate solution to prevent coagulation, the mixture centrifuged and the serum pipetted off the latter will give with nitric acid the fine play of colours familiar in the test for bile in the urine If, in the doubtful case this test be positive it constitutes valuable evidence of slight biliary obstruction

Whilst these special aids to diagnosis may play an important role in some cases in making or clinching a diagnosis they can only supplement, but never replace the clinical data *obtained from an accurate history* and a careful physical examination The latter must ever remain our surest guides to diagnosis and on them we will mainly rely for the correct interpretation of any given case

Diagnosis at Operation

The final opportunity for completing the diagnosis will arrive when the abdomen has been opened That the opportunity is not always fully grasped is evidenced by the number of cases in which a recurrence of symptoms follows hard on the operation Little difficulty is found in assessing the pathological changes *in the gall bladder* The crux of the problem is the common bile duct and the diagnosis can never be regarded as complete until this has been exposed and its condition determined Even should there be no calculus palpable if there be any thickening or dilatation of the duct it should be explored first with a hypodermic needle and if the bile withdrawn shows turbidity by incision and probe

Failure to detect and remove a stone from the common duct is the usual cause of recurrent symptoms after operation and where doubt exists, incision and exploration of the duct should invariably be practised The condition of the pancreas the appendix the stomach, and duodenum must be investigated as coincident lesions in these organs are by no means rare and may require to be dealt with that complete recovery may follow Only with good anaesthesia and a free incision can the complete pathological picture be displayed and adequate treatment be safely employed Inadequate operation can only bring disappointment to the patient and discredit to surgery The removal of several hundred gall stones will avail nothing if the one which was the real cause of the trouble be left behind To remove one or more calculi and leave an infected thickened and functionless gall bladder may give the patient some relief but will not result in cure and is evidence of a failure on the part of the surgeon to appreciate the intrinsic mural character of the gall-bladder infection Timely preoperative diagnosis and complete assessment of pathological change at operation are the two essentials for the successful treatment of biliary infections

PERIARTERIAL SYMPATHECTOMY*

BY

KENNETH BLACK F.R.C.S.Ed.

PROFESSOR OF SURGERY KING EDWARD VII COLLEGE OF MEDICINE SINGAPORE

THE basis of the theory of periarterial sympathectomy is dependent on the experiments of Claude Bernard who found that in the rabbit when the sympathetic nerve in the neck was divided, the arterioles dilated and the ear became hyperaemic and when the peripheral end of the cut nerve was stimulated the ear became blanched from constriction of its arterioles

Attention was first drawn to the useful possibilities of this operation by Leriche of Lyons who published his

* Read before the Malaya Branch of the British Medical Association at the annual meeting held in Singapore April 1924

original account in 1913 He stated that the operation was first performed by his old teacher, Jaboulay, in 1889, who, however, did not publish his results In 1921 Leriche reported sixty-four cases in which he had performed periarterial sympathectomy for various chronic lesions, with only one complete failure

The operation consists of removing the whole circumference of the outer sheath of the main artery of a limb as high up as possible for about one inch of its length This causes an increase in the vitality of the limb below the operation, due to the hyperæmia resulting from division of the sympathetic vaso-constrictor nerves which are believed to extend along the course of the arteries and arterioles in their outer sheaths

It is not definitely proved that the sympathetic vaso-constrictors do extend along the arteries in the manner suggested, and in fact the contrary is asserted by some physiologists, nevertheless, there is evidence that such, in man, is probably the case Leriche and others found that after periarterial sympathectomy of the femoral artery there was a temporary local constriction of the femoral artery at the site of the operation, and distally there was an elevation of surface temperature of from 2° to 3°, which lasted about a couple of weeks, also the blood pressure in the limb was raised as much as 40 mm of mercury On the other hand, several surgeons who have performed this operation have failed to find any elevation of the temperature or blood pressure in the limb following the operation A similar rise of temperature has been observed in a limb after excision of an aneurysm of its trunk artery

It seems probable that the continuity of the vaso-constrictor sympathetic nerves is broken by the operation, and the distal arterioles in consequence dilate Whatever ultimately proves to be the real physiology of the operation, there is considerable evidence that the vitality of the part below the site of the operation is increased, as evidenced by the results that have been and constantly are being reported

Internal decortication has been performed for various surgical conditions, but its utility seems to be greatest and the results obtained most encouraging in cases of trophic ulcerations of the extremities, especially favourable results have been reported in perforating ulcer of the foot In ulcers of the legs or feet it gives good results provided the ulcers are not very old or surrounded by much scar tissue It has been tried with no inconsiderable success in Raynaud's disease, in frost-bite gangrene, ischæmic paralysis of the forearm, painful stumps, trophic contractions of muscles and in some chronic cases of pains in the hands and feet (erythromelalgia)

I can find no report of the operation having been performed for the ulcerations of leprosy In two of my cases (2 and 3) the results were remarkable In each the leper had lost several of his toes and the stumps had remained ulcerated for six or more months, within two weeks or so after periarterial sympathectomy the stumps were healed, although the local treatment remained unchanged This result I think warrants further trial in leprous ulcerations it might prove, too, of value in Dupuytren's contraction of the hand, but I have not been able to obtain suitable cases Decortication of the common carotid artery has been done for glaucoma and for trophic ulcer of the cornea, but the results are not sufficiently clearly reported to be of value

The operation, it would appear is contraindicated in diabetes, mitral, hepatic, or cardiac disease, and in arterial degeneration

Case 1—Chinese, male, aged 32 Three perforating ulcers of the sole of the right foot for five years Various lines of treatment had been tried without success There was a small patch of anæsthesia on the sole of the foot and the Wassermann reaction was slightly positive Leprosy for long had been suspected, but repeated investigations failed to demonstrate the lepra bacillus Operation was done and in twelve days the ulcers were healed and the patient soon after went out of hospital back to his work

Case 2—Tamil male aged 38 Leper with two toes of the right foot destroyed by leprosy and the stumps ulcerated and raw for a month Operation March 18th 1924 Two weeks later the stumps were healed over, the patient walking about a week later At present date the ulcers are still well healed.

Case 3—Chinese, male, aged 21 Inner three toes of the right foot sloughed away, due to leprosy, and stumps ulcerated for seven months Operation March 18th, 1924 Stumps healed over in two and a half weeks Patient walked a week later, and ulcers remain healed to date

Case 4—Chinese, male, aged 31 For ten months he had a large spreading ulcer of the right leg Operation March 20th, 1924 In a little over two weeks the ulcer was clean and healthy looking and much smaller in size, in seven weeks the ulcer was very nearly healed and the healed portion was covered with very thick horny epithelium

Case 5—Chinese, male, aged 52 Had three chronic ulcers of the left leg for nine months Operation March 20th, 1924 Result after seven weeks, very great improvement He had been in hospital for six months with rest in bed and dressings previous to operation, with little or no apparent improvement

Case 6—Chinese, male, aged 33 Small ulcer on dorsum of left foot of the size of a five shilling piece He had been in hospital with treatment for seven weeks and then was operated on (March 27th, 1924) and three weeks later the ulcer was healed, recently he was discharged cured

Case 7—Chinese, male aged 35 Several small ulcers at back of right leg which he had had for five months Operation on March 28th, 1924 He was discharged cured on April 18th

Case 8—Chinese, male, aged 49 Ulcerated dorsum of right foot following a bruise of six months duration Operation March 29th, 1924, early in May the ulcer was well healed over with thick epithelium

Case 9—Chinese, male, aged 60 Several ulcers of the toes of the right foot of one and a half years' duration Operation April 3rd, 1924 Result, middle of May, great improvement

Case 10—Chinese male, aged 45 Ulcer left leg of eight months duration Operation April 4th, 1924 Very little improvement by the middle of May

The operation is carried out as follows The femoral artery in its sheath at the apex of Scarpa's triangle is exposed by a suitable incision The femoral sheath is then opened and the artery isolated and held up with two small blunt hooks Next the outer coat or sheath of the artery is incised vertically along its length carefully with a very sharp tenotomy knife for about one inch, and this outer coat is then dissected from off the artery all the way round and cut away It is thin, but thicker than might be expected Great care must be taken not to pull on the artery or to tear the sheath away, as there is a risk of tearing through the muscular coats of the artery, an accident that should not occur with reasonable care Any tiny branch vessel should be secured with mosquito forceps and tied with very fine silk All remaining cobweb-like tissue which is found still to be adherent to the artery is dissected away The artery is thus completely decorticated of its outer sheath or adventitia I have observed that as I dissected away the outer sheath the artery contracted markedly at the point of injury This, in a few of my cases, soon gave place to a slight bulging of the artery, in fact the artery sometimes became decidedly fusiform in shape The wound is then closed by suturing the deep fascia and skin

In none of my cases has any bad symptom occurred, and whilst it is too early definitely to state whether aneurysm as a late result is likely to occur or not, my impression is that this is unlikely provided the operator has been careful not to damage the muscular coats I have not seen any case of aneurysm resulting from this operation reported In none of my cases have I been able to corroborate the suggested elevation of the temperature or blood pressure in the limb below the site of the operation

The results so far encourage me to believe that this operation may often be valuable, particularly in the classes of cases already indicated and where the more usual forms of treatment prove slow or fail It is, however, too early for me to speak with confidence of the final results of this operation It is only recently that cases here have been subjected to this surgical method In none has any alteration of the local treatment been made, in order better to be able to determine the direct effect of the operation

NINETY-SECOND ANNUAL MEETING

OF THE

British Medical Association.

Held at Bradford, July, 1924

PROCEEDINGS OF SECTIONS

SECTION OF MEDICAL SOCIOLOGY

ARTHUR MACKENZIE, M.B., B.S., President

DISCUSSION ON HAS THE NATIONAL HEALTH INSURANCE ACT JUSTIFIED ITS EXISTENCE?

PRESIDENT'S INTRODUCTORY REMARKS

In order to attempt in any way to answer this problem we must first of all carry our minds back to the conditions of medical practice before the Act, both as affecting the medical profession and the classes of society now falling under its influence. We must bear in mind the claims made for it by the introducer of the bill. Mr. Lloyd George brought his bill before the House of Commons in a most eloquent and persuasive speech, full of his native Welsh imagery and backed by the utmost power of his political prescience. A glowing picture was drawn of the clouds of misery and sickness being dissipated by the sun of health and scattered by the invigorating breezes of the National Health Insurance Act. After eleven and a half years' experience we may ask, Have these prophetic aspirations been fulfilled? Is the nation better and brighter and healthier for the very revolutionary step then taken? Is the medical service of the nation improved by the working of this Act and all the subsequent amendments introduced together with the many regulations issued from Whitehall? Has the Act made for freedom and breadth of vision in medical work, or are we cabin'd, cribb'd, confin'd—bound in a system of petty details, irritating rules and embarrassing regulations? Has the sturdy individualism of the general practitioner, the old family doctor of other times, been undermined and its very existence threatened by the welding together of many of our profession into one common service? Have we lost in personal efficiency and magnetic influence in order to have gained in corporate action?

Of the multitudes now deriving medical aid from the Act it was common knowledge that, before 1913, many deserving people were unable to command either efficient or sufficient medical treatment. They were either unattended or ill attended, and received scant assistance in the battle with the ills that flesh is heir to. Some were able to pay their way, some accumulated huge debts with their medical men, some were more or less favourably situated as members of old and well established friendly societies, and some received their help through the Poor Law medical service. Of those who paid their way it may be said that oftimes it was with great difficulty and with self-denial in other ways. Many of them were, and still are, assisted by the system—prevalent especially in industrial communities—of weekly payments per collector. This resulted in many running family accounts which tended rather to increase than diminish as time went on, and in many cases were never discharged when the parents died. One result accrued, and that, curiously enough, was a certain crystallization of industrial practice. Now, in many cases, the younger persons of the family, on being insured at 16 years of age choose a medical attendant of their own, and the family touch is lost. This may be a sign of independence, or to be in line with their fellows.

Again, we may consider whether the Act has tended towards thrift, or has it undermined, to any extent, the grit and independence of our Anglo-Saxon race? Time was when a man would take nothing from the State or municipality, and would strive to make provision for old age, for sickness, for family, and for education entirely by his own efforts. The advent of free education found many unwilling to accept its benefits, and much planning and self-denial still obtained that the boy or girl should have a better education than the parent at the hands of that parent. But time worked great changes, and one now hears very little of the demoralizing effects of State education. More and more have availed themselves of its benefits and feel no qualms upon the matter. So, too, with regard to the National Health Insurance Act. One hears less and less of the people who would rather pay than receive treatment under this system. The incidence of the great war and the economic conditions following thereupon have made great changes in the attitude of the general population towards State aid. They have not been without effect upon the moral fibre of our people, and no doubt have reacted upon the view taken by the participants of health insurance towards the benefits of the Act. Has the National Health Insurance Act broadened the outlook of the insured population in the way of showing that the health of the nation should be the nation's care? Or has it merely narrowed their outlook in the direction of instilling further the idea that the State should supply and the individual receive as many benefits as possible? If the vision of the people has been narrowed in this way the Act has not fostered the idea of community of interest and community of effort, the idea of each for all and all for each.

In many practices the separation of prescribing from dispensing was a great revolution. Although we still meet with those who declare that they do not get the same medicine as when supplied from the surgery, this must be for the best. If prescribing be conscientious the effect must be in favour of more thoughtful treatment. Also it should increase in the minds of the patient the respect for advice, as such, apart from the inevitable "bottle"—for the public still clings to the outward and visible sign and regards its bottle as the concrete expression of the advice tendered. The establishment of advice in its proper relation to treatment should make for an increase in the personal touch which has been somewhat endangered by the wholesale operation of the Act. The medical practitioner has been brought willy-nilly into a great scheme of national medical service, but after all, his patients are individuals with their individual needs and so appeal also to the individualism of their medical adviser.

The National Health Insurance Act has called into existence the panel system. Has this system proved that, in spite of any defects, it is far superior to any national medical service contemplated by many, both within and without the profession? Surely it is more elastic and by the recent extension of the principle of free choice of doctor it must appeal more and more to the individuals involved. May we not say that it constitutes an arrangement based more upon the usages and principles of general practice as we know it, than could be the case in any so-called national medical service with its inelastic and necessary limitations of regional distribution?

What, if any, tangible effect has been produced by the working of the Act during these eleven years upon the health of the nation as a whole? Has the possibility of earlier diagnosis and earlier treatment cut down the ravages of serious disease? Is its action reflected in the mortality tables and the records of epidemic disease? Have our industries benefited by less sickness and so by less loss of working hours? Our medical officers of health no doubt can give us some idea of this as shown in the record of their offices. Then, too, our hospital physicians and surgeons will be able to tell us of cases sent in earlier to hospital in a condition more amenable to treatment than in former times. Perhaps this will be more noticeable in the surgical than in the medical ward, but both should demonstrate the benefit. We hear of many cases throughout our surgeries with apparently very trivial complaint. Surely this should give an opportunity to our budding Mackenzies searching out the beginning of disease. Even with the cramped facilities of the 1921 record cards it is quite possible to look back upon our cases and see how the clinical record has developed and to note small facts which appeared to be of little or no importance fitting in to the completed picture. As examples multiply much useful material should accumulate and lend itself to the establishment or otherwise of hitherto accepted views.

And now as to tuberculosis When the original bill was introduced great results were predicted as to the effect upon this terrible scourge Have the results been in any sense commensurate with the prophetic vision of the Chancellor? If not, is the lack of progress due to any inherent defect in the system, or to a want of enthusiasm or discrimination upon the part of authorities or practitioners in carrying out the programme? A striking report has been issued recently by the West Riding County Council upon the whole question of the incidence, mortality, and treatment of tuberculosis If carried out in full this scheme should make for greater efficiency in combating this great factor in our sickness and mortality records, and should prove an example and an inspiration to other authorities The movement in this case seems to have originated with the West Riding Panel Committee, and especially with its chairman, who is with us to-day We may therefore point to this progressive action as a direct result of the National Health Insurance Act We hope for great things yet in the solution of this problem, and that the more intimate contact between the general practitioner and public health authorities brought about by the Act will not be without beneficent effect

I have not applied myself to the answer to the great question before us, but have rather indicated by a series of queries many of the factors which go to the intelligent consideration of the question I have not trenched upon the domain of the approved societies or the insured persons because we shall hear from those better able to speak for them what are their minds and attitudes towards the Act and its dealings We all hope that the discussion will be free and untrammelled, providing food for thought and a better understanding as to future action in extending and improving this great system of national medical service

ADMINISTRATION (a) INSURANCE COMMITTEES

BY

SIR WILLIAM S GLYN-JONES

I should like to thank you for the compliment you have paid me by electing me a Vice-President of this Section, and I appreciate the honour of being permitted to take part in your proceedings The question "Has the national health insurance system justified itself?" is one in which I am intensely interested

I have been asked to deal with the subject as the representative of Insurance Committees, but in what I say here I commit no one but myself

At the last annual meeting of the National Association of Insurance Committees I attempted to give an answer to this very question, and I expressed opinions which nothing that has since transpired has given me reason to modify I will venture to repeat some of them We are here mainly concerned with that part of the scheme which I will call medical and allied benefits The scheme compels insured persons to contract and pay for direct personal and individual benefits, including medical treatment, maternity benefit, and sick pay Whilst not claiming that there is not room for improvement, I have no hesitation in asserting that, in the main, this contract has been fulfilled I believe such would be the verdict of any impartial critic possessing a full knowledge of the facts In the mass, insured persons are getting much better attention and medicine, and the medical profession as a body is receiving from the insured portion of the population a bigger income than was the case in pre-Insurance Act days The patients are better served and the doctors better paid than they were I do not say that either should be fully satisfied, but the improvement in service and pay as compared with things prior to 1911 would in itself justify the Insurance Act

In 1922 insured persons were paid over eight million pounds in sickness benefit, and more than three and a quarter million pounds in disablement benefit, whilst it is estimated that over six million persons received medical treatment involving forty-four million attendances Maternity benefit has proved an undoubted boon Sanatorium benefit is no longer a part of the scheme, but the special provisions relating to tuberculosis, incomplete as they were, enabled a substantial advance to be made in the prevention and treatment of that great scourge, and laid the foundation for, and made possible, the larger and extended efforts now organized by the public health authorities, so that the measures available under the Insurance Act to insured persons are now available to the whole community

I have given you a string of assertions which I have no time to amplify, but if challenged I am prepared to justify each of them The conclusion I draw is that, in so far as individual benefits are concerned, insured persons in the main have received better treatment than they could have secured for the amount of their own contribution, and the doctors have been paid for their services more than the insured persons left to themselves would or could have provided Speaking generally, the individual patient and individual doctor has much to thank the system for In the organizing of these individual benefits, Insurance Committees, or rather I should say their staffs, have played a great part but it is obvious that Parliament intended that Insurance Committees should be more than organizations for the administration of medical benefit In practice an enormous departure from the scheme, as conceived and as embodied in the original Act, has been made On questions of policy Insurance Committees have been given little, if any, voice The Ministry and the British Medical Association have settled the questions that really matter Insurance Committees have done the routine, clerical—the donkey work, in fact, or rather, as I have said, this has been done most efficiently by the clerks to the Insurance Committees and their staffs

I believe they could have done it just as well if they had been unfettered by their respective committees But I have forgotten the work of the medical, pharmaceutical, and joint services subcommittees Have they not solemnly sat in judgement as between doctor, pharmacist, and patient? Yes Insurance Committees have policed the scheme—an important and necessary, but unattractive, function This policing, instead of being, as it had practically become, the main function which committee members, apart from their staffs, perform, should have been subsidiary to far more important duties, which the Act contemplated would have been entrusted to these committees

In my view, whilst it is undoubtedly true that the system has justified itself, it has far from fulfilled the promises made to induce Parliament and the country to establish it Notwithstanding the success of the scheme from the point of view of individuals, important as that undoubtedly is, if that is all, then in my opinion the present elaborate Insurance Committee organization is not justified The clerks, with the occasional help of a magistrate, could do the work But what about the neglected functions by means of which the national health was to be so greatly improved, by and through national health insurance? I admit the State is indirectly benefited whenever an individual citizen is beneficially medically treated, but that indirect benefit by no means exhausts what was promised the country in return for the huge subsidy added by the State and employers to the individual insured person's contributions In other words, whilst to the individual the goods have been delivered, the State is still waiting to receive what it has paid for The whole organization, including Insurance Committees and Panel and Pharmaceutical Committees, was to concern itself not only with the routine work of administering benefit, but the Insurance Committee was to regard itself as a statutory health authority, specially concerned with the health of the insured population in its area Important sections of the Act, containing in the main the preventive features of the bill, have been, to all intents and purposes, a dead letter In a circular issued last year by the National Association of Insurance Committees they stated that "they considered that the time had arrived when the collective experience of the committees in the working of medical benefit should be reviewed If the knowledge gained by Insurance Committees and Panel Committees were pooled, facts and data not in the possession of any authority would be available upon which future action could be decided Obviously in this matter Insurance Committees are almost helpless without the active co operation of the individual practitioners" The circular added

that it is clear that that co-operation would be forthcoming If the authorities are neglecting this side of the work, it is perhaps excusable that the practitioner often regards his contract as completed if he does his duty by his individual patients He is apt to consider that his duty begins and ends with the individual patient, but is this so? Would the State and employers' contributions be justified if such were the case? Is not that portion of the capitation fee he receives which is found by the State and employer, paid to him for services which he is expected to render not only to the individual patients but to the community as a whole? Is he not a unit in the State health organization, the capitation fee being his payment as much for the services he renders to the State as for those which he gives to the individual insured patient? It is this consideration which justifies his being asked to keep medical records, for instance

In one of their letters to the Ministry of Health the committee of the British Medical Association make it clear that they are alive to the value of this branch of the work They say

> The Committee on the contrary views the insurance medical service as having been set up not merely to assure medical attendance on certain wage-earners when they become ill but to promote the national health by having regard to preventive as well as curative methods by facilitating research into the beginnings of disease (for which such a service obviously offers unrivalled facilities) and by making such investigations and reports on health matters as the Ministry of Health might properly require

They express the opinion that some of this work has "not yet developed very far"

It would be an impertinence on my part if I attempted to speak to this audience of the importance of the pooled knowledge, data, and experience which should, through the Panel and Pharmaceutical Committees, be in the possession of Insurance Committees The point is well emphasized by Sir George Newman in his last annual report, in which he said

> There is a wide prevalence of ill health in the community due to general sickness invalidity and physical impairment which in bulk provides the chief burden of disease and disablement and there is a great burden of disease which incapacitates and cripples to a serious extent and yet finds no place in notification or death returns It is largely unmeasured and unregistered and yet it is the principal cause of physical inefficiency Much of it lays the foundation of mortal disease much of it is preventable and all of it constitute a part—perhaps the main part—of the health problem of the nation

The national health insurance system will not be fully justified until all taking part in it co-operate and co-ordinate their efforts in tackling what Sir George Newman describes as "perhaps the main part of the health problem of the nation" It has been unfortunate, though probably it was inevitable, that the best brains in your profession have been so much occupied in the recurrent wranglings over remuneration and the details of medical regulations Some people seem to think that "good doctoring" can be secured by some mysterious contract, the more mysterious because to learn its terms you must start with the Act itself, wade through the Regulations, and, when these are mastered, find the rest in the actual document signed by the practitioner Altogether these purport to give a kind of specification of the services which are to be the subject of the contract—the surgery hours, the size of the panel as well as of the surgery—for all the world as if you were contracting for the purchase of a machine, or for the supply of coal

The last thing you can do by means of regulations is to convert a grudging or incompetent doctor into a keen, tactful, competent practitioner These paper controls may have their uses, but I fear too much importance has been attached to them, and far too much time and energy spent in their preparation Doctors possess their fair share of human nature, probably no more or less, and it is folly to neglect the motives which actuate average human beings

My recipe for a good service would be to provide such conditions of, and remuneration for, medical treatment under the scheme as will result in practitioners being as anxious to secure and to retain insurance patients as they are where private patients are concerned If, in addition, you educate your insured person so that he can recognize efficient treatment, then, with the patient's freedom of choice and right to change you can in the main leave the rest to the forces of competition and the ordinary laws of supply and demand

We must all be thankful that your profession and the Government are to have a rest from bartering Perhaps there is now some hope that the Government, Insurance Committees, and your great organization, will be able to take what I believe to be a "long view" and that, either with or without the Royal Commission, we shall all be soon engaged in administering a service of which the profession and the State will be proud

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ADMINISTRATION: (b) APPROVED SOCIETIES

BY

ALDERMAN FRANCIS ASKEW, J P

The System

THIS question is, and rates, an eminently pertinent proposition, and one which, it is respectfully submitted, is capable of a clear and unequivocal reply The authors of the law of national health insurance set out with the object of providing primarily—

(1) For dealing on extensive lines with treatment and financial support for a large population whenever suffering from sickness, disablement, and other contingencies of life, by means of a rather technical and complicated system, and

(2) For the promotion of the health of the community in general by preventive measures against disease and the spread of disease

In the year 1911 when the first and principal Health Insurance Act passed into law, there existed in the country a widespread voluntary system in which provision was made against certain expectancies in life, well known as friendly societies, which had been for over a century recognized by Parliament and strengthened in their development and beneficent operations by later enactment under which every well ordered friendly society, or branch, was registered and to some extent controlled In 1911 the members of the friendly societies of the United Kingdom had an enrolled voluntary membership of approximately five million adults in round numbers, composed (except as to only a small section) of members of the industrial population The main objects of the friendly societies provided for financial benefit in the case of the sickness of their members, including accidents in pre-workmen's compensation days medical attendance for members, and stated mortality allowances to provide for the orderly burial of members members wives, and widows Benefits in sickness were at varying rates according to the character of the areas and the duration of the disability, sometimes the benefits were restricted in amount as in their duration The payments made by the members for the maintenance of the objects correspondingly varied in like conditions as to benefits This outline gives shortly the main provisions voluntarily aimed at by the friendly societies Their constitution and methods of administration differed considerably in detail, but on the whole the results generally achieved by them were highly appreciated by observers they were satisfactory to the members, and they themselves gained valuable experience in the exercise of their unfettered control in the management of their societies Thus was a wholesome measure of public good indirectly effected by them in the administration of their affairs, which constituted a great business This may be seen at once by the fact that these voluntary societies have (entirely out of health insurance) accumulated £60 000 000 in funds

The effect of the inauguration of national health insurance was to bring into compulsory insurance altogether nearly 15,000,000 people, which number included nearly 5 000,000 of the members of the registered friendly societies between the ages of 16 and 70 All manual workers were compulsorily brought into the scope of the new scheme and also non-manual workers whose salary did not exceed £160

per annum (a limit now raised to £250) Health insurance finance is provided by funds in a threefold way—namely, a weekly contribution by employers and employees, and a contribution by the State The contributions of the insured persons are made by way of health insurance stamps affixed during the weeks of their employment to periodically issued stamp cards The State scheme provides up to the age of 70 for sickness and disablement benefit (not for accident, liability for which is expected to be met under the Workmen's Compensation Acts), at age 70 the insured person is provided for under the Old Age Pensions Act, at present subject to a means limit, and medical benefit for all insured persons throughout life The sickness benefit varies in amount for men and women, and also as to additional sums payable by such approved societies as were shown at the first valuation to have disposable surpluses No mortality provision is made under the health insurance scheme but, on the other hand, the scheme provides for maternity, a provision which was not ordinarily made by friendly societies, except in the case of a few women's societies or branches

The original Act provided sanatorium benefit for those who suffered from tuberculosis, and the opinion was frequently expressed at the first that consumption might be stamped out if nationally dealt with, and made effectual in co-operation with the schemes of the local governing authorities of the country It would appear, however, that one of the effects of the great war has been to increase largely the number of cases for treatment, and sanatorium provision has since been cut out of the system of health insurance, while the local authorities have had imposed upon them the duty and responsibility of dealing with this disease The problem of providing a comprehensive and all-embracing system of treating consumption remains, however, to be solved

This is a short statement of the scheme of national health insurance as now administered by important Government departments in England Scotland, Wales, and Ireland and by the agency of societies which include practically all the friendly societies approved by the Government for that purpose

The Results

What may be said as to the results of the system after the experience of just twelve years? It scarcely needs to be observed that the organization of this immense department of national health insurance through the agency of approved societies has been a task of enormous dimensions and extraordinary detail scarcely conceivable by people who are unfamiliar with the complicated nature of the work All the difficulties and problems obviously could not be seen at the first, nor provided against Let me mention one problem as an example the scheme brought in a large number of women workers, and during the war the number was greatly multiplied Prior to 1912 there existed but the scantiest information upon which adequately and satisfactorily to base the financial arrangements for meeting the sickness and other liabilities of this comparatively new and unknown factor It is safe to say that, after all, the results of the working of this difficult item of health insurance have come out fairly well But the experiment was an anxious one, and there is no doubt that the actuarial advice tendered to the authors of the Act on this head was of a wisely careful character

Weaknesses and abuses in the system as a whole may exist, but substantial improvements have been effected The reduction in the number and character of circulars, books, and regulations has had a simplifying effect upon administration When, however, the magnitude of the scheme of health insurance is recognized, and the comparatively short time during which it has been operative, is it not fair to suggest that the date is yet early for the introduction of drastic changes, or for submitting any simplification of the scheme into one of public assistance against other complicated disabilities of our intense social system?

What is actually being disbursed in meeting the various benefits under the Act may be fairly understood from the statement recently given in the House of Commons by the present Minister of Health as to the payments made in England and Wales for the year 1922, the latest year for which figures are available, namely

	£
In sickness benefit	8,273,000
In disablement benefit	3,267,000
In maternity benefit	1,606,000
To insurance practitioners for medical benefit	6,317,000
	19,483,000

The good done by the distribution annually of large sums as represented by this great total for the benefit of the needy insured population is incalculable In the year 1922 the accumulated funds under health insurance were stated by the Ministry to be £90,000,000 for meeting the incidence of future claims, in view of sickness experience, which grows with the advancing years of life The scheme of health insurance has had the effect of affording to the lives of a large population a real sense of security which cannot be tested in tabulated form, while their health and comfort, as a result of the care, support, and treatment received, have been substantially enhanced Compare this with the previous position of some ten millions of our people who prior to the introduction of this insurance were quite outside the favoured ranks of membership of the friendly societies, and were therefore in a state of unhappy unpreparedness, possibly in too many cases through their own fault

It may be asked, What is the administrative cost of insurance? Here again we are indebted to the inquiring minds of members of the House of Commons, for in the month of May last the Minister of Health, in answer to a question, informed us that for the year 1922 the actual sum spent on administration in England and Wales was as follows

	£
Approved societies	2,913,000
Ministry of Health and other Government departments, including the Audit and Actuary's Departments	1,010,000
Insurance Committees	378,000
	4,301,000

Excluding Government grants-in-aid received during the year from the actual contributions and expenditure of Government departments on administration, the ratio of administration expenses to contributions from all sources was 12½ per cent—for convenience say 13 per cent—a percentage which cannot be said to be abnormal

The Conclusion

The subject submitted in the form of the question "Has the National Health Insurance Act justified its existence?" I answer unhesitatingly in the affirmative In my opinion, if the question were now put to the insured population by way of a referendum, their reply would be an emphatic approval of the major principles underlying health insurance Had a referendum been taken—were that provided for in our British constitution—at the time the principal Act was put into operation, it is doubtful whether it would have secured the endorsement of the people Imperfect as the Act and its administration may be in some respects, yet the results to-day are such that I believe the insured population would never vote for a repeal of the Act, which has upon the whole amply justified itself

There is possibly a case for inquiry into the merits of its administration, and in the scope of national health insurance—a Royal Commission would seem to be a slow moving machine for achieving the purpose—yet nothing but good would emerge from an impartial and comprehensive investigation of the whole scheme It was admittedly a daring experiment in British legislation when first introduced, but its influence and general results are such that any idea of repeal or of a turning back on this road of beneficent social reform would, I firmly believe, be unlikely, unthinkable, and unwise

THE INSURED PERSON MALE

BY

MR TOM HARTLAND,
Bradford

SINCE the commencement of the Act in 1912 as an insured person I looked upon it at first with rather an indifferent feeling Mr Lloyd George made him a bit famous when he brought the Act into being and I well remember his promise of ninepence for fourpence, and of other good things to follow

Now I wonder if we are getting that ninepence The Act has been changed so much that I almost believe that we insured persons are getting just a bit out of it and, being like Oliver Twist we are always asking for more I think the time will come when dental and optical treatment, convalescent home and hospital treatment, will be definite supplementary benefits to be had for the asking by everyone Some societies are already giving these benefits and they are very much appreciated by the recipients I have had some of these benefits and I know the value of them from experience I believe some doctors think that they give the best service they certainly do well for the panel patient up to a point, but some give it rather grudgingly as if they were not paid enough for it, there are others who *give of their very best, both in skill and attention I myself* have every cause to believe that, but for the timely attention of my panel doctor, when I was taken ill with a perforated duodenal ulcer, I should not be here to-day I should very much like, if that gentleman is here to day, to thank him from the bottom of my heart, and still again to thank the brave doctors at St Luke's Hospital, Bradford

Some doctors, I am sorry to say do not give their best, and this helps malingerers to draw on the funds of societies, to the detriment of the good member Now just imagine a doctor allowing a patient to throw on the funds of his society with a certificate marked 'Constipation' I saw this person, and my opinion was that a little work and exercise would have been more in keeping and also another case where the doctor told a patient to return to work as he would be all right, the man did so and collapsed within an hour These cases show that had the doctor done his duty as a servant of the State should much trouble could have been avoided

I know that there are very few cases where doctors get reports against them Why? Because so many insured persons are afraid of a doctor It must be that old customs are still recurring when doctors were looked upon as men who dealt in witchcraft Thank goodness these days are altered, and we find that doctor and patient are conversing with each other, quite comfortably, the doctor being a human being, and, of course, generally a more prosperous man than his predecessor of the dark ages

I do wish some doctors who seem to have an overcrowded panel would think seriously of getting assistance Surely *there are plenty of young doctors ready and willing, I have* noticed one or two doctors who have already secured assistance I am sure it must be more agreeable to work with a companion, and patients are soon asking to try the new doctor I say give the young doctors a chance—they will soon prove their worth

It is really disappointing when one goes to the surgery *to find a long queue all waiting to see one doctor How much* better with two! All we want as insured persons is the best service for our weekly contribution It may seem small individually, but I am not trying to deal with finance, so will leave it at that

There is an aspect of national health insurance that I should like to mention The organization of national insurance is to me wonderful, it is exact and precise, even to a single contribution stamp or the detection of a wrong date of birth The point I wish to make is that considering all the time, thought, and money which are expended in checking and auditing financial matters relating to approved societies, is it not strange that the largest liability which is carried is allowed to go on year after year without any check or periodical systematic examination? I think all insured persons should be called upon to submit themselves for audit with respect to their health say at least every five years Why not preventive measures as well as curative measures—to say nothing at all about the help it would be to ourselves in our practice? Most insured persons do not visit the doctor until they are compelled—often they come too late for a satisfactory result to be achieved simply because they are frightened and probably get the idea into their heads that their next duty will be to make their wills The best medical advice one can get is not worth much if it comes too late Therefore if the health of insured persons could be audited regularly with the same precision and accuracy that the financial and statistical matters are, I almost think that the duties of medical gentlemen would be very greatly lightened and the benefits that would accrue to the health of the nation would be worthy of the cost

In conclusion allow me to say that I am a member of the Manchester Unity of Oddfellows and I try to take an interested and an intelligent interest in the work of my lodge, and in the administration of the benefits of the National Health Insurance Act The friendly societies movement has high resolves and ideals, and the practical operation of these qualities must have made some impression on the life and health of the nation during the past century and taking a very broad view we have very much to thank the medical profession for—your predecessors entered into the spirit of these ideals and were content to share in the common experience that resulted that your profession did much to help forward this work I cannot but admit With the advent of national health insurance there is no doubt that on both sides—doctor and patient—a new view prevails to day Why should it? Human nature alters very little, there are still the aches and the pains to be endured, and to those who have the skill, the nerve, and the disposition to relieve and cure unspoken gratefulness and loving appreciation is the reward In every walk of life there are differences of opinion, especially on financial matters and remuneration and services retained or rendered but doubtless you may look upon me as a typical victim, and, *on the other hand, you may allow me to think* that I do something towards your petrol expenses I do thank you sincerely for this opportunity of representing an insured person and I extend my good wishes to you all for the success of this conference I also wish to thank the local Insurance Committee and also the chairman for his kind help, and with feelings of gratitude pay my sincere tribute to the triumphs that medical science has accomplished

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THE INSURED PERSON FEMALE

BY

MISS FLORENCE GODFREY,
Birstall

My part this morning is to speak for the woman worker I believe that during the preparation of the Act women were found to be most difficult to legislate for, because very *few women before then had made any provision for sickness,* whereas a large number of men were provided for through the different friendly societies, etc, and valuable and helpful information could be obtained for them which was not available for women Many people were afraid of insuring the women, and predicted all sorts of terrible things to happen, but although I am aware that there have been some who have not done altogether the straight thing and that there others who are still bitterly opposed to it and would not be insured if they were not obliged to be, yet both these classes put together are not sufficient to worry about, and I am sure that *the majority of insured women* have tried to do the right thing and have only applied for benefit when it was needed and after reckoning all special difficulties and imperfections I feel I can say that, even for women, the Act has justified its existence

I need not say very much about the more obvious benefits The sick pay although not a big amount is a very useful benefit and has prevented scores of women having to accept charity during illness and has largely eliminated collection in factories on such occasions Then we are all entitled to qualified medical assistance as a right, and many are now able to have professional assistance who could not afford it before It is not even necessary to be too ill to work,

and I believe that has done a lot to prevent more serious illness—having the right to see the doctor before the illness has gone too far. The maternity benefit is also a very useful and much appreciated benefit, and has the advantage of helping the child as well as the woman herself, and giving the child a better start in life than it would otherwise have. Then some little has been done towards lessening England's white scourge, tuberculosis, and we hope more will be done in the future, and that cases will be treated in the earlier stages when there is some chance of a cure. You know much better than I do the number who were sent for treatment, but it was too late, the trouble was too deep-rooted. Still, we all know of lives undoubtedly prolonged by sanatorium and other treatment.

Perhaps the Act has justified itself more by the need it has revealed than by actual accomplishment. As a record is kept of all sickness we can now obtain information as to the average sickness per member, what kind of sickness is more prevalent, whether people engaged in different industries are affected by their work, and all this should be a help towards devising preventive methods in the future. In September, 1921, I had the privilege to be sent by my employers J. T. and J. Taylors, Ltd., Batley, to an industrial conference at Balliol College, Oxford. One of the lectures was by Sir George Newman of the Ministry of Health, and his subject was the health of the worker—a lecture I shall never forget. I could quote widely from his lecture, but I will only use one illustration. He told us that in 1920 the amount of sickness and disablement benefit paid out to insured persons alone amounted to 14,000,000 weeks, or 270 000 years, and that for the eight years up to that period the loss of time through sickness varied from 260 000 to 270,000 years per annum. These figures are staggering, and if there had been no Insurance Act they could not have been obtained so easily, and they show that much is required yet before we can claim to be a healthy people.

The Act has given working women the chance to educate themselves in public work of a national character, and women should be encouraged to take an interest in this matter which so vitally affects them, and wherever possible women's benefits should be administered by women as there are so many special difficulties in connexion with women that perhaps we could best deal with them. The most difficult woman under the Act I believe has been found to be the married woman, and the Act is very complicated with regard to her. Here is where difficulties arise that are peculiar to women. The Act needs amending as regards married women and pregnancy. Some women get doctors' certificates and are receiving sick pay all the period, and doing their household work, while others who try to do the straight thing receive nothing but the maternity benefit. If a woman is in receipt of sick pay she should be incapable of work as in ordinary sickness.

A lot could be said about the administration of the Act, and I wonder sometimes if those who administer the different benefits realize that they are dealing with our nation's greatest asset—the health of the worker—and if they give the sympathy and impart the human touch that they could do. For instance, a lot of women are not satisfied with the panel system. They say they do not receive as good treatment as they would as private patients, and although I believe that a lot of doctors treat their panel patients in a fair manner, yet I am afraid there is real ground for complaint. It is not so much that they do not receive attention, but only insufficient attention—what would be considered trivial if they had to report them, but those trivial things can be extremely annoying, and although perhaps no complaint is made, insured persons know when they get their due, and when one hears the complaint that it only takes us many minutes as there are panel patients for some doctors to attend to them, even the most ignorant know they are not receiving the treatment they have a right to expect.

As our part is compulsory, and we cannot help being insured if we work, we feel we have a right to the best, and that there are too many restrictions for panel patients—such as different surgery hours, not allowed to send for the doctor during the night unless it is almost a matter of life and death, and although I agree that a doctor should only be sent for at night in serious cases, yet a panel patient is just as liable to sudden illness as an ordinary patient, and there should be no restriction there.

Then, in the case of medicines, there should be no limit as to cost. The patient's need should be the deciding factor every time, and the best of professional skill should be at our disposal, and I think some sort of inspection would be helpful at times to try and find out if medicines are up to prescription, and also if they are dispensed correctly.

To me, he who is able to add the touch of humanity in administering the different benefits—whether he be doctor, chemist, or society official—will be the most successful. In other words, justice should be tempered with mercy and kindness, always remembering that we are dealing not with those who are whole, but those who are sick. Some would have us believe that approved societies have altogether failed in this direction, and recommend that there shall be central units formed and all in that area become members of such unit. I do not agree with this suggestion, although perhaps the human side is not now as fully developed as it might be, yet, in my opinion, if that course were adopted the human touch would very soon be lost completely, and we should all be just a certain number on the register and nothing more. And besides, it would rob us of almost the only bit of choice there is—that of choosing our own society.

I sometimes think that the Act has hardly the right to be named "National Health Insurance" because so many workers who ought to be insured are not—such as agricultural workers, those who work for the large clothing factories in their own homes, hawkers, etc. Perhaps there are special difficulties in the way, but these should be overcome, as I feel sure they would be better under the Act.

I have said nothing about the special benefits which have been available since the valuation for those who had a disposal surplus. Some of these are very good, but I prefer benefits in kind rather than cash, as they are then spread over a larger number. Will you pardon one reference to my own society? Our main special benefit is convalescent benefit. We have a home of our own at St. Annes-on-Sea, and we send our members when convalescent to this home, and it is a benefit of which those who have tried it cannot speak too highly.

My time is expired, but as an insured woman myself and a worker before national health insurance, I do think that the Act has justified its existence, and, rightly and sympathetically amended will do, still more in the future. If those who have the framing of these different amendments and those who have the Act to administer would keep in mind Ruskin's great truth, that "the nation is the richest which has the most healthy and happy human beings," and also remember that they are dealing with what is the real capital of the nation—the health of its workers—and also try to educate the people to take an interest in these matters, to teach them to do all in their power to keep healthy, and to prevent disease (and let us realize it is a chance where the strong can help the weak), then there should be a still greater future in store.

THE MEDICAL PROFESSION (*a*) CONSULTANTS

BY

ALFRED F. BARNES, M.B., F.R.C.P. Lond.,

Lecturer on Medicine in the University of Sheffield

I have been asked to answer this question from the point of view of a consultant, and find myself in the difficulty that I have really no *locus standi* as a representative of consultants as a class. My only qualification is that I have been more or less intimately acquainted with the working of the Act [illegible] and as one who has had no direct financial interest have had [illegible] opportunities to form independent views.

[illegible]bt about one thing [illegible]ances in administration the Act has been one of the greatest [illegible] has brought some [illegible]trative medicine in our time. It [illegible] it was a revolution [illegible] organization into what was a chaos. It [illegible]ually become the [illegible] which, by means of evolution, will even [illegible] most important factor in the public health

It is a fact that on one occasion a member of Parliament asked the Minister of Health if he could not grant to some of the middle classes one of the benefits which the working classes were already receiving under the National Health Insurance Act I refer, of course to insulin Here we had a great advance in scientific medicine which, in a marvellously short space of time, thanks to the activity of the Medical Research Council and the Ministry of Health was made available to the working man If anyone still clings to his doubts as to the Act having justified its existence let him try to throw his mind back for a dozen years and try to imagine the club patient receiving insulin from his club doctor However conscientious the club doctor he could never in justice to his own family have given insulin at a cost of fourteen shillings a day to a club patient This is, however one of the extreme examples where the individual manifestly owes his life to the Act It is not fair, perhaps, to draw conclusions from the case of insulin, any more than it is fair to judge the panel service by the commercial genius who invented the celebrated early door I will leave this aspect of the matter, as I see it is to be dealt with by an insured person

As an example of the value of organization I would like to point out the public value of the Local Medical and Panel Committees For almost the first time we have had *properly organized professional bodies representing* the ordinary medical man I use the term 'properly organized" because they represented all the medical men concerned These committees have had to meet lay committees and thrash out difficult questions where professional interests clashed with others The professional side has learned to appreciate the layman's side better than before, and the layman has met us without giving anything away but in a fair spirit I believe that the satisfactory solution of the difficulty about the transfer of practices which has relieved the minds of so many hard working doctors was first conceived in the mind of a lay official

The public opportunities of these committees are as yet hardly realized The Sheffield Committee has co-operated with the University in organizing post-graduate lectures and demonstrations It has suggested subjects for lectures to the University authorities It gave £1 000 to the University towards the equipment of the field laboratories of the new Department of Pharmacology Recently, when the epidemic of encephalitis lethargica struck the city, it organized a lecture and series of demonstrations by Professor Arthur Hall Another Panel Committee with which I am acquainted is endeavouring to think out a scheme for laboratory services for the insured person The Leicester Panel Committee is endeavouring to organize the insulin treatment of diabetic patients The Panel Committees are well organized bodies, and have taken means to ensure co-operation between themselves, and to have such committees all over the country thinking about the administrative problems of medicine is a great public advantage As Panel Committees are now trained to take co-ordinated action, and together form a strong fighting force, it is quite possible that on some future occasion they may be the means of compelling public authorities to take the right turning in matters of public health

I know less about the approved societies, but in the early days I acted as referee for one local society under a scheme approved by the local Division of the British Medical Association It appeared obvious that most of the cases were really the victims of improper nutrition and bad surroundings and one day I suggested in a report that it might be a better use of money to send these cases to a properly managed convalescent home in the country That society is one that gets things done, and soon possessed two of the best managed convalescent homes in the country Employers found most of the capital, and, what is perhaps more important, spent it to the best advantage In this case the Act has furnished one opportunity for employer and employed to work together There are gross abuses in some approved societies, but this is outside my sphere

What are the usual relations between panel patient and doctor? A panel doctor was persuaded to stand for the City Council in Sheffield, and did so in the district in which he practised He got in with the largest majority ever polled in a municipal election When he retired his party lost the seat In this case the personal popularity of a panel practitioner was put to the vote There have been a good many sneers at the panel practitioner perhaps especially at the increase in motor cars After all, what does it mean more than that the panel patient is seen by a man who is not tired and footsore with walking miles through sordid streets? The patients realize this better than the gutter press

I am convinced that the relations between panel patients and their doctors are exactly the same, in many respects even better, than those between doctor and patient in higher classes of society The patient can choose his own doctor, and in districts where there is open healthy competition he has the opportunity of choosing a good one The Act was passed on the assumption that the average doctor was a decent fellow and the average working man likewise There are exceptions on both sides naturally, but they remain exceptions, although perhaps rather noisy ones

Is medical work among the working classes improving as a result of the Act? There is no reason to doubt this Nowadays our best graduates make no bones about going into panel practice There must be hundreds of able men engaged in panel practice who, ten years ago would have *starved as embryo consultants rather than face the indignities* of club practice, and who had not the capital to enter a good middle-class practice The results are obvious to the hospital consultant who will use his out-patient room to its best advantage as a consultant department Cases come up in increasing number with a record and a request for assistance in diagnosis and suggestions for treatment One is expected to return the patient and the compliment of the letter The out-patient rooms are filled with worthy diagnostic problems and not with dissatisfied club patients A surgical colleague recently drew my attention to the great increase in the number of gall stone cases which come up at a much earlier stage He thinks that one of the reasons is that the early attacks of pain are severe but last only a few hours, and that formerly the doctor was never summoned, whereas now he is sent for and makes a diagnosis at the only time when it can be made with certainty There is no doubt about the fact and I think the explanation is probably true

Personally I foresee that at an early date the hospital out-patient departments will break down badly under the strain and some kind of consultant service will become absolutely necessary I have at times a dream of the future when the vast hidden funds of the Insurance Act will be loaned to hospitals to enlarge and develop and the money returned to the funds in services rendered by a properly equipped and organized team of paid consultants seeing insured persons under more leisured condition

Can the service of the panel practitioner be improved I think that all will agree that it should be the endeavour of everybody to raise the standard as high as possible Is it not a mistake to assume that any doctor is good enough for the responsible and lonely position of the panel practitioner facing difficult problems concerning life and death in an isolated surgery? I make bold to say that he ought to have at least six months in a hospital after graduation When we get a Minister of Health sufficiently bold to suggest this and put up a bar there will be a fight with the protagonists of professional liberty but the insured person will win Another advance would be an attempt to remove some of the rust which comes from years of more or less isolated work Why not organize a course of practical post-graduate instruction in London and give some small financial assistance to men who attended and possibly a money prize for the best essay on the practical lessons to be learned from the course (with criticism.)

The question of locumtenents is one of some difficulty especially in isolated district The principal assumes responsibility in theory but could not the Ministry usefully organize a small body of young aspirant to the service who would serve as approved locumtenents in case of illness, as temporary assistants in times of epidemics or as a mobile column in the study of small epidemics on an intensive system and in the slack season to liberate a

certain number of men on study leave? I think some such plan would almost pay for itself, and would serve as an excellent training ground for some of the super-practitioners of the future

Criticism of the Working of the Act

Taking a broad view, and excluding the few examples where medical men have proved to have commercial instincts stronger than their professional instincts, I should say that the serious tendencies are the increasing use of drugs, the increase in neuroses, and, finally, the lack of consultant facilities

The bottle of medicine habit was not caused by the Insurance Act, but it has been fostered This result, which I am informed is already a source of anxiety from financial reasons, is not due to any one particular fault The popular conception of the beneficial working of the Act is something like this John Smith has a troublesome cough which, if neglected, may lead to tuberculosis He therefore goes to his doctor and receives a bottle or two of medicine which cures the cough and averts tuberculosis The real facts of the case are that he has a cough If it is due to tuberculosis it will not get better, but he should go to his doctor, who should discover the tuberculosis (one of the most difficult problems in diagnosis) and should put him under proper treatment before the case becomes hopeless The bottle of medicine is only a symbol, but it has become an idol The Greeks of two thousand years ago rightly believed that diagnosis, prognosis, diet, and regimen were the really important things in medicine, but to-day we have the strange anomaly that the proper working of the Act is judged largely by the promptitude with which John Smith receives his bottle of medicine The nation as a whole believes that the bottle of medicine is a convenient means of avoiding the results of all forms of sin against the laws of hygiene, and obviates in a simple and convenient manner the necessity for regimen and diet This bottle superstition will be difficult to eradicate The last person who ought to take drugs is the chronic complaining neurotic, but under present regulations it would be highly dangerous for a panel practitioner to refuse him his bottle Years will be required to bring about reform, because it is against the public's idea of its own interests, and all we can do at present is to attempt to redress the balance in favour of brains against bottles I will make a suggestion later

The problem of the increase of neuroses is one of most serious national import, as it costs millions a year in the working of the Insurance Act, the Workmen's Compensation Act, and the Pensions Warrant The education of doctors and politicians in the matter of neuroses is vitally necessary The loss of Dr Rivers to politics was as great as the loss to medicine This problem of neuroses is the storm centre of all the controversies about loose certification We have the paradox that every neurotic is really ill and that nevertheless every pensioned neurotic is a parasite upon society 'There is no question whatever that the perfectly legitimate and praiseworthy measure by which those disabled as a result of the war should receive monetary compensation has through the highly complex nature of psycho-neurosis led to the actual production, and still more largely to the prolongation, of disability to work" Rivers used these words in reference to miners' nystagmus, and the same principle applies to the working of the National Health Insurance Act There can be no reasonable doubt but that the availability of sick benefit under this Act—just as the presence of a pensions fund and the Workmen's Compensation Act—has fostered neuroses All alike have rendered more easy the "flight into illness" as an escape from the intolerable mental conflicts between natural instincts and the social conditions which threaten the fulfilment of instinctive strivings

In warfare the conflict between the instinct of self-preservation and the exigencies of military duty caused the neuroses unfortunately labelled "shell-shock" In civil life it is well recognized that the conflicts between the sexual instincts and social barriers cause neuroses, and it is practically certain that other instincts also play an important part Check the roaming instincts of a dog by keeping him constantly on a chain and he will get a neurosis, as recently pictured on the hoardings, and similarly, by chaining a young man to a monotonous machine for overlong hours a neurosis is produced The excessive dangers of a collier's calling must be correlated with the numerous neuroses from which miners suffer I think I have noticed a strong neurotic tendency in those men who work in electric cranes carrying ladles of molten steel along the roofs of our foundries Perhaps, however, the neurosis which at present gives rise to the most cynical comment is that which occurs when a man's instinct for preserving his home—let us call it his nesting instinct—is threatened by the cessation of the "dole" Trying to solve an impossible problem, his head aches, he cannot sleep at night, his food disagrees with him, and little wonder that when he goes with his troubles to the doctor he looks ill enough to satisfy an inquisitor Personally I am convinced that the certificates given in these circumstances are genuine enough The wonder is that there are not more of them The only solutions to the problem are either to breed a race of men with the instincts of the cuckoo—which is, curiously enough, one of the most deplored tendencies of much modern legislation—or to mend society in some way so that the conflict does not arise In the present circumstances the panel doctor must of necessity be a temporizer Drugs will not help him Alcohol has been tried on a large scale, and the cure was apparently worse than the disease All that appears to be possible within the Insurance Act is to help to stiffen the attitude of the individual doctor, and this is as much in the interests of the patient's recovery as in those of the approved society I would suggest the following means to this end

1 That there should be some means whereby the approved society can ask a doctor to have any patient examined by any other doctor of his choice (the doctor's choice) for a second certificate I think this would act in practice, not by reversing the first doctor's certificate, but merely by strengthening his hand with the knowledge that a second medical man in whom he has confidence has been unable to find anything organic

2 The present easy means of transfer from doctor to doctor should be supplemented by making it compulsory for a doctor losing the patient to indicate on the record card whether the patient's transfer has been preceded or not by the refusal of a certificate, or possibly by making the transferring patient sign a denial or affirmation of certificate refusal

3 Discouraging the use of drugs as much as possible If a doctor were to treat neuroses on what is generally recognized to be the best lines without the use of drugs he would get into serious trouble with the lay authorities, who look upon the administration of drugs as the chief end of medical benefit His position would be still worse if at some later stage it should be found that some organic disease had been overlooked

4 To deal with this particular problem the doctor's position must be made as strong as possible

The important point I wish to raise is that the Insurance Act cannot remedy what is really a social evil due to imperfect social economics Something may perhaps be done to prevent its adding its own quota to the human misery caused by neurotic illness

My third point is to suggest that a consultant service may be practical politics at very little expense As a consultant myself I cannot criticize the absence of a consultant service Too much consultation may be an evil Pushed to extremes it may so subdivide responsibility that no one bears any at all, and this is not good for either patients or doctors Some of the weaklings in the army were artists in the subdivision of responsibility The fact seems to me to be that both doctors and patients vary very much in their attitude to consultations Some doctors feel strengthened and helped by a consultation, others feel weakened, and it is important to bear in mind that if a doctor is to help his patient on the all-important psychological side he must not be harassed by having his authority undermined by unwanted consultations To all of us it is also essential that the consultant chosen must have the confidence of both doctor and patient They must be free to choose their own consultant That is as important as the free choice of doctor and the easy transfer of patients The question is whether this can be done I think it can

done if the authorities would trust the panel practitioner with a little credit as they trust him with the lives of his patients I have already noted in the two previous criticisms that there is reason to believe that the drug question is on a very unsatisfactory basis The drug bill is rising enormously The charges of excessive prescribing are usually impossible to prove to the satisfaction of a Panel Committee consisting of men who have not seen the patient, and therefore are not in a position to give a confident opinion From the point of view of professional men I imagine that these charges are the most irritating and distasteful part of the administration They ought to be abolished, and I think that with their abolition one could try an experimental consultant service which would create no vested interests The first thing is to ensure that every patient gets necessary drugs which are absolutely required An expert committee could prepare a short schedule of the drugs which are absolutely essential to the practice of medicine but which are not at the same time cheap There are very few I would let each man prescribe what he thought necessary of these drugs, which are all powerful poisons and not likely to be abused The schedule prepared, there are already data in the hands of the pricing bureaux which should render it possible to estimate their cost We should then have an essential drug fund, and would thereby ensure that no one person suffered from lack of drugs With the residue of the present Drug Fund, and any other funds which can be raised, I would constitute a Medical Treatment Fund and divide it on a capitation basis Let the doctor who wants consultations be able to pay for them out of this fund if he can economize in drugs of an optional nature If he requires appliances which are not scheduled let him get them, if he requires laboratory help let him pay for it out of this fund by means of vouchers The Panel Committee can bargain for a scale of fees In fact, let him help his patients in the best way he can out of this fund without question from the authorities, but let him be encouraged to use his brain on behalf of his patients He will soon learn all practicable economies for the benefit of his patient, and the public will soon find out which doctor serves them best The chief difficulty I see is in the case of the young man starting with a minimal panel whose drug bills are proportionally heavy His capitation grant would have to be proportionally larger, but the data upon which this can be calculated are in possession of the pricing bureaux

I claim, therefore, that the Act has justified its existence by converting the "clubber" into the privileged "State patient", by improving the status and conditions of work of the doctors it has vastly improved the quality of their work, and under wise guidance can do so still

The chief points for criticism arise from the undue prominence given to drugs (not the drug habit), the increase of neurotic illness, and the lack of a consultant service Some suggestions have been made whereby these defects may be ameliorated, and attention is drawn to the vital importance of doing nothing to undermine the status and diminish the personal responsibility of the doctor

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THE MEDICAL PROFESSION (*b*) GENERAL PRACTITIONERS

BY

G B Hillman, M B E,

Wakefield

In attempting to answer from the general practitioner's point of view the question which we are discussing to-day, it appears to me to be necessary to put another question

How *can* a national health insurance scheme justify its existence from a general practitioner's point of view? In order to justify its existence it would seem to be necessary that it should attain at least the following objects

(*a*) It must enable a good, sound, wide and complete service to be given

(*b*) It must permit of such service being rendered without stint either of quantity or quality

(*c*) It must allow of, and tend to strengthen the good feeling between the doctor and the patient which has been existent for generations past

(*d*) It must be sufficiently remunerative to enable the doctor to devote the requisite time and care required by his individual cases

(*e*) It must not unduly interfere with the liberty of action of the doctor by means of regulations controlling service under it which are irksome in character and which tend to create difficulties in the already difficult path of general practice nor must it interfere with or limit the reasonable independence of the patient

(*f*) It must enable practice under its regulations to be conducted in accordance with the time-honoured ethical requirements of the profession

(*g*) Lastly—and perhaps most important of all—it must be so framed and administered as to educate public opinion in the knowledge that the duty of the private doctor does not end in diagnosis and treatment but that he is the first line of defence in the whole national system of preventive medicine and a skilled and useful adviser in matters of personal and domestic hygiene who may and should be consulted early rather than late

Taking these as some of the main requirements of a national health insurance scheme let us consider how far the National Health Insurance Act has conformed to them In the first place I imagine we all agree that the Act has provided an infinitely better service than existed before its advent When one looks back to the old days before 1912 and recalls the manifold drawbacks and imperfections of the now discredited "club" system one is bound to rejoice at the improvement effected No more has a young doctor starting in practice to consider how he may best obtain an appointment as medical officer to the village club and go cap in hand to prominent members of such societies for patronage No longer can such a doctor be subjected to the humiliation of being summoned before his employers in some small inn to give an account of any action of his which did not commend itself to the club committee of management, and fortunately the day is now gone by when one disgruntled member of a society can so influence a few of his friends against a doctor that he loses the whole of his appointment on short notice The Act has not of course, abolished contract practice But the contract—though it contains many undesirable and irritating provisions—is made between the practitioner and a public body of some standing and safeguards are inserted in the regulations which form a very comforting protection against injustice and prejudice Taken on the whole it appears to me that, so far as it goes the Act has enabled a good, sound and wide service to be given but it is not by any means, as yet as complete as could be desired It is in no sense perfect and the last word in national health insurance has not yet been spoken But, as a beginning I think we general practitioners must recognize that it has laid a foundation for the ultimate creation of a good, sound wide, and complete medical service for the class of people for whom it was intended

So far as the Act has met the requirement of there being no stint in the quantity or quality of the service rendered my own view is that certain alterations are urgently called for I believe that generally the service rendered has been good, both in respect to its amount and its efficiency but I do feel that many improvements could and should be made For example in regard to certain things which a doctor may not prescribe for his patient it seems to me absurd and unfair that an insured person with a controllable hernia may not be supplied with a very necessary truss or that a doctor may prescribe a paint for the throat but must not—on any account—order a throat brush with which to apply his remedy

One great advantage of the Act from the practitioner's point of view appears to me that it is undoubtedly encouraging the old friendly and confidential feeling between the doctor and his patient Now that absolutely free choice—with the opportunity of change at any time—has been granted there can be no reason why a reluctant patient should consult his doctor on any single occasion This is I feel a great and mutual advantage

As I understand that the limits of this discussion do not allow reference to the financial aspects of the service, I am debarred from considering the question of whether the remuneration is such as to enable the doctor to devote the time and care required for the well-being of his patient All I would venture to say is that whether satisfied or

dissatisfied with his guerdon, I am convinced that in the enormous majority of cases the practitioner has given of his best in the service of his insured patients

It is often said that the Act has seriously interfered with the "liberty" of the doctor I am much inclined to controvert this statement There must, of course, where public money is being spent, be some regulations governing its use I admit that many regulations have been made which are tiresome, irritating, irksome, and unnecessary But before it is possible to lose a thing, such a thing must have already existed, and from my recollection of conditions before the advent of the Act, I am inclined to the view (certainly in industrial areas) that the post-Act liberty is infinitely preferable to the pre-Act servitude

Coming now to the question of the effects of the Act on ethical procedure, I think there is really very little to complain of One thing, at all events, which the Act appears to me to have successfully accomplished is that it has created an infinitely better and more friendly attitude between medical men than existed years ago Competition no doubt is keen—as it always has been—and competition in itself is not a bad thing But I think most practitioners will agree with me when I say that a much more cordial and brotherly feeling has existed amongst us, and a better atmosphere, than has been the case for a long time past

Lastly, as to the effects of the Act in the direction of preventive medicine, I believe that it has led doctors to take a wider view of their duties towards the environments and habits of their patients than heretofore, and that the public is surely arriving at a truer valuation of the services of its individual medical advisers The old pathetic belief in the "bottle of medicine" is slowly passing away, more faith is arising in modern methods of examination, diagnosis, and treatment, and greater appreciation is day by day being shown of what is truly described as the "progressive" practice of medicine

So far I have dwelt chiefly upon the advantages resulting from the Act There are, however, many changes which most of us would desire to see Personally I would rejoice in the production of a comprehensive scheme involving the consolidation of all forms of insurance—life, sickness, accident, old age, widows' pensions, unemployment, and so on There appear to be indications that some contributory scheme of this nature may be brought forward in the near future Pauperization of our people none of us wish to see, but so far as thrift is concerned, and some redress for the unavoidable misfortunes of life, the State clearly has a duty

When the time comes for some such scheme to be developed I am satisfied that not only the general practitioners, but all the members of our profession, will give a good account of themselves They will show, once more, that it is a calling devoted to the service of the people, and one which can, by its work and by its example, give a lead to all who have at heart the true and abiding interests of the inhabitants of this country

THE INSURANCE ACT AND THE HOSPITALS

BY

H S SOUTTAR, C B E, F R C S,

Surgeon, and Director of the Surgical Unit, London Hospital

When the Insurance Acts came into force in January, 1913, serious misgivings were felt in the hospitals of London as to the effect they might have upon their income and upon the numbers of their patients As regards the former it was argued that with the provision of a national medical service the sources of charity would be dried up, and as regards the latter fears were freely expressed that in such an area as London it would be only too easy for the insurance practitioner to relieve himself of his more serious responsibilities at the expense of the hospitals, whilst retaining the payment he received for services which he never rendered Neither of these fears has in fact been justified by experience, even at the London Hospital, where perhaps they had more foundation than at any other hospital in the country In regard to the London I am able—thanks to the kindness of the House Governor, Mr Morris—to place before you definite statistics which are important both as proofs of the statement I have made and as suggestive of what we may expect from an extension of national health insurance

The Effect on Patients

As regards patients, the number of in-patients was in no way affected, but the out-patients dropped at once by 31 per cent During the war the numbers dropped still further, until in 1918 the number of out-patients was only 43 per cent of that in 1913 Since then it has risen slightly, but even now it is less than half what it was before the Insurance Acts came into force An even more remarkable result appears on studying the average attendance of each out patient, for the curve shows an absolutely steady rise, unaffected by either the Insurance Acts or the war The average number of attendances has risen from 2 5 in 1908 to 4 4 in 1922 To give actual figures for these two years in 1908 at the London Hospital 242,000 out-patients made 607,000 attendances, whilst in 1922 107,000 out patients made 466,000 attendances

These figures are large enough to justify two very definite conclusions In the first place, it is evident that the hospital is not being swamped by numbers of patients who ought to be treated by their panel doctor In the second place, the severity of the cases coming to the hospital and the extent of the treatment they receive are both increasing It is evident that the cases have already been to some extent selected and that the hospital is being used to a greater and greater degree in a consultative capacity

The Effect on Income

As regards hospital funds, there has been a steady rise in contributions from all sources, and this has certainly not

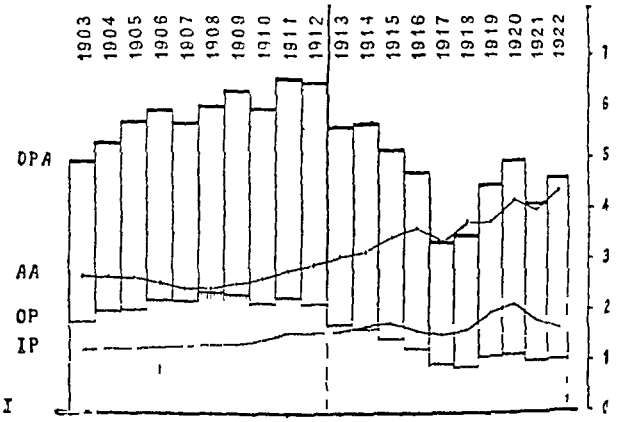


FIG 1.—Patients attending the London Hospital for ten years before and after National Health Insurance Acts. IP in-patients each unit representing 10 000 OP out patients each unit representing 100 000 OPA, out patient attendances each unit representing 100 000 AA, average attendances of out patients, each unit representing one attendance

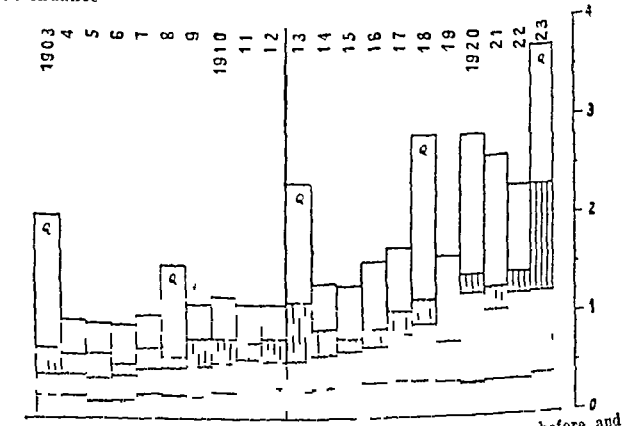


FIG 2.—Income of the London Hospital for ten years before and eleven years after National Health Insurance Acts In each column there is represented from below upwards—1 income from trust funds investments and estate 2 payments by and for patients by nursing institutions and from the Sunday, Saturday, and King Edward Funds 3 legacies 4, voluntary contributions, apart from capital Q quinquennial appeal Each unit represents £100,000

been checked by the Insurance Acts As it happened, 1913 was the year of our quinquennial appeal at the London, and it then resulted in the handsome total of £237,763—a record

at the time which, however, we quite eclipsed last year It is, of course, true that we are no richer since costs have kept pace with contributions, but I think it is a matter for congratulation to Lord Knutsford that contributions have kept pace with our costs And the increase is not from one source only The chart shows that contributions from patients, from the working classes by legacies, and from the charitable public have all shared in achieving this end It almost seems as if charity were stimulated and not checked by the efforts of the working classes to pay what they can for the services of the hospitals Certainly there has never been a time when the benefits of the hospitals were more widely appreciated or when a higher value was set on the services they render to the State

Future Developments

It seems highly probable that in the near future attempts will be made to enlarge the scope of the Insurance Acts in two directions first, to extend their operation by the inclusion of dependants, and, secondly, to include hospital treatment in the benefits they provide

As regards the first, everything goes to show that such an extension would improve the standard of the work of the hospitals by relieving them of minor cases and by still further increasing the consultative character of their services To the patient there would be the immense advantage of treatment in his own locality where continuous supervision would be far easier, and where he might expect a degree of individual attention and interest scarcely possible in an out-patient department

The inclusion of hospital treatment in medical benefit I regard as the only logical sequel to the Insurance Acts and as a really progressive step It will bring the consultant and the general practitioner into a closeness of co-operation which will be of incalculable benefit both to the patient and to our profession The interchange of information and opinion will become a matter of routine and will be carried out with an efficiency at present impossible The early reference and admission of serious cases will be assured whilst it will be possible to discharge many cases at an earlier date with the knowledge that they will receive adequate medical attention at home On both grounds a considerable increase in efficiency and a reduction in the cost of treatment may be expected, whilst the advantage to the patient is obvious

Along these lines I think that it will be possible to develop a great health service, linking up the patient's home with all the material and scientific resources of our great hospitals Such a service will be no Utopian dream but a natural development from the best of what we have—a true synthesis of what are at present somewhat incoordinate atomic groups It will be a medical service to which we may all be proud to belong for it will bind our profession together in one united body, strong in the fight against disease and in the service of our country

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VOLUNTARY HOSPITALS ADMINISTRATION

BY

MR J J BARPON

Secretary-Superintendent Bradford Royal Infirmary

WHEN the National Health Insurance Act was under discussion in the House of Commons in 1912 the chairmen of twelve London hospitals had an interview with Mr Lloyd George then Chancellor of the Exchequer regarding the effects of the Act in relation to voluntary hospitals The Chancellor explained that the main work of the hospitals was not touched by the Act inasmuch as the treatment afforded to insured persons under the Act was such treatment as could properly be given by a general practitioner of ordinary competence and skill whereas this was just the kind of treatment that a hospital did not exist to give Thus insured persons needed as much as ever the aid of hospitals in order to obtain the treatment that was given in the in-patient departments and to a substantial extent that given in the out-patient departments (for example all that for which special medical or surgical skill was required) Thus hospitals would only be carrying out their proper duty in continuing to give this treatment The subscriptions donations, and legacies on which the hospitals had depended would be needed as much as hitherto and they would have the same claim on the support of the benevolent The Chancellor said that the question of hospitals had been by no means overlooked in planning the Government insurance scheme, but that it had been deemed wiser to endeavour to avoid any steps that would imperil the voluntary nature of the great hospitals of this country This could not have been avoided if hospital work had been brought into the scheme of the Act since a subsidy from public funds would necessarily be followed by some degree of public control He understood that the hospital authorities were greatly desirous of continuing the voluntary system unimpaired, and if the position of things under the Act regarding hospitals was properly understood it would be seen that no fears need be entertained on this score from the Act

The facilities afforded to panel patients by the Act have made possible the earlier diagnosis of disease with the result that those patients are given a chance of earlier hospital treatment than would otherwise have been the case

In discussing the effect of the Act upon the administration of voluntary hospitals the matter must be looked at from two points of view—first, from that of the patients, who are to-day, as they always have been, the first consideration, and, secondly, from the point of view of finance

The first effect of the Act was a reduction in the number of out-patients requiring advice or treatment In 1911 the number of out-patients (excluding casualty patients) dealt with at the Royal Infirmary Bradford, was 7 233 and this side of the work has decreased until last year (1923) the number was 3,548 But the in patient figures show a considerable increase In 1911 the number was 2,756 last year it had reached 3 291

As shown above there has been a considerable increase in the number of in-patients involving a corresponding additional expenditure quite apart from the great advance in the cost of all commodities in use which is not compensated by the saving on the smaller number of out-patients receiving treatment As you doubtless are aware the main items of hospital expenditure are incurred in the in patient department

Some figures as to the number of insured persons treated during the last two years may be of interest In 1922 45 27 per cent of in patients were insured persons but on making inquiries only 14 per cent of the total were found to be entitled to additional benefit and in respect of these a sum of £2 245 was received from approved societies—an average of rather less than £4 5s for each patient entitled to additional benefit or £1 12 4d of all insured persons The average cost per patient was £9 5s 4d

In 1923 the percentage of insured persons treated as in patients was 44 24 of whom again 14 per cent were entitled to additional benefit The sum received was £2 319—rather less than £5 9s for each of these patients in benefit or £1 14s 6d for each insured person while the average cost of each in-patient was £8 17s

I think you will agree that the figures given above show that the performance of this work for the national health insurance organization entails a heavy burden on the finances of the voluntary hospitals and that the board of these institutions have a right to expect that the approved societies will recognize this fact in a more substantial manner than they have done

It cannot be denied that the work of the voluntary hospitals is of great value to the approved societies and their members, as the effect of hospital treatment is not only to relieve those patients from suffering but also to reduce the periods during which they are a charge upon the insurance funds

The Government should not throw its clients on "charity" If the usefulness of hospitals is to continue they must receive support, and may fairly claim from the approved societies and the Health Committees the cost to which they are put in dealing with insured patient

PREVENTIVE MEDICINE

BY

J J BUCHAN M.D., D.P.H.,
M.O.H. Bradford

PREVENTIVE medicine is not to be regarded as the sole practice and province of practitioners of medicine, and still less of the practitioners of any special branch. It is, more than any other, a department of medicine in which success can only be attained by the united effort of the public and the whole medical profession, and a system by which no fewer than sixteen millions of the population of this country are required to play even a small part in the promotion of their own health conditions is one worthy of the most serious consideration and support by all interested in the physical welfare of the nation. Preventive medicine is too young a science to have adopted any inviolate precedents. It has no preconceived notions, and in its work it is essentially an opportunist, it is prepared to welcome and rally to its aid every means of assistance to influence for good the health of the people. Many aspects of public and private work, therefore, fall into the category of true preventive medicine, though not recognized as such, and it says something for the vision of those responsible for framing the original Insurance Act that they avowedly aimed from the start at doing something to promote public health, and admitted it in the appellation which they gave to their measure. Like all reforms dependent on legislation, the realization is found to fall far short of the hopes of the promoters, but this should not prevent us from appreciating the real good that the National Health Insurance Acts have done in furthering the cause at heart. In order to appreciate truly the effect of these Acts on the health of the people it is not inappropriate to consider in which directions preventive medicine operates in its endeavour to promote better health, and to inquire in each case how far the Insurance Acts have assisted the work attempted to be done. The operations of preventive medicine and its allies may roughly be classified under four heads as follows:

1. Efforts made to improve the environmental and general living conditions of the individual.
2. Efforts made to educate the people in the preservation of their personal health and that of their families.
3. Efforts made directly against certain diseases, or groups of diseases.
4. Efforts made to prevent and ameliorate disease generally, and to mitigate the after effects.

In each of these directions the National Health Insurance Acts have done most useful work, and from these aspects alone have, in my opinion, fully justified their existence.

In the first category the original Act contained some provision for bringing home to sanitary and other authorities any failure on their part to secure such betterment of health or living conditions for which they were responsible. These powers have been practically unused, but their very existence has afforded, in some districts, powerful moral support in bringing about needed reforms. Apart from this, however, the actual payments under sick and disablement benefit, and especially under maternity benefit, have had a directly beneficial effect upon improving the environment and living conditions of those who unfortunately came within their scope. The tax on the financial resources of the insured caused by sickness has been to some extent removed, and sickness has to a less degree become a disabling economic handicap for years upon the insured person and his family. It has in this sense very truly led to a continuous improvement of his environment. In maternity benefit the gain is greater still, for in a large number of cases it has materially aided, not only the general environment, but also the actual living conditions of the mother and the newly born infant. All this seems very indirect, but preventive medicine in these days has got to know that an indirect action, or a less direct action, towards the general improvement is often rewarded in good results to a greater degree than is a much vaunted and more direct campaign. Further, the change in the attitude of the insurance practitioner towards his insured patients set up by the Insurance Act is altogether for the good of the public health. The insurance practitioner is no longer a medical practitioner called out to attend illness; it is his personal interest to see that his patient is well or to find out why he has become, or continues to be, ill. This, it may be said, has always been the attitude of the medical profession, but a prolonged experience of the work of a medical officer of health justifies me in saying that the complaints which I have received from medical practitioners with respect to environment of patients since the passing of the 1911 Act greatly outnumber in proportion those that were being received prior to that date. It may, I think, be definitely stated that environmental conditions are now regarded as a part of their work in the view of many insurance practitioners, and this is surely as it should be.

In the second category, the educational effect of the Insurance Act on health conditions can be said to be enormous. Sixteen millions of people have been encouraged to regard illness in all its stages as worthy of consideration, care, and treatment, not merely delaying until an incapacitating condition for work has resulted, but seeking medical treatment at the onset of illness when it is most likely to be effective. It has to be admitted at once that it is not a good thing to make a man introspective with respect to his health or give any encouragement to malingering in disease. In the bulk I believe the Insurance Act has not done this, for protection provided against it is, on the whole, adequate. In ordinary private practice the introspective adult too often becomes a source of income to one or many doctors, but in insurance practice he is a nuisance and a drag upon the work of all, while both in private and insurance practice the malingerer would not be tolerated by any. The better mutual understanding now existing between Insurance Committees, approved societies, and panel practitioners has given the practitioner greater confidence in dealing with such cases.

Education in health matters is specially provided for in the Act of 1911, and most Insurance Committees have done something in this direction, but the effect of the giving of lectures, or the publication of information, on questions relating to health, even though this had been carried out to its utmost extent, would not have been any greater than the huge and general educational effect on health which the mere institution of sickness benefit and of maternity benefit has brought about.

In the third category of the activities of preventive medicine, where direct action is taken against certain diseases, the notable achievement of the National Health Insurance Acts has relation to tuberculosis. In the administration of sanatorium benefit the point of view of public health has from the first been taken, and this has made possible the antituberculosis campaign in this country. Without the National Health Insurance Acts it is probable that this campaign would have been delayed indefinitely, for while the original Act did not itself do a great deal in the matter it was a powerful stimulus to the public mind, and caused work to be undertaken at once that would otherwise have lain dormant. In the last few years we have heard a great deal about wrong turnings in tuberculosis and elsewhere, but I do not think the country has anything to regret in attempting to make provision for the sanatorium treatment of the tuberculous. It is easy to make no wrong turnings if we stand still, and those local authorities who have been most active in tuberculosis have not confined their efforts to the provision of sanatorium treatment, but have been most active in all the other—the general and special means of prevention in this disease. Since the passing of the 1911 Act tuberculosis has been falling in incidence in this country at an even greater rate than before. This occurred in the war and post-war years, when conditions apparently favouring an increase abounded, further, in the natural history of the prevention of any disease, the time comes when progressive improvement becomes ever more difficult to attain, and after so great an improvement as had occurred in tubercle it was warrantable to believe that this time had arisen.

In the fourth, and last, category of operations of preventive medicine the Insurance Act has taken a most important place Medical benefit as a whole is one of the chief efforts the country has taken to ameliorate disease among those suffering, and to mitigate the after effects It is unnecessary to elaborate this Such good as is done in this direction is not easy to demonstrate by statistics of lives saved, or capacity for work restored But yet it forms an enormous mass and reflects continuously on the public health statistics We need not at this moment be unduly concerned about the number of weeks lost to industry through sickness or other causes for we have no reliable data for comparison and times are changing, and, with them circumstances We can contemplate with full confidence that after a period of years the time lost to industry from sickness will have very materially fallen through the working of the Insurance Acts At the moment, when the Acts have been in operation only a little over ten years and have during that time been encouraging a greater care of the sick there would be naturally enough an apparent tendency towards increased sickness shown, but over a longer period we shall find this showing a marked decrease, and with this decrease will also come a greater efficiency of each unit in industry which will ultimately result in greatly increased output

For all these reasons, from the point of view of preventive medicine, I cannot come to any other conclusion than that the National Health Insurance Acts have justified their existence, and even had they conferred no further benefit on the population this ground alone would fully warrant their retention

DISCUSSION

Dr HAROLD BEADLES (chairman of the West Ham Insurance Committee), looking at the question from the side of administration, considered that the Act had justified its existence by showing that national insurance was necessary for the health of the community Health insurance he said must be primarily for the community and not for the individual, and must include the dependants of the insured and those who at present came under the Poor Law If they were to have a healthy nation they could not leave the latter out even though unemployable Medical attendance for the whole community must be placed under the control of one body, and not of independent approved societies or Insurance Committees Dr Beadle advocated an *ad hoc* committee of the county or borough councils The name 'national" would be a force so long as deposit contributors remained, and a number of societies giving different benefits to their members existed There should be no difference in amount of pay such as was at present the case in sickness old age, unemployment and compensation for accidents The scheme for all forms of disability should be financed on a contributory basis

Dr J T WALKER (Southend-on-Sea) advocated the promotion of goodwill between the administrators of the Act and the medical profession The question "Are you a panel doctor?" should be answered with pride in the affirmative But this could only be achieved by leaving more matters in the administration of medical benefit to the doctor The Medical Service Subcommittee was not altogether satisfactory Amongst the insured dissatisfaction with the Act was more frequently due to delay in obtaining sick pay than to any complaint against the doctor Dr Walker considered that the "bottle of medicine" habit had its use because with it the patient was more likely to follow advice Without it he was liable to be disgruntled Dr Walker deprecated the piling up of regulations as no amount of regulations would make a good doctor

Dr HERBERT JONES (M O H for Herefordshire) welcomed the cordial co-operation now taking place between the British Medical Association and the Society of Medical Officers of Health, since in his official capacity he looked for help from the whole profession The general practitioner on the panel should call more frequently upon the medical officer of health for assistance Dr Herbert Jones added that he liked to be associated with the panel work, this association was a help to him and of service in the administration of the Insurance Act

Dr G W SKENE (chairman Public Health Committee, Willesden Urban District Council) said that although he was outside the working of the Insurance Act he looked forward to the possibility of its being used as a great public health measure Everyone so far during the session of the Section had spoken well of the Act but in one respect it had not been a complete success it had not obtained the active support of the whole medical profession The reasons for the abstention from service under the Act were not financial What was wanted was some modification perhaps slight in administration If modifications in administration could be effected making service under the Act acceptable to the whole profession it would be for the good of the country

Mr WILLIAM GILL J P (Manchester Unity of Oddfellows) referred to the introduction of the working of the Act in Bradford and the prolonged discussions with the doctors He was glad that a whole-time service was not introduced The present service in Bradford was second to none in the kingdom and there had never been a complaint from his society, the largest friendly society before the Medical Service Subcommittee He had spoken to a delegate meeting of his society every three months and had challenged the meeting to produce a complaint of the medical service He resented disparagement of the old club practice because it should be remembered that club practice was the foundation of the Insurance Act Sanitary improvement in Bradford had been due to the Act with its sickness and other benefits The approved societies had had many irritating things to contend with no less than the doctors had The claim that the Medical Service Subcommittee should consist of doctors only was a travesty of British justice Doctors might require to be protected from their fellows and justice to be tempered with mercy Mr Gill disagreed with taking the tuberculosis benefit out of the hands of the Insurance Committees Its administration had become too much centralized the Insurance Committees were deprived of their most interesting work and the human element had to some extent been eliminated County councils were already overloaded with work

Dr PETER MACDONALD (chairman York Insurance Committee) said that for a comparison of pre-insurance with post-insurance contract work everyone should read *The Old Doctor*, by Dr Layton of Walsall There had been a great change of view among doctors since 1913 in 1912 if a *referendum of medical* practitioners had been taken, it would have consigned the author of the Act to perdition Dr Macdonald deprecated the bad things Miss Godfrey had said about doctors for which there was very slight justification There was no question of 'pull devil pull baker" in the Medical Service Subcommittee whose constitution made for fair play for everyone From his experience as a consultant who came in contact with many insured persons he could assert that the work of the panel doctor was nearly always well done sometimes extremely well done The notes of cases submitted to him were of great value and this view was backed by the opinion of pensions medical officers The contract under the Act had given a great incentive to preventive work The general practitioner had always done preventive work but it was now to the advantage of the panel doctor that patients should remain well With the abolition of fees the doctor saw the patient earlier and in such diseases as acute Bright's disease could stop its progress This reacted on the amount of money required for sickness benefit and was one of the reasons why actuarial expectations were falsified Bringing in under the Act the remaining two-thirds of the population would probably have even greater proportionate effect From the point of view of promoting prevention the Act justified itself

Dr G H SEDGWICK (Rotherham) thought the title for the discussion was too wide The promises of the Act were not altogether fulfilled The administration was good and would become more useful But the Act stopped short in treatment and it was necessary to press for a widening of its scope so to include consultants, hospital treatment and laboratory facilities It was a drawback that all general practitioners were not on the panel In most parts of the

country they were, but in centres of idle luxury the non-panel man was looked upon as professionally superior All general practitioners should make it a point of professional honour to be on the panel With regard to the "bottle of medicine," it might be useless, but neurotics were often cured by faith

DR H SCURFIELD (Folkestone) said that when in former times he acted as Admiralty surgeon and agent and also as medical officer to the Post Office, he found that he was more pleased with the piecework terms of the former than with the contract payment of the latter Probably the doctor had not always realized the amount of remuneration derived from fees in bulk The old capitation fee in clubs was too small, and insurance practice was regarded at first as merely glorified club practice Now there would be difficulty in getting doctors to go off the panel At the same time the speaker was inclined to favour the method of the Scottish Provident Clerks' Association in insuring against doctors' bills, a method in which 6s a head was found to be the limit of liability The panel service needed to be increased by the addition of consultants and hospital treatment which were even more necessary for dependants and children

DR J W BONE (Luton) thought that the question should be looked at from three points of view (*a*) those who gave service, (*b*) the administration, (*c*) those who received service Those who gave service were satisfied on the whole, especially in industrial areas But it was worth while to inquire why such areas as London, Edinburgh, and Bournemouth were without sufficient panel doctors In this view the reason was that in these areas private practice was highly paid, so that Insurance Act practice was not attractive The best service also was given where discretionary measures were put in the background In London there was too much of the iron hand, and too little of the velvet glove of Bradford Before the Act the speaker looked forward to getting rid of club practice He remained on the panel now because he liked it It emphasized a friendly feeling in the profession, and gave opportunities for team work Those who administered the Act were satisfied, except perhaps that they would like a little more money But amongst the insured persons there were serious differences of opinion, and on the whole those who received service were not satisfied One reason probably had been the absence of complete free choice of doctor This had now been remedied except in one particular—much for patients attached to institutions run by friendly societies Then again, there was difficulty with chemists, panel patients were kept waiting a long time for their medicines and very often the chemists' shops were closed when the doctor was still attending patients in his surgery Thirdly there was delay in getting sick pay especially for those whose approved society office was far away from the patient's residence

DR C BUTTAR (London) thought the title of the discussion vague and academic, and that its unsatisfactory nature was reflected in the opening addresses, which consisted mainly of a mixture of apology and satisfaction, with little in the way of suggestion for improvement Was not better medical attendance possible? In his opinion improvement might be effected by getting rid, as far as possible of lay control The people of this country were the slaves of shibboleths, such as that "public money required public control" He suggested to Insurance Committees and approved societies that the aim should be the best medical service, and that public control did not mean control by the public, but control by a gentleman who sat in an office Dr Buttar advocated cutting off medical benefit entirely from other benefits under the Act, making the medical service for the country a department of the Ministry of Health, managed by doctors, exercising control locally through local committees of doctors—statutory committees if necessary, using, as far as possible, in disciplinary matters the bodies found sufficient for the interests of the non-insured population

MR C J BOND (Leicester), vice-chairman of Consultative Council for Medical and Allied Services, Ministry of Health, said that the Act was a step in the evolution of the attitude of the nation to disease This did not mean that it was perfect The relation of the Act to hospital service was not satisfactory The position of hospitals was not satisfactory, and the experience of the London Hospital, described by Mr Souttar, should not be taken as applicable to all the hospitals in the country In some the number of out-patients had increased beyond that of pre-Act days, and far too many patients were waiting for admission Mr Bond thought that contributions to hospitals should be spread over the population on an insurance basis, and be found that more and more workmen were willing to contribute to hospitals The statesmanlike attitude towards the Act was that it was an important, but not the final, step in the process of improving the health of the community

DR E W G MASTERMAN (Medical Superintendent of Camberwell Infirmary) noted that more patients were treated in infirmaries than in hospitals The infirmary was in close contact with panel doctors, and he had observed that panel doctors showed the greatest care in their attendance on insured persons Infirmaries were improving in the facilities they offered, many had pathological departments, and in some cases consultant staffs were attached Infirmaries should be linked up with the Insurance Act system Patients were never refused admission to infirmaries, which were in the position to relieve the waiting lists of hospitals

DR H B BRACKENBURY (London), in closing the discussion said that some valuable information on facts had been given, some valuable opinions, and some odd suggestions The first fact of interest was the reduction in the number of patients attending out-patient departments This was confirmed by evidence from London and Bradford, and should dispose effectually of the accusation that insurance practitioners relieved themselves of patients for whom they were responsible by sending them to hospitals Secondly, medical officers of health had noted that insurance practitioners were drawing attention to the conditions under which their patients lived, and so were taking part in preventive work Of the three methods of dealing with illness—private practice, State service, and insurance—the third was new, and was applied by all three parties in the State to various social ills It had the merit of encouraging thrift He agreed with Dr Buttar that medical benefit should be a health service, dissociated from sickness benefits and that such a service might bring in non-panel men He had been trying to find out what it was that prevented some men from becoming insurance practitioners Dr Skene had suggested some modification of administration, but he had not said in what direction Dr Bracken-bury said he would not go as far as Dr Buttar, but so far as purely professional work was concerned a purely professional body would be more in accordance with that profound and ingrained professional spirit, which might well be infused into other professions and trades The supreme honour of the profession would resent any increased control by laymen An alteration of discipline so as to leave it more and more to the general sense of the profession would safeguard and help forward the interests of the nation Extension of the Act was necessary, since if workers needed protection their dependants needed it even more There was no need to fear that the profession would become commercialized However much was paid there would remain opportunity for extra insight and humanity in the treatment of disease The element of charity would never be eliminated by State payment Therein medicine differed from trade A pound of tea could not be thrown in by any profession It was necessary to take the treatment of tuberculosis out of the hands of Insurance Committees, because in that particular disease the whole community was brought into the campaign Similarly with public health questions, they could not be dealt with for one section of the community, but must be under the public health authority Doubtless in the future

Insurance Committees would have to merge themselves in other bodies, but the personnel of the committees would be required in the new work A representative of insured persons had proposed a quinquennial audit of every individual's health It was difficult for laymen to understand that medicine was not an exact science Englishmen in the mass would never submit to this quinquennial valuation, even if it were desirable that individuals should voluntarily submit themselves to it, and health values could not be set down in the same way as auditing accounts Dr Brackenbury agreed that energy had been wasted on details of regulations, and that it was necessary to take a wider view of medical duties and to direct all possible efforts towards the preventive side of the work The medical men should do as much work, but it should be spread over a smaller number of patients

Dr Brackenbury concluded by proposing a vote of thanks to the Chairman and Secretaries for their work in connexion with the Section

SECTION OF PATHOLOGY AND BACTERIOLOGY

Professor C H BROWNING, M D, President

DISCUSSION ON TISSUE CULTURE ITS BEARING ON PATHOLOGICAL INVESTIGATION

THE address with which Dr ALEXIS CARREL of the Rockefeller Institute, New York, opened this discussion was printed with illustrations in our issue of last week (p 140) The following is a note of the brief discussion which ensued

Dr R SAN RICART (Barcelona) said that all tissue cells were susceptible of cultivation, but the cellular life was more precarious in proportion as the specific function was higher Connective tissue was by far the easiest to cultivate and the growth could be either increased or diminished according to the medium The liquefaction of plasma with fatty degeneration was the usual manner in which cellular life ended Some had attempted to explain the healing and cicatrization of wounds on the principles of tissue culture Knowledge gained from tissue culture should provide reliable information to guide the surgeon in surgical transplantations

The President of the Section, Professor C H BROWNING, asked whether it was true that a large mononuclear cell could degenerate into a fibroblast, and also how Dr Carrel explained the curious disappearance of polymorphs in cultures from blood He remarked that weighing the tissue culture, if practicable, would seem the most accurate way of estimating growth

Dr DIBLE asked whether Dr Carrel could give any information as to the nature of the growth-stimulating substances

Dr HINE (London) confessed that he had had great difficulty with Tyrode's solution, and asked for further details about the flasks used for tissue cultures He had had fairly good results with oxalate plasma as a medium, and asked if Dr Carrel considered this to have any objectionable qualities

Professor M J STEWART (Leeds) asked how fibroblasts and large mononuclear cells compared as regards phagocytosis He asked also what powers of growth neuroglia cells possessed in culture, and whether mixed cultures of fibroblasts and squamous epithelial cells reacted on each other at all

Dr MACARTNEY (Edinburgh) dwelt on the delicate and laborious nature of the technique which he had studied with a view to helping him in work on cultivation of filtrable viruses His experience convinced him that the youth of the serum used for culture media was of utmost importance

Dr CRUICKSHANK remarked that by the first method of culture no growth appeared to be possible unless the fragment of tissue was fixed to the slide, so that there appeared to be some factor of importance in the fixation He asked Dr Carrel whether he did not consider the existence of mitotic figures in the cells evidence of growth

Dr CARREL, in reply, confessed that he had never been able to secure cultures of polymorphs only large mononuclear cells remained in cultures of blood cells The medium used for cultivating leucocytes should contain one-third embryonic juice and fresh serum, leucocytes in culture were very sensitive to disturbance and it was possible that the necessary mechanical interference by manipulations might account for the difficulty experienced in keeping cultures alive The best *p*H for tissue cultures was 7 4 to 7 8, media should be retested daily The growth-promoting substance was once thought to be an enzyme, it was destroyed at 56° C by shaking, and by Chamberland filtration it was precipitated by alcohol and acetone with the protein fraction, its chemical nature was unknown These chemical substances might serve as a source of nitrogenous material for the cells since they would grow in embryonic juice alone The character of the glassware used for flasks containing media was of the utmost importance many forms of glass gave off alkali, thereby disturbing the *p*H Only the serum of young animals should be used, and these must be in good health The formula for Tyrode's solution was taken from Bayliss's *Physiology* Dr Carrel laid great stress on the importance of redistilled water, correct osmotic pressure, and reaction He had not done many experiments with neuroglia cells Thyroid cells in culture tended to become surrounded with more actively growing fibroblasts which cut off available food supplies He distinguished between mere survival and cultivation the word "cultivation" should only be used when the new tissues actually multiplied and thus increased in mass at the expense of the medium Weighing was not a practicable method for estimating growth by the means at their disposal to-day Amino-acids were not utilized by growing fibroblasts, they stimulated migration but did not cause the cells to increase Migration might occur without growth Both oxalate and citrate plasma were toxic to growing cells

At the conclusion of Dr Carrel's reply the Section passed a hearty vote of thanks to him by acclamation

THE SECTIONS

BRIEF SUMMARY OF PROCEEDINGS

ARRANGEMENTS have been made to publish, during the next few months, full reports of the discussions in the Sections of the Annual Meeting at Bradford Meanwhile the notes printed below will enable members who were not present to gain a general view of the proceedings Any errors to which attention may be drawn will be corrected in the full reports

SECTION OF MEDICINE.

Wednesday, July 23rd

CARDIAC IRREGULARITIES PROGNOSIS AND TREATMENT

Dr T WARDROP GRIFFITH (Leeds) opened a discussion on cardiac irregularities especially in reference to prognosis and treatment After paying tribute to the writings of the older observers and stressing the debt that British medicine owes to Sir James Mackenzie and Sir Thomas Lewis Dr Griffith classified cardiac irregularities into six main groups (1) sinus arrhythmias (2) from extra-systoles of various kinds (3) from pulsus alternans (4) auricular heart-block (5) from sino-auricular block (6) from fibrillation and flutter Tracings were shown exhibiting the conditions which were distinguished by an older generation as irregularity and intermission, and the history of the growth of knowledge of auricular fibrillation was traced It was pointed out that there was still no adequate explanation of the lack of correspondence between the strength of the beat and the length of the preceding pause so frequently

seen in this condition The influence of digitalis was next dealt with Dr Griffith reminded the meeting that it had been well known for many years that the form of cardiac failure associated with a pulse and cardiac action devoid of rhythm called for the free use of digitalis, and that the influence of digitalis in depressing the conductivity of the junctional tissue was now known to be especially developed in cases of auricular fibrillation Opinions differed as to whether the beneficial effects of digitalis were due entirely to the diminished number of impulses reaching the ventricle or whether there was also some direct action on the muscle of the ventricle he was strongly of the opinion that some such direct action must exist He was also of opinion that the appearance of extra-systoles with a slowing beat was a strong hint to drop the drug, but he did not consider that it was a hint that might not sometimes be neglected In discussing the influence of quinidine sulphate, he confessed himself convinced by Lewis's experiments that auricular fibrillation and flutter were due to a 'circus movement," and that the effect of quinidine in these conditions was due to the lengthening of the refractory period and to the slowing of conduction in the auricular musculature It was clear that in a certain number of cases the use of quinidine did restore the normal rhythm of the heart The advantages of restoring the normal rhythm and the dangers associated with the use of the drug were contrasted The nature and causation of extra-systoles were next discussed and the difficulties to which they gave rise in prognosis were pointed out on the whole the prognosis depended more on the associated conditions than upon the actual irregularity In conclusion pulsus alternans and pulsus bigeminus were briefly considered

Professor John Hay insisted that the important thing was to recognize the nature of the arrhythmia, if that were done prognosis and treatment could be much more easily settled He pointed out that fibrillation did not necessarily imply a rapid action, and he disagreed with Dr Wardrop Griffith in his description of auricular fibrillation as a condition characterized by an "irregular irregularity," as that might also be found in cases of premature systole The characteristic feature of fibrillation was the absence of any fundamental rhythm The common arrhythmias could be put into two main groups (1) simple sinus arrhythmias and premature beats (2) fibrillation In the first group the arrhythmia might be ignored if there was nothing else wrong, in fibrillation the outlook depended on the response to digitalis, and in fibrillation associated with Graves's disease the response to digitalis was very marked if the toxæmia was adequately treated The effects of quinidine were discussed and statistics of "permanent cures" were given

Dr W J Tyson spoke from the standpoint of the purely clinical physician and after calling attention to the great change in outlook that had occurred in the last forty years said that, although he himself never worked with the polygraph or electrocardiograph, he did not think that his patients had suffered on that account, he, however, acknowledged freely that by these means the knowledge of the classification and diagnosis of heart diseases had been advanced Illustrating his points with clinical cases, Dr Tyson insisted that the effect of cardiac disease was to be estimated by the extent to which ventricular action was affected a man's capacity for work was to be ascertained by putting him to work and noting the reaction Dr Foster reviewed the irregularities of the heart in youth, which he said were now viewed much less seriously he looked very pessimistically upon auricular fibrillation when the damage to the heart was already done Dr Halls Dally expressed the view that it was very undesirable to tell patients, especially nervotic ones, that they had any irregularity He agreed with what had been said about digitalis, but thought that many people were afraid to give it in adequate doses Dr Langley advocated the treatment of fibrillation with massive dosage of digitalis on the Eggleston plan, followed by quinidine, and gave details of the treatment Dr B H Pain and Dr I G Thomson spoke from the point of view of the general practitioner, and Dr Thomson expressed disagreement with the view that graphic methods were of no value in general practice Dr Veale protested against the labelling of patients V D H and D A H Dr Wardrop Griffith and Professor Hay replied

Thursday, July 24th

JAUNDICE

Dr J W McNee, opening a discussion on jaundice, stated that his special purpose was to deal more particularly with the practical application to medicine and surgery of the recent advances in our knowledge of jaundice After a review of previous work he emphasized the importance of the investigations of Professor Hijmans van den Bergh, the basis of which was the development of a delicate method by which minute quantities of bilirubin could be detected and measured quantitatively in small amounts of albuminous fluids As a result of the methods thus introduced attention had now been transferred from the colour of the skin to occurrences in the blood Dr McNee then discussed the reticulo-endothelial system, and the structure of the liver lobules, as points of fundamental importance in recent research work on the metabolism and formation of bile pigment, which must necessarily enter largely into any consideration of haemolytic icterus and toxic and infective jaundice The experimental production of icterus in birds seemed to show that in them the cells concerned in the breaking down of haemoglobin and the elaboration of bile pigment were the Kupffer cells of the liver and the reticulo-endothelial cells of the spleen, but not the glandular cells of the liver This view was largely confirmed by others, and, although the results of some experiments were conflicting, a definite answer might soon be expected to the question whether true haemolytic icterus occurred apart from the liver The clinical evidence for a true haemolytic jaundice was shortly reviewed Dr McNee set out the new theory of jaundice, which was based on the belief that the cells of the reticulo-endothelial system elaborated bile pigment whilst the polygonal cells of the liver passed it on to the bile capillaries On this theory four varieties of jaundice would appear possible (1) Bile pigment formed normally by the reticulo endothelial system and passed on normally through the polygonal cells but obstructed in the capillaries (obstructive hepatic jaundice)—prompt direct van den Bergh reaction (2) Bile pigment formed normally, but unable to pass on owing to damage to the polygonal cells (toxic and infective hepatic jaundice) —biphasic van den Bergh reaction (3) Excessive blood destruction and too much bilirubin formed in the reticulo endothelial system for the polygonal cells to deal with (haemolytic jaundice)—delayed or negative van den Bergh reaction (4) Damage and disordered function of liver cells, together with obstruction to the bile ducts (cholangitis) —variable van den Bergh reaction In conclusion, the practical application of the new views and methods was discussed, and reference was made to the extent to which they have modified old ones and improved the clinical observation of icterus

Professor van den Bergh pointed out that it was Dr McNee who had first suggested that the cells of the reticulo-endothelial system probably elaborated the bile pigment, he knew of no clinical observation opposed to this theory, which was in entire agreement with his own observations In dealing with experimental work they must remember that animals varied greatly thus the dog had an extremely low threshold for bilirubin Particular credit was given to French authors for their study of the formation of bilirubin and allied pigments in haemorrhagic effusion, which he had studied quantitatively by the diazo method As a possible explanation of the non-occurrence of icterus in such cases, he suggested that the bilirubin might not be absorbed, or absorbed only slowly, and he pointed out that there were certain little understood physical distinctions between the pigment with the direct and indirect reaction, which might be of importance in this connexion He wished to emphasize that the quantitative diazo test was not very perfect, but he did not think there was yet a better one, the practical advantages and disadvantages of various modifications were discussed It was only by some chemical test that bilirubin could be detected when methæmoglobin or haematin was present in the serum and it was also very

necessary to distinguish between jaundice and the xanthosis that occurred in some patients after eating freely of green vegetables and eggs In conclusion Professor van den Bergh pointed out certain clinical conditions in which he had found this examination indispensable for diagnosis but he emphasized the fact that from time to time exceptions to the general rule of the test were met with which at present it was impossible to explain Sir William Willcox, after welcoming Dr McNee's classification of jaundice criticized the experimental evidence for a true haemolytic jaundice as extremely weak, but the clinical evidence seemed much more conclusive Toxic jaundice, which in his experience was much more common than was generally believed might be caused by many agents—chemical, bacterial and protozoal—and by auto-intoxication In attacks by these agents it was the liver that formed the main defence of the body and he referred to that as the 'toxiphylactic" function of the liver The liver cells might often be protected by giving glucose In the case of catarrhal jaundice he was certain that the French school was right and that the disease was really a hepatitis probably due to a bacterial poison Dr Langdon Brown referred to the advantages of the modern classification and said that one of the great attractions of the new theory was that it explained so much that had previously been obscure He agreed with Sir William Willcox's views of catarrhal jaundice Dr Tidy asked where the difference lay between patients with pernicious anaemia in whom jaundice was practically never seen and patients with acholuric jaundice in both cases there appeared to be excessive blood destruction He also suggested that it might be possible to distinguish by the van den Bergh test between cases of true Banti's disease passing on to cirrhosis and other forms of splenic anaemia

Sir Berkeley Moynihan spoke from the surgeon's point of view and said that the clinical term 'Banti's disease" was merely the name of a terminal state that resulted from many different conditions He expressed the immense debt owed to Dr McNee and Professor van den Bergh for their research on this subject and urged closer co-operation in research between medicine and surgery Dr Platt reminded the meeting that Professor van den Bergh had himself demonstrated the bilirubin content of the splenic vein to be higher than that of the splenic artery He suggested that in acholuric jaundice the red cells might really be unduly resistant to abnormal osmotic pressure and asked whether the urobilin in the urine was always increased when there was an indirect van den Bergh reaction Dr Paramore discussed the etiology of toxic jaundice with special reference to the pernicious vomiting of pregnancy Dr McNee and Professor van den Bergh replied to the questions put to them

Friday July 25th

DIAGNOSIS OF SMALL-POX

A discussion on small-pox with special reference to diagnosis, was opened by Dr McConnel Wanklyn (London) Dr Wanklyn first took a general survey of small pox, the disease or the mischief that had to be done away with and maintained that it was necessary not to focus attention on this or that particular pathological or clinical point but to surround oneself with the psychological atmosphere of small-pox The right attitude to adopt towards small pox was expressed in the words the less one sees of it the better" All efforts should be directed towards stripping down its defences attacking its vulnerable points, and destroying it at its start Small-pox had been protected by misunderstanding and it was the duty of the medical profession to remove this Competent authorities at the present time were not so much concerned with the actual small pox returns as with the freedom of the people from its menace, and concentrated not on a zero of small pox but on 100 per cent of small pox free efficiency—that was health Curves were shown of the London figures for the past twenty years of freedom from small pox and percentage of vaccinations to births The striking feature was that whereas vaccination the chief weapon against small pox had steadily fallen the freedom from small pox nevertheless stood higher than ever it did The explanation lay not in any decrease in the virulence of small-pox, nor in improved sanitation but entirely on the team work of the profession and the voluntary civic spirit of its members Small-pox was as great a danger to the country as ever it was the decreasing use of vaccination rendered the people almost defenceless to it and but for the ceaseless effort of the medical officers and their colleagues it would sweep again across the country as calamitously as ever In diagnosis it was necessary to discard the unimportant and concentrate on the essential feature First came the question Can this be small-pox' bearing in mind in schematic form the different stages and varieties of the disease It was unwise to put too much reliance on certain old friends such as umbilication shottiness, uniloculation, cropping rash in different stages rash on the soles of the feet spots on the palate The main cards were (1) prostration (2) distribution (on the skin), (3) localization (in the skin) (4) maturation

A paper by Dr C Killick Millard (Leicester) was read in his absence by the Honorary Secretary He entirely agreed with Dr Wanklyn as to the fundamental importance of correct diagnosis, and thought that no medical student should be allowed to practise until he had given evidence that he was fully qualified at least to suspect small pox when he met a case He also agreed with the opener as to the useless ness of the old textbook signs the most important point was the distribution of the rash In using this test it was best to ignore the head and neck and to divide the rest of the body into (*a*) trunk (*b*) limbs Lesions more numerous on the trunk meant small-pox lesions more numerous on the limbs characterized chicken pox With regard to the general aspect his experience at Leicester taught him that vaccination had an unmistakable power to protect the individual but that the value of infant vaccination as a protection for the community had been greatly overestimated

Dr R P Garrow (Chesterfield) gave a detailed account of his experience of the epidemic of mild small pox prevalent in Chesterfield He emphasized the various distinctions between this and virulent small pox and stated that up to date they had had no case of virulent small-pox Dr E H Snell (Coventry) pointed out the administrative difficulty in dealing with an epidemic in which many cases only showed a few pimples probably more cases passing unrecognized than recognized Colonel Penny stated that his experience in Burma was that even in the Asiatic form the disease was often extremely difficult to diagnose Dr J A Watt (Derby) spoke of the cases in Derby, which were very similar to those in Chesterfield Dr Mercer said that in New Zealand the vaccination laws had been allowed to lapse

Dr F W Eurich (Bradford) read a paper on the clinical features of anthrax illustrated by lantern slides He stated the need for early diagnosis, which must be by the microscope With regard to treatment he did not excise the pustule except under certain conditions the part was kept absolutely at rest and Sclavo's serum was given in large doses, with 80 c.cm for the initial dose Dr Mitchell suggested the use of diathermy as an alternative to excision Dr Renshaw suggested the administration of auramine Dr F C Eve (Hull) read a paper describing the domestic estimation of urinary sugar, a method by which the patient could estimate the quantity of sugar passed The principle of the method was to take the specific gravity of the urine before and after fermentation by yeast

SECTION OF SURGERY

Wednesday July 23rd

ACUTE OSTEOMYELITIS

THE President Sir Cuthbert Wallace introduced Mr John Fraser (Edinburgh) who opened the discussion on osteomyelitis

Mr Fraser said that osteomyelitis was looked upon as nobody's child" because it brought little credit to the surgeon it was a source of worry and was frequently followed by untoward results He thought that the nomenclature applied to bone was important and recognized diaphysis epiphysis epiphyseal cartilage and metaphysis The metaphysis was the pre-eminently important

part, existing as it did between the diaphysis and epiphyseal cartilage Osteomyelitis was always a central lesion, and he had never seen an acute primary periostitis The majority of cases were the result of a blood-borne infection, but in a few the infection entered from a neighbouring focus, as happened in cases which followed infection of neighbouring joints The infection arose from the teeth, throat, or skin, but he thought that the umbilicus was also a frequent source There were three stages In the first there was an intense infection of the medulla, and the inflammatory products were under extreme tension In the second stage there was a spread of infection to the subperiosteal area, and this was characterized by relief The third stage was one of reaction, and the osteoblasts of the periosteum were activated He did not think operation was necessary in every case About 15 per cent of the cases were caused by the pneumococcus, and these should be left alone In the ordinary acute case he opened the bone over the metaphysis and passed along the bone until healthy marrow was found, he never scraped out the marrow He had abandoned subperiosteal resection of the bone For the general treatment he used vaccines and blood transfusion

Mr Maybury (London) said that in the early stage there was often local pain in several bones which usually rapidly disappeared from all except one bone These cases were likely to be mistaken for acute rheumatism He thought that the disease was capable of undergoing spontaneous cure, but for a severe infection operation on the local lesion was urgently called for, for a mild infection expectant treatment should be adopted He showed slides of skiagrams of a humerus affected with osteomyelitis Mr Acton Davis (London) said his main point of disagreement with Mr Fraser was with regard to operation He was strongly in favour of subperiosteal resection of the shaft He preferred diaphysectomy, because of (1) rapidity, (2) completeness, (3) absence of subsequent excavation of the bone The main objection was failure of alignment, but that could be avoided if attention were paid to extension Mr Mitchell (Aberdeen) disapproved of the gutter operation, because the disease frequently spread to other bones and the joints became infected, and amputation had sometimes to be performed He thought that in very bad cases operation was useless When the local condition was not spreading the gutter operation was sufficient, but usually in bad cases he performed subperiosteal resection, put the limb in a Thomas splint with extension applied, and encouraged the patient to move his muscles He found vaccines useful

Thursday, July 24th

PULMONARY EMBOLISM

At this session Mr G E Gask was in the chair, and Mr Lockhart-Mummery (London) opened a discussion on pulmonary embolism He said that pulmonary embolism was by no means always fatal, and he thought that most cases of so-called post-operative pneumonia were really cases of pulmonary embolism In this condition the dangerous period was during the first few minutes In non-fatal cases the dyspnoea soon passed off and the pain in the chest subsided Examination of the chest revealed an area of dullness and tubular breathing He divided cases of pulmonary embolism into (1) those in which death occurred instantaneously (2) those in which death occurred a short time after an acute crisis, (3) those in which the patient recovered after a crisis Any study of post-operative pulmonary embolism showed that, in most of the cases, the operation had been upon the abdomen and lower limbs He believed that operations upon the upper part of the body did not cause such a degree of venous stasis in the vena cava as operations upon the abdomen He could not accept the belief that embolism was due to sepsis His theory was that the operation predisposed to embolism by liberating thrombokinase into the circulation, and by producing venous stasis near the walls of the great veins He thought that the best method of preventing post-operative thrombosis consisted in altering the methods of preparation and of after-treatment Preliminary purgation should be abolished, and the practice of starving the patient before and after should be discontinued, the patient should be prevented from assuming a constrained position during the operation Sir Charles Gordon Watson laid stress on loss of fluid before, during, and after an operation as a factor in stasis, and on immobility after operation as well as posture during it, which interfered with the flow of blood through the vena cava He argued that massive embolism could only occur when the thrombus was lightly attached to the walls of the veins and active phlebitis was absent, whereas in pulmonary infarction the reverse was the case, and septic phlebitis was usually present He advocated morphine and amyl nitrite with oxygen during the attack, and was very insistent on early movements and respiratory exercises after operation Professor Shaw Dunn said that in the *post-mortem* room pulmonary embolism was seldom found to be the cause of post-operative deaths In immediately fatal cases the morbid appearances were fairly uniform, and an elongated mass of dark red clot was found, coiled up at the bifurcation of the pulmonary artery The site of the thrombus should be looked for in some large vein near the operation area Some degree of septic infection frequently existed, so frequently that he thought it was invariably present Professor Ernest Glynn, associated with Dr Maurice Cohen, produced evidence that primary pulmonary thrombosis was a cause of sudden death, and was more frequent than pulmonary embolism Stasis and mild sepsis were two main factors in the production of the thrombosis Stasis could be diminished by post-operative exercises, including deep breathing

Friday, July 25th

At the third day's session Mr Harold Burrows took the chair, and Mr T P Dunhill read a paper on auricular fibrillation in Graves's disease Among the cases of exophthalmic goitre operated upon by him there were a number who had irregular heart action, he believed that hyperthyroidism was present, and it seemed proper to reduce the amount of the secreting gland The degree of improvement varied Patients were not infrequently seen who had auricular fibrillation associated with goitre, but in whom the goitre was not the cause of the auricular fibrillation It was necessary to be alert for this type of case Auricular fibrillation was one not infrequent result of thyroid toxaemia, and it might result either from toxic adenoma or from Graves's disease In toxic adenoma it might disappear when the adenoma had been removed In Graves's disease it might disappear temporarily when the vessels had been tied, or when one lobe had been removed, but, in his experience, it had recurred under stress Mr G L Keynes read a paper on blood donors He said that the performance of a blood transfusion postulated the presence of a suitable donor, and in hospital practice this was too often left to Providence A blood donor did not experience any suffering He had proved that a healthy man could give 750 c.cm of blood, or even more, without any ill effect, and could perform his work efficiently afterwards An American writer had shown that many blood donors experienced not only a feeling of well-being, but also an increase in weight after the operation A loss of 500 c.cm of blood could be made good in less than a week Men were more suitable than women, the donor should be young and healthy, and his Wassermann reaction must be tested He believed that the supposition that individuals belonging to Group IV were "universal blood donors" was only an approximation to the truth, and he thought that it was safer to give some patients the blood of their own group, especially in cases of blood diseases, such as pernicious anaemia Mr Winsbury White read a paper on hydronephrosis He said that the disease was especially common in the third decade of life, but that it might commence very early or very late in life It involved either kidney in about equal frequency, and was twice as common in the female as in the male The so-called cardinal symptoms were seldom evident Pain was the most common symptom, and was most severe in the earliest cases A palpable enlargement of the kidney was as often absent as present Haematuria was a common complication, and resulted either from a superimposed infection or from obstruction of a vein by

pressure between an artery and the distended pelvis Pyelography was not required as a routine measure in the examination of the urinary tract but in the hands of one who understood it it settled the diagnosis in hydronephrosis Mr Cowder read a paper on cleft palate He said that the beak-like protuberance of the intermaxillary was so pronounced and the strain put upon the edges of the double hare-lip by suture of both sides simultaneously was so great, that surgeons formerly removed the premaxilla It was not necessary to close both sides of the lip at once One side was closed in the first few weeks of life, and the other in about two months In his experience good speech after operation was rare Closure of the cleft was an easier problem to solve than that of producing clear articulation

SECTION OF OBSTETRICS AND GYNAECOLOGY

Wednesday July 23rd

Ante-natal Care in Private Practice

Dr J Abernethy Willett (London) opened the first session of the Section of Obstetrics and Gynaecology under the presidency of Dr J S Fairbairn with a paper on the methods of the ante-natal clinic and their application to private practice Basing his remarks on 3 years practice in the ante-natal department of the City of London Maternity Hospital he dealt first with the aims and objects of ante-natal work then with the methods of attaining these, and finally with the results gained He explained the importance of adequate supervision of the patients as soon as possible after conception, and described special educative, preventive and therapeutic measures that might be required in the period up to the time when the child was viable Passing to the ensuing period he stated that out of 2 145 patients examined at the twenty eighth week 204 showed the presence of some abnormality which required treatment Albuminuria was present in 57 cases out of the 204 in no case did eclampsia develop, but probably there was some permanent damage to the kidney Breech presentations occurred more commonly than was generally thought early diagnosis was important since the earlier that external version could be performed the more easily was it effected Dr Willett next dealt with methods of pelvic examination and for estimating the fit of the foetal head The findings by vaginal examination should be regarded as confirmatory Personally he found himself relying more and more on the results obtained by abdominal examination He declared himself a strong advocate of the induction of labour in suitable cases, since slight prematurity was of little consequence if the infant had been delivered uninjured He concluded with a reference to the serious results that followed when ante-natal supervision had been omitted

Dr E K Mackenzie (Tain Ross shire) gave a detailed account of the ante-natal methods he used in rural practice When first engaged he made a thorough physical examination and saw the woman again about the fifth month Unless conditions requiring special supervision were detected his final ante-natal visit was paid about a week before the expected confinement Major E L Moss C M G R A M C (Aldershot) considered that the unavoidable death rate in properly supervised pregnancies was 1 in 2 000, and described the satisfactory conditions existing in the case of the wives of soldiers Dr Rhoda Adamson (Leeds) gave a summary of the ante natal work in Leeds Mr Aleck Bourne (London) and Dr A F Martin (Bradford) spoke on, among other subjects the value of pelvimetry Dr T H Richmond (Stoke-on-Trent) after touching on several points of treatment observed that it would probably be many years before the ideal of treating every labour in an institution would be attained Dr R W Johnstone (Edinburgh) referred to the pioneer work of the late Dr J W Ballantyne in this branch of obstetrics and described the method of induction used in Edinburgh Dr F Edge (Birmingham) Dr Marion E Mackenzie (Leeds), and Dr Janet I Campbell (London) continued the discussion and the President Dr J S Fairbairn made some observations Dr Willett replied to the points raised by various speakers

Thursday, July 24th

The work of this Section on the second day of the meeting consisted of the reading of four short papers and a discussion on each of them The proceedings were opened by Professor B P Watson (Edinburgh), who took as his subject imperfect urinary control following childbirth and its surgical treatment Professor Watson commented upon the frequency with which, when questioned on the subject, women admitted the loss of control of their urine under any sudden strain—a laugh, a cough, the lifting of a heavy weight, very often resulted in the escape of a few drops of urine, or sometimes of quite a stream The patients in the vast majority of cases were parous women the condition being comparatively rare in nulliparae In a series of 183 cases of cystocele incontinence was present in 120 cases His views as to the nature and causation of the trouble were identical with those of Victor Bonney In all patients presenting this symptom he had found a marked sagging of the neck of the bladder away from its proper situation behind the pubes In many cases of cystocele this sagging might not be at all pronounced or might be entirely absent If the neck of the bladder was braced up this symptom did not occur It was not due to any damage to the sphincter itself but to stretching and consequent weakening of the musculo-fascial sheath which normally supported the base and neck of the bladder He thought that the cause of the condition was the strain thrown upon the anterior vaginal wall when the head came forward over the perineum, and it was aggravated by the obstetrician's attempt to 'save the perineum" by restraining the sinciput and pushing the whole head forward before the occiput had come right underneath the pubic arch For this reason he never hesitated when the pelvic floor was unduly resistant to perform an episiotomy this measure he did as a routine in breech cases in primiparae Another causative factor was the pushing down of the anterior lip of the cervix by the head of the child Professor Watson then explained how the musculofascial band could be easily demonstrated at operation and he explained step by step the operation which he had devised to restore the neck of the bladder to its proper anatomical position He supplemented his description by a demonstration of lantern slides Out of 105 patients operated upon in the manner described 69 had regained perfect urinary control in 23 control was much improved but was not quite perfect and in 13 there had been no improvement A short discussion followed, in which the President, Mr Miles Phillips (Sheffield) and Dr R W Johnstone (Edinburgh) took part

Mr James Phillips (Bradford) followed with a paper on the investigation pathology, and treatment of uterine haemorrhage about the climacteric He laid emphasis upon the difficulty of excluding cancer in every case even after microscopic examination and he maintained that hysterectomy was the safest treatment for haemorrhage at the menopause and also gave the patient the most comfort Radium might check actual bleeding but there were frequently other factors present which caused more discomfort to the patient, such as a heavy drooping uterus and these radium could not touch The paper was discussed by Dr J J Bell (Bradford) Professor Watson (Edinburgh), Mr Miles Phillips (Sheffield) Dr Gordon Luker (London) Dr W W King (Sheffield) the President, and Dr J J Holland (Western Australia) Mr Miles Phillips (Sheffield) then read a paper entitled 'The advisability of a routine pelvic examination during the puerperium' He strongly advocated a thorough and complete examination of all patients on the twelfth day before they were allowed out of bed and again at the termination of the fourth to sixth week of the puerperium Just as ante-natal care prevented abnormal midwifery so should post-natal care obviate much of the subsequent trouble which filled the out-patient department of every special women's hospital The paper was discussed by Dr R W Johnstone (Edinburgh) Professor Watson (Edinburgh) Miss Frances Ivens (Liverpool) and Dr McGregor Young (Leeds) The morning's work terminated with the reading of a paper by Dr W W King (Sheffield) on the clinical aspects of adenomyoma of the pelvis Dr King's paper was a personal record of 103 cases which he had operated upon 53 of these being growths

of the recto-vaginal space and involving the rectum in about half the number Hysterectomy with removal of the ovaries had proved to be the most certain cure, but less radical measures were often followed by success Professor Watson, Dr R W Johnstone, and Dr Luker commented upon the paper

Friday, July 25th

DYSMENORRHOEA IN YOUNG WOMEN

The third day's work of this Section consisted of a discussion on dysmenorrhoea in young women, its incidence, prevention, and treatment The opener was Dr Alice E Sanderson Clow, and she commenced by defining dysmenorrhoea as suffering of any kind associated with the menstrual period She had questioned 2,050 girls between the ages of 12 and 22, and, using this definition as a standard, she had found that in 78 per cent menstruation was unaccompanied by any pain or discomfort, while in the remaining 22 per cent, in 3 per cent only was suffering so severe as to be described as disabling The incidence of dysmenorrhoea was thus lower than that quoted by other observers She considered it to be quite unnecessary for so many as 22 per cent of girls to suffer during the period She thought that many gynæcologists had a wrong impression of what a normal menstruation should be, and that it was wrong to teach that the monthly period should be regarded as a time of semi-invalidism Normal menstruation should be a painless function, during which the daily bath and exercise should be continued as usual Dr Clow quoted the leaflet issued by the council of the Medical Officers of Schools Association, in which girls are urged to have their warm bath and to take regular exercise during the period, and to obtain a daily action of the bowels She quoted figures to show how the incidence of dysmenorrhoea among the girls who had followed her advice had diminished to a striking degree The best means of reducing the incidence of dysmenorrhoea throughout the country would be to teach every schoolgirl the simple rules of hygiene of the menstrual period If dysmenorrhoea came to be looked upon as a disqualifying complaint in a woman worker, many of the cases which could be cured by exercise would disappear, and the others, instead of suffering in silence, would seek treatment from their doctors, and thus would be removed the chief source of the inefficiency of the unmarried woman worker compared with the man In regard to treatment, she strongly advocated that a course of baths and exercise should be tried for at least six months before any other measures were employed in all cases where examination failed to show any evidence of disease or structural abnormality In her experience it was very exceptional to find cases which were not cured by this simple means If she had to use a drug she usually prescribed ammonal She felt certain that cases of dysmenorrhoea in industrial workers would almost entirely disappear if this complaint was ruled out as an excuse for granting leave of absence

Dr Leonard G Phillips who followed, agreed with Dr Clow as to the excellent results of simple hygienic measures in a very large number of cases, but he could not go so far as to claim that baths and exercise would cure every case of dysmenorrhoea He had records of 500 cases of bad dysmenorrhoea, a certain percentage of these had been cured by the correction of faulty hygiene, but there remained a small number whom nothing but radium or hysterectomy could touch He pleaded for a classification based on the clinical types met with, and commented upon the constant association of sterility with severe dysmenorrhoea Mr J B Turner testified to the great success he had obtained by following out Dr Clow's rules in a large girls' school and a hostel for young business women Dr Catherine Chisholm (Manchester) and Dr Rhoda Adamson (Leeds) quoted from their experience in connexion with large girls' schools, university students, and factory workers and were agreed that disabling dysmenorrhoea was of very rare occurrence Dr Minnie Madgshon (G P O London) produced figures obtained from 10,000 postal workers to show how very rare really severe dysmenorrhoea was Dr Watson (Leicester) gave further support to Dr Clow's statistics from her own experience as a county medical inspector Dr W A Potts (Birmingham) entered a plea for the psycho-therapeutic treatment of cases which had resisted all other forms of therapy, and which had no gross surgical lesions Mr Aleck Bourne insisted that there were a number of cases which absolutely resisted every form of treatment In these the only thing to do was either to expose them to radium or perform hysterectomy Dr J J Holland (Western Australia) held that the pain was more commonly of ovarian than uterine origin Sir Malcolm Watson (Federated Malay States) said that white women in the tropics commonly suffered from excessive loss He would henceforward alter his methods and ask them to take more exercise in spite of the heat

The President welcomed the great help which had been rendered by medical women in giving them a clear understanding of this subject As specialists they were apt to get a false impression, because they only came into contact with the worst cases There was a very large attendance, including a number of medical women, and the discussion was followed by a deeply interested audience

SECTION OF PATHOLOGY AND BACTERIOLOGY

Wednesday, July 23rd

TISSUE CULTURE

THE first contribution to this Section was a paper by Dr Alexis Carrel on tissue culture and its bearing on pathological investigation It was published in full, with illustrations, last week (p 140) Many of those who had listened to Dr Carrel's clear and interesting address took part in the subsequent discussion, which is reported at page 181 of this issue An enthusiastic vote of thanks was recorded to Dr Carrel for his authoritative survey of this important subject

PROTOZOAL INFECTIONS OF THE INTESTINE

Mr A Malins Smith read a paper on the incidence and spread of protozoal infections of the intestine in the population of Great Britain Before the war it was generally believed that *Entamœba histolytica* was not to be found in the intestines of healthy people in Great Britain who had never lived abroad Researches carried out between 1916 and 1919 had altered this opinion, for he found pathogenic amœbæ in large numbers of people in England who had never left this country, the pathogenicity of the discovered amœbæ being proved by feeding tests In a total of 2,137 people examined who had never been abroad he found 3·4 per cent to be carriers of *Entamœba histolytica* As the cysts were the usual infecting agents and were rapidly destroyed by drying and would not live long outside the body, he thought the conclusion must be drawn that these cysts were distributed by defective personal or social hygiene Both in the tropics and at home the patients who actually suffered from amœbic dysentery represented but a small proportion of those who harboured this parasite

"THE SIGMOID LEECH"

Dr C E Dukes described an apparatus, designed by himself, for obtaining cultures of bacteria from the colon It consisted of a long glass tube attached to a bottle, evacuated by means of a water pump or hand pump and fitted with a vacuum gauge for indicating the pressure At the end of the long glass tube contained a small plug of sterile cotton-wool During examination with the sigmoidoscope this "sigmoid leech" could be applied to an ulcer or inflamed area of the bowel wall and the bacteria sucked through on to the cotton-wool plug, which was removed with sterile forceps and transferred to nutrient broth From this tube of nutrient broth subcultures could be made on to such media as serum and blood agar

Thursday, July 24th

IMMUNITY

"Immunity, with particular reference to specificity and the influence of non-specific factors," was the subject discussed at the second session of the Section of Pathology and Bacteriology Dr R A O'Brien (London) read the first paper, and approached the subject entirely from the point of view of the laboratory worker As instances of rigid

specificity he quoted the reaction of diphtheria antitoxin with diphtheria toxin, and compared this with phenomena to which the rigid laws of specificity cannot be applied, such as the Wassermann reaction As instances of non specific reactions he referred to the benefits claimed from injection of peptone in various diseases, and explained that laboratory tests for the most part failed to give any evidence that injection of peptones increased recognizable antibodies such as antitoxins in the blood He quoted a number of experiments carried out to confirm the claims of others that various organic or inorganic substances stimulated antibody production he found little evidence that such was the case But the fact that satisfactory confirmation of the claims of non specific protein therapy had not been secured by laboratory tests did not necessarily disprove the statements of clinicians The laboratory investigator had an easier task than the clinician because the guinea pig was insusceptible to suggestion The clinician had a double task he must seek the truth and also cure his patient Dr P Hartley (London) pointed out that by means of immunity reactions we could distinguish between substances which by all known methods of chemical analysis appeared to be identical Analytical figures obtained for the total protein of ox and horse serum, as well as the albumins and globulins from each type of serum, revealed no points of difference between corresponding proteins immunity reactions, on the other hand, demonstrated that these substances were essentially different He quoted the work of Avery and Heidelberger, who isolated from autolysed cultures of pneumococci the soluble substance which precipitated specifically anti-pneumococcus serum of the homologous type, and demonstrated the presence of this substance in the blood and urine of experimental animals and lobar pneumonia patients This substance was essentially a polysaccharide it was incapable of stimulating antibody production, though serologically it was sharply type-specific Professor T J Mackie (Edinburgh) remarked that though the specificity of acquired immunity had been one of the basic principles in immunization, and while this principle had dominated the study of immunity and its applications, non specific factors had long been recognized in the resistance of the tissues to microbic infection—for example, the reaction of inflammation phagocytosis, the normal opsonin and alexin of blood serum After a review of a wide field he concluded that while specific immunization must be regarded as the most effective method by which tissue resistance was increased the development of an acquired specific immunity or the output of specific antibodies might be influenced secondarily by non specific or heterologous effects Professor W J Tulloch (St Andrews) declared that each disease-producing microbe should be studied to determine its mechanism of infection, its mechanism of disease production, and its mechanism of causation of death Any one of these might be of outstanding significance and might be related to a particular moiety of antigen or to special combinations of antigens problems of specificity arose at every turn The *in vitro* methods, notably agglutination and absorption of agglutinins, sometimes gave ultraspecific results but that was because the major factor in disease production by some species of germs was not resident in the germ protoplasm but in certain products of growth the former might be more specific than the latter Exotoxins therefore were only partial antigens and antitoxins were only partial antibodies

Dr S Davidson (Edinburgh) reported a research undertaken to compare the antigenic properties of simple heat-killed vaccines detoxicated vaccines, and defatted vaccines Tested by agglutination and complement fixation tests it appeared that the antigenic properties of detoxicated and defatted vaccines were greatly inferior to heat-killed bacillary emulsions Dr D Campbell (Glasgow) reminded his audience that natural immunity could not be explained by the doctrines of specificity no specificity was obtained in the response to irritation familiar as inflammation Also many people recovered from infections before the easily recognized so-called specific antibodies appeared in their blood He related an experience extending over three and a half years of treating over a hundred cases of rheumatoid arthritis by protein shock therapy The intravenous or intramuscular injection of a foreign protein resulted in a general reaction on the part of the body in the shape of a temporary elevation of temperature, increase of polymorphs in the blood stream, and possibly increased production of tissue enzymes His experience had led him to the conclusion that non specific protein therapy was a valuable addition to our therapeutical resources in dealing with joint diseases

Dr E M Dunlop (Glasgow) reported some clinical and laboratory observations on cases of rheumatoid arthritis treated by protein shock therapy, work carried out in conjunction with Dr Campbell The protein was administered in the form of a typhoid vaccine and the patient's serum was examined from time to time in order to determine how far, if at all, the relatively small doses which were being given might lead to the production of agglutinins for *B. typhosus* Two conclusions could be drawn from this work one was that the treatment of microbes with alkali, as in methods of detoxication, greatly damaged their antigenic value The other suggested that non specific therapy (protein shock) might evoke a specific antibody response Dr R Row (Bombay) read a short paper discussing some products of autolysed tubercle bacillus cultures with special reference to their antigenic and curative value By the injection of autolysed tubercle bacilli into tuberculous guinea-pigs he had been able to improve their condition and he showed a series of temperature charts illustrating the application of this new form of treatment to sick people

Friday, July 25th

At this session Professor M J Stewart (Leeds) read a paper on xanthoma and xanthosis The cutaneous form of lipoid deposition known as xanthoma of the skin he regarded as a local manifestation of hypercholesterinaemia in one patient he found the blood cholesterin raised from the normal of about 0·18 per cent to as high as 3·8 per cent Once the xanthoma tumour had formed it might persist after the hypercholesterinaemia had disappeared In "strawberry gall bladder" another form of xanthoma the proof was not complete that the lesion sprang from hypercholesterinaemia though this was probably the case He described similar tumours found in the choroid plexus and in atheroma Xanthosis was to be regarded as a local manifestation of a similar lipoid degeneration Dr Archibald Leitch (London), in his paper on mule-spinners' cancer, stated that 20 per cent of cancers of the scrotum occurred in cotton spinners and 7 per cent in chimney-sweeps, and suggested that some factor existed in the nature of the mule-spinner's occupation which predisposed to malignant disease He commenced experiments last year with the lubricating oils used by mule-spinners, and found that some would produce cancer in mice when painted on the skin in other cases he was unsuccessful Many lubricating oils were now being examined The question arose why the scrotum should be the site of the disease, an answer to which might be found perhaps in the fact that the oils were retained in the sebaceous glands and some irritating material soluble in sebaceous fat was extracted In answer to other speakers Dr Leitch suggested that in the hot atmosphere of the factories the mouths of the glands dilated and in colder surroundings the oil was sucked in

Dr J E McCartney (Edinburgh) read a paper on the criteria of transmission and cultivation of encephalitis and allied viruses He reported a research undertaken to test the validity of the histological changes said to be distinctive of virus infections in the brains of rabbits Experimenting with 372 rabbits some of which were free from disease, whereas others suffered from bacterial or protozoal infections, he found that 55 per cent showed lesions such as perivascular infiltration commonly taken as a sign of virus infection and 15 per cent showed areas of focal necrosis, claimed by many to be peculiar to encephalitis infection in rabbits He concluded that the evidence of the transmission of virus disease which was based only on histological findings was valueless His researches had led him to study the growth of the virus of encephalitis in large and hundred injections and he experimented with three virus He found that the commonly employed Smith-Noguchi medium was not at all suitable for the cultivation of this

viruses, but they grew better in simple dextrose broth incubated anaerobically

Dr J Cruickshank recounted observations on the *B acidophilus* His technique for isolating this microbe consisted in making a thick emulsion of the stool in broth, adding 1 per cent glacial acetic acid, incubating overnight, and plating out on ordinary agar After obtaining pure cultures he studied the sugar reactions of many and attempted to place them in groups Great diversity was found both in morphology and sugar fermentations Agglutination tests were resorted to, but even by this method he was not able to group these bacteria successfully He concluded that several different varieties of aciduric bacteria existed in the faeces Dr R P Smith had carried out a similar study, but used whey broth or liver glucose agar as medium By administering three times a day two and a half pints of milk soured with *B acidophilus* he had succeeded in transforming the faecal flora of typhoid carriers so that film preparations showed 90 per cent of Gram-positive rods in the faeces He was not able to implant *B bulgaricus* by feeding tests He succeeded in implanting *B lactis aerogines* in the intestine of typhoid carriers only after preliminary injections of vaccine As to the therapeutic results of such feeding experiments, he had come to the conclusion that chronic constipation could be relieved but the typhoid bacilli could not be expelled from the intestinal tract of carriers by such means Dr C E Dukes reported that he had succeeded in transforming the faecal flora both of healthy individuals and of cases of ulcerative colitis by feeding with large quantities of lactose This was attended by benefit in patients with inflammation of the large bowel whose stools showed the presence of non-lactose fermenting bacteria After a course of feeding with lactose these non-lactose fermenting bacteria could no longer be found He considered that the acidophilus group of bacteria was a very large one and contained many subgroups Dr Cruickshank agreed as to the great variety of these microbes He described the different types of colonies found in solid media, and stated that he had found *B acidophilus* as well as *B bifidus* in the stools of breast-fed infants

SECTION OF NEUROLOGY AND PSYCHOLOGICAL MEDICINE

Wednesday, July 23rd

CERTIFICATES IN MENTAL DISORDERS

THE proceedings in this Section opened with a discussion on certificates in mental disorders from the medical and social aspects The President (Dr Grainger Stewart), in his introductory observations, said that the officers of the Section had endeavoured to choose subjects that would be of interest to the profession as a whole—to general practitioners as well as to specialists The subject of certification in mental disorder had received much attention from the lay press, and had, he feared, at times been misrepresented Hence it was profitable to discuss the true position The first question should invariably be, "What is best for the patient?" The opening paper was read by Dr H Yellowlees (York), and was of great interest in the various points it raised He began by commenting upon the form of certificate, which dealt essentially with the patient's social relations rather than with his mental state It was primarily concerned with his fitness for detention and not with his unsoundness of mind The Lunacy Act was only interested in mental disease if and when it rendered a patient fit for detention This fact had an important bearing on the course the practitioner must adopt when writing a certificate The word "detention" signified a keeping against the will, and there was no glimmering of the idea that a patient might be not only willing but anxious to stay under care and treatment Dr Yellowlees then referred to the weak points in the present method of certification particularly the signing of the reception order by magistrates—as distinct from county court judges—who were often quite ignorant of the detailed requirements of the law which they were called upon to administer He cited numerous instances in which mistakes had been made, and pointed out that the rectification of such irregularities—if they were brought to light—fell upon the Board of Control and the medical superintendent of the hospital to which the patient had been admitted This system of certification was then contrasted with the method existing under Scottish law, the latter appearing to be preferable

Dealing with borderland cases, Dr Yellowlees feared the public was being misled on the subject A true borderland case, he considered, did not become insane, while a mild or incipient case of mental disorder was by no means necessarily curable the acute recoverable cases were, on the whole, far more abnormal in conduct than the permanently and hopelessly insane Dr G W B James (Moorcroft House) dealt with the various clinical points which were of help to the practitioner when certification was in question Important considerations were (1) the degree of insight the patient had into his own condition, (2) suicidal impulses, (3) danger to others He also mentioned the surprising fact that although a patient was under certificate in a mental hospital he was quite at liberty to refuse treatment Dr J H Thornley (Scarborough) discussed the question from the point of view of the general practitioner He agreed with Dr Yellowlees that the system of certification in Scotland was superior to that in England, and pleaded for the appointment by the State of a mental expert who should give advice—for private and poor patient alike—on the question of certification, and if necessary, be a signatory of one of the certificates He also considered it advisable to introduce a form of "temporary certification"—a method by which borderland cases could be detained temporarily for observation and reflection before a definite opinion was given Dr Russell (North Riding Mental Hospital) considered that we should do all in our power to elevate the mental hospital and to certify in modified form, so that cases would be received earlier and the suicide of many incipient cases avoided He also advocated a similarity of procedure in the certification of both the private patient and the so-called "pauper" case Dr Stanford Read (London) distinguished between "insanity" and "unsoundness of mind," and deplored the stigma attached to the term "insanity" He expressed the opinion that the difficulties connected with certification would be greatly smoothed away by the education of the medical profession and the public in the law Dr Bedford Pierce (Leeds) urged that the voluntary treatment of patients should be facilitated in every possible way, and that recent acute cases should be admissible to temporary detention without certification Dr Mills agreed with Dr Bedford Pierce, and considered that pauper cases should be allowed to be treated as voluntary boarders when indicated, while Dr Blair (Lancaster) emphasized the fact that the onus of certification should not be upon the family physician Dr Hildred Carlill (London) mentioned the difficulty that often arises in stating 'facts observed indicating insanity," and cited an instance Dr Worster Drought (London) dealt further with the question of the refusal of treatment by certified patients, certification of those exhibiting suicidal impulses, and with the powers of the relieving officer under Section 13 of the Lunacy Act

Thursday, July 24th.

EPILEPSY

On the second day the proceedings in this Section were devoted to a discussion on the nature and treatment of epilepsy Dr J S Collier, in opening the discussion, stated that although the investigations of recent years had brought no great discoveries to alter fundamentally our view of the causation, nature, and treatment of epilepsy, some progress had been made towards a much wider conception of the disease, and also towards bringing into line all those conditions in which the manifestations resembled or were identical with those of the malady termed "idiopathic epilepsy" Useful work had also been done in the separation of certain clinical types of epilepsy, and also at least one valuable addition made to therapeutic measures As regards the nature of epilepsy, Dr Collier considered that it was not in any sense a disease of the brain, but that there was much evidence in favour of its being due to a form of metabolic disturbance He also cited other conditions of known metabolic dyscrasia in which epileptiform convulsions occurred—such as uraemia and eclampsia—

while in his opinion infantile convulsions were epileptic in nature Among the points in favour of a metabolic disturbance were the periodicity of the attacks, the resemblance of status epilepticus to an acute toxic process, the immunity of the epileptic from so many common diseases, the constant leucocytosis with increase at the time of the paroxysm, the diminished blood alkalinity both before and after the attack, and the presence of choline in the cerebro-spinal fluid of some epileptics There was very little evidence in favour of an endocrine disturbance as responsible for the manifestations of epilepsy, while in his experience protein therapy did not yield any convincing results From the irregularity of the incidence of epilepsy in brain lesions, Dr Collier considered that it was not the lesion itself which caused the epilepsy, but that it was due to some associated condition not necessarily present with every lesion As regards traumatic epilepsy, he had never seen a case benefited by operation He then referred to treatment concerning general hygienic measures, he was convinced that the less one departed from the routine of a normal healthy life, and the fewer restrictions that were made, the better for the patient Occupation was good for every epileptic Thyroid extract benefited those cases with a low basic metabolic index, in other cases, however, it might be harmful The remedies for choice were bromide and luminal, and he strongly condemned the view that medicinal measures should not be used in epilepsy until all other hygienic-dietetic measures had failed

Dr Aldren Turner was uncertain as to all cases of epilepsy being due to a metabolic dyscrasia, although some cases might be referred to this cause, such as those which follow the exanthemata Concerning an endocrine disturbance as a factor he was sceptical, some forms might be due to anaphylaxis, while others appeared to be purely psychogenic Dr Tylor Fox (Lingfield) dealt with the use of luminal in epilepsy and the importance of the patient's environment Colony treatment was eminently satisfactory, as the epileptic saw himself as a normal member of the community in which he lived Dr A McDougall (David Lewis Colony) also spoke of the benefits of colony treatment, the earlier in life the patient was admitted the better he progressed Dr Stanford Read considered that the psychic factor in epilepsy had not been taken sufficiently into account and pleaded for a more detailed psychological study of those cases in which no organic lesion could be demonstrated He related a case in which the epilepsy appeared to depend on a psychogenic cause the patient benefiting by psychotherapy Dr D N Hardcastle regarded epilepsy as a regression to a preconscious psychological level, and discussed the various psychological factors involved The President then expressed the opinion that the cause might eventually be found to concern the vegetative nervous system, he instanced a case of the vagotonic type which had been cured by atropine Dr Hildred Carlill dealt with the diagnosis and the question of marriage in epileptics, while Dr Potts advocated the institution of psychotherapy early in life Dr Worster-Drought expressed surprise that Dr Collier had seen no case of traumatic epilepsy benefit by operation, he related two cases met with in which operation had resulted in cure He also dealt with the theory of anaphylaxis as a cause and detailed tests he had carried out Dr Core and Dr Scharff also contributed to the discussion Dr Collier brought a most interesting discussion to a conclusion by replying to the various speakers

Friday, July 25th

The proceedings on the third day began with a demonstration by Dr F C Eve (Hull) of the measurement of Kernig's sign by means of a wheel goniometer When the patient's flaccid leg was raised from the bed with the operator's hand placed just below the middle of the tibia a stage was reached when the knee flexed spontaneously The angle which the leg then made with the horizontal was measurable with the wheel goniometer—an apparatus consisting of a spindle carrying a small graduated wheel which was weighted so that the 90 degree mark always remained uppermost

A discussion on the differential diagnosis and treatment of compression paraplegia was then opened by Dr Anthony Feiling In order to keep the discussion within reasonable limits, Dr Feiling excluded from consideration all cases of sudden and acute lesion of the spinal cord caused by trauma or acute myelitis After a description of the physiological disturbances and pathological changes that follow compression of the spinal cord, he classified the causes of this form of paraplegia under two main headings (1) extradural lesions, and (2) intradural lesions Among extradural lesions were the various diseases of the spine—caries tumours arising from bone and spondylitis—and conditions such as aortic aneurysm parasitic cysts and tumours arising in the peridural tissues The intradural lesions included extramedullary and intramedullary tumours and the different forms of chronic meningitis The general signs and symptoms of compression paraplegia were also considered under two headings (1) those due to the direct effect of the lesion on the spinal cord and nerve roots at some particular level (local symptoms), and (2) those due to interruption of the functions of the long tracts in the cord (remote symptoms) The local symptoms included pain, hyperaesthesia and later anaesthesia while the remote symptoms were (*a*) motor—loss of voluntary power spasticity and alteration of reflexes (*b*) sensory disturbances and (*c*) autonomic system affections such as vesical and rectal disturbances, vasomotor changes and trophic lesions Dr Feiling then described the particular features of the two most important forms of compression paraplegia—that resulting from Pott's disease and that due to intradural tumours The changes that often occurred in the cerebro-spinal fluid—increased protein content and Froin's syndrome—were also reviewed, and reference was made to x ray examination following the intradural injection of lipiodol by cisterna magna puncture to determine the presence of a block in the intradural canal Dr Hildred Carlill pointed out that the site of a compressing lesion of traumatic origin could often be determined by the attitude of the patient he showed a photograph of a man with a lesion just below the sixth cervical segment, illustrating this observation He described a case of compression paraplegia following cerebro-spinal fever the diagnosis being confirmed by the intradural injection of lipiodol with x ray examination and subsequently by laminectomy He expressed the opinion that for the use of lipiodol it was not necessary to puncture the cisterna magna, as the injection could be made into the cervical or dorsal theca above the compressing lesion Dr Burrow emphasized the occurrence of spinal rigidity in cases of spinal cord tumour He considered the sensory examination of the utmost importance and advocated the use of Head's algesiometer for the purpose Concerning lipiodol he had seen retention of urine follow its use, and was not in favour of the substance as an aid to diagnosis Mr G Jefferson dealt further with changes in the cerebro-spinal fluid He considered that the absence or reduction of the increase in cerebro-spinal fluid pressure in the lumbar region normally present during venous compression was an aid in the diagnosis of compression paraplegia As regards spinal caries, 80 per cent of cases would recover after fixation treatment The President (Dr Grainger Stewart) also dealt with the surgical aspects of compression paraplegia and gave a most interesting account of the symptomatology of those spinal tumours arising intradurally from the roots of the spinal nerves They were of considerable importance as with treatment by operation the prognosis was so favourable Dr Worster-Drought referred to the frequent difficulty of differential diagnosis in many cases of lesions affecting the lower cervical region of the spinal cord and the manner in which cerebro-spinal fluid examination was of assistance in arriving at a conclusion

SECTION OF OPHTHALMOLOGY

Wednesday July 23rd

Intracapsular Method of Cataract Extraction

The President Dr Maitland Ramsay of Glasgow, expressed his appreciation of the honour done to his school and university in appointing a Glasgow man to the high office, he gave a hearty welcome to the members of the Section In the absence of Professor Ignacio Barraquer (Barcelona)

his paper was read by the Honorary Secretary of the Section, Dr J D McCulloch (Bradford). He considered the classical operation for the extraction of cataract with cystotomy a most imperfect operation, there was pressure on the eyeball, difficulty in securing complete extraction, retention of the capsule with risks of subsequent inflammatory reaction and loss of sight. Intracapsular extraction of cataract was not new, it was performed in 1745 by Daviel, and since then many methods had been exploited, most of these were defective or difficult to perform. His own method, the use of a suction pump and pneumatic cup, removed these disabilities. He had practised the operation during the last eight years, and the clinical results were much superior to those obtained in his previous work when the usual capsulectomy was performed. The operation was not difficult, but it was completely different from all other cataract operations. Mr A. H. H. Sinclair (Edinburgh) opened the discussion by giving an account of his personal experience of extraction of cataract in the capsule. He did not follow Barraquer's method. He had devised a forceps the extremities of which were shaped like the human hands when placed, little fingers together, in making a cup of the hands. The half cup on each limb of the forceps was finished off in the most delicate fashion so that there was no possibility of pricking or cutting of the lens capsule. The degree of pressure of the approximated edges of each blade end could be adjusted by a regulating nut on the shafts of the blades. In operating, the cup ends of the forceps were applied as widely as possible to the face of the lens by depressing the blades. A grip was obtained of the capsule and some of the underlying lens matter, and by the hold thus obtained it was possible gently and gradually to detach the lens from the lens ligament and lift it bodily as a pear-shaped bag through the coloboma of the iris and so through the corneal wound. The procedure was shown recorded by a cinematograph film of an actual operation on a patient. Of 52 cases operated on by this method 16 got 6/6 vision, another 16 got 6/9. Vitreous loss, if extensive, was a very serious event, especially with normal vitreous. He had had two serious losses and seven slight losses, in the two vision was poor and might degenerate, in the seven vision was good and might be expected to remain so. He recognized that his cases were few, but their promise was good. Lieut.-Colonel Henry Smith (I.M.S.) said that Dr Barraquer did not lay emphasis on the primary necessity in intracapsular extraction by whatever method—suction or expression or extraction—of an ample incision. That was the secret of success; without it failure was certain. Suction extraction would always fail with Morgagnian cataract, the capsule was too frail. Suction was tried first in 1906, it might be simple, it might be very complicated. Dr Barraquer's apparatus was excessively complicated, and he doubted if the vibration set up by it had any advantage. Recently a combination of Barraquer's suction and his (Lieut.-Colonel Smith's) expression had been tried, and he thought it provided an ideal practice. Mr M. L. Hepburn (London) said that many of the alleged disadvantages of cystotomy were largely visionary. Cystotomy remained an excellent and very safe operation. Of intracapsular operations suction was preferable to expression, but the complexity of the apparatus and relatively large size of the instruments introduced into the eye for suction was serious, worst of all, there was an undoubted increase in the losses of vitreous, which constituted the gravest danger of all. He thought Barraquer's operation was not the operation of the future. Mr J. Gray Clegg (Manchester), Mr Bishop Harman (London), Mr Harrison Butler (Leamington), Mr R. J. Coulter (Newport), Mr A. L. Whitehead (Leeds), Mr L. E. Maddox (Bournemouth), Mr A. Little (Bradford), Dr Gordon Spencer (Mesopotamia), Dr O. G. Morgan (London), continued the discussion, almost all testified to the superior advantages of extraction with cystotomy, and Mr H. H. Sinclair replied. Mr A. L. Whitehead (Leeds) read a paper on paresis of the accommodation as a late sequela of encephalitis lethargica, which was discussed by Mr Harrison Butler (Leamington). A message was sent to Professor Barraquer expressing the sympathy of the Section with him in his recent bereavement.

Thursday, July 24th

Microscopy of the Living Eye

At this Section the chair was taken by Mr R. J. Coulter (Newport), vice-president. Mr Basil Graves, British Medical Association Science Research Scholar, opened a discussion on the microscopy of the living eye. He proposed to confine his observations to the aqueous and lens. The aqueous fluid was usually thought to be optically empty, but this was not so. The fluid was reluscent, and this was increased in pathological conditions. Using the ordinary slit-lamp and the 1 mm. dot-aperture, the observer could see the path of the beam traversing the normal aqueous fluid. Slow movement of the beam of light up and down improved perception. He described the visibility of the path of light in the normal aqueous fluid as a homogeneous "flare." It differed from the visibility of discrete particles seen in pathological states. On occasions, when the arc slit-lamp was used, occasional isolated illuminated particles might be seen to cross the beam-track even in an eye which might be presumed to be normal, he believed such particles, when few and when unaccompanied by any increase in the visibility of the normal homogeneous flare component, were not indicative of past or present intraocular trouble. Particles of an order of size and distance of separation which was below the lowest limit of resolution were due to scattering of light, but particles which were visible owed their visibility to diffraction. There was an inconstant feature of the optical section of the anterior and posterior lens cortex, a restricted portion might show an almost metallic lustre. It was best seen in many a normal senile cortex, but it might be seen in delicate form in young persons. The appearance could be varied with the angle of the optical beam, it increased with age. He thought them due to a summated specular manifestation occurring along the course of the sectional beam as the result of multiple diminution of structure, and that in this might be a recognition of presenile cataractous changes which might have some bearing on the onset of senile cataract.

Mr Harrison Butler (Leamington) gave a most lucid and interesting account of his observations in this method of investigation of the eye, illustrated by many very beautiful projection pictures. These showed the appearance of the structures of the eye from cornea to retina when illuminated by the slit-lamp beam. Further, the altered appearances of these structures in conditions of disease were shown. The corneal picture shown demonstrated superficial keratitis, herpes ophthalmicus, keratitis disciformis, central keratitis, folding of Descemet's membrane, and interstitial keratitis. The changes in the aqueous were of special importance. He believed the detection of cellular elements might be the first sign of sympathetic ophthalmitis. He had failed to see the reluscence of the normal aqueous described by Mr Basil Graves he only saw it in disease. There had been a new revelation of lens structure both in anatomical details and in clinical conditions. He was convinced of the value of the slit-lamp and of its permanent utility.

Mr C. B. Goulden (London), dealing mainly with the specular reflections of the media of the normal eye, showed that in disease these reflections were increased both in intensity and in number. Mr O. G. Morgan (London) described the appearances seen in a series of cases of cyclitis involving keratitis punctata and vitreous changes. Mr Humphrey Neame (London) discussed posterior stellate or rosette opacity of the lens following trauma, in which the opacity disappeared completely in a few weeks.

Mr Basil Graves, in reply, thought that at present the slit-lamp was of great value in clinical examination, save only in vitreous haze, in which the ophthalmoscope was the better. Mr Harrison Butler agreed that gross vitreous opacities were invisible with the slit-lamp. Mr J. A. Wilson (Glasgow) read a paper on sympathetic ophthalmia and allied conditions. In the afternoon demonstrations of cases and of the slit-lamp were given at the Royal Eye and Ear Hospital, also of operations for the intracapsular extraction of cataract.

SECTION OF PUBLIC MEDICINE AND INDUSTRIAL DISEASES

Wednesday, July 23rd

On July 23rd the Public Health Section met in one of the large rooms in the Bradford School of Art. There were some thirty members present at the beginning but the number rapidly increased to over fifty—including several ladies—by the time the preliminary proceedings were over. The President of the Section (Dr Herbert Jones, Hereford) in his opening remarks called attention to the fact that this was the first Annual Meeting at which the public health service, as represented by the Society of Medical Officers of Health, had been formally admitted to the Representative Meeting and to the Council and that there was a reciprocal representation of the British Medical Association on the Council of the Society. It was therefore apposite that the subject for the first discussion should be that of the role of the general practitioner in preventive medicine. He called to mind that in the early days of public health the first medical officers of health were taken from the ranks of general practice, and he mentioned the names of such pioneers as Franklin Parsons, Bruce Low, Thursfield of Shropshire, Kelly of Kent, George Wilson of Warwickshire, George Turner of Hertfordshire, Woodforde of Berkshire (to which list had not modesty forbidden, he might well have added his own). The success with which these men had laid the foundations of public health was an open book and the purpose of the discussion now to be opened was to bring to the forefront practical suggestions for the complete and intelligent co-operation of the general medical practitioner and the medical officer of health, for the ultimate aim of both was the welfare of the whole community. Dr Peter Macdonald (York) then read his paper dealing with the activities of the general practitioner which tended to the prevention of disease, with the directions in which he failed to take full advantage of the opportunities that present themselves, and with the various ways in which he might be more closely linked up with the departments of public health. In the latter department Dr Macdonald was strongly of the opinion that a part-time service was the most advantageous to the community in the end. The discussion was vigorously taken up by some fourteen participants, amongst whom were several general practitioners. The chief points which emerged were to the effect that the general practitioner's sympathies were early divorced from public health on account of the faulty and fragmentary way in which the subject was presented to him in the course of his medical studies, while the M O H and his department too often stood aloof from the general practitioner. Lieut.-Colonel F. E. Fremantle, M.P., who spoke at some length, laid great stress on the point that neither the one nor the other, in honour to his profession, could adhere absolutely to "the bare contract" of his office, and some machinery ought to be devised to facilitate interchange of ideas and ideals between the two branches of medicine. Dr H. B. Brackenbury claimed that the general practitioner was in fact, doing a great deal of preventive work, but as this was not done under the auspices of a municipality it was not credited as such. As an outcome of the discussion a formal resolution was passed unanimously, requesting the Council to inquire as to the best means for effecting co-operation between the profession at large and the medical members of Parliament. Next, a short paper was read by Dr J. Hall-Edwards upon public health authorities and the cancer problem, in which he ventured the opinion that sooner or later it would be necessary to make cancer notifiable. From inquiry made by the Birmingham Cancer Sub-committee it was clear that our hospitals were not fully equipped for applying all the methods which offered some measure of success, and that residential treatment for inoperable cases was badly needed. He believed much good could be done by propaganda in bringing about an earlier recognition of the disease and in this matter nurses and welfare workers could be of great assistance. A brief discussion followed and then Dr Peter Macdonald formally replied to the comments upon his paper, whereupon the Section adjourned for the day.

Thursday, July 24th

The second day's proceedings opened auspiciously with an attendance of about seventy. Dr J. Boyd Orr (Rowett Institute, Aberdeen) in his paper on recent advances in our knowledge of nutrition directed attention to the importance of mineral constituents in diet, remarking that the 'calorie value" was a very imperfect test of the efficiency of a food. Modern methods of preserving, preparing and cooking food deprived it of much of its mineral value, and these minerals were required not only for skeletal structure, but were necessary for the proper functioning of the soft tissues, gland and secretion. A physiological balance of mineral solutions in the body was necessary for the maintenance of health and many diseases were due to mineral deficiency, for even a slight divergence caused a considerable upset of the normal functions. Calcium and phosphorus, they knew were essential for the prevention of rickets, but sodium and potassium were also necessary, while an excess of the latter led to excessive excretion of the former. Iodine in minute quantities also played an important part. Cod liver oil corrected in a remarkable way an ill-balanced diet but it failed if the balance was too far out. Sunlight and ultra-violet ray had a similar effect. The application of scientific principles of dietary had had a marked effect in stock breeding and they could be applied with equal effect to the human species. In the absence of Professor E. Mellanby Dr Robert Hutchison followed up the subject by dealing with the influence of diet in the first few years of life on the constitution of the adult. He maintained that at an early age the defects due to improper diet could be eradicated by improved feeding afterwards, but if the dietary errors occurred at or a little after the age of puberty the result were much more serious and lasting. Dr J. S. Manson in his paper on common errors of diet in an urban population caused considerable amusement by his reference to "angel food," which is the popular name for fancy cakes, jellies and suchlike innutritious dainties. The discussion which followed centred chiefly upon the necessity for instructing the public so that they should not be misled by specious advertisement and dainty appearance in their judgement of food values. As a practical outcome of the discussion a resolution was carried unanimously asking the Council of the British Medical Association to investigate in conjunction with the Society of Medical Officers of Health, the dietary of the people and to set up a standing food committee for advisory purposes.

The second half of the morning was devoted to industrial welfare, and it was gratifying to note that a considerable number of representatives and welfare workers from the large manufacturing firms in the neighbourhood entered the meeting at this juncture and took an active part in the subsequent discussion. The President (Dr Herbert Jones), in welcoming these visitors reminded them that industrial welfare was no modern innovation, for the first Josiah Wedgwood carried it out at the end of the eighteenth century by building houses and providing an open air swimming bath for his workers. Dr W. F. Dearden then read his paper dealing with the different systems and practices of industrial welfare in this country and in America and was followed by Dr David McKail who dealt with the pros and cons of the welfare movement as applied to factories. A keen discussion followed in which the advantages of taking an active and practical interest in the health and well-being of the workers both from a commercial and from a health point of view was warmly advocated with the warning note that such work could only be successful if the workers' sympathy and support were first gained.

SECTION OF DISEASES OF CHILDREN

Wednesday, July 23rd

Mental Deficiency

The first discussion in this Section was on the prevention of mental deficiency. Dr A. F. Tredgold confined his opening remarks to mental deficiency as defined by the Act of 1913. He said that mental deficiency fell in to two

groups—primary and secondary Primary amentia was essentially a diminished developmental potentiality of the cerebral neuroblasts, it was germinal in origin, and it was inherited or transmissible He did not consider the mode of transmission obeyed the Mendelian laws, but rather that it consisted in a form of "germ devitalization", this might be the result of various toxic factors This would manifest itself in the offspring by defective function, as seen in hysteria, epilepsy, or mental instability, or by defective durability, as seen in mental defect He thus considered that it was not mental defect which was inherited or transmitted, but the impairment of developmental potentiality of germ neuronic determinants—that is, neuropathic diathesis For the prevention of mental deficiency he thought segregation much better than sterilization, which gave rise to a sense of false security, and would loose on the public these defectives, and there would be an increase of venereal disease as the result Whichever view was adopted, however, it was clear that the number of defectives would be only slightly lessened by this means To produce any appreciable preventive results all those who suffered from the neuropathic diathesis would have to be sterilized, and this was not only impracticable but impossible Birth control would certainly not prevent mental deficiency, on the contrary, it would probably increase the proportion of these persons, as those who would practise it were the prudent and the desirable classes, while those who would not were the neuropaths Secondary amentia differed from the primary in that the germ plasm was sound, there was no morbid heredity, it was produced by adverse factors of environment acting directly upon the developing embryo or the young child By better obstetrics the birth injury might be done away with, and in those cases where haemorrhage had taken place it might be set right by operation Other factors causing secondary amentia were infections, such as seen in encephalitis lethargica, meningitis, and syphilis

Dr Eric Pritchard agreed that the pessimism of Mendelism had pervaded the whole medical profession as regards mental deficiency He considered that by the removal of the toxins or infections depressing the germ plasm it would return to normal Faulty feeding—vitamin or chemical lack—might be a factor in the production of mental deficiency Dr Robert Hutchison said that from a study of 150 cases of mental deficiency in the upper classes in his private practice he concluded that there was no evidence that the heredity in such children was more neuropathic than that of the average normal child, nor had he been able to trace any ill health in the mother to account for the condition It was absurd to say that mentally deficient children came of neurotic stock All who were worth anything came of neurotic stock He considered primary amentia, therefore, to arise as a fortuitous unfavourable variation, and that each generation would continue to produce its crop of such children from the ordinary average stock, just as it produced its crop of men of exceptional ability Dr W A Potts thought that heredity was a most important factor This was borne out by the fact that the mating of two mentally defective parents produced all mentally defective children With better obstetrics, better hygiene, and segregation, mental deficiency might to some extent be prevented Dr R Langdon Brown thought that Goddard's work on the Mendelian theory of the transmission of mental deficiency was not proved He thought that segregation was better than sterilization Dr R M Marshall considered that on the whole, in our present state of knowledge, there was very little hope of further preventing mental deficiency Dr Turner thought that eugenics was of the utmost importance Dr Crofton maintained that infections of the mother were of great importance to the foetus, especially during the first six weeks of intrauterine life Dr Nash said that the diagnosis of birth injury was extremely difficult, and therefore the chances of helping the infant by operation were remote Dr Priest Lapage considered infection might produce the neuropathic diathesis, but that the question of "stock" was most important Dr Brackenbury thought it possible that both the defective germ plasm theory and the Mendelian principles of inheritance might be operating at the same time The President (Dr Leonard Findlay) said that such a discussion was of great importance, as the people considered that the doctors knew how to prevent mental defect but would not act This discussion would therefore be an answer to eugenists He wondered whether the special schools and institutions, with special doctors and nurses, which were provided by the ratepayers of the country, were really worth while, and whether any mentally defective child was ever improved sufficiently to earn its own living

Thursday, July 24th

PULMONARY TUBERCULOSIS IN CHILDHOOD

Dr Clive Riviere, opening this discussion, confined his remarks to the period between the ages of 6 and 15 years He quoted the Registrar-General's figures, which showed an extremely small mortality in this period from pulmonary tuberculosis This must mean that either infection of the child during this period was rare or his immunity to infection was high He then quoted figures on the tuberculin skin tests to show that observers such as McNeil in Edinburgh and von Pirquet in Vienna had found that during this period of life more than half the children gave a positive test In a large series of necropsies the incidence of pulmonary tuberculosis was extremely high These figures indicated that tuberculous infection of the lungs or bronchial glands was extremely common in children of school age The clinical picture of these children was next described Right paravertebral dullness was as characteristic of such cases as crepitations at the apex were characteristic of adult pulmonary tuberculosis Dr D Campbell Suttie of Glasgow read a paper on the x-ray diagnosis and findings in pulmonary tuberculosis in children, based on the investigations of patients who had been diagnosed by x-rays and physical signs, and in whose sputum tubercle bacilli had been found At necropsy the lesions of tuberculosis had been demonstrated He believed that the x-rays would demonstrate very minute lesions before they were advanced enough to give rise to physical signs There were four types of pulmonary tuberculosis in children miliary, bronchopneumonic, hilum tuberculosis, and the adult apical type Tuberculous glands were not shown by x-rays until they were either caseous or calcareous Dr Piget Lapage (Manchester) said in the diagnosis of pulmonary tuberculosis in childhood symptoms of the 'toxic state" were first shown in the appearance of the child and its general loss of tone, flat-feet, scoliosis, irritable heart, and generally impaired functions The physical signs he relied on most for diagnosis were the area of right paravertebral dullness, cog-wheel breathing, and d'Espine's sign X-rays were difficult to interpret and not diagnostic in slight cases Dr C W Vining (Leeds) could not agree that localized tuberculous glands would cause such gross symptoms of malnutrition and toxic change as had been claimed Tuberculous lesions which produced such a picture were so extensive that there was no question of their existence Some clinicians overlooked the fact that chronic dyspepsia, constipation, or underfeeding might give rise to a picture very like the one under discussion Dr Charles McNeil (Edinburgh) had not been able to find any physical sign of use in diagnosing these cases with any reasonable certainty He placed great value on a negative cutaneous test with tuberculin, but none on a positive reaction Dr F G Chandler (London) thought the seeds of adult tuberculosis were sown in childhood, and especially in the bronchial glands Dr Crofton (Dublin) considered the subcutaneous tuberculin test infallible, not only for tuberculous infection, but for its activity also Dr John Watt (Derby) had found the sputum positive in the majority of his cases He considered that hilum tuberculosis of childhood developed later into the adult type Dr Eric Pritchard (London) doubted whether the ordinary mortal could percuss out this small area of paravertebral dullness but he believed that the subcutaneous tuberculin test was most efficient in diagnosing an active or latent tuberculous infection Dr Priest thought that preventive methods might succeed if patients could be discovered early, prolonged treatment given, and the stigma removed from sanatoriums by calling them chest hospitals The President (Dr L Findlay) admitted that there was much tuberculosis within these age limits, but was there much pulmonary tuber-

culosis? He was unable to diagnose pulmonary tuberculosis until physical signs appeared, and the x ray supported the diagnosis He thought mediastinal tuberculosis was common, but its diagnosis was beyond him he could not understand the mechanism of pathology of paravertebral dullness If children with a positive skin tuberculin reaction were to be considered tuberculous as they were in Toronto or Vienna 90 per cent of the children in this country would be labelled tuberculous In his opinion all milk was tuberculous and should therefore be pasteurized or sterilized

SECTION OF LARYNGOLOGY AND OTOLOGY

Wednesday, July 23rd

Chronic Tonsillitis

The proceedings of the section were opened by the President (Dr W Jobson Horne), who said that the subjects set down for discussion although perhaps well worn were of daily importance in practice Dr A Brown Kelly opened a discussion on chronic tonsillitis He pointed out that an enlarged tonsil, although apparently healthy on probing and squeezing if examined microscopically after enucleation would be found to be diseased, from a bacteriological standpoint every tonsil was a diseased tonsil, and it became necessary to base an opinion mainly on the clinical history concomitant signs and local aspect It was sometimes asked whether operation might not abrogate or destroy some important function by the deprivation of which the patient would suffer This was conceivable in the young child, but it should suffice to remember that the tonsil was made up of numerous nodules of lymphadenoid tissue precisely similar to those found scattered singly or in groups beneath the mucous membrane of the pharynx There need be no hesitation in removing enlarged or diseased tonsils from a child of 2 years, or even of 18 months, if healthy and vigorous, in a younger child it was advisable to operate on the adenoids first and leave the tonsils until later According to the view generally held, enucleation of tonsils lessened the liability to contagious diseases, and when such diseases were contracted the attacks were milder in those who had undergone operation The detection of a septic focus, or good grounds for suspecting the presence of one in a tonsil was manifestly a matter of importance, but in many cases it was difficult or impossible by mere inspection to say whether a tonsil was healthy or diseased The absence of signs by no means excluded the presence of a small chronic abscess close to the capsule or of a collection of decomposing debris at the bottom of a long crypt Several points had to be noted Was a focus of infection present in the tonsil? Was the special focus for which search was being made in the tonsil? Were foci of infection present elsewhere? If the tonsil was clinically healthy, had caused little or no trouble in the past, and there was no apparent relation between the tonsil and the systemic disease under investigation tonsillectomy should not be recommended In all cases of systemic disease suspected of being due to a septic focus in the tonsils these general principles should be borne in mind before recommending tonsillectomy Mr Scott Ridout asked the meeting to formulate a definite line to guide the practitioner in recommending operative treatment in those cases in childhood which might be described as the borderline type Dr J S Fraser pointed out that in order to see the tonsil properly it was necessary to get the patient to gag Mr L D D Davis gave a summary of the numerous diseases and symptoms for which he had been asked to enucleate the tonsils Mr Syme Mr O'Malley Mr Pavey Smith, Mr Bell Tawse, Mr Holt Diggle, Dr Jobson and the President also took part in the discussion Resolutions were unanimously passed to the effect that tonsillectomy by enucleation was the only effective operation that the operation should not be conducted as a minor operation but as one of the lesser major class of operations and that the operation should only be undertaken after expert opinion had been given

Dr Neil Maclay read a paper on nasal neuroses he gave an account of physiological experiments which had been carried out under his supervision and correlated them with his clinical experience The paper was discussed by Dr Brown Kelly, Mr O Malley, Mr Kelson, and Mr Dunlop

Dr William Hill read a paper on radium therapy in cancer of the oesophagus He had dealt with seventy-seven cases of malignant stricture of the oesophagus by radium and in about one third there was remarkable improvement, in another one third substantial improvement and in the remainder the improvement was either very slight and fleeting or there was none Three patients had died within a few days of the application The paper was discussed by Mr L D D Davis and Mr Syme

In the afternoon there was a demonstration of cases and specimens at the Royal Eye and Ear Hospital Mr Appleyard showed six cases including a facio-hypoglossal anastomosis and a pneumatocele of the mastoid process following an operation for acute mastoiditis Mr Donald Watson showed eight cases including an osteoma of the frontal sinus a xanthoma multiforme affecting the mouth and larynx and a mucocele of the larynx extending into the neck Mr Watson demonstrated a new mastoid retractor and Mr H S Southall demonstrated his new oesophagoscope

Thursday July 24th

Acute Otitis

The second day of the proceedings of the Section with Dr Jobson Horne in the chair began with a discussion on the importance of early treatment of acute otitis which was opened by Mr J F O'Malley Mr O Malley said that the term "acute otitis" might be appropriately applied to any acute inflammatory or suppurative process arising in any portion of the organs of hearing either external, middle or internal ear, but was usually limited to affections of the external and middle ear only An acute inflammatory process in such a small air chamber as the middle ear, clothed as it was with a vascular lining and containing a delicately jointed bony mechanism for the conduction of sound constituted a dangerous menace to the function of hearing Mr O Malley summarized the possible complications of acute otitis to emphasize the importance of the subject He classified acute otitis media under four headings (1) deafness and pain with hyperaemia of the drum (2) deafness pain hyperaemia and bulging of the drum (3) acute middle-ear suppuration, (4) the second and third *plus* suspected mastoid antrum infection Otologists had to make up their minds whether treatment should be medicinal and if so for how long, and if surgical how soon and what form it should take Dr Peter Macdonald and Sir Malcolm Watson emphasized the importance of the subject for the general practitioner Dr J S Fraser pointed out the difficulty sometimes of diagnosing a furunculosis from mastoiditis he did a paracentesis if the patient had had a bad night and the drum was beginning to bulge but not at the hyperaemic stage Mr Neil Maclay thought that early paracentesis was most valuable Mr Holt Diggle believed that if there was pain even without bulging for forty-eight hours paracentesis should be done Mr Tawse said that paracentesis was one of the rarest operations which he did but he strongly believed in early opening of the mastoid antrum Dr William Hill, Mr Kelson Dr Wallace (Uppingham) Mr Dunlop Mr Donald Watson Mr Ritchie Rodger, and the President also took part in the discussion

Dr J S Fraser read a paper on cerebellar abscess giving statistics of cases seen at the Edinburgh Royal Infirmary From 1907 to 1923, 2 000 cases of acute purulent otitis media were seen among these cases 699 came to mastoid operation one patient had cerebellar abscess and three had abscess of the temporal lobe During the same period, 6 492 cases of chronic middle-ear suppuration were seen 1 305 radical or modified radical mastoid operations were performed 26 cases had cerebellar abscess and 27 abscess of the temporal lobe From 1907 to 1923 Dr Fraser had performed 140 Schwartze operations and 725 radical or modified radical mastoid operations and had dealt with 8 cerebellar and 10 temporal lobe abscesses of the 8 cerebellar cases only 1 followed acute middle-ear suppuration and 7 resulted from chronic purulent otitis media 4 of the 8 cases recovered and 4 died The paper was discussed by Mr Kelson Mr Ritchie Rodger, Mr Scott Ridout, and Mr Tawse

Mr W H Kelson read a paper on some osseous growths of the nasal and adjacent bones These growths, he said, were rare, but were nevertheless of considerable interest, especially to the rhinologist He gave a survey of the literature on the subject, and showed some interesting specimens and photographs The paper was discussed by Mr Syme, Dr William Hill, Mr O'Malley, Dr J S Fraser, Mr Donald Watson, and the President

Mr W S Syme read a paper entitled "Definite diagnosis in affections of the ear, nose, and throat" He said that the ear was never thoroughly examined until the nose and throat had been examined as well, and he told his students that of all methods of examination posterior rhinoscopy was the most important It was more than a coincidence that many cases of recurring furunculosis, otitis externa, and eczema of the meatus suffered also from nasal suppuration or from septic tonsils or dental disease He had sometimes completely relieved very severe pain in the ear by removal of the hypertrophied posterior end of the inferior turbinal Again, of all forms of chronic laryngitis probably none was so intractable as that caused by the inhalation of septic material from atrophic rhinitis

SECTION OF DERMATOLOGY

Wednesday, July 23rd

SKIN CANCER

Dr HENRY MACCORMAC (London) in his opening paper criticized the prevailing view that there were two distinct kinds of cancer of the skin—(1) rodent ulcer and (2) squamous-celled epithelioma He enumerated the following points of differentiation between the two types of skin cancer, some of which had been insisted upon by Jacob, the Dublin surgeon who originally described rodent ulcer, and some by his successors (*a*) Rodent ulcer was usually confined to the face (*b*) Rodent ulcer began at an earlier age than other forms of cancer (*c*) In rodent ulcer glandular and visceral metastases did not occur Dr MacCormac showed that to each of these generalizations there were important exceptions, and as regards the third, on which most weight was usually placed, he quoted three cases in which the patient died from metastases On the other hand, he had also collected a series of twenty-two cases of squamous-celled epithelioma of the skin in which the growth had been present a considerable time, which showed that glandular metastasis was by no means common in prickle-celled cancer of the skin It also appeared that metastasis was rare in the cutaneous cancer of paraffin workers Approaching the problem from another angle, the study of the histology of rodent ulcer had revealed no definite dividing line between rodent ulcer and prickle-celled cancer, in many cases basal- and prickle-celled types of growth were found side by side and merging into one another Darier was evidently of much the same opinion, for he divided all skin cancers into (*a*) a spino-cellular group, (*b*) a baso-cellular group or rodent ulcer, and (*c*) metatypic or spino-baso-cellular epitheliomata, it also appeared that the prickle cells were not infrequently found in rodent ulcer Dr MacCormac was of opinion that syphilis was not a predisposing cause of skin cancer, although it might be of cancer of the mucous membranes Finally, he said that primary epithelioma might arise in three situations—the skin, the semimucous membranes, such as the lip, and the true mucous membranes, as the tongue On a semimucous membrane the degree of malignancy was greater than on the skin and on the true mucous membranes higher still In fact the clinical aspects of epithelioma depended more upon the anatomical position than on the histological type of the growth

Dr Swarbrick (Manchester) divided primary cancer of the skin into (1) basal-celled, (2) squamous-celled, and (3) mixed He said that squamous-celled carcinoma might arise either from normal skin or from preceding dermatoses, which might be either definitely precancerous or not It might be diagnosed clinically from basal-celled by its rapid growth the raised button-like character of the lesions, and their translucency He laid no stress on glandular metastases but great stress on the rate of growth, which was fifty-two times faster in squamous than in basal celled cancer He had known it confused with sebaceous cysts, boils, and molluscum contagiosum, but such confusion should not arise with ordinary skill and care Dr Swarbrick showed a large number of slides illustrating the clinical characteristics of squamous- and basal celled carcinoma He drew attention to the early age at which it might arise, and agreed with Dr MacCormac that the malignancy of the squamous type on the skin had been exaggerated He had had two cases of old standing rodent ulcer which suddenly began to grow rapidly when the patient became infected with syphilis He protested against the term "rodent ulcer," for, said he, it was not an ulcer and was not rodent in character

The President (Dr J M H MacLeod), in opening the discussion, said that the classification of skin cancer into basal and squamous forms was convenient and should not be abandoned In his experience, when the infiltration consisted of plasma cells there was less malignancy than when a more acutely inflammatory type of infiltration was present Sir Norman Walker mentioned the difficulty of reforming an old, if inaccurate, terminology He was content to use the term "rodent ulcer" as a name, although warning his pupils that it was not an ulcer and did not corrode He was inclined to think that rodent ulcer arose somewhat earlier than squamous epithelioma, and his statistics showed, contrary to his impression, that rodent ulcer was just as common in women as men He thought it extremely difficult to determine histologically the exact tissue origin of a growth, and he said also that some cases of rodent ulcer which developed metastasis might escape the notice of the dermatologist because they affected the internal organs and never came back to him but went to the physician or surgeon Finally, he uttered a note of warning about the treatment of lupus by *x* rays In 1902, of sixty-two cases of lupus treated thus in the Edinburgh Royal Infirmary, many of which apparently did very well, no less than twenty-three had died since of carcinoma Dr Dore referred to four cases, clinically diagnosed as rodent ulcer, but which were resistant to radium and turned out on histological examination to be squamous carcinoma Dr Goodwin Tomkinson (Glasgow) mentioned a case of multiple malignant disease of the skin Dr Hallam (Sheffield) advised removal of glands at the same time as the primary growth in cases of primary squamous-celled carcinoma Dr Allan C Parsons read a paper on bakers' dermatitis From inquiries made in various districts it appeared probable that not more than 50 per cent of cases of dermatitis amongst bakers were true cases of "bakers' dermatitis" These occurred in bakeries where the dough was mixed by hand, and in nearly half the total cases the patients had been working with sugar in some degree There was no evidence that the inferior quality of flour or the refining processes of milling were responsible Rarely there was a condition of sensitization to flour protein which might follow a long period of immunity

Thursday, July 24th

RADIO-THERAPEUTICS IN DERMATOLOGY

Dr Sequeira (London), in opening the discussion, said that *x*-ray therapy had inaugurated a new era in dermatological therapeutics He contrasted the blind and dangerous procedure of the early years with the more advanced methods now employed to measure dosage, to screen off undesirable rays, and to afford protection to patient and operator He confined his remarks almost entirely to superficial radiotherapy, with which the Section was alone concerned Over a quarter of a million doses of *x* rays had been given in his department at the London Hospital, all controlled by the Sabouraud pastille, without accident In dermatology *x* rays might be used for the following purposes (1) Relief of irritation—that is, in pruritus of the anus and vulva and in lichenification (2) In psoriasis with limited lesions only (3) For keratoses, especially plantar warts, other warts be treated by preference with carbon dioxide snow (4) The ulcerative form of tuberculosis of the skin was greatly benefited by

small doses at intervals of three or four weeks, though nodules were usually left to be dealt with by other agencies, the dry form of lupus vulgaris should never be treated with *x* rays (5) Mycosis fungoides, nothing was more remarkable than the way in which this disease reacted to *x* rays, but unfortunately the benefit was only temporary (6) Multiple idiopathic sarcoma of Kaposi (7) Keloid (8) Carcinoma of the skin, especially rodent ulcer, squamous-celled carcinoma did not react (9) Ringworm, 7 145 cases had been treated at the London Hospital in fourteen years with only four cases in which there had been imperfect growth of hair (10) Acne vulgaris, useful in cases with greasy skin and comedones Dr Sequeira then went on to speak of phototherapy, and said that the Finsen light was the ideal treatment of dry lupus, but that it was preferable to combine it with general arc light baths, whereby the percentage of cured cases of lupus could be raised from about 60 to 90 per cent

Dr Dore (London) referred to the difficulty of using and installing a Finsen apparatus in private and was glad that the Kromayer lamp was useful He had had a considerable experience of phototherapy since the early days, and had used many forms of lamp in many different dermatoses He had come to the conclusion that its field was far more restricted than that of *x* rays which he preferred in general to radium He had found that light rays were either bactericidal but non penetrating or penetrating but non bactericidal He thought that *x* rays in small doses had a stimulating effect hence their utility in ulcerative lupus All now agreed as to the danger of *x* raying dry lupus He thought that the inhibitory and destructive effect of the rays was especially great on young and rapidly growing cells of embryonic type, hence their action on new growth The epilatory action of the rays was useful in ringworm and mycosis but he desired to warn all against their use in hypertrichosis, in which terrible sequelae had resulted from their employment The President referred to the employment of pastilles for measurement of dosage, and considered that the direct method of measurement, if perfected, would be better He had found the behaviour of the Coolidge tube very uniform and regular He thought that the treatment of ringworm required much skill, and he could not boast results equal to those of Dr Sequeira Since he often had to have babies of 18 months and mentally defective children *x*-rayed for ringworm of the scalp he had devised a webbing apparatus for keeping them still He thought that in leprosy good might result from de troying nodules with very small doses, but not more than half a pastille He had not had wonderful results from the new vegetable oils and their derivatives and thought the best results were obtained in leprosy from treatment on sanatorium lines at all events in this country He agreed in discouraging the treatment of hypertrichosis by *x* rays

Sir Norman Walker (Edinburgh) had had no accidents in ringworm cases for many years although in consultation he had been shown some deplorable results In ringworm of the beard he found *x* rays unnecessary, because the hairs of the beard were tough enough to be epilated by hand Discussing phototherapy, he said that the new generalized light treatment had caused wonderful improvement in lupus He had been especially struck by the improvement in the general health and spirits of the patients they did not pigment so deeply as those of Dr Sequeira but he got just as good results He thought the lack of pigmentation was due to difference in race and colour He had been exceedingly disappointed with the results of phototherapy in psoriasis although Dr Nevins Hyde of Chicago had claimed good results in patients exposed in a glass-roofed sun bath He also drew attention to the dangers of *x* rays in lupus and hypertrichosis, and thought it improbable that light would benefit leprosy, for the disease was commonest in countries where the sun was strong and clothing scanty Dr Hallam (Sheffield) deplored the fact that the prolonged treatment of lupus by *x* rays was still being continued by many, and hoped that the condemnation of it uttered by all present would have some result He called attention to the benefit of small doses in chronic eczema Dr Mitchell (Bradford) had entirely abandoned the *x* ray treatment of lupus and relied on curetting and diathermy, which he also used for rodent ulcers Dr Howard Humphris (London), unlike Dr Dore, considered that ultra violet radiation had a wider field than *x* rays, and that it was more scientific to use an artificial source of ultra-violet light than sunlight, which, in this country varied from day to day In some cases he combined *x* rays with ultra violet treatment Dr Goodwin Tomkinson (Glasgow) had first treated ringworm in Sabouraud's clinic in 1905 He had had good results in Glasgow for many years, with only two slight accident and ascribed his good fortune to the fact that he never took the pastille right up to Tint B Dr Haldin Davis (London) had treated about 700 cases of ringworm with his own hands, with only three cases in which there had been slight thinness of the hair over a small area and he agreed with Dr Goodwin Tomkinson that the pastille should never be turned to more than the four fifths B tint on the Lovibond tintometer Dr H C Semon (London) referred to the treatment of psoriasis by irradiation of the thymus gland The proper dose was one-third of a pastille and a 2 mm filter Dr Hall-Edwards (Birmingham) said that in the old days there were far more terrible cases of lupus than at the present time and he thought they had, notwithstanding the remarks of previous speakers, often done good to them

SECTION OF ORTHOPAEDICS

Friday, July 25th

Hallux Valgus

Sir Robert Jones (Liverpool) drew attention to the mobility of metatarsus and toes in young children In bare-footed races this mobility continued throughout life and precluded the development of hallux valgus a deformity produced by the limitation of movement due to wearing boots particularly of incorrect shape Distinction must be drawn between the patient who complained only of the appearance of the deformity and the one who complained of pain and disability Operative treatment should be limited to those patients who were willing to wear appropriate shoes subsequently for if the patient resumed the use of pointed shoes the deformity would recur To remedy the appearance only of the deformity a wedge osteotomy on the inner side of the neck of the metatarsus was adequate In cases with osteoarthritic hange and pain adjusting the shoes to relieve pressure on the joint would often relieve the pain, but without modifying the deformity No operation should be performed on bone or joint in the presence of an inflamed bursa if the bursa alone was the cause of pain it should be removed and the underlying osteophyte with it In severe cases in the young and athletic a careful wedge operation was advisable, when possible, but with older people, with advanced arthritic change, free removal of bone was indicated

The President (Mr R C Elmslie) emphasized the importance of the cramping of the foot by the boot and the need of education in the use of the small muscles Mr Laming Evans drew attention to focal infection if this were present in the teeth, for example, it would prejudice the prospect of restoring mobility after the operation Mr N Dunn (Birmingham) remarked that the source of pain was traceable in most cases to some condition associated with the deformity rather than to the deformity itself Removal of the sesamoid bones was essential when they were involved in arthritic changes Mr P B Roth did not agree that the normal civilized toe was straight and considered that stockings and socks might be important causes of hallux valgus Some cases were due to direct injury and others were hereditary Mr Bristow urged that the sesamoid bones should be preserved whenever possible Dr Holmes (Harrogate) referred to the difficulty of getting bootmakers to make boots sufficiently broad without making them unnecessarily conspicuous Mr Daw (Leeds) and Mr McCrae Aitken (London) also took part in the discussion In the afternoon a clinical demonstration was held in Mr Basil Hall's nursing home cases being shown by Mr S W Daw (Leeds) and Mr F W Gorder Dr Fernandez (Leeds) demonstrated his non-inflammable celluloid splints

Reports of Societies.

GYNAECOLOGY

AT a meeting of the Edinburgh Obstetrical Society held on July 16th, with the President, Professor B P WATSON, in the chair, Professor JAMES MILLER read a communication on a case of malignant hydatidiform mole with pulmonary metastasis Professor Miller discussed in the first instance the developmental origin of the trophoblast resulting in the formation of the chorionic villus with its two covering layers derived from foetal epiblast and its connective tissue core formed from mesoblast He then illustrated the common type of hydatidiform mole, comparing it with the normal trophoblast and also with cases of chorio-epithelioma in the female and in the male Subsequently he demonstrated specimens from a case of malignant hydatidiform mole which came to necropsy, and which showed fully developed metastatic villi with covering epithelium and connective tissue cores in the lungs as well as in the primary growth He drew attention to the rarity of such cases, only one previous case of this kind being described in the literature The importance of such a case was the light which it threw upon the nature and classification of this group of tumours Composed as they were or might be of cells derived from two different layers of the embryo, they clearly belonged to the category of the teratomas The tumour unit was the villus or an approximation thereto, thus warranting the use of the term "villoma" On this basis the following grouping was suggested Teratomas to be divided into (1) embryomas, (2) chorionas, these latter including (*a*) chorio-villoma simplex (the simple hydatidiform mole), (*b*) chorio-villoma malignum (the malignant mole with or without metastasis), (*c*) chorio-epithelioma, the common type without villus formation Ewing had introduced the term "chorio-adenoma" for the type of condition illustrated Professor Miller thought this scarcely a happy term Certainly the growth was composed of epithelium and connective tissue But the connective tissue of the chorio-villoma, in contrast to the stroma of all the other types of adenoma, was formed by the tumour itself and was not merely a reaction of the host Moreover, the epithelium covered the masses of stroma—that is, there was no acinus formed He claimed that a case of this kind settled once and for all the vexed question of the nature of hydatidiform mole—that is, whether it was a neoplasm or a degeneration It was, or at any rate might be, of neoplastic origin The relationship of this group of tumours to cystic disease of the ovaries was also discussed The case cited showed complete cystic disease of both ovaries Here was a suggestion as to the possible cause of this type of growth from the absence of normal corpus luteum

Dr HAIG FERGUSON read a short paper, illustrated with lantern views, on a case of early chorion-epithelioma

The patient, a married woman aged 39, had had four children, the last being born seven years ago She was admitted to the Royal Infirmary with the history that a hydatid mole had been expelled the previous day As haemorrhage continued the uterus was explored, and some adherent remains of decidua and membrane were removed Examination of the scrapings showed no evidence of hydatidiform tissue The patient was discharged well, but two months later was re-admitted to hospital suffering from severe bleeding Curettage was performed, and during the operation haemorrhage was so free as to necessitate packing of the uterus Although microscopically there was no evidence of chorion epithelioma, the clinical features were so strongly suggestive of this diagnosis that panhysterectomy was performed The patient made a rapid recovery Examination of the uterus showed marked invasion of the deeper muscle layers with trophoblast cells, multiple thrombi in the efferent blood channels, multiple areas of haemorrhage, and a definite decidual reaction along the line of the blood vessels

Dr JAMES YOUNG then read a paper on hydro-ureter and hydronephrosis secondary to prolapse of the uterus and cystocele During five years he had seen two cases of this complication of cystocele

The first was in a cadaver in the dissecting rooms of the University There was an extreme prolapse of the vagina, cervix, and bladder, and there was marked bilateral hydro-ureter and hydronephrosis At their upper ends the ureters were as broad as the wrist

The second case was that of a woman aged 52, who was admitted to the Edinburgh Royal Infirmary with a history of prolapse of sixteen years standing A pessary had not been worn The specific gravity of the urine was 1003 There was a trace of albumin, no pus, blood, or sugar Three days after the ordinary plastic operation for prolapse and cystocele she died with suppression of urine At the *post mortem* examination a marked degree of bilateral hydronephrosis was found

Dr Young had been so much impressed by the glaring pathological changes present in the first case and by their importance to gynaecologists that, in his textbook in 1921, he had described hydro-ureter and hydronephrosis as one of the complications of cystocele He referred to a paper in the *American Journal of Obstetrics and Gynecology* of December, 1923, by Brettauer and Robin, which was based on a study of ten cases of prolapse during life In eight cases (80 per cent.) there was hydro-ureter and hydronephrosis These authors referred to an investigation of Tandler and Halban, who in 23 autopsies on cases of prolapse found hydro-ureter in 15 No mention of the kidneys was made, as these had previously been removed without being examined Dr Young held that the presence of this abnormality, hitherto unsuspected by the operating gynaecologist, indicated the need for a careful examination of the kidney function before an operation was decided upon This examination was important in long-standing cases of cystocele in which the risk of severe kidney damage was especially great In the future a seriously embarrassed kidney function must be added to the contra-indications to the treatment of prolapse and cystocele by operation

Dr J RAMSAY MUNRO read a communication on the administration of thyroid gland during pregnancy He suggested that thyroid deficiency was occasionally a factor in the causation of premature labour, and described two cases in which premature stillbirth had occurred, and in which the administration of thyroid extract had been followed by the delivery at term of a healthy child

Reviews.

SECRETION

IN writing his *Introduction to the Study of Secretion*,[1] a little book founded on a course of eight University lectures, Professor SWALE VINCENT has had as one of his chief objects "to examine the main facts of secretion and 'internal secretion' to see how far they may legitimately be included in a common category" After a brief review of the history of our knowledge of secretion, the histological changes in various types of gland cell during the secretory process are described This leads to a consideration of the physical and chemical mechanisms of secretion, and here the author draws largely from Bayliss's *Principles of General Physiology* A change in the permeability of the cell membrane, with the consequent production of large changes in the osmotic forces, is probably one of the most important physical antecedents to secretion, although the possibility that other factors such as diffusion and surface tension may take part in the phenomenon must not be overlooked The change in permeability of the cell membrane leads to a separation of ions of opposite charge, this is reflected in the electrical variations of potential which have been known to accompany the secretory act since their discovery by Bayliss and Bradford in 1885

So little is known, however, of the intimate nature of the processes of secretion—and these indeed must differ fundamentally in different types of gland—that the principles underlying them can only be guessed at Consequently we are not surprised that the author has to content himself with a description of the various means—chemical and nervous—which are known to rouse a gland to activity and

[1] *An Introduction to the Study of Secretion* By Swale Vincent, M.D., D.Sc., M.D., F.R.S.Ed. and Can. London: Edward Arnold and Co. 1924. (Demy 8vo, pp. 108, 35 figures. 10s. 6d. net.)

of any morphological changes which are seen to accompany the act. Two chapters devoted to a summary of the main facts known with regard to the secretion of special substances such as gases, salt, poisons, and toxins, brings the first part of the book to a close.

The second part deals with internal secretion. "The process consists in the preparation and setting free of certain substances of physiological utility (the raw materials for which are supplied by the circulating blood) by certain cells of a glandular type; the substances set free are not passed out on to a free surface, but into the blood stream." The author rightly insists that the pharmacological action of an extract of a gland is no criterion of the normal or abnormal production of such a substance and its indispensability to the animal economy. The extract of the posterior lobe of the pituitary is an excellent example of this maxim. Although the substance has such well marked and definite pharmacological properties, removal of the gland in the dog care being taken not to injure the surrounding tissues, is unaccompanied by the polyuria of "pituitary inadequacy," whilst the condition is speedily brought about by injury to the *hypothalamic region of the brain*. The evidence for the normal passage from the endocrine glands of some substance into the blood stream is necessarily derived chiefly from experimental and clinical data. We do not agree with the author that 'there must be histological evidence of secretion in the essential cells of the tissue in question before we can place any given structure definitely and certainly among the organs of internal secretion." We can conceive of comparatively simple substances being secreted without any accompanying structural change sufficiently intense to permit histological identification. Indeed, in the case of the kidney the author admits that 'the act of secreting urine appears to have no influence on the structure of the protoplasm in the cells of the convoluted tubules." Yet the experimental evidence in favour of the tubule cells secreting such substances as urea and sulphate into the glomerular filtrate is very strong.

The experimental and clinical evidence for the production of internal secretions is limited to a very few of the endocrine organs, such as the thyroid, pancreas, and chromaffin glands, yet 'there is scarcely" the author says 'a branch of biological science which does not now call in the aid of hypotheses derived from the realm of internal secretion. In medicine and therapeutics 'endocrinology' constitutes the fashion of the day. The evolution of man is said to be modified by changes which have occurred in certain organs of internal secretion. The behaviour of human beings is attributed to variations in the functions of the ductless glands. Health, happiness, and personal character are all alleged to depend on the adequate and harmonious functioning of the endocrine organs. In books on the subject we find such headlines as 'environment and heredity,' 'earliest impressions,' 'discipline,' 'nagging,' 'parents as teachers,' and so on, and every conceivable topic concerning physical, social, and moral welfare is dragged into the discussion."

The book, which contains a well selected bibliography, will be found useful by those who desire a short and up-to-date account of the present state of knowledge in this difficult realm of medical science.

CLINICAL HAEMATOLOGY

THE treatise on clinical haematology[1] by Professor RIEUX has published recently is an amplification of a small volume which appeared in 1911. He has aimed at writing a book which would be sufficiently detailed to satisfy the needs of the medical student and of the clinician, and at the same time strike the happy mean between the "too succinct" and the "too discursive." In order to succeed in such an undertaking—to eliminate the unproven theory, to avoid redundancy, and discard what is not necessary—calm deliberation and critical judgement are demanded, and the author has performed his self-imposed task admirably. There is, perhaps, a little tendency to quote old theories, but not to the exclusion of the more recent. This, however, is not altogether a matter for regret, since a treatise on haematology should deal to some extent with the history of the science, and this has been indulged in very judiciously. The work covers more than the title would indicate; it is a treatise on haematology not merely clinical, it is a book to read and read again, and then keep for reference, those who expect to find it a laboratory work, with instructions for carrying out blood examinations in connexion with clinical cases will probably be disappointed.

The book is divided into six parts, each subdivided into chapters and sections. The first treats of general haematological technique, and is useful in bringing to mind in a few sentences work which has already been learned from books giving greater detail and from practical work in the laboratory, but is in the main too brief to be a guide for the student, except from the theoretical aspect of the subject. For example, the chemistry of the blood occupies only five pages. In this section is a useful table elucidating the confusion which has been caused by the various terminologies used by modern haematologists in naming the blood cells. The principles of stains and staining methods are well explained, but we miss any mention of Leishman's stain, which is easy of application, very generally used, and gives excellent results. The second part is concerned with physiological haematology, and describes the genealogy of the various cells, the biological properties of the serum and the histology and physiology of the haemopoietic organs. The origin of the various corpuscles is well stated, but the value of the text would be enhanced if a plate could be included depicting each of them. The next two parts treat of pathological haematology. First from the analytical aspect, dealing with the different cells in order, the serum and its phenomena of agglutination, precipitation, and fixation of complement, the whole blood, its physical and chemical properties, and finally the haemopoietic organs in general terms of myelopathies, lymphadenopathies, and splenic conditions. The second deals with the subject of pathology from the synthetic aspect of various diseases—leukaemias, pseudoleukaemias, polycythaemia, the anaemias, and haemorrhagic conditions. The fifth part is devoted to bacteriology and parasitology of the blood, and this is the least satisfying. The final section treats of blood transfusion—its principles, its indications, and its risks.

The author has kept more or less strictly to established facts and to essentials. The bibliography is limited to occasional footnotes. Illustrations in the text are few, but the coloured plates at the end of the book are good except that of subtertian malaria, which is somewhat crude. Regarded as a book for the practitioner's library it leaves little to be desired, but a few points may be mentioned for consideration when, as is almost certain, a new edition is called for. The technique of serological methods is only cursorily described, practical details being almost entirely omitted; haemolytic action of serum, agglutination, complement fixation, and opsonic estimation are all dealt with in a half a dozen pages, and though it is stated that titration of the materials for the Wassermann reaction must be carefully carried out no instructions are given for so doing. Though fourteen pages are given up to an account of Hodgkin's disease we fail to find any reference to the Pel-Ebstein syndrome. Two pages are taken up in describing haemogregarines in human blood, whereas filarial embryos are dismissed in a couple of lines, and strange to relate, embryos of *Dibothriocephalus* are said to be parasitic in the blood of man. The parasite of subtertian malaria is spoken of throughout the book (except in one instance) as the *Plasmodium praecox* or *Pl immaculatum*. The former is usually restricted to bird malaria, the latter, if not a *nomen nudum* is not in general use. Lastly, in speaking of agglutination of the *Bacillus typhosus* by the serum of patient it is said that "agglutination may be very high 1 in 200 for example but this is rare, the usual titre being 1 in 100 to 1 in 500." Misprints are not numerous, the paper and printing are good but as is frequently noticeable in French books the index is poor. As a whole, however the work is remarkably good, the subjects discussed are well chosen, the theories clearly and succinctly expressed.

[1] *Traité d'hématologie clinique*. Par J. Rieux. Medecin Principal de 1ere classe, Professeur au Val-de-Grace. Paris: Gaston Doin. 1924. (Roy. 8vo. pp. 770. 16 figure. 16 plate. Fr. 70.)

SURGERY OF THE NOSE, THROAT, AND EAR

THE first edition of DR GEORGES LAURENS's textbook on the operative surgery of the ear, nose, pharynx, and larynx appeared in 1906, and was reviewed at some length in these columns The general plan of the book remains unchanged in the second edition [3] Endoscopic exploration of the oesophagus is naturally included, but the more elaborate plastic operations on the head and neck, for example, a domain invaded by many laryngologists since the war, in France especially, receive no mention The scope is thus well defined and everything else in the work is equally definite and clear cut, as might be expected in a leading French textbook The indications for each operation and the method of performing it are described in great detail, and yet with a vivacity and precision which make fascinating reading of a subject that might easily be dull and tedious Whilst the author has consulted the latest literature in order to bring the new edition abreast of the times, yet he has impressed his own personality on the work as a whole, and the reader is made to feel that he is not consulting a mere compilation, but is reading the work of a great master in whose experience and sagacity he can place the fullest trust DR LAURENS has done for aural and laryngeal surgery what Jacobson did for general surgery, and no higher praise can be offered than this simple statement He gives a clear lead on each topic from his own experience

The whole subject, however, is still young and in some respects in a state of transition, consequently there will be found some statements with which some or even many may disagree For example, his enthusiasm for Luc's radical operation for the cure of suppuration in the antrum of Highmore will not now meet with universal approval in this country Many cases are cured by the simpler intranasal operation, and the unpleasant sequelae, immediate and remote, of the greater operation are avoided LAURENS, however, still considers Luc's by far the best operation, and says so quite definitely, though he gives excellent descriptions of alternative methods, such as the intranasal operation and the operation of Denker Local anaesthesia receives much attention, as it should, for it is only by meticulous attention to detail that uniform success with these methods is obtainable, once again the French tendency towards local in preference to general anaesthesia in these branches of surgery is clearly revealed

The size of the book makes it an adequate work of reference, and moreover it is one which provides definite advice and instructions To any surgeon recently appointed to a special hospital or department this volume will be invaluable, and such a one is strongly advised to keep a copy on his bookshelf

The authors of *Intranasal Surgery*,[4] with the co-operation of their publishers, have produced a book which in the excellence of its illustrations, the perfection of the printing, the firmness of the rich red binding, and the luxury of the thick glazed leaves, leaves nothing to be desired Moreover, the authors have done well that which they undertook to do, but the subject is approached from such a restricted point of view that the usefulness of the book is marred For example, if the surgery of the frontal sinus is described in a book, the description should be complete and not confined to one method of approach The descriptions given are adequate and careful, but there is a tendency unduly to exalt intranasal surgery, and the impression is conveyed that there is scarcely a nasal septum to be found which could not be improved by an appropriate submucous resection An excellent intranasal operation on the antrum of Highmore is described, and the authors' comment is worth quoting "The radical operation as devised by Luc, Caldwell, or Denker should not be a routine operation in diseased antrum Undoubtedly the nerve supply to the incisor and canine teeth is destroyed by these operations" The conditions which call for a radical operation are described, but here again the limitations of the work exclude a description of any of these operations Within its limits the book is good and is a useful supplement to the ordinary textbooks on rhinology

[3] *Chirurgie d'oreille du nez du pharynx et du larynx* Par Georges Laurens Deuxième edition entièrement refondue Paris Masson et Cie 1924 (Roy 8vo pp xiv + 1052 792 figs Fr 100 net)
[4] *Intranasal Surgery* By Fred J Pratt MD FACS and John A Kolmer MD FACS Philadelphia F A Davis Company 1924 (Med 8vo pp xv + 335 194 figs 5 dols net)

COMMERCIAL ORGANIC ANALYSIS

Allen's Commercial Organic Analysis is a laboratory hand book designed for the use of analysts concerned with non mineral substances Our recollection of the first edition is that it was only very good in certain parts Allen's own contributions were well done, he was a capable analyst and possessed a gift for clear description, the matter abstracted from other sources was not so satisfactory The construction of Volume I of the new (fifth) edition[5] is uniformly good The contents are divided into sections under appropriate headings, each contributed by an experienced authority, and contributors have been sought on both sides of the Atlantic This is an improvement, no better scheme of compilation could have been devised, and Allen's own conception has been more fully realized than before The sections include alcohols, malt and malt liquors, sugars, wines and potable spirits, starch, paper, yeast, and a group of the aliphatic acids

Sometimes an analyst can accomplish his work under guidance of the well known rules of physics and chemistry, more often he has to follow a devious course under disturbing effects from unknown or unmeasured influences For these cases he needs not only direction as to method but also instruction from one whose large experience has taught him the causes of failure and error It is in this sense that the character of the work has been developed on broader lines A great number of methods have been proposed at one time and another, for the recognition and approximate determination of methyl alcohol in the presence of ethyl alcohol, this fact is evidence that no single method has given general satisfaction In the volume before us it is pointed out with reference to this subject that varying circumstances call for alternative methods, several of the most trustworthy are described and their merits and demerits carefully appraised Such judgements represent the strong character and value of the volume Its measure of usefulness is enhanced by miscellaneous information relating to the articles treated A book is of value if it contains the sort of information that is most frequently hard to get Under chloral hydrate, for example, the unexpected statement is found that its use for drugging liquor with criminal intent has been so far practised that the solution has acquired the sinister name of "knock-out drops" No one who consults the work for guidance in analytical methods is likely to be disappointed

[5] *Allen's Commercial Organic Analysis* Edited by Samuel S Sadtler, S B Elbert C Lathrop A B, Ph D and C Ainsworth Mitchell, M A, F I C Fifth edition revised and in part rewritten London J and A Churchill 1924 (Med 8vo pp viii + 796 105 figures 30s net)

NOTES ON BOOKS

THE second part of the fifty seventh volume of *St Bartholomew's Hospital Reports*[6] begins with a short but sympathetic obituary of DR HUGH WALSHAM, who, like so many pioneers in x ray work, paid a heavy penalty for his devotion to this dangerous branch of medicine Walsham was established as a physician with a special interest in disease of the chest when x rays were discovered, and was therefore specially fitted to advance our knowledge of skiagraphy in this respect, and this he most certainly accomplished In his pleasantly written article on William Harvey and the hospital, SIR D'ARCY POWER first envisages a friendship between Inigo Jones and the discoverer of the circulation, then deals with his appointment of physician to the hospital in 1609, which lasted till 1643 MR GEOFFREY KEYNES appropriately follows up his paper on DR EDWARD BROWNE by publishing for the first time notes for a lecture on the skin which SIR THOMAS BROWNE sent to his eldest son, lecturer at Chirurgeons' Hall, the manuscript is among the Sloane Collection in the British Museum DR A G SHUTTLOCK reviews the history and hypotheses of summer diarrhoea in infants, and concludes that the view of its causation by prolonged hot weather on infants suffering from nutritional disorders explains nearly all the data of the distribution of its incidence, and that there is little evidence that bacteria gain virulence by passage through the intestinal canal of a sick infant SIR FREDERICK ANDREWES lucidly reviews the recent work on the causation of rickets, a subject on

[6] *St Bartholomew's Hospital Reports* Vol lvii Part II London John Murray 1924 (Cr 4to, pp 93 174 5 plates 10s 6d net)

which he gave two lectures during May last at the hospital In a note on two cases of implantation dermoid cyst Mr J Paterson Ross distinguishes between them and cysts forming around foreign bodies Mr R C Davenport reports three cases of intraocular foreign bodies, illustrated by three plates

The first volume of the *British Journal of Experimental Biology* has been completed by the publication of the fourth number It is issued quarterly from the Animal Breeding Research Department of the University of Edinburgh, and is edited by Mr F A E CREW, director of that department, with the assistance of an editorial committee representative of other universities It is the official medium for the publication of work done by members of the Society for Experimental Biology The general character of its contents may be judged from this fact It has contained series of papers on the comparative physiology of digestion and on internal secretions, including one in the last number on the action of pituitary extract and adrenaline on contractile tissues of certain invertebrates This number contains also a paper from the zoological laboratory of Harvard University on skin grafts in the larval, from which it appears that autotransplants of pigmented skin on a white region and of white skin on a pigmented region both exhibit a strict specificity There is no migration of the pigmented cells The journal is adequately illustrated in black and white and in colours It is published by Oliver and Boyd, of Edinburgh and London, and the annual subscription is 40s The price of a single number is 12s 6d

Dr HENRY A ELLIS'S pamphlet on *Reaction in Relation to Disease*, which is a reprint from the *Medical Officer* of a paper read at the conference of the Tuberculosis Society of Great Britain and Ireland in March, 1923, forms an introduction to a research conducted by the author into the biochemistry of the urine in relation to health and disease Dr Ellis's conclusions, which are based on the study of about 1,000 specimens, are as follows (1) All persons have acid normal, or alkaline constitutions (2) In tuberculosis a definite alkaline incidence is necessary for activity of the disease in addition to the infection (3) Arterio sclerosis and heart disease with high blood pressure occur in almost all acid cases (4) In acid cases there is considerable danger of *renal insufficiency from the acid injury to the excreting tissues* (5) Septic fibrositis with low blood pressure is often an alkaline condition, whereas true metabolic rheumatic fibrositis is acid

Reaction in Relation to Disease By Henry A Ellis B A M B Cantab London H K Lewis and Co Ltd 1924 (Cr 8vo pp 28 3 figures 1 net)

THE ROYAL SANITARY INSTITUTE CONGRESS AT LIVERPOOL

(*Concluded from page 197*)

PREVENTION OF MATERNAL MORTALITY

AT the Health Visitors conference Miss MILDRED S LOWE superintendent of health visitors Warwick County Council read an interesting paper on the objects and training of health visitors They should, she said, bear the same relation to preventive medicine as nurses to curative medicine She instanced five branches of public health work in which health visitors were of vital importance (1) ante natal clinics and home visits, (2) maternity beds under the supervision of the Ministry of Health (3) midwifery service, (4) infant welfare centres (5) the following up of cases under the medical inspection of school children In health matters the two blackest spots which even after twenty years had only slightly been reduced in shade were the high maternal mortality rate and loss of infant life In the respect of maternal deaths this country compared unfavourably with Germany Norway, Italy Sweden, and Holland In 1922 some 3 000 mothers died in connexion with childbirth and 60 121 infants died before reaching twelve months old If stillbirths were also included the total loss of maternal and infantile life for one year only would approach 166 500 In conclusion she urged that midwifery in all its branches should be the most important part of the health visitor's training In New Zealand 400 newborn babies a year were considered sufficient for the care and supervision of one health visitor whereas in some districts of London the health visitor was expected to supervise 1,200 in a year

Maternity and Child Welfare

Dr E W HOPE (MOH Liverpool), in his presidential address to the Section of Maternity and Child Welfare gave a review of the work that had been achieved by the city health authorities during the past twenty five years in the preservation of maternal and infant life The mortality rate has been reduced by practically one half In Liverpool there were twelve pre maternity centres under medical supervision and fourteen post natal and infant clinics where preventive medicine was expounded and suitable hygienic advice given In case of disease the sufferers were sent to their own doctors Liverpool had eighty health visitors and the Ministry of Health urged that the number should be increased He pointed out that maternal mortality was greater in rural districts where medical skill could not readily be obtained and urged the establishment of maternity homes to which women living in remote places could go In the days of rapid and easy communication the maternal mortality should rapidly decrease The improvement in infant mortality was shown by the fact that in 1923 the number of children who died before one year old was about one half of the number in 1883 In conclusion Dr Hope emphasized the value of sunlight fresh air and appropriate food in the prevention of diseases to which childhood was liable The housing problem had an intimate bearing on these points for many children were compelled to sleep in most unsanitary conditions, which would disappear with its solution

Health in Factories

The Section of Industrial Hygiene was opened with a presidential address by Dr T M LEGGE (Inspector of Factories Home Office) which he was unfortunately unable to deliver in person It contained an interesting account of factory and workshop legislation from its inception and showed the benefits that had accrued to the workers from a health point of view but the health of young persons should be better taken care of when in the factory Hitherto a kind of negative certificate only had been required—namely that the worker was not disabled by disease or bodily infirmity for working full time according to law Dr Legge advocated (1) Initial detailed examination of all applicants for work giving where necessary conditional certificates (2) Periodic examination of such persons as the medical adviser deemed necessary (3) Periodic medical examination of workers in dangerous processes (4) Inspection periodically to see that first aid and ambulance equipment was in good working order Dr F E FREMANTLE M P stated that the whole health system of the country was at present barred from the factories and workshops and urged that the Ministry of Health should be approached with a view to remedying this Dr DEARDEN (Port Medical Officer Manchester) put forward the following resolution

> That in the opinion of this Section the first step to be taken in organizing medical and sanitary supervision in industry would be the establishment of a factory medical service attached to the Ministry of Health

This was adopted and the special attention of the Council was drawn to the observations of Dr Fremantle on this subject

The Health of Children

In the Personal and Domestic Hygiene Section the health of the child was the subject with which most of the papers dealt Prevention better than cure (treatment) was the important end in view and no possible avenue of attaining this object should it was said be left unexplored In the schools domestic hygiene should be regarded as one of the most important subjects of instruction Dr NASH (Hounslow) advocated that temperance should be taught in the schools on strictly scientific lines, and not allowed to get into the hands of cranks and faddists The importance of breast feeding in the interests of both mother and child was the subject of a paper by Dr KATHERINE M L GARGEE (Hull) who said that her experience was that the post war mother was decidedly not as willing to nurse her baby as the pre war mother had been Health visitors should pay particular attention to urging every mother to do her duty in this respect

Meat Inspection

At the Veterinary Inspectors conference it was stated that large quantities of tuberculous meat were sold for consumption and eluded inspection Several dodges were described and details were related of an instance where the tuberculous material was removed from the vertebrae and the cavity filled with fat Private should be replaced by public abattoirs and all animals intended for human consumption should be submitted to *ante* as well as *post mortem* examination Resolutions affirming these principles were passed with the request that the Council of the Institute press them on the attention of the Ministry of Health

Quarantine and Ship Sanitation

Dr J G MOYLES in his presidential address to the conference of Port Sanitary Authorities dealt historically with quarantine and the various measures that had been adopted by countries to prevent the importation of disease With regard to plague rat extermination had been most efficiently pursued Sulphur fumigation up to the last eighteen months had been the usual means of getting rid of these animals but more recently hydrocyanic acid had been used and at a time and labour saving process this agent had been most successful The danger to life was great but every precaution was taken to protect the men employed from inhaling the gas This country had always led the way in devising schemes which would effectively prevent the introduction of epidemics and at the same time be as little burden some as possible upon ordinary home commerce

Dr W HANNA, medical officer of the Port of Liverpool, read a paper on the present standard of ship sanitation, and Dr J HOWARD JONES read another on the hygiene of the tramp steamer During the discussion which followed it was observed that the death rate of merchant seamen was imperfectly known, the only available statistics being those of the Board of Trade, which contained no percentages and in which an obsolete classification of diseases was employed Efforts for improvement in hygiene were being hampered thus, and the conference therefore recommended the Council to petition that the classification of the Board of Trade might be brought up to date, and that matters relating to the health of sailors should be transferred from the Board of Trade to the Ministry of Health

MEDICAL WOMEN'S INTERNATIONAL ASSOCIATION

We mentioned briefly in our issue of July 19th that the Medical Women's International Association had met in London on July 14th and following days Owing to pressure on space, due to the reports from the Annual Meeting at Bradford, we were last week compelled to postpone the publication of our further report

This was the third meeting of the association, the two previous congresses having taken place in New York and Geneva respectively At the meeting in London the association came into being as a well organized society functioning under rules agreed upon by elected delegates from the various countries, and under constitutionally appointed council and officers The retiring president was Dr Lovejoy of New York, and the new president Lady Barrett, M D The meeting was held in the rooms of the Royal Society of Medicine Delegates from fifteen out of nineteen possible countries were present Great Britain 7, Australia 5, United States 28, South America 1, Germany 6, Turkey 1, India 12, Norway 3, France 3 Switzerland 2, Czecho-Slovakia 1, Austria 1, New Zealand 5, Poland 4, Russia 2 The foreign delegates were guests of the Medical Women's Federation, a large number of whom attended Hospitality was arranged for the foreign guests, and with the generous co-operation of a committee of friends an interesting programme was carried out, which enabled the guests to see the various public features of English life In addition to visits to institutions and hospitals, the guests were received by the Archbishop of Canterbury and Mrs Davidson at Lambeth Palace, at the House of Commons by various members, by Miss MacDonald at Downing Street, by Mrs Creighton at Hampton Court, and by the *Lancet* staff On July 19th a party of between thirty and forty visited Bath, where they were entertained at luncheon by the Mayor and Corporation, and were shown the baths and other objects of interest All the prominent women's clubs in London gave hospitality, and Lady Sybil Smith Lady Barrett, and others, both medical women and friends gave various receptions and lunches to the delegates The annual dinner of the Medical Women's Federation was attended by 320 members, friends, and delegates

As so much business concerning the International Association had to be done on the various days only one day (July 17th) could be set aside for a medical discussion, or for reading papers, and it was decided to concentrate upon one subject of interest to all delegates The subject chosen was maternal morbidity and mortality causes and treatment Representatives of each country, taken in alphabetical order, were asked to speak

DISCUSSION ON MATERNAL MORBIDITY AND MORTALITY

Lady BARRETT, M D, president of the association, opening the subject, said that all would recognize that the chief causes of maternal mortality were sepsis, toxæmias, hæmorrhage, difficult labours and complicating organic diseases In gynæcological practice patients were found to suffer mainly from the results of badly managed labours and sepsis The general health of women was far below the standard that could protect them from toxæmias, and this subtracted from the effectiveness of the uterus in labour One of the great problems was the health and conditions of life of child bearing women In Great Britain there were certain groups concerned in watching the women's health, and in improving it, and also groups concerned with the education of doctors and midwives The midwife was the important factor She had more leisure than the doctors for observing the patient's symptoms She could, in this respect, be an important factor in the prevention of illness or death The number of maternity clinics, with antenatal and postnatal care as their object, was continually increasing More and more beds were being provided for women who needed them and also small homes linked up with large hospitals The scheme was very good on paper, and also in practice in certain places where the mortality was half that of the country as a whole The poorest woman should have access to what she needed

Dame JANET CAMPBELL M D, M S, Senior Medical Officer of Health for Maternity and Child Welfare, Ministry of Health, outlined briefly the work of the public health service in relation to maternal morbidity The Ministry of Health was responsible for directing, approving, and instigating the work The cost of the services was divided between the Government and the local authorities There had been almost no reduction in maternal mortality during the last thirty years Three thousand women died last year, or one for every 250 births In 1902 the Midwives Act had given better midwives, and puerperal sepsis had come down a little, but still accounted for two fifths of the maternal deaths The regulations required that every case of puerperal fever should be reported by the doctor to the medical officer of health in order that the patient might receive all necessary treatment and that infection might be prevented But, in practice, only a small proportion of these cases were reported and these chiefly when the patient was very ill or dead It was hoped to improve notification and so make the chances of success better The local authority had wide powers to improve treatment, and was ready to help the doctor or woman who asked for assistance Antenatal supervision was provided in maternity centres, many of which were staffed by women who were expected to have a special knowledge of midwifery There were splendid staffs of nurses, and the maternity centre provided examination, and advice, and instruction, and treated minor ailments Complications were referred to special hospitals Venereal disease was treated in some centres Postnatal treatment was also given It was the function of the Ministry of Health to approve of the nursing staffs, to receive reports, and so on The duty of the local authorities was to assist women in their own homes and to provide midwives, if a doctor was called in by a midwife he was paid by the local authority Skilled nursing in the patient's home was to be had, and domestic help was also provided The patient could be given food for three months before confinement, and could also be given milk Under the National Insurance Act the wife of an insured man got £2, and, if she herself was insured, £4, which she might spend as she pleased But propaganda was necessary to enlighten public opinion on maternal care For the last few years the Health Department had been hampered for lack of funds but it could now go ahead, and a circular had been sent out encouraging effort and promising help

Dr BALFOUR (India) said that the circumstances in India were very discouraging Medical men and women were excluded from the normal lying in room There were no professional midwives, and the middle aged native nurses knew nothing and were in the habit of interfering unnecessarily Medical women were only called to serious complications, and often the mother died or the child was lost A public health department now devoted attention to childbirth, but was heavily handicapped In Bengal 84 per cent of mothers were under 30 years of age, and the mortality of these was 14 8 per 1 000 In 1921 60 000 women died in childbirth, and 1 000 of tetanus In important towns the rates were very high In Poona the death rate was 32 per 1,000 in mothers and 850 per 1,000 in infants

Dr HELEN BOYLE (Brighton) said that an important side of maternal morbidity was the nervous and mental The danger of even slight or of permanent damage could not be overestimated Notification of symptoms in early cases might prove effective, but they ought to be prevented Puerperal insanity was hardly ever seen in a woman who had suckled her child, the fact that lactation was an excretion for the benefit of the mother was overlooked It was a mistake to stop lactation on account of nervous symptoms She would commend to their notice also the cases of fifty four women who had been allowed to suckle their children when febrile the infants did perfectly well In a large number of these women the nervous element began long before pregnancy It might start in childhood and only be brought out in pregnancy The woman should never have had that weak spot Every child should be carefully watched as to its nervous development

Dr DAVIS (United States) said she had spent many years in the exclusive practice of maternity work The whole subject was bound up with prenatal conditions The naturally delicate or somewhat degenerate might live badly, and healthy women might do the same American women were not starved Some ate too much and had oversized children America believed in education, and hygienic instruction on maternity should be given in public schools She admired the English college degree in domestic science As regarded the nursing technique, some

thing must be wrong where so many cases were lost through infection. A simpler technique might be safer. Every nurse should be taught about gonorrhœa in this connexion. In the majority of cases the patient could be made safe, but there was more trouble with toxæmia than with infection. In America eclampsia was often caused by too little exercise and too much food. In infection it was important to use oxalum instead of vulvar pads, and to drain the uterus by raising the head of the bed. Incomplete drainage resulted in chronic gynæcological infection. The teaching of midwives was a great problem in the United States. The midwife was ignored, but she prevailed. She came from foreign countries and attended foreign women. About one third of the cases were delivered by these women in Chicago.

Dr. HELSLEF EDENHUISEN (Germany) spoke on the prophylaxis of eclampsia in 1918-20, when a large percentage of the population were very much underfed, and the individual lost, on an average, 17 kilos in weight. Women were often exhausted, and had a very low blood pressure—for example, 116. This saved them from eclampsia, for the attacks were caused by high blood pressure. It was found wise to limit the diet of pregnant women, and to give them green salad and fruit. In addition to this the morphine-scopolamine method was employed. With this in her experience, the blood pressure went down from 160 to 130, and symptoms disappeared in an hour or an hour and a half. Twilight sleep was one of the best prophylactics against eclampsia. From the experience of twenty years' practice she was convinced that puerperal fever was due to the introduction of septic material before the confinement. In the Rhine districts there was a belief that coitus in the first pains of labour made the confinement easier. She believed a large number of cases of sepsis were due to this. She had always ascertained the time of the last coitus, and it was never later than the day before the labour. She forbade it after the fifth month of pregnancy, and where this instruction was carried out had had no more cases of sepsis. The women of all countries should be enlightened on this matter.

Dr. ILNICKA (Poland) discussed the occupations which were injurious to women. There was a high mortality among factory workers who became feeble and neurasthenic and prone to tuberculosis. Such occupations as sewing machine or laundry work contributed to abortions. Inspectors and doctors should work in co-operation. She spoke of the provision made for expectant mothers, and of the nervous and neurasthenic effects on them of too much work. In Poland women did more hard work than men.

Dr. CHAPMAN (New Zealand) described a safe maternity campaign recently conducted in Wellington in order to rouse public interest in the serious situation that existed with regard to maternal mortality. In five years, out of a population of a million there had been 755 puerperal deaths. These could be attributed to three causes: (1) lack of ante-natal care and advice, (2) the existence of private maternity homes (State supported) run by midwives, but not well run, (3) the scattered population, although the women could often come into town before their confinement. An effort was being made to provide ante-natal advice in connexion with maternity hospitals, and to educate people to use them. It was proposed to do away with the private maternity homes and to give private treatment in public maternity hospitals. Dr. Chapman also spoke of Dr. Truby King's excellent work. The Health Department was being supported in its attempts to protect mother and child against the too frequent use of forceps in supplying skilled help to patients, and in educating the public. In the ante-natal work human touch and sympathy were needed. It was confidently hoped that with the help offered by the Government, the death rate would be lowered.

Dr. IVENS (Liverpool) said that four things would help to combat maternal mortality: more ante-natal care, early discovery of complications, major and minor, the avoidance of forceps, and a very careful examination and careful history of the case. Gonorrhœa and a previous sepsis were frequent causes of sepsis. Venereal clinics should be conducted in connexion with maternity hospitals. There should be a more ample provision of maternity beds. Maternity cases should have the best hospitals. The work of midwives in normal cases was extremely good, but they did not take sufficiently early steps to have difficult cases removed to hospital. Obstetrics should have a more important place in the medical curriculum. Not only mothers but doctors had to be educated. Every clinic should have a good obstetrician in charge of it, not a junior medical man.

Dr. LEACOCK (Canada) said that in Canada there were no midwives. Experienced women were allowed to attend any woman who lived thirty miles from a doctor. Now that there were more country doctors midwives had almost disappeared. For the last five years she had studied the bacteriology of puerperal infections, and had come to the conclusion that the infective agents were the staphylococcus, gonococcus, pneumococcus, *Bacillus coli*, and streptococcus. The streptococcus was concerned with local infections. Extrinsic causes of infection were dirt and squalor and infective foci in others—for example, septic tonsillitis, local abscesses, etc. Streptococci in the uterine tract might cause septicæmia. If such cases were about, steps should be taken to protect the patient. Intrinsic causes were previous streptococcic infection—for instance, after abortion, after influenza of a severe epidemic type, or after streptococcic pyelitis or salpingitis. All these exposed the patient to general infection. The streptococcus might persist for years in the Fallopian tube. Patients should be warned not to become pregnant for at least two years after an infection or illness like influenza. If, in constant daily cultures, streptococcus was grown, the result was invariably fatal.

Dr. V. LEBEDEV (Russia) described in a paper the maternity and child welfare work entrusted to the People's Commissariat of Health in Soviet Russia. This body aimed at providing the best conditions for parturient women, and for supervision the health of mothers. Motherhood was considered a social function. Any suggestion of philanthropy was excluded. The help given was regarded as the duty of the State towards the woman who was continuing the race. Creches were very numerous, for it was considered that through them mothers would be able to combine motherhood with useful social work. Consultation centres, milk canteens, and friendly help in educating mothers were in existence. There were homes where women could stay for four months. A manual worker could receive four months' wages, and an intellectual worker twelve weeks' pay. There were forty-four consultation clinics and thirty-five maternity homes under the Commissariat of Public Health.

Dr. MEAD (United States) spoke of conditions in the Middle States. There was a body of nurses, in the proportion of 9 to 25,000 people, who visited their patients by motor-cars. Their work was with pre-natal cases. Most of the very poor people were now provided with midwives and doctors.

Dr. RUDENHOF (Austria) spoke about the intense exhaustion caused by tuberculosis. Pulmonary tuberculosis was especially dangerous to the pregnant woman. Even in cases where it did not seem grave the woman often died after the birth. It was dangerous because of the high temperature and risk of hæmoptysis. The bacillus was not dangerous in itself. In grave cases and as a last resort pregnancy should be interrupted. In Austria there was a system of sick insurance. The nursing facilities were very good.

Dr. SAFIEH ALI (Turkey), who is at work in the obstetrical and gynæcological wards of the American Hospital at Stamboul, and who is so far the only Turkish woman doctor in her country, described her work. The head of the obstetric and gynæcological work of the Stamboul Maternity was Professor Bessim Omer Pasha.

Dr. SWENSSON (Norway) spoke of the necessity of feeding the pregnant woman on the right foods. About 50 per cent. of the food taken was deficient in lime, phosphorus, and vitamins. Insufficient diet for the mother could cause a high rate of infant mortality. The diet should contain milk, vegetables, fruit, and bread. These were necessities. There were no maternity clinics in Norway.

Dr. MARIE UGON (Montevideo) referred to the causes of maternal mortality that were common to all countries, and enumerated the attempts to combat these in Uruguay. Among social causes she placed the abandoning of the pregnant woman and its consequences, and also prostitution, both officially recognized and clandestine. Among pathological causes she placed deliberate abortion, venereal disease, nephritic or cardiac complications, and infectious diseases. The social causes were combated by attempting to protect the girl mother and by hospital treatment in any stage of gestation provided officially and freely. A system of secret admission had been adopted. Every pregnant woman was allowed to withhold her name, which she handed in a sealed envelope to the director. This was returned to her on her discharge, and only opened in case of her death. Investigation of paternity was carried out by the legal adviser of l'Assistance Publique. Attempts were made to put down the white slave traffic, but the official regulation of prostitution made this difficult. Deliberate abortion was punishable under the law. She laid very great stress on metritis. The story of metritis needed rewriting. In her opinion an insidious or latent metritis acquired a special virulence during confinement. In her polyclinic the genital organs of all pregnant women were examined. Every metritis found was actively treated. Gonococcal metritis was not proved bacteriologically, but was highly dangerous. In order to prevent eclampsia maternal canteens were provided where suitable food was given—an important matter in a country where meat formed a staple article of diet. She advocated the improvement of women's education, especially in sex hygiene, and was herself promoting a plan with this object.

A few other communications were received and taken as read.

British Medical Journal.

SATURDAY, AUGUST 2ND, 1924

TEN YEARS

A certain number of people are disposed to write down the late war as ancient history, but there cannot be many thoughtful individuals who really regard it as no longer of any but academic interest It may seldom be discussed in its more personal and intimate details, but it is still an active factor in the mental lives of most of us, as also in the physical existence of everyone This is inevitable The great war was less a war than a cataclysm, and one whose social and economic effects must be felt not merely by the present generation but by many generations to come

In two days it will be exactly ten years since Great Britain came to her fateful decision to oppose the Germans, and it is already ten years since the Germans first evidenced their contempt for civilized conventions by sending troops across the French frontier twenty-four hours before war had been declared against France How quickly the storm gathered and broke was amazing at the time, and is hardly less amazing when one looks back on it to day On the second of August ten years ago many officials of the British Medical Association were still at Aberdeen, and hundreds of its members had only just reached their homes after a meeting during which there had been nothing unusual except the fact that several German-speaking medical men had not arrived to read their promised papers, and one Austrian professor of much distinction had left hurriedly on the ground that his country was at loggerheads with Serbia Less than twenty-four hours later a truly kaleidoscopic change had taken place All Great Britain was agog with excitement as to whether or not this country would have to take part in a great European war, and scores of medical men were quietly struggling with the problem of what they should do with their practices if there arrived the orders that seemed not unlikely, and which, in fact, most of them did receive less than twelve hours later Some, indeed, had already had to reach a decision, for the fleet was mobilized before the German response to the British ultimatum was received, and the Royal Naval Reserve, which included a good many medical men and medical students, was called up simultaneously By the fifth of the month nearly all Territorial medical officers and those belonging to the Special Reserve had received definite orders, and by the evening of the same day many had already reported themselves for duty at camps and elsewhere Some, indeed, received warning at the camps, for sundry Territorial Divisions had recently assembled for the annual training

How largely the medical profession was thus instantly and inevitably affected by the outbreak of war will be clear when it is remembered that, apart from battalion medical officers, the Territorial Force included the officers of over fifty field ambulances On the same day the twenty-four Territorial general hospitals at home, and fourteen clearing hospitals, received instructions to mobilize, and at least one of the former had begun to erect its buildings by the following morning Within less than a week of the time at which the scientific proceedings at Aberdeen came to an end, dozens of those who had taken an active part therein had put on the military uniforms which in many cases they were not to doff for five weary years, others had joined the Navy, which was the first to give temporary commissions, and still more had sent in their names to the War Office as ready to serve with the troops if required It may be added, in fact, that a good many medical men, whose outlook had hitherto been purely civilian, had in the same period practically taken the field For the Expeditionary Force began to land in France on August 9th, and of the 400 or 450 medical men which it included many were civilians It was part of the pre-war plans of the Army Council to employ a considerable proportion of these in all medical units assigned in advance to the Expeditionary Force Apart from all these the staffs of the civilian general hospitals in most of the greater towns had co-operated with the local authorities in placing beds at the disposition of the War Office should they be needed, and great numbers of medical men were assisting in the provision, by the Red Cross and St John Ambulance Association, and by many private persons, of hospitals in various parts of the country Simultaneously there was great bestirring among medical men specializing in sanitary science The formation of large Territorial camps, on ground not previously devoted to any military purpose, called for much work of this order, and a large proportion of the officers belonging to the sanitary division of the Territorial Force held more or less important civil appointments which it was exceedingly difficult for them to abandon at a moment's notice Fortunately they were not called on to do so forthwith, and meanwhile events had already revealed that field sanitation and the sanitation of towns and rural areas stood far apart in matters of detail, though not of principle

Even more remarkable than the sudden change of outlook was the prescience shown by the medical profession in the matter of the needs that the new outlook was likely to create, and the promptitude with which it prepared to meet them Even before the hour at which war had been actually declared, the medical profession at Southampton had held a meeting whereat it was resolved that home staying members of the profession would act as substitutes of those who might join the colours, and thus save them as far as possible from financial loss, and in less than forty-eight hours the Exeter Division, besides holding a similar meeting, had taken steps to provide for that lack of medical assistance which it foresaw might arise in rural districts The two towns mentioned were the first in the field in this connexion, but other areas showed no backwardness Long before the completion of the landing in France practically all Divisions of the British Medical Association had organized meetings of the profession at which almost identical resolutions were passed, and at many of these it was also agreed to give gratuitous medical attendance to the necessitous cases and families of recruits and others called up for military duty Meanwhile connected work was being pursued with great activity at the headquarters of the Association By the time in question it had already secured a promise from the Government that the horses and motor cars of rural practitioners should not be commandeered, as well as a promise of privileges, if required, in respect of supplies of petrol It had also prepared lists of retired medical men and others willing to fill gaps left in rural areas by medical men who had been called

up and had provisionally arranged with the Government to co-operate in the recruiting of medical men if required. In this way it prepared the ground for the Central Medical War Committee, which later on played so important a part and which in its final form should be regarded as having first blossomed in the Metropolitan Counties Branch of the Association.

The British Medical Journal it is satisfactory to remark also showed prescience, more particularly by urging that the offers of small yachts and other like vessels for use as hospital ships should not be accepted as they were likely to prove unsatisfactory from all points of view by endeavouring to secure the acceptance of antityphoid inoculation and by indicating that although there would doubtless be scope for the work of all expert surgeons the primary need of the army would be for men able and willing to take any kind of army medical work either at home or abroad which the needs of the moment might require. In short within ten or twelve days of the termination of the Annual Meeting of 1914 the whole scaffolding of the medical arrangements of the war had been erected and there stood to the credit of the medical profession achievements which were only dwarfed by the greatness and continuity of its efforts during the following long years.

The first fortnight of August 1914 is in fact a period on which the medical profession as a whole can look back with satisfaction but not as individuals. In common with vast numbers of Great Britain's citizens medical men saw their sons maimed or killed and their daughters bereft for the most part of any real chance of happy marriage and they are still suffering financially not only from heavy taxation but unfortunately also in the case of many Territorial officers from inability to regain to the full the practices they formerly conducted. Likewise very many of us lost much esteemed professional friends and if any reminder was needed one of the events of the now concluded Annual Meeting at Bradford provided it. This was the handing over to the President of the illuminated missal containing the names of members of the Association who died in the service of the country. Mort pour la patrie is in France considered the finest epitaph a man can have. This record provides for 574 of our fellow members and we add for each of them the old Greek blessing to the dead

γαῖαν ἔχοις ἐλαφραν

THE INSURANCE SYSTEM DEBATE

It may perhaps come as a surprise to some sections of the public that at the discussion in the Section of Medical Sociology at Bradford (reported at p. 167) on the question "Has the National Health Insurance Act justified its existence?" the answer given was practically unanimous in the affirmative. The speakers were representative of nearly every section of the community connected directly or indirectly with the working of the Insurance Act: Insurance Committees, pharmacists, approved societies, insured persons male and female, medical consultants, general practitioners, hospital surgeons, lay administrators of voluntary hospitals, and medical officers of health were all represented in the debate and not a single speaker could be found to assert that the Insurance Act had not on the whole justified its existence.

Among other things it was claimed that insured persons now had much better facilities for obtaining treatment in the early stages of disease and thus that serious complications were often averted; that the out-patient departments of hospitals were now less crowded with trivial cases than formerly, which allowed more time to be devoted to the more serious cases, that the number of in-patients requiring special treatment which could not well be given at home had increased; that general practitioners were now brought into more intimate contact with the consulting staffs of hospitals, which was helpful to both; that the Act had proved financially satisfactory to the panel practitioners especially as compared with the old club system, that doctors generally had been led to take more interest in the preventive side of medicine, and that as a result the general health of the community had improved. It was said too, that the forebodings of the voluntary hospitals that subscriptions to the hospital funds would fall off had been falsified by the facts; as apart from the disturbing effects of the war many hospitals were now receiving greater help in the way of subscriptions and donations than before the insurance system began. It was stated that the great bulk of insured persons were getting better medical advice and treatment than in pre-insurance days, and were on the whole grateful. It was claimed too that the establishment of Panel, Medical Benefit, and Pharmaceutical Committees as properly organized professional bodies, and the establishment of Insurance Committees had brought about a greater public and professional interest in general health problems, and thus indirectly had stimulated the health authorities to greater activity; though the Insurance Committees had not used the powers conferred by the Insurance Act as extensively as they might perhaps have been justified in doing. It was further shown that the tax on the financial resources of the insured caused by sickness had been to some extent removed; that sickness had been to a far less degree a disabling economic handicap on the working classes, and that in this way the insurance system had led to a continuous improvement in their environment. On these and other grounds the claim was made that the National Insurance Act had fully justified its existence.

Nevertheless in spite of this pæan of praise one cannot read the report of the proceedings without being struck by the strongly critical spirit manifested. Many of the speakers did not confine themselves to the strict subject of debate—namely "Has the Insurance Act justified its existence?"—and the definite answer "Yes" was qualified by the addition that the scheme might and ought to have been more satisfactory than it is. In some cases the praise was mainly for the general principle of insurance against sickness embodied in the Insurance Act. But it is worthy of note that even this modified praise is an advance from the attitude taken at the inception of the insurance scheme by a considerable number of persons. At that time there was a fairly widespread objection against any form of what was called state interference between the family doctor and his patients. Much less has been heard of this idea recently—largely no doubt because the principle of free choice of doctor fought for all along by the British Medical Association and recently extended by the Ministry of Health has had the effect of removing some of the grounds for this objection. It is recognized that any form of public medical service must have interfered with previous arrangements, and that it was high time that there should be some interference by a properly constituted authority with the former degraded club system from which the medical profession seemed unable to escape. In spite, however, of the strong criticism of the

details of the Act, it may fairly be taken that the speakers in the Section of Medical Sociology, widely representative as they were of the community, were strongly of opinion that the principle of self-help embodied in the national insurance against sickness has justified its claim to be preferred to a system of medical doles which would be involved in any public medical service entirely financed and managed by the State itself

It was only to be expected in any debate about national health insurance that numerous suggestions for improving the Acts should be put forward The subject of the payment of panel practitioners was purposely excluded from debate, but numerous suggestions were made for widening the range of services now provided for the insured, and though many of these suggestions were excellent in themselves the difficulty of financing any great extension of the services hardly seemed to be fully realized It cannot be too often repeated that the national health insurance scheme is in the nature of a business proposition, and as such should be self-supporting No one can doubt that a complete medical service should include in patient and out patient hospital treatment and the services of consultants and specialists of every section of the medical and dental professions But the objection at once arises, Who is to pay for all this? The present subscriptions of employers and employed will certainly not suffice, and neither of these classes would be likely to agree to the considerable increase of their contributions which would be necessary if national insurance is to give these extra services and continue to pay its way An alternative would be a very large annual and permanent contribution by the State, neither the House of Commons nor the Treasury would be likely to approve this policy Moreover, it seems likely that the voluntary hospitals would raise objections against the State control that would naturally follow any considerable State subsidy These are, however, questions that will be suitable for consideration by the Royal Commission Meantime the debate in the Section of Medical Sociology has brought out very clearly the general feeling that the National Health Insurance Act has not only justified its existence but its continuation, that anything like scrapping the system would be strongly opposed, and, further, that it should be extended along its present lines as far as financial and other considerations allow

It is possible if not probable, that the question will be raised, 'How far does the opinion of the Section of Medical Sociology represent the general opinion of panel practitioners and of approved societies throughout the country?' None of the speakers, of course, were directly elected representatives for the purpose of this debate, but from all the information obtainable it may be assumed that neither panel practitioners nor approved societies in general would entertain for one moment the idea of replacing the Insurance Act by any other system yet devised, however much they may complain about the shortcomings of the service or the worrying administrative details with which officialdom has surrounded it

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The King has appointed Sir Harold J Stiles, K B E, LL D, Regius Professor of Clinical Surgery in the University of Edinburgh, to be one of the Honorary Surgeons to His Majesty in Scotland, in succession to Sir William Macewen, C B, F R S, M D, deceased

THE CARE OF CRIPPLED CHILDREN

Since the beginning of the century which is now approaching the end of its first quarter there has been developed very quietly and unostentatiously an organization, which is now on the way to become national, for treating and caring for crippled children, for preventing crippling diseases, and mitigating their evil effects The country owes it to two people—Sir Robert Jones and Miss A G Hunt, R R C The combination is typical science and surgical skill in the one, and wise management and good nursing in the other Miss Hunt had established a country home for children at Baschurch in Shropshire, to which county her family belongs, mainly with the idea of bracing up children to undergo another operation An awkward staircase and insistent demands to take more patients led to putting most of them to live in a lean-to, with excursions into the sun outside when it shone Some of the children improved so much that the intended operation became unnecessary At this stage Miss Hunt became a patient, and remained the friend, of Sir Robert Jones Both had the happy knack of infecting others with their own enthusiasm, and before very long a number of orthopaedic surgeons arranged to visit Baschurch periodically to advise and operate The next step, if we remember rightly, was the establishment in various parts of Shropshire, within reach of Baschurch, of centres chiefly for patients who had been treated at Baschurch, but to which parents could take crippled or deformed children for general advice as to what they could best do Later on Baschurch Hospital was removed to larger premises in Oswestry, where it is now carrying on a great work, more important still, the principle by which it is inspired has been grasped in other counties There is the Wingfield Orthopaedic Hospital at Headington, near Oxford, established mainly through the exertions of Mr G R Girdlestone, F R C S, it has out-clinics in Oxfordshire, Berkshire, and Buckinghamshire, as has also the cripples' hospital established in Stoke-on-Trent, with some forty beds In Hertfordshire there are ten clinics, which are visited by Mr Higgs, and to which school children and infants are sent for treatment by school medical officers, welfare centres, and by their own doctors, if operation is deemed necessary they are sent to a hospital in London There are also the Ethel Hedley Hospital, Windermere, and the Woodlands Hospital, Birmingham The Oswestry Hospital has extended its clinics to Chester and Hereford shire, after-care schemes are operating at Nottingham in connexion with the Staffordshire Orthopaedic Hospital at Biddulph, and clinics are about to be established at Bath (see page 151 of our last issue), Plymouth, Wrexham, Oldham and other places in Lancashire, and in Derbyshire The Ethel Hedley Hospital at Windermere now has seven out-clinics in Cumberland, North Lancashire, and Westmorland, with approximately 550 patients The Birmingham Cripples' Union, founded two years ago, is well equipped and officered, and has a convalescent school for tuberculous children, where they are taught various trades among others pottery, Mr Naughton Dunn and Mr Wilson Stuart hold a clinic fortnightly at the central office But we cannot profess to give a complete list, which will be found in a new publication—the *Cripples' Journal*—which is to be published quarterly Its aim is to stimulate public interest, to advise on the establishment and maintenance of new centres, and to furnish information to workers in this field The first number contains a short article by Sir Robert Jones, in which, without minimizing the difficulties ahead, he writes hopefully of the future a paper on gymnastics and orthopaedic treatment by Mr McCrae Aitken, an account of the New England Peabody Home for Crippled Children, started on a small scale in 1894 and now doing an enormous amount of work at its own country hospital, and the beginning of a history o

Baschurch by Miss Hunt The journal is published by the Shropshire Orthopædic Hospital Committee, and copies can be obtained post free from that institution for 1s 3d

THE SAFEGUARDING OF MILK

THE Ministry of Agriculture has at its disposal a considerable annual sum for the development of agricultural research and education A portion of this sum amounting approximately to £100,000 is used for annual grants in aid of fundamental and continuing research work carried out at agricultural research institutes each dealing with a special subject such as soils, plant diseases fruit growing and dairying In order to make the results available for farmers the Ministry employs a number of specialist advisory officers—entomologists mycologists chemists economists, and veterinarians—who are attached to university departments of agriculture and to agricultural colleges The county councils have also appointed agricultural organizers and county agricultural staffs Lectures are given by the various members of these several staffs to students in agricultural colleges farm students, and to audiences of farmers and farm workers, recently, in co-operation with the National Farmers' Union, addresses have been given at meetings of branches of that union by those engaged in research work at the different institutes The Ministry has published a large series of leaflets with which many of our readers must be familiar, and also a book by Mr V E Wilkins entitled *Agricultural Research and the Farmer*, which gave a summary account of practically the whole of the agricultural researches in progress The Ministry has now begun the publication of a series of *monographs treating the various subjects in greater detail* than was possible in Mr Wilkins's book The first of these monographs is entitled *Studies Concerning the Handling of Milk* [1] It has been compiled by Dr Stenhouse Williams and the staff of the National Institute for Research in Dairying at Reading This institute which began work on a small scale in 1911 has secured a large capital sum, partly from the Treasury and partly from public donations and has been able to provide itself with new buildings and a farm of its own, where its work will continue and develop under the best conditions It is supported also by the Ministry of Health and the Medical Research Council, as well as by the Royal Agricultural Society of England and the dairy industry The monograph treats in detail, but with as little use of technical terms as possible, of nearly all the points to which attention must be given in the production of clean and wholesome milk There is a discussion on farm conditions and advice is given as to the relatively simple precautions which, when the staff of a farm is well taught, can ensure a wholesome milk Certified milk" must be bottled at the farm from cows which do not react to the tuberculin test and are subject to veterinary inspection It can be supplied in country places at prices no higher than those charged for ordinary milk, and even in great towns has made its position, and within limits set by its higher price is assured of a market The future of Grade A (tuberculin tested) milk" is not yet, it is said clear In Reading, where it was first put upon the market at the beginning of 1922, the sales have gone up greatly, and in Newcastle also considerable quantities are sold It has the great advantage that its price is not more than about 1d a quart over that of ordinary milk The poorer classes have been found willing to buy it chiefly because it keeps much better than the milk to which they have been accustomed Grade A milk," which can be sent in sealed churns to be bottled at a dealer's premises, is obtained from cows which are not subject to the tuberculin test, but are submitted to regular veterinary inspection It ought to keep sweet as long as "Grade A (tuberculin tested) milk" but it has not yet been long enough on the market to gauge the probability of its eventually becoming commercially successful The monograph also contains some notes on cheese It is the intention of the Ministry to provide funds to the agricultural colleges *for the promotion of work similar to that* which is being done at the National Institute at Reading Though the monograph is primarily addressed to dairy farmers it gives an account so complete and yet so succinct of the present position of the measures advised to be taken to ensure the purity of milk that it will we believe, interest many medical readers

[1] London H M Stationery Office Price 1 net post free.

MINERS PHTHISIS

THE term miners' phthisis" is used loosely to denote silicosis which is a form of industrial pneumonoconiosis and also silicosis associated with tuberculosis The boundary line between these two conditions is not distinct and the nature of the association between silicosis, an inflammation due to a mineral dust and tuberculosis, a bacillary infection has not hitherto been satisfactorily determined Mavrogordato pointed out in 1922 that the early stages of miners' phthisis can be produced by silica alone, and there is abundant evidence that the silicotic lung is more liable to tuberculosis than any other form of pneumonoconiosis In the same year Gye and Kettle showed that subcutaneous injections of a mixture of silica and tubercle bacilli resulted in the temporary protection of the bacilli, so that they proliferated freely in the area of coagulation necrosis due to the silica F H Kettle [1] has now proceeded further along this line of investigation and has performed a series of experiments with a view to determining the nature of *the association between silicosis and tuberculosis* He finds that if localized inflammatory lesions are produced in the subcutaneous tissues of mice and rabbits, and intravenous injections of tubercle bacilli are subsequently given the greater vascularity of the inflammatory areas renders them more liable to infection than normal connective tissue The inflammatory lesions themselves do not appear to be in any degree more favourable to the growth of tubercle bacilli than the uninjured tissues, except when the inflammatory agent is silica when the tubercle bacilli proliferate freely in the lesions and produce in susceptible animals typical tuberculous foci This occurs in spite of the fact that the inflammatory reaction to silica is usually much less than in the case of other substances employed such as calcium chloride and turpentine There would therefore, appear to be something specific in the action of this agent and it is suggested that cell protoplasm containing silica though apparently uninjured otherwise may be unable to deal with ingested bacilli It is also possible that silica may have some specific influence on the growth of the tubercle bacilli

[1] E H Kettle *Brit J Exp Path* June 1924 p

HOSPITALS IN AUSTRALIA

THE Secretary of the Department of Public Health of Western Australia, Mr F J Huelin, has written a report on the 'State Hospital Service" of the State dealing with its needs and making some suggestions for improvement His intention is to give publicity to the shortcomings and needs of the hospitals encourage discussion and so, by helpful criticisms and suggestions of ways and means, improve the unfortunate position now existing due to shortage of funds It will be rather a shock to some to be told that a State Hospital Service can be inefficient owing to lack of funds But Mr Huelin states that there is A lack of modern equipment antiquated and unsuitable buildings absence of suitable cultural surroundings a low standard of ward equipment and furnishing and an entire lack of hospital provision in many districts" There are sixty-one hospitals in the State costing £197 000

per annum, this cost is met by fees from patients as regards £52,000, subscriptions, donations, and special efforts, £19,000, payments for services rendered, £16,000, State funds the balance The method of obtaining the funds for these hospitals suggested the inquiry as to their exact status The report speaks of "department hospitals," "committee hospitals," and "intermediate hospitals," but does not define them From information given to us by Australian doctors now in London it appears that the State provides mental and fever hospitals—that is, the department hospitals—but no general hospitals There is nothing like our Poor Law hospital but homes for the incurable are maintained by the State The general hospitals are found in what Mr Huelin calls "committee hospitals," and are just such hospitals as we know in England as voluntary hospitals they are managed by independent committees appointed by the subscribers, they are recognized by the State, which subscribes to them through a 'Charities Commission" or the equivalent An officer of such commission visits the hospitals, just as the visitors of the King Edward's Fund do in London, and grants are made to the hospitals according to their needs It is stated, however, that no control is exercised by the States over these hospitals to which the subventions are granted The 'intermediate hospitals" are institutions provided and maintained by various church and philanthropic organizations—for example, the Salvation Army, the Baptist, Congregational, Presbyterian, Roman, and Anglican Churches They are described as glorified nursing homes, and meet the need of those who do not wish to enter the "committee hospitals" and cannot meet the higher charges of the ordinary nursing homes and private hospitals For the most part the services of the medical staffs of the "committee hospitals" are given gratuitously, the report points out the anomaly that 'at the present moment this patient receives its professional attention gratis, and still is expected to pay the hospital as much as it possibly can The cure of this, the writer thinks, lies in freeing this class of case from the liability of fees" Caustic comment is made on the working hours of the nurses At most hospitals nurses are working 63 hours, sometimes 65 hours a week on day duty, and at many of the Australian hospitals up to 80 hours on night duty

Reform means more expenditure At the moment there is no money to pay for it and it is difficult to see where the money is to come from In considering where money is to be got from he rules out further State grants or municipal rates It is open to objection that income taxation is contributed by only 42 000 taxpayers out of a total number of 152 293 breadwinners earning or receiving income Further he points out (in italics) 'the benefit to be derived by the individual from the public hospitals service is in inverse proportion to his income' His proposal for meeting the need is to establish a direct compulsory income tax for the hospitals, a levy of one penny in the pound upon all income in excess of £1 a week—that is, a compulsory contributory scheme He says the cost would be little and the collection almost automatic A single person with less pay than £3 15s a week, and a married man with three or four children with £4 10s or £5 a week would be able to claim treatment free in virtue of his contributions others would pay on a graduated scale The report is of interest in showing the difficulties of other countries and other systems and the measures proposed for their remedy It would be of interest if the Australian Branches of the British Medical Association would make a special inquiry and report on the working of this subsidized independent hospital system of their States and furnish first-hand evidence of its conditions and effects West in Australia is a small State as measured by population, information from populous States would be valuable

UNDERFEEDING OF COAL MINERS' FAMILIES

During the year 1922 many statements were made in the House of Commons and elsewhere to the effect that the available income of miners was insufficient to provide them and their families with the bare necessities of life It was a period of grave industrial depression, and the difficulties of the mining class were aggravated by the fact that many families were burdened by debt, the aftermath of a strike, and therefore a wage which might have been sufficient to provide an adequate supply of food was often so much reduced as to be below subsistence level It seemed clear that the economic position of coal-miners was far from fortunate, but little detailed evidence as to the precise domestic circumstances of the miners' families was available The situation called for scientific inquiry, and, under the authority of the Medical Research Council, the Committee upon Quantitative Problems in Human Nutrition set on foot an investigation into the composition and physiological value of the diet available for miners' families, together with a comparison of the state of nutrition of miners' children with those of other children in the same district The report on this work has just been published[1] From the manner of its beginning the report, which covers some sixty pages promises to be easy reading, but for all except trained statisticians disappointment lies ahead A description in simple language of the food requirements of man and the way in which the energy-giving value of foodstuffs is determined leads on to a critical survey of the results obtained by such method as those of indirect calorimetry We need not call attention to the argument on which is based a provisional assessment of the needs of a coal-miner, but pass at once to a description of the methods adopted in the present inquiry, and the conclusions to which this inquiry has led Five typical colliery districts were investigated by social workers in the winter of 1922-23—Durham, Derbyshire, Northumberland, Lancashire, and Stirlingshire In every case the consent and co-operation of the housewives was obtained, and in most cases they rendered valuable assistance Each study lasted a week a period which might be thought to be too short to give a fair representation of the diet, in view of the fact that wages were uncertain To the miner one week differs considerably from another, but over a large series of 140 families it is suggested that these differences may tend to balance A special form of record book was prepared and used throughout, allowance was made for the food in hand at the beginning of the study and for that unconsumed at the end, the amount of edible matter lost in waste was determined, notes were kept of the meals taken at home by each member of the family The section of the report which discusses the figures obtained by this investigation is most cautiously worded, and points to the many fallacies which beset deductions from the information gathered Thus, in some families the amount of money allowed to the wife for the purchase of food and the general household expenses bore no constant relation to the wage earned In spite of these and other reservations this inquiry has established that "(1) During the period of observation (December, 1922, to March, 1923) the average consumption of food in one district—Derbyshire—was sufficient to maintain healthy existence, and in that district the children of the miners whose family diets were studied differed in respect of height and weight in no significant way from the average for the whole country (2) That the diets of the four other districts, and in particular of the Durham area fell somewhat below the standard generally accepted as satisfactory In Durham the children measured were in respect of weight slightly below the

[1] Report on the Nutrition of Miners and their Families Medical Research Council Special Report Series No 87 London HM Stationery Office To be obtained through any bookseller (price 2s 3d)

county average." Thus we must accept the regrettable conclusion that in four out of five of the districts investigated the miners did not obtain the food necessary for their arduous work and their families were ill nourished. It would seem that, apart from differences of income, variations of diet exist from district to district and within each district; for instance, in districts where bread is baked at home the diets were more satisfactory. Undoubtedly housewives could be helped to secure a more adequate return for their expenditure by a better dissemination of knowledge both of the economic and hygienic aspects of diet. Another interesting point of view and one worth further exploration, was opened up by this investigation. Some evidence was obtained but not sufficient to be absolutely conclusive, that the diets of families of which the mother had had training in domestic service were better than the average. This report will furnish material for thought not only to the physiologist, but also to the social worker and reformer.

WILLIAM HARVEY AND ST BARTHOLOMEW'S HOSPITAL

Those familiar with Sir D'Arcy Power's memoir of Harvey in the Masters of Medicine Series—and what British medical historian is not?—will turn with interest to his recent note on William Harvey and St Bartholomew's Hospital.[1] In it he raises the question why in 1602 on his return from Padua, Harvey attached himself to the hospital in Smithfield instead of returning to Cambridge: he was *more interested in anatomy and experimental physiology* than in bedside medicine, and might have pursued his favourite studies on the banks of the Cam rather than on those of the Thames. Although the suggestion is admittedly speculative, Sir D'Arcy Power thinks it possible that his friendship with the famous architect Inigo Jones, who was baptized in the church of St Bartholomew-the-Less, began at Padua. Whatever the reason there is documentary evidence that Harvey applied for and obtained the reversion of the post of physician to the hospital in 1608, an appointment somewhat similar to that of assistant physician for in the absence of the physician it involved the discharge of his duties without payment. He had, however, not to wait very long, for he became physician on October 14th 1609, and with it obtained the right to rent a house within the hospital, this Harvey never did, and in 1626 his annual stipend of £25 was increased to £33 6s 8d in lieu of this privilege. About 1631 Harvey's duties as physician-in-ordinary to the King took him so much away from the hospital that Dr Richard Andrewes was appointed to take on his work, being in 1633 made 'an immediate physician" with an annual salary of £23 6s 8d, and given £20 for his previous year's work while physician in reversion. During this last year Harvey presented to the court of governors sixteen rules for the regulation of hospital practice, several of which read rather curiously now as restricting the independent action of the surgeons, for example, 'that every chirurgion shall follow the directions of the doctor in outward operations for inward causes for recovery of every patient under their several cares", this was agreed to by the chirurgeons, who, however, protested against the overriding of their opinion by the doctor in the presence of the patient. At this time John Woodall, author of *The Surgeon's Mate* (1617), was one of Harvey's surgical colleagues. In 1634 Dr Andrewes died, and Harvey ceased to be a regular attendant at the hospital, but it was not until 1643 that the last payment was made to him, and it was only in 1653 that Dr (afterwards Sir John) Micklethwaite, who had been doing the work for some years, was formally elected physician.

[1] *St Bartholomew's Hospital Reports* 1922 lviii 69-107 (with a plate of Harvey in his 63rd year).

A MUNICIPAL CONVALESCENT HOME FOR MOTHERS AND BABIES

The first municipal convalescent home for mothers and babies in this country was officially opened on July 26th by Mr Wheatley Minister of Health. Fairley Grange which is at Fawkham, Kent was given to Bermondsey Borough Council a year ago by Dr Alfred Salter at that time M.P. for Bermondsey. The Minister in his opening speech spoke of the co-operative spirit which is beginning to characterize public life to-day. The fact that the ratepayers of Bermondsey had realized that a farthing rate was being well spent in providing convalescence for mothers who would not otherwise be able to take a holiday showed that they had realized it was the business of the community to attend to the affairs of its weaker members. The attitude of the Ministry of Health was sympathetic toward all schemes likely to further maternity and child welfare which he considered to be the corner-stone of public health work to-day. In welcoming Mr Wheatley Mrs Salter the chairman of the Maternity and Child Welfare Committee said that Bermondsey was proud of the fact that the maternal mortality per 1,000 births for last year was 1·37. Although the infantile mortality was still very high 70 yet it was the lowest Bermondsey had reached. Ten years ago, before the first health visitor was appointed it was 159. The home is a comfortable sixteenth century manor house standing in twenty-three acres of ground it has all modern conveniences and is well adapted to accommodate sixteen mothers and babies.

ANNUAL MEETING NOTES

THE PATHOLOGICAL MUSEUM

The Pathological Museum contained twenty-four series of exhibits covering a wide field ranging from bottled specimens of morbid conditions to x-ray photographs, ancient skulls and sepulchral vestiges. A special feature of the museum this year was the group of exhibits illustrating anthrax, a disease of singular importance in Bradford. Dr F. W. Eurich had collected a series of water-colour representations of cutaneous anthrax and photographs of pustules; there were also photographs illustrating the opening sorting and carding of scheduled material; samples of suspicious damaged and blood-stained wool; photographs of the Government Disinfecting Station at Liverpool and samples of wool before and after disinfection. The station was described and illustrated in our issue of December 3rd 1921 (p. 952). The President of the Association, Mr Basil Hall exhibited a unique series of museum specimens illustrating malignant disease of the large bowel, each specimen being accompanied by a description of the patient's illness and after-history. Mr Malir Smith had a number of microscopic preparations of *Entamoeba histolytica* and its cysts some of them of peculiar historical interest as they were prepared from the first cases of endemic amoebic dysentery discovered in this country. Mr John Fraser's exhibit of tuberculous disease in bone excited a good deal of attention. He showed examples of encysted infiltrating hypertrophic and atrophic bone tuberculosis many of the preparations being accompanied by microphotographs portraying the minute pathology. Mr W. E. M. Wardill contributed an exhibit illustrating a method of cysto-copy in the presence of blood and pus and arranged to demonstrate his method in the museum on Thursday afternoon.

A heterogeneous collection of museum specimens of different morbid conditions was brought over from the pathological department of the University of Leeds. The elegantly mounted specimens represented recent additions to its museum. Professor Stewart showed some specimens

and microscope slides illustrating xanthoma and xanthosis The museum occupied two well lighted rooms of the College, and provided a very instructive display

THE CLOSE OF THE REPRESENTATIVE MEETING

In the SUPPLEMENT this week we conclude the full report of the Annual Representative Meeting, of which the first three days' proceedings were reported in last week's SUPPLEMENT The agenda for the last day (Tuesday, July 22nd) included two items which might have provoked considerable controversy—the report on indirect advertising and that on the scale of salaries for public health appointments That the first was accepted with general approval, subject to the reference to Council for reconsideration of two paragraphs, marked the successful termination of two years' work on a difficult subject In spite of the difficult points of classification involved, and the modifications in the scale as passed last year, indicated by the Chairman of Council as the result of conversations with representatives of local authorities at the Ministry of Health, the questions raised on the latter subject were almost entirely devoid of criticism This was a striking tribute to Dr Bolam's personal work during the past twelve months in this connexion, and a signal mark of confidence from the Representative Body The confidential nature of his communication would, in the natural course, have exposed it to even more drastic criticism than that raised by an ordinary report of completed negotiations The reference for reconsideration of the paragraphs of the Central Ethical Committee's report dealing with signed communications to the press could hardly have been opposed by the Chairman of the Ethical Committee after Dr Brackenbury's comment The comparative absence of criticism of the rest of the statement of policy showed that, with this exception, the Ethical Committee had succeeded in expressing the general feeling of those who have the maintenance of high professional standards most at heart but this particular point there could be no doubt of the moral desire for revision How far a closer definition of what is legitimate and what is objectionable use of signed communications to the press may be possible remains to be seen Dr Fothergill's suggestion for collective pronouncements from Divisions and Branches on matters of public interest met with as little support as the original statement of the Committee The discussion on the two motions directed to speeding up procedure in dealing with Important Notices should be of definite use if it has emphasized the need for prompt action in cases where delay is more often the result of ignoring than of following the rules of ethical procedure The motion on advertisement of nursing homes which had provoked considerable discussion in the Council was adopted almost without comment On the Public Health Report the motion to discourage acceptance of fees for consultations by whole-time public health officers was passed after a discussion which served at least to indicate a growing desire in each of the two branches of the profession to understand and appreciate the difficulties of the other The Dartford motion on free choice of doctor for Poor Law patients supplied a new and interesting application of one of the cardinal points in the Association's general policy The Birmingham motion on the Milk and Dairies Act and the Tuberculosis Order stressed the obligation of the medical profession in respect of public health When the profession, through the Divisions of the Association, gives a clear lead in these matters the Council is in a far better position to urge the most vigorous action on whatever Government may be in power Dr Fothergill's motion for a reconsideration of the Medical Acts with a view to revision served as a reminder that general agreement on the desirability of reform is not an adequate substitute for definite action to secure such reform

The Annual Representative Meeting closed with the usual votes of thanks, after dispatching a reasonably full agenda with singularly little friction, and with shorter sittings than usual It is not often possible to say, as it can be said of the proceedings at Bradford, that practically every speech made at a Representative Meeting has been fully audible to all who paid reasonable attention For the provision of a hall with good acoustic properties, and for the general excellence of the arrangements which smoothed the work of the meeting, those responsible fully deserved the cordial appreciation expressed by the representatives

THE SECRETARIES' CONFERENCE

The Secretaries' Conference on the afternoon of July 23rd was, except in the matter of its interest and success, in striking contrast to that at Portsmouth last year At Portsmouth discussion was introduced by special papers dealing with various aspects of an honorary secretary's work in different types of Division At Bradford the Conference was asked to express an opinion on certain questions for the guidance of the Science and Organization Committees, and of the central office The discussion, under the five minutes' rule, was characterized throughout by directness and a sense of responsibility, and suggested a definite advance in co-operation between the central and local bodies Appreciation of the part played by the Library in the work of the Association, and of the efficient services of the librarian, was marked, and practical suggestions for improvement centrally and locally were favourably received In general, it seemed to be felt that the utility of the Library was limited only by the demands of the members The question of the organization of a golf competition, introduced last year by the Deputy Medical Secretary, received this year that respectful and considered attention which is its due An expert committee was appointed to elaborate a scheme, and the Treasurer's generous offer of a cup for competition was accepted with enthusiasm The idea of some suitable badge of office for Branch and Division presidents, chairmen, and secretaries met with considerable, though by no means unanimous, approval, and was referred to the Organization Committee for development For the rest, the usual discussion of the comparative percentage figures of members and non-members of Divisions and Branches allowed those secretaries most burdened with accommodation addresses, home addresses, and the names of retired practitioners to lift their accustomed lament before a sympathetic audience The debate on notifying local secretaries of arrears of subscriptions, with a view to saving lapses of membership, whilst it resulted in a suggestion for action on this line, left the members of the Conference with a vivid impression of the difficulties of the case and the laborious and fruitful work of the Financial Secretary in his most ungrateful task of collecting arrears The Conference owed much of its undoubted success to the able and genial chairmanship of Dr William Paterson, honorary secretary of the Willesden Division Dr Paterson's skill in dealing with an agenda paper which he had not previously studied with a view to the discharge of this particular function was such that the Conference refused to alter its procedure by electing its chairman for the next meeting in advance, mainly on the score that the present system produced results which could not be bettered The absence of Dr Garstang from this particular gathering, which his work has done so much to make an efficient part of the Association's machinery, was regretted most deeply by those who had the longest experience of his untiring interest in the perfection of local organization, and the secretaries followed the representatives in sympathizing with him in the illness which prevented his attendance at Bradford A report of the Conference appears in this week's SUPPLEMENT (p 80)

England and Wales.

The Rural Housing Problem

Dr Herbert Jones in his annual report for 1923 on the Hereford hire Combined Districts for which he is medical officer of health discusses the problem of rural housing He remarks that the rural point of view in this respect differs considerably from that in urban districts the cost of the provision of a water supply and drainage disposal is much greater in a rural district where as a rule a well must be sunk and in some cases special arrangements made to deal with the drainage of a single house He suggests that if certain conditions in rural districts could be approximated to those in the urban private enterprise house building would be stimulated Financial assistance from the State is required towards the construction of rural water supplies and sewage disposal work, and expert engineering advice in organizing such schemes is desirable In few rural districts is there an official with the capacity of the engineer or surveyor in an urban district, so a rural district council is often reluctant to embark on an enterprise which entails at the outset an outside professional adviser The cost of building could be reduced by mass production of building material and fittings and by scientific organization of work whereas State subsidies are a hindrance rather than a help as they result in an increase of cost A private individual who wishes to build a house for his own occupation, and for whom no subsidy is available finds that he has to pay his share of the subsidies given to other people and in addition, his own house costs him considerably more than otherwise it would About a quarter of the cottage houses in the combined districts are supplied with water from sources distant from the dwellings, and the task of achieving a proper standard of cleanliness is thus made difficult The duty imposed on the rural district council of ensuring that each occupied house has within reasonable distance an adequate supply of wholesome water ought to be more thoroughly performed Out of 91 samples of water examined during the year at the county council public health laboratory, 39 were found to be unfit for domestic consumption In nearly all parts of the district dip wells provide the only source of supply for drinking purposes, and owing to the readiness with which they can be contaminated are a definite source of danger

King Edward's Hospital Fund for London

A meeting of the council of King Edward's Hospital Fund for London was held on July 25th, with the Prince of Wales in the chair to receive the report of the Management Committee dealing with the recommendations of the Ambulance Cases Disposal Committee, the need for additional voluntary hospital accommodation, and the bequests of the late Mr and Mrs Wells The council approved a recommendation that when the annual grants were made consideration should be given to the question whether those hospitals which dealt with accidents or sudden illness occurring in public places provided a sufficiency of beds for their use, and a reasonably sufficient number of observation beds to obviate transfer of patients to other institutions The London County Council had agreed to represent to the police and ambulance authorities that no institution which was not equipped for the reception of serious cases of accident or illness should be retained on the list of ambulance hospitals, and that in drawing up this list the co-operation of the Ministry of Health would be sought in the case of infirmaries and of the King Edward's Hospital Fund in that of hospitals The Management Committee considered that it should be represented to the Ministry of Health with a view to early legislation or administrative action, that in the case of street accidents or sudden illness brought to Poor Law institutions, including transfer cases from the casualty department of a voluntary hospital no question as to residence of the patient, site of the accident or site of the transferring hospital should be raised prior to reception and treatment, that no such cases should be transferred to another institution if the patient's condition was likely to be prejudiced, that the charge for treatment in such cases should be a common metropolitan one and that such patients should not be subject to any disability arising out of technical pauperization On the general question of hospital accommodation it was reported that the replies to the interrogatories issued by the King's Fund at the request of the Voluntary Hospitals Commission were being received and afforded evidence of the care the hospitals were devoting to the answers The committee supported the suggestion that the Well legacies estimated at more than £200,000 should be used to assist the hospitals in the provision of additional accommodation assistance towards schemes of improvement and increased grants for maintenance The adoption of the report including the recommendation was moved by Lord Stuart of Wortley, chairman of the Management Committee seconded by Lord Revelstoke the honorary treasurer and chairman of the Finance Committee and carried unanimously

The Prince of Wales read a message from the King approving the proposal to apply the recent legacies of Mr and Mrs Well in the way suggested and expressing his gratification that the Fund was in a position to afford this special assistance to the voluntary hospitals The Prince also announced that the Regent of Abyssinia had presented £500 to the Fund He drew attention to the great improvement in the finance of the voluntary hospital system even in 1920, when the difficulties were greatest London hospitals had an income of £2 400 000 as compared with £1 500 000 before the war Since 1920 their income had increased to £2 850 000 without counting any of the money raised by the combined appeal A sum of £990 000 had been added to their endowments and £1 100 000 had been received for extensions and improvements Thus in London alone the voluntary hospital had received in three years two and a half millions for special purposes not including the addition to the investments of the King's Fund itself There were now 1 600 more beds than before the war and the extension schemes in hand or proposed would add a further thousand This was an indication of vigorous life and growth in the voluntary hospital system There were still some institutions in grave financial difficulty and all the hospitals were faced with increased expenditure involved in new methods of diagnosis and treatment Taken as a whole however they had been able to turn their attention more and more to extension The bequests of Lord Mount Stephen and Sir Thomas Sutherland had increased the permanent income of the Fund by £40 000 a year thus substantially assisting the hospitals to meet their current expenditure The recommendations approved that day would enable immediate action to be taken to meet the need of additional accident beds especially in South London The Fund could not be a substitute for individual interest and individual effort which was the source of life for each individual hospital It had its own particular function concerned with the needs of London as a whole and with the relative needs of the different districts

Birmingham Medical Institute

For the past two years the committee of the Birmingham Medical Institute has been empowered to dispose of the original buildings in Edmund Street should a favourable opportunity arise Negotiations which took place in the earlier part of last year came to naught but later in the year an offer was made which was considered to be satisfactory and was accepted by the committee and confirmed by a general meeting of members on August 22nd, 1923 On November 6th it was decided to purchase a building susceptible of adaptation to the needs of the Institute at 154 Great Charles Street and in these premises the Institute is now housed The Birmingham Medical Institute was originally founded and endowed through the generosity of a few members of the profession and their friends It has since been maintained and administered by the unstinted work of a comparatively small number of medical men and women Through the efforts of these workers the Institute now possesses a very comprehensive and extensive library of valuable old books for reference recent and current medical literature and all the leading British and foreign journals The removal to new

premises provides the city with a building which should become the centre of its medical life The accommodation is adequate, and the literary facilities and social amenities are extended and improved It has been possible to reduce the annual subscription to the small sum of one guinea, and the committee hopes that medical practitioners in Birmingham and district will join in large numbers, and by so doing not only benefit themselves but enable the Institute to widen greatly its sphere of usefulness

The Chair of Pathology, Welsh National School of Medicine

Dr Edgar Hartley Kettle has been appointed to the chair of pathology and bacteriology in the Welsh National School of Medicine, Cardiff, in succession to the late Professor Emrys-Roberts Dr Kettle graduated M B, B S Lond in 1907, and M D in 1910 He received his medical education at St Mary's Hospital, London, and was appointed assistant pathologist there in 1907 In 1918 he became joint pathologist and lecturer in pathology at St Mary's with Dr B H (now Sir), and, on the resignation of the latter, became pathologist, lecturer in pathology, and later director of the department of general and special pathology Dr Kettle is secretary of the International Association of Medical Museums, and the author of a monograph on *The Pathology of Tumours*

Diagnosis and Treatment of Poliomyelitis in London

At the meeting of the London County Council on July 29th a joint report was presented by the Education and Public Health Committees on the result of a survey of the position in London regarding the early diagnosis and notification of poliomyelitis and the facilities for treatment Although poliomyelitis is a disease compulsorily notifiable, a number of cases chiefly mild abortive cases in which there is no obvious paralysis are not notified owing to the difficulty of recognition The total number of cases of poliomyelitis notified in London during the last ten years has been 824 The committees have considered, in consultation with the Ministry of Health, the best steps to be taken to secure early diagnosis The Ministry has under consideration the issue of a circular to metropolitan borough councils suggesting, among other things, that the councils should circularize general practitioners in their areas on the subject An arrangement is also to be made whereby expert members of the medical staff of the county medical officer will be available to assist general practitioners in doubtful cases Inquiry has also been made as to the provision available in London for the treatment of poliomyelitis and the resulting crippling conditions, and the subject has been considered at a conference of orthopædic surgeons Generally speaking, it is possible for the voluntary hospitals to provide institutional treatment for cases in the first stage (three to six months), the second stage (extending from eighteen months to two years) is the most difficult for the voluntary hospitals to cope with, and it is impossible for London hospitals which deal in the main with patients in the acute stages of the disease to set aside beds for such a long period The third stage of the disease, characterized by various contractures and deformities, may call for operative treatment, and for this purpose again a period of prolonged residence in hospital should be provided The two committees have come to the conclusion that it would be more satisfactory to deal with cases requiring operative treatment at the most suitably equipped London hospitals, and to transfer them later to other institutions The Metropolitan Asylums Board provides treatment in its fever hospitals for cases of poliomyelitis in the early and acute stage and the Board has intimated that it is prepared if the Minister of Health agrees, to provide a certain amount of additional accommodation—fifty beds to begin with—in order to take in cases referred to it by the voluntary hospitals child welfare organizations, and central or local public health departments The greatest measure of co-operation is to be sought between the London County Council and the metropolitan borough councils in the selection of cases for treatment in the Board's institutions, particularly in view of the expert assistance to be provided by the Council in connexion with diagnosis It is hoped by earlier diagnosis and more resolute treatment in the first stage to diminish the number of cases which reach the second and third stages, the possibilities of further accommodation in voluntary institutions for cases requiring prolonged treatment have been explored, and a certain number of new beds have been allotted for this purpose

Scotland.

The Medical Curriculum

The summer medical graduation in the University of Edinburgh was held in the McEwan Hall on July 25th, when Principal Sir Alfred Ewing presided over a large attendance, 27 graduates received the degree of M D, while 211 students graduated M B and B S Dr Barger, Professor of Chemistry in Relation to Medicine, delivered the address to the graduates on the medical curriculum He dwelt upon the necessity for medical practitioners to render themselves acceptable to their patients, and to acquire a knowledge of more things than the mere scientific aspect of medicine In this connexion he made a quotation from John Hall (1568) "Should you, at any time, be called a patient to see, and perceiving that thou art too great and ponderous for him, see that thou cast disdain aside, and think it no shame counsel to take But rather with good-will get thee one or two expert men to help thee in thy need" The amount of knowledge which had to be imparted to the student kept continually increasing, but the limits of the medical curriculum could not be indefinitely enlarged In Edinburgh the time limit had been extended to five years, and in some universities to six years, but a limit in that direction was imposed by economic considerations Some subjects became of less importance as time went on, and might be cut down or cut out An example of this was botany, which, although the oldest chair in the medical faculty, and at one time of paramount importance to the physician, who had to know his herbs at first hand was now of less importance when drugs could be bought ready prepared There was a need for more co-ordination, more co-operation, and the breaking down of watertight compartments between different subjects He thought that the intensive teaching of subjects for a short time had a detrimental effect on the student A suggestion had been made that an honours course should be instituted in the medical school of the University, which could be taken by exceptional students Its reward would be an honours degree in medicine, and the medical school would be able to choose its teachers from such honours graduates In this way a better utilization of scientific knowledge would be assured, and matters not essential for the general practitioner could be deleted from the curriculum which those intending to pursue general practice would require to take

Edinburgh Hospital Appointments

At a meeting of managers of the Edinburgh Royal Infirmary last week, the resignation of Mr J W Dowden, F R C S, from his position as surgeon in charge of wards in the Infirmary was announced Mr Dowden has been appointed surgeon to Chalmers Hospital in succession to Mr Lewis Beesly, and assumes his new duties in October next

Royal (Dick) Veterinary College

The annual prizes in the Royal (Dick) Veterinary College, Edinburgh, were distributed on July 10th Dr Nasmith, vice-chairman of the Board of Governors, who presided, referred to the very important relations which existed between research in veterinary pathology and the development of certain diseases in mankind, and spoke of the prospect of providing a chair in the subject of comparative pathology, which would deal with disease in plants, animals, and human beings Principal Bradley, in calling upon the Lord Provost to present the prizes, spoke of the connexion between veterinary science and public health, and stated that, in this respect, the session which was just closing was noteworthy, there was now in existence what might be called a veterinary public health diploma, and in the past year more graduates had taken that diploma than in any

other year since it was instituted During the last year, too more appointments than during any previous session had been gained by graduates of the College

CENTRAL MIDWIVES BOARD FOR SCOTLAND

At a meeting of the Central Midwives Board for Scotland for the hearing of penal cases, Dr James Haig Ferguson in the chair a certified midwife was censured and admonished to adhere strictly to the rules in future in respect of delaying to send for medical assistance when required and to notify the local supervising authority of a case of ophthalmia neonatorum At the same session another certified midwife, for a similar offence was severely censured

Ireland.

FEES FOR OPERATIONS IN WORKHOUSE HOSPITALS

At a meeting of the governors of the Route District Hospital co Antrim a letter was read from the Ministry of Home Affairs (Northern Ireland) stating that the Ministry had under consideration the question of fees payable to medical officers in connexion with operations in the district hospital and had been much concerned at the present situation that existed between the Board of Guardians and the medical practitioners in regard to the fees It appeared to the Ministry that, apart from other considerations in the interest of the sick poor it was highly desirable that the present state of affairs should be brought to an end at once and that an equitable scale should be put in force With this object in view the Ministry had given further consideration to the question of devising a scale of fees based on the services rendered and with due regard to the fees payable in other areas The Ministry had also had an opportunity of ascertaining informally the views of the medical practitioners concerned and after a careful review of the whole situation the Ministry had devised a scale of fees on the following lines a fee of two guineas for each operation, *plus* travelling expenses at the rate of 1s per mile each way with a further fee of one and a half guineas for each additional operation performed on the same day, the above fees to be increased by 50 per cent in the case of night operations The Ministry had made informal inquiries from the medical officers concerned and it was understood that they would be prepared to accept this reduced scale subject to the condition that the scale was made retrospective as from October 17th last the date of the Ministry's previous letters on the subject and to the condition that the legal expenses incurred by Dr Wallace in connexion with the action now pending against the Board of Guardians would be paid by the guardians It appeared to the Ministry that the above proposals were reasonable and equitable and in order to save further difficulty the Ministry suggested that the guardians should give effect to them as soon as possible After a long discussion the Board decided to forward the following reply to the Ministry of Home Affairs

(1) Under the proposed scale the fees for travelling expenses payable to Dr Wallace would practically amount to three guineas for each operation at which he assisted the amount sued for by him in his proceedings and as the guardians have always considered this fee excessive for an assistant they object to the scale as regards payment for the work sued for in the proceeding (2) While they would not object if other things are satisfactory to the new scale being made retrospective to October 17th last they consider that the request to pay the legal expenses incurred by Dr Wallace is not equitable inasmuch as the Board has been all along acting with the knowledge of the Ministry which had approved of the existing scale the defence to the action is that they could not depart from the scale so approved and the doctors could have applied to have the same altered before bringing the action We therefore respectfully request the Ministry to consider also our side of the question

VITAL STATISTICS IN NORTHERN IRELAND

During the quarter ended March 31st 7 109 births were registered in Northern Ireland equivalent to an annual birth rate of 22 1 per 1 000, and corresponding with a birth rate of 20 2 in the Irish Free State 19 4 in England and Wales and 22 7 in Scotland The deaths registered during the quarter numbered 6 754 representing an annual rate of 21 0 per 1,000, and comparing with a death rate of 18 4 in the Irish Free State 16 7 in England and Wales and 12 1 in Scotland The birth rate in the county boroughs and urban districts which contain nearly half the population of Northern Ireland was 26 5 per 1 000 of the population the rate for the remainder of the country being 19 4 The death rate in the county boroughs and urban districts during the quarter was 21 9 per 1 000 and in the remainder of the country 21 4 The number of successful primary vaccinations registered during the quarter was 5 213

Medical Notes in Parliament

[FROM OUR PARLIAMENTARY CORRESPONDENT]

Anthrax Infection.—The Home Secretary said on July 17th that every possible step was being taken to guard various workers from the risk of anthrax There was power under the Factory Act to make regulation for the protection of persons employed in docks and other premises and regulations were in force as to the handling of hides imported from Asia or Africa Experience showed however that the most to get the only effective remedy consisted in the disinfection of the material the most hopeful line of advance therefore would be to utilize wherever practicable the powers conferred by the Anthrax Convention Act 1919 by providing for compulsory disinfection at the port of entry Certain materials were already being compulsorily disinfected at the Government station at Liverpool and the extension of this requirement to other materials and in particular to East India wool was under consideration.

Visitors to Mental Hospitals.—Sir John Marriott asked on July 21st whether the parents of a patient detained in a lunatic asylum were by regulation denied access to or communication with the patient if the latter's wife raised objection to such a communication Mr Wheatley said he was unaware of any such regulation The question of allowing the friend or relative of a patient to visit or of withholding communications addressed to a patient was entirely within the discretion of the medical superintendent of the hospital who would be guided by the opinion he would form as to whether such visits or communications would be likely to have a detrimental effect on the patient's mental condition

Deaths from Vaccination.—In reply to Mr Broad on July 16th the Minister of Health said that during 1923 the word vaccination or vaccinia occurred upon eleven death certificates received for England and Wales In one case—that of a child aged one month—it was ascertained that vaccination had no connexion with the death which was accordingly classified as due to heat stroke There were two other cases in which the word did not occur upon the certificates but which were ascertained upon inquiry to be due to vaccinia Of the twelve deaths attributed to vaccinia the condition was associated with septicaemia in two cases with cellulitis in one case and with convulsions in one case

Feeding of Necessitous Children.—In Committee of Supply on the Education Estimates on July 22nd Dr Haden Guest spoke on the feeding of necessitous children and the general question of the health of school children as affecting their work He said that medical inspection showed about 10 per cent of the children to be below par He urged that an effort should be made to raise the physical standard of child life in the elementary schools to that now prevailing in the secondary school A comparatively small number would be affected but it was part of the general human problem and so long as it was not treated more inefficiency was being created

Fluctuations in Death Rate.—Mr Wheatley stated on July 23rd in answer to Mr Black that the considerable variations in the death rate for 1923 as between area and area could not be assigned to specific causes and moreover it was hazardous to attempt to draw inferences from the mortality rates of a single year It was however a fact that in the case of both the urban and the rural areas with the highest rates for 1923 the sanitary conditions were not satisfactory The Ministry of Health was giving attention to the subject

Tuberculosis in Crofting Area.—Mr James Stewart (Parliamentary Under Secretary for Health for Scotland) acknowledges that the death rate from tuberculosis in various crofting areas is high but does not admit as was suggested by Mr Mackenzie Livingstone on July 24th that bad housing is the sole contributory cause Considerable improvement had however taken place in the housing conditions in many districts of the Highlands and Islands He explained the facilities that are available to improve housing

Slum Areas.—The following notice of motion has been put on the order paper of the House of Commons To call attention to the fact that the provisions of the Housing Bill now under consideration by Parliament do not apply to the clearance of unhealthy areas which clearance is provided for only by a State grant (slum) areas which clearance is provided for only by a State grant of 50 per cent whereas the bill now before Parliament provides for a State grant for housing of 60 per cent and to move that in the opinion of this House financial provision for the clearance of unhealthy (slum) areas should be made on lines favourable thereto as is for other housing proposals under the present Housing Act The notice is signed by Dr Haden Guest Dr Fremantle Dr Chappie Mr Somerville Hastings Dr J H Wilmar and Lieut-Colonel T S B William It understood that Mr Health hopes when the Housing Bill is in operation to take up the matter of slum clearance leaving out all that would be next session

Army Hospitals in India.—Lieut.-Colonel Sir Philip Richardson asked, on July 28th, what steps, if any, had been taken to secure an immediate and general improvement in the whole standard, comfort, and accommodation in the hospitals for British troops in India as the result of the investigations of the British Station Hospital Committee under the chairmanship of Surgeon-General Sir G. H. Makins in 1918. The Parliamentary Under-Secretary to the India Office (Mr. Richards) replied that he had not received any report from India, but was having a statement prepared from the information in his possession and would supply a copy to the inquirer.

Registration of Nurses.—Dr. Chapple asked, on July 23rd, whether the Minister of Health had consulted the Law Officers of the Crown as to the position of nurses who, notwithstanding an order of the House giving them access to the State register of nurses, had been denied this right by reason of the fact that the interpretation of the Act by the Nursing Council gave them only one week within which to apply for registration. Mr. Wheatley replied that he was advised by the Law Officers that the view adopted by the General Nursing Council was the correct construction of the statute.

Pension Scheme for Nurses.—Mr. T. Atholl Robertson inquired, on July 16th, whether the Minister of Health could see his way to establish a pension scheme for nurses on a contributory basis with substantial aid from the State for all who had faithfully served public bodies, hospitals, and other institutions, and give assistance to the private nurse in a fair and reasonable way. Mr. Greenwood replied that the Minister of Health was in sympathy with the object but was advised that the adoption of such a scheme would be wholly impracticable.

Tuberculous Cases among Ex-service Men.—On July 17th the Pensions Minister said that tuberculosis officers of local health authorities were not invited to express an opinion as to entitlement in cases which came before them solely for medical treatment. But arrangements had been made for such officers to sit as members of medical boards dealing with cases of that disease, and in such it became their duty to assist in arriving at the official decision on entitlement. The arrangements were made some eighteen months ago and had been found to work well. The Minister promised, on a request by Viscountess Astor, to take into account whether men suffering from tuberculosis and sent to sanatoriums could be kept there until they got their medical discharge.

Service Pensions Hospital.—Mr. Roberts informed Mr. Davidson on July 24th that the number of military hospitals on that date was 53, the number of occupied beds 6,249, and the number of vacant beds 1,188. The latter figure was temporarily in excess of the normal number, but certain hospitals no longer required were being vacated but were still partially occupied pending evacuation. The expenditure by the Ministry in maintaining the hospitals was estimated at £155,000 for the financial year.

Cost of Pensions Hospitals.—The Pensions Minister stated, on July 17th, that the average daily cost to the Ministry of Pensions per patient in hospital was approximately the same as the cost in hospitals administered for use by his department by voluntary bodies—namely, 8s. 8d. The Ministry maintained separate institutions only where that course was necessary to supplement otherwise existing accommodation or to provide treatment for special war disabilities (for example, neurasthenia) for which adequate treatment was not otherwise obtainable. The position was reviewed from time to time.

Notes in Brief

Mr. Hendersonstates that the London police keep under observation shops exposing for sale contraceptive articles and report to him as Home Secretary that there has not been any noticeable increase in the number of such establishments. But any action amounting to a breach of the peace would be the subject of legal proceedings. Asked what he meant by "any action amounting to a breach of the peace," Mr. Henderson replied he did not think, in the public interest, he should state that there.

In reply to a question on July 16th the Parliamentary Secretary to the Ministry of Health said that a very large number of persons had already applied to give evidence before the Royal Commission on Lunacy Law, and that such persons had been informed that their applications would receive consideration, and that if the Commission decided to hear evidence from them a further communication would be sent. The procedure of a Royal Commission was entirely within its own discretion.

Mr. Wheatley stated on July 23rd that the Expiring Laws Continuance Bill now before Parliament provided for the extension until December 31st, 1924, of the operation of the National Health Insurance (Prolongation of Insurance) Act.

The Minister of Health has stated in reply to Dr. Fremantle that a local inquiry had been made with regard to the proposal of the Middlesex County Council to convert Porter's Park, Shenley, Herts, into a mental hospital, and that the report was before him. The objections raised would be carefully considered.

Mr. Greenwood stated on July 28th, that the Government could not this session undertake to introduce legislation on the subject of the sale of patent medicines.

The Minister of Health is aware of the high maternal mortality in Poplar as compared with Poplar and West Ham, and he has been told that this mortality occurs mainly among the poorer classes. The borough council has taken steps to improve and extend the maternity facilities in the borough. The council has for some time past made arrangements for the supply of meals at cost price to expectant mothers in necessitous cases.

Correspondence.

GOITRE

SIR,—It would appear from the letters from Dr. Chalmers Watson (June 14th, p. 1071) and Mr. Cecil A. Joll (July 19th, p. 130) that differences of opinion do exist both in regard to the intestinal antiseptic action of such drugs as thymol, benzo-naphthol, salol, and dimol, and in regard to their effect in early cases of simple goitre. There are, in the first place, my own observations in Himalayan India, where I had to deal solely with endemic goitre, that such intestinal antiseptic drugs as thymol, beta-naphthol, and salol caused the diminution in size or the disappearance of a proportion of recent cases of goitre when regularly administered by myself or my assistants to out-patients over periods of several weeks. In my book I have given, at page 245, the actual results obtained in a sufficient number of such cases to justify the conclusion I have drawn as to the curative action of these drugs. Then there is the evidence provided by Dr. Messerli of Lausanne, who likewise was dealing with endemic goitre. Dr. Messerli studied the effects on "soft goitres" of benzo-naphthol, thymol, salol, and creosote. His observations were controlled by Dr. Brennecke of Berne; they were carried out under experimental conditions, the patients being kept under observation for some time prior to the commencement of treatment in order to eliminate any possible error due to the influence of other factors. As a result of his inquiry he confirmed my observations in the Himalayas, and arrived at the conclusion that "continued disinfection of the intestine determines a gradual diminution in size of soft goitres." His thesis on this subject was awarded an "honourable mention" by the Academy of Medicine, Paris. Other Continental observers who, according to Messerli, have satisfied themselves of the beneficial action of benzo-naphthol in recent cases of endemic goitre are Professor Galli-Valerio and Drs. Guisan and Cuchod. It seems, therefore, that in two of the greatest endemic zones of goitre in the world—the Himalayas and the Alps—the curative value of intestinal antiseptics has been demonstrated. Nor is evidence of their efficacy wanting in Great Britain. To go no further than the correspondence columns of this JOURNAL, one finds (May 12th, 1923, p. 835) the statement by Dr. D. J. Harries of Cardiff that he gets good results with kerol, and now never gives iodine. One finds also the statement by Dr. Hensleigh Walter (August 19th, 1922, p. 329) that in a district of Somerset "where endemic goitre is very prevalent and the water supply indifferent" he finds that "in the majority of early cases treatment [by an antiseptic of high germicidal efficiency and of low relative toxicity] extending over a period of from four to six weeks causes a complete disappearance of the swelling." Again, there is the experience of Mr. A. J. Walton at the London Hospital.

He "investigated a series of out-patients and the results were very interesting. Twenty cases were treated with regular doses of the syrup of the iodide of iron and twenty with intestinal antiseptics alone. About 50 per cent. of each group were cured. In the two treatments were combined a further 40 per cent. were greatly benefited, thus supporting McCarrison's view that an excess of iodine may be insufficiently absorbed if intestinal sepsis be present."—*Lancet*, July 14th, 1923, p. 59.

On the other hand, we have Mr. Joll's experience, which has led him to conclude that intestinal antiseptic drugs "have no curative action whatever" on small recent parenchymatous goitres. Some of his cases not only grew noticeably while under this treatment, but several of them increased sufficiently in size to produce pressure symptoms calling for operative treatment. In Himalayan India I have not met with small recent parenchymatous goitres which grow so rapidly within the space of twelve months as to produce pressure phenomena, and it would seem that herein lies one of the differences between some of Mr. Joll's cases and mine. He states, however, that a few of his cases "diminished slightly in size" while under treatment by intestinal antiseptics, "but certainly not more than occasionally follows the use of such drugs as iodine, arsenic, etc." In some few cases, therefore, Mr. Joll has obtained results by the use of intestinal antiseptics comparable to,

although not better than those which occasionally follow the use of iodine." If his conclusion that intestinal antiseptics have no curative action whatever" be accepted, then it might be inferred from the text of his letter that neither has iodine—an inference which would be contrary to the clinical experience of years. I do not contend that in the treatment of endemic goitre intestinal antiseptics give better results than iodine, which, as I have stated at page 107 of my book is the most potent of all known remedies in the treatment of this disease. But I do contend that in my hands they have yielded results in Himalayan patients as good as iodine; they appear to have done so also in the hands of Messrs. Harrison in Cardiff, and of Walton in London. For me the fact that they have done so is of more etiological than therapeutical interest, as is the experience that no matter by what means the cure of endemic goitre is brought about—whether by iodine, by thyroid extract, by intestinal antiseptics, by soured milk, or by vaccines—the effect on the patient's metabolism is the same, the evidences of hypothyroidism which accompany the goitre diminish or disappear *pari passu* with the diminution in size or disappearance of the thyroid swelling. These considerations lead me to believe that it is not because intestinal antiseptics are not so efficient in their action in European patients as in Himalayan patients that Mr. Joll has failed to obtain results comparable to mine—for neither are they comparable to those of the other observers I have mentioned whose patients were European—but that it is more likely to be due to the fact that more than one type of thyroid swelling is included under the generic term of 'simple goitre." I do not regard, and have never regarded, intestinal antiseptics as a panacea for goitre, even in regard to thymol in endemic goitre I have stated in my book that 'the beneficial results of the drug are *often* very striking" and again in my recent British Medical Association Lecture on Goitre" (British Medical Journal, June 7th, 1924) that intestinal antiseptics cause the disappearance of *a proportion* of cases of recent goitre." I hold these moderate estimates of the utility of intestinal antiseptic drugs to be well founded, and that in consequence of their action attention has been directed to one important way in which the thyroid gland may become deranged.—I am, etc.,

Eastbourne, July 20th. R. McCarrison

COCAINE SUBSTITUTES

Sir,—The very interesting account of the properties of local anæsthetics given by Dr. Copeland in your issue of July 12th must excite admiration for the care and patience displayed in his experiments. It is a pity that, in expressing his results, the author has allowed a lack of precision to detract from their scientific value. He does not sufficiently distinguish between the facts he has proved and the inferences which, granted certain (tacit) assumptions may be drawn from those facts. For example, he describes experiments to demonstrate the effect of certain drugs on the *efferent* fibres of the vagus. But he states his findings as though he had measured what is really the relevant matter—the effect on the *afferent* fibres. Table III. shows that holocaine, etc., "all give prolonged *anæsthesia* when brought into direct contact with nerve fibres." Are these two effects the same? At least as regards cocaine Professor W. E. Dixon has shown (*Journ. of Physiol.*, December, 1904) that they are very different.

Again, the convulsant effect of these drugs has, it seems, been assumed to be directly related to habit formation. Is this a fair assumption? It is excitement of the emotional and relatively lower centres" that leads to narcomania. Have we any evidence that this is proportional to the power of producing convulsions?

Similarly, in the conclusions" we read "These experiments show that . . . (2) For the nose cocaine and tutocain are alone useful." Surely the first criterion of usefulness of a local anæsthetic in this field is its power of producing anæsthesia when applied to the nasal mucosa. Dr. Copeland adduces no evidence at all on this point in his publication and is clearly in doubt himself as regards tutocain. Further, reference to the *Proceedings* of the Royal Society of Medicine (Section of Laryngology, March, 1924) will discover a very considerable body of opinion that alypin, beta-eucaine, butyn, and possibly novocain and stovaine, in addition to the two drugs for which he claims a monopoly of utility, are useful for the nose." Ischæmic power is admittedly of great importance in this region, and we must praise the ingenuity of Dr. Copeland's method for measuring it in animals. But the mode of administration through the trephined frontal sinus introduces at least one factor to render the surgical application of his findings uncertain. On this point direct clinical observation is possible. I have been using tutocain in my practice for three months, but cannot find any appreciable shrinkage'—certainly nothing at all comparable to that produced by cocaine, and for which, *inter alia*, the latter is so valuable in rhinology. A statement such as that quoted seems regrettable because likely, if taken by the clinical reader as it stands, to prejudice his estimation of the value of the experimental work.—I am, etc.,

Bristol, July 19th. F. Watson-Williams

*** We have referred the above letter to Dr. Copeland, who writes:

Sir,—I have read Dr. F. Watson-Williams's criticism of my paper. I did not use the words efferent and afferent." I used the word anæsthesia' to apply to loss of the power of conductivity of the cardiac fibres of the vagus; it is apparently to this expression that Dr. F. Watson-Williams takes exception.

Dr. F. Watson-Williams states: Again, the convulsant effect of these drugs has it seems been assumed to be directly related to habit formation. Is this a fair assumption?" I think this criticism is unfortunate as I did not assume this; nevertheless I believe that drug addictions of this type are due to cortical stimulation, and that stimulation of the motor areas also involves effects on the emotions.

I agree that the first criterion of usefulness of a local anæsthetic is its power of producing anæsthesia—just as the first criterion of usefulness of an aeroplane is that it should fly. I showed that tutocain is more effective as a surface anæsthetic than novocain, and even novocain the weakest surface anæsthetic has proved very efficient" in the hands of at least one eminent *rhinologist*.

I do not propose to analyse the medley of medical opinion as published in the *Proceedings* referred to, but they suggest that the most important property which should be possessed by a local anæsthetic for the main purposes of rhinology is shrinkage power, and also that no cocaine substitute than known had this power. My experimental observations on animals showed that tutocain gives better surface anæsthesia than novocain, is less toxic for laboratory animals than cocaine and butyn, and in addition differs from all other cocaine substitutes investigated in having some shrinkage power.

Dr. F. Watson-Williams objects to my experimental method, but does not suggest a better one. Yet it is possible that the quantitative method of testing shrinkage which I described may present a factor of less uncertainty than that of the direct clinical' observations on which Dr. F. Watson-Williams places reliance. His three months' experience of tutocain has led to conclusions at variance with the findings of other clinicians after one year's experience of tutocain. Drs. Seiffert and Anthony report that they have used tutocain for nearly one and a half years for nose work, and that, like cocaine, it causes local anæmia and shrinkage of the mucous membrane. These effects were quite definite, though less than those given by painting with cocaine. Dr. Riedel states:

> We have used tutocain in our clinic to one year. For diagnostic purposes also for shrinkage of the mucous membrane and erectile tissue [*Schwellkörper*] of the nose 1–2 per cent. solution was quite enough. With it the mucous membrane shrinks and pales quite quickly.

I cannot explain the discrepancies of these three clinical observations.—I am, etc.,

A. J. Copeland

Pharmacological Laboratory, Cambridge, July 25th.

POST-ANAESTHETIC VOMITING

SIR,—I think it safe to say that all or the majority of surgeons regret to see their patients suffering from post-anaesthetic vomiting Experience teaches that when patients do not vomit after operation they are in better case than when vomiting and retching occur In the table published by Drs Cave and Edwards (BRITISH MEDICAL JOURNAL, July 5th, p 11), in 100 cases of anaesthesia (duration not stated) 45 had no vomiting and no nausea after operation We may say vomiting makes the patient feel wretched, and, if too frequent, exhausts her After abdominal operation it may cause the sutures to give If persistent it induces or exaggerates acidosis it causes a clamping of the liver capillaries—producing thus a distension of the gastric and intestinal capillaries, an engorgement which may result in rupture, with the oozing or pouring out of blood into the stomach and intestine with brown vomit or melena It is the prelude to so-called chloroform poisoning By interfering with the blood flow through the gastric musculature, it induces atony of the stomach and gastric dilatation Doubtless it affects the renal circulation, preventing the adequate excretion of non-protein nitrogenous bodies in the blood, and even causes structural changes

A comparative study of "acidosis," especially in children, and of so-called chloroform poisoning (as yet unpublished), led me to the opinion that post-anaesthetic vomiting is due to a "catarrhal" state of the gastric mucosa This may be determined by one of two causes, or by both acting together First, there is the effect of the anaesthetic on the cells of the gastric mucosa secondly, there is the anaesthetic state and the effect of this on the blood flow through the gastric mucosa and so through the liver Whether the inhalation of an anaesthetic for a sufficient duration of time affects the gastric mucosa, causes a secretion of mucus and a change similar to that affecting the skin of such an animal as *Salamander maculosa* when poisoned with chloroform (changes which we can observe) I leave others to discuss, but that during prolonged anaesthesia, even in the Trendelenburg position, the blood flow through the stomach is impaired will be obvious During general anaesthesia the general blood pressure falls Thus the blood flow through the stomach and liver becomes diminished Whether the blood flow through these organs becomes so diminished that an impairment of function, persisting for some time, is produced, is the second question I raise I think it more than likely In this respect we must remember that not only anaesthesia induced by inhalation, if sufficiently prolonged is followed by vomiting, but that after spinal anaesthesia vomiting at times occurs

The vomiting in this case, presumably, is not induced by the desirability of ridding the body of a poisonous product But spinal anaesthesia also causes a fall in general blood pressure The fall in general blood pressure in this case does not seem to arise from the drug affecting primarily the heart or the nerve centres which control the degree and the frequency of its systole but by causing a paralysis of many peripheral structures (for example, lower limbs and abdominal wall) whereby the return of blood from the capillaries in such parts (limbs and abdomen) is not as good as in the normal Thus in this case, too the blood flow through the stomach and liver must be diminished Is the resulting change in the gastric mucosa the cause of the post-spinal-anaesthesia vomiting? It would seem that it is, and this rather suggests that with inhalation anaesthesia the resulting vomiting is similarly induced I put forward as far back as 1913 a similar explanation of the early vomiting of pregnancy [1] I showed reason to believe the expanding uterus in the early months of pregnancy to be associated with a relaxation of the abdominal wall musculatures, necessarily occurring most at night (during sleep), with a concomitant impairment of blood flow through the gastric and hepatic capillaries That explanation so far has received no consideration but it fits in well with the considerations on post-anaesthetic vomiting here adduced, and that it is the explanation I have no doubt

How then can it be expected that the use of such carminatives as oil of cloves, of peppermint, or of lavender should prevent post-anaesthetic vomiting? Drs Cave and Edwards appear a little disappointed with their results I congratulate them on their endeavour, but suggest, if I may, they consider, perhaps more in detail than they have, the anatomy of the vascular mechanism in the abdomen, the blood flow through the organs during anaesthesia, the effect of "complete" relaxation of the abdominal wall on this, and especially the general blood pressure The state of organs depends before everything on the blood flow through them, obviously, if this falls below a certain level, the organs concerned must become impaired And if the gastric mucosa becomes "impaired," what but vomiting can be expected?—I am, etc,

Rugby, July 5th R H PARAMORE, F R C S Eng

[1] The Interval Rupture in Pregnancy, *Proc Roy Soc Med*, Obstetrics Section, 1913, p 284

LYMPHATICOSTOMY IN PERITONITIS

SIR,—The letter by Mr D A Mitchell (BRITISH MEDICAL JOURNAL, July 5th, p 36) prompts me to report a case in which lymphaticostomy was performed in the treatment of pneumococcal peritonitis

The patient was a girl, aged 4 years On February 20th 1924 I opened the abdomen and evacuated a large quantity of pus A drainage tube was placed in the pelvis through the lower end of the abdominal incision

After operation improvement took place, both generally and locally, and continued for about a week, when the abdomen again became distended and painful and the pulse and temperature rose

On March 5th the thoracic duct was exposed, ligatured, incised, and drained, as suggested by Costain [1] No great difficulty was experienced in the operation and it resulted in an immediate and copious discharge of lymph There followed a marked improvement in the patient's distension and tenderness disappeared and from the abdominal wound became much less continued for five days during which time a very free discharge of lymph was observed from the cervical wound although the small drain had been removed from the opening into the duct

It was then noticed that, although the abdominal condition appeared to be most satisfactory and the child was taking abundant nourishment by the mouth, she seemed to be getting weaker and to be losing weight rapidly On March 14th, nine days after the lymphaticostomy had been performed, death took place Lymph was discharged freely up till shortly before the child died In the abdominal pus pneumococci (Type 2) were found In lymph taken immediately on opening the duct no organisms were present

From observation of this case alone the impression given was that the lymphaticostomy had a markedly beneficial effect on the course of the peritonitis, but that it seemed highly probable that the continued discharge of lymph from the thoracic duct was the ultimate determining cause of the patient's death From a consideration of Costain's experiments on artificially produced peritonitis [1] and intestinal obstruction, [2] and from his report of a case of pneumococcal peritonitis, [1] and from the account of Edwards's case of puerperal peritonitis, [2] it is impossible to avoid accepting their conclusion that lymphaticostomy may be a life-saving procedure in such cases The great importance of this must, as Mr Mitchell points out, make a strong appeal to every surgeon

The main difficulty seems to me to be what is going to happen to the patient if his duct fistula does not heal when his abdominal condition improves If the discharge of lymph continues for more than a few days it is obvious that the loss of the essential food constituents must be a very serious matter Costain states that a wound of the thoracic duct readily heals as a collateral circulation is established, and quotes in support of this the experimental work of Lee and the report of a case of drainage of the duct by Wilms

In the cases reported by Costain and by Edwards, as also in the case reported by Mr Cooke, [3] the lymph discharge appears to have stopped within a week after operation, while in my own case it persisted vigorously to the end

It would be of great value to know if Costain's idea that a collateral lymph circulation takes place is really what occurs in every case, or whether it is possible that the circulation may become re-established in the duct by closure of the wound and by absorption of the ligature placed distally to the point of incision in the duct —I am, etc,

Aberdeen July 6th ALEX MITCHELL

[1] *Surg Gynecol and Obstet* March, 1923
Ibid February 1924
[3] BRITISH MEDICAL JOURNAL June 14th, 1924 p 1048

X-RAY INTERPRETATION

SIR,—The Mackenzie Davidson Lecture by Sir Thomas Horder (BRITISH MEDICAL JOURNAL, July 19th, p 89) is a handsome tribute to the value of radiology in diagnosis and treatment It shows how radiology has altered and advanced our conceptions of disease I should leave it at that and be grateful, had I not seen a paragraph in small type giving my own conclusions in a recent case (The paragraph is correct but for one error "ileac stasis" printed in mistake for 'ileal stasis"—the correct term)

Sir Thomas Horder accuses me of going beyond the legitimate limits of x-ray interpretation Yet my full report gives all the observed facts which led to and justified, my conclusions He objects to my diagnosis of "catarrh of the large intestine" and of "toxaemia" To take catarrh" first I have every reason for saying that persistent spasmodic narrowing is due to catarrh for whenever this type of narrowing occurs the bowel wall feels thickened, and the pathologist finds, in the faeces and the blood evidences of intestinal catarrh As for toxaemia" ileal stasis and intestinal catarrh produce toxaemia, and this is always confirmed by the pathologist who examines the blood and analyses the urine As well deny the skilled oculist the right to diagnose that the characteristic retinitis he sees is due to albuminuria

I am in constant collaboration with surgeons pathologists, and clinicians I take every opportunity of controlling my observations of patients by clinical and pathological reports and surgical operations It is no longer true that the radiologist deals with the shadow rather than the substance, for he holds the viscera in his hands and grasps them he moves them to and fro, he sees the splash of liquid in the stomach, later he may see the stomach close in upon its contents under the spell of his manipulations His power of seeing through" his patients enables him to palpate in the most purposeful manner to aid his diagnosis—I am, etc,

London W 1 July 16th ALFRED C JORDAN

A DEGREE IN PHARMACY IN THE FACULTY OF MEDICINE OF THE UNIVERSITY OF LONDON

SIR,—At the meeting of the Senate of the University of London on July 23rd it was resolved to institute a new degree, to be called "Bachelor of Pharmacy in the Faculty of Medicine" The list of degrees in the Faculty of Medicine authorized by Statute 108 henceforth reads 'Bachelor and Doctor of Medicine, Bachelor and Master of Surgery Bachelor of Dental Surgery, and Bachelor of Pharmacy"

The proposal to institute "a degree" in pharmacy originated with a request to that effect from the Pharmaceutical Society in February, 1923 This proposition was referred to the Committee of Medical Members of the Senate, who reported, as regards the title It seems preferable that the degree should be that of 'Bachelor of Science (Pharmacy)'" The recommendation was adopted (March, 1923) by the Academic Council, which consists chiefly of members of the Senate elected by the Faculties A little later (June, 1923) the External Council, which consists chiefly of members of the Senate elected by Convocation, recommended "that a Bachelor of Science Degree in Pharmacy be instituted for external students" The Senate passed these recommendations and a subcommittee of the Academic Council was appointed to deal with the matter This subcommittee recommended 'that the new degree be called 'Bachelor of Science in Pharmacy,'" and suggested subjects and syllabuses The Academic Council submitted the report of its subcommittee to the Board of the Faculty of Science for consideration and report That board submitted a reasoned report (June 2nd, 1924) against the admission of the new degree in the Faculty of Science The Academic Council thereupon recommended (June 16th, 1924) that the new degree shall fall within the purview of the Faculty of Medicine," and referred the question to the Committee of Medical Members of the Senate, who recorded their agreement with the Academic Council

The refusal of the Faculty of Science to accept the new degree, together with the fresh recommendation of the Academic Council and the opinion of the Committee of Medical Members came before the External Council under my chairmanship on July 9th and the Council on my suggestion passed unanimously this resolution That the question of the inclusion of the Degree in Pharmacy in the Faculty of Medicine be referred to the Faculty of Medicine for consideration and report' I moved this resolution at the Senate on July 16th, and argued that as it was now suggested that the degree should come into the Faculty of Medicine, that faculty should have the same opportunity of considering acceptance of the degree, or, if it thought fit, of refusing it admission, as had been enjoyed by the Faculty of Science The Dean of the Faculty of Medicine from his seat upon the Senate opposed the reference to his own Faculty on the ground that its membership was too large for useful consultation Chiefly owing to this opposition by the titular head of the Faculty of Medicine my motion was very naturally, defeated, and, unless opposition is immediately manifest the new degree will take a place on the statute book under the heading of Degrees in Medicine without the Faculty of Medicine having had any voice in the matter Inasmuch as the statute (No 108) regulating degrees in medicine has to be altered to admit the new degree the consent of Convocation must be obtained An opportunity will thereby be given to graduates to protest against the addition but medical graduates unfortunately, seldom attend meetings of Convocation

The new degree is intended by its promoters the Pharmaceutical Society to be taken chiefly by dispensing chemists Does our profession view with favour the creation of a degree which dispensing chemists who possess it may quite justifiably call a medical degree of the University of London Conferment of this new degree upon the dispensing chemist cannot but increase the already considerable and unfair competition of the dispensing chemist with the doctor, and it must also debase the reputation of medical degrees generally of the University I submit that the Faculty of Medicine would do well to insist in no uncertain way upon its wishes being at least consulted before the new degree comes into effective operation—I am etc

E GRAHAM LITTLE
Representative on the Senate of Medical and Surgical Graduates of Convocation

London July 26th

Obituary

EDMUND MOODY SMITH, M D, C M D P H,
Late M O H York

THE death on July 23rd of Dr Edmund Smith, medical officer of health for the city of York, is regretted by all who knew him, and they were many as a public health reformer of the first rank He was taken ill about three years ago while acting as an examiner at Manchester for the Royal Sanitary Institute and although after a long convalescence he recovered sufficiently to resume his duties it was not altogether a surprise to his friends to learn that he had resigned his office in May last

Edmund Moody Smith was born in Leeds in 1864 and received his medical education at Edinburgh University graduating M B C M in 1888 and M D in 1895 when his thesis on therapeutics earned for him the Milner-Fothergill gold medal He obtained the D P H Camb in 1891 and in that year settled in practice in York Although a busy practitioner he was strongly drawn to the preventive side of his profession, and in 1898 he became deputy medical officer of health for the city two years later he was appointed the first whole-time officer

The record of Edmund Smith's work in York during the past quarter of a century is in effect a record of public health reforms in that city His persistence in advocating the abolition of privy middens met with its reward and York is now a water-carriage town and freed from typhoid fever previously endemic His work in connexion with tuberculosis and in child welfare was characterized by the same patient persistence and while never playing to the gallery he plodded along the track he had traced out as the right one meeting difficulties with the firm intention of overcoming them and succeeding in doing so As a private practitioner he had earned the respect and regard of his medical brethren and this must have been of immense help

to him when he became a public official His election as president of the York Medical Society was sufficient evidence of his keen interest in the clinical side of his profession He was an active member of the British Medical Association and of the Society of Medical Officers of Health, and had been president of the Yorkshire branch of the latter body His contributions to public health literature were marked by sound common sense and an intimate knowledge of his subject, while his literary ability was of a high order By his public health colleagues he will always be remembered as one whose knowledge and experience were at all times at their service, and many of the younger members of the service have cause to be grateful to him for wise counsel and timely advice

Until ill health prevented, Edmund Smith was a constant attendant at medical and public health conferences and congresses, and by the calm logical presentation of his case he was able to influence debate in the right direction He was never dogmatic, though he possessed the art of convincing to a remarkable degree His career and the work he accomplished for the citizens of York can now be viewed with pride by all who were acquainted with them Without blare of trumpets and without ostentation he carried on his task conscientiously and thoroughly to a successful issue and to the admiration of his fellow workers It may be some consolation to his widow in her sorrow to know the high esteem and affectionate regard in which he was held by his medical colleagues

WILLIAM ARNOLD EVANS, M D Lond., B Sc Vict., D P H Camb.,

Formerly M O H Bradford

There were many medical officers of health and others present at the meeting of the Association in Bradford who received with sincere regret the announcement of the sudden death on July 7th, while at work in his surgery of Dr Arnold Evans, who was medical officer of health for Bradford from 1890 until 1912 He was the son of the Rev John Evans of Sheffield, and was born in that town in 1862 he received his early education at Silcoates School, Wakefield, and went afterwards to Owens College, Manchester He took the diplomas of M R C S Eng and L S A Lond in 1883, and graduated M B Lond in 1884 and M D in 1888, he took the B Sc Vict in 1904 In 1890 he obtained the D P H Camb After holding resident appointments in the Manchester Royal Infirmary, the Wolverhampton and Staffordshire General Hospital, where he acted as pathologist and in the Monsall Fever Hospital, Manchester, he eventually settled in practice in Bradford at the time that the position of medical officer of health was held by Dr James McClintock, who imbued him with a strong interest in public health When Dr McClintock resigned his appointment to become medical officer of health for Lanarkshire he thoroughly approved the action of the Bradford Corporation in selecting Dr Evans as his successor

During the years he held office Arnold Evans undertook a great deal of spade work, and many of the advanced public health activities upon which the Bradford Corporation has been engaged in recent years have only made possible by his painstaking preparatory labours In 1894 he contributed to the BRITISH MEDICAL JOURNAL an account of his investigations into the prevalence of small-pox in Bradford, which stamped him as an epidemiologist of a high order He came to the conclusion that the prevalence of the disease in the area immediately surrounding the small-pox hospital was due to aerial convection from the wards of the hospital, though we believe in recent years he had reason to modify his opinion in this respect His investigations into what at the time was locally the burning question of back-to-back houses were a determining factor in the general condemnation of this type of dwelling, so dear to many in the northern counties In many other matters the citizens of Bradford have good reason to be grateful to him for the public health reforms in which he was actively engaged He was president of the Bradford Medico-Chirurgical Society, to whose proceedings he was a frequent contributor, and in 1893 was president of the Yorkshire branch of the Society of Medical Officers of Health As a Fellow of the Royal Sanitary Institute, and for many years a member of the Board of Examiners, he took a prominent part in its affairs

With the general practitioners in Bradford his relations were of the most cordial character, and in the public health service he was held in high esteem, he possessed the affectionate regard of the medical staff and of the public health staff of the corporation In 1912 he resigned his appointment and a few years later started in private practice in Oakworth in the Bronte country, where he married and resumed his interest in public affairs by becoming an active and useful member of the urban district council During his many years of residence in Bradford his sister kept his house, and many of his public health colleagues have very happy and pleasant memories of hospitality extended to them by Miss Evans, to whom, and to his widow, our sincere sympathy is extended

Universities and Colleges.

UNIVERSITY OF OXFORD

At a congregation held on July 23rd the degree of B M was conferred on E H Koerner and A D Dyson

Theodore Williams Scholarships

The following awards of Theodore Williams Scholarships are announced

Scholarship in Human Anatomy (£50 for two years) Denis Hubert Brinton New College [illegible]

George Eric Macdonald [illegible] (£60 for two years) Th[illegible]

UNIVERSITY OF LONDON.

Meeting of Senate

At a meeting of the Senate on July 23rd the Bethlem Royal Hospital was admitted as a school of the University in the Faculty of Medicine for the purpose of research in psychological medicine

The resignation by Professor H R Kenwood of the Chadwick Chair of Hygiene at University College as from December next was accepted with regret and with an expression of appreciation of his long and valued services to the College and to the University

Sir Wilmot P Herringham, K C M G, C B, M D, F R C P, has been elected Chairman of the Committee of the Medical Members of the Senate for 1924–25

The following candidates have been approved at the examinations indicated

M D—Branch I (*Medicine*) J A Burrell Florence R Dingley A H Douthwaite J N Kerr (University Medal) R C Lightwood Gladys M Wauchope

Branch IV (*Midwifery and Diseases of Women*) Janet K Aitken, Edith K Budden C M Gwillim, Dorothy McNair, Kathleen H Matthews

Branch V (*State Medicine*) H Shannon

M S—Branch I (*Surgery*) G Massie A D Wright

Branch IV (*Laryngology, Otology and Rhinology*) V E Negus (University Medal)

University College

The following awards have been made in the Faculty of Medical Sciences

Bucknill Scholarship J R Pierie Epsom Scholarship G G Gillam Medical Entrance Exhibitions A S Hatch and M Levy all continued for second year Gold Medal [illegible] R M Sargent Silver Medal for Anatomy Silver Medal for Histology and Embryology Medal for Physiology (Senior Class) R [illegible] J F Forty Wrounim Silver Medal for Organic and Course) Audrey Z Baker.

London Hospital.

The Medical Unit

Dr A W M Ellis has been appointed, as from October 1st, 1924, to the University Chair of Medicine tenable at the London Hospital Medical College He was educated at Upper Canada College and at the University of Toronto In 1908–9 he served as house physician and house surgeon in the Hospital for Sick Children, Toronto, and during 1909–10 he was resident pathologist at the Lakeside Hospital, Cleveland, Ohio, and demonstrator in pathology in the Western Reserve University Medical School In 1910–11 he assisted in the teaching of pathological chemistry at the University of Toronto From 1911 to 1914 he was assistant physician to the Hospital of the [illegible] During the war he was at first in charge of the [illegible] Fever Hospital at Bulford (1914–15), he [illegible] 1st Canadian Division, becoming Officer Commanding the Canadian Mobile Laboratory in 1916 In 1918 he was appointed Adviser in Pathology to the Fourth Army He was mentioned four times in dispatches and was awarded the O B E Since 1920 he has been Assistant Director of the Medical Unit at the London Hospital He has published a large number of papers, independently and in collaboration with others, in the BRITISH MEDICAL JOURNAL (1915), the *Journal of Experimental Medicine* (1913–14), and other medical periodicals

UNIVERSITY OF EDINBURGH

AT the graduation ceremonial held in the M Ewan Hall on July 25th the following degrees and diplomas were conferred

M D—[illegible]

C [illegible]
H [illegible]
I [illegible]
[illegible]

J W C H Riddell *M C* S Rowland A H Sheenan Major R H H Spence R A M C A White S H Wilkinson G S William on *M C* L A Wilson

Gold medal for thesis ; Highly commended for the is Commended for thesi

M B Ch B—A M Affleck J A Aitchison J Aitken Agnes M Allan A J W Allen A A Allison J M Alson J M Anderson R G Anderson W L Anderson F R Ashton D Bell P Bell *M C* R A Penrett W D Bertram C M Pe bune W J Bethune W H Biccard C A Bingham P A F Blair T Bonar Marion Bow T F Bowden E I Boyle C A Bo man A Brodie Marjorie I Bro herston K R Brown Margaret C Bruce Joyce L Bunting C P Burg s Margaret C Burne White Robertha Burt R C Burton F L Buttar Bertha M Buters D Cameron I M D Came on A F Campbell C MacD Campbell R J W Charlton W N Chisholm Elisabeth K Clark Margaret R Clark J Cottrell W D Couper J Crawford Elsie V Crowe D A Cunningham F Danks W R Davie C Davie Jones L J Davis E Dockray Mary A D Douglas I I Dorey Anne Dugnid. I Duguid GJ Durran P O Eaden D M Edington R A Edmondson A D Fairbairn A A Fo herstil A Foxcroft A J Gans C F G Gill A. H Gillon F J C Glass I Goldberg G R Gomez F W Goodwin F G R Grant J L Harley J W Harris T B Harvey D J D Henderson I S Henderson Dorothy P Herdman R Hermon J Heron C E V Horne J L Horne T Howden Flenora J Howie J W Hunter N M Hunter C Hurwitz L I Johnston Jeannie kean T P keating Winifred K N Kemp G R kennedy P A H king D Laing F W Lang *M C* J H D Lawrie W J Liddle J S Lipz Phyllis E List, R Lodge Elizabeth B Lorne kathleen B Lorraine Gwyneth D Love J Lowe L E M Cracken A S M Culloch M MacCulloch A A S M Donald D R Macdonald I J Macdonald J F M Donald R A. Macdonald H M MacGill Misabel M MacGillivray D M Cregor I G MacGregor W Mackay Helen W Mackenzie H W D Mackenzie W J Mackintosh A E W M Lachlan D G S M Lachlan Helen S M Laren D Macleod J Macleod J T M Ouat S Macvicar W R Main Margaret F B Marshall A N Melvin A I Nesser Ruth F Millar W G Millar R D Miller kathleen G Milner Grace E Monro J G B F Morris J R Murdoch C A Murray G B Murray H A Murray B Myer H Myers I Z G Nel Barbara k Nichol on G S Nicoll S Noll J G Oliver Winifred Ormerod J R Paterson H Patrick W G Patterson J H Penman T N R Philip H B Portenas Annie Rabinowitz Frances A Redhead H R M. Richards J A Richard on A H D O Richmond R G Riddell G Robb Phoda B N Robb A Robert L G Rosa F M Rose A. M K. Ross Anita H V Ross W M Ross C F Postant C M Russell I Sanderson R C Scott M Segal A J Shedden T D Shiels H Shirlaw M F de Silva. Agne M C Simpson Winifred M Small F Smalley C H Snowdowne J R Somerville J W Sparkes J P Steel N M Stephen R S Stewart S S L Steyn R I Stirling A J Stout D N Stewart H R Stubbins Annie Sutherland Jessie C B Symm J Symon J M B Thomas T H Thomson A T Til Margaret C Tod Agnes F Turner J F G Turner W S Urquhart Jessy W Ward J William on W C Wilson W Wyatt F E Wynne Hoe an M A Young J A B Young Roberts M G Young

† Passed with First Class Honours
‡ Passed with Second Class Honours

DIPLOMA IN TROPICAL MEDICINE AND HYGIENE.—P J Mathews (*in absentia*)

D P H—Elizabeth A Baxendine (*in absentia*) Elizabeth S Blair Jane P S Bow W Boyd H H Condie Mary I S Cuthbert (*in absentia*) F C Ellis (*in absentia*) Jean F Farquhar Edith N Hartley (*in absentia*) Doris M Hopp anet M Morton Agnes M Ogilvie Captain L T Poole D S O *M C* P A M C P J Reid W A Simpson A G H Smart Dorothy F Smith Vera Thompson E P Waters J H Williams C R Wilson

The following fellowships scholarships prizes etc, were presented

Thesis Gold Medallists S W Hardihar M D R C Low M D G S Williamson M D The Cameron Prize in Practical Therapeutics Harvey Cushing M.A. M D D Sc LL D F A C S F R C S (Eng and Ire), Moseley Professor of Surgery Harvard University and Surgeon in-Chief Peter Bent Brigham Hospital Boston Mass for important contributions to the surgery of the brain The Ettles Scholarship and Leslie Gold Medal Margaret Christine Tod M B Ch B The Allan Fellowship in Clinical Medicine and Clinical Surgery John Thomson M Ouat M B Ch B The Freeland Bartour Fellowship Ruth Elizabeth Millar M B Ch.B The Stark Scholarship in Clinical Medicine John Gray M.B Ch.B The M Coh Graduates and Medical Bursaries Robert Carmichael M B Ch B The Mouat Scholarship in the Practice of Physic John Durran M B Ch B The Buchanan Scholarship in Gynaecology Thomson Bonar M B Ch B The James Scot Scholarship in Midwifery Margaret Christine Tod M B Ch B The Lauder Brunton Prize in Pharmacology and Therapeutics Owen Stanley Gibbs M B Ch B The Beaney Prize in Anatomy and Surgery Ruth Elizabeth Millar M B Ch B The Conan Doyle Prize Donald John Davidson Henderson M B Ch.B The Annandale Gold Medal in Clinical Surgery Ernest William Goodwin M B Ch B The Scottish Association for Medical Education of Women Prize Margaret Christine Tod M.B Ch B The Dorothy Gilfillan Memorial Prize Margaret Christine Tod M B Ch B *prox ae* Winifred Margaret Small M B Ch.B The Wellcome Medals in the History of Medicine (*Gold medal*) Sidney Elsabeth Crosbery B Sc (*Silver medal*) Samuel Layinka Ayodeji Manuwa The Wightman Prize in Clinical Medicine James Maxwell Alston M B Ch B The Cunningham Memorial Medal and Prize in Anatomy Graham Anderson Hereward Gumley The Whiteside Bruce Bursary Alexander Simpson

ROYAL COLLEGE OF SURGEONS OF EDINBURGH

Fellowship Examination

AT a meeting of the College held on July 25th under the chairmanship of Sir Harold J Stiles (President) the twenty two successful candidates (out of fifty seven entered) who passed the requisite examinations between March 31st and April 7th 1924, were admitted Fellows

R G G Croly P Cutler H Donovan S E Duff. A. A Gemmell Major P P Gow I M S D S O I C Kacker Hilda M Lazarus Laura M Ligertwood J D McLaggan E R. Maduram Captain S Nag I M S Ellen L A Pateman Captain R H C Pryn R A M C C A Pae Z Schwartz L Sime P C Thomas A P Walden H A B Whitelocke W P Williams T G Wynne

The Services

AUXILIARY ROYAL ARMY MEDICAL FUNDS

THE quarterly meeting of the committee was held at 11 Chandos Street W 1 on July 18th when Colonel Manwell Moullin was in the chair The treasurer's quarterly statement which was of a satisfactory character was received In the benevolent branch five applications for help were renewed for a further year the total amount being £278 In the relief branch a grant was made to one new case four old cases were renewed and grants amounting to £130 renewed One new case was considered and the school fees, amounting to £30 granted The next meeting of the committee will take place in October when the majority of the cases will be again reviewed

TERRITORIAL DECORATION

THE Territorial Decoration has been conferred upon the following officers of the R A M C T A —*General List* Lieut Colonels J H Hunter M C L D Bailey M C and P Phillips O B E Majors D W Boswell E L Dewdney and J H Owens Captain G F R Smith *Supernumerary List* Major H K Griffiths *Supernumerary for Service with the O T C* Lieut Colonel A M H Gray C B E

Medico-Legal

LUNACY LAW AND ADMINISTRATION

HARNETT v BOND AND ADAM.

IN the Court of Appeal on July 23rd Mr Cope Morgan made an application on behalf of Mr W S Harnett that an order made by the Court of Appeal as to costs should be stayed pending an appeal to the House of Lords

Mr Morgan said that in the King's Bench Division the plaintiff was awarded £25 000 damage for wrongful detention in a lunatic asylum £5 000 being awarded again t Dr Bond personally and £20 000 against Dr Bond and Dr Adam jointly and severally The Court of Appeal had allowed the appeal of Dr Adam and had ordered a new trial in the case of Dr Bond with the usual order for the costs of the action and appeal to be paid or provided for by the plaintiff before further proceeding Counsel now asked on the ground of convenience that the order as to cost should be stayed pending the hearing of the appeal in the House of Lord

The Master of the Rolls who sat with Warrington and Atkin L JJ said the court saw no reason for interfering with the ordinary rule Although the order of the Court of Appeal might be inconvenient it did not render the appeal to the House of Lords impossible and there seemed to be no ground for exercising the discretion asked for by the plaintiff

Medical News.

PROFESSOR K F WENCKEBACH recently summoned a conference in Vienna at which Dr W B Coffey and Dr P K Brown demonstrated the technique of their operation for the relief of angina pectoris comparing it with the operation performed by Dr G Hofer of Vienna A plan of further joint investigation was arranged and another meeting proposed for 1925

THE Junior Red Cross is the name of a movement which is thought to have originated in the schools of Canada about 1916 although it began independently in Australian schools about the same time Since then it has spread to the schools of twenty one countries and its members number six million children Its main object is to inspire children with the idea of service It has begun the issue of *The Junior Red Cross Journal* Further particulars can be obtained from the Director Junior Red Cross, 19, Berkeley Street W 1

AN international health congress will be held at Lausanne on August 4th, 5th and 6th under the auspices of l Union Internationale contre la Tuberculose

TWO years ago the Canadian Medical Association decided to establish a triennial oration in honour of Lister A committee was formed and reported that the sum of 5 000 dollars would be necessary, the interest from which should be sufficient in three years to provide for the visit to Canada of some distinguished authority Donations may be sent to Dr F N G Starr, 112 College Street, Toronto The first Listerian Oration was delivered at the recent meeting of the Canadian Medical Association in Ottawa by Dr John Stewart of Halifax.

SIR JOHN ROSE BRADFORD, K C M G, M D, has been adopted by the London University Unionist Association as the official Conservative candidate at the by election caused by the death of Sir Sydney Russell Wells, M P for the University of London

THE Universities' Library for Central Europe, established four years ago to meet the book famine in the universities of Central Europe, has already supplied to various university and other libraries 25,000 volumes and some 50 000 parts of scientific periodicals The countries thus benefited are Austria, Czecho Slovakia, Danzig, Finland, Germany, Hungary, Poland, Rumania, and Russia Among medical periodicals sets of which have been supplied is the BRITISH MEDICAL JOURNAL The committee believes that the ensuing months will see a relaxation in the urgency for the distinctly charitable aspects of its work, but that a strenuous effort must be made during this year An appeal is therefore made for contributions Cheques and money orders, which may be earmarked for a particular country or university, should be made payable to Sir George S Gibb, London School of Economics, Houghton Street, London, W C 2

PRIZES of 100 guineas, 60 guineas, and 40 guineas respectively are being offered by the directors of the *Medical Journal of South Africa* for three essays, entitled the Maynard Prize Essays, to perpetuate the memory of the late Dr Maynard, who was for some time editor of that journal The prizes will be awarded for the three best essays submitted on or before December 31st, on the following subjects (1) Dental caries in native children in kraals and in urban areas, (2) Frequency of infestation with, and pathological conditions due to, intestinal parasites among Europeans and natives in South Africa and the treatment of these conditions, (3) Surgical tuberculosis in South Africa and its treatment, (4) Chronic diarrhoea—its etiology, pathology, and treatment, with especial reference to South African conditions, (5) The treatment of industrial surgical accidents, with special reference to restoration of functions and minimizing subsequent incapacity No whole time employees of the department of public health or whole time workers in research institutions will be eligible for these awards It is hoped that it will be possible to offer the prizes yearly

THE Office Français du Tourisme (56, Haymarket, London, S W) is issuing some pamphlets on French spas The last two deal with Luchon in the Pyrenees, and the thermal watering places of Auvergne

AT the June matriculation examination of the University of London 126 successful candidates were placed in the first division and 1,019 in the second division, 41 took the supplementary certificate for Latin

Letters, Notes, and Answers.

Communications intended for the current issue should be posted so as to arrive by the first post on Monday or at latest be received not later than Tuesday morning

THE telephone number of the BRITISH MEDICAL ASSOCIATION and BRITISH MEDICAL JOURNAL is GERRARD 2630 (Internal Exchange) The telegraphic addresses are

EDITOR of the BRITISH MEDICAL JOURNAL, *Aitiology Westrand, London*

FINANCIAL SECRETARY AND BUSINESS MANAGER (Advertisements etc) *Articulate Westrand London*

MEDICAL SECRETARY *Medisecta Westrand London*

The address of the Irish Office of the British Medical Association is 16 South Frederick Street, Dublin (telegrams *Bacillus, Dublin* telephone 4737, Dublin), and of the Scottish Office 6 Rutland Square Edinburgh (telegrams *Associate, Edinburgh* telephone 4361 Central)

QUERIES AND ANSWERS

SOMNAMBULISM

"W asked in our issue of June 7th for advice as to the treatment of a public school boy, aged 16, who had recently begun to walk in his sleep A correspondent writes in reply to advise that the boy should not give up work and should not be given any drug, and continues It is necessary to deal with the patient in his somnambulistic state as with a hypnotized subject See him in such a state, talk to him as if he were awake, ask him where he is going and what he proposes to do He will usually answer If he does not at once respond repeat the question and tell him to go through his thoughts aloud Write down what he says, reassure him while in his dissociated condition then tell him to get back into bed and suggest to him that he will remember what he has been doing and saying when he awakes in the morning and that until then he will sleep quietly When he wakes the next day read over to him what he has said discuss the matter in the waking state, and supplement any information that may be desired

INCOME TAX

Subscriptions to Medical Association

"M C P" refers to the note in our issue of June 14th with regard to the allowance of subscriptions to medical associations and states that the local inspector of taxes has never allowed the deduction against his earnings as a school medical officer

*** The note to which "M C P" refers dealt with the assessment of practitioners' profits under Schedule D rather than of salaries chargeable according to the rules of Schedule E There is this difference, that in the latter case the expenses are not allowable unless "necessarily" incurred in the performance of the duties of the office "Necessarily" is a word which perhaps requires, and certainly is capable of, a strict construction, and unless "M C P" can show that membership of the British Medical Association is required by his authority as a condition of his employment he will probably be unable to convince the authorities that the subscription is allowable in his case, if membership is so required he would probably succeed if he appealed against the inspector's view to the General Commissioners

LETTERS NOTES ETC.

DERMATITIS DUE TO CATERPILLARS

DR W T CASTLE (London, W) writes The recent prevalence of caterpillars in the London parks and squares has resulted in several cases of dermatitis The caterpillars, which are of the large and hairy varieties, drop from the trees and bushes on to the chairs and seats Children apparently like playing with them and picking them up, and wherever the hairs come in contact with the skin dermatitis may appear In one case a nurse had severe dermatitis of the buttock, due presumably to having sat on some caterpillars, the hairs or irritation of the hairs having passed through her clothes The rash may be of a discrete papular type or more diffusely erythematous, but in either case it yields to soothing lotions and generally fades in two or three days As in all cases of dermatitis due to external irritants, there is great variety in the degree of susceptibility even among children of the same family

MILLSTONE FLOUR AND NATIONAL NUTRITION

DR J MACPHERSON LAWRIE (London, W) writes "I would be most grateful to know where, in London, one may be quite certain of obtaining bread made from a sound and nutritious flour It seems to me a pity that the British Medical Association does not organize a more active crusade, carried out all over the country, on proper diet, and more especially on proper bread The public require and would accept a definite lead from such a recognized and trusted medical authority It seems to me that this first and all important duty on the part of our profession is now being taken up by various educational authorities, and we may be left in an invidious position

A GRAIN OF OATS IN THE CONJUNCTIVA

DR ADAM MOSS (West Kirby) writes In 1901 I saw a patient who complained of pain and lacrymation in the right eye "ever since he was struck by a grain of oats, three months before" He had been standing near the man who was sowing oats broadcast, with an instrument worked by a bow On everting the upper lid I found the grain considerably swollen, embedded in the fornix Some years ago I saw a lady who appeared to have a long creeping ulcer on the margin of the cornea On proceeding to cauterize the margins and floor, an almost transparent husk of a grass seed came away attached to the cautery

THE PURITY OF CARBON TETRACHLORIDE

DR DAIE, in his letter published last week (page 160), pointing out that it was inadvisable to permit the presence of carbon bisulphide in carbon tetrachloride for internal administration, said that a new test of great delicacy would be published in the *Pharmaceutical Journal* It appeared in the issue of our contemporary on July 26th (p 101) It is performed as follows 10 c cm of the sample to be tested is boiled and agitated for a few minutes, together with 3 c cm of an alkaline solution of potassium plumbite and 1 c cm of absolute alcohol The mixture is then allowed to stand A darkening of the upper layer signifies the presence of CS_2 The alkaline plumbite reagent is prepared by dissolving 0 5 gram of lead acetate in 20 c cm of water, and then adding 20 grams of pure caustic potash The test is simple and will detect 5 parts of CS_2 in a million The investigation was carried out by Mr Maurice Perkins, A I C, in the laboratories of the British Drug Houses, Ltd

THE "MEDICAL DIRECTORY"

MESSRS J AND A CHURCHILL (7, Great Marlborough Street, London, W 1) ask us to state that the annual circular with reference to the entries in the *Medical Directory* has been posted to each member of the medical profession They ask for its return by an early post If the form has not been received a duplicate will be sent on request

VACANCIES

NOTIFICATIONS of offices vacant in universities, medical colleges, and of vacant resident and other appointments at hospitals, will be found at pages 33, 35 36 and 37 of our advertisement columns, and advertisements as to partnerships, assistantships, and locumtenencies at pages 34 and 35

A short summary of vacant posts notified in the advertisement columns appears in the *Supplement* at page 88

EPITOME OF CURRENT MEDICAL LITERATURE

Medicine.

67 A New Method of Estimating Capillary Pressure

V C GUILLAUMI (*C R Soc de Biologie*, June 20th, 1924, p 75) gives a method of estimating capillary pressure entirely different from any hitherto in use It depends on the observation that the living skin presents, on spectroscopic examination by direct vision, *at least one and often two absorption* bands of oxyhaemoglobin, and these are seen with marked distinctness only disappearing when the majority of the capillaries have been emptied by pressure Previously the author had employed a direct observation of the capillaries on the back of the finger by means of a capillaroscope as a criterion of the pressure The application of his more recent method is effected by interposing a specially constructed spectroscope in the eyepiece of the capillaroscope, to which is also attached a pressure gauge with scales and weights The weight at which the bands in the spectrum disappear forms the basis of the estimation

68 Achylia in Childhood.

E KLEMMENTSSON (*Acta Paediatrica*, vol 3, fasc 2 1924, p 136) has investigated the composition of the gastric juice of 166 children between the ages of 1 and 12 years They were classified in four groups In the first group, which included 111 children, there were no symptoms referable to the digestive system, most of them were convalescent from various diseases In 6 of these cases achylia was found and only in one of these cases was there a history of previous illness which might possibly have injured the lining of the stomach by direct or haematogenous infection In the second group, which included 12 children there was a recent history of acute intestinal disease In this group there was little or no departure from the normal in the composition of the gastric juice In the third group, which included 30 children, there were signs of chronic gastro intestinal disease In every case the secretion of gastric juice was very defective, absolute achylia being found in 26 cases, and hypochylia in the remaining 4 It was observed in some of these cases that with an improvement in the general condition the composition of the gastric juice approached the normal In the fourth group which included 13 children, there were no definite symptoms of gastro intestinal disease but there were complaints of epigastric pain before or after meals In none of these cases did test meals show any great deviation from the normal in the composition of the gastric juice The author found as a rule, in healthy children under the age of 12 years, that the secretion of hydrochloric acid by the stomach is considerably below the normal for adults, this secretion is lowest at the age of 1 year, after which it increases rapidly till the fourth to the seventh years After the seventh year it remains fairly constant for the rest of childhood

69 Tetany and Alkalosis

O TEZNER (*Monats f Kinderheilk*, May, 1924 p 97) gives a critical review of the evidence in support of the theory that tetany is caused by excessive alkalinity of the blood, and reports some experiments designed to test it If the symptoms were produced by alkalosis, they would be relieved by the injection of acid into the blood Tezner produced electrical and mechanical hyperexcitability of the nerves in two dogs by causing them to breathe excessively under light ether anaesthesia, he then injected 60 c cm of N/4 hydrochloric acid he found that *the hyperexcitability* was abolished and that the urine became more acid To exclude a deficiency of carbon dioxide in the blood as the cause of the symptoms he gave three other dogs pure carbon dioxide from a bag tested the electrical excitability of their nerves, and then injected 200 c cm of sodium bicarbonate solution intravenously He found that the inspiration of carbon dioxide (and consequent acidosis) caused a lowering of the nervous excitability and that the injection of alkali quickly raised it much above normal and at the same time made the urine alkaline (showing that an alkalosis had been produced) He concludes (1) that the tetany of hyperpnoea depends on an excessively alkaline reaction of the blood and (2) that symptoms of tetany may be caused in the dog by excess of alkali He then proceeded to try the effect of alkalosis on the electrical excitability of the nerves (*a*) in normal children, and (*b*) in a child with latent idiopathic tetany No change was produced, although enough alkali was given to render the urine strongly alkaline Reviewing the findings of other investigators in gastric tetany in tetania parathyropriva and in guanidine tetany, he concludes that the evidence of alkalosis is very doubtful and that in none of these varieties has it been shown that alkalosis causes the symptoms Finally, he tried treating idiopathic tetany with drugs which decrease the alkalinity of the blood (calcium chloride and ammonium chloride) He had no success with ammonium chloride, he thinks calcium chloride better, but is inclined to attribute its good effect to the calcium and not to the acidifying effect of the Cl radicle He concludes that there is no evidence that alkalosis is more than a very subsidiary factor in any variety of tetany, except that produced by hyperpnoea

70 Treatment of Graves s Disease with Insulin

J GOFFIN (*Le Scalpel*, April 19th, 1924, p 498) admits the difficulty in determining the value of treatment in Graves s disease and points out the desirability of basing an opinion on a large number of cases, followed for a long period As a preliminary communication only, he records briefly four cases treated by insulin, with rapid improvement in three In the first case after the failure of other lines of treatment the author tried insulin injections Improvement rapidly followed, the palpitation diminished the thyroid decreased in size exophthalmos disappeared, the tremor became less, and subjective symptoms ceased. In the second case, the subjective symptoms greatly diminished the tremor almost ceased von Graefe s symptom disappeared, and the goitre and palpitation became less noticeable In the third case the subjective symptoms disappeared or diminished, the tremor ceased and the goitre of the neck decreased In the fourth case, in which syphilis also was present only slight improvement followed The author considers that insulin influences the general condition, and may also have some action on the sympathetic or on the endocrine glands

71 Bronchial Asthma and Climate.

W STORM VAN LEEUWEN, H VAPEKAMP and L BIEN (*Klin Woch*, March 25th 1924, p 520) refer to the well known fact that bronchial asthma occurs in certain cases when the patient has inhaled substances which are harmless to normal individuals—for example, pollens, ipecacuanha, castor oil or effluvia from horses or other animals They believe that there are other unknown *colloid substances* which may produce asthma in "sensitized patients, and they find that the removal of such patien s to a mountainous country has an immediately beneficial result in many cases Other factors beside altitude have to be considered, including air pressure, humidity, temperature, and amount of sunlight In Holland there are three principal zones (1) the dunes and sea coast, (2) the banks of the larger rivers (3) the drier sandy areas If patients from the coast are sent to the third zone they improve, while those from the second zone do not The authors determined to send three patients to various Swiss mountain stations, and observations were made at Basle (100 metres) and at various mountain stations the highest being St Moritz (1 800 metres) The three patients were natives of the different climatic zones Each was carefully examined daily (auscultation and blood pressure) The third patient (from Groningen) did not improve as rapidly as the others, but eventually when at St Moritz all were free from symptoms of asthma and of bronchitis The authors conclude that (1) the majority of cases are due to inhalation of certain "asthmogenous ' substances of usually unknown nature (2) these unknown substances are seldom found in mountain stations, so that at 1,200 to 1 800 metres the majority of patients are free from symptoms (3) sojourn in mountainous country does not cure asthma

72. Prophylaxis of Malaria

V MANDRU (*Paris med* February 23rd 1924 p 121) as the result of many years experience of malaria in the Rumanian army, comes to the following conclusions (1) Every spleen that can be defined by percussion is enlarged (2) In countries where malaria is endemic an examination should be made of all patients to determine whether he spleen can be percussed or not (3) If the spleen is percussible treatment by quinine, in doses of 2 grams a day for ten days at least should be instituted (4) Treatment with smaller doses of quinine is the cause of malaria passing into a chronic stage, and resistance to treatment is in direct proportion to the duration of the disease (5) The duration of treatment and the cure of malaria should be determined by percussing the spleen

Surgery.

73 The Diagnosis of Paranephritic Abscess

H J LEVINSEN (*Ugeskrift for Laeger*, June 26th, 1924, p 497) discusses the diagnosis of paranephritic abscess, using as his text three cases observed at his hospital during the past year The interval between admission to hospital and an operation was four weeks, five weeks, and eight days respectively, the length of which intervals stressed the difficulty of arriving at a definite diagnosis From a study of the literature of the subject the author concludes that it is exceptional for the symptoms early in the disease to point unequivocally to the seat of the mischief It is more common for the pain to be referred for a considerable time to neighbouring structures, such as the pleura and hips, and paranephritic abscess has many a time been taken for hip disease Sooner or later the pain is referred to the lumbar region, and tenderness with a boggy swelling in this region leaves little doubt as to the localization of the inflammatory focus When the disease has reached this stage there are only a few conditions, such as tumour of the kidney or pyonephrosis, which are likely to be diagnosed, and the differential diagnosis should present no special obstacle, particularly when a paranephritic abscess has led to redness of the overlying skin But early in the disease the conditions which a paranephritic abscess may simulate are almost numberless, and the author offers no single sovereign test wherewith to clinch the diagnosis Only by a careful weighing of all the evidence is the clinician likely to escape the numerous diagnostic pitfalls which await him, and he is the more likely to evade them if he remembers that paranephritic abscess is not the rare disease it was formerly held to be The author finds that a most careful examination of the urine may be misleading, since its composition is not invariably abnormal, except that it is concentrated An *x* ray examination early in the disease may be negative, and though an exploratory puncture is not likely to do harm its evidence is of value only when pus is found, failure to find pus does not exclude the diagnosis of paranephritic abscess

74 Intestinal Obstruction complicating Appendicitis

M OUDARD (*Bull et Mem Soc Nat de Chir*, June 14th, 1924, p 660) records four cases of acute appendicitis complicated by acute intestinal obstruction In all the cases the cause of the obstruction was identical—the fixation of the terminal portion of the ileum by adhesions In three cases the obstruction followed a few days after the appendicectomy, in one case it occurred twelve days later In the first two cases the author states that he did not take sufficient care to examine the condition of the termination of the ileum and to see that all adhesions were freed, giving a clear passage from the ileum to the caecum for the intestinal contents It is also possible that in enfolding the stump of the appendix the ileum was encroached upon, so tending to its narrowing With regard to the treatment of these cases, in one the adhesions were freed and the patient recovered without further complication In a second case, as he was not satisfied with the freeing of extensive adhesions, an ileo colostomy was performed, with a fatal result The author now considers that such an operation is not advisable, and suggests that an ileostomy above the site of obstruction is safer under these conditions In two cases where this was adopted the intestinal contents followed their normal course a few days after the enterostomy had been performed, and the fistulae were closed at a later date satisfactorily

75 Fracture of the Head of the Radius

K SPEED (*Amer Journ of Surg*, June, 1924, p 157) classifies fractures of the head of the radius as complete and incomplete These fractures are generally found in adult life, males being affected seven times more often than females, but fractures of the neck of the radius occur in adolescents Fracture of the head is often associated with other lesions—such as fractures of the ulna, lower end of the humerus, or dislocation of the elbow joint After fracture of the radial head the patient appears holding his forearm in a position of 90 degrees flexion, he will not pronate or supinate his arm owing to pain, which is also elicited by pressure over the radial head Swelling is usually delayed for a day or two, and crepitus is often absent Progressive loss of function develops gradually and may ultimately, if neglected, lead to elbow ankylosis Operative treatment is not desirable in children or adolescents By direct pressure the fragment is forced into something approaching its normal relation, and the forearm is then fixed in full flexion Movement is started in twelve to fourteen days, and a good functional result may be expected in most cases In adults, removal of the head is primarily indicated, unless the lesion is a mere crack, the earlier this is done the better will be the functional result A position of flexion and full supination is maintained for five to eight days in plaster of Paris Active movements are then encouraged in an increasing range and the results are uniformly good

76 Division of the Trigeminal Nerve in Man

E HARTMANN (*Ann d'oculistique*, April, 1924, p 241), discussing the effects of division of the trigeminal nerve, points out that the loss of superficial sensation after neurotomy shows that the associated fibres pass along the fifth nerve He finds that both epicritic and protopathic sensations are thus lost deep sensibility, however, was not affected in his cases, and it appears that these fibres do not run in the trigeminal nerve, but either in the facial or sympathetic nerves Section of the nerve only affects superficial sensibility, and the fibres controlling the vasomotor and pupillary reactions and the regulation of intraocular tension are not affected Immediately after the division of the nerve there was no inequality of the pupils, proving the absence of pupillo dilators or constrictors in it At a later stage there was some inequality of the pupils with contraction of the pupil of the affected side, retraction of the eyeball, and widening of the palpebral fissure, which effects are usually considered to be due to division of the sympathetic fibres running in the fifth nerve This view is untenable, for the effect should be instantaneous, whereas it is actually delayed for a week or so It is suggested that these results are due to the cicatrization of the roots of the nerve which are attached to the ganglion, and this would satisfactorily explain the stimulatory effects observed at this later period

77 The Genesis of Renal Tuberculosis

M PERSSON (*Acta Chir Scand*, May 7th, 1924, p 525) records two cases of renal tuberculosis which provided evidence of the manner in which tuberculosis begins in the kidneys In 1908 Ekehorn suggested that the disease starts as a single haematogenous focus, which is usually situated within a papilla of the kidney It communicates by a fistula with the renal pelvis, which in its turn becomes infected, and from which the disease spreads to the rest of the kidney Since surgical treatment is rare in the early stage of renal tuberculosis, little evidence has hitherto been available for checking Ekehorn's claims, but Persson's two cases definitely supported them In one patient, a man aged 44, the left kidney was found to be healthy except for a tuberculous cavity the size of a pea in one of the uppermost papillae The cavity communicated by a microscopical fistula with the renal pelvis, the mucous membrane of which showed some minute early tubercles There was also a very small ulcer on the surface of a papilla adjacent to the one in which the tuberculous cavity was found

Anaesthetics.

78 Lumbar Anaesthesia and Fall of Blood Pressure.

H ZIEGNER (*Zentralbl f Chir*, May 31st, 1924, p 1163) states that Bier in 1903 was the first to draw attention to the dangers of lumbar anaesthesia As a rule, lumbar anaesthesia is always accompanied by a fall of blood pressure The cause of this phenomenon and the associated collapse has received comparatively little attention An attempt has been made to attribute it to damage to the spinal cord by the anaesthetic, which is supposed to reach the respiratory centre by the cerebro spinal fluid This explanation, however, does not tally with the fact that in severe collapse the reflexes of the upper extremities are preserved Ziegner in 1919 drew attention to the fact that, with the onset of lumbar anaesthesia, priapism invariably occurred, except in advanced age, owing to engagement of the corpora cavernosa, just as after a transverse lesion of the cord This vasomotor phenomenon appears after the smallest dose of the lumbar anaesthetics usually employed, and is an infallible sign whether the anaesthesia has been successful or not If the sign is present there is no need to prick the skin or test the reflexes, while if it is absent anaesthesia has not been produced The fall of blood pressure, therefore, is the result of paralysis of the vasomotor centres in the anaesthetized segments of the cord As the splanchnic nerves are the most important constrictor nerves and principal regulators of the blood pressure, the paralysis of the vasomotor nerves in the splanchnic area occurs, as is always the case in deep spinal anaesthesia the blood collects in the abdominal vessels, and death may take place from fall of blood pressure, just as after splanchnic anaesthesia At present we do not possess any spinal anaesthetic which does not affect the vasomotor nerves, so that the risks of the method cannot be prevented

79 Intratracheal Ether Anaesthesia

E WEAVER (*Med Journ of Australia*, May 24th, 1924, 506) contends that the intratracheal method of ether anaesthesia, while providing everything claimed for ordinary methods of administration, affords the additional advantages of lessened abdominal movements and greater muscular relaxation The induction is even in depth with a minimum of post operative effects, and, should occasion arise, artificial respiration can be effectively performed through the tracheal catheter About half an hour before operation a hypodermic injection of morphine (1/6 gr) and atropine (1/100 gr) should be given the patient being anaesthetized in the ordinary way until there is complete relaxation of the masseter muscles Under laryngoscopic guidance a No 14 Belfast soft rubber catheter is passed through the widely abducted cords down to the bifurcation of the trachea this is connected with an apparatus (such as that invented by Dr Lidwill of Sydney) *for pumping air through an ether chamber* When the desired depth of anaesthesia has been obtained it is maintained by the air ether regulating chamber which, by providing for a definite percentage of ether, prevents any deepening in depth Before the end of the operation pure air is passed down the catheter and should the oral method be required this can be done by connecting the apparatus to an artificial airway in the mouth For operations upon the upper air passages this method is obviously the best, since it provides a clear view to the surgeon maintains an even anaesthesia in any desired posture, and the return current of air along the sides of the catheter assists in removing blood and mucus from the field of operation

80 Reflex Rigidity under General Anaesthesia

E GUEDEL and K R RUDDELL (*Amer Journ Surg*, Anaesthesia Supplement April 1924, p 36), in considering reflex rigidity in abdominal operations, point out that this condition is caused by stretching the muscle, and is in proportion with the violence of such stretching Peritoneal manipulation has nothing whatever to do with its causation since the peritoneum is practically insensitive to all forms of traumatism Under light anaesthesia the injuring of the mucous membrane causes slight reflex response of the skin whereas harper response, whilst the greatest response follows stretching of the muscle tissue Nitrous oxide oxygen anaesthesia *alone will control pain reflex in either skin or mucous* membrane but is insufficient to control such reflex action when muscle is forcibly stretched Complete abdominal relaxation can be secured under light nitrous oxide oxygen anaesthesia, when supplemented by infiltration of the muscles with novocain solution, without infiltrating the skin, fascia, or peritoneum, so that in order to secure complete relaxation it is rarely necessary to infiltrate the muscle

Obstetrics and Gynaecology.

81 Treatment of Myomata.

SCHICKELE (*Paris med*, June 21st, 1924, p 572) states that in his practice just over 50 per cent of patients admitted to hospital for myoma are operated on, about 10 per cent receive palliative treatment, and the remainder are treated by *x* rays or radium Whatever the anatomical or pathological characters of the tumour may be, the age of the patient is a most important factor in deciding which treatment to adopt, radiotherapy is ineffective in patients aged from 20 to 30 bearing myomata twice the size of the closed hand, and it is safe until about the age of 40 that such treatment competes with operation Clear indications for operation are (1) if the tumour be so large as partially to fill the abdomen and thereby cause distress, (2) compression of the bladder or rectum Gangrene of the myoma as a rule necessitates operation which in the case of submucous tumours leading to dilatation of the cervix is best performed by the vaginal route Coexistence of inflammatory adnexal lesions has generally been regarded as a definite indication for surgical treatment, but recently reported favourable results from the treatment of chronic non purulent pelvic inflammation by *x* rays have perhaps reopened the question The operative risk is the wiser treatment in the case of a pedunculated *subserous myoma, which may become twisted or lead to* other complications In the author's opinion operation is the only effective (because the speediest) treatment in anaemia acute enough to threaten life as a consequence of haemorrhage from myoma Rapid increase in size of the tumour is also admitted by him to be an absolute indication for operation, if a sarcomatous transformation has taken place no account of operative haste is likely to prevent the subsequent occurrence of metastases, and increase in the size of the myomata is not uncommon at a menstrual epoch Calcified myomata, and those which have resisted radiotherapy should be operated on Errors of diagnosis are made in about 8 per cent of cases, and in about 10 per cent diagnosis in the absence of operation is uncertain the latter group of cases should come to operation Recognition of a coincident pregnancy does not necessarily call for surgical *treatment Schickele points out that while it is undoubtedly* true that carcinoma may develop in the cervical stump left after hysterectomy for myoma (in 0 3 per cent of cases in his material) yet, on the other hand operative has the advantage over radiotherapeutic treatment that occasionally an unsuspected carcinoma of the corpus uteri is removed together with the myoma

82. Pyelonephritis complicating Pregnancy

J C APPLEGATE (*Therapeutic Gazette*, June 15th, 1924, p 390) considers that pyelitis in pregnancy is generally associated with some coexisting nephritis, casts usually being present Occurring in 8 per cent of pregnancy cases it is more frequent in primiparae one attack predisposes to another, and it may arise at any time after the second *month Lumbar pain is present frequently on the right side*, and radiating downwards from the region of the kidney it is accompanied by malaise, headache, fever and frequency of micturition, the urine being scanty and concentrated The chief danger to the child is a persistently high temperature for eight or more days, but the termination of the pregnancy is rarely indicated averaging about 5 per cent. of the cases, when the child is viable and can be saved In spite of the liability to recurrences, the prognosis is favourable under treatment by rest, milk diet abundance of water, and the administration of sodium bicarbonate or potassium citrate alternating with urotropin Since urinary and intestinal stasis are among the chief predisposing causes careful attention to the gastro intestinal tract to guard against stasis and colon bacilluria, is needed In obstinate cases pelvic lavage with a silver salt or ureteral drainage may be necessary but *operations on the kidney during an active attack are to be* condemned, and, in the absence of complications, Caesarean section is not indicated should it become necessary to terminate the pregnancy

83. Caesarean Section in Placenta Praevia

J SCHULTE (*Zentralbl f Gynäk*, May 17th 1924, p 1067) urges that the surgical treatment of placenta praevia is the one of choice He gives his maternal mortality over a series of 25 cases as *nil*, but he points out that the prognosis depends on the rapidity with which *the woman can be brought under* observation after diagnosis and on the absence of infection The advantages of Caesarean section in these cases, he emphasizes, are the avoidance of the following grave risks post partum haemorrhage, retained portions of placenta, sepsis, and the death of the child He criticizes the other methods of treatment as follows (1) Bipolar version generally stops bleeding, but there is a possibility that infection may occur, and the child is nearly always lost (2) The use of metreurynters stops the bleeding, gives a slight danger of infection, and half the children are saved. (3) Vaginal Caesarean section stops the bleeding quickly, gives rise only to slight danger of infection, but the life of the child is jeopardized (4) Abdominal Caesarean section, however, is a certain haemostatic, gives little chance of infection, and saves the child.

84 X ray Treatment of Fibroids

A L YOCOM (*Journ of Radiol*, May, 1924, p 158) states that since the *x* ray treatment of fibroids was first introduced by French radiotherapeutists in 1904 thousands of cases have been reported in all countries, and the success of the method has been satisfactorily proved The advantages of *x* ray treatment are that it is painless and safe and, in properly selected cases, there are no failures The menopause is not attended by any serious symptoms since it is brought about gradually and so is not a sudden shock *to the nervous system* If failures occur surgical treatment is still possible but this If failures occur surgical treatment is still possible but this is required in only 1 per cent of the cases The contraindications laid down by Döderlein in his gynaecological clinic are as follows (1) very large myomata extending above the umbilicus, (2) cases in which it is desirable to retain the menstrual function (3) myomata with malignant degeneration (4) purulent or gangrenous myoma (5) subperitoneal pedunculated myomata (6) completely or partially prolapsed submucous myomata, (7) myomata with tumours of the adnexa, (8) myomata which cause compression symptoms It usually takes from three to eight months for irradiated fibroids to disappear completely Permanent cessation of menstrual function usually occurs after the third

month of treatment In patients under 40, the treatment may be prolonged so as to produce a mild menopause Suppression of the menstrual function occurs more readily after 40 than in younger individuals

Pathology.

85 Wassermann Sachs-Georgi and Kahn Tests Compared

ELIZABETH W ROCKSTRAW and M J BENT (*Journ Lab and Clin Med*, June, 1924, p 634) have compared the Wassermann, Sachs Georgi, and Kahn tests, using 1,022 serums and spinal fluids The Wassermann tests were put up in triplicate—one cholesterinized antigen with incubation in the water bath for one hour, and two simple alcoholic extracts of beef heart with incubation in the ice chest for four hours The Sachs Georgi test was performed according to Rice's technique, three antigens being used The Kahn precipitation test, which differs from many of the other precipitation tests in the greater volume of serum and the greater concentration of antigen employed, was carried out in a manner essentially similar to that originally described by Kahn, but on account of the large amount of serum required it was found possible to use only one cholesterinized and one alcoholic antigen with a serum and antigen control As regards results, it was found that the Kahn test with cholesterinized antigen was more sensitive than the Sachs Georgi or the Wassermann tests with plain alcoholic antigen, but slightly less sensitive than the Wassermann test with cholesterinized antigen In the case of untreated syphilis there was a close agreement (98 9 per cent) between the Kahn and the Wassermann reactions, but in the case of treated syphilis the agreement was less marked (86 5 per cent), the Kahn reaction frequently remaining positive when the Wassermann had disappeared Comparison of the Sachs Georgi with the Wassermann reaction showed that the former was often negative while the latter was strongly positive, and in the cases in which a positive Sachs Georgi was obtained with a negative Wassermann reaction there was generally no evidence clinically of syphilis In the case of spinal fluids the Kahn test proved to be of little value Summing up, it would appear that the Kahn test should provide a very suitable control for the Wassermann test, it is simple to perform and has the advantage of detecting persistent abnormality in serums which have become Wassermann negative

86 Streptococci in Heart Disease and Polyarthritis

R FREUND and E BERGER (*Deut med Woch*, May 16th, 1924, p 625) confirm the findings of Schottmuller as to the etiological connexion between the *Streptococcus viridans* and endocarditis lenta Using fluid culture media, as advocated by Petruschky, Poynton, and Paine, the authors have conducted bacteriological examinations of the blood of 113 patients, who were divided into two groups, the first group being represented by such diseases as endocarditis lenta, other forms of endocarditis, rheumatic polyarthritis, and sepsis The second group included a great variety of diseases such as tuberculosis, malaria, malignant disease, and neurasthenia In every one of the 19 cases of endocarditis lenta they found streptococci, which, in as many as 16 cases, were identified as "green" streptococci In the remaining 3 cases they were haemolytic as well as "green" Among the 18 cases of acute endocarditis there was only one in which the bacteriological examination was negative, in 14 "green" streptococci, and in 3 haemolytic "green" streptococci, were found Among the 23 cases of rheumatic polyarthritis there were 14, and among the 10 cases of sepsis there were 8, in which "green" streptococci were found in the blood In the second group of mixed cases the bacteriological examination of the blood was almost invariably negative, but there were 2 cases of scarlatina, 2 of tuberculosis, and one each of erysipelas and cholangitis, in which "green" streptococci were found When they were haemolytic they proved to be pathogenic to mice

87 Effect of Insulin on the Respiratory Exchange of Normal Animals

B R DICKSON, G S LADIE, J J R MACLEOD, and P R PEMBER (*Quart Journ Exper Physiol*, April, 1924, p 123) report on the effect produced by injections of insulin on the respiratory exchange of normal animals Lowering of the blood sugar to between 0 05 and 0,06 mg per cent stimulated the respiratory centre and increased muscular tone The onset of hyperpnoea and increased energy exchange occurred at varying intervals after injection, and at about the same time that the animals developed symptoms of hyperexcitability and restlessness Convulsions resembling those of asphyxia eventually supervened and the arterial blood became venous in colour This, with the marked increase in oxygen consumption, leads the authors to suggest that there is a development of abnormal metabolic products—the result of hypoglycaemia—which creates a demand for their oxidation, this demand is met by stimulation of the respiratory centre Logan and Olmstead are quoted as having shown that insulin fails to produce convulsions in decerebrated cats, and the conclusion is drawn that convulsions, with the preliminary muscular twitchings, must be due to stimulation, not of the lower motor neurones, but of the higher, located in the region of the cerebellum or the nuclei of the mesencephalon The possibility is noted, however, that the increased muscular activity may be due to actual hyperexcitability set up in the muscles, in virtue of which they respond excessively to the normal stimulus of the higher neurones Three possible causes are suggested for the rise in the respiratory quotient (1) a greater relative increase in carbohydrate metabolism, (2) a reduction of carbohydrates to fat like substances, and (3) an elimination of CO as the result of hyperpnoea caused by the development of acid substances or by other conditions Since the rise occurred before the hyperpnoea, the authors consider that there is no evidence in support of the last mentioned possibility In their opinion it can only be *accounted for by an increased combustion of glucose occurring* immediately after the injection of insulin, when the blood sugar is being rapidly lowered They indicate one possible explanation of the disappearance of glucose following insulin Proof exists that the injection of insulin into normal animals diminishes the glycogen stores, in contrast with its effect on diabetic animals where there is an increase This they interpret as indicating that the sugar withdrawn from the blood and the glycogen from the tissues become converted into some intermediate form of carbohydrate which does not possess the property of reduction, and is, consequently, not included in sugar estimations, nor, from its reaction to alkalis and alcohol, can it be included in those of glycogen The suggestion is made that insulin may produce similar intermediate and unrecognizable forms

88 Hypoglycaemia in Lesions of the Liver Parenchyma

W STEINBRINCK (*Klin Woch*, June 3rd, 1924, p 1029) draws attention to the hypoglycaemic reaction in lesions of the liver parenchyma Mann and Magath have shown *that in total or* partial extirpation of the liver the blood sugar diminishes and hypoglycaemic symptoms follow The same toxic symptoms occur in all severe lesions of the liver parenchyma ("glykoprive" intoxication of Fischler) In the early stage the symptoms of the hypoglycaemic condition can be checked by the administration of sugar though often only temporarily The author refers to the sinking of the blood sugar after chloroform narcosis, and the prophylactic and therapeutic value of sugar administration For some time in the Breslau Hospital intravenous sugar infusions have been employed in all severe lesions of the liver parenchyma, such as those caused by salvarsan, and in poisoning by the fungus *Agaricus bulbosus* Macleod has pointed out that when the blood sugar falls below 0 075 per cent the patient feels tired and anxious, tremors, chilliness, and sweating follow As the blood sugar diminishes further mental symptoms—delirium and coma—occur In animals the poisonous fungus *Agaricus bulbosus* produces almost the same symptoms and sugar reduction, which the author was able to check by the injection of sugar In all severe lesions of the liver large and repeated intravenous injections of sugar are to be recommended

89 Bacteriophage Inactivity in Gelatin Media

THE addition of certain antiseptics to the culture medium, while failing to inhibit the growth of the organism, interferes very seriously with the activity of the bacteriophage inoculated simultaneously, and this has been found true of certain colloids To investigate this phenomenon P BRUTSAERT (*C R Soc de biologie*, May 16th, 1924, p 1292) studied the effect of the addition of gelatin to a broth culture inoculated with a mixture of a bacteriophage and a highly susceptible organism Three strains of bacteriophage were chosen, labelled d'Herelle, Shiga, and typhoid Two drops of bacteriophage and one drop of the microbe were inoculated into a tube of 12 per cent gelatin, which was then incubated at 37° C After twenty four hours a portion of the culture was heated to 56° C to kill the bacteria and isolate the bacteriophage This was then inoculated into a fresh tube of gelatin, which was treated in the same manner, and so on for six times The last tube in the series was examined by the usual technique for the presence of the bacteriophage It was found that only in one case—that of the d'Herelle strain—had the bacteriophage survived, and even this, when tested on the organism with which it had been grown, proved to be inactive It appears, therefore, that in gelatin media the bacteriophage loses its activity, and may actually be destroyed

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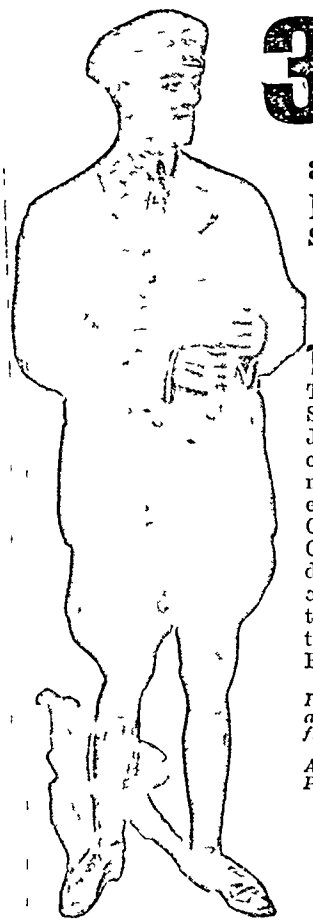
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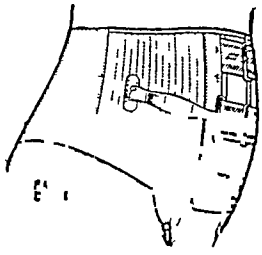
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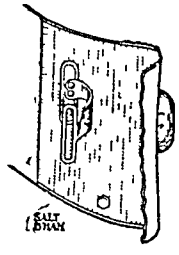
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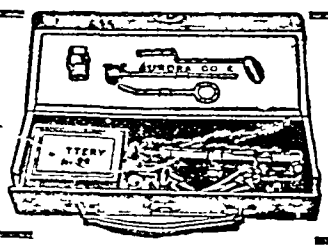
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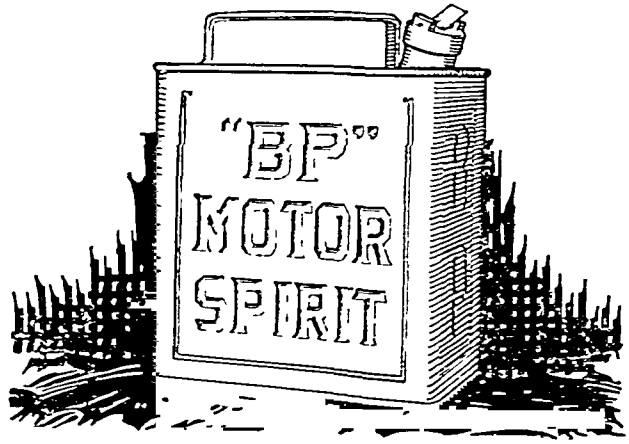
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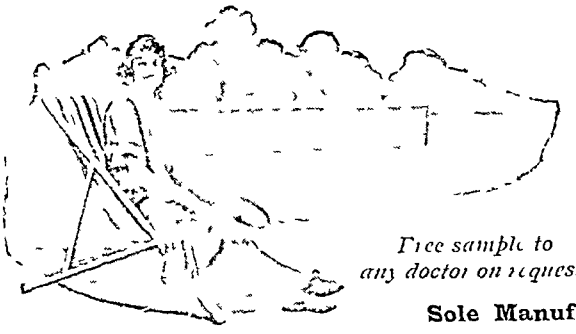
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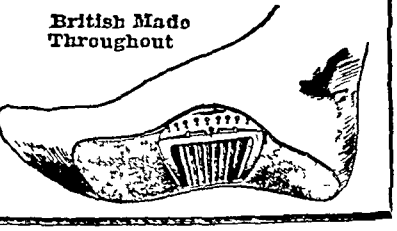
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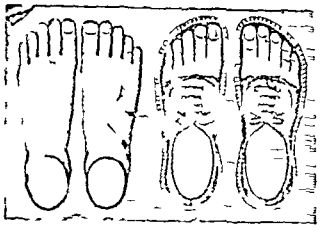
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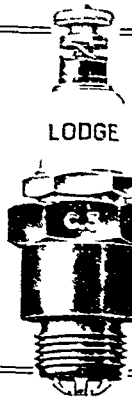
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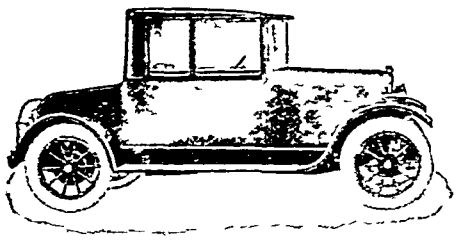
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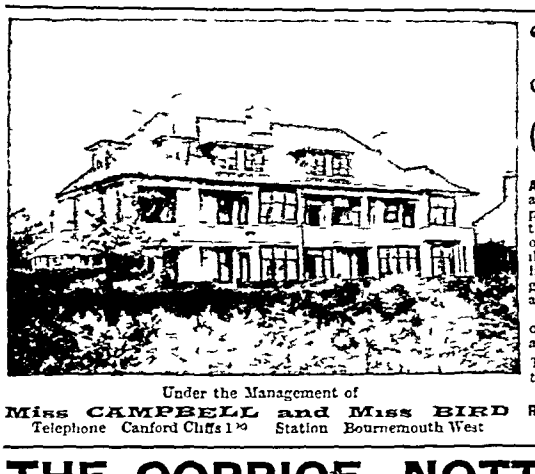
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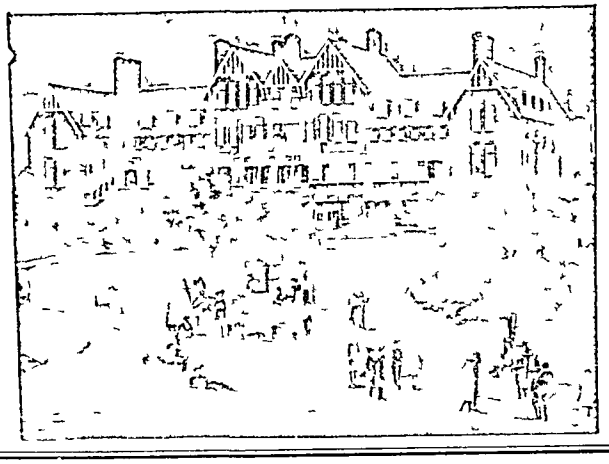
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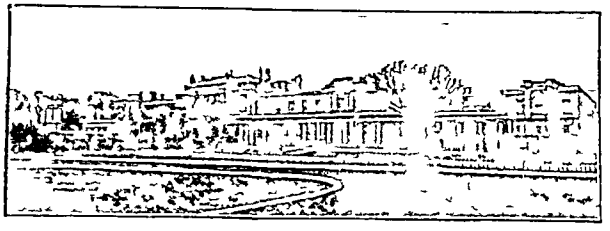
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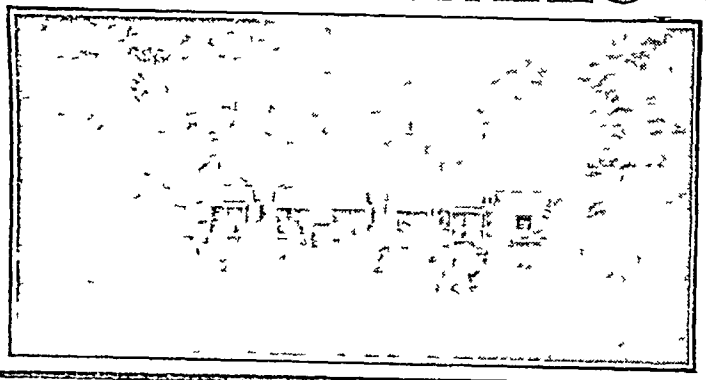
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July 1924.

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Endsleigh Gardens, N.W.1.

Next Session will commence 22nd September 1924.

For Prospectus and further particulars apply to The Secretary, London School of Tropical Medicine, Endsleigh Gardens, N.W.1, or to the Head Office, Seamen's Hospital, Greenwich, London, S.E.

Royal Southern Hospital, Liverpool

NEWBOLT MEMORIAL FUND

In compliance with a wish expressed by many of his [illegible]

Liverpool to perpetuate the memory of its distinguished Senior Surgeon the late Mr. G. P. NEWBOLT, C.B.E., F.R.C.S., who died on the twenty-sixth anniversary of his appointment.

As part of the Memorial the Organizing Committee has commissioned Mr. Frank Copnall to paint a portrait, which will be hung in the Committee Room of the Hospital. Photogravure copies will be available.

It is felt however that in recognition of his long and devoted service to the Hospital and the community at large it would be desired that a Memorial of greater magnitude should be found to his memory.

With this object in view the Committee hopes that a sufficient sum will be subscribed to permit of the carrying out of certain improvements which Mr. Newbolt had at heart at the time of his death, namely —

1. The extension of the X-Ray Department; and
2. The provision of additional accommodation for the Nursing Staff, both of which are most urgent necessities.

Donations to the Fund will be gladly received by any of the members of the Memorial Committee or by Mr. LYON H. MAXWELL, at the Hospital, who has kindly consented to act as Honorary Treasurer.

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The district has an area of 1,823 acres and contains a population of 16,000 (1921 census).

The appointment will be subject to the provisions of the Sanitary Officers Order, 1922, and to the sanction of the Minister of Health.

Applicants must be duly qualified, and are to be sent with copies of not more than three testimonials of recent date, so as to be received by the undersigned not later than Wednesday, August 20th, 1924.

Canvassing in any form will be a disqualification.

Council Offices, Town Hall, Yeadon, near Leeds, July 21st, 1924.

HERMAN WALLSLEY, Clerk.

Wanted by Aberdeen Graduate, an ASSISTANTSHIP, with view to ultimate partnership if suitable Country town practice preferred where good work done has had 2 years exp in large private and panel practice in large industrial city Abstnr keen Free Sept 1st —Address No 3922 B M J Office 429, Strand

Wanted —Assistantship, with or without view, by M B B Ch Irishman, aged 26 years Three years (English) Hosp exp, med and surg Strong, energ and liked by patients Good anæsthetist, fond of midwifery Ex testimls Mod capital —Add , No 3912 B M J , 429 Strand

Wanted —Assistant, with view to early Partnership South Coast Town (Sussex) Must be capable Surgeon prefer ably F R C S —Address full details to No 3913, British Medical Journal Office 429, Strand W C

Wanted —Young (Male) ASSISTANT British, for panel and private practice, near Manchester some experience neces sary —Address with testimonials and recent photo, No 3910 British Medical Journal Office, 429, Strand W C 2

Wanted for October 1st, ASSISTANTSHIP of 6 months, followed by partnership in London by young Glasgow graduate Has had two years experience in large mixed practice in West R ding Abstainer Keen —Address No 3813 B M J 429 Strand, W C 2

Wanted —Indoor Assistant (male) for Country PRACTICE State age experience etc —Address No 3919 British Medical Journal Office 429, Strand W C 2

Wanted, immediately.— Indoor ASSISTANT Salary £200 per annum Usual bond —Address No 3924 British Medical Journal Office 429 Strand W C 2

Wanted —Evening Work in London—all evenings free—by M D C M ex H S Aged 34 —Address No 3914 British Medical Journal Office 429 Strand, W C 2

Assistantship or Partnership wanted by Med cal woman aged 37 Ex H P London teaching hospital also experience child ren and tuberculo is Sanatorium considered — Address No 3918 British Medical Journal Office 429 Strand W C 2

Required for Company in the EAST, fully qualified DOCTOR must be C S Eng or Edin Salary £1 000 per um with free furnished quarters and free age Out and Home Three years agreement — rite with full particulars to Box D c o The Agent Advertising Service Ltd , 4 London Wall Buildings London E C 2

Secretary, (lady) 27, wishes POST in London, with Doctor or Dentist Six years experience and references —Address No 3928 British Medical Journal Office, 429 Strand W C .

Qualified Medical Officer, irreproachable character preferably un married, for two or three years appointment mines Near East, Working knowledge Arabic an advantage Free passage board and quarters provided State age experience essential particu lars and forward testimonials —Address No 3902 British Medical Journal Office 429 Strand

Doctors requiring Lady DISPENSERS should write to Mr J L Waldey Westminster College 112 St George s Road S E 1 (only address) No fees to Doctors. years experience Daughters and other relatives of medical men always in training

Dispenser, Lady, Hall Certificate desires POSITION Experienced excellent recent testimonials Doctor or institution preferred —Address No 3915 British Medical Journal Office 429 Strand, W C 2

Dispenser—Book-keeper — young lady desires post Good experience one post five years Neat quick Excellent testi monials —Address No 3929 British Medical Journal Office 429 Strand W C 2

Lady Dispensers supplied, qualified experienced and also trained in Bacteriological Laboratories of the LONDON COLLEGE OF PHARMACY FOR LADIES Pre para tion for examinations Blood sugar estimation Tech nique during Insulin treatment can be carried out by these Dispensers recently qualified from the College —Secretary, 7, Wellbourne Park Road W

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(Late of Arnold & Sons, London)
43, BEDFORD STREET, STRAND, W.C.2.
Telegraphic Address
"Positions, Westrand, London."
Telephone Regent 229

As Locum —An experienced Doctor who has had own Practice desires further engagements for September and October Terms 7 gns p w, London or country town Does some 10 locums annually Well recomd —Address, "Medicus, c/o Dr Bell, 43, Claremont Sq , N 1

Hospitality Locum.—Comfort- able house and garden in country town in Cotswolds offered Doctor (and family) in return for doing light duties Golf —Address, No 3917 British Medical Journal Office 429 Strand W C

Locum —Doctor, retired from own Practice desires to act as such for long or short period Disengaged after August 16th Fees by arrangement according to work from 5 gns per week — Dr Baker c/o Dr Coode, Carlton House, Stroud Glos

Locum wanted by woman M B ; free August and September hospitality and travelling expenses accepted —Address, No 3916 British Medical Journal Office 429, Strand W C 2

Locum or Assistant Work wanted for August by M R C S , L R C P (woman), qualified 1921 Experienced anæsthetics Testimonials if desired —Address No 3921 British Medical Journal Office, 429 Strand W C 2

Light Holiday Locum, seaside or London wanted for week or two during September Small fee for pleasant change from busy Practice —Address No 3923 British Medical Journal Office 429, Strand, W C 2

Woman, M.B , Ch B , D P H. (Edin) desires LOCUMS for August and September Good testimonials — Address No 3927, British Medical Journal Office, 429, Strand, W C 2

FOR LOCUM TENENS APPLY TO Mr. PERCIVAL TURNER.
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4, ADAM STREET, STRAND, LONDON, W.C.2
Teleg "Epsomian, London" Phone Gerrard 399

Wanted —Medical Officer- ship to Sanatorium, public or private long temporary or permanent Sanatorium and Clinic experience Ex M O H , D P H , Temporary Major, D A Director of Hygiene —Address, No 3920, Brit Med Journal Office, 429, Strand W C 2

Wanted —Partnership with or without view to Succession South or East Coast Country town or Seaside preferred Preliminary Assistantship entertained — Address No 3901 British Medical Journal Office, 429, Strand W C 2

Cheshire —Half partnership in good Practice Pretty district Nice house garden, garage rent £54 Receipts £4 000, including panel £1 000 Price 1½ years purchase part down balance as arranged —Manchester Med & Scholastic Association, Ltd , 88 King St

Partner wanted to join a firm of Surgeons established for 25 years Good mixed class practice near London Small share to dispose of, with suitable option for increase of equality in a reasonable time House immediately obtainable Audited accounts and guarantee of share given —Address No 3908 British Medical Journal Office 429 Strand W C 2

Partnership.—Senior Partner retiring One third share in a well-estab middle and working cla s practice in a plea ant open suburb of London 8th of the Thames Average receipts £5 300 Good appointments Panel 2 600 Fees from 3/6 Confinements about 100, fees from 3 to 5 gns Good house available rent £45 on lea e Good schools Young Scotsman pref —Add No 3907 Brit Med Jour. Office 429 Strand W C

Partnership is offered in good sound General and Panel practice Est 25 years, in Northern Cathedral City Average cash receipts £1 500 One third or half share at first with view to succession Two years purchase Modern house specially built for Vendor available to rent or purchase —Address, No 3905 British Medical Journal Office 429 Strand, W C 2

Partnership for sale, early in 1925 Pleasant outskirts Yorkshire city £1 450, Premium £2 000, part deferred House on Lease Panel about 2,000 —Address No 3903 British Medical Journal Office, 429, Strand W C 2

Partnership offered in West Country Spa Practice Receipts £1 700 one third—one half share beginning House on lease Excellent prospects for keen energetic man Mixed panel and private —Address, No 3909 Brit Med Jour. Office 429 Strand W C 2

M D , and Wife, M B , Ch.B , seek PARTNERSHIP, or to take over G P Gentleman ex H S H P (General) also Ear Nose and Throat Chest Gynæcology Anæsthetics Both Scotch, under 30 Highest testimonials and refer ences (London and Provincial hospitals) —Address No 3925 Brit Med Jour Office 429 Strand W C

M.D Lond , M R C P Lond., requires first class PARTNERSHIP or PRACTICE in West End or City Aged 28 Avail able at once —Address No 3906 British Medical Journal Office 429 Strand, W C 2

Southern Seaport Town —In an old established practice a PARTNERSHIP with early succession agreed upon, for sale Small panel To suitable party Premium £400 —Ad dress No 3930, British Medical Journal Office, 429, Strand, W C 2

Wanted, by well qualified and experienced practitioner, a seaside PRACTICE, preferably South Coast Income £800/£1 200 p a Can pay £1 000 down and balance by arrangement Full details (in confi dence) to Mr W H Grant 50, Wigmore St , W 1 No charge unless sale effected

Wanted to purchase, large PRACTICE in seaside resort for prefer ence, with large panel and private work realizing in all about £4 000 Give full particulars in con fidence —Address No 3926 British Medical Journal Office 429 Strand W C 2

Wanted —Middle and work ing class PRACTICE yielding from £1,000 to £3,000 a year in London or any good town Partnership entertained —Apply Peacock & Hadley 19 Craven Street, Strand W C 2 No charge unless sale effected

Wanted —General Practice, yielding from £800 to £1 500 a year, in any pleasant residential district House on lease Apply, Peacock & Hadley, 19 Craven Street, Strand, W C 2 No charge unless sale effected

Wanted by F R C.S , aged 30, a PRACTICE or PARTNERSHIP in town in the S or Midlands, with scope for surgery Income about £1 000 Now free, and can pay cash —F c/o Blundell & Co , 22, Craven Street, Strand, W C 2

Wanted. — F Prince, 32, Charing Cross, London S W 1 always having clients desirous of PURCHASING PRAC TICES or PARTNERSHIPS in Town & Country, prepared to pay good premiums can usually effect a quick sale Terms, without obligation, post free

Cheshire —For Disposal. General PRACTICE in good residential district Average receipts £1,400 including Panel £650 Detached house garage garden Lease of house, with option to purchase —Lawson, Corrock & Hart, Solicitors 18 Tib Lane, Manchester

Dental Practice in S W. Suburb (Artisan Practice) Established 14 years Residence with 5 bedrooms etc Price of House and Practice £1,200 —Full particulars, Hilbery Boston & Co , 49, Leadenhall St E C 3

Easily worked Practice for Sale in industrial part of N W Lancs Returns £1 600 Known to and recommended by us —L M N Hough Hoseason & Co , Ltd , Manufacturing Chemists Manchester

For Disposal —A good Prac- tice is not always to be had directly but Mr Percival Turner can generally offer applicants something suitable Nearly all the best Practices are sold by him without being advertised —Full information free on application to 4 Adam St W C 2

Midlands —Pleasant County

Gloucestershire — Old-estab
In Industrial and Mining PRACTICE Average receipts £750 Panel 0 Cottage Hospital Hou e ren £45 Good garden Introduction — LEE & MARTIN Ltd

Dorsetshire — Old-established
Practice PARTNERSHIP with preliminary As i tantship and ultimate Succession Receipts £1 112 Panel 1 4 0 Scope —Further particulars from LEE & MARTIN Ltd

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Town and Country PRACTICE in a County Town. Receipts £1,574 Appointments. Panel nearly 400 Good fees. Expen es small Hos pital (20 beds) Purcha er would be appointed Physician or Surgeon Good house and garden Pre mium for practice £2,250 —LEE & MARTIN Ltd

North of England —Old-
established Country Town PRACTICE Average receipts £1 460 Good panel. Expen es small. Good house garden tennis lawn and orchard.—LEE & MARTIN Ltd

Staffordshire — Old-estab
Town and Country PRACTICE.—Receip s £1,190 Panel over 500 Appointments Scope Freehold house on leas amp e accommodation good garden —LEE & MARTIN Ltd. 71 Temp e Pow Birmingham

Manchester Suburb —Old-
established Pleasantly situated corner house (peculiarly built) garage &c £90 on lease Receip s £1 550 Great scope for increa e 14 years purchase part deferred.—MANCHESTER MED & SCHOLASTIC ASSOCIATION LTD., 58 King Street

North of England —Town
PRACTICE [illegible] ly increa ed ne (10 rooms t Premium succession —

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tunity p esents itself to a medical man (retired or o herwise) to secure profitable PRAC TICE increasing in residential nur ing home in South of England Moderate investment secured on the freehold property —Apply No 7563 c o PERCIVAL TURNER 4 5 Adam St Strand W C 2

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without expert a. l tance With 40 years ex perience Mr PERCIVAL TURNER can advise in all cases. Terms free on application to 4 Adam Street, Strand W C 2 Telephone Gerrard 399 Tele grams Epsomian London

Western or North Western
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Part time CONSULTING ROOM in a per fectly appointed hou e Al o large light Basement ROOM suitable for laboratory or work hop — Address No 3931, BRITISH MEDICAL JOURNAL Office 429 Strand W C 2

Well-furnished Flat to Let
(Portland Place) 1 recpt. 1 bed kitchen bathroom electric light and central heating Suit Medical man or married couple Phone to view Hampstead 7 [illegible] —MACKENZIE, 211 High Road Brondesbury N W

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LOGICAL INCUBATOR for Pathological Laboratory catalogue price £34 12s In excellent order as new except gas fitting mi sing Size outside measurement 20" x 15 In side measure ment 17" x 12" One shelf Also steam s erilizer 6 x 18 Offers invited —Apply Honorary Secre tary Bath Eye Infirmary 2 Belvedere Bath.

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£5 5s square polished ASH TENNIS STANDARDS complete with heavy ground plates powerful fixing screws and brass worm gear Ne winder 45/ Also regulation size heavy water proof NET with steel headline 18/- Both guaranteed perfect condition and never used Approval willingly on receipt of post dated cheque — GILLARD Darley Street Bradford

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never used Flat Weldless tubular steel any position very rigid Leg stirrups Cost £14 accept £10 Hegar's Dilators —12 set 1-14 NP Quite new 30 —Address No 3911 BRITISH MEDICAL JOURNAL Office 429 Strand, W C 2

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Cheltenham —For Sale,
substantially built freehold family RESI DENCE about 5 minutes walk of three railway [illegible] and [illegible] Kitchen dress ocked Good le for Doctor or Mental Home —WYATT Essex Place Cheltenham

For Sale —A 15th century
House situated in a beautiful old world Cotswold Hills village pop 400 2 sitting rooms 4 bedrooms, kitchen large attic garden paddock barn etc. Ideal place for retired medical man Trout stream Nearest Docto 4½ miles —Dighton The Nappings Charlton King Cheltenham

Leyton —Freehold House
for Sale in the main road Suitable position for a professional man. Usual office 2 reception rooms 4 bedroom bath 2 w c s Price £700 with vacant possession — Apply 669 Lea Bridge Road Leyton E 10

Oxford —Freehold Residence
for sale fine opening for Medical Man in [illegible] grow arter first Vaca Appl

To Specialists and others —
Excellent SUITE of three Large rooms on ground floor in Brook Street will be to let vacant Ideal position for Consultant. Rent (inclusive) £500 —Apply immediately WAY & WALLER 7 Hanover Square W

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Birkenhead Education
COMMITTEE
ASSISTANT MEDICAL OFFICER.
Application [illegible] of
Assistant Me [illegible] a
The duties a
with experience and must hold the Diploma in Public Health
The post will carry with it the designation of *Assistant School Medical Office and Assistant Medical Officer of Health.*
[illegible] bers
[illegible] be
[illegible] s of
application may be obtained from Dr Mo ley Mathieson Medical Office 9 Hamilton Square Birkenhead and applications must be delivered to me not later than August 2nd
Town Hall ROBERT T JONES
Birkenhead. Director of Education
August, 1924

County Council of Durham
LOCUM with special experience in Tuberculosis required to act as ASSISTANT RESIDENT MEDICAL OFFICER, a HOLYWOOD HALL SANATORIUM Wolsingham for a period of at least three months Salary at the rate of £40 per month, with board residence and laundry in addition
Applications with copies of testimonials should be sent to the County Medical Officer of Health Shire Hall Durham not later than Friday, 8th August, 1924

Leeds Public Dispensary
Wanted SENIOR RESIDENT MEDICAL OFFICER (male) Must have held posts of Resident Physician and Resident Surgeon Salary £200 per annum with board residence, and laundry Separate sitting room Applications with copies of three recent testimonials, to be addressed to the Secretary of the Faculty Public Dispensary North Street, Leeds

Guy's Hospital
Applications are invited for the post of CLINICAL ASSISTANT in the Ophthalmic Department Attendance either on Tuesday and Friday afternoons or Tuesday and Thursday evenings Honorarium £100 per annum Duties to commence at once
Applications should be sent to the Treasurer Superintendents Office Guy's Hospital, on or before Wednesday August 6th

Wanted —Resident Medical
OFFICER (male) for [illegible] Asylum, Hereford in Shropshire £500 per annum, house [illegible] [illegible] [illegible]

APPOINTMENTS—Important Notice.

(a) British Islands.

Medical Practitioners are requested not to apply for any appointment referred to in the following table without having first communicated with the Medical Secretary of the British Medical Association, 429, Strand, London, W C 2

Town or District	Town or District	Town or District
CONTRACT PRACTICE.		
ENGLAND.	**WALES** *(continued)*	**PUBLIC HEALTH** *(continued)*
CANNOCK CHASE AND DISTRICT *(Clubs and Friendly Societies Appointments)*	OGMORE VALLEY, GLAMORGAN *(Wyndham Colliery Medical Aid Society) (Workmen's Medical Scheme)*	LINCOLN CITY EDUCATION AUTHORITY *(Woman Assistant School Medical Officer)*
MIDDLESBOROUGH *(Medical Aid Associations or Workmen's Clubs)*	TONDU & ABERKENFIG, GLAMORGAN *(Workmen's Medical Scheme.)*	MIDDLESBROUGH EDUCATION COMMITTEE *(Assistant School Medical Officer)*
SOUTH BANK, & ESTON *(Medical Aid Associations or Workmen's Clubs)*	**PUBLIC HEALTH.**	MIDLOTHIAN EDUCATION AUTHORITY *(School Medical Officer)*
WALES.	ABERDEENSHIRE EDUCATION AUTHORITY *(Assistant School Medical Officer)*	NORTHUMBERLAND COUNTY COUNCIL *(Woman Assistant Medical Officer of Health)*
ABERTRIDWR, GLAMORGAN *Windsor Colliery (Medical Scheme)*	ARGYLLSHIRE EDUCATION AUTHORITY *(Executive School Medical Officer)*	NOTTINGHAMSHIRE *(County Medical Officer of Health)*
EBBW VALE, MON *(Workmen's Medical Society)*	BARNSLEY COUNTY BOROUGH *(Assistant Medical Officer of Health and Assistant School Medical Officer)*	SHEFFIELD EDUCATION COMMITTEE *(Assistant School Medical Officer)*
GILFACH GOCH, GLAMORGAN *(Workmen's Medical Scheme)*	FIFE EDUCATION AUTHORITY *(Assistant School Medical Officer)*	SOUTHWARK METROPOLITAN BOROUGH *(Tuberculosis Officer)*
LLWYNYPIA, CLYDACH VALE, PENYGRAIG GLAMORGAN *(Workmen's Medical Scheme)*	HUDDERSFIELD COUNTY BOROUGH *(Woman Assistant Medical Officer of Health)*	STOKE-ON-TRENT EDUCATION COMMITTEE *(Assistant School Medical Officer)*
MARDY, GLAMORGAN *(Workmen's Medical Scheme)*	HUNTINGDON ADMINISTRATIVE COUNTY *(Assistant County Medical Officer and Assistant School Medical Officer)*	YORKSHIRE NORTH RIDING COUNTY COUNCIL *(Assistant School Medical Officer)*
OAKDALE, MON *(Medical Officer for Medical Aid Association)*		

(b) Colonial Medical Service.

WINDWARD ISLANDS MEDICAL SERVICE (Grenada with Carriacou St Vincent and St Lucia)

(c) Overseas Appointments.

Medical Practitioners are requested not to apply to any appointment referred to in the following table without having first communicated with the Honorary Secretary of the Division or Branch named in the second column or with the Medical Secretary of the British Medical Association, 429, Strand, London, W C 2

Town or District	Hon Sec of Division or Branch	Town or District	Hon Sec of Division or Branch	Town or District	Hon Sec of Division or Branch
NEW SOUTH WALES *(All Friendly Society Appointments)*	Dr R H TODD (Hon Sec New South Wales Branch) B M A Building 30 34 Elizabeth Street Sydney N S W	QUEENSLAND *(Brisbane Associated Friendly Societies' Institute.)*	Dr R MARSHALL ALLAN (Hon Sec Queensland Branch), Adelaide Street, Brisbane	VICTORIA *(All Institute or Medical Dispensaries)*	Dr FRANK DAVIES (Hon Sec Victorian Branch) Medical Society Hall E Melbourne Victoria
				WESTERN AUSTRALIA *(Contract and Lodge Practices)*	Hon Sec, Western Australian Branch No 6 Bank of New South Wales Chambers St Georges Terrace Perth

Address 429 Strand W C 2
July 30th 1924

By order of the Council of the British Medical Association
ALFRED COX, Medical Secretary

Nottinghamshire County Council. Ransom Sanatorium

APPOINTMENT OF ASSISTANT RESIDENT MEDICAL OFFICER

The Nottinghamshire County Council invite applications from duly qualified and registered Medical Practitioner for the appointment of Assistan Medical Officer at the County Sanatorium Sherwood Forest (130 beds)

The salary attaching to the position will be £375 per annum and in addition board residence, and laundry and the appointment will be terminable on three months notice

The person appointed will be required to reside at the Sanatorium and will act under the direction of the County Medical Officer and Resident Medical Superintendent and perform such duties as may be prescribed Experience in the treatment of Surgical Tuberculosis and X ray work will be considered an advantage

The successful candidate will also be required to assist in the Medical Work at one or more of the County Tuberculosis Dispensaries

Application stating age qualifications and experience accompanied by copies of not more than three recent testimonials must reach me not later than Saturday August 16th 1924

County House Shire Hall Nottingham. July 17th 1924

TWEEDALE MEARS Clerk of the County Council

Addenbrooke's Hospital, Cambridge

Applications are invited for the post of HOUSE SURGEON (Male) The appointment will be for a period of six months from September 1st 1924, but is terminable at an earlier date by one months written notice on either side Salary £130 per annum with board, residence and laundry Candidates who must [illegible] forward their [illegible] cations etc to four recent testimonials to the undersigned on or before Tuesday, August 12th 1924

W H HEAD Secretary Superintendent

Jersey General Hospital and Poor Law Infirmary

RESIDENT MEDICAL OFFICER

Applications are invited Applicants must be duly Medicine and Surgery S with board residence in t

The appointment is for one year and is renewable Applications with testimonials must be sent in on or before Saturday, August 9th, 1924 addressed to the undersigned from whom further particulars may be obtained

G H de la HAYE Secretary

The Gloucestershire Royal Infirmary & Eye Institution Gloucester (110 Beds)

HOUSE SURGEON SENIOR (Male) fully qualified required salary £175 per annum with board residence and laundry Candidates who have had previous experience as Resident Medical Officer preferred

Applications stating [illegible] and nationality with copies recent testimonials to be not later than Thursday candidate will be required to enter upon his duties on August 25th

G HURFORD Secretary
Gloucester July 24th 1924

Royal South Hants and Southampton Hospital Fanshawe Street Southampton

Required a JUNIOR HOUSE SURGEON (Male and unmarried) Candidate must be doubly qualified and be willing to engage for six months Salary £150 per annum with rooms, board and laundry Duties to be taken up on September 1st 1924

Applications stating age to be sent to the undersigned with printed copies of testimonials (limited to 3) not later than Wednesday August 13th 1924

T A FISHER HALL Secretary
August 1st 1924

Pontypridd Union

LLWYNYPIA HOSPITAL.

APPOINTMENT OF SUPERINTENDENT MEDICAL OFFICER

The Guardians invite applications from duly qualified Medical Practitioners (male) for the [illegible] has at which is [illegible] rising by [illegible] house in the institution grounds together with coal and light.

The appointment will be subject to the provisions of the Poor Law Officers Superannuation Act 1896, for which purpose the value of the emolument of the office has been fixed by the Guardians at £70 per annum.

[illegible] to candidates who have [illegible] to devote [illegible]ce, which [illegible]gical con[illegible]ion of the Guardians and he will be debarred from private practice. He will be responsible for the training of the Nurses in accordance with the requirements of the General Nursing Council and the carrying out generally of the Orders of the Ministry. Among his earliest duties will be that of advising the Guardians as to the extension and development of the present Hospital. He will further be required to act as referee in doubtful cases where [illegible] relief [illegible] applicants who have are graduates of a

Applications stating age experience and qualification accompanied by copies of three recentes timonials and stating date when applicant (if appointed) can take up his duties must be received by me no later than Saturday the 16th day of August 1924.

Canvassing will be considered a disqualification.

Union Offices, Pontypridd. WILLIAM SPICKETT, Clerk.

July 12th, 1924.

County Borough of West Ham

MEDICAL OFFICER OF HEALTH AND CHIEF SCHOOL MEDICAL OFFICER

Applications are invited from duly qualified Medical Men for the appointment of Medical Officer of Health and Chief School Medical Officer at an inclusive salary of £1,500 per annum.

Applicants must not be more than 45 years of age and be fully qualified to carry out and perform all the duties of Medical Officer of Health and Chief School Medical Officer including duties as Administrative Officer under the Mental Deficiency Act 1913.

The appointment will be subject to three months' notice on either side and the gentleman appointed will be required to devote the whole of his time to the duties of the office.

The appointment will be subject to the provisions of the Local Government and other Officers' Superannuation Act 1922, and to a medical examination as required by the Council for the purposes of that Act and the statutory contributions to the Superannuation Fund under the Act will be deducted from the salary.

APPLICATIONS on the form provided (which will be forwarded by the undersigned on receipt of a stamped addressed foolscap envelope) must reach me not later than Saturday the 30th August 1924.

Applicants must be members of a recognized Medical organization.

Canvassing members of the Council is prohibited and will disqualify.

Town Hall, West Ham, E.15. By Order GEORGE E. HILLEARY, Town Clerk.

July 28th 1924.

City of Norwich

Wanted TEMPORARY ASSISTANT SCHOOL MEDICAL OFFICER in the Public Health Department. Should possess a D.P.H. The duties chiefly will be those connected with the Medical Inspection of School Children. Salary £11 11s. per week. The duties will commence on the 8th of September and are estimated to occupy 14 weeks.

Other things equal preference will be given to candidates who have held appointments in Children's or General Hospital.

Applications stating age qualifications and experience to reach Dr. PATTIN, S.M.O., Church Plain House, Norwich on or before August 9th.

Wanted—Medical Officer

and PUBLIC VACCINATOR for the Parish of SHAPINSAY, Orkney, to take up duties on September 1st 1924. Salary £275 per annum with free house, parish and panel practice. Applications along with copies of testimonials to be lodged with D. L. KEMP, Clerk, Shapinsay Parish Council.

Staffordshire, Wolverhampton and Dudley Joint Committee for Tuberculosis

ASSISTANT RESIDENT MEDICAL OFFICER

Applications are invited from Medical Men not more than 30 years of age with special experience in the treatment of Pulmonary Tuberculosis for the post of Assistant Resident Medical Officer at Prestwood Sanatorium for men (1 0 beds) situated 9 miles south of Wolverhampton.

The salary will be £400 per annum rising by annual increments of £25 to £450 including quarters for single man only with full board and laundry.

Forms of application together with any other information desired may be obtained from the undersigned.

Applications together with three recent testimonials must be received no later than Thursday August 14th 1924.

Canvassing either directly or indirectly will be a disqualification.

County Building, Stafford. EUSTACE JOY, Clerk to the Joint Committee.

July 29th 1924.

City of London Hospital for Diseases of the Heart and Lungs

Victoria Park, E.

(Buses, tram or tram. Cambridge Heath, L.N.E.P.)

The Committee of Management are desirous of appointing a RADIOLOGIST (Senior) to attend at least once weekly.

An honorarium is attached to the appointment.

Applications accompanied by copies of testimonials are invited to be sent to the Secretary not later than the first post Monday, August 18th 1924.

GEORGE WATTS, Secretary.

City of London Hospital for Diseases of the Heart & Lungs

Victoria Park, E.2.

(Buses, tram, & rail Cambridge Heath, L.N.E. Bly.)

Applications for the post of HOUSE PHYSICIAN (Male) with copies of recent testimonials are invited to be sent to the undersigned by Monday August 11th 1924.

The appointment will be for six months from August 15th 1924.

Salary at the rate of £125 per annum with board residence and laundry provided.

GEORGE WATTS, Secretary.

The Samaritan Free Hospital

FOR WOMEN,

Marylebone Road, London, N.W.1.

Applications are invited for the post of HOUSE SURGEON from September 20th 1924 to February 20th 1925. Salary at the rate of £100 per annum. Previous experience as House Surgeon essential.

Applications accompanied by copies of testimonials must reach the Secretary at the Hospital on or before August 30th 1924.

G. H. HAWKINS, Secretary.

The Miller General Hospital

FOR SOUTH EAST LONDON,

Greenwich Road, London, S.E.10.

SENIOR RESIDENT MEDICAL OFFICER required (unmarried). Salary £250 per annum with board, lodging and laundry.

Applications stating age, nationality, qualifications and experience, accompanied by copies of not more than three recent testimonials to be sent to the Secretary. There are three other Residents.

Applications to be received not later than Monday, August 11th, next.

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12 Victoria St., NOTTINGHAM. Tele. 5334 5.

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PARTNERSHIP for disposal with view to succession. Midland town, at least £1,000 cash on completion.

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W. J. HICKS, *Secretary*

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FOR DISPOSAL

Yorks.—An old-established General PRACTICE near coast. Receipts £1,500. Panel 60. Fees 26 upwards. Excellent house, 5 bedrooms, etc. ¼ acre of garden. Pen. £30. Premium 1½ years' purchase.—Folio 624.

London, N.—A General PRACTICE situated in a thickly populated district. Receipts £2,500, panel 2 0 ample scope. Vendor retiring. Charming house, etc. Premium 1½ year's purchase.—Folio 670.

London — City Practice Receipts £1,250, including appt. £500. Panel 10. Fees 3 6 upwards. Vendor retiring. Ample scope. Nice house in central position at rental. Premium £2,000.—Folio 667.

Norfolk.—A General PRACTICE, situated in a country district. Receipts £1,600. Panel nearly 600. Good fees. Nice house, with excellent garden, etc. Pen. £35 per annum. Premium £2,500.—Folio 600.

Glam.—General Practice in thickly populated district on Coast. Receipts £1,700. Fees 3 upwards. Panel 900. Commercial scope. House, containing 4 bedrooms, etc. rent £50 p.a. Premium £1,500.—Folio 887.

Derbyshire.—A General

Premium £1,000.—Folio 653.

Midlands.—General Practice [illegible]tuated in small Country Town. Receipts £1,200. Panel 500. Fees 3 6 upwards. Excellent house containing 6 bedrooms, &c. Premium 1½ years purchase.—Folio 617.

Purchasers stating their requirements can have details of other Practices not advertised.

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South Coast — About £450 p a Panel 200 Visiting Fees 3/6 upwards Few midwifery 63/- Small house larger can be obtained if desired —Apply No 7577

Home County — Unopposed Nearly £1 200 Old established PRACTICE Panel about 800 Appointments, &c, £170 Good fees Detached house, garage, &c, £70 p a —Apply No 7575

London, N —About £450 p a Small non residential PRACTICE Panel about 2 0 Fees f r visits 2/6 to 7 6 Good premises on lease No appointments or midwifery —Apply, No 7574

London, S E —Over £1,450 per annum PARTNERSHIP with succession, within 12 months Panel about 1 600 Good fees Very few midwifery cases Excellent house, with good garden, to rent —Apply No 7572

Gloucestershire —About £750 p a Country town Old established Panel 60 Fees 3/6 up Appointments about £100 p a Good detached house with large garden, garage etc To rent Premium moderate —Apply No 7566

Near Manchester — Nearly £2 000 p a Panel worth about £600 p a Moderate house with separate surgery to rent Premium 1½ years purchase easy terms Good schools near —Apply No 7565

Eastern County. Partnership About £2 200 p a Panel about 2 000 and other appointments Fees 3/6 p a One-third share for disposal with succession in about 3 years Apply No 7564

London, W —About £1,100 a year Non dispensing Very small panel Fees 5 upwards Very few midwifery cases Corner house to rent —Apply No 7561

London, S W —Partnership and succession £2 000 a year Half share for disposal immediately Panel 1 800 Old established Good fees Excellent house and large garden From 2½ years purchase —Apply No 7560

Yorkshire —About £1,700 a year Panel 1 12 Visits 2/6 to 10 6 medicine extra About 30 midwifery cases up to £5 5 0 Appointments £60 Good house with garden and garage for sale or would let on lease — Apply No 7559

Death Vacancy —£1,000 a year Favourite Riverside Resort Very old established Same hands over 30 years Small and select panel Night work mostly refused Good house with garage and garden on lease Excellent opportunity for prompt purchaser Personally known and recommended.—Apply, No 7556

Home County — Old-established Country PRACTICE of nearly £1 600 a year Panel 1 40 Other appointments £130 Fees 3 6 to 10 6 Excellent house with half an acre of ground tennis lawn etc —Apply No 7554

Lancs — University Town About £700 p a Panel over 700 No midwifery ample scope Good house and garden Most price for Practice and house - Apply No 7553

North-West Coast — Over £3 000 p a For disposal old established PRACTICE in favourite Seaside Resort Visiting fees 3 6 5 10 6 and upwards About 30-40 midwifery cases p a Detached house 2 reception 5 bed dressing, servants rooms etc Consulting and waiting rooms Garage and garden Rent £75 on lease Moderate premium part by instalments — Apply No 7544

Cheshire —Nearly £4,000 a year Old established Practice HALF SHARE for Sale at 1½ years purchase Panel about 1 400 Appointments £45 Good fees Good house and garden to rent —Apply No 7536

South County —Over £1,000 p a Panel 610 other appointments £120 Practically unopposed Excellent house electric light etc Good garden All sport —Apply No 7535

Midland Town — About £1 100 a year Old established PRACTICE Panel 750 Appointment £40 Very little midwifery Large house and garden Premium £1 600, including drugs etc —Apply No 7534

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LONDON N E —Old established G P Nice basement house Income £950 p a Panel 380 Scope for midwifery and panel Premium £3 000, to include house

MIDLANDS —Old established G P Good house to rent situated in busy district Income over £1,700 p a Panel over 2 000 Premium 1½ years purchase

YORKS (W R) —Old established G P Nice house Panel nearly 1 300 2 appointments Premium £3 900 to include house (part can remain)

YORKS (E R) — Busy Industrial PRACTICE Panel over 1,100 Income £2 050 p a Scope for Surgery Premium 1½ years purchase

LANCS —Old established G P, situated in manufacturing town Income nearly £800 Small panel (scope) Fees 3/ up D D house to rent or sell Premium for Practice £800 (to include Drugs etc)

WEST COUNTRY —Practically unopposed old established small country town G P Income over £1,400 p a Panel 1,000 Two appointments Excellent D D detached house 5 bed rooms, 2 dressing Modern drainage 21 years lease Rent £60 p a Premium £2,200

KENT —Old established country G P Panel 800 Two appointments Income £1 600 Excellent house Premium, to include house, £4 650 (Mortgage can be arranged)

MANCHESTER — NUCLEUS, General Practice situated in busy quarter Small house (5 bed rooms) Panel and cash Income over £600 per annum Premium £1,450 to include house

YORKS —Old established country town Panel 1 00 Income £2 500 three appointments Detached house with garden and garage, to let on lease Premium £3 500

Purchasers stating their requirements will be sent particulars of other suitable Practices and Partnerships for sale free of charge

Please address all communications to the Manager, Mr W H GRANT, Medical Transfer and Insurance Department

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Partnership —Third Share in Cash PRACTICE in S W London Receipts £2 680 Panel 2,000 Appointments £800 House available to rent

London, S W —Middle class PRACTICE of £700 in nice residential district Small panel Scope for increase Nice freehold house can be bought

Death Vacancy — Middle class PRACTICE in Residential District within 10 miles Receipts about £1 600 Panel 600 Fees 3/6 up Very nice house specially built Freehold and practice can be bought cheaply

Surgeon under 35, required as PARTNER in first-class Practice in country town with cottage hospital Quarter share of £6 000 House can be rented

Yorks —Middle and working class PRACTICE in fine town Receipts £1 750 Panel 1 800 For Sale owing to illness Fine house can be rented

Near Peak District — Old established PRACTICE of about £1 000 held by Vendor for about 40 years in beautiful district Panel 500 Appointments £100 Excellent house with large garden, rent £75 Premium 1½ years purchase

Midlands —Practice of £1,800 in prosperous town Panel 2,000 Appointments £110 Great scope for anyone attending more to the practice House with garage Rent £50 on lease

Liverpool —Practice of £1,400 in suburb Appointments £110 Panel 1 100 Opposition weak Rent £50

Colonial Appointment Salary £800

Lincs —Unopposed Practice of £900 Panel and appointments £500 Very good house with two acres, can be rented Station in the place

S W County — Old-established PRACTICE of £750 in small town with hospital Appointments £160 Panel 700 House, with large garden and orchard, rent £45

Home County —Partnership Half share of about £2 500 in beautiful country town Good class non panel practice Fees 3/6 to 1 guinea Good house and garden can be bought cheaply

Within 80 miles — Old-established PRACTICE of £1 280 in nice town Panel 1 500 Nice house with good garden Rent £70 Schools, Society, &c

Yorks —Practice of £1,450 in fine town Panel 800 Appointments £160 No midwifery has been done House with pretty garden and separate entrance to surgery Can be rented

West Coast —Nucleus of £550 including £90 from panel in wealthy seaside place Premises in prominent position

Home County —Partnership Half share of £2 000 in beautiful country town Panel 700 Appointments £200 House can be rented

Ear, Nose, and Throat PRACTICE of £2 000 Fees 1 to 3 gns Transferable appointment Low rent

Midlands —Town and country PRACTICE of £1 200 including 700 panel Good corner house with garage Rent £60

Home County —Partnership with succession to mid lle-class Practice of £1 850 in residential district The place is growing and has a cottage hospital Panel 1 240 Appointments £180 Very few midwifery Rent £70

Purchasers stating their requirements can have Particulars of other Practices not advertised

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An Accountant's certified report is required in respect of every practice or partnership the disposal of which is undertaken by the Agency

The commission chargeable in respect of any practice in Great Britain placed exclusively in the hands of the Agency for transfer has been fixed on an exceptionally favourable scale, the maximum chargeable on any transfer being £50 In the case of Foreign and Colonial practices similarly placed the maximum is £75

NO CHARGE IS MADE TO PRINCIPALS FOR THE INTRODUCTION OF LOCUM TENENS OR ASSISTANTS.
Accountancy and Legal services furnished by the Agency, where desired, at moderate inclusive charges.

PRACTICES AND PARTNERSHIPS FOR SALE.

1 HOME COUNTY —Hospital Town within 30 miles of London PARTNERSHIP A one-half share in a mixed general practice held by senior partner 23 years Average income over £2 000 Panel over 600 Advice and medicine from 2/6 Visits and medicine from 3/6. Very little midwifery Detached double fronted house with [illegible] over £2 000 of an up-to-date Good sport school etc Premium 2 years purchase half by arrangement.

2 MIDLANDS —SMALL TOWN PARTNERSHIP A one-third share to commence with 1st for disposal in a very old-established mixed general Practice Income nearly £5 000 Panel of about 2 500 Advice and medicine from 2/6 Visits 3/6 to 21/ Well situated freehold house with 5 bedrooms garden Price £1 600 Good sport and school Cottage Hospital and incoming Partner (who should not be over 35 years of age) will be appointed to the Staff Premium 1½ years purchase

3 SOUTH MIDLANDS —Exceptionally attractive residential town Old established non dispensing and mainly best class PRACTICE Income about £2 000 a year Small selected panel of 500 Fees 2/6 to 21 mainly 7/6 upwards Midwifery 2 to 25 guineas Ten cases last year House with 3 reception bedrooms garden Rent £100 Premium 2 years' purchase.

4 DEATH VACANCY —BLACKPOOL—Very old-established non panel PRACTICE Average income last three years £1 311 Very easily worked and no conveyance required Visits 7/6 to 21/ Good house facing sea Rent £150 Premium £1 000 (to include good stock of instruments drugs etc) payable half by instalment. Locum in charge

5 DEATH VACANCY —In a pleasant detached London suburb a good middle-class PRACTICE is for immediate disposal Certified cash receipts for past three years show an average of £1 500 per annum including 300 panel patients Visits 5 to 10 Midwifery fees 3 to 5 guineas Excellent freehold residence (built by late Incumbent) with ample accommodation garden etc. Price £3 000 of which £1 500 can remain on mortgage Premium for practice £2 000 Locum Tenens in charge

6 INDIA —ASSISTANTSHIP with view to PARTNERSHIP A single man (about 30 years of age and not over 36 who must be an F R C S Eng., of good appearance and a sportsman) is [illegible] satisfactory at one year's purchase with increase ultimately up to one-third Premium payable out of receipts One of the Partners is in England at present and a personal interview during the next month is essential

7 CHANNEL ISLANDS —Old established PRACTICE held 11 years by present Incumbent, who is relinquishing on account of ill health Cash receipts for the past three years average nearly £750 per annum including an appointment worth £35 Visits 7/6 to 10 6 in the Town extra outside Midwifery 3 to 5 guineas 8 to 10 cases yearly Car no required House contains 4 reception 6 bedrooms [illegible] by valuation purchase

8 LINCOLNSHIRE —Old-established unopposed Country PRACTICE Average income over £1 100 Very easily worked Fees 2/6 to 10/6 Panel of over 500 Good detached house in its own ground rent £80 on lease Premium £1 500 cash or £1 600 part by instalments

9 JUNIOR PARTNERSHIP — EAST COAST TOWN [illegible] Over 30 under quire 1 000 price easily 5 bedroom

10 SOUTH WEST OF ENGLAND —COUNTY TOWN —A ONE THIRD SHARE producing £800 is offered in a good-class non [illegible] £1 000

11 CHESHIRE —Twelve months PARTNERSHIP introduction will be given to an old-established middle-class and panel Practice £2,100 Situated in large [illegible] se to seaside resort Visits about 100 cases yearly Car no required Good house with garage, available at end of introduction Premium 1½ years' purchase

12 PARTNERSHIP —LANCS Large Town The third share of an old-established lucrative and money making Practice worth for the last financial year £3 722, can be acquired by a young unmarried man Panel list over 1 500 and patients operative cl... Visits 2 to 5 Midwifery 2 to 3 guineas Ingoing partner could reside with Vendor or unfurnished rooms are available Gift to be had Premium 1 years purchase

13 DERBYSHIRE -HOSPITAL TOWN -Old-established PRACTICE [illegible] a year at 2 to 5 guineas Centrally situated house (2 reception rooms consulting and waiting rooms 4 bedrooms bathroom etc) on lease at £100 a year Premium £5 000 £1 500 by instals Good scope for surgery and Vendor is on the Staff of the Hospital

14 SOUTH COAST —LARGE TOWN PARTNERSHIP A quarter or one-third share in a middle and working-class Practice Income over £4 000 with scope Panel of over 1 000 Fees 2/6 to 7/6 chiefly 3/6 to 5 No midwifery and very little night work Purchaser should preferably be not over 35 Prem. 2 years purch

15 YORKSHIRE.—Large clean town. Well-established middle and working-class PRACTICE Income £1,300 including £580 from panel and £350 from appointments Advice and medicine from 2/6 visits and medicine 3/6 upwards Very little midwifery lowest fee 2 guineas Good detached freehold house with small garden Electric light Garage Price £2,500 of which £1,500 could remain on mortgage. Premium £1 400 cash

16 LONDON WEST END —PARTNERSHIP —A quarter share (to commence with) and up to one-third in 2 years and one-half in 4 or 5 years with ultimate succession if desired is for disposal in a first-class general Practice Income for the immediate past year £3 020 Fees mostly 1 guinea upwards and a few at 10/6 Purchaser should be a Graduate, or hold some higher qualification. Premium for the quarter share £1,500

17 LONDON EAST —Old established sound middle and working class PRACTICE Income over £1,150 Panel of 1,700 Surgery fees 2/6 visits 3/6 upwards No midwifery Can be much increased if desired. Small house, suitable bachelor or lease. Would suit Lady doctor Premium £1 750

18 NEW ZEALAND (NORTH ISLAND) —Unopposed and increasing PRACTICE in a very beautiful district on main line about 70 miles from a large city and worth nearly £1,300 a year including easily worked appointment at £100 Visits into Township 10/ mileage 6/ midwifery 5 gns Good and up-to-date house (built by Vendor's predecessor) containing surgery 2 reception rooms 3 bedrooms and sleeping porch bathroom etc with an acre of ground tennis court etc Rent £120 on lease Prem £1,000 Rent £104, on lease Premium £1,000 built down and balance in 1 or 2 years

20 WEST CENTRAL —Sound easily worked PRACTICE of about £770 Very good cope as Vendor has offered from health since the war Fees mostly 10/6 Very convenient Flat Rent £58 Premium £1 100

21 FAR EAST —Wanted in November a young unmarried ASSISTANT (not over 35 years of age) on a two years' agreement, with possibility of succession on end of engagement Free return passage paid In review in London essential before engagement

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Practices and Partnerships for Disposal No charge to Purchasers.

HOME COUNTY —(1) PARTNERSHIP in first-rate Practice about £7 000/£8 000 p a in one of the best Residential Districts House (7 bedrooms) to rent Premium one sixth share two years purchase Partner should be aged over 30 and have held hospital appointments

YORKSHIRE, WEST RIDING —(2) Well-established mixed class PRACTICE nearly £1 500 p a in Manufacturing Town Panel 1 58 Good house (9 bedrooms) to let on lease Premium one and a half years purchase

SOUTH WALES Seaport Town —(3) Old-established middle and working class PRACTICE £1 400 p a with valuable Shipping connection Small panel No midwifery Ten roomed house on lease Moderate offer entertained

MIDLAND TOWN —(4) Old-established PRACTICE about £1 100 per annum in Residential Suburb Panel 700 Good house and large garden Premium £1 500

LONDON, N W —(5) PRACTICE worth about £450 per annum in working class district Panel 400 Increasing No midwifery Double fronted corner house Premium Practice and freehold House £1 500 Great scope for young man

DEATH VACANCY — (6) Borders of Epping Forest PRACTICE averaging £1 500 p a Panel 900 Modern corner residence (8 bedrooms) with garage etc

SOUTH MIDLANDS —(7) PARTNERSHIP in old-established Practice about £6 000 p a in Country Town Panel about 2 000 Excellent house to rent Premium one fourth share two years purchase

FIRST-RATE RESIDENTIAL DISTRICT up the THAMES —(8) PARTNERSHIP in good class Practice averaging about £1 550 p a Not much Midwifery Good house with garage, to be sold Premium one half share £1 200 Scope for Surgery

LONDON, E C —(9) PARTNERSHIP in Special City Practice Excellent opening for gentleman (aged 30-35) specialising in Skin work and experienced in Nervous and Digestive Disorders Share worth about £500 at one and a half years purchase

CELEBRATED HEALTH RESORT —(10) Nucleus of old established PRACTICE at present doing about £350 p a No Midwifery Good corner house to be sold Price to include practice, £5 000 Good opportunity to develop Consulting Practice

LONDON S W —(11) Recently established Lock-up PRACTICE in new and developing outlying Suburban District Rent of Consulting rooms £40 Premium to include lease furniture and fittings £250

MANCHESTER —(12) Old established and increasing middle class PRACTICE averaging £1 550 per annum in Suburb with Hospital and opportunities for Surgery Small panel Good house (8 bedrooms) in excellent position Rent £90 Premium one and a half years purchase

SCOTLAND, NORTHERN HIGHLANDS —(13) PRACTICE averaging over £1 600 p a in a Town No panel House (8 bedrooms etc) in best residential part Ample scope for midwifery and panel Premium £1 200

LONDON, S W —(14) ASSISTANTSHIP, with view to Partnership in well established Suburban Practice No midwifery Share worth about £800 to suitable man who should for preference be married

SOUTH OF ENGLAND —(15) PARTNERSHIP in very old established Country Town Practice over £3 670 per annum in beautiful part within 10 miles of the Coast Panel over 1 300 Well appointed house (8 bedrooms &c) with garden and lawn to rent on lease Cottage Hospital and scope for Surgery Premium one half share two years purchase.

MIDLANDS —(16) PARTNERSHIP in very old-established Practice over £4 300 in good Country Town Panel 2 000 House contains 5 bedrooms &c Premium for one third share one and a half years purchase

WEST MIDLANDS —(17) PARTNERSHIP in old established Country Town Practice over £3 600 p a Panel 2 183 Rent £60 Partner should be aged 35 to 40 with some Surgical experience Well equipped Cottage Hospital Premium one third share one and a half years purchase

LONDON, S W —(18) Well-established PRACTICE of £600 to £700 p a in favourite Residential Suburb Panel 295 Not much midwifery Excellent detached house (6 bedrooms) with good garden for Sale Ample scope Premium one and a half years purchase

SOUTH OF ENGLAND —(19) Unopposed Country PRACTICE nearly £500 per annum Panel 420 House (3 bedrooms 2 attics) with well stocked garden Rent £25 Premium £650

SURREY —(20) PARTNERSHIP in good middle class compact practice over £2 650 in residential District easy distance of London Panel 1 200 Two fifths share at first at two years purchase

SOUTH MIDLANDS —(21) Well-established unopposed PRACTICE averaging £1 181 per annum in good Agricultural District Panel 800 Detached house (5 bedrooms) Rent £70 on lease Premium £1 700

MIDLANDS —(22) Unopposed Country PRACTICE over £1 150 in beautiful part Panel about 720 Detached house (4 bedrooms) with half an acre garden Mild climate

SOUTH AFRICA —(23) PRACTICE about £1,000, in small Town in Cape Province Very comfortable house to rent Living very cheap Premium £800

EAST COAST —(24) Old-established good class PRACTICE £1 700 per annum, in pleasant Seaside Town and favourite Resort Nice modern double fronted house (6 bedrooms) Rent £75 on lease Prem £2 000

SOUTH OF ENGLAND —(25) PARTNER required in very sound old established Practice in Seaport Town Panel under 3 000 Share worth £700 to £800 at two years purchase Partner must be keen and energetic and not much over 30

NORTH OF ENGLAND —(26) Old established PRACTICE of £1 460 per annum in Country District Panel 810 Very good house (5 bedrooms) in charming grounds two acres Premium, practice house and grounds £4 000 Mortgage could be had on house

NORTH-WEST COAST —(27) Sound middle class PRACTICE about £2 400 Conveniently situated house to rent Premium £2 900 part by instalments

HOME COUNTY —(28) Old-established PRACTICE, over £1 850 p a in a most desirable Residential District under ½ mile from London Panel about 600 Excellent detached house (6 bedrooms) and garden Rent £75 on long lease Cottage

EAST ANGLIA —(29) PARTNERSHIP in middle and working class Practice averaging about £2 200 p a in picturesque district near popular Seaside Resort Panel nearly 1 200 Choice of houses One third share at first at two years purchase

EASTERN COUNTIES —(30) Very old established Country PRACTICE over £1 400 p a Panel 636 Suitable house (6 beds) Rent about £40 Mild climate Premium one and a half years purchase

SOUTH WALES —(31) Well-established PRACTICE nearly £1 250 p a in County Town Panel over 900 Fees 5/ to £2 2s Well situated double fronted house (6 bedrooms) with large garden Rent £60 Educational facilities Premium £1 800

SPECIAL OPHTHALMIC PRACTICE —(32) About £1 400 in high class inland Health Resort Operative and acute cases refused of late years Considerable scope for increase Premium £2 000

SOUTH WALES —(33) Old established working class PRACTICE over £2 200 in good Town Panel 1 100 Detached house with 4 bedrooms, to rent on lease Premium £2 500

SOUTH OF ENGLAND —(34) PARTNERSHIP in old established PRACTICE £1 500 p a in town of nearly 30 000 inhabitants Panel 450 No midwifery House contains 5 bedrooms Premium one half share one and a half years purchase

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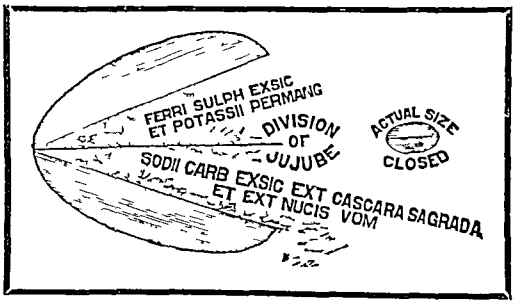
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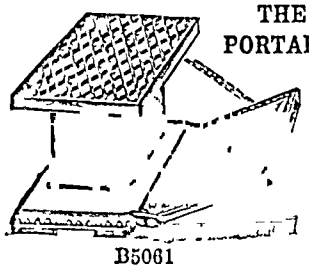
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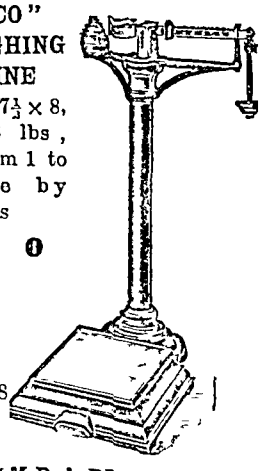
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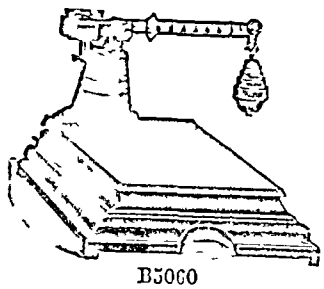
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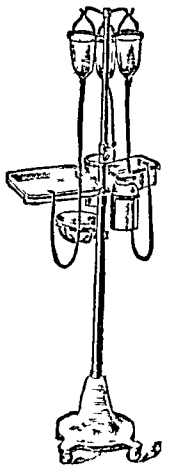
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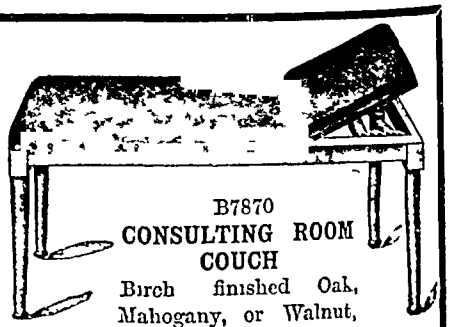
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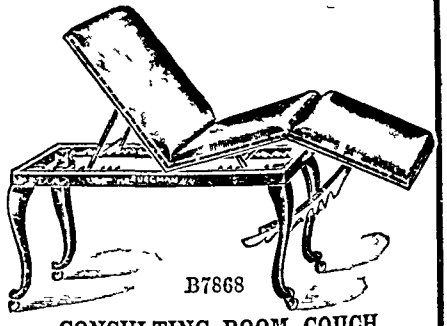
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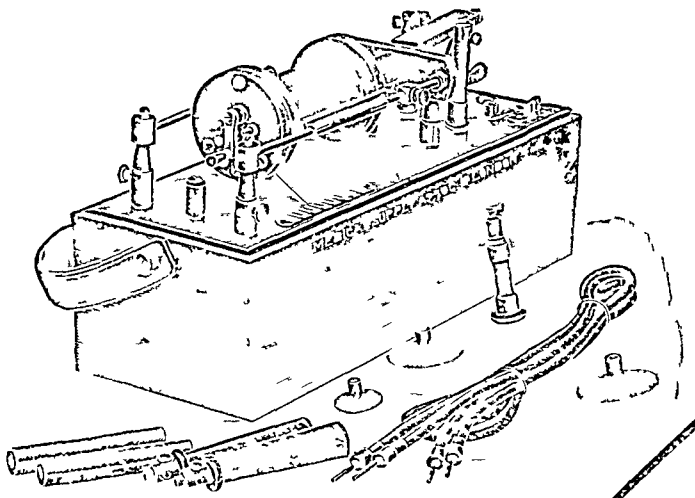
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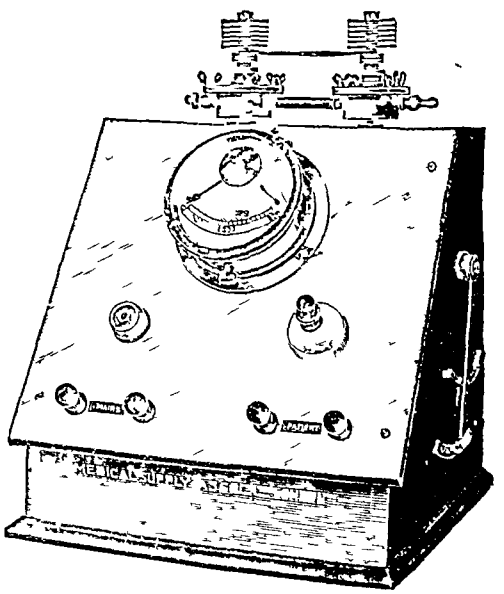


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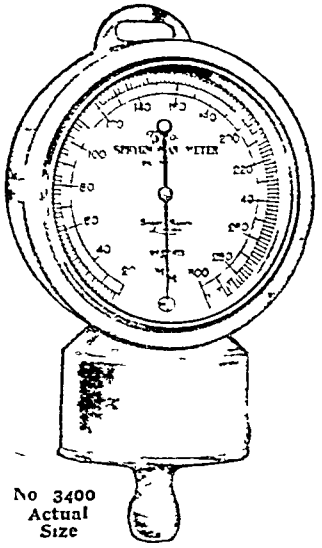
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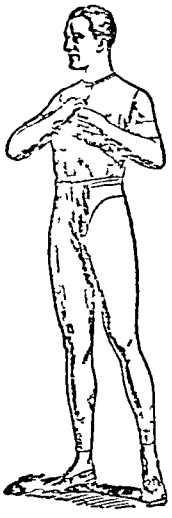
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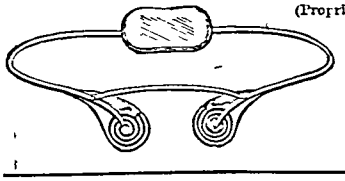
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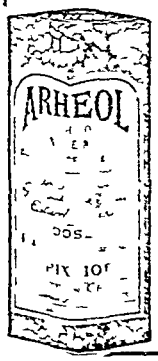
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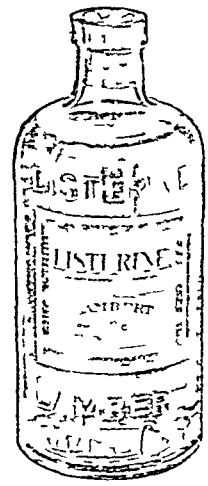


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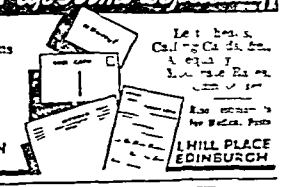
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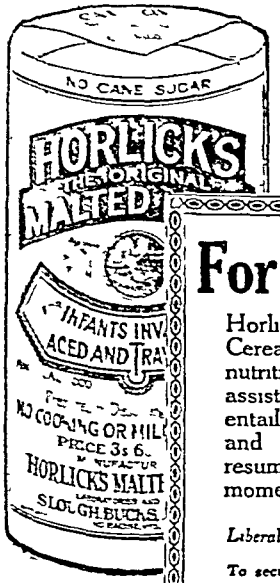
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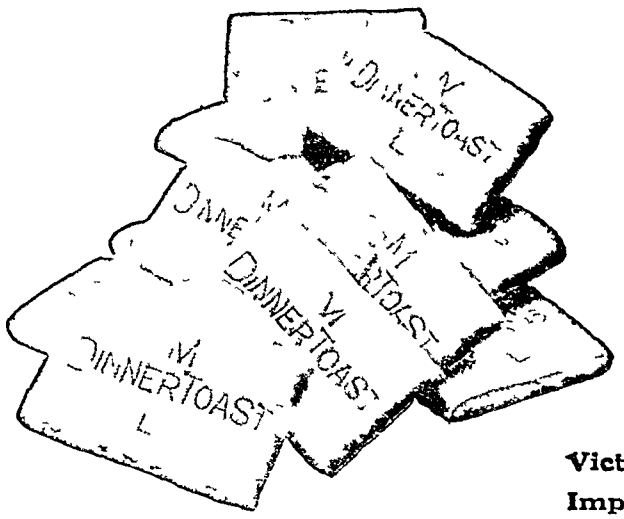


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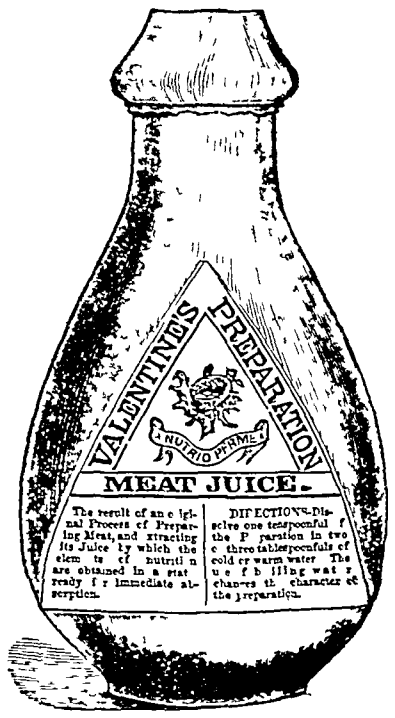
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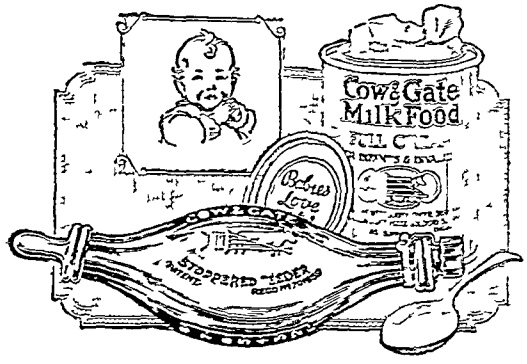
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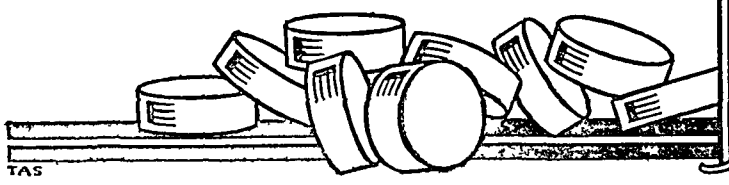
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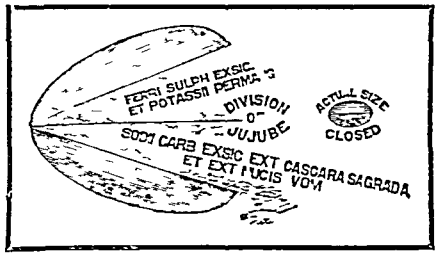
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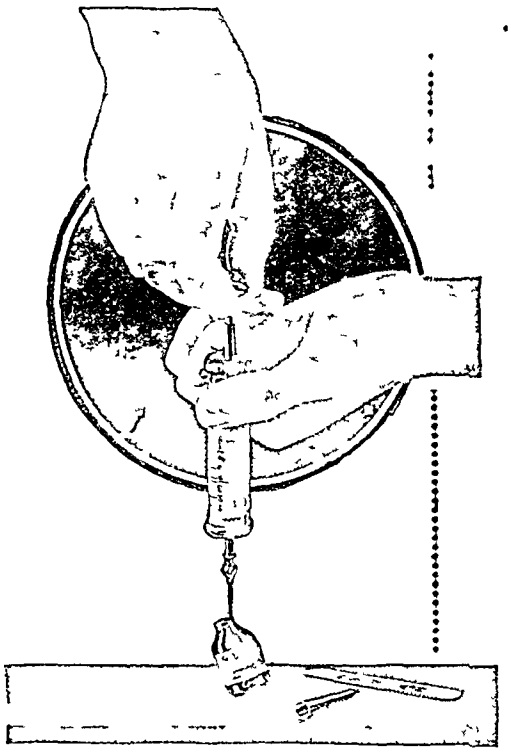
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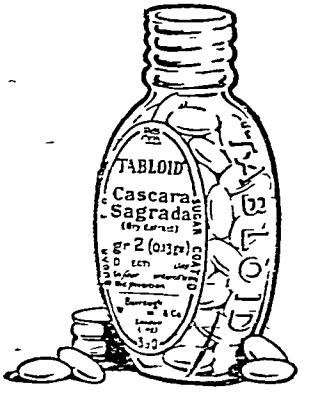
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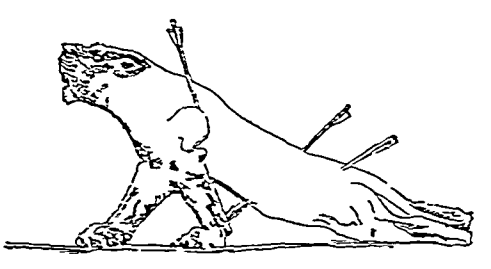
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An Address

ON

PROGRESS AND PROSPECTS IN CHEMOTHERAPY.

Delivered in the Section of Physiology of the British Association at Toronto

BY

H H DALE, C B E, M D, F R S,

Head of the Department of Biochemistry and Pharmacology, Medical Research Council President of the Section

[After a brief reference to the discovery of insulin in the physiological department of the University of Toronto, Dr Dale turned to the subject of his address, as follows]

I The Theoretical Origin of Chemotherapy

Chemotherapy may be defined as the specific treatment of infections by artificial remedies The object of those who study it is to find new remedies which will cure or arrest diseases due to infections, not by alleviating the symptoms or invigorating the patient, but by directly and specifically suppressing the infection Chemotherapy, in this wide sense, is not entirely of recent growth When the natives of Peru discovered the value in fevers of the cinchona bark, which the Jesuits brought to Europe in the seventeenth century, they had found a specific remedy for malaria, which is still the best available Similarly the natives of Brazil had found in ipecacuanha, which reached Europe shortly after cinchona, a remedy for amoebic dysentery better than any other which our modern systematic and scientific efforts have produced Modern chemistry, indeed, has separated the alkaloids from these drugs, and has made it possible to identify among them the actively therapeutic constituents, protozoology has revealed the nature of the infections We know now that cinchona owes its curative action chiefly to quinine and quinidine, and that they act as specific exterminators of the malaria parasites, and not simply as remedies for fevers in general, and we know that ipecacuanha owes its action to emetine and cephaeline, and that these act as exterminators of the entamoeba causing tropical dysentery, and not simply as symptomatic remedies for dysenteries of any kind But chemistry has produced no better remedy for malaria than quinine, or for amoebic dysentery than emetine, and the method by which either of these alkaloids cuts short the infection by a particular parasite, the nature of its specific action, remains a fascinating problem

The modern development of chemotherapy, as a new department in therapeutic science, claiming the co-operation of parasitologists, microbiologists, and synthetic chemists, did not take origin, however, simply from the study of these traditional remedies It may be regarded rather as an outcome of the study of the natural antibodies The investigation of these natural antagonists to infection produced a new therapeutic ideal Not only had they shown themselves to have an intensely specific affinity for the infecting organism of the toxin which caused their production, they were also perfectly harmless to the patient, behaving in relation to his organism, as normal constituents of his body fluids and tissues Ehrlich aptly compared them to magic bullets, constrained by a charm to fly straight to their specific objective, and to turn aside from anything else in their path

Of the artificial remedies, on the other hand, which man had empirically discovered, even of drugs like those just mentioned as being specific for certain infections the best that could be hoped was that they would eliminate the parasite before they poisoned the patient And thus when the limitations of natural immunity were becoming clearer, when it was realized that to certain forms of infection, several of which had proved to be infections by protozoa the body was unable to produce antibodies of sufficient potency to eliminate the infection and leave the patient immune, the question arose whether, with the new and growing powers afforded by synthetic chemistry man could not so far rival Nature's achievements as to produce in the laboratory, substances specifically adapted to unite with and kill the protoplasm of these parasites as the natural antibodies united with that of others and to leave the tissues of the patient similarly unaffected The ideal of this new and systematic chemotherapy, as the imaginative genius of Paul Ehrlich conceived it, was to be the production by synthesis of substances with a powerful specific affinity for, and a consequent toxic action on the protoplasm of the parasites, and none for that of the host—of substances, to use Ehrlich's own terminology, which should be maximally parasitotropic and minimally organotropic

I want to invite your attention to-day to the results which, during the last twenty years, have been produced under the stimulus of this bold conception, not, indeed to attempt a survey or summary of all that has been done, but in the light of a few of the suggestive facts which have emerged, to consider how far this hypothesis has justified itself, and whether it can be accepted as a safe guide to *future progress, as it has undoubtedly provided the initiative* and working basis for much of what has been accomplished hitherto Before we deal with some of the actual results obtained, it may be well to consider a little more closely what Ehrlich's working hypothesis involved The problem was to discover, by chemical synthesis, a compound which, in virtue of its chemical structure, should have a maximal affinity for the protoplasm of a microscopic parasite, such as a trypanosome, and a minimal affinity for that of the host's body cells These affinities were pictured by Ehrlich as determined by certain side-chains of the complex protein molecule, or chemoreceptors, which endowed the protoplasm with specific combining properties When it is remembered that knowledge of the chemistry of the protoplasm of a trypanosome is almost *nil* and that what little we do know suggests that it is very similar to that of our own cells it will be admitted that the enterprise was one calling for scientific courage and imagination in the highest degree Complete failure would not have been surprising the matter for surprise, and for admiration is that so large a measure of practical success should, at the end of two decades, already claim record

II Trypanosomes and Spirochaetes

1 *The Action of Dyes and Analogous Compounds*

The investigations leading in the last few years to a clear promise, at last, of the successful treatment of the diseases in man and animals due to infections by trypanosomes, had at least two different starting points—the action of dyes and the action of arsenic Ehrlich's early interest in the synthetic dyes, and his observations of the curiously selective distribution which they often exhibited among the cells and tissues of the body naturally suggested the possibility of finding, in this group, a substance which would selectively fix itself to the parasite and poison its protoplasm, without injuring that of the host The technique developed by Laveran and Mesnil, by which a particular strain of trypanosomes could be passed through a series of mice or rats, and produce an infection of standardized type and virulence, enabled the effect of a large selection of dyes to be investigated, with the view of finding one which would favourably influence the infection A starting-point having been obtained, the resources of synthetic dye production were available to produce an indefinitely long series of derivatives and modifications of the active compound each to be tested in its turn In this way Ehrlich and Shiga arrived at a substance which gave experimental proof of curative value a benzidine dye to which the name trypan red" was given Two years later Mesnil and Nicolle proceeding further along the same path described another even more favourably active blue toluidine dye trypan blue This is the only one of the dyes which has hitherto had a genuine practical success in the treatment of a protozoal fever in,

trypanosome, for example, had lost its atoxyl receptors Apart from the objections already mentioned, this conception met a new difficulty, when in Ehrlich's laboratory it was found that the resistance was by no means as rigidly specific as it had first appeared to be Not only imperfect treatment with atoxyl, but treatment with a particular group of dyes having no kind of chemical relation to it was found to produce a race of trypanosomes resistant to atoxyl and to other arsenical derivatives To suggest that the chemoreceptors for arsenic and for these dyes are identical is merely to restate the fact of this reciprocal action in terms having no definite meaning Obviously no more precise conception as to its significance can be formed until we know something more of the conditions on which resistance and susceptibility depend A recent suggestion by Voegtlin has interest in making at least an attempt at interpretation in more definite biochemical terms Voegtlin and his co-workers point out that arsenious oxide and its derivatives readily combine with substances containing a sulphydrile grouping and find that the toxic action of the organic arsenoxides, on trypanosome and mammal alike, is depressed by the simultaneous injection of excess of various sulphydrile compounds

III Suggested Reaction of an Arsenoxide with a Sulphydrile Compound

The work of Hopkins, showing the importance of one such sulphydrile compound—reduced glutathione—in the hydrolytic oxidation-reduction processes of the cell, suggests to Voegtlin that a combination with such groups, and consequent suppression of this vital function, may explain the toxic and curative actions of the arsenical derivatives, and that a formation by the trypanosome of the sulphydrile compound, in excess of its vital need, may be the basis of acquired resistance If certain dyes similarly affect this cellular oxidation system the production under their influence of strain of trypanosomes resistant to arsenic *would* also be explained So stated the suggestion leaves many aspects of the problem still unconsidered, but it may at least be allowed the merit of an attempt to interpret the action of these drugs in terms of known biochemical facts

IV Emetine and Dysentery

To turn to another example of a chemotherapeutic problem I may mention briefly some results obtained, some years ago, by Mr Clifford Dobell and myself, in an attempt to explore the curative action of emetine and the other alkaloids of ipecacuanha in amoebic dysentery, with a view to finding a more effective treatment At the time when we took up the problem it seemed simple Rogers had recorded that the amoebæ obtained from a case of amoebic dysentery, and treated *in vitro* with emetine, were rapidly killed by the alkaloid in dilutions as high as one part in 100,000 This seemed to explain the action of emetine as a *simple* and direct one on the parasites, and to provide a rapid method for testing a series of compounds for their therapeutic possibilities We *failed*, however, as other observers before and since have done to confirm the observation, on the contrary we found that the dysenteric amoebæ, obtained from cats secondarily infected, or, in a control observation directly from man were surprisingly *insusceptible* to the action of emetine, living for hours in concentrations much greater than the highest which they would tolerate of other alkaloids, which had no curative action in dysentery One of the other natural alkaloids of ipecacuanha methyl-psychotrine, and certain artificial derivatives of emetine were much more effective in killing the amoebæ in the test tube, and at the same time were practically devoid of the characteristic toxicity of emetine and cephaeline for mammals and for man Here, on the classical assumption of chemotherapy, should have been ideal remedies for *amoebic infection—substances* much more parasitotropic and much less organotropic than those already known to be effective Yet each of them in turn, when administered to patients suffering from amoebic dysentery, in doses much larger than those in which emetine could be tolerated, produced *no effect whatever* on the dysentery, which promptly cleared up when emetine was subsequently given Among the members of this group of alkaloids which were tried, the curative effect seemed to be proportional rather to their toxic and nauseating action on the patient than to their lethal action on the isolated amoebæ Yet emetine and cephaeline are not mere symptomatic remedies, they definitely stop the progress of infection by the amoebæ, and, properly administered, eliminate them altogether from the body

Yet another puzzling observation, made by Dobell and myself, was that an amoebic infection which readily yielded to treatment with emetine in man was entirely unaffected by emetine when transferred to the cat In no way is it possible to account for these facts without admitting a co-operation of the patient's tissues in the curative action, nor, with that admission, can we do more than consider possibilities We only know that the truly parasitic *Entamoeba histolytica*, which cannot live without invading the tissues, can be checked in this invasion and eliminated from the body by administering emetine, while other entamoebæ, which live on faecal debris, remain unharmed Whether the tissues are so altered that the amoebæ cannot invade them, or the amoebæ, *without being directly killed*, are so weakened in virulence that they cannot invade the tissue and obtain their food, but succumb in face of the normal resisting powers of the host, are possibilities on which we can only speculate, and no method of bringing them to the test of experiment has yet been found

The work of Morgenroth and his co-workers, extending now over more than a decade, has again led them to emphasize, in connexion with the curative action of substances which they have examined, a fixation to the cells and tissues of the host, a definitely *organotropic* property, as an important factor in the effect Two examples may be mentioned

V Quinine and Malaria

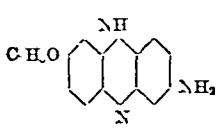
One of the earliest of chemotherapeutic discoveries, that of the cure of malaria by quinine, had never been satisfactorily explained There was no evidence establishing even a probability that quinine, in such concentrations as can be tolerated in the blood of the living subject, would directly kill the malarial plasmodia, especially if these were partly screened from its action by their position in the interior of the red corpuscles Morgenroth, from the results of his determinations by biological methods of the distribution of quinine in blood, is led to the conception of quinine as acting on malaria in virtue of its fixation by the red corpuscles, either killing the trophozoites in their interior, or blocking the entry into them of the merozoites of the asexual cycle On this latter supposition it will be seen that quinine would act, not by killing the malarial parasites, but by rendering the blood unfitted for their multiplication They are supposed to fall a prey to the natural defensive substances in the plasma, because a film of quinine denies them access to the red corpuscles, in the interior of which they could continue their development in safety There are discrepancies between Morgenroth's determinations of the distribution of quinine in favour of the red corpuscles and those obtained by direct chemical means, which would still need to be reconciled before either theory of the curative process in malaria could be fully accepted Meanwhile these suggestions are of interest as another example of the need found, more and more, by workers in this field to regard an organotropic property of a drug, not as detrimental to its curative action, but as an essential factor in the chemotherapeutic process

VI Remedies for Bacterial Infections

This same property of fixing themselves to the red blood corpuscles or to the connective tissue has been observed by Morgenroth and his co-workers with the higher homologues of quinine, ethylhydrocupreine ("optochin") and octylhydrocupreine ("vuzin"), and with the dyes of the acridine series with which they have obtained promising results in the treatment of bacterial infections In the treatment of pneumococcus infections by optochin several factors other than those of immediately lethal action of the alkaloid on

the pneumococci appear to be concerned Evidence was obtained by Moore, for example, which suggested that the defensive reaction of the host was an essential factor in the cure, optochin, in doses inadequate to kill the pneumococci, rendering them liable to the action of specific antibodies, and some experiments of Felton and Dougherty suggest that an excessive dose of an alkaloid of this class, by suppressing the natural defensive reaction, may even allow the fatal spread of an infection which a lower dose would cure Morgenroth, on the other hand, emphasizes the part played by the organotropic properties of optochin and vuzin in enabling the red corpuscles to act as carriers of the drug to the point of action, and the connective tissues to form local depots of it

An acridine dye, named trypaflavin, was under study in Ehrlich's laboratory in 1914 as a trypanocidal remedy, and was found during the war, by Browning and his co-workers, to have valuable properties as an antiseptic for infected wounds and mucous membranes, for which, under the name 'acriflavine," it is still used Since the war other dyes of this series have been investigated by Morgenroth and his school, and one of them, called "rivanol," is stated to be particularly effective as a tissue antiseptic especially in conditions of spreading infection due to streptococci



"Rivanol" (2 ethoxy 6 9 diamino acridine)

In the case of "rivanol" also evidence has been brought forward that it is fixed by the red corpuscles and the subcutaneous tissues protected thereby from excretion or held at the point where its curative action is required From these body cells it is suggested that the dye is gradually given up to the cocci on which its action is exerted by a process called 'transgression" by Morgenroth This is a process by which a substance is passed from one medium to another, when both have strong affinities for it, through a layer of an intervening medium for which it has no affinity, and in which it may be almost insoluble In this process of depot formation and gradual liberation of the active substance, we are concerned with a phenomenon which certainly has a widespread importance for chemotherapeutic action We have earlier seen evidence of such fixation and gradual release in the cases of Bayer "205" and salvarsan

Another suggestive feature of the action of "rivanol" on streptococcal infections is that such organisms as escape the immediately lethal effect of the dye appear to have lost their haemolytic properties and to have been modified into a relatively avirulent strain

VII Conclusion

I have considered a few examples only of the directions in which chemotherapeutic investigation has proved practically fruitful, including some in which it shows, at the moment, the most hopeful signs of progress If we consider any one group of investigations by itself, we may easily feel at the same time elated by the practical success obtained in the cure of some infection which but a few years ago seemed beyond the reach of treatment, and depressed by the disharmony between the results of experiment and the theoretical conceptions hitherto available of the nature of the chemotherapeutic process Some of the most notable practical triumphs in this field have resulted, not from experimental investigations based on theory, but from an almost empirical trial on human patients suffering from one type of infection, of a remedy which had experimentally shown promising results in infections of a different, and sometimes of a widely different, type The partial success of tartar emetic in trypanosome infections might have justified a hope that it would have some effect in kala-azar, but hardly a prediction of its really remarkable efficacy in that previously intractable form of infection Still less would it have justified expectation of the brilliant success of this same drug in infections by the schistosoma or bilharzia worm which but recently seemed almost beyond the hope of any kind of treatment

With such instances in mind one might but a year or two ago, have been tempted to suggest that the attempts at theoretical investigation of the intimate mechanism of the chemotherapeutic process had contributed little to the practical achievements, and that a reasonably intelligent empiricism was still the safest guide I do not think that the suggestion would even then have been defensible and it would assuredly have been stultified by the results of the past few years Patient, systematic exploration by routes of which the initial sections were already mapped in the early days of chemotherapy, has in these recent years again led to results of major importance, both for practical therapeutics and for the theoretical basis of future advance That the original theoretical framework begins to show itself inadequate for the expanding fabric is good reason for its reconstruction, but we may well beware of hasty and wholesale rejection, remembering that it served the early builders well

I think it is especially encouraging to note that, though, in the action of almost every remedy which has proved its value in the specific cure of infection, there are features which cannot be interpreted by a strict application of Ehrlich's distribution hypothesis, the discrepancies begin to show a new congruity among themselves Repeatedly we find phenomena which point to the need of modifying the theoretical structure in the same direction The conception of a remedy not killing the parasites immediately, but modifying their virulence, or lowering their resistance to the body's natural defences, of a remedy not acting as such, but in virtue of the formation from it in the body of some directly toxic product, either by a modification of its structure or by its union with some tissue constituent, of an affinity of the remedy for certain cells of the host's body, leading to the formation of a depot from which, in long persistent, never dangerous concentration, the curative substance is slowly released—all these conceptions present themselves, again and again, as necessary for our present rationalization of the effects observed It can hardly be doubted that they will potently influence the methods by which, in the immediate future new and still better specific remedies are sought But though our practical aim, in relation to the affinities of a remedy for the parasite and for the host's tissues, may be radically changed, the meaning of these specific affinities, so delicately adjusted to a precise molecular pattern, remains dark Ehrlich's chemoreceptors may no longer satisfy us, but we have nothing equally definite to replace them I have endeavoured to indicate what seem to me hopeful signs of new contacts between biochemistry and chemotherapy

There is promise, in another direction that at least some aspects of the problem of immune specificity are being brought within the scope of strictly chemical investigation, as in the recent work of Avery and Heidelberger on the constituent of the pneumococcus which combines with the specific precipitin As in Ehrlich's pioneer work in chemotherapy, it can hardly be doubted that an increased understanding of the meaning of immune specificity, which but a short while ago might have seemed hopelessly beyond the range of attack by chemical weapons will still influence ideas and help to shape the course of further investigations on the chemotherapeutic process As the biological complexity of the problem is realized it becomes increasingly a matter for wonder and admiration that so much of practical value has already been achieved—the treatment of the spirochaetal infections, syphilis, yaws and relapsing fever revolutionized, Leishmania infections, kala azar and Baghdad boil, and bilharzia infections which crippled the health of whole populations in countries such as Egypt now made definitely curable trypanosome infection such as the deadly African sleeping sickness after years of abortive promise and disappointment brought now within the range of effective treatment And if such results have already been attained in a period during which practice has often and inevitably outrun theory, we may well be hopeful for a future in which fuller understanding should make for more orderly progress

THE RECOGNITION OF LATENT JAUNDICE DURING TREATMENT WITH ARSENOBENZOL COMPOUNDS *

BY

W. I. GERRARD, M.B., D.P.H.,

SURGEON LIEUTENANT-COMMANDER, R.N.

Introduction

THE occurrence of jaundice as a complication of the salvarsan treatment of syphilis is now well known and its varieties have been closely studied. So far, however, the prime factor concerned in its causation has not been completely elucidated. In the medical literature of this country few references are available as to the actual incidence of salvarsan jaundice at the present time, but this complication is the most serious and frequent met with so far as the Royal Naval Medical Service is concerned.

It seems unnecessary here to discuss in any detail the work that has been done on jaundice following salvarsan treatment, since the whole matter is clearly and fully discussed in the recent report of the Salvarsan Committee of the Medical Research Council.[1] In that report three classes are recognized:

(*a*) *Early Jaundice*.—This occurs a few days after an injection. It is usually of a mild evanescent character, but may at times be more severe and persistent.

(*b*) *Late Jaundice*.—This comes on several weeks after the end of a course of treatment, and is more serious and prolonged than the "early" type.

(*c*) *Acute Yellow Atrophy of the Liver*.—This very fatal complication may occur at any time during the course of late jaundice.

At the Royal Naval Hospital, Haslar, 42 cases of definite jaundice following treatment by arsenic compounds have been investigated in the period from May, 1922, to March, 1923. During that time the total number of patients treated was 900. Of the 42 cases 30 could be classed as severe, and two deaths occurred, in both the histological changes in the liver were similar to those described by Turnbull[2] as characteristic of death from post-salvarsan jaundice. The remaining 12 cases were of the mild type.

On the advice of Dr. J. W. McNee the van den Bergh reaction has been used in all cases of syphilis undergoing salvarsan treatment as a routine method of detecting any variations in the bilirubin content of the serum during the course of treatment, in an attempt to throw light on the pathology of post-salvarsan jaundice.

The cases are classified as follows:

A. Primary syphilis (showing a primary sore).

B. Late syphilis (cases without any active lesions). All of these had already received one or more courses of treatment with arsenobenzol compound.

C. A few cases of chancroid, in which syphilis was finally excluded.

Scheme of Treatment

For cases of primary syphilis (A) the total number of injections given was eight, the individual doses never exceeding 0·45 gram of novarsenobillon (N.A.B.). In certain cases, if the patient appeared very much below standard in general health a smaller initial dose of 0·3 gram of N.A.B. was given, and the dosage thereafter gradually increased. Injections were given every third day until a total of 3·6 grams had been administered. The drug was at first dissolved in distilled water so that 0·45 gram was contained in 4 c.cm. of distilled water. The subsequent modification of the technique and the reason for it is given below. In cases of late syphilis without clinical symptoms (B) the total number of injections given in a course was six, each dose consisting of 0·45 gram of N.A.B., repeated every fourth day until a total of 2·7 grams had been given. The dilution was made in the same way as described above. Mercury was not given at all, but potassium iodide was prescribed for three weeks after each course of injections.

Observations on Cases

This article is concerned with a series of 370 cases of syphilis undergoing treatment with novarsenobillon. The van den Bergh test was applied to all of these cases on admission, and again at intervals during the course of treatment. In as many cases as possible the test was again carried out at various periods after the termination of the course of injections.

In 281 cases no increase in the bilirubin content of the serum was found at any time. In the remaining 89 cases the bilirubin content was definitely increased as demonstrated by the test. In 67 of these on admission the number of bilirubin units was found to be less than 1—that is, was only slightly increased, in 22 cases examined on admission the number of bilirubin units showed a more marked increase, ranging up to 2·5 units. In these last cases, 22 in number, 17 were unaffected by a further course of treatment, but the remaining 5 showed a very definite increase again after the additional injections.

Particular attention has been paid to the series of 67 cases which on admission showed no increase whatever in the bilirubin content of the serum, but which, after a new course of treatment, showed interesting changes in the bilirubin titre.

21	cases showed an increase to	1	bilirubin unit		
24	"	"	"	1·5	" "
13	"	"	"	2	" "
3	"	"	"	2·5	" "
6	"	"	"	3 and over	

The six cases which showed an increase up to or over 3 units in the serum are the most important, because they may be taken as definitely demonstrating a latent jaundice. In four of them, as will be seen from the following brief notes of these cases, the latent jaundice soon became definite and overt. Careful examination of the blood serum was carried out at short intervals during the icteric stage, and a steady increase, and subsequent decrease during convalescence, was easily demonstrated by the test employed. Case 86 had already shown intolerance to arsenobenzol compounds three months previously, and had it not been for the information obtained of slowly developing latent jaundice by the van den Bergh test the condition of affairs could not have been discovered in time to prevent the administration of further doses of N.A.B. It was noted in all four cases that the jaundice only became obvious in the skin and mucous membrane when the number of bilirubin units in the serum reached a figure of about 4. This is in confirmation of the work already published by van den Bergh,[4] Lepehne (1920, 1921),[5] and McNee.[6]

Brief Notes of Six Cases of Late Syphilis showing Latent Jaundice

Case 84.—The patient had had a course of novarsenobillon, followed by potassium iodide for three weeks. On admission there was no increase in the bilirubin content of the serum. On July 12th, 1922 there was an increase to 2·5 units, on July 15th to 3 units, on July 17th to 5 units (jaundice overt). On September 1st there was an increase of only 1 unit and there was no jaundice. Wassermann reaction positive.

Case 85.—The previous treatment of this patient consisted of three courses of novarsenobillon with potassium iodide for three weeks after each course. On admission there was no increase in the bilirubin units. On July 21st, 1922, the bilirubin content had increased to 2 units, and on July 24th to 3·5 units, glucose given. On July 27th the bilirubin increase was 2·5 units, and there was a trace of bile salts in the urine. Wassermann reaction negative.

Case 86.—This patient had previously been treated with novarsenobillon (one course followed by potassium iodide for three weeks) and mercury. There was no increase in the bilirubin content on admission. On July 20th and 22nd there was an increase to 3 units, glucose was given on the latter date. On July 25th the bilirubin had increased to 4·5 units, there was faint overt jaundice, and bile salts and pigments were present in the urine. Wassermann reaction positive. Three months previously, at the end of the course of novarsenobillon, the patient had rash and pyrexia.

Case 87.—Previous to admission this patient had had three courses of novarsenobillon, each course followed by potassium iodide for three weeks, and mercury treatment. There was no increase in the bilirubin content on admission nor on examination on July 14th, 1922. On July 16th however, there was an increase to 3 units, glucose given. On July 18th the bilirubin content had increased to 3·5 units, and there was a trace of bile salts in the urine. Wassermann reaction negative.

Case 88.—The previous treatment in this case consisted of four courses of novarsenobillon with potassium iodide for three weeks after each course. On admission there was no increase in the bilirubin content of the serum. On September 13th, 1922 there was an increase to 2·5 units, and on September 15th to 4 units, glucose given, bile salts and pigments were present in the urine.

* Received for publication May 14th, 1924.

On September 16th there was a further increase to 6 units overt jaundice On September 21st the increase was 4 units and on September 24th 3 5 units Was ermann reaction positive

Case 89—The patient had had two courses of novarsenobillon each course followed by potassium iodide for three weeks No increase in bilirubin content on admission On September 20th, 1922 there was an increase to 3 units and the following day to 4 5 units with faint overt jaundice On September 23rd the increase was 3 5 units the urine contained a large quantity of bile salts and bile pigments were faintly present On September 29th the increase was 2 units Wassermann reaction positive

The question of alteration in the bile pigment metabolism during salvarsan treatment was found, during the course of the present observations, to have been in part investigated already by Strauss and Buerkman,[11] who also studied cases treated with arsenic compounds only, and not with mercury In a small number of cases of primary and secondary syphilis undergoing salvarsan treatment a definite increase of bilirubin in the serum was found, but the writers concluded that the increase could be put down to the effects of the spirochaetal infection rather than to the use of the drug In cases of late syphilis which had already undergone extensive treatment with arsenobenzol compounds Strauss and Buerkman again found an increase in a small number of cases

Strauss and Buerkman—18 cases all late syphilis Increased bilirubin in serum—6 2 per cent of cases
Present Series—370 cases 85 per cent late syphilis Increased bilirubin in serum—24 per cent of cases

With a view to comparing the results obtained at the Royal Naval Hospital, Haslar, with those of another institution, the writer was fortunate, through the kindness of Dr A M H Gray of University College Hospital, London, in being allowed to apply the van den Bergh test to 50 patients undergoing treatment there with N A B, mercury, and potassium iodide The course of treatment was more prolonged but less intensive than that adopted at Haslar The cases were chosen at random, and although no example of latent jaundice becoming clinically obvious was observed an increase of bilirubin in the serum was noted in 15 cases

Modification of Treatment

Since it seemed possible that the concentration of the solution of N A B used at Haslar might be a factor leading to the frequency of post-salvarsan jaundice, either latent or overt, 0 45 gram of N A B was dissolved in 10 c cm of distilled water instead of in 4 c cm Since the introduction of the more dilute solution a much smaller number of cases have shown a rise in the bilirubin content of the serum after a course of injections

The value of glucose as a protector of the liver cell against various poisons has been shown by Graham[3] and by Davis and Whipple,[4] and is now in fairly general use as a preventive of the hepatic complications of syphilis treated with salvarsan It was employed in all the cases of the present series where an increase of the bilirubin content of the serum was made out and I believe that this prompt administration of glucose may have been the means of preventing the cases in which slight latent jaundice was recognized from developing a more serious type of liver injury on the continuance of arsenical treatment The method of administration of glucose employed was that recommended by Maclean,[6] and as now carried out by Colonel Harrison at St Thomas's Hospital

Subsequent History of Cases Investigated

Through the kindness of Surgeon Commander Parnell, R N, I have been able to investigate the subsequent history and treatment of 40 cases recorded in the series Three men have received a further course of treatment with N A B, and one of these developed definite jaundice two months afterwards None of the six cases referred to as showing latent jaundice has received further N A B treatment, but all of them have been given intramuscular injections of metallic bismuth cream without untoward results

Other Methods of Estimating Hepatic Insufficiency

The opportunity was taken of examining some of the other accredited methods of recognizing disturbances of hepatic metabolism and comparing them with the results obtained by the van den Bergh test The methods made use of were the following

1 *Widal's Haemoclasic Crisis Test*—This test described by Widal, Abrami, and Iancovesco[12] has been extensively employed in the past few years and many publications are available dealing with the results obtained A critical review by Lepehne (1924)[5] deals very fully with this test and its possible value Ninety cases of the present series have been investigated simultaneously by this method and by the van den Bergh reaction and the results seemed to discount the haemoclasic test being of any definite diagnostic value No correspondence was ever made out between the changes of the leucocytic count and the amount of bilirubin in the blood serum This agrees with Lepehne who has also concluded against the test as an indicator of impaired hepatic function

2 *Laevulose Tolerance Test*—This has been carried out only a few times being given up because it was found to be too time-consuming for routine work The method used was that published by Spence and Brett[10]

3 *The Lipase Test*—Here again only a few cases have been examined using the technique of Lowenhart It was found that the test also required too long a time for routine work and the results obtained were also inconclusive It must be noted however that Mackenzie Walbis[7] places considerable reliance on this method as an indicator of disordered liver function

4 *Enumeration of the Haemoconia in the Blood*—This test was applied to a very considerable number of the cases in the series being easily carried out and not requiring a great deal of time The test has been recommended by Brule and Lemierre[1] and consists in a study of the particles in the blood seen under dark-ground illumination before and after the ingestion of a meal containing an abundance of fat The test proved of no value in detecting mild degrees of impaired hepatic function

Some interesting observations have been made in the series of cases on the disturbance of different parts of the bile metabolism following the injections The urine was regularly examined for bile salts, using a modification of the Hay test In many cases in which no excess of bilirubin was present in the blood serum, bile salts were detected in the urine, although generally in small amounts In the definite cases of jaundice a dissociation, such as has been studied by French workers, was not infrequently detected Bile salts continued to appear in the urine for several days after the bile pigments had entirely disappeared

Summary and Conclusions

1 The test of Hijmans van den Bergh has given an added interest to the study of the condition known as post-salvarsan jaundice, and additional points in the pathology of the condition have been revealed by its application The present investigations have been fairly extensive, and the van den Bergh test has clearly demonstrated its great value to the individual treating cases of syphilis by N A B

2 The specialist in venereal diseases requires a practical, rapid, and easily applied test to enable him to control his dosage of arsenic compounds and to warn him of approaching dangers which cannot be discovered by mere physical examination of his patients It seems that in the van den Bergh test we possess a very useful means of detecting with certainty the condition of 'latent jaundice This is a point of great importance It has been found that the laevulose tolerance test and the serum lipase test, as means of detecting impaired hepatic function, cannot be employed in a daily routine manner where large numbers of cases are being dealt with, they are much too time-consuming The haemoclasic crisis test would seem to be altogether unreliable The laevulose tolerance test has undoubtedly proved of value in demonstrating impaired hepatic function after treatment by arsenobenzol compound but the individual treating syphilis must necessarily be more interested in a method which is of assistance to him in controlling treatment and in detecting the gradual development of the earliest signs of disturbed hepatic function

3 The fact that "latent" jaundice can be detected by the van den Bergh test is a great advance towards scientific control in the use of a dangerous drug

Latent" jaundice is a danger-signal of the possible development of a far more serious condition The course of a case of post-salvarsan jaundice however mild cannot be predicted, and it therefore behoves us to take all possible steps to eliminate this complication As soon as a condition of "latent" jaundice was detected arsenical treatment was at once stopped and glucose given freely It

seems probable that this procedure prevented the subsequent development of a much more grave disturbance of hepatic function

4 The van den Bergh test is simple It is the most rapid and most easily applied of all the tests applicable to the investigation of disturbed hepatic function, and, with experience, is reliable The results obtained are accurate enough for all clinical purposes, although no colorimetric method of this kind can pretend to more than approximate accuracy

5 It is suggested that the van den Bergh test, if used as a routine in cases of syphilis undergoing treatment by arsenobenzol compounds, affords a strong safeguard against the development of the grave condition of post-salvarsan jaundice, fatalities from which are more frequent than general mortality statistics would lead one to believe The small amount of serum necessary for the test is readily obtained when taking the blood for the routine Wassermann reactions

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POSTURE IN DIFFICULT LABOUR.

BY

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Most of the devices by which we reduce the difficulty of labour have been practised, at least in kind, for thousands of years Used at first empirically and promiscuously, the mode of operation of many of them has been made clear and the indications for them precise, and it is now possible to employ them scientifically

The official postures, such as that on the long popular delivery stool or, in this country, the left lateral position, found justification in their convenience for rendering service at the delivery, but the need of allowing them to be varied was recognized for individual cases A "hanging leg" posture was described and figured by Scipio Mercurio at the end of the sixteenth century, but, though he mentions compression and checking of the bones of the pelvis as a source of difficulty, he did not recognize the position as specifically adapted to that difficulty, but to labour that is difficult "from what cause you will" This "Mercurio" posture has legs and also shoulders lower than the pelvis, and he explains that in this position, with the shoulders low, it is easy for the midwife to reduce a badly placed child to the mid line, whereas the shoulder high position on the delivery stool tends to make the malplacement worse

The distensibility of the symphysis pubis in pregnant women was long a subject of dispute Ambroise Paré and Severinus Pinæus separately report their presence in February, 1579, at the autopsy of a woman of 24 years, who had been hanged for child murder ten days after her delivery It was demonstrated by sight and touch to all who were present that the pelvic bones were so mobile that the end of one pubic bone could be raised half a thumb breadth above the other Some, indeed the greater crowd, of the spectators "stiffened their necks" and adduced arguments against its possibility, but the facts have forced recognition, especially in the operation of section of the symphysis It was not recognized that this mobility of the bones could be called upon by the posture of the patient to reduce the difficulty of labour in a narrow pelvis until in 1889 Walcher reported that in six cases, by putting the woman with a cushion under her sacrum and her legs hanging, he had secured an increase of from 8 to 13 millimetres in the conjugate diameter of the brim Since that time the hanging leg position has become one of the resources of the scientific obstetrician and is often titled the "Walcher" position The mechanism of the manœuvre is simple The sacrum being held by the spine and by the upward pressure of the cushion, the pull of the legs on the acetabula in the opposite direction carries the front part of the pelvis down and lengthens the distance between the symphysis pubis and the promontory of the sacrum

Obesity was recognized by most of the ancient writers as a source of difficult deliveries Mercurio discusses it at some length and recommends (*a*) reduction of the diet by a third during the last two months of pregnancy, thus forestalling Prochownik, (*b*) medicines, (*c*) posture, (*d*) manipulation The posture which is described and illustrated is an exaggeration of the hanging leg posture, such that it has been ridiculed as scarcely tolerable even for an acrobat This posture is almost exactly represented in a figure brought by the excavators from Ur, and it is highly probable that there is an Eastern strain in the line of tradition leading to the formal description of the hanging leg position Mercurio refers to Avicenna, but the hanging leg position does not come directly from that author

The posture which the ancient writers prescribed for the delivery of obese women was that on knees and face This can be traced from Soranus, through Aetius, on to Euchanius Rosslin Avicenna directs that the fat woman lie with her knees under her belly and her head on the ground, and have her vulva anointed and opened with the fingers, when this is done, he says, she will bear quickly in the mode of quadrupeds He prescribes the dorsal position with the legs raised, when it is necessary to douche the passage with lenitives, and when it is necessary to open the vulva with instruments he says it may be tried in the ventral posture or in the dorsal or otherwise It is obvious that in these prescriptions the chief consideration was the facility of manipulation

The ventral postures are, however, not an invention of the erudite, but are found widely distributed among primitive peoples as an aid in prolonged labour The mechanical effect of these postures seems to have received little attention In the knee-face and the knee-chest positions the disposition of the forces acting on the pelvis is the same in kind as in the ordinary hanging leg position In each a backward force acts on the acetabulum—in one case a thrust, in the other a pull from the femur—and in both the tendency is to carry the anterior part of the pelvis downwards in relation to the posterior I have not at present the opportunity of making a series of measurements to determine the relative lengthening or the conjugate at the brim which results from the various postures, and so commend this observation to any who are more fortunate In practice, the hanging leg position has proved so irksome to the patient that it has not always been possible to maintain it for a sufficient time The knee-face posture is much easier, as is obvious from its being so often spontaneously adopted Should it be found that the measure of its influence approximates to that of the hanging leg posture it would offer a valuable aid in the slightly narrow pelvis

British Medical Association

PROCEEDINGS OF SECTIONS AT THE ANNUAL MEETING, BRADFORD, 1924

SECTION OF PUBLIC MEDICINE AND INDUSTRIAL DISEASES

HERBERT JONES, L R C S I, D P H, President

PRESIDENT'S OPENING REMARKS

THIS is the first Annual Meeting at which the public health service as represented by the Society of Medical Officers of Health, has been formally admitted to your Representative Meeting and to your Council, and there is reciprocal representation of the Association on the council of the Society. For many years the Association has concerned itself with the interests of the public health service, on whose behalf much time, thought, and treasure have been expended by the Association. The Society had been engaged in similar work, though the two bodies, while having the same ends in view, have not always travelled along parallel lines. There had been of late years a tendency in some quarters to make a sharp distinction between curative medicine and preventive medicine. In my opinion there should be no such distinction, and if in this Section we can indicate to the general practitioner and to the medical officer of health the way in which each can be of service to the other we shall have set a distinctive mark on the meeting which may serve as a milestone on the broad highway along which the whole profession is journeying. The first medical officers of health appointed were of necessity drawn from the ranks of the general practitioner. This was the case even in those posts which were of a whole-time character, and it is instructive to recall that the majority of the early whole time posts were in rural areas, several districts combining to make this financially possible. The holders of these posts were real pioneers whose names will always be held in reverence. There were Franklin Parsons, Bruce Low, Thursfield of Shropshire, Kelly of Kent, George Wilson of Warwickshire, George Turner of Hertfordshire, and Woodforde of Berkshire, masters of their craft, whose successful achievements were largely due to the fact that they were conversant with the difficulties of the general practitioner, and faithfully upheld the traditions of their order. The mention of Franklin Parsons and Bruce Low serves to remind us that for a long period the medical service of the Local Government Board was recruited from the ranks of medical officers of health, whose administrative experience and insight into the idiosyncrasies of local governing bodies were invaluable to the central authority. These pioneers had much to contend with. They had to teach the people, gently but firmly, that the laws of health must be complied with, and that in certain particulars the Legislature had made that compliance obligatory by Acts of Parliament. It has been wittily said that the earliest Public Health Acts were regarded from various standpoints as a new-fangled way of wasting money, as an unwarrantable interference with the liberty of the individual, as an impious encroachment on the prerogative of Providence, and as a convenient way of spiting a neighbour. Some of us have still to combat these views, but our task is light compared with that of our predecessors. How successful these were in laying the foundations of reform is now an open book. Preventable disease has been lessened, infantile mortality reduced in a remarkable degree, while our expectation of life has been so markedly increased that, whereas at the end of the last century a favourite topic for newspaper discussion in the silly season was, 'What shall we do with our boys?" these boys are now anxiously inquiring, "What shall we do with our grandfathers?" Though the public health service has come to be proud of its achievements, it cannot take to itself the entire credit for the results attained. The marvellous and, indeed astounding triumphs of the physician and surgeon in the realms of diagnosis and treatment are completely recognized in the public health service. Nor must we forget the scientific investigator patiently plodding in his laboratory, without whose aid we might still be taking timorous leaps in the dark, hoping for the best but uncertain of the issue. When considering the topics to be discussed in this Section it seemed to me and to my colleagues the vice-presidents and secretaries that the time was particularly appropriate to turn our attention to those subjects which would bring to the forefront practical suggestions for the complete and intelligent co-operation of the general practitioner and the medical officer of health and the manner in which one can best assist the other. The aim of both is the welfare of the whole community lightening burdens and making existence more tolerable in the words of a great English novelist, 'What is life for if not to make the world less difficult for one another'.

DISCUSSION ON THE ROLE OF THE GENERAL PRACTITIONER IN PREVENTIVE MEDICINE

OPENING PAPER

BY

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IN dealing with the place of the general practitioner in preventive medicine I propose to take a wide view of the meaning of the word 'preventive' and not to restrict it to its relation to the work of the departments of the public health.

In Brend's book *Health and the State*—which despite some questionable statements about the medical side of national health insurance work, I would like to commend to every person interested in the public health or in the progress of medicine—he points out that preventive medicine is of ancient standing and this is in some ways true. In the Mosaic laws there are many sanitary measures, and while some of them are concerned with various incantations and sacrifices, some are in accord with modern ideas and in the Middle Ages most European countries had laws dealing with sanitation, adulteration of food, etc. The punishment seems to have best fitted the crime in Germany, where there is an account of an adulterator of wines being condemned to drink six quarts of his own wine, from which he died. Nevertheless, in ancient times up to and through the dark ages, preventive medicine consisted mainly of priestly incantations and laying on of hands, and real effective prevention is a growth of the past fifty years or so.

While, then, the practice of medicine goes back into the forgotten past without a break, that practice has been in the main the practice of cure. Sir George Newman in his monumental memorandum *On an Outline of the Practice of Preventive Medicine*, begins with these words. 'The first duty of medicine is not to cure disease, but to prevent it.' Had Sir George Newman said that this ought to be its first duty all must agree, but as the words stand they are almost exactly the opposite of most of the practice of the past, as of the present, for most medical practitioners devote their lives to the cure of disease already there and not to its prevention.

Speaking of things within my own experience—if I find a cataract I remove it. I cure the blindness which the cataract causes. If I find a collection of pus in the cell of the bone behind the ear, and this affects hearing or threatens life, I secure an exit for that pus, and so cure or endeavour to cure, the deafness it causes. This sort of thing is my function in life. It is no part of my direct function to prevent the advent of the pus or to prevent the advent of the germs which give rise to that pus or so to organize the functioning of the body that no germs shall enter. I may take action which has this result but I do this so to speak, unofficially. In other words my function is, if it is not the prevention of disease, but its cure; and until quite recently this has been the function of almost all practitioners of medicine in all countries and in all

countries inhabited by white races, and is still the function of most of them other than those engaged in public health or research

Why is this? The answer is obvious, and it is that the economic demand on the medical profession has, until recent years, been entirely a demand for cure, and, with the vast majority of the profession, still is a demand for cure Speaking in terms of economics, we are the employees of the people who pay us our fees, and in the main we perform the task they set us to perform, and on the whole that task is to cure or to try to cure, and that is what we are paid to do It is only within recent years that we have begun to prevent, and it is still more recently that we have been asked to prevent and some of us paid to prevent

A result of the outlook which I have described is that until comparatively recently we received our emoluments from people who were ill—a highly unstable position, for it meant that we obtained fees from our clients at just the time when they were least able to afford them, a state of affairs so unstable that in the case of those people who are without reserves of property (and they are the vast *majority*) the arrangements broke down and the need had to be met in other ways As a semi-charity came the inception of a new aspect of the problem of the supply of medical services —that of insurance, not so much against illness as *against* the cost of the cure of illness and of maintenance during illness, and the club system arose This is *not the* place to discuss whether this system represented an advance or not, but for the purposes of this paper I *would* like to point out that it somewhat shifted the economic outlook The club doctor was paid by capitation fee, and *his income* depended on the number of members in the club, and not on the amount of work he did for them

I was interested to hear this point raised at the Representative Meeting last year, in the discussion on the National Health Insurance medical work, *when one of the* representatives aroused a storm of protest by saying that the interests of the private general medical practitioner were by no means identical with those of the panel practitioner, for the direct interest of the panel practitioner was to have less disease among his insured patients, and accordingly less work, while the direct interest of the private practitioner was to have more disease, and, therefore, more work Crudely put, the statement is liable to be misunderstood, and was met with a storm of angry protest, but the prejudice was unreasonable, for the logic of the representative was unassailable As a matter of economics it is to the interests of the private practitioner that there should be more disease and not less and it is *only* because there is no such entity as the economic man, and because men, not being economic men, "do not live by bread alone, but by every word that proceedeth out of the mouth of God," that the private practitioner does endeavour to prevent disease and often with success, and certainly does not desire to see more disease in the world

In 1912 the club system was enlarged on a grand scale into the National Health Insurance Medical Service, and this greatly changed the economic outlook of medical practice Previous to this time club practice had become, in part at least, so degraded that it was becoming a *diminish*ing factor in the medical service of the country, but now about one-third of the medical service became contract work, the principle of which is "pay when well, receive when ill"—under which it is the interest of the medical man to have his patients remain well I cannot accordingly but regard the advent of the National Health *Insurance Medical* Service as giving incentives for preventive work which did not previously exist, and, though the effect may *not* as yet be very great, I have no doubt it will become greater

With this preamble I now propose to deal with my subject under several heads

1 *What are the Present Activities of the General Practitioner which tend to the Prevention of Disease?*

By far the most important of these comes from his being the first to deal with disease already present, and on his being accordingly able to treat it in its early stages, the result being that often he is able to prevent acute from developing into chronic disease, and by treating disease effectively in its earlier acute stage he is able to prevent more or less serious complications Examples are obvious An acute Bright's disease treated early is prevented from becoming chronic Bright's disease The early treatment of influenza saves the victim from pneumonia Indigestion dealt with early may be got rid of before a duodenal ulcer develops The early treatment of a trivial wound prevents the onset of serious blood poisoning

Macleod Yearsley has in recent years written several illuminating articles on the prevention of deafness He points out that, while the "cure" of deafness when well established is usually a hopeless matter, the prevention of deafness is often an easy matter But the initial steps which will in the individual case lead to this prevention are almost entirely in the control of the general medical practitioner He is the medical person first called in to advise about deafness, or the inflammatory process which results in deafness, and on his prompt action depends the momentous question as to whether the cause of the deafness can be removed before organic change takes place which will make removal impossible Prompt action in inflammatory middle-ear disease usually results in satisfactory or normal hearing Failure to take prompt action results in loss of hearing Here the specialist is powerless the general practitioner is all-powerful The prompt action must in the first instance be his But, further, the general practitioner has power to prevent deafness before it is present at all, for it is he who first has the opportunity of observing whether the patient—in this case the young child—suffers from conditions, such as nasal obstruction, which are liable to produce deafness, and it is as the result of his prompt recognition of these conditions, and prompt action resulting from this recognition, that not only deafness but danger to health and to life may be prevented

I have enlarged on this example as one coming within the scope of my own work, and it is with pleasure that I recognize that in my experience the general practitioner has become increasingly alive to his opportunities in this respect, and though a general statement is dangerous, as the observation of one person must be too limited to warrant it, it is my belief that with the National Health Insurance the work of the general practitioner has improved in this respect Space does not permit me to multiply examples, but the aggregate effect of this indirect prevention is great, and there has been an interesting result in connexion with the National Health Insurance work An effect of the substitution of contract work, where a service received does not mean the expenditure of a fee, for private practice, where the service involves a fee, has undoubtedly been that the doctor sees his cases earlier, and sees more trivial things, and in my opinion the preventive effect of this is one of the reasons why the actuarial estimates of duration of sickness have been upset and the sickness incidence has been so much less than that expected that the accumulated reserves of the National Health Insurance funds have become as large as they have been found to be

Other activities which have preventive effect are such as the notification of infectious diseases, the vaccination of contacts in cases of small-pox, the vaccination of babies, the early treatment of venereal disease and its early reference to venereal disease clinics, and the prophylactic administration of antitoxin in diphtheria contacts Ophthalmia neonatorum was becoming relatively rare until the war seemed to restore it to or beyond its former scale, but its dreadful ravages have been reduced and so blindness prevented by the care of the general practitioner at childbirth and early treatment if the disease appears By advice about general hygiene much disease is prevented, and often advice given by the family doctor in the case of members of the family not obviously ill has been invaluable in the way of avoidance of illness Advice given during an illness may have an important effect in the promotion of health subsequently and the prevention of ill health The lesson a patient or his family receives on the value of the open window in pneumonia has had effect in opening windows and keeping them open after pneumonia has gone.

2 *How is the General Practitioner Failing to Take Advantage of the Opportunities he has at Present to Promote the Prevention of Disease?*

On the above and on cognate lines, examples of which everyone can multiply for himself, the general practitioner is doing admirable preventive work, but on other lines he is failing to promote prevention of disease where his influence might be great, and I believe that this failure is because it is not his first duty to prevent disease, as Newman appears to say, but to cure it

I suppose there are none of us who would challenge the statement that a bad environment is a cause of disease, and that in such cases prevention involves a change of environment But not only is a bad environment a cause of disease, and its removal a *sine qua non* for the prevention of such disease (which is not directly the business of the general practitioner), but a bad environment is also a potent influence in hindering the cure of disease, and as such it is the general practitioner's direct concern Bad housing conditions not only promote pulmonary consumption, but they also interfere with its cure Pollution of the atmosphere by smoke not only promotes rickets but its presence markedly hinders its cure Excessive hours of work, bad conditions of work, overcrowding in houses, overcrowding of houses, adulteration of food, alcoholic excess, conditions which promote alcoholic excess, are not only factors in promoting disease, but in hindering cure, and so are the concern of the general practitioner, directly as well as indirectly

Brend discusses the various alleged causes of infantile mortality, which is taken generally to be an index of the public health Some of these are poverty, defective sanitation, industrial employment of women, bottle-feeding, the absence of skilled attention in child-bed, maternal ignorance, influence of pre-natal conditions, etc He points out that none of these can be the chief cause, as they none of them invariably accompany infantile mortality The chief cause, for instance, cannot be maternal ignorance, despite Sir George Newman's dictum that "the principal operating influence is the ignorance of the mother, and the remedy is the education of the mother", for I for one am not going to believe that the wives of agricultural labourers and shepherds are so much less ignorant than the women of Bradford, where so much has been done to promote instruction of mothers The one constant factor that seems to accompany a high infantile mortality is a smoky and dirty atmosphere Accordingly, infantile mortality (and let me again remind you that infantile mortality is taken, and I believe, rightly taken, to be an index of the public health) is largely due either to smoke pollution or to some other cause, or congeries of causes, which is not yet established, and to ascertain which research is urgently needed

Let me take another example Macleod Yearsley has pointed out that the chronic running ear—the overwhelming occurrence of which is the bugbear of every school clinic and the nightmare of every otologist—is the outcome of poverty and evil housing conditions, there is no gainsaying this

What has all this to do with the general practitioner and his place in preventive medicine? you may ask Let me take the matter of smoke prevention for my answer The only reason why smoke pollution of the atmosphere continues is because public opinion does not call for its prevention were public opinion aroused to prevent it it would disappear To science the prevention of the smoke nuisance presents no difficulty, nor is there any difficulty for the economist To purify our atmosphere from smoke would certainly mean economic gain, not loss Why does it persist? Purely through ignorance and apathy, and because as Dickens pointed out over sixty years ago, the object of Governments is "how not to do things Governments can only do things when public opinion allows them to do them or forces them to do them, and here is a place for the general practitioner in preventive medicine He has a better opportunity for observing the disaster of bad environment than any other member of the community, he has, or ought to have, the skilled eye to see the effects as no one else can It is his privilege, accordingly, as well as his duty to be in the forefront in the creation of the public opinion which will sweep that environment away But what is he doing to form such public opinion as will reach out towards the new social order? I fear the only answer is nothing if it is not worse than nothing

In Parliament and on *local* authorities the influence of the medical profession is negligible, and for this state of affairs the general practitioner cannot be regarded as free from blame, he has failed to take advantage of his unrivalled opportunities to create public opinion

3 *What should be Aimed at in the Near Future to Give to the Community the Full Advantage of the Opportunities the General Practitioner has to Promote the Prevention of Disease?*

(*a*) If the general practitioner prevents disease as I have above pointed out that he does, through early treatment of acute disease, obviously the effect of his work will be greater the better he is able to do the curative work which is the function for which there is economic demand and I have already indicated that in a bad environment he cannot do effective work We have to realize that where people urgently need fresh air rest, good feeding etc, medical treatment can do little for them so long as their environment remains unchanged This change depends on the growth of a public opinion which will demand it, and in the foregoing portion of my paper I have dwelt upon this sufficiently Such growth of public opinion will be slow but there is one change in environment for which public opinion is ripe, and were the medical profession to demand it with no uncertain voice the ways and means for the change would readily be found

If we agree that the profession is doing a great preventive work by the early treatment of acute disease, and by the effective treatment of it, it is obviously necessary for the best results that the medical practitioner should have his patient in the best available surroundings to get him well quickly This then raises the question of the proper place in which to be ill if we have to be ill at all and I venture to state quite dogmatically that, generally speaking, houses built to live in are not suitable to be ill in There is a story told of Sir Frederick Treves and King Edward that when he had operated on the King for appendicitis he told him, on his recovery, that he had been as well treated as if he had been a poor person in a London hospital If the story is not true, *it ought to be*

But if houses are not suitable to be ill in, the general practitioner cannot do his best work if he has to treat his patients in them To obtain his best from him he must have hospitals in which to do more if not most of his work We of the middle class are increasingly finding out for instance, that childbirth is in every way safer and more convenient in a nursing home than in a private house even when that house is relatively commodious, the nightmare of midwifery practice in a workman's cottage with even two or three bedrooms is good neither for the mother, nor the child nor the doctor nor the community

The provision of hospital beds in this country is grossly inadequate to the needs of the community, it seriously handicaps the general practitioner's powers to treat disease and in the proportion that it handicaps such powers in at least that proportion it lessens the effect of his work in preventing it The late Sir Napier Burnett stated that the needs of the community could not be met by less than three hospital beds per thousand of the population in urban areas *and this* estimate has never been seriously challenged except that it is on the low side Present hospital accommodation is about one bed per thousand of the population This is not the place to consider whether the voluntary system, which is hard put to it to make ends meet, can be so extended as to meet the real needs But the provision of adequate accommodation is an urgent matter and could this be brought home to the people a solution would be prompt The appeal to the intellect however has small effect compared with that to the emotions As Brend says 'Many who would spare no effort to help a person injured in the streets before their eyes will read quite unmoved a statement that the hospital provision in England is seriously inadequate" In all seriousness I suggest that

the best way to find a solution would be to shut our hospitals down Three months would give the solution, and I suggest that the general practitioner could help towards it

(*b*) Apart from the question of environment in the treatment of disease, the community might gain from the general practitioner a further degree of attention to prevention of disease by giving him an economic demand for it I have indicated that the National Health Insurance Medical Service does to a certain degree make this effective demand indirectly, for it is to the interest of the insurance practitioner to have his clients well But if this be so, it affords but another reason for the ending of the absurdity that about one-third of the people of the working classes should have their medical service supplied to them through State agencies, and that the other two-thirds, belonging not only to the same class but to the very same families, should have no national provision whatever Were it not outside the purview of this discussion, one might ask the question What can you think of the intellectual capacity of the persons called statesmen who set up a medical service for a father, but not for his wife or his children? And one might ask what possible relation the question of employment can have to the provision of such service But if the present National Health Insurance medical work has had an effect of prevention, giving as it does medical service to one-third of the working-class people, this preventive effect would probably increase in a much greater proportion by extension to the other two-thirds Twice one is not always two—it is often far more than two, and the preventive effect of a National Medical Service (I use the term because a State Medical Service would probably be misunderstood) would certainly be far greater in the case of children than of adults were it extended in such a way as to secure a contented and, therefore, an efficient service

(*c*) The demand for prevention here would still be indirect, and I would now like to raise the question whether a direct economic interest in prevention could be given to the general practitioner My knowledge of the work of Pensions Medical Boards is slight, but it is enough to lead me to the conclusion that such direct interest could be given, but whether public opinion is prepared to avail itself of the opportunity is possibly more than doubtful At these Pensions Boards the examination of the persons who come before them is thorough to a degree An examination for an injury of, say, an extremity involves an exhaustive examination of the whole body, and I believe that it will be found to be the universal experience of Pensions Boards that at an examination for one object other factors have often been discovered, attention to which has had the greatest effect in the prevention of illness Could this idea be extended to the community generally, or even to the insured person, for whom national provision is already made? It would involve extra cost, for it would involve an increase in the medical work done for the insured person by between one-third and one-fourth, but evidently the chief difficulty would be in the training of the people to take advantage of it Were the difficulties overcome, the advantages of periodic examination by boards, consisting largely of general practitioners who would soon become skilled examiners, might have great preventive effect, and examples are so obvious that I propose to occupy neither time nor space in giving them

4 *How is the General Practitioner Linked up with the Departments of Public Health?*

When I planned my paper I proposed to consider the question of (*a*) how the general practitioner is now linked up with the departments of the public health, and (*b*) what could be done to make the link closer and better, but exigencies of space will not permit more than a mere reference to it I would, however, like to make the plea that, in the encroachment the local and national public health authorities are continuously making on the domain of the general practitioner, as in the treatment of school children, etc, the maximum use should be made of the general practitioner in this work, and not the minimum

The advantages to the local authority of the whole-time official are obvious on the surface he makes administrative arrangements easier, is less costly, and possibly to begin with more efficient, but in the long run I am certain that the advantage to the community lies with the part time service, where it is possible, of the practitioner otherwise engaged in general work The experience he obtains in one makes him fitter to do the other, and he becomes more efficient in both

5 *Has any New Thought recently arisen Profoundly Influencing the Outlook upon Health and the Prevention of Disease?*

So far I have been dealing mainly with the environmental aspect of prevention, and environment is pre-eminently a matter for the State and civic authorities, and its improvement is a communal affair, we have hitherto accordingly been considering the social aspect of health and prevention I am the last to deny its importance, but a new outlook upon health and disease has been forced upon me recently through the writings of F M Alexander, and my personal knowledge of his work, which point to health and disease being largely a question for the individual

There is no time here to go into this new view exhaustively, were this indeed the place for it But just as there is a place for the general practitioner in the social aspect of the matter, so I believe there is a place for him in this individual one The fundamental thought in Alexander's work is that health, physical and mental, depends upon a co-ordination of the whole body, and that disease is largely due to a failure in this co-ordination, and that this failure is chiefly due to a continuance on the part of man to rely upon instinctive control of the functions of the human mechanism, that, whereas instinct was a sound guide in the stable or slowly changing environment in which man passed his more primitive life, it is unsound in the unstable and rapidly changing environment of latter-day civilization, and for it must now be substituted a conscious control

That similar thoughts are influencing others is evidenced by some of Sherrington's work, by H C Cameron's paper on the nervous child at one of the Sections last year, when he related the condition of the nervous child to faulty posture, and, again, by a most interesting article by W A Cochrane in the BRITISH MEDICAL JOURNAL of February 2nd this year, in which he relates most disease similarly to faulty co-ordination In this article he says, and I think rightly, that "No part of the body can be used wrongly without the body as a whole suffering, and if one group of symptoms, whether referred to the foot, knee, hip, back, shoulder, or abdomen, is to be regarded as local only, treatment is not likely to be satisfactory"

Alexander stresses particularly this need for general as against specific treatment, and he claims that education and re-education will prevent disease and will eliminate it when it is established, and, indeed, make man largely superior to environment, and my own observation on his work induces me to believe that he largely justifies his claim

If this is so, then there is pre-eminently a place for the general practitioner, whose function it is to deal with general medicine, first in research into the truth of the claim, and, secondly, in the application of the principles of the truth if it is established

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GENERAL practitioners, as a body, have not hitherto taken much interest in prevention, the reasons for their indifference being (1) The very unattractive way in which the subject of preventive medicine was presented to most of us as medical students, and our consequent thought of it as concerned only with such unsavoury matters as drains and smells, (2) dissociation of the idea of prevention from all other subjects in the curriculum, which only recognized established disease or death, (3) our resultant conception of a medical officer of health as not really a proper doctor at all, but as someone akin to a more or less genteel plumber or scavenger, who varied the monotony of his mechanical calling with occasional body-snatching among the private practitioners' patients

There has been a steady evolution of the preventive idea during the last fifty years. First there was the urgently necessary "epoch of sanitation," which saw an intense campaign of cleaning up, and preaching of the gospel of cleanliness. This was the essential foundation for subsequent effort. Next came the "germ epoch" in which was effected the subjugation of epidemic disease. During this time the bacteriologist came into great prominence, and it was believed that 'preventive medicine is bacteriology writ large." There followed upon this the present epoch of social study in relation to disease" with its much wider outlook, continuing the policy of the previous eras, and adding to this a continuous consideration of the individual throughout life, with a view to the maintenance of sound health. This requires an intimate knowledge of the influence of environment, habits, occupation, mentality, and heredity upon the bodily functions, together with ability to recognize the earliest divergences from the normal.

Sir George Newman, in his review of medical training, rendered signal service in demonstrating to those responsible how lacking was the general knowledge of natural processes, and how necessary, therefore, a much greater emphasis upon the study of physiology, since the occurrence of pathological conditions was, after all, due to physiological breakdown. He emphasized strongly the imperative need for carrying the idea of prevention, and preventive application into the teaching of every subject, advice to which the training schools are now giving close consideration.

The general practitioner undoubtedly constitutes the first line in defence—a line with a great deal of reserve power that has never been put to use. The family doctor is in a unique position for detecting and observing tendencies to depart from the normal, and he knows, best of anyone, the family circumstances, habits, and environment, and their influence upon the health of the members. The need, then, for the closest possible co-operation between him and the health department is obvious. For an example, neither the general practitioner nor the medical officer of health can prevent poverty, probably the chief cause of ill health, and certainly of its continuance. But much may be done to mitigate its asperities and consequences by the fullest possible use of existing facilities, many of them provided through the health department. Even if the general practitioner is not fully conversant with all such agencies in his neighbourhood, he can always obtain information about them from the medical officer of health, if the latter is worth his salt.

Much of our serious invalidity develops from neglected trifles, beginnings of a pathological sequence, such as "growing pains" in children, carious teeth, minor forms of indigestion, overstrain, enlarged tonsils and adenoids, chronic ear discharge, personal uncleanliness, pediculosis or scabies, and the hundred-and-one little troubles that upset babies (and their mothers) but which we have never been taught to recognize or consider. All these may be the beginning of a lasting misery. The starting factor of disease may not always be within the human body. Thus, to take an imaginary case, and trace backward: Cancer of the stomach may arise from the traumatic ulcer, *chlorosis, constipation*. And this may result from avoidance of daily evacuation owing to the public position or nastiness of the domestic privy.

A problem that is seriously prejudicing success in the fight against consumption is the difficulty in getting hold of cases in the early and curable stage. The great majority of sufferers do not consult a doctor at all until the disease is well established, and there is quite an appreciable proportion in which the condition is suspected, yet valuable time is lost before obtaining expert opinion, either through hesitancy on the part of the doctor, or even a mistaken sense of consideration for the feelings of the patient or his friends. Occasionally one still comes across deaths of patients who have never been notified so that no step has been possible for the protection of other members of the household. Comment on such culpable laxity is superfluous. But the private practitioner could make considerably more of his opportunities for the detection of early signs of, or tendencies to, tuberculosis among the others of a consumptive's family, and so anticipate the intervention of the medical officer of the municipality.

Much more might be done by the profession as a whole in education of the public in matters relating to health, such as the value of a clean and tubercle-free milk (which will certainly not be forthcoming until people learn to demand it), the significance of insanitary domestic conditions and habits in relation to summer diarrhoea, the vital importance of breast-feeding, the discontinuance of which on the flimsiest evidence of insufficiency or inadequacy is too often condoned by the family doctor. The private practitioner is in a specially favourable *position* to gather valuable data bearing upon the causation and conditions conducive to the occurrence of diseases such as encephalitis lethargica and cancer, that are of growing concern to the nation at the present time—data the significance of which is only perceptible to the man with an open mind, *who* can observe more than the mere lesion for which his services were originally requisitioned. So too in other questions of public health policy such as atmospheric pollution, food adulteration, water supply, scavenging, public parks and recreations, his help would be of the greatest value, not necessarily through membership of his local council, but through his local British Medical Association Division. He, better than anyone else, can help in the control of venereal disease by direct advice to young people, and by teaching parents how to protect and warn their adolescents.

Lack of enthusiasm on the part of the general practitioner has led to the multiplication of the minor—but far from unimportant—whole-time clinical appointments by municipal authorities throughout the country. So often when part-time medical officers have been tried the venture has failed through want of sympathy, inattention, or unpunctuality (not always unavoidable), or actual temperamental unsuitability of the person selected, and the local authority has been compelled to install whole-timers instead. This is very regrettable, for while the immediate gain to the authority, both in practical results and financially, is seemingly considerable, such a specialist post proves in most cases a mere cul-de-sac offering no prospect of professional or material advancement to the holder, and if not soon relinquished it results only too often in a narrow and cramped outlook, with blighting disappointment.

It would be of immense advantage to the community as a whole if the invaluable experience obtainable only in the various clinical undertakings of public health authorities could be garnered by private practitioners, who would then be able to utilize it for the good of all.

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To put into practice the doctrine of the unity of the medical services requires something more than lip service. The object of this discussion is, I take it, to indicate what that something is. Before doing so we must have some idea of what we mean by the term "preventive medicine." It originally implied the treatment of the environment of the people, it later included the treatment of certain patients who, on account of their condition, were dangerous to other members of the community, and to-day it is concerned with the treatment of patients to prevent the development of disease in them elves. This last is what in fact the general practitioner does quite as effectively when he has the chance, though not with the same method and with a different apparent objective from that of the medical officer of health.

The public authority has undertaken it because it has not been done efficiently or sufficiently before. Why was this so? Dr. Macdonald has pointed out the economic reason, but, further, we must remember that the patient or their parents did not appreciate the need, and medical men in general have been by force of circumstance and training too much obsessed with curing established disease. There has been, there still is, a greater difficulty for the general practitioner—practical one might say ethical—the impossibility of his seeking out and following up these potential patients. There is also the fact that he has had no

sort of authority to compel their attendance, and, even if he had, he would not always have been able to provide all the necessary treatment or to ensure that it was carried out

Some of these difficulties could be overcome without legislation, but not all The disputed territory lies in the various clinics, no commission can settle the boundary line, it can only be arranged by the mutual agreement of both parties, who no doubt realize that they are, after all, only different units of the same service The question is not who should actually do the work at the clinic, but Is the clinic, as it exists, always a necessary part of the practice of preventive medicine, could the work be equally well done otherwise?

At present the patients are by various means got to the clinic, often at much inconvenience to themselves and at considerable cost This in addition to the cost of equipment, general staffing, and management, and the fixed place and time make it frequently impossible for the family doctor to undertake the work there If, instead of being referred to a clinic, the patients were definitely sent to such medical men as agreed to do the work, and were attended by them at the patients' homes or the doctors' surgeries, the attendance being paid for by the authority in control of the clinic, the cost would probably be less, and the advantage would be great The service would be more convenient to the patient because of better possibility of adapting both time and place It could not fail to be a great advantage, from the point of view both of cure and prevention, if the patient could be seen in his home surroundings Moreover, in a large proportion of cases the medical man would be acquainted with the family medical history

In addition to this, the general practitioner's wide experience of the history and reaction to treatment of all sorts of disease in all sorts of conditions must be set against the more limited clinical experience of the assistant medical officer, who too frequently is changed as soon as he has gained valuable experience, and who, if he is not changed runs the risk of having been too long engaged in too limited a sphere of work These clinics deal essentially with disease in its earliest stages, but the earlier the stage of the disease the more difficult it is to diagnose and appreciate and the more important it is to have the help of the experienced general practitioner

In large industrial centres clinics may be a necessity, but in small towns and country districts I cannot see the advantage gained by transferring this work from the experienced general practitioner, provided that he is given proper facilities, to the assistant medical officer just referred to, to be done at the clinic, which is to many becoming a fetish It is assumed that arrangements would be made for consultations and specialist treatment when necessary This applies to all sorts of clinics, except those, such as dental, eye, and orthopædic, which are particularly specialized To none surely does it apply with more force than to the antenatal clinics which it is now proposed to set up all over the country The local medical men might take some part in even the special clinics if these were conducted in connexion with cottage hospitals

It has been objected that the State would not be willing to pay for this work unless it had some opportunity of inspecting it, or some guarantee of its efficiency, but it already does pay for midwifery work, which it has no opportunity of inspecting How, in actual fact, does the local authority inspect or ensure the efficiency of the clinical work of its own medical officers?

Though the medical officer of health has become clinician as well as administrator, I have no desire to see the family doctor become administrator as well as clinician, but there is other work that might with advantage be allotted to him I have in view the notifying of houses that are unfit To give him power to do this might require legislation, it certainly would if it were to be made a duty, and I can see no objection to this under certain conditions It is already his duty to notify certain cases of infectious disease, so that they may be dealt with in such a way as to prevent spread why should it not likewise be his duty to report on such conditions of living as are favourable to the growth and spread of infections and other diseases? I would give him the power and the duty to report, not to take action

An excellent instance of the manner in which the practitioner may take part in preventive medicine is that suggested in the recently issued report of the Departmental Committee on the Medical Examination of Young Persons for Factory Employment This shows how a little assistance, in the way of information given by a department to the practitioner, may enable him to do very valuable work His wide knowledge of disease, his frequent contact with the worker, his acquaintance with his home surroundings, combined with the knowledge of the past history which he will get from the education authority, will enable him to give very valuable opinions

Many of the difficulties in the way of the general practitioner taking a larger part in preventive medicine could be overcome by legislation In theory the medical man should be paid to keep his patients well, but he cannot be expected to undertake to do this unless he is at the same time given power to control their habits, their method of living, and their surroundings This, of course, would not be practicable The nearest organization by which we could overcome the difficulties would be an extended national health insurance service The advantages in this respect are so obvious that I need not detail them

It might be objected that under this service some medical man actuated by a subconscious self-interest would let the medical officer do as much clinical work as possible, *per contra*, the medical officer would reason—the panel practitioners are paid to do this, why should I do it? Incidentally he would admit the general practitioner's fitness and ability to do it Fortunately, however, the profession is not impelled by motives of self-interest, but by that imbued, or at any rate inculcated, altruism which is now generally called by the less pleasing name, herd instinct Under this service medical men are already carrying out a very valuable work in the making of records, which, with care in collation and interpretation, should be of great value to preventive medicine

The general practitioner has now not only an opportunity but a duty to help in the work of the public medical services, and he, on his part, will recognize the need to adapt to it both his practice and himself, he will attain a better appreciation of and education in the science and practice of preventive medicine, that he has not had it in the past is not his fault, but the fault of those who were responsible for his training This omission is now being rectified, but the reform will be of no avail if more use is not made of his newly acquired knowledge We cannot overlook the fact that, so far as clinical medicine is concerned, the general practitioner has much the same education as the medical officer of health, and after some years' practice has perforce more clinical experience than the latter All he wants is the opportunity and the authority to use it

All medical practitioners are in fact potential servants of the State, and if their service can be given without undue interference with their freedom and individuality, so much the better for the State and for medicine Whether their special work is administration, clinical medicine, or laboratory research, there is every reason why they should work together as members of one service, for the family doctor's experience, his knowledge, and his opportunities are essential for the completion of the practice of preventive medicine

GENERAL DISCUSSION

DR F E FREMANTLE, M.P., remarked that, strictly speaking, the economic contract of the general practitioner bound him to attempt the cure, not the prevention, of disease, similarly, the economic contract of the medical officer of health was not to prevent but to advise his local authority how to carry out its statutory duties But indirectly the "contract" covered the current conception of the "doctor" as the friend of humanity who would do his best whether he was in private practice or public office The profession was trained to work for the higher and larger object, and not for the narrow lay conception of an economic contract This basis was difficult to maintain in these days of materialistic trade unionism, but it was vital to maintain it for the sake of their profession, their

successors, and their own peace of soul Though the general practitioner deserved credit for many of the achievements attributed to public health, he could do much more by taking a more active part in public life —for example, in local elections and on local authorities He should make the influence of medical opinion and experience more directly felt through the medical members of Parliament, who largely failed owing to inadequate support by the profession This was the fault of no one in particular, but it arose rather from the lack of efficient machinery If individuals could each make themselves responsible for one of the several subjects—for example, milk supply, midwifery, tuberculosis, and so on—a body of evidence could be elicited by questions in the House, publicity and world-wide support be secured, and action taken on businesslike and strategic lines, thus making full use of the representatives of the medical profession in Parliament

Dr J S MANSON (Warrington) thought that the general practitioner was quite alive to his responsibilities in respect to the preventive side of medicine This was evidenced by the way in which he carried out his statutory duties in the form of notifications and suchlike He was always ready to give advice on matters of general health, but he was willing to admit that such advice would be much more effective if it were backed up by his own personal example

Professor F E WYNNE (Sheffield) agreed that some of the prejudice which lingered in the minds of the profession was due to faulty teaching of the subject of public health to the students in the past He considered it the duty of all those who were engaged in the teaching of this subject in the universities to lift it to a higher plane, and to show that the intensive study of preventive medicine formed a link between the elaborate training of the student and its application to practical life Personally, he owed a great debt to the cordial co-operation of the general practitioners in Sheffield, where the whole of the clinical work was carried out by part-time officers A practical difficulty, however, arose in referring patients to the general practitioner in that he was *not in a sufficiently independent position* to assist in educating his client to avoid the traditional bottle of medicine, which, especially in the case of infants, was generally useless and often injurious

Dr H B BRACKENBURY (London) maintained that the general practitioner had many opportunities of taking part in the work of preventive medicine, and was at the present time availing himself of them He had a greater chance than anyone of seeing and tracking disease in its early stages, and, almost alone in the profession, he directed his mind to the whole organism, or even to the whole personality In addition, the general practitioner was now carrying out a large amount of active prophylactic work by means of vaccine therapy and similar methods and he was also increasingly consulted on matters of personal and even factory hygiene In all this work it was quite usual to call it "preventive" when done under the auspices of a public body, but not to recognize it as such when done by a general practitioner He had also great opportunities in the way of propaganda both amongst the public and members of administrative bodies, especially if he put himself forward for election on the latter In this he should not be deterred by the fear of self-advertisement If economic conditions would allow, his work should be so arranged that, instead of spreading his time and energy over a large number of persons, he could concentrate on a smaller number, thus dealing with them more thoroughly from the aspect of prevention This would be a powerful aid in securing more and better work being done in this direction

Dr JAMES R KAYE (Wakefield) expressed his appreciation of the part played by both branches of the profession in relation to public health As an illustration he quoted the example of the West Riding County Council which had now forty general practitioners doing county work in addition to thirty-eight whole-time assistants In reference to propaganda work last year they had obtained the voluntary co-operation of 160 medical men in giving some 280 lectures in the elementary schools during "Health Week," and they hoped to increase those figures this year The universality of the subject covered numerous fields of civil activity, and embraced very closely the efforts of the general practitioners The significance of the title 'Doctor" should not be overlooked, and it should be recognized that the wider education of the healthy is fraught with more advantages than the bedside nursing of the sick As to any new thought influencing the medical outlook, in his opinion it was supplied in the modern idea of promotion of health as distinct from prevention of disease He agreed with Oliver Wendell Holmes's remark that it would be a good thing if the whole of the drugs in the *Pharmacopoeia* were thrown overboard and that "a healthy cobbler was a better man than a sick king"

Dr D MCKAIL (Glasgow) was very pleased to hear about the great use that Dr Kaye was making of the general practitioners in the West Riding of Yorkshire, and of his high appreciation of their work He regretted that in former days so many recently qualified practitioners had been appointed as school and tuberculosis officers He believed that experience in general practice was a very valuable preliminary to all such work, if not a necessity in urban districts Parents and others would pay more attention to the views of *matured men* Such posts also afforded a means of part-time employment for medical men *wishing to ease off from the stress and strain* of general medical practice

Dr LOCKHART STEPHENS (Emsworth) recommended the employment by local authorities of general practitioners in educational work, for which they could be trained by post-graduate lectures The demand of the public for information concerning health matters was gradually increasing and by such means that valuable asset of the trust which a patient had in his doctor could be utilized in a way which had hitherto been neglected in preventive medicine The day of dosing infants for diarrhoea was over, and it was time the public were taught so

Dr H SCURFIELD (late Medical Officer of Health Sheffield) asked what was to be the attitude of the general practitioner towards the midwifery of the future Emergency midwifery was condemned, and preventive midwifery was taking its place Preventive midwifery required greater skill and knowledge Most of the births nowadays were attended by midwives If the general practitioners attended fewer cases their ability to help the midwives would obviously grow less Was the future midwifery service to be a panel of obstetricians (perhaps largely women) doing the ante-natal work attending births, answering calls of midwives giving the newly born a good start in life, and working in co-operation not in competition, with the general practitioner?

Sir MALCOLM WATSON, M D (Federated Malay States) expressed surprise to hear the plea for unity between the two branches of the medical profession Was it that there had been too much specialization, and hence a drifting apart? In his long experience abroad he had seen that the waste places of the earth had been made habitable only by pioneer work and co-operation Employers could be made to realize that the health of the worker was essential for commercial success, and it seemed that this needed to be impressed here In this country the practitioners must educate the public, without this there could be no progress

Dr CECIL WILLIAMS (Medical Officer of Health Todmorden) asked for a better definition of the duties the general practitioner owed to prevent ve medicine particularly in ante-natal work and in tuberculo s Inadequate action by a local authority caused the general practitioner to depreciate notification

Dr N R RAWSON (Whitley Bay) revered the familiar order of expression and claimed co-operation of the medical officer of health with the general practitioner Much misunderstanding had arisen through the former having to consult with practitioners in matters relating to health

medical service, ante-natal work, and tuberculosis The general practitioner should not be ignored in public health schemes

Dr R WOOLSEY STOCKS (Medical Officer of Health, West Bromwich) emphasized the necessity of observing the old custom of a newcomer calling on the other practitioners, and said this should be observed by health department assistants Personal acquaintance would go far to remove misunderstanding He also advocated the discussion of public health subjects at meetings of the British Medical Association Divisions

Resolution

Before the meeting adjourned the following resolution was moved by the PRESIDENT and seconded by Dr H C PATTIN (Norwich)

> That the Council be requested to institute an inquiry as to the best means of applying the experience and influence of the medical profession to the work of Parliament, especially with a view to the establishment of an effective co operation with the medical members of Parliament

On being put to the vote of the meeting this was carried unanimously

The Popular Lecture
ON
THE SUN CURE.

DELIVERED AT THE ANNUAL MEETING OF THE BRITISH MEDICAL ASSOCIATION, JULY 25TH, 1924,

BY

SIR HENRY J GAUVAIN, M A, M D, M CH,

MEDICAL SUPERINTENDENT, LORD MAYOR TRELOAR CRIPPLES' HOSPITALS, ALTON AND HAYLING ISLAND

As in all things human, so in medicine, there are fashions and fancies Sun treatment recently has attracted a great deal of attention, both medical and lay Medical men may safely be left to explore its possibilities and indicate its limitations It is thought by many to be a new method of treatment, actually it was employed by the ancient Greeks, and perhaps long antedates that period of history Physicians have for ages recognized the value of sunny climates, and have recommended sunny districts to their patients, particularly have they noted the value of sunshine during convalescence from illness Nations have even been sun worshippers, and to this day the people of Hammerfest celebrate the return of the sun to that Arctic city with festival and rejoicing It is strange, then, that the scientific study of light used intensively should have been so long delayed

While it is true that sunshine has been long employed therapeutically, its scientific utilization for the relief of disease is of quite recent date The work of Finsen opened a new epoch in scientific light treatment The genius and the value of his researches are now universally recognized It is worthily succeeded by Dr Axel Reyn, who addressed this Association last year Bernhard at the commencement of this century and Rollier in 1903 were pioneers in the sun cure I recall Dr Stoker, shortly after the Treloar Hospital was opened, describing to me the methods of the natives during the Zulu war, who took their wounded braves to the mountains and exposed them naked to the sun with results that were remarkable He ascribed the success of this measure to the purity of the air and the presence of ozone, while that was undoubtedly of value, the actual rays of the sun were probably the principal factor in the success of their treatment

Very shortly after we commenced work at Alton, I, with youthful enthusiasm but without actual experience, commenced careful sun exposures with happy results that surprised me The summer of 1911 first convinced me from clinical findings of the true value of insolation, and the treatment has since been systematically applied at Alton in every suitable case with encouraging results Nevertheless, the effects of this, as of all methods of treatment, should be considered calmly and judiciously In a paper in 1914 I stated

> "The value of A prolonged not be unduly exaggerated at Alton has convinced me of its value Heliotherapy is an adjuvant to treatment and as an aid to treatment is of the greatest value, but the indications for its employment and its limitations should be very clearly recognized"[1]

In 1920 I wrote

> "The sun cure should be regarded as an adjuvant, and merely as an adjuvant, method of treatment in non pulmonary tuberculosis The extravagant claims made by some advocates of this method of treatment need to be examined with critical care In certain instances they have been advanced on questionable grounds, either by enthusiasts biased in their opinions, or for reasons which happily are not regarded with favour in English medical circles Such statements as 'The sun will cure all forms of surgical tuberculosis' are contrary to fact, and will sooner or later bring discredit and disillusion on a method of treatment possessed of many advantages, a method of which the application is very desirable in certain cases but with definite limitations Examination of the methods employed by the most successful exponents of the sun cure shows that much of the success attributable to insolation is due rather to conservative measures (in *surgical tuberculosis*) skilfully applied, aided by the discriminating employment of heliotherapy"[2]

These words are equally true to-day, though since they were written many researches of the greatest interest and importance have been completed, and establish ever more firmly the value of this method of treatment, they equally demonstrate that its employment in disease should be entrusted to skilled and competent practitioners and should be used in the light of existing knowledge with judgement and discrimination

Comparatively little general interest in sun treatment was evoked until 1921, when the most wonderful summer in *living memory, coupled with the increasing advocacy of* an extended summer time, compelled universal notice in England of the effects of abundant sunshine, and directed an almost embarrassing attention to our work at Alton Quite suddenly this method of treatment attracted widespread notice, and nobody was more surprised than we at the interest aroused in our work, which had been carried on for years in comparative obscurity

I must be brief in dealing with a subject which has so grown in interest that already there has arisen a considerable literature Perhaps, in the limited time, I can be most helpful by indicating rather the dangers of the *treatment than its advantages (for every potent treatment* must in unskilled hands possess dangers), and the way in which, as far as present knowledge extends, sunlight acts

DANGERS OF HELIOTHERAPY

The dangers may most simply be classified under two headings (1) due to carelessness or ignorance, (2) due to unsuitability of the individual

(1) The most obvious dangers under this head are sunstroke, heat-stroke, and sunburn The former is produced by local heating of the brain as well as by general heating of the body, while heat-stroke is caused wholly by the latter Professor Leonard Hill and Dr Argyll Campbell have shown that by placing *the head end of a rabbit in the sun* and the tail end in the shade the temperature of the brain may rise several degrees above that in the rectum The circulation of blood is not sufficient to distribute the radiant heat locally received equally round the body If the brain temperature rises too high death may result Hence the need of suitably protecting the head and the spinal column, particularly in the tropics Heat-stroke is preceded by fatigue of the sweating mechanism on which the heat regulation of the body depends in hot atmospheres Such fatigue and failure to sweat is accelerated by illness Heat-stroke can be warded off by induction of artificial sweating, by wetting the patient with a spray and blowing upon him with a fan Heat-stroke is especially prone to arise in windless hot atmospheres, and in overheated conditions[3] Sun-burning may contribute to the onset of sunstroke or heat-stroke by making the subject ill through absorption of the product of damaged tissues The blister which results in extreme cases of sunburn may leave an open sore which in turn may become infected and is thus a source of danger Sunburn should always be avoided I hold a nurse who allows her patient to develop a sore in

consequence of sunburn in equal disgrace with a nurse who permits a sore to form on a paralysed limb through lack of care By carefully graduated exposure such sores may be avoided, they do not occur when the skin has gradually become well pigmented and chocolate-coloured In some patients with limited pigmenting power they may be difficult to avoid unless extreme care and skill are exercised

(2) Dangers due to unsuitability of the individual exposed are more difficult to describe, and in certain cases can only be ascertained by undertaking complicated tests Subjects who will not pigment, or who freckle but do not pigment well, should only be exposed under medical advice and with meticulous care Albinos are unsuitable for sun treatment In them the protective pigment so useful in undertaking the sun cure will not form Briefly and for general guidance it may be said that the very young, the aged and infirm, people suffering from any illness or organic disease, should never attempt sun treatment except under medical advice For many of these sun treatment may be of the highest value but there are dangers in its application so great, that treatment should only be undertaken by those expert and trained in its use

Precautions to be Taken

For the robust who pigment well and are free from organic disease, carefully graduated exposure to the sun has little danger and may be very advantageous, but certain precautions should always be taken The feet should be first exposed, gradually more and more of the body should receive insolation, and only after about a fortnight (though there may be individual variations) should full exposure be permitted Eventually a total exposure of some two to three hours a day may be permitted with advantage, but always the head should be protected, the patient should never be too hot or too cold, blistering should be avoided, and exposure should stop short of fatigue, but should be followed by a feeling of well being and exhilaration

Naturally the interpretation of directions for the conduct of sun treatment in this country needs common sense conditions suitable for sun treatment vary so much, according to season or locality Thus I left Alton at 9 o'clock yesterday morning in a blaze of sunshine and a blue sky with my little brown patients exposed nude to the sun and air I arrived at Bradford at 3 o'clock in the afternoon in a cold drizzle with a dark and lowering sky, conditions quite unsuitable for a sun-bath Common sense must therefore be employed, but a good safe rule to be observed is that individuals exposed should not feel cold nor should they be unduly hot

Patients responding suitably to insolation are extraordinarily immune to colds and catarrh not only when receiving treatment but their resistance is so raised that this immunity usually remains for a considerable time after treatment is completed Coughs and colds are almost if not quite unknown amongst my patients at Alton and Hayling Island

I observed just now that in cases of organic disease, sun treatment, though often highly beneficial should not be applied except under medical advice and direction It is not necessary in this lecture to review the indications or contraindications, nor describe the tests which should be made *This matter is too technical for discussion here*

I must, however, make passing mention of sensitization in sun treatment a phenomenon of extraordinary interest which is receiving attention now Certain fluorescent substances, as eosin, sensitize animals to the visible rays Hypersensitivity to light sometimes occurs in families A substance known as haematoporphyrin, an iron free derivative of haemoglobin, is a most remarkable sensitizer, and a small quantity of this injected into white guinea pigs will make them so sensitive that they will die on exposure to light Hill has shown that if painted on the abdominal wall, which is then exposed to light, not only will the belly wall of the exposed animal slough and die, but subjacent viscera in contact with this part of the body will also undergo necrosis

In other words, then, when undertaken not under medical advice, insolation is suitable for the well man only who feels the better for it For the sick and infirm it should never in any circumstances be undertaken except under medical supervision I have *purposely stressed the* dangers and advised caution because dangers do exist and I feel a responsibility in the matter Under skilled medical advice and supervision they need not be apprehended and many a sick and convalescent patient might be aided could he but have the opportunity of a properly planned sun cure

How the Sunlight Acts

Properly planned sun treatment may be said to be beneficial in three ways

1 *Psychological Action* —Sunlight has a powerful stimulating and tonic effect It exhilarates and enlivens Those who live in the sun are notoriously merry and lively It braces up and cheers the soul, and tends to banish depression Not only is the vivacity of the patient increased but his mental capacity is raised As a well known writer has said "The sun is a dispeller of ill-humour" But, like all stimulants, if pressed to excess it intoxicates and then exhausts

2 *Local or Direct Action* —Sunlight has a powerful direct bactericidal action It has been described as the world's greatest antiseptic This property is especially strongly possessed by the ultra-violet rays in the sunlight These rays have very little penetrative power, so that the direct bactericidal action is limited to organisms on the surface Nevertheless, on superficial wounds it is of value both by its direct bactericidal action and also by the favourable inflammatory response which carefully graduated exposure elicits Penetrability may be assisted by mechanical means such as utilized in the Finsen lamp, and in that way such diseases as lupus may be cured Nevertheless, the penetrability of ultra-violet rays is so limited that Barnard has stated that if a tubercle bacillus could be conceived as directly superimposed on another such organism, the exposed bacillus would be slain, the subjacent one survive

3 *Indirect or Remote Action* —The most fascinating problem presented to the heliotherapist is Why and how can a deep-seated lesion protected by a mass of superjacent tissue which by no conceivable means can be reached directly by ultra-violet radiation be favourably influenced? Before answering that question let me direct attention for one moment to the solar spectrum A beam of white light is composed of many rays of different colours and different wave-lengths Below the red rays are the invisible infra-reds radiating heat and demonstrable by their ability to raise the mercury in a thermometer placed in their track Beyond the violet are other invisible rays the ultra-violet, rich in actinic power and capable of producing an image on a photographic plate These rays diminish in wave-length from the infra-red to the ultra violet Luckiesh states that if a normal spectrum of the entire range of wave-lengths of radiant energy could be produced and the spectrum of light—that is the portion due to visible radiation—were but one foot long the entire spectrum would extend for several million miles in length[5] Happily we are here only concerned with a very small portion of that spectrum Research has indicated properties in some of these rays which are now capable of practical application in the service of man Very long-waved infra-red rays constitute the so-called wireless used in broadcasting wireless telegraphy and telephony but the term "wireless" reserved for this method or conveying messages is a bad one, as all forms of radiant energy may be projected without the aid of conducting wires Very short-waved rays have been for years used with the greatest benefit in the diagnosis and treatment of disease as the x ray and radium emanation These two examples are of very long- or very short-waved rays at the extremes or the scale but it is those waves in the neighbourhood of the luminous spectrum, the near infra-reds the visible and the near ultra violets, that especially concern us in relation to the sun cure

All these rays, suitably controlled, shed a beneficent influence on living matter but only some of their potentialities are as yet known Without indulging in speculation, we are, however, able already to detect some of the

effects of the infra-red, visible, and ultra-violet rays, and at the present stage of our knowledge the ultra-violet are the most important It is interesting to note that the effects of particular rays may be modified by substituting or combining other rays Thus, an x-ray burn may be treated advantageously by ultra-violet light, and the lethal effect of ultra-violet light on infusoria may be postponed by admission of visible rays It is probable that the combination of rays in the solar spectrum is peculiarly suited to the needs of the inhabitants of this planet, particularly in temperate regions

Certain of the properties of the ultra-violet rays on the body have been ascertained, notably the recent discovery of their ability so to influence the blood, after due exposure of the skin, that its power to destroy disease-producing organisms may be greatly increased This is a property of the greatest interest and value It affords an explanation of the beneficial effect of sunlight on septic conditions Haemobactericidal power after insolation though commonly raised, may be occasionally lowered and this is an additional reason why insolation should be applied under medical direction, as in certain conditions lowering of the bactericidal power of the blood may just turn the balance and result in great harm to the patient For the discovery of this property of ultra-violet light credit must be given to Professor Leonard Hill, working with Dr Colebrook and Dr Eidinow It is, I think, one of the most important discoveries made in recent years, and likely to have profound significance in therapeutics From clinical considerations one felt that such a result must be produced, but it needed the skill of these investigators to demonstrate it Here I would especially pay a warm tribute to the brilliant investigations of Professor Hill

Other remarkable properties of the ultra-violet light are its effect on the calcium metabolism of the body, assisting in that way in the repair of diseased bony tissues, its function as an essential food spur[1] In a vitamin-free diet it enables life to be prolonged and disease due to vitamin deficiency, as rickets, to be cured It has the power, too, of creating pigment in the skin This skin pigment has a protective quality, permitting prolonged exposure to sunlight to be safely endured and utilized for the good of the bodily health These are but examples of some of the properties ultra violet light has been shown to possess, and this knowledge may now be applied in practical therapeutics

The visible rays, of longer wave-length than the ultra-violet, have greater penetrative power, pass through the skin, and are absorbed by the blood, their energy being converted into heat This fact was discovered by Sonne, who put forward the suggestion that this local heating of the blood destroys toxins or poisons produced by germs, and supported his view by a series of experiments with lethal doses of diphtheria and typhoid toxins injected into rabbits

The infra-red rays have even greater penetrative power, and produce local congestive and thermal effects It is unnecessary to dilate further on the properties of various rays I have but indicated a few of the more important effects as yet discovered What the future will disclose I know not, but much remains to be discovered Enough has been said to show how complex is the modern science of heliotherapy, how manifold are its possibilities, how strange and unexpected its effects Their very complexity shows that they should be employed with caution, with a definite aim, and on sound physiological principles All these rays, be they infra-red, visible, or ultra-violet induce inflammatory reactions, which, properly controlled in suitable subjects, may be utilized in the fight against disease

I cannot do more than mention here the incidental effects produced by sunlight[2] Insolation necessitates exposure of the skin to the cold air This in itself produces all sorts of effects which would need a special lecture to describe Especially is this of importance in increasing metabolism—a matter of great moment in treating such a disease as surgical tuberculosis Still more may the body metabolism be raised and the effects of the sun-bath increased if the latter follows carefully graduated sea-bathing[6] Ultra-violet radiation is more intense at the seaside than inland, the sea is a great mirror reflecting the actinic rays, absorbing the heat rays, and hence intensifying the action of the former

Conclusion

To my mind, study of the so-called sun cure opens up a vista much wider and more extensive than that exhibited by mere consideration of the effects of radiant energy It means that we have at hand a potent method of producing cell stimuli and of profoundly modifying or altering the properties of the cells of which our bodies are composed The study of bacteriology, important and valuable as it has been, has perhaps too much obsessed us Bacteriologists have patiently investigated the seeds producing disease, their cultural and microscopical character, their variations, even the various strains of similar micro-organisms We can divide tubercle bacilli into human, bovine, avian, atypical, and other strains But what about the soil into which these organisms are implanted? We do not need to be agriculturists to know that certain seeds will only grow in certain soils and under certain conditions, that if they do grow they may be modified or altering the nature of the soil or [illegible] Have we not been rather slow in applying that knowledge to disease in man? Let us study ever more eagerly and intensively the properties of the human soil, how we may modify and alter it until at last it becomes impossible for germ diseases to be implanted and develop The sun cure is only one indication of how this new study may be developed Itself it is full of hope and promise, but greater still are the lessons to be learned by considering how the properties of the living cell may be modified After all, the cell is the fortress against disease which needs to be strengthened and reinforced so that it will not only overcome invasion, but even resist and prevent infection

One further lesson must still be learned Sunlight is an important agent in the prevention and arrest of disease It is a vital necessity for all, especially the growing child Uninterrupted enjoyment of its health-giving rays should be possible for all, and every effort should be made to reduce the smoke pall which too often shrouds our great cities and obstructs the light In its intensive use there is great promise in the employment of artificial light for therapeutic purposes Already at Alton has been initiated a great artificial light department, where light rays of varying wave-length may be used separately or in combination to supplement or take the place of that source of all terrestrial energy, the sun Little imagination is needed to suggest wide and general application of principles I have laid down But while advocating the sun cure, I feel it is my duty to utter a warning that it must be wisely and carefully employed Graduated exposures are essential, and all needful precautions should be taken, or a method of great hope and promise will inevitably fall into disrepute

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[4] Rollier *Heliotherapy* Oxford Medical Publications, 1923
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Memoranda:

MEDICAL, SURGICAL, OBSTETRICAL.

DIAPHRAGMATIC HERNIA OF THE STOMACH

The following case is interesting on account of the rarity of the condition and the possibility that trauma was the cause

A girl, aged 2 years, fell on to the floor, striking her nose The next day she seemed well and was playing as usual, but on the following day she began to vomit a clear, watery fluid, and subsequently spent a sleepless night Twenty four hours later the vomit became brown in colour the child could not speak, but would do as she was told, she did not complain of pain, but she was constipated and the vomiting continued She looked ill, with a peculiar staring appearance, though she had quite a good colour The vomit was typically "coffee ground", she had a very rapid pulse, the temperature was normal, and the tongue clean Very marked epigastric pulsation was present, the heart was pushed downwards and to the right the apex beat being just below the tip of the xiphisternum All the heart sounds were of maximum

intensity to the right of their normal positions the apical sound being best heard just below the xiphisternum and the basal sounds over and to the right of the sternum respectively Her abdomen was supple and she showed no signs of pain or tenderness during the examination I could not elicit any knee jerks but her pupillary reflexes were normal as were those of the upper extremities She had a large bruise over the bridge of her nose but there was no history of bleeding from it or from the ears or mouth She became worse the same evening and died early the next morning The necropsy disclosed a diaphragmatic hernia The stomach was in the left pleural cavity having passed through a circular opening about half an inch in diameter to the left of the bodies of the vertebrae it was very dilated and full of 'coffee ground' vomit but as it was uninjured and not congested I find it difficult to explain the presence of blood in its contents I might add that I had seen this child previously on two occasions and I did not find the heart in an abnormal position The coroner brought in a verdict of death due to shock and added that he was convinced that the child would still be alive had it not been for the fall I was unwilling to express an opinion on this point but on being pressed I said it was probable that the fall was a coincidence and not the cause of the stomach passing through an opening which had always been there

R A McCabe MRCS, LRCP

Pulham Northants

PSEUDO-HERMAPHRODITISM

Cases of pseudo-hermaphroditism are not so very common, hence my excuse for recording the following

A child then aged 4 years was admitted into a home under my care in 1914 and has been seen by me at intervals ever since The foster-mother under whose charge the child has been told me recently that the child had always been rather a tomboy at school and that she had lately noticed that the child did not look quite like other girls and as she complained of a swelling in the right groin she asked me to examine her

At a casual glance all that was noticeable was an apparent fold of skin about an inch long between the anterior part of the Labia majora on raising this was seen a small triangular-shaped area covered with mucous membrane resembling the vaginal opening of a little child On further examination it was at once obvious that the fold of skin was a diminutive and ill formed penis the urethral orifice being on the under surface near the free extremity

The swelling complained of in the right groin was obviously the right testicle and on the left side a similar but more elusive swelling suggested the left The right testicle since my examination three days previously has come down into the right labia majora The pubic hairs are only just beginning to grow On rectal examination there is nothing to be felt suggestive of the uterus and there is no sign of any breast tissue the child's voice is becoming rather deep for a girl

It is obvious, therefore, that this child who has been brought up from birth as a girl, is in reality a boy, and his outward apparel will have to be changed to conform with the masculine organs which are beginning to assert themselves

Ipswich John Gutch, MD

THE CURE OF PILES BY THE RE-EDUCATION OF THE ANAL SPHINCTER

The essential factor in many cases of piles is a loss of tonic contraction of the sphincter ani sufficient to allow the blood in the haemorrhoidal plexus or veins to find its way through the capillaries of the mucous membrane of the anal orifice into the external (subcutaneous) veins of the anus This statement is easily verified, for in cases of piles it is often noticeable that the tightness of the anal sphincter, when tested by the tip of a finger, is less than it should normally be

In such cases the tendency to piles can be obviated by the simple expedient of teaching the patient voluntarily to contract the sphincter and levator ani many times in the day, and to hold them contracted for many minutes at a time whether he be standing walking or sitting A very few days, or weeks, of this oft-repeated and voluntary increase in activity will re-establish a normal habit of tonic activity, and the tendency to piles will no longer exist The efficacy of this treatment is easily demonstrable in any case where there are external piles of any size In such a case, after the patient has exercised the muscles for a week or so, it will be found that as soon as the voluntary effort is made, a haemorrhoid of considerable size can be retracted far enough to be compressed by the action of the anal muscles, quite apart from the additional compression which can be exerted by the action of the gluteal muscles The continuous compression thus exercised during the day, combined with the absence of distension of the haemorrhoid (in consequence of the improved tone of the sphincter), will cause a great diminution in its size, and may ultimately lead to its disappearance

I do not claim that all piles can be cured in this manner, but only that it is a simple method of treatment which often proves effective in curing this troublesome condition

T Stacey Wilson, MD, FPCP,
Honorary Consulting Physician
Birmingham General Hospital

Reviews.

SUNSHINE AND OPEN AIR

Sunshine and Open Air,[1] by Dr Leonard Hill, does not disappoint the expectations raised by the author's name The book is devoted to a scientific consideration and analysis of the atmosphere and sunlight, their physiological effects and their therapeutic significance Although a very short work, it is closely packed with scientific data its brevity being due to the absence of redundant matter and repetition In point of fact, readability is often sacrificed to compression, but the book will well repay the close attention it demands

The introductory chapter concerns the Alpine winter climate and contains a useful note on the suitability of cases for Alpine treatment, it is pointed out that the measure of success depends upon the power of response of the body to the stimulating conditions Following this is a chapter on the composition and physiological effect of high and low atmospheres In the next section, on humidity and catarrh, the author's views may be summed up in his own words

> The more people pollute the atmosphere with smoke and consequent fogs cut themselves off from sunlight shut themselves up to avoid cold and live sedentary hot house lives disordering their economy by over-eating and at the same time reducing the combustion of food through body heat agnation the more they will suffer and die from catarrhal complaints

Most practitioners will agree with Dr Hill when he maintains that much could be done by laying the bogy of "catching cold" and encouraging free ventilation, which prevents hot heads and cold feet, and there is undoubtedly, as we believe, an increasing appreciation of the importance of ventilation amongst the people as a whole In this connexion it is of interest to note that Sir Henry Gauvain, in his lecture printed at page 234 this week states that patients responding suitably to insolation at Alton and Hayling Island are extraordinarily immune to coughs and colds

Sunshine is considered in all its aspects An interesting comparison is made between the lethal power on infusoria, in shallow quartz cells, of sunlight and of the mercury-vapour lamp, the effectiveness being nearly equal The biological action of light is separately and very fully considered in the fourth chapter It is impossible to summarize this, but reference may be made to the section on deficiency diet, rickets, and light, in which it is maintained that the ultra-violet rays can ward off or delay the evil effects of a deficient diet Young rats and children are protected from rickety changes in the bones by a short daily exposure to the sun, the arc or the mercury-vapour lamp

The closing chapter treats of metabolism, heat loss and the cooling power of the air, the baneful effects of too sedentary a life, the sense of well-being created by correct habits and environment, and many another consideration of great practical value The book teems with fact, and their practical application to human needs is not neglected, the result is a book which should be read by everyone interested in the scientific use of natural remedial measures

CLINICAL DIAGNOSIS

Dr Lewellys F Barker's *Clinical Diagnosis of Internal Diseases*[2] is dedicated to the late Sir William Osler by his pupil and successor in the professorial chair at the Johns Hopkins Hospital These three bulky volumes,

[1] *Sunshine and Open Air: with Reference to the Aspirin Cure*. By Leonard Hill, MB, FRS London: Edward Arnold and Co (Demy 8vo, pp viii + 220, 12 figures in the text, 10s 6d net)

[2] *The Clinical Diagnosis of Internal Diseases*. By Lewellys F Barker, MD, LLD Baltimore, New York and London: D Appleton and Co 1923 (Pp 8vo, Vol I, pp xiii + 1000, 171 figures and 2 coloured plates, Vol II, pp xvii + 1000, 171 figures and 2 coloured plates, Vol III, pp xvii + 1000, 171 figures and 2 coloured plates)

containing over 3,000 pages and 700 illustrations, were published as part of a six-volume set known as *Monographic Medicine*, the individual volumes of which were not available for separate purchase, now, however, as the outcome of "requests" from various sources, the decision that "all or none" must be bought has been relaxed Although the bulk of this work might suggest it, Dr Barker specially disclaims any suggestion that it should be regarded as a "system," which indeed should be the work of many authorities, each an expert in his own subject There are no doubt serious difficulties before one man who sets out to produce a condensed and at the same time comprehensive review of clinical diagnosis, but it must be recognized that Dr Barker has brought to this task an encyclopaedic mind, long experience as a teacher and consultant, and opportunities—probably seldom surpassed—of observing and practising the modern methods of investigating the disorders of function His aim has been to provide a guide to those anxious for directions how to carry out an examination of the human body, both clinically and by laboratory methods With this in view the tests described have been critically selected, and no attempt has been made to give a recital of all the known methods of research, though the bibliographies appended at short intervals in the text supply references for this purpose Special attention is directed to functional [illegible]hology to keep pace with what in the preface is [illegible]ribed as the "seething activity in our clinics in the [illegible]lication of biochemical and biophysical methods to [illegible]gnosis"

The style of the text is commendably concise, and this brevity is rendered possible by the generous use of explanatory illustrations, charts, and tables The book was begun before the outbreak of war, and it must be conceded that delays in printing and publication may have aggravated the ever-present difficulty in keeping a work on such an actively progressing subject up to date, but even so, full of knowledge as it is, it appears to have received little in the way of addition for some years Thus in volumes I and II the references stop about 1915, and yellow fever is ascribed to Reed, Carroll, and Agramonte's virus without any reference to Noguchi's *Leptospira icteroides*, the last reference on this subject being dated 1914 Weil's disease, or epidemic catarrhal jaundice, is said to be caused by *Bacillus proteus vulgaris*, no mention being made of *Spirochaeta icterohaemorrhagiae*, and the outline of subacute infective endocarditis does not contain any remark on clubbing of the fingers or reference to any article published later than 1914 In volume III, which deals with the muscles, bones, joints, nervous system, metabolism, and endocrinopathies, there is still evidence of a hiatus between the present time and that represented in the text and references But after all, the most recent fruit is not always the best digested, and, though it is only right to point out omissions such as those mentioned above, these volumes will be widely useful as sources of reference

Yet another book has appeared on *The Examination of Patients*[3]—this time by Dr Nellis Foster, Associate Professor of Medicine at Cornell University College of Medicine, New York The author's hope is that it will prove helpful to practitioners, and this hope will probably be fully justified The usual fault with books of this kind is that they are too elementary, and better suited for medical students than for qualified practitioners This volume has escaped this fault, and has not fallen into the ruck of the ordinary textbook of medicine It concerns itself primarily with diagnosis, as the all-important first step towards treatment, and the author lays stress upon diagnosis being an art as well as a science—an art so far as concerns the eliciting and collating of the signs, both subjective and objective, of disease, and a science in so far as concerns the method of interpreting and utilizing the signs observed Dr Foster's aim has been to present such diagnostic facts as appear to receive too little attention in the ordinary textbooks, and to give them chemical or physical explanations, whenever they may be helpful in suggesting a correct interpretation A special merit of the book is that such diagnostic points are obviously the fruit of the accumulated experience of an observant clinician and teacher, who has been able to sift essentials from non-essentials, and has thus kept his book within a moderate compass

Following introductory chapters on diagnosis in general, there are chapters dealing with the modes of examination of each of the special systems All these sections contain practical hints of much interest and instruction to practitioners, particularly when conducting cardio-vascular and neurological examinations In the latter the portions dealing with ocular, motor, and sensory defects may be especially mentioned

The book is well illustrated throughout whenever illustrations can be of service It closes with a chapter on immunological tests, and here, too, the illustrations of the various degrees of superficial reactions are distinctly helpful

[3] *The Examination of Patients* By Nellis B Foster, M D Philadelphia and London W B Saunders Co 1923 (Med 8vo, pp xvi + 253, 67 figures 18s net)

TUBERCLE OF BONES AND JOINTS

Professor Oehlecker's book on tuberculosis of the bones and joints[4] is of the nature of an atlas He seems to have had at his disposal at the Hamburg hospital a great wealth of material, and from this he not only illustrates cases of bone and joint tuberculosis in almost every part of the skeleton, but for purposes of differential diagnosis has reproduced drawings and photographs of bone lesions caused by other agents than *Bacillus tuberculosis*

He discusses at some length the sun and air treatment of surgical tuberculosis, and, while paying high tribute to the work of Rollier and Bernhard, maintains that not the least of their services to surgery has been the establishment of the importance of the general treatment of the whole individual as well as of his local lesion or lesions This treatment, including fresh air and exposure, can be, and has been, successfully carried out at low altitudes, as has been shown in the successful sea-level hospitals in France, and even in "fogg[illegible]" [illegible]ally good results have followed open-air accounts have been received as to the nursing and domestic arrangements in some foreign mountain clinics which dispose us to think that they do not reach the standard to which English parents would wish their children to be submitted It is fortunate, therefore, that experience is accumulating which goes to show that the results of open-air treatment at lower levels and in higher latitudes may be as good as those obtainable in the Alps

Professor Oehlecker devotes considerable space to a consideration of the various radiations which have been used as substitutes for the sun's rays, especially various forms of mercury vapour lamp He deprecates extensive operations and has arrived at the same conclusion as is generally held by orthopaedic surgeons in this country—namely, that the best results are obtained from conservative treatment Not much space is given to details of treatment of particular local lesions, and it is more for its illustrations of bone disease than for any practical hints that we can recommend it to those who are interested in the subject

BAZAAR MEDICINES

Colonel Birdwood, in the preface to his book *Practical Bazaar Medicines*, tells us that his attention was first directed to the subject during the war, when European medicines were both difficult to get and costly, by a recently qualified man in charge of a dispensary, who told him that he could not carry on work without a larger supply of European drugs Colonel Birdwood consequently set to work to compile this book, primarily for the use of Indian medical men in charge of branch dispensaries

This is not the first work on bazaar medicines to see the light The late Surgeon Major E J Waring, C I E, I M S, was the author of an excellent little book on the subject, which, first published in 1860, and reaching a sixth edition in 1901, had a life of half a century Two Indian

[4] *Tuberkulose der Knochen und Gelenke* Von Professor Dr med F Oehlecker Berlin and Vienna Urban and Schwarzenberg 1924 (Double cr 8vo, pp xi + 405, 356 illustrations Unbound, Swiss fr 33 75, bound, Swiss fr 40)

physicians, Drs Kanhai lal De and Mudin Shariff, also wrote works on the subject

Colonel Birdwood's book is divided into three parts, each arranged in alphabetical order The first is a list of bazaar medicines, classified by their therapeutic action The list contains several drugs which are included in the *British Pharmacopœia*—for example, ammonium chloride opium, catechu, iron sulphate Among many less well known are several which are, or used to be, frequently prescribed by European as well as by Indian doctors nim and chiretta, as bitter tonics after fever, isaphgul and khurchi, for dysentery kamela, for tapeworm The sherbets and antiscorbutics are in common use, among both Europeans and Indians, but as cooling drinks rather than medicines The vernacular name, anantamul appears twice over, as the Hindustani name of two different drugs of different therapeutic actions The second part is a list of drugs, a short page to each, with instructions as to the preparation of infusions, etc The third is a list of over 200 prescriptions while a list of drugs which should be kept in stock, ready for use, in dispensaries, completes the book

As the author states in the preface manufacturing chemists who can make, standardize, and put on the market preparations of the more useful Indian drugs are much wanted in India

That a second edition[5] has been called for within four years of the first shows that the book has been found useful It is interleaved for notes and is of a size handy for the pocket The type is excellent, and we have not noted any misprints

A BIBLIOGRAPHY OF SIR THOMAS BROWNE

MR GEOFFREY L KEYNES, a member of the surgical professorial unit at St Bartholomew's Hospital, has just published an elaborate and complete *Bibliography of Sir Thomas Browne*[6] No pains have been spared to make the list complete in every respect and it may be commended to all who wish to be acquainted with the various editions of Sir Thomas Browne's works The volume, which makes a very handsome appearance, has as its frontispiece a reproduction of the contemporary portrait of Sir Thomas Browne and his wife It also contains facsimiles of the first page of MS No 3 of the *Religio Medici*, of an autograph manuscript of *Repertorium*, of the engraved title-page of the first unauthorized edition (1642) of *Religio Medici*, and a reproduction of a portrait in oils of Simon Wilkin, whose edition of the work of Sir Thomas Browne (1835) has long been appreciated as one of the best edited books in the English language In addition to these plates the book contains a number of reproductions of title pages The edition is limited to 500 copies We congratulate Mr Keynes upon the admirable way in which he has performed his task

NOTES ON BOOKS

DR R FORTESCUE FOX, to whom the profession already owes thanks for several volumes dealing with the therapeutic use of water, has published under the title of *Medical Hydrology*[7] an exposition of the subject based on his lectures at the University of London The first two chapters discuss the physical properties and action of waters and their origin uses, and classification also the properties and actions of baths and the different forms of the latter, the functions of the skin and the action of heat and cold upon the human body These initial chapters deal in short with the principles of medical hydrology, and the remainder with their application in incipient, chronic, and acute disease as also in certain surgical conditions Finally, the indications for their use in a variety of specific disorders are set forth, and the available hydrotherapeutic resources of the British dominions are described As a rule the various statements are illustrated by a reference to one or more well known spas and in speaking of specific disorders the waters suitable for their treatment are always mentioned This fact and the laudable brevity and clearness of the descriptions of the principles of medical hydrology are likely to make the book popular among those who only occasionally have to consider the question of where to send a patient for hydrotherapeutic purposes

The volume on *The Treatment of Infants in Private Practice*[8] by Professor P NOBECOURT and Dr MARCEL MAILLET of Paris forms part of the series entitled 'Comment Guerir' edited by Dr Charles Fiessinger and like the other works in this series which we have had occasion to review, is characterized by the clearness of its exposition and its practical qualities It deals first with individual and social hygiene infant feeding in health and disease external and internal medication spa treatment and climatotherapy The second part is devoted to the treatment of symptoms arranged according to the various systems, and the third part to the treatment of particular diseases The volume—which unlike most French medical books, is provided with a good index—will be found a useful work of reference by those who wish to gain some knowledge of current French pediatrics

In our issue of June 7th 1924 (p 1020) we gave an account of the recent conference on mental deficiency held at the Central Hall Westminster, under the chairmanship of Dr H B Brackenbury The full report of the conference has now been issued as a pamphlet of 128 pages by the Central Association for Mental Welfare Copies (price 3s) may be obtained from the Honorary Secretary of the Association 24, Buckingham Palace Road S W 1

[5] *Practical Bazaar Medicines* With over 200 useful prescriptions By C T Birdwood Lieutenant-Colonel I M S Civil Surgeon Lucknow Second edition. Calcutta and Simla Thacker Spink and Co 1924 (Fcap 8vo pp xxi + 182. Rs 4/8)

[6] *A Bibliography of Sir Thomas Browne Kt M D* By Geoffrey Keynes M A M D F R C S Cambridge The University Press 1924. (Imp 8vo pp xii + 255 illustrated. 42 net.)

[7] *Medical Hydrology Outlines for Practitioners and Students* Based upon Lectures given at the University of London By R Fortescue Fox M D London J and A Churchill 1924 (Post 8vo pp viii + 160 2 figures 6s net.)

[8] *La Thérapeutique du Nourrisson en Clientèle* By MM P Nobécourt and Marcel Maillet Paris A Maloine et Fils 1923 (Imp 12mo pp 854 Fr 25)

MEETING OF THE BRITISH ASSOCIATION IN TORONTO

PRESIDENT'S ADDRESS

AT the inaugural meeting of the British Association for the Advancement of Science, in Toronto on August 6 the presidential address was delivered by Major General Sir DAVID BRUCE, K C B, F R S, on the prevention of disease

The Prevention of Disease

He began with a reference to the loss of power entailed upon a community by sickness and drew attention to the recent report of the English Ministry of Health that over twenty million weeks of work were lost each year among English workers in England through this cause In other words, the equivalent of the work of 370 000 people for the whole year had been lost to the State without taking into account the non-insured population It had lately been calculated that the financial loss in England and Wales from sickness and disability amounted to at least £150 000 000 a year This gave some idea of the importance of preventive work and pointed to a conclusion that medicine must change its strategy and assume the offensive instead of awaiting the attack It must no longer be said that a man was so sick that he had to send for the doctor the *medical practitioner of the future must be able, by frequent* examinations of men in health to detect any commencing departure from it and to teach ways of living in accordance with the laws of personal health the public health authorities co-operating by ensuring a healthy environment In the early days of history disease had been considered the work of evil spirits or magicians or a punishment exacted by Providence Some few hundred years ago it was recognized that some diseases were contagious this led to a belief that some chemical substance escaped from the sick to the healthy acting like a ferment, and resulted finally in the discovery of the part played by microscopic organisms Pasteur had lifted medicine out of the region of vague speculation and empiricism and set it firmly on new ground as an experimental biological science to him therefore, must be dated the beginning of the intelligent and purposive prevention of disease Later made practical use of the discoveries of Pasteur, and the satisfactory results which followed his procedure of sterilization led him to devote the rest of his life to the improving and simplifying of the methods of preventing the infection of wounds

Passing to the consideration of infectious diseases Sir David Bruce took some specific examples to illustrate preventive work He gave details of his experience with Malta fever since 1887 when the micrococcus which caused it was discovered In spite of energetic and very measures, however, the disease continued unchecked for seventeen years The Royal Society of London undertook its investigation in 1904 and in the following year the problem of prevention was solved almost by accident Some goats had been inoculated with the organism, and having shown no pyrexia or other signs of ill health, they had been classed as immune or non-receptive to the

disease On subsequent examination their blood was found to have agglutinable properties for the micrococcus of Malta fever This observation led to the re examination of the immunity of the goat, and it was discovered that about half the goats in the island were infected with this disease, and that about 10 per cent of them were excreting the organism in their milk Maltese milk having been struck out of the dietary of the garrison, Malta fever was practically abolished—to such a degree, in fact, that the island was used as a sanitorium during the late war This was one way of preventing an infectious disease—the discovery of the living germ and of its natural history, and with this knowledge the designing of the procedure by which it can be prevented from infecting man Another way of preventing bacterial disease was found in the case of typhoid fever, where hygienic measures, especially a clean water supply with good drainage, were primarily essential When such conditions were not attainable typhoid fever could still be prevented by inoculation This method, derived originally from the discovery of Jenner and followed by the researches of Pasteur, Haffkine, and Wright, had led to the most striking decrease in the mortality of this disease among the troops in India, in the South African war, and, more recently, in the late war, in which there were fewer cases of enteric fever than there had been deaths from that cause in the South African war Sir David Bruce related that, at the beginning of the late war, among the French soldiers who were not inoculated there were some 96,000 cases of typhoid with ly 12,000 deaths, whereas among the British soldiers there only 2,689 cases and 170 deaths Later on the French 's were very thoroughly inoculated, with the result that immunity became as complete as that of the British typhoid inoculation during the recent war certainly con ed one of the greatest triumphs in the prevention of ase The third meth[illegible] bacterial disease— ely, by the injection blood serums— as illustrated by the antitetanic and tidiphtheritic serum, which contained the antibodies required to combat the respective diseases Before the use of serums at least 85 per cent of tetanus cases succumbed, but following its use the incidence of the disease fell to a little more than one in a thousand, and the mortality to less than half During the war there were 2,500 cases of tetanus in the British army, with 550 deaths If there had been no prophylactic injection of antitetanic serum there would probably have been 25,000 cases with 20,000 deaths It had been stated that the introduction of antidiphtheritic serum in 1894 had reduced the death rate from 40 to 10 per cent, and if used on the first day of the disease to almost nothing Preventive measures in diphtheria had recently come into vogue, and an active immunization had been effected by a mixture of toxin and antitoxin in individuals who had been shown by the Schick test to be susceptible to the disease Passing to the subject of tuberculosis, the President spoke of the progress made since the discovery of the bacillus in 1882, though even before Koch's discovery a considerable amount had been done in the way of prevention Edmund Parkes, professor of hygiene in the Army Medical School, had reduced to a great extent the incidence of tuberculosis in the British army by procuring for the soldier more floor space and more air space in the barracks General von Moltke, hearing of the death of Parkes, said that every regiment in Europe ought to parade on the day of the funeral and present arms in honour of one of the greatest friends the soldier ever had The prevention of disease depended fundamentally on the provision of a better environment and the education of the people in physiological living It had been recently demonstrated that the disease was usually acquired in childhood—a fact of great significance, since with early diagnosis and the placing of the child under good conditions, effective resistance and even immunity against a second attack could be established Latent tuberculosis, by preventing the second invasion, seemed to be definitely advantageous, as was shown by the experience of Metchnikoff in a part of Siberia where the tubercle bacillus was unknown He had discovered that many of the emigrants from this safe country into the big cities died of acute and rapid tuberculosis, and similarly the Senegalese, who were also free from tuberculosis in their native condition and were found to be free from the disease on reaching France during the late war, developed an acute and fatal form of tuberculosis subsequently, in spite of the hygienic measures enforced by the army authorities The curious conclusion followed that if any country cleared itself of the tubercle bacillus it would appear to establish thereby a grave risk for any of its inhabitants who migrated into a neighbouring country Preventive measures against tuberculosis included improvement of the general hygienic conditions, provision of methods of early diagnosis, preventive treatment, and isolation of the more infectious patients, and, thirdly, the use of tuberculin, though in this great caution must be exercised in assessing the claims advanced These and other measures, including attention to the supply of pure milk, had been embodied in antituberculosis schemes in England and America, with the result that in 1920 Washington had a death rate of only 85 per 100,000 of the population, Chicago 97, New York 126, and London 127 Other nations had not been so energetic in preventive measures, and the death rate in the same year in Paris was 279 and in Vienna 405

Protozoal diseases were next considered, and were illustrated by tsetse fly disease and sleeping sickness Sir David Bruce gave details of the investigation of the Zululand outbreak of this disease in 1894, with which he had been closely associated The detection of the trypanosome in the blood of the diseased cattle was followed by the discovery of the part played by the tsetse fly, and the chain of infection was traced, preventive measures were then rendered possible This work led to the discovery in 1903 of the cause and of the possibility of preventing sleeping sickness, which was also found to be correlated with the distribution of the tsetse fly In the large group of infectious diseases of which the parasite was either unknown or doubtful, small pox and rabies were now preventable Trench fever, which came into such prominence during the late war, had been previously recognized in Poland, where it was called Wolhynia fever It became one of the most powerful factors in reducing our man power, there being probably more than a million cases among the allies on the Western front In 1917 in the British army alone 20,000 out of 106,000 admissions to hospital were cases of trench fever After the discovery in 1916 that the blood of trench fever cases was infective, research steadily proceeded, and the United States on coming into the war also co operated The discovery that the louse, and the louse alone, was responsible for the spreading of the disease made preventive measures possible, and there could be little doubt that if the war had lasted longer, trench fever, like tetanus, would have practically disappeared The prevention of typhus fever was similarly rendered possible by the discovery of the part played by the louse

The discovery of deficiency diseases, and the part played in them by the substances known as vitamins, brought into prominence another line of prevention of disease As far back as 1747, James Lind, a surgeon in the British navy, had carried out experimental observations on sailors suffering from scurvy, which had to a certain extent anticipated the latter investigations The work of Holst and others in Copenhagen, published in 1907 and 1912, formed the basis of the numerous researches carried out since in England and America, and the classic experiments published by Hopkins in 1912, established the importance of vitamins beyond a doubt Sir David Bruce dealt in considerable detail with the importance of these vitamins and the relation of deficiency diseases to hygienic conditions He then passed, in conclusion, to the diseases associated with morbid conditions of the ductless glands, and gave illustrations of the way in which disease of these glands can be prevented as well as cured The activities of the Rockefeller Foundation were promoting the well being of mankind throughout the world, science knew no boundaries of nations, languages, or creeds Man had now come out of the gloom and shadow of the Dark Ages into his heritage, and seemed to possess some particle of the universal curative forces which enabled him to wrest from Nature the secrets so jealously guarded

The Sections

The sections this year are as follows Mathematics and physics, chemistry, geology, zoology, geography, economic science and statistics, engineering, anthropology, physiology, psychology, botany, educational science, and agriculture Dr H H Dale, C B E, F R S, president of the Section of Physiology, and his address on progress and prospects in chemotherapy appears in this issue on p 219 On the same day Professor A B Macallum, F R S, read a paper on the absorption of organic colloids by the intestinal mucosa, other subjects dealt with included the part played by the adrenals in metabolism and the chemical control of body temperature, the activity of iodothyroglobulin and its digest-fractions as compared with thyroid secretion, and experimental aortic regurgitation A popular lecture was delivered by Professor J C Drummond on cod-liver oil The President of the Section of Anthropology is Dr F C Shrubsall, who gave an address on health and physique through the centuries Other papers read included one on new trends in anthropology, by Mr Charles Hill-Tout, and another by Dr C Wissler, on the segregation of racial characters in the population The Section of Psychology, under the presidency of Professor W McDougall, F R S, considered on August 7th the classification of instincts, feeling and emotion in daily life, and other more technical subjects

British Medical Journal.

SATURDAY, AUGUST 9TH, 1924

THE BRADFORD MEETING

ONE of the advantages of holding the Annual Meeting of the British Medical Association in a different town each summer is the varying local atmosphere." Thus, although the general pattern of organization changes little from year to year each gathering of the profession has an individuality of its own. The Bradford meeting is now an event of the past but it will long be remembered by those who took part in it as one of the most instructive and agreeable ever held. Bradford as the centre of the world's wool textile industry and a city whose corporation is well known for its enterprising health policy, has special features which claim the attention of those engaged directly in preventive medicine and public hygiene. While not a university town, it is an important medical centre, with large hospitals and kindred institutions which have grown up to meet the needs arising from an intensely rapid increase of population during the past hundred years. Bradford is the centre also of a wide tract of interesting country, and the Annual Meeting of 1924 has been remarkable for the number and variety of the excursions provided.

It has been well said that the Scientific Sections of the Annual Meetings form a common meeting ground for consultant specialist and general practitioner. The character and scope of the work of the twelve sections which met at Bradford will appear from the short summary of proceedings printed in our last issue. The debate in the Section of Medical Sociology on the National Insurance system was reported at length last week, and the opening session of the Section of Public Medicine is fully reported at page 227 this week. In subsequent issues we shall complete our full reports of the work of all the sections. Here we need do no more than remark on the keenness and the practical spirit which to the onlooker seemed to characterize all the scientific and clinical discussions. Much interest was shown, too, in the Pathological Museum, arranged by Mr. F. W. Govder and Dr. Buckell on the top floor of the Technical College, and in the demonstrations with which several of the sections rounded off each day's programme.

Medico-political business and the Association's domestic affairs occupied, as usual, the four week-days preceding the sectional meetings. The full report of the proceedings of the first three days appeared in the SUPPLEMENT of July 26th, and the conclusion was recorded in the same detail last week. Some idea of the debates and decisions of the Annual Representative Meeting has already been conveyed in the outline sketches published in the JOURNAL of last week (p. 208) and the week before (p. 154). With this meeting at Bradford the Representative Body reached its twenty-first year, and a general desire was shown to celebrate the coming of age of what, under the reformed constitution of 1904, was set up as the governing body of the Association. Dr. Bolam's account of his stewardship as acting treasurer revealed a very healthy position both in money matters generally and in regard to the finance of the Association's new building in Tavistock Square, which it is hoped will be ready for occupation next year. Equally satisfactory were the figures of membership presented by the Chairman of the Organization Committee. The number of members at the close of last month was 27,588, surpassing all previous figures. As Dr. Morton Mackenzie remarked, an association which has increased its membership by over 10 per cent. in one year, as ours has done, must be in a very healthy working condition. The record membership he attributed partly to the belief which is spreading more rapidly now than ever before that the Association is willing to take up anything which it feels will help its members, and partly to the efficient way in which the work is done both at headquarters and at the periphery. For detailed information on the many other topics of professional interest brought forward and debated at Bradford under the able chairmanship of Dr. Wallace Henry members must turn to the very full reports published in the SUPPLEMENT and the running commentaries in the JOURNAL.

The success of the first meeting that the British Medical Association has held in Bradford was due to the admirable arrangements made by the Local Executive Committee under the leadership of the President, Mr. Basil Hall, and the indefatigable Honorary Local Secretary, Dr. W. N. West-Watson. Only those who have been behind the scenes on such occasions can realize how much foresight, how much hard work, and what organizing skill are necessary to ensure smooth running in every wheel of the machine. Nor was hospitality one of the main virtues of Yorkshire, wanting; and the warmth and friendliness of Bradford's reception, which was typified in the genial person of the President, will remain in the memory of every visitor. It is, we believe, an open secret that when the Annual Meetings were revived after the war Dr. West-Watson set his heart on welcoming the Association to Bradford, he can now look back with satisfaction upon the outcome of many months' work. Among the colleagues who helped him to accomplish his aim only a very few can be named here, but some further acknowledgement of individual services will be found in our report of the closing business of the Representative Meeting, and in the delightfully informal speech made by Mr. Basil Hall at the Annual Dinner, both published in last week's SUPPLEMENT. Special mention should be made of Dr. W. F. Rawson, the local treasurer, who devoted himself to the raising of the guarantee fund and succeeded in his task. All the arrangements for providing hospitality in and around Bradford were made by Dr. Margaret Sharp, the chairman, and Dr. F. A. Lankester, the honorary secretary, of the Hotels and Lodgings Subcommittee. Another name is that of Dr. B. Wade, who drew up the long list of excursions arranged for all the transport, and borrowed private cars for the various trips. Much good work was done, too, by Dr. A. Minknell, chairman of the Reception Rooms Subcommittee. Lastly must be mentioned Dr. J. Hambley Pove, who made himself responsible for compiling and editing the *Book of Bradford*, he planned the contents of this attractive volume, and organized his team of writers. In collaboration with Dr. Wade he prepared also the excursions handbook, which many visitors have kept as a memento of the successful Annual Meeting of 1924.

CHEMOTHERAPY

Dr H H Dale's presidential address, delivered to the Section of Physiology at the British Association meeting this year in Toronto, and published this week at page 219, embraces an account of the recent work—that is, work accomplished within the last twenty years—in that branch of pharmacology which has come to be known as chemotherapy, which he defines as the specific treatment of infections by artificial remedies The home of the inception of insulin being Toronto, Dr Dale naturally began his address by a reference to insulin, "which opened up new vistas of knowledge to exploration and brought relief to unmeasured misery"

Some years ago the fact had been slowly forcing itself upon those engaged in experimental medicine that in certain forms of infection the body was unable to produce antibodies of sufficient potency to eliminate the infection and leave the patient immune Ehrlich conceived the idea of synthesizing substances with an affinity for the protoplasm of the parasite causing the disease, and none for the host, to this general principle he applied the term "chemotherapy" Ehrlich considered that his drugs combined directly with the protoplasm of the parasites, and he spoke of chemoreceptors, and, indeed, all this work was pictured by him in terms of his side chain theory This idea was in no way new Professor Langley of Cambridge had previously enunciated the same hypothesis and put forward facts to substantiate his views But Langley was engaged in exploring physiological phenomena and Ehrlich the cure of disease

It is interesting and stimulating to note that several very important results have been obtained from this type of research The treatment of spirochætal infections—syphilis, yaws, and relapsing fever—has been revolutionized, Leishmania infections, kala azar, Baghdad boil, and bilharzia infections, are curable, trypanosome infections are now within the range of effective treatment Practically all these are tropical diseases, and in consequence of the control under which medical research has brought them the tropics are becoming habitable by the European It is our misfortune that no such progress can be reported for our own endemic diseases, the treatment of tuberculosis, pernicious anaemia, Hodgkin's disease, rheumatoid arthritis, and many others, has advanced little during the past twenty years

Ehrlich's early interest in the synthetic dyes and their selective action on certain cells of the body naturally led him to experiment first with a large selection of such dyes The first of these to give promise of cure was trypan red, this observation led other workers along the same path to the discussion of trypan blue, which has had a practical success in the treatment of piroplasma, an intracorpuscular parasite in animals The remarkable fact was early noted that trypanosomes treated with dye *in vitro*, though not stained or visibly harmed, had nevertheless lost their power of infection Dr Dale goes on to describe the discovery of "205," which not only frees an animal from trypanosomes in a few days, but may render it resistant to further infection for months, this substance also has little effect on the trypanosomes when applied to them directly, and he produces evidence leading to the conclusion that the affinities of "205" for the constituents of the host's blood and tissues must play an important part in its curative properties

Dr Dale then passes to the organic compounds of arsenic, and here again he shows that the tissues must change these derivatives, *perhaps from the pentavalent to the trivalent form*, before they become curative Time no doubt prevented him from discussing why the trivalent compounds given directly are no more curative than arsenious acid The guess may be hazarded that these organic compounds of arsenic act because they first get into the cell owing to their lipoid solubility, and subsequently undergo change there to the trivalent or active form Voegtlin's suggestion that they act by combination with a sulphydride grouping is particularly interesting at a time when Hopkins has shown the importance of one such sulphydride compound as a normal constituent of the body tissues In describing his own work on amœbic dysentery Dr Dale shows how emetine is only effective in curing this condition in the body, and is relatively inactive when applied directly to the parasite

At the root of Dr Dale's thesis is the principle that the remedy does not kill the parasite directly, but acts in some other way it may be by lowering the resistance of the parasite to the natural defences of the body, or it may be by undergoing conversion within the body into some substance toxic to the invader This principle certainly applies to the dyes, to organic compounds of arsenic, antimony, and bismuth, and to emetine, the effect of quinine in malarial conditions is more difficult to explain The original significance of the term "chemotherapy" has therefore gone, and if the term is to be retained it must be understood as meaning something quite different from the connotation which Ehrlich originally gave to it *It means a drug treatment in which the drug, by acting on the body tissues, so modifies their metabolism as to enable them to destroy the parasite, or a treatment in which the drug is retained in an inactive form by certain cells in the body, and is slowly changed and set free in an active form which is lethal to the parasite*

MEDICAL WORK AT WEMBLEY

Those who have had practical experience of a medical organization which has to deal with such multitudes as daily visit a great exhibition will at once realize that the requirements are many and varied Exhibition crowds are made up of all classes and all ages from early infancy to extreme old age It is therefore incumbent on those responsible for their welfare to anticipate and provide for the necessities that these extremes dictate, and the environment peculiar to an exhibition makes demands apart from the medical and surgical happenings ordinarily associated with communal life The medical organization of the exhibition is arranged to render early assistance to all cases requiring first-aid treatment, and, should medical attention be considered necessary, their rapid conveyance by ambulance car to the main ambulance station, where a medical officer is on duty day and night To enable this to be carried out first-aid cabinets are placed in the great Palaces of Engineering and Industry and in the exhibition grounds An orderly of the St John Ambulance Brigade or the British Red Cross Society is on "sentry go" at each cabinet The cabinets are in telephonic communication with each other and with the four ambulance stations The latter are staffed by men and women belonging to the Order of St John of Jerusalem or the British Red Cross Society, and are, with the exception of the main ambulance station, named, according to position, Northern, Eastern, and Stadium These in turn can communicate in the same way with the "first-aid" headquarter office, and also with the office of the Director of Medical Services, both situated in the Stadium The motor ambulances are garaged at the main ambulance station, and are provided

and manned by the St John Ambulance Brigade and the British Red Cross Society On receipt of a message from any cabinet or station a car, accompanied by orderlies, is dispatched to the spot The patient is then brought direct to the main ambulance station and treated and discharged, or, if necessary, sent by ambulance car home or to hospital If it is decided that the patient requires hospital treatment he is sent by car to the Wille den General Hospital The council of the Wille den General Hospital has placed thirty beds at the disposal of the medical service of the exhibition, and has also supplied the trained nurses for the main ambulance station, which is therefore, in military parlance, the casualty clearing station of the exhibition The cases that it deals with are surprisingly varied in character and severity This must be expected with a changing daily population of between one and three hundred and fifty thousand—last Whit-Monday's census The numbers already treated exceed 11,000, and though the cases have been mostly trivial, some 300 must be classed otherwise Among the latter have been cases of fracture 12, dislocations 5, perforated duodenal ulcer 5, appendicitis 4, and gastric enteritis 87 (all in one day) Of the last named the BRITISH MEDICAL JOURNAL has already published a preliminary report The fractures included three of the shaft and one of the neck of the femur, and one of the lower end of the ulna—an unusual position Among the dislocations were three of the shoulder, all reduced and all returned home, and one of the terminal phalanx of the great toe backwards Persons, old and young, frequently fall into the lake and though little harm is done they must be put to bed while their clothes are drying It was found necessary to accommodate batches of ex-soldier paraplegics for the relief of urinary difficulties The Amusement Park provides occasional accidents, but few are other than slight, and the menagerie there provides its quota of slight wounds from twisting the lion's tail, or the retaliatory defensive measures of irate bears, monkeys, and other animals Auto-intoxication due to fatigue is a common complaint among elderly folk and children, following long journeys frequently undertaken at night with little rest or sleep, combined with unsuitable and irregular meals They are treated by rest in bed and dieting Headaches require relief, and are due to the same cause Aged men with prostatic trouble, ofttimes leading to distension with overflow, require catheterization, elderly females with colotomies or pessary displacements sometimes wish for readjustments, and excursionists by railway or charabanc with abdominal colic from repletion seek anodynes When it is stated that over 84,000 ices were sold one day in the exhibition this is not surprising, as there can be no limitation except the pocket to individual desires Epileptics and hysterics respectively demand bromides and sympathy Cowboys and cowgirls, whose very livelihood and chances of prize money depend on their sticking to their jobs, naturally avoid falling into the doctor's hands, but sometimes necessity compels where they have fractured a bone It was then that the portable radiographs proved useful on receipt of a telephone message the specially designed car plant arrived with an expert operator, and an excellent radiograph was produced within twenty minutes of the exposure Numbers of natives of India and of other Eastern dependencies are employed in the exhibition and their sick requiring hospital treatment are sent to the Seamen's Hospital, Greenwich, by motor ambulance All infectious cases are sent by special motor ambulance car to the local infectious hospital at Acton Parents visiting the exhibition with infants in arms or children of tender age find provision for caring for them at the day nursery established in the north-west corner of the exhibition grounds, and adjacent to the Wembley Park Station of the Metropolitan Railway It is a delightful home, in picturesque surroundings, and is replete with all the comforts and requisites that a parental solicitude might wish for or a child's heart desire The mural paintings depict scenes from well known nursery rhymes, and the number and variety of the games and toys must amuse and satisfy children of all ages, they are quite in keeping with general efficiency and the hygienic feeding and nursing of its inmates The fee for a four hours stay is sixpence and there is a small extra charge for feeding The day nursery is largely patronized, and Her Majesty the Queen has expressed approval of its general arrangements It is organized by the Central Council for Infant and Child Welfare, and is under the auspices of the British Red Cross Society The number of children admitted since the opening of the exhibition exceeds 5,000 It therefore fills a real want, and is especially appreciated by nursing mothers Sanitary inspections of the exhibition buildings, restaurants, Amusement Park, and grounds generally form part of the daily routine of the medical authorities Sanitary reports are sent in to the chief administrator daily The medical staff of the exhibition consists of a director and four medical officers, one of whom is the medical officer of health for Wembley and another a lady (Dr Marjorie Thompson) There are two dispensers and three ex-R A M C men as orderlies The St John Ambulance Brigade and the British Red Cross Society have provided all the first-aid personnel (80 to 100 are on duty daily), much of the ward equipment, and all the surgical dressings and drugs used since the exhibition opened The exhibition authorities and the British public are therefore indebted to these societies for what they have so ungrudgingly and unostentatiously done and given on humanitarian grounds

BISMUTH FOR LUNG MAPPING

INTEREST has been raised by recent communications to the medical journals of Paris and London describing the uses and technique of injections of lipiodol into the tracheo-bronchial tree, and it is in consequence desirable to consider what other methods have been designed to serve the same purpose In particular the insufflation of bismuth in the form of powder has an important place now only because of certain advantages apparent on consideration, but also because the method is one introduced and recommended by so experienced an authority as Dr Chevalier Jackson If it be desired to examine any particular part of the tracheo-bronchial tree in a patient suspected of bronchiectasis, lung abscess, or penetrating foreign body, the first step consists in the introduction of a bronchoscope through the mouth of the anaesthetized or conscious patient Should the condition be one in which collections of pus are present or suspected in parts of the lungs it is desirable to use an aspirating broncho scope, not only to permit of a clear view, but also to prevent spread of pus into neighbouring healthy areas After localization and cleansing of the affected region, visual examination will give valuable information as to the condition of bronchi or bronchioles, especially as to the presence of any granulations liable to prevent the free drainage of pus Local treatment may, of course, be carried out at the same time Having gained what information is available by inspection the next step consists in introducing a long metal tube charged with dry powdered bismuth preferably in the form of subcarbonate, through the broncho scope The contents are discharged by compression of a rubber bulb on the proximal end of the insufflator The powder adheres to the walls of bronchi and bronchioles, it will make visible even fine ramifications of the air tubes, and will demonstrate any dilatations or cavities, in radiograms taken in the antero-posterior and lateral planes Stereoscopic views

will be especially useful, and will show the relations of an opaque foreign body which has entered the lung, an exact determination can be made as to the position of a fragment lying within an air tube or outside, and by such an examination Dr Jackson has been greatly helped when dealing with penetrating projectiles The advantages of the method depend in part on the fact that the mapping is carried out under visual guidance and is limited to that particular area of the lung which is suspected of pathological changes, furthermore, the powder adheres to the walls of the tubes and does not gravitate in the same way as liquids Bismuth, it is said, is without any ill effects when insufflated into the lungs, and is, in fact, described as exerting a beneficial influence on infected areas Further details may be obtained from Dr Jackson's paper in the *American Journal of Roentgenology* for October, 1918 (p 454), from his paper in the *Annals of Surgery* for October, 1923 (p 501), and from Dr Louis H Clerf's article in the *Surgical Clinics of North America*, vol 4, No 1

AFTER HISTORY OF SANATORIUM PATIENTS

THE Medical Research Council has issued a report on the after-history of patients treated at the Frimley Sanatorium during the years 1905 to 1914 [1] The Council has previously supported two similar investigations into particular modes of treatment of tuberculosis—namely, the results of sanatorium treatment at King Edward VII Sanatorium, Midhurst,[2] and a study of tuberculosis in insured persons accepted for treatment by the City of Bradford Health Committee [3] A further investigation on similar lines at King Edward VII Sanatorium, Midhurst, is shortly to be published, and these, together with the present report on the experience at Frimley, will complete the series of studies of the problems of the sanatorium The Brompton Hospital Sanatorium, Frimley, was opened in 1904 It is a daughter department of the Brompton Hospital, London, with which it keeps in close connexion With very few exceptions every patient passes through a period of observation and treatment at the parent hospital before he or she is considered eligible for the sanatorium Thus a judicious selection of cases favourable for sanatorium treatment is made in London, and the same visiting medical staff is enabled to follow the progress of patients as they pass from hospital ward to open-air conditions The tracing of patients discharged from sanatorium or hospital is always difficult work, and the difficulties were increased in this investigation because of the general shifting of the population during the war years Thus it was discovered at the beginning of this research that out of 3,400 patients treated during the years under review, nearly 1,400 (more than one-third) had been lost sight of, this being disclosed by the fact that when a circular of inquiry was sent to every patient in 1918 quite one-third of the letters were returned by the Post Office marked "Unknown at address" However, after painstaking efforts, including advertising in the press, a personal canvass at every known address, and a study of the returns of the Registrar-General, the authorities succeeded in obtaining information of over 1,000 of the 1,400 patients untraced when the investigation started, so that only 343, or almost exactly 10 per cent, had finally to be put down as definitely lost sight of For the purpose of this investigation the condition of patients on admission to the sanatorium was classified in the following way Group I, incipient cases, Group II, moderately advanced cases, Group III, far advanced cases The results of treatment as revealed at discharge from the sanatorium were grouped as follows arrested, much improved, improved, stationary, worse The first phase of the inquiry was the determination of the mortality of patients according to the condition on admission, and a comparison of these figures with the standard death rates for the general population It was found that for every death expected by the standard table, experience showed that the deaths which actually occurred were in Group I 4, in Group II 16, and in Group III over 40 In the first few years after discharge there appeared to be a fall, not only in the excess mortality, but also in the mortality rates actually experienced The mortality experienced by patients treated at Frimley, in its main aspects, confirmed that previously shown to have been experienced by patients treated at Midhurst The next phase was to determine the mortality according to the condition on discharge It was found that in Group I exactly 75 per cent were discharged "arrested," and only about 2 per cent were "worse", while in Group III only 4 per cent were discharged "arrested," and over 30 per cent were "worse"—the latter figures showing that beneficial results of a permanent nature are to be expected only in a minority of Group III patients Each group of patients discharged "arrested" experienced lower mortality than those discharged in other conditions The large majority of patients discharged "worse" died soon after discharge, about one half of the deaths occurring in the first year Thus the prognosis of patients arrived at by the medical officers may be regarded as a reliable guide as to the heaviness or otherwise of the mortality subsequently to be experienced Interesting results were brought to light by the determination of mortality according to the presence or absence of the tubercle bacilli in the sputum The mortality of patients who showed negative sputum on discharge, even if reversing the result of the test at admission, is much more favourable than when at discharge the sputum was found still to be positive One of the most important factors in a favourable prognosis is the disappearance of the tubercle bacilli from the sputum From the figures collected in this report statistical evidence is found to support the opinion of experienced clinicians that the earlier the stage when the disease comes under sanatorium treatment the greater is the chance of survival In the early cases of Group I, 79 3 per cent of the male patients and 89 7 per cent of the female survived five years, the corresponding number of survivors after ten years being 65 2 per cent and 85 2 per cent respectively The results of the treatment of Group III —the far advanced cases—were not satisfactory Of those discharged worse 93 per cent were dead when observations closed in 1918, and of these deaths 58 per cent occurred in the first year after leaving the sanatorium The results with Group II—the moderately advanced cases —showed that 56 8 per cent of the male patients were alive at the end of five years and 38 2 per cent at the end of ten years, and 67 4 and 49 7 per cent respectively of the female patients In such a grave disease as pulmonary tuberculosis, already in its second stage, such figures justify sanatorium treatment, though we may trust that in the future some more direct therapeutic measures may come to be associated with it, enhancing its value

CANCER RESEARCH

A FURTHER memorandum on cancer [1] has been sent to local authorities by the Ministry of Health It surveys the main lines of experimental research during recent years, and summarizes the broad conclusions which seem to be deducible It is hoped that such a statement may be serviceable to those who are now considering experimental cancer investigation as a whole, and the directions in which

[1] Medical Research Council Special Report No 85 An Inquiry into the After histories of Patients Treated at the Brompton Hospital Sanatorium at Frimley during the years 1905 1914 By Sir Percival Horton Smith Hartley R C Wingfield, and J H R Thompson
[2] Published in the Special Report No 35 1919
[3] Published in Special Report No 76, 1923

[1] Circular 516 London H M Stationery Office Price 1d

particular researches require to be started or continued This memorandum is, in the main, the work of Dr J A Murray, director of the Imperial Cancer Research Fund Commencing with an outline of the history of cancer research, reference is made to the chief theories which held the field at the opening of the present century—namely, the irritation theory of Virchow and the embryonic rest theory of Cohnheim Very little success has attended the experimental work concerned with the second theory, but since 1915 the continued application of tar had been shown to induce the formation of a growth displaying the two typical features of cancer—unlimited power of multiplication and ability to form metastases This step, supporting the first theory, constituted a great advance, and is dealt with in some detail in the memorandum Two main subjects are considered In the first place, the properties of cells already cancerous have been investigated after experimental transference from one animal to another This line of research was started as early as 1889, but its importance was first properly appreciated in 1902 it indicated that it was unnecessary to cite the hypothesis of altered metabolism to explain the continued growth of a cancer—the seed rather than the soil was the important factor The question of immunity or resistance to transplantation was investigated and it was realized that a certain natural immunity existed in the majority of persons Moreover, animals having been once unsuccessfully inoculated had proved to be resistant to a second inoculation, even of considerably more active material This resistant state could be established also by preliminary treatment with normal tissues, if intact living cells were used it was only effective against subsequent grafting, and was without effect on established tumours The most energetic measures of immunization were found to have no influence on the progress of primary cancer The study of cancer metabolism brought to light the fact that there were slight but constant differences between normal and cancerous tissues outside the body The water content of cancerous tissues was found to be greater than that of normal tissues, and the more rapidly growing tissues had a higher proportion of water and of potassium salts, and had a lower calcium content, a feature common to young and embryonic tissues Accessory food factors in relation to cancer were studied, and it was not found that deficiency of vitamins A and B exerted any marked influence on the growth of transplanted tumours Tissue culture outside the body showed that tumours produced substances poisonous to themselves, and frequent replacement of the culture medium was neccessary if growth was to continue These toxic substances were innocuous to the growth of normal tissues Embryonic tissues and tumours proliferated immediately when planted out in a suitable medium but adult tissues only began to grow after an initial delay, which could be cut out by adding to the culture medium an autolysate of normal damaged tissues Rapidly growing transplantable tumours extracted without autolysis gave an extract with the same properties Thus the process of malignant new growth was brought into close relation with the processes of tissue repair after injury The investigation may possibly result in a method of distinguishing true new growths from rapidly growing tumours due to other causes, such as tuberculosis and syphilis The second part of the memorandum deals with the experimental study of the changes by which cells become cancerous This was based on two possibilities—the hypothesis of a microbic, embryonic, or gametic origin, and, secondly, the conception of Virchow, that chronic irritation was of great importance in the production of cancer None of the experiments under the first heading led to the production of a new growth of more than temporary character, but radiant energy, certain animal parasites and chemical irritants, such as tar, proved to be effective in producing new growths This line of research is being actively pursued at present

LES VOSGES

An old member of the Association now abroad writes to the effect that those who have not yet decided how to spend their summer vacation might do worse than to pay a visit to the north-eastern corner of France It is an area of France much less well trodden by English feet than many which are no more easily reached and in some respects less attractive Though parts of it now figure officially under other name, all its inhabitants still call themselves "the people of the Vosges" In the mass they are a cheery good-tempered race, though familiar for at least ten centuries with death and misery as the outcome of war For the Vosges has always been the scene of battles between different leaders—the Dukes of Lorraine and of Burgundy the kings of France, the emperors of the Holy Roman Empire, and more recently modern France and modern Germany Its chief town is Nancy, just north of which lies Verdun, just to its east lies the frontier which for fifty years, deprived France of its natural bulwark—the Rhine Much of it is mountainous and all of it is hilly and well wooded calling to mind some parts of North Wales The fact that the people are mostly bilingual and have both a Teutonic and a Gallic element in their blood makes them an interesting study in point of view of folklore and of natural characteristics Since little of the country lies below an elevation of 700 ft, and most of it is much higher, the general atmosphere is of a stimulating kind There are also opportunities for study in the shape of the medicinal springs, of which there are quite a number Included are some of wide-spread repute such as those at Plombiere Vittel, and Contrexeville Others less well known, but probably with equal claims to therapeutic respect, are *Bains-les-bains*, *Luxeuil* Martigny-les-Bains and Bussang the latter having the advantage of lying at an elevation of about 2,000 ft and being surrounded by pine woods—an excellent place for Oertel and other like exercises Hotel accommodation is plentiful, though in the best known, and therefore more fashionable towns it may be well to secure it in advance The prices, when translated into English money, rule low, and a stay, even in one of the more palatial establishments at the fashionable spas, is not expensive when compared with the cost of a similar stay at an hotel of the same class in Great Britain From the larger spas it is easy and inexpensive to visit like places and others of interest by taking a seat in a public motor car, and from Nancy it is easy to visit, in the same way, Verdun and the St Mihiel salient From Verdun, naturally, the whole of the line lying between the heroic city and Rheims can easily be explored Our correspondent noted with regret that the degree to which the country has been restored is very much less than he had been led to believe from what he had seen in the papers In parts, even wire entanglements have not yet been cleared away, and large blocks of country, besides being practically treeless, are still uncultivated The foundation causes seem to be multiple lack of rebuilt villages sufficiently near the lands to make them easily cultivable, the destruction of farms and the deaths of their owners, the inherent drawbacks of peasant proprietorship, and, finally the inability of the French Government to advance with adequate speed the moneys necessary for land clearing and rebuilding operations It might have been expected that the villages and small towns, when rebuilt, would be arranged on modern town-planning lines, but this is not the case Small property ownership again stands in the way, with the result that the new villages tend to be tangled congeries buildings and lanes just as their originals were but much

less picturesque In a German stronghold buried in a wood, and still practically in its original condition, our correspondent found evidence of the care our late enemy took of himself when he had time, besides being built of concrete and iron, and for the most part below the surface, the construction had a damp-proof course

ANNUAL MEETING NOTES

The Popular Lecture

The Popular Lecture was delivered in the Mechanics' Institute, Bradford, on the evening of July 25th, to a larger audience than has gathered for this event in recent years The lecturer was Sir Henry Gauvain, and his address on the sun cure is printed at page 234 He illustrated his remarks by lantern views of his little patients at Alton and Hayling Island, some of them showing the condition of the child on admission and again after he or she had been subjected for six months or so to the healing influences of sun and wind and (at Hayling) sea The improvement in posture, in musculature, and in the clearing up of lesions was vividly brought out, and the photographs showed, perhaps to an exaggerated degree, the pigmenting which, said Sir Henry Gauvain, accompanied the cure Children who failed to pigment did less well A point brought out in the photographs was the enjoyment of the children, who were generally quite oblivious of the fact that any treatment was in progress The President (Mr Basil Hall), who occupied the chair, said that it was sixteen years since Sir William Treloar, then Lord Mayor of London, established the Alton institution, which was now recognized as a national asset for the treatment of poor children suffering from surgical tuberculosis He was afraid that so far as Bradford was concerned they would have to rely upon artificial heliotherapy if they were to undertake any cures of this kind, but there was some hope that these artificial means might be perfected Sir Jenner Verrall, in proposing a vote of thanks, said that for many years most people thought of tuberculosis as being entirely pulmonary in its character, the recognition that it could be a scourge in other ways was of fairly recent date He thought that that evening the ideal of a popular lecture had been fulfilled, in that the subject was one in which the public was interested, and the exposition of that subject was in the hands of a man who was a master of it Dr H B Brackenbury, in seconding the vote of thanks, said that many general practitioners would like to see their results exhibited by the same graphic and comparative method, but this was only possible in the case of patients under such control as obtained at Alton He asked what was the actual time the children had to stay at Alton before such results as those shown were brought about Sir Henry Gauvain said that the time varied very greatly In some of the cases which he had shown six months only elapsed between the condition of gross deformity found on arrival and the comparative straightness of limb and healing of lesions shown in the second photographs The average duration of the stay at Alton was about fourteen months, but he had some children who had been there for as long as six years, and the one thing of which they were proud at the Lord Mayor Treloar Cripples' Hospitals was that as long as a child could be improved so long could that child remain

The Book of Bradford

Every member attending the Annual Meeting of the British Medical Association at Bradford received a copy of the *Book of Bradford*,[1] edited for the Publications Committee by Dr J Hambley Rowe, whose articles on the history and institutions of Bradford have appeared from time to time in our columns during the past nine months It is a handsome volume of more than 250 pages, with many illustrative plates, including as a frontispiece a portrait of the President, Mr J Basil Hall, who contributes a short preface In its pages will be found an account of some of the historical matters connected with the city of Bradford, its industries and its growth, its notabilities and its medical institutions The material is arranged in thirty chapters of varying length, each contributed by some local authority upon the subject of which he treats, of the twenty contributors no fewer than nine are medical men The book, with its clear print, neat binding, and profuse illustrations, forms a very pleasant introduction to the city, its manufactures and antiquities, and its institutions, and reflects the greatest credit on Dr Rowe and those associated with him The arrangement of the earlier sections is in the main chronological Dr Rowe's opening chapter on prehistoric vestiges is followed by notes on Roman affairs in the West Riding by Dr Francis Villy, on the Anglian and Danish occupation, by Mr Butler Wood, on Norman and Plantagenet times, by Mr W H Barraclough, and on the Tudor period, by Mr W E Preston Mr W Claridge takes the story of Bradford into the seventeenth century, and Mr H J M Maltby writes of developments in the Hanoverian period The trade and industries of Bradford are described in a group of short notes by Mr Maltby, with a longer chapter on the textile industry by Mr W H Sawyer The geology of the district is discussed by Mr H E Wroot, the flora by Mr J Beanland, and the fauna by Mr F Rhodes and Mr W P Winter Dr Rowe contributes notes on the learned societies, the buildings and institutions, and the notabilities of Bradford The Technical College, which formed the headquarters of the Annual Meeting, is described by Mr Barker North, the Bradford Royal Infirmary by Dr J B Dunlop, the Royal Eye and Ear Hospital by Dr William Appleyard, the Children's Hospital by Dr N G Meade, the St Catherine's Home for Cancer and Incurables by Dr Walter Denby, and the Waddilove Samaritan Hospital for Women by Dr J J Bell Descriptive notes on places of interest within easy reach of Bradford are provided by Dr Rowe and Dr B Wade, and these are supplemented by a short historical account of Harrogate Spa by Dr Michael Foster The history of public service developments in Bradford is told by Mr Maltby, and the medical officer of health, Dr J J Buchan, in the course of his summary of public health work in the city, describes the origin of the much discussed Municipal General Hospital The volume closes with a note on Bradford Cathedral from the versatile pen of the editor, with portraits of the Bishop and the Archdeacon

Ethnological Exhibits

A series of exhibits of ethnological interest formed part of the museum organized for the Annual Meeting at Bradford under the direction of Mr F W Goyder and Dr M A C Buckell A general note on the Pathological Museum appeared in this column last week The ethnological collection was arranged and exhibited by Dr J Hambley Rowe The principal item was a very representative series of coliths, paleoliths, and neoliths—the first from the Kent plateau, the second from Belgian gathering grounds and from the Hampshire gravels, and the neoliths chiefly from local sources, though at least five other English counties were represented Non-flint implements from Arabia, Nigeria, and the United States also were to be seen These exhibits, placed in chronological order, demonstrated very well the development of craftsmanship from the very crudely worked coliths to the beautifully finished arrow and lance heads of later neolithic days As

[1] *The Book of Bradford* Prepared under the direction of the Publications Committee for the Ninety Second Annual Meeting of the British Medical Association July, 1924 Bradford W H Brocklehurst (Pp 252 with 105 illustrations)

one viewed in turn the Pre-Chellean, Strepyan, Chellean, Acheulean, Mousterian, Aurignacean, Solutrean, and Magdalenean sets of instruments, a general decrease in size, an improvement in handicraft, and a greater evidence in design was very noticeable Curiously, in the Azilian period, which succeeded the Magdalenean (and is looked on as a transitional period between the Paleolithic and Neolithic eras), the implements, though they followed the general diminution in size, were much less ably worked than those of two or three periods preceding them Apparently the Azilians were a people of inferior culture to the Magdalenean and Solutrean The English paleoliths were collected by Dr Rowe during his period of military service at Bulford on Salisbury Plain, and included several fine and one or two unique specimens The neoliths included about one hundred arrow and lance heads, knives and scrapers from the moors above Pickering in the North Riding, and a very fine collection mounted on cards and gathered by Mr Sam Crowther on the local moors The eoliths mainly came from the collection of the late Benjamin Harrison of Ightham, the learned village grocer, whose contention that they are artefacts found a strenuous believer in Sir Joseph Prestwich, the famous geologist, in 1895, and since then many other geologists and archaeologists have accepted their human origin On the other hand, a few authorities are not yet convinced We are indebted to Dr Rowe for the following brief statement of the reasons given for accepting eoliths as artefacts

(*a*) The evolution of craftsmanship demands the existence of artefacts of a cruder type than the paleolith

(*b*) Though the greater part of the surface of eoliths was formed by natural cause, if several specimens of the same general shape are examined and the edge chipping noted, it becomes difficult or impossible to assert that there is no hand work upon them

(*c*) The edge chipping is not only alike in general appearance, but is found in similar relative positions

(*d*) In the hollow scraper type the chipping is along the edges of the hollow and not on the projecting corners, which being more exposed, if nature did the chipping should show the effect of accidental blows

(*e*) The chipping is generally found on one face of the flint Accidental chipping would be on both faces

(*f*) A series of paleoliths and eoliths can be so arranged that it is impossible to draw a line and say that on the one hand there are artefacts and on the other naturally formed stones

(*g*) There is a distinctive character about the chippings which strikes one as being something different from the irregular breakages of nature

Other exhibits were a few bones lately exhumed from beneath the tessellated pavement of the 'basilica" at the Roman station of Isurium at Aldborough, a cinerary urn (containing fragments of bone), which was dug up on Baildon Moor whilst laying out a golf course, a finely preserved Roman cinerary urn from the Eastern Midlands, a Nigerian skull, with a cephalic index of 82 5, and a few unpublished anthropometrical charts showing seriation of cephalic index in 100 West Riding heads and seriation of stature in 88 Yorkshiremen, drawn up by the exhibitor in 1904

THE Fellowship of Medicine and Post Graduate Medical Association announces a fortnight's intensive course beginning on Monday August 11th at the Brompton Hospital for Consumption and Diseases of the Chest From August 11th to 23rd a course in diseases of children will be given at the Queen's Hospital Hackney Road E 2 From August 18th to September 8th there will be a special course, in the diagnosis and treatment of common diseases of the nervous system at the out patient department of the West End Hospital for Nervous Diseases 73 Welbeck Street, W 1 During September the following courses will be held a fortnight's intensive course in medicine surgery and special departments at the Westminster Hospital on dermatology at the Hospital for Diseases of the Skin Blackfriars, on diseases of infants at the Infants Hospital on ophthalmology at the Royal Westminster Ophthalmic Hospital and on psychological medicine at the Bethlem Royal Hospital Information about these courses may be had from the Secretary of the Fellowship, 1, Wimpole Street, W 1

THE HEALTH OF LONDON

SIR WILLIAM HAMER'S report for 1923, briefly noticed in our issue of July 19th, is full of interesting material, from which it is difficult to make selection

Influenza

As an epidemiologist Sir William Hamer has a long and thought-stimulating discussion on influenza In a diagram of four-weekly periods from 1890 onwards to 1923, the relation is exhibited of average atmospheric temperature to influenza and to diseases of the circulatory system, pneumonia, and bronchitis The cold of winter is associated with deaths from circulatory diseases, but sometimes the mortality peak is higher than temperature can account for, and the explanation is found in influenza, for an increase in cardiac deaths always occurs during influenza epidemics, which show also a relationship to mortality from *pneumonia and bronchitis in cold weather* The behaviour of diseases of the influenza group during 1923 was watched with close attention Not until the autumn did influenza become strikingly apparent, and the maximum mortality —178 deaths in a week—was not reached until the seventh week of 1924 Then followed an increase in encephalitis lethargica which attained its maximum in the eighteenth week of 1924, and Sir William Hamer goes on to express the view that during the last two years in London 'influenza in one or more of its phases has been *endemic*" In discussing this he refers to Hirsch's "Chronological Survey" of influenza, 1173-1875 Hirsch mourns the sparsity of records in this country even for the pandemics of 1857-58 and 1874-75 But for the fifteenth century the sweating sickness has been annexed as influenzal, and also the great dengue prevalences of the eighteenth and nineteenth centuries in India, the West Indies, and elsewhere in the tropics at the identical times when the temperate regions were suffering from 'influenzas" Sir William Hamer notes that Dr Sherman of Los Angeles has quite recently (in the present year) remarked that "in any modern textbook in which dengue is written up, if the reader supplies influenza for dengue the subject matter will not have to be greatly changed," whilst in Calcutta and elsewhere in India prevalence of dengue coincided with recrudescence in London of influenza between July and October, 1923 Having thus roped in dengue, the question of endemicity is raised with regard to the Picardy sweats and 'influenza colds," though the subsequent emergence of Pfeiffer's bacillus rather threw such suggestions into the shade Ague also came into the question, and Bezly Thorne wrote that influenza is "an infectious and febrile affection of the nervous system," which naturally leads on to the lassoing (as at Wembley) of such steers as polioencephalitis, and cerebro-spinal meningitis to be followed now by encephalitis lethargica, concerning which we are told, 'It is being recognized nowadays, that any phase which may be assumed by influenza is apt to be described as a 'new disease'—men's memories in any case being short and their eyes being especially blinded at the present time in the dazzling light of so many recent discoveries" Though Hall of Sheffield observed that it was unfortunate that so much prominence should have been given to a single symptom which may in some instances be entirely absent," yet, Sir William remarks, the 'new epidemic disease" was "duly declared notifiable, and there followed in 1920, 1921, and 1922 a decline in the familiar poliomyelitis, polio-encephalitis, and cerebro-spinal meningitis, a well marked prevalence of encephalitis lethargica becoming officially established in London between 1919 and 1921" We must refrain from additional quotations from the pages on this subject even though citation is made of the views of recent American writers on encephalitis lethargica, one of whom remarks that 'the peculiar malady seems to change its symptoms from year to year," 1919 and 1920 having one group predominating 1921 another, while in Minnesota in 1923 'there seemed to be an entirely new set of symptoms"

Tuberculosis

During the three years previous to 1923 the mortality from tuberculosis increased, but in that year there was a decrease greater than in any year since 1910, if the abnormal figures of the war period be disregarded Attention is called to Dr Bardswell's investigation of the after-histories of adult tuberculous patients in London who received institutional treatment Inquiry regarding 2,987 cases supports the impressions of many observers that sanatorium treatment is useful in initial stages, but ineffective when the disease is well established In 1918 the pulmonary cases were made up of 47 per cent early, 29 per cent moderately advanced, and 24 per cent far advanced In July, 1923, of these early cases, 85 per cent were alive, and of the moderately advanced 39 9 per cent, the others of the two groups being dead, while of the far advanced cases only 4 5 per cent survived Fortunately the percentage of early cases dealt with was much greater in 1918 than it had been in 1914, but the principle of giving ex-service men the benefit of any doubt has, it is believed, contributed to the good proportion of early cases, and a fall may be expected in subsequent years It is held that a patient's home environment, housing, work, habits, temperament, and standard of living determine his future much more than his period of sanatorium treatment year's sanatorium residence would make more difference, t "even then, in many cases, one would expect bad home nditions to be the decisive factor in ultimate failure" x-service men, however, are not limited as to duration of nstitutional treatment, and have a well endowed scheme of after-care, so that of their "moderately advanced cases" of 1918, 51 per cent survived in 1923, while of civilian males only 24 per cent, and of civilian females 28 per cent, were still alive

Typhoid Fever

Typhoid fever caused only 42 deaths in London in 1923, as against 45 in 1922, 60 in 1921, and 48 in 1920 The cases were, however, rather more numerous (331) than in either of the two previous years The autumnal prevalence of the disease, formerly usual, has not been observed since 1912 Reference is made to the report for 1922, which contained a review of thirty-two years' typhoid in London, and to the part played in causation of the disease by immature ungutted plaice The sale of these fish from an area near the mouth of the Elbe and certain other inshore areas practically ceased in London a few years before the war, but reports were received that in the latter part of 1921 and in 1922 it had been resumed During August and September, 1923, a considerable amount of Danish- and Dutch-caught fish, mostly plaice, was sold in Billingsgate, and subsequently there was an approach to the development of a slight autumnal rise in typhoid

After discussion of typhoid fever and dysentery in the mental hospitals of London, and of the stages in the history of typhoid in London generally, onwards from 1869, when it was first separately tabulated by the Registrar-General, three conclusions are reached

"(i) That in the first fifteen years of typhoid fever registration the mortality returns include a large proportion of deaths not really attributable to typhoid fever Some of the deaths returned from certain institutions, even some years after 1884, probably come within the same category

"(ii) That from 1885 1900, and in less degree for nine or ten years thereafter, typhoid fever, clinically speaking, so far as the large majority of carefully diagnosed cases was concerned, fairly well conformed to type, those affected with it in London throughout the fifteen years in question were mainly quite poor persons, the disease, moreover, exhibited a fairly constant age and sex incidence

"(iii) From about 1909 onwards the cases of 'typhoid fever' developing in London, apart from persons infected outside London have in the majority of cases been deemed on further examination not to be typhoid fever"

The report contains an elaborate study of typhoid in the provinces as contrasted with London, and the opinion is expressed that, epidemiologically, London has had two kinds of epidemic disease commonly diagnosed as typhoid One of these is due to eating polluted fish or shellfish and is unassociated with dysentery, it may occur in explosive outbreaks, but exhibits no tendency to spread from case to case, it shows increase in the autumn, preferentially attacks males from 10 to 25 years of age, and is mainly limited to the working classes (Charles Booth's classes C and D) The other kind is that sometimes met with in mental hospitals, it is associated with dysentery, does not occur in explosive prevalences, shows no marked autumnal increase, but appears to spread from case to case, preferentially attacks females and not infrequently persons over 25, and has no such marked special incidence upon a particular social class The first type has almost completely disappeared in recent years From this point of view the subject is then considered decade by decade in the provinces in relation to the industrial areas, whose populations correspond to that in London, which in the past is believed to have received its typhoid through fish or shellfish The changes in prevalence in the provinces are held to show a general correspondence The hypothesis is illustrated by a series of maps covering the five successive decades 1871-1920 The whole study, as submitted by Sir William Hamer, is of epidemiological interest and importance

WELFARE OF THE BLIND

DEPUTATIONS TO MINISTER OF HEALTH

A DEPUTATION from the National Union of the Professional and Industrial Blind was received by the Minister of Health on July 28th The deputation, through Mr Ben Purse, the general secretary, and himself a blind man, advanced reasons for objecting to the provisions contained in the Blind Persons Act Amending Bill now before Parliament In the course of his statement he said that the bill, should it become law in its present form, would bring about a complete revolution in present methods of dealing with the needs of the blind community, and would not be productive of good results

In the first place, Mr Purse argued, it was neither necessary nor desirable to reduce the pensionable age limit from 50 to 30 It would place difficulties in the way of really effective training being given Again, there were disabilities even greater than that from which the blind suffered If the whole question of invalidity was gone into with a view to providing pensions for all such sufferers, then those blind persons who were labouring under additional physical and mental disabilities might properly come within the purview of such provisions, but the deputation questioned whether it was desirable to give a pension to a man at 30 years of age, to provide him with a minimum wage, and to ask the State at the same time to make a grant in aid of the continuity of his employment This was a trinity of interests which involved their mutual destruction The present system ensured the co-operation of the voluntary system, municipal help, and State assistance, each performing its own distinctive functions and constituting a guarantee of permanence and stability It was proposed under Section II of the amending bill to transfer the whole obligation to the county or county borough authorities and to refuse assistance to voluntary agencies It proposed also to establish the principle of a minimum wage which county or county borough authorities would be required to provide The blind themselves considered that with the present machinery they could obtain infinitely better results and provide more substantially for the needs of the blind, whilst at the same time increasing the number of employable blind To sacrifice existing arrangements by setting up some newly devised machinery was to suggest a scheme that could only be conceived in institutions reserved for a particular type of mental case The productive capacity of the average blind worker was not more than 50 per cent of that of the normal artisan engaged in the same occupations, and when county and county borough authorities realized this they would naturally be reluctant to speed up methods of training when they knew that the economic value of those workers for whom such training was necessary would not be comparable with the monetary values they would be required to provide The deputation deliberately and emphatically affirmed that such a provision could only result in reducing the number of employable blind persons Difficulties would arise if a municipality were called upon to launch out in general trade and subsidize such trade from funds derived partly from the State and partly from the funds of local

authorities. It was held that there were directions not indicated by the amending bill in which the Blind Persons Act 1920 could be strengthened. First, the powers of municipalities should be enlarged in order that they might be in a position to take effective necessary measures to check preventible forms of blindness, and, secondly, Section II of the Act should be so amended and strengthened as to deal directly with the problem of mendicancy among the blind. Section III might be so amended as to provide that the registration authorities should periodically, say every three years, be required to satisfy themselves that none of the societies registered in their area have become redundant.

Another deputation—this time from the National League of the Blind—waited on the Minister of Health on July 31st to urge acceptance of the bill now before Parliament. The deputation pressed for the abolition of the voluntary system in connexion with the welfare of the blind and the establishment of direct municipal and State control, urging that the wages of blind workers should be not less than those paid to the unskilled municipal labourer. They asked also that competent blind persons should have preference over seeing persons in the appointment of home teachers. Mr. Wheatley thanked the deputation for their statement of their case. He pointed out that he had already received two other deputations on this matter during the week, and promised to give most careful attention to the whole question at an early date.

England and Wales.

FEES TO MEDICAL OFFICERS AT CORONERS' INQUESTS

THE Coroners Act, 1887, provides that a medical practitioner who has attended at a coroner's inquest in obedience to a summons from the coroner shall be entitled to receive two guineas for making a *post-mortem* examination of the deceased and for giving evidence thereon, or one guinea for giving evidence in cases where no such examination has been made. As is well known, however, there is a proviso to the effect that when the inquest is on the body of a person who has died in a public institution of a kind specified in the Act, the medical officer of that institution whose duty it has been to attend the deceased person is not entitled to receive a fee. Hitherto considerable difficulty has been experienced in determining what institutions were excepted from this provision, but fees have not been withheld from medical officers of workhouses and Poor Law institutions. Recently the district auditor of the London County Council took exception to witness fees paid to medical officers of hospitals controlled by the Metropolitan Asylums Board, and he has now drawn the attention of the Council to the fact that although eminent counsel advised many years ago that Poor Law infirmaries were not public hospitals within the meaning of the Act these institutions have now considerably changed their character. Advantage is frequently taken of these institutions by patients who are not destitute in the sense that they cannot pay for medical assistance, and patients are sent to them from the general hospitals. The auditor concludes that the fees provided to be paid under the Coroners Act for making *post-mortem* examinations and giving evidence at inquests are not payable to the medical officers of hospitals controlled by the Metropolitan Asylums Board, Poor Law infirmaries, general infirmaries, prisons, and other medical institutions of a public character, and that such payments if made, are an illegal and improper charge upon the Council's funds. The Public Control Committee accordingly recommended to the London County Council that such payments be discontinued as from September 1st next, and the Council at its meeting on July 29th adopted the recommendation. The amount of fees involved is stated to be about £1,500 a year.

THE CAPE OF CRIPPLES IN WALES

Last week we had occasion to mention the recent rapid extension of an organization for the care and treatment of cripples which had its origin at Baschurch in Shropshire, where was established a cripples' home now transferred to a larger building at Oswestry, which is near the Welsh border. We now have to record fresh evidence that the same movement is developing in Wales. The Prince of Wales Hospital at Cardiff owes its existence to Sir John Lynn-Thomas, who, when consulting surgeon to the Western Command during the war, was able to interest Mr. Percy Miles and the late Mr. J. P. Cadogan in the establishment of an orthopaedic hospital for the treatment of Welsh soldiers crippled in the war. From the first the idea was that after the war the hospital should become a civilian institution, and that has already come about; but the accommodation has proved insufficient and the hospital has a waiting list of 260. As a step towards relieving the congestion ten open air cots have been provided in the garden of the hospital, and these were formally opened by Dame Margaret Lloyd George last week. At the beginning of the proceedings the chairman, Mr. Percy Miles, read a telegram from the patron of the hospital, the Prince of Wales—who had opened it about seven years ago—in which he expressed the hope that the necessary funds would be given to provide further accommodation urgently required. Sir John Lynn-Thomas sketched the history of the hospital, which he said had just entered upon a new phase of its career. A skilled staff with all the necessary equipment was now engaged in carrying on orthopaedic treatment for the maimed and crippled in Wales. He dwelt on the importance of beginning treatment early, as in this way there was a better hope of restoring to health and active life children who would otherwise be lifelong burdens to themselves and their friends. The provision of a country branch would not only help to relieve the pressure but would add greatly to the efficiency of the hospital. Mrs. Lloyd George supported this view, and Mr. Alwyn Smith, one of the surgeons of the hospital, said that a country hospital containing at least one hundred beds was needed. A site had not yet been elected, but it was estimated that about £20,000 would be required. A vote of thanks to Mrs. Lloyd George was adopted by acclamation, and in the course of her reply she read a message of goodwill from Sir Robert Jones. On the motion of Sir William Diamond, seconded by Professor A. W. Sheen, F.R.C.S., a vote of thanks was adopted to the chairman, of whose devoted services to the hospital both spoke in the highest terms.

BRISTOL CRIPPLED CHILDREN'S SOCIETY

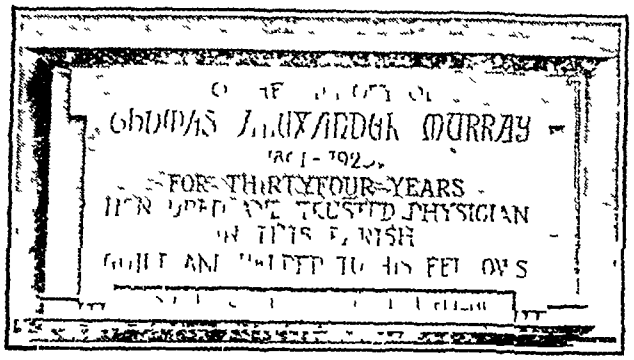
The first annual report of the Bristol Crippled Children's Society contains a record of the success that has been achieved in correlating the various agencies in Bristol which deal with crippled children, the supply of surgical appliances, the provision of convalescent treatment and skilled supervision in the home. During the past year 150 cases were dealt with, 36 children were enabled to receive treatment at local hospitals, 56 were provided with surgical appliances, 21 were given extra nourishment, 19 were sent to open air hospital schools and other special hospitals, and 7 to convalescent homes.

CARDIFF ROYAL INFIRMARY

The Royal Charter authorizing the King Edward VII Hospital, Cardiff, to be known as the Cardiff Royal Infirmary has been granted. The eighty-seventh annual report, which has lately been issued, deals with the considerable progress made during the year in the reorganization of the infirmary to meet the requirements of the medical school of the University of Wales. The requisite minimum number of medical beds has been provided for the unit system. In addition to a slight increase in income the infirmary gains the services of whole-time medical officers of professorial rank who receive stipends from the university. The services of the staff of each unit are given without charge, and the laboratories and fully equipped departments are also placed at the disposal of the infirmary. During the last year 4,652 in-patients and 23,476 out-patients were treated and 4,619 operations were performed. Each department in the infirmary was taxed to the utmost, but there are still over 1,000 on the waiting list. The average daily number of patients in the infirmary during the past year was 292·6 as compared with 282·37 in the previous year, and the average cost of each occupied bed dropped from £151 2s. 2d. in 1922 to £146 0s. 9d. in 1923.

MEMORIAL TO DR T A MURRAY

An interesting ceremony at the Great Sankey Parish Church on Sunday, July 13th, was the fulfilment of a desire among general practitioners in the district that the valuable work of the late Dr T A Murray of Penketh should receive recognition in some concrete form He was for fifteen years an ideal honorary secretary of the Warrington Division, and he never spared himself in his efforts to further the interests of the British Medical



Association He possessed a strong, tactful, and genial personality, which was highly regarded both by his colleagues near home and at headquarters

A carved oak tablet to his memory in the church was unveiled in the presence of a large assembly of old patients and friends, local medical practitioners, and the President of the Lancashire and Cheshire Branch, Dr W H Bateman of Rochdale

Ireland.

MEDICO-PSYCHOLOGICAL ASSOCIATION

AT the annual meeting in Belfast of the Medico-Psychological Association of Great Britain and Ireland (to which reference was made in this column on July 19th), Dr G M Robertson read a paper in which he suggested that dementia praecox ought not to be considered a definite clinical entity as suggested originally by Professor Kraepelin Several varieties of mental disorder were possibly included under this term, all of which tended to develop one or another of the nine different forms of terminal dementia described by Kraepelin Sir Frederick Mott gave an account of his recent work on the thyroid gland, and emphasized the importance of the thyroid and the endocrine glands generally in relation to mental disorder He drew attention to the part played by the cholesterin ester of the suprarenal in neutralizing the toxins of infections as well as building up the body tissues Dr R Marshall contributed some notes on encephalitis lethargica, based on forty-two cases treated in the Royal Victoria Hospital, Belfast, between 1918 and 1923 There seemed to be no definite relationship between the intensity of the attack and the development of a Parkinsonian syndrome Dr Chalmers Watson dealt with the part played by autoinfection in the etiology of acute and chronic mental disorders viewed from the standpoint of the general physician, and Dr A T Hobbs of Toronto gave a survey of the American and Canadian psychiatrists' opinion regarding the importance of focal infection or chronic sepsis in functional psychoses Among other subjects considered was the colloidal gold reaction of the cerebro spinal fluid, introduced by Dr T Houston, and Dr W Calwell reported a case of mental symptoms following the evacuation of a cerebral blood cyst, and read a short paper embodying a new suggestion with regard to the conception of the "unconscious" He suggested that there might be a primitive mind, not self conscious, with a physical basis in the primitive brain, giving rise to the phenomena of the unconscious, but inextricably associated with the adult human mind, which had its physical basis in the later developed association centres

SIR PATRICK DUN'S HOSPITAL

The movement in aid of the rebuilding of Sir Patrick Dun's Hospital, which has set itself out to raise in Dublin and vicinity a sum of £100,000 during the period July 31st to August 9th, was advocated at a dinner in the Mansion House on July 31st, at which a very large company assembled, comprising members of the medical and surgical professions and other prominent people Sir William Taylor, M D , said that remodelling the hospital would be throwing away money, and the Board had come to the conclusion that it would be better to scrap the hospital and build one that would be in keeping with modern requirements That was why they were out in the present campaign Objections had been raised to rebuilding the hospital and spending so much money when the public recognized that amalgamation of hospitals would be more in keeping with modern ideas There were many advantages to be gained from amalgamation He believed they could build a hospital with 750 beds, fully equipped and carry on at no greater expense than five of the hospitals with 650 So far as the campaign for the rebuilding of Sir Patrick Dun's Hospital was concerned, he said that they would not spend a penny on the rebuilding until every avenue in connexion with amalgamation was explored

ARMAGH ASYLUM

At a recent meeting of the Committee of Management of Armagh Asylum, the resident medical superintendent presented his annual report The statistical report, which dealt with the year 1923, stated that on December 31st there were 253 males and 250 females in the institution, a decrease of 11 on the previous year During the year 11 were admitted, an increase of 6, but 2 of these were considered not to be insane and were discharged as soon as possible The total number of cases under treatment was 592, 66 of which were first admissions, being 3 less than the previous year, 38 were discharged, 22 as recovered, and 11 as relieved, 1 was not improved, but was considered to be sufficiently harmless to be allowed out under the care of his relatives There were in all 29 deaths, including 12 of persons over 60, all were due to natural causes There was one death from influenza in 1923, though in the early part of the present year there were a good number of deaths from this disease, which was more or less epidemic in the neighbourhood It is a matter for thankfulness that no deaths occurred from violence, accident, or suicide One patient effected her escape

New South Wales.

SYDNEY MEDICAL SCHOOL

AT the recent commemoration ceremony of the University of Sydney Dr John Hunter, professor of anatomy, was admitted to the degree of Doctor of Medicine with first class honours and the University medal, and was awarded the Ethel Talbot Memorial Prize His thesis was "The forebrain of *Ipteryx australis*" The Peter Bancroft Prize for the year 1923 was awarded to Dr N D Royle for his experimental work on the problem of the treatment of spastic paralysis

AMERICAN SURGEONS IN SYDNEY

During March, Sydney was visited by members of the American College of Surgeons The party included Drs Franklin Martin W J Mayo, Hart, and R Smith They were entertained at various functions A luncheon was given by Sir George Fuller, Premier of the State of New South Wales A dinner was given by members of the New South Wales Branch of the British Medical Association Addresses were given by the visitors on the standardization of hospitals, and Dr Mayo delivered an address to the Medical Society of the University of Sydney on research work Consequent on their visit, it is understood that Dr Ralph Worrall, formerly senior gynaecological surgeon of the Sydney Hospital, has been asked to visit the United States at the time of the next annual congress of the

American College of Surgeons, when the honorary degree of Fellow of the American College of Surgeons will be bestowed on him Professor John Hunter and Dr N Rovle, who have been recently occupied in research work on the function of the nervous system in regard to the locomotor system, have been invited to deliver the John B Murphy address at the same congress

Sir Alexander MacCormick

Sir Alexander MacCormick, for many years lecturer on surgery, has left for a six months' trip to England, and before his departure was presented with an oil portrait of himself, the subscribers to which consisted of medical men on whom, or in whose families, he had at some time operated It is expected that this portrait will later be hung in the Listerian Theatre at the Sydney University

Medical Notes in Parliament

[From our Parliamentary Correspondent]

Maternity and Child Welfare India—The Under-Secretary of State for India informed Mr Scurr on July 28th that the Government of India did not intend to ratify the proposals of the International Labour Convention of Washington concerning maternity benefits The Washington Conference of 1919 had asked the Indian Government to make a study of the question of the employment of women before and after confinement and of maternity matters and had made a report on the subject In reply to a further question as to the mortality rate of infants and children statistics were given, not in the usual form—namely deaths of infants in relation to births—but as the ratio of deaths per 1 000 of population in the Bombay Presidency The following figures show the ratio of deaths per 1 000 of population of infants under 1 year and between 1 and 5 years of age, in the Bombay Presidency for the years 1919 and 1920 For 1919 Infants under 1 year—males 206 70 females 195 73 1 year and under 5—males 56 48 females 55 32. For 1920 Infants under 1 year—males 191 42 females 174 26 1 year and under 5—males 45 60 females 43 20 Mr Richards states that he has seen the report of the lady doctor appointed by the Government of Bombay to the effect that 93 per cent of the children born in the industrial area in Bombay are drugged with opium He is inquiring into the matter

Methylated Spirit Denaturant—Mr Lorimer inquired on July 30th the number of persons convicted of methylated spirit drinking since the addition of pyridine was made compulsory and how the figures compared with the number of convictions before the issue of the new order The Under-Secretary for the Home Office (Mr Rhys Davies) said it would not be possible to measure results yet as the ingredient was not introduced compulsorily until May 1st of this year Mr Lorimer asked whether the Minister was aware that the Chairman of the Liverpool Licensing Bench said that the increase in the consumption of methylated spirit was enormous and in those circumstances would not the Home Office withdraw the order for the mixture which was very injurious to the industries using methylated spirit Mr Davies replied that they were very desirous of making methylated spirit as unpalatable as possible to those who were inclined to drink it Mr Lorimer put it that as methylated spirit was extensively used in surgery and was one of the best sterilizers of the skin and of instruments the Chancellor of the Exchequer should in the interests of surgeons and patients cancel the order for the addition of pyridine inasmuch as it had a harmful effect upon the skin of the hands of surgeons and the skin of patients Mr Graham said that the question was then under investigation

Patent Medicines—Sir A Butt asked on July 30th whether having regard to the deception and often injury to health inflicted upon poor people by advertisers of patent medicines who alleged that they were capable of curing malignant disease the Minister of Health would introduce a bill making it obligatory that all patent medicines should state clearly on the labels the principal drugs they contain Mr Wheatley referred the hon member to a reply given to Sir Kingsley Wood stating that the Government could not find time for the introduction of legislation this session.

Birth Control—Mr Thurtle suggested to the Minister of Health on July 30th the desirability of allowing local authorities to impart to people who wished to obtain it information as to birth control methods without penalizing such local authorities by withdrawing their maternity and child welfare grants Mr Wheatley replied that his view was that the institutions provided by local authorities at the cost of public funds should not be used for purposes such as that contained in the question which were the subject of controversy without an express direction from Parliament Mr Thurtle asked whether the Minister knew that a large number of labour women passed unanimously a resolution in favour of this procedure Miss Jewson also inquired whether the Minister was aware that many working-class women attending welfare centres were unfit to bear children and to bring up healthy children and the doctors knew they were unfit and yet were unable to give the information which any upper or middle-class woman could obtain from a private doctor She asked the Minister to consider the bearing of this question on the subject of abortion which was so terribly increasing in this country Mr Wheatley submitted that these suggestions and arguments might be put before Parliament if it were considering new directions but he held that his business was only to carry out the instructions received

Royal Commission on National Health Insurance—Mr Wheatley stated on July 31st that the Royal Commission on National Health Insurance had already held a preliminary meeting and would begin its sittings for the hearing of evidence in October The Commission had not yet reached a decision as to the admission of the public to its meeting

National Insurance Age Limit—Mr Black pressed the Minister of Health on July 30th as to the exclusion of persons at the age of 70 from further participation in benefits however long they had contributed to the fund Mr Wheatley in his answer pointed out that though liability to pay contributions and the title to sickness and disablement benefits ceased at the age of 70 medical benefit did not The extension of sickness and disablement benefits to persons over 70 which could be effected only by amending legislation would necessitate an increase in weekly contributions It would also present serious administrative difficulties to approved societies in the application of the test of incapacity for work

Departmental Committee on Sexual Offences—The Home Secretary has appointed a Departmental Committee under the chairmanship of Sir Ryland Adkins K C with the following terms of reference To collect information and to take evidence as to the prevalence of sexual offences against young persons and to report upon the subject indicating any direction in which in their opinion the law or its administration might be improved The other members of the committee are Mr H W Disney Mrs E H Kelly C B E J P Miss Clara Martineau J P Dr A H Norris M C Mr P J Parr O B E Mrs Packham J P and Sir Guy Stephenson C B The secretary is Miss J D I Wall of the Home Office

Coroners Inquests—Mr R Richardson asked on July 31st if the Home Secretary would initiate legislation to secure the better conduct of *post mortem* examinations to prevent the nomination to appointment of coroner by private individuals to bring the office more into accord with modern need and to arrange that inquests should be adjourned until after trials at assizes with a view to avoiding unnecessary expense and the inconvenience and hardship to witnesses giving evidence before these tribunals Mr Davis said that the Home Secretary now had under consideration a draft bill for amending the law relating to coroners and coroners' inquests and that this bill dealt with the points to which Mr Richardson referred

Income Tax Relief for Professional Workers—Major Church inquired on July 31st if the Chancellor of the Exchequer was aware that salaried professional scientific and technical workers assessed for income tax purposes under Schedule E were at a disadvantage as compared with corresponding classes assessed under Schedule D as regards abatements on account of subscriptions to learned societies and libraries the cost of the preparation of scientific memories the upkeep of private laboratories the provision of study accommodation and the provision of special clothing and whether in view of certain abatements to the journalistic profession he would give similar relief to the above-mentioned classes Mr Graham replied he was unaware that the classes mentioned were at a disadvantage Questions in regard to the admissibility of expenses under Schedule D and F of the Income Tax Acts were necessarily dealt with in accordance with the existing law the allowance of particular items of expenditure could be determined only by reference to all the facts of the case If Major Church had in mind any case in which further relief was thought to be due to a taxpayer and would let him (Mr Graham) have the particulars he would have the matter investigated

Sanitary Commissioner in India—Questioned by Mr Hogge on July 28th Mr Pichard said that Lieut Colonel Graham I M S who was appointed by the Government of India to act during the absence of the Public Health Commissioner on leave was not registered as holding the D P H He held the degrees of M B M S Glas and the Diploma of Tropical Medicine During the war he was A D M S (sanitary) at General Headquarters Mesopotamia and since the war had held the post of Director of Health Services and adviser to the Minister of Health Irak Government

Service Treatment Allowances—Dr Haden Guest inquired on July 28th whether seeing that under the rule of the Pensions Ministry a man suffering from an attributable disability which disabled him from work was not entitled to treatment allowances unless the treatment prescribed by the Ministry was of such a character as actually to prevent him from obtaining work and in view of the fact that a man certified by his panel doctor or by a hospital doctor to be incapable of work was thereby rendered unable to obtain work while at the same time he did not receive any treatment allowances the Minister of Pensions would take steps to remove what appeared to be a grave hardship to ex-service men Mr Muir reminded Dr Haden Guest that the conditions governing the grant of allowances under Article 6 of the Warrant were not identical with those which determined certification for the purpose of sickness benefit under the National Health Insurance Act Allowances under the Warrant were not therefore necessarily also payable in all cases where sickness benefit was obtained He regretted that the Pensions Minister was not in a position to accept the suggestion made

Notes in Brief

Marriage allowance granted in India to personnel of the British service and to certain other ranks drawn from the British service and serving under the same general conditions of pay It is not considered necessary to extend the allowance to the Indian Medical Department the personnel of which with few exceptions are domiciled in India They are allowed to draw separation allowance on account of special war-time conditions

Correspondence.

CRIMINAL RESPONSIBILITY

Sir,—In the summary of recommendations of the Report of Lord Justice Atkin's Committee on Insanity and Crime, the first clause reads "It should be recognized that a person charged criminally with an offence is not responsible for his act when the act is committed under an impulse which the prisoner was by mental disease in substance deprived of any power to resist"

The second clause reads, "Save as above, the rules in M'Naghten's case should be maintained"—that is, the test of the knowledge of right from wrong is maintained

The report therefore indicates two tests of irresponsibility (1) uncontrollable impulse from disease, (2) absence of knowledge of right from wrong The first is purely psychological, the second intellectual and ethical

The first can be proved to be present in every case, and the second only in a very few An "act," as psychology (the science of common sense) asserts, and all men know, is due to impulse Every "criminal act" is due to impulse, and when committed by an insane person the presumption is that it is due to disease, unless there is evidence to prove a criminal motive unrelated to the insanity, or that the impulse from disease was not of a form or degree to render it uncontrollable

There is no definition possible of insanity as a whole or even of its groups, and different forms of impulse may arise in the same conditions of disease Hence the existence of morbid impulse and its uncontrollability can be decided best on the evidential facts in each case

The M'Naghten "test" is open to many objections, namely

That the vast majority of the insane in asylums obey the rules, etc, of the institution, and that a large proportion have a keen appreciation of their ethical relations to others

That in certificates of insanity and in notes of their malady no mention of the knowledge of right from wrong is ever made

That insane persons accused of crime are of adult age and have usually lived with little or no breach of social order, so that unless they have become extremely demented they must still retain their social knowledge

The measures taken in secretly preparing for the commission of the crime and for the evasion of detection before and after it are evidence of knowledge of wrong in a large proportion of cases

The fact that lunatics have been known to express the knowledge of their irresponsibility

The statistical examination of the results of murder trials shows that many are condemned under this test and are reprieved afterwards on the ground of insanity

That many escape condemnation because the judges evade applying the test

That with few exceptions the criminal insane in Broadmoor, under the strict application of the Act, should have been executed

That juries as a rule are not educated to decide the debatable questions in jurisprudence and ethical philosophy that may arise under the M'Naghten test

That every juryman has had personal experience of a great number of impulses to wrong acts and can the more readily understand impulsive action

A full knowledge and consideration of these facts would, I believe, convince legal authorities that there are very few insane persons to whom the test would apply, except the mental defectives, the demented, and those in states of incomplete consciousness, whose mental irresponsibility is obvious

The question of the capability of an insane person to control an impulse on which he has been proved to have acted would probably be decided on the impulse being related to the form of insanity—for example, suicide to melancholia, vindictiveness to persecutory insanity etc, together with evidence of it having been manifested in other acts Also in the absence of any sane motive or of previous criminal habit or character

The responsibility of an insane person, however difficult the proof may be, should certainly be held to be possible, for reasons of a deterrent nature, both in the incipient and certified insane

From these considerations it is to be hoped that the so-called M'Naghten "test" will be dropped as unsatisfactory and misleading, and that the first clause of the summary of the report will become the psychological and sole test of irresponsibility —I am, etc,

H Rayner, M D

London, N W, July 13th.

THE ADMINISTRATION OF PLAGUE VACCINE

Sir,—I am reminded by the letter of Dr Mansoor (British Medical Journal, July 12th, p 83) of an experience in Basia, Mesopotamia, when in 1919 an outbreak of plague occurred in that town and surrounding districts I have no figures beside me, but the salient points stand out clearly in my memory

The outbreak began in April and was exhausted by the end of June, only an occasional case appearing early in July Some three hundred or more cases were reported, and the measures adopted were disinfection of dwellings, etc, and the inoculation of occupants and neighbours An attempt was made to popularize inoculation among the natives by issuing pamphlets and communicating articles to the local press on the advantages of inoculation In this work, too, the services of health visitors—Indian, Hebrew, and Armenian alike—were invaluable Four thousand or more natives were inoculated at dispensaries established for the purpose, but it was soon found that very few women presented themselves unless of the Jewish or Armenian section of the community, purdah women refrained Accordingly a dispensary for purdah women was set up and staffed by two nursing sisters, where, as far as I can remember, 1,200 or more women were inoculated

It was thought advisable to give the full dose of vaccine at one attendance, as it was highly improbable that the natives would return for a second injection had the dose been divided I have therefore no knowledge of the severity of the reaction following inoculation in these people, but among the European, Indian, and Arab staff it was seldom that the reaction could be described as severe, few, in fact, having to cease work Generally, the reaction was no worse than that following the first T A B injection

The result of this work left no doubt in my mind of the value of plague vaccine as a prophylactic measure Of the people inoculated only a small percentage subsequently developed plague, and these had either been incubating the infection at the time of inoculation or had been infected during the negative phase following the injection A notable feature was the comparative immunity of inoculated individuals who continued to live in infected dwellings and the tendency of uninoculated members of the same houses to contract the disease —I am, etc,

J W Patterson, M B,
Late Captain R A M C

Glasgow, July 21st

CARDIAC DELIRIUM

Sir,—In your Epitome of June 7th last, under the heading of "Delirium in heart disease," Dr R Massini is quoted as describing two types of mental aberration occurring in individuals suffering from heart disease In your issue of June 28th Sir Clifford Allbutt, in discussing these types, refers to the condition as cardiac delirium, and it is from this use of this name that I would humbly dissent The terms "cardiac delirium" and "delirium cordis" are surely synonymous, and yet the latter has usually been employed to denote, not a mental state, but a confused and excited condition of the heart muscle, usually due to auricular fibrillation It is always a pity when a phrase signifies two quite different things Thus, one often sees the doubt that arises when the term "sleeping sickness" is used It may mean either encephalitis lethargica or trypanosomiasis, and if he received a cable from the other side of the world saying that a friend had "sleeping sickness" he would not know exactly what was wrong In the same way, if the cable read "cardiac delirium" the loved one might either be mentally unbalanced or in cardiac distress

Apologizing for thus even seeming to criticize the language of such a master of English as Sir Clifford Allbutt, I am, etc,

R D Rudolf

Toronto, July 18th

Sir,—I think evidence could be easily collected from general practitioners that this is anything but an uncommon condition Undoubtedly it only occurs when a patient is gravely ill, but few of us would care to say that the patient would not recover Without going further back than the last twelve months, I can remember two patients who

recovered after it, both of whom are living to-day One, an old lady, has had two attacks of heart failure, both accompanied by "travelling delirium", the other is a man who is again active and walks easily two or three miles a day —I am, etc,

Spalding July 27th RAMSAY MUNRO

SIR —It may be of interest to record a case of "travelling delirium" which has been very marked A male patient, 68 years old, had suffered for some four years with myocarditis and had had several attacks of cardiac failure During his last illness, of seven weeks' duration, the symptom of 'travelling delirium" was very noticeable and persistent, lasting for a fortnight, in fact until his death a week ago —I am, etc,

Chester July 26th JOHN WELSH

THE R A M C (T A)

SIR,—Though now retired, I should like to say a few words on this important subject, based on a long experience as D A D M S and A D M S of a Territorial division

The shortage of medical officers was a source of anxiety before the war, but seems to have become even more acute since This is, of course, partly due to 'war weariness" and partly to a recollection of the rapidity with which many temporary medical officers (who had undergone none of the burden of peace-time training) skipped up the ladder of promotion, passing at a bound over the heads of Territorial Force officers who had years of service behind them Medical men now naturally think that it will be better to wait and join up when the next war comes along, and certainly the attenuated cadres to which the present *R A M C (T A) is reduced point the same moral*

Now this idea is exceedingly subversive of the efficiency of the Territorial Army Granting that we can perhaps allow 75 per cent of the officers in a general hospital 50 per cent in a casualty clearing station, and, say, 25 per cent in a field ambulance to be men with medical training only, still the remainder must be trained soldiers as well as doctors, or the units in question will be immobilized and useless As each existing field ambulance must on mobilization at once expand into three, it is obviously necessary and imperative that in peace time it should have its full number of officers training for that eventuality, and the same applies to other units

The need, therefore, is urgent How are the officers to be obtained?

First, I think, a very grave mistake is made in belittling the work to be done in the A M S (T A), and representing it as a pleasant picnic The right sort of men are not got that way, in fact, it is probably the reason why so few of the right sort do join up Men are not going to put themselves to serious inconvenience for a trifle, and though undoubtedly to the man with soldierly instinct and true patriotism the work brings very great pleasure, it is also at times hard and exacting examinations have to be read for and passed, evenings given up to drills and lectures and even camp is not a real holiday, because the medical man *does not get away from his professional work there as all* others do I think it would be far better to stress the work and the urgent necessity for it, and not to present it as a pleasant relaxation The pay will perhaps cover expenses, but not much more The attraction should be the wider outlook gained and the opportunities for acquiring professional knowledge and here I think the authorities might step in and throw open the courses of instruction in the R A M C College at Millbank to a certain number of *Territorial medical officers each year* The opportunity of becoming really efficient in sanitary science, tropical medicine, etc, would be a very strong inducement to men to join up In addition special facilities might be given to suitable candidates from the Territorial Army to join the R A M C on the lines of those given in the combatant ranks of the Territorial Army for commissions in the line Such facilities are no more than the service deserves and would be a well merited recognition of the public spirit of the R A M C T officers Inducements such as these would, I believe bring in desirable men At present riding, camp sanitation, and stretcher drill are the only avenues by which fresh experience can be obtained

Personally, I have always held very strongly that every medical officer should join, or be attached to a field ambulance in the first instance before taking up regimental duty Otherwise he never has an opportunity of really learning his work and his duties, but remains the Doc" very *much at the mercy of the adjutant and the sergeant-major*, which is not desirable Such a course also promotes a spirit of camaraderie between the regimental and other medical officers, which is most useful and desirable on active service —I am, etc,

Bury St Edmund July 22nd E C FREEMAN Colonel A M S T (ret), Late R A M C

SIR,—One cannot but sympathize with Colonel Ducat's *lament over the shortage of medical officers, but his assertions* that those who join "will never regret it" and that their years of seniority "will benefit them in no small degree," are not borne out by the facts of the late war

A medical officer to a combatant unit will serve for three and a half years and pass an examination before becoming a captain He will go to the war (if any) with his unit live in the trenches—possibly for years—and come home a casualty On leaving hospital and reporting for duty as a tried and seasoned veteran he will, of course be given an appointment at home or abroad with higher rank and pay? Not a bit of it He will find himself odd man out in a medical unit where he is years senior to everybody including the O C, and with less pay than the latest imported conscript (who, by the way, is automatically promoted in the abbreviated space of twelve months, while he himself is not allowed a day's reduction in his period of service) If he is stationed at home his allowances are cut off, and he will beg to be sent abroad again in order to earn nearly as much as a conscript on home service He is fortunate if he gets back to the mud and blood of his old congenial battalion, and he will finish the war, as he began a captain

My advice to a young man about to join is 'Don't Wait until you are conscripted, and then you will get more consideration, better pay, quicker promotion, and earlier *demobilization*"—*I am, etc*,

July 1 th. "MORE THAN ONCE BITTEN"

THYROID EXTRACT AND MANGANESE

SIR,—Dr H W Nott, in his letter printed in the JOURNAL of July 12th (p 81), should have given your readers exact details of the administration of thyroid gland and permanganate of potash Does he administer them in actual combination or separately, and at what intervals of time? Dr William Moore gave a demonstration at a banquet of medical men thirty years ago that potassium permanganate was an antidote to morphine, he did this by taking three grains of morphine followed by four grains of potassium permanganate in weak solution Nearly a hundred people were saved that year in New York alone by that demonstration

I introduced acid permanganate as a means of estimating morphine and its salts, also uric acid and its salts, so early as 1877, and published the same (see *Year Book of Pharmacy*, 1878), and permanganate was recommended by me as an antidote to morphine and opium in 1884 But I could never feel sure that Dr W Moore's method of giving permanganate hypodermically, as well as by mouth could be effective, because acid permanganate was also my method for estimating all the albumins (eight parts albumin id decolorize one part of permanganate *immediately* in weak acid solution), vegetable and animal quantitatively Albuminous principles are all easily oxidizable and immediately deoxidize permanganate A 5-grain tabloid or thyroid might be expected to deoxidize more than a sixteenth or a grain of potassium permanganate If Dr Nott and his confreres combine the remedies in pill form or if Dr W Moore's hypodermic method is effective for morphine poisoning then it should be a reduced salt of manganese that would answer both purposes, and a preparation of *manganese might be found more palatable* than permanganate itself (see *Pharm Codex*)

A patient of mine found by accident more than twenty years ago that potassium permanganate, taken in quarter-grain doses in plenty of water in the early morning, cured his chronic rheumatism and reduced his bunions, instead of being unable to walk two miles he could walk fifteen He has continued his daily dose more than twenty years, and would not give it up, except whilst I was attending him He started quite a coterie of permanganate takers in his neighbourhood, and I know a family who regard it as a specific for gout He is 78 years old and more active than he was at 50

The alkaloids which do not deoxidize permanganates, which are therefore unlike morphine, apomorphine, and colchicine, and which we may call for the moment non-oxidizables, are caffeine, strychnine, hyoscine, atropine, hyoscyamine, and aconitine, as I demonstrated by *in vitro* experiments, published 1894-96 in a series of articles — I am etc,

London, S E 24, July 21st J BARKER SMITH, L R C P

SMALL-POX IN LONDON

SIR,—Dr Archibald Kidd (BRITISH MEDICAL JOURNAL, July 26th, p 161) draws attention to the recent outbreak of small-pox in London, and says that it forms an instructive commentary on one of my arguments That argument is that very mild cases of small-pox in the unvaccinated, such as are easily overlooked, are of very rare occurrence when we are dealing with a virulent strain of small-pox, but such cases usually occur only when we are dealing with a very mild strain of small-pox, and that such strains tend to breed true

If such a case as the clinically very mild attack in an unvaccinated child which apparently was responsible for the recent London outbreak (where the strain was clearly a highly virulent one) were a common occurrence, I admit that it would to a large extent invalidate my argument, but I submit that it is so rare as to be almost unique I have never alleged that such a thing could not occur, but I have urged, and I still urge, that it is infinitely less likely—when we are dealing with a severe strain of small-pox—for ultra-mild modified cases (such as easily escape recognition) to occur in unvaccinated subjects than in vaccinated ones

I assume, as I am bound to do, that there is no doubt that the unvaccinated child responsible for the recent outbreak really was "extremely mild," as stated by Dr Kidd, also that it really was unvaccinated The mere fact that a case of small-pox has no marks on the arms and is stated by the parents to be unvaccinated, whilst it justifies such a case being classified as unvaccinated, does not necessarily exclude the possibility of the case having been vaccinated I well remember a patient (a young woman) who was admitted to the Birmingham Small-pox Hospital during the epidemic of 1893-94 She had no vaccination marks on her arms, and she was definitely stated by her parents to be unvaccinated Yet she had a typically mild abortive attack such as so frequently occurs in vaccinated subjects She was the only example of such a case in an unvaccinated subject that I had ever seen at that time (we were dealing with a severe strain of the disease), and I regarded her as unique Whilst she was under treatment, however, a faint but definitely foveated scar, about the size of a threepenny bit, was noticed on her lower lip, and on our inquiring as to its origin we were told that it was left by a sore place which she had had on her lip when a girl, through nursing a baby brother or sister at the time the latter had a bad arm after vaccination We had no doubt then that the patient had accidentally inoculated herself with vaccine without her parents realizing its significance I have a photograph of this case which shows the scar on the lip fairly distinctly

The proof full report on the recent outbreak is available it will be necessary to learn the exact clinical description of the original case It is not only scantiness of eruption that is important, but also whether the eruption aborted In the meantime I can only repeat that such occurrences are sufficiently rare as not materially to affect my argument —I am, etc,

C KILLICK MILLARD

Leicester, July 28th

SCHOOL MEDICAL OFFICER APPOINTMENTS

SIR,—It is a fundamental part of the policy of the British Medical Association that for equal work equal pay should be given, regardless of sex To this no member of the Association can reasonably object A large number of recently qualified lady members of the profession are finding it increasingly difficult to get remunerative work, and many of them are looking in the direction of the school medical service for an appointment Many vacancies in this branch of work regularly appear in the Important Notices in the JOURNAL A certain type of man (not very plentiful, I hope) will apply for these underpaid appointments, but education committees and authorities in increasing numbers are selecting women for these posts The Oldham Education Committee received only six applications for a vacancy Five of these were from recently qualified ladies, and only one man This committee wisely consented to re-advertise at the British Medical Association figure of £600 Two education authorities in Scotland (Morayshire and Argyllshire) have recently selected ladies at a salary of £450 Can nothing be done to prevent these young and comparatively inexperienced graduates filling posts where they cannot be respected by their professional colleagues, with whom they are brought into contact in discharging their duties? It is disheartening to young members who desire this work, who desire to be loyal to the Association, and who are realizing what is happening, particularly in the school medical service —I am, etc,

July 29th X Y Z

*** We have shown this letter to the Medical Secretary, Dr Alfred Cox, who makes the following comment

"The British Medical Association has used every effort to dissuade both medical men and women from applying for posts at salaries below the recognized standard A letter is written to every applicant whose name can be ascertained, and much success has thereby been achieved The Medical Women's Federation has used all its influence in the same direction, and not long ago a letter was written to every teacher of public health subjects in the medical schools asking for their help in dissuading newly qualified students from taking these appointments and thereby lowering the standard of remuneration for the public health services If "X Y Z" will read the report of the discussion on the scale, which appears in the SUPPLEMENT of August 2nd, he will see that negotiations are proceeding with the bodies representing the employing authorities, and it is hoped that an agreement may shortly be arrived at"

THE ADMINISTRATION OF OXYGEN

SIR,—In connexion with Dr T Stacey Wilson's letter (July 12th, p 82) in regard to the administration of oxygen, may an old pupil of his be permitted to indicate a method that was suggested to me by a colleague, which both he and I have found to be most successful? It is to give pure oxygen from a nitrous oxide apparatus Two bagfuls of pure oxygen may be inhaled every hour, the bag is filled and its contents inhaled until the bag is collapsed

The results in post-influenzal disorders of the heart and in a case of diffuse suppurating peritonitis were astounding —I am, etc,

Probus, Cornwall, July 14th J C JONES, M B

JOHN HUNTER AND SYPHILIS

SIR,—While gratefully acknowledging the review of my *Memoir of William and John Hunter* in the BRITISH MEDICAL JOURNAL of July 19th, may I write a few lines on the subject of John Hunter's self-inoculation with venereal disease? My own conception of the account contained in Palmer is that he did not intend to communicate syphilis, and that the mixed infection of the case he happened to select was outside his knowledgee and design To this extent, then, it was inadvertent (see pages 149, 154 of my *Memoir*) I may be wrong, but such is my inference from John Hunter's own words, the exact meaning of which, owing to the then confusion of terms and ideas, is somewhat involved —I am, etc,

London, W 9, July 21st. GEORGE C PEACHEY

Universities and Colleges

UNIVERSITY OF CAMBRIDGE

AT A congregation held on July 17th the following medical degrees were conferred

M D—C B Cohen

M B, B CH—C E G Smith C A Lupton T R Thomson C E Newman H D V Miller

M B—G K Cooper T M Thomas

B CH—J R B Dearden A H Johns H W H Holmes R A M Scot R W Smith

UNIVERSITY OF LONDON

UNIVERSITY COLLEGE

MR RICHARD J LYTHGOE has been appointed Sharpey Research Scholar in physiology Mr Lythgoe was Mercers Company's Scholar at Cambridge He was placed in the First Class of Parts I and II of the Natural Science Tripos he has been clinical assistant to Sir John Parsons at the Royal London Ophthalmic Hospital, and demonstrator to Professor Langley in physiology to Professor Hopkins in biochemistry and to Professor MacAlister in anatomy He served in the Royal Garrison Artillery during the war

The Percy F MacGregor Scholarship in embryology has been awarded to Mr G Pavling Wright He was placed in the First Class in the Honours School of Physiology at Oxford He held the Theodore Williams Scholarship in pathology at Oxford and the Filliter Exhibition in pathology at University College Hospital Medical School

UNIVERSITY OF WALES

AT the congregation of the University of Wales held at Bangor on July 17th the following degrees were conferred

M B, B CH—D I Bowen D T Davies Edith M Davies L. C. Edwards Martha Griffith E D Owen Constance Walters

ROYAL COLLEGE OF PHYSICIANS OF LONDON

THE ordinary quarterly comitia of the Royal College of Physicians of London was held on July 31st, when the President, Sir Humphry Rolleston, was in the chair

Members

The following gentlemen having passed the required examinations were admitted as Members

Richard Sydney Allison M.D Belfast Walter Russell Brain M.B Oxon Walter Francis Raphael Castle D S C M D Camb Alexander Cavadias O B E M D Paris Philip Cyril Powter Cleake M D Lond L R C.P Keith Douglas Fairley M D Melb Charles Basil Sabine Fuller M C M.B Camb L R C P Eric Frank Gartrell M B Adelaide Frank Bedo Hobbs M B Camb L R C P Charles John Lewis M D Birm L R C P Samuel Lawrence Ludbrook, M B New Zealand Arthur Arnold O man D S C L R C P Martin Owen Raven M D Oxon L R C P Carl Ivo Streich M B Adelaide Eric Leo Susman M.B Sydney Geoffrey William Theobald M.B Camb L R C.P James Graham Willmore L.R C P

Licences

Licences to practise physic were granted to the following 208 candidates who had conformed to the by laws and regulations and passed the required examinations

Harriet E Acheson B E Ahrens N J Ainsworth H McC Allen G Anderton E C Archer F H Armanious R N Aston A E Austen J M. Barnard E V Barnes A Barnsley J C Barrett Idris M Benjamin T P Beswetherick, F A Bevan H M. Bird R Bolton W R Bowen A D Briscoe Eileen M Bron on A C Brown D M Brown *Doris D Brown R K Bryce H. F Burtt G A. H Buttle *Doris M E Carrington M N Charterjee F E Chester Williams *Edith I Clark C K. Colwill A Cooke H A Cooper J D Craig S H Currie D D R Dale Agnes S Daniel Edith M Davies J Davies *Muriel Davie V H J Davie S C M. Davison R Y Dawbarn Ursula H de Fonber M. de Lacey J A. F Deny sen D M de Silva A C Dick, J C G Dickinson C P Donnison R H Dyer C J East H E K. Eccles A B Eddowes J E Elam *Dorothy K. Elliott M N Emery *Phyllis V L Epps H G Estcourt T L Evan T P Evan A Farid D W G Faris C W S Fernando W W J Fernando H R Fisher F G France H J Fuller Florence M. Gamble A G D Gavin W T MacN Gent e W H Gervis G Gillett A Glen I Gluckman P L Goitein F M Graham P L Gray W H Gray S J H Griffiths G E Harrie J Harsilver H Hinchco R C Howard *Dorothy M Howse J N Hudson G C Hughes R G W Husbands A G Hyde M H Jacobs *Bessie G Jem on C M Jennings A J R F Johnson D J Jones E L H Jones R W Jone P C Jones A. Jowell D E keefe M C H Kin don I Kinsler A H Kynaston J H R Lapsin W C Latham J J Law S A Leader H Levit F J Levy *Nancy R Lewis E M Liddle W R A. Line Rosalie E Lucas H J McCarthy J McCunn A F McGlashan G A McKaig A V Mackenzie R S MacLatchy J R Maleri H B Mann R G B Marsh D J Martin F Martin G A Martin R Massingham J H Matthews L M Maybury B A J Maro T F Meyrick, K. V Milburn W J Montague J H Moore J G Morgan L Morris C J Murphy J W Nankivell M. C O Connor J O Oliver F C O Mara Helen E D E Ormstein K. C L Paddle L J Panting H R Paterson *Doroth E Peake A A F Peel M S Pembrey D B Phillips L M J R Pilo G H. Pitt L. Platky H G Poles A Pool *Gwendolen M Prat J O Priestley V J Rao W E Rees H D C Rice Jessie L Robb W. A. Robb Lilian E. Robinson W E Rodgers G R Rolston F W Roques E Scott J A Scott S J Scurlock E K. Seah J Sellick A Shirley A D H Simpson A W H Smith Jean L Smith K. S M. Smith J F Southward H L Sparrow C E Saanthorpe F V Suckling H S Tait C Thomas D M E Thomas O F Thomas O O S Thomas W D R Thompson D S Todd White G M. Tothill J R Tree L A S Trotter C A Van Rooyen G C Vaughan I R Vermooten F O Walker J L le C Walker H A Ware H C Warner P L Washington H O Watkins Pitchford A Watson B M. R West Vivian E Whiteman M. D A Wiles W Wilkinson R G Williams V G Williams T J Wilson W M. Winder A. J Wrigley E Zimmerli

* Under the Medical Act 1876.

Diplomas

The diplomas indicated were granted jointly with the Royal College of Surgeons to the following successful candidates

PUBLIC HEALTH—H L Barker J B Batten W G Booth L P Costobadie A Crawford B B Dalal Idith M P Davies S P E Davies Eileen M Du Buis on Mary Essemont Gwladys Evans Dorothy J L Gallie P C C Garnham G McN Hargreaves Marjorie C Hawkins N R Jenkins Llelpeth H B Livingstone V A Luna Kathleen F Matthews Alice D Pocock A T W Powell I N O Price Violet Reade Grace S even on Emma M. Store E Tagoe Bancelette Thomas P Thwaites E H Wilkinson Gwendolen Wilson J G Wilson

TROPICAL MEDICINE AND HYGIENE—T Benjamin P G Cochrane T Creaser I K Dixon W Dunlop R J Gittins A W Grace M L C Irvine R B MacGregor H G D Mathur D roshy Mitchel S Nag G C Ramsay Beatrice A S Rus ell Puth M Scut H W Torrance B B Yodh

PSYCHOLOGICAL MEDICINE—J S Harris W J T Kimber N Macleod E G T Loynder D Smith

OPHTHALMIC MEDICINE AND SURGERY—G ApThomas H M. Armstrong B Basu W J Chapman J M Dawney G Kumar S H Mile F N Oulton Freda Ramsay J Pego R S Shah S S. Sumner K N Tandon H E Variava

LARYNGOLOGY AND OTOLOGY—W R Bevis J B Cavenagh J Hare H I Mariner T G Wynne

The Murchison Scholarship was awarded to Mr Norman William Snell M P C S L R C P

College officers members of committees and examiners were appointed on the nomination of the President the Council and the Library Committee

Censors Dr H G Turney Dr Farquhar Buzzard Dr James Calvert Dr Cyril Ogle

Emeritus Treasurer Sir Dyce Duckworth Bt M.D Treasurer Dr Sidney Phillip

Examiners

Chemistry—C S Gibson B Sc R H A Plimmer D Sc

Physics—W J Curtis D Sc Sidney Russ D Sc

Practical Pharmacy—A E Russell M D L A Coleyne M D Philip Hamill M D Nathan Mutch M D W E Dixon M D

Physiology—J B Leathes M B John Mellanby M D

Anatomy—T B Johnston M.B

Medical Anatomy and Principles and Practice of Medicine—H Morley Fletcher M D A P Beddard M.D W C Bosanquet M D J W Russell M D C P Lox M D Sir James Purves-Stewart K C M.G M.D Charles Bolton M D L A Smith M D Sir Charlton Briscoe Bt M D J A Torrens M D

Midwifery and Diseases peculiar to Women—J P Hedley M B Sir Ewen Maclean M.D T G Stevens M D J D Barris M.B H J F Simpson M B

Public Health—Part I H. Wilson Hake Ph D Part II D S Davies M D

Tropical Medicine—Sir Percy Bassett-Smith K C B (Bacteriology) Sir Leonard Rogers M D (Diseases and Hygiene of the Tropics)

Ophthalmic Medicine and Surgery—J Sandsfield Collier M.D

Laryngology and Otology—Sir StClair Thomson

Psychological Medicine—Part I E D Macnamara M D Part II R Percy Smith M.D C M. Hinds Howell M D

A communication was received from Mr C F Pevon behalf of H H Tafari Makonnen the Regent of Ethiopia expressing his appreciation of his visit to the College and sending a commemorative medal in memory of i

The President brought before the College the results of communications with (1) the Home Office concerning veronal (2) the Ministry of Health concerning heroin A report by Sir William Hale White and Sir William Willcox on the question of the prohibition or the limitation of the manufacture of heroin

The Moxon Medal was awarded to Sir Leonard Rogers, M D, F R S, on the recommendation of the Council

The adjudicators recommended that the Weber Parkes Prize and Medal be awarded to Professor Calmette

Dr Sidney Martin and Sir Arthur Newsholme were re elected Representatives on the Executive Committee of the Cancer Research Fund

The President announced that he had appointed Sir Frederick Mott M D F.R S to deliver the Harveian Oration in 1925

A report was received from the representative of the College on the General Medical Council

After some formal College business had been transacted the President dissolved the comitia

ROYAL COLLEGE OF SURGEONS OF ENGLAND

AN ordinary council meeting was held on July 31st, when the President Sir John Bland Sutton was in the chair

Diplomas of Membership were granted to 208 candidates* Diplomas in Tropical Medicine and Hygiene were granted jointly with the Royal College of Physicians to seventeen candidates and in Ophthalmic Medicine and Surgery to fourteen candidates

Sir W Watson Cheyne will deliver the Lister Memorial Lecture on Thursday, May 14th 1925

Sir Charles Ballance was re elected a member of the Executive Committee of the Imperial Cancer Research Fund

ROYAL COLLEGE OF SURGEONS IN IRELAND

THE following candidates have been approved at the examinations indicated

PRIMARY FELLOWSHIP—T G Wilson

FINAL FELLOWSHIP—J D Cherry M. Crone F S Dancorpe J Tenan.

CONJOINT BOARD IN SCOTLAND

THE following have passed the final examination and have been admitted L R C P.Ed. L R C S Ed and L P F.P S Glas.

Amy B R A Perrison A H. Forman M A. Wilson F N Jarvis M M Tannahill C C Robson N C G Mercer P Murray H V Pitchie-McKinley C F Denham W A. Easmake S. P Jones

* The names are printed in the report of the comitia of the Royal College of Physicians published in the preceding column.

H Amarasinghe Mary C Semple J Donnelly O H D Oliver, S Thambipillai A Menzies R S Caldwell M Goldberg E S Greaves J H MacAlpine S N Bandyapadhay J M Anderson S Levenson A E Coyne J G O'Keeffe, D M Safwat J F Sweeney G M Rose D T Gemmell, C Campbell V Bell, D M Gray D R Paterson and H Schulgasser

The following candidates have been approved at the examination indicated

FINAL EXAMINATION.—*Medicine* B S Jayawardena F El Ahmadi N T Yusif H A Newton H H James N Wren, G H Tarras, P A M Jayewardene J E Israel T J Muir and N Ampalavanar *Surgery* B S Jayawardena, Molly F Churcher H H James J Kirkness G H Tarras A Vasudev E S Brohier D Stewart J P Subramaniam, and N Ampalavanar *Midwifery* D A M McKinney P Groarke, T G S Harkness F El Ahmadi J T Smith D S Middleton, Molly F Churcher N Wien R F Pagnam J M Rutherford J E Israel V B van Dort L S Brohier and D Stewart *Medical Jurisprudence* Winifred G Price, D B Churchshank C A Basil T W Chapman F Blacklee A G Cruikshank J F Wallace H B Martin G McCracken W J Ledgerwood J B Hutchison W W Crawford J Lees P. Henry I Michaelson Eliza Bell J T M Symington H S Kent, J C Shiach Jessie R Bruce A F Chisholm E G Douglas, T M. Olmiston J M Coutts G B Burnett, Catherine Millar, A A F Shepherd D B Craig, J W Wylie T D Gould R J Snodgrass, A J M Gall C Ismail and J A Hyde

CONJOINT BOARD IN IRELAND

The following candidates have been approved at the examinations indicated

FINAL PROFESSIONAL EXAMINATION.—P M Baum T G Boyle Dorothy E Campbell, E J Daly W O Dunwoody T T W Eaton V D Gordon Attracta Halpenny A Heron J J Hogan J A Kennedy G A Moorhead W McCurry A S ff O Carroll E Orr F R O Shiel Muriel V Prentice J Shiel R A McE B Simpson A W P Smyth M J Walsh

D P H.—W E R Dimond W H Smith

SOCIETY OF APOTHECARIES OF LONDON

following candidates have passed in

SURGERY.—W B Arnold K R Chaudhri C E Donaldson R Hare.

MEDICINE.—H P Burns J C C Langford H Morris (Section I)

FORENSIC MEDICINE.—J O W Bland J C C Langford

MIDWIFERY.—H L Bernstein, J L Hopkins G L W Iredale J de V Maingard

The Diploma of the Society has been granted to Messrs W B Arnold, H P Burns, K R Chaudhri, C E Donaldson, R Hare

The Services.

Major General S Guise Moores, C B, C M G, R A M C (ret.), has been appointed house-governor and medical superintendent of the Osborne Convalescent Home for officers of the Navy, Army, Air Force, and Indian Army, on the retirement of Surgeon Lieut.-Colonel Sir W R Crooke Lawless, K C V O, C B, C I E, M D

DEATHS IN THE SERVICES

Lieut Colonel Morgan David O'Connell, R A M C (ret.), died in Dublin on June 3rd He was born at Kilmallock on May 13th, 1855, and educated in the medical school of the Royal Irish College of Surgeons, taking the L R C S I in 1875, and the L K Q C P in 1876 He entered the army as surgeon on August 4th, 1878, became lieutenant-colonel after twenty years' service, and retired on August 15th, 1903 He served in the Sudan campaign of 1885, at Suakin, receiving the Egyptian medal and the Khedive's bronze star, and in the South African war in 1899-1902, when he was in charge of a general hospital, with the rank of colonel, he took part in operations in Cape Colony and in the Orange River Colony, and received the Queen's and King's medals, with two clasps to each He was re-employed during the recent great war, from January 1st 1915 He was the author of a work entitled *Climate and Ague*, published in 1909

Major Patrick Ambrose McCarthy, I M D died in the General Hospital, Calcutta, on May 15th aged 56 He entered the department in 1885, received a commission as lieutenant on December 26th, 1910, and attained the rank of major on December 25th, 1917 He was civil surgeon of Mogok, the ruby mines district in Burma, and at the time of his death was the senior officer but one of his department

Dr William Henry Simmons late R A M C, died suddenly in West Africa on June 11th, aged 29 He was the youngest son of the late Charles James Simmons and of Mrs Simmons of Hove, and was educated at Guy's, taking the M R C S and L R C P Lond in 1918 He entered the R A M C as a lieutenant in the Special Reserve on November 14th, 1918, just after the armistice, and became captain after 4 years service Before joining he had held the post of out-patient officer at Guy's and subsequently those of house surgeon of St John's Hospital, Lewisham, and of assistant resident medical officer at the National Hospital for Consumption, Ventnor, afterwards he joined the West African Medical Staff

Captain Hugh Michael Collins I M S (ret.) died on May 8th He was born on October 23rd 1890, and trained at Madras University and at the London Hospital, taking the M R C S and L R C P Lond in 1915 Immediately afterwards he took a temporary commission as lieutenant in the R A M C, and was appointed to the I M S as lieutenant and temporary captain on May 30th, 1916 He was invalided two years ago During the recent war he served in Mesopotamia, in the operations in South Kurdistan in 1919, was mentioned in dispatches in the *London Gazette* of June 15th 1919, and February 12th, and received the O B E on November 15th 1919

Obituary.

T D LISTER, C B E, M D

We regret to record the death of Dr Thomas David Lister, C B E, who died, on July 30th, at his residence at Henley, aged 55 He was educated at Ashe's School and Guy's Hospital, where he graduated as M B, B S Lond, and obtained the diplomas M R C S, L R C P in 1892 Two years later he proceeded to the degree of M D, and in the same year became F R C S In 1900 he received the diploma of M R C P He was house-surgeon at Guy's Hospital from 1893 to 1894, and pathologist to the East London Hospital for Children from 1897 to 1900

Dr Lister was consulting physician for chest cases to the Prince of Wales's Hospital for Officers, Marylebone, from 1917 to 1919 In the latter year he was elected a member of the Senate of London University, and in 1920 he received the C B E Whilst honorary advisory physician of the council of the National Association for the Establishment and Maintenance of Sanatoria for Workers Suffering from Tuberculosis he drafted the scheme for Benenden Sanatorium He was the head office medical adviser of the Royal Exchange Assurance Corporation, the Friends' Provident Institution, and the North British and Mercantile Insurance Company, physician to the National Union of Teachers, consulting physician to the Post Office Sanatorium Society, and the Association of Local Government Officers, an invited member of the Panel Committee for the County of London, and of the Hospital Sunday Fund Board of Delegates His other appointments included those of physician to the Mount Vernon Hospital and the Royal Waterloo Hospital for Children and Women His publications included *Industrial Tuberculosis* (1910), *Sanatoria for the People* (1911), and various contributions on life assurance, children's diseases, consumption, and allied subjects He leaves a widow, two sons, and a daughter

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Dr W F Marsh Jackson of Smethwick died on July 21st in his 83rd year He was the son of the Rev William Jackson, at one time vicar of St John's, Workington, was educated at Queen's College, Birmingham, and took the diplomas of M R C S Eng in 1868 and L R C P Edin and L M in 1888 He went to Smethwick in 1864, first as assistant and then in partnership with Dr Hicks From 1874 to 1922 he served as certifying factory surgeon, and on his retirement from that appointment received many letters, including one from the Home Office, congratulating him upon his long and faithful service The Volunteer movement made a strong appeal to Dr Jackson's patriotic spirit, he was appointed honorary surgeon in 1868, and in 1892 received the Volunteer Officers' Decoration for long service He was appointed a justice of the peace on the formation of the borough bench for Smethwick in 1901 He was also consulting medical officer of health and divisional surgeon to the county police Prior to the proceedings at the borough police court on July 24th, the chairman spoke of the high esteem and respect in which Dr Marsh Jackson was held by everybody in the district

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Dr George Fisher, who died suddenly of angina pectoris, aged 78, on August 1st, was the son of George Fisher, who practised at Bawtry, Yorkshire He received his medical education at Leeds and took the diplomas of M R C S Eng in 1876, and the L R C P Edin and L M in 1874 He served for two years as house-surgeon at the Worksop General Dispensary After practising for two years in New Zealand, where he was surgeon to the Thames Gold Field Hospital, he returned to this country and was in practice at Shere, Surrey, until 1907, when he retired In that year he went to live at Dorking, where he identified himself with the public life of the town, serving on the Urban Council for many years, and remaining a member until the time of his death Dr Fisher is survived by one son and two daughters

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The well known American psychologist, Professor Stanley Hall, has recently died at the age of 78

Medical News.

On August 1st, 1924, the London School of Tropical Medicine became incorporated in the London School of Hygiene and Tropical Medicine. The Director of the new school, Dr Andrew Balfour, informs us that invitations were sent to all members of the staff of the former institution, and, so far as can be told at the moment, all these members have signified their desire to become members of the staff of the new London School of Hygiene and Tropical Medicine.

THE St Bartholomew's Old Students' dinner will be held on Wednesday, October 1st, in the Great Hall of the hospital, at 7 for 7.30 p.m., with Dr J. H. Drysdale in the chair. The cost of the dinner is 25s. 6d. (inclusive of wine); early application should be made to Sir C. Gordon-Watson, K.B.E., 82 Harley Street, W.1.

FOLLOWING upon the resignation of Mr J. B. Bannister from the post of gynaecologist to the Prince of Wales's Hospital, Tottenham, on his appointment to Charing Cross Hospital, the governors have invited Mr Arthur Giles, consulting gynaecologist to the hospital, to resume active work on the staff as senior gynaecologist, and have appointed Mr Aubrey Goodwin as gynaecologist.

THE triennial meeting of the International Institute of Anthropology will be held in Prague from September 14th to 21st. It will deal with the historical and morphological aspects of anthropology, comparative ethnology, social psychology, and eugenics. Short excursions will be arranged in Bohemia and longer ones in Moravia and Slovakia.

THE French Congress of Oto-rhino-laryngology will be held at the Paris Faculty of Medicine under the presidency of Professor Jacques of Nancy, from October 15th to 18th, when the following subjects will be discussed: (1) Posterior sinusitis and its ocular complications, introduced by Canuyt, Ramadier and Velter; (2) Diathermy in oto-rhino-laryngology, introduced by Bourgeois, Dutheillet de Lamothe, Portmann and Pavet. Further information can be obtained from the general secretary, Dr O. Pasteau, 13 avenue de Villars, Paris, VIIe.

A POST-GRADUATE course will be held in Vienna from September 29th to October 11th, dealing with modern developments in medical and surgical treatment, and from November 24th to December 6th there will be an intensive course in children's diseases. Detailed information can be obtained from Dr A. Fischel, Dean of the University.

THE West India Red Cross Society exists to help in reducing the heavy infant mortality in the British West Indies and generally in promoting the welfare of that portion of the empire. It is affiliated to the British Red Cross Society and several institutions in various islands. I held a meeting in London on July 25th, which was addressed by Dr Andrew Balfour, Director of the London School of Hygiene and Tropical Medicine.

SIR MARTIN CONWAY has written and the Paris-Lyons and Mediterranean Railway has published in English, a very well illustrated pamphlet entitled *A Week-End in the Jura*. He begins by stating that it is possible to leave Victoria Station, London, at 11 o'clock on a Friday morning, to be back there again at 7 o'clock on the following Tuesday evening, and to have enjoyed three full days of motoring through the Jura mountains. Copies of the pamphlet can be obtained (post free) from the offices of the company, 179 Piccadilly, London, W.1.

THE sixth Congres francais de Navigation will be held at Strasbourg, from September 25th to 28th. It will consist of seven sections, devoted to legislation, economics, statistics, morality and education, social hygiene, dwellings, houses and agriculture respectively.

POST-GRADUATE courses on *dermatology* and *syphilography* will be held at the Hopital St. Louis, Paris, under the direction of Professor Jeanselme, commencing on October 3rd and November 3rd respectively. The fee for each course is 150 francs. A detailed programme will be sent on application to Dr Burnier, Hopital St. Louis, Paris.

THE issue of *Paris Medical* for July 19th, which is devoted to orthopaedic surgery, contains an article by Dr Pochem, of Cannes, on Lord Byron's club-foot, illustrated by Platier's caricature.

Letters, Notes, and Answers.

ORIGINAL ARTICLES and LETTERS *forwarded for publication are understood to be offered to the* BRITISH MEDICAL JOURNAL *alone unless the contrary be stated.* Authors desiring reprints of their article published in the BRITISH MEDICAL JOURNAL are requested to communicate with the Financial Secretary and Business Manager, 429 Strand, W.C.2, on receipt of proof.

CORRESPONDENTS who wish notice to be taken of their communications should authenticate them with their names—not necessarily for publication.

Communications intended for the current issue should be posted so as to arrive by the first post on Monday, or at latest be received not later than Tuesday morning.

ALL communications with reference to advertisements as well as orders for copies of the JOURNAL should be addressed to the Financial Secretary and Business Manager, 429 Strand, London, W.C. Attention to this request will avoid delay. Communications with reference to editorial business should be addressed to the Editor, BRITISH MEDICAL JOURNAL, 429 Strand, W.C.2.

THE telephone number of the BRITISH MEDICAL ASSOCIATION and BRITISH MEDICAL JOURNAL is Gerrard 2630 (Internal Exchange). The telegraphic addresses are:

EDITOR of the BRITISH MEDICAL JOURNAL, *Aitiology, Westrand, London.*

FINANCIAL SECRETARY AND BUSINESS MANAGER (Advertisements, etc.), *Articulate, Westrand, London.*

MEDICAL SECRETARY, *Mediscra, Westrand, London.*

The address of the Irish Office of the British Medical Association is 16 South Frederick Street, Dublin (telegrams, *Bacillus, Dublin*; telephone 4737 Dublin); and of the Scottish Office, 6 Rutland Square, Edinburgh (telegram, *Associate, Edinburgh*; telephone 4361 Central).

QUERIES AND ANSWERS.

MILLSTONE FLOUR AND NATIONAL NUTRITION.

MR E. MUIRHEAD LITTLE, F.R.C.S., replying to Dr J. Macpherson Lawrie's question in the JOURNAL of August 2nd (p. 218), says he gets excellent bread made of stone-milled flour from Messrs. Crang and Son, 3 Thaver Street, Marylebone, W.1.

INCOME TAX.

Request for Certified Accounts.

"S. W. F." has made a return of income on the average of the three years 1921, 1922, and 1923, but has now been asked by the local inspector of taxes to supply certified copies of the accounts of the practice for 1922 and 1923.

The accounts requested are, we presume, statements of gross cash receipts and classified expenses for each year. Such accounts would probably be only an elaboration of the calculations which S. W. F. no doubt prepared for himself when he calculated his average profits, and we suggest that he might make out such statements and certify them to be correct to the best of his knowledge and belief, and forward them as being a reasonable compliance with the inspector's request.

Motor Car Transaction.

J. W. J. bought a motor car in October 1923 value £200, when a motor cycle was taken in part exchange (£90). The value of the motor cycle at that date was £150.

*** Assuming that £150 was the cost of the cycle in the first place, the position is that J. W. J. has improved his professional equipment and at the same time has in effect covered his renewal cost—in other words, the net outlay of £200 — £90 = £110 represents (*a*) replacement of cycle to the extent of £60, *plus* (*b*) £50 expended on improvements. On these grounds the £60 is clearly allowable.

MOTORIST bought about six years ago a second-hand B car for £150, and in 1923 replaced it by a new M.C. car at a cost of £255 less £30 received for the old car.

*** The net expenditure of £225 is in part an improvement of the equipment, seeing that the original car was a second-hand one, and the whole of the expenditure is not allowable for income tax purposes. £100 (that is £130 — £30) is allowable, and £125 represents the capital outlay.

A. B. sold an A.J. car for £65 and purchased an O. car for £335 in replacement. An A.J. car would then have cost £475. What is the correct deduction to be made?

*** It must be remembered that as no depreciation allowance can be claimed by a professional practitioner, the deduction must be restricted to out-of-pocket expenses, the cost of replacement was in fact £335 — £65 = £250, and A. B. cannot claim to deduct a greater sum even though that sum would have been allowable if he had expended it. He will be well advised however to bear in mind that his standard of replacement is a £475 car and not a £3.5 car, so that if for instance he were to replace his new car by one costing £475 no portion of the then cost would represent capital improvement.

LETTERS, NOTES ETC

LASSOING A PAPILLA

DR J G BENNETT (Hyde) writes I had a rather curious case a few days ago of a weaver who, in the act of sucking up thread from the shuttle, found that the thread had become attached in her throat and could not be removed When I saw the patient she had the thread hanging out of her mouth and the other end was firmly fastened in what I surmised must be her larynx However, on examining the throat, I found that the distal end of the thread was anchored on to a circumvallate papilla at the root of the tongue Pulling quite forcibly would not dislodge the thread, so I perforce had to seize the papilla in artery forceps and avulse it with the cotton attached The interest of the case lies in the apparently impossible happening, for the thread end, when sucked into the mouth must have become knotted round what at the best is a very tiny projection I should think the chances of this occurring again would be about one in a million

ACHOLURIC JAUNDICE

DR ROBERT PLATT (Sheffield) writes May I correct a small error which appeared in last week's issue? In the discussion following the papers on jaundice, at the Annual Meeting (August 2nd, p 183), I am reported as having said "that in acholuric jaundice the red cells might really be unduly resistant to abnormal osmotic pressure" This is not so We know (by the ordinary "fragility" test) that they are *less* resistant to hypotonic solutions My point was that cells which are less resistant to hypotonic solutions are usually *more* resistant to haemolytic agents acting on the cell membrane, such as saponin (See Bayliss, *Principles of General Physiology*, third edition p 135) And, as it is unlikely that the haemolysin at work in acholuric jaundice should act by altering the osmotic conditions, I suggested that what we usually called fragility might really be increased resistance

A NEW CONTRACEPTIVE PESSARY

T A DAVIDSON (Hanwell, W) writes Some time ago I was asked to suggest a contraceptive having the following qualities ease of application certainty of action, and freedom from harmful results, especially with regard to the safeguarding of the natural protective agent in the healthy vagina—the *Bacillus lacticus* Lactic acid of 1 per cent solution proved on experiment to be fatal to spermatozoa and not injurious to the lactic bacillus The pessary, however, contains 2 per cent, on account of the neutralizing effect of the alkaline seminal and uterine secretions It is spherical, 1¼ in in diameter, and dissolves slowly in contact with moisture When wet it has a smooth, soapy surface, which allows it to be inserted without the aid of a lubricant In five to ten minutes it begins to disintegrate, and is effective and remains so for seven to nine hours Its shape avoids the risk of misplacement and its size obstructs the vagina The dissolved surface forms a creamy substance, which occludes the os uteri and fills all the irregularities of the mucous surface The spermatozoa are thus prevented from entering the uterus No douching is required, nor is it desirable The simplicity of its constitution and manufacture brings it within the reach of the poorer classes, for whose use, and that of the unfit, it is primarily intended

DIFFICULT MIDWIFERY AT SEA

DR J F ST GEORGE QUELLY (Walton on Thames) sends an account of a severe case of midwifery which occurred on a mail steamer returning from the East The patient was brought on board as the boat was starting, she was about nine months pregnant, and during the night had seven eclamptic fits with continued hiccup The urine was full of albumin and her general condition was bad, the Rotunda Hospital treatment for eclampsia was tried—namely half a grain of morphine followed by quarter grain doses, until altogether she had received three grains by hypodermic injection Both the fits and hiccups ceased, and she was able to retain a little milk and barley water After two days the urine began to clear, although a little albumin remained Labour pains commenced on the third day after this treatment they were weak, with rather long intervals, but on the fourth day they became stronger, and with a little assistance a healthy child was born After a short time, since there was no sign of the placenta being expelled, in spite of the usual treatment, manual extraction appeared necessary The placenta was found adherent and high up, a good deal of haemorrhage followed, but the patient progressed favourably afterwards, and was transferred to a nursing home at Liverpool, where she completed her recovery The only person available to help was one stewardess

PNEUMONIC PLAGUE

DR F D BANA (Bombay) writes Allow me to point out that Colonel Glen Liston in his lectures on the history of the plague omits to mention that it was the late Colonel Childe I M S then Professor of Clinical Medicine in the Grant Medical College, Bombay, who first discovered the presence of *B pestis* in the sputum of cases of pneumonic plague (it was, as Colonel Liston says, Dr Viegas who called it plague when it visited Bombay in 1896) By this omission he does great injustice to the memory of that great clinician and physician of his times in this part of Western India The late Colonel Childe was much liked and respected by his students He was a great clinician of his time whose advice was always sought for eagerly in Bombay and its Presidency.

SECOND ATTACK OF MEASLES

DR ALEXANDER C LAMBERT (Chaotso, Honan, China) writes: In the issues of April 26th and May 3rd Drs Kemp and Davidson write on the subject of second attacks of measles Perhaps my own personal experience of three attacks of what were presumably measles may be of interest I have very distinct recollections of suffering in my schooldays, at the age of 11, from an attack of rubella, which was shortly afterwards followed by definite measles, and I have even now very clear recollections of the difference in the two rashes and [illegible] of the measles My next attack of me[illegible] when I was in practice in Nanking, China The attack was mild but definite My last attack was at the age of 45, while serving with the R A M C in Mesopotamia In this instance prodromal symptoms were present for two or three days before the rash appeared Measles was prevalent in the Force at the time, and other members of my unit were attacked There was a definite rash followed by desquamation I am hoping that immunity has now been established, for grey hairs and measles are apt to provoke the irreverent to unseemly mirth

THE LEFT HANDED CHILD

DR CHARLES F HARFORD (London) writes I am grateful to Dr Elder for his kind references to my letter in your issue of June 21st Undoubtedly it was my intention to suggest that the allied habits of squint, left handedness, and stammering were primarily of psychogenic origin I am aware, however, that this statement is liable to be misunderstood owing to the way in which terms are used by different writers I have endeavoured to make quite clear my own meaning in a small book entitled *Mind as a Force* In the chapter on mind and body on page 76 I say "There is no need to discuss at length the effect of the body upon the mind, for this is universally recognized" After quoting certain instances I continue "We desire to make quite clear the converse of this picture—namely, that the mind affects the body in countless ways for good and ill, and if we must speak of priority we believe that the mental impulse precedes the bodily reaction" In the same book I have discussed the relations of physiology and psychology In the problem of heredity which Dr Elder puts to me I am inclined to accept his second alternative of "the psyche *qua* psyche in one individual begetting a similar psyche in another" But this is a big question As to the method of educating children with faulty habits "patient gradual training" seems to be a good description of what is necessary It is, however, of the utmost importance to realize that where there is an emotional difficulty it may be necessary to deal with this On a recent occasion I was giving a popular lecture upon dreams, and referred to the problem of left handedness A teacher who was present stated that he had been left handed and every means to help him failed until he became engaged to be married, when the difficulty was soon solved In the early stages of this correspondence mirror writing was particularly noticed I had not been brought into touch with this phenomenon until after the writing of my last letter Since then, on June 19th, a youth of 17 came before me with right internal strabismus When questioning him in my usual routine as to left handedness I found that he was a mirror writer with his left hand and in this way he could write as well with his left hand as with his right Nothing further needs to be said as to this beyond what has been said by your other correspondents I noted, further, that the attitude of this boy to his mother was sufficient to justify the conclusion that he was suffering from the result of a mother complex

ADMINISTRATION OF OXYGEN

DR SHAPURJI A BANAJI (Bombay) writes Dr Laing (June 14th, p 1074) has mentioned the early use of oxygen in pneumonia I have given oxygen in early cases of bronchopneumonia in children, some of very severe type following measles, with marked benefit Respiration rate is lowered by one fourth to one half, cyanosis disappears, restlessness and distress are diminished, sleep follows, and the general well being of the patient is ensured In all cases of pneumonia and broncho pneumonia with increased respiration, cyanosis and distress, oxygen should be administered early to be of benefit Like other remedies administered late it is bound to fail when marked toxaemia and cardiac failure are setting in

DIAGNOSIS OF SMALL POX

A Correction

OUR Reporter in the Section of Medicine writes In the preliminary report of Dr Killick Millard's paper on the diagnosis of small pox read at the Bradford meeting, which appeared in the JOURNAL of August 2nd (p 183) there is one very serious mistake, for which I express my regret In describing the distribution test Dr Millard said that if the lesions were more numerous on the limbs than on the trunk the case was almost certainly one of small pox, whereas if the lesions were more numerous on the trunk the case was almost certainly one of chicken pox In the report these characteristics of the two diseases were transposed, the correct version will appear in due course in the full report of the Section

VACANCIES

NOTIFICATIONS of offices vacant in universities, medical colleges, and of vacant resident and other appointments at hospitals, will be found at pages 32, 33 35 36 and 37 of our advertisement columns, and advertisements as to partnerships, assistantships, and locumtenencies at pages 34 and 35

A short summary of vacant posts notified in the advertisement columns appears in the *Supplement* at page 96

EPITOME OF CURRENT MEDICAL LITERATURE.

Medicine.

90 Therapeutic Value of the Bacteriophage in Typhoid Fever

D HERDERSCHÉE and L K WOLFF (*Nederl Tijdschr v Geneesk*, June 14th 1924, p 2705) record their experience of 95 cases of typhoid fever treated with d'Herelle's bacteriophage at the Wilhelmina Hospital, Amsterdam as compared with a series of 105 not so treated Instead of a single injection as recommended by previous observers two, and in some cases three, injections were given, with two or even three days interval between each The treatment was employed only in undoubted cases of typhoid fever in which the bacilli had been cultivated from the blood, or the agglutination titre examined in two different laboratories was higher than 1 in 100 The ages of the patients were as follows of 105 treated with the bacteriophage 22 were under 10 38 between 10 and 20, and 45 above 20 of the 95 controls 19 were under 10 36 between 10 and 20 and 40 above 20 The results were as follows of the 95 treated by the bacteriophage 20 died, including 11 from intestinal haemorrhage and 4 from peritonitis while among the 105 controls there were 15 deaths, including 6 from haemorrhage and 2 from peritonitis While no bad effects followed the treatment in no instance was a recovery seen in twenty four to twenty six hours after the injection Unlike Beclerich and Handuroy who observed a crisis twenty four to forty eight hours after the injection the present authors did not see any distinct effect on the temperature as a result of the treatment The average duration of the fever in cases treated by the bacteriophage was twenty two days, as compared with twenty days in those not so treated Twelve relapses were observed among the cases treated as compared with ten among the controls The authors conclude that while it is possible that better results may be obtained by a change in the preparation of the bacteriophage or improvement in technique, at the present time abstention from treatment of typhoid fever by the bacteriophage cannot be regarded as a mistake

91 Observations on a Group of Marathon Runners

B GORDON S A LEVINE and A WILMAERS (*Arch Intern Med*, April 15th 1924 p 425) examined all the competitors in the American Marathon race just before the contest They classify their observations thus (1) vital capacity of the lungs before and after the race (2) effect of the race on the size of the heart (3) blood pressure and general considerations (1) In regard to vital capacity, this varied greatly from below to above normal, and there was no definite relation between vital capacity of the lungs and the order in which the runners finished (*a*) The average vital capacity was normal, indicating that prolonged vigorous training did not increase the breathing space of the lungs (*b*) There was a fall of 17 per cent in vital capacity immediately following the race with a return to normal in twenty four hours (2) The authors agree with the majority of recent observers that the size of the heart in these runners, as determined by *x* rays, is not increased, this indicated that many years of vigorous training did not produce cardiac hypertrophy immediately after the race there was a temporary decrease in size, the heart returning to normal in about twenty four hours (3) *In most* cases immediately after the race the systolic pressure was found to be approximately normal while the diastolic pressure was definitely reduced During the following hours the systolic pressure fell, then both systolic and diastolic pressures returned to normal Many of the men complained of pain in the right hypochondrium, this occurred after running two or three miles Others suffered later in the race from slight nausea The majority suffered from pain and stiffness in the legs and blistered feet at some time or other during the race but none complained of dyspnoea or of pain in the chest *No rales were heard in the lungs and the liver* edge could not be felt The authors conclude that given a *normal heart the most important part of training is that of* the legs rather than of the chest

92. Urobilin in Malarial Patients

BALLERSTEDT (*Arch f Schiffs und Tropen Hyg*, March 1924 p 100) examined twenty cases of tropical malaria and five of other diseases at the Hamburg Institute for Naval and Tropical Diseases for the presence of urobilin, and came to the following conclusions (1) The increased excretion of urobilin in the urine and stools bears a direct relation to the severity of the attack in recent infections and as a rule diminishes gradually (2) The duration of the increase of urobilin in the urine and stools and its amount vary in different cases Urobilin may be found in the urine and stools in convalescence long after the cessation of the attacks (3) Urobilin is always excreted in greater quantity in the stools than in the urine, and the return to normal in the case of the stools occurs more slowly than in the case of the urine (4) In view of the fact that slight urobilinuria may occur in normal persons, urobilinuria of mild degree in the absence of other symptoms, such as enlargement of the spleen and mononucleosis, *is no proof of latent malaria* (5) *The nature of the* malarial parasite does not produce any appreciable difference in the excretion of urobilin in the urine and stools (6) Quinine treatment has no effect on the excretion of urobilin either in a positive or negative sense After quinine treatment the malarial parasites disappear from the blood in two to four days, but the urobilinuria persists much longer (7) As a rule the largest quantity of urobilin in the urine and stools was found during defervescence and in the apyrexial interval (8) There was no difference in the amount of urobilin excreted whether the blood contained parasites or not (9) The excre*tion of urobilin was almost the same in first attacks and* relapses The relapse was always accompanied by an increase in the excretion of urobilin though the amount excreted was not so high as in the first attack (10) The liver function is damaged in the course of chronic malaria in consequence of being flooded with large quantities of urobilin As a result the liver is enlarged in subjects of chronic malaria (11) The quantities of urobilin excreted in the urine and stools did no correspond to the haemoglobin values There was usually a haemoglobin content of 80 to 90 cent whereas the urobilin was found in much larger quantities

93 Acute Syphilitic Meningitis

BALTACEANU (*Bull et Mem Soc Med des Hop de Bucarest*, February 1924, p 37) states that lumbar puncture shows that meningeal reactions are almost constant during the secondary period of syphilis Syphilitic meningitis is only the local manifestation of a general infection sometimes it becomes acute resembling other forms, especially tuberculous meningitis This may occur at any period after the primary infection (from four weeks to one year according to various authors) Secondary syphilitic meningitis although generally diffuse attacks particularly the lateral aspect of the frontal lobe Basal localization is relatively common and when this is the case there are cranial nerve lesions—especially oculomotor and facial, the latter being of the peripheral type Very rarely there is an auditory nerve lesion at the same time as in the following case A man aged 37, was admitted with intense headache, stiffness of the neck vomiting and right facial paralysis Six months previously he had had a syphilitic chancre He received antisyphilitic treatment for six weeks only Headache, vomiting, and rigors commenced fourteen days before admission followed seven days later by diplopia and deafness three days after this right facial paralysis occurred On admission he was very deaf, and complained that the severity of the headache prevented him from sleeping Kernig's sign was definite and the left mastoid region was painful on pressure There was peripheral right facial paralysis persistent diplopia and inequality of pupils the right being larger than the left, and reacting sluggishly to light The knee jerks were brisk and the Babinski reaction absent The Wassermann reaction of the cerebro spinal fluid was strongly positive Daily injections of 0 01 gram of mercuric cyanide were given for a week with no improvement, but there was rapid improvement when this was replaced by neosalvarsan and quinine iodobismuthate Twenty seven days later the patient had no symptom other than slight deafness equal on both sides Baltaceanu comments on the number of cranial nerves involved, and states that such lesions as these of both auditory nerves with left mastoiditis of the right facial and the oculomo or nerves with disturbance of accommodation are very rare during the secondary period of syphilis but are much more frequently found during the tertiary stage The lesions may be due to the presence of (1) exudate (2) inflammatory oedema, (3) local meningo encephalitis or (4) end arteritis In a case of acute syphilitic meningitis Fahr found in the frontal lobe a number of spirochaetes—apparently the starting point of a generalized meningitis Baltaceanu considers it probable that there was a similar etiology in this case

Surgery.

94 Operation for Cancer of the Rectum

R C COFFEY (*Surg., Gynecol and Obstet.*, June, 1924, p 723) points out that few parts of the body lie so favourably situated as the rectum for complete removal of all the tissues involved in cancerous invasion Cancer of the rectum spreads by direct extension, through the venous and lymphatic systems. The radical operation imposes a great strain upon the vitality of the patient, it is perhaps the largest operation in surgery The author considers the operation which he has evolved to be the best and safest type of the two stage operation, which fulfils all the necessary requirements The first step is common to all cancer operations The abdomen is exposed through a right rectus incision, and the operator, having decided to do the radical operation, isolates the sigmoid and ties the superior haemorrhoidal artery The sigmoid is severed between the clamps and the proximal end brought out through the left rectus muscle to make a permanent colostomy A rectal tube is now passed up through the sigmoid and fixed in position, it is then pulled on, the *gut is inverted, and brought out through the anus* All raw surfaces are closed, and the abdominal wound sutured At the second stage, an incision is made from the sacrum encircling the anus, and the last joint of the sacrum and coccyx are removed The hand is then inserted into the wound, and the growth and the rectum are peeled out with ease and completeness In extensive cases a large dose of radium is packed into the wound In 47 cases operated on in this way two have died, and the ultimate results in the others appear good so far

95 Splenectomy for Rupture of the Spleen

AUVRAY (*Bull et Mem Soc Nat de Chir*, June 21st, 1924, 703) records two cases of traumatic rupture of the spleen th interesting features In the first, operation was carried at one hour after the injury, there being symptoms of severe internal haemorrhage The second case was one of those rare ones in which rupture is followed by a long latent period, for sixty eight hours this patient exhibited no symptoms of splenic rupture, and the operation was performed seventy hours after the injury In the first case reported there was a tearing of the pedicle associated with a rupture of the spleen itself, which necessitated removal of the organ Two weeks after removal the red cells numbered 2,300,000, whilst about three weeks later a count showed 4,500,000 red cells present In the second type of case it is possible that the injury leads to an intracapsular rupture, and the signs of haemorrhage do not become apparent until the capsule ruptures owing to the pressure of the extravasated blood The only symptoms noted during the latent period were rigidity of the abdominal muscles in the *left hypochondrium*, increasing pulse rate, and a lowering of the blood pressure These signs following an injury would lead one to suspect a "silent" rupture of the spleen, but it is possible that they may not always be present Both patients made a satisfactory recovery after operation, and were remarkable for the great desire for food they exhibited during convalescence This supports the theory that the spleen has some influence on general nutrition, probably in the assimilation of carbohydrates

96 Picric Acid as a Skin Disinfectant

W TURSCHMID (*Zentralbl f Chir*, May 24th, 1924, p 1128) states that Mitchell in 1911 first drew attention to the germicidal action of picric acid, and was followed by Gibson in 1919, who found that a 5 per cent alcoholic solution was superior to tincture of iodine because it did not cause any irritation of the operation field and was also decidedly cheaper Hewitt's experiments in 1922 showed that skin was no longer sterile at the end of three quarters of an hour after it had been painted with ether, alcohol, and 3 per cent tincture of iodine, but remained sterile after it had been painted with iodine in benzine, 7 per cent tincture of iodine, and picric acid Gibson had very successful results in 437 cases Slek and Turkel, who used a 5 per cent alcoholic solution of picric acid, came to the following conclusions (1) Picric acid hardens the upper layers of the skin and thus prevents the organisms in the deeper *layers invading the site of operation* (2) Picric acid does not irritate the exposed peritoneum or cause peritoneal adhesions (3) It does not have any injurious effect on instruments (4) It does not produce eczema or inflammation of the skin even of the most sensitive parts, such as the scrotum (5) It is three times cheaper than tincture of iodine Türschmid states that a 5 per cent alcoholic solution of picric acid has been used on 170 cases in the General Hospital at Nowy Targ in Poland, and has proved to be an excellent skin disinfectant The skin is washed once or twice with benzine, according to its state of cleanliness, and the operation area is then painted with the picric acid solution for ten to twenty seconds The cases included 52 hernias, 33 thyroidectomies, 20 appendicectomies, and 37 other aseptic operations In only 6 did suppuration occur, which was of a slight and superficial character The discoloration of the skin caused by picric acid is readily removed by a 25 per cent alcoholic solution of ammonia

97 Acute Pelvic Abscess in Children

P. ROSENBLUM and R B BETTMAN (*Amer Journ Dis Children*, April, 1924, p 336) report two cases of pelvic abscess of unknown origin in girls, aged respectively 2 and 9 months, cured spontaneously by rupture into the vagina, and notes of two other cases are given as being of clinological interest In the first patient a sudden attack of fever and fretfulness ended in two days with the occurrence of a profuse, greenish, and odourless vaginal discharge Six weeks later, and again three months subsequently, the symptoms were repeated, the child, during the intervals, and at 10 months old, being apparently well In the second case there was a previous history of a purulent otitis and throat inflammation, with high temperature lasting over a month, at which time the right thigh was held flexed on the abdomen, efforts to extend it being painful By the fluoroscope a mass was seen in the right flank, and during slight extension of the thigh the abscess ruptured into the vagina, complete recovery following While throat conditions are frequently associated with abdominal pain in childhood, it is possible that some pelvic abscesses may arise from infection involving the lymph glands Although appendix abscesses may rupture spontaneously, they almost invariably do so into the bowel The fact that pyosalpinx may occur in infants must be borne in mind as a possible causative factor

Laryngology and Otology.

98 After-treatment of Tracheotomy by Bronchoscopy

L H CLERF (*Surg., Gynecol and Obstet.*, April, 1924, p 472) finds that statistics from various hospitals show a mortality of 10 to 20 per cent following tracheotomy In his cases there has been no operative mortality, and a post operative mortality of only 1 per cent Tracheotomy is a means to an end it does not ensure a permanent free airway Close observation of every tracheotomized patient is imperative An increased respiratory rate and signs of dyspnoea rarely mean pulmonary complications The most common cause of dyspnoea is mechanical obstruction to the airway, this may be due to secretion or to a badly fitting cannula Any case of dyspnoea not relieved by fitting a clean cannula should have a bronchoscopy, in order to see why the air is not getting down to the lungs Obstructive dyspnoea is impossible when the tracheotomy tube and bronchial tubes are patulous A bronchoscope or a mechanical aspirator should be at the bedside of every tracheotomy case, these may be the means of saving life When there is total absence of the cough reflex, often seen in children after tracheotomy, the patient will die unless the secretions are removed mechanically A case is recorded where bronchoscopy was performed seventeen times for the removal of crusts and secretion, and the child, previously restless, slept peacefully until there was a recurrence of the obstruction to the airway

99 Mediastinal Disease and Oto Rhino-Laryngology

G PORTMANN and P FORTON (*Rev de Laryngol., Otol et Rhinol.*, March 31st, 1924, p 177) remind specialists that they are medical practitioners first and specialists afterwards, and instance the frequency with which the specialist in otolaryngology encounters a series of symptoms in his own domain which are referable, however, to no local lesion but to some morbid condition in the mediastinum They divide this cavity into the anterior mediastinum, which contains the heart, the great vessels, the recurrent laryngeal and the phrenic nerves, and the posterior mediastinum, which contains the oesophagus, thoracic aorta, the azygos veins, *thoracic duct, the vagus, and the sympathetic nerve trunks* These organs are lying in a mass of cellular connective tissue which is liable to disease, such as syphilis and infection, and has in its substance the important groups of lymphatic glands The "syndrome mediastinal" consists of a series of symptoms which are due to pressure on these various structures in the mediastinum The veins are much more easily affected than the arteries on account of their thinner walls, and the result of mediastinal pressure is shown by

distended subcutaneous veins, and in cases where the collateral circulation is poor by oedema of the arms face, and thorax The eyes are injected and the patient suffers from vertigo, epistaxis, and headache Compression of the pulmonary vessels may be followed by a certain amount of haemoptysis Pressure on the recurrent laryngeal nerve gives rise to laryngeal spasms, paroxysmal dyspnoea, and periods of suffocation The voice is profoundly changed, becoming bitonal, and the affected cord is found at first in the median line and later in the cadaveric position Anginal pains follow irritation of the cardiac plexus while irritation of the sympathetic gives rise to changes in the pupil and paralysis to the syndrome of Claude Bernard-Horner myosis, narrowing of the palpebral fissure and retraction of the eyeball Irritation of the phrenic nerve causes persistent hiccup Compression of the oesophagus brings about difficulty in swallowing solids at first, followed by spasmodic dysphagia, which is excited by liquids more than by solids Deglutition becomes painful at an early stage of the dysphagia Compression of the bronchus leads to a reduction or loss of breath sounds over the lung but the resonance of the lung is retained When the larger air passages are diminished in calibre there is a characteristic stertorous breathing Marked compression of the bronchus leads to retraction of the chest wall The pathology of the mediastinal tumours comprises thoracic aneurysm cancer and hydatid cyst of the lung cancer of the oesophagus and tumours of the mediastinum proper, which include tuberculous glands, and glandular deposits of lymphadenoma, leukaemia and lymphosarcoma Other rarer tumours are sarcoma, epithelioma, degeneration of the thymus and endothoracic goitre Syphilis of the glands or of the mediastinal cellular tissue gives rise to the symptoms described, and improves in a remarkable manner under specific treatment

100 Differential Diagnosis of Laryngeal Paralysis

L BAR (*Pet de Laryngol, Otol et Rhinol* February 29th 1924 p 110) records a case of paralysis of one vocal cord which recurred several times during eight years In spite of a previous thyroidectomy and a history of acute cold before one at least of the attacks, the author considered that the condition was arthritic in origin He discusses the various types of paralysis met with and classifies them as due to neuro muscular defect or to a mechanical hindrance to the movement of the cords or of the arytenoid cartilages Scarring of the larynx following old disease certain forms of acute and chronic oedema and masses of thickened tissue in the interarytenoid space are visible hindrances to movement Arthritis of the crico arytenoid joint may give rise to redness swelling and thickening whilst certain vegetations and tumours obviously hinder movement Some forms of *perichondritis do not give any signs of redness or swelling*, especially when following a cold or exposure but may partly or wholly paralyse the cord In tuberculous laryngitis there is often paralysis before any other sign appears in the larynx, and this may be due to muscular atrophy and absorption of the contractile tissue In these cases actual tubercles have been found in the substance of the muscles A small invisible subglottic cancer has caused absolute paralysis of one vocal cord In sudden and complete paralysis the diagnosis of hysteria is usually made In certain cases of catarrhal laryngitis an extra chill or other form of exacerbation is followed by paralysis, due to direct implication of the muscles usually the internal thyro arytenoid and the arytenoideus which are nearest to the mucosa These paralyses are usually fleeting, but sometimes persist for long periods There are a number of cases in which the immobilization is due to contracture of the adductor muscles and such conditions must be diagnosed from abductor paralysis During phonation in a case of contracture the arytenoid is carried in front of, and in the mirror appears to be a little above the healthy cord, and with its cord passes the middle line On inspiration this cord remains in the position of phonation and keeps a straight edge In cases of paralysis the cord is not so tense and vibrates in the stream of air in respiration and phonation These two types of immobilization can be differentiated by the position of the arytenoid and the tenseness of the cord

101 Speech Defects after Encephalitis Lethargica.

I VASILO (*Arch Internat de Laryngol* May 1924 p 565) reports the case of a child, aged 8 years who in the course of convalescence after an attack of encephalitis lethargica six months previously developed a spasmodic affection of the tongue At the beginning of the attack speech was quite normal then the tongue contracted spasmodically and became curved laterally the mouth remained open and the saliva dribbled The spasm lasted for a few seconds and then speech became normal again

Obstetrics and Gynaecology.

102 Hypertrophy of the Breast.

ACCORDING to E I BARTLETT (*Surg, Gynecol and Obst*, June 1924, p 798), breast hypertrophy is a clinical entity to which have been accorded some thirty different names, including chronic cystic mastitis, senile parenchymatous hypertrophy, abnormal involution, and Schimmelbusch's disease Its anatomical characters are different from those of tumours or infections and non surgical treatment is invariably successful From analysis of a series of 125 cases of breast hypertrophy, of which 63 earlier ones were treated surgically and studied histologically the following conclusions are drawn Breast hypertrophy is a disorder chiefly of the ages 20 to 50, more especially of the fourth and fifth decades marriage, virginity, lactation and pregnancy have little etiological bearing Differential diagnosis is based on four points pain, multiplicity, position and shape Pain is almost invariably reported, usually in combination with tenderness pain or tenderness is present in about 50 per cent of benign breast tumours while cancer is not tender except in the presence of ulceration and is painful only in the later stages when convincing signs of malignancy are present Multiplicity of the lumps or occurrence in both breasts practically excludes a diagnosis of malignant disease both these features are very common in breast hypertrophy Hypertrophy frequently involves a whole lobulus from nipple to periphery, giving a radial Indian club shaped mass where more than one lobulus is affected a quadrant a hemisphere or the whole breast may be thickened The shape of the lump is significant in that hypertrophy follows the form of the gland tissue Often the lump is flat and of equal thickness throughout or variations in thickness can be shown to be due to superficial projections on the other hand a buried lump if cystic or cancerous is always thickest towards its middle point giving the impression of a spherical mass Superficial breast lumps are either benign tumours or hypertrophies In the absence of pain or tenderness and of multiplicity about 25 per cent of buried tumours must be explored in order to determine their cystic or cancerous nature or to prove that a cyst is not associated with cancer

103 Antispasmodic Drugs in Sterility

S R MEAKER (*Journ Amer Med Assoc* June 28th, 192-, p 2098) points out that there exists a definite group of sterile women whose Fallopian tubes are hardly patent to gas, though they are anatomically normal and adhesions are absent He suggests that the obstruction in them is due to spasm of the circular muscle in the interstitial portion of the tube, and that this may result in sterility, spermatozoa being prevented from entering the tubes He reports five cases in which the administration of benzyl benzoate in 20 per cent alcoholic solution was successful in overcoming the obstructions and recommends the use of this drug in cases in which there is no evidence of disease or abnormality in the husband or wife

104 Vaccine Therapy of Gonorrhoea.

F WOLFF (*Zentr ibl f Gynäk* May 17th 1924 p 1058) discusses the relative merits of proprietary brands of vaccines in the treatment of gonorrhoea in the female The conclusion he comes to is that a large enough percentage of cures result after three to five injections in the course of fourteen days to make the method worthy of consideration it tends to shorten the disease and in puerperal cases especially, prevents further spread He describes the treatment, which consists of injections of living gonococci The technique is slow and laborious and includes the incubation of the organisms for two days, the preparation of an emulsion in saline, and the injection of it subcutaneously The dose he points out is surprisingly small—namely about 1/2 million He has treated fourteen patients in this way six of whom were cured after one injection He claims for the method that it is harmless, that it gives a fair percentage of cures and that the systemic disturbances are relatively slight, so that the patient need not be confined to bed

105 Dysmenorrhoea and Spasmophilia

HIPSCH (*Arch d med chir y esp*, June 21st 1924 p 595) maintains that a mechanical cause for essential or idiopathic dysmenorrhoea can be excluded on the following grounds In 300 autopsies he made measurements of the cervical canal and never found an anatomical stenosis Moreover in cathe examinations of women he has never met with stenosis of such a degree as to prevent discharge of menstrual blood or the penetration of spermatozoa and in cases in which he has performed catheterization during the monthly period he has never found any obstruction to the flow He has also found

the uterus quite free from any accumulation of blood both in the painful pre menstrual stage and at the end of menstruation. On the other hand, he regards dysmenorrhoea as a symptom not of a local but of a general disease which is met with in asthenic, hypoplastic, neurasthenic, and spasmophilic subjects. Asthenic patients are characterized by a general ptosis of the viscera associated with a great laxity of the paracervical cellular tissue and parametrium, and in such cases tonic treatment and gymnastics are indicated. In spasmophilic subjects, who form about 30 per cent. of the cases of dysmenorrhoea, the treatment should consist in the employment of an anaesthetic such as novocain during the attacks and the application of a treatment on a calcium basis in the intervals. Hirsch has been in the habit of giving intravenous injections of aphenil (10 per cent. solution of an organic compound of calcium chloride).

Pathology.

106 The Central Nervous System in Botulism

HITHERTO it has been generally held that the paralytic features encountered in poisoning by the toxin of *B. botulinus* are of central origin, but recent work along physiological lines has tended to show that they result from the action of the toxin on the peripheral nerve endings. To determine which of these hypotheses is correct E. V. COWDRY and F. M. NICHOLSON (*Journ. Exper. Med.*, June, 1924, p. 827) have carried out extensive examinations of the brains of mice, guinea pigs, and rabbits which had been injected with *B. botulinus* toxin and killed when pronounced symptoms of poisoning had appeared. The most satisfactory preparations were obtained by simple treatment with Giemsa's stain after fixation in Zenker's fluid without acetic acid, while other methods were employed, including vital staining with trypan blue. Their observations convinced them that the only noticeable abnormality in the brains of these animals was a slight degree of congestion of the blood vessels of the meninges and the base of the brain, but even this was not always present. Changes in the Nissl bodies, in the cell processes, and in the mitochondria could not be substantiated, the changes actually found being no more marked than in control animals. The perivascular and focal cell infiltrations occasionally found could not be correlated in any way with the action of the toxin. This absence of any definite evidence of action of the toxin on the central nervous system inclines the authors to consider more favourably the hypothesis that its main site of action is on the peripheral nerve terminals.

107 The Bacteriology of Appendicitis

S. V. BAGGER and O. MIKKELSEN (*Hospitalstidende*, April 30th, May 7th and 14th, 1924, pp. 284, 289, and 305) have made a bacteriological examination, at the time of operation, on 200 cases of acute and 19 cases of chronic appendicitis. These investigations were conducted in hospitals in Copenhagen, and material for bacteriological examination was collected at various intervals during the operation, from the stage when the peritoneum was first opened to that at which the appendix was removed and could be dissected. After giving an account of their technique, the authors state that two kinds of bacteria were found to be particularly common, either together or in almost pure culture—namely, coliform bacilli and Gram positive ovoid diplococci. The latter were probably identical with Dible's enterococci, which the authors also found in 16 out of 46 normal intestines which they examined. In almost every case of acute appendicitis coliform bacilli were found, and in 18 cases these bacilli were found in pure culture; these were far from being light cases of appendicitis, and gangrene was found in some of them. In about a quarter of all the cases the only bacteria found were coliform bacilli and enterococci. In 119 out of 160 cases (74 per cent.) these two germs were found either alone or in company with other germs. In 3 cases only were enterococci found in pure culture, and these cases were light. Streptococci in pure culture were found only in 2 cases, and in one case there was an almost pure culture of the *Staphylococcus aureus*.

108 Tetanus Anatoxin

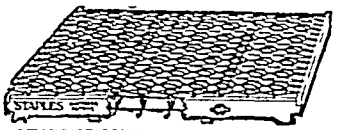
THE work of Ramon on the preparation of diphtheria anatoxin was dealt with in our columns of February 23rd (Epitome, p. 32, para. 176) and of March 22nd (Epitome, p. 44, para. 247). P. DELCOMBEL (*C. R. Soc. de Biologie*, July 4th, 1924, p. 239) has directed his attention to tetanus toxin with a view to repeating the experiments relating to the modification of crude toxin. Taking a toxin whose minimal lethal dose for the guinea pig was one ten thousandth of a cubic centimetre, he submitted it to the action of formaldehyde and heat, and found that it was now so depleted of its toxic fraction that a guinea pig could withstand from 5 to 10 c.cm. injected subcutaneously without developing any symptom of disease. If 20 c.cm. of the crude toxin be treated with 0·3 c.cm. of tetanus antitoxin flocculation occurs in an hour and a quarter at a temperature of 45°C. If the amount of antitoxin required to flocculate the toxin which has been submitted to the action of formaldehyde and heat—known as anatoxin—be worked out, it is found to be the same as before—namely, 0·3 c.cm., indicating that the treatment of the toxin deprives it of toxicity without affecting its capacity for flocculation. It is found, moreover, that the anatoxin has a high antigenic power, so that when it is injected into animals it gives rise to the production of a true antitoxin. Thus, if 1 c.cm. be injected subcutaneously into a guinea pig, the animal at the end of three weeks is able to withstand the injection of several minimal lethal doses of crude toxin. Similarly, a horse which is given two doses of anatoxin at an interval of fourteen days will suffer the injection of thirty minimal lethal doses of toxin two weeks later without any disturbance. Although the amount of antitoxin required to flocculate the anatoxin is the same as that required to flocculate the crude toxin, there is a difference in the time taken for flocculation to occur, in the case of the anatoxin it is longer, and it depends on the particular anatoxin under consideration. By careful experiment it has been shown that the shorter the time the better the antigenic quality of the anatoxin. With a good anatoxin it has been possible, by the injection of a single dose of 0·5 c.cm. into a guinea pig, to render the animal, within a month, resistant to no fewer than 500 minimal lethal doses of toxin, so that the immunizing possibilities of this atoxic product appear to be very great.

109 Insulin and Glucose Destruction

G. AHLGREN (*Klin. Woch.*, June 24th, 1924, p. 1158) points out that the discovery of insulin has furnished new possibilities in the discussion of the old controversy as to whether hindered sugar destruction or increased sugar production, is the cause of the hyperglycaemia of diabetes. Using Thunberg's methylene blue method, the author has shown that tissues which possess no power of sugar destruction acquire that power by the addition of a suitable quantity of insulin. In his experiments the tissues were taken partly from normal animals, partly from animals made diabetic by total extirpation of the pancreas. When insulin is present in the tissues a transformation of the glucose molecule occurs. The experiments can be made advantageously with the muscles of normal "winter" frogs. The insulin concentration is important—if too great no effect is obtained. The experiments show that the presence of insulin promotes the glucose destruction, and the author considers that the hyperglycaemia which follows in diabetes, through deficiency of insulin, must have an essential cause in a diminished or arrested glucose destruction. By previous experiments, made on frogs rendered diabetic by extirpation of the pancreas, the author has demonstrated a disturbance of the glucose destruction in diabetes. The muscles of the frogs were unable to destroy glucose, only after the addition of insulin did a powerful destruction of glucose occur. The results of other experimenters are discussed. The author considers that the transformation of the glucose molecule, which is necessary for its further destruction in the organism, cannot be accomplished by insulin alone. We must suppose that, in addition to insulin, some unknown substance is present in the tissues, which appears to be destroyed in a relatively short time after the muscle is removed from the body.

110 Inefficacy of Hexamine in Rabies

P. REMLINGER and P. BEL (*C. R. Soc. de Biologie*, May 23rd, 1924, p. 1312) carried out the following investigations at the Tangier Pasteur Institute to determine if hexamine, which has been advocated in various forms of encephalitis in man and animals, had a preventive or curative action in rabies. Twenty one guinea pigs of approximately equal weight were given deep intramuscular injections in the nuchal region of 5 c.cm. of very virulent street virus, which killed a rabbit in six to seven days, and were then divided into three groups. The first group was given subcutaneous injections daily of 2·5 c.cm. of a 20 per cent. solution of hexamine. The second group, in addition to the daily subcutaneous injections, was given 0·5 c.cm. of the same solution, which was injected through the orbit into the cranial cavity every other day. The third group served as controls. A week after the first injection rabies began to appear. The injections of hexamine were continued until death. The results were as follows: (1) All the animals treated by subcutaneous and intracerebral injections died. (2) One of the animals treated by subcutaneous injections only survived. (3) Two of the controls survived. Generally speaking, the incubation and duration of the disease were shorter in the treated cases. Hexamine thus proved a complete failure in the prevention and cure of rabies.

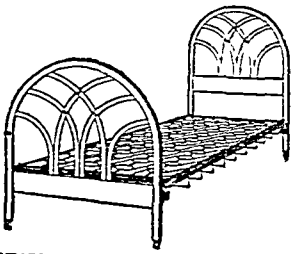


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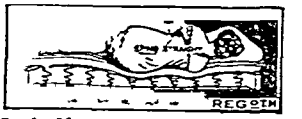


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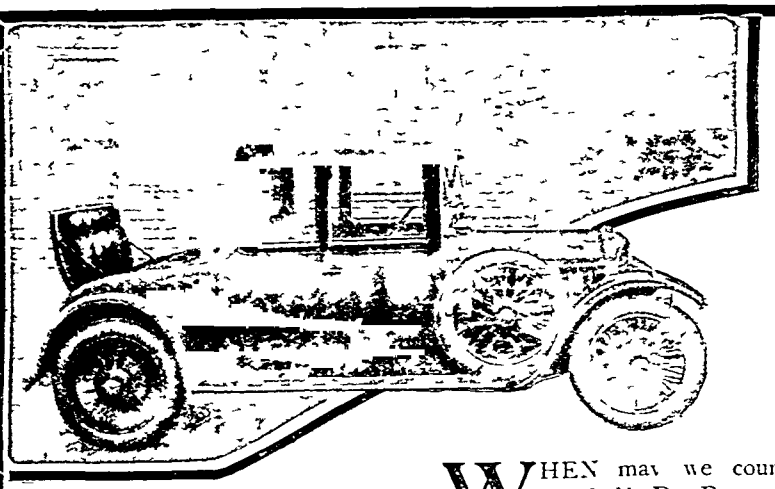
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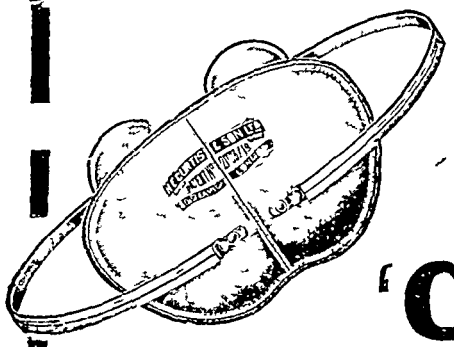
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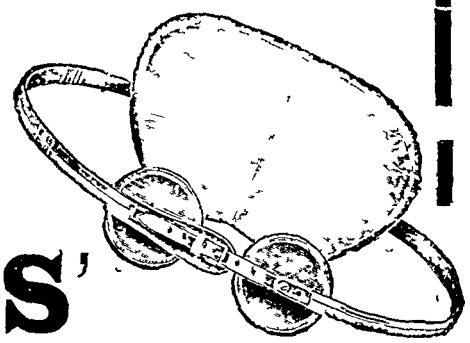
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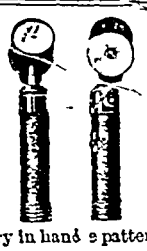
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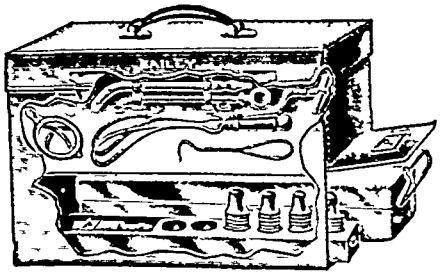
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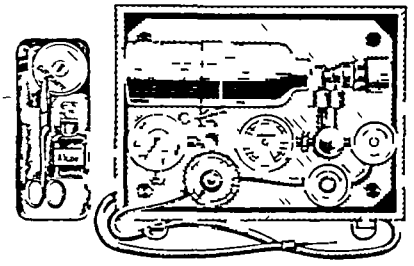
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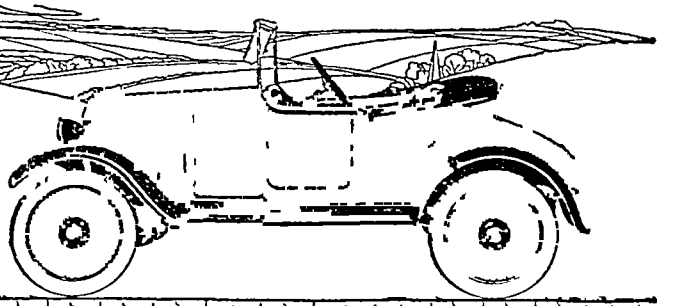
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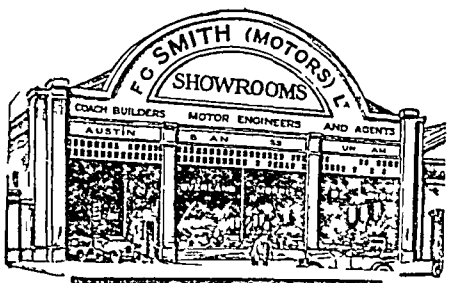
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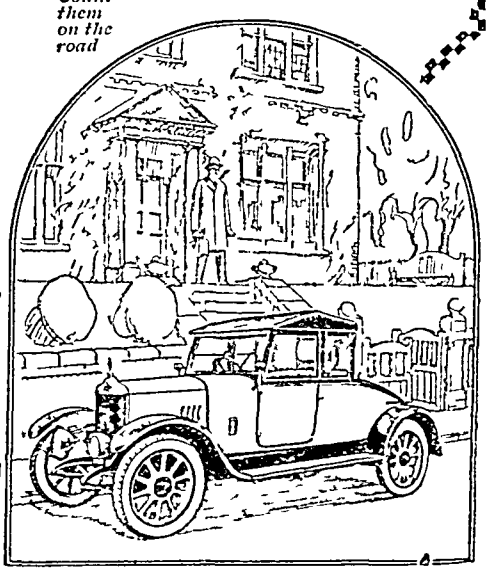
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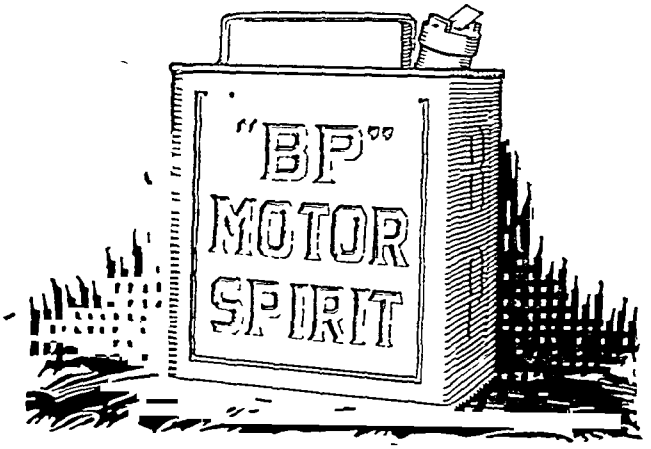
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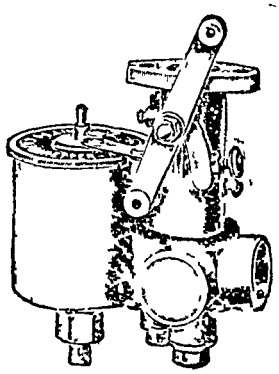
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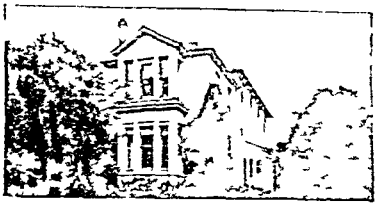
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This Institution is exclusively for the reception of a limited number of **Private Patients** of both sexes of the **Upper and Middle Classes,** at moderate rates of payment It is beautifully situated in its own grounds on an eminence a short distance from Nottingham and from its singularly healthy position and comfortable arrangements affords every facility for the relief and cure of those mentally afflicted.

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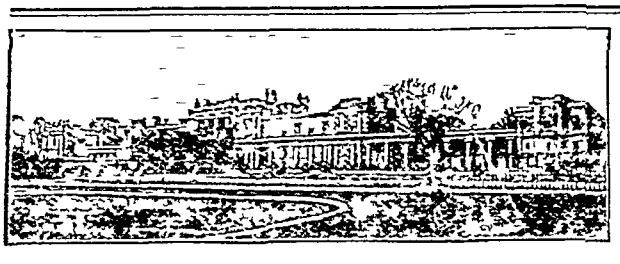
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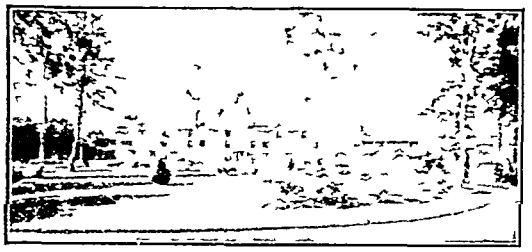
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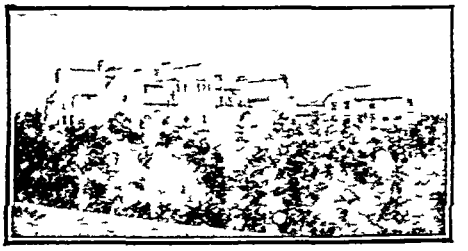
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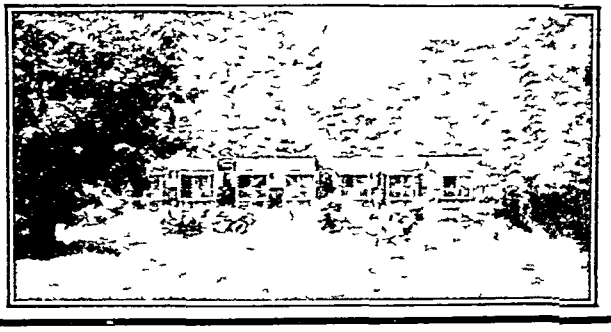
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Physiology —A V HILL, M A Sc D, F R S, Jodrell Professor Sir WILLIAM M BAYLISS M A, LL D D Sc F R S Professor General Physiology)
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(University of London),

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THE WINTER SESSION

BEGINS ON

OCTOBER 1st

Entrance Scholarships Examinations begin September 15th Applications must be received not later than September 6th

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Messrs J & J Paton having an intimate unique and up-to-date knowledge of the Best Schools and Tutors in this country and on the Continent, will be pleased to Aid Parents in their choice by sending (free of charge) prospectuses and Trustworthy Information

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J & J Paton Educational Agents 143 Cannon Street London E C 4 Telephone 5053 Central

LONDON SCHOOL OF TROPICAL HYGIENE & MEDICINE,

Division of Tropical Medicine & Hygiene,

Endsleigh Gardens, N W 1

Next Session will commence September 22nd, 1924

For Prospectus and further particulars apply to The Secretary, Endsleigh Gardens, N W

ST. MARY'S HOSPITAL MEDICAL SCHOOL,

PADDINGTON, W 2
(University of London)

The WINTER SESSION will begin on Wednesday, October 1st, 1924 The Medical School provides courses in Preliminary Intermediate, and Final Subjects, and Students can join at once after matriculation

SITUATION Between a large population providing clinical material and one of the best residential districts thus enabling students to live in close proximity to their work

CLINICAL UNITS IN MEDICINE AND SURGERY Certain members of the Medical and Surgical Staff devote their whole time to teaching and research

NEARLY 1 000 BEDS available for teaching—additional clinical material being provided by affiliation to the Paddington Hospital and other Institutions

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For further particulars and illustrated prospectus apply to the School Secretary

C M WILSON (*M C*) M D F R C P, *Dean*

ST MARY'S HOSPITAL MEDICAL SCHOOL

PADDINGTON W
(University of London)

PRIMARY F R C S. COURSE.

A Course of Instruction for the December Examination will begin on *Tuesday September 2nd, 1924*, and will be conducted as follows —

Anatomy and Embryology —Prof J Ernest Frazer F R C S (Professor of Anatomy in the University of London)

Physiology and Histology (with practical classes) —Prof B J Collingwood, O B E M D (Professor of Physiology in the University of London)

Fee for the Course £16 16s 0d or £9 9s 0d, for either section separately This fee includes membership of the Students Club during the period covered by the Course

For further particulars apply to the School Secretary

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Examining Board in England

BY THE
ROYAL COLLEGE OF PHYSICIANS OF LONDON
AND THE
ROYAL COLLEGE OF SURGEONS OF ENGLAND

PRE MEDICAL EXAMINATION

This Examination will commence on Tuesday September 30th 1924

FIRST EXAMINATION

This Examination will commence on Tuesday, September 30th 1924

SECOND EXAMINATION

This Examination will commence on Thursday October 2nd 1924

THIRD OR FINAL EXAMINATION

This Examination will commence on Tuesday, October 7th 1924

Students who have completed the required professional study and have fulfilled the other necessary conditions and desire to present themselves for Examination must forward the necessary schedules through the post to the Examination Hall, Queen Square Bloomsbury London W C fourteen days before the Examination commences

FREDERIC G HALLETT
1st August 1924 Secretary

Guy's Hospital Medical SCHOOL London Bridge S E 1

FINAL F R C S COURSE

A COURSE of INSTRUCTION for the Final Examination for the Fellowship of the Royal College of Surgeons of England will commence on October 1st and September 3rd 1924

Wednesday Class are given every facility to Members of the Clinical experience gain the necessary Clinical Surgery The fee is £26 5 0d or £21

The fee for the Course may be obtained from the exclusive of Operative Surgical School, London Further particulars may Dean Guy's Hospital Medical Bridge, S E 1

Royal College of Surgeons of ENGLAND

DIPLOMA OF FELLOW

F
Thursday November 20th, 1924 respectively

Candidates are required to give not less than fourteen days notice of their desire to present themselves for either of these Examinations

Particulars relating to these Examinations may be obtained from the Director of Examinations (Mr J G Hallett) Examination Hall Queen Square Bloomsbury London W C, to whom all applications should be addressed

The required fees must be paid three days prior to the Examinations.

LICENCE IN DENTAL SURGERY

Notice is hereby given that the First Professional Examination will commence on Friday, 5th September, 1924

Notice is hereby given that the Second Professional Examination will commence on Friday, 7th November 1924

Candidates are required to give not less than twenty one clear days notice in writing of their desire to present themselves for the respective Examinations to the Director of Examinations (Mr J G Hallett), Examination Hall Queen Square, Bloomsbury W C from whom all particulars relating thereto may be obtained.

August 1st 1924

Joint Nursing and Midwives COUNCIL FOR NORTHERN IRELAND

MEDICAL AND NURSING EXAMINERS FOR STATE PRELIMINARY EXAMINATION

The Council invites applications from (a) Medical Practitioners, a
willing to act as

Subjects —
Hygiene and Nursing

Particulars and application forms obtainable from Belfast to not later than

By Order THE REGISTRAR

University of Melbourne, VICTORIA, AUSTRALIA

CHAIR OF PATHOLOGY

Applications are invited for the above Chair Salary £1 200 per annum Full particulars of this appointment may be obtained upon application to the Agent General for Victoria Melbourne Place Strand London W C 2, to whom applications (6 copies) from candidates outside Australasia should be addressed and must reach him by Sept 20th 1924

University of Otago, New Zealand.

Applications are invited for the position of Professor of Surgery, in the above University at a salary of £800 per annum, with right of consulting practice. Full particulars and forms of application obtainable by sending stamped foolscap envelope to the High Commissioner for New Zealand 415 Strand London W C 2 by whom completed applications will be received up to 31st August 1924

Kent Education Committee SCHOOL MEDICAL SERVICE

SCHOOL DENTIST

Applications are invited from fully qualified Dental Surgeons for the post of whole time Dentist under the Kent Education Committee

The successful candidate will be required to devote his whole time to the duties and will work under the supervision of the School Medical Officer

The salary will be at the rate of £350 per annum with war bonus on sliding scale (at present £154 14s per annum)

Applications stating age and full qualifications, and accompanied by copies of three recent testimonials must be forwarded to the undersigned not later than August 16th 1924

No official form of application will be issued and canvassing will be considered a disqualification

ALFRED GREENWOOD M D
Sessions House School Medical Officer
Maidstone July 23th 1924

County Mental Hospital, Whittingham Preston Lancs

LOCUM TENENS MEDICAL OFFICER required Gentleman Prospect of promotion to permanent staff Salary £8 8s per week together with Board furnished apartments attendance and laundry One who has held House Physician or House Surgeon's appointment preferred Well appointed and well staffed Laboratory for research unmarried and registered
Apply stating age and full particulars to the Medical Superintendent.

APPOINTMENTS—Important Notice.

(a) British Islands.

Medical Practitioners are requested not to apply for any appointment referred to in the following table without having first communicated with the Medical Secretary of the British Medical Association, 429, Strand, London, W.C.2.

Town or District	Town or District	Town or District
CONTRACT PRACTICE.		
ENGLAND	**WALES** (continued)	**PUBLIC HEALTH** (continued)
CANNOCK CHASE AND DISTRICT (Club and Friendly Societies Appointments)	OGMORE VALLEY GLAMORGAN (Wyndham Colliery Medical Aid Society) (Workmen's Medical Scheme.)	INVERNESS-SHIRE EDUCATION AUTHORITY (Temporary Assistant School Medical Officer)
MIDDLESBOROUGH (Medical Aid Associations or Workmen's Clubs)	TONDU & ABERKENFIG GLAMORGAN (Workmen's Medical Scheme.)	LINCOLN CITY EDUCATION AUTHORITY (Woman Assistant School Medical Officer)
SOUTH BANK & ESTON (Medical Aid Associations or Workmen's Clubs)	**PUBLIC HEALTH.**	MIDDLESBROUGH EDUCATION COMMITTEE (Assistant School Medical Officer)
WALES.	[illegible] JCATION [illegible] Officer)	MIDLOTHIAN EDUCATION AUTHORITY (School Medical Officer)
ABERTRIDWR GLAMORGAN Windsor Colliery (Medical Scheme.)	ARGYLLSHIRE EDUCATION AUTHORITY (Executive School Medical Officer)	NORTHUMBERLAND COUNTY COUNCIL (Woman Assistant Medical Officer of Health)
EBBW VALE MON (Workmen's Medical Society)	BARNSLEY COUNTY BOROUGH (Assistant Medical Officer of Health and Assistant School Medical Officer)	NOTTINGHAMSHIRE (County Medical Officers of Health)
GILFACH GOCH GLAMORGAN (Workmen's Medical Scheme)	FIFE EDUCATION AUTHORITY (Assistant School Medical Officer)	SHEFFIELD EDUCATION COMMITTEE (Assistant School Medical Officer)
LLWYNYPIA CLYDACH VALE PENYGRAIG GLAMORGAN (Workmen's Medical Scheme.)	GLASGOW EDUCATION AUTHORITY (Assistant School Medical Officer)	SOUTHWARK METROPOLITAN BOROUGH (Tuberculosis Officer)
MARDY GLAMORGAN (Workmen's Medical Scheme)	HUDDERSFIELD COUNTY BOROUGH (Woman Assistant Medical Officer of Health)	STOKE-ON-TRENT EDUCATION COMMITTEE (Assistant School Medical Officer)
OAKDALE MON (Medical Officer for Medical Aid Association)	HUNTINGDON ADMINISTRATIVE COUNTY (Assistant County Medical Officer and Assistant School Medical Officer)	YORKSHIRE NORTH RIDING COUNTY COUNCIL (Assistant School Medical Officer)

(b) Colonial Medical Service.

WINDWARD ISLANDS MEDICAL SERVICE (Grenada with Carriacou, St. Vincent and St. Lucia)

(c) Overseas Appointments.

Medical Practitioners are requested not to apply to any appointment referred to in the following table without having first communicated with the Honorary Secretary of the Division or Branch named in the second column or with the Medical Secretary of the British Medical Association, 429, Strand, London, W.C.2.

Town or District	Hon. Sec. of Division or Branch	Town or District	Hon. Sec. of Division or Branch	Town or District	Hon. Sec. of Division or Branch
NEW SOUTH WALES. (All Friendly Society Appointments.)	Dr. R. H. TODD (Hon. Sec. New South Wales Branch), B.M.A. Building, 30-34, Elizabeth Street, Sydney, N.S.W.	QUEENSLAND (Brisbane Associated Friendly Societies' Institute.)	Dr. R. MARSHALL ALLAN (Hon. Sec. Queensland Branch), Adelaide Street, Brisbane.	VICTORIA (All Institute or Medical Dispensaries.)	Dr. FRANK DAVIES (Hon. Sec. Victorian Branch), Medical Society Hall, East Melbourne, Victoria.
				WESTERN AUSTRALIA (Contract and Lodge Practices.)	Hon. Sec., Western Australian Branch, No. 6 Barracks, New South Wales Chambers, St. George's Terrace, Perth.

Address 429, Strand, W.C.2.
August 6th, 1924.

By order of the Council of the British Medical Association,
ALFRED COX, Medical Secretary.

Nottinghamshire County Council. Ransom Sanatorium

APPOINTMENT OF ASSISTANT RESIDENT MEDICAL OFFICER.

The Nottinghamshire County Council invite applications from duly qualified and registered [illegible] for the appointment of Assistant Resident Medical Officer at the County Sanatorium.

The salary attaching to the position will be [illegible] and [illegible] by evidence of Surgical Tuberculosis and X-ray work will be considered an advantage.

The successful candidate will also be required if necessary to assist in the Medical Work at one or more of the County Tuberculosis Dispensaries.

Application, stating age, qualifications and experience, accompanied by copies of not more than three recent testimonials, must reach me not later than Saturday, August 16th, 1924.

COUNTY HOUSE, Nottingham. TWEEDALE MEABY, Clerk of the County Council.

July 17th, 1924.

Staffordshire Education Committee

ASSISTANT SCHOOL MEDICAL INSPECTOR.

Applications are invited for the appointment of a School Medical Inspector (Man or Woman) to undertake the duties connected with a combined scheme for Medical Inspection and Treatment of School Children, Health Visiting and Infant Welfare under the County Medical Officer of Health who is also the School Medical Officer. Experience in the administration of anæsthetics in Nose and Throat Operations will be an additional recommendation.

Salary £600 per annum, rising by annual increments of £50 to £800. No bonus.

Form of application (which must be returned by September 8th) and list of duties will be forwarded on receipt of stamped addressed foolscap envelope.

Candidates receiving no reply by October 1st may assume vacancy filled. Apply Director of Education, Education Offices, Stafford.

Leeds Public Dispensary

Wanted SENIOR RESIDENT MEDICAL OFFICER (male). Must have held posts of Resident Physician and Resident Surgeon. Salary £200 per annum with board, residence and laundry. Separate sitting room. Applications with copies of three recent testimonials, to be addressed to the Secretary of the Faculty Public Dispensary, North Street, Leeds.

The Gloucestershire Royal Infirmary and Eye Institution, Gloucester.

There is a vacancy for an ASSISTANT PHYSICIAN and PATHOLOGIST on the Acting Medical Staff of the Institution. There are certain emoluments in connection with the above posts particulars of which can be obtained from the undersigned.

By the rules of the Hospital the members of the Acting Medical Staff shall be duly registered practitioners.

Candidates should send in their applications, diplomas and testimonials under cover to the Secretary. G. HUEFORD, Secretary.

Gloucester, July 31st, 1924.

ADVERTISEMENT.

The Miller General Hospital for South East London, Greenwich Road, London, S.E.1.

RESIDENT MEDICAL OFFICER required, unmarried, who must have had some experience in midwifery and surgery. Salary £250 per annum, with board, lodging and laundry. The appointment is for six months in the first instance, and is renewable for a further period of six months. Applications, stating age, nationality, qualifications and experience, accompanied by copies of not more than three recent testimonials, to be sent to the Secretary by Monday, August 11th next.

Wanted—Assistant with view to PARTNERSHIP in good class non panel Practice in pleasantly situated town in North of England Good prospects and scope especially for surgery for capable and energetic man with capital 1 R C S preferable, but not essential—Address full details to No 4013 British Medical Journal, 429, Strand, London W C 2

Wanted—Assistantship by M B, Ch B (woman) aged 23½ Honours Midwifery Experience Panel and Dispensary Practice Cyclist, keen, hardworking, athletic Good testimonials and references Free now—Add, No 4023 Brit Med Jour Office 429 Strand W C

Wanted—Assistantship or LOCUM by Woman M B, Ch B (Edin) Post graduate experience in Medicine, Specials, and Midwifery Experience in anæsthetics Free now—Address No 4018 British Medical Journal Office 429 Strand, W C 2

Wanted—Assistantship with view to Partnership by Medical woman aged 29 English, qualified 1920 Several hospital appointments in London and provinces Special experience, children and anæsthetics Lx test—Add, No 4015 B M J Office 429 Strand

Wanted—Assistant, with view to early Partnership South Coast Town (Sussex) Must be capable Surgeon preferably F R C S—Address full details to No 3913, British Medical Journal Office, 429 Strand W C

Wanted—Male Assistant for large General Practice to live at Surgery—Apply, Roughton & Jolputt, Montagu Street Ket ering

Wanted, part-time work in London (evenings only) by M B, M R C S 24) during September and October Hospital experience—Address No 4017 British Medical Journal Office 429, Strand W C 2

Wanted in South Wales Colliery District qualified Indoor ASSISTANT willing to sign usual bond—Address, *with full particulars No 4028 British Medical Journal Office 429 Strand W C 2*

Wanted—Medical Officership to Sanatorium, public or private long temporary or permanent Sanatorium and Clinic experience L M O H, D P H Temporary Major D A Director of Hygiene—Address No 3920 Brit Med Journal Office 429, Strand W C 2

Wanted—Medical Officer, Anti malaria General Medical Infant Welfare Greek Refugees Macedonia under Malaria Expert Salary £350 with travelling and maintenance—Applic forms from Dr Hilda Clark Friends Council International Ser, 136 Bishopgate London

Assistantship wanted by single man steady and reliable loyal to Principal, and much interested in work, several years exper in priv and panel prac of good appear and well received, cyclist At present disen Open to Locum—Add No 4004 B M J Office 429 Strand

Assistantship (outdoor), with view to Partnership later wanted by experienced medical practitioner Some years experience o G P work Good anæsthetist and accoucheur—Address No 4016 British Medical Journal Office 429 Strand, W C 2

Edinburgh M B, Ch B, newly qualified, desires ASSISTANTSHIP preferably permanency, or with view or other opening locums, etc Age 32 (ex service) T T, excellent record and testimonials—Address No 4019 Brit Med Jour Office 429 Strand W C 2

Evening work required by M R C S (Eng) L R C P (Lond) preferably in North West London—Address, No 4026 Brit Medical Journal Office, 429, Strand, W C 2

Final Year Student, passed Medical Preliminary, sound knowledge Surgery DESIRES POST with doctor suburb preferred can drive car, free August 11th to Sept 24th—Address No 4014 British Medical Journal Office 429 Strand W C 2

M B, C M Ed, several years' experience who has held hospital appts has lately completed the Course for the Diploma in to obtain further experience as Radiographer to a —Address No 4031 British Medical Journal Office 429 Strand W C

Wanted, Lady Dispenser-Bookkeeper. To live in Please write, stating age qualifications and salary required Care of instruments and knowledge of typewriting preferred Photo if possible—Address No 4024 British Med Journal Office 429 Strand, W C 2

Wanted—Qualified Lady DISPENSER BOOK KEEPER for Partnership Practice Must be experienced. Please write stating age, qualifications and salary required No 4002 British Medical Journal Office, 429 Strand W C 2

Dispenser, Book-keeper (Lady) desires post with Doctor (Resident) Three years' experience and excellent testimonials Willing to do needlework light housework or to assist with children—Address No 4001 British Medical Journal Office 429 Strand W C 2

Dispenser-Book-keeper—Young lady desires post Good experience one post five years Neat quick Excellent testimonials—Address No 3929, British Medical Journal Office 429, Strand W C 2

Qualified Dispenser-Chauffeur (Male), wanted for Doctor Northern town Address stating age experience and wages to No 4029 British Medical Journal Office, 429, Strand W C, 2

Secretary, or Secretary-Receptionist to London Specialist Doctor, or Dentist Eleven years experience shorthand and typewriting Hours 10 to 4—Address Miss Snelling 'Iddesleigh' St Mary Cray Kent

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Locum or Assistantship wanted by Woman, M B Free now Remuneration nominal—Address No 4009 British Medical Journal Office, 429, Strand W C 2

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43, BEDFORD STREET, STRAND, W.C.2.
Telegraphic Address
Positions Westrand, London.
Telephone: Regent 223

Welsh-speaking young PARTNER required in pleasant Coast Town main line Preliminary Assistancy About £1,100 share 11 years purchase part down—Address No 4027 British Medical Journal Office, 429, Strand W C 2

Wanted—Partnership with or without view to Succession South or East Coast Country town or seaside preferred Preliminary Assistantship entertained—Address No 3901 British Medical Journal Office, 429, Strand W C 2

Wanted, by Cambridge Graduate age 30, PARTNERSHIP In come £1 000 £2 000 in any pleasant residential district in or near London, ample capital available Address No 4012 British Medical Journal Office 429 Strand W C 2

Fashionable Seaside Resort, gentlemanly partner required Income £4 000 half share £3 000 Absolutely genuine and a splendid opportunity for an able man—K L M Hough Hoseason & Co, Ltd, Manufacturing Chemists Manchester

Lancs Seaside Resort—PARTNERSHIP for Sale in old established Practice formerly doing over £1300 Single man to live in Excellent prospects Price, £200 for half share—Manchester Medical & Scholastic Association Ltd 88 King Street

Partner wanted to join a firm of Surgeons established for 20 years Good mixed class practice near London Small share to dispose of, with suitable option for increase of equality in a reasonable time House immediately obtainable Audited accounts and guarantee of share given—Address No 3908 British Medical Journal Office, 429 Strand W C 2

Partnership for sale, early in 1925 Pleasant outskirts Yorkshire city £1 450 Premium £2 000, part deferred House on Lease Panel about 2,000—Address No 3903 British Medical Journal Office, 429, Strand, W C 2

Partnership offered in West Country Spa Practice Receipts £1 700 one third—one half share beginning House on lease Excellent prospects for keen energetic man Mixed panel and private—Address No 3909 Brit Med Jour Office 429 Strand W C 2

Wanted, by Hons Graduate and M D Edin (34) a middle class PRACTICE or PARTNERSHIP in provincial town preferably with opportunity for lung and X ray work Some panel not objected to Leaning towards medicine House with garden and garage Income £1 000 p a up—Address No 4 005 British Medical Journal Office 429 Strand W C

Wanted—Seaside Practice with good house (no basement kitchen) in Hants, Devon or Somerset, about £1 200 per ann Cash available Address in strict confidence—No 4010 British Medical Journal Office, 429 Strand W C 2

Wanted, by well qualified and experienced practitioner, a seaside PRACTICE preferably South Coast Income £800/£1 200 p a Can pay £1 000 down and balance by arrangement Full details (in confidence) to Mr W H Grant 50 Wigmore St, W 1 No charge unless sale effected

Wanted by F R C S, aged 30, a *PRACTICE or PARTNERSHIP* in town in the S or Midlands, with scope for surgery Income about £1 000 Now free, and can pay cash—F, c/o Blundell & Co, 22, Craven Street, Strand, W C 2

Wanted—Good General PRACTICE or PARTNERSHIP Income to exceed £1 000 a year Purchaser can invest up to £3 000 if necessary,—Apply Peacock & Hadley, 19 Craven Street, Strand W C 2 (No charge unless sale effected)

Within half-hour London—Wanted middle upper class PRACTICE or PARTNERSHIP £1,500-£2 000 Medium sized house, lease preferred Wide exp hospital and G P and all branches surgery Highly qualified Capital available—No 4025 B M J 429 Strand

Wanted.—F. Prince, 32, Charing Cross, London S W 1 always having clients desirous of PURCHASING PRACTICES or PARTNERSHIPS in Town & Country, prepared to pay good premiums commensurate with quick sale Terms without obligation post free

Western or North Western Suburb Wanted by a practitioner of exceptional experience a PRACTICE of not less than £500 p a, with scope House should have at least 4 bedrooms and should be let at a reasonable rental Full details (in confidence) to Mr W H Grant 50 Wigmore Street W 1 No charge unless sale effected

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East Coast —Seaside Practice popular health resort Excellent house mid-detached six rooms, rent £75 Lease with option of purchase Average receipts for 3 years over £1,700 no panel patients easily obtained If desired Moderate premium —Apply No 2113 REYNOLDS & BRANSON Ltd 13 Briggate Leeds

For Disposal —A good Practice is not always to be had directly but

I Unique opportunity of acquiring well established practice of about £1,200 amongst English speaking people Work light, good fees Small premium for quick sale No Agents For particulars, Address No 4003 BRITISH MEDICAL JOURNAL Office 429 Strand W C 2

Medical Practice (old-established) Northumberland with good house Average cash receipts £2,150 Suitable introduction —Address ROBERT FLEMING S S C 21 Hill Street Edinburgh

Near Chester —Increasing PRACTICE of £500—£600 with scope Small panel which could be dropped or largely increased. Suitable for man or woman practitioner Convenient mall med house with garden on lease rent £37 Prem £750 —No 4022, B M J, Strand

Notts —Good and middle-class PRACTICE. Excellent corner house garage, &c. £60 Receipts over £1,200 Good panel Great scope Price 3½ years purchase part of which may be deferred —MANCHESTER MEDICAL & SCHOLASTIC ASSOCIATION Ltd, 80 King Street.

Nursing Home —An opportunity presents itself to a medical man retired or otherwise) to secure profitable PRACTICE increasing in residential nursing home in South of England Moderate investment secured on the freehold property —Apply No 7563 c/o PERCIVAL TURNER, 4 5 Adam St Strand W C 2

Old-established Practice on North west Coast Convenient house with small garden Small rental separate surgery premium £1,250 —Apply No 2126 REYNOLDS & BRANSON 13 Briggate Leed

Midlands —Pleasant County Borough Old-established industrial and middle class PRACTICE Average receipt £2 548 Panel 2 23 Appointments probably transferable. Good house. Preliminary Partnership or Assistantship —LEE & MARTIN LTD 71 Temple Row Birmingham.

West Midlands —Old-estab Town and Country PRACTICE in a County Town Receipts £1 574 Appointments. Panel nearly 400 Good fees Expenses small Hospital (90 beds) Purchaser would be appointed Physician or Surgeon Good house and garden —LEE & MARTIN Ltd

North of England —Old-established Country Town PRACTICE Average receipts £1 460 Good panel Expenses small Good house garden, tennis lawn and orchard —LEE & MARTIN Ltd

Staffordshire —Old-estab Town and Country PRACTICE.—Receipts £1 190 Panel over 500 Appointments Scope Freehold house on less ample accommodation good garden —LEE & MARTIN Ltd, 71 Temple Row Birmingham

South Midlands or South Wanted NUCLEUS or PRACTICE (with good house and garden to let on lease) up to about £1,000 per annum —Address No 4011 BRITISH MEDICAL JOURNAL Office 429 Strand W C

Scotch Graduate —The third SHARE (about £900) of Lanes hire Practice offered to above at 1½ years purchase Part payment may be deferred. Should be unmarried Practice can be increased —Address No 4021 BRITISH MEDICAL JOURNAL Office 429 Strand W C

Scotland —For Sale or Exchange. Unopposed Village PRACTICE Receipts £800 including Panel and appointments House with large garden Premium for S27 BRITISH and W C 2

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Bournemouth —In local Harley Street CONSULTING ROOM and use of Waiting Room, to Let. Dark Room available Suitable for Pathologist or other Specialist —Address No 4007 BRITISH MEDICAL JOURNAL Office 429 Strand, W C 2

Harley Street —For Sale the LONG TRUST LEASE of a most comfortable Professional House with ground floor rooms 2 drawing rooms, and adequate bed and baths over Garage private mews Remarkably well fitted and appointed throughout —Apply ELLIOTT SON & BOYTON 6 Vere Street W 1

TO MEDICAL MEN REQUIRING QUIET QUARTERS FOR STUDY

Vacancy occurs in September Large room overlooking garden Home comforts Easy access to any part of London Moderate terms —Mrs WATER 18, Hornsey Lane Highgate N 6

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Leicester Royal Infirmary
SECOND RESIDENT ANÆSTHETIST

Applications are invited for this post Appointment for six months with possibility of renewal Salary to commence £200 per annum with board and residence

Applications from female candidates (the emolis a female) forthwith stating experience in the administration of anæsthetics and accompanied by testimonial with particular reference to anæsthetic work to the House Governor and Secretary
Augus 1st 1924

Cumberland Infirmary,
Carlisle

Wanted October 1st 1924 QUALIFIED ASSISTANT

Salary as House Physician at rate of £175 per annum, and as House Surgeon at rate of £200 per annum with Board Residence and laundry in each case

Applications, accompanied by not more than four testimonials, should be received by first post on Tuesday August 19th by the undersigned who will supply further particulars if required.
J G HOWITT Secretary

District Infirmary and CHILDREN'S HOSPITAL,
Ashton under Lyne —(200 beds)

The Governors propose to appoint at the end of the year an HONORARY MEDICAL OFFICER to the Massage and Electro-Therapeutic Department

Candidates must show evidence of experience in the special work. Further particulars of the appointment may be obtained from the undersigned who will be pleased to hear from intending applicants FRANK OLIVER
General Superintendent and Secretary
August 2nd 1924

Royal Salop Infirmary,
Shrewsbury (Containing 130 Beds)

HOUSE PHYSICIAN required at once Candidates must be duly registered under the Medical Act. British and unmarried (Ladies ineligible)

Salary at the rate of £160 per annum, with board residence and laundry

The duties consist of being responsible to the Medical Staff for the Medical cases, assisting the

Post Graduate Office

undersigned forthwith
ALFRED SUGDEN Secretary
August 5th 1924

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Candidates should have passed final examination and be under 30 years of age

Write in first instance to the Medical Superintendent Windsor Place London S W

County Borough of East Ham

ASSISTANT MEDICAL OFFICER
(School Medical Service)

Applications are invited for the position of Assistant Medical Officer, whose duties will be chiefly in connection with the Medical Inspection of school children The appointment will be temporary for a period of twelve months Salary £600, subject to percentage deductions in accordance with the provisions of the Local Government and other Officers Superannuation Act, 1922

The successful candidate will be required to give full time service and act under the supervision of the Medical Officer of Health, and School Medical Officer

Candidates must have definite experience of Children s Diseases, and the possession of the Diploma in Public Health or similar qualification is desirable

Applications must be made on forms to be obtained from the undersigned to whom they must *be returned accompanied by copies of three recent* testimonials not later than Monday, the 25th August 1924

Canvassing the Members of the Council will disqualify for appointment

(By Order),
Town Hall, East Ham E 6 — O EUSTACE WILSON Town Clerk.
July 30th 1924

Leeds Township Infirmary.

ASSISTANT MEDICAL OFFICER

The Guardians of the above Township require the services of a Third Assistant Medical Officer for the Indoor Institution, Beckett Street, Leeds Salary £275 per annum together with board, apartments, and attendance (subject to deductions under the Poor Law Officers' Superannuation Act, 1896) The post is recognized by the University of London as qualifying candidates to sit for the M.D Exam Branch I

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tendent of the Township Infirmary will give any information as to the duties etc , on application to him Applications stating qualifications and giving particulars of present and prior occupations and military service if any together with copies of three recent testimonials, must be received by me not later than 10 a m on Tuesday the 19th August, endorsed 'Assistant Medical Officer' Canvassing the Guardians is prohibited and will disqualify a candidate Selected candidates will receive due notice to attend

Poor Law Offices, South Parade, Leeds — JAMES H FORD, Clerk to the Guardians
August 1st 1924

Birkenhead Education COMMITTEE

ASSISTANT MEDICAL OFFICER

Applications are invited for the appointment of Assistant Medical Officer at a alary of £600 p a

The duties will include the inspection and treatment of children attending the schools in the borough The candidate appointed will be required to devote his whole time to the duties

Applicants must be duly qualified medical men, with experience, and must hold the Diploma in Public Health

The post will carry with it the designation of "Assistant School Medical Officer and Assistant Medical Officer of Health

Canvassing, either directly or indirectly members of the Committee or of the Town Council will be regarded as a disqualification

Particulars of the appointment and forms of *application may be obtained from Dr Morley* Mathieson Medical Officer 9 Hamilton Square Birkenhead, and applications must be delivered to me not later than August 22nd

Town Hall, Birkenhead — ROBERT T JONES, Director of Education
August 1924

Bolton Education Committee

THOMASSON MEMORIAL SCHOOL.

Wanted for the Thomasson Memorial Residential Blind and Deaf School a MATRON to take charge of the Household Staff and to be responsible for

t Children The person
to re ide at the School
will be at the rate of £80
residence
n to candidates having

knowledge of Sick Nursing and the care of Children and Institutional experience will be an additional qualification

Forms of application which must be returned not later than Saturday August 9th 1924, and list of duties may be obtained from the undersigned on receipt of a stamped addressed envelope Copies of not more than three recent testimonials will be required

F WILKINSON, *Director of Education*
Education Offices Nelson Square, Bolton

Pontypridd Union.

LLWYNYPIA HOSPITAL.

APPOINTMENT OF SUPERINTENDENT MEDICAL OFFICER

The Guardians invite applications from duly qualified Medical Practitioners (male) for the position of Superintendent Medical Officer of the Llwynypia Poor Law Hospital, which has at present, accommodation for 150 cases, but which is being increased to 300 to 350 beds

The alary offered is £700 per annum, rising by increments of £25 to £900 per annum with house in the institution grounds, together with coal and light

The appointment will be subject to the provisions of the Poor Law Officers Superannuation Act, 1896, for which purpose the value of the emoluments of the office has been fixed by the Guardians at £70 *per annum*

Preference will be given to candidates who have *held responsible posts at General Hospitals*

The person appointed will be required to devote his whole time to the duties of the office, which will include the general medical and surgical control of the institution under the direction of the Guardians, and he will be debarred from private practice He will be reponsible for the training of the Nurses in accordance with the requirements of the General Nursing Council and the carrying out generally of the Orders of the Ministry Among his earliest duties will be that of advising the Guardians as to the extension and development of the present Hospital He will further be required to act as referee in doubtful cases where applicants have been certified for relief

Preference will be given to applicants who have a knowledge of Welsh and who are graduates of a British University

Applications stating age, experience, and qualifications, accompanied by copies of three recent testimonials and stating date when applicant (if appointed) can take up his duties, must be received by me not later than Saturday, the 16th day of August 1924

Canvassing will be considered a disqualification

Union Offices, Pontypridd. — WILLIAM SPICKLIT, Clerk
July 12th 1924

Hertfordshire County Council

SCHOOL DENTIST.

Applications are invited for the position of Dentist (either sex) to act as School Dentist in connection with the Council s scheme for treatment of defects in school children Duties include visiting dental clinics and examination of teeth of children attending public elementary schools The Dentist will act under the School Medical Officer s direction The successful candidate will be required to devote whole time to the appointment Salary £500 per annum with allowance for travelling and out of pocket expenses Applications giving full particulars and accompanied by copies of not more than three recent testimonials should reach me not later than first post Wednesday, 20th August 1924

August 1st 1924 CHARLES E LONGMORE,
Education Department,
Hertford.

Royal Sussex County HOSPITAL, Brighton —(220 beds)

HOUSE SURGEON (male) required with charge of beds, part casualties and anæsthetics Salary £150 per annum, with board, residence, and laundry

Candidates must hold medical and surgical qualifications of the United Kingdom, and be duly registered under the Medical Acts

Candidates must be unmarried and when elected under 30 years of age *Applications with copies* of testimonials must reach the undersigned before Friday the 22nd August 1924

(Signed) L L W LANCASTER GAYE,
Secretary Superintendent

The Samaritan Free Hospital FOR WOMEN,

Marylebone Road, London, N W 1

Applications are invited for the post of HOUSE SURGEON from September 20th, 1924 to February *28th 1925 Salary at the rate of £100 per annum* Previous experience as House Surgeon essential

Applications accompanied by copies of testimonials must reach the Secretary at the Hospital, on or before August 30th, 1924

G H HAWKINS Secretary

Guy's Hospital

Applications are invited for the po t of CLINICAL ASSISTANT in the Ophthalmic Department Attendance either on Tuesday and Friday after *noons, or Tue day and Thursday afternoons* Honorarium £100 per annum Dutie to commence at once.

Applications should be sent to the Treasurer Superintendent s Office Guy s Hospital on or before Wednesday, August 6th

County Borough of West HAM

MEDICAL OFFICER OF HEALTH AND CHIEF SCHOOL MEDICAL OFFICER

Applications are invited from duly qualified Medical Men for the
Officer of Health and
at an inclusive salary

Applicants must not be *more than* 45 years of age, and be fully qualified to carry out and perform all the duties of M
School Medical
trative Officer,
1913

the duties of the office

The appointment will be subject to the provisions of the Local Government and other Officers Superannuation Act, 1922 and to a medical examination as required by the Council for the purposes of that Act and the statutory contributions to the Superannuation Fund under the Act will be deducted from the salary

APPLICATIONS on the form provided (which will be forwarded by the undersigned on receipt of a stamped addressed foolscap envelope) must reach me not later than Saturday the 30th August 1924

Applicants must be members of a recognized Medical organization

Canvassing members of the Council is prohibited, and will disqualify

Town Hall, West Ham, E 15 — By Order GEORGE E HILLEARY, Town Clerk
July 29th, 1924

Staffordshire, Wolverhampton and DUDLEY JOINT COMMITTEE FOR TUBERCULOSIS

ASSISTANT RESIDENT MEDICAL OFFICER.

Applications are invited from Medical Men, not more than 35 years of age, with special experience in the treatment of Pulmonary Tuberculosis, for the post of Assistant Resident Medical Officer at Prestwood Sanatorium for men (150 beds), situated 9 miles south of Wolverhampton

The salary will be £400 per annum rising by annual increments of £25 to £450 including quarters for single man only, with full board and laundry

Forms of application, together with any other information desired, may be obtained from the undersigned

Applications, together with three recent testi monials must be received not later than Thursday, August 14th 1924

Canvassing, either direct or indirect, will be a disqualification

County Buildings, Stafford — EUSTACE JOY Clerk to the Joint Committee
July 24th, 1924

Tunbridge Wells General HOSPITAL

Wanted, *HOUSE SURGEON* (Male) Candidates must be unmarri and duly qualified in Medicine and Surgery (Two residents) May be required
86 Beds In patients largely predominate V D Clinic with board, residence,

This Hospital is approved by the University of London for the purpose of the M D , and M S Examinations

Applications, stating qualifications, with certificates of registration and copies of testimonials should be sent to the undersigned on or before Thursday, August 21st next Appointment to be entered into September 1st

J J WEBB Secretary

Durham County Hospital

The post of HOUSE SURGEON will be vacant on September 30th next The appointment is for six months certain, subject to renewal Candidates must be male and duly qualified and registered Salary £200 per annum, with board and lodging Applications with copies only of testimonials to be sent to the undersigned, by *August 23rd*

9, Saddler Street, Durham — Wm R WILSON *Secretary*

City of London Hospital for DISEASES OF THE HEART & LUNGS,

Victoria Park L 2
(Bus, tram, & rail, Cambridge Heath, L & N E Rly)

Application are invited for the po t of half time MEDICAL OFFICER (Male) for attendan e every Afternoon at 2 p m to assist the Out patient Physicians and to carry out certain other duties of a Medical character The appointment will be for *a period of six months from* the 15th September, 1924, with salary at the rate of £200 per annum
by no more than
each the undersigned
mber 1st

GEORGE WATTS, Secretary

Royal Devon and Exeter
HOSPITAL, Exeter

ASSISTANT PHYSICIAN

Applications are invited for the post of Honorary Assistant Physician at this Hospital Candidates must be Fellows or Members of the Royal College of Physicians of London and Graduates in Medicine of some University of the United Kingdom

Particulars as to duties, etc., may be obtained from the undersigned

Applications, together with certificate of birth and original testimonials, should be delivered at the Hospital address to the President on or before Monday September 29th, 1924

The Committee desire that there should be no canvassing by or on behalf of any candidate

Signed on behalf of the Committee
S S COLE Secretary

Dated July 21 t 1924

Hospital for Epilepsy and
PARALYSIS, Maida Vale, W 9

Applications are invited for the post of HOUSE PHYSICIAN The salary is at the rate of £100 per annum and the appointment is for 1x months. The elected candidate will be required to take up duty early in September

Applications accompanied by copies of three recent testimonials should reach me by 23rd August
H W BURLEIGH,
Secretary and General Supt.

North Riding of Yorkshire
MENTAL HOSPITAL, York

Wanted a FEMALE DEPUTY CHIEF NURSE to act as SISTER TUTOR, age not to exceed 35 years Candidates must have had Mental Hospital experience and have completed their training in a recognised General Hospital

Salary £110 per annum with board furnished apartments and laundry

Applications to the Medical Superintendent

North Devon Infirmary,
Barnstaple

Wanted end of August duly qualified HOUSE SURGEON (gentleman) Salary £150 per annum with board apartments and laundry Appointment to be for not less than six months.

Applications stating age, qualifications, with copies of testimonials, to be sent in on or before Saturday August 16th addressed Hon. Secretary

New Sussex Hospital,
Windlesham Road, Brighton. (30 beds)

Applications are invited from fully qualified medical women, for the post of HOUSE SURGEON to commence duties on October 1st. Previous hospital appointment essential Honorarium at the rate of £50 per annum with board lodging and laundry

Applications with copies of testimonials, should be sent to the Secretary of the Hospital not later than August 25th, 1924

Royal South Hants and
SOUTHAMPTON HOSPITAL,
Fanshawe Street Southampton

Required a JUNIOR HOUSE SURGEON (Male and unmarried) Candidates must be doubly qualified, and be willing to engage for six months Salary £150 per annum with rooms board and laundry Duties to be taken up on September 1st 1924

Applications stating age to be sent to the undersigned with printed copies of testimonials (limited to 5) not later than Wednesday August 13th 1924

T A. FISHER HALL Secretary

August 1st 1924

Stockport Infirmary

Immediate applications are invited from fully qualified gentlemen for the position of THIRD RESIDENT HOUSE SURGEON Salary £175 and Board Residence Special Departments for Eye Ear Nose and Throat and Orthopædic work.

Copies of not less than three testimonials should be forwarded with application addressed to the undersigned Preference will be given to applicants who could take up the appointment at the earliest possible date

EDWIN J PEARCE Secretary Supt

Victoria Hospital, Blackpool
(112 Beds.)

ASSISTANT HOUSE SURGEON required for above Hospital.

[illegible] duly qualified and registered, experience, and [illegible] of three recent [illegible] 23rd, endorsed

[illegible] Hon Secretary

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London, N.—A General PRACTICE situated in a thickly populated district Receipts £2 500 panel 2 500 ample scope Vendor retiring Charming house etc. Premium 1½ years purchase.—Folio 670

London — City Practice Receipts £1 250 including appt £500 Panel 100 Fees 3 6 upwards. Vendor retiring Ample scope Nice house in central position at rental Premium £2 000.—Folio 667

Norfolk.—A General PRACTICE situated in a country district Receipts £1,600 Panel nearly 900 Good fees Nice house with excellent garden, etc Rent £35 per annum Premium £2 500.—Folio 600

Glam.—General Practice in thickly populated district on Coast Receipts £1 700 Fees 3 upwards. Panel 500 Commencing scope House containing 4 bedroom etc rent £50 p.a Premium £1 500 Folio 887

Derbyshire.—A General PRACTICE situated in an industrial district Receipts about £800 Panel 500 Good fees Nice house containing 8 bedrooms &c at rental Premium £1,000.—Folio 653

Midlands.—General Practice situated in small Country Town Receipts £1,200 Panel 500 Fees 3s. 6d. upwards. Excellent house containing 6 bedrooms, &c Premium 1½ years purchase.—Folio 617

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(Mrs) MILLICENT HICKS *Superintendent*
W J HICKS *Secretary*

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TRAINED NURSES for MENTAL and NERVOUS CASES can be had immediately Apply to LADY SUPERINTENDENT 19 Nottingham Place, London, W 1 Telephone Mayfair 2429

NORTHERN BRANCH —Apply LADY SUPERINTENDENT 51 Clarendon Rd., Leeds Phone Leeds 2515

York Road (General Lying-
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2 MIDLAND TOWN —PARTNERSHIP with view to Succession Total receipts £1 500 p.a. Panel 1 500 Suitable house available to Let Half share for sale now at 1½ years purchase
3 MIDLAND [illegible] — Middle class a year Panel e [illegible] urger y lease Premium 1½ years purchase
4 HOME COUNTY —Beautiful district Country PRACTICE Receipts £1,550 p.a. No resident opposition. Commodious house good garden Premium £2,400
5 LIVERPOOL (SUBURB) — Well-established good-class private PRACTICE, non panel Receipts £1,200 p.a. Visiting fees 5 to 10 6 Good detached house Freehold price £1,250 Premium for Practice £2,000
6 MIDLANDS —Small Industrial Town PRACTICE returning about £2,500 p.a Panel 1 500 Convenient residence with garden garage &c. Rent £40 Premium £3 500
7 LANCS —Manufacturing Town Long established General PRACTICE. Receipts £1 250 Small house £36 p.a Premium £1 650
8 SOUTH WALES —Coast Town General PRACTICE yielding £1,700 a year Small but convenient house. Rent £50 Premium £1 500
9 LONDON N —Lock up Surgery Cash and Panel PRACTICE, yielding over £400 p.a. Rent of Surgery 25 per week. Whole house can be had if desired Premium £600

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2 WESTERN COUNTY —Good-class PRACTICE in Hospital Town and worth over £2 000 a year Visits 5 to 21/ medicine extra. Capital family residence may be leased Efficient partnership introduction. Premium £3 000
3 VERY OLD-ESTABLISHED PRACTICE S.E — Conducted as a Local Surgery Receipts £1,300 a year No midwifery panel or night work Convenient house (main road) at low rent Modern terms conceded
4 NORTH OF ENGLAND —PRACTICE of £1 400 a year including Panel of £550 in good business cent e. Vendor retiring Fees from 3 6 Good corner residence for Sale with goodwill Price for late £2,000
5 IN CHARMING COUNTY TOWN within 20 miles of Carlisle, General PRACTICE of about £1 800 a year including panel and appointments of over £750 Excellent position Good residence and garage on lease at £80 Price £2,400
6 CONFINES OF CITY —General PRACTICE of £1 250 a year including £550 from panel and small panel No midwifery Fees 3 3 Convenient residence on long lease at £125 Premium £1,500
7 SEAPORT TOWN (N W Coast) Average income £1,500 Panel and appt £600 Good scope for active man Vendor's health very indifferent Well-situated residence and garden on lease. Price £2 300
8 UNOPPO[illegible] within [illegible] including [illegible] society [illegible] lease [illegible]

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PRACTICES AND PARTNERSHIPS FOR SALE

1 EASTERN COUNTIES —UNOPPOSED COUNTRY PRACTICE, within 80 miles of London Very old established and easily worked, and situated close to a County Town Average income for the last three years £1 314 including appts, worth about £70, and panel of 788 Advice and medicine 3/6 to 5/, visits 5/ to 10/6 medicine usually extra Midwifery 30/ upwards 10—16 cases yearly Very attractive residence, standing in its own grounds, containing consulting room surgery (with separate entrance) 3 reception 4 bedrooms, etc garage, stabling One acre of garden and two acres of meadow land Price, freehold £1,200 part on mortgage Premium £2 000

2 HOME COUNTY —Hospital Town within 50 miles of London PARTNERSHIP A one half share in a mixed general practice, held by senior partner 25 years Average income over £2,000 Panel of 780 Advice and medicine from 2/6 Visits and medicine from 3/6 Very little midwifery Detached double fronted house, with ample accommodation and good garden Price £2 000 of which £1 000 can remain on mortgage There is an up to date Hospital and an early vacancy on the staff probable Good sport, schools, etc Premium 2 years purchase half by arrangement

3 MIDLANDS —SMALL TOWN PARTNERSHIP A one-third share to commence with, is for disposal in a very old established mixed general Practice Income nearly £5,000 Panel of about 2,500 Advice and medicine from 2/6 visits 3/6 to 21/ Well situated freehold house, with 5 bedrooms garden Price £1 600 Good sport and schools Cottage Hospital and incoming Partner (who should not be over 30 years of age) will be appointed to the Staff Premium 1½ years purchase

4 SOUTH MIDLANDS —Exceptionally attractive residential town Old established non dispensing and mainly better class PRACTICE Income about £2 000 a year Small selected panel of 500-600 Fees 2/6 to 21/ mainly 7/6 upwards Midwifery 2 to 25 guineas Ten cases last year House with 3 reception 7 bedrooms garden Rent £100 Prem 2 years purchase

5 DEATH VACANCY —BLACKPOOL —Very old established non panel PRACTICE Average income last three years £1 311 Very easily worked and no conveyance required Visits 7/6 to 21/ Good house facing sea Rent £150 Premium £1 000 (to include good stock of instruments drugs etc), payable half by instalments Locum in charge

6 SOUTH WEST OF ENGLAND — COUNTY TOWN —A ONE THIRD SHARE producing £800 is offered in a good class non panel and non dispensing practice, with a considerable amount of surgical work There is a good Hospital in the town, and the incoming partner (who must hold the F R C S Eng) will eventually be elected on to the staff Premium £1 600

7 CHESHIRE —Twelve months PARTNERSHIP introduction will be given to an old established middle-class and panel Practice (1 600 patients on list) worth last year £2 100 Situated in a large town (population nearly 100 000) close to seaside resort Visits 2/6 to 5/ Midwifery 2 to 3 guineas about 100 cases yearly Car not required Good house with garage available at end of introduction Premium 1½ years purchase

8 PARTNERSHIP —LANCS Large Town The third share of an old established lucrative and money making Practice worth for the last financial year, £3 722 can be acquired by a young unmarried man Panel list of over 1 800, and patients operative class Visits 2/ to 5/ Midwifery 2 to 3 guineas Ingoing partner could reside with Vendor, or unfurnished room are available Golf to be had Premium 1½ years purchase

9 DERBYSHIRE —HOSPITAL TOWN —Old established PRACTICE held 13 years by present Incumbent who is relinquishing on account of ill health Income for last year £3 372 including about £1,500 from panel Fees 3/6 to £1/1/0 About 50 cases of midwifery at 2 to 5 guineas Centrally situated house (2 reception rooms, consulting and waiting rooms 4 bedrooms bathroom etc) on lease at £100 a year Premium £5 000 £1 500 by instals Good scope for surgery and Vendor is on the Staff of the Hospital

10 SOUTH COAST —LARGE TOWN PARTNERSHIP A quarter or one third share in a middle and working-class Practice Income Panel of over 4,000 — Fees 2 6 to 7/6 over £4 000, with scope chiefly 3/6 to 5/ No midwifery, and very little night work Purchaser should preferably be not over 35 Prem 2 years purch

11 JUNIOR PARTNERSHIP —EAST COAST TOWN Over 100,000 inhabitants A gentleman, who should be married, under 30 years of age, and have held a hospital appointment, can acquire the fifth share (to commence with which will produce over £1 000 per annum) in a leading and old-established non panel Practice Visits 5/ upwards Midwifery from 2 guineas 150 cases yearly Very good house available, containing 3 reception rooms 5 bed rooms, bathroom, etc and garden Rent £60 on lease Premium 1½ years purchase Prospects of surgery

12 YORKSHIRE —Large clean town Well-established middle and working-class PRACTICE Income £1 300 including £580 from panel and £350 from appointments Advice and medicine from 2/6 visits and medicine 3/6 upwards Very little midwifery lowest fee 2 guineas Good detached freehold house with small garden Electric light Garage Price £2 500 of which £1 500 could remain on mortgage Premium £1 400 cash

13 INDIA —ASSISTANTSHIP with view to PARTNERSHIP A single man (about 30 years of age and not over 36 who must be an F R C S Eng, of good appearance and a sportsman) is required on a two years' engagement to commence next March in a practice producing £7 000 a year Salary 650 Rupees a month, plus board and lodging (the total equals £800-£850 p a) At termination of engagement a one sixth share will be sold if satisfactory at one year's purchase with increase ultimately up to one third Premium payable out of receipts One of the Partners is in England at present and a personal interview during the next month is essential

14 CHANNEL ISLANDS —Old established PRACTICE held 11 years by present Incumbent who is relinquishing on account of ill health Cash receipts for the past three years average nearly £750 per annum including an appointment worth £35 Visits 7/6 to 10/6 in the Town, ext a outside Midwifery 3 to 5 guineas, 8 to 10 cases yearly Car no required House contains 4 recep

15 I ing PRACTICE in a very beautiful district on main line about 36 miles from a large city and worth nearly £1 300 a year including easily worked appointment at £100 Visits into Township 10/ mileage 6/ midwifery 5 gns Good and up to-date house (built by Vendor's predecessor) containing surgery 2 reception rooms 3 bedrooms and sleeping porch bathroom etc with an acre of ground tennis court etc Rent £120 on lease Prem £1 000

16 NEW SOUTH WALES —Old established non dispensing PRACTICE unopposed and situated in a small town (containing Public School, Post Office Shops, etc) in a very pretty district Cash receipts for the past three years average £1 200 per annum including small Lodge worth £80 Visits 7/6 to 10/6 (mileage 7/6 to 10/6 per mile) Midwifery £5 5s Od Attractive Bungalow residence with consulting room, surgery (separate entrance) 3 large bedrooms maid's room etc Garden Acetylene gas plant Rent £104, on lease Premium £1 000, half down and balance in 1 or 2 years

17 LONDON WEST END —PARTNER commence with and up to one third 4 or 5 years with ultimate succession first class general Practice Income £3 020 Fees mostly 1 guinea upwards and a few at 10 6 Purchaser should be a Graduate or hold some higher qualification Premium for the quarter share £1 500

18 LONDON, EAST —Old established sound middle and working class PRACTICE Income over £1 150 Panel of 1,400 Surgery fees 2 6 visits 3/6 upwards No midwifery Can be much increased if desired Small house, suitable bachelor on lease Would suit lady doctor Premium £1 750

19 WEST CENTRAL —Sound easily worked PRACTICE of about £770 Very good scope as the Vendor has suffered from ill health since the war Fees mostly 10/6 Very convenient Flat Rent £58 Premium £1 100

20 YOUTH RESORT Old established Income £400, but very large scope for young man with qualifications Good fees Corner house with 3 reception 6 bedrooms garden Freehold Premium for House and Practice £2 500

21 FAR EAST —Wanted in November a young unmarried ASSISTANT (not over 30 years of age) on a two years agreement with possibility of succession at end of engagement Return passage paid Interview in London essential before ultimate engagement

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North-West Coast — Favourite Seaside Resort About £300 a year Increasing PRACTICE. Small panel Visiting fees 3 6 upward No midwifery or anæsthetics Situated centre of town. Moderate rent —Apply No 7578

South Coast — About £450 p.a. Panel 2 0 Visiting Fees 3 6 upwards Few midwifery 6 3 Small house large garden can be obtained if desired —Apply No 7577

London, N —About £450 p.a. Small non-residential PRACTICE Panel about 2 0 Fees for visits 2 6 to 7 6 Good premises on lease No appointments or midwifery —Apply No 7574

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Yorkshire — About £1,700 a year Panel 1 125 Visits 2 6 to 10 6 medicine extra. About 50 midwifery cases up to £5/5 0 Appointments £60 Good house with garden and garage for sale or would let on lease —Apply No 7559

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YORKS (W.R.) —Old-established G.P. Nice house Panel nearly 1 00 2 appointments Premium £3 900 to include house (part can remain)

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KENT —Old-established country G.P. Panel 500 Two appointments Income £1 600 Excellent house Premium to include house £4 650 (Mortgage can be arranged)

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YORKS —Old-established country town Panel 1 0 0 Income £2 500 three appointments Detached house with garden and garage to let on lease Premium £3 500

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Death Vacancy —Partnership Third share of £4,500 Panel practice in open suburb Scope for midwifery Fees £75

South Wales —Practice of £1,400 with great scope in large town Small panel and some shipping work at good fees. Practice formerly did £3 000 Rent £52. Premium 1 year's purchase

Lancs —Practice of £2,000 in prosperous town Scope for Surgery and vacancy on staff. Panel 600 Good house Rent £90 Premium only £1,800 £1,000 down

London, S.W —Middle-class PRACTICE of £700 in nice residential district. Small panel. Scope for increase Nice freehold house can be bought

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Yorks —Middle and working- class PRACTICE in fine town. Receipts £1,750 Panel 8 0 For sale owing to illness Fine house can be rented.

Near Peak District — Old- established PRACTICE of about £1 000 held by Vendor for about 40 years in beautiful district. Panel 500 Appointments £100 Excellent house with large garden rent £75 Premium 1½ years purchase

Midlands —Practice of £1,800 In prosperous town Panel 2 2 0 Appointments £110 Great scope for anyone attending more to the practice House with garage Rent £50 on lease

Liverpool —Practice of £1,400 in suburb Appointments £110 Panel 1 1 0 Opposition weak. Rent £50

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Lincs —Unopposed Practice of £900 Panel and appointments £500 Very good house with two rooms can be rented. Station in the place

Home County —Partnership Half share of about £2 500 in beautiful country town Good class non-panel practice Fees 3 6 to 1 guinea Good house and garden can be bought cheaply

Within 80 miles — Old- established PRACTICE of £1 280 in nice town Panel 1 0 Nice house with good garden Rent £70 School Society &c

Yorks —Practice of £1,450 in fine town. Panel 8 0 Appointments £160 No midwifery has been done House with pretty garden and great convenience of surgery Can be rented.

West Coast —Nucleus of £550 including £90 from panel in wealthy seaside place. Premises in prominent position

Home County —Partnership Half share of £2 000 in beautiful country town Panel 7 0 Appointments £260 House can be rented

Ear, Nose, and Throat PRACTICE of £2,000 Fees 1 to 3 gns. Transferable appointments Low rent

Midlands —Town and country PRACTICE of £1,200 including 60 panel Good corner house with garage Rent £60

Home County —Partnership with succession to middle-class Practice of £1,850 in residential district. The place is growing and has a cottage hospital. Panel 1,2 0 Appointments £185 Very few midwifery Rent £70

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SOUTH MIDLANDS —(1) PARTNER required in well established Practice over £3 700 per annum in first rate Residential Town about an hour from London Panel 2 100 House with 5 or 6 bedrooms Rent £30 Premium one-fourth share one-and three-quarters years purchase

YORKSHIRE, WEST RIDING —(2) Well-established mid dle and working class PRACTICE, over £1 300 (£920 from Panel and appointments) in large clean town Good detached corner house Premium £1 400

EAST COAST —(3) Increasing PRACTICE over £500 in rapidly developing District Panel about 100 Nearest apponent 4 miles Bungalow residence (5 rooms) Premium £750

EGYPT —(4) Well-established PRACTICE £700 to £800 ma nly among English Residents and Visitors to celebrated Hotel Excellent semi detached residence (5 bedrooms) Premium to include furniture £1 100

EASTERN COUNTIES —(5) PARTNERSHIP, (with preliminary Assistantship) in well-e tablished Practice in first rate Town Incoming partner should be a University man or hold the F R C S

EASTERN COUNTIES —(6) Old-established unopposed Country PRACTICE of £826 p a Panel about 500 Very good house in 2 acres of garden also 18 acres of land attached to rent or pur chase Nearest apponent 5 miles

MIDLANDS —(7) Lucrative PRACTICE averaging over £2 200, in Country Town near Birmingham Panel 1 800 Charming hou e (6 be trooms) large garden Rent £100 Premium one and a ha f years purchase.

HOME COUNTY.—(8) PARTNERSHIP in well-established and increasing Practice over £2 200 in delightful Residential Country Town within 30 miles of London. Panel 8 0 Cottage Hospital Premium one third share £1 425 Great scope

HOME COUNTY — (9) PARTNERSHIP in first-rate Practice £7 000/£8 000 p a in one of the best Residential Districts House (7 bedrooms) to rent Premium one sixth share two years purchase Partner should be aged over 30 and have held hospital appointments

YORKSHIRE, WEST RIDING —(10) Well-established mixed-class PRACTICE nearly £1 500 p a , in Manufacturing Town Panel 1 8 Good house (9 bedrooms) to let on lease Premium one and a half years purchase.

MIDLAND TOWN —(11) Old-established PRACTICE about £1 100 per annum in Residential Suburb Panel 700 Good hou e and large garden Premium £1 500

LONDON, N W —(12) PRACTICE worth about £450 per annum in working-class district Panel 450 increasing No mid wifery Double-fronted corner house Premium Practice, and freehold House £1 500 Great scope for young man

SOUTH MIDLANDS —(13) PARTNERSHIP in old-estab Practice about £6 000 p a., in Country Town Panel about 2 000 Excellent house to rent Premium one-fourth share, two years purchase

FIRST-RATE RESIDENTIAL DISTRICT up the THAMES —(14) PARTNERSHIP in good-class Practice averaging about £1 550 p a. Not much Midwifery Good house with garage, to be sold Premium one half share £1 200 Scope for Surgery

LONDON, E C —(15) PARTNERSHIP in Special City Practice Excellent opening for gentleman (aged 30–35) specialising in Skin work and experienced in Nervous and Digestive Disorders Share worth about £500 at one and a half years purchase

CELEBRATED HEALTH RESORT —(16) Nucleus of old established PRACTICE at present doing about £350 p a No Midwifery Good corner hou e to be sold Price to include practice, £5 000 Good opportunity to develop Consulting Practice

LONDON, S W —(17) Recently established Lock-up PRACTICE, in new and developing outlying Suburban District Rent of Con ulting rooms £40 Prem to include lease furniture, and fittings £250

MANCHESTER —(18) Old-established and increasing middle class PRACTICE averaging £1,550 per annum in Suburb with Ho p tal and opportunities for Surgery Small panel Good house (8 bed room) in excellent position Rent £90 Prem one and a half years purchase

SCOTLAND, NORTHERN HIGHLANDS —(19) PRACTICE averaging over £1 600 p a , in a Town No panel House (bedrooms etc) in best residential part. Ample scope for midwifery and panel Premium £1 200

SOUTH OF ENGLAND —(20) PARTNERSHIP in very old established Country Town Practice over £3 670 per annum in beautiful part within 10 miles of the Coast. Panel over 1 300 Well appointed hou e (5 bedrooms &c), with garden and lawn to rent on lease Cottage Hospital near Scope for Surgery Premium one half share two years purchase a year rooms consulting

(21) PARTNERSHIP in very old-established on lease at £200 a year in good Country Town Panel 2 000 House Good scope for surgery and Anæsthe third share one and a half years

Hospital

MIDLANDS Practice over £4 300 Prem um for

contains 5 bedrooms ac

purcha e

WEST MIDLANDS —(22) PARTNERSHIP in old-estab Panel 2 183 Rent ll hed Country Town Practice over £3 600 p a. Partner should be age l 2 to 40 with some Surgical experience Well £60 Partner shou l be age l 2 to 40 with some Surgical experience Well equipped Cottage Ho p Prem one-third share one and a half year s purchase

LONDON, S W —(23) Well-established PRACTICE of £600 to £700 p a in favourite Residential Suburb Panel 9 Not much midwifery Excellent detached house (6 bedrooms) with good garden, for Sale Ample scope Premium one and a half years purchase

SOUTH OF ENGLAND —(24) Unopposed Country PRACTICE nearly £500 per annum Panel 4 0 House (3 bedrooms 3 attics), with well stocke l garden Rent £25 Premium £650

SURREY —(25) PARTNERSHIP in good middle class compact practice over £2 650 in Residential District easy distance of London Panel 1 200 Two fifths share at first at two years purcha e

MIDLANDS —(26) Unopposed Country PRACTICE over £1 150 in beautiful part Panel about 720 Detached house (4 bed rooms) with half an acre garden Mild climate

SOUTH AFRICA —(27) PRACTICE about £1,000, in small Town in Cape Province Very comfortable house to rent Living very cheap Premium £800

EAST COAST —(28) Old-established good-class PRACTICE £1 700 per annum, in pleasant Seaside Town and favourite Resort Nice modern double-fronted house (6 bedrooms) Rent £75 on lease Prem £2 000

SOUTH OF ENGLAND —(29) PARTNER required in very sound old established Practice in Seaport Town Panel under 3 000 Share worth £700 to £800 at two years purchase Partner must be keen and energetic, and not much over 30

HOME COUNTY —(30) Old-established PRACTICE, over £1 850 p a in a most desirable Residential District under 25 miles from London Panel about 600 Excellent detached house (8 bed and dressing rooms) Nearly acre garden Rent £75 on long lease Cottage Hospital near Premium one a and half years purchase

EAST ANGLIA.—(31) PARTNERSHIP in middle and working class Practice averaging about £2 200 p a In picturesque district near popular Seaside Resort. Panel nearly 1,200 Choice of hous s. One third share at first at two years purchase.

EASTERN COUNTIES —(32) Very old-established Country PRACTICE over £1 400 p a Panel 636 Suitable house (5 beds) Rent about £40 Mild climate Premium one and a half years purchase

SOUTH WALES —(33) Well-established PRACTICE nearly £1 250 p a in County Town Panel over 500 Fees 5/ to £2 2s Well situated double fronted house (6 bedrooms) with large garden Rent £60 Educational facilities Premium £1,800

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SOUTH OF ENGLAND —(36) PARTNERSHIP in old- e pa in town of nearly 30 000 inhabitants Panel ontains 5 bedrooms Premium one half share

YORKSHIRE (WEST RIDING) —(37) PRACTICE over £1 500 p a in thriving Industrial Town Panel 1,500 Good house (5 bedrooms) Rent £80 Premium £2 250

MANCHESTER —(38) PARTNERSHIP in old-established good-class Practice over £4 500 in Residential District Small panel One fourth share would be sold for £2 115, with option to increase up to one-half Partner should be about 30 and preferably M D or F R C S

SOUTH COAST —(39) PARTNERSHIP in Practice, over £4 000 p a in popular Seaside Resort Panel 4 150 Premium one third share two years purchase Partner must be energetic and not over 35

EASTERN COUNTIES —(40) Old-established PRACTICE Panel 1 100 No midwifery Excel ry good garden Cottage Hospital

SOUTH COAST —(41) Good class PRACTICE of £1,350 per annum Excellent house Premium £1 250

YORKSHIRE (W RIDING) —(42) Old-established PRACTICE over £1 700 in clean Manufacturing Town Panel 1 12. House contains 3 bed and 2 dressing rooms Garden half an acre Pretty surrounding country Prem £2 000 to include book debts tenant s fittings &c.

LONDON, N —(43) PARTNERSHIP in Cash and Panel Practice of £1 800 in Residential District Panel 2 100 House con tains 5 bedrooms &c One third share at firs Premium £1 200 Incoming Partner must be married

ESSEX —(44) NUCLEUS of Practice in Industrial Village Panel and Midwifery refused Detached house (4 bedrooms and 2 attics) with garden Premium Practice, and House £1 000 Plenty of scope

MIDDLESEX —(45) PARTNER required in very old-established and lucrative practice over £4 500 per annum in industrial district. Panel 1 000 Small house (4 bedrooms) Rent £52 Premium one-third share two years purchase

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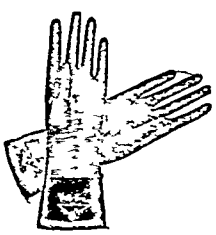
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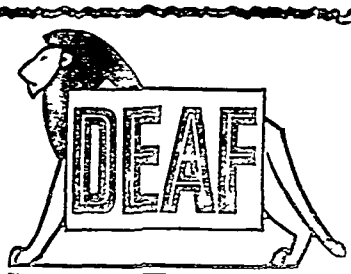
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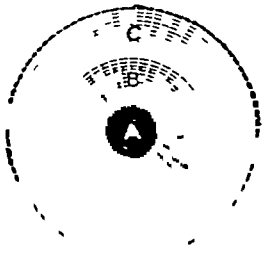
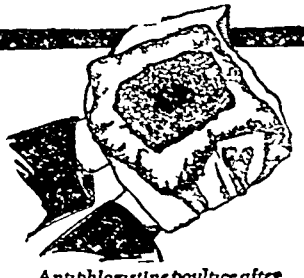


Diagram represents inflamed area. In zone "C" blood is flowing freely through underlying vessels. This forms a current away from the Antiphlogistine whose liquid contents therefore, follow the line of least resistance and enter the circulation through the physical process of endosmosis In zone A" there is stasis no current tending to overcome Antiphlogistine's hygroscopic property The line of least resistance for the liquid exudate is therefore in the direction of the Antiphlogistine. In obedience to the same law exosmosis is going on in this zone, and the excess of moisture is thus accounted for



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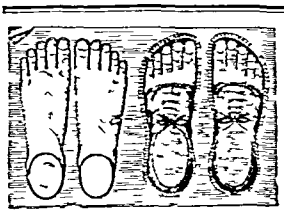
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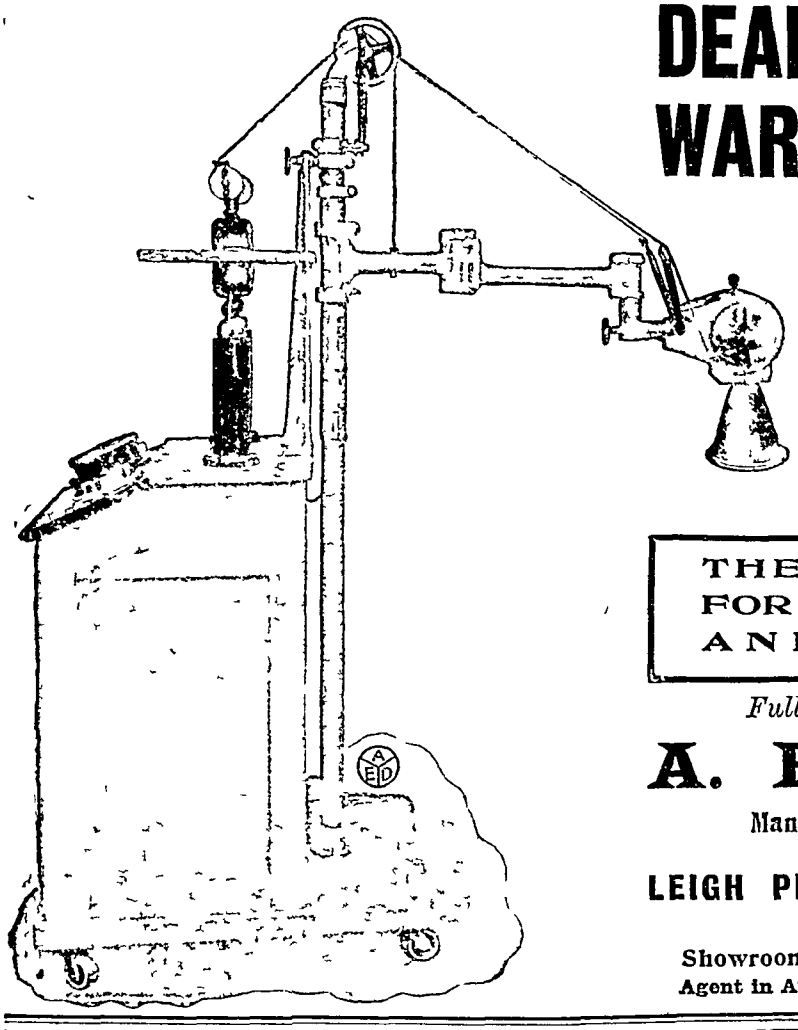
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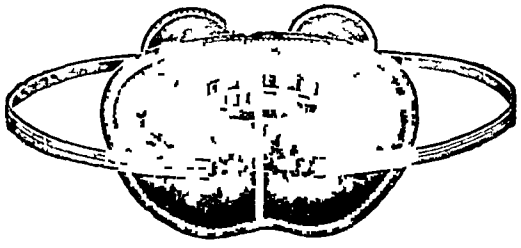
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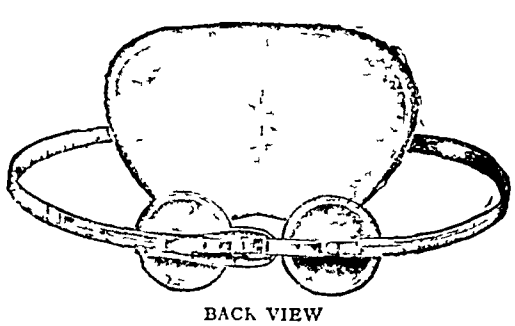
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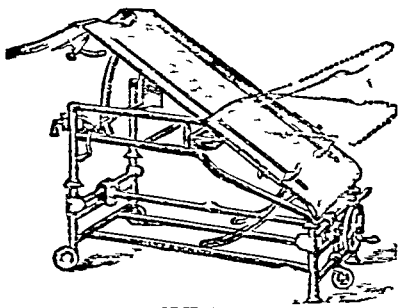
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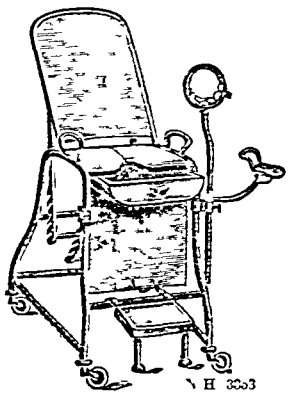
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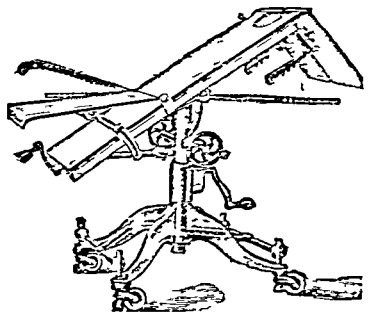
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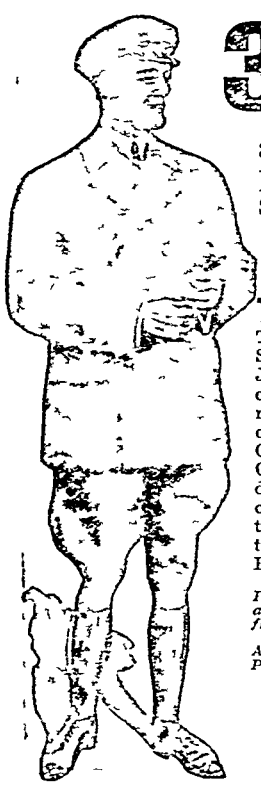


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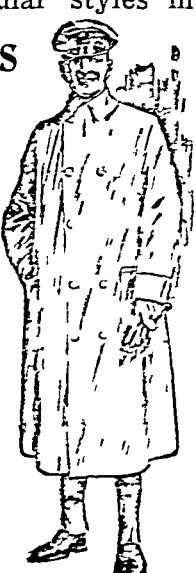
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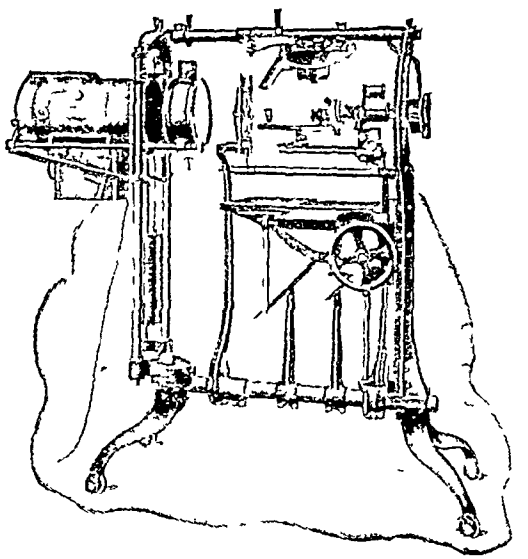
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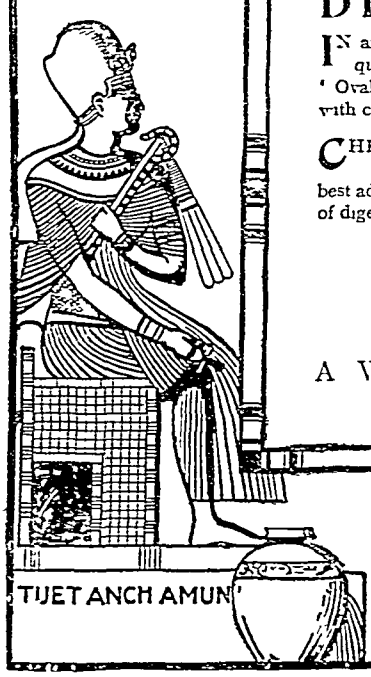
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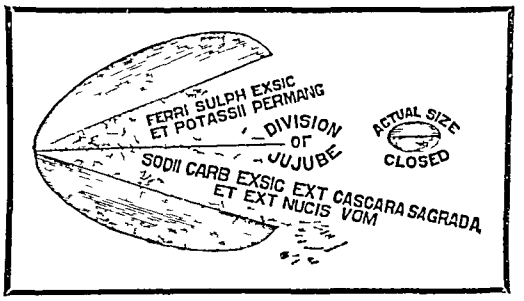
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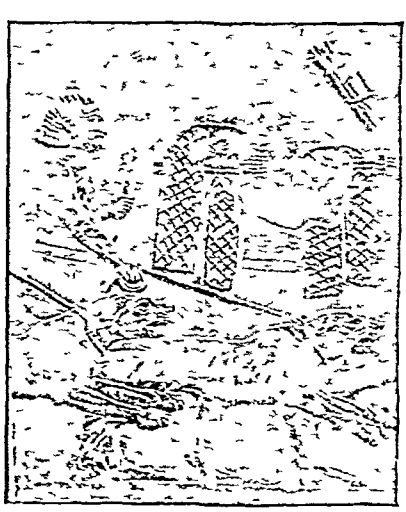
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A Clinical Lecture ON TUBERCULOUS CERVICAL GLANDS.

BY

R. DAVIES COLLEY, C.M.G., M.CH., F.R.C.S.,

SURGEON TO GUY'S HOSPITAL

TUBERCULOSIS of the cervical glands is probably always secondary to infection by pyogenic organisms, and would soon cease to be one of the common affections of childhood if better attention were paid to the treatment of septic adenitis in its early stages. Much has been done in recent years to eliminate oral sepsis by early treatment of affections of the tonsils and teeth, and there can be no question that as a result the number of children now seen with tuberculous glands is very much smaller than it was twenty years ago; but the fact remains that it is still very much greater than it ought to be.

It used to be taught that tubercle bacilli reached the cervical glands by direct passage through the lymphatics from the mucous membrane of the mouth and throat; but it is much more likely that they are carried by the blood stream in almost every case. If a direct spread from the epithelial surfaces were a common mode of infection, associated tuberculous lesions of the tonsils, etc., would be frequent instead of comparatively rare. It is fairly safe to say that in a crowded community like London every child has at one period or another tubercle bacilli circulating in its blood stream, which only need the chance coincidence of an area of tissue suitably damaged, either by trauma or sepsis, to enable them to settle down and develop a tuberculoma. Just such an opportunity is provided by the attacks of cervical adenitis so frequent in children, and thus it is hardly an exaggeration to say that every inflamed gland in a child's neck is a potential focus of tuberculous disease.

Anatomy of the Cervical Lymphatics

It is, therefore, of the greatest importance to have an accurate knowledge of the paths of lymphatic drainage about the head and neck in order that simple infections of the glands may be traced to their source at an early stage and arrested by suitable treatment before they become dangerous; for it is in the chronic infections that the danger of tubercle arises.

The cervical glands are arranged in two main sets—a superficial and a deep—separated from one another by the deep fascia. The superficial set consists of three distinct groups—a suprahyoid group beneath the symphysis of the lower jaw, a submaxillary group beneath the body of the mandible, and a somewhat scattered collection along the course of the external jugular vein situated for the most part between the edges of the sterno-mastoid and the trapezius muscles. Of these groups the first two are concerned in the drainage of the buccal cavity, the teeth, tongue, lips, and face, while the third receives the lymphatics from the scalp, external ear, and the skin of the neck. The deep set of glands is situated along the course of the internal jugular vein in the anterior triangle of the neck and drains the tonsils, naso-pharynx, pharynx, larynx, trachea, and oesophagus. It also receives communications from the superficial group and probably a few vessels pass directly to it from the sources normally drained by the superficial glands.

If this very definite grouping of the glands be remembered it should not be difficult to locate in every case the cause of a septic enlargement. In my experience among hospital out-patients the commonest sources of infection in order of frequency are (1) the tonsils, (2) the scalp and external ear, and (3) the teeth. The one most frequently overlooked is the scalp, perhaps because it is not sufficiently recognized that the presence of pediculi is quite enough to cause enlargement of the glands without any obvious cutaneous lesion.

It is unnecessary to go into details of the treatment of these infections, which is simple enough as a rule, and I would only emphasize again the importance of dealing with them properly and with energy. It is, of course, possible to be too energetic, and the wholesale sacrifice of tonsils which is practised by many at the present time is, I think, an instance of quite unnecessary and probably harmful thoroughness. Hyperplasia of the lymphoid tissue in the mouth is a normal process in childhood and undoubtedly serves a purpose, though it may not yet be understood exactly what this purpose is, and the still recent discoveries of the value of the secretions of the various ductless glands should warn us against labelling a superfluous any organ the precise function of which is not known. Doctors, and I am afraid particularly the medical officers of schools, are apt to overlook this fact, and it cannot be too strongly urged that to condemn tonsils on the strength of one or two attacks of acute tonsillitis with temporary swelling of the gland is entirely unjustifiable and reprehensible. As far as the glands are concerned the tonsils should only be removed if the glandular enlargement persists between the attacks of tonsillitis and after less radical measures or treatment have been given a thorough trial and have proved unavailing.

Diagnosis

The diagnosis of tuberculous glands is fortunately, as a rule, a simple matter. Tuberculosis is the only common cause of persistent enlargement of the cervical glands in the absence of a definite focus of infection. Simple adenitis quickly subsides after removal of the source of infection, and I have not found it in any child on whom I have operated with a previous diagnosis of tuberculous glands. Glandular enlargement from Hodgkin's disease and other general lymphatic diseases is generally easily distinguished by the multiplicity of the glands affected, and in any case, if there be a doubt the question can be settled without difficulty by removing a superficial gland for histological examination.

Clinically the cases fall into three groups or stages of infection, and from the point of view of treatment it is convenient to consider these three groups separately.

1. In the first or early stage the glands are discrete and can easily be counted; the muscles and skin are not infiltrated, though even from the first the glands may be adherent to one another and their mobility impaired. The earliest to be affected are almost always the glands in the upper part of the neck; but as time goes on the infection tends to spread downwards until a chain of nodules may be felt extending from the base of the skull to the clavicle. As a rule they are firm in consistence, though if they have been for long as large as a filbert nut there will almost certainly be central caseation in some of them and softening may be apparent, but if so the pus is confined within the capsule of the glands and has not spread to the connective tissue around them. Sometimes they remain for a long while in a state of latency, but there is generally a tendency to periodic outbursts of activity in which they swell up and become painful. Each succeeding exacerbation leaves them a little larger than they were before, and there is always a danger that during one of these attacks a cervical abscess may form.

2. In the second stage the stage of abscess the suppuration has involved the neighbouring connective tissue, especially the sterno-mastoid muscle and the subcutaneous tissue over it, in which collections of pus have formed. The glands near the abscess are no longer palpable as distinct entities, but are matted together in an indefinite mass which is fixed to the structures round it and is often extremely tender.

3. In the third stage, which follows quickly upon the second, the abscess has burst through the skin, leaving one or more discharging sinuses. The persistence or not of this stage depends upon whether the gland or glands from which the abscess started have been able completely to discharge their contents into it. If no persistent sinuses will follow with the gradual development of contracting and disfiguring scar, and in some cases a spreading tuberculous infection of the skin.

Treatment of First Stage

There are, practically speaking, two methods of dealing with tuberculous glands—operative and non-operative. The first aims at complete removal of the infected tissue

This lecture was delivered some two years ago and I publish it now because there seem to be a growing tendency to regard tuberculous glands as a medical rather than a surgical disease—that is, one not calling for treatment by operation, a view which I consider to be wrong and likely to become dangerous if widely taught and acted upon.

by excision, while the object of the second is so to raise the patient's resistance that he is able to deal with the infection himself—in other words, to promote a natural cure. I have said that there is a tendency at the present time to teach that the non-operative method gives better results than the operative. I am entirely in disagreement with this view, and my main purpose in this lecture is to endeavour to establish the case for early excision. There are four main considerations by which we may compare the two methods:

1. The completeness of the cure achieved.
2. The length of time needed for the treatment.
3. The dangers resulting from it.
4. The accessibility of the treatment to individual cases.

1. A complete cure is claimed by the advocates of both methods, but I must confess that I find it hard to believe that tuberculous foci are destroyed by expectant treatment as completely as is generally taught. I so frequently see patients who have had "glands" in childhood which have lit up again in after life that I think it is much more probable that though the obvious enlargement of the glands may subside the tubercles are merely reduced to a state of quiescence, and that for a very long while after this apparent cure the bacilli remain alive and ready to recrudesce if given a favourable opportunity. After all, this is only what we see constantly happening with tuberculous foci in other situations, and it is unlikely that in the cervical glands the life of tubercle bacilli is shorter than elsewhere. The advocates of expectant treatment, it seems to me, draw too sweeping conclusions from the effects of non-operative treatment of tuberculosis of the spine and joints and the bad results which operative surgery has given in both these situations in the past. But here, surely, the conditions are not in the least comparable, for in spinal tubercle excision of the diseased tissue is from the nature of things impossible, and surgery is limited to the evacuation of pus and to the immobilization of the spinal joints, while in the case of tuberculous joints any attempt at excision is of necessity bound to upset their delicate mechanism and to result in a fixed or in unstable limb, and I have no doubt that if a radical operation could be devised which held out a hope of a good functional result the tedious process of waiting for a natural cure would very soon become a thing of the past. With early tuberculous glands in the neck the case is entirely different. A complete excision of all infected tissue can be made without interference with function and brings with it a sense of security in the knowledge that no tubercles are left to infect other glands in the neighbourhood.

2. The length of the treatment is perhaps not of such vital importance as *the completeness of the cure*, and no doubt for this reason little point is usually made of it. It is, however, of considerable importance, because, apart from the tedium and necessary expense of a long course of treatment, it must be remembered that the age at which tuberculous glands are most prevalent is also the age at which education should be taking a prominent part in a child's life, and any interference with the normal order of things is found to hamper educational facilities. Besides, removal of a child for a long period from its family is not as a rule desirable either for the child or for its parents. In older subjects the interference with their work makes time of still greater importance. There can be no question as to which of the two methods of treatment requires the longer time for its completion. Expectant treatment, if it is to have any chance of success, must be continued for many months or even years, while after excision a few weeks' convalescence by the sea are usually enough to restore complete health.

3. The dangers of expectant treatment are those which must inevitably arise from the constant presence of a tuberculous focus in any part of the body—that is, local spread *of infection and suppuration and the involvement of* distant organs and general tuberculosis. It is true that as long as the tuberculous process is in a state of quiescence—and the object of expectant treatment is to keep it so—the danger of complications is small, but with glandular tubercle [illegible] to semi-quiescence, however careful the [illegible] are that is quite sufficient to rouse the bacilli to a burst of activity, and it is quite impossible to avoid trivial ailments of this sort, no matter what precautions are taken. It stands to reason, therefore, that the longer the primary focus remains the greater is the risk of one of these complications developing. Fortunately, both metastasis and general dissemination are rare with tuberculous glands, but that is no excuse for ignoring them. Local spread of infection and suppuration may not in themselves be so dangerous, but there can be no question that they immeasurably increase the difficulties of treatment and sometimes make a complete cure impossible. Gland to gland extension is not altogether without serious consequences, for when the lower cervical glands are reached it is but a short step from them to those in the mediastinum, and I know of at least two instances of direct involvement of the apex of the lung by tuberculous glands in the posterior triangle. The unpleasant results of suppuration are known to all and need no detailed description.

Apart from the natural antipathy which the general public has to any form of cutting operation, a feeling which is easily understood but is for the most part purely sentimental and unreasoning, there are three obvious disadvantages to operative treatment—the risk of the anæsthetic, the resulting scar, and the possibility of injury to important nerves.

The danger from the anæsthetic is so small nowadays that I think it may be disregarded, whilst in an early case the scar left by the operation, if the incision has been carefully placed, is usually almost invisible after a very short time, and in the hands of a competent operator injury to important nerves should be out of the question. So I think it may justly be claimed that the risks from the operation are trivial when compared with those of waiting for a natural cure.

One other objection I have heard raised to operation is that excision of glands in the neck is useless because in tuberculous cases those in the mediastinum are always likely to be involved as well, and as these cannot be reached by the surgeon no operation can hope to achieve more than a partial removal of tuberculous tissue. I know of no reason to suppose that there is a particle of truth in this statement. All our experience goes to show that in the early stage only the upper cervical glands are usually tuberculous, and that it is by a gradual downward spread that the lower cervical and the mediastinal glands become infected.

4. Medical treatment, if it is to have any chance of success, must be carried out in ideal surroundings and under strict medical supervision—conditions which are by no means easily obtained in this country except by those who are able to pay highly for them. The vast majority of tuberculous gland cases occur *among the poor in the large towns*, and for these treatment in their homes is useless. Institutions for the treatment of surgical tuberculosis are few in number, and there are so many calls upon their limited accommodation by the more urgent types of tuberculosis that the chances of any but the worst gland cases gaining admission to them are small. The average surgical convalescent *home is not* suitable for cases of tuberculous glands, because the medical supervision at them is not sufficiently strict, and I can remember many instances of having to open cervical abscesses in children who had been sent to convalescent homes in the hope that their glands would clear up under the influence of fresh air and sunshine. Convalescent homes, too, owing to the demand on their beds, are rarely able to keep gland cases long enough to do any lasting good. So that while it is not a difficult matter for the well-to-do to obtain surroundings favourable to *medical treatment, for the poor it is only possible in a* very small percentage of the total cases. On the other hand, accommodation in hospitals is easily found for children requiring operations, and after excision of tuberculous glands they can safely be sent to any convalescent home without fear of untoward complications developing.

The foregoing considerations apply particularly to those cases in which only a small group of glands is tuberculous, and I think it must be admitted that for them on every count the case for operation is a stronger one than that for expectant treatment, and that operation should therefore be regarded as the method of choice. Exceptions are,

perhaps be made in the case of the well to-do with whom the risks of waiting are relatively small but even with them the length of time taken by expectant treatment is so great that operation is preferable

When the involvement of glands is widespread and the disease has reached the lower members of the cervical chain, the question of treatment is harder to decide, because the golden opportunity for excision has passed, and not only are the operation risks, especially that of injury to the spinal accessory nerve increased, but also the resulting scar is apt to be large and unsightly In cases of this sort unless there is some special reason for hurry, medical treatment should be given an extended trial, in the hope that even if not completely cured the glands may be so much reduced that a subsequent operation for their removal may be a relatively easy and safe procedure But it must be clearly understood that extensive involvement of glands is a state of things which is easily prevented and only occurs as the result of pursuing the hopeless policy of waiting during the earlier stage, when the disease is localized

I do not propose to discuss in detail the operations for excision of glands Suffice it to say that there are two points which are essential (1) all obviously enlarged glands must be removed and (2) the incisions must be placed in such a way that they will be least noticeable when healed Both of these essentials are readily secured if the case be taken early If it be left until adhesions have formed, the difficulties may be such as to tax all the skill of the most experienced operator

One is sometimes confronted with a case in which softening tuberculous glands are associated with tonsils which obviously require extirpation Now if the tonsils are removed in the hope that the glands will subside there is a very considerable danger that the operation in the mouth may precipitate a state of suppuration in the neck and lead to the formation of a cervical abscess To avoid this unfortunate event it is best in these cases to remove the glands and the tonsils at the same time The double operation has no deleterious effect on the healing of the wound in the neck and the patient is thereby saved *not only* the risk of a cervical abscess, but also the trouble and expense of a second operation

Treatment of the Second Stage

My remarks on the dangers of non-operative treatment during the first stage apply with still greater force when suppuration has occurred It is true that aspiration or repeated aspiration, of tuberculous pus may cause an abscess eventually to dry up but the process is so slow and so uncertain in its result that I *do not think* this method of treatment is justified Operation to my mind is clearly called for and it only remains to consider how extensive an operation is advisable It is obviously best when possible to excise the whole area of diseased tissue and if the abscess is small and the mass of glands is not large or closely adherent to the surrounding structures this can usually be done without much risk But if the abscess is a large one and particularly if there is as is often the case a considerable amount of surrounding cellulitis the risk of injury to important nerves by an attempted excision is so great that it is best not to attempt it The safer course is *to open* the abscess widely and then having thoroughly scraped the walls of the cavity, to search for the opening by which it communicates with the caseating gland This can generally be found and through it the semi-solid caseous material can be removed from within the capsule of the gland by means of a sharp spoon—a most important step for unless the contents of the gland itself are evacuated a discharging sinus is certain to result The wound is then sutured with a small drain at its lower end which is removed after two days by which time any oozing from the abscess wall will have ceased Healing is usually rapid and if only one or two glands are caseous no further operation may be required In any case the cellulitis quickly subsides and any remaining tuberculous glands or infiltrated muscle can be excised if necessary, at a later date

Treatment of the Third Stage

When sinuses have formed and the suppuration has reached a chronic stage, the only satisfactory course is to excise the whole mass of tuberculous tissue and this should be done unless the area of disease is so wide that its excision would leave a gap too large to close But it must be remembered that at this stage the tough adhesions between the glands and the neighbouring structures will have made the operation a very difficult one, which should not be undertaken by anyone who has not had a large experience of cervical surgery If the diseased area is too large for excision it is possible by opening up the sinuses and scraping out the caseous material from the glands to which they lead to get them to heal but to obtain a complete cure this must be followed up by a long course of heliotherapy and, if the skin is involved, *x*-ray treatment

THE DIAGNOSIS OF MALIGNANT DISEASE OF THE LARGE INTESTINE*

BY

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I FEEL encouraged to draw attention to this subject for several reasons first because it is a common condition and secondly because recent advance in methods of diagnosis and treatment have greatly improved our chances of dealing *radically with cancer of the large bowel* Moreover I have been much impressed, during the last few years by the late stage at which these cases come to seek surgical advice That the surgeon does not see these until a late stage—often too late—is generally admitted and the fact is due to one of several reasons—namely that the patient ignores the symptoms caused by the disease, that the symptoms are so slight as not to give rise to any trouble until the disease is advanced or that the symptoms, whether slight or severe have not impressed the practitioner sufficiently to lead him to make a thorough examination of his patient

Mr Wilkie of Edinburgh recently, in an address to the Newcastle upon-Tyne and Northern Counties Medical Society on diagnosis in surgery made the following statement with which I entirely agree

> Diagnosis is the crux of modern surgery and that the latter is now attended with so much success is due in my opinion to the improved diagnosis of the general practitioner much more than to the advance in surgical methods and technique great as these have been One has but to consider the results of the operative treatment of urgent conditions such as perforated ulcers of the stomach and duodenum and acute appendicitis to realize this fact Too many patients whose lives are now saved by prompt operation should bestow their gratitude on the men who made the early diagnosis not on the surgeons whose task was made easy

This is quite in keeping with what occurs in the Royal Victoria Infirmary at the present day, which forms a striking contrast to the time a few years ago when I was house-surgeon when it was common experience that the majority of cases of appendicitis presented themselves with abscess or general peritonitis while now the pathology is nearly always limited to the appendix

The diagnosis of carcinoma of the colon has certainly not kept pace with these cases of abdominal emergency I have no hesitation in saying that the most successful cases of operation for cancer of the large bowel which have come under my care have been sent by a few enthusiastic practitioners who seldom miss an opportunity of making a complete examination, whenever symptoms however slight show themselves

It is to the necessity of early diagnosis I wish to draw special attention and to emphasize the fact that without the co-operation of the practitioner this is impossible and that it is upon him the fate of the patient must largely depend It is for him to say in doubtful cases that further investigation by one or other of the special diagnostic methods is essential to success in treatment

What are the points of greatest importance that assist us in the diagnosis of a carcinoma of the large intestine before laparotomy is performed? If a student be asked this question he will often give the following answer Ahemuth

* An address delivered before the Hartlepool Division of the British Medical Association on January 31 1924

meal and x-ray examination, or a sigmoidoscopic examination, digital examination of the rectum, or abdominal palpation It seldom occurs to him to give an answer that the history of the patient, carefully taken, should come first, and indeed it is often of more value than any other method of diagnosis, and should always have careful consideration Following on this a careful examination of the patient should be made, and next, special efforts of diagnosis, which I will refer to later, may confirm or refute an opinion already suggested

Pathology

The symptoms chiefly depend on the type of growth and the portion of gut involved Cancer occurs in certain portions of the bowel with greater frequency than others My own series of cases support the statistics of others They consist of 84 cases of malignant disease of the large intestine Of these, 42 occurred in the rectum and 42 in other parts of the large intestine Of the 42 cases other than the rectum, 21 (50 per cent) occurred in the pelvic colon, 11 in the ascending colon, 4 in the splenic flexure, 3 in the descending colon, 2 in the transverse colon, and 1 in the cæcum

It will be seen, therefore, that cancer has a special affinity for certain sites, the rectum and pelvic colon being positions in which it is most commonly found, and though statistics vary considerably they are all agreed upon this point

Symptoms

Intestinal obstruction—acute, subacute, or chronic—the discovery of a tumour, or bleeding from the bowel, are the chief indications of intestinal cancer Whatever portion of the large intestine may be affected the symptoms resulting from obstruction are as a rule the first complained of, but in some cases obstruction never develops at all, so that we may divide the cases into three different groups, according to the symptoms these patients complain of when they first seek advice (1) Those who complain of acute intestinal obstruction (2) those who have subacute or chronic intestinal obstruction, and (3) those who have had no obstruction at all

Of 42 of my cases 8 were in the first group, 21 in the second group, and 6 in the third group In the remaining 7 cases the history was not sufficiently definite to classify them

In the early stages it is not necessarily pain, but rather the discomfort of an increasing constipation, necessitating the use of purgatives, of which these patients complain An aphorism always impressed upon us as students by Professor Rutherford Morison was "Increasing constipation of recent origin in an elderly person, only overcome by purgatives, suggests malignant disease of the colon," and this complaint demands thorough investigation if the patient is to have a fair chance

Attacks of diarrhœa apparently without cause, when chronic colitis may be suggested as the diagnosis, may also be an early symptom of obstruction in these cases Later on, as the obstruction increases borborygmi can be heard, and may be so loud as to be noticed by people anywhere in the room It is unfortunately a fact that people afflicted with these symptoms and without pain, very often fail to seek medical advice As the growth gradually occludes the bowel the sense of discomfort increases and may be associated with alternating diarrhœa and constipation Sir Berkeley Moynihan remarked as follows

> It is a remarkable feature in cases of carcinoma of the colon that the patient is often able to localize the seat of the obstruction He will describe the accumulation of flatus in a certain point of the intestine where the difficulty seems to be and may say also that a rush of escaping fluid and gas is felt to be followed at once by r

I am able from my own experience to verify this, for example I recently operated on a woman aged 71 who complained for nine months of increasing constipation, loud rumblings and wind rolling down the left side to a point in the pelvis Invariably her sense of discomfort was complained of in the same area At operation she was found to have a constricting carcinoma in the middle of the pelvic colon

If a case of intestinal obstruction is familiar to you It is due to the contraction of the intestine above the seat of the [illegible] spasm of circular involuntary muscle, is cramp-like in character The pain of obstruction may occur at any time and has not always relation to the taking of food It may be only when obstruction is almost complete that pain is complained of, for as long as flatus is passed the patient can live under fairly comfortable conditions It is interesting that out of 21 cases of malignant disease of the pelvic colon, 18 gave a history of pain like that resulting from intestinal obstruction as the first symptom This could be expected, as the type of growth which occurs in this region is nearly always of the constricting variety

Often sudden obstruction is due to the impaction of some faecal or foreign matter in the rapidly constricting growth, and the sufferer may obtain instantaneous relief from an enema If left untreated, the whole colon above the stricture dilates and the greatest tension occurs in the cæcum, which may result in gangrene occurring in patches, liable to rupture, and cause fatal peritonitis

Carcinoma occurring in the ascending colon frequently gives rise to attacks of diarrhœa without pain, and may not cause obstruction at all until very advanced It is in such cases that the patient becomes anæmic, and often to such a degree that he is thought to be suffering from pernicious anæmia until the true nature of the condition is brought to light by the discovery of a palpable tumour

Hæmorrhage as a result of a carcinoma of the colon is unusual and is more common in connexion with growths situated in the rectum, but it may occur as the first symptom in the case of cancer of the colon, and is often a godsend to the patient, as it may herald the discovery of the growth at its early stage, because the sudden loss of a quantity of bright blood is a symptom which cannot but alarm the patient and cause him to seek medical advice at once

> A few years ago I saw a man, aged 38 who complained that for six months he had passed large quantities of bright blood by the rectum, but hæmorrhage occurred apart from stool and was at times accompanied by some abdominal pain After sigmoidoscopic examination was made and nothing was seen, with the aid of an anal speculum it was found that he had several small vascular hæmorrhoids, which I regarded as the cause of the hæmorrhage and performed the operation of ligature for the cure of the condition The day following I went on holiday abroad and on my return was surprised to hear the following story
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> A week after the operation the patient had had another copious hæmorrhage from the rectum, and this time accompanied by severe abdominal pain Professor Rutherford Morison, who saw him in my absence and during an attack observed that the pain was spasmodic in character, found a tumour in the left side of the abdomen He made the diagnosis of an intussusception due to growth, and operated forthwith His diagnosis was confirmed, the cause of the intussusception being a small movable columnar celled carcinoma in the descending colon This was a lesson never to be forgotten by me, and I hope it may be remembered by all who are here

On the other hand, blood may only be detected on microscopical examination of, or be seen adhering to, the fæces

Although hæmorrhage from cancer of the rectum is a common symptom, it seldom makes its appearance until the disease is far advanced Then the blood is commonly found mixed with liquid fæces It should be borne in mind that bright blood may be passed by patients suffering from cancer of the rectum and its origin be from hæmorrhoids, and not from the new growth, but this must be regarded as exceptional

The history of a case of cancer of the rectum offers a clue of the strongest diagnostic importance The patient will tell you how, on going to the lavatory in the morning, he feels that he is about to have a normal motion, but, instead, the attempt at defæcation results in the passage of flatus accompanied by a little moist bloody fluid having the appearance of beef-tea The relief attained only lasts a short time before his visit to the lavatory has to be repeated, and perhaps many times before he has gained sufficient relief to carry on his day's work

Examination of the Patient

An abdominal tumour, which is palpable in the case of cancer of the colon, is not always the primary focus Occasionally a case presents itself with the primary growth in the pelvic colon and in a position that is not palpable, while a tumour is felt in the right side of the abdomen, which is a secondary deposit in the liver Another abdominal tumour, other than the primary focus, may be felt in

the left iliac fossa, which is really a hypertrophied iliac colon or a bowel laden with faecal matter due to the obstruction of a growth in the upper rectum or pelvic colon. Again a tumour palpable in a case of colon growth, and, indeed often visible, may be the distended caecum due to obstruction lower down. Here the caecum is resonant on percussion and often mobile from side to side. It varies in size and consistency. Tenderness of it suggests inflammation or ulceration and demands immediate treatment.

Growths of the colon are much more frequently palpable when cancer occurs on the right half of the colon than on the left, and this is explained in several ways. In the first place the character of growths found in the caecum and ascending and transverse colon differ from those on the left side, as they are larger and often of the cauliflower type while those on the left side as has previously been stated form a tumour seldom larger than a walnut and present the appearance of a string tied tightly round the peritoneal coat of the gut (the signet-ring type). It must also be remembered that the splenic flexure and its adjacent portions of the bowel lie well under the costal margin whilst the opposite flexure (the hepatic) in the right side is at the costal margin and is not tucked away under it.

Again, the pelvic colon lies normally in the pelvis and when the seat of malignant disease, frequently becomes fixed in the recto-vesical pouch or, in the female adheres commonly to the pelvic genital organs. I should like to illustrate this from my own series of cases. If a vertical line be drawn through the middle of the transverse colon bisecting the large intestine it will be seen that of the 35 growths 10 occurred in the right half of the colon of which 9 were palpable, and 25 on the left side, of which 5 only were palpable.

RECTAL EXAMINATION

A rectal examination is an important part of the examination of every abdominal case. It is told of the late Mr Jordan Lloyd that, anxious to impress on his students the importance of making a rectal examination he used to say: 'Gentlemen, if you do not put your finger in, you will put your foot in it.'

Often a growth in the upper part of the rectum can only be felt through the mucous membrane the palpable mass being obscured by a Heuston's fold, or a growth situated in the pelvic colon may come to lie in the pelvis on or adherent to the front of the rectum and be palpable through the bowel wall. In such cases occurring in women additional help may be got from vaginal examination. If the statement has been made by another observer that he has felt a growth in the rectum, and you fail, on examination, to corroborate his findings, it will be well not to dispute the point until after a complete examination has been made.

I recollect the case of a middle-aged man admitted to hospital who for some months had been subject to attacks of abdominal rumblings and rectal tenesmus. His doctor, who saw him during an attack, felt a growth in the ampulla of the rectum. On admission to hospital the patient appeared to be well and free from symptoms. Rectal examination was negative. After an enema the rectum was again examined, and a constricting carcinoma easily palpable, was felt low down in the rectum. The condition of affairs turned out to be a growth originating in the pelvic colon which was the cause of a chronic intussusception prolapsed into the rectum.

There is no part of the large intestine in which malignant disease is so difficult to get hold of in the early stages as the rectum, for there may be no symptoms until the patient has a large palpable liver full of growth. This is frequently the case when the primary growth occurs in the ampulla of the rectum and when a large mass encircles the lumen of the gut without giving rise to obstruction, and local and general spread of the disease has rendered a radical operation hopeless.

A patient, the subject of cancer of the rectum although at best unfortunate, is less so when the neoplasm occurs in the upper part of the rectum, because the character of the growth simulates that found in the pelvic colon and obstruction occurs early, driving him to seek surgical advice before dissemination has commenced. Bearing on this point I should like to quote the following case:

A man aged 56 consulted me for bleeding from the rectum when the bowels were moved which he stated he had noticed for three weeks. The blood was in small quantities and he was under the impression it was the result of piles. A week later he began to have diarrhoea which persisted for three days during which time he complained of tenesmus with the passage of flatus. He looked in good health his appetite was good and he had lost no weight nor had he suffered the slightest pain. On examination in the lower part of the rectal ampulla and within easy reach of the finger was a large hard craggy mass adherent to the anterior rectal wall. It was so fixed that it offered no hope of resection and this opinion was also given by a celebrated rectal specialist in London whom he also consulted.

This history, with the condition found occurring in the case of a highly intelligent man, demonstrates the difficulty in getting a case at the early stage, for the reason that the disease may be, and often is, practically symptomless in the operable stage.

Glands in the neck may be found in the left posterior triangle secondary to any abdominal viscus—most commonly the stomach—and rarely in the case of the colon or rectum. They should, however, be looked for and, if present are found at the posterior border of the left sterno-mastoid in the region of the thoracic duct. Secondary tumours in bone are also rare clinically, although I once saw, in consultation, a woman from whom a surgeon had removed the rectum by Kraske's method, three years previously. She appeared to be well, and showed no signs of local or abdominal recurrence, but complained of pain in two small nodules adherent to the vault of the skull over the parietal bones. A small portion of growth was removed under local anaesthesia for microscopical examination. The report was returned: "This is a columnar-celled carcinoma containing spicules of bone."

DIFFERENTIAL DIAGNOSIS

Attention has been drawn to the resemblance between appendicitis and malignant disease of the right side of the colon, cases being reported by Rutherford Morison,[2] Grey Turner[4] and others. Turner states that:

> A growth in the caecum may be associated with attacks like appendicitis. These attacks may be due to obstruction or to inflammation in the pelvic parts around and this may go on to the formation of an abscess which may exactly simulate one due to appendicitis.

The following is an illustrative example:

> A man aged 27 came under my notice who gave a history that for several months he had not felt well, was unable to take his food as usual and was constipated. Ten days before admission to hospital he complained of aching pain in his right lower abdomen but not serious enough to prevent him carrying out his work as a labourer. Three days before admission the pain became worse, was paroxysmal and was felt across the bowel, and he was unable to take food. He stated that he had had a similar attack six months previously which had passed off.
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> On admission to hospital there was a large tender mass in the right iliac fossa. The case was thought to be one of appendicitis associated with local suppuration or tuberculous disease of the caecum.
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> Operation revealed a large growth involving the caecum and ileum with a mass of malignant glands at the ileo-caecal angle. The lower few inches of ileum together with the caecum and a portion of the ascending colon and glands were removed, and the condition proved to be a round-celled carcinoma—a rare type of growth and usually followed by a fatal result from dissemination within a year.
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> The patient made a good recovery from the operation but died six months later at home from abdominal recurrence.

It is when cancer attacks the posterior wall of the caecum or ascending colon, that early perforation with fixation and suppuration closely simulates subacute appendicitis. One is always suspicious of a fixed right-sided tender mass, and if with comparatively slow onset in a patient over 40 years of age and preparation prior to operation should always be made for complete excision of the right half of the colon in case the condition should turn out to be carcinoma without any gross suppuration. This is a type of case that when admitted to hospital along with other emergencies is apt to be diagnosed hastily and operated upon without due care and preparation.

Another mass occurring in the region of the caecum which may be most difficult to distinguish from cancer is hyperplastic tuberculosis of the caecum and when this disease is suspected tubercle bacilli should always be looked for in the faeces.

As in the body elsewhere, syphilis, too, can so closely simulate cancerous growth of the intestine as to be indistinguishable until microscopic examination or antisyphilitic treatment and time have cleared up the diagnosis In the region of the hepatic flexure inflammatory masses associated with the gall bladder, kidney, and liver have to be excluded, these, as a rule, are to be recognized—that is, whether or not they are in the colon—by palpation of the abdomen under the fluorescent screen after the administration of a barium enema The same method of diagnosis will assist in distinguishing growths of the transverse colon from malignant disease of the stomach, should the history of the case not be straightforward

An intussusception, the result of a growth, may occur in any part of the colon and form a tumour out of proportion to the size of the primary growth, which is as a rule small and polypoid in type

Of the lesions that simulate malignant disease of the left side of the colon we have the condition known as "diverticulitis," which, as you know, is due to multiple small pathological sacculi of the colon—in reality hernie of the mucous membrane through gaps in the muscular coat, the gaps, as a rule, being the openings for blood vessels as they traverse the intestinal wall These small sacculi, usually the size of a pea, are much more commonly found in the pelvic colon, although they occur in other parts of the large intestine they appear to develop more readily, and certainly are more likely to give rise to complications in this area than in other parts of the gut In an old-standing case the mesentery is found to be very much shortened, the gut wall chronically thickened, and the appendices epiploicæ, into which these sacculi frequently open, have become adherent to the gut and surrounding tissue

A sacculus may be compared with a vermiform appendix, inasmuch as there pathological findings in some ways resemble one another Many of the sacculi harbour enteroliths similar to those found in the vermiform appendix, ulceration may occur in these sacculi, resulting in local or general suppuration, and in a pelvic colon with dense hard fibrous walls deficient in active muscular tissue and very much narrowed in the lumen, indeed, so much so in some instances that intestinal obstruction occurs, which is most frequently mistaken for that due to carcinoma of the colon There is another type of case which, though rare, requires mention and serious consideration, as the diagnosis, though not easy, is important The patient, usually of middle age, has not been well for weeks or months, often suffering from indigestion and getting thinner, but with indefinite symptoms An attack of sudden abdominal pain drives him to send for his doctor He vomits, it may be blood or "coffee grounds," and has abdominal pains with rumblings and increased peristalsis He is constipated and belching wind, passing little by the rectum The abdomen is swollen and tender, if not generally, in parts At an early date fluid may be detected in the abdomen, and on rectal examination there is a hard nodular growth to be felt anteriorly (felt per vaginam in the female) This mass, however, is not a primary rectal cancer, but a deposit of growth in the recto-vesical pouch secondary often to a stomach cancer The absence of violent peristalsis, the fact that after rectal examination faeces may almost always be found on the examining finger that some flatus escapes by the rectum the abdominal tenderness, the presence of fluid, the veins all condition of the patient, the fact that the rectum overlying the growth is not ulcerated, make it clear that a diffuse malignant peritonitis is present that the patient will quickly die, and that any operation will bring no relief but add to his misery and hasten his end

The differential diagnosis rests on the history of the case Of special methods in diagnosis we have two, both most valuable at times supplementary to the ordinary physical examination I refer to the sigmoidoscope and the use of the x rays after the administration of barium meals and

Sigmoidoscopy

[illegible] very valuable in the diagnosis of malignant [illegible] upper rectum and pelvic colon, and I consider [illegible] employed to anything like the extent [illegible] the fact that growths are not only common in these regions but are seldom palpable by the rectum or abdomen It is practically free from risk in skilled hands, and can be carried out without an anæsthetic with little more inconvenience to the patient than a digital examination of the rectum

To ensure a clear view of the lower portion of the intestinal tract the patient should be prepared beforehand with a purgative, followed by an enema, and the necessity for this preparation is made clear when we consider how difficult it may be to obtain a clear view of a growth in a patient the subject of chronic intestinal obstruction, even after repeated enemata following on purgation For all practical purposes the most suitable position is on the left side with the knees drawn up to the chest, with a sand bag to raise the pelvis and the buttocks projecting well over the side of the table

After the instrument is introduced into the rectum it must be passed further along the bowel by sight, for without this precaution it is possible to inflict injury of a serious kind upon the intestine—indeed, perforation and fatal peritonitis have followed its unskilled use As a rule, in a normal case, no difficulty is met with in the passage of the instrument until just beyond the upper end of the pelvic colon the At the entrance of the lower part of the pelvic colon the bowel often appears to end blindly, owing to a sharp anatomical turn about the level of the first sacral vertebra To overcome this apparent cul-de-sac the instrument must be withdrawn for a couple of inches and again advanced in another direction until the valve-like aperture is found— and on no account must any force be used

It may be that a growth seen through the sigmoidoscope is not typical in appearance, and when such is the case a small portion of the tumour should be removed through the instrument with long forceps and submitted to a competent pathologist for microscopical examination This I have found most useful on many occasions in finally settling the exact diagnosis It may be that on account of a suspicious history of malignant disease one is led to make a sigmoidoscopic examination, with the result that instead of a malignant growth one or more simple polypi are seen As these simple tumours are so commonly found in association with cancer one is justified in opening the abdomen to explore the colon for a more serious condition

X-ray Examination

X-ray examination of the colon has made great strides during the last ten years, and it has been the means of altering our views as to the anatomy and physiology, and has assisted us very much in diagnosing the pathological conditions to which the viscus is liable

We are indebted to Cannon of America for many important observations on the peristaltic and antiperistaltic action of the colon, first worked out in the case of animals He showed that the prevailing movement in the right half of the colon was antiperistaltic in character, and that a series of waves conveyed the fluid contents of the bowel back to the cæcum, while the left half of the colon has its prevailing movement in the carrying onward of its contents towards the rectum

In describing movements of the colon Case describes the mass movement seen under the fluorescent screen, which he attributes to Holzknecht as being the first to record it The bowel is seen to lose its haustral marking and the contents are seen to form masses with rounded ends, the mass travelling over a considerable distance at about twice the rate of the peristaltic wave of the stomach When the movement has ceased, the normal haustra make their appearance once more These movements occur about six times duly The movements of the colon are greatly influenced by respiration, and Case has noted that the contents of the colon are difficult to move by palpation of the abdomen, it being impossible to pass the contents of the ascending into the transverse colon

By means of the x rays we have at our disposal two methods of examination—by the barium meal and the barium enema The meal is the method to be employed where the function of the colon is to be thoroughly investigated but where a definite stricture has to be located in the large intestine the enema is the method of choice

The meal, when given by the mouth, may of course be of great value When there is any marked obstruction this barium will show up on the proximal side of the stricture as a thick black shadow with a sharply defined rounded end, and later thin flakes of the metal may be seen escaping through the stricture, the dense black mass remaining for long on the proximal side All barium meals should be verified a second time in order to avoid any fallacy

It is an interesting fact that, however tight a stricture may be as long as the hypertrophic compensation is good on the proximal side and no great obstruction is present at the time the barium is passing along the intestinal tract, the salt will travel to the distal side of the obstruction in an amazing way We must remember that a barium meal is not at any time palatable, and that any one the subject of carcinoma of the colon with obstruction is apt to be sick, and thus render the value of this method of diagnosis not practicable

The method of giving barium by the rectum in the case of malignant stricture of the colon has this advantage over the mouth method—that it may be done much more quickly, and that long and frequent examinations are not necessary It has for long been known that enemata given by the rectum will travel the whole length of the large gut to the caecum and that on introducing a solution of barium sulphate into the rectum by the tube and funnel it will travel to the caecum within a few minutes To enable this procedure to work satisfactorily the colon must be empty The patient is laid flat on the back there being no need to adopt the knee-elbow position In the case of obstruction to any marked degree the salt will be arrested on the distal side of the stricture enabling the site to be distinguished

During the past few years I have had considerable experience in the use of barium enemata as an aid to diagnosis of malignant strictures and although I regard it as a valuable method of examination in the diagnosis of the condition I feel that it is not to be relied on alone

The following case is of interest

A growth was located in the sigmoid the patient was given a bismuth enema and the salt was seen to pass through the growth without delay to the caecum Later at the operation when the growth was removed the lumen was found to be reduced by half

This is a point of great importance showing that a growth producing partial obstruction does not necessarily interfere with the passage of the barium

I recently saw a man aged 58 who had been suffering from diarrhœa and rectal tenesmus for upwards of a year There was occasionally blood in the stool but never bright He was seen by a distinguished radiologist who administered a barium enema The barium solution travelled the whole length of the colon to the caecum and on account of the free passage of the salt along the bowel the radiologist reported that the patient was suffering from colitis whereas on rectal examination the lower edge of a hard craggy carcinoma could be felt adherent to the bladder This was verified by operation shortly after when secondary deposits were found in the liver and he died nine months later from general dissemination of the disease

This case brings out several points

1 How a most advanced cancer of the bowel will allow a barium enema to traverse it

2 That the method of investigating the case was wrong for had the history been obtained and a rectal examination made and if necessary sigmoidoscopy the diagnosis would have been clear

3 Pathologists should not make a diagnosis on their findings alone

It would be difficult to exaggerate the value of palpating the barium-filled colon under the x-ray screen in the diagnosis of lesions of the large intestine The colon stands out in a dense shadow and can be freely moved about the abdomen When an abdominal tumour is present its exact relation to the colon can be detected for the visible colon is easily altered in position in relation to the swelling so that it can be ascertained whether or not a tumour has its origin in the large gut The method is useful chiefly in the case of tumours which are in the immediate neighbourhood of the colon such as those of the kidney and pancreas, swellings in the psoas sheath, and for certain retroperitoneal growths

Abdominal palpation, aided by sight, may be of great value, and all practical physicians and surgeons should be familiar with it

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TWO CASES OF RAT-BITE FEVER

BY

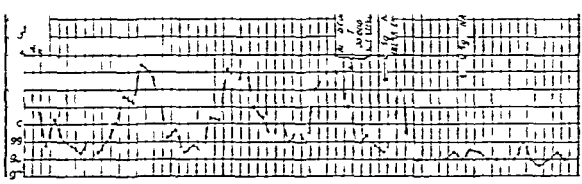
W T COLLIER, *M C*, M D Oxon

HONORARY ASSISTANT PHYSICIAN RADCLIFFE INFIRMARY OXFORD

More than twenty cases of rat-bite fever have now been described in this country alone, and the clinical picture is well established The following cases are recorded because in the first the disease was caused by the bite of a cat and in the second the diagnosis was established by gland puncture during an afebrile period

CASE I

A woman aged 52 was admitted to the hospital in September 1921 Three weeks previously she had been bitten on the back of the hand by a cat The cat lived in a barn and was known to be a rat killer One week before admission the hand became very swollen and was incised by her doctor On admission to the surgical ward there was a granulomatous ulcer on the back of the hand with some cellulitis and enlargement of epitrochlear and



axillary gland The local condition rapidly yielded to treatment but during her stay in hospital she had three bouts of fever each of four to five days duration in which the temperature mounted gradually to 103° F A fourth bout was aborted by an injection of novarsenobillon Each bout of fever was accompanied by an eruption of purplish blotchy non itching spots as well as by headache sore throat and pain in back and limb The blood culture was negative and during the fever there was a polymorph leucocytosis of 30 000 per c mm The spirochaete was not found in the blood but it was not sought by dark ground illumination

I have found three other cases described in the literature of this country in which the disease was not due to the bite of a rat In two cases it followed the bite of ferrets and in the third that of a kitten which had been playing shortly before with the body of a dead rat

CASE II

A farm labourer aged 26 was admitted to the hospital in February 1924 Five weeks previously he had been bitten on the hand by a rat while ferreting The wound healed but a fortnight later became inflamed and was incised by his doctor It then healed rapidly but a week later he developed sore throat with a temperature of 104° F and red blotches all over his body The fever subsided after several days only to recur shortly before admission The temperature was 102 8° and the body was covered with large purplish macules which appeared to be already fading By the following evening the temperature had fallen to normal and there was no subsequent rise above 99° during the remaining ten days of his stay On the third day after the temperature had fallen to normal Dr Gibson punctured the epitrochlear gland with a hypodermic needle and injected a small quantity of sterile saline He then removed a small quantity of gland juice in which he was able by dark ground illumination to demonstrate the presence of spirochaetes Two days later the first injection of novarsenobillon was given

These are the only cases which have occurred in the practice of this hospital since the war As the hospital serves an agricultural area of about twenty miles radius it is possible to form some idea of the frequency of the disease in this country

I have to thank Mr Bevers and Dr Gibson respectively for permission to publish the notes of these two cases

THE NATURAL DURATION OF CANCER

BY

W S LAZARUS-BARLOW, M D, F R C P,

AND

J H LEEMING, M D

(From the Cancer Research Laboratories, the Middlesex Hospital)

In every instance where the value of a method of treatment in disease is under consideration a basis of comparison derived from observations in which no special treatment is applied is necessary Sometimes, as in the case of acute intestinal obstruction and operation, or in that of diabetic coma and insulin, the comparison is sharply defined between life and death within a few hours More frequently the question resolves itself into the less dramatic inquiry whether the given treatment relieves suffering or prolongs life, and periods of weeks or months are involved Further, the matter is of importance for indicating whether the method of treatment is intrinsically sound, and therefore further advantage may be anticipated from increased attention to technique, or is intrinsically unsound and should be abandoned

Such a provision of "controls" as a basis of comparison is of more than normal importance in cancer, where the question of "cure" or complete recovery is particularly uncertain It may be quite impossible to promise cure in any individual case, and yet it may be fully permissible to indicate that, from consideration of a large number of cases, a given line of treatment is associated, on an average, with prolongation of life And if such prolongation of life be accompanied by relief of symptoms, the method by which these two benefits are attained is not merely an advantage as it stands, but calls for additional research in order to magnify those advantages

With a view to providing such controls for researches upon cancer treatment in general, and treatment by radiations in particular, we have analysed the records of the Middlesex Hospital over a period of forty years (1883-1922) and present the results of the inquiry in tabular form

The natural duration of the disease in each case has been taken as that period which elapsed between the date of reputed onset as determined from the patient's history and the date of death Cases in which operation was performed other than palliative (for example, tracheotomy, colostomy) have been excluded, and the same is true with regard to experimental lines of medical treatment (for example, somnin, trypsin, and amylopsin), but it was impossible to exclude purgatives, analgesics, and drugs of like simple character, nor was it considered necessary

In a few instances where the patient had been discharged from hospital at his own request and the actual date of death was not known, a computation was made of the possible survival by careful consideration of the state of the patient on discharge, and lastly, where the reputed onset was unusually long or short, the case was reconsidered, and if there was reasonable cause for doubt was discarded entirely, otherwise it was retained

In many instances where the reputed onset was separated by a long period from the date of admission it appeared probable that a pathological but non-malignant condition passed imperceptibly into malignancy Such cases were found most frequently in the breast and cervix In the breast a lump may have been recognized for many years prior to admission, but occasionally it is expressly noted that at some later date the mass took on increased growth When such a statement was found in the records this later date was regarded as that of the onset of the cancer, otherwise the earlier date was utilized Similarly in the case of the cervix it is often impossible to be certain whether the first symptom noted by the patient is due to changes at the menopause or to cancer Hence it is probable the mean durations given in the table are somewhat overestimated for cancer of the breast and for cancer of the cervix about the menopause Nevertheless it appears certain that some cases of malignant disease last for a very long time In the notes we have examined we have found one case of cancer of the cervix which lasted eighteen years from reputed onset to death, and fourteen of these years were spent in the hospital under constant observation. Another case of malignant disease of the pelvic bones was a patient in the cancer ward for over fifteen years, and many records of the local condition are found in the notes The reputed onset in this case was ten years before admission Both patients were admitted with clinical signs of undoubted cancer, died in the hospital, and autopsies were made In spite of the unusual duration we felt that neither case could be regarded as non-cancerous

Naturally it is desirable that such basic figures should not emanate from the experiences of a single institution, and we have reason to believe that values calculated on identical lines are being prepared by the Cancer Hospital, the Christie Hospital, Manchester, and the Glasgow Royal Cancer Hospital When these have been obtained fairly reliable figures indicating the natural duration of cancer at the principal primary sites should be available for Great Britain

The average durations were calculated for decennial age periods in all cases, but only such figures are given in Table I as are derived from a reasonable number of cases

TABLE I.—*Natural Duration of Cancer at Certain Primary Sites Calculated on Age at Reputed Onset*

Site	Age	Sex	No of Cases	Natural Duration in Months			Percentage of Cases below Mean
				Mean	Maximum	Minimum	
Breast	Under 25	F	1	24 0	—	—	—
	25-34	F	15	36 0	196	3	80 0
	35-44	F	42	32 0	112	6	64 3
	45-54	F	61	39 2	186	2	68 8
	55-64	F	60	40 7	210	3	70 0
	65-74	F	44	44 3	169	11	63 6
	75 and over	F	20	36 1	64	12	50 0
Cervix	Under 25	F	3	13 0	17	6	33 3
	25-34	F	96	18 6	100	6	60 4
	35-44	F	295	21 4	126	3	66 1
	45-54	F	316	21 4	120	3	66 1
	55-64	F	150	22 4	130	6	62 7
	65-74	F	49	24 9	223	4	69 4
	75 and over	F	7	11 3	21	5	57 1
Tongue and mouth	Under 25	M	1	17 0	—	—	—
	25 34	M	7	9 1	16	3	42 9
	35-44	M	33	15 8	52	4	63 6
	45-54	M	70	16 9	54	3	61 4
	55-64	M	74	15 8	75	4	68 9
	65-74	M	33	15 5	60	3	69 7
	75 and over	M	7	16 3	37	3	57 1
Rectum	Under 25	M	3	9 0	12	3	33 3
	25-34	M	10	14 5	35	4	60 0
	35-44	M	19	22 6	69	6	68 4
	45-54	M	39	20 1	54	4	64 4
	55-64	M	59	21 2	86	4	67 8
	65-74	M	38	25 2	56	4	68 4
	75 and over	M	4	24 0	38	6	50 0
Rectum	Under 25	F	1	16 0	—	—	—
	25-34	F	14	29 9	122	3	78 6
	35 44	F	19	16 7	34	3	52 6
	45-54	F	47	26 3	67	4	63 8
	55-64	F	62	26 8	73	7	54 8
	65-74	F	22	26 4	63	6	59 1
	75 and over	F	8	32 0	109	10	62 5

When figures from the additional sources mentioned above have been obtained it may be possible to separate other primary sites on a decennial basis For the present such averages as are derived from a small number of observations are given (Table II) as general means and only divided into males and females

It is obvious that no detailed examination of the results is called for, but two facts seem to emerge (1) that the earlier the age of onset the shorter the total duration of the untreated disease, and (2) that the natural duration of cancer at one and the same primary site is longer in the female than in the male

In the case of cervix, breast, rectum (male and female), and tongue and mouth (male), where sufficiently large numbers were available, the cases were divided into two equal periods of twenty years—namely, 1883 to 1902 and 1903 to 1922—in order to determine whether the natural duration of the disease had undergone a change during later years The differences were as follows for breast, rectum

TABLE II.—*Mean Natural Duration of Cancer at Various Primary Sites*

Site	Sex	No. of Cases	Natural Duration in Months			Percentage of Cases below Mean
			Mean	Maximum	Minimum	
Lip	M	19	18.3	42	7	63.2
Tongue and mouth	M	225	15.9	75	3	65.8
Tongue and mouth	F	18	17.4	37	6	66.7
Cheek	M.	29	13.4	27	3	48.3
Cheek	F	7	12.0	31	6	57.1
Pharynx	M	32	11.8	25	3	65.7
Pharynx	F	6	15.8	34	7	50.0
Larynx	M	44	14.0	40	3	56.8
Larynx	F	11	14.0	37	7	70.0
Tonsil	23 M. 2 F.	25	14.2	42	3	48.0
Neck	M	35	9.4	37	3	51.4
Neck	F	7	13.0	25	3	42.0
Parotid	1 M. 3 F.	4	14.5	19	11	50.0
Thyroid	3 M. 2 F.	5	8.6	13	3	50.0
Oesophagus	M	63	12.1	51	2	66.1
Oesophagus	F	11	19.4	50	2	36.4
Stomach	M	61	16.5	60	3	65.6
Stomach	F	38	17.2	50	3	58.9
Colon	M	35	15.0	51	2	53.3
Colon	F	49	19.2	65	2	59.1
Rectum	M	172	20.4	85	3	61.6
Rectum	F	173	25.9	122	3	39.9
Peritoneum	1 M. 7 F.	8	19.4	53	4	62.5
Prostate	M	17	15.4	46	6	66.6
Penis	M	8	21.4	52	10	57.1
Testicle	M	3	25.0	37	5	33.3
Scrotum	M	3	23.0	29	15	33.3
Cervix	F	915	21.3	125	3	60.6
Corpus uteri	F	28	24.2	83	5	42.9
Ovary	F	22	15.1	33	3	57.1
Vagina and vulva	F	57	22.1	131	5	72.7
Bladder	M.	22	26.9	101	2	71.4
Bladder	F	18	15.2	44	4	50.5
Kidney	8 M. 9 F.	17	15.1	51	3	63.2
Liver and gall bladder	M	7	15.0	25	7	60.0
Liver and gall bladder	F	23	10.8	44	2	54.5
Pancreas	5 M. 8 F.	13	11.2	35	3	69.2
Breast	F	243	38.4	210	2	59.3
Skin	11 M. 9 F.	20	19.4	39	2	60.0
Bones—short	33 M. 20 F.	53	22.5	311	2	71.7
Bones—long	10 M. 5 F.	15	14.1	27	2	40.6
Muscle (sarcoma)	2 M. 1 F.	3	14.0	35	8	66.6

(male) and rectum (female) the mean duration was 9 to 13 per cent. *greater* during the second period than during the first; for tongue and cervix 1 to 5 per cent. *less*.

One final observation is necessary. The value in Table I. are computed from the ages at reputed onset of the disease. Obviously, if this date were accurately known the values would be absolute. But, since it is an uncertain factor, it must of necessity be reflected in the natural duration. At primary sites, where cancer normally runs a rapid course, probably little difference obtains whether age at reputed onset or age at admission to hospital is employed. But in the breast, where many cases last a long time, such is not the case. For this organ the same series of 243 cases was compared under the two methods. The values obtained were as follows:

Age	25-34	35-44	45-54	55-64	65-74	75
At reputed onset ...	30.0	32.0	39.2	49.7	44.3	35.1
At admission	19.2	31.1	32.0	41.2	40.2	40.2

It is seen that, although the tendency of the disease to last longer as it occurs later in life is apparent under both methods of calculation, noteworthy differences obtain in several of the decennial age periods. And since age at admission is relatively of little interest, age at reputed onset has been adopted in all cases.

SPLENECTOMY IN A CASE OF SPORADIC ACHOLURIC JAUNDICE

BY

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In view of the somewhat variable results of splenectomy in acholuric jaundice the following case may be of interest.

A girl aged 18 was admitted to the Manchester Royal Infirmary on November 19th 1923 on account of chronic jaundice and attacks of abdominal pain. She was a healthy child until the age of 4, when jaundice was first noticed. She had been continuously jaundiced for fourteen years though the intensity of the jaundice had varied somewhat from time to time. There was no history of clay-coloured stools or itching of the skin. As long as she could remember she had been subject to attacks of pain in the epigastrium and left hypochondrium. These attacks lasted a few hours at a time were of considerable severity and had become increasingly frequent of late. No history of any similar condition in any relative could be obtained.

The patient, a fairly well nourished girl, was jaundiced with a deep golden yellow colour of the skin and sclerotics. There was considerable enlargement of the spleen below the costal margin and slight enlargement of the liver. Bile was present in the blood serum but not in the urine. The urine was bright pink from the presence of urobilin and the faeces a brick red colour. The absence of obstruction in the bile ducts was confirmed by van den Bergh's reaction (indirect). The fragility of the red corpuscles was increased, haemolysis occurring with N/25 salt solution whereas normal red cells haemolyse with N/35 saline. A blood count before operation showed:

Red corpuscles	3,050,000 per c.mm.
Haemoglobin	52 per cent.
Colour index	0.85
White corpuscles	9,400 per c.mm.
Polymorph	69.6 per cent.
Lymphocyte	21.2
Large mononuclears	7.4
Eosinophiles	1.8

X-ray examination of the gastro-intestinal tract and gall bladder region was negative. The Wassermann reaction was negative.

Operation.

On November 24th 1923 Mr. Morley made a median incision above the umbilicus. The gall bladder and cystic duct were found to be filled with small soft pigment stones but no stones were found in the common bile duct which was not dilated. The spleen which was four times its normal size was not adherent and was easily removed. The gall bladder was opened and the pigment stones removed. A tube was left in the gall bladder for ten days.

After History.

Convalescence was uneventful. A week after the operation the jaundice which had persisted for fourteen years had vanished. A blood count on December 10th (seventeen days after operation) showed that the red corpuscles had risen from 3,056,000 to 5,080,000 per c.mm. and the haemoglobin from 52 to 78 per cent.

At the present time, seven months after the operation, the patient is perfectly well and has remained entirely free from jaundice.

Histological Examination of Spleen.

Dr. G. E. Loveday reported as follows: The section shows no obvious increase in the connective tissue stroma. The most marked feature is the general dilatation and patency of the sinuses. The tissue between the sinuses is infiltrated with blood and the appearance suggests congestion rather than haemorrhage. The red corpuscle cells of the pulp are comparatively scattered. The endothelium of the sinuses shows proliferation. The endothelial cells of the Malpighian bodies are not particularly proliferated and the outline of Malpighian bodies is rather less defined than usual in some instances.

I am indebted to Mr. John Morley, under whose care the patient was admitted, for permission to publish these notes.

British Medical Association.

PROCEEDINGS OF SECTIONS AT THE ANNUAL MEETING, BRADFORD, 1924.

SECTION OF OBSTETRICS AND GYNAECOLOGY.

John S Fairbairn, M B, F R C P, F R C S, President

DISCUSSION ON METHODS OF THE ANTE-NATAL CLINIC AND THEIR APPLICATION TO PRIVATE PRACTICE

OPENING PAPER

BY

J ABERNETHY WILLETT, M A, M D Oxon,
Surgeon with charge of Out-patients, City of London Maternity Hospital

In opening this discussion on ante-natal supervision I propose to take as a basis the methods and results of a year's (1923) practice in the ante-natal department of the City of London Maternity Hospital, and to consider how far they might be applied to private practice The time at my disposal is insufficient to enter into the educational value to the patients, great though this may be, and I shall therefore confine my remarks to the clinical aspect

The ante-natal department was started in 1908, when the hospital was reorganized The work of the department has gradually grown as its value has been more fully recognized by the practitioners and midwives in the neighbourhood and by the patients themselves It will be clear that my personal experience of non-supervised pregnancy is small, and the results of its omission are exemplified by emergency admissions

Routine examination is made of all primigravidae and all multiparae with a history of any abnormality in a past pregnancy or labour The patients never object to examination, and never refuse to return for further examination if and when requested to do so

As regards personnel, Mr A J McNair and I are the responsible officers, but it sometimes happens that the resident medical officer or other substitute may take our place In practically all instances when the likelihood of an obstetrical difficulty is foreseen the patient is referred to one of our senior colleagues, Mr Comyns Berkeley or Mr Holland, for a further opinion

The subject of ante-natal work falls naturally under three headings (1) the aims and objects, (2) the methods by which the aims and objects can be attained, and (3) the results obtained by these methods Further, we can see that there are two definite phases or periods—the first from conception to viability of the foetus, which is concerned with the preservation of the pregnancy and of the health of the mother and the second from viability onwards, when the aim is that of obviating untoward developments during labour

Aims and Objects

I suppose we are all agreed that one of the most striking developments of modern medicine is its change of outlook Many of us as students thought that our chief duty would be to cure the idea of prevention and all that it meant hardly crossed our minds But now—partly, I think as the result of our experiences in the great war, —our outlook is changed and we daily realize what an important part prevention plays in the well-being of the nation *Si monumentum requiris circumspice*

Once we accept this view it behoves us as obstetricians to see that our branch of medicine does not lag behind, in so doing we shall more really approach the ideal that pregnancy and labour should be physiological processes ending in a healthy mother and an undamaged infant Or, to put it in other words, our aim and object during pregnancy and labour must be the elimination of adverse factors, and, should such arise, to ask ourselves—if preventable, why not prevented?

First Phase—From Conception to Viability of Child

I do not propose to enter into detail about the preventive aspects during this phase I have not sufficient material from which to draw conclusions, as by the rules of the City of London Maternity Hospital patients are not seen until the twenty-eighth week unless their condition is really urgent I feel sure that later speakers, especially those in private practice, will be able to tell us what proportion of patients seek their advice during pregnancy, what are the more common ailments, and how best they may be treated

For ante-natal work to be successful during this first phase it is essential that our patients should come to us early—the earlier the better We can only attain this end by educating and explaining to them that our advice is given in their interest If we would only make a point of asking every patient who consults us late in her pregnancy to come early on the next occasion, and again when we cease our attendance after a confinement, I am convinced that our advice would be followed Supposing we are consulted early, we must first of all find out if we are dealing with healthy material before we can proceed in our aim at keeping that material healthy To this end the heart, lungs, and urine must be examined and questions put as to past history In many cases when the medical history of the patient is known to her doctor a full examination may be unnecessary Then a few hints as to personal hygiene should be given, including advice as to limitation of meat, *with the necessary increase of carbohydrate* in the diet and the ingestion of plenty of fluid Next a warning that if anything abnormal happens, such as swelling of the feet and ankles, haemorrhage, or even if trivial discomforts such as constipation arise, the doctor is to be informed at once Arrangements must be made for testing the urine at approximately monthly intervals, and a reminder that care of the breasts and nipples is essential will not go unrewarded at the onset of lactation Equally we should be careful to say nothing which might frighten a patient We all know the power of suggestion, so let us use it in assuring her of the improbability of anything abnormal happening in her case

Of the major complications of early pregnancy reference need only be made to some of the more important

Vomiting—It is stated that about 50 per cent of all pregnant patients suffer to a more or less degree from vomiting My own view is that the cause is functional, and that for the slighter cases attention to diet, exercise, and the ingestion of fluid, accompanied by the suggestion of improvement or cure, suffices For the more severe the discipline and suggestion of nursing home or hospital work works wonders In the absence of physical signs we should be chary of accepting a diagnosis of pernicious vomiting, even with the presence of acetone bodies in the urine, for such are commonly found in the urine of cases of starvation But in using the word "functional" I do not wish to minimize the importance of the complaint Successful early treatment will prevent the development of more serious symptoms

Abortion—It is believed that between 20 and 25 per cent of pregnancies end in miscarriage, but we have no means of knowing what percentage of these is preventable We all know that the amount of invalidism, temporary or permanent, produced by miscarriage is proportionately very high and depends largely upon whether medical advice was sought early or late I see no prospect of improvement until our patients are educated up to two points first, to place themselves under medical care as soon as they know that they are pregnant, and secondly, to regard any haemorrhage, however slight, as an indication for treatment By the first we might hope to prevent the occurrence, and by the second the sequelae, of abortion

Sometimes a general disease quite independent of the pregnancy may be discovered I refer particularly to venereal diseases and tuberculosis

Syphilis—Frequently the secondary symptoms are slight and evanescent, so that the detection of the disease may escape recognition The results of the Thavies Inn Clinic

have shown us that, given adequate treatment, a healthy infant can almost certainly be assured

Gonorrhoea.—At the best of times the treatment of this disease is difficult and unsatisfactory, and the accompanying pregnancy makes it more so. Perhaps others who have had experience of this disease during pregnancy can tell us what are the best methods of treatment to pursue. I can only say that there is a very high mortality and morbidity after labour if the disease has been recently acquired. Our routine practice in all cases of venereal disease is to refer them to the special department of a general hospital.

Tuberculosis.—It is essential that this disease should be considered of urgent importance and the pregnancy second. Treatment will clearly depend upon the social status of the patient.

Morbus Cordis.—Undue breathlessness is the common symptom followed by the usual train as compensation fails. If seen early and treatment commenced at once, these patients do better than is commonly supposed. Mild ambulatory cases are supervised by my medical colleague, Dr. Owen, and the more severe are referred to appropriate hospitals.

Complications of the Second Phase

The total number of patients examined was 2,145, and of these 204 were found to have some abnormality which required treatment or some doubtful point which necessitated further observation.

Albuminuria.—The most frequent abnormality found was albuminuria, which occurred in 57 instances out of a total of 204 patients requiring treatment. At the onset of labour albumin was absent in 39, present in 13, and there is no record in 5. In 4 instances only was in-patient treatment deemed necessary. I do not suggest that all these patients should be classified as pathological, or that they would of necessity deteriorate without treatment, but I am sure it is wise to regard them as potentially dangerous. In no instance did eclampsia develop, but modern opinion tends to the view that in a certain number of these cases the damage to the kidney is permanent and will be revealed in later years.

Pyelitis of pregnancy is a rare disease with us. There was only one instance among these 204 as determined by bacteriological examination. But any patient complaining of pain in the iliac fossae with tenderness in the loin is at once given citrates.

Abnormal Presentations.—There was one shoulder presentation and two face presentations not recognized at ante-natal examination. The mothers were multiparae in whom there was no evidence of contracted pelvis. It seems likely that these presentations developed at the onset of labour, as not infrequently happens, and so would not be recognized by ante-natal examination.

Breech Presentations.—Our experience is that breech presentations occur more commonly than is usually thought. This may be explained by the fact that patients are first seen about the twenty-eighth week; many breech presentations would have converted themselves later on into vertex. The diagnosis may be easy if the physical characteristics of the head can be detected with certainty, but under a thick rigid abdominal wall with the head practically under the costal margin a certain diagnosis may be very difficult. It is in such cases that we may hope for assistance from *x* rays. The earlier that external version is performed, the easier it is. Towards the end of pregnancy an anaesthetic may be necessary, and it is advisable to raise the foot of the bed so as to dislodge the presentation out of the pelvis. It is true, I think, that the greater the difficulty in performing version, the more certain is the correction to persist.

Misfits.—The next group may be classified under the general heading of "misfits," the cardinal sign being the unduly high situation of the foetal head. Of these there were 24 instances. For the most part the patients were of under average physique with the type of pelvis so aptly called "under average"—that is, with no marked diminution in any one diameter. Occipito-posterior position is another common cause of high situation of the head, and is a source of constant worry when associated with an under average pelvis. One realizes that flexion will take place as labour progresses, but will labour start with rupture of the membranes because of the high situation of the head? In these two types the prognosis and treatment must depend on the accuracy in interpretation of physical signs—in other words, examination.

Occipito-posterior Positions.—No treatment is advised if the head is deeply engaged because in this case it is assumed either that the child is small, or, more probably, that the head is already well flexed. If the head is high, *the Burst method* of rotation is employed. I regret that I have not kept records for a sufficiently long period, but my impression is that the rotation forwards usually follows the application of the pads and binder, but that there is no certainty of the rectification persisting. It frequently happens that, a week later, the back will be found posterior again.

Examination of the Pelvis

I need hardly emphasize that examination of the false pelvis is based on the assumption that if the false pelvis is of normal shape and size so also the true will be, and that if the false pelvis is abnormal so also may the true be expected to be. Hence both shape and size are important.

I have found the following an easy and very satisfactory method of estimating the shape. Place the tip of one index finger on the tip of the anterior superior iliac spine and the other on the highest point of the crest. The distance between these two points should not be less than 2½ in., easily measured by the eye. The skin is then stretched along the outer edge of the crest between these two points, the normal curve has its convexity downwards and outwards with the patient on her back. An abnormally shaped pelvis will be detected at once from its failure to reach the above standard in one or both respects. To conclude the examination the pelvic measurement should be taken with callipers. If the callipers have been forgotten or mislaid a sufficiently accurate estimation can be made if the length of one's span is known. By placing one end of the span on one spine the distance of the other end of the span from the opposite spine can be measured or judged. I find that students by employing these methods can give after very little practice a reliable opinion both as to the shape and size of a pelvis.

Estimation of Fit of Head

I must apologize for recalling to your memory such an elementary fact as the shape of the foetal head. It has two extremities, occiput and sinciput, and between these, on its circumference, the parietal eminence. I do not mean to imply that one can always feel these exact spot and I use these terms as referring to these regions. The sinciput is always the more prominent and usually higher up—in fact in a well flexed head it may be the only one to be felt. With regard to the parietal eminence it is clear that it will have to pass behind some part of the pubes and so the relationship of these two bones may be important. To identify these points I use my palm placed flat on the hypogastrium for the parietal and the tips of my fingers pressing in either inguinal region for occiput and sinciput. If the head is deeply engaged the finger-tip must be pressed firmly downwards and backward in the axis of the brim.

To illustrate the importance of noting these facts let us assume that we are examining a primigravida at thirty-seven to thirty-eight weeks in whom the head is barely engaged. Two possibilities will cross one's mind to account for this condition: the pelvis is contracted or the head is too big. Examination of the false pelvis may show it to be slightly under average but not enough to call it definitely contracted. Examination of the head shows that both extremities are easily palpable and about equally prominent and that the parietal is well above and seems about flush with the pubes. The badly flexed head has increased the length of the long diameter of the head which fits badly into an undersized pelvis, but the relation of the parietal to the pubes shows that there is no great disproportion. To make certain the palm of the hand is placed on the parietal and the patient sits up and leans

By this means we have the opportunity of inspecting the room in which the confinement is to take place and seeing if it is suitable, and it is not too late to make suggestions for its improvement if we are not satisfied

I hope that the evidence I have put forward is sufficient to convince you that in the patient's interests there can be no two questions of the value of ante-natal supervision That in itself is enough for us But if we look at it from the lower level of our own personal interests I think we shall come to the same conclusion Much of the unpopularity of midwifery at the present time is due to its uncertainty—we are suspicious of an unpleasant surprise, somewhere sometime, and when the case is successfully over we are correspondingly thankful Our ante-natal work should, and does, remove much of this worry To find at our last examination of a primigravida that the head is deep in the pelvis is a most comforting sign We know that nothing much can go wrong and that there can be no desperate hurry when we are summoned Or we might find an abnormal presentation or the head too high—we have ample time to consider what to do, to seek advice or assistance, and who of us would not rather perform external version or insert bougies at his leisure and with the saving of his nervous system, than deal with the same condition during labour as an obstetrical emergency? But again, none of us is infallible, and so there are bound to be certain oversights, which will disappear as with practice we become more efficient After all, we have been trained to draw deductions from symptoms and physical signs, and that is all that ante-natal work consists of

In conclusion, two points seem to me to follow as a sequence the first is that, if by ante-natal work we can prevent or minimize the complications of pregnancy and labour, there ought to be a fall in the mortality from these causes and if by the same means we can reduce operative interference to a minimum there should be a corresponding fall in septic puerperal mortality and morbidity rate, and the second, that the obstetrician of the future will be of a different type from his ancestor He will not be famous because of his knowledge and skill in dealing with emergencies, but rather by his application of these attributes to their prevention

May I, as opener of this discussion, be permitted to suggest the lines on which it might profitably be continued? In the first place, I hope that all who disagree with the ideals or the methods advocated in this paper will not hesitate to express their reasons for doing so In the second that those who agree with me, and especially those who have practised ante-natal supervision, will give the meeting the benefit of their experience and results, be the latter good or bad, remembering that practical suggestions however small, may be of the greatest help in overcoming the difficulties of others,

I now leave behind me all doubts and debatable points for the sure ground of tradition Annually we meet for the purpose of friendly discussion in the sure hope that by so doing we shall add to that common stock of ideals or of practice, which is our heritage, something to the advancement of our knowledge, and so to the honour of our profession Then shall our time have not been spent in vain

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ANTE-NATAL METHODS IN RURAL PRACTICE

A medical practitioner is not justified in accepting service for a confinement if the size of his practice the state of his health, or his other preoccupations are to be made an excuse for his failure to carry out those measures of ante-natal care attendance during the actual confinement, and post-natal watchfulness which are in accordance with modern knowledge and hospital practice There is no responsibility, out of the many shouldered by the general practitioner in the wide range of his activities, which can compare with the obligation which he assumes in undertaking maternity practice and yet I doubt if any field in the domain of medical science is more lightly considered, whether it be by the medical schools who pass men into the world or general practice to struggle to the realization of their obligations through the disasters of their early years, or by the busy practitioner who, in the hurry and bustle of his harassing life, treats this the most vital part of his work, as a side-show, and often as a nuisance

Graduating in 1906, it was 1915 before I fully realized the importance of the maternity side of my work and came to the conclusion that it engaged for a confinement that confinement must, in view of the responsibilities involved, have a first claim upon my time and my thoughts The practice over which I preside includes a somewhat lowland part of the Scottish Highlands—namely the Easter Ross District It involves an average of 3,700 visits and 2,400 consultations per annum, and this means an average of 11,200 miles travelling Since 1915 my average number of confinements per annum has been 77, and of these 33 per cent were primiparae The practice involves an attendance upon 1,100 insured persons, and the bulk of the work lies over five miles from my home The class of patient is, in the main fisherman, farm labourer, and crofter Many of the people live in one roomed cottages with a closet off, and the majority have not more than two rooms In very few houses are there conveniences of any kind, water being taken in from outside wells or pumps The practice is therefore typically rural with all the difficulties of distance and locomotion which such a practice entails, and the question I have to answer is, Can I singlehanded, give in such a practice the necessary time and care as will satisfy the ideals upon which this paper is based? I unhesitatingly answer in the affirmative not only so but I find that ante-natal care and the knowledge which it gives, not only removes the anxieties of my practice in these cases, but simplifies my procedure, and, in the end makes my actual work less The contention that in general practice there is no time for ante natal care I find baseless, as I have also found the statement that patients resent such attention Nothing in life interests a prospective mother like the preparations in anticipation of her first baby, and the doctor who gives the requisite attention to ensure ultimate success wins a place in her heart which time enlarges I must confess however, that even yet the lay mind is not fully awakened to the importance of ante-natal care, but it is gratifying to feel with the passing of the years, not only a *keener appreciation of its value and an earlier engagement* of my services, but a growing tendency to take it for granted

I shall now come to the actual details of my practice when engaged for a confinement, and shall deal with the subject under two heads—namely (1) ante-natal care, (2) preparations for the actual confinement

When engaged for a confinement I make an early visit to my patient and have a talk with her I go fully into her past health history and make a thorough physical examination of heart lungs and breasts carefully examine her abdomen and make inquiries as to her past menstrual history, and her freedom or otherwise from vaginal discharge If I have previously delivered her much time is saved as I have full notes, and my only duty will be to remind her of points previously explained, emphasizing any important factor to which her past history compelled attention At this interview I calculate the probable date of confinement arrange about a nurse and draw the patient's especial attention to dress diet exercise baths regulation of bowels, morning sickness preparation of nipples and such symptoms of pathological significance as pain in abdomen, haemorrhage from vagina sudden pallor swelling of lower eyelids, etc I instruct her about the importance of supplying me regularly with samples of urine and conclude my visit by leaving with her a printed pamphlet explaining the points discussed, and detailing shortly what she ought to do *should any* of the mentioned pathological symptoms arise

I again see my patient about the fifth month when I confirm or otherwise my previous estimate of the probable length of her pregnancy make careful external pelvimetric measurements the mere doing of which gives me a good idea of the capacity and form of her pelvis again examine her breasts urine and the importance of frequent examinations of the urine and conclude by an examination of the abdomen generally confirming or correcting the impressions as to progress formed at my first visit At this visit I go into details about the preparations for the confinement and see the actual bed The preparations I detail in Par 2 of the pamphlet which I leave with her and I shall discuss them later

Unless my findings or her summons as the result of some pathological state developing compel an earlier attendance, I pay

my final ante natal visit, as nearly as possible, a week before the expected confinement At this visit I again completely examine heart, abdomen, and pelvis, and satisfy myself as to the actual relation of foetal to maternal parts This enables me to undertake any measures that my examination may have rendered necessary for facilitating delivery, and I am usually able to visualize the course of the confinement, and so know and anticipate, when called to her bedside, what my actual difficulties, if any, are likely to be I again go over details of the preparations for the actual confinement

It is difficult to put in words what all this has meant to me, such details in general practice being incomplete in many respects, but I can truly say that my whole mental attitude towards my confinements has been changed I can now face them without any misgiving as to what is before me, and I have been rewarded by uninterrupted good fortune Guidance in heart, renal, and even dyspeptic cases has not only made all the difference to the prospective mother, but has warned off dangers to her and her child, and our combined knowledge and confidence in one another has removed difficulties at one time ever present with me Since 1915 I have conducted 680 confinements, of which 224 were primiparae, and I have only had 11 stillborn children I have had no maternal deaths, and no puerperal fever In that series there were 3 monsters, 2 cases of spina bifida, 3 cases of eclampsia, and 4 cases of ante-natal albuminuria not terminating in eclampsia In 13 cases labour was premature, and in 14 cases I had to remove the placenta manually In 212 cases forceps were used, and in 151 cases I had to repair the perineum This latter I do in every case of ruptured perineum, however small it may be The series further included 18 breech cases, and 4 shoulder presentations

My preparations for an actual confinement are based upon my belief that a clean patient, clean outside with a cleaned-out bowel and an empty bladder, with clean bedclothes covering a clean bed in a clean room, with an efficient nurse in attendance, undergoes little danger of contracting the infection of puerperal fever provided the doctor has a clear forehand conception of his procedure, and carries out his ideas with reasonable skill

The patient, however poor, can provide clean clothes for her bed and her body, can have her body clean, including the removal of vulval hair Her nightdress is tucked up under her armpits, and she wears a clean petticoat slit down the back The bed is supported by boards, previously got ready, slipped under the mattress or spring, and the mattress is covered with thick brown paper or waterproof sheeting The under bed sheet is also covered with thick brown paper or waterproof sheeting, and a broad draw-sheet is placed under the mother Lysol, one pound roll of cotton-wool, and two deep basins, one often borrowed from a neighbour, with abundance of hot and cold water, complete the arrangements

All this seems simple, but, as my instructions carried out in every detail are vital to success, they have to be fully explained before the confinement, and I leave with patient and nurse a pamphlet fully detailing my requirements, so that when I arrive for the actual confinement it is my custom to find all in order In the early days of my practice I met difficulties and ignorant opposition, especially at the hands of the old-fashioned "howdie" or handywoman, and upon one occasion had to take the serious step of leaving a patient in actual labour because my instructions had been ignored The fact that I had taken this drastic step soon spread abroad, and I have had no trouble since

In all cases, when labour starts I insist upon a dose of castor oil followed by a large enema, the latter repeated as necessity demands I also require the bladder to be frequently emptied

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MATERNITY WORK AMONG SOLDIERS' WIVES

The question I propose to ask, and answer, is "What is the maternal mortality when every pregnant woman, whether normal or abnormal, is examined and watched ante-natally, and then confined in an institute with modern obstetric technique?" Putting it simply, "How many mothers die if you can conduct pregnancy and parturition on more or less ideal lines?" My answer is that about one in two thousand is the unavoidable death rate These conditions now prevail in a certain small section of our population—namely, in the case of the wives of soldiers in the British Army, and I can give you the result of the four years, 1920 to 1923 inclusive, of the maternity work carried on in the Louise Margaret Hospital, Aldershot

During these years the number of women confined in the hospital was 1,850 There were not more than four women confined in the hospital who had not attended the ante-natal clinic Of the women who had attended the ante-natal clinic and were also confined in the hospital there was one death from pulmonary embolus on the seventh day, following septic infection of an incomplete perineal laceration, the result of forceps delivery Even this death may have been preventable If I include the cases of officers' wives who attended for ante-natal examination, and were then confined in the hospital or at their own homes, we have a total of just over 2,000 confinements with one death amongst those who were watched ante-natally

I now have a significant remark to make Two other deaths in connexion with pregnancy did occur inside the hospital Both were women from outside of our district, both were left, as it were, on our doorstep in a dying condition, and neither had been examined ante-natally One had just arrived from the North of England, was brought up from the railway station, and died before the commencement of labour from advanced double mitral disease The other was a woman brought in by ambulance from fifteen miles away, dying as the result of ante-partum haemorrhage She had engaged a midwife for her confinement and had not been examined ante-natally

I expect we have all heard the remark that there is no time for ante-natal examination in private practice My experience amongst women of all classes is that nowadays they not only expect it, but talk about its omission Several of my friends have told me that they only examine primigravidae and women with bad obstetric histories I heard this remark a few weeks ago at an ante-natal clinic, and at my request the first multipara, who was about to leave the room, was put upon the examining table, and revealed a breech presentation that was easily turned I think it was worth doing, because although her last baby was born head first and quite all right, her first one was stillborn and she thought it had come feet first

To return to results Out of the 1,850 mothers who, strictly speaking, came under my own combined ante-natal and obstetric supervision there was one death I think it is as well to forestall the remark that we must have been dealing with an unusually normal and healthy lot of women I do not think this was especially the case, and should imagine that they were a very fair average We had many difficult cases to deal with Most of our troubles were detected ante-natally, and therefore deprived of much danger

Caesarean Sections

There were eight Caesarean sections, in all of which the mothers and children lived They comprised two for more or less central placenta praevia, one of these two was diagnosed before bleeding occurred, one for cervical growth, followed by hysterectomy, and one for degenerating fibroid in the uterine wall The remaining four were for contracted pelves

Toxaemias

As regards the toxaemias of pregnancy during the first year there were three cases of eclampsia with fits, all fatal, during the second year, one case, during the last two years no case occurred, but several women were admitted during pregnancy with pre-eclamptic symptoms of various kinds, and recovered to go through normal labours I find blood pressure a most useful practical guide in treating these cases

Forceps

We used forceps in about 7 per cent of the cases, mostly primiparae A whole-time medical officer at a hospital can avoid using forceps much more easily than in private houses, hence one of the arguments in favour of confinement in hospital

Breech Cases

In the ante-natal clinic I turned fifty four breech presentations into vertex by external version without anaesthesia, and I think there is a risk in using anæsthetics for this purpose. It may be possible to cause accidental haemorrhage by separation of the placenta. In three cases in which I failed to turn without anæsthesia I had no better success when it was used. The foetal legs were extended.

In order to emphasize the fact that our cases were by no means all plane sailing, I may mention a 24 lb. baby that I had to deliver. It was delivered intact and undamaged, but there was delay with the huge shoulders and it was stillborn. The mother's perineum was not very badly lacerated. Ante natally I mistook it for twins owing to the associated tense hydramnios. Accurate palpation was impossible.

Sepsis

During the four years no case of puerperal septicæmia occurred. In 1920 there were three borderline cases of fever during the first ten days of the puerperium due to pelvic infection, in addition to the case of pulmonary phlebitis already mentioned. There were no rigors but the fever was pyrexia up to 103° F. with offensive lochia. *Bacillus coli* and staphylococci were cultured from intrauterine swabs; the blood cultures were all sterile. All these cases were normal by the fourteenth day and were treated by swabbing out the uterine cavity with 1 in 500 perchloride solution on one or more occasions within twenty four hours of the appearance of pyrexia.

Outlets

I would like to lay stress on the importance of examining the outlet in all primigravidæ because it is often neglected. Recently I met with a primigravida aged 43 with pelvimetric measurements very little below the normal. The head at the thirty-eighth week could be made to engage in the brim but the bony outlet in the transverse was only two and a half inches. Cæsarean section resulted in a happy mother with a male child.

We never meet unwillingness to attend for ante natal examination. The women notify the matron when they are pregnant on printed forms obtained from a welfare centre stating the date of their last period. Our lady visitors (usually officers' wives, and the district nurses soon taught the women why it was necessary for them to attend and a woman needs to be very dull indeed not to recognize the advantage of trying to avoid trouble. Requests are frequently received asking for permission to attend for examination and reassurance that 'all is well' from women in no way entitled to it.

If we are agreed upon the value of prophylactic midwifery and intend to reduce our maternal mortality and morbidity then money, brains and hard work will have to be expended in organizing a national system. Ante natal supervision for all women must be organized by medical men and women, who will *soon* become proficient at this particular work. Maternity beds in hospitals with separate nursing staffs have to be provided for the ante natal treatment of the toxæmias etc. as well as for difficult cases. Nothing short of this will suffice even as a commencement.

Ante-natal Equipment

My ante-natal equipment consists of a pelvimeter, stethoscope, urine testing outfit, sphygmometer and rubber gloves.

Personally I believe the time will come when only the very well to do, who can afford suitable rooms and two nurses, will have their confinements at home and that the majority of civilized women will be confined in maternity hospitals, with all facilities for improved and safe obstetrics, with medical attendants and nurses who are not in a hurry and know their job. Hurry spells disaster in obstetrics and how many practitioners are there who can possibly avoid being in a hurry? The better the man the more he is sought after—the greater his hurry. Vast sums of money and much thought have been expended on safeguarding us from the danger of our own excretions. Our hygiene experts and sanitary engineers have perfected our drainage and sewage systems and provided our houses with modern lavatories for this natural act to take place safely. If some of this money and thought had been expended on provision for hygienic parturition, we might have advanced beyond our present state. I maintain that our most competent midwives, single-handed and with domestic surroundings, cannot conduct even a normal case in safety from the point of view of necessary cleanliness. They just do the best they can and bear the stigma of reproach when their cases "go septic." It is no good bemoaning our present maternal mortality unless we make up *our minds to fight for sweeping changes and costly reforms*, that alone will make parturition safe. In the meantime, I think a lot can be done by starting with the half measures suggested above—namely, systematized ante-natal work.

The future will require much more of us if we are going to stamp out a death rate of about one mother for two hundred and fifty births. Our already overtaxed country is spending much money on its most unfortunate incurable and imbeciles, but is it spending a sensible amount on securing healthy and sound mothers for our race? I think our most practical obstetricians are to be found among our general practitioners throughout the country, but we cannot conduct safe midwifery any more than safe surgery in the homes of the poor, and our difficulties under our present system, or lack of system, are overwhelming. But ante-natal examinations can be arranged.

Last week I visited one of Germany's largest and most modern gynæcological and obstetrical hospitals, with a total of 160 beds. They averaged 2,000 confinements a year since the war. The death rate per thousand births in the hospital was between twelve and fifteen. The professor remarked that septicæmia was much more common than before the war and in reply to inquiries regarding ante-natal routine examination he said that if women felt ill during their pregnancies they came to the hospital, but there was no systematic ante-natal work or supervision. The hospital buildings are superb in construction and almost extravagant in their magnitude, but in details of technique, cleanliness and order I saw nothing to approach our best English hospitals.

In conclusion, I think our outlook is quite hopeful because we are more or less unanimously agreed on the main points concerning what ought to be organized, and the lines upon which improvement may be expected to follow. That alone is something achieved already. We have, as it were, assembled at the *starting point* and a *good bombardment* of the public with our ideas will be a helpful preliminary to the launching of our schemes.

GENERAL DISCUSSION

Dr RHODA ADAMSON (Leeds) said that her personal experience of the practice of the ante-natal supervision of pregnancy came under three headings. (1) The ante-natal department of the Leeds Maternity Hospital, comprising the out-patient department at the hospital, where were seen patients booked to be attended in the hospital and on its districts, those sent up for an opinion in consultation, and also the ante-natal beds in the hospital, to which were admitted patients from the out-patient department and also patients sent in as urgent cases by general practitioners and the municipal pre-maternity clinics. In the year 1923 the number of attendances made by patients booked for delivery in the hospital was 4,958. In addition the Leeds Maternity Hospital was the recognized centre for the treatment of venereal disease in association with pregnancy, whether booked for attendance at delivery in the hospital or not. (2) In her own private practice for twelve years she had been in the habit of supervising the pregnancies of her patients on exactly the same lines as those followed in hospital. (3) During the war, for ten months she had organized a pre-maternity department in an engineering factory of the Ministry of Munitions. This experimental scheme came to an end shortly after the armistice when forty women had been employed under it. Their medical supervision was exactly on the lines of an ideal pre-maternity

clinic, and, in addition, their whole daily or nightly work could be organized according to their physical and mental capacity The history of these 40 women was interesting and instructive—38 women had 39 living children their histories of previous pregnancies had not been so favourable Two women had dead children, of these one woman was known to be a breech presentation which had recurred after two attempts at external cephalic version at the end of her factory day's work she went home and cleaned down the house She went into labour at the thirty-sixth week, and the child was stillborn owing to delay in delivery of the after-coming head through a partially dilated cervix The other woman had had one child born with instruments alive, and following this miscarried three or four times in the middle months of pregnancy She was found to have deep bilateral lacerations of the cervix At the seventh month she did two weeks' household washing one evening, and gave birth to a feeble premature child that survived only a short time She had never encountered any difficulty in inducing patients to submit to ante-natal examination In addition to verifying the fact and duration of pregnancy and taking pelvic measurements, she always examined for the presence of a vaginal discharge, and took blood for the Wassermann test if required She had come to the following conclusions as to the common defects found in cases in Leeds Considerable rickets present in Leeds before the establishment of infant welfare centres had led to many cases of contracted pelvis in women now being delivered in hospital During 1923 there were 1,493 deliveries, and Caesarean section was performed in 36 cases, many others were admitted as possible Caesarean sections and given the benefit of a trial labour under supervision with good results Induction was carried out three times Toxaemia of pregnancy was very common, and early cases yielded to treatment Most of them eclamptic cases were sent in as urgent cases from outside after inadequate supervision before its onset During 1923 there were 55 cases admitted for albuminuria with 26 living children, 24 eclamptic with 13 living children, and 12 pre-eclamptic with 8 living children In addition, there were numerous cases which yielded to treatment as out-patients Ante-partum haemorrhage due to placenta praevia was frequent During 1923 there were 24 cases with one maternal and 20 foetal deaths, this year she had had 12 cases since June 1st She had not found that many cases came through their ante-natal department, but mostly as urgent cases from outside She had been able in many cases to identify the position of the placenta by abdominal examination and vaginal touch through the undilated cervix

Their ante-natal venereal diseases department had been most helpful in reducing the incidence of purulent vaginal discharges at the time of labour, minimizing the incidence of ophthalmia neonatorum and septic manifestations in the mother Every case with a history of previous miscarriage or stillbirth was subjected to a routine Wassermann examination Those cases proving positive were treated during the whole pregnancy Those with strongly suspicious histories, though with negative Wassermann reaction, were still treated and further examined, sometimes with a change of reaction—for example, out of 188 negative Wassermann reaction cases 57 were treated in 1923 It was noticeable that in Leeds the type of syphilis appearing in the mother was mild In view of the frequent discovery of abnormalities in pregnant women subjected to systematic ante-natal care, she would also strongly urge the general adoption of supervision of these patients

Mr Aleck Bourne (London) said that cases of ante-partum haemorrhage occurring in late pregnancy with a non-engaged head or breech presentation should be regarded cases of placenta praevia and treated by termination of pregnancy as soon as convenient If the head was engaged, and especially if albumin or oedema was present, the patient should be treated by rest, dieting, and sedatives With regard to pelvic examination, he believed in the use of the pelvimeter provided the value of the various diameters was appreciated He attached little importance to the anterior diameters, but laid stress on the external conjugate and posterior interspinous, the latter being a fairly accurate index of the width of the sacrum Vaginal examination should be made in all primigravidae to eliminate possible obstructions, deformity of the outlet, and vaginal discharge Contraction of the outlet apart from deformity of the brim was a very real thing, and could only be detected by vaginal examination

Dr A F Martin (Bradford) said that the following points, in his own experience, bore on the discussion (1) Pelvimetry had helped, even if only the interspinous and intercristal measurements were taken, to relieve anxiety, and, in pointing to possible dangers, leading to examination earlier term in those cases where the difference was less than 2 cm., to determine whether the head entered the pelvis easily or not Pelvimetry had not helped in estimating the pelvic outlet, and vaginal examination did not give enough definite information If the head was not entering at the end of the eighth month induction was called for (2) Induction could be done at this date without interfering with the vitality of the child in better-class practice (3) Eclampsia could be avoided by routine examination of the urine, backed up by systolic blood pressure observations in those cases where the albuminuria was increasing A rising blood pressure in spite of treatment was an indication for induction (4) Maternal anxiety was lessened if the mother could be assured that most of her pain could be saved by a well conducted obstetric anaesthesia

Dr T H Richmond (Stoke-on-Trent) insisted that ante-natal work was an art and not a mere science, and could only be properly accomplished after much practice Callipers were important, but could not replace the foetal head in estimating whether labour was going to be an easy process or not Accurate information by palpation could only be attained by very considerable practice The diagnosis of a breech might be a very difficult matter indeed X rays should be of considerable help here, but a lateral view should be obtained with the patient sitting up Too much reliance could not be placed on auscultation as a means of diagnosing the position of the foetus, he thought that vaginal examination was absolutely essential He advocated induction in every case where possible rather than Caesarean section His experience was that pyelitis was relatively common It would take many years before the ideal put before them by Major Moss—treating every labour in an institution—could be attained In the meantime, abnormalities should be recognized by ante-natal examination and treated in hospital, while normal cases could be confined in their own homes In conclusion, he warned them not to create a set of ante-natal hypochondriacs by alarming their patients unduly, this was happening now in America

Dr R W Johnstone (Edinburgh) referred to the pioneer work of the late Dr J W Ballantyne of Edinburgh in this connexion The older obstetricians were inclined to think that ante-natal observation meant merely the testing of the urine and the examination of the pelvis, but the more ante-natal care was practised, the more obvious had it become that there were many other conditions to be attended to He gave a short summary of the work of the ante-natal department in the Royal Maternity Hospital, Edinburgh, in the year 1923-24, during which time many cases of pyelitis, hyperemesis, cardiac and pulmonary disease, had been admitted to the ante-natal department, in addition to a large number of cases of albuminuria Of fifty-eight cases of albuminuria, including pre-eclamptics, admitted for treatment, only one had actually developed eclamptic fits, although several others had had labour induced as a prophylactic measure With regard to the question of disproportion between the head and the pelvis, he thought that Mr Willett had treated pelvimetry rather cavalierly, and he was inclined to deprecate the rough-and-ready methods of estimation which the opener of the discussion advocated He advised a vaginal examination in all cases, as thereby one could rapidly estimate the diagonal conjugate, ascertain by Munro Kerr's method exactly how the head entered the

pelvis and at the same time exclude any abnormal condition of soft parts. In numerous cases of disproportion labour was practically induced by dilatation of the pituitrin method being particularly applicable to private practice. He began by inducing the cases with several doses of 5 grains of quinine in solution, then some castor oil was given and an injection of pituitary extract commenced one or two hours after the castor oil had acted. The pituitary extract was injected in 0·5 c.cm. doses at intervals of twenty minutes to half an hour until either the patient had delivered herself or pains had begun. In no cases eventuated the course of pituitary extract was repeated twenty four hours later and a second failure was followed by recourse to induction by bougie. The drug method was remarkably successful—no case had to undergo induction of labour from uniformly ill health and had the advantage that it obviated anything in the nature of a mental interference. In closing, Dr. Johnstone referred to the report of the Scottish Commission on puerperal morbidity, one of its recommendations was to the effect that the Insurance Act should be so altered that maternity benefit should be refused to women who, from their circumstances, were such as to make it desirable that they should not be confined at home and who yet refused to go into hospital. If these cases were compelled to go into hospital in the interests of the public surely women in such circumstances should be forced to go into a maternity hospital for their confinements in the interest of the State.

Dr. I. Inge (Birmingham) thought that one reason for the absence of previous pretentiousness was the absence of vaginal examinations. Hence arose the absolute necessity of great care when they made vaginal examinations. The great danger was carrying germs already in the vagina up to and upon the lower pole of membranes. Unless the antenatal examinations were conducted in a properly equipped and arranged antenatal clinic a great risk of increased sepsis might arise. All that was essential could be made out without passing the fingers into the cervical canal. These examinations were so prolonged that the general practitioner should be well paid for making them. As to vaginal discharges douching was of very little use. If the points infected were in the vulva they were carrying infection upwards. If in the cervix then more was required than a douche. Careful swabbing and a frequently changed antiseptic gauze pack was required.

Dr. Marion I. Mackenzie (Leeds) desired to emphasize the importance of diet in antenatal work for making the child, especially in the better-class mother whose diet was too liberal. Undoubtedly a difference of a few pounds could be made in the weight of the baby and in cases where the patient had dieted in one pregnancy the baby had been much smaller than in a case where the mother was carefully fattened up. Another point she wished to make arose out of Major Mosse's suggestion that every baby should be born in hospital and that was the risk of entering its to the baby, which might be the cause of dyspepsia for life. She also thought that the risk of breast failure was greater in hospital.

Dr. Janet M. Campbell (London) said that the chief contribution which the public health service could make to the reduction of maternal mortality was the provision of facilities for antenatal supervision and the education of the mothers to make use of them. There was no intention of replacing the general practitioner or of coming between him and his patient, but many women were attended only by midwives, and many doctors had no time to exercise effective supervision. There were about 550 antenatal clinics staffed as far as practicable by doctors who had specialized in midwifery and nurses who could visit the patients in their homes. The function of the centre was to examine and educate, and it should be in touch with a maternity hospital for complicated cases. In country districts use should be made of district nurse midwives and there should be an extended use of consultants. It was very desirable that all cases of ante-partum haemorrhage should be referred to hospital at once whenever practicable.

The President emphatically agreed that antenatal work was very much in fact. He was pleased to note that all the speakers had agreed that they had experienced no difficulty in persuading the patients to submit to examination especially at the meeting last year a good deal had been made of the alleged reluctance of women to submit to antenatal examination. Though all of them were agreed on no certain principle it was very interesting to note the marked difference in the practice of the various speakers. There were four instruments, those who placed reliance on the use of callipers and those who did not. There were wonderful people who could palpate a placenta through the abdomen, he contented that he could not do so himself. There was rather a striking difference in the forceps rate in the figures which had been quoted as one would expect it was much higher in scattered practice than in hospital. As regards contracted outlet he himself had seen very very few, but no doubt a rare case would make a great impression on anyone who met with it. There was the question of what should be done in ante-partum haemorrhage. Often enough it was only slight and no harm was done. Certainly the type of the haemorrhage might assist a diagnosis definite gushes of blood meeting a placenta praevia. But every now and then all their calculations were upset by what appeared to be a slight case suddenly developing a really severe and dangerous bleeding. He thought that one should keep their cases longer in hospital for observation and if constant observation were difficult owing for instance to the distance of the patient from her doctor then dilatation of the cervix and digital exploration for the placenta should be done. He did not take Dr. Marion Mackenzie's remarks on dieting at all seriously.

Opener's Reply

Dr. Willett in reply said that the opener must make his paper rather provocative in order to evoke a discussion. His view in regard to the use of callipers was that they were very useful in confirming any suspicion that had been otherwise aroused that *something* was wrong in the size of the pelvis. He did not make a routine vaginal examination because he had heard patients complain that at some clinics they were constantly subjected to these examinations. He had never yet met with a case of contraction at the outlet but an estimation could be made by seeing whether two, three or four fingers could be inserted in transversely between the tubera ischii. It gave the patient a great feeling of confidence if she could be told, after a careful examination, that her labour ought to be quite straightforward and if they could suggest that forceps would not be needed he thought that the patient would hold out a great deal longer. He thought that it was very seldom indeed that the placenta could be palpated through an undilated cervix. In his hands the *quinine method of induction* had failed in about 50 per cent. of cases. He agreed that great care should be exercised in staffing an antenatal clinic. Residence in a hospital or post-graduate experience should be required in all cases.

SECTION OF PUBLIC MEDICINE AND INDUSTRIAL DISEASES

HERBERT JONES, L.R.C.S.I., D.P.H., *President*

PUBLIC HEALTH AUTHORITIES AND THE CANCER PROBLEM

BY

J. HALL-EDWARDS, L.R.C.P., L.D.S., D.P.H., M.E. Camb., F.P.S.Ed., Major (late R.A.M.C.)

Despite the strenuous efforts now being made to elucidate the cause of cancer, we are making no headway in diminishing the appalling death rate from this terrible disease. Many theories have recently been brought forward as to its causation, the majority of them are resuscitations, and contain no new elements of importance. At the same time we have increasing evidence that at any rate a considerable percentage of the deaths are avoidable, and it is my wish in this short paper to consider the subject from this point of view.

In a circular published by the Ministry of Health (No 426, August 14th, 1923) it is pointed out that by means of propaganda work, which can be carried out through the agency of our public health departments, a large amount of unnecessary suffering could be avoided, and many lives saved The circular in question deprecates the establishment of a "public cancer service" "until medical education in cancer diagnosis and treatment has undergone further development"

With this contention I am not entirely in accord, for it must be evident that, in dealing with any known disease, we can only give advice within the scope of our knowledge, and if we are to wait for the fulfilment of our desires in respect to cancer thousands of lives will be unnecessarily sacrificed in the interim

There can be no doubt that in scientifically tackling the problem the first rational step would be that of making the disease compulsorily notifiable, but the difficulties in the way of carrying this out effectively are great, not the least important being that experience has taught us that a knowledge of the existence of this disease is detrimental to the well-being of the sufferer, and that popular opinion, based largely upon ignorance, is opposed to the step I have very little doubt that sooner or later this drastic course will have to be adopted, but for the present it is wise to content ourselves in safeguarding the public by means of education through channels now at our disposal Through the instrumentality of the public health departments of our large cities and towns much can be done by the setting up of subcommittees whose duty it should be to instruct the nurses and welfare workers under them charge in what is at present known concerning the disease, and in the methods which should be adopted for combating it The first duty of such a committee should be the drawing up of a report of the facilities offered by the city or town for the treatment of cancer, both operative and remedial With this object in view the Cancer Subcommittee of the City of Birmingham addressed the following questions to the various hospitals within its boundaries

1 Are the facilities which you have at your command adequate for dealing with cases of cancer now presenting themselves for treatment, and, if inadequate, in what respect particularly as regards the following (*a*) x rays (*b*) radium, (*c*) diathermy, (*d*) other electrical methods, (*e*) immunizing serums, etc ?

2 Is there much delay between the recognition of the first symptoms of the disease by the patients and their seeking advice at your hospital?

3 Is there any delay (avoidable or unavoidable) between the diagnosis of cancer and the application of operative or other methods of treatment?

4 Would your committee be willing to furnish the Cancer Subcommittee with the names and addresses of all patients resident in the city who apply for treatment for cancer, together with the date of operation, the part affected, the nature of the growth, and the treatment adopted?

5 What facilities, if any, have you at your command for dealing with recurrent and inoperable cases?

6 Your opinion as to the necessity for providing residential treatment for inoperable cases with which you are unable to deal

This circular elicited replies from nine hospitals In answer to the first question nearly all the institutions replied that they regarded their equipment as sufficient, but in the cases of two of the large hospitals in the city both regretted that they had no apparatus for deep x-ray therapy, and one said that it desired a supply of radium In only one hospital out of nine was there installed a deep x-ray therapy set

Question No 2 was answered by the statement that in a large percentage of cases patients did not seek advice at the earliest moment

In answer to question No 3 the subcommittee was informed that little or no delay occurred

In reply to question No 4, relating to the giving information with regard to the patients treated, two hospitals only intimated their willingness to do this, whilst another hospital expressed its willingness, granting that the patients had no objection Six out of the nine hospitals refused to furnish this information, for the reasons generally brought forward in opposition to compulsory notification

To question No 5, relating to recurrent and inoperable cases, the answers were much the same as to question No 1

To the first question seven of the replies were to the effect that residential treatment was urgently needed In one hospital residential treatment was already established, whilst in another the view was expressed by the committee that residential treatment is no more necessary for cancer cases than for any other incurable disease

In considering the replies the Cancer Subcommittee was unanimously of the opinion that further accommodation was required for inoperable cases, and although the subcommittee did not at the present feel that it was in a position to recommend this step it decided to take action at the earliest opportunity

It is quite obvious from these replies that our hospitals are not either sufficiently or efficiently equipped for treating cancer by all the methods at present at our disposal which offer some chance of success There can be no doubt that, if the authorities of these hospitals were asked the reason why they were not fully equipped, they would answer that the necessary money was not forthcoming Whilst I still pin my faith in voluntary hospitals, I feel that the time has arrived when, in the circumstances, they should be given (without prejudice to their present position) the necessary apparatus for fighting cancer, at the expense of the State The present appalling death rate from this disease calls for immediate action, and no stone should be left unturned which holds forth a chance of saving lives

I would here like to say a few words on the suggestion made, that residential treatment is no more necessary in cases of cancer than in any other incurable disease With this contention I am in absolute disagreement Of all incurable diseases cancer holds a place especially its own, inasmuch as patients afflicted with the disease recognize that there is no hope and that their end is a matter of certainty In many cases such patients suffer indescribable tortures, whilst their fearful sloughing, foul-smelling sores need constant attention, under conditions which could only be obtained in an *institution properly equipped for such* treatment Writing on this question, Sir Bruce Bruce-Porter says "*One of the great tragedies of* England to-day is the want of suitable 'homes' for incurable cancer patients"

The mental attitude engendered by this terrible disease demands that, for humanity's sake alone, steps should be taken to render their lives as livable as possible in the circumstances, and there can be no doubt that in carrying this into effect we should be doing at least as good, if not better, work than is being done in our sanatoriums, where hope of recovery always exists up to the moment of death

It has been computed that from 10 to 15 per cent of the deaths arising from cancer could be saved by intensified propaganda work—*that is to say, that from 7,000 to 10,000* lives could be saved annually What would these lives mean to the nation? They are not the lives of newly born children whose destiny is unknown, but of fathers and mothers of families, whose responsibility is acknowledged to be an asset to the nation Our inability to discover the cause of cancer should be no hindrance to such propaganda work, for with our present knowledge we are armed to a small extent with facilities for fighting the disease We are told that smoking is a cause of cancer of the tongue This is true to only a limited degree Were it absolutely true half the male nation would be wiped out annually Where there exists an already recognized lesion of the tongue or lips there can be no doubt that smoking, by keeping up irritation, engenders the disease, and a knowledge that under such conditions smoking should be avoided would undoubtedly save many lives I merely mention smoking as one of the incidents of causation, but the same reasoning applies to many others which must be obvious to you all

It is in recognizing the first symptoms of danger, and in the seeking of treatment at this stage, that lives are to be saved Our nurses and welfare workers are in a position to instruct those with whom they come in contact as to the necessity of obtaining advice when symptoms present themselves which foreshadow danger By the wholesale distribution of leaflets, giving advice as to the steps which should

skull must have some relation to mental manifestations In the course of his argument, Sir James Crichton Browne admitted that, while the size and mass of the brain are, in general, a measure of mental power, nevertheless the volume of the brain is not the sole criterion of mental capacity A brain of small dimensions may contain more active brain stuff than one of large size, and it is the grey substance which really matters The phrenologists, the lecturer maintained were right in the principle of localization of function in the brain, "though not in the sense they alleged, nor according to the scheme they issued" He repeated the story that Gall as a schoolboy noticed that pupils with quick, retentive memories had a certain fullness of the eyes, and for this reason, when developing his system of phrenology, planted his faculty of language in the neighbourhood of *Broca's convolution* This fact, that phrenologists located the higher intellectual faculties in the frontal lobes, is given as another instance of their prescience

In the third lecture, *delivered on May 9th, 1924*, Sir ARTHUR KEITH displayed somewhat less anxiety than his predecessors *to magnify* the researches of the earlier phrenologists, *though he, too,* confessed that in his youth he had been seized by the doctrine promulgated by George Combe and his younger brother Andrew Experience gained in his student days sadly disturbed his phrenological beliefs, but Sir Arthur Keith is sustained by an inward assurance that some day Gall's dream of a science of phrenology will come true, and that it will be possible, by a mere inspection of a brain, to assess the mental *potentialities of its owner The lecturer illustrated the methods* he has adopted in the attempt to place the study of the human skull on a more rational basis by means of a comparison of the skull of Sir Thomas Browne with those of Dean Swift, Robert the Bruce, and Robert Burns He explained his reasons for the adoption of the subcerebral plane instead of the Frankfort plane in his standard frame and he indicated the error of the older phrenologists in attaching significance to the conformation of the forehead by referring to the changes produced by acromegaly Sir Arthur Keith acknowledged that his researches had not brought us any nearer to an explanation of the peculiar abilities of the author of *Religio Medici*, so that it might appear that phrenology is merely a doctrine, *not a science* But he did not take this view, rather he seemed to think that the day might possibly come when we shall be able to decipher the parts of the brain in the living head and ascribe with certainty the functional *significance* to be attached to each of them—a final tribute to phrenology

For the greater part of a century Gall has been under a cloud as a charlatan who invented phrenology, a pseudo-science associated with mean little *temples and pier kiosks*, where china busts with mapped-out crania were venerated Thither the proletariat resorted to have their bumps of amativeness or combativeness defined The rehabilitation of Gall's reputation by such distinguished persons as Professor Elliot Smith Dr Henry Head, Sir Arthur Keith, and Sir James Crichton Browne is interesting The rehabilitation does not apply to Spurzheim, it appears, though opinion differs on this point Dr James Drever, *in 1917*, wrote

Gall was certainly more than half a charlatan, as were many of his followers, and cranioscopy can claim no respect from the scientist But Spurzheim and Combe were not charlatans Professor Elliot Smith replies that Dr Drever could not have been aware of the facts, since he ignored the real contribution of Gall to neurological science Perhaps the truth about Gall is best indicated by a remark Professor Elliot Smith makes to the effect that Gall, who, in his opinion was a superb anatomist and demonstrator, a man of intense devotion to research, was one of those who are content to rely wholly on observation and do not attempt to check any of their observations by experiment On hasty inferences from his observations Gall based his massive castle of phrenology, which has less capable disciples—Spurzheim and Combe—could not prevent from crumbling The survival of its ruins was probably due solely to the munificence of William Ramsay Henderson, whose gifts are now being applied to more fruitful purpose

THE DISEASES OF MIDDLE LIFE

THE two volumes, each containing more than 900 pages, entitled *Diseases of Middle Life*,[1] contain twenty-three articles by various contributors, and are edited by Dr FRANK A CRAIG of the Henry Phipps Institute of the University of Pennsylvania At first sight it must occur to the reader that, except for the omission of children's diseases, of the acute fevers, and of special articles on tuberculosis and syphilis, this work covers much the same ground as ordinary textbooks of medicine The editor evidently anticipated such a criticism, for he observes in the preface that the diseases are approached from a different angle and presented in a form unlike that usually employed The object of the work is to facilitate the recognition of the diseases in an early stage, when they are curable or preventable, in fact, in the belief that *the proper time to treat old age is during middle life* No definite limits are assigned to the age period designated "middle life," the term being employed in an elastic way to be interpreted by each contributor as he thinks fit In his chapter on gynaecology, Dr F A L Lockhart takes diseases of women between 35 and 45, but Dr J E Talley, in his article on cardiac disease, which occupies more than 200 pages, certainly does not confine himself to what is ordinarily considered to be middle age Dr J R Lutz rather goes out of his way in writing of jaundice to state that "the hereditary type affects principally the newborn and disappears after a few days or weeks in *those cases that* recover," for by hereditary jaundice is usually understood not syphilitic but haemolytic jaundice, which, when congenital, *is usually lifelong Though* Asiatic cholera, gastro-intestinal influenza, rabies, and varicocele, to take examples at hazard, may, of course occur in middle age, they are hardly diseases specially characteristic of that period, and throughout the work there *appears*, possibly from anxiety to avoid omissions, to be a tendency to include too much There is room for a book on middle age in which the text *deals with that subject* and the morbid conditions specially likely to occur in that period, but the editor of the present work has been too good natured to his contributors, and the result is much what the reader's first impression foreshadowed

RURAL EXCRETA DISPOSAL

IT is generally recognized by all who have had *occasion to* give *attention to the matter* that the sanitary problems in rural districts differ very materially from those *in urban* areas, for the reason that in the latter they can be dealt with on a communal basis, while in most country places single dwellings or small *groups of dwellings* are concerned In *Home Sewage Disposal*[2] Mr W A HARDENBERGH, the director of rural sanitation of the Jefferson (Alabama) County Board *of Health*, has set himself the task of furnishing reliable data to engineers and others engaged or interested in sewage disposal for single homes, small communities, and institutions

He states at the *outset that* "*any method* of sewage treatment or excreta disposal, if it is to be effective in the reduction or elimination of disease, must prevent the access of flies and or animals to the excreta, the scattering of the excreta or sewage over the surface of the ground, causing soil pollution, and ground water pollution, or the *contamination* of wells, springs, and other sources of drinking water" Most public health workers in this country consider that these desiderata can be attained by the speedy application of earth to excreta on the lines taught by Moses and popularized in more recent years in England by the Rev Mr Moule of Dorchester and Dr Vivian Poore at Andover The principle underlying this method is the rapid nitrification of excreta by the activities of bacteria, and it is a little astonishing to find that it is not referred to by Mr Hardenbergh He gives very elaborate descriptions of concrete-constructed vault privies

[1] *Diseases of Middle Life. The Prevention Recognition and Treatment of the Morbid Process and of Special Significance in this Critical Life Period* Edited by Frank A Craig MD In two volumes Philadelphia F A Davis and Co 1923 (Med 8vo Vol I pp xii + 501 illustrated Vol II pp viii + 501 illustrated 12s dollars net)

[2] *Home Sewage Disposal* By W A Hardenbergh MA or Sanitary Corps O R C etc London J B Lippincott Company 1924 (Demy 8vo pp viii + 214 62 figures 15s net)

and of privies erected over septic tanks or made to discharge into tanks situated at a distance from the privy, and he describes the "box and can privy," which is apparently the pail closet as we know it in this country He also refers, though not very approvingly, to the "chemical closet," which is in effect a closet-pan fitted into a container or connected with a large tank holding either caustic soda or a phenol or pine tar disinfectant according to the whim of the manufacturer The newest approach to this type of closet in this country is the Goux system, in which the inside of a pail is packed at the bottom and sides with cotton waste, as carried out in Halifax More nearly akin to it is the method first adopted in Congleton, Cheshire, of placing in the bottom of a pail a supply of peat impregnated with strong sulphuric acid, by which it is claimed that the ammonium carbonate is converted into the more stable sulphate

Although we cannot approve of the recommendations of the author regarding single dwellings, we have nothing but praise for the manner in which he deals with the treatment of sewage from groups of houses or from isolated institutions His elaborate and detailed description of the construction of tanks and of the best methods of dealing with the effluents from them leaves little to be desired, and if due allowance is made for local conditions his recommendations may be followed with safety The illustrations in this part of the volume are numerous, and serve to elucidate the text to a degree which should render the second portion of the volume invaluable to public health workers in this country as well as to those in America

NOTES ON BOOKS.

PROFESSOR A BIEDL'S work on internal secretion, of which an English translation was published shortly before the war (see JOURNAL, May 24th, 1913, p 1116), has reached its fourth edition,[5] although only the first part of the first volume and the third volume have at present been issued The former is divided into a general and a special part In the general part the historical development, physiological foundation, and general principles of the doctrine of internal secretion are considered, while the second part, which is concerned with the thyroid, parathyroids, and thymus, contains a detailed description of the development of these organs, their anatomy, histology, and physiology, and an account of the clinical symptoms and treatment of disease of the parathyroids in man and of the relation of the parathyroids to other endocrine organs The third volume, consisting of 480 pages, is entirely devoted to a bibliography of internal secretion down to the middle of 1921 In spite of its size the list of works quoted does not lay any claim to be exhaustive, as, in the first place, the foreign literature of the last five years was not completely available, and secondly, all the earlier literature down to the middle of the nineteenth century was omitted, the reader being referred to special monographs on the various endocrine organs for information In spite of the incomplete character of the references, the volume and page being often omitted, the absence of uniformity of bibliographical style, and the presence of errors in some of the British references which we have tested, the amount of labour required for the compilation of such an index cannot but provoke respect for the author's industry

MR KINGZETT'S *Chemical Encyclopaedia*[6] is the third and enlarged edition of his *Popular Chemical Dictionary*, of which the second edition appeared two years ago This new edition is considerably larger than the earlier ones, and the attention paid to cross indexing has much increased its value The descriptions of the various chemical substances are clearly and simply set out.

We have received a copy of the first volume of a new journal devoted to psycho analysis entitled *Fortschritte der Sexualwissenschaft und Psychanalyse*,[7] and edited by Dr WILHELM STEKEL of Vienna, with the assistance of Dr ANTON MISSRIEGLER and Dr FRITZ WITTELS In contradistinction from the publications of the orthodox Freudian school, in which, according to Dr Stekel, the patient has become a secondary consideration, the new publication is, with few exceptions, devoted to clinical studies Most of the papers deal with epilepsy and allied conditions, and the results are held to indicate that by the proper use of psychoanalysis success may be obtained in the treatment of diseases which were formerly regarded as incurable and exclusively organic

The Tenth Bulletin of the International Association of Medical Museums[8] contains many articles dealing with technical methods which will be of use both in the museum and in the laboratory The intention is to render the bulletin, not a manual of technique, but a medium for drawing attention to the most recent additions to knowledge and reporting on their value and trustworthiness In addition to original articles having this end in view, a section is included giving abstracts of the current literature on technical subjects Of the original articles may be mentioned one on a rapid method of macerating bone specimens, which every curator will be glad to know of It is based on the solvent action of antiformin on soft tissues, and in illustration of the rapidity of the method it is stated that good macerated specimens can be obtained in half an hour after removing the bone from the body *Professor Crowell speaks highly of* Jores's method of preparing coloured specimens, as modified by Kloz and MacLachlan The method is much less expensive than that of Kaiserling, and Crowell has adopted it almost to the exclusion of other methods Failures are attributed to departures from the published formulae, but it is stated that the specimen should not be more than 3 cm thick, a circumstance which somewhat limits the usefulness of the method Dr Watters reports on the ultimate result of the gelatin method of mounting specimens, after an experience of eighteen years, and a very practical article on the colouring of photographs of pathological specimens is contributed by Drs Callender, Coupal, and Prior The volume also contains several articles on microscopical technique A brief account of the work of the late James Ritchie, who was an active member of the International Association of Medical Museums from the time of its inception, is contributed by James Miller

[5] *Innere Sekretion Ihre physiologischen grundlagen und ihre Bedeutung für die Pathologie* Von Prof Dr A Biedl Band I, Teil I Band III, Literatur Vierte Auflage Berlin and Vienna Urban und Schwarzenberg 1922 (Band I, sup roy 8vo pp 338 44 figures, Band III pp 480)

[6] *Chemical Encyclopaedia* By C T Kingzett, I I C F C S Third edition London Baillière, Tindall and Cox 1924 (Med 8vo, pp viii+666 30s net)

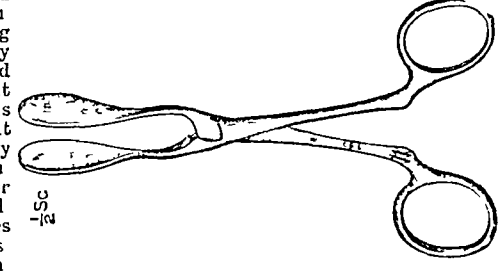
[7] *Fortschritte der Sexualwissenschaft und Psychanalyse* Herausgegeben von Dr Wilhelm Stekel Redigiert von Dr Anton Missriegler, und Dr Fritz Wittels Band I Liepzig and Vienna Franz Deuticke 1924 (Med 8vo, pp 420)

[8] *Bulletin No 1 of the International Association of Medical Museums and Journal of Technical Method* Managing Editors Maude E Abbott, M D and Major James I Coupal New York P B Hoeber Inc 1924 (Med 8vo pp viii + 165 illustrated 3 dollars)

MEDICAL AND SURGICAL APPLIANCES

Swab Forceps

MR R L SCITTEL, F R C S (General Hospital, Colombo), writes: Messrs Down Bros have made for me two patterns of forceps in rustless steel, one a spring swab forceps and the other bow handled (illustrated here) Designed primarily to replace the fingers when dressing wounds they obviate the use of gloves and the danger of contaminating lotions by repeated immersions of the bare hand Used with an ordinary dressing forceps they pick up and squeeze out moist pledgets effectively At operations they serve to manipulate mops or to pick up vulnerable tissues such as intestine or appendix for the latter purpose the gripping surface should be provided with wide grooves Ratchets on the bow handled forceps enable the swab to be retained, so that it may be laid aside and picked up again later The essential element in the spring forceps is the lightness of these springs, which should respond to the least touch and not tire the fingers



A Syringe for Regional Anaesthesia, including Splanchnic Analgesia

MR O STANLEY HILLMAN F R C S (London W) writes The syringe has been designed for regional anaesthetic work, including splanchnic analgesia for which a specially long needle is required The syringe is of the Record type and is capable of holding 12 c cm but is graduated to 10 c cm only the remaining 2 c cm being available for aspiration after the syringe has been filled to the 10 c cm mark and has been attached to the needle already in position in the patient It is made with a peripheral nozzle which greatly facilitates its use in some positions The nozzle is made with a pin which holds the bayonet fitting with which each needle is made thus preventing any 'flying off' of the needle when injecting The needles are made of rustless steel and are of the sizes recommended in Labat's book on regional anaesthesia The syringe has been made for me by Messrs Arnold and Sons (John Bell and Croyden Ltd) 50 52, Wigmore Street W 1 and they supply it in a box containing three of each size of needle

SMALL-POX AND VACCINATION IN THE PHILIPPINES

BY

JOHN C McVAIL, M D, LL D, F R F P S

THE report for the year 1922 by Dr Vicente de Jesus, Director of the Philippine Health Service, shows a decided improvement in the manner of preparation and in accuracy as compared with some previous volumes It has a useful table of contents, and the index, appreciably shorter, is much better arranged The activities of the Health Service during the year are summed up in the following introductory passage

Substantial decreases in the general mortality and in infant mortality rates constituted the salient points of the year The work on leprosy investigation was expanded by more liberal appropriation and by the detailing of expert technical personnel at Culion and at San Lazaro Hospital the vaccination campaigns for the eradication of small pox cholera and typhoid were continued and conducted in an intensive and systematic manner and with the co-operation of the Rockefeller Foundation, malaria and hookworm surveys were effected resulting in a decided practical contribution to public health conservation Special investigations were also conducted in different provinces with a view to eradicate yaws and tropical ulcers The greatest achievements of the year however were attained in the suppression of epidemics and in keeping up and raising the moral of health officials resulting in greater individual activity and efficiency and a higher conception and better comprehension of their duties and responsibilities.

Compared with the figures for 1921 notable reductions in the general mortality and infant mortality rates have been accomplished in 1922—namely from 21 22 to 18 94 per 1 000 population in the case of general mortality and from 170 46 to 153 94 per 1 000 births in the case of infant mortality The reductions in this regard have resulted undoubtedly from (*a*) suppression of epidemics (*b*) slow but gradual control of preventable disease through effective health measures and permanent sanitary improvement and (*c*) improvement of individual health through health education and publicity and the subsequent awakening of the sanitary conscience of the people at large

The special interest of the Philippines reports for several years past has related to the facts as to small pox and vaccination in the islands These were discussed by me pretty fully in the BRITISH MEDICAL JOURNAL last year (1923, vol i p 158, and vol ii, p 421) Happily variola has been much less prevalent since the great epidemic of 1918-19 The following have been the recorded deaths in the six years 1917 22 inclusive

	Manila (Capital City)	Provinces (including Mindanao-Sulu)
1917	2	434
1918	939	15 158
1919	55	43 196
1920	5	7 100
1921	0	719
1922	0	19

The health authorities attribute the disappearance of the disease in Manila to 'the continuous vaccination and revaccination campaign against small pox from 1918 to the present date' and in the provinces to "continued and extensive vaccinations especially of the newly born infants" It may be recalled, however that in the years previous to the epidemic there had been an enormous amount of alleged vaccination and revaccination, but that inquiry raised serious doubt as to the value of much of the vaccine used, whether owing to original inactivity or to loss of efficacy as a result of defects in preservation and transport in a warm climate The natives had proved incompetent and unreliable and many parents had deliberately wiped off the lymph immediately after insertion Further, it had not been found practicable to inspect anything like the whole of the vaccinations performed, and, finally, a huge percentage of those inspected were found to have given no local result Many of these failures however were probably due to immunity owing to previous successful vaccination or revaccination It may be freely admitted that these defects were largely unavoidable, but their general effect has been to leave serious doubt as to the actual amount of reliable vaccination and revaccination in the Philippines In these circumstances the health authorities though naturally rejoicing now in the disappearance of small pox should be warned by their previous experience They know—none better—that small pox is an epidemic disease Even in parts of the world where it may be regarded as endemic, there are great fluctuations in prevalence In Europe and America, in centuries when there was neither vaccination nor small pox inoculation, there were everywhere intervals of practical freedom from the pestilence Epidemics came in some places about every four years, and in others less frequently Are Dr de Jesus and his colleagues quite sure that even now their vaccine material is always and everywhere reliable, that it is never rendered inert by the heat of the climate combined with defective storage and transit, that their vaccinating parties, admirably conceived and arranged, are even yet wholly composed of skilled and trustworthy men, and that if an epidemic again occurs they will not again find out that their system has been defective

The demonstration of the power of vaccinia over variola requires no buttressing by data which cannot be tested and proved in every detail Since the days of Jenner history throughout the world has accumulated evidence of the value of his prophylaxis, and serious disservice is done to the cause of preventive medicine by claims which may be too hurriedly made or cannot stand the minutest scrutiny In 1922 in the capital city of Manila, with its population of close on 300,000, there were 111,649 vaccinations and revaccinations but only 21,919 were inspected as to the result, and in 5,652 it was negative How many of the total were primary and how many were revaccinations does not appear, but the fact is that only 16,267 of the whole 111,649 are recorded as positive In the great southern archipelago of Mindanao and Sulu, where it might be reasonably supposed that administration is more difficult than in the capital of the Philippines, the proportion of inspections is much higher, and yet the figures are accompanied by a modest explanation of why they are so low

> There was the difficulty of performing the inspection because of the nomadic way of living of the Mohammedan natives and the difficulty of communication
>
> As to the material used dry vaccine has been preferred in remote places and where transportation facilities were difficult or irregular and the fresh vaccine only in places where ice was available for its preservation
>
> Also the low percentage of takes may be attributed to the occasionally defective classifications made by the sanitary inspectors in determining or distinguishing positive vaccinations from slight reactions Besides this some of the persons vaccinated had already previous successful vaccinations

All these considerations are relevant, and indicate a grasp of essential facts Of 108,449 vaccinations in Mindanao and Sulu, 72,590 were inspected, and 39,134 were reported positive In the Provinces, of 1,900,704 vaccinations, 1 384,910 were inspected, and of these 846,532 were positive, 538,378 being negative

Unquestionably the health department of the Filipino Government is striving after better things But its difficulties are immense, and no good will be done by too ready assumptions as to cause and effect in the domain of disease prevention It is certain, however, that good vaccine, skilfully used and not destroyed on the skin of the vaccinee, will protect against variola those who resort to it and who renew their protection as may be required

As regards fatality rates of small pox in 1922, the figures are (fortunately) insufficient to be of much statistical value In Manila there were no cases, in the Provinces 12 deaths occurred in 126 cases of small pox, and in Mindanao and Sulu 7 deaths in 14 cases In addition there were in the Provinces 183 cases of "varioloid" with 4 deaths If these be added to the small pox figures the fatality rate is, of course, lowered It is regrettable that neither in this nor in previous reports is any statement made as to the differential diagnosis between variola and varioloid, as the terms are used in the Philippines It would be worth knowing whether merely mild cases are put in the latter category and more severe cases in the former or whether there are two recognizably different types of the disease The latter view is rather supported by the fact that in nearly all the provinces where "varioloid" occurred there was no "small-pox" Bohol had 61 varioloids, and Cavite 63, without a single death or a single registration of small-pox The province of Oriental Negros, however, had 115 small-pox cases with 10 deaths, and 6 varioloids with one death while Samar had no death in 6 small pox cases and 7 varioloids

Very remarkably, Sorsogon had no small-pox cases, but 3 of varioloid, all of which were fatal Perhaps in his next annual report, or even earlier, which would be better, the Director of Health will deal with this question, bearing as it does on the whole subject of mild small-pox, which is of so much interest to epidemiologists at the present time

PORT AND SHIPPING SANITATION IN THE FAR EAST

In August, 1922, the Health Committee of the League of Nations decided to dispatch a mission to the Far East The main object was to gain the information necessary for framing a convention governing port health procedure which would receive the approbation and adherence of all Far Eastern countries The mission was entrusted to Dr F Norman White, who, after making a tour of 35,000 miles extending over nine months, during which a vast amount of information was accumulated, presented a voluminous report, a copy of which has just reached us The principal places visited were Bangkok, Singapore, Java, Hong-Kong, Shanghai, Japan, Formosa, Korea, Harbin, Mukden, Dairen, Newchwang, Peking, Manila, Haiphong, Saigon, Kuala Lumpur, Penang, Rangoon, Calcutta, Simla, Bombay, and Colombo Nominally the subject-matter of the inquiry was already covered by the International Sanitary Convention of Paris, but this convention was framed primarily with the object of protecting the countries of the West from invasion by infection from the East, and the local conditions peculiar to the East received insufficient attention For instance, the Paris Convention endows the human being with an importance as a vehicle for the transmission of plague infection from port to port that he does not possess in the East, and most vessels which have in the past done so much harm in spreading plague infection from country to country might still be designated "healthy" in the terms of the Paris Convention The convention is regarded with unqualified disapproval in the East, and it is considered that mere revision would be insufficient to convert it into a satisfactory document Dr Norman White, however, thinks that with certain additions it could be adapted to the conditions prevailing in the Far East, and he has drafted a series of articles which, he suggests, might be incorporated in the Paris Convention

The articles, twenty three in number, are concerned partly with definitions necessary to the understanding of the effective provisions The diseases regarded as within the scope of the provisions are typhus, bubonic or rat plague, pneumonic plague, cholera, small pox, and yellow fever, the incubation periods of which are reckoned at six days for plague, cholera, and yellow fever, fourteen days for small pox, and twelve days for typhus The existence of a "plague epizootic" is to be regarded as established by the discovery of a plague infected rat in the local rat population, or the occurrence of a non imported case of bubonic plague Ports are classified in three categories "first class ports," having (1) an adequate health staff, (2) apparatus for fumigation of large vessels, (3) a staff for rat scrutiny, (4) a quarantine station for detention and disinfection of deck passengers, (5) a bacteriological laboratory, (6) an infectious diseases hospital, (7) a good water supply, and (8) machinery for dealing with vital statistics, 'second class ports," in which conditions (1), (3), (5), (6), (7), and (8) are fulfilled, "third class ports," those not falling within the above A "suspected port" is one in which a non imported case of disease has occurred or a plague epizootic is present A first or second class port is to be deemed an 'infected port" when twenty five cases of disease have occurred during any one week, or, in the case of plague, when rat infection has been proved in any harbour area, the occurrence of five deaths from disease other than yellow fever within one week shall be sufficient to constitute a third class port an "infected port" One case of yellow fever shall suffice to constitute a port of any class infected A port shall cease to be considered suspected when no case has been reported during two weeks, also, in the case of plague, when no infected rats have been found during two months A port shall cease to be considered infected (and shall pass into the 'suspected" category) when for three weeks the number of cases has fallen to fifteen a week in the case of first and second class ports, or to three deaths a week in the case of third class ports, provided that no first or second class port shall cease to be deemed infected until one month from the discovery of the last plague infected rat in the harbour area In the case of yellow fever, a port shall be considered healthy when no case has occurred for two months

The effective provisions of the draft are

1 The signatory Government shall undertake a systematic examination of rats in the harbour area during a period of six months after a port of the first or second class has ceased to be suspected

2 In the event of plague occurring in the interior of the country, outside the port area, the Government shall disinfest all goods likely to harbour rats, before shipment

3 Passengers, other than cabin passengers, coming from a territory in which cholera, typhus, or small pox prevails, shall be dealt with at the port of departure in accordance with the requirements of the Government of the port of destination

4 Notification by the signatory Government of the first case of disease recognized in its ports shall be made immediately by telegram to a central intelligence bureau, giving details of the case and the preventive measures taken, and in the case of first class ports, a weekly notification of fresh cases shall be made, until the disease is no longer epidemic or sporadic, second and third class ports are to make fortnightly notification

5 The signatory Governments shall take cognizance of any ship during her voyage from suspected or infected ports, and of vessels from clean ports which have cases of disease or "plague suspicious or "cholera suspicious" cargo on board (the nature of the goods likely to convey rats or the cholera virus is specified)

6 The measures to be taken against ships of which the signatory Governments take cognizance shall be left to the discretion of the authorities at the port of arrival These measures will include such matters as inspection quarantine, and disinfestation, and will vary according to the health condition of the port of departure and of the passengers and cargo, and, more particularly, (*a*) in the case of ships from clean ports carrying plague suspicious cargo, measures for rat destruction shall be applied at the anchorage before discharge of cargo is permitted or pratique given, (*b*) any ship of whatever origin, arriving at any port of the first class, which has not been fumigated within the preceding six months, shall be fumigated before her departure, and in the case of vessels whose trade is confined to the Eastern arena, three monthly fumigation shall be imperative, (*c*) any ship arriving at a first class port shall have her drinking water tanks cleaned and sterilized unless this has been done within the previous three months (*d*) the departure of every ship of which cognizance is taken shall be notified by telegram to the next port of call

7 A ship leaving any port in the Eastern arena for a foreign port shall obtain a bill of health This should be made an important document, corresponding practically to the vessel's case sheet or hospital notes, giving its past history, present state, and treatment

8 A ship leaving an infected port shall be inspected by a health officer prior to her departure The inspection shall include such examination of the vessel, cargo, passengers and crew, food and water supply, the ship's relations with the shore, manner of loading, and possibility of invasion by rats and insects, as will enable the officer to determine whether the requirements of the convention have been complied with No communication with the shore shall be permitted after this examination A similar inspection at suspected ports of departure may be demanded by the country of the port of destination

9 When local conditions render the above provisions unsuitable the necessary modifications shall be made by general agreement of the signatory Governments

Mention has been made above of a central intelligence bureau as a necessary part of the scheme No department of the kind at present exists, and the author suggests that Singapore would be a most suitable site for establishing a Central International Epidemiological Intelligence Bureau for dealing with this and cognate matters The possibility of such a bureau being installed for a term of years on an experimental basis through the agency of the Health Organization of the League of Nations is deserving of careful consideration The signatory Governments of the Far East would, naturally, demand control, through some form of advisory board, of an organization in which they were primarily interested, and it is possible that one of the existing medical organizations in the Far East would be willing to undertake this duty, and no more suitable body could be found than the Far Eastern Medical Association Apart from its utility under the proposed convention outlined above, such a bureau would greatly facilitate and improve the port health procedure as at present carried on It is difficult to estimate the cost of the bureau but the annual expenditure would probably approximate to £10 000

Dr Norman White has not specifically considered the Mecca pilgrim traffic and the labour traffic from country to country The former is regulated by the International Convention, but the protection of the health of the East from diseases conveyed by returning pilgrims appears to have received too little attention in the convention The migration of labour forces is governed by shipping ordinances and labour ordinances in most of the countries chiefly concerned, and bilateral agreements further control the traffic There is, however, room for improvement, and the trade might be made the subject of a future convention It is important that shipowners interested

in the traffic should be freely consulted, the enforcement of more stringent regulations in some countries than in others gives an unfair advantage to the shipowners of the latter

In addition to a vast amount of information relating to the various ports and countries visited, the report contains a valuable chapter on plague in the Far East, in which the more important epidemiological facts emerging from a study of the disease during the last twenty-five years are dealt with in relation to the framing of measures of control in the conditions actually prevailing in the East. Separate chapters are also devoted to cholera and small pox.

SCHOOL HEALTH WORK IN LONDON

In his report for 1923 as school medical officer, Sir William Hamer remarks that school medical work belongs practically to the present century. While the general death rate had been falling for forty years before 1900, owing to improved environmental conditions, infant mortality began to decline only from that time. The majority of mothers had enjoyed the advantages of elementary education, and the mother is practically the environment of the infant, so that, as urged last year by Dr James Wheatley at the Portsmouth Meeting of the British Medical Association, the predominating influence has been the Education Act of 1870. The benefit appears not only in respect of infants, but also in the lowered mortality of school children. The Registrar General, it is noted, has shown that in the fifty years 1861-1910 the most marked improvement has been at ages 5 to 14—the school ages—the decline in mortality being 55 per cent. In the earlier decennia, however, the ages 20-24 showed an even more rapid fall, owing presumably to migration, whilst in 1911-20 the age period 0-4 years came out best, and here infant and child welfare work may claim part of the credit. Comparing London with the whole of England and Wales, and recollecting Dr Farr's remark that diseases chiefly incidental to children are twice as fatal in towns as in the country, London now comes out remarkably well as shown in tables of mortality under 15 years of age. Statistics of improvement in verminous conditions tell the same story. So recently as 1913 flea-marked children in London schools were 28 per cent. of the whole, but in 1923 they were only 7 per cent. As regards nutrition in relation to unemployment, the results of investigation by the Scottish Board of Health, referred to in the BRITISH MEDICAL JOURNAL of July 19th (p. 122), are supported by London experience.

> The measures of social amelioration in force clearly do what they were intended to do, and in spite of the adverse economic conditions the condition of the school child in regard to health, nutrition, and physique is to-day very much better than it was in the decade which preceded the great war.

The percentage of children placed in the under-nourished category was 5·9 against 12·8 in 1913. Improvement in cleanliness is notable, and the percentage of older girls with perfectly clean heads is now for the first time over 20. The condition of the teeth of entrant children is rather better than in the previous year. In 12-year-old boys the proportion with apparently sound teeth increased from 50 per cent. to 67 per cent. between 1913 and 1923, whilst extensive caries diminished from 10 per cent. to 2·7 per cent., a corresponding improvement is shown by girls, who enjoy a higher degree of resistance to caries than boys. As regards adenoids and enlargement of tonsils there is improvement, only 11 per cent. being affected instead of 12·8 per cent. in 1922, 16·5 per cent. in 1921, and still higher figures in previous years. This is probably due, at least in part, to lessened oral sepsis and greater attention to dental hygiene. Investigation of two schools by Dr E. O. Lewis indicates that removal of enlarged tonsils diminishes the risk of contracting infectious disease. In one school it was found that one in nine children with enlarged tonsils had contracted scarlet fever, as compared with one in twenty-eight children with normal tonsils. The proportion of children suffering from defective hearing as ascertained at routine inspection, has been halved during the past ten years, and is now only 0·7 per cent. Without following details as to visual acuity, enlarged gland, heart defects, lung complaints, etc., analysis of the statistics relating to 200,000 children shows improving conditions which over a period of years are very striking. Notwithstanding great difficulties, including especially ignorance and apathy of some parents, a review of ten years' results

> leads to the conviction that the mountain of disability and suffering which the school medical service at its inception had to face has indeed begun to move. Independent observers in a position to know state that the London child is now a different being. Not only is the improvement marked as a whole, but analysis shows a steady advance year by year at each age and in each sex in a most consistent way.

As to general policy, unwise compulsion would defeat its object, but the more intelligent parents eagerly avail themselves of the council's facilities.

> "Dr James Kerr, whose clinical experience and knowledge of the conditions are unrivalled, has recently remarked upon the surprising *improvement in the condition of children who have* qualified for scholarship and come before him for medical inspection, and he particularly instanced their dental condition.

In 1913, out of 1,635 children examined for that purpose, 640 required dental treatment before they could pass the medical examination, but in 1923 of 1,560 so examined, only 111 were referred for dental treatment—*a diminution from 39 per cent. to 7 per cent.* While all this is excellent, very much remains to be done. At the primary reinspection of 183,348 children who had been referred for treatment or placed under special medical observation, 34,444, it was found, had not been treated and still required treatment. Of 55,528 children reinspected a second time, 31,637 (57 per cent.) were under treatment, or were in a condition to be discharged, the combined results of first and second reinspections, showed that 76·8 per cent. of the children found defective had obtained relief within a year of primary inspection. If dental defects were deducted from the total, 83 per cent. of the children were found to have been satisfactorily dealt with.

The report gives full details about medical treatment, school nursing, open air education, employment of school children, physical exercises, the teaching of hygiene, the control of infectious disease in schools, and many other important matters.

School Feeding

Though all children receiving school meals are not seen by the school doctor, he is often consulted about doubtful cases, and all menus are submitted to the school medical officer for approval. Necessitous children can get sufficient starchy food at home and school feeding is mainly confined to supplementing the protein portion of the diet. The London rule is that every meal for a necessitous child shall contain at least 25 grams of protein. Milk and cod-liver oil are provided in school only for the undernourished child, on medical advice and under medical supervision. Particulars as to provision of milk meals are given for the week ended January 24th, 1924. The numbers were 19,624 meals free or on part payment, and 45,911 on full payment, while 2,726 doses of cod-liver oil were given free or on part payment, and 5,891 on full payment. In addition many head teachers run milk clubs and arrange independently with dairies. The size of a school's milk meal list depends largely upon the opinion of the head teacher and care committees, and on their zeal and enthusiasm in seeking out suitable children and bringing them before the doctor as special cases. The restrictions under the Board of Education's circular of May 17th, 1922 resulted in more care and consideration of the case of the ill-nourished child, to ascertain whether the giving of milk was in itself sufficient, and whether in one district children no longer needing milk were receiving it to the exclusion of children requiring it urgently in other districts. Differences of view cannot, of course, be prevented, but the position has been safeguarded by keeping children removed from the milk list under observation for a sufficient period. The milk supplied has been systematically examined. Of 1,116 samples, 116 (10·4 per cent.) were unsatisfactory—3·5 per cent. on account of added water and 6·9 per cent. on account of deficiency in fat. Sixty-eight meals were examined in the council's central laboratory, and in a number of cases attention was drawn to the need for increase in the protein or the calorific value.

British Medical Journal.

SATURDAY, AUGUST 16TH, 1924.

ANTE-NATAL CARE IN PRIVATE PRACTICE

The discussion on the methods of the ante-natal clinic and their application to private practice, reported in full in this issue, covers many points of interest. It is in the first place a striking evidence of modern progress in preventive medicine that the discussion should have taken place at all. It is, perhaps, difficult for the medical student, or the recent graduate, to realize that the teaching of obstetrics—even during the student days of those who are still young enough to look forward hopefully from the midst of the years and who yet bear the burden and heat of the day—was unencumbered by any reference to the necessity for pre-maternity care. It was only in 1900 that Dr. J. W. Ballantyne, in a clinical lecture in the Edinburgh Royal Maternity Hospital, first gave voice to the conviction, "gradually developing within him," of the need for a special department set apart in maternity hospitals for the treatment of the various disorders of pregnancy. "Finally," he said, "it has seemed to me that there is a want in our hospital system—the necessity for some special institution in which pathological pregnancies in general might be both studied and treated," and it was only so recently as 1901 that, in response to his appeal published in these columns,[1] and entitled "A Plea for a Pre-maternity Hospital," there was endowed in the Edinburgh Royal Maternity and Simpson Memorial Hospital the Hamilton bed, the first to be set apart in any hospital for the treatment of the various morbid conditions of pregnancy. Before his death Ballantyne had the satisfaction of seeing the principles which he had advocated with such untiring devotion receive their practical application in hundreds of ante-natal clinics throughout the country. It would have been a source of great gratification to his admirers had he been spared to take part in the Bradford discussion, and to receive the ovation that would without doubt have been accorded to him as the honoured pioneer in this important department of obstetrics.

The discussion at Bradford will probably be noted in after years as marking an epoch. The last two decades have been occupied with propaganda—not exclusively directed to the lay public, but also to the general practitioners engaged in the practice of midwifery, in order to impress upon them the necessity for pre-maternity care. Neither was the path of the propagandist always smooth. There was much talk of the difficulty of carrying out ante-natal supervision in private practice. Women, it was said, would view with alarm and as a herald of coming disaster any attempt at ante-natal examination unless there was some obvious disturbance of health to indicate its necessity. From this point of view the paper of Dr. Eneas K. Mackenzie (p. 269) is of much significance. In a country district of the Scottish Highlands, and with a large and widely scattered panel practice necessitating 11,200 miles of travelling yearly among a population composed chiefly of fisher folk, farm labourers, and crofters, he finds it possible to supervise the pregnancies of all women for whose confinements he assumes responsibility. "The contention," he says, "that in general practice there is no time for ante-natal care I find baseless, as I have also found the statement that patients resent such attention."

Turning to the discussion itself, there are several points that are worthy of notice. It is, of course, inevitable that those who have large experience of the conduct of clinics in any branch of medicine will develop peculiar and special methods of diagnosis and treatment that are not accepted and practised by all, and that pre-maternity work is no exception to the rule is shown by the divergent views expressed, for instance, regarding the value of external pelvimetry. There can be little doubt that, generally speaking, the more experienced an obstetrician becomes the less he relies upon this aid to diagnosis of pelvic deformity, and in many of the minor degrees no conclusive indication of their existence may be gained by measurement of any of the external diameters, but only from estimation of the diagonal conjugate. After all, pelvic measurements merely serve in most cases as a warning of possible dangers ahead. They fail to take into account the other factor in the case—the foetal head, which still remains the best pelvimeter. We are not disposed, however, to regard so lightly as Dr. Willett seems to do the information to be gained by combined internal and external determination of the relationship between the head and the pelvis, nor to accept his contention that one can decide for or against Caesarean section by mere abdominal palpation. Such a determination takes no account, for example, of so simple and frequent a condition—especially in primiparae, in whom these difficulties mainly arise—as a loaded colon, the existence of which can only be excluded with certainty by vaginal examination. Every experienced obstetrician knows of the case in which a mobile and perhaps disproportionately large head descends easily into the pelvic cavity after the administration of an enema. While the value of vaginal examination is generally obvious, its risks were rightly emphasized by some of the speakers, and there can be no doubt that it is a dangerous proceeding if not carried out with due regard to the principles of asepsis.

We have said that the last two decades have been occupied in bringing home to the medical profession and to the State the importance of pre-maternity care. The recognition by the latter of the benefits to the race that are likely to accrue, and the discussion which we publish to-day, may be taken as evidence that the advocacy of Ballantyne and his early followers has not been in vain, and that the profession has at last universally acknowledged the urgency of the teaching and practice of preventive midwifery. As Major Moss said, after commenting upon the present unanimity of opinion on this point, "That alone is something achieved already. We have, as it were, assembled at the starting point, and a good bombardment of the public with our ideas will be a helpful preliminary to the launching of our schemes. During the next decade or two the education of the public will continue, and it is to be hoped that our teaching centres and hospitals will rise to the new occasion. Opportunity must be given to the student to learn the principles of ante-natal diagnosis. This is all that is necessary. Expertness can only be acquired by constant practice in the years after graduation. For post-graduates the larger living in hospitals should organize courses of instruction at convenient times, and only those should be given charge of a pre-maternity centre who have had special post-graduate experience in obstetrics and are practically acquainted with the

[1] British Medical Journal, April 6th 1901.

method of carrying on a large clinic As Dr R W Johnstone truly said, Ante natal observation no longer means merely the testing of the urine and the examination of the pelvis The more experience one acquires in ante natal work the more numerous its opportunities appear Ballantyne foresaw these possibilities at the very start In 1901 we find that one of the benefits which he expected to follow the establishment of pre maternity wards was the opportunity that such beds would afford of studying pregnancy diseases and normal pregnancy metabolism It is during the next decade that this ideal will be realized Indeed, it is being realized already, for in some of the larger teaching centres such studies have been in progress on an intensive scale for some considerable time

Thus all along the line the forces of progress are massing There has been a tendency in the past among other branches of the profession and not altogether without reason, to look upon obstetrics as a crude and unprogressive science Indeed, it is only too true that with the exception of the advances rendered possible by the advent of anaesthesia and of Listerism (chiefly in Caesarean section) there has been little progress in obstetrics during the last fifty years This is a reproach that should soon be removed, and in its removal all who are engaged in the teaching, study, and practice of obstetrics—specialist and general practitioner alike—can play an honourable part To the younger obstetrician with a scientific bent the gate of opportunity stands wide open Inside are ranged the secret truths that 'yearn for birth' The time is ripe May their delivery be safely accomplished, and soon!

FRUITS OF THE ANTITUBERCULOSIS CAMPAIGN

AT the fourth Congress of the International Union against Tuberculosis held at Lausanne on August 5th, 6th and 7th a number of important papers were read, such as Professor A Calmette's discourse on the permanent separation between tubercle bacilli and paratuberculosis organisms, and on the modifications which can be artificially produced in the virulence of tubercle bacilli, although they do not thus become paratuberculosis bacilli But the most fundamental question raised was that so ably discussed by Sir Robert Philip, who for forty years has devoted his energies to the antituberculosis campaign—namely, Has this campaign justified its existence and diminished the toll levied by this infection on the human race? In arriving at an affirmative conclusion Sir Robert brought forward statistics from two sources—from England and Scotland and from North America In many of his arguments he was supported by Professor Knud Faber of Copenhagen, who showed that in Denmark, where the antituberculosis campaign has been widespread specially well organized, and provided with a more liberal State expenditure than in any other country, the death rate from tuberculosis is the lowest of all European nations being in 1922 at the rate of 9 5 as against 11 2 per 10,000 for this country

Sir Robert Philip passed in review and refuted the explanations other than the influence of the antituberculosis campaign sometimes given for the fall in the mortality from tuberculosis since 1870 It has often been pointed out that this decline began before the campaign and open air treatment came into existence and it has therefore been suggested that the decline in the tuberculosis mortality is merely part of the reduction in the general mortality, and no doubt environmental factors have exerted an important influence, especially in the initial fall in the tuberculosis mortality during the seventies and eighties But on the basis of many statistics Sir Robert Philip showed that the progressive decline in the general mortality, which is on a uniform rate, cannot explain the accelerated fall in the tuberculosis mortality and that a much more powerful influence has been brought to bear on tuberculosis than on the other forms of disease collectively Thus in Scotland, during fifty years (1871 1921) the death rate from all diseases was reduced by less than half, whereas the mortality from tuberculosis fell by more than two thirds In Denmark the fall in the tuberculosis death rate has been even more abrupt than in other European countries A further point of great significance as regards the efficacy of the campaign is that the drop in the tuberculosis mortality has occurred most conspicuously in the earlier periods of life, up to the age of 25, in Denmark Knud Faber shows that up to the age of 14 years the tuberculosis mortality has fallen since 1890 by more than 70 per cent, and in the discussion Professor Winslow mentioned that in the United States pasteurization of milk has brought down the statistical incidence of non pulmonary tuberculosis

The suggestion that the decline of the tuberculosis mortality is due to an advancing immunization of the civilized population against the disease does not receive support from Sir Robert Philip's survey of the conditions in nations of the older civilization, which should show the effect of such a factor in a more or less uniform degree, for there are striking differences between the rates in England and Scotland on the one hand and in Ireland on the other as indeed there are between various cities, both in Great Britain and also in the United States of America The view that variations in the mortality rate of tuberculosis in different countries depend on differences in racial characteristics cannot be entirely set aside for the Jews are specially resistant and some Celtic strains are peculiarly susceptible, but it does not explain the decline in the rate since 1871 in Britain with its fairly constant racial qualities of the population or the high tuberculosis mortality in Austro Hungary and the low rate of mortality of these races when domiciled in America In short, all the evidence points to the beneficent influence of a widespread and well planned campaign in diminishing the death rate from tuberculosis One authority, indeed, went so far as to express to Sir Robert Philip the opinion that tuberculosis is on the run

ROBERT KOCH

THE life of Robert Koch has often been told—his early start as a bacteriologist, lacking both leisure and laboratory, and his quick but not quite constant spring to fame and all facilities It is an interesting story however, and of so much importance to the history of bacteriology that it will bear telling again This Professor Martin Kirchner has done in a small book[1] It is very simply written, but is the more impressive for its simplicity In 1876, at the age of 33, Koch was engaged in private practice in Bomst in Wollstein a little town of 4,000 inhabitants, and also held the post of Kreisphysikus, a position roughly equivalent to that of part-time medical officer of health It would be hard to conceive a position more unfavourable to research, but Koch worked in such time as he could spare from his other duties, with very limited equipment, without

[1] *Robert Koch* Von Professor Dr Martin Kirchner Band V Meister der Heilkund Vienna and Berlin Julius Springer 1924 (5½ × 8¼ pp 64 one portrait)

any assistance, in isolation from other investigators, and with no library facilities. It was under these conditions that he succeeded in working out the life-history of the anthrax bacillus. He developed methods for cultivating bacteria on solid media, and proved that the anthrax bacteria formed spores, that these spores could develop into bacteria, and that the cultivated bacteria, when inoculated into animals, produced the disease anthrax. This work established firmly the causation of anthrax, and was at once recognized by Cohnheim as being of the greatest fundamental importance. Koch's scientific reputation was established by it, but he continued to combine general practice and bacteriological research until 1880, when he was called to the Kaiserlich Gesundheitsamt in Berlin. Here he had adequate time and equipment for research, and was amidst a circle of other brilliant investigators, including Loeffler, Gaertner, and Gaffky. In these favourable surroundings he became one of the leaders in the rapid advance of the new science of bacteriology. In 1882 he discovered the tubercle bacillus, possibly the chief single discovery of his career. Koch himself always regarded his investigations on tuberculosis as the most important portion of his life's work. In 1883 Koch was sent to Egypt and India to investigate cholera, and succeeded in demonstrating that the comma bacillus was the causal agent. In 1890 he created a great sensation by declaring that he had discovered substances which would arrest the growth of the tubercle bacillus, not only in the test tubes, but also in the living body. This discovery of tuberculin aroused immense general interest, but the final result was a severe disappointment to the early hopes, and Koch felt this disappointment very keenly. From boyhood he had had a keen desire to travel, and during the last fifteen years of his life he was able to gratify this passion to the full, for nearly half his time was spent in the tropical centres of disease. He visited practically every tropical country in Africa and Asia, investigating diseases both of animals and men. In an interval of travel, however, he attended the International Tuberculosis Congress in London in 1901, and caused a great deal of surprise by announcing that human and bovine tuberculosis were separate forms, and that bovine tuberculosis was practically harmless to man. This conclusion gave rise to long controversy, and though the distinction between the two strains is now generally accepted, the belief that the bovine is not injurious to man is known to be incorrect. In 1904 Koch retired from the post of director of the Institute for Infectious Disease, a post he had held for thirteen years, he continued to work, however, and in 1906 went to East Africa to investigate sleeping sickness. He died in 1910 at the comparatively early age of 67. The mere recital of Koch's chief discoveries indicates better than anything else the dominant part he played in the development of bacteriology.

DANGERS OF ZINC STEARATE DUSTING POWDERS

THE attention of the medical profession in the United States has been specially drawn to the serious consequences of using an apparently harmless substance—zinc stearate—in dusting powders for infants and young children. The untoward results range from severe bronchopneumonia to simple toxæmia of variable duration. Accidents have occurred, attributable, it seems, to the inhalation of the powder—as, for example, when deposited on the hands of the child. Heiman published a paper in 1922, according 12 cases of poisoning following this accidental inhalation. Of his series, one patient died within twenty-four hours, three developed bronchopneumonia from which they recovered, and in the remaining cases there were symptoms of partial asphyxia without definite pulmonary disease. Further publicity was given to the question in 1923, when the Section on Diseases of Children recommended unanimously to the House of Delegates of the American Medical Association that warning labels should be placed on all containers of the powder, and that the form of the container be modified so as to prevent the risk of accidents. In response to a request for information in February last by the *Journal of the American Medical Association*, records of 34 other cases were obtained, and these have been published in our contemporary's issue of July 12th. Of these cases 5 had terminated fatally, the youngest patient, an infant aged 3 months, to whom a tin of the powder had been given as a plaything, dying in one hour. It was noted that in all cases the onset of the symptoms was immediate, and that they varied in severity according to the amount of the powder inhaled. The collapse observed in many patients strongly suggested a toxic effect, possibly zinc poisoning. In their conclusions the American investigators state that zinc stearate powders possess no special advantage over other and harmless preparations, such as those containing talc. While, doubtless, the recommendation to attach warning labels to the zinc stearate containers has been adopted and will serve to prevent such tragic accidents in the future, it would seem to be, nevertheless, very much open to question whether the use of this type of powder is to be commended. So far as can be ascertained, dusting powders consisting of zinc stearate are rarely employed in this country, but in view of the accidents following their use in America it would seem desirable to bring their qualities under the notice of the medical profession.

THE INTERNATIONAL UNION AGAINST TUBERCULOSIS

THE International Union against Tuberculosis, which was founded in 1920, has published the first number of its *Bulletin*.[1] The internal affairs of the union, with which twenty-four countries are affiliated, are directed by an executive committee and a council. The council meets once a year, and, in addition to doing administrative work, hears a scientific paper from some person of authority. These papers will be published in the *Bulletin*, which is to be issued quarterly in French and English on facing pages. The first number contains a short account of the activities of the union from 1920 to the present time. Summaries of subjects discussed at the international conferences, held in Paris in 1920, in London in 1921, and in Brussels in 1922, are provided, and the constitution and by-laws of the union are set out in full. It was formed primarily among the nations signatory to the covenant of the League of Nations, and includes the United States of America. Its objects are to co-ordinate the efforts of all the organizations engaged in the campaign against tuberculosis, and to collect and distribute information on questions concerning the scientific and sociological study of tuberculosis. The *Bulletin* contains a report of the meeting of the council held in July, 1923, and also of the meeting of the executive committee held in December, 1923. To the last council meeting Professor Bezançon contributed an exhaustive and detailed criticism of the methods used for the detection of tubercle bacilli in sputum, pus, cerebrospinal fluid, faeces, urine, and blood. Full references to the literature of various methods are given. The *Bulletin* also contains notes from the various countries affiliated to the union. The national associations of Czecho-Slovakia, Italy, and Alsace-Lorraine held conferences during 1923. The English National Association held its tenth annual conference in July of this year. The Belgian National

[1] *Bulletin de l'Union Internationale contre la Tuberculose*. (Vol. I, No. 1.) Issued by the Executive Committee, 2 Avenue Vila Quez, Paris VIIIe. (Medium 8vo, pp. 127.) Subscription 12 francs (French) for the year 1924.

League has followed the example of the French National Committee of Defence against Tuberculosis by printing notices in the daily press to put the public on guard against propaganda in favour of certain treatments of tuberculosis A complete list of the governments and associations affiliated with the International Union, together with councillors and ordinary members, is appended The fourth conference of the International Union was held at Lausanne from August 5th to 7th On August 5th Professor Calmette of Paris opened a discussion on the virulence of the tubercle bacillus On the following day Professor Torssner of Stockholm introduced a discussion on the relation of tuberculosis to pregnancy A third discussion was opened by Sir Robert Philip of Edinburgh on the effects of the antituberculosis campaign upon the diminution of the mortality from tuberculosis in different countries (see page 285 of this issue) After the conference visits were paid to antituberculosis centres in various parts of Switzerland

CONFERENCE OF CREMATION AUTHORITIES

The third annual conference of cremation authorities was held at Wembley on August 1st, and was attended by delegates of cremation authorities, representatives of the Federation of Cremation Authorities and of the Cremation Society of England During the morning session the constitution of the Federation of Cremation Authorities was dealt with and cremation regulation and propaganda work considered In the afternoon Bishop Gore opened the proceedings, urging strongly the value of this way of dealing with human remains, more especially in crowded populations and great cities He hoped to be able to dissipate a certain fog of prejudice which still affected the sentiments of many people There was no theological objection to this mode of disposal of the dead, and he believed that if the practical advantages of it were advertised the false sentiment against it could be overcome within a short time Sir Thomas Horder then took the chair and suggested that a stronger appeal to the general public could be made from the sentimental and aesthetic point of view The Society was just fifty years old, and its progress was still slow owing to lack of appreciation of sanitary and economic arguments The ensuing discussion included the following points cremation associated with public health and economics, the aesthetic point of view and the ideal crematorium, education and propaganda work In the annual report of the council it is stated that the total number of cremations in Great Britain during the last twelve months was 1,926 The slight decrease of twenty-three on the figures for 1922 could probably be related to the abnormally low death rate, and in this sense was not unsatisfactory When full statistics were available it was probable that the cremation ratio to the death rate would show a marked improvement Over 25 per cent of well known names published in the *Times* review of its obituary columns for the past year were of those who had been cremated A new crematorium has been completed at Pontypridd, and the provision of crematoria has been under consideration at Cardiff, Chiswick, Canterbury, Richmond-on Thames, and in the West of England

ALLEVARD LES BAINS

Dr H Vallee sends an account of the sulphuretted hydrogen cure for diseases of the nose, throat, and larynx at Allevard les-Bains, Isere, France The season extends from June 1st to September 30th and twenty five days is stated as the duration of treatment Allevard is a picturesque town in the mountains of the Dauphine, 1,500 feet above sea-level, and reached from Paris by Aix les-Bains and Chambery, or Lyon and Grenoble At Pontcharra on the P L M Railway there is a junction for Allevard The climate is described as temperate, and very suitable for children and nervous people The town is protected from the winds by surrounding mountains, and there are easy and delightful excursions in the neighbourhood The temperature of the spring is 42° C , the water is limpid and transparent, and contains sulphuretted hydrogen, carbon dioxide, and nitrogen Dr Vallee describes two methods of treatment at Allevard The first consists of gaseous inhalation at the ordinary temperature, for this there are seven large rooms In the middle of each room a fountain of spring water is thrown with great force on to a large metallic disc suspended from the ceiling The water falls in a fine shower into a large basin and thence into smaller ones, breaking up each drop, and so discharging its gas content, in this way a bath of gas mixed with air is produced Dr Vallee reports that patients can take several inhalations each day, the first lasting only two or three minutes to avoid discomfort children are said to bear this treatment very well In the second method warm gaseous inhalations are taken in four rooms in a similar way to that in the cold room, except that the vapour of the heated water rises from the open floor and produces a thick fog in the room The patients, in bath gowns, remain in these rooms from twenty to forty minutes, and after inhalation often take a general douche or hot foot-bath This form of treatment is considered by Dr Vallee to be very efficacious for such chest affections as emphysema, chronic bronchitis, and asthma The water is also used for nasal douches and for gargling, dry chronic pharyngitis and tonsillitis are said to be much benefited Diseases of the larynx, such as chronic catarrhal and chronic hypertrophic laryngitis, and dry catarrhal middle otitis are other conditions for which this treatment is recommended, contraindications to it include tuberculosis, acute or febrile conditions, arterio-sclerosis, cancer, old age, and diseases of the heart and kidneys

CANCER AND LUBRICATING OILS

Early in January the trial began of a workman's compensation case which turned on the point whether cancer of the scrotum was to be considered a disease to which "mule-spinners" in the cotton industry were particularly liable in consequence of the nature of their employment, and for which, therefore, they should receive compensation References to this appeared in our issues of February 16th (p 289) and April 12th (p 679) On July 26th Judge Mossop, at Ashton-under-Lyne County Court, found in favour of the cotton-spinner concerned, awarded £26 5s , the agreed damages, and gave a declaration of liability on the part of the employers should the disease recur The plaintiff at present appears to have completely recovered In a written judgement the judge gave his reasons as follows "(1) Plaintiff contracted the disease known as cancer of the scrotum, (2) this disease manifested itself for the first time whilst he was employed by the respondents, who were his last employers, (3) his employment brought him into contact with a moving bar, which caused constant friction close to his scrotum, (4) his employment involved his overalls near the scrotum being constantly sprinkled with mineral oil, (5) mineral oil is an irritant, (6) the applicant, when at work, used overalls which could be easily penetrated by the oil, (7) the atmosphere in which he worked was humid, (8) investigation has proved that cancer of the scrotum is quite common amongst mule spinners, and (9) combining the facts numbers (1) to (7), the conclusion is irresistible that there is a connexion between the disease and the employment" He further

found as a fact that the return of the disease was reasonably probable This ruling has had a curious sequel A claim is being made against an Oldham mill company under the Workmen's Compensation Act in the case of a mule-spinner who has been dead two years and who ceased his connexion with spinning eight years before his death We understand that an appeal against the county court judge's ruling has been lodged

EQUINE INFECTIOUS ANAEMIA

Infectious anaemia, or swamp fever, is an obscure and insidious septicaemic disease, which until recently was believed to be confined to the equidae It generally has a fatal issue, but cases occur in which the symptoms, being limited to a few slight attacks of fever, escape notice, and such animals may act as carriers The disease may be acute or chronic, with more or less irregularly intermittent or remittent fever as the most constant characteristic A horse may die from the effect of a single attack, but in some cases the fever is mild and the other symptoms so indefinite that injection of blood is necessary to determine the existence of disease The most prominent symptom is progressive anaemia, which is much more pronounced in chronic than in acute cases It is accompanied by a train of secondary symptoms such as gastro-intestinal disturbances, cachexia, and icterus The anaemia is very variable there is generally a considerable diminution of the red blood cells (from about seven to two or even one million per cubic millimetre), with the occasional occurrence of nucleated and other abnormal cells There is leucopenia with a relative polymorpho-leucocytosis, but the number of leucocytes increases during the bouts of fever The disease is essentially a septicaemia marked by subserous or subendocardial haemorrhages in the more acute cases, by alteration in the bone marrow, by degeneration of the parenchyma of the heart, liver, and kidneys, and enlargement of all the lymph glands of the body The causal organism is a filtrable virus which is capable of existing in the blood of horses that have apparently recovered for periods as long as twelve years In addition to occurring in the blood, the virus is found in the urine, nasal and ocular secretions, and milk, but not in the faeces It has been demonstrated in the blood of newly born foals It is easily destroyed by heat and sunlight, but not by drying and decomposition The incubation period is from five to nine days There appears to be no immunity The organism has not yet been seen or cultivated, although certain Japanese workers are of opinion that it is a spirochete (*S equi infectiosa*), 3 to 25 μ long and about 0·3 μ broad, with five to seven rather loose spirals and a short terminal filament This theory has not yet been generally accepted The disease is very widely distributed in Europe and elsewhere, and appears to be spread by the mechanical agency of various blood-sucking flies, including *Stomoxys calcitrans*, the stable-fly Man was believed to be refractory to the disease, but Peters[1] has recently reported the case of a Dutch veterinary surgeon who in May, 1917, contracted infectious anaemia while treating horses suffering from it Until the end of 1918 his symptoms were identical with those observed in horses He remained more or less in the same condition until the beginning of 1919, when a perceptible improvement was noticed During the period, less than 1 c.cm of his blood injected into a horse was sufficient to cause death The incubation period and symptoms were identical with those shown by another animal injected with blood from an equine source Three horses thus inoculated died One was injected with filtered blood and succumbed to the disease, thus confirming the opinion that it is due to a filtrable virus In 1923 the blood of the human patient appeared to be free from the virus Peters, though he does not believe that this disease has anything in common with human pernicious anaemia, suggests that it may afford a possible explanation of some of the more obscure cases of anaemia in man

[1] *Presse medicale*, 1924, p 103

THE PARLIAMENTARY SESSION

The parliamentary session, which was adjourned on August 7th until September 30th, proved (our Lobby Correspondent writes) much less sensational than had been predicted by those who overlooked what Mr Ramsay MacDonald said on assuming office He recognized that, as Prime Minister of a Labour Administration, he would nevertheless be the head of a minority only, and that in those conditions his party would be compelled to moderate their policy and to accept defeats other than in actual vote of want of confidence. In those circumstances no proposal for a capital levy or for the nationalization of any industry has been put forward, the Cabinet being content to move along lines which, subject to occasional vicissitudes, secured adequate support Indeed, the constitution of the Government more or less required also that movement should be by degrees The Ministry received its sharpest knock on an Evictions Bill introduced by Mr Wheatley, under which a landlord would have been unable to recover possession of a house if the tenant were unemployed This was rejected, and one introduced by Mr E D Simon, a Liberal member, to make evictions subject to certain new conditions was passed instead The provisions of the Housing Bill are too familiar for need of summary here It was subjected to considerable amendment in Committee and was opposed by the Conservatives because of their belief that it would not serve the purpose intended With the qualifications made in Committee the scheme is subject to review every three years and also to stoppage by the Minister of Health if the rate of building falls one third behind that set forth in the bill A measure to amend the unemployment insurance law had for a principal feature to remove the gap which, according to law, was made at certain periods in the allowances, but which, as a matter of fact, has been generally yielded to meet emergencies Another bill substantially reduced the limitations put upon the qualification for old age pensions The greatest criticism in this connexion was as to the barrier against work for pensioners over 70 years of age The bill to set up wages boards for agricultural workers and the London Traffic Bill are two other pieces of legislation touching widely different subjects, which occupied a good deal of time in Committee As was understood would be the case when the Government was formed and Mr Ramsay MacDonald undertook the Foreign Secretaryship as well as the Premiership, he has been little seen in the House of Commons, save at question time and for the purposes of statement or speech in big debates, but his influence as head of the Government has been no less strong on that account His great ambition has been to exercise influence for a European settlement, and international affairs have greatly occupied him Mr Roberts has proved a sympathetic Pensions Minister The Home Secretary, Mr Arthur Henderson, is seeking to engrave his name on the Statute Book by a compendious bill for amending and enlarging factory legislation One objection taken to this measure is that it still leaves administration distributed among so many departments Probably an amendment embodying this point will be submitted by Dr Fremantle when the second reading is moved in the autumn session This will, it is understood, have sympathy from most, if not all, of the medical group

FORMALDEHYDE IN FOOD

Report by Food Preservatives Committee

The Food Preservatives Committee of the Ministry of Health has issued this week an interim report on the use of formaldehyde as a preservative for food, with special reference to its use in connexion with chilled beef.[1] The report concludes with a recommendation that the treatment of meat with formaldehyde or any of its derivatives should be specifically prohibited.

This departmental committee was appointed in July, 1923, by Mr. Neville Chamberlain, then Minister of Health, and is now constituted as follows: Sir H. C. Monro, K.C.B. (chairman), Professor W. E. Dixon, M.D., F.R.S., Sir A. Daniel Hall, K.C.B., F.R.S., Dr. J. M. Hamill, Mr. P. A. Lillis Richards, Professor F. G. Hopkins, M.B., F.R.S., Dr. G. R. Leighton, Dr. A. P. Luff, Dr. Charles Porter, and Mr. G. Stubbs. The secretary is Mr. A. M. Legge of the Ministry of Health. The terms of reference of the committee are to inquire into the use of preservatives and colouring matters in food, and to report (1) whether the use of such materials, or any of them, for the preservation and colouring of food is injurious to health, and, if so, in what quantities does their use become injurious, (2) whether it should be required that the presence of such materials and the quantities present, in food offered or exposed for sale should be declared.

The present report, which is signed by all members of the committee, and dated June 12th, 1924, is made in response to a request for a special report on a process (named after its inventor the Linley process) for the preservation of chilled beef by means of formaldehyde. The aim of this process is to make it possible to import beef from distant countries in a chilled instead of a frozen condition and thus to be sold to the public in a condition more closely approximating to that of fresh beef. But the Linley process forms part of a larger subject—namely, the use of formaldehyde as a preservative of foods generally—and in the committee's opinion its consideration cannot be satisfactorily divorced from the wider question. Accordingly this interim report deals with the use of formaldehyde as a preservative for food in general, with special attention to its particular application as a preservative of chilled beef in the Linley process.

Formaldehyde as a Food Preservative

A 40 per cent. solution of formaldehyde in water is known as formalin, and it is as formalin that formaldehyde comes into commerce for various purposes, including its use as a preservative for food. The committee proposes to deal in its final report with the objections which are common to the use of preservatives in general in food, at this stage it merely states that these objections are applicable to formaldehyde with no less force than to other preservatives. The report continues:

> Formaldehyde is a preservative substance which is inimical to life and to vital processes of all kinds. It is a powerful protoplasmic poison. Formaldehyde when ingested exerts an irritant action upon mucous membranes and after prolonged use appears to cause inflammatory changes in the liver and also in the kidneys where a portion of it is excreted. In the body formaldehyde is partly oxidized to formic acid and partly excreted unchanged in its passage through the body it combines with tissue proteins and this combination renders its excretion slow so that it is probably cumulative and this feature makes its use as a preservative of food particularly objectionable. Formaldehyde may retard digestion even when present in food in comparatively great dilution and it combines with the protein constituents of foods forming a compound which is less digestible than the original substance. Even if this formaldehyde protein compound is ultimately digested and the products of digestion are absorbed it is possible that these products are abnormal in character and present knowledge does not justify us in asserting that they could be regarded as unobjectionable and without effect upon the normal metabolic processes of the body. On the contrary recent advances in our knowledge of biological processes point to the far reaching importance of the effects produced upon metabolism and nutrition by extremely minute amounts of substances ingested and absorbed, and in view of this a substance such as formaldehyde which is known to produce gross changes in the composition of food materials and to be inimical to life even in high dilution must be regarded with grave suspicion in regard to its possible ultimate effects upon the normal processes of metabolism.

Sir George Buchanan fifteen years ago, in a report to the Local Government Board, referred to the possible use of formaldehyde for concealing incipient decomposition in meat and for hiding any smell of staleness or putrefaction. As to this, the committee, of course, reprobates the foisting upon consumers of an article which has already begun to decompose. Returning to the main question, the report proceeds:

> We have heard evidence in regard to the use of preservatives in food from a large number of firms engaged in the preparation, sale, and importation of a large range of food materials and also from associations and societies representing food traders' interests, but from none of these with the exception of the firm of meat importers already mentioned and one other witness, did we receive any request that formaldehyde should be permitted as a food preservative. It would appear that the undesirableness of using this substance as a preservative is generally recognized by traders. We are aware that public analysts occasionally find formaldehyde in certain foods such as milk but no milk vendor of any standing would tolerate this practice which in the case of milk is definitely illegal. Quite recently certain consignments of caviare imported into England have been found to contain formaldehyde in considerable quantities but appropriate administrative action on the part of the Port Medical Officer and local authorities concerned led to the abandonment of this use of the preservative. When formaldehyde is added to food nowadays it is usually done by irresponsible persons and its use as a food preservative appears to be comparatively rare and sporadic. We understand however, that butchers are being supplied to some extent with a solution of formaldehyde for treating the surface of the meat although it is possible that they may be unaware of the nature of the material they are using. Medical and scientific witnesses both those who gave evidence before us on behalf of food traders and also those who spoke on behalf of local authorities and other organizations concerned with public health interests neither asked that formaldehyde should be recognized as a permissible food preservative, nor when questioned failed to agree that formaldehyde was an objectionable substance to use in connexion with food. A witness who voiced the opinion of the British Medical Association was emphatic in his condemnation of this preservative.
>
> There is in this matter an almost complete consensus of opinion amongst commercial and public health interests. These interests are too often opposed but we desire here to record our impression that among the more enlightened and far seeing firms engaged in the preparation, sale, and distribution of food there is a growing tendency to recognize that the true interests of the trader are similar and run parallel with considerations affecting the interests and health of the consumer.
>
> The Departmental Committee on Preservatives and Colouring Matter in Food which reported in 1901 regarded the addition of formaldehyde to food or drinks as so objectionable that they recommended that its use for such purposes should be absolutely prohibited. We may add that with scarcely an exception every country which has made legal enactments or regulations in connexion with the purity of its food supply has prohibited the addition of formaldehyde to food either specifically or implicitly in a general prohibition of preservatives.
>
> Having regard to the interests of the trader and of the consumer we have no hesitation in recommending that the addition of formaldehyde or any of its derivatives to food or drink should be absolutely and specifically prohibited.

The Linley Process

The committee carefully considered representations made to it that the Linley process is not open to the recognized objections to the ordinary use of formaldehyde as a food preservative on the ground that owing to the special method of application only a small amount of formaldehyde is required and the quantity absorbed by the meat is negligible.

The object of this process is to enable beef to be carried chilled at a temperature of about 29° to 30° F. from distant countries so as to arrive here in good condition and free from moulds. A description of the process in its essentials, as supplied by the inventor, is given in the report. It was in operation some years before the war in connexion with the transport of some though by no means all of the chilled beef sent to this country from the Argentine. The Linley apparatus was installed in several abattoirs in the Argentine but no abattoir in that country controlled by United States firms ever adopted the process, and without its aid these firms were able to export chilled beef to England successfully. During 1909 and 1910 five trial consignments of chilled beef treated by the Linley process were sent from Australia but after that date shipments were discontinued. Sir G. S. Buchanan's inquiries in 1909, in association with Dr. S. B. Schryver led him to conclusions unfavourable in general to the treatment of chilled beef with formaldehyde and he suggested that the use of this substance might be limited to disinfecting the holds of ships before the meat was introduced. After this the use of the Linley process in the importation of chilled beef was kept under close observation by the Local Government Board. The importers concerned knew that consignments were being officially sampled, and were from time to time warned that in the Board's opinion consignments contained excessive amounts of formaldehyde.

[1] London: H.M. Stationery Office; or to be purchased directly through any bookseller. 1924. 2d. net.

"They doubtless endeavoured to keep the amount of formaldehyde as low as possible, but the widely varying amounts of formaldehyde which nevertheless were found appear to indicate what might be expected from the nature of the process—namely, that its control is difficult, and that although it is possible to regulate the amount of formaldehyde admitted to the beef it has not proved practicable to control, with any degree of certainty, the amount which the beef may actually absorb It would appear, also, that the degree of penetration may be considerable—the presence of formaldehyde having been demonstrated at a depth of 30 mm even when the treatment of the beef with formaldehyde has been slight"

Since August, 1914, when the importation of chilled beef ceased, the Linley apparatus has not been revived Early in 1923 the Argentine Government was considering whether this process should be recognized, but before making any pronouncement consulted the British Government, which replied that the revival of the process would not be in the interest of the consumer In a decree dated February 20th, 1923, the Argentine Government prohibited the treatment of meat by the Linley process The report continues

"The present position is therefore as follows The country with the largest export trade in chilled beef has prohibited the treatment of chilled beef with formaldehyde The United States Government has specifically prohibited the importation of meat treated with formaldehyde Every other country, with scarcely an exception, which has made regulations in connexion with the purity of food has prohibited, either explicitly or implicitly, the treatment of any food material with formaldehyde Finally, the Linley process is not now in operation in any part of the world

"The chief reason given for desiring the resumption of the process is that it will enable the establishment of a trade in chilled beef from Australia, since under present conditions the journey from Australia is too long to permit the successful transport of chilled beef to this country without the aid of some such process It is hoped that if a process of this kind is permitted such a trade can be created, and the importer will be able to obtain a higher price than Australian beef imported in a frozen condition fetches at the present time"

Early this year a trial consignment of chilled beef treated by the Linley process was arranged between Australia and London This experiment failed, and the whole consignment was subsequently condemned by the medical officer of the Port of London as unsound and unfit for food, and was surrendered by the importer for destruction The amount of formaldehyde found was relatively small, but traces were detected as deep as 30 mm from the surface of the meat, showing that formaldehyde penetrates into the meat with ease and does not confine itself merely to the surface The inventor ascribed the failure of the experiment to several causes for example, improper slaughtering, insufficient care in dressing and handling of the carcasses, improper hanging of the meat, and inefficient working of the fan for circulating air in the hold The committee adds that the conclusions at which it has arrived have not been influenced by the failure of this experiment

Conclusions

The report next discusses practical difficulties in connexion with chilled beef which would arise if it were justifiable to assume that formaldehyde was sufficiently unobjectionable to enable it to be tolerated in small quantities in foods, but the committee is definitely of opinion that this assumption cannot be made, and here it finds itself in agreement with the health authorities of all other countries who have devoted attention to the use of preservatives in food The report concludes as follows

"We have given careful consideration to trade interests in so far as they are compatible with or in furtherance of the interest of the consumer It appears possible that a section of the trade might benefit financially by the treatment of chilled beef with formaldehyde, but we think that the true interests of the trade as a whole would not be furthered by a revival of the practice There appears to be much in the statement that the treatment of beef with formaldehyde may correct, in part at any rate, improper and defective methods of preparation, handling, storage and transport, but it is undesirable that preservatives generally should be used to support the perpetuation of bad methods in dealing with food offs We are satisfied that the consumer will not be prejudiced our non interference with existing conditions in the meat trade, that no ultimate advantage to the consumer would accrue from a revival of the Linley process

"Having regard to all the information which has been given to us we are of opinion that no exception in favour of the Linley process should be made from our general condemnation of the use of formaldehyde in any article of food or drink

"We therefore recommend that the treatment of meat with formaldehyde or any of its derivatives should be specifically prohibited"

Nova et Vetera.

THE OBSTETRIC CHAIR, AN ANCIENT MECHANICAL APPLIANCE

The recent find by Mr C J S Thompson, the curator of the Wellcome Historical Medical Museum, of an example of a Hippocratic luxation table[1] is indeed a very valuable and important addition to that collection The Hippocratic physicians were undoubtedly dexterous in the application of mechanical principles in the treatment of disease, and many of their devices have hardly been improved upon, a fact which reflects high credit on those whose anatomical knowledge was so limited

One of the most interesting contrivances of the ancients was the obstetric chair (*διφρον μαιωτικον*), a convenience which was in use for many centuries, but now seems to have fallen into complete desuetude Our earliest knowledge of obstetrical science is derived from certain treatises in the Hippocratic collection Amongst these are those on diseases of women, on superfoetation, on excision of the foetus, on birth, and a few others wherein are contained numerous valuable and painstaking observations on the general practice of midwifery

In early times pregnant women were usually attended by a midwife, and physicians were only consulted in difficult cases, later, however, they were often called in to conduct normal cases It will be recalled that the mother of Socrates, Phaenarete, was herself a midwife, from which circumstance her famous son has drawn one of his ingenious illustrations After Hippocrates, Diocles of Carystus (*c* 350 B C) and Herophilus (*c* 300 B C), the celebrated Alexandrian anatomist, both published works on this subject, none of their writings, however, have come down to us

We are fortunate in possessing several writings of one of the greatest physicians of all time, and an outstanding exponent of midwifery, gynecology, and diseases of infants —the illustrious Soranus of Ephesus, who lived during the reigns of the Emperors Trajan and Hadrian (98-138 A D), and was following his profession in Rome about 100 A D His two books on the diseases of women are a storehouse of interesting facts on the practice of midwifery and pediatrics in ancient times All our detailed knowledge of these subjects is derived from his works, and here we find every topic discussed in a methodical and systematic manner Although nominally Soranus belonged to the sect of the Methodists his practice was almost certainly eclectic, combining the best in the teachings of the numerous medical sects of the time Before giving his account of the construction and use of the obstetric chair I will briefly mention the preparations that were then thought necessary for a confinement The following are to be prepared for use Olive oil for lubricating the passages, warm water for cleansing the parts, sweet-smelling perfumes for easing the pain, sponges, wool, a pillow for the child, and a binder, an obstetric chair, two couches—one for the mother and the other for the child

In the twenty-first chapter of the first book we have the following

"The obstetric chair is required to put the patient in the proper posture for delivery In construction it is a chair having in the centre of the seat, where the birth takes place, a moderately large space cut out round in shape This space must not be too wide, so as to allow the hips of the patient to slip through nor again too narrow, so as to cramp the perineal region, which in the state of the patient would be painful It had better be wide however than narrow, for if too wide the opening may be lined with cloth and made the proper size The chair should be broad enough to accommodate stouter patients and it should be above the average height since in the case of smaller women the deficit can be made good with a footstool Underneath the seat the chair should be boarded in on the right and left sides but the front and rear should be left open for the purpose of the delivery to be detailed hereafter There should also be affixed to the seat on the right and left sides two arm rests for the patient to grasp during the pains and in the rear a sloping support to prevent the loins and hips slipping back This back rest is necessary because if the midwife were assisting parturition from the rear and the patient were to lean back the direct delivery of the child would be hindered by the unnatural position Another contrivance which some utilize is an axle, arranged under the chair and protruding

[1] British Medical Journal, February 23rd, 1924, p 333

on either side fitted with a handle and a knob The purpose of this is that in the delivery, a noose may be slipped over the ears to the shoulders or some other part of the child the ends of the cords made fast to the knob and the delivery effected by windlass action But those who use this contrivance do not understand the common rule of obstetrics that difficult labour should take place when the patient is in a recumbent posture

The obstetric chair then would be of the above construction as we have described

Such is the description of the obstetric chair, which appears to have been frequently used from the notices of it in the literature

An obstetric case was probably conducted as follows

There were three attendants in addition to the midwife or obstetrician, two of these took up their positions on either side of the patient and the third in the rear They assisted the woman during the pains, and generally exhorted her to endure them steadfastly The parturient woman lay down on the couch on her back, and her pains were eased by vaporizing aromatics Some physicians during this stage allowed the patient to walk about and take nourishment others forbade it, asserting that it lessened the strength of the patient and exposed the body to the cold As the patient lay on the couch the midwife determined the progress of the case by making a vaginal examination When the os was sufficiently dilated the patient was then transferred to the obstetric chair, where the labour was completed If the patient was of a weak constitution, or if an obstetric chair was not at hand, the labour was then allowed to proceed to its termination on the couch with this modification, however that the final stages were completed in a squatting posture When the patient was placed on the chair her garments and hair were loosened, and the midwife took up her position on a low stool, hiding as much as possible her countenance from the patient, to gain her confidence The parts were then lubricated with a little warm oil, and the woman was directed to bear down and direct all her strength to expelling the child especially when the pains occurred The anal region was kept clean with a small linen towel If the membranes were not ruptured this was to be accomplished with the finger nail When the child was born it was received by the midwife on a napkin then if the placenta was slow in coming away the cord was cut and it was manually removed When the birth was completed the parts were then sponged, the patient was transferred from the obstetric chair to a couch, a napkin was applied to the pudenda and a binder was applied around the abdomen Little food was allowed for two days, on the third day easily digested foods of all kinds, and on the seventh the patient was allowed to rise

Normal cases were conducted in this manner throughout antiquity, and although Galen has several references to obstetrics in some of his writings it is probable that most if not all of his knowledge was derived from Soranus This work of Soranus was translated into Latin perhaps about the sixth century, and thus this great tradition was handed on to the West

But the most interesting phenomenon in the history of obstetrics is the discontinuance of what is probably the natural mode of delivery, a mode which the ancients endeavoured to assist by means of the obstetric chair

Belfast SAMUEL SIMMS, M D

ROYAL MEDICAL BENEVOLENT FUND

At the last meeting of the Committee thirty cases were considered and £508 10s voted to twenty-nine applicants The following is a summary of some of the cases relieved

Widow aged 61 of L F P S Glas (1906) who when he died in 1902, left her unprovided for She had help from a married daughter who is now dead and her husband also The applicant is left without means but with a grandchild Voted £25

Daughter aged 64 of M R C S Eng who died in 1869 The family remained in Russia and have been lost Since then the applicant has supported herself and has been earning about £14 a year by needlework She receives from various sources £25 from a private charity £25 and from a friend £20 She lives at a ladies' home and pays £56 a year Voted £13 in twelve calendar months

Widow aged 47 of L S A (Lond) who died in April 1923 There are a child now a daughter aged 18 and a boy aged 16 both at school The applicant expects when all her affairs are settled to have about £400 left [repeats to take effect on two passing events] Present income £70 a year Left £410

Widow aged 63 of M B Aberd. (1885) who served in R A M C (T) and in the Royal Air Force He died in May 7th 1924 leaving eight children aged 10 to 25 years The eldest son is a medical student Voted £20

Subscriptions may be sent to the honorary treasurer, Sir Charters Symonds, K B E M S, at 11, Chandos Street, Cavendish Square, London, W 1

THE BRITISH ASSOCIATION IN TORONTO

WORK OF THE SECTIONS

THE inaugural meeting, at which the President, Major-General Sir David Bruce, F R S, delivered his address to the Association—an account of which was published last week (p 239)—was held in the Convocation Hall of the University of Toronto The delegates were formally received by the Premier and other members of the Ontario Government, in the Parliament building on August 6th The Council of the Association ratified the appointment of Professor Horace Lamb, D Sc, F R S, late professor of mathematics at Manchester University, as President for 1925 Next year's meeting will be held in Southampton

On August 7th the Association separated into its thirteen sections, for each of which suitable accommodation was provided in the Toronto University buildings, all being close to the central reception room The address by Dr H H Dale, the president of the Physiological Section, was printed in our last issue (p 219)

Health and Physique

The president of the Section of Anthropology, Dr F C SHRUBSALL, dealt with health and physique through the centuries Complaints about physical deterioration of the population were ancient, dating back to Egyptian times The report of the Ministry of National Service on the findings of the recruiting boards during the last years of the war had caused alarm with regard to the position in England, but this survey had been undertaken when most of the physically fit had already enlisted voluntarily A record obtained in 1918 was probably more indicative of the actual state of the nation Of about 170 000 youths, aged 18, 65 per cent were placed in Grade I 30 per cent in Grades II and III and 5 per cent in Grade IV The recent war appeared to have left no obviously harmful marks on the population, the children were well nourished, and the anticipated increase of defective children had not materialized even in air raid areas The increase in the number of children who were troublesome and educationally backward was not due to innate defects of character, but rather to lack of discipline during the absence of their fathers Dr Shrubsall held that a pessimistic view of the physical and mental condition of the people in England was unjustified, there was no decrease in stature or weight, and the recent war had shown the existence of powers of resistance to physical adversity that had never been equalled hitherto Education, so far as children were concerned, was now more general, the national health had improved, and the expectation of life was longer than ever before There was no reason to think that the physical conditions of any class of the population were worse than those of corresponding classes at previous epochs, even in those classes on which industrialism and city life had pressed most hardly The real increase in proportion of the unfit was much less than had been assumed, reproductive selection which tended to increase the apparently less valuable stocks, was opposed by a lethal selection, which had a contrary trend From the eugenic standpoint emigration, though a real disadvantage to England, had been a source of strength to the empire of associated nations The evils of industrialism were being successfully opposed by a higher level of general culture and the awakening of a national conscience A still greater influence for good was the more intelligent care of children, in which the application of preventive medicine was playing an important part The intellectual average of the nation was equal to that of any other country Civilization might be making greater demands of its bearers, but their qualities were neither diminishing nor deteriorating and increasing numbers were being fitted to shoulder the burden The younger countries could profit by the experience of the older and provide from the start better hygiene and more effective education They could watch over the most favourable racial elements establish a public opinion favouring the early segregation of degenerate types, and as Canada was doing could limit emigration to those likely to become fit citizens

The Scope of Psychology

In the afternoon of August 8th Professor W McDOUGALL delivered the presidential address to the Section of Psychology on purposive striving as a fundamental category of psychology He remarked that the success of the Psychological Section might be taken as evidence of the recognition of the claim of psychology to form a branch of natural science Among psychologists there were some differences of opinion as to the scope of their science Some defined psychology as the science of consciousness, confining themselves to the *analytic description of*

states of consciousness as complex conjunctions of units, others, on the contrary, introduced into the study of mind only those methods of observation, description, and explanation which were used in the physical sciences, and practically confined themselves to the study with the unfortunate name "behaviourism." Professor McDougall believed that neither of these two lines satisfied the majority, and he urged the adoption without reserve of the conception of purposive striving as being "valid, useful, nay indispensable, and therefore true." The life of man was one long series of such strivings, and we now realized, thanks to Freud, that this striving continued in dreams—the end in view governing the activities of both mind and body. This striving had to be considered at every stage of psychological investigation when it had been ignored the "will" could not be introduced into the picture as the finishing touch. In physiology the mechanistic confidence of the nineteenth century was fading away as the complexity of the living organism was more fully realized. So, also, in general biology the mechanistic neo-Darwinism was helpless before the problems of evolution, the origin of variations, the differentiation and specialization of instincts, the increasing part played by intelligent adaptation, and the combination of persistency of type with indefinite plasticity, which was analogous with the steadfast, purposive, adaptive striving of a resolute personality. Such considerations, he added, should encourage them to claim for psychology the freedom to choose, shape, and refine its own fundamental conceptions, instead of accepting the abstract conceptions of physical science and attempting to build up from them a mechanical dummy. Let them begin by accepting man for what he seemed to be—a thinking being, who strove to attain desired ends and to realize ideals. Psychologists should endeavour to understand the history of these tendencies to strive, as they progressed with this task they might cautiously extend the same principles of explanation to the animals of successively lower levels, and then, perhaps, they might be able to begin to understand the broader aspects of the physiology of a complex organism.

On August 9th, in the morning, a joint discussion of the Psychological and Physiological Sections was arranged, and dealt with the physiological and psychological factors of muscular efficiency in industry. Professor C. LOVATT EVANS read a paper on the physiology of muscular contraction in relation to fatigue, and Professor E. A. BOTT dealt with the co-ordinate volitional action of antagonistic muscular groups. Professor E. P. CATHCART discussed the calculation of the mechanical efficiency of the performance of muscle work. Dr. C. S. MYERS spoke on conceptions of fatigue, and Professor S. F. LEE contributed an account of the physiological aspects of efficiency in industry.

On August 9th and 10th a considerable number of excursions were arranged. The Engineering Section inspected the great hydro-electric installation in the Niagara district under the Ontario Power Commission, visited the new Welland Ship Canal, and made a motor-car tour of the Niagara fruit district. The Geological Section explored the glacial formations in the Niagara region, and the Chemistry Section studied industrial plants in the Niagara peninsula. The Physiological Section inspected the Ontario Mental Hospital at Whitby.

Biochemistry

On August 11th the Physiology and Chemistry Sections united in a discussion on vitamins and the relation of light to their action. Professor J. C. DRUMMOND outlined the modern tendencies of vitamin research, and Professor H. C. SHERMAN dealt with the quantitative distribution and nutritional significance of fat-soluble vitamin. The isolation of a bios from autolysed yeast was described by Professor WALTER H. EDDY, and fractionation of bios was considered by Professor W. LASH MILLER. Professor W. STEENBOCK called attention to radiant energy as the antirachitic factor. In the afternoon the Physiology Section considered the unsaturated fatty acids in metabolism, which subject was introduced by Professor W. R. BLOOR. Dr. D. D. VAN SLYKE spoke on the distribution of electrolytes in the blood. Professor H. E. ROAF contributed some observations on urinary pigments, and Dr. E. GORDON YOUNG dealt with the decomposition of glucose by bacterial enzymes.

On August 12th Professor J. J. R. MACLEOD described experiments he had been making with a view to elucidating the nature of the chemical change that accompanies the disappearance of blood-sugar in normal animals under the influence of insulin. Mr. C. H. BEST, dealing with the question of the dosage of insulin, had confirmed the findings of other investigators that a small dose (10 units) exerted as rapid and nearly as prolonged an effect upon the blood-sugar of a normal dog as a dose ten times the size. It seemed, therefore, that insulin acted as a cell stimulus rather than in bulk as a chemical. A paper by Drs. P. J. MOLONEY and D. M. FINDLAY was concerned with the properties and purification of insulin, with especial reference to the application of the authors' procedure of adsorption as a method of purification, and the trial of some new preparating agents for insulin. Professor A. T. CAMERON, speaking on the effect of the absorbable intestinal toxins on metabolism, reported that an artificial filtrate of these toxins had been shown experimentally to produce distinct chloride retention in dogs and a rhythmic effect on total nitrogen and urea excretion (a fall followed by a greater rise) which could be repeated by increasing the injection dose.

Race and Mind

Professor W. MCDOUGALL opened a joint discussion by the Sections of Anthropology and Psychology on the existence of mental racial differences. The majority of psychologists, he said, probably took the view that such differences did not exist; experimental psychology had, however, reached two well-founded conclusions. First, the Cambridge anthropological expedition in 1899 to the Malaya Archipelago had shown that two of the coloured races, the Oceanic negro and the Malayo-Polynesian, differed in their sensory capacities from the white races so little as to afford no basis for the explanation of their cultural difference. This conclusion had later been confirmed, and it might be taken as established that all branches of the human race possessed practically equal sensory capacities. Secondly, methods of intelligence testing showed, however, that there were definite racial differences in the innate capacity to develop general intelligence, and the negro had, on the average, a definitely lower endowment than the white race. With regard to the existence of more specific racial differences, two views were held by psychologists: the first, based on the psycho-analytic methods, was that there were symbolic methods of thinking common to men of all races, and thus each race had a racial or collective "unconscious," which influenced its culture, religion, and philosophy. The most serious objection to this view was that it implied the reality of Lamarckian transmission, but this was not insuperable. Professor McDougall held the more conservative view that the various races differed in the relative strengths of instinctive tendencies. In one race the pugnacious tendency was very strong, in another weak, and similar differences existed in the strength of the other instincts. Such differences were reflected in their cultures and institutions, and the comparative study of these threw light on racial differences. Both schools of thought recognized that just as there were great individual differences amongst persons of the same race in respect of special mental capacities, so probably there were similar innate differences in these respects between different races.

Nerve Injury and Deformity

Dr. IVY MCKENZIE in the afternoon read a paper on orthopaedic deformity and the dissolution of central nervous integration. In the upper limb gunshot wounds in the musculo-spinal segment were rarely followed by serious sequelæ, in contradistinction to wounds in the ulnar segment, and operations on the ulnar nerve were less successful than those on the musculo-spinal. A wound in the musculo-spinal segment might give rise to a deformity in the ulnar segment, but a wound in the ulnar segment never gave rise to deformity in the musculo-spinal segment. The explanation of these differences was that the lowest segment (first thoracic) contained central neurones of the sympathetic system which were absent from the upper segment. The lowest segment contained also motor neurones and terminal sensory neurones of the ulnar nerve, which is concerned with the finer movements of the hand. This explained the tendency to orthopaedic deformity in the ulnar segment of the limb as the result of dissolution of the central nervous integration in the cord.

Colour Blindness

Professor H. E. ROAF reported that as the result of examining colour-blind persons it had been found that some were sensitive to as great an extent of the spectrum, and apparently with equal intensity, as was the case with normal people. It followed therefore, that their colour-blindness was due to failure to differentiate certain wave-lengths. These patients recognized their mistakes when they viewed their colour matches through a colour screen. He suggested that possibly the wearing of a coloured eyeglass over one eye would enable such a patient to recognize colours like a normal person.

Renal Hypertrophy

A paper contributed jointly by Professors L. B. MENDEL, T. B. OSBORNE, E. A. PARK, and Dr. M. C. WINTERNITZ, dealt with the influence on the kidney of dietary factors. The general belief that a high protein diet produced renal irritation was tested by observing the changes produced in rats fed on rations extremely rich in protein. The kidneys became strikingly hypertrophied, but no inflammatory or degenerative changes were found by histological examination, nor was there any hypertrophy in the heart. When the renal function was greatly augmented by certain causes other than the task of eliminating nitrogenous waste, hypertrophy did not develop in the same way.

INTERNATIONAL DENTAL FEDERATION

THE seventeenth annual meeting of the International Dental Federation was held this year in the city of Luxemburg, on August 3rd, 4th, and 5th. The Town Hall was placed at the disposal of the Federation by the municipality, and the Mayor received the members in the council chamber.

At the opening meeting the Director General of Education in Luxemburg (Herr NEVENS) presided in the absence of His Excellency, Emile Reuter the Prime Minister. He was supported by the Marquis de Brichanteau, Italian Ambassador to Luxemburg, Dr. Weber, President of the Society of Medical Sciences, Dr. Forman, representing the Medical College, Dr. Krombach, President of the Union of Folk and School Hygiene.

M. ALOYSE DECKER of Luxemburg introduced the Federation in a short speech, and Herr NEVENS, on behalf of the Prime Minister, read an address in French, which expressed the Government of the Grand Duchy's high appreciation of the considerable progress made in recent years in odontological science and its gratification at the honour of the visit of the International Dental Federation.

Speeches were afterwards delivered by the dental representatives of various countries, commencing with that of France by M. A. BLATTER (Paris), followed by Dr. SCHAEFFER STUCKERT (Frankfort, Germany), Dr. H. FRIESELL (Pittsburg, U.S.A.), Dr. G. BAUDOUX (Brussels), M. GRIEPESCLOEK (Riga), Mr. W. B. PATERSON (London). The last named speaker remarking upon the reappearance of a more fraternal spirit among the dentists of Europe as exhibited by their delegates speeches, expressed the opinion that such a manifestation of solidarity would result in a success for the next International Dental Congress, which is to be held in Philadelphia, U.S.A., in 1926. He expressed the regret of British dentists that the International Congress, prepared for with great labour and care in London in 1914, had been ruined at the last moment by the commencement of the great war.

Dr. TRUMAN W. BROPHY (Chicago), President of the International Dental Federation having thanked the Government representative and the various speakers, the meeting adjourned for the consideration of the various matters of the programme by the several commissioners appointed.

The Hygiene Commission reported its opinion that, in view of the prevalence of dental caries in all civilized countries throughout the world and the dangers to public health resulting therefrom, a dental department ought to be established in every Ministry of Health to be under the control of a dental director. The Documentation Commission reported that it had established in the Palais Mondial, Brussels, a catalogue of all the important works and papers on dental subjects published during the past seventeen years. The cataloguing was done on the latest and most approved system both as regards title of subject and the name of author. Dentists and others were now able to obtain copies of papers etc. at a nominal fee by writing to the Director of the Palais Mondial or references to subjects or authors would be sent for the cost of postage. A curious incident in connexion with cataloguing was the publication weekly of a Russian journal of references to books, papers, and other dental communications published all over the world at the expense of the Soviet Government of Russia. No such elaborate work was published by any other nation or by any other Government. The Palais Mondial had received a copy weekly from Russia during the past two years.

The Miller Memorial Prize awarded by the International Dental Federation every two years for important work done in connexion with dental science or for dentistry was awarded to Dr. Truman W. Brophy, Dean of the Dental School of Chicago. Mr. J. HOWARD MUMMERY (London) on behalf of the Federation announced the award and congratulated the recipient.

Various matters of organization connected with the forthcoming International Dental Congress in Philadelphia in 1926 were brought before the Federation by Dr. KING (Chicago), the General Secretary of the Congress, and were replied to by Dr. W. GUY, Dean of the Edinburgh Dental School, Professor GILMOUR of Liverpool University, and Dr. G. VILLAIN (Paris).

The fund organized by the Federation for the relief of distress among Russian dentists in 1923 was reported upon by Dr. FLORENTIN AGUILAR (Madrid), who with Dr. Georges Villain (Paris) acted as honorary secretaries in the collection and distribution. Over 260 complete sets of dental instruments were distributed, each set consisting of a small and compact dental engine, instruments, and materials for tooth stoppings and extraction forceps. Dr. Aguilar and his wife obtained passports from the Soviet Government and visited Petrograd (Leningrad), Moscow, and Odessa for the purposes of investigation and distribution. A cordial vote of thanks was passed by the Federation to Dr. and Madame Aguilar for their courageous and noble actions.

The business proceedings of the Federation in Luxemburg terminated with a banquet at the casino or chief club of the city. The next meeting of the International Dental Federation was fixed to take place in Geneva on August 5th and the following days, 1925.

India.

PUBLIC HEALTH IN BOMBAY

THE Public Health Department of the Bombay municipality has prepared for the information of the public a pamphlet in English, Gujrathi and Marathi dealing with the precautions to be taken against seasonal sickness. The various preventive measures are detailed, and certain diseases, such as influenza and plague are dealt with at length. A list of the municipal dispensaries where medical relief can be obtained and where applications for admission to hospitals can be received, is given, and a note of the several institutions, such as maternity homes, infant welfare centres, tuberculosis and other dispensaries, is included. Information with regard to the administrative procedure concerned in health and diseases generally is duly set forth, and a list of the health department offices and vaccine stations in the city is appended.

SOUTH INDIAN BRANCH

The second number of vol. xviii of the *Transactions of the South Indian Branch* of the British Medical Association contains three papers read before the Branch. In the first, Lieut.-Colonel F. F. Elwes dealt with the ancient history of medicine, with special reference to Greece and India. He pointed to the apparent similarity between the beginnings of medicine in Egypt, Greece, and India, in each country the origin was supposed to be divine, and in each, in the course of time, the original promulgators were deified. The subsequent growth and development of medicine differed considerably—in Egypt medical knowledge progressed slowly for a few centuries and then became stationary; in India little progress was made; but in Greece medical knowledge advanced and it was from Greece that modern medicine derived its origin. Aesculapian temples like the early Egyptian temples, were not confined to worship, but served also the purpose of treating the sick and maimed and might be considered the prototypes of modern hospitals, sanatoriums, and medical schools. Whether the Hindus influenced Greek medicine before the time of Alexander the Great or were themselves influenced by it, the Hindu physicians and surgeons of this period had a well deserved reputation for skill, and the ancient humoral pathology, closely allied to the doctrine of Hippocrates, survives in India in the present day. The Chinese ancient system of medicine was characterized by reverence for authority, but was encumbered by excess of detail and many inaccuracies. He concluded that "we owe to the Babylonians specialization in the matter of fees, to the Jews medical jurisprudence and hygiene, to the Hindus skill in operative surgery, and to the Greeks the ethics and scientific foundation of the theoretical and practical medicine of modern times." The second article, by Major W. L. Forsyth, is a review of infantile biliary cirrhosis of the liver in India. After discussing the history of the disease since it was first described in 1281, he defined it in the terms of Gibbons (1891) as being a cirrhosis of the liver of infants and very young children, chiefly of the Hindu community, essentially biliary in type but showing also intralobular fibrosis and symptoms of varying degree of portal cirrhosis. He suggested that it was due to irritation following the excessive eating of chillies and curries and that there was intrauterine poisoning of the embryonic liver by a toxin in the maternal blood, which later continued to be given to the child at the breast. Dr. I. Frost, professor of biochemistry at the Medical College, Madras, dealt with old and new ideas in biochemistry and remarked that the modern outlook was more concerned with physical state than with chemical composition. In the living creature any state of matter was so subdivided or dispersed through another state that a maximum or effective surface was

developed for a minimum volume Such a state of subdivision was called the "colloid" state, and there arose thence a conception of a surface which might be broadly defined as the boundary between two phases, and as the seat of special forces—mechanical and electrical He concluded by considering the phenomena of surface tension, surface contraction, and adsorption

Cholera in Bihar and Orissa

The cholera epidemic which had obtained so strong a hold in April in Bihar and Orissa has since been kept in check Preventive measures, which were carried out on a very extensive scale, included the disinfection of wells and other water supplies, and the clothing of the sick Routine treatment with kaolin and potassium permanganate was instituted with very satisfactory results At the beginning of June there was a marked decrease in the mortality throughout the epidemic area, due in some degree to the heat and unusual dryness of the weather during the previous two weeks Close co-operation between the public health officials and civil surgeons and the district boards was maintained

Kala-azar Commission

The Kala-azar Commission recently appointed by the Government of India is composed of Lieut.-Colonel Christophers, Major Shortt, and Mr Barraud, and is being financed by the Government of India, the India Research Fund Association, and by grants from the Governments of Assam, Bengal, Madras, Bihar and Orissa, and the United Provinces In the first instance, the inquiry will be focused on the method of transmission of this disease in nature, and preparatory work is being performed to enable the Commission as a whole to make a full start in October An intensive epidemiological study of certain selected kala-azar localities is being arranged, and it is intended that the inquiries should synchronize in all areas with the period of active transmission of the disease A complete collection and examination of all biting insects found in association with the disease will be made, and experimental laboratory work will be organized, dealing with parasitic and allied flagellates, with a view to obtaining clues to the life-history of Leishmania outside the body The geographical distribution of the disease throughout the world, as well as in India, will be accurately ascertained

Ambulance and Hygiene Training

The annual general meeting of the St John Ambulance Association and the Indian Red Cross Society was held on June 24th, with the Viceroy in the chair The annual report of the St John Ambulance Association stated that 750 courses of instruction in first aid, home nursing, and home hygiene had been held during the previous year, at which 12,712 persons had attended The percentage of passes obtained in the subsequent examinations was 63, as compared with 56 in the previous year, and 61 in 1921 Seven new centres had been opened during the year, and an increasingly active interest was being taken by the police and the railway employees The Indian States continued to support this training, and classes were held at thirteen stations in different States The total number of certificates and other awards issued by the Indian Council since 1911 was over 100,000 All-India ambulance competitions were held during the year at Allahabad and Calcutta, and a challenge shield will be presented by Lord Reading for such meetings in the future The report of the Indian Red Cross Society contained a reference to its useful work in providing simple health booklets and leaflets in several languages, coloured posters, and lantern slides Many centres had been provided with this literature, and in certain provinces it was being freely used by Government health officers The increase in child welfare centres was being somewhat retarded by the lack of suitably trained Indian welfare nurses More training schools for nurses were urgently needed, and it was hoped that within the next few years every town would possess at least one welfare centre and one trained health nurse

The Anglo-Indian Type

A statistical analysis by Professor Mahalanobis on stature measurements made by Dr Annandale, the director of the Zoological Survey of India, of a group of 200 Anglo-Indians of Calcutta, has been published in the Records of the Indian Museum (vol xxiii) The Anglo-Indians examined were the offspring of European and Indian parents Professor Mahalanobis's conclusions are that, while Indian castes and tribes are significantly less variable in stature than the average, the Anglo-Indian variability is greater than Indian caste variability, but is of the same order as the variability of modern European races This variability, however, though greater than the average, is not beyond the range of possibility of homogeneous variability, and shows a tendency to increasing homogeneity in the younger generation In other words, we gather that the Anglo-Indian of Calcutta, the product of the last 200 years, is becoming a homogeneous anthropological type Growth in this race is somewhat precocious, and arrest of growth appears to occur at an earlier age than amongst European races Professor Mahalanobis is engaged, we understand, in analysing observations on the other anthropological characters recorded amongst the group of 200 Anglo-Indians measured by Dr Annandale

Scotland.

The British Dental Association Meeting

The forty-fourth annual general meeting of the British Dental Association was held lately in Edinburgh The Lord Provost, Sir W L Sleigh, who was accompanied by a number of the magistrates, in extending a welcome on July 29th said that the visit of such an association to Edinburgh made a powerful appeal, for the city recognized the importance of the dental profession and the great influence that it exercised in public health affairs At the opening of the first session, Mr Campion, the retiring president, delivered his retiring address, and Mr John S Amoore, the new president, was called to the chair He pointed out that dentists formed now a body of men not concerned only with craftsmanship, they tried to probe the secrets of the development, nutrition, and well being of the human body to discover the causes of the incidence of dental decay A great change had come over both medical and lay opinion in regard to the teeth and their relation to general health Up to the early eighties of last century, if there was no pain and no active suppuration present, many roots which would be unhesitatingly condemned to-day were allowed to remain in the mouth, and these were often very skilfully joined up by mechanical means, though undoubtedly to the prejudice of the patient Some thought that the pendulum had now swung too far, and that mouths were often cleared of teeth without benefit resulting to the patient, who was thereby left worse off than before, very few dentists would wish to argue that substitutes were as good and efficient as the original teeth The development and calcification of the teeth should be considered before birth, during lactation, and infancy, for few would not maintain the advantage of having well-formed jaws and well calcified teeth at the beginning of life If expectant mothers received well arranged diets in which green vegetables and milk were abundantly supplied and cereal foods well balanced by substances containing vitamin A, a good beginning would be made If the mother and the child could live more in direct sunlight it would go far to promote a healthier condition and to balance the many agents which, combined in their right proportions, produced a healthy body They were all now agreed on the necessity for everyone, but especially for children, of good hard food—not bread soaked in milk, which was once considered ideal—but crisp bread, bread toasted baked and crisp toast, which not only acted as a detergent and cleaned the teeth, but promoted the flow of normal saliva Dr Ralph A Broderick, in a paper on dental bacteriology, suggested that a swab taken carefully from the root canal of a doubtful tooth would help to

clear up the question of treatment, and smears from a case of gingivitis would clinch a diagnosis of Vincent's angina Mr H W P Bennette declared that many collar crowns had been fixed in the mouth which should never have been applied The whole history of collar crown work as he had seen it was resonant with the one word—failure The history from the patient's point of view had often been good in spite of badly fitting crowns and not because of them Very often when they removed a crown it gave off an abominable odour, they might be quite confident that in such a case, even if the patient had been unaware of any trouble, evils had been hatching which his bodily power of resistance had had to fight against He had reached this conclusion, that if so much tooth had been lost that he could not restore it by some other means than by collar crowns he condemned it to extraction, he advised some of the younger members to seek some other form of restoration than collar crowns and bridges which necessitated these The medical profession was condemning crowns wholesale and laying the blame for many ills of patients on these 'gilded sepulchres"

Sir Leslie Mackenzie, of the Scottish Board of Health, in an address on "Dental hygiene and a public dental service," said that during the last thirty years following the report of the Scottish Royal Commission on Physical Training he had had a personal share in inducing the public authorities to provide dental treatment for school children Dr Lewis Cruickshank had collated the facts about defective teeth in children of 5 years of age The percentage showing decayed teeth at that age was enormous, for at least 57,000 children began school life in Scotland every year with their teeth in a defective condition, and of these 20,000 had more than five teeth in a state of decay In the Report of the Scottish Board of Health for 1923 it had been stated that of the school children examined in that year 52 3 per cent had from one to four teeth, and 13 3 per cent had five teeth or more, in a decayed state—a total of 65 6 per cent The speaker emphasized the question of nutrition in relation to the teeth, and said that the tooth was not an isolated structure, but at every stage of growth shared like other tissues in the general nutrition the problem of the teeth was therefore only one among the many problems of nutrition and growth Mellanby had shown that the structure and arrangement of the teeth of animals depended largely on their nutrition during the period of development the teeth were valuable indicators of general nutrition It was well known that the nails showed the strain history of the previous four or five months and it was probable that the teeth showed similar changes A shrewd guess could often be made at the period of the occurrence of some serious illness by observing the part of the enamel of the teeth which was affected The administrative problem facing a public dental service could now be stated in general terms It must be related to the work of general medicine it must also take account of pre-natal nutrition of the child and of the nutrition during lactation, including the care of the nursing mother If the basic problems were well tackled a dental service could work marvels for the community within a few years The lecturer described the condition of the teeth of children in the Western Islands, where the percentage of children with all the teeth sound was about 77, and in some schools it was as much as 90 A prominent feature was the rarity of rickets and bad teeth among the younger children It was worth investigation whether the children benefited by an increased intake of iodine, calcium, and other essentials for good growth The children in industrial centres certainly consumed more sugar and had less access to wholesome vegetables An effective Dental Board had now been established the internal difficulties of the dental profession had been provisionally solved and would ultimately disappear as similar difficulties had disappeared in the medical profession The technical standard of dental education would continue to rise A public dental service was effectively growing up, and when they had utilized the resources of the existing services to the full, the next step would reveal itself A paper by Mr H Alvin Mahony upon some economic aspects of public dental service called attention to the gap which existed for the majority of people requiring dental treatment between the treatment at school clinics and the time when the dental treatment from approved societies became available

CENTRAL MIDWIVES BOARD FOR SCOTLAND

The examination of the Board held simultaneously in Edinburgh Glasgow, Dundee, and Aberdeen, has just concluded with the following results Out of 127 candidates 117 passed Of the successful candidates 31 were trained at the Royal Maternity Hospital, Edinburgh, 43 at the Royal Maternity Hospital, Glasgow, 3 at the Maternity Hospital, Aberdeen, 9 at the Maternity Hospital, Dundee, 9 at the Queen Victoria Jubilee Institute, Edinburgh 6 at the Cottage Nurses Training Home, Govan, Glasgow, and the remainder at other recognized institutions

EDINBURGH ROYAL INFIRMARY APPOINTMENTS

At a meeting of the managers of Edinburgh Royal Infirmary on August 4th Mr J W Struthers, F R C S Edin, was appointed to the office of ordinary surgeon in charge of wards, to fill the vacancy caused by the resignation of Mr J W Dowden, who has been invited to become a consulting surgeon Dr Logan Turner, who was surgeon to the ear, nose, and throat department from 1906 to 1921, and who subsequently acted as surgeon consultant for three years, retired on August 5th, and has been invited to accept the office of honorary consulting surgeon Dr R Cranston Low was appointed one of the physicians for diseases of the skin from October next, when Sir Norman Walker will complete his term of service, the latter, however, will continue as extra physician for lupus and sunlight treatment cases It was reported that 1,536 patients had been treated in hospital during the previous two weeks, and that the number of cases awaiting admission to the institution on August 1st was 1,786

ROYAL COLLEGE OF SURGEONS OF EDINBURGH
F R C S EXAMINATION

The following is the text of the papers set in the subjects specified at the recent examination for the diploma of F R C S Edin All the questions in both papers were to be answered

Surgery and Surgical Anatomy

1 Discuss the differential diagnosis of a unilateral congenital dislocation of the hip in a child aged 2 How will you treat the condition? Indicate the prognosis

2 Mention the causes of hydronephrosis and indicate how you will determine the cause in a given case What methods of treatment are employed for hydronephrosis? Indicate the factors that will guide you in selecting each of these methods

3 What do you understand by an hour-glass constriction of the stomach? Discuss its etiology How is the condition diagnosed and what fallacies must be guarded against in arriving at a diagnosis? Describe the operative treatment of a well marked case

4 What symptoms would lead you to suspect an extrinsic carcinoma of the larynx? How would you verify this diagnosis? Describe an operation for complete removal of the larynx.

Surgical Pathology and Operative Surgery

1 Name the varieties of odontomes and discuss their etiology

2 What are the non-malignant affections of the oesophagus amenable to surgical interference? Describe the macroscopic and microscopic changes in and about a cicatricial contraction

3 What are the anatomical factors in spina bifida which determine surgical treatment? Describe an operation for meningocele

4 Give the morbid anatomy of a tumour of the carotid body and the surgical anatomy involved in its removal.

PERTH ROYAL ASYLUM

The ninety-seventh annual report of James Murray's Royal Asylum shows that the work in this institution is making good progress The total number of patients under treatment during the year was 212 and the average daily number on the register was 147 2 The number of admissions during the twelve months ending March 31st, 1924 was 61, 34 patients came in as voluntary boarders In 29 cases a definite history of mental disease or abnormality in a near relative was obtained In most cases the bodily health was obviously impaired, and, apart from hereditary predisposition and physical ill health, the more important causes of the mental disorder were long-standing alcoholic excess in 11 cases, in 9 cases puberty changes, in 12

climacteric disturbances, in 12 senile decay, and in 9 cases worry and anxiety In 3 cases there was obvious overaction of the thyroid gland, and in 2 cases insufficiency In more than 40 cases on admission the condition of the mouth, gums, teeth, and tonsils was unsatisfactory, and treatment of these conditions was made a routine in all new cases Forty-seven patients were discharged during the year, of whom 24 had recovered, 19 were relieved, and 4 were unimproved The ratio of recoveries to direct admissions was approximately 43 per cent During the coming year it is proposed to install a new hot water system, which will result in a better supply of hot water and a considerable economy

ROYAL BLIND ASYLUM, EDINBURGH

A company of about 350 of the blind workers, with their friends, was entertained by the Directors of the Royal Blind Asylum of Edinburgh to celebrate the opening of a new work pavilion The latter is a large, well lighted hall, having a floor space of about 5,000 sq ft, and is intended to be used for the making of baskets and other wicker-work This has been erected, at a cost of £1,800, in connexion with the workshops in Gillespie Crescent, Edinburgh On the same day the annual prize-giving of the Royal Blind School took place An interesting exhibition of dancing was given by the pupils after the prize-giving It was explained that dancing by the blind was experimental, but the dancers were able to keep excellent time and to find their partners again after somewhat intricate measures with wonderful quickness, and the blind clearly enjoyed greatly this part of the proceedings

England and Wales.

EXTENSION OF SCHOOL MEDICAL SERVICE IN LONDON

THE Education Committee of the London County Council has been considering a scheme for the more comprehensive organization of education in its area, and in a recent report to the Council has outlined a programme of educational developments to be introduced in the course of the next few years, on the understanding that each detail of the proposal as it arises will be submitted for approval in the usual manner Among the proposals is a further extension of the school medical service to make it include the systematic medical examination of children immediately before leaving school, so that advice may be given on questions relating to employment and co-operation may be established between the school medical officer and the factory surgeon It is also proposed to extend the arrangements for dental treatment and treatment of minor ailments, to make provision for in-treatment of children operated upon for enlarged tonsils and adenoids and children suffering from eye disease, to arrange for the further provision of remedial exercises under special supervision, and increased facilities for the inspection and diagnosis of mentally defective and anæmic and tuberculous children, and for provision for children suffering from epidemic encephalitis The total additional maintenance cost for medical and care work is estimated to be £18,000 for the first year, rising to £23,200 for the third year in which these schemes are in operation

CENTRAL MIDWIVES BOARD

The Central Midwives Board for England and Wales met on July 31st for a special meeting and the ordinary monthly meeting SIR FRANCIS CHAMPNEYS presided Consideration was given to a letter from the Blackburn Branch of the National Association of Midwives asking for the Board's opinion on a communication the Blackburn local supervising authority was sending to midwives regarding the proposed issue annually of a certificate of competence to every midwife practising in the borough who qualified for it, is follows

"This is to certify that certified midwife No , Miss or Mrs practising at has carried out her duties, both as regards ante-natal care and midwifery during the year ended December 31st 192 , to the entire satisfaction of the Health Committee"

The M O H for Blackburn had written setting forth the scheme of which the foregoing forms part, and in connexion with the matter a letter had also been received from the M O H of Birmingham While approving generally the efforts of the Blackburn local supervising authority for the improvement of ante-natal work on the part of midwives, the Board did not think that the granting of a certificate was essential to the success of the scheme It was agreed, in reply to a letter from the Association of Poor Law Unions to receive a deputation from its council at the Board's meeting on October 9th

LONDON POLICE ORPHANAGE MEDICAL EQUIPMENT

The annual report of the Metropolitan and City Police Orphanage contains an account of the new war memorial hospital, which was opened by the Prince of Wales in June It was erected in memory of the 386 Metropolitan and City police officers who died in the war, and will provide medical treatment for the children of the orphanage All minor ailments and the examination and treatment of ophthalmic defects can now be centralized in the hospital instead of being dealt with in various parts of the orphanage The new wards and convalescent rooms, as well as the provision of accommodation for isolation of cases of suspected infectious disease, have been needed for a long time In planning the building special attention was paid to the fact that the number of cases for treatment varied at different times—sometimes requiring the use of the whole building, at other times allowing for closing of much of the ward accommodation, such changes can be dealt with satisfactorily without disturbing the general working of the hospital The building is fitted with electric light, bells, fire alarms, and fire appliances of the most modern type, the sanitary work and the hospital equipment are fully up to date The cost of the erection, furnishing, and equipping of this valuable asset of the orphanage was defrayed by a special subscription from all ranks of the Metropolitan and City Police Force

Medical Notes in Parliament.

[FROM OUR PARLIAMENTARY CORRESPONDENT]

Tuberculous Pensioners.

Conference of Authorities

DR W E ELLIOT, on August 7th, raised the question of the treatment of tuberculous ex service men under the care of the Ministry of Pensions

The tuberculous man, was, he said, in a peculiar position in that he came to some extent under two Ministries—the Ministry of Health, or the Board of Health in Scotland, and the Ministry of Pensions The ordinary pensioner was not convinced that when he came under the care of the Ministry of Health he had the same advantages that his fellows enjoyed who were under the sole care of the Ministry of Pensions There were also other points He did not believe it was possible to concentrate the tuberculous cases in one or two spots in the United Kingdom He had already raised the grievance of some men as to the disability grant, a pension of 100 per cent was granted for six months after first dismissal from a sanatorium, but was not continued at that rate after subsequent admissions and dismissals from the sanatorium Then a man was boarded solely on the extent of his disability He did not know what the average length of life of the tuberculous pensioner was, but hoped it was longer than the average length of life of the tuberculous civilian patient The latter was stated by the medical officer of health for Glasgow to have a duration of life of three years after first dismissal from the sanatorium Consequently these pensioners were few in number and Dr Elliot asked whether it would not be possible to deal with them as special cases When he brought the matter to the attention of the Ministry of Pensions they said quite rightly it was impossible to mix up the duties of the Ministry of Pensions which looked after the man in so far as he had been injured by the war, and the duties of the Ministry of Health, which looked after him in so far as he was a peril to the community That made all the more necessary a close co ordination between the two departments He knew of one case of a man with a 40 per cent disability and another of a man with an 80 per cent disability whose two children had both contracted tuberculosis He asked what chance there was of such men finding employment Dr Elliot went on to press the need for a closer co ordination between the Ministry of Pensions and the Ministry of Health The problem of the tuberculous man was a grave one in the community The necessity for getting him to undergo sanatorium treatment was one of the ways in which they should be able to continue the reduction in the tuberculosis figure which was such a feature of their present health statistics The Ministry of Pensions had a special report

ility to make sure that these men were so treated as to give the impression among the civil population that the tuberculous man should enter hospital for his own good—that he had the best possible chance of having the disease arrested and of making sure that it was not communicated to other

Mr Muir (Parliamentary Secretary to the Ministry of Pensions) acknowledged that Dr Elliot had raised one of the most important questions the department had to consider A man with a high disability from tuberculosis was debarred from entering into occupation because of the undesirability of his association with other workers That was admitted at once but the difficulty was to know what to do with him It was necessary if any assistance was to be given by way of curative treatment that a patient's mind should be free from financial embarrassment and also that he should feel he was a useful member of the community It was important to know whether it was better to give a man full maintenance which would make him independent of any need to earn a livelihood or whether it would be better to give him the ordinary assessable pension on the same terms as for other disabilities and to try to provide him with useful occupation The difficulties had been considered by the Ministry of Labour and the Ministry of Pensions in conjunction with the Ministry of Health and schemes were proposed for setting up communities entirely for tuberculous ex-service men The trouble was that most of these men were not desirous of entering such a community On the other hand a community such as that would probably have to be subsidized for a considerable time and would have to enter into production of various kinds and into competition with purely economic units The difficulty again presented itself of enabling men who entered these communities to feel that they were really useful, because if their productive work was not carried on in the competitive sense the felt that it was not on the same level as ordinary production One or two schemes were running but they were not too successful one he understood was working now on economic lines and paying its own way but that was the only one so far A conference was arranged by the Minister of Pensions a month or two ago with the Ministry of Health and the Ministry of Labour to go into the question of the treatment of tuberculous ex-service men It was agreed that no matter how much they might try as the Ministry of Pensions to help ex-service men their case was bound up with the general question The Ministry of Pensions however was responsible for the payment of pensions and allowances and it had its inspectors to see that the men were properly attended to in institutions At the beginning of the pensions scheme all tuberculous men were assessed and treated exactly as were those who were suffering from other disabilities but later it became necessary to consider them as a class apart There were among ex-service men 37 000 cases of tuberculosis due to or aggravated by war service and five and three-quarter years after the end of hostilities such cases were being admitted for pensions at the rate of 190 per month The annual expenditure of the Ministry of Pensions on tuberculous cases was between six and seven million sterling and of that only £300 000 went for administration and medical services Most of the money went as hard cash to the pensioners themselves In the case of men who got 100 per cent disability after a course of treatment in the sanatorium it was true that the assessment was for six months Contrasted with their ordinary assessment it must seem strange that when they came out of the sanatorium in better health than when they entered it they should get the 100 per cent and then at some other time revert to their ordinary pension but it was done to relieve their minds from financial embarrassment Following on the six months rate there a assessment came down to lower than 50 per cent for a period of two years He could promise that the matter of co-ordination was being kept in mind The conference which was held recently raised certain points which were now under consideration

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Health Commissioner at Simla.—Mr Hogge asked on August 4th whether the post of Public Health Commissioner at Simla would be vacant in August of this year and whether only medical men holding a British diploma in public health would be considered for the appointment Mr Pichards replied that the vacancy would occur on the date named The appointment was made by the Government of India and he had no information in regard to the second part of the question Mr Hogge asked whether it was not a fact that every junior commissioner in this service must hold the British diploma in public health before he received appointment Would the Government undertake that this post—the best in the Indian Public Health Service—should not be given to any man without such diploma Mr Pichards said he was not aware that the facts were quite as stated but he would draw the attention of the Secretary for India to the point The appointment was made by the Government of India without reference at all to the Secretary of State

Workmen's Compensation (Silicosis) Bill.—In moving the second reading of this measure which came down from the Lords Mr Rhys Davies on August 5th recalled the Workmen's Compensation (Silicosis) Act of 1918 which enabled the Home Secretary to make schemes to cover those engaged in trades subject to exposure from silica dust In 1919 a scheme was instituted to cover the cases of those engaged in the manufacture of gannister or silica brick For this purpose a special compensation fund was created Contributions were obtained from the trade itself limited in a way that compensation would not be limited under this bill Trouble arose because in cases of silicosis accompanied by tuberculosis no workmen's compensation was payable Under the present bill compensation would be extended to these mixed cases Workmen might have been employed by one firm for three or four years and yet it might not be ascertained until some time after wards when perhaps he was engaged by another employer that he was suffering from the disease incurred during the previous employment Therefore under the measure a man might draw benefit in respect of silicosis though he might suffer at the same time from tuberculosis and might have changed his employment Silicosis did not arise from many occupations But in addition to the scheme already mentioned for dealing with persons engaged in the manufacture of gannister or silica bricks the Home Office proposed to set up a scheme to cover persons employed in the grinding industry—in Sheffield and some he believed in the West Bromwich district The arrangement which had been made in this matter was unique There were some industrial diseases not sufficiently definite for inclusion in the ordinary scheme of workmen's compensation For instance the development of cataract of the eyes in men employed in steel and iron manufacture That was a problem which the Home Office had under its care at the moment Under the present measure when a man was suffering from tuberculosis he would not be allowed to continue in that employment because he would be more liable to contract silicosis as well Dr Fremantle agreed that this was a useful measure to advance but there was the objection to such legislation that it was handled by different departments The Ministry of Health took responsibility for perhaps one third of the health of the people the Board of Education for another third and the Home Office for another third The Home Secretary, though essentially as regards these bills a Minister of Health was not advised in the same direct manner as was the Minister of Health The Minister of Health had a large medical department but the chief inspector at the Home Office was not a medical man and the medical inspectorate was subservient to the lay inspectorate The bill was read a second time and afterwards passed all its stages

Pensions Ministry Medical Officers.—In answer to Dr Fremantle on July 31st, Mr Roberts stated that 115 out of the 460 full time medical officers and 644 out of the 2 463 sessional medical officers in the Ministry of Pensions did not serve overseas Nearly 94 per cent of these officers had served either at home or abroad No medical officer with overseas service had been discharged in order to provide for another officer without such service In the election of medical officers for discharge which was unavoidable owing to the continued decline in the work of the Ministry of Pensions full regard was paid to war service and to the qualifications required for the work to be performed but efficiency was the first consideration

Tuberculosis Cases.—Mr Roberts stated on July 31st in answer to Dr W E Elliot that whenever a course of residential treatment was prescribed by a tuberculosis medical officer for a condition accepted by the Ministry of Pensions as due to or aggravated by war service and such treatment was given in a sanatorium approved by the Ministry of Health the allowances and other expenses authorized under Article 6 of the Royal Warrant were granted Dr Elliot asked whether the pensions for tuberculous patients were reduced after the discharge of the patient from the sanatorium for the second time to 50 per cent and whether the Minister would give instruction that it should be 100 per cent for six months as in the case of dismissal for the first time Mr Roberts said there was no general rule in operation On discharge from a sanatorium for the second or any subsequent period of treatment a patient was given the pension at the rate or assessment which was found by a medical board to be appropriate to his condition unless he were still eligible for the special rates of pension available for a certain period in cases of tuberculosis These rates which were 100 per cent for the first six months after discharge following the first period of treatment in a sanatorium or training centre and not less than 50 per cent for the succeeding two years were designed as a special measure to assist cases in the early stages of the disease Apart from the period of two and a half years to which these rates applied cases of tuberculosis had to be dealt with under the general provisions of the Warrant applicable to all classes of disability

Tuberculous Cases in Metropolitan Prisons.—Mr Stranger asked the Home Secretary on August 4th whether he was aware that an insufficient number of cells were set apart in metropolitan prisons for offenders suffering from tuberculosis and that in consequence such offenders were put in ordinary cell Mr Davies replied that at Wandsworth Wormwood Scrubs and Holloway the number of special cells for tuberculous patients was in excess of requirements At Pentonville and Brixton the number of tuberculous cases was often somewhat larger than the number of special cells When this occurred the cases were either located in adjoining ordinary cells or were removed to separate rooms in the hospital In all cases the patient received appropriate treatment It was proposed to provide additional special cells without delay

Anthrax.—Mr Buxton stated that he was aware that there was an increase of 40 per cent in the number of cases of anthrax in 1923 as compared with 1922 but there had been no increase in the first half of 1924 as compared with 1923 What had happened was that the increase over 1922 had been maintained The incidence of anthrax was however low the total number of animals affected throughout the country in 1923 numbering only 64 The eradication of anthrax was a difficult problem inasmuch as investigation went to show that about 80 per cent of cases in this country occurred on farms on which there had been no previous outbreak and that infection had been brought to the farm by foodstuffs or manure etc from abroad There was also reason to believe that foodstuffs became infected during transit in countries of origin It would hardly be practicable to attempt here the disinfection of the very large quantities of materials involved even if this could be done without damaging them The Ministry had sought the co-operation of shipping companies with a view to keeping

foodstuffs, skins, and bone manure separate on the voyage This would be beneficial in minimizing risks of infection, but only partly met the complicated and difficult problem —Mr Henderson on another question said that the Home Office had throughout been fully alive to the desirability of arranging, if practicable, for disinfection in the country of export With this object in view, in 1918 representations were made to the Government of India, from which country the greater part of the infected material came The Indian Government, however, had not seen its way to arrange for disinfection in India, and therefore the British Government was thrown back on the alternative of providing for disinfection at the port of entry in this country At Liverpool the material was conveyed direct from the ship to the disinfecting station, so that the risk to dock workers was reduced to a minimum

Estimates Committee Ministry of Pensions —The Select Committee on Estimates, in a printed report on the Ministry of Pensions, states that the estimate for the current year 1924 25 amounts to £66 947,180, as compared with an estimate of £73,655,240 for the year 1923 24, and with a net expenditure of £106,360,500 for the year 1920 21, when the peak was reached The main causes for the decline from the highest point, apart from the deaths of pensioners, are the recovery of pensioners under medical treatment, the remarriage of widows, and the growing up of children The capital value of present war pensions liabilities is estimated at about £900 000,000, as compared with £1,400,000,000 in 1921 The present staff is just over 18,000, as compared with 32 045 in 1920 21, and the cost of the staff has been reduced to £2,337,000, as compared with £4,252,188 for the peak year The percentage cost of administrative expenditure is about 4 53 per cent compared with 5 9 for the peak year This diminution the committee found to be attained without impairing the efficiency of the medical or non medical services, and is deemed highly creditable, and the committee reports that further economies are expected in the near future The Ministry has considered the question of treatment allowances and in particular the possibility of instituting different rates for different localities In certain counties where wages are low the treatment allowance is considerably in excess of what the patients would earn in health But it is held that the treatment allowance interlocked with the pensions scale, and that it would be impossible to separate the two without a breach of faith In regard to hospital treatment the policy of the Ministry is to rely mainly upon Ministry of Pensions hospitals The committee believes that there are a considerable number of beds unoccupied in the military hospitals, and recommends that the question of s under the Ministry of Pensions be There are at present thirty six t over 8,000 beds, of which 10 to 15 per cent are unoccupied

Answers in Brief

Mr Wheatley said that, taking as a whole the people dealt with under the national insurance scheme, there was no evidence that the prevalence of unemployment had adversely affected the claims for benefit under the Act

Correspondence.

AFTER-HISTORY OF AFRICAN TRYPANOSOMIASIS, 1911-1924

SIR,—In 1911 over 12,000 natives were examined in the territory of the Gambia, about 100 of them were infected with trypanosomes [1] An effort was made to keep track of these persons, in order to ascertain the duration of untreated trypanosomiasis in African natives The population of the Gambian Protectorate is comparatively stable and offers a unique opportunity for the continued observation of natives over lengthy periods But, for various reasons, in only one district were the cases followed as closely as had been hoped In 1919 it was recorded,[2] from the observations of the travelling commissioners, who had reported from their respective provinces, that "four natives living in the Protectorate of the Gambia, found to be infected with trypanosomes at the beginning of 1911, were in good health at the end of 1918"

Commissioner E Hopkinson, C M G , D S O , M D , wrote in 1920 that the four natives mentioned as being in good health in 1918 were still alive and well In 1924 he had lost track of three of these cases, but one was still living and had "never shown a sign" of trypanosomiasis In 1920 Travelling Commissioner E B Leese reported that four more of the cases of trypanosomiasis observed in 1911 were still living (Only one of the cases found in his district in 1911 was known to have died of "sleeping sickness," in 1916)

From these reports it may be concluded that eight natives of the Gambia, who were infected with trypanosomes at the beginning of 1911, were in good health in 1920, and that one of these cases—nothing is known of the others—was still alive in 1924, and had never shown a sign of "sleeping sickness"

The history of these cases permits the definite statement that either human trypanosomiasis may be in extraordinarily chronic infection or that spontaneous recovery from the disease may not uncommonly occur in African natives of the Gambia The situation is one which can be clarified by the continued observation and examination of cases over long periods To do so is, therefore, a work which can only be undertaken by a permanent authority —I am, etc ,

JOHN L TODD, M D

McGill University, Montreal July 22nd

COCAINE SUBSTITUTES

SIR,—By his letter in your issue of August 2nd, Dr Copeland forces me into a controversial attitude that I would fain have avoided "Anaesthesia" has hitherto invariably meant the blockage of afferent nervous impulses He writes that he "used the word 'anaesthesia' to apply to the loss of power of conductivity of the cardiac fibres of the vagus"—namely, the efferent fibres—a use for which I can conceive no possible sanction This is not a trivial point of dialectic, but the fundamental matter of the whole investigation, for the effects of drugs on the two sets of fibres are quantitatively quite different In fact, of his experiments, these, as far as can be seen, do not demonstrate anything immediately related to the subject of anaesthesia

Dr Copeland explains that he did not assume that the convulsant effect of these drugs is directly related to habit formation He wrote [1]

> "When these drugs are injected their convulsant action can be placed in the following order cocaine, butyn, tutocain. This property of giving rise to powerful stimulation and excitement of the cerebral cortex is *characteristic of one* of the two main groups of addiction drugs represented by cocaine"

Would he inform us what meaning we *are* to attach to the passage I quote? And further, where in his paper we can find the facts which led him to "Conclusion 4 Beside cocaine, it is believed that the properties of butyn and tutocain may render them addiction drugs"?

Again, he wrote,[1] "These experiments show that For the nose, cocaine and tutocain are alone useful" This can only mean (*a*) for the nose, cocaine and tutocain *are* useful, (*b*) other drugs are *not* useful, (*c*) the experiments show this I can find no record in his paper of any investigation of surface anaesthesia in the nose Experiments on the eye do not in themselves afford us any information as to actual or relative effect on the nasal mucosa Yet in support of his claim for tutocain as a nasal anaesthetic, Dr Copeland, in his letter, adduces his comparison of its action on the eye with that of novocain "And even novocain has proved very efficient in the hands of one eminent rhinologist" Who is the anonymous authority? And what weight must we give to such a vague quotation, of verifying which we are given no opportunity? Unless I am mistaken, this passage refers to *injected* novocain, and is therefore entirely beside the mark In any case, it is in flat contradiction to the quoted statement which it was brought to support

I referred Dr Copeland to the considered opinion of some of the leading rhinologists of this country He declines "to analyse the medley"! Had he done so he would have found that they [*sic*] do not suggest, as he says they do, that the *most* important property of a local anaesthetic for rhinology is shrinkage power—(for example, Mr T B Layton, loc cit) "*apart from anaesthesia* the chief matter was the shrinkage value" If Dr Copeland wishes to put the "medley" in evidence against me, he should at least be correct

I do not "object" to his experimental method it is simply not to the point The practical question is whether a given substitute, applied per nares in a reasonable dose, will constantly effect in man a shrinkage comparable to that

[1] Todd and Wolbach The Diagnosis and Distribution of Human Trypanosomiasis in the Colony and Protectorate of the Gambia, *Annals of Tropical Medicine and Parasitology* vol v, April 20th, 1911, to February 26th 1912 pp 245-286

Todd (1) The After History of Trypanosomiasis in Africa *New Orleans Medical and Surgical Journal*, vol 72, No 5, November, 1919

[1] BRITISH MEDICAL JOURNAL, July 12th, 1924, p [illegible]

produced by cocaine With tutocain I have been unable to obtain this That is all that I have claimed, not that absolutely no shrinkage occurs Dr Copeland describes his experiments as quantitative, though he does not afford us the advantage of his actual findings I have already admired their ingenuity, and am willing to concede their infallibility But surely on this point clinical observation (which is exceedingly simple), however liable to error it may be thought, must provide the final court of appeal Dr Copeland "cannot explain the discrepancies" of clinical findings A single personal observation would at least assist his judgement of the subject on which he is writing I still maintain that the statement, "These experiments show that For the nose, cocaine and tutocain are alone useful," is inexact, misleading, and therefore regrettable — I am, etc,

Clifton Bristol Aug 6th. E Watson-Williams

CHRONIC INTUSSUSCEPTION

Sir,—I was particularly interested in the article in the Journal of May 24th (p 904), by Dr Ambrose W Owen, on this subject It is one of the strange features of the distribution of disease that this condition, so rare in Western lands, is a relatively common one in parts of the East In Formosa, where I worked for about twenty years, chronic intussusception formed one of the commonest of serious intra abdominal surgical conditions Personally I can speak from considerable experience, as I have myself operated on close on forty cases, and my colleagues in Formosa have also treated many others The two points with which Dr Owen deals are those of diagnosis and treatment, and on these I should like to make a few remarks

In the absence of x ray examinations, the possibility for which did not then exist with us, the point on which we came most to rely was the symptom of pain No other sign or symptom is so reliable Vomiting may have been present at the beginning but not rarely was absent, the passage of blood in the stool was frequent, but by no means constant, the presence of a tumour was most uncertain Pain was always characteristic, being paroxysmal in nature, with complete or almost complete remissions, except in very late cases, between the attacks, which might run from one or two to many in the twenty four hours One form of the pain was quite pathognomonic, and in these cases the patient, when asked to describe it, would place the hand over the right iliac fossa and trace the line of the pain up the region of the ascending colon and along the transverse colon In one case I had the rare opportunity of watching a lump form in the caecal region as the paroxysm began, and travel up the ascending and along the transverse colon, retiring in the opposite direction as the pain passed off

With regard to treatment, the cases divided themselves with us much in the way that Dr Owen describes One class of advanced cases, with a large and irreducible mass, seemed almost hopeless The condition of such patients was always very bad, operations of any severity proving too much for them The second class, and happily much the largest, was of those in whom the intussusception was almost completely reducible It was seldom that this could be quite accomplished, usually the last two inches or so being still irreducible In these cases an almost uniformly successful operation was to reduce the intussusception as far as possible, without unreasonable force, and then to do an ileo colic anastomosis round the remaining intussuscepted portion This operation proved not merely temporarily, but permanently, satisfactory, and I was able to watch several cases over a period of years after operation, one of these for no fewer than seventeen years, during which no further trouble occurred What happens to the remaining intussuscepted mass after operation I am unable to state, but I suspect that with the cessation of pressure the mass gradually resolves and the bowel again becomes completely patent At any rate, repeated examinations, years after operation have failed to reveal any persistent mass in the right iliac fossa

One word more as to cause This remains obscure, but in the majority of my cases there appeared to be a tuberculous mass in the caecum Several cases had diffuse miliary tubercles over the surrounding intestines, almost all had marked family histories of the tubercle, and one case died of pulmonary phthisis some years after operation without any further abdominal symptoms —I am, etc,

Shanghai James L Maxwell, M D Late of Formosa.

NEED FOR X RAY EXAMINATION OF CARIOUS TEETH

Sir,—I beg leave to repeat that the employment of the hard brush and chemical dentifrice is the most frequent cause of destruction of the enamel and laceration of gums, with the result—early decay in the former, and in the latter a portal provided for the entrance of pathogenic germs to the blood stream

I wish to add that I find teeth are so commonly "filled" by dentists in which subsequent radiological examination demonstrates sepsis at roots, and rarefaction of sockets, that I do not hesitate to emphasize the necessity for an x-ray photograph in every case before attempting to fill any dental cavity If deep sepsis—much less any moribund sign—exists the tooth should be extracted

The practice of blindly sealing a dental cavity with *cement, in my opinion,* is as fatuous as to remove a diseased appendix and not to take the trouble to examine the other abdominal organs, even the adjacent ileum for inflammatory adhesions which if ignored lay the foundation for a subsequent attack of acute intestinal obstruction, I need hardly mention the not uncommon sequence —symptoms of appendicitis continuing after removal of the appendix —I am, etc,

Buenos Aires, June 29th. John O'Conor, K B E, M D

TREATMENT OF BILHARZIASIS

Sir,—Since February, 1919, I have given over 1,700 intravenous injections of tartar emetic without a single death or serious toxic effect, a further series of 100 injections of the sodium salt was associated with too much muscular pain or general debility amongst the patients to be continued, though this may have been partly due to the distilled water employed A year after the injections were discontinued one patient with bilharzia died from a motor-bicycle accident, another from carcinoma of the bladder, and a third following an operation for the removal of a renal calculus

It has been my practice to dissolve the drug along with sodium chloride (soloid No 4,848) in boiling tap water, and to inject not more than 3 c cm, commencing with 1/2 grain for a juvenile adult With the sodium salt 20 to 30 grains of tartar emetic are generally necessary to cure the adult bilharzia patient However, with the potassium salt, not more than 18 grains are required for a patient of 18 or over, 15 grains for a patient of 15, and 12 for a child of 12, provided the injections are given regularly over a period of twenty-eight days and, as it is unnecessary to give single doses of more than 1½ grains, toxic effects are avoided

Once the point of the needle is well inside the lumen of the vein local accidents are avoided by injecting the solution without undue delay The curative dose of the potassium salt would appear to be the same as that of emetine, there is no clinical reason for injecting the latter drug into the blood stream, and, when a reliable solution is injected intramuscularly with or without the addition of 1 per cent phenol, the intramuscular injection of emetine may be used in preference to intravenous antimony —I am, etc,

Durban Natal. F G Cawston, M D Cantab

The Dutch Medical Association which consists of sixty divisions with a membership of 3 373, or about 90 per cent of all the practitioners in Holland, has celebrated its diamond jubilee by the issue of a memorial volume containing papers on Dutch medicine before the foundation of the Association, Dr A. F H de Lespinasse (its founder) the origin of the Association, and the history of its library The volume contains numerous portraits of officers of the Association including Drs Daniels, Donders Pel, Snellen, Stokvis Treub, and Wenckebach, as well as full page illustrations from some of the rare works in the Association library

Obituary.

ANDREW SMITH, M D Edin,

Past President, North of England Branch, British Medical Association

It was with feelings of genuine sorrow that the medical profession and the whole community of the district received the news that Dr Andrew Smith of Whickham had died with tragic suddenness on the evening of August 1st Before the fatal syncopal attack he was in good health and had done a hard day's work

Andrew Smith was born in Leven, Fifeshire, 69 years ago He had a distinguished student career at Edinburgh, where he graduated M B with honours in 1876, and five years later he proceeded to the degree of M D Nearly fifty years ago he began practice at Whickham, co Durham, and there he spent the remainder of his life, through sheer merit he built up a large practice, in the conduct of which at the time of his death he was assisted by three of his sons His outstanding feature was the high standard he maintained in his clinical knowledge He made himself *au fait* with everything new in medicine and surgery, so keen a student was he that no post-graduate class in Newcastle-on-Tyne was ever formed that did not have Dr Smith as the most regular attendant, and it was a rare event for him to miss a meeting of any of the local medical societies He was an ex-President of the Northumberland and Durham Medical Society, also of the Newcastle-on-Tyne Clinical Society, and on the amalgamation of these as the Newcastle-on-Tyne and Northern Counties Medical Society he continued his active membership He was an able speaker and often took part in the discussions His scholarly presidential addresses to these societies will long be remembered by those who were privileged to hear them He was a keen observer and he made some valuable contributions to the literature in the medical journals

Dr Andrew Smith was a staunch supporter of the British Medical Association, and had been a member for forty-one years He successively filled the offices of Chairman of the Newcastle-on-Tyne Division and President of the North of England Branch He was an active member of the Executive Committee of the Division, also of the Branch Council, while he acted as a Representative of the Division at the recent Annual Meeting at Bradford When the Annual Meeting was in Newcastle-on-Tyne in 1921 he did yeoman service on the Executive Committee He also represented the North of England area on the Insurance Acts Committee, which necessitated not infrequent journeys to London His friends for some time had been apprehensive that he was overtaxing his strength, but nothing would persuade him to curtail his activities His constant valued companion was a gold snuff-box, which was presented to him by appreciative members of the Newcastle Division in 1912 He took a warm interest in his Alma Mater, and had served as President of the Edinburgh Graduates' Association in Newcastle-on-Tyne He was a member of the Society of Medical Officers of Health and had acted as President of the Northern Branch In 1904 he was appointed medical officer of health to Whickham Urban District Council, which appointment he retained until his death He was a valued official and his work was warmly appreciated by the council Until he retired in 1921, owing to the age limit, he had acted as public vaccinator to his district Other appointments included that of honorary medical officer to the After-Care Home at Dunston Hill, and to the Edith Brough Children's Holiday Home at Whickham He was honorary surgeon and instructor to the Whickham Division of the St John Ambulance Brigade, and early this year was made an honorary associate of the Order of St John of Jerusalem in recognition of his services to the ambulance movement In recent years probably his most active sympathies were claimed by the Whickham and District War Memorial Cottage Hospital He was largely instrumental in raising the funds for the purchase and the equipping of the hospital Under his skilful guidance a thoroughly up-to-date hospital has materialized, and his appointment as the honorary medical adviser to the institution has ensured the outstanding success it has attained

Dr Smith leaves a widow and family of four sons and three daughters, three of the sons being members of the medical profession To them we tender our deep sympathy in their loss His humanity, his charm, his humour, his integrity, his uniformly good temper, his unfailing courtesy, his loyalty to his professional colleagues, and his tolerance of other people's opinions, endeared him to all The general esteem in which he was held was amply testified at the funeral, when the large church at Whickham was filled to overflowing by representatives of every section of the community The medical profession was particularly in evidence, and many doctors had travelled long distances to honour the memory of a warm friend and colleague

R J W

Mr G Grey Turner writes

When I began the study of medicine at Newcastle upon Tyne thirty years ago, the brothers Smith of Ryton and Whickham were held up to us students as practitioners exemplifying the highest ideals of our calling Now we deplore the death of the younger brother, Andrew, of Whickham, whose life and work for all these years have been an example and an inspiration As a house-surgeon I learnt to appreciate his thoroughness, for many cases were sent in to the wards from his practice, and each was accompanied by a carefully written letter giving the history of the case, its progress, the circumstances which led up to the necessity for hospital treatment, and a polite request that a report should be sent as to the findings This was invariable with Dr Smith, and I constantly held up his plan as an example which young practitioners should strive to follow When I afterwards became surgical registrar I carefully preserved many of these letters, they are now to be found bound with the hospital records, and form valuable additions to the notes of the cases concerned His accuracy in diagnosis was quite remarkable, and he followed up the after-history of his cases with great care and enthusiasm

Though the subject of this note had a great influence on the profession, not only in this district, but far afield, I am sure his greatest achievement has been the training of the succession of young graduates who have acted as his assistants For many years an assistantship at Whickham was looked upon as the best preparation for practice, and at that time was one of the most comprehensive post-graduate courses that any man could take Though I had not the privilege of acting in this capacity I soon appreciated its value, and I know that there are very many men in the counties of Northumberland and Durham who owe more to the time spent as assistant to Dr Smith than to any other part of their education To them it may be said that their principal was always appreciative of their work, and I have frequently heard him speak of the constant help and loyalty which he had received from them I hope that some of his former assistants will speak of these experiences and will tell the profession more of the very admirable way in which the late doctor conducted his work, and especially of those pleasant Sundays when, after a family meal at his hospitable board, a regular clinic was conducted on the interesting and obscure cases collected from the various parts of his wide practice The life at Whickham was always strenuous, but it must have been a fearsome ordeal before the days of the motor car, and I have often heard Andrew Smith refer feelingly to the words of Oliver Wendell Holmes, whom he much admired, and who made one of his characters say that in a country doctor's life a house was all very well in an occasional way, but for regular occupation nothing could equal a buggy! In the war time he shouldered an enormous amount of work while his three doctor sons, at that time assistants in the practice, were absent on foreign service

Smith was most regular in his attendance at scientific meetings, and in fact medical functions of all sorts, and for nearly half a century nothing of the kind in this district has been complete without Smith and his snuff box In the days when transport was not so easy as in these degenerate times, he thought nothing of walking out to Whickham, a distance of about four miles, at any hour of the night after some such function in town I followed him in the presidential chair of the Newcastle-upon-Tyne Clinical

Society, and I found it hard to live up to the standard which he had set The address which he delivered at the commencement of his year of office was a remarkable one in many respects and a fine record of the work of his practice It was entitled "The country doctor," and I always remember how well he formulated the real criteria of sound education when he said, speaking of the country practitioner, that "His knowledge so far as it goes should be thorough and based on a sound pathology, *so that in unusual cases he may be able to act on true principles rather than routine*" The italics are mine, but none will deny their justification Men of the stamp of Andrew Smith have an influence for good wherever they happen to live and work, but it is particularly fortunate when such men are found in the districts where medical schools are situated, and his too early death will be keenly felt in more directions than is obvious at first sight His life and work are well portrayed in the poem "The Auld Doctor," written by his equally well known and respected elder brother of Ryton, for whom sincere sympathy will be felt in this new trial

REGINALD JAMES COPE COTTELL, C B E,

Colonel R A M C (ret)

THE large number of medical officers who during and after the war came into relation with Colonel R J C Cottell will all receive the news of his death with sincere sorrow Born in 1858, the fourth son of Major James William Cottell of the Honourable East India Company's Service, Reginald Cottell followed the example of an elder brother in entering the medical school of St George's Hospital, whence he qualified in the year 1885, by passing the examination of the Society of Apothecaries In the following year he obtained the diplomas of M R C S Eng and L R C P Lond, and not long afterwards passed into the Royal Army Medical Corps as a surgeon on probation

When the Boer war broke out he was stationed in Natal, whither he had returned after sick leave in England, during which he was married It is characteristic of the privations and inconveniences of army life that his young bride and he did not meet again till four years had passed, when he saw his first born child for the first time Cottell served throughout the war, and was present at many actions receiving the Queen's Medal with three clasps and the King's with two clasps He subsequently served at Gibraltar, and in 1906 was appointed junior assistant surgeon to the Royal Hospital, Chelsea, and succeeded to the senior post of physician and surgeon in 1910, which post he held till his retirement in 1913 At Chelsea he did excellent work, both medical and surgical, in looking after the pensioners' health and seeing that their infirmities were treated by the most recent operative or non-operative methods At that time there was no Ministry of Pensions, but its duties were carried out by the staff at the Royal Hospital Cottell did good work in this department, and earned the respect and friendship of the Governor, the late Field Marshal Sir George White, V C

After a year's retirement the great war called him forth to undertake recruiting duties in the London district, but in 1915 he was appointed to command King George's Hospital This great Red Cross hospital was established in the newly built premises of H M Stationery Office in Stamford Street, Waterloo Bridge Road The duties of this post were most onerous as in addition to the responsibilities on the spot they included the supervision of other institutions and moreover, he was entirely without any assistants experienced in the administration of a military hospital The building was vast and not very suitable for the purpose but it had to be made the best of The staff included a large number of distinguished consultants in medicine and surgery and their special branches, many of whom were, to put it mildly, unsympathetic towards the disciplinary methods necessary in a great military hospital, and some of them had little consideration for the difficulties which beset the commandant The patients also gave a great deal of trouble Many unquiet spirits who could not be managed in smaller institutions were sent to King George's, where at least on one occasion the more able-bodied patients broke out into actual mutiny, during which the commandant's life seemed to be almost in danger and he suffered physical injuries, or which he felt the results long afterwards In this trying post Cottell's sterling qualities enabled him to triumph over all difficulties Shortly afterwards he was made colonel by brevet, and the Order of St John rewarded him by making him a Knight of Grace On the closure of the hospital and consequent termination of his appointment he received the military C B E These rewards can hardly be considered excessive

Reginald Cottell was a man who combined great firmness when a principle was at stake with gentleness of manner and method and a modesty which shrank from all self-assertion He was unselfish to an unusual degree and capable of complete self abnegation when duty or the public good called for it For some two years before his death he was hopelessly ill, and for the last sixteen months was completely bedridden Knowing as he did his own condition, and suffering much pain and constant inconvenience, he maintained almost to the last a cheerful demeanour and bore all his sufferings like a soldier and a philosopher till death released him on August 7th He was a devoted husband and father, and leaves a widow and three daughters to mourn for him His elder brother, Lieutenant-Colonel Arthur Cottell, also late R A M C, survives him

ROBERT DAVIES EVANS, M R C P Ed,

Festiniog, North Wales.

ON August 9th Dr Robert Davies Evans died, in his 69th year, at Blaenau-Festiniog, North Wales He was born at Criccieth, his mother being a woman of great intellectual ability and deep feeling He was intended for the ministry, and was placed in a school and college of theological colour at Haverfordwest, but, whilst retaining an intimate regard for the school of divinity to the end of his life he decided to pursue the art of medicine He served a pupilage under the late Dr Williams of Middlesbrough, and subsequently studied at the Edinburgh School of Medicine, where he received the diplomas of L R C P and L R C S Ed in 1878, at the early age of 21, being one of the most earnest and brilliant students of his year His medical studies were greatly influenced by the teaching of Lister, whilst his own work was directed by James Finlayson, and that master of clinical investigation, Sir William Gairdner of Glasgow He took the M R C P in 1882, and decided to pursue his career at Blaenau-Festiniog, where he practised for forty-seven years Soon after settling there he married Elizabeth Ann Jones, eldest daughter of the Rev Thomas Jones of Eisteddfa, and the sister of two medical men, Sir Robert Armstrong-Jones and Colonel J Lloyd T Jones, I M S, formerly the assay master at the royal mints in India Dr Evans was a wide reader of Welsh literature and theological studies It would be difficult to find a man more endowed with that rare faculty common sense, and this, with the fact that he kept himself abreast of modern medicine, secured for him the closest confidence of his patients, and of late years an extensive consulting practice in North Wales He was chairman of the Festiniog magistrates and High Sheriff for Merionethshire in 1918 to 1919 His other appointments included those of surgeon to the Oakeley Hospital certifying factory surgeon, and surgeon to the Trawsfynydd military camp

Dr Evans became a member of the British Medical Association in 1886, and was chairman and representative of the South Carnarvon and Merioneth Division in 1909 His eldest son, Sir Thomas Carey Evans, M C, F P C S, Lieut.-Colonel, I M S, married the eldest daughter of Mr Lloyd George A daughter, Dr Olwen Evans, succeeds to her father's practice, she was the first woman doctor to receive a parish appointment in Wales Four of his sons served in the late war, and one was killed in action, another on is now studying medicine Dr Evans's life was strenuous and active He died in harness, as he would have wished a conscientious, toil-worn worker, and was buried at Tabor, his funeral being the occasion for general mourning

THE LATE DR T D LISTER

Dr S Veri Pearson writes

I knew T D Lister for over twenty years and esteemed him as one of the wisest and most genial of my friends His death removes from our midst one of the most clear sighted physicians of the day He was a sound and clever clinician, but more remarkable was his extraordinary grasp of the great problems of medicine His outlook upon the larger aspects of tuberculosis, for example, as they affected social hygiene, politics, and industrialism, etc, was always broad and his vision far seeing He was one of the first to emphasize the value and importance of demography Years before the war he was advocating "defining the plague spots of the disease" by working out rates of mortality and morbidity for tuberculosis in different industries, factories, areas, etc He recommended that the whole force of our artillery should be first directed against the districts or groups of workers which showed an excess above a fixed standard figure, which was to count as the "tuberculosis index" He levelled incisive and telling criticism against any opinions, however widely accepted, which he considered ill supported by good evidence, and he had much ability in expounding his views His profound knowledge of the problems of life assurance was well recognized in many medical circles in England, but it extended far beyond these shores, for some of his writings on these subjects have been translated into many languages His manifold and useful labours in connexion with public institutions and other associations were always carried through with a maximum of amiability and a minimum of advertisement of himself The recital of these activities, already given in the British Medical Journal of August 9th, p 256, are an indication of their extent The arduous work he did in this direction was always cheerfully conducted It often brought him into contact with the fussy ones and the busy bodies He generally showed a placid tolerance of such people, though he occasionally gave vent to very caustic criticisms on the foibles and failings of some of the bureaucrats Dr Lister was a man who never stooped to anything petty He studiously held aloof from all intrigues, wire pulling, or cliquism, though sometimes this characteristic was disadvantageous to his preferment and material interests Our heartfelt sympathy goes out to his wife and children in their great loss

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Dr George Duppa Collins died on August 6th at his home in Broseley, Shropshire He was educated at King's College Hospital, and obtained the M R C S Eng diploma and the L S A in 1878 After serving as house-surgeon at Shrewsbury Infirmary he commenced practice in Broseley about forty years ago A charming personality combined with considerable professional ability soon resulted in a most extensive practice About twenty years ago his heavy work affected his heart and he retired from practice After a long rest he regained his health and spent some time in British East Africa Returning to his home he entered fully into local affairs, becoming a magistrate, a town councillor, and a guardian, his tact and sound common sense proving of considerable service When the war came Dr Collins joined the Medical Recruiting Board at Shrewsbury, and daily used to motor there in all weathers After the war he continued working on the Pensions Board A week before he died he was taken suddenly ill at a Pensions Board at Shrewsbury with anginal symptoms His condition was so serious that he was removed to the infirmary On the day of his death he returned home and passed away quietly the same evening It is interesting to note that having completely retired twenty years ago he should have died in harness He leaves a son, Captain Edward Duppa Collins A colleague, N F E, to whom we are indebted for the foregoing particulars, adds Dr Collins was a keen sportsman, shooting and fishing occupying most of his spare time, and it is to the writer a real sorrow that he will never fish again with his old friend

Universities and Colleges.

UNIVERSITY OF LONDON

Dr Charles Bolton F R S, has been appointed Examiner in Medicine for the remainder of the year 1924, vice Dr J Lawcett, resigned, and Mr C H S Frankau as Associate Examiner in Surgery for the same period, vice Mr W H Clayton Greene, resigned

The following grants have been made out of the Thomas Smythe Hughes Medical Research Fund for 1924-25 (1) £100 to Mary F L Keene, M B, B S, and Evelyn E Hewer, D Sc, for the continuation of their investigation of the human foetus, and particularly for the payment of a section cutter for six months, (2) £20 to Dr Harold M Woodcock for the continuation of his study of blood digestion by tissue cells along histological lines, (3) £20 to Dr Gerald Slot for a research on the normal iodide secretion

The subject of the essay or dissertation for the Rogers Prize for 1926 is "The value of the various methods of investigating diseases of the pancreas"

It has been decided to institute, in accordance with the regulations on university titles, a University chair of physics, tenable at St Bartholomew's Hospital Medical College

University College Hospital Medical School

The Goldsmid Entrance Exhibitions for 1924 have been awarded to C L Owen, Trinity College, Cambridge, and Miss F C Kelly, University College, London

St Mary's Hospital Medical School

The University Scholarships have been awarded to T C Hunt, Magdalen College, Oxford, and D N Rocyn-Jones, Downing College, Cambridge

Medical News.

The Fellowship of Medicine and Post Graduate Medical Association announces that on August 18th a three weeks course in the common diseases of the nervous system will begin at the West End Hospital for Nervous Diseases, 73, Welbeck Street The following courses will be held in September a fortnight's intensive course in medicine, surgery, and the special and other departments at the Westminster Hospital, in dermatology at the Hospital for Diseases of the Skin, Blackfriars, in diseases of infants at the Infants Hospital, Vincent Square, in ophthalmology at the Royal Westminster Ophthalmic Hospital, and in psychological medicine at Bethlem Royal Hospital Copies of the syllabus of these courses, with the *Bulletin* giving information of the clinical opportunities of the other London hospitals in association with the Fellowship of Medicine, may be had on application to the Secretary at No 1, Wimpole Street, W 1

A monument in honour of the late Professor Grasset, the well known neurologist of Montpellier, was recently unveiled at Lamalou les Bains

The Kent County Council, at its meeting on August 6th, decided unanimously to increase the salary of the county medical officer, Dr Alfred Greenwood, from £1,400 to £1,600, without any application having been made by that officer

Courses of instruction for sanitary officers will be held at the Royal Sanitary Institute, commencing on September 24th, for health visitors and child welfare workers on September 29th, and for meat and food inspectors on October 3rd The introductory lecture to these autumn courses will be delivered by Professor H R Kenwood, on Monday, September 22nd, at 5 30 p m The date fixed for "health week" is October 5th to 11th, and copies of the statement of the objects, aims, and procedure can be obtained from the secretary at the Institute, 90, Buckingham Palace Road, S W 1

A course of lectures and practical instruction for the diplomas in psychological medicine granted by the Universities of Cambridge, London, Durham, etc, will be given at the Bethlem Royal Hospital, Lambeth Road, S E 1, commencing on September 15th The syllabus and further *particulars can be obtained on application* to the physician superintendent

The winter session of the Middlesex Hospital Medical School will open on Wednesday, October 1st, Dr Charles Porter will deliver an introductory address at 3 p m at the Queen's Hall on some aspects of preventive medicine, and the prizes will be distributed by Lord Birkenhead The annual dinner will be held the same evening at 7 30 at the Hotel Cecil, when Mr G Gordon Taylor will preside Those desiring to be present at the dinner are requested to communicate with the secretary superintendent at the hospital

Special courses in dermatology and venereal diseases have been arranged at the St Louis Hospital, Paris, the fee for each course is 150 francs The course in dermatology will begin on October 3rd, and that in venereal diseases on November 5th Both courses will include clinical and laboratory work as well as lectures, and will be held each afternoon, the mornings being free for work in the museum and hospital wards Further information can be obtained from the secretary of the Faculty of Medicine, Rue de l'Ecole de Médecine, Paris

The annual dinner for past students of the London Hospital will be held at the Trocadero Restaurant on Wednesday, October 1st, at 7 30 for 8 o'clock Particulars may be obtained from the honorary secretaries, Mr L C Lindsay, C B E, 33, Wimpole Street, W 1, and Dr Ashley Daly, 5, Seaford Court, Gt Portland Street, W 1.

THE annual dinner of past and present students of St Mary's Hospital Medical School will be held at the Connaught Rooms, Great Queen Street, W C , on Monday, October 6th, at 7 p m

O August 8th, in connexion with the sixteenth international Esperanto Congress in Vienna, medical men of various nationalities held their annual meeting, which was conducted entirely in the international language Dr Sos, Vienna, presided, and papers were read by Dr Austerlitz (Czecho Slovakia) on what is lacking in medical education, Dr Blassberg (Poland) on insulin therapy, Dr Prummer (Great Britain) on serum therapy, and Dr Sos (Austria) on pyorrhoea Amongst those present was Mrs Zamenhof, widow of Dr Zamenhof, ophthalmologist and author of the international language

A COURSE of bacteriology will be held at the Pasteur Institute, from January 5th to the beginning of April, 1925 As the accommodation for practical work is limited early application should be made by those desiring to attend The fee will be 500 francs payable at the commencement of the course Lectures will be given by Professors Calmette, Levaditi, Mesnil, Weinberg, and Vallée, amongst others Further information may be obtained from the Pasteur Institute, 25 Rue Dutot, Paris (15e)

W HEFFER AND SONS, LTD Cambridge, announce for early publication *Practical Physical and Colloid Chemistry for Students of Biology and Medicine* by Professor L Michaelis, Berlin, translated from the second German edition by T R Parsons, M A , B Sc

THE head office of the British Petroleum Company, Ltd distributors of 'B P' petrol, has been moved from 22, Fenchurch Street, London, to the new building of the Anglo Persian Oil Company, Ltd., *Britannic House, Moorgate, E C 2*

A DESCRIPTION of the Kitchener school of medicine in Khartum was contributed to our columns on September 29th, 1923 (p 581) by Dr O F H Atkey, the director of the medical department In the Wembley Exhibition four photographs of the school are displayed in the bilharzia part of the Tropical Health Section in the Government Pavilion The photographs give a good idea of the impressive exterior of the building and of the chemical, biological, and physiological laboratories with the students at work

WE are informed that the annual report for 1923 of the Chief Medical Officer of the Ministry of Health is now in the press, and it is hoped that publication will be made early next week The report is in form similar to that of previous years, and contains vital statistics showing that the year under review was the healthiest on record The chapters are devoted to a number of subjects concerned with personal and public health, including tuberculosis maternity and child welfare, the insurance medical service the Poor Law medical service etc Particular reference is also made to the remarkable decline in the mortality from typhoid during the last fifty years, the small pox outbreaks and human nutrition The report including four short appendixes, is 211 pages in length and may be obtained either direct from H M Stationery Office, or through any bookseller, price 3s

THE city of Canton China, has lately given a tract of twenty acres within two miles of the centre of the city, to the Canton Hospital in recognition of services rendered to the municipality It is hoped to erect a modern medical school and hospital on the site

THE *Cronica Medico Quirurgica de la Habana* has devoted a special number to the proceedings of the sixth Latin American Medical Congress of the Republic of Cuba, held at Habana in November 1922 The principal subjects discussed were bacillary dysentery in Cuba, prophylaxis of venereal disease treatment of sterility by diathermy treatment of the pulmonary complications of hydatid disease, and renal tumours

MESSRS NEWTON AND WRIGHT LTD 471, Hornsey Road, N 19 have issued a new price list of apparatus for radiology

OF the thirteen original members of the Societe de Neurologie of Paris which was founded in 1900, only four survive—namely, Babinski, Pierre Marie, Meige, and Souques The others were Gilles de la Tourette, Raymond Brissaud, Dejerine, Ballet, Dupre Parinaud, Joffroy, and Gombault

ARRANGEMENTS are being made to combine in one building in Prague the headquarters of the Union of Czecho Slovak physicians the Society of Czech physicians which is concerned with post graduate instruction and the library of Czech physicians There will also be accommodation for the Association of Czech Medical Students and its library

THE sixth Congress of the French Society of Orthopaedics will be held in Paris under the presidency of Professor A Broca, on October 10th The subjects to be discussed are spina bifida occulta, introduced by Dr Mutel of Nancy, dropped shoulder, introduced by Dr Paul Hallopeau of Paris, and metatarsalgia, by Dr Mallet of Brussels

Letters, Notes, and Answers.

CORRESPONDENTS who wish notice to be taken of their communications should authenticate them with their names—not necessarily for publication.

THE telephone number of the BRITISH MEDICAL ASSOCIATION and BRITISH MEDICAL JOURNAL is Gerrard 2630 (Internal Exchange) The telegraphic addresses are

EDITOR of the BRITISH MEDICAL JOURNAL, *Attiology Westrand, London*

FINANCIAL SECRETARY AND BUSINESS MANAGER (Advertisements etc) *Articulate Westrand London*

MEDICAL SECRETARY *Mediocra Westrand London*

The address of the Irish Office of the British Medical Association is 16 South Frederick Street Dublin (telegrams *Bacillus Dublin* telephone 4737 Dublin) and of the Scottish Office, 6 Rutland Square Edinburgh (telegrams *Associate, Edinburgh* telephone 4361 Central)

QUERIES AND ANSWERS.

Bee Stings

"F W L" writes I was called in to see a lady stung by a bee on the ring finger The local reaction was much as usual but the general reaction was such as to endanger life The pulse was rapid and small face and neck swollen and cyanosed breathing obstructed by similar sw... This came on a few minut... restless occasion the heart was ... be was unconscious within a r... ct her unduly Is there any ... is bee keepers soon get a large ... stings, this is evidently one w... applies graduated doses of bee v... method of providing immunity?

Pulmonary Tuberculosis in Later Life

"NATAL" replies as follows to B 's" request for advice published in this ... '924 (p 1078) regarding a patient from ... 57 of moderate means, suffering from ...

The patient may not wish to see snow again but to go from the beautiful scenery of Canada to the dreadfully dull treeless waterless Karoo where very little English is spoken would be madness taking everything into due consideration In the event of death the wife and daughter would be stranded This would only add to the number of real tragedies of the Karoo The Highlands of Natal would be more suitable and perhaps, according to the case just inland from the coast (say 500 feet up) One must consider the whole family concerned In Natal the language question can be neglected B' must consider the mental buoyancy of his case both now and hereafter from its clinical aspect South Africa is at present suffering from depression and we have our hosts of unemployed also Coming from Canada B 's patient the wife and daughter are probably workers and all would therefore make themselves useful on a farm in, say, the Moon River district of Natal, some 4 000 feet up This is a beautiful country peopled by some well to do English farmers, and with a glorious climate Put a black mark against the Karoo"

Income Tax

"X Y N B " retired from a partnership on October 31st, 1922, retaining an appointment until April 1923 he accounted for his liability for 1922-23 by paying on seven twelfths of the Schedule D assessment and on the whole of the Schedule E assessment on the appointments He has been assessed for 1923-24 in respect of the cash received by him for pre October, 1922 bookings

*** The basis of settlement of liability for 1922-23 is correct but the assessment for 1923-24 is bad and should be discharged Our correspondent is chargeable to tax in respect of professional earnings only for periods during which he was exercising his profession. The fact that the assessments were based on the amounts of cash received—on the implied assumption that those amounts were equivalent to the value of the respective year s bookings—does not alter the position as regards periods subsequent to October 1922 in any way The cash received by 'X Y N B' after that date represented receipts of capital so far as he was concerned—that is the payment to him of fees the tax on which has already been accounted for in the Schedule D assessments If the continuing partner who now has the whole of the practice wishes to be asses ed for his earnings on the 'cash basis he should include in his returns for assessment the whole of the cash receipts including those passed on to our correspondent, his alternative is to make his 1923-24 return on the basis of the value of the whole of the gross bookings of the firm to October, 1922

Medical Literature

"R M" has claimed to deduct £10 as the expense incurred in keeping himself supplied with current medical literature—BRITISH MEDICAL JOURNAL, *Public Health* etc The inspector of taxes refuses to allow any such expenditure unless it is

"a replacement of an old edition of a work by a newer edition of the same work"

*** The general principle was explained in a note published on June 14th last (p 1063) We think that the inspector, in the case related, is taking a narrow view, and that an appeal to the Commissioners on the point would succeed Where a manufacturer replaces a machine by another one it is not at all necessary that the second should be similar in type or pattern, and the replacement of one book by an entirely different one would be an exactly analogous case, if the same purpose is served and the new one necessary to keep up to date Similarly with current periodicals of a professional or technical character The professional or business man acquires in his training a certain stock of knowledge and literature, expenditure to extend the field or obtain some extraordinary skill would be capital expenditure, but in so far as money is laid out to maintain an attained standard of professional competence the expenditure is, in our view, properly allowable, whether incurred in the purchase of a professional periodical or a retail trade journal We suggest that "R M" might inform the inspector that he gives formal notice of appeal and would like to know as soon as possible the date for which the appeal meeting is likely to be fixed

Renewals of Car and Apparatus

"SURGEON" has replaced his old car by one of superior grade and inquires as to the allowance due (*a*) on this account, (*b*) in respect of purchases of apparatus, and (*c*) for subscriptions to medical societies

*** (*a*) In so far as the "replacement" improved the grade of professional equipment, the expenditure must be regarded as representing a further outlay of capital, and the allowance due for income tax purposes is £380–£250=£130 only (*b*) So long as an instrument or appliance is bought for the definite purpose of replacing one scrapped or out of date the expenditure (excluding capital outlay) is allowable, although the new instrument is not identical with that displaced This principle was definitely admitted by official witnesses before the Royal Commission on Income Tax as applied to manufacturer's machinery, and applies necessarily to a practitioner's apparatus (*c*) It is understood that under a recent decision of the Board of Inland Revenue such subscriptions would be allowed We suggest that our correspondent might convey that suggestion to the local inspector and inquire whether he has not received an intimation to that effect from headquarters

LETTERS, NOTES, ETC

Strangulated Inguinal Hernia in an Infant

Mr WILLIAM EVERETT, F R C S Ed (Barry), writes Inguinal hernia is common in children of both sexes, but irreducibility and strangulation under 6 months are unusual The case of strangulation in an infant of 3 weeks reported in your issue of July 12th by Mr Simmonds recalls the following case that came under my care for operation a year ago A male child, aged 5 weeks a twin, was taken ill in the early morning of July 22nd, 1923, with vomiting and pain The family doctor, who saw the child at 9 a m of the same day, correctly diagnosed the condition, and instructed the parents to take the child at once to the hospital for operation However, the parents, who were Greeks, spent the better part of the day looking for the priest to baptize the child, and it was late in the afternoon when it was admitted to hospital It was then suffering severely from shock, the pulse was uncountable, the features grey and sunken There was a firm elastic ovoid swelling in the region of the left external abdominal ring, the size of a walnut, and showing a bluish coloration through the thin skin of a poorly nourished infant Both testes were in the scrotum The swelling could not be reduced at the time nor when the child was under anaesthesia for operation A knuckle of bowel two to three inches long, deeply congested, was found tightly constricted by the neck of a congenital hernial sac The bowel was viable, and the operation, which had only lasted a few minutes, was completed in the usual way The bowels moved at the close of the operation The child, however, survived for only twelve hours

Mr PHILIP ROSENBLOOM (house surgeon, Victoria Hospital, Burnley) writes As Mr F A H Simmonds has pointed out in his account, this type of case is sufficiently rare to be worthy of report A male infant, aged 14 days, was admitted to the Victoria Hospital, Burnley, on April 8th with the provisional diagnosis of intestinal obstruction The parents stated that the child had been quite well until three days earlier, taking his feeds regularly, and having regular movement of the bowels He then began to vomit The vomit at first consisted of curdled milk, later of bile stained fluid, and during the last twenty four hours it had been faecal in character For the previous three days absolute constipation had been present, no history of blood stained anal discharge was elicited The child was haggard and wizened, his cry was feeble, he had an obvious faecal odour about him, and he appeared to be moribund The temperature was 97°F, respirations 40, and pulse 150 He weighed 5½ lb Particularly abdomen was distended, no peristalsis was seen and there was generalized resistance to palpation On examining the hernial orifices I found a small round swelling the size of a pigeon's egg in the region of the right external abdominal ring, and accordingly diagnosed strangulated inguinal hernia An operation was immediately performed by the honorary surgeon, Mr J H Watson Owing to the condition of the child local anaesthesia was employed, the right inguinal region being infiltrated with 1/2 per cent novocain On opening the sac blood stained fluid escaped, and a knuckle of congested small bowel was found to be constricted at the external abdominal ring The constriction was divided, the small bowel inspected and returned to the abdomen, and the sac was ligatured at the neck and removed The wound was then closed For the first twenty four hours the child was kept on rectal saline, with sodium bicarbonate and glucose, and then gradually worked up on diluted and citrated milk with lactose He made an uneventful recovery and was discharged on May 5th, after having put on 1½ lb in weight I must thank Mr J H Watson for permission to report this case

Foreign Bodies in the Oesophagus

"COUNTRY G P" writes At the close of Mr E B Waggett's account of removal of a toothplate from the bronchus by inferior bronchoscopy, in your issue of July 26th (p 145), he adds remarks about the occurrence of foreign bodies impacted in the oesophagus He compares the safety of direct vision removal through the oesophagoscope with removal by oesophagotomy Not all surgeons are as expert as Mr Waggett with oesophagoscopes, nor do all surgeons possess them I was present a few weeks ago at an autopsy on a child sent into hospital with a halfpenny impacted in the oesophagus It was x rayed, but the surgeon was unable to remove it through the oesophagoscope In contrast, as regards the "danger" of oesophagotomy, I have myself in three urgent cases removed impacted articles in this way with success, one of these was very similar to the case recorded by Mr Waggett and Major Fylle

Holidays for Factory Girls

We have received the following letter, signed on behalf of the Factory Girls' Country Holiday Fund by the Countess of Sandwich, the Bishop of London, Lady St Helier, Mrs Creighton, the Very Rev Dr Hertz (Chief Rabbi), the Rev Dr R F Horton, Mr Frank Lloyd, and Dr Mary Scharlieb

"Will you allow us to make a very urgent appeal for funds to send working girls and women away for a short holiday? Many of those who are hoping to go during the next few weeks have never slept out of London for a single night They have been saving up for months to get this unique privilege, and are even now counting the days in hot workshops and dusty factories till they can have it only one week of freedom and fresh air The large amount of unemployment which still continues among men has made the women and girls in many cases the sole support of their families It is obvious that these cannot pay much towards their holidays, obvious, too, that young people living in narrow streets and overcrowded rooms may be permanently injured in health if no change is possible In weather such as this who can happily arrange or take a holiday without doing something to enable those less fortunate to have—for even one week—the good food and rest and refreshment that may set them up for long months of the winter's work? Subscriptions and donations will be thankfully received by the chairman of the executive committee, Mr J F Green, or Miss Canney, 75, Lamb's Conduit Street, W C 1

Insurance Companies and the Prevention of Disease

A good deal has been heard of the efforts made by various insurance companies in the United States to provide their policy holders with information on the preservation of health This practice has been followed also by the Wesleyan and General Assurance Society of Birmingham It has issued pamphlets on first aid, on influenza, and on measles It has now published two others one on the house fly and its relation to disease, giving quite sound if commonplace advice, and the other on infantile diarrhoea, in which the causes and prevention are discussed, here also the advice is good, though we question whether it is true to say that the majority of such cases can easily be prevented We commend the advice as to treatment, which is to stop feeding and to send for a doctor It is, perhaps, a little unfortunate that this last piece of advice is so qualified as to make the casual reader think that it will be necessary to send for medical aid only in severe cases A case which seems mild at the beginning may easily become severe

Loose Leaf Account Books

The Kalamazoo Company has prepared a loose leaf book designed to simplify the work of keeping the accounts associated with general medical practice By this system all necessary accounts are arranged in exactly the required order, unnecessary ones being removed and filed separately Opening a new account is effected by inserting another sheet into the book These sheets contain spaces for recording visits paid, extras, and amounts chargeable each month Quick and easy reference can be made to each account, and the risk of error is reduced to a minimum The books are prepared in a large variety of sizes, and can be obtained from Kalamazoo, Ltd, 40, Grosvenor Place, London, S W 1

Vacancies

Notifications of offices vacant in universities, medical colleges, and of vacant resident and other appointments at hospitals, will be found at pages 26, 27, 30, and 31 of our advertisement columns, and advertisements as to partnerships, assistantships, and locumtenencies at pages 28 and 29

A short summary of vacant posts notified in the advertisement columns appears in the *Supplement* at page 101

EPITOME OF CURRENT MEDICAL LITERATURE.

Medicine.

111 Late Rickets and Osteomalacia.

H S HUTCHISON and G STAPLETON (*Brit Journ Child Dis*, January–March, 1924, p 18, and April–June, p 96) review the literature and record their own observations on late rickets and osteomalacia in India, their conclusions being as follows (1) In osteomalacia the existence of pregnancy does not produce symptoms differing in any essential way from those occurring in non puerperal cases The presence of pregnancy, therefore, does not entitle osteomalacia to be regarded as a separate clinical entity (2) The existing differentiation of early rickets late rickets, and osteomalacia according to age incidence, does not appear to be justifiable The evidence points to the conclusion that these conditions are identical and represent rickets at different ages (3) The primary causal factor of early rickets, late rickets, and osteomalacia is environmental While lack of sunlight may be regarded as an important factor, life in purdah, which entails a diminution in muscular activity is of predominating importance (4) Pregnancy is of subsidiary importance in the causation of osteomalacia

112. Intraperitoneal Blood Transfusion in Infantile Anaemia.

H OPITZ (*Klin Woch*, April 29th, 1924, p 784) points out that transfusion of large quantities of blood, though a rapid method of treatment in cases of severe infantile anaemia, is often difficult to carry out, especially when required frequently By intraperitoneal blood transfusion a steady supply of small numbers of red blood corpuscles is brought about It has been shown by many observers that red blood corpuscles can be absorbed from the peritoneal cavity Opitz and Metis have shown by numerous experiments on dogs and rabbits that red blood corpuscles are rapidly absorbed, as shown by the enumeration of the red corpuscles in the circulating blood and that adhesions do not occur, as proved by laparotomy and *post mortem* examination subsequently After these experiments on animals intraperitoneal blood transfusion was employed in cases of anaemia in children The author has employed this method in 100 cases with aseptic precautions, and no bad results have followed Details of two cases of infantile anaemia are recorded, showing the prompt increase of the red corpuscles of the blood after the intraperitoneal injections of defibrinated blood (170 c cm and 150 c cm respectively) Precautions desirable when intravenous transfusions are employed (preliminary agglutination and haemolysis tests, etc) are also necessary when intraperitoneal transfusions are carried out Defibrinated blood is recommended for the transfusion

113. Combined Syphilis and Chancroid

L PEPIN (*Paris med*, March 1st 1924, p 202) recalls that the term mixed chancre was introduced by Pollet in 1853 to denote the coexistence of hard chancre and chancroid in the same ulcer In 1920 Milian showed that soft chancre might also be associated with syphilis in the secondary or tertiary stage, or in the inherited disease, and that these hybrid forms were curable by antisyphilitic treatment The following varieties of the symbiosis of syphilis and chancroid may be defined (1) Primary mixed chancre (2) Secondary or secundo-tertiary mixed chancre including (*a*) papular soft lesions (3) Tertiary mixed chancre including (*a*) tertiary ulcerative chancre, (*b*) mixed phagedaenic ulcerative chancre In primary mixed chancre there is a direct inoculation of *Treponema pallidum* and Ducrey's bacillus in the same spot The inoculation occurs simultaneously, or the two organisms may be inoculated one after the other As a rule the subject has been hitherto free from syphilis For a long time primary mixed chancre was regarded as rare its frequency being estimated from 2 per cent (Puche and Fournier) to 6 per cent (Rollet) At present it appears to be much commoner than is generally supposed its frequency having increased considerably during the war and since It is seen in both sexes and in all grades of society It may be situated in all parts of the body but an extragenital site is rare In men it has a predilection for the region of the frenum It is seldom present on the meatus or glans but is found more often in the balano-preputial groove and skin of the penis or scrotum In women it is situated on the labia minora nymphae entrance of the vagina, anus and occasionally the cervix In secondary, secundo-tertiary, or tertiary mixed chancre syphilitic changes take place in the soft chancre in a manner similar to what is seen in injuries or wounds in a syphilitic subject Treatment of mixed chancre includes treatment both of syphilis and of chancroid. In primary mixed chancre the treatment should be begun as soon as possible, but not until an absolutely certain diagnosis has been made by finding *Treponema pallidum* a positive Wassermann reaction, or the development of secondary symptoms Intravenous injections of arsenobenzol should then be given without delay In mixed secondary or secundo-tertiary chancre arsenobenzol may also be used but it is advisable at the onset to substitute mercury salts, especially the cyanide in intravenous injections. Bismuth salts and potassium iodide are also indicated As regards the treatment of chancroid, no cauterization should be employed since it is likely to produce artificial induration, and no method should be used which would interfere with examination for treponemata Local applications such as iodoform powder or boracic baths are best, but should be stopped three days before ultramicroscopic examination In secondary or secundo-tertiary chancre zinc chloride hot air or iodoform powder may be employed In cases of phagedaenic chancre local hydrogen peroxide or potassium permanganate baths for an hour or more are required

114 Relief of Severe Hiccup

T HISHIKAWA (*Schweiz med Woch*, April 10th, 1924, p 350) finds that the problem of relieving hiccup has recently been accentuated by the wave of epidemic encephalitis which often manifests itself in attacks of intractable hiccup With regard to the devices already in common use, he refers in particular to two which, though certainly effective, are either disagreeable or technically difficult Thus, introducing a tube into the stomach and leaving it there for some minutes may be very effective, but is also very unpleasant The other device requires the co-operation of a second person, and it consists of pressing the thumbs under the costal arches and pushing them outwards so as to induce passive distension of the diaphragm and thus check its clonic contractions The devices recommended by the author aim at cutting short these clonic contractions by a perfectly simple reflex mechanism The first consists in provoking the sneezing reflex by tickling the mucous membrane of the nose with a small feather or a thin strip of paper, the second aims at inducing the vomiting reflex by introducing a finger or some other object into the throat Both devices throw the respiratory muscles of the abdominal wall violently into action and cause forcible stretching of the diaphragm

115. Cardio-respiratory Synchronism.

G GALLI (*Arch des Mal du Coeur des Vaisseaux et du Sang*, April, 1924 p 203) has observed that, in cases of heart disease after a test of exercise tolerance, a definite synchronism is often established between the cardiac and respiratory movements The phenomenon may last for only a few seconds or be prolonged for some minutes or hours Frugoni has recorded the case of a young man suffering from aortic and mitral regurgitation, who had periodic anginal attacks of the abdominal type during which the respiration rate was accelerated to that of the pulse The attack lasted three days without remission The patient was neurasthenic, concentrating his attention on his heart and pulse Frugoni was able to exclude organic cerebral disease, and regarded the synchronism as psychic Zeri has recorded a synchronism of equal pulse and respiratory rates in a case of Stokes-Adams syndrome, but in that case the auricle contracted three times as often as the ventricle Galli reports another case, in a man aged 35, with a doubtful history of syphilis The synchronism persisted in spite of intravenous injections of atropine and inhalations of amyl nitrite, but disappeared after a full course of antisyphilitic treatment the lesion was probably bulbar Galli discusses the physiology of the bulbar respiratory centre, and concludes that (1) cardio-respiratory synchronism is very frequent in heart disease (2) that synchronism is often brief and may escape attention, though sometimes it may persist for some hours, (3) the synchronism depends on a functional association between the respiratory and cardiac centres, the latter is usually the dominating factor and determines the ratio and duration of the synchronism, but occasionally the reverse is observed The synchronism corresponds to a functional compensation and a lessening of the myocardial effort Its appearance or disappearance is of value in diagnosis, prognosis, and treatment

116 Fenugreek as a Substitute for Cod-liver Oil

P BLUM (*Bull Soc de Th r* , April 9th, 1924, p 135), who records twenty six illustrative cases, states that fenugreek (*Trigonella foenum graecum*), which has been used since remote antiquity, can be employed as a substitute for cod liver oil in every case in which the latter is indicated, such as lymphatism, scrofula, rickets, anaemia, and debility following infectious diseases or neurasthenia, as well as in gout and diabetes, in which it may be combined with insulin It possesses the great advantage of being cheap and being readily taken by children, in spite of its bitter taste, which can easily be disguised Its chemical composition resembles that of cod liver oil, owing to its containing substances rich in phosphates, lecithin, and nucleo albumin It also contains considerable quantities of iron in an organic form, which enables it to be readily absorbed Reutter has noted the presence of several alkaloids in fenugreek, such as methyl amine, dimethylamine, and trimethylamine, as well as cholin, neurin, and betain, which are derived from the splitting up of lecithins Like the alkaloids in cod liver oil, these substances by their action on the nervous system, r ulteo poietic effect The drug is given in the form of powder in doses of two teaspoonfuls daily in broth, milk, or jam

Surgery.

117 Intrathoracic Suppuration

T G MOORHEAD (*Irish Journ Med Science*, July, 1924, p 293), dealing with the diagnosis and treatment of various intra thoracic suppurative conditions, urges that the aphorism that "all cases of unresolved pneumonia are cases of un diagnosed empyemata" should be universally taught, since, although stated in too general terms, it contains much truth, and failure to appreciate its significance is often followed by tragic results He points out that a diagnostic difficulty may exist in the case of extensive abscess owing to the physical signs being ambiguous The level of dullness may be oblique owing to the limitation of pus by adhesions, and also loud tubular breathing, often amphoric in character, may be heard, and so obscure the presence of fluid in the pleural cavity In all doubtful cases, and particularly when persistent pyrexia has followed pneumonia, a needle should be intro duced whether physical signs suggest unresolved consolida tion or not In an experience of hundreds of cases he has never seen harm result from this procedure In the second type of post pneumonic empyema, with a small collection of pus either between the base of the lung and the diaphragm or interlobar, he finds that diagnosis is some times helped by observing that the edge of the spleen is palpable owing to the pushing down of that organ, or that on the other side there is a similar depression of the liver dull ness He recommends that any pus removed by the needle should be kept for the inspection of the surgeon, in order that there may be evidence of the existence of suppuration, it had sometimes been difficult at the operation to find the abscess at once, and the suggestion of a mistaken diagnosis had thus arisen Moorhead draws attention to the existence of an "acute chest" comparable with the "acute abdomen," and describes a case which occurred during the influenza epidemic in 1921 Should a discharging sinus persist after operation and the lung fail to expand, he urges strongly that sterilization of the cavity by Dakin's or some similar solution, followed by the introduction of bismuth paste and a closing of the sinus, should be adopted

118 Submucous Fissure of the Palate

M SEEMAN (*Arch Internat de Laryngol , Otol et Rhinol* , April 24th, 1924, p 383) mentions three types of abnormality of the palate—complete absence, fissure with divided mucosa, and fissure without division of the mucosa—but deals only with the latter type The condition is brought to notice by nasal intonation in a child, and this is often the only sign of the abnormality Careful examination shows a small triangular depression in the mid line at the junction of the hard and soft palates, with its apex forwards Digital examination at this point reveals a defect in the bone about 7 to 10 mm long and 3 to 5 mm broad at the base On phonation the soft palate does not efficiently close the naso pharyngeal passage The author mentions that the amount of occlusion required to produce the different vowel sounds varies, and the degrees required may be shown by placing behind the soft palate tubes of different calibre or by connecting the nares with a tambour and registering the pressure By these means it is shown that the approximation of the soft palate to the posterior wall of the pharynx increases successively in the pronunc iation of the vowels *a*, *o*, *e*, *u*, till finally in the case of the vowel *i* the closure is complete The causes of the submucous and other fissures of the palate are difficult to determine Various authors have suggested hereditary deformity, outside forces acting on the foetus, inflammatory and mechanical changes, and a condition of hydrocephalus separating the palate bones Others have thought that a large pad of adenoids prevents the approximation of the palatal processes, and one author considered syphilis to be the cause, but this has not been confirmed Seeman thinks that the explanation must be found in a developmental error The two maxillo palatal processes should unite ab u. the ninth week and the soft palate close a little later Ossification in membrane begins in the third month, and the development of the face and palate continues until the fifteenth year or so The submucous fissure is always found at the posterior end of the hard palate in the median suture line, and in this and other types of palatal fissure the postero inferior part of the vomer is undeveloped The vomer usually lies with a broad base on the median suture line in the child, and as the palatal crest is formed it is raised up by that process The action of the vomer tends to keep the palatal processes in the horizontal plane against the action of the tongue, which tends to force them into the vertical In certain ruminants the vomer does not normally reach to the posterior end of the hard palate, and the author suggests that the condition described is a lack of develop ment retrogressing to this ruminant type, and that the deficiency of the palate is a secondary stage of this vomerine fault Treatment of this condition includes voice training and massage of the soft palate Great care should be taken when removing adenoid vegetations, as the deficient closing of the naso pharynx may be accentuated by their removal

119 Acute Appendicitis in Childhood

F BEEKMAN (*Annals of Surgery*, April, 1924, p 538), in analysing the results of 145 cases of acute appendicitis in childhood, states that in 113 cases the rectus splitting inci ion was used and in 32 the McBurney incision was employed The appendix was usually removed with the cautery, and the stump inverted in'o the caecum Drainage was usually employed, and blood transfusion was found very beneficial in long drawn out cases of sepsis Eleven patients died, and with the exception of children under 5 years of age, in whom it is extremely high, the mortality is about the same as among young adults It occurs more commonly in boys, but the mortality is twice as high in girls as boys Incisional hernia follows operation in children more often than in adults Sloughing of muscles and aponeurosis, secondary abscess, and partial evisceration of portions of the abdominal contents appear to be the causative factors There were sixteen incisional herniae in the series, and all the cases had been drained, eleven of these have subsequently been cured by operation *The earlier the diagnosis* is made and operation performed, the lower is the mortality and the fewer the com plications In the very young the d sease is comparatively rare and its frequency increases up to adolescence. The onset in childhood is usually abrupt, *with acute abdominal* pain and vomiting The temperature is usually under 103° F Some mistakes in diagnosis would seem to be inevitable, but it appears better to err by operating when in doubt

120 Acute Pancreatit s

R VOGEL (*Deut Zeit f Chir* , April, 1924, p 71) records his observations on 55 cases of *acute fat necrosis* of the pancreas which were operated on at St George s Hospital, Hamburg, between 1910 and 1923 His conclusions are as follows (1) There is a close connexion between the diet and state of nutrition on the one hand and the origin of acute pancreatitis on the other Most of the patients are obese, and in the years in which a deficiency of fat in the food occurred there was a decided fall in the incidence of the disease, no cases having been admitted during the years 1918 and 1919 (2) Erroneous diagnoses are frequent, acute pancreatitis being most frequently mistaken for perforated gastric ulcer and intestinal obstruction (3) *There is a close* connexion between cholelithiasis and acute fat necrosis Among 55 cases there was a history of gall stones in 13, in 16 jaundice was present on admission to hospital, in 15 stones were found in the gall bladder, in 9 in the ducts as well, in 2 in Vater's papilla, and in 5 there was a single channel for the common bile duct and pancreatic duct Other factors in the production of acute pancreatitis are trauma, sublimate poisoning, mumps, alcoholism, and pregnancy (4) Acute pancreatitis commences with oedematous swelling of the gland and surrounding tissues, followed by exudation and necrosis The process is at first degenerative and later infection supervenes The exudation is at first serous, but afterwards becomes purulent and sanious Spontaneous recovery may take place by encapsula tion and the formation of adhesions when the infective process is not too violent (5) The mortality in the cases

operated on was 59 per cent The complications following the operation were fistula of long duration, diabetes and impaired function of the pancreas, manifested by diarrhœa or constipation (6) The necropsy findings were haemorrhagic infarction and necrosis of the pancreas with fatty infiltration, fatty liver, thrombosis and thrombo-phlebitis of the portal vein and its tributaries and liver infarcts R BRINGMANN (*Ibid*, May, 1924 p 211) emphasizes the diagnostic value of examination of the blood in doubtful cases of acute pancreatitis The most important blood changes which are due to toxic peritonitis are a moderately high leucocytosis which may amount to 30 000 at the onset, a high neutrophil percentage with well marked or hyper regenerative displacement of the nucleus, and a very low lymphocyte count.

Diseases of Children.

121 Hydrocele in the Infant and Hereditary Syphilis

P VALLERY PADOT and G SALES (*Paris méd*, May 24th, 1924, p 485) describe the following three forms of hydrocele in children (1) Hydrocele in the newborn This appears in perfectly healthy children without any syphilitic taint and is associated with swelling of the mammary gland, secretion of milk, and the appearance of lanugo and naso facial milium The hydrocele in this form is bilateral, irreducible, of small size and of short duration, subsiding without causing any morbid change in the testis (2) Congenital hydrocele, due to congenital malformation of the peritoneo-vaginal canal, which may persist in its entirety or be partially obliterated, forming encysted hydrocele These congenital hydroceles have often little tendency to spontaneous cure If they increase in size and persist beyond the first year operation is required They have no connexion with syphilis (3) Persistent unilateral and irreducible hydrocele This form is strongly suggestive of congenital syphilis being frequently associated with enlargement of the spleen, craniotabes, dilatation of the cranial veins, and other signs of the disease The Wassermann reaction in the blood or hydrocele fluid is not of much diagnostic value, as it is frequently negative in undoubted congenital syphilis in early life In the mother the reaction is often positive Whether treated or not the hydrocele finally becomes absorbed It is of no gravity in itself, but the prognosis depends on the syphilitic disease of which it is a manifestation Antisyphilitic treatment is necessary not to hasten the absorption of the effusion, but in order to control the generalized infection

122. Pyrexia in Infants.

In afebrile newborn infants the protein concentration of the blood serum is fairly constant (6 to 7 per cent), in the newborn with fever the serum proteins are usually above 7 5 per cent and often above 9 per cent, indicating dehydration. H BAKWIN, R M MORRIS and J D SOUTHWORTH (*Amer Journ Dis Child*, June, 1924, p 578) studied the effects of giving fluid in this condition, 35 c.cm of fluid per kilogram of body weight, warmed above the temperature of the baby, were given and the temperature and blood concentration determined repeatedly before and after The fluid was given (1) by gavage, (2) hypodermically, (3) intraperitoneally The fluids used were tap water saline, and 5 per cent glucose solution, and the babies were kept well covered during the experiment The red cell concentration was also studied. As controls, infants of 2 to 15 months, with fever due to various infections, were used The results showed that by gavage there was a prompt fall in temperature and blood concentration to normal in an hour where water or glucose was employed, saline solution caused a tendency to diarrhœa and was discontinued With hypodermic and intraperitoneal injections the effect was less prompt, less marked, and less regular than by gavage The controls showed only a slight fall in temperature In their comment the authors consider the parallelism between the effect of fluid on the blood concentration and on the temperature as evidence that the fever is due to dehydration, and they point out the greater efficacy of the oral route over other routes In the adult this route is second only to blood transfusion Similar results were obtained in a group of infants dehydrated by severe diarrhœa

123. The "Intoxication" Syndrome in Infants

C ROSENBAUM (*Monats f Kinderheilk* July, 1924, p 289) investigates this condition in 83 infants—coma, spasm, and hyperpnœa being taken as signs of "intoxication The syndrome is always a result of great loss of fluid from the body at a certain rate of loss Toxic symptoms arising in a case of infectious disease are due to desiccation, and all intoxicated infants show a 'thickening of the blood' This is proved by estimation of (1) the water content, which is usually, but not always, correlated with the toxic syndrome, (2) the serum protein concentration, which is increased in toxic infants, in three cases as the child recovered high values decreased to normal, (3) the red cell count, which was usually increased, though a correspondence between the cell increase and the increase of serum protein content was lacking in 10 cases out of 16, (4) the serum viscosity and specific gravity, which were both definitely increased, especially the former This "thickening" is noticeable whether the comparison be made with healthy infants of the same age or with the patients after restoration to health Similar blood concentration may occur in infants under other conditions without any signs of 'intoxication" Examinations of the solid organs showed that the water content of the brain is increased after administration of large quantities of fluid, while in untreated cases normal or considerably decreased values are found The kidneys are unaffected. Severe dehydration may cause fatty degeneration of the liver and so determine a disturbance of metabolism, but cases of dyspepsia without toxic symptoms may show a similar fatty change Administration of fluid (isotonic saline or gum solution) intravenously is of little service still more ineffectual is the intraperitoneal route (saline or 5 per cent dextrose in saline) Tea, in small quantities, given orally, produces the best results For the vomiting, sodium luminal, given intramuscularly, is recommended Some infants who have been entirely freed by treatment from toxicity die suddenly

Obstetrics and Gynaecology.

124 Volvulus of the Fallopian Tube.

J J WELLS (*Journ Amer Med Assoc* July 5th, 1924 p 30) reports a case of volvulus of the Fallopian tube occurring in an unmarried woman, aged 32, with tuberculous pyosalpinx The onset was sudden the patient, who was in apparently good health, while on her way to business was seized with severe pain in the lower part of the abdomen on both sides, particularly on the left, and vomited frequently during the next few hours Later the pains decreased, the temperature, pulse, and respirations were normal, but there was slight tenderness in the left and lower part of the abdomen, and also on deep palpation of McBurney's area There was no history of menstrual abnormality, and the patient was menstruating during the first day of the attack. All symptoms disappeared during the next day, the patient got up, and then a second attack of cramp and vomiting occurred, with a rise of temperature to 102 2° F, and the pulse rate to 120 There was no change in the abdomen, and a tentative diagnosis of subacute appendicitis was made The abdomen was opened, and the appendix was found to be normal On examination of the uterine appendages there appeared to be a gonorrheal pyosalpinx on the right side, and on the left there was volvulus of the left Fallopian tube, the torsion being from left to right, with three and a half complete turns, both ovaries were normal The pyosalpinx proved subsequently to be of a tuberculous nature Wells discusses the subject of volvulus generally, pointing out its extreme rarity, and suggests that a long, loose mesosalpinx seems to be one of the main predisposing factors The condition has never been diagnosed before operation

125 Ovarian Pregnancy

P MOULONGUET DOLÉRIS (*La Gynecologie*, May, 1924, p 257) remarks that no recorded case of ovarian pregnancy can be regarded as authentic in the absence of microscopical examination, and he publishes brief abstracts of the 77 cases which he has found described in the literature Early ovarian pregnancy suggests to the naked eye a haematoma of the ovary and requires microscopical demonstration of the embryonic nature of the tumour, in late ovarian pregnancy there is an obvious foetus but the situation of the ovum within the ovary is very difficult to prove microscopically In the first case diagnosis depends on detection of chorionic villi in the second, Spiegelberg's postulates should be fulfilled—the foetal sac, with attached utero-ovarian ligament, should be in the place of the ovary, the tube should be normal, and ovarian tissue should be histologically demonstrable in the foetal sac wall Rupture with peritoneal bleeding is the most common fate of ovarian pregnancy, and occurs as a rule earlier than in a tubal gestation—so early that a clinical history of amenorrhœa is rarely obtained, usually the patient when seized with acute abdominal pain is unaware of pregnancy and expects to menstruate within a few days Exceptionally the ovum is destroyed by peritubular haemorrhage which does not pass the bounds of the ovarian tissue the true character of the lesion is only noted at a later operation for chronic pelvic inflammation In recent years only one authentic case has been recorded of survival of an ovarian pregnancy to term

123 **Chronic Cervicitis**

H H SCHLINK (*Med Journ of Australia*, June 7th, 1924, p 560) discusses the indications for endocervical enucleation in chronic diseases of the cervix, and describes his instrument for performing the operation By endocervical enucleation leucorrhoea may be cured and the chances of conception improved, while the operation does not interfere with normal dilatation during subsequent labour Chronic cervical gonorrhoea and carrier cases can be eliminated by its performance, and, by relieving focal infection, the posterior parametritis in the utero sacral ligaments can be cured, with the relief of backache and dyspareunia Following subtotal hysterectomy for fibroids, or inflammatory diseases of the appendages, it is useful in preventing the occurrence of post operative leucorrhoea and the possibility of later cancer, and, when undertaken after or before removal of the tubes for gonorrhoeal salpingitis, the patient is more rapidly cured of infection than if an infected cervix were left With the author's instrument endocervical enucleation can be accomplished with saving of time and a completeness which removes a scientifically measured section of tissue containing the entire gland bearing area of the cervix

127 **Double Mammary Cancer after Chronic Irritation**

R B MCGRAW and R SCHRINKEL (*Journ Amer Med Assoc*, June 21st, 1924, p 2028) report a case in which carcinoma of both breasts developed in an unmarried woman, aged 41 The patient stated that at the age of 8 the left leg had been amputated at the middle of the thigh following an injury, and from this date she had used a crutch on the left side At the age of 23, after an operation for fractured right patella, she commenced to use two crutches and continued to do so, walking with them held closely to the body so that the breasts were compressed towards the mid line Three months before admission to hospital the patient noticed that both breasts were growing smaller, the left more rapidly than the right, and that there was a small hard lump in the upper and inner quadrant of the right breast On examination a stony hard mass was detected in the right breast, the nipple was retracted, but there was no discharge In the lower and inner quadrant of the left breast there was a large mass, the surface of the mass was ulcerated, and the ulcer involved the nipple, which was retracted The diagnosis of carcinoma was confirmed by pathological examination The authors point out the interest of the case from the standpoint of the history of long continued irritation by crutches, used on one side for thirty five years and on the other for twenty years

Pathology.

128 **The Welch-Fraenkel Bacillus and Gastro enteritis in Infancy**

G JORGENSEN (*Ugeskrift for Laeger*, June 5th, 1924, p 443) has carried out bacteriological examinations of the stools of infants, some of whom were suffering from gastro enteritis The stools were obtained by placing sterile hydrophile cotton wool between the anus and the napkin, and were examined by direct staining methods and by a special cultural technique designed to favour the growth of the Welch Fraenkel bacillus Zeissler's methods were adopted to this end, and the cultures were injected subcutaneously into guinea pigs to see whether gas phlegmon could be induced The stools of 30 infants not suffering from gastro enteritis, but convalescing from diseases such as bronchitis and pneumonia, were thus examined, but in no case was the Welch Fraenkel bacillus found This observation does not agree with those of earlier investigators, and the author suggests that this discrepancy may arise from the inadequacy of the technique of his predecessors He also examined the stools of 14 infants showing signs of gastro enteritis, which in 8 cases was acute primary gastro enteritis, in 6 of these cases he found the Welch Fraenkel bacillus He did not find it once in the remaining 6 cases, in which the gastro enteritis was secondary to some other disease He concludes that the Welch Fraenkel bacillus may play an important part in the gastro enteritis of infancy, and that the beneficial effect of withholding sugar from the baby's food may be traced to depriving the Welch Fraenkel bacillus of a much needed culture medium

129 **Filtrable Forms of Tubercle Bacilli**

J VALTIS records some experiments (*Ann de l'Inst Pasteur*, June, 1924, p 453) which show that under certain conditions the tubercle bacillus is able to traverse a Chamberland filter, and to give rise to disease in guinea pigs Pus and sputum were used, they were autolysed for three days in the incubator and were then centrifuged The deposit was examined for tubercle bacilli and was then mixed again with the supernatant fluid, two animals being injected subcutaneously with this to serve as controls The remaining fluid was then diluted with saline, filtered first through a paper covered with kieselguhr, and then through a Chamberland L$_2$ candle Sterility tests were made of the filtrate, including cultures on various egg media suitable to the growth of tubercle bacilli, and 5 or 10 c cm of the filtrate were then injected subcutaneously into guinea pigs The results of the various injections were so similar that they may be summarized together The local glands swelled slightly during the week or so following, and then went down again, the animals showed no other sign of disease, except a loss in weight Death occurred in many of the cases in from two to four months At autopsy there was a slight increase in size of the local glands, tumefaction of the tracheo bronchial glands, and small areas of hepatization in the lungs containing tubercle bacilli No other lesions were seen, not even local ones at the site of inoculation The same results were obtained with filtrates of glycerin broth cultures three to eight weeks old In no case did any organisms grow out on the media put up from the filtrates and in all cases the guinea pigs inoculated with the unfiltered emulsion developed generalized tuberculosis Valtis maintains, therefore, that certain forms of tubercle bacilli are capable of passing a filter and of giving rise to lesions in the bronchial glands and lungs containing tubercle bacilli Material from these lesions on inoculation into fresh animals gives rise in them to a similar type of disease

130 **Phagocytosis in Bismuth Therapy**

R SAZERAC and R VAURS (*C R Soc de Biologie*, July 18th, 1924, p 430), as the result of experimental work, have come to the conclusion that phagocytosis plays an important part in the action of the insoluble bismuth compounds on spirochaetes and trypanosomes They suggest that this phagocytosis is similar to the action of phagocytes in combating parasites the bismuth is absorbed into the cell substance and is there transformed into a soluble product Their experimental work was performed on guinea pigs, rats, and rabbits They found that an aqueous suspension of bismuth, when injected into the peritoneum of a guinea pig, resulted in an active absorption of the metallic particles by the phagocytic cells These cells, which number normally in the peritoneal fluid about 10,000 per cubic millimetre, increased rapidly after the injection, reaching 150,000 to 250,000 per cubic millimetre two to three days later At first the cells were full of the characteristic bismuth particles, but at the end of eight to ten days these had disappeared and the cell content returned to the normal, similar phenomena were observed in the rat and the rabbit In the case of rats infected with *Trypanosoma brucei*, which in untreated animals is always fatal in four or five days, it was found that the injection of metallic bismuth removed the parasites from the peripheral circulation in from one to two days A reappearance of the trypanosomes in four to ten days was successfully treated by a second injection of bismuth, and cure followed Similar results were obtained in treating spirochaetosis in the rabbit These results, the authors believe, are brought about by the phagocytic cells conveying the bismuth throughout the body and transforming it into a soluble product which is able to destroy trypanosomes and spirochaetes

131 **Lymphatic Reaction in an Acute Infection**

F J L WOLTRING and J F HULK (*Nederl Tydschr v Geneesk*, May 24th, 1924, p 2344), who record an illustrative case, remark that when an increase in the number of leucocytes occurs in an acute infection, the polymorphonuclears are almost always principally affected, and that it is very unusual for a lymphocytosis to occur In such cases anxiety may be felt because the blood picture suggests acute lymphatic leukaemia, of which the prognosis is very unfavourable The benign course of the disease, however, excludes the possibility of acute lymphatic leukaemia, and the diagnosis of a lymphatic reaction is substituted Several examples of this kind have been Dutch writers—namely, Brunning, I , and Ierwen According to Brunning, this peculiar reaction of the lymphatic system is due to the infective or toxic agent having a strong affinity for the lymphoid tissue, on which it acts as an irritant The present authors' patient was a lad, aged 19 admitted to hospital with signs of acute bronchitis The examination of the blood showed that the lymphocytes were 95 per cent, the polymorphonuclear neutrophils 6 per cent, and the eosinophils 1 per cent The temperature was subfebrile The cervical, occipital, axillary and inguinal glands, as well as the spleen, were enlarged The blood picture suggested acute lymphatic leukaemia, although this diagnosis did not correspond with the patient's satisfactory general condition The enlargement of the lymphatic glands and spleen also suggested tuberculosis, but this was excluded by the subsequent course of the disease, which ended in complete recovery, with a return of the blood picture to normal



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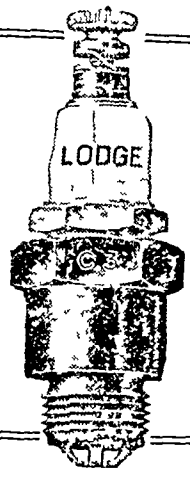
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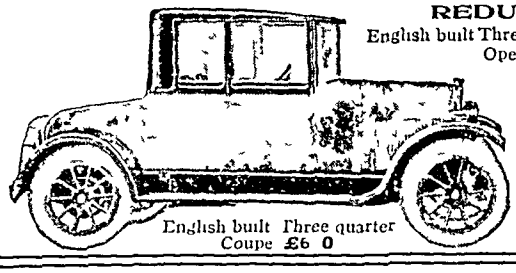
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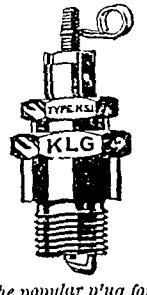
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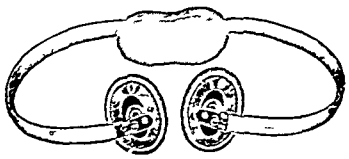


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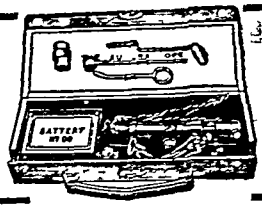
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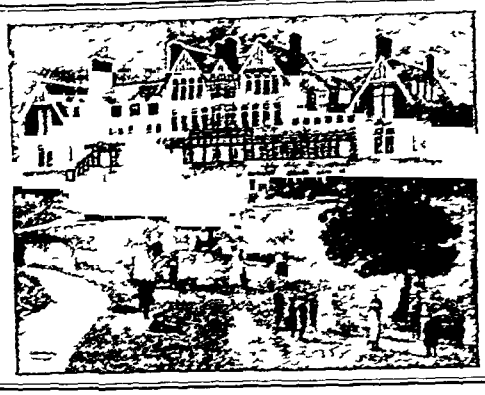
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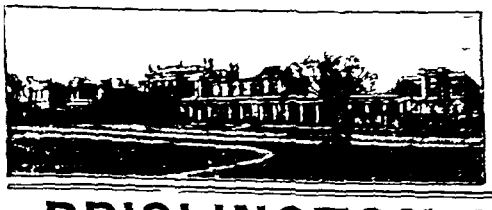
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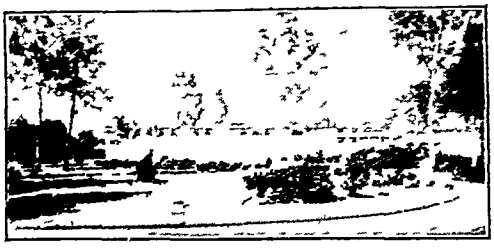
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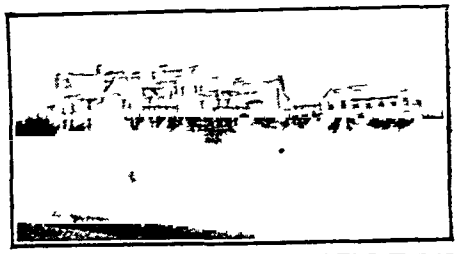
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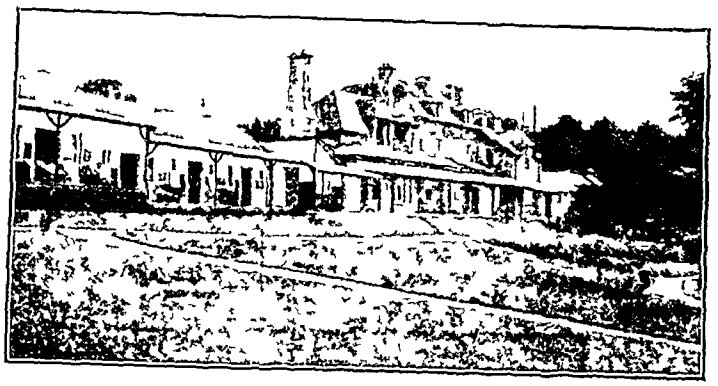
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BEGINS ON

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Entrance Scholarships Examinations begin September 15th Applications must be received not later than September 6th

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July 30th 1924.

University of Cambridge

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Anatomy H H WOOLLARD M.D B S

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Fees Physiology and Biochemistry - 12 gns.

Anatomy - 9

Composition Fee for both Courses 18

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FACULTY OF MEDICAL SCIENCES

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The Anatomy Course will be taken by Mr H A. HARRIS and the Physiology Course by Mr C J H LONG

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nd

23

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Vacancies exist for Medical Officers Class II in the above Service Salary £350 rising by £20 per annum to £600 with quarters or an allowance in lieu The pay is subject to a bonus which at present on a salary of £350 is £154 11s These posts are pensionable and there are prospects of promotion to higher rank

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The duties of the Professor will begin and the appointment date from January 1st 19 o

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EBBW VALE MON *(Workmen's Medical Society)*	GLASGOW EDUCATION AUTHORITY *(Assistant School Medical Officers)*	SHEFFIELD EDUCATION COMMITTEE *(Assistant School Medical Officer)*
GILFACH GOCH GLAMORGAN *(Workmen's Medical Scheme.)*	HUDDERSFIELD COUNTY BOROUGH *(Woman Assistant Medical Officer of Health.)*	SOUTHWARK METROPOLITAN BOROUGH *(Tuberculosis Officer)*
LLWYNYPIA CLYDACH VALE PENYGRAIG GLAMORGAN *(Workmen's Medical Scheme.)*	HUNTINGDON ADMINISTRATIVE COUNTY *(Assistant County Medical Officer and Assistant School Medical Officer)*	STOKE ON TRENT EDUCATION COMMITTEE. *(Assistant School Medical Officer)*
MARDY GLAMORGAN *(Workmen's Medical Scheme)*	INVERNESS SHIRE EDUCATION AUTHORITY *(Temporary Assistant School Medical Officer)*	YORKSHIRE NORTH RIDING COUNTY COUNCIL *(Assistant School Medical Officer)*
OAKDALE MON *(Medical Officer for Medical Aid Association)*	LANARK COUNTY *(Medical Officer of Health)*	

(b) Colonial Medical Service.—WINDWARD ISLANDS MEDICAL SERVICE (Grenada with Carriacou, St. Vincent and St. Lucia)

(c) Overseas Appointments.

Medical Practitioners are requested not to apply to any appointment referred to in the following table without having first communicated with the Honorary Secretary of the Division or Branch named in the second column or with the Medical Secretary of the British Medical Association, 429, Strand, London, W C 2.

Town or District.	Hon Sec of Division or Branch	Town or District.	Hon. Sec. of Division or Branch.	Town or District	Hon. Sec of Division or Branch
NEW SOUTH WALES. *(All Friendly Society Appointments)*	Dr R H TODD (Hon Sec. New South Wales Branch) B M A Building 30-34 Elizabeth Street, Sydney N S W	QUEENSLAND *(Brisbane Associated Friendly Societies' Institute.)*	Dr R. MARSHALL ALLAN (Hon. Sec Queensland Branch) Adelaide Street Brisbane	VICTORIA *(All Institute or Medical Dispensaries.)*	Dr FRANK DAVIES (Hon. Sec. Victorian Branch), Medical Society Hall, E Melbourne, Victoria.
				WESTERN AUSTRALIA. *(Contract and Lodge Practices.)*	Hon Sec Western Australian Branch, No 6 Bank of New South Wales Chambers, S Georges Terrace, Perth.

Address 429 Strand, W C 2.
August 13th 1924.

By order of the Council of the British Medical Association.
ALFRED COX, Medical Secretary

Tunbridge Wells General HOSPITAL.

Wanted HOUSESURGEON (Male) Candidates must be unmarried and duly qualified in Medicine and Surgery (Two residents) May be required to lecture to Nursing Staff. 86 Beds In patients 1923 1,364. Surgical cases largely predominate. Major operations 600 yearly V D Clinic.

Salary £160 per annum with board residence &c in the Hospital.

The Hospital is approved by the University of London for the purpose of the M D and M S Examinations.

Applications stating qualifications, with certificates of registration and copies of testimonials should to sent to the undersigned on or before Thursday August 21st next. Appointment to be entered into September 1st.

J J WEBB Secretary

The Samaritan Free Hospital FOR WOMEN

Mary-le-bone Road London N W 1

Applications are invited for the post of HOUSE SURGEON from 5 September 1st, 1924, to February 28th 1925 Salary at the rate of £100 per annum. Previous experience as House Surgeon essential.

Applications, accompanied by copies of testimonials, must reach the Secretary at the Hospital not later than August 25th 1924

G H HAWKINS Secretary

Staffordshire Education COMMITTEE

ASSISTANT SCHOOL MEDICAL INSPECTOR.

Applications are invited for the appointment of a School Medical Inspector (Man or Woman) to undertake the duties connected with a combined scheme for Medical Inspection and Treatment of School Children, Health Visiting and Infant Welfare under the County Medical Officer of Health, who is also the School Medical Officer Experience in the administration of anæsthetics in Nose and Throat Operations will be an additional recommendation.

Salary £600 per annum rising by annual increments of £50 to £800 No bonus

Form of application (which must be returned by September 6th) and list of duties will be forwarded on receipt of stamped addressed foolscap envelope

Candidates receiving no reply by October 1st may assume vacancy filled Apply Director (M.L.) County Education Offices Stafford

Leeds Public Dispensary

Wanted SENIOR RESIDENT MEDICAL OFFICER (male) Must have held posts of Resident Physician and Resident Surgeon Salary £200 per annum with board residence, and laundry Separate sitting-room Applications with copies of three recent testimonials, to be addressed to the Secretary of the Faculty Public Dispensary North Street, Leeds

City of London Hospital for DISEASES OF THE HEART & LUNGS

Victoria Park E.2

(Bus tram, & rail Cambridge Heath, L.&N.E.R.y)

Applications are invited for the post of half time MEDICAL OFFICER (Male) for attendance every Afternoon a 2 p m to 4 of the Out patient Physicians, and to carry out certain other duties of a Medical character The appointment will be for a period of six months from the 1st September 1924, with salary at the rate of £200 per annum.

Applications accompanied by no more than three testimonials should reach the undersigned no later than Monday September 1st

GEOLGE WATTS Secretary

Canadian Pacific Steamships

LIMITED invite applications for SURGEONCIES from reliable and energetic men of character and ability Applicants should be about 30 years of age ex House-Surgeon and of good appearance. Period of service 9 to 9 months.

Medical Staff includes two Nurse Dispenser and Hospital Attendants Ships carry up-to-date medical and surgical equipment Operating Theatres, &c.

Work is heavy but provides invaluable experience.

Candidates chosen only after personal interview and stringent investigation as to suitability

Write for further information to the Medical Superintendent 8 Waterloo Place London S W 1

Wanted immediately, by Company operating in Tanganyika Territory, MEDICAL OFFICER, trained in Tropical Medicine Free quarters, passage out and home State age experience and all essential particulars including copies of testimonials — Write, R A S, c/o J VICKERS & Co, Ld, 5 Nicholas Lane, E C 4

Wanted — Medical Officer-ship in any department of Public Health or to Sanatorium, long temporary or permanent Sanatorium and Clinic experience Lx M O H Temporary Major Director of Hygiene —Address No 3920 BRIT MED JOUR Office 429 Strand W C

Wanted in October, indoor ASSISTANT, male single with panel experience in easy Practice, without nightwork and with time for Hospital and reading in lieu moderate remuneration Usual bond Interview necessary —Address stating nationality and other essential particulars No 4151 B M J Office 429 Strand W C

Wanted — Assistantship, with or without view to partnership by Medical Woman, D P H ex H S and O A. Experience children anæsthetics Open to Locum — Address No 4113 BRITISH MEDICAL JOURNAL Office 429, Strand W C 2

Wanted. — An Indoor ASSISTANT Please state age experience qualifications, and other essential particulars R C for preference Sign usual bond —Address No 4139 BRITISH MEDICAL JOURNAL Office, 429, Strand W C 2

Wanted by Ex-H P. Assis-TANTSHIP One with view to Partnership would be preferred Has had three years experience General Practice Good references —Address No 4123 BRITISH MEDICAL JOURNAL Office, 429, Strand W C 2

Wanted — Assistantship, with prospects by M B, Ch B, (Scotch), aged 28 Twenty months Scotch and London Teaching Hospitals as H S and H P Six months experience G P Excellent references —Address, No 4133 B M J Office 429 Strand W C 2

Wanted — Assistant (Male) with experience, for Private and Panel Practice in Liverpool To commence duties end of September —Address, No 4107 BRITISH MEDICAL JOURNAL Office, 429 Strand, W C 2

Wanted by M.R C S, L R C P aged 33, with good experience ASSISTANTSHIP with view to Partnership in General Practice Preferably in North of England and in suburban neighbourhood Capital available Add, No, 4135 B M J Office 429, Strand W C 2

Assistantship wanted by M B, Ch B aged 26 single abstainer two years qualified experienced panel and private practice Good testimonials Free September 1st Reference can be made to present employer —Address No 4130, BRIT MED JOUR Office 429 Strand W C 2

Assistant (indoor) required two months, small Country Practice No Midwifery Duties very light State full essential particulars and enclose photo —Address No 4102 BRITISH MEDICAL JOURNAL Office 429 Strand, W C

Assistantship wanted by M B, B S London All round experience in both Private and Hospital Practice including General Surgery —Address No 4111, BRITISH MEDICAL JOURNAL Office 429, Strand W C 2

Assistantantship or Locum wanted by M R C S, L R C P (Woman) in or out of London. Free now —Address No 4128 BRITISH MEDICAL JOURNAL Office 429 Strand W C

Graduate (M A, M B, Ch B Aberd.) Lady aged 25 Specially trained in X rays and Electrotherapeutics would like to do this branch of some large practice would help in other branches Free Sept 23rd Salary required £200 indoors.-Add. No 4101, B M J, 429, Strand

Outdoor Assistantship (bond) desired by M R C S L R C P Lond experienced Practice panel colliery anæsthetics Lx H.S. Good walker cyclist drive car married 47 abstainer Free October — 'Locum, 56, Old St, Clevedon, Somerset

Optimist — Graduate, 9 years exper serious worker needs immediately, London POST allowing time for spec study (genito-urinary) Remuneration secondary matter Fullest explanations unimpeachable refs Interview to any one wanting loyal helper or dependable remplacant —Add. No. 4125 B M J Office 429 Strand, W C 2.

Pathological and Bacteriological LABORATORY ASSISTANTS ASSOCIATION —Pathologists and Bacteriologists requiring SKILLED CERTIFICATED LABORATORY ASSISTANTS are invited to communicate with H P HUDSON, Hon Secretary Panama Villa, Trumpington Cambs —No Fees

Part-time work (London) wanted —Woman M B, M R C S, &c aged 28 H P, H S London Teaching Hospital R M O in charge Hospital (Women and Children) C S O, and Anæsthetist (Children's Hospital) Free now — Address No 4104, B M J Office 429 Strand, W C

Stipendiary to attend out-patients, mornings only 2—3 hours work Stipend £125 p a —Apply REGISTRAR Hahnemann Hospital, Liverpool, with testimonials

Secretary-Receptionist seeks POST with London Doctor or Dentist Experienced Excellent references Age 28 —Address, No 4103 BRITISH MEDICAL JOURNAL Office, 429, Strand, W C 2

Young Practitioner, at present doing locum in Swansea, desires ASSISTANTSHIP or long Locum Experience private and panel practice Free September —Address No 4118, BRITISH MEDICAL JOURNAL Office, 429 Strand W C 2

X-Rays, Electrotherapy, &c —Fees moderate All cases under medical supervision —Apply, Secretary, CITY X RAY AND ELECTRICAL INSTITUTE, 65-66, Basinghall Street, E C 2 Telephone: London Wall 4881

Doctor's daughter, Hall Certificate, requires Post as DISPENSER Bookkeeper, and Secretary to a Doctor Experienced Disengaged middle of September —Address No 4108 BRITISH MEDICAL JOURNAL Office, 429, Strand W C 2

Lady Dispensers supplied, qualified experienced, and also trained in Bacteriological Laboratories of the LONDON COLLEGE OF PHARMACY FOR LADIES Pre

Lady Dispenser, free for short ENGAGEMENT from August 18th Experienced Excellent testimonials — Address, No 4105 BRITISH MEDICAL JOURNAL Office, 429, Strand W C 2

Qualified Lady Dispenser desires RE ENGAGEMENT Experienced excellent testimonials; at liberty August 21st Doctor or Institution preferred — Address, No 4114 BRITISH MEDICAL JOURNAL Office, 429, Strand, W C 2

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Teleg Epsomian London Phone Gerrard 399

As Locum — An experienced Doctor who has had own Practice and doing 6th locum since Xmas last, desires further engagements from mid of 1st week in Sept Terms 7 gns p w Well recommended Add "Medicus c/o Dr Moyles, 136, Stoke Newington Road, N 16

Anglo-Australian, experienced wishes SHORT LOCUM small country Practice Devon or Cornwall Reduced fees for easy work Available till December Full particulars and references by writing A A M C Box 1686, SELLS Advertising Offices Fleet Street L C 4

Cotswold Town — Comfortable house and garden offered Doctor and family who will take CHARGE of PRACTICE with quite light duties for month from end of August Golf — Address No 4134 BRITISH MEDICAL JOURNAL Office 429, Strand W C 2

Doctor offers hospitality for nominal services for six weeks from August 18th Pleasant surroundings North London —Address No 4124 BRITISH MEDICAL JOURNAL Office 429, Strand W C 2

Experienced Locum (M B, C M Edin), will again be at liberty on August 26th. Has been in own practice and is steady and well received.—Address No 4126 BRITISH MEDICAL JOURNAL Office 429 Strand, W C

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PROVIDED
Without fee to Principals
Apply to
Mr. W. S. ATKINS
43, BEDFORD STREET, STRAND, W.C.2.
Telegraphic Address
"Positions, Westrand, London."
Telephone Regent 229

Hospitality Locum — Doctor in partnership, desires hospitality for self and wife in country or seaside West of England Maid, and running expenses own car only Light work. — Address No 4129 BRITISH MEDICAL JOURNAL Office 429, Strand W C 2

Hospitality offered to Doctor and family for 2—4 weeks in September in return for very light work in country One who could bring his own car preferred —Address No 4106, BRITISH MEDICAL JOURNAL Office 429, Strand, W C2

Locum engagements wanted by an M B, Ch B, of Aberdeen Good experience of all branches of practice Free to engage from August 16th Terms moderate where work light.—Address No 4127 BRITISH MEDICAL JOURNAL Office 429 Strand, W C 2

Locum — Doctor retired from own Practice desires engagements Aug 18th to Sept 4th and after Sept 20th Fees by arrangement according to work, minimum 5 gns per week Dr Baker 18 Grosvenor Avenue, E Sheen, S W 14. Phone Putney 1613

Locum wanted for end of August and September by Scotch Graduate (Woman) Previous experience References — Address No 4122 BRITISH MEDICAL JOURNAL Office, 429, Strand W C 2

Locum, disengaged after the 24th August Highest references — Apply, Dr A. C BIRD Woolbrook Cottage, Woolbrook, Sidmouth

Locum Free, 25th August Address—Locum c/o Dr Norton Mortomley Hall Mortomley Nr Sheffield

Woman Graduate, is at liberty to do LOCUM WORK for the month of September experienced in general practice highest testimonials —apply, Dr Kelliher, Tudor House Heath Town Wolverhampton

Wanted — Partnership with or without view to Succession South or East Coast Country town or seaside preferred Preliminary Assistantship entertained — Address No 3901 BRITISH MEDICAL JOURNAL Office 429 Strand W C 2

Wanted, by Cambridge Graduate age 30 PARTNERSHIP In come £1 000 £2 000 in any pleasant residential district in or near London ample capital available Address No 4012 BRITISH MEDICAL JOURNAL Office 429 Strand W C 2

Junior Partnership — In a large Hospital Town, in a pleasant neighbourhood about 100 miles from London, a share producing over £1 000 a year (*to commence with*) in an extensive Practice can be acquired by a suitable gentleman Suit married man with Hospital experience and good qualifications an advantage. Nice house available at reasonable rent Premium 1½ years purchase and easy terms of payment might be arranged —Address No 4152 BRITISH MEDICAL JOURNAL Office, 429, Strand W C 2

Midland Town — Partnership with view to succession Total receipts £1 500 p a Panel 1 000 Suitable house available to Let Half share for sale now at 1½ years purchase or near offer —Apply PEACOCK & HADLEY 19 Craven Street Strand W C 2

Young Physician, M D Lond, M R C P Lond, requires first class PARTNERSHIP in West End or Home County town with prospect of Hospital staff appointment — Address No 4110, BRITISH MEDICAL JOURNAL 429, Strand, W C 2

West Country Practices — (1) Country (over £1 000 p a) Price £1 500 (2) Coast (400 p a) Rent or buy £500 (3) City Third share, or Practice (£1 800) Lease (4) Nursing Home (unopposed) *Devon Riviera.*— WESTERN TRIPLE AGENCY, Woodfield Rd Torquay

Wanted at once, Practice of £1,000 to £1,500 South Coast or South Country Good panel and mixed Appointment if possible house to be rented no bought with one or more bedrooms Early settlement for suitable practice —Address, in strict confidence, No 4138 British Medical Journal Office, 429 Strand W C 2

Wanted, in large Country or County Town a good-class Non panel PRACTICE with opening for Consulting Work or specializing House at rental. Necessary capital available No agents —Address in first instance to 4112, Brit Med Jour. Office 429 Strand W C

Wanted by FRCS, aged 30, a PRACTICE or PARTNERSHIP in town in the S or Midlands with scope for surgery come about £1,000 Now free and can pay cash —F c/o Blundell & Co 29 Craven Street Strand W C.2

Wanted—Good General PRACTICE or PARTNERSHIP Income Purchaser can invest up to —Apply Peacock & Strand, W C.2 (No

Wanted—Seaside Practice with good house (no basement kitchen) in Devon or Somerset about £1,200 per annum cash available. Address in strict confidence.—o 4010 British Medical Journal Office, 429 Strand, W C.2

Wanted small Practice or NUCLEUS in Herefordshire or Monmouthshire, with hunting and fishing facilities No panel.—Address No 4131, British Medical Journal Office 429 Strand W C.2

Wanted, by well qualified and experienced practitioner a seaside PRACTICE preferably South Coast. Income 800/£1,200 p.a. Can pay £1,000 down and balance by arrangement Full details (in confidence) to Mr W H Grant 50 Wigmore St W.1 No charge unless sale effected

Wanted, by experienced practitioner aged 37 a general PRACTICE yielding from £1,000 to £1,500 a year Small capital Would give good premium if purchase arranged on easy terms —Address No 4116 British Medical Journal Office 429 Strand W C

Wanted, in London or Suburbs PRACTICE yielding at least £1,000 with panel keen on Midwifery and Surgery Small house preferred —Address No 4115 British Medical Journal Office 429 Strand W C 2

Wanted — F Prince, 32, Charing Cross London S W 1 always having clients desirous of PURCHASING PRACTICES or PARTNERSHIPS *in Town & Country* prepared to pay good premiums can usually effect a quick sale Terms without obligation post free.

Wanted by FRCS, MB (Cambs.) at present in practice and for 6 years on Surgical Hospital Staff OPENING for practising Surgery in Somerset or near —Address No 4121 British Medical Journal Office 429 Strand W C.2

For immediate Sale —Sound mixed non panel PRACTICE recently established and corner house in West Riding City Busy centre moderate fees. 12 months receipts £960. Splendid opening for panel.—Address No 4109 Brit Med Jour. Office 429 Strand W C 2

For sale —Old established PRACTICE £2,000 per annum mostly cash also good house, in nice road South of Dover three miles of Charing Cross little midwifery increasing panel low expenses suit retired officer or young practitioner —Address No 4136 B M J Office 429 Strand

For Sale, a well-established Panel PRACTICE in Scottish University town Average receipts for last three years £950 For further particulars address No 4117 British Medical Journal Office 429 Strand W C 2

For Disposal —A good Practice is not always to be had directly but Mr Percival Turner can generally offer applicants something suitable Nearly all the best Practices are sold by him without being advertised —Full information at consultation at 4 Adam Street W C.2

Glasgow —Practice for Sale Panel over 1,600 Large private practice Central. Good house (rented) Premium 1½ years purchase —Address No 4127 British Medical Journal Office 429 Strand W C 2

London, S E —About £,1524 per annum Cash and panel PRACTICE. Visiting fees 2/6 to 5 Excellent premises on lease Small panel No Sunday or night work Apply No 7576, c/o Percival Turner, 4, Adam Street, Strand W C 2

Midland City —Practice for Sale established over 40 years. Panel 3,000 Receipts about £1,000 Scope for increase Commodious house with accommodation for numerous cases Specially equipped professional rooms Xylol Southall Bros & Barclay Birmingham.

Medical Practice for Sale — Urban and Rural neighbourhood of White- [illegible] ture and valuable stock of drugs) £2,500 Large vacancy No agents.—Apply Chaplin & Baxter, Solicitors Whitehaven

Midlands — Pleasant residential town. Modern class PRACTICE Receipts £1,300 a year Panel 700 Fees good Corner house with surgery attached. Rent £60 long lease. Premium 1½ years purchase.—Apply Peacock & Hadley 19 Craven Street Strand W C

Pleasant Lancs Town.—Old- established Ill health cause. Nice house, good garage Rent £56. Receipts over £500 Great scope. Panel 700 increasing opposition no strong Easily worked. Price 1½ years purchase.—Manchester Medical and Scholastic Association Ltd 6 Brown Street.

Required by M D good class PRACTICE situated either in London or the Home Counties near good hospital with staff appointment Partnership in a West End practice entertained Full details (in confidence to Mr W H. Grant, 50 Wigmore Street W 1. No charge unless sale effected

Required at once —Practices and PARTNERSHIPS —Mr W S Atkins (late of Arnold & Sons London) has a large number of clients who are seeking Practice and Partnerships and wish to settle down at once — Send full particulars in confidence to Mr W S Atkins Medical Transfer Agency 43 Bedford Buildings Strand, London, W C 2

South London —Good middle and working-class PRACTICE held many years by Vendor now retiring Receipts £1,400 a year Panel 1,600 Excellent residence with garden Good lease —Apply Peacock & Hadley 19 Craven Street Strand W C 2

South Midlands or South Wanted NUCLEUS or PRACTICE (with good house and garden to let on lease) up to about £1,000 per annum —Address No 4011 British Medical Journal Office 429 Strand W C.2.

Scotland.—Old-established extensive and desirable town and country PRACTICE in North of Scotland for disposal Large panel and appointments Good house. Exceptional opportunity.—Address No 4122 British Medical Journal Office. 429 Strand W C.2

Dorsetshire —Old established PRACTICE-PARTNERSHIP with Preliminary Assistantship and ultimate succession Receipts £1,112. Panel 1,400 Scope Further particulars from Lee & Martin Ltd 21 Temple Row Birmingham.

Midlands —Pleasant County Borough. Old established industrial and middle class PRACTICE. Average receipts £2,548. Panel 2,230. Appointments probably transferable. Good house. Preliminary Partnership or Assistantship — Lee & Martin Ltd

West Midlands —Old-estab Town and Country PRACTICE in a County Town. Receipts £1,574. Appointments. Panel nearly 400 Good fees. Expenses small Hospital 50 beds Purchaser would be appointed Physician or Surgeon Good house and garden — Lee & Martin Ltd

North of England —Old- established Country Town PRACTICE Average receipts £1,460 Good panel. Expenses small Good house garden, tennis lawn, and orchard.—Lee & Martin Ltd.

Staffordshire —Old-estab Town and Country PRACTICE.—Receipts £1,190 Panel over 500 Appointments. Scope Freehold house on lease ample accommodation good garden.—Lee & Martin Ltd 21 Temple Row Birmingham

Suffolk —Nearly £1,600 a year Non-dispensing PRACTICE Panel 700 Fees 5/- to 10/6 Good detached house large garden Rent £70 Some surgery and ample scope. Apply No 7583 c/o Percival Turner, 4 Adam Street, Strand, W C.2.

To Purchasers —Do not Buy without expert assistance. With 40 years experience Mr Percival Turner can advise in all cases. Terms free on application to 4 Adam Street Strand W C 2 Telephone Gerrard 3[illegible] Telegrams Epsomian London."

Yorks —Old-established, good house, garage £60 on lease Receipts over £2,000 panel 1,110 Excellent scope Vendor on Hospital staff to which buyer can succeed. Price £3,000 half down.—Manchester Med & Scholastic Association Ltd 6 Brown St

Yorks, East Riding — Beautiful district Country PRACTICE Receipts £1,400 Unopposed. Good house every convenience —Apply W A. Wharram Ltd 34 Lady Lane Leeds.

Western or North Western Suburb [illegible] exceptional experience than £500 p.a. with [illegible] lease 4 bedroom and good detached at a reasonable rental Full details (in confidence) to Mr W H Grant 50 Wigmore Street W 1. No charge unless sale effected.

NOTICE TO HOSPITALS NURSING HOMES AND THE MEDICAL PROFESSION GENERALLY

A comprehensive stock of and a large STORES and ALE at the edical Stores Essex Parade Mews Larden Road Acton Vale, W.3 The instruments and equipment may be inspected at the Depot at any time between the hours of 9 a.m and 6 p.m. except Saturdays (9 a.m to 12 noon) Offers to purchase should be addressed to The Controller of Supplies H M Office of Works King Charles Street Whitehall, S W 1

Wanted, to purchase, mid- wifery instrument. Neville's Axis Traction Forceps etc.—Address No 4120 British Medical Journal Office 429 Strand W C.2

Med. and Surg Sundries (new and secondhand) May Op Outfits £10 Sterilizers for 10 Spencer Wells Forceps 2/6 Wool 2oz. compl pkts 1/4lb Record Syringes for 5 Iod Catgut tubes 1/6 Sterile silk or Catgut 12 tubes 1 —A W Alty 47, Swinderby Rd. Wembley

Bournemouth —In local [illegible] use of able. [illegible] Address No 4007 British Medical Journal Office 429 Strand, W C.2

Dis-used Hotel on the East Coast facing the Sea. Suitable for Convalescent Home or Institution To be LET or SOLD —Apply Surveyor, 72 Hamilton House Bishopsgate, E.C.2.

Furnished or unfurnished ROOMS to Let Suitable consulting, waiting room attendance. Whole or part time. 3 windows South aspect —Miss Stear, 8 New Cavendish Street W 1

Large Ground Floor Room to Let to permanent patient in Nursing Home.—Sister, 1 Benthuck Street W 1

To be Let or Sold, in a Midland Borough Town.—A good HOUSE in a fine position, with every convenience. Has been used as a Doctor's house for over 40 years.—Address, for full particulars No. 4119 British Medical Journal Office 429 Strand W C.

Wanstead Park, main road Purely residential neighbourhood. Modern freehold corner HOUSE Ample accommodation, garage electric light telephone. Very suitable for doctor Vacant possession. View by appointment.—Particulars Green & Jones Albert Road E 12

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Taxed year Just run in mileage about 2 000 New condition Fitted loose covers £320 —Dr GRIMSON, 168, Lower Clapton Road, E 5

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(1923) 12 Rover Coupé, with drop head, brand new, never been used, painted dark claret, with black wings and mouldings Dickey seat ideal car for Doctors use list price £575, our price £500, would take smaller car in part payment —STRADLINGS, Newbury

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UNTIL you have consulted us We are Agents for all leading makes and will supply you with any Car on DEFERRED PAYMENTS Your old car taken in PART EXCHANGE Call write or phone —ERNEST GRIMALDI Ltd 87 Great Portland Street W Langham 2983

The Royal Portsmouth

HOSPITAL Portsmouth
(Three Resident Medical Officers)

THIRD HOUSE SURGEON wanted, Male (qualified) Six months appointment To commence duties on September 8th, 1924 Eligible on completion of term for Senior appointment

Salary £150 per annum with Board etc Candidates selected for interview will be allowed, not exceeding two guineas, railway fare

Applications stating age nationality etc and copies of three recent testimonials, to be sent to the undersigned, from whom full particulars can be obtained

B WAGSTAFF, Secretary

The Royal Infirmary and

CHILDREN S HOSPITAL, Sunderland

Wanted a specially experienced VISITING MEDICAL OFFICER to take charge of the X ray Electro therapeutic and Orthopædic Department He will be restricted to this class of practice and must reside in Sunderland Salary £400 per annum with percentage of any private fees

Applications to be received not later than August 26th For particulars of appointment apply to S C FRYERS, Secretary, The Royal Infirmary, Sunderland

11th August, 1924

West Ham Mental Hospital

Goodmayes Ilford

THIRD JUNIOR ASSISTANT MEDICAL OFFICER (single man) wanted Salary commencing £300 per annum with furnished quarters board, laundry and attendance The appointment is subject to the provisions of the Asylum Officers Superannuation Act 1919 Applications stating age qualifications with copies of three recent testimonials to be sent to the Medical Superintendent West Ham Mental Hospital, Goodmayes, Ilford, Essex

Essex County Hospital

Colchester (120 beds)

Wanted for September a HOUSE SURGEON (Male) Salary £200 per annum with board washing and residence in the Hospital Medical and Surgical qualifications required Applications with three recent testimonials to be sent at once to ALFRED G BUCK Secretary

Ministry of Education, Egypt.

SCHOOL OF MEDICINE

Applications are invited for the vacant posts of —

(1) PROFESSOR OF PHYSICS
(2) PROFESSOR OF CLINICAL MEDICINE
(3) PROFESSOR OF CLINICAL SURGERY

The holders of these posts are expected to devote their whole time to teaching and research and are not allowed private practice of any kind

The initial salary is £E 900 a year in a class £E 900 1140

The appointment would be on probation for the permanent cadre for an Egyptian in the case of a foreigner on a three years' contract

The instruction must be given either in Arabic or in English

Applications should be accompanied by full record of teaching experience and research work and must reach the Director, School of Medicine Cairo, Egypt not later than September 15th 1924

Ministry of Education, Egypt.

SCHOOL OF MEDICINE

Applications are invited for the vacant whole time post of LECTURER IN PHYSICS in the School of Medicine Cairo

Applicants must be of Egyptian nationality and should forward with their applications full particulars as to their qualifications research work and former teaching appointments with testimonials

The initial salary of the post is £L 540 in a class £L 540 840

Applications must reach the Director, School of Medicine Cairo Egypt before September 15th 1924

University of Otago,

New Zealand

Applications are invited for the position of PROFESSOR OF SURGERY, in the above University at a salary of £600 p a , with right of consulting practice Full particulars and forms of application obtainable by sending stamped foolscap envelope to the High Commissioner for New Zealand 415 Strand London, W C 2, by whom completed applications will be received up to 31st August 1924

County Borough of East Ham.

ASSISTANT MEDICAL OFFICER
(School Medical Service)

Applications are invited for the position of Assistant Medical Officer, whose duties will be chiefly in connection with the Medical Inspection of school children The appointment will be temporary for a period of twelve months Salary £600, subject to percentage deductions in accordance with the provisions of the Local Government and other Officers Superannuation Act, 1922

The successful candidate will be required to give full time service and act under the supervision of the Medical Officer of Health and School Medical Officer

Candidates must have definite experience of Children s Diseases and the possession of the Diploma in Public Health or similar qualification is desirable

Applications must be made on forms to be obtained from the undersigned to whom they must be returned accompanied by copies of three recent testimonials not later than Monday, the 25th August 1924

Canvassing the Members of the Council will disqualify for appointment

(By Order)
Town Hall, C EUSTACE WILSON
Last Ham E 6 Town Clerk
July 30th 1924

West Riding County Council

APPOINTMENT OF DISTRICT TUBERCULOSIS OFFICER

The County Council of the West Riding of Yorkshire in ite applications for the appointment of District Tuberculosis Officer for the Barnsley Area

Salary £600 per annum rising by annual increments of £25 to £750

Further particulars and form of application may whom all more than not later than Monday, the 1st September 1924 from the undersigned

County Hall FRANCIS ALVEY DARWIN,
Wakefield Clerk of the County Council
11th August

Manchester Ear Hospital,

Grosvenor Square All Saints

The Board invite applications for the post of HOUSE SURGEON Twenty four beds State essential particular Candidates must be duly qualified and registered Applications with four copies of recent testimonials to be forwarded to Mr Frank Donner (Hon Sec Manchester Ear Hospital) c/o Mr W T Ellam, 33 Brazennose Street, Manchester

Borough of Bromley,

TEMPORARY ASSISTANT MEDICAL OFFICER OF HEALTH

The Town Council of Bromley invite applications from ladies or gentlemen whose age should not exceed 40 years for the appointment of temporary Assistant Medical Officer of Health and whose principal duties will be to conduct [illegible] School [illegible] Medical [illegible] and [illegible] ough

[illegible] annum

Candidates should have had experience in (1) Infection, (2) Anæsthetics, (3) Gynecology and the possession of the Diploma of Public Health will be a recommendation

Forms of application can be obtained and must be returned accompanied by copies of three recent testimonials, to the undersigned not later than Monday, the 1st September 1924

Canvassing will be considered a disqualification

Municipal Offices, FRED H NORMAN
Bromley Kent Town Clerk
11th August, 1924

County Council of Durham

Education Department

Applications are invited for the post of ASSISTANT OCULIST to the Education Committee Candidates must be skilled refractionists, and must also have occupied the post of House Surgeon in an eye hospital or in the eye department of a general hospital for a period of not less than six months Commencing salary £600 per annum rising by annual increments of £25 to a maximum of £650 per annum, with travelling expenses in accordance with the County Regulations

The person appointed will hold an established post under the Local Government and Other Officers Superannuation Act, 1922, and will be subject to the provisions of the Act

Forms of application, which must be returned not later than 25th August 1924 can be obtained from the Director of Education Shire Hall Durham

A J DAWSON
Shire Hall, Durham Director of Education
Aug 1st 1924 (No 68 1924)

Bolton Education Committee

THOMASSON MEMORIAL SCHOOL

Wanted for the Thomasson Memorial Residential Blind and Deaf School a MATRON to take charge of the Household Staff and to be responsible for the supervision of Resident Children The person appointed will be required to reside at the School

The commencing salary will be at the rate of £80 per annum plus board and residence

Preference will be given to candidates having knowledge of Sick Nursing and the care of Children and Institutional experience will be an additional qualification

Forms of application, which must be returned not later than Saturday August 30th 1924 and list of duties may be obtained from the undersigned on receipt of a stamped addressed envelope Copies of not more than three recent testimonials will be required

F WILKINSON Director of Education
Education Offices Nelson Square Bolton

City of Bradford

MUNICIPAL GENERAL HOSPITAL, ST LUKE S

HOUSE PHYSICIANS and HOUSE SURGEONS required

Salary in each case £200 per annum with board and lodging

These appointments are for six months, renewable for a further period of six months

Application forms may be obtained from the Medical Officer of Health Town Hall, Bradford and should be returned to him not later than August 27th, 1924

Town Hall, N L FLEMING Town Clerk
Bradford July 31st 1924

Tyn-y-Coed, Llanrhos,

CONVALESCENT HOME FOR MEN
(66 Beds)

MATRON

The Committee of the Birmingham Hospital Saturday Fund invite applications for the post of Matron Salary £120 per annum Duties to commence October 1st

Applicants (fully trained) state age experience and references Apply to W S ASTON Honorary Secretary 10 Newhall Street Birmingham

Leeds Maternity Hospital

Applications are invited for the post of REGISTRAR to the Leeds Maternity Hospital at a nominal salary Applicants must be registered practitioners Replies to be made not later than August 25th to Sec to Medical Faculty Leeds Maternity Hospital 12 Hyde Terrace Leeds

Bristol Royal Infirmary

Applications are invited for the following resident appointments for the six months commencing October 1st, 1924 —

1 CASUALTY HOUSE SURGEON
1 OBSTETRIC AND OPHTHALMIC HOUSE SURGEON
2 HOUSE PHYSICIANS
4 HOUSE SURGEONS
1 HOUSE SURGEON to the Ear, Nose and Throat Department
1 ASSISTANT OBSTETRIC HOUSE SURGEON

Salary for the first two mentioned appointments at the rate of £100 per annum with Board Apartments and Laundry and for the last eight mentioned appointments at the rate of £80 per annum with Board Apartments and Laundry

1 DENTAL HOUSE SURGEON—non Resident. Salary at the rate of £116 per annum with Board

Applications together with testimonials to be sent to the undersigned on or before August 29th 1924.

ELLIS C SMITH F.C.I.S., Secretary

Bristol General Hospital

The Committee invites applications for the following appointments which become vacant on October 1st next —

2 HOUSE PHYSICIANS, HOUSE SURGEON
RESIDENT OBSTETRIC OFFICER HOUSE SURGEON to the Special Departments and a CASUALTY HOUSE SURGEON

The appointments will be for six months at salaries at the rate of £80 per annum, and in the event of a second appointment being held at the rate of £100 per annum with Board, Residence etc. provided in the Hospital.

Candidates must be registered under the Medical Acts and produce testimonials of good personal character and ability and must have had recent experience in the administration of anæsthetics.

Forms of application to be obtained from the Secretary must be returned with copies of testimonials addressed to the undersigned on or before Monday September 1st next, from whom further particulars may be obtained

THOMAS W GREGG Secretary

Cumberland Infirmary,

Carlisle

Wanted October 1st 1924 QUALIFIED RESIDENT MEDICAL OFFICER (Male) twelve months appointment—six months as House Physician and the remaining six months as House Surgeon Salary as House Physician at rate of £175 per annum, and as House Surgeon at rate of £200 per annum, with Board Residence etc. in each case

Applications stating age with copies of not more than four testimonials should be received by first post on Tuesday August 19th by the undersigned who will supply further particulars if required

J G HOWITT Secretary

The Gloucestershire Royal

INFIRMARY AND EYE INSTITUTION
Gloucester

There is a vacancy for an ASSISTANT PHYSICIAN and PATHOLOGIST on the Acting Medical Staff of this Institution. There are certain emoluments in connection with the above posts particulars of which can be obtained from the undersigned.

By the rules of the Hospital the members of the Acting Medical Staff shall be duly registered practitioners.

Candidates should send in their applications diplomas, and testimonials under cover to the Secretary

G HURFORD
Gloucester July 31st, 1924. Secretary

County Mental Hospital,

Whittingham Preston Lancs

LOCUM TENENS MEDICAL OFFICER required Gentleman. Prospect of promotion to permanent staff Salary £8 8s per week together with Board furnished apartments attendance and laundry One who has held House Physician or House Surgeon's appointment preferred Well equipped and well staffed Laboratory for research work Candidate must be unmarried and registered under the Medical Acts Apply stating age and full particulars to the Medical Superintendent

A Vacancy will shortly occur

for the post of ASSISTANT PHYSICIAN in the ENGLISH SANATORIUM MONTANA, Vaala, Switzerland. Knowledge of French very desirable Applicants are requested to state clearly and briefly (1) their qualifications (2) their experience of tuberculosis (3) their knowledge of French or German No more than two recent testimonials to be sent to MED SUPT, 5 Eaton Gardens London NW1 The gentleman elected who must be unmarried will be required to take up his duties in November

Kent Education Committee

SCHOOL MEDICAL SERVICE.

SCHOOL DENTIST

Applications are invited from fully qualified Dental Surgeons, for the post of whole-time Dentist under the Kent Education Committee.

The successful candidate will be required to devote his whole time to the duties and will work under the supervision of the School Medical Officer

The salary will be at the rate of £350 per annum with war bonus on sliding scale (at present £154 14s. per annum)

Applications stating age and full qualifications and accompanied by copies of three recent testimonials, must be forwarded to the undersigned not later than August 16th 1924.

No official form of application will be issued and canvassing will be considered a disqualification.

ALFRED GREENWOOD M.D
Sessions House, Maidstone. School Medical Officer
July 28th 1924.

New Sussex Hospital,

Windlesham Road Brighton. (30 beds)

Applications are invited from fully qualified medical women for the post of HOUSE SURGEON to commence duties on October 1st Previous hospital appointment essential. Honorarium at the rate of £50 per annum with board, lodging and laundry

Applications with copies of testimonials, should be sent to the Secretary of the Hospital, not later than August 25th 1924

Hospital for Epilepsy and

PARALYSIS Maida Vale, W.9

Applications are invited for the post of HOUSE PHYSICIAN The salary is at the rate of £100 per annum and the appointment is for six months. The selected candidate will be required to take up duty early in September

Applications accompanied by copies of three recent testimonials should reach me by 23rd August

H W BULLEIGH,
Secretary and General Supt.

Free Eye Hospital,

Southampton

Applications are invited for the following appointments —

1 HONORARY CONSULTING SURGEON (not Ophthalmic)
2. HONORARY DENTAL SURGEON

Applications to be addressed to THE SECRETARY Free Eye Hospital not later than August 25th 1924.

Liverpool School of Tropical

MEDICINE

The Committee are about to appoint a young Medical Graduate to the staff of the SIR ALFRED JONES RESEARCH LABORATORY Freetown Sierra Leone. For particulars apply to the Hon. Dean Liverpool School of Tropical Medicine, Pembroke Place Liverpool.

Dundee Royal Infirmary

HONORARY ASSISTANT PHYSICIAN for Diseases of Children.

The Directors invite applications accompanied by 20 copies of three recent testimonials, these must be lodged with the Secretary on or before September 1st.

LEE & MARTIN, LTD.,

THE BIRMINGHAM MEDICAL AGENCY
71, TEMPLE ROW, BIRMINGHAM.

TELEGRAMS "Locum Birmingham." TELEPHONE 1110 Central, Bham.

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PRACTICES for sale. Particulars on application.

ATKINS

MEDICAL TRANSFER AGENCY.

Partners

W S ATKINS (Late of ARNOLD & SONS, London)
J R LOWNDS (B.A.Cantab., L.R.C.P.)
43, BEDFORD STREET, STRAND, W.C.2,
(A few doors from The Lancet" Office)

Telegrams Positions, Westrand, London." *Telephone* Regent 2.9

LOCUM TENENS and ASSISTANTS supplied.

FOR DISPOSAL

Staffs —Partner required for a General Practice situated in an industrial district Receipts £2,500 Panel 1,300 House at rental Premium for third share 1½ years purchase Option to increase to half share Folio 887

Sussex —A General Practice situated in charming district. Receipts £1,400 Panel 700. Ample scope Fees 3 guineas upwards. Cottage Hospital Nice house containing 6 bedrooms etc Premium 1½ yrs purchase Folio 593

London — City Practice Receipts £1,250 including appts £500 Panel 100 Fees 3,6 upwards. Vendor retiring Ample scope. Nice house in central position at rental Premium £2,000 —Folio 667

Norfolk —A General PRACTICE situated in a country district. Receipts £1,600 Panel nearly 900 Good fees Nice house, with excellent garden, etc. Rent £35 *per annum. Premium £2,500 —Folio 600*

Midlands —General Practice situated in small Country Town Receipts £1,200 Panel 500 Fees 3s. 6d upwards. Excellent house containing 6 bedrooms, &c. Premium 1½ years' purchase —Folio 617

Glam —General Practice in thickly populated district on Coast. Receipts £1,700 Fees 3, upwards. Panel 600 Considerable scope. House, containing 4 bedrooms etc. rent £50 p.a. Premium £1,500 Folio 887

Derbyshire —A General PRACTICE situated in an industrial district, Receipts about £800 Panel 600. Good fees. Nice house containing 8 bedrooms, &c. at rental. Premium £1,000 —Folio 653

Purchasers stating their requirements can have details of other Practices not advertised

Telephone. Langham 2728.
Telegrams "Assistance, London."

NURSES

MALE OR FEMALE.

TRAINED NURSES FOR MENTAL, MEDICAL, SURGICAL AND FEVER CASES

Nurses reside on the premises and are available for urgent calls, Day or Night.

THE NURSES' ASSOCIATION

(In conjunction with the MALE NURSES ASSOCIATION)
29, York Street, Baker Street, London, W 1
(Mrs.) MILLICENT HICKS *Superintendent.*
W J HICKS *Secretary*

ST. LUKE'S HOSPITAL.

ESTABLISHED 1751.

PRIVATE NURSING STAFF DEPARTMENT

TRAINED NURSES for MENTAL and NERVOUS CASES can be had immediately Apply to LADY SUPERINTENDENT, 19 Nottingham Place, London, W.1. Telephone Mayfair 3439.

NORTHERN BRANCH.—Apply LADY SUPERINTENDENT 30 Clarendon Rd., Leeds. 'Phone Leeds 23165.

THE
NEW MENTAL NURSES CO-OPERATION,

139, Edgware Road, Marble Arch, W.

Specially trained Nurses for Mental and Nerve cases. (All Nurses are insured under the Employers Liability Act, 1906.) Apply the SUPERINTENDENT.

Telegrams "Psyconurse Paddi, London." *Telephone* No 6166 Paddington.

THE OLDEST AND LEADING MEDICAL AGENT

MR. PERCIVAL TURNER, LTD

(Established over 40 years)

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Telegrams "EPSOMIAN LONDON
Telephone GERRARD 399

Printed Prospectus of Terms, etc, post free on application

Yorkshire —Average £1,286 Appointments £350 Visiting fees 3/6 to 10/6 Panel nearly 1,300 Few midwifery cases Good house every convenience —Apply, No 7581

North-West County — University Town £1 200 a year Old established Visits 5/ to 10/6 Midwifery 4 to 7 guinea Freehold house standing in own grounds Scope —Apply No 7579

North-West Coast — Favourite Seaside Resort About £300 a year Increasing PRACTICE Small panel Visit 3/6 upwards No midwifery or appts Situated centre of town Moderate rent —Apply No 7578

South Coast — About £450 p a Panel 200 Visiting Fees 3/6 upwards Few midwifery 63/- Small house larger can be obtained if desired —Apply, No 7577

London, N —About £450 p a Small non residential PRACTICE Panel about 200 Fees for visits 2/6 to 7/6 Good premises on lease No appointments or midwifery —Apply, No 7574

London, S E —Over £1,450 per annum ASSISTANTSHIP with view to Partnership, with succession Panel about 1 600 Good fees Very few midwifery cases Excellent house, with good garden, to rent —Apply, No 7572

London, N.—Average £850 p a Panel 850 Visiting fees 3/6 upwards Midwifery £3 3s Od to £5 5s Od Good house large garden to rent Moderate premium —Apply, No 7569

Near Manchester — Nearly £2 000 p a Panel worth about £600 p a Moderate house with separate surgery to rent Premium 1½ years purchase easy terms Good schools near —Apply, No 7565

Eastern County Partnership About £2 200 p a Panel about 2 000 and other appointments Fees 3/6 p a One-third share for disposal with succession in about 3 years Apply No 7564

London, W —About £1,100 a year Non dispensing Very small panel Fees 5/ upwards Very few midwifery cases Corner house to rent —Apply No 7561

London, S W —Partnership and succession £2 000 a year Half share for disposal immediately Panel 1 800 Old established Good fees Excellent house and large garden Prem 2 yrs 'purchase —Apply, No 7560

Yorkshire —About £1,700 a year Panel 1 120 Visits 2/6 to 10/6 *medicine extra* About 30 midwifery cases up to £5/5/0 Appointments £60 Good house with garden and garage, for sale or would let on lease —Apply No 7559

Death Vacancy —£1,000 a year Favourite Riverside Resort Very old established Same hands over 30 years Small and select panel Night work mostly refused Good house, with garage and garden on lease Excellent opportunity for prompt purchaser Personally known and recommended —Apply, No 7556

Lancs —University Town About £700 p a Panel over 700 No midwifery ample scope Good house and garden Mod price for Practice and house -Apply No 7553

Cheshire —Nearly £4,000 a year Old established Practice HALF SHARE for Sale at 1½ years purchase Panel about 1 400 Appointments £45 Good fees Good house and garden to rent —Apply, No 7536

South County —Over £1,000 p a Panel 640 other appointments £120 Practically unopposed Excellent house elec light, etc Good garden. All sport —Apply No 7535

Midland Town — About £1 100 a year Old established PRACTICE Panel 750 Appointment £40 Very little midwifery Large house and garden Prem £1 600 including drugs etc —Apply No 7534.

ARNOLD & SONS,

(JOHN BELL & CROYDEN, LTD),

(Established over a century)

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LANGHAM 3000
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"INSTRUMENTS WESDO LONDON

LOCUM TENENS provided at short notice

FOR SALE.

SOUTH WALES (Not Colliery)—Old established G P, situated in excellent surroundings Panel 2 800 Income over £2 700 Splendid house etc Suitable for two in partnership though not necessary Opposition negligible Premium 1½ years purchase Reasonable terms entertained

WEST COUNTRY —Practically unopposed old established small Country Town G P Income over £1 400 p a Panel 1 000 Two appointments Excellent D P detached house 5 bed rooms 2 dressing Modern drainage 21 years lease Rent £60 p a Premium £2,200

MANCHESTER (SOUTH) —Old established, good class PRACTICE Panel 1 000 Income over £3 000 p a Suit two in partnership Excellent house Premium £4 000

GLOS —Well established G P Panel over 1 500 Income nearly £1 700 Excellent house at rental Premium 1½ years purchase

LONDON N —NUCLEUS G P Income nearly £700 p a Panel over 200 (scope) Good sized house (leasehold) Premium 1½ years purchase

MIDLANDS —Old established G P Good house to rent situated in busy district Income over £1,700 p a Panel over 2 000 Premium 1½ years purchase

YORKS (W R) —Old established G P Nice house Panel nearly 1 300 2 appointments Premium £3 900 to include house (part can remain)

YORKS (E R) — Busy Industrial PRACTICE Panel over 1 120 Income £2 050 p a Scope for Surgery Premium 1½ years purchase

MANCHESTER — NUCLEUS, General Practice situated in busy quarter Small house (5 bed rooms) Panel and cash Income over £600 per annum Premium £1,450 to include house

YORKS —Old established country town Panel 1 500 *Income £2 500 three appointments* Detached house with garden and garage to let on lease Premium £3 500

Purchaser stating their requirements will be sent particulars of other suitable Practices and Partnerships for sale free of charge

Please address all communications to the Manager, Mr W H. GRANT, Medical Transfer and Insurance Department

ESTABLISHED 1868

PEACOCK & HADLEY,

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This old established reliable Agency negotiates the Sale of PRACTICES and PARTNERSHIPS on reasonable terms which can be obtained on application No charge made unless a sale be effected
LOCUM TENENS and ASSISTANTS supplied

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LOCUMS SUPPLIED

Home County —Middle and working class PRACTICE of £1 100 in country town Panel 900 Club £100 Little midwifery Scope for active man Rent £65 Premium £1 500

South Midlands —Partnership Third share of £3 867 Unopposed PRACTICE in country town with cottage hospital Appointments £600 Panel 1914 House with nice garden, tennis court, garage, etc Rent £80

Within 80 miles —Practice of £1 380 in country town in beautiful district Nearly half the income from panel and appointments Rent £45

Midlands —Surgeon required as PARTNER for half share of £3 000 Scope for major surgery and vacancy on the staff of hospital Premium £2,100 House on rent

South Coast — Partnership Half share of £2,300 Fees 3/6 upwards Few midwifery Panel 1 000 Good house with large garden Rent £120

Death Vacancy —Partnership Third share of £4 500 Panel practice in open suburb Scope for midwifery Rent £75

South Wales —Practice of £1 400, with great scope in large town Small panel and some shipping work at good fees Practice formerly did £3,000 Rent £52 Premium 1 year's purchase

Lancs —Practice of £2,000 in *prosperous town Scope for Surgery* and vacancy on staff Panel 600 Good house rent £90 Premium only £1 800 £1 000 down

London, S W —Middle class PRACTICE of £700 in nice residential district Small panel Scope for increase Nice freehold house can be bought.

Surgeon under 35, required as PARTNER in first class Practice in country town with cottage hospital Quarter share £6,000 House can be rented

Yorks —Middle and working fine town Receipts Sale owing to illness

Near Peak District — Old established PRACTICE of about £1 000 held by Vendor for about 40 years in beautiful district Panel 900 Appointments £100 Excellent house with large garden, rent £75 Premium 1½ years purchase

Midlands —Practice of £1,800 In prosperous town Panel 2,200 Appointments £110 Great scope for anyone attending more to the practice House with garage Rent £50 on lease

Liverpool —Practice of £1,400 In suburb Appointments £110 Panel 1 100 Opposition weak Rent £50

Lincs —Unopposed Practice of £900 Panel and appointments £500 Very good house with two acres, can be rented Station in the place

Home County —Partnership Half share of about £2 500 in beautiful country town Good class non panel practice Fees 3/6 to 1 guinea Good house and garden can be bought cheaply

Within 80 miles — Old established PRACTICE of £1 280 in nice town Panel 1 100 Nice house with good garden Rent £70 Schools, Society etc

Yorks —Practice of £1,450 In fine town Panel 800 Appointments £160 No midwifery has been done House with pretty garden and separate entrance to surgery Can be rented

West Coast —Nucleus of £550 including £90 from panel in wealthy seaside place Premises in prominent position

Purchasers stating their requirements can hear Particulars of other Practices no advertised

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An Accountant's certified report is required in respect of every practice or partnership the disposal of which is undertaken by the Agency

The commission chargeable in respect of any practice in Great Britain placed exclusively in the hands of the Agency for transfer has been fixed on an exceptionally favourable scale, the maximum chargeable on any transfer being £50 In the case of Foreign and Colonial practices similarly placed the maximum is £75

NO CHARGE IS MADE TO PRINCIPALS FOR THE INTRODUCTION OF LOCUM TENENS OR ASSISTANTS

Accountancy and Legal services furnished by the Agency, where desired, at moderate inclusive charges.

PRACTICES AND PARTNERSHIPS FOR SALE.

1 RESIDENTIAL TOWN within 100 miles of London Average income dispensing Fees of about £2 mid from 2 6 to wifery yearly at 2 to 25 guineas Attractive and commodious house (3 reception bedroom etc garden) on rental of £100 p.a. Good society and sport of all kinds Premium 2 years purchase

2 PARTNERSHIP —Growing prosperous Town within 10 miles of

3

premium 1 years' purchase part by instalments Satisfactory reasons for selling Educational facilities and sport of all kinds

4 PARTNERSHIP —A Junior Partner is required in an extensive and lucrative established non-panel Practice situated in a large Town within 4 hours run of London The share (which can be increased after a time) produces £1,015 on average of past 3 years Visits 5 upwards Good house available on lease at moderate rent etc Married gentleman (under 30) preferred, and if possible purchase would be conceded if necessary to suitable man Premium about £1,500

5 EASTERN COUNTIES —UNOPPOSED COUNTRY PRACTICE within 80 miles of London Very old established and easily worked Average income worth about 5/ visits 5, Midwifery 30/ upward. 10—15 cases yearly Very attractive residence standing in its own grounds containing consulting room surgery (with separate entrance) 3 reception 4 bedrooms etc. garage, stabling One acre of garden and two acres of meadow land Price freehold 000

6 miles of London

garden Price £2,000 of which £1,000 can remain on mortgage. There is an up-to-date Hospital and an early vacancy on the staff is probable. Good sporting district. Premium 2 year purchase half by arrangement

7 SOUTH WEST OF ENGLAND —COUNTY TOWN —A ONE THIRD SHARE producing £800 (and increasing later) is offered in a high-class non-panel and non-dispensing practice with a considerable amount of surgical work There is a good Hospital in the town and the incoming partner (who must hold the F R C S Eng) will eventually be elected on to the staff Prem

PARTNERSHIP introduction will middle-class and panel Practice (1,900 patients on list) worth last year £2,100 Situated in a large town (population nearly 100,000) close to seaside resort Visits 2 6 to 5 Midwifery 2 to 3 guineas about 100 cases yearly Car required Good house with garage available at end of introduction Premium 1½ years purchase.

9 PARTNERSHIP —LANCS Large Town The third share of an old-established lucrative and money making Practice worth for the last financial year £3,722, can be acquired by a young unmarried man. Panel list of over 1,800 and patients operative cases Visits 2 to 5/ Midwifery 2 to 3 guineas Income Partner could reside with Vendor or unfurnished rooms are available Gift to be had. Premium 1½ years purchase

10 SOUTH COAST —LARGE TOWN PARTNERSHIP A quarter or one-third share in a middle and working-class Practice Income over £4,000 with scope

11

300 including £580 Advice and medicine Very little midwifery ed freehold house with small Price £2,500 of which Premium £1,400 cash

12 view to PARTNERSHIP A single man (about 30 years of age and not over 35 who must be

satisfactory at one year's purchase with increase ultimately up to one third Premium payable out of receipts One of the Partners is in England at present and a personal interview during the next month is essential

13 CHANNEL ISLANDS —Old established PRACTICE held 11 years jun. him, on account of ill three years average nearly ntment worth £35 Visits Midwifery 3 to 5 guineas 8 to 10 cases yearly Car not required House contains 4 reception 6 bedrooms bathroom etc large garden Must be purchased by valuation but mortgage can be obtained. Premium 1 years purchase. Excellent educational facilities and sport of all kinds

14 NEW ZEALAND (NORTH ISLAND) —Unopposed and increasing PRACTICE in a very beautiful district on main line about 60 miles from a large city and worth nearly £1,300 a year including easily worked appointment at £100 Visits into Township 10/ mileage 6/ midwifery 5 gns Good and up-to-date house (built by Vendor's predecessor) containing surgery 2 reception rooms 3 bedrooms and sleeping porch, bathroom etc with an acre of

15

school Post Office Shop etc) in a very pretty district Cash receipts for the past three years average £1,200 per annum including mail Lodge worth £80 Visits 7/6 to 10 6 (mileage 7 6 to 10 6 per mile) Midwifery £5 5s 0d. Attractive Bungalow residence with consulting room, surgery (separate entrance) 3 large bedrooms maids room etc Garden Acetylene gas plant Rent £104, on lease Premium £1,000, half down, and balance in 1 or 2 years

16 LONDON WEST END —PARTNERSHIP —A quarter share (to commence with) and up to one-third in 2 years and one half in 4 or 5 years with ultimate success on if desired is for disposal in a income for the immediate past year upwards and a few at 10 6 *or hold some higher qualification.* £1,500

17 LONDON EAST —Old established sound middle and working class PRACTICE Income over £1,150 Panel of 1,200 Surgery fees 2 6 visits 3 6 upwards No midwifery Can be much increased if desired. Small house suitable bachelor on lease Would suit lady doctor Premium £1,750

18 SOUTH EAST COAST —FAVOURITE RESORT Old established non-dispensing PRACTICE Income only about £400 per annum at present but there is very large scope for increase by a young well-qualified man. Good fees Excellent corner house with 3 reception 6 bedroom garden. Freehold Price for House and Practice £2,500

19 PAST EAST —Wanted in November a young unmarried ASSISTANT (not over 2 years of a possible e pai

20 SOUTH of Village easy access to large town. Very old established and held by the Vendor over 30 years Average income about £800 including appointments and panel of 4 Nearest opposition 5 miles Fees 3 6 to 20 Large freehold house with 3 acres of garden Price £2,500 Premium for Practice £1,500

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EASTERN COUNTIES —(3) PARTNERSHIP in old-established non dispensing Practice £2 250 p a in first-rate town No panel Incoming partner should be University man or F R C S Hospital and chance of appointment on staff One third share at first at one and a half years purchase (preliminary Assistantship)

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SOUTH MIDLANDS —(7) PARTNER required in well established Practice over £3,700 per annum in first rate Residential Town, about an hour from London Panel 2 100 House with 5 or 6 bedrooms Rent £30 Premium one-fourth share, one-and three-quarters years purchase

YORKSHIRE, WEST RIDING —(8) Well-established middle and working class PRACTICE, over £1,300 (£920 from Panel and appts) in large clean town Good detached corner house Prem £1 400

EAST COAST —(9) Increasing PRACTICE over £500 in rapidly developing District Panel about 100 Nearest opponent 4 miles Bungalow residence (5 rooms) Premium £750

EGYPT —(10) Well-established PRACTICE £700 to £800 mainly among English Residents and Visitors Excellent semi detached residence (5 bedrooms) Premium to include Furniture £1 100

EASTERN COUNTIES —(11) Old-established unopposed Country PRACTICE of £826 p a. Panel about 500 Very good house in 2 acres of garden also 18 acres of land attached to rent or purchase Nearest opponent 5 miles

MIDLANDS —(12) Lucrative PRACTICE averaging over £2 200, in Country Town near Birmingham Panel 1 800 Charming house (6 bedrooms), large garden Rent £100 Prem one and a half yrs purchase

HOME COUNTY —(13) PARTNERSHIP in first-rate Practice £7 000/£8 000 p a , in one of the best Residential Districts House (7 bedrooms) to rent Premium one sixth share two years purchase Partner should be aged over 30 and have held hospital appointments

YORKSHIRE, WEST RIDING —(14) Well-established mixed class PRACTICE nearly £1 500 p a in Manufacturing Town Panel 1 [illegible] Good house (5 bedrooms) to let on lease Premium one and a half years purchase

MIDLAND TOWN —(15) Old-established PRACTICE about £1 100 per annum in Residential Suburb Panel 700 Good house and large garden Premium £1 500

LONDON, N W —(16) PRACTICE worth about £450 per annum in working class district. Panel 450 increasing No midwifery Double fronted corner house Premium Practice, and freehold House £1 500 Great scope for young man

SOUTH MIDLANDS —(17) PARTNERSHIP in old estab. Practice of £6 800 per annum in Country Town Panel about 2 000 Excellent house to rent Premium one-fourth share, two years purchase

FIRST-RATE RESIDENTIAL DISTRICT up the THAMES —(18) PARTNERSHIP in good-class Practice averaging about £1 550 p a. Not much Midwifery Good house with garage to be sold Premium one half share £1 200 Scope for Surgery

LONDON, E C —(19) PARTNERSHIP in Special City Practice. Excellent opening for gentleman (aged 30-35) specialising in Skin work and experienced in Nervous and Digestive Disorders Share worth about £500 at one and a half years purchase

CELEBRATED HEALTH RESORT —(20) Nucleus of old established PRACTICE at present doing about £350 p a No Midwifery Good corner house to be sold Price to include practice, £5 000 Good opportunity to develop Consulting Practice

LONDON, S W —(21) Recently established Lock-up PRACTICE, in new and developing outlying Suburban District Rent of Consulting rooms £40 Prem to include lease furniture, and fittings £250

SCOTLAND, NORTHERN HIGHLANDS —(22) PRACTICE averaging over £1 600 p a., in a Town No panel House (5 bedrooms etc.) in best residential part Ample scope for midwifery and panel Premium £1 200

SOUTH OF ENGLAND —(23) PARTNERSHIP in very old established Country Town Practice over £3 670 per annum in beautiful part within 10 miles of the Coast Panel over 1 300 Well appointed house (8 bedrooms &c), with garden and lawn, to rent on lease Cottage Hospital and scope for Surgery Premium one-half share two years purchase

MIDLANDS —(24) PARTNERSHIP in very old established Practice over £4 300 in good Country Town Panel 2 000 House contains 5 bedrooms &c Premium for one third share one and a half years purchase

WEST MIDLANDS —(25) PARTNERSHIP in old established Country Town Practice over £3 600 p a Panel 2 153, R £80 Partner should be age 30 to 40 with some Surgical experience Well equipped Cottage Hosp Prem one third share one and a half years purchase

LONDON, S W —(26) Well-established PRACTICE of £600 to £700 p a in favourite Residential Suburb Panel 95 Not much midwifery Excellent detached house (6 bedrooms) with good garden for Sale Ample scope. Premium one and a half years purchase

SOUTH OF ENGLAND —(27) Unopposed Country PRACTICE nearly £500 per annum Panel 420 House (3 bedrooms 3 attics) with well stocked garden Rent £25 Premium £650

SURREY —(28) PARTNERSHIP in good middle class compact practice over £2 650 in Residential District easy distance of London Panel 1,200 Two fifths share at first at two years purchase

MIDLANDS —(29) Unopposed Country PRACTICE over £1 150 in beautiful part Panel about 720 Detached house (4 bed rooms) with half an acre garden Mild climate

SOUTH AFRICA —(30) PRACTICE about £1,000, in small Town in Cape Province Very comfortable house to rent Live very cheap Premium £800

EAST COAST —(31) Old-established good class PRACTICE £1 700 per annum in pleasant Seaside Town and favourite Resort Very modern double fronted house (6 bedrooms) Rent £75 on lease Moderate prem.

SOUTH OF ENGLAND —(32) PARTNER required in very sound old established Practice in Seaport Town Panel under 3000 Share worth £700 to £800 at two years purchase Partner must be keen and energetic and not much over 30

HOME COUNTY —(33) Old-established PRACTICE, over £1 850 p a in a most desirable Residential District under 3 miles from London Panel about 600 Excellent detached house (8 beds 3 dressing rooms) Nearly acre garden Rent £75 on long lease. Cottage Hospital near Premium one and a half years purchase

EAST ANGLIA.—(34) PARTNERSHIP in middle and working class Practice averaging about £2 200 p.a. in picturesque district near popular Seaside Resort. Panel nearly 1,200 Choice of house One-third share at first at two years purchase.

EASTERN COUNTIES —(35) Very old established Country PRACTICE over £1 400 p a. Panel 630 Suitable house (6 beds) Rent about £40 Mild climate Premium one and a half years purchase

SOUTH WALES —(36) Well-established PRACTICE nearly £1 250 p a in County Town Panel over 500 Fees 5/ to £2 2s Well situated double fronted house (6 bedrooms) with large garden Rent £60 Educational facilities Premium £1,800

SOUTH WALES —(37) Old established working class PRACTICE over £2 200 in good Town Panel 1 100 Detached house with 4 bedrooms, to rent on lease Premium £2 500

YORKSHIRE (WEST RIDING) —(38) PRACTICE over £1 500 p a., in thriving Industrial Town Panel 1,500 Good house (5 bedrooms) Rent £80 Premium £2 250

MANCHESTER —(39) PARTNERSHIP in old-established good-class Practice over £4 500 in Residential District Small panel One fourth share would be sold for £2 115 with option to increase up to one half Partner should be about 30 and preferably M D or F R C S

SOUTH COAST —(40) PARTNERSHIP in Practice, over £4 000 p a., in popular Seaside Resort. Panel 1 150 Premium one-third share two years purchase Partner must be energetic and not over 35

EASTERN COUNTIES —(41) Old-established PRACTICE £1 855 p a in pleasant Market Town Panel 1 100 No midwifery Excellent detached house (7-8 bedrooms) Very good garden Cottage Hospital Premium one and half years purchase

SOUTH COAST —(42) Good class PRACTICE of £1,300 per annum Excellent house Premium £1 250

YORKSHIRE (W RIDING) —(43) Old-established PRACTICE over £1,700 in clean Manufacturing Town. Panel 1 1 5 House contains 3 bed and 2 dressing rooms Garden half an acre Pretty surrounding country Prem £2 000 to include book debts tenant's fittings &c.

LONDON, N —(44) PARTNERSHIP in Cash and Panel Practice of £1 800 in Residential District Panel 2 150 House contains 5 bedrooms, &c One-third share at first. Premium £1,200 Incoming Partner must be married

ESSEX —(45) NUCLEUS of Practice in Industrial Village Panel and Midwifery refused Detached house (4 bedrooms and 2 attics) with garden. Premium, Practice, and House £1,000 Plenty of scope

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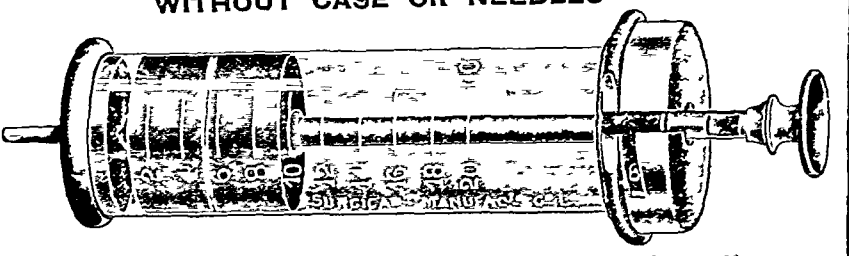
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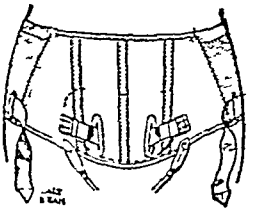
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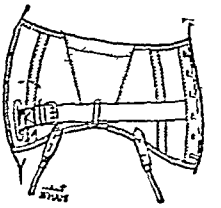
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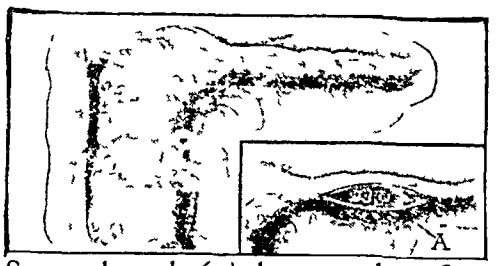
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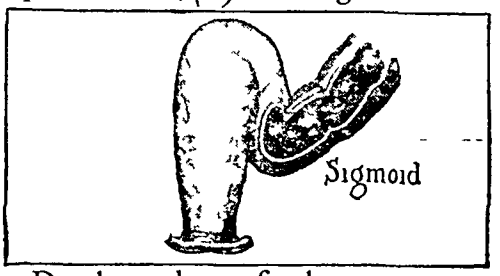
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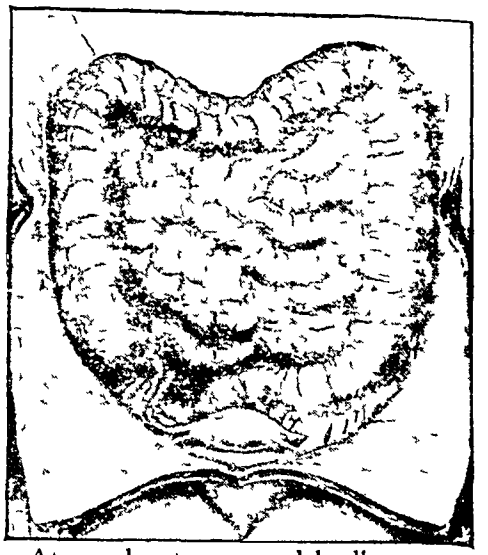
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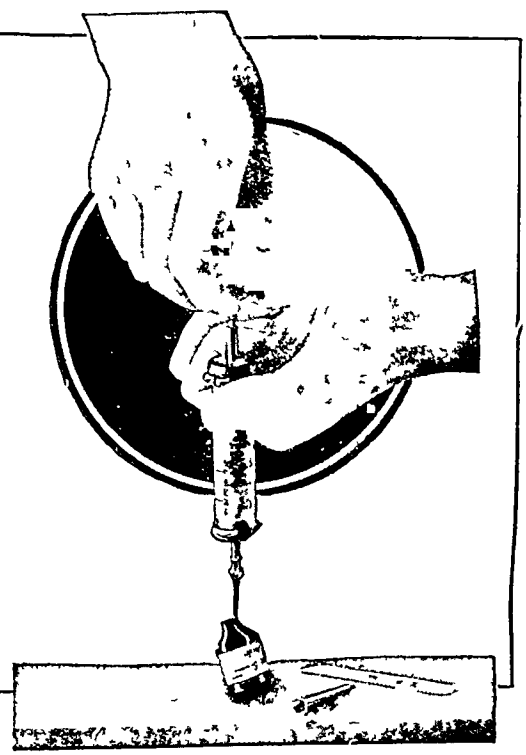
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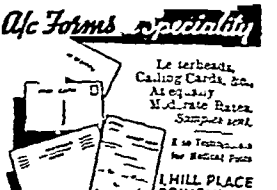
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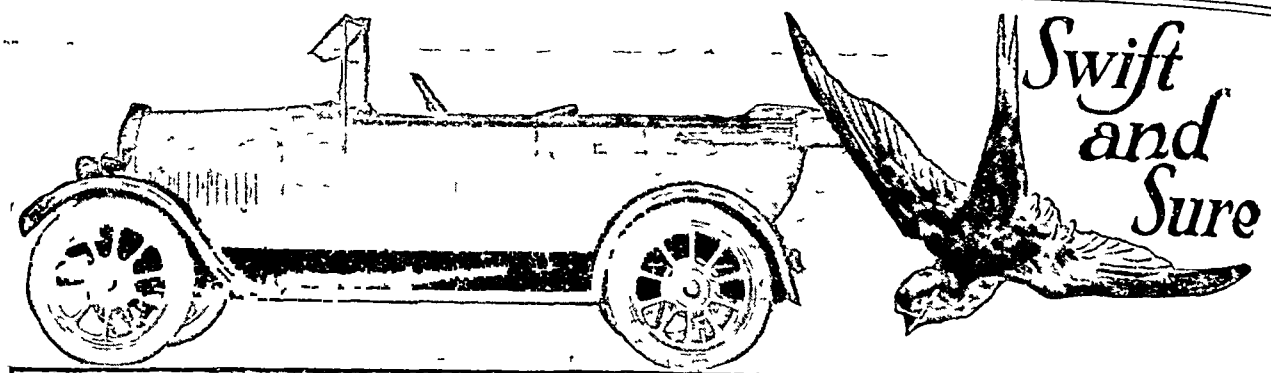
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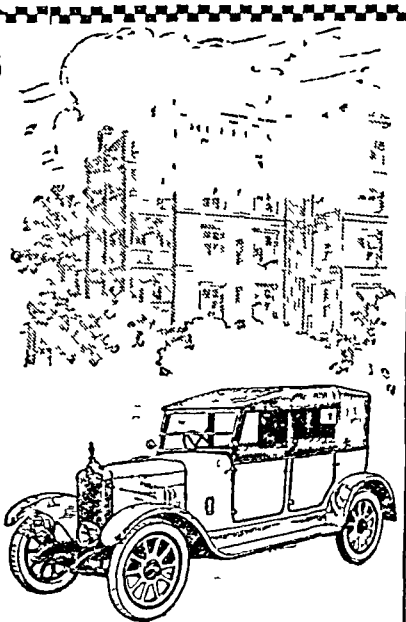
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Remarks
ON
RECENT ADVANCES IN THE TREATMENT OF SPRUE
CALCIUM AND PARATHYROID

BY

H HAROLD SCOTT M D, M P C P LOND,
D T M AND H CAMB F R S EDIN
(From the London School of Tropical Medicine)

In February 1923, a preliminary note was communicated to the Royal Society of Tropical Medicine[1] advocating the employment of calcium lactate and parathyroid in sprue In a subsequent paper published in October, 1923, five cases of sprue treated by this method were recorded, and in the following December, a discussion on sprue and its treatment took place at a meeting of the Tropical Diseases Section of the Royal Society of Medicine The paper *contributed by the present writer*, which was read at the discussion was reported in full in the BRITISH MEDICAL JOURNAL,[2] and, as a result of the publicity thus given to the *theory therein detailed this method* has been tried by medical men in this country and in other parts of the world, and the results which have been recorded are such as to warrant a further communication on the subject A series of cases is described in the present paper varying from those of mild character and recent origin to those of great severity and long standing For purposes of comparison of the results obtained by this and other forms of treatment selection has been made from amongst those of whom I have fairly full notes, who are of nearly the same age, who show approximately the same degree of severity, or in whom the disease has existed for the same length of time Appended is a table giving a few particulars of such as have been reported in sufficient detail to provide the information under the different headings

CASE I

This was an ordinary case and the patient had been treated on the lines previously recognized H W B male aged 40 The patient's foreign service had been as follow 1901-4 China 1905-6 East Indies 1908-10 the Mediterranean During these years he had no illness From 1916 to 1918 he was in Mesopotamia and suffered from malaria and sandfly fever From 1919 to 1921 he was again in China Briefly the history of this present illness is that in August 1921 he began to pass loose bulky and frothy stools of a light straw colour his tongue became sore and tender with small ulcer occasionally particularly at the tip Before his illness his weight was 157 lb The symptoms continued with very little intermission until November 1923 when he was admitted to hospital having lost 20 lb in weight He was treated by the usual dietetic and regimenal measures He was kept in bed and given milk only in increasing amounts Nothing else was allowed for five weeks after which time he was given a small sago pudding eggs (one at first later two daily) liver soup and a rusk The following was his day's nutriment at the end of thirteen weeks 6 a m milk 1 pint 8 a m milk 1 pint 1 egg 1 rusk 10 a m milk ½ pint 12 noon milk ½ pint liver soup sago 3 oz 4 p m milk ½ pint flavoured with tea 1 egg 1 rusk 7 p m milk 1 pint liver soup arrowroot 10 p m milk ½ pint Total 5 pints of milk While on this diet he suffered a relapse for which the physician stated no explanation could be found A sample of his blood was taken and the ionic or free calcium estimation was 9·5 mg per cent (the normal being 10·5 to 11·5) He had to go through the mill again and finally was well enough to leave hospital on April 16th after a stay of twenty three weeks and days His weight then was 1 6½ lb an increase of 10 lb on what it was on admission but still 10 lb below what he stated was his normal

CASE II

L E V male aged 42 First went abroad (to India) in 1914 The following year on the North West Frontier he had a slight attack of dysentery There was no history of any other illness In April 1923 he suffered from diarrhoea the stools being yellowish white bulky and frothy and he rapidly lost weight He left for England at the end of the month and arrived on May 18th During the voyage the tongue was sore but the diarrhoea was less and on arrival he felt better From that time until admission to hospital early in January 1924 the motions were never formed nor of normal colour and he continued to lose weight the tongue was at this time very sore On admission he was anaemic and wasted and the tongue was red glazed and tender Blood examination showed a reduction of red cells to 3 040 000 per c mm and the haemoglobin 70 per cent The ionic calcium estimated eighteen days after admission was still only 6·9 mg per cent Five weeks later it was 9·1 per cent Twelve weeks after admission the red cells had increased to 4 250 000 and the haemoglobin to 80 per cent After a stay of sixteen weeks and five days he was discharged He was still having three stools daily and his diet was milk sago 2 eggs 2 rusks and pounded fish The final note made was that he had progressed favourably To continue diet and report

The next patient also contracted the disease in India and very nearly at the same time, and came under treatment after a similar interval

CASE III

W E J male, aged 32 Went to India (Bangalore) in 1920 From November 1921 to May 1922 he was in Calcutta and thereafter in Bombay In February 1923 he suffered with diarrhoea four or five actions daily mostly in the morning the stools were foul bulky whitish and frothy according to his doctor typically pruelike He also complained of dyspepsia and acidity and had a sore tongue He improved under treatment but only temporarily The symptoms returned in April 1923 he passed *two large pale stools in the early morning* His normal weight was 170 lb but by this time it had dropped to 149 lb During July and August he lived on milk and oranges and in the middle of September sailed for England He felt somewhat better on the voyage but from October 10th his motions became paler—nearly white—and his tongue more sore and tender When seen on October 24th his weight in clothes was 163 lb the tongue was red and tender with two small aphthae He was unwilling to come into hospital but promised to keep strictly to milk for a fortnight and to stay in bed He was given calcium lactate 10 grains thrice daily and extract of parathyroid (P, D and Co) 1/10 grain twice daily At the end of the fortnight he reported that he felt much better the soreness of the tongue had quite disappeared *he had some flatulence still but only one stool daily almost solid* The ionic calcium had risen to 8·9 per cent He was now allowed (in addition to the milk) milk puddings fish chicken and some green vegetables When seen a week later (November 14th) his weight was 173 lb he felt much brighter was having usually one action a day—normal in size and darker in colour occasionally a second stool The tongue was well enough to allow of it moking without discomfort He was now allowed to get up and the diet was further increased to include potatoes carrot spinach tea and toast A week later (November 21st) he felt well and hungry He was told he might go on a fuller diet to include mutton and it that caused no discomfort beer but no too much fat and no twice-cooked meat It was considered that the food *was now containing all the calcium he needed* so the lactate was stopped but the parathyroid continued in full doses for another week On Mar 25th he said he was quite well his weight was 178 lb and he started to come up to London daily for business The ionic calcium was now normal—10·6 mg per cent The parathyroid was therefore reduced to half doses and was to be left off altogether at the end of the succeeding week (the sixth after commencement)

On January 9th 1924 he wrote Almost immediately after my last visit I knocked off the parathyroid and although I have eaten everything including rich tuffs at Christmas I feel as fit as a professional footballer My weight just before Christmas was 168 lb and my appetite is enormous This patient returned to India the following month and has kept quite well

So much for mild cases, next to compare two of moderate severity

CASE IV

F F G male aged 44 Went to Bombay in 1910 and except when home on leave in 1914 and 1922 has lived in India or Ceylon ever since Prior to March 1923 his only illnesses were attacks

the list in severity is the following, and in this patient the disease had existed for nearly two years longer

CASE V

H S, male, aged 48 Was abroad in Australia from 1907 to 1910, during which period he enjoyed perfect health In October, 1920, he went to India, and in January, 1921, had an attack of malaria The following March he began to suffer from diarrhoea, having some ten actions daily, frothy and light yellow in colour This was stopped by treatment In April, 1921, at Bangaloie, he still suffered from malaria and at times passed loose stools He sailed from India in September and arrived in England the following month In November and December his mouth was tender and sore, but this was better at the end of December, the symptom returning worse than before in April and May, 1922, he also had dyspeptic symptoms—heartburn, nausea, and occasional vomiting From June to December he was, on the whole, better and kept at work though suffering at intervals with soreness of the tongue In March, 1923, he had dyspepsia, diarrhoea with three or four actions daily, and a sore, ulcerated tongue The diarrhoea was stopped by treatment at one of the London hospitals, but the other symptoms continued in spite of treatment of various kinds—bismuth, salol, opium, dieting with milk, eggs, soups, cereals etc His weight, however, which had fallen from his normal of 150 lb to 136 lb, rose to 144 lb In October the diarrhoea started again and the motions were large, loose, pale, and frothy—two daily as a rule—and the mouth was still sore He came into hospital on October 30th His weight then was only 118 lb He was kept in bed on a diet of milk only, and was given calcium lactate 15 grains thrice daily, and parathyroid 1/10 grain twice daily He began to improve at once In a week his weight had risen to 121¼ lb and the ionic calcium was 7 mg per cent, the total 9·9 per cent His weight in successive weeks was 127, 133¼, 142¼ lb By November 18th (less than three weeks after admission) his mouth was quite well, and he was feeling hungry the stools were regaining colour, and his diet had been increased by the addition of milk puddings, eggs, cakes, and fish In another ten days he expressed himself as 'perfectly fit", he was then taking full diet, had one action of the bowels daily, and this was formed and of normal colour He left hospital on December 1st, after a stay of four weeks and three days, weighing 146¾ lb The ionic calcium had risen to 7·4 mg per cent in a fortnight, and to within normal limits—10·8 per cent—at the end of three weeks, and remained there More than six months later (June 20th 1924) he called to see me He stated that he had kept quite well, had had no sore tongue, dyspepsia, or diarrhoea, and smoked heavily I seized the opportunity to take another specimen of his blood and found that the ionic calcium was more than maintained, being now 11·1 mg per cent

The next case is worthy of record as tending to show that, in spite of long persistence of the disease, the upset of the parathyroid is, nevertheless, probably functional only, so that when once the condition has cleared up there is apparently no necessity to continue treatment

CASE VI

F G, male aged 63½ The duration of disease in this case was at least fourteen years (with periods of intermission), possibly longer This patient was abroad in the West Indies from 1888 to 1898 In 1896 he had an attack of yellow fever, but no other illness except "ulceration of the mouth" (whether this was the earliest sign of his sprue it is impossible now to say) He returned to the West Indies for various periods between 1905 and 1920 In 1909 definite symptoms of sprue made their appearance—recurrent attacks of diarrhoea with a tender, painful tongue and loss of weight During the ensuing eleven years there were intermittent periods of improvement but in 1921 the diarrhoea, with large, frothy pale, clay like stools became persistent A diagnosis of chronic pancreatitis was made but no treatment was of any avail In 1923 the condition was definitely diagnosed as sprue, and he was treated accordingly by confinement to bed on a strict milk diet This was continued for four months, and though the diarrhoea was checked thereby, any attempt to increase the diet led to a return For two months more he lived on milk and strawberries with temporary relief but again a relapse occurred even while he was on this diet He came to hospital on May 12th and exhibited the typical symptoms—sore and tender mouth and tongue flatulence heartburn, large, pale, frothy porridge like stools His weight was 120 lb Two days later he started the calcium lactate and parathyroid treatment The diarrhoea ceased in a week the motions became formed, and the colour was coming back the soreness of the tongue disappeared in ten days In a fortnight his diet was increased Progress continued without interruption, and seven weeks after admission he left hospital on full diet, with no sore mouth no tenderness of the tongue, and normal stools He started to reduce first the calcium and then the parathyroid and ceased taking either of them four weeks after leaving hospital He went to Scotland and wrote from time to time to say that he was keeping well and when he came to London twelve months later (July 1st 1924) he called to show himself He looked the picture of health and his weight was 151 lb He stated that he had had no symptoms at all since leaving hospital that he ate any food without restriction and that he had not taken a single dose of calcium or parathyroid since the previous July

For comparison with this the following record of a case, also chronic, but not more severe and not of so long standing, is of interest No parathyroid was given, but calcium only in the form of milk and pulvis Bataviae It will be seen that in the absence of stabilization the improvement was not maintained, but intermitted

CASE VII

H C B, female, aged 67 Lived in Shanghai from 1907 to 1910, and again after six months at home in each of the years 1910 to 1913 and 1913 to 1919, when she returned home to stay In 1918 she suffered from diarrhoea with yellowish stool times frothy From January to May, 1920 she kept strictly to a milk diet, and for six weeks of this period stayed in bed Improvement was great, in fact she "considered herself well" continued on a limited diet of milk, junket and fruit For following April she relapsed, having four or more loose motions the twenty four hours, and this had continued until admitted to hospital in October, 1923 At this time she passing three to five loose, pale frothy stools, and the mouth tongue were sore She was 26 lb below her normal (119 lb) She was kept in bed on milk and was given Bataviae Within a few days the stools were less frothy fortnight later they were again loose, large, and fermenting she had lost a further 2 lb in weight In another three weeks, though her weight was maintained (91 lb), the motions still bulky, frothy, and somewhat loose A fortnight later had been a gain of a pound, after which the improvement more rapid, nearly 12 lb being added in the ensuing month After thirteen weeks in hospital the weight was 103½ lb (112 clothes still 7 lb below what it was before the relapse in April 1922) and the patient left the final note being, 'Improved continued, patient left, with instructions as to diet"

As the last in this series of graded cases the following of interest as being exceptionally severe, accompanied at one time by intense anaemia, the red corpuscles being below 1,000,000 per c.mm The patient had submitted during the previous ten years to almost every form of treatment, as her history will show

CASE VIII

E P female, aged 56 Her illness began in 1914 at Shanghai In November of that year she was thought to be suffering from dysentery and was treated with emetine A week after this was stopped she was passing white, formed stools, later clay coloured and loose She then went to the Fukien Province, and took santonin for two weeks and lived on milk and fruit There was improvement The following year she was very ill and returned to Shanghai for special treatment She was made to rest and was strictly dieted for several months She gained a little weight, but the improvement was not very marked

At the end of 1916 she relapsed again, and was treated by a three months course of injections of an autogenous vaccine from the mouth and the stool She improved greatly, but was still liable to loose, pale motions In 1918 she went to South Africa and again relapsed Early in 1919 she reached England and was treated with sodium cacodylate without obtaining any benefit In August, 1919 she went to Bath and took santonin for several weeks, under supervision She gained a little weight but the symptoms did not improve She had two relapses in 1920, and improved in a nursing home during the strawberry season, but was worse again as the autumn came on In February 1921 she came to hospital in London, and was strictly dieted and given pulvis Bataviae She was in for seven months, and by that time was allowed fish, sago, eggs, and toast in addition to milk She returned to South Africa and the following year to China In 1922 she had a severe relapse and was ill with slight intermissions of improvement until September, 1923 when she again went to Shanghai for treatment Her weight was then only 79 lb, she was very anaemic, the red cells being 1 000 000 per c.mm and haemoglobin 30 per cent Her medical attendant started her on the calcium lactate and parathyroid and she was soon allowed a diet comprising 'underdone beef, mutton chops fish, eggs oyster soup, spinach, carrots grapes, and mangoes' She kept under this regime for six months the weight increased to 90 lb and during the later months she had only one stool daily—formed and of good colour She embarked for England in May, 1924 and stopped all medicine She took ordinary food throughout the voyage with good appetite, and in three weeks weighed 112 lb, and had 'one well formed normal action daily, and no other symptoms"

When seen on June 30th her weight was 120 lb, the stool was dark and firm she was having only one action daily no dyspeptic symptoms and no discomfort and in her own words 'feels strong and well and eats anything Opportunity was taken to obtain a specimen of her blood and analysis showed that the ionic calcium was 10·6 mg per cent

The above contrasted cases suffice to show that with the administration of calcium and its regulation by parathyroid the disappearance of symptoms occurs early, the ionic calcium returns rapidly to normal, ordinary diet can be resumed in a shorter time and the beneficial effects are generally steady and permanent The following case is recorded in order to stress the point that the treatment must not be dispensed with directly the symptoms clear and the ionic calcium attains the normal in other words this condition of things requires to be stabilized, and the drugs must be reduced gradually with a view to seeing that the patient is able to carry on the process unaided

Table of Cases of Sprue treated by Calcium Lactate and Parathyroid

Initials	Sex	Age	Length of Illness	Main Symptom Cleared in—	Result	Remarks
I. L. W.	M.	[illegible] years	2 years	5-6 weeks	—	Too early for certainty; keeping well two months later
A. M. G.	M.	28	11 months	"	—	Still well six months later
I. W. W.	M.	31	5 "	3	Much improved	Parathyroid stopped after three weeks (? reason); relapse over two months later
L. G. T.	M.	28	5 years	7	—	Keeping well two months later
J. I.	F.	>40	2	7	—	Keeping well two months later
M. C.	F.	42	2	4	Recovery	Still quite well sixteen months later
I. I.	F.	26	10	2-3 months	—	Keeping well three months later; after symptoms cleared afraid to leave off
J. I. D.	M.	50	3	6 weeks	?	Left well nine months ago; no news since
H. H. S.	M.	8	1?	4	Recovery	Well seventeen months later
I.	F.	?		10-14 days	—	Keeping well three months later
F. C.	M.	[illegible]	14 years	4 weeks	Recovery	Still quite well twelve months later
I. H. M.	M.	21	1 year	3		Quite well twelve months later
M. S.	F.	50	Over 5 years	2-3	Death	See "Case" Case (1) M. S. Sprue symptoms cleared; died of pernicious anaemia
H. S.	M.	48	2 years	3	—	Keeping quite well seven months later
I. J. W.	M.	32	8 months	17 days	Recovery	Returned to India; well seven months later
D. C. H.	F.	0	[illegible] years	?	Improved	Left hospital in five and a half weeks; no news since
D. W.	M.	21	15 months	14 days	Death	See Case (2) D. W. Died from pernicious anaemia.
J. C. S.	M.	?	1-2 years	6 weeks	Recovery	Returned to duty in China
J. S.	M.	54	[illegible] months	3		Well six months later; remained at work abroad
E.	M.	?	?	4		Last report: Keeping well; doing full work
J. T.	M.	43	7 months	4	—	Keeping well three months later
W. C. A.	M.	53	At least 6 months	[illegible] days	—	Keeping well three months later
W. G.	F.	?	4 years	8 weeks	—	Keeping well four months later
H. C. S.	F.	51	6	6	Improved	[illegible] of dyspepsia from which she had recent news
M. F. M.	M.	7	15 months	8-9	—	[illegible] months later
I. I. F.	F.	26	Began 2½ years ago	3	—	This patient relapsed about every two years. Too early for certainty; keeping well
H. E.	M.	40	12 years on and off	?	—	Too early for certainty; keeping well
B. C.	M.	[illegible]	12 months	5 weeks	—	Too early for certainty; keeping well
W. H. S.	M.	58	13	—	Improving	Has been under treatment less than one month.
A. H. W.	F.	[illegible]	12	4-5 weeks	Recovery	Returning to India.
M. S.	M.	?	At least 12 months	3		Well twelve months later; returned to China six months ago
A. C.	F.	[illegible]0	2 years	5-6	Much improved	Up and about; progressing well; severe case
McC.	M.	52	20	—	Improved	No report for several months; had dysentery also (amoebic); remained weak and very anaemic

before all support is removed. As a rule it has been found that the fuller diet provides all the calcium needed, and the element can be first left off the regulator—parathyroid—being continued in full doses for another week or so. This is then reduced and as a rule can be stopped in a turn a week to a fortnight later.

CASE IX.

W. F. W. male aged 31. Foreign service Calcutta 1913, China and Japan 1914. Red Sea, Bombay and Persian Gulf 1915-16 and again in 1919. India, China and Japan 1921 to December 1923. He suffered from enteric fever and dysentery in 1918.

Sprue symptoms first appeared in October 1923 with five or six copious white frothy stools daily. The tongue was sore, he complained greatly of flatulence and he lost much weight. On admission to hospital on February 4th 1924 he was put on calcium lactate 15 grains thrice daily and parathyroid 1/10 grain twice daily. Blood examination showed red cells 4,210,000, white 6,000, haemoglobin 80 per cent., and ionic calcium 8.1 mg. per cent. In three weeks there was marked improvement and the parathyroid was stopped. The blood when examined two days later gave normal ionic calcium (10.6 per cent.). The amelioration was maintained for four or five weeks when the symptoms reappeared and the calcium was found to have dropped again to 8.5 per cent. and treatment had to be resumed.

In the next case the calcium lactate was given in full dose but the parathyroid in only half the usual quantity. It will be seen that the improvement was marked but a little slower as compared with some already recorded.

CASE X.

T. C. [illegible] at Aden 1923. In Egypt and in Durazzo 1914-15 to Haifa and Cyprus from 1919 to 1923. In 1923 he had an attack of malaria and suffered from slow convalescence. In October 1923 he began to pass whitish stools not very loose at first but later looser, copious and frothy, and he lost weight—28 lb. in four months. Two months after the first signs appeared his tongue became sore and shortly afterwards ulcerated. From January 7th to February 15th he kept on a rigid diet of fruit and milk and when he came to hospital on March 13th his weight was 126 lb. 11 oz.; there were ulcers on the inner surface of the lips and on the buccal mucous membrane. The ionic calcium was low (6.8 per cent.), the red cells 3,360,000, the white cells 5,800 per c.mm., haemoglobin 75 per cent. The calcium and parathyroid were started on March 18th but the latter only in half doses. He was kept on milk for a fortnight and the diet then gradually but fairly rapidly increased. Five weeks later there were no aphthae but still some tenderness of the mouth and tongue; this in turn disappeared in another week. By April 30th the red cells had increased to 4,270,000 per c.mm. and the haemoglobin to 80 per cent., and by April 24th to 4,860,000 and 85 per cent. respectively. He left hospital after a stay of eight and a half weeks having put on 15 lb. in weight and feeling well; no sore mouth, stools normal.

All the above-mentioned patients have been under treatment in England but it is most gratifying to find that equally successful results are being obtained in the endemic foci of the disease. Over twenty have been reported to me, and the following four are selected for very brief notice because the reports were sent from different parts of the globe—one each from the West Indies, India, Persia and China.

British Guiana.—E. male. Recovered after being in hospital in London for some months with dietetic treatment only, and was told he might return to his work. He left England in November 1923 and a few days after sailing suffered from a relapse of his sprue and arrived in British Guiana so bad although he had kept

to milk throughout the rest of the voyage, that he wished to return at once to England for further treatment His medical adviser to whom I am indebted for these notes, suggested that he should try calcium and parathyroid The first note after arrival, written on December 2nd, is, "Passed a stool, very white", and on December 3rd, 'Stool the same, *started calcium* and parathyroid treatment at 8 p m" He was kept in bed for a fortnight, and soon afterwards was able to take fish, meat, and chicken The last note, dated December 30th, was, "Stool quite normal, brown, patient's weight 14st 1lb" (his normal was 152 lb, but on leaving England "in excellent health" it was only 135 lb), and when his medical attendant wrote towards the end of January he stated that the patient "is now about his ordinary work that of a manager of a large sugar estate, and is able to take his ordinary diet"

India—Reported from Bombay and already recorded in the BRITISH MEDICAL JOURNAL of February 16th, 1924 (p 306) In this instance the improvement was remarkably rapid, there being a distinct change for the better in three days, and the symptoms practically clearing within a fortnight In this patient all the symptoms were present "diarrhoea, *loss of weight, increasing* weakness, typical sprue tongue, with pain and burning in the mouth, and pale, copious, fermenting, very offensive stools"

Hong Kong—H, male This man held a good position in China, contracted sprue, and came to England for treatment He was treated in a private institution for many months by the usual methods, parathyroid and calcium being withheld He then against advice, returned to the East, being warned that he would probably not live to reach his destination He was landed by stretcher from the ship, and his medical attendant there started the parathyroid and calcium treatment at once "In three weeks he was up, and in five weeks resumed his work and has kept well since, taking ordinary food and feeling very fit"

Persia—Lastly, a medical man in Persia wrote that he had been abroad for twenty-five years with the usual leave at intervals In December, 1923, he was passing bulky, pale, clay coloured, frothy stools, mostly in the early part of the day, and rapidly lost weight—18½ lb in three weeks He became very despondent when the symptoms continued unchecked by treatment, and anticipated returning He cabled for a supply of parathyroid The result is best given in his own words "I started treatment on February 27th and on March 6th there was *marked improvement* On the 22nd I was eating everything, and am now nearly up to my normal weight I can do a hard day's shooting (aged 54) and keep my end up with anyone"

To make the story complete the following two cases, in which death ensued with symptoms of pernicious anaemia, are included In one, the condition was of long standing and the parathyroid treatment was started only in the last few weeks of life, and even then an amelioration of some of the more urgent symptoms was obtained In the other, severe anaemia appears to have been an early symptom, the sprue condition cleared up sufficiently for the patient (a medical man) to take ordinary diet and go about feeling so well that he wrote to the medical papers reporting his cure On account of the persistence of the anaemia he was advised against returning to the East, but did so, and died on the way from pernicious anaemia, though the other (sprue) symptoms never returned

(1) M S female aged 50 Had suffered from sprue for some years and her weight had fallen from 126 lb to 79 lb She was very anaemic, red cells under 1,000,000 per c.mm., and the mouth very sore, in consequence of which he was unable to take nourishment and was passing five or six motions daily—large, pultaceous, and frothy A week after starting parathyroid and calcium the stools were reduced to three daily and were darker and less frothy, and the ulcers in the mouth had cleared She expressed herself as feeling much better and wished to get up, but was too weak Her weight fell still further, and she died a few days later with all the signs of pernicious anaemia

(2) D W, male, aged 51 The disease, contracted in China, began acutely with sore mouth typical stools, and progressive anaemia On careful dieting the stools were reduced and the symptoms, with the exception of the anaemia, improved In a month the red cells were only 2½ million per c.mm and the haemoglobin 50 per cent On attempting to increase the food relapse occurred, and he again slowly improved until he was able to take a fairly generous diet so long as fats and untoasted bread were excluded These immediately brought on a recurrence of symptoms Fifteen months after the onset of disease he started the calcium and parathyroid, and wrote saying 'On the fourteenth day after, I felt so well that I took a huge meal to see what would happen—boiled pork, very fat, a large 'club' helping, followed by boiled suet pudding—and was none the worse Since then I have eaten everything that I wanted to eat and have been none the worse" After being in England about a year he wished to return to China, but, as the anaemia was *not getting better* was advised against this step However, as there had been no sign of a recurrence of the sprue symptoms themselves, he decided to go back By the time he reached Singapore the anaemia was worse, and he died, shortly after reaching Hong Kong, of pernicious anaemia

Some of the cases in the accompanying table (p 307) have been reported to me by professional men abroad, and I wish to put on record my thanks to all those who have so done, and also to those in charge of cases in London and the provinces by whose kindness I have been enabled to observe patients personally To Dr G C Low and Dr P H Manson-Bahr, physicians to the Hospital for Tropical Diseases, the former for notes of control cases, the latter according me the exceptional privilege of seeing his patients at any time, to Colonel C Barry, I M S (ret), Major H C Brown, I M S (ret), Dr O Marriott, Dr Chalk (Singapore), Dr McCracken (Shanghai), Dr Scott (Teheran), Dr D (British Guiana), Dr Spence (Rangoon), Dr Hathaway (New York), Dr Collier (Oxford), and Dr Wells (Bristol)

Summary

A series of cases in progressive degrees of severity recorded, comparing the results obtained under ordinary methods of treatment, expectant and empirical, with those treated with calcium lactate and parathyroid gland Gratifying results are also being reported from the endemic centres of sprue in various parts of the world—the West, the Middle East, and the Far East

The question of the ionic calcium and the value of its estimation is being made the subject of separate investigation

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A NOTE ON PSITTACOSIS

WITH REPORTS OF TWO RELATED CASES

BY

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It has long been known that parrots, both from America and Africa, especially when imported in large numbers, often die in high percentages, both during the voyage and after arrival It is also well established that the disease from which they suffer can be transmitted to human beings, and that this occurs with fair frequency and probably oftener than is recognized Apparently the first recorded epidemic was in 1879 (Ritter[1]), and every few years since then human epidemics have been reported in Germany, France, Italy, America and this country The specific bacillus (*B psittacosis*) was isolated by Nocard in 1893 from the bone marrow of affected parrots and in 1896, by Gilbert and Fournier, from human beings as well as parrots, in another small epidemic It belongs to the same group as *B enteritidis* Gaertner, *B paratyphosus* B and *B morbificus* Its relations have recently been studied by H M Perry[2]

In parrots the symptoms are loss of appetite, debility, drowsiness, drooping of the wings, and severe diarrhoea sometimes associated with haemorrhage Death may be preceded by convulsions The mortality seems to be over 50 per cent The disease appears to occur mainly, if not entirely, in newly imported birds, or those which have come in contact with them on their arrival In fatal cases the bacillus is widely distributed throughout the body of the bird, and the dejecta are found to contain large numbers It is apparently from this source that the disease is conveyed to human beings, and there can be no doubt that it was so contracted in the two following cases

CASE I

In the autumn of 1923 I was asked to see a lady with pneumonia in a town in Scotland I had seen her previously as a strong woman, at intervals since 1914 She had been originally a [illegible], but since nursing her father during a long illness, and [illegible] before had been in poor health and suffered from indigestion, anaemia, eczema, etc These ailments were got rid of with difficulty by the end of 1915 and except for a slight relapse in 1918 had been increasingly stronger

The present illness had begun five days before, with acute pain in the right side of the chest and a rise of temperature to 103, but apparently no definite rigor During these five days the temperature had ranged between 101° and 103·6°, pulse 103 to 120, respirations 28 to 36 When I saw her she was quite clear mentally there was no cyanosis, the tongue was fairly clean, pulse 112, [illegible] moist, the heart not dilated and sounds good, pulse pressure (M S) 120 There was dulness with bronchial breathing at the root of the right lung and also above it with some crepitation and friction, lungs otherwise clear very little cough and no sputum She looked unusually well for a patient in the fifth day

of pneumonia and there seemed no reason to anticipate anything else. The temperature fell by crisis two days after my visit but began to rise again in a few hours in step-ladder fashion. When I saw her again on the eleventh day of her illness it had reached 102°. She was obviously much more seriously ill though still clear mentally, the tongue was very dirty, the pulse 124, and the heart feebler. The right lung had entirely cleared but there was a fresh patch with typical signs at the left base. During the next few days she became steadily worse, the pulse reaching 160 and respirations 60 towards the end, temperature running between 100° and 102°, and she died on the fifteenth day of her illness. Throughout there were no abdominal symptoms, no distension, and no enlargement of the spleen.

CASE II.

A sister younger by some years and much more robust was taken ill on the sixth day of her sister's illness with a rigor, temperature 103°, pulse 120, respirations 32. When I saw her first, at the time of my second visit to her sister, she had a pneumonic patch in the front of the right lung and another at the left base. The former had cleared up almost entirely six days later, the latter remained unaltered, but a fresh patch had appeared about the root of the left lung. She was never so seriously ill as the first patient, but the temperature ran much the same course, between 102° and 103° for the first week. There was no critical fall, but a fall by a slow and irregular lysis during the second week with an evening rise to 99° for three days more. The lungs cleared slowly, and after the temperature had been normal for a week there was a pleural effusion on the left side with slight fever. 10 oz. of clear fluid were drawn off. This on culture proved to be sterile. Convalescence was slow and tedious. In this case again there were no abdominal symptoms, very little cough, and no sputum. A feature of both cases was a depressed mental state, though neither was delirious at any time.

The second sister had been much with the first, and to begin with we thought one had infected the other, but attention was soon drawn to possible connexion of both cases with a parrot. The bird, a young African parrot, had been received from London almost exactly a month before the first case began. It suffered from diarrhoea all the time, the two sisters looked after it and cleaned its cage, no other member of the household came in close contact with it. It died the day before the first case began. On inquiry, it was found that, at the shop from which the bird came, numerous parrots—blue fronted Amazons from South America—had died during July and August, and that officials of the Board of Agriculture had isolated pneumococci *post mortem*.

The symptoms of psittacosis in human beings are almost invariably such as I have described in these two cases. It is a striking fact that a disease which is obviously of abdominal type in the bird is seldom associated with abdominal symptoms in the human being, but takes the form of an atypical pneumonia with or without additional bronchitis. The onset is generally acute, often with a rigor, and the fever is usually continuous, highest during the first week or so, with a tendency to fall by lysis, and lasting, in cases which recover, from two to three weeks, sometimes a little longer. The charts published by Vickery and Richardson[1] are very like those of my cases. Mental depression is a marked feature, headache is common early. The spleen may or may not be enlarged; rose spots and even petechiae may appear, but do not seem to be common. My cases reminded me of paratyphoids with pulmonary complications, but in both the pulse was rapid throughout, corresponding more closely to the height of the fever than it usually does in enteries. There was no distension of the abdomen.

The mortality is generally stated as about 40 per cent., and the disease is naturally more dangerous in elderly or debilitated persons. There seems to be difficulty in obtaining the bacillus from the human being during life; it has been found in the heart blood after death. Agglutination in general feeble, apparently not beyond 1 in 60, and soon disappears.

I have recorded these cases because of the fatal character of the disease and the difficulty in diagnosis. It is more than likely that the disease is more frequent than is supposed, and might be diagnosed as pneumonia or influenza with pneumonia in the epidemic case, or as paratyphoid in [illegible] without marked pulmonary involvement. Its occurrence in [illegible] epidemic and its relation with parrots [illegible] enteric.

[illegible]

British Medical Association

PROCEEDINGS OF SECTIONS AT THE ANNUAL MEETING, BRADFORD, 1924

SECTION OF MEDICINE

Professor ARTHUR J. HALL, M.D., F.R.C.P., President.

DISCUSSION ON SMALL-POX, WITH SPECIAL REFERENCE TO DIAGNOSIS

OPENING PAPER

BY

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SMALL-POX, with special reference to diagnosis, is our reference to-day, and for the privilege of your invitation to me, Sir, to open this discussion, I beg heartily to thank you.

That a topic which has been described as a Cinderella among her sister arts should appear on an important occasion like this is, if I may say so, an example of the prescience of those who preside over our proceedings, for in choosing this subject they have not only interpreted the signs of the times aright, as I shall venture to submit, but they have extended valuable support to some of us who need it. There are nowadays few heavier responsibilities in the daily practice of our profession than that thrown upon us by the necessity of having continually to be on guard against this particular disease, consequently diagnosis has come to be one of the most important items of our professional equipment, and in my judgement will remain so until we are able to discard it in the only way possible—that is to say, we must destroy the monster before we can lay down the sword, which meantime it behoves us to keep very sharp, we have now to expel small-pox completely from our shores before we can dispense with small-pox diagnosis, I appeal that is an achievement which I for one emphatically believe that we can and that we shall accomplish.

Two main heads will comprise my remarks.

I. The first item of our reference—namely, Small-pox viewed as the disease, the mischief, in its general bearing. It is useful to take as comprehensive a view of the whole field as possible, in order that we may be the better able to see our individual parts in their due proportion, and understand the better how to carry them out.

II. The second item of our reference—namely, Diagnosis viewed as the remedy, the weapon, in its application by any individual one of us, and I take it that a useful part of to-day's proceedings will be the opportunity which each one of us will have of re-exercising himself in the use of this weapon.

I. SMALL-POX IN ITS GENERAL BEARING.

To what main aspect of small-pox shall we devote our attention in the short time at our disposal? It would be interesting to discuss pathological phenomena, such as the acute fatty degeneration of the liver cells which occurs in the first few days of the illness, or the clinical and pathological significance of the haemorrhages which accompany the majority of cases of the European type; or again, there is ample material for debate, if mere debate were wanted, in a discussion about the two main types of the disease—the European and the American, the malign and the benign, the small-pox culture of the Ghetto and the small-pox culture of the open country—were it not for the fact that the ablest brains of our profession have already settled that the latter is true small-pox.

But it seems to me that if we are to make real progress with our subject we must not wander in the pleasant pathological or clinical fields, but must surround our selves

with what I may call the psychological atmosphere of small-pox, which, as in every human activity, comprehends all other branches of the subject

May I illustrate my meaning? There used to be a tendency to regard the manifestations of small-pox as if they were those of the structure of a fossil, a flower, or a mammal, as of some object to be minutely studied, admired, recorded, left *in situ*, returned to, and cherished But if ever I indulged in *such a pursuit I have learned* differently, and that from teachers from whom I have learned much—namely, from the robust matter-of-fact bluntness of my colleagues in practice whom I have met at consultations They have told me, "Small-pox may be this, and small-pox may be that, but the way I look at it is this—the less I see of it the better I like it" To my thinking that is the correct psychological view to take of small-pox It is not in the nature of a *scientific specimen*, beautiful and interesting, but it is a poisonous and devilish enemy, to be utterly put to the sword Indeed, in the whole range of medicine I know of no disease which destroys the human form divine *with more horrid* defacement, with more utter brutality, with more savage deadliness, than does small-pox *It fully justifies the* detestation in which it is held by patients and the profession alike

May I lighten and give point to my remarks by a story or two? Some of the vivid photographs which you have seen here had been put out one morning lately for an evening lecture, *when I went to speak*, the senior hall attendant told me that his assistant had been looking at them, in consequence the lad had had no dinner, and, as yet, no tea

A mother, who went to see her child dangerously ill from small-pox, told me afterwards "Vaccination," she almost screamed, "why, that there vaccination, I would have had it over and over again for them poor creatures, with them things all over their poor bodies from head to foot, if that would have done them any good"

A strong and honest antivaccinator, in whose official care one of the valuable lives entrusted to his guardianship had been lost, told me with great sorrow and a candour that compelled respect that his view of small-pox had been completely changed by what he had *seen*, he himself led the way in being vaccinated and taking all *necessary* measures, but for which small-pox, which had got right in among a close and unvaccinated community of 1,000 souls with an initial well spread outbreak of 25 cases—sown right among them before its real nature was recognized—could hardly have taken a toll of less than 100 deaths Owing to his leadership when faced with the *facts*, and his fearless acceptance of skilled advice, the cases were limited to 49 only, and the deaths to 15 only

Beyond all doubt the above tersely expressed view of small-pox is psychologically correct it is a repulsive and detestable nuisance, which we want not only to see little of, but to banish entirely

Need we therefore abandon our usual technical methods of examining, exploring, and analysing the morbid phenomena of the mischief before us?

By no means Just the reverse Our subject requires to be studied with just as much attention and close scrutiny —only with this single object in view that it is an enemy to be destroyed as rapidly and completely as possible, and therefore we must direct our attention to the appropriate phenomena We want to know how it defends itself, so that we may strip down its defences, we want to know what are its vulnerable points so that we may attack them, we want to know how and where it propagates and breeds, so that we may destroy it *in ovo*, we want to know how to recognize it quickly and to a certainty so that it shall not escape us for an instant It is in this manner that I submit we should study small-pox, so that the word may bring always into our *minds* the picture of an enemy whom to think of is at once to *prepare to attack* Clearly we cannot now pursue all these lines of study, I will therefore select a few, and will endeavour to direct my remarks to the exposure of small-pox, and to the display of its movements in their true light

What has especially protected and still protects small-pox in this country may be summed up in one word, misunderstanding There has been thrown about it by assiduous suggestion and misrepresentation—whether witting or unwitting matters little, since it is misrepresentation all the same—on the part of amateur and academic instructors, such a cloud of untruth, unreality, and nescience, that small-pox *has been implanted* deeper when it could have been uprooted, and has been reinforced when it could have been destroyed It is one of our duties to tear down this cloak and expose the nakedness and foulness of the mischief behind it, for, be assured, once small-pox is so displayed, not with the specious colour and false gloss often and deceitfully put upon it, but in its bare hideousness as it really is, it will have short shrift indeed

We have already indicated how that may be done in the above-related stories, such as could be multiplied a hundred fold by those who hear me, and it is such tales as these that testify so tersely and trenchantly to the truth And we can carry on this line of analysis and exposure by referring our academic friends who revel in doctrinaire discussion at a distance, to actual cases and to observation in the field, or at least to authentic photographs

We must press *on now* to uncloaking another misapprehension which helps to obscure and protect small-pox, it is one which intimately concerns ourselves For this purpose, Sir, be pleased to regard the table before you, upon a few salient points only of which our time allows us to touch

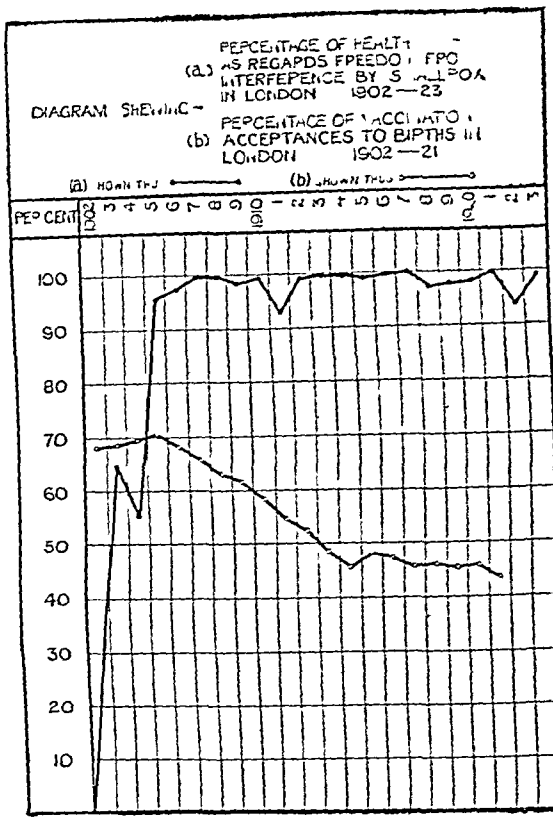
Table of Small pox, 1841–1924

Year	Deaths from Small pox: England and Wales	Deaths from Small pox: London	Admissions to M A B Hospitals		Year	Deaths from Small pox: England and Wales	Deaths from Small pox: London	Admissions to M A B Hospitals	Percentage of Infant Vaccination Acceptances to Births in London
1841	6,368	1,053			1883	957	136	598	
1842	2 715	360			1884	2 234	1 236	6 363	
1843	Figures	438			1885	2 827	1 317	6 146	
1844	not	1 804			1886	275	20	99	
1845	avail	909			1887	506	9	56	
1846	able	257			1888	1 026	9	62	
1847	4 277	955			1889	23	1	5	
1848	6 903	1 620			1890	16	3	22	
1849	4 644	521							
1850	4,665	499			1891	49	8	63	
					1892	431	29	325	
1851	6 997	1 062			1893	1,457	186	2 376	
1852	7 320	1 150			1894	820	89	1 117	65 4
1853	3 151	211			1895	223	55	941	
1854	2 808	694			1896	541	9	190	
1855	2 525	1 039			1897	25	16	70	
1856	2 277	531			1898	253	1	5	53 8
1857	3 936	156			1899	174	3	18	58 8
1858	6 460	242			1900	85	4	66	61 7
1859	3 978	1 158							
1860	2,713	898			1901	356	229	1,743	64 3
					1902	2 464	1 314	7 842	68 0
1861	1 290	217			1903	760	13	355	68 9
1862	1 579	366			1904	567	25	449	69 7
1863	5 891	1 996	Cases		1905	116	10	53	70 7
1864	7 624	547	certi		1906	21	0	27	68 1
1865	6 361	640	First	fied in	1907	10	0	2	65 9
1866	2 977	1 391	M A B	Eng.	1908	12	0	1	63 0
1867	2 467	1 345	Hospital	land &	1909	21	2	15	61 7
1868	1 944	597	opened	Wales	1910	19	0	5	58 1
1869	1 482	275	Dec 1st						
1870	2 547	973	1870	293	1911	23	9	70	54 8
				124	1912	9	1	5	52 2
1871	23 062	7 912	13 721	116	1913	10	0	1	48 5
1872	19 022	1 786	2 359	66	1914	4	0	1	45 8
1873	2 303	113	174	92	1915	13	3	11	48 0
1874	2 084	57	112	151	1916	18	0	1	47 4
1875	849	46	89	7	1917	3	0	0	45 6
1876	2 408	736	2 134	64	1918	2	0	36	45 7
1877	4 278	2 551	6 516	297	1919	25	5	27	45 0
1878	1 356	1 417	4 558	263	1920	29	4	18	45 6
1879	536	450	1 628						
1880	648	471	1 982	335	1921	5	0	2	45 1
				973	1922	27	20	65	
1881	3 098	2 367	8 551	2 483	1923	7	1	11	
1882	1 317	430	1 799	1 500	1924*		0	0	

* Four months

Among notable years you will observe 1871 and 1872, when Germany fell on France she took a bad dose of small-pox herself, and, by driving to our shores many small-pox infected refugees, incidentally deprived us of the 40,000 of our people who died of small-pox in those two years Another notable year is 1902, when London spent on her 10,000 cases no less than £500,000 on hospital treatment alone—£50 a case A notable year for London is 1901, in which was first established the system of medical team work which has synchronized with the small score compiled

by small pox in the last twenty years. This mass of figures, however, being too heavy to be rapidly appreciated, I have had some of the most striking of them set out on simple curves.



The lower curve shows the percentage of London infant vaccinations. The upper curve shows the level of health in London in respect of freedom from interference by small-pox. This last-named feature is one to which I attach much importance. It requires a few words of explanation. The true end and object of our work is to raise what may be called the antivariolous health of our communities to the highest possible point. Just as a general in the field cared little about the actual number of cases of scabies in his division, and much for the number of scabies-free men whom we could give him for his operations, so at the present time competent authorities are less interested in the actual small-pox returns, and more concerned with the freedom of their peoples from the occurrence, the menace, and the cost of small pox, and therefore it is for us to fix our minds not on a zero of small pox, but on 100 per cent of small pox free efficiency—that is, health. That is the point. And this 98 or 99 per cent level of freedom from small pox is extremely difficult in existing circumstances to keep up, requiring tireless vigilance and unending work, it is as difficult to maintain as to extract the last two knots of speed from a steamship, and for similar reasons.

In constructing this curve there has been adopted a rough arbitrary scale in which 1,000 small pox cases in a year represent a zero of health, and no small-pox cases in a year represent 100 per cent of health. 100 cases in a year therefore represent 99 per cent, and 65 cases in a year represent 93·5 per cent of health for instance.

What then, strikes us when we look at these two curves? This: that the chief antidote to small pox—namely, vaccination—is much less used than formerly, and at the same time our freedom from small pox stands higher than ever it did. It appears that the remedy, or a remedy, is potent remedy has fallen into partial disuse, but that the patient's health has improved. It was as a malaria patient became robust when the chief antidote to his disease was discontinued.

What can be the explanation? Can it be that small-pox itself has become less virulent and less frequent? That is not so. 93,000 deaths from small pox took place in British India alone in one year (1918), that mean nearly half a million cases. Competent observers assert that a round estimate of 1,000,000 cases of small pox in the world each year is a modest estimate. Can it be that small pox does not come to our shores as of yore? We know that it does, so that does not help us.

Our old and hard worked friend, sanitation, may perhaps account for this fall in small pox in the minds of some. But let us ask our cities. What striking sanitary act, what sanitary innovation, had its inception in 1904, and has been in operation ever since? None. That explanation does not suffice.

Is it possible that some factor, not fully disclosed, has been at work to influence the situation? It is not only possible, but it is the fact. It is here that we shall come upon the truth. Critics tell us that the mighty sea-lordship of the British Empire has been acquired in a fit of absent-mindedness. Whether that be true or no, it is certainly the case that our profession has tackled and defeated small pox without realizing its achievement. That partly arises from the fact that vigilance and determination cannot be placed upon a chart, nor can heart and loyalty be exhibited in a balance sheet. But that does not mean that they have not existed, and been operating. We know how enormously these factors always count, and in this work, too, they have carried the day. I can state with authority and intimate personal knowledge that the one factor by which small pox has been pulled down, and is now being held down, is the team work of our profession and the voluntary civic spirit of its members. That is the truth.

Let us have the results in a nutshell. In London this team work was begun in 1904. Compare the figures before and after that year. Add the small pox cases in London during the nineteen years before 1904—they total 15,894, add those of the nineteen years since 1904, during which time we have worked as one team in this matter—there have been 351 only. That gives us an abatement of 15,453 cases of small-pox, and on a basis of costing at £260 a case, it represents a saving in that time of £3,980,600 of public and private money. That is no mean achievement.

Not for one moment would our profession claim that it has done this by itself. Nothing of the kind. We must take stock of the situation fairly, avoiding exaggeration on the one hand and self-depreciation on the other. Let us take a grip of the whole position as briefly as we can. In this way. Small pox is erroneously believed by large numbers of the laity to be almost a thing of the past in this country. The exact opposite is the fact. The truth is that small pox abounds in the world at large—to an extent which is not exactly known but which is estimated to amount to millions of cases every year, it is therefore as dangerous as ever to the people of these islands, whose decreasing use of vaccination has made them individually almost defenceless to small-pox, and has much increased the general risk, which in turn has only been countered by the continued shepherding efforts of a slender cordon of medical officers, their colleagues and assistants, to whose team work the community owes almost entirely its present and temporary freedom from small-pox but for whom small-pox would again sweep in as calamitously as ever, because there is nothing else to stop it. A final result which, sooner or later, is absolutely inevitable unless the community comes to understand the truth and to act upon the truth, and to protect itself by means of adequate vaccination. That is the situation.

Commenting on this lately a valued friend of mine observed, "Then it is a hopeless position, for we shall never get a Government that will tackle vaccination, they dare not, and they cannot." He spoke the absolute truth, yet not the whole truth, for he was unconsciously labouring under the familiar delusion that a Government is an all-powerful group, instead of being, in point of fact, our agents over whom we have lost control and over whom, incidentally, we have to regain control.

Let us stand back a little from this problem and look at it anew, and from a distance, and let us consider fundamentals An island suffers from a pest, its inhabitants, the citizens, are sick of it in a double sense, and are determined to have it out Very well They have long had the task in hand They have entrusted part of the task to certain standing authorities which they themselves have set up, as one item among the many referred to them to complete But this has not been completed Why? In brief, for this reason—because those standing powers cannot complete it, and as at present constituted will never be capable of completing it That is the point So far my friend was right

But the pest remains, and the task, the service of expelling the pest, also remains Is this service, then, to be abandoned? Is our determination to fail? By no manner of means, if only for this reason The commission entrusted to the various standing authorities to deal with small-pox is only part of our general civic effort against this disease, the rest, and a big rest it is, is known under the head of voluntary effort The real fact is this—that the citizens as a whole, of whom we are part, have charged part of this work upon the organized civic authorities and part upon our own voluntary and less rigidly organized effort, and we are now endeavouring to co-ordinate the whole, to watch its working, and to develop its several parts as required, for in one way or another the service must be completed, it is coming to be widely felt that it is utterly intolerable for the free people of the very country that produced a Jenner and a Ricketts to lie down any longer under this ridiculous, uncivilized, self-inflicted, and utterly abominable intruder If you doubt me, ask any gathering of women and hear what they say, they are perfectly right

We have spoken of citizens, and indeed this clearance of small-pox is a civic task, upon which we are here engaged to-day in our capacity as citizens I was glad to see that a leading member of our profession recently gave us a reminder of this important truth—that we are citizens as *well as doctors, and have important civic duties* Here is one of them the clearance of small-pox It is a duty which others have dropped in abandoning vaccination, which we did not seek, which we did not avoid, which we did not fear, which we have educated ourselves to understand, which we have shouldered, which we shall not drop, which we shall obstinately pursue, which we are determined to complete Why? Perhaps because we are of those who, if they do not lightly accept a task, never lay it down, if they can possibly help it, until it is done That may be one reason, there certainly is another We are not only citizens in the matter, but we are citizens with special knowledge, to whom the rest look and rightly look to lead the way *In my judgement that is a request which we* cannot possibly refuse It is a call which we are bound to accept and honour

Jenner has led the way by his work on vaccination, Ricketts has led the way by his work on diagnosis it is for us to follow up their leadership, and give final effect to what they have begun and others have carried on Above all, we should work on a plan Here is one, fourfold:

1 To hold small-pox
2 To educate ourselves and others thereupon
3 To prepare to throw it out
4 To throw it out

That is in fact the plan upon which the work in London has long been carried out At the moment we are holding small-pox, and must continue to hold it And one supreme weapon for holding it is accurate diagnosis Upon the detail of that, therefore, I will submit a few notes as briefly as possible, apologizing for their possible resemblance to pemmican

II Diagnosis

Under this, the second item of our reference—namely, small-pox *diagnosis*—I will give simply and shortly just the items which personally I have found most useful in my own work *They have been under trial for about thirty* years on about 15,000 cases If anyone finds them of service I would advise him nevertheless to *modify them as may be* necessary for his own requirements and system

Diagnosis, generally speaking, may be said to be the discarding of the unimportant and the concentration upon the important features of a case with a view to its complete recognition To be successful the process must be *methodical* and complete, so as to miss nothing, easily grasped, easily remembered, as brief as possible, simple, practical and quick in its application—that is to say, capable of being worked in difficult circumstances, such as in the hurry, noise, responsibility, or other distractions which may arise in general practice, for obviously small-pox is not a disease that can await removal to the quietude and deliberation of a consulting room

My remarks will comply with as many of these requirements as possible, and I hope that what I am going to say will form the basis of a scheme which will hang naturally and easily together, so as to be carried in the memory without reference to notes

First comes a question of four words, on which hangs all the rest That question is, "Can this be small-pox?" In rather fuller phraseology it may be expressed, "Can this case confronting me, the diagnosis of which is not fully cleared up—can this possibly be small-pox in one of its very numerous forms?" In truth there is hardly a condition of disease which may not be simulated by small-pox

It is understood that this is a question to be put to oneself and to nobody else—a quiet reflection How then should we proceed? We should split up that one question into its components, following the natural stages of small-pox Can this case be—

(*a*) Small pox before the rash has come out, when it may have to be distinguished from influenza, acute rheumatism, lumbago, etc?
(*b*) An initial rash of small pox, liable to be confused with scarlet fever, measles, and so forth?
(*c*) Haemorrhagic small pox, requiring to be distinguished from purpura and petechiae?
(*d*) Small pox in the papular stage, simulating acute papular erythema, for instance?
(*e*) Small pox in the vesicular stage, resembling pemphigus or varicella?
(*f*) Small pox in the pustular stage, recalling acute pustular dermatitis?
(*g*) Small pox in the crusting stage, suggesting chronic eczema?
(*h*) A patient recently scarred with small pox? This is a condition which forms a not uncommon trap, the detection of which may be of little avail in the case of the patient himself, but of immense value to the life and welfare of his friends

Running over these eight touchstones in one's own mind may be sufficient to dismiss all possibility of small-pox and may settle that the case is something entirely different

Suppose, however, that small-pox cannot be eliminated How then should we proceed? In matters of detail, by two ways especially First, by ensuring a thoroughly good light, and secondly, by seeing as much of the skin in one view as possible, the patient should be stripped of ordinary clothes to the waist, and decently and warmly clothed in blankets or similar coverings That will give a fair chance of the actual lesions present being fairly observed These are homely but most important points

What phenomena are we, then, going to discard as relatively unimportant and what are we specially to note? We may cherish old friends but must not expect too much of them, it is not fair Among these I would include (1) shottiness, (2) umbilication, (3) umbilication, (4) the "cropping" as of chicken pox, (5) the rash being in different stages, (6) the rash occurring on the soles of the feet, (7) spots on the palate I venture to discard these phenomena either in part or entirely Not that they do not occur, they do occur, but they are not sufficiently distinctive when distinction is urgently called for

Let us, then, proceed to the four groups of clinical phenomena which, to my thinking, include the master cards They are

1 Prostration
2 Distribution (on the skin)
3 Localization (in the skin)
4 Maturation

It is not in place for me to discuss these here, and I will add only the briefest comment

1 *Prostration* is not an absolute sign of small pox, nor does its absence give a complete negative to that diagnosis,

but it usually is a reliable sign, especially when considered in proportion to the density of the rash A copious rash preceded by complete absence of prostration is a strong argument against small-pox

2 *Distribution*, as a group of evidence regarded by itself, is the soundest of all Its key is that the rash of small pox favours the irritated and shuns the unirritated surfaces To follow up the subject it will be necessary to consult textbooks and treatises

3 *Localization*, or depth in the skin This is obviously important It is specially useful to regard those lesions which occur on the tenderer portions of the skin, such as over the malae, chest, or flanks, relative depth in the skin is more readily appreciated in such situations, and by rolling a loose fold between the finger and thumb

4 *Maturation* This simply means that the progress or standstill of a rash clears up many a doubtful case Of course it is not suggested that a possibly infectious case should be kept unisolated pending development of rash Rather this sort of evidence is useful A rash which has only required two days to pass from its first appearance to a fully pustular condition cannot be small-pox for small-pox does not proceed at that rate A rash which is papular and stationary for three or four days cannot be small pox, for small pox always develops in some fashion A haemorrhagic case is often clearly disclosed by the supervention of the focal—that is, the papular—rash, that is only to say again that the rash of small-pox develops and matures

To my thinking a suspected case of small pox should be analysed under each of these heads separately, and the respective findings recorded and compared The balance of evidence should then be weighed and recorded Seldom then is the truth missed

History is corroborative evidence, and should be so placed and regarded—after careful appreciation of course Events observed by a medical attendant, a nurse or a competent mother may be invaluable, whereas the story told by a man's wife who does not wish him to lose his job, or of the mother who will sacrifice everything to keep her child at school is apt to be less reliable

But unquestionably the method is not only scientific but self-educational which studies the actual pathological phenomena in view as intently as possible, which reads the case as well as it can be read which deciphers the hieroglyphics which takes the direct evidence, before listening to the history and the hearsay evidence

It is often said that the lack of clinical material is a great difficulty in studying small-pox diagnosis I do not entirely agree I know that there are difficulties, but good stereoscopic photographs correctly used and well demonstrated give a surprisingly good working foundation for small pox diagnosis, as a result of which many a man who has never previously seen a case of small-pox has been enabled to recognize the papular rash on the first day Then again we do not make half enough use of the clinical material which we do possess, organization is here required for its due and legitimate study

But these difficulties apart, there is one fertile source of study open to all who wish to improve their small pox diagnosis I mean our abundant cases of chicken pox It can hardly be doubted that small pox and chicken-pox are cousins even if hundreds of thousands of times removed—so close are many of their superficial resemblances, and anyone who is in earnest in seeking to heighten his proficiency in small pox diagnosis may derive great advantage from testing some such scheme as the above upon every case of chicken pox in his practice especially chicken pox in the adolescent and adults, in whom its features are commonly more regular and more easily observed, particularly as regards the distribution

This much should be added small pox diagnosis in my experience is a most difficult art, and few of us have opportunity of becoming highly proficient therein this is evident when we reflect that the 6 000 of us in London have at present an average of about three cases in every two months on which to exercise our skill, and that those eighteen or twenty cases a year are commonly whisked away within a few hours of their appearance To attain real proficiency is not a practicable proposition for any but a few On the other hand, there is strong reason why every single one of us should have that sound knowledge of the groundwork of small pox diagnosis that will enable, and indeed has enabled us of late years to *arrest* the great majority of cases

Herein lies our chief encouragement "Judge," said Demosthenes of Philip of Macedon—"Judge what he will do by what he has done" An expression as true as it is pithy Let us judge what we shall do by what we have done We have succeeded to a large extent, we shall succeed altogether That is one reason why I am so desirous of establishing the truth in regard to what our profession has already done to drive and keep small pox down From that very success let us take heart of grace and strongly push ahead

This is every man's work, to take his share in finally disposing of a disease which should not be tolerated among us for a single instant, the continuance of which is no compliment to our civic organization and common sense, for consider, we have had to put up with nearly 5 000 cases of small pox in England and Wales in the last eighteen months It is for each of us to tackle it in his own sphere, and for us altogether to develop our team work so that we may lead the way in sweeping it out of the country

Let me fitly end my contribution with a striking passage from the Hunterian Oration of 1907 by the late Sir Henry T Butlin who in the last words here quoted doubtless had in mind many others of our profession besides John Hunter

Human beings may fairly be divided into three classes in their relation to the affairs of this world

First are they who see that a thing is wrong they are very numerous especially in their relation to politics, and their opinion in these days is frequently referred to as the opinion of 'the man in the street'

Next are they who see how what is wrong should be put right They are not so numerous as those of the first class, and of one who sees clearly there are at least many hundreds who only dimly see And of those who see clearly few are capable of putting the wrong thing right Few of them indeed, have the inclination to do so and of those few still fewer are capable of doing so, they are for the most part talkers, not workers

And third are they who set to work diligently and with determination to correct the wrong They are not necessarily the persons who first discerned the wrong or who saw clearly the means by which the wrong might be corrected Sometimes indeed they are merely workers, what are termed humble instruments but the work which they accomplish in this world and for the good of man is greater than words can tell

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Dr C KILLICK MILLARD,
M O H Leicester

Dr Wanklyn divides his paper into two sections (1) small-pox in its general learning (2) diagnosis I will comment on the second section first Like all that Dr Wanklyn has written on this aspect of the subject, this part of his paper is highly practical and valuable, and I only regret that he did not devote more space to it I entirely agree with him as to the fundamental importance of correct diagnosis in the control of this disease More attention is devoted to this subject in the medical curriculum than was formerly the case, but there is still much room for improvement In view of the fact that there is no disease in which failure on the part of a medical practitioner to recognize or even to suspect its true nature is fraught with such tragic consequences to the community it is urged not unreasonable to contend that no medical student should be turned loose on the community as a qualified practitioner until he has given specific evidence that he has acquired proficiency in this subject sufficient at least to enable him to suspect small pox whenever he may happen to meet with it

As Dr Wanklyn rightly points out the lack of clinical material now that small-pox has become such a comparatively rare disease is a difficulty though by no means an insuperable one I cannot doubt but that ways and means of learning small pox would be found if only small-pox were made a special subject and that at least one question were asked on it in every final professional examination A long overdue reform is the transference of the precious time at present devoted to "learning vaccination" to learning small-pox, which to-day is of infinitely greater importance As a matter of fact, I think most will agree

that a special course on vaccination is quite unnecessary, provided the student be well grounded, as of course he should be, in the theory and practice of asepsis

As regards the practical side of diagnosis, I agree with Dr Wanklyn as to the comparative uselessness of the old textbook diagnostics, "umbilication," "shottiness," "uniloculation," "cropping," and the presence of lesions on the palms or soles or palate, which students apparently are still largely taught to rely upon In my experience they are a source of much confusion and uncertainty, and of very little real value

Dr Wanklyn enumerates the four groups of clinical phenomena which he *considers of* real importance—namely, (1) prostration, (2) distribution, (3) localization (in the skin), and (4) maturation I agree that the most important is distribution In the vast majority of cases distribution will settle the diagnosis as between small-pox and chicken-pox Moreover, as careful enumeration is independent of the personal factor, I regard the distribution test as quite the most valuable for the general practitioner I would describe the test as follows

Distribution Test for Distinguishing between Small pox and Chicken pox—(1) Ignore the head and neck (2) Divide the rest of the body into (*a*) trunk, and (*b*) limbs Then, if the lesions on a careful count be more numerous on the limbs, the case is almost certainly one of small pox, whereas if they be more numerous on the trunk it is almost certainly chicken pox It is true that there are a few cases in which the lesions may be almost equally divided, and in order that any error may be on the safe side—that is, in the direction of suspecting small pox even though the case be one of chicken pox, rather than vice versâ, it is well to weight the test by counting the buttocks and shoulders as being part of the limbs, though in reality I believe that these regions should be counted with the trunk if the test is to give the greatest proportion of correct results

I know of no other single test of equal value to this distribution test, though, of course, before the final decision be made every point should be considered I will only add that whilst cases will occur that will puzzle even the most expert, yet, speaking generally, and apart from bacteriological tests, in no other zymotic disease in this country can a positive diagnosis be arrived at in a larger proportion of cases In other words, given the necessary knowledge, in no other zymotic is diagnosis so satisfactory

Turning now to the first section of Dr Wanklyn's paper—namely, small-pox in its general bearing—to which he devotes the greater part of his space, I find many points with which I am unable altogether to agree I fear that this is my fault rather than Dr Wanklyn's, for he is *nothing if not* strictly orthodox—a vaccination "die-hard" of the stanchest type!

With small-pox again present in Leicester after being absent for eleven years, I necessarily speak with a sense of due responsibility I cannot, of course, foretell what the future may have in store for Leicester or, for that matter, for any other city, but in everything I have said or written on the question of small-pox and vaccination during the past twenty years I have always had in mind the probability that the disease would be introduced into Leicester from time to time, as in the case of other cities, and that more or less spread of the disease would result, as in the case of other cities I have never been so foolish as to suppose that Leicester bore a charmed existence Let me then repeat at the outset, what I always make a point of saying—namely, that whenever small-pox visits Leicester it demonstrates unmistakably the power of vaccination to protect the *individual* But it also demonstrates, as I believe, that the orthodox view as to the great value of infant vaccination in protecting the *community* has been overestimated Perhaps it would be more correct to say that it also demonstrates that the supposed danger to the community of the absence of the "protection" of infant vaccination has been overestimated

Dr Wanklyn states that small-pox is a "poisonous and devilish enemy," and that in the whole range of medicine he knows of "no disease which destroys the human form divine with more horrid defacement, with more utter brutality, with more savage deadliness, than does small-pox" Such a lurid description is, I admit, fully justified as applied to the severe or Asiatic strain of the disease, but if it be applied to the American or Alastrim strain of small-pox which has prevailed in this country during the last few years, then it is a clear exaggeration Alastrim small-pox can hardly be said to be either a disfiguring or a deadly disease, and hitherto it has shown little if any tendency to change into the Asiatic type Although from the scientific point of view I have no hesitation whatever in regarding it as true small-pox, yet from the practical point of view it is a very different proposition, and personally I doubt if it is quite disingenuous to trade upon the name small-pox in the way that is so often done Dr Wanklyn's story of the mother who said that she would gladly have been vaccinated many times if it would have saved her child from getting small-pox can be paralleled by stories of parents who, when they have seen cases of alastrim small-pox, have said that if *that* be small-pox they would much sooner have it than some of the bad arms they have seen after vaccination

Dr Wanklyn points out that in spite of the fact that the "chief antidote" to small-pox—namely, vaccination—is much less used than formerly, our freedom from small-pox stands higher than ever it did He says "It appears that the remedy, an undeniably potent remedy, has fallen into partial disuse, but that the patient's health has improved" He asks what can be the explanation, and points out that it is not that small-pox has become less virulent (this is hardly correct as applied to the country as a whole—C K M), or that the disease no longer comes to our shores He cannot admit that it is in any way due to "sanitation," and concludes that it is to be attributed to the method of dealing with small-pox by "team work," by which he means presumably the modern method of improved diagnosis, prompt notification, immediate and effective isolation, and the hunting up, vaccinating, and surveillance of contacts If Dr Wanklyn will look up the word "sanitation" in almost any standard dictionary I think that he will find that it is not unduly straining the meaning of the word to make it include all the preventive measures indicated above, but I have no wish to argue about the meaning of a word I would, however, suggest that it looks, on Dr Wanklyn's own showing, as if modern preventive measures were much more successful in combating small-pox than the measure on which we formerly relied—namely, infant vaccination

Dr Wanklyn makes a calculation as to the amount of saving, expressed in terms of money, which the employment of these improved measures for dealing with small-pox have effected in London alone during the past nineteen years by reducing the incidence of the disease, and on the basis of 15,800 less cases, *at £200 per case*, he estimates the saving at over £3,000,000! I have no wish to damp his enthusiasm for what is undoubtedly a splendid piece of work, but I cannot help suggesting that his estimate is a little too liberal I can understand a single case of small-pox costing as much as £200 where the circumstances are exceptional, but to take this as an average over 15,000 cases seems a little wide of the mark Probably an extra cipher has crept in unawares, £20 per case, and a total of £300,000 would surely be nearer the mark

In conclusion, it is not very clear what Dr Wanklyn thinks the future has in store In one part of his paper he says that the decreasing use of vaccination has made the people of these isles individually almost defenceless against small-pox, and that as the final result, which is "absolutely inevitable unless the community protects itself by adequate vaccination," small-pox will again sweep the country "as calamitously as ever" Yet towards the end of his paper, apparently overlooking this gloomy prophecy, he says enthusiastically, in speaking of the success which has attended improved diagnosis, "Let us judge what we shall do by what we have done We have succeeded to a large extent, we shall succeed altogether" It is, he says, for us to "develop our team work so that we may lead the way in sweeping it [small-pox] out of the country" To which sentiment I, personally, say "Amen" But which of these predictions does Dr Wanklyn really wish us to accept?

But these are only minor points With very much of Dr Wanklyn's paper I heartily agree, and I take this opportunity of expressing my appreciation of the great

service rendered by Dr Wanklyn to the community in the prevention of small pox by his writings and teaching on small pox diagnosis

DISCUSSION

Dr R P GARROW (M O H Borough of Chesterfield) referred to the prevalence during the past three years of a mild form of small-pox in Derbyshire In October, 1923, the infection was introduced into the borough of Chesterfield and since that date, in spite of all the orthodox preventive measures being taken, the disease had continued to spread in the borough amongst those who refused vaccination To date there had been 500 cases He understood that in Derbyshire there had been something approaching 2,000 cases without a death from small pox in three years He was of opinion from a careful study in hospital of the 500 cases from the borough of Chesterfield, that this mild disease was a clinical entity distinguishable from small pox on the one hand and chicken pox on the other While he did not believe that an individual case of the mild disease could be distinguished clinically from an individual case of the same severity occurring in an outbreak of virulent small pox, nevertheless the two diseases looked at as a whole, presented so many and such striking differences that an outbreak of the mild disease could be easily and rapidly distinguished from an outbreak of the graver disease He indicated the chief points of difference as follows (1) Extreme mildness of the average case The fact that there was no death from small pox in his series of 500 cases did not convey an adequate impression of the mildness of the disease, for no case in his series could be said to be so ill from small pox as to give rise to any anxiety as to the outcome of the illness (2) Prostration one of Dr Wanklyn's master cards, was not seen in any case (3) Other evidences of profound toxaemia such as prodromal rash and haemorrhage were also entirely absent from the series (4) Pitting after recovery was rare, and consisted of fine foveation on the forehead nose, and cheeks (5) The pyrexia of the primary toxaemia was lower than that of virulent small-pox, and ranged from 100° to 103° F (6) Suppurative fever was absent in the great majority of cases (7) The symptoms of onset were different The gradual onset with headache, dizziness and aching limbs contrasted with the sudden onset with rigor vomiting and lumbo sacral pains in virulent small pox (8) The eruption consisted of lesions which were on an average smaller and more superficially situated than those of virulent small pox They were unilocular, their evolution was more rapid, they failed to pustulate completely, but dried up into amber-like heads, varying in size from that of a pin's head to that of a split pea, and in colour from pale straw to deep amber (9) A most interesting difference was the chronological relationship of the appearance of the eruption to the primary toxaemia Whereas in virulent small pox the eruption appeared fairly constantly in the middle of the primary toxaemia about its third or fourth day, in this mild disease the eruption appeared immediately *after* the primary toxaemia or was delayed for several days so that an interval of complete intermission of all symptoms lasting from one to four days was observed between the end of the primary toxaemia and the appearance of the eruption in about a third of the cases

[Dr Garrow showed the following table which indicates the day of illness on which the eruption appeared in the 500 cases

Days from Onset to Eruption	No of Cases	Days from Onset to Eruption	No of Cases
Same day	51	6	81
2	13	7	47
3	60	8	35
4	110	9	7
5	93	10	3
			173

From this it will be seen that in no fewer than 173 cases, just over a third, the interval was from six to ten days]

(10) Another interesting difference between the two diseases was that while virulent small pox was specially toxic towards newborn babies, the mild disease tended to be exceptionally mild in very young unvaccinated infants Four infants, aged under 5 weeks at the time of the appearance of the eruption, had no initial illness recognized by the mothers, who stated that they had not missed a feed at the breast In some of these cases the eruption was profuse

The above points of difference referred to the average cases which constituted the bulk of an outbreak They provided sufficient evidence to justify the belief that the word 'small pox' as at present used included two diseases The crucial question was whether these diseases bred true to type—that is to say whether the mild disease remained mild in all circumstances and could not under any known or unknown conditions suddenly assume virulence So far as the experience in Derbyshire went, this mild disease was remaining strictly true to type It had been stated on high authority in South Africa, in America, and in this country that the mild disease had been known to assume virulence and acquire all the malignant characters of classical small pox The evidence on which this statement was made did not appear to the speaker to bear critical examination However, that was a highly controversial matter, and would require a discussion to itself

Dr Garrow finished by quoting from page 1 of Ricketts and Byles's monograph on *The Diagnosis of Small-pox* Referring to the differentiation of chicken pox and small-pox, this authority stated that

> Only a little *before Jenner's* time did chicken pox come to be distinguished clearly from the graver disease Indeed it was not until well into the nineteenth century that the identity of the two disorders ceased finally to be a matter of serious controversy Even *a the latter end of the century Hebra* appeared like a modern Nestor maintaining still the ancient heresy

If it took hundreds of years to clear up the difference between chicken pox and small pox, how long would it take to establish the difference between two diseases which admittedly resemble one another more closely?

Dr E H SNELL (Coventry) thought that when the question arose as to the diagnosis of small pox, the main difficulty had been surmounted The great difficulty—in the present epidemic of very mild cases—was met with by the man in practice He was confronted by cases with just a few pimples, perhaps only three, so negligible in fact that even the patient ignored them or failed to draw his doctor's attention to them The present epidemic had been going on for about three years Its very mildness accounted for it being so widespread He himself had had twenty four cases in hospital during the last few months, but in attempting to follow up the source of these cases he had found whole families who had recently had the illness in an unrecognized form, in fact probably more had been unrecognized than had been recognized The administrative difficulty in dealing with such an outlook as the present was quite novel so far as small pox was concerned

Colonel PENNY said that as a result of his experience in Burma he thought that small-pox, even of the Asiatic type, was by no means so easy to diagnose as some people imagined He had on occasion found experts entirely unable to agree on particular case He quite agreed that if cases of small-pox from the East could be put into glass cases and shown round the country there would be no anti-vaccinationists

Dr MERCER stated that in New Zealand vaccination had died a natural death from lethargy and inanition and that the vaccination laws had been allowed to lapse The authorities had, however, acquired the power to take vigorous measures if an outbreak occurred

Dr WATT (Derby) dealt with the clinical features of the mild type of small pox now prevalent in the North Midlands There had been nearly 2 000 cases of notified small-pox in Derbyshire since 1921 *without* a death due to this cause—probably a record in this country The incubation period was on an average about fourteen days as compared with twelve days in the ordinary form The period of invasion covered about five days In a well marked case there were malaise, fever, headaches, backache, pains in the bones and muscles, faintness or shivering The temperature reached 100° or 101° F The symptoms resembled

influenza and terminated abruptly Patients got out of bed and resumed their usual vocations But a large number had no symptoms other than slight malaise, and certainly no prostration About the fifth day the rash appeared on the face about the forehead, nose, malar eminence or mouth It travelled downwards, and invaded the legs some twenty-four hours afterwards Its distribution was fully described in Ricketts and Byles's book on small-pox, which should be studied The eruption was often very sparse with only a few spots, but occasionally it was profuse About one in three showed a secondary rise in temperature to 100° F Little help was to be got from the old diagnostic points such as umbilication, shottiness, cropping, umbilication Complications were negligible The spots were pigmented for some weeks, but the skin was nearly always left smooth The African or alastrim type was of a very low infectivity Unvaccinated persons in close personal contact with cases had not contracted the disease Infection had been broadcast in an isolated village, and only about one in eight of the population attacked The fairy often called it influenza with spots Epidemics were difficult to subdue because many never consulted a doctor for so trifling an illness Thus it smouldered on in a district, waking up into activity as it reached a fresh community Personal contact and the occurrence of missed cases were responsible for its spread The striking distance appeared to be short The alastrim form bred true to type, and after four years' prevalence in this country there was no sign of any increase in its virulence

DR WINKLYN, in reply, said that Dr Millard's main point appeared to be that the spread of unrecognized cases was largely added to by infant vaccination, with this he agreed, but it was true now to a much less degree than formerly He denied, however, that the abolition of infant vaccination would help matters, because the modification of the disease by vaccination did not really make the diagnosis more difficult Moreover, a number of small children who were unvaccinated got the disease in a greatly modified form He agreed that experience in this country up to the present suggested that the mild cases did breed true, in Detroit, U S A, however, after a long series of mild cases they had recently had a run of severe cases Outbreaks of the mild variety had been known for many years and in all parts of the world, and he thought there was little doubt that mild small-pox had been going on for well over two hundred years His great desire was that before the old method of dealing with small-pox was scrapped a new one should be completely prepared

SECTION OF DISEASES OF CHILDREN.

LEONARD FINDLAY, M D, F R C P S, President

DISCUSSION ON THE PREVENTION OF MENTAL DEFICIENCY

OPENING PAPER

BY

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SINCE the law of England has two different criteria of mental deficiency, it is desirable that I should specify the particular class to which I apprehend this discussion is intended to relate, and with which it is therefore my intention to deal In the Education Act of 1899 the criterion is an educational one, and the term "mental defective" is applied to a group of children evincing *a certain degree* of scholastic disability In the Mental Deficiency Act of 1913 on the other hand, although the educational test is still made use of in regard to children it is quite clear that the essential criterion is not one of educational, but of social disability It is perfectly true that to a certain extent the two classes defined by the respective Acts are identical—that is to say, most children who are certifiable under the Education Act and who are sent to special schools do subsequently prove to be socially incapable and certifiable under the Mental Deficiency Act This, however, is by no means always the case, there is no doubt that children may be educationally defective without being socially defective, and since, in my opinion, the former have a different causation from the latter, I wish to state that it is with the latter only that I shall deal—that is, with mental deficiency as defined by the Mental Deficiency Act of 1913 I may add that this is what is usually understood when we speak of mental deficiency

While we are all aware that many diseases may be successfully treated and cured in the absence of precise knowledge as to their causation, it is clear that it is otherwise with regard to their prevention To achieve this end such knowledge is essential, hence, in dealing with the prevention of mental defect, our discussion must largely be based upon and centre round what we know of the causation of this condition This is so obvious that no apology is needed for the relatively great amount of space I shall devote to this aspect of the question It may not be inopportune to remark that since mental defect cannot be cured, the subject of its prevention is one of great and urgent importance

With regard to their causation, I think we shall all agree that cases of mental defect may broadly be divided into two groups First, there is that group in which the defect is primarily and essentially due to an innate incapacity for normal development Secondly, there is that group in which the defect is the result of development having been arrested by some external influence These were formerly designated "congenital" and "acquired" respectively, but the terms "primary" and "secondary" which I applied to them many years ago are, I think, preferable, and are now generally used As we shall see presently, primary cases are a result of inheritance, secondary cases are a consequence of the direct action upon the individual of some factor of the environment

For purposes of discussion, therefore, it will be convenient to deal with the subject under these two headings, but in so doing we must not fall into the mistake of thinking that heredity and environment are opposing or even independent factors This is not the case All growth and development are the resultant of both these factors, and, in actual practice, we find many cases of mental defect in which we can clearly trace the operation of both inheritance and environment It is clear, however, that in a very large proportion of cases one or other of these influences preponderates to such a degree as to leave little doubt as to the class in which they should be placed, and since the terms "heredity" and "environment" embrace all possible causal agencies such a division is justified for our present purpose With regard to the relative incidence of primary and secondary cases, we shall probably all agree that the former are much more numerous, although doubtless there will be differences of opinion as to the precise ratio of the one to the other It seems to me likely that these differences are largely dependent upon the particular field in which we work For instance, the ratio between primary and secondary differs according to age, it also differs in institution cases as compared with cases at large Taking all mental defectives above the first life-decade, my experience is that they occur in the proportion of approximately four primary to one secondary

PRIMARY AMENTIA

The essential cause of primary amentia is a diminished developmental potentiality of the cerebral neuroblasts It results from a variation of the germ plasm it is therefore inherited and transmissible I am of the opinion that these statements are justified by the results of microscopical examination clinical observation, and genealogical investigation, and I do not suppose they will be controverted This being the case it would at first sight appear to follow that to prevent primary mental deficiency all we have to do is to prevent the propagation of those who are mentally deficient This is a view which is very prevalent and among those who hold it the question of prevention mainly resolves itself into a discussion of the respective merits of two methods—namely, sterilization and segregation

Unfortunately, however, the matter is not so simple, and in order to make this clear it is necessary to inquire somewhat more fully into the nature of the germinal change which is the basis of this diminished developmental potentiality as well as into the mode of its inheritance. At this point we meet with a divergence of opinion, and there are two chief views we have to consider.

According to one of these views primary amentia is a definite unit character which has arisen in various stocks as a defect mutation, and which is inherited as a Mendelian recessive. Assuming, for the moment, that this view is correct, it by no means follows that the condition would be eradicated, or even appreciably diminished, by measures directed towards the prevention of propagation. On this point I do not think I can do better than quote the conclusions of Professor Punnett of Cambridge, a well known worker on Mendelism.

Punnett states that, assuming an initial proportion of one defective per 100 population, the segregation or sterilization of defectives would have to be continued for twenty two generations to reduce this proportion to 1 per 1,000, to reduce this 1 per 1 000 to 1 per 10,000 a further sixty eight generations would be needed while to carry this reduction to a proportion of 1 per 100,000 another 216 generations would be required. I am quite aware that these figures have been criticized by some eugenists, but I believe they are accepted by most, if not all, authorities on genetics.

However, in spite of the fact that certain enthusiasts state that amentia is now definitely established to be a unit defect, or combination of defects, transmitted in accordance with Mendel's laws, I have myself the gravest doubt regarding this, and I certainly think the proposition is far from being established. As a matter of fact, the relatively small number of his offspring renders man a rather unsatisfactory subject for Mendelian observations at all, and when, in addition to this, we are confronted with the extreme difficulty of obtaining accurate information as to the exact mental condition of the collateral and direct antecedents of a particular individual for any considerable distance back, it is evident that one must accept such conclusions as to the nature and mode of transmission of mental defect with considerable reserve. The matter is further complicated by the fact that the mental condition of an individual is a product of his environment as well as of his inheritance. For instance, if we assume two persons possessing exactly similar developmental potentiality, it is clear that the realization of this potentiality must be influenced by the nature of their upbringing. A person with a slight degree of impairment may pass muster and be regarded as normal provided his development is not further handicapped by any external cause, and the circumstances of his life are not in any way exacting. Another, not possessing these advantages, may stand revealed as abnormal. As a matter of fact there is no such thing as the inheritance or transmission, of mental defect at all. What is inherited and what may be transmitted, is a varying degree of diminished potentiality for neuronic development, and this brings me to the second view regarding the nature and causation of mental deficiency.

According to this view the germ change consists in what we may perhaps best regard as a form of devitalization. We really know very little about the minute structure of the germ cell and the manner in which the different parts of the organism to which it subsequently gives rise are represented in it remains a mystery concerning which we can only theorize. It is certain however that each organ and tissue is represented in some way and it is now generally assumed that this representation consists of a number of "directive forces" or "determinants" which govern and direct the growth and development of the cells composing each variable part of the body. It is assumed that under certain conditions there may be an impairment of the developmental potentialities or a "devitalization" of these determinants with a consequent tendency to imperfection of the corresponding organ. This condition of the offspring constitutes a diathesis, and when it involves the central nervous system we term it the neuropathic diathesis. According to the view we are now considering this diathesis, or innate tendency to imperfection of neuronic development, which is the basis of mental deficiency. It is very important to note however, that the degree of this germ impairment may vary in different generations—it is not a fixed Mendelian unit. It is also necessary to bear in mind that the environment (using this term for all those external factors which may operate upon the offspring from the time of fertilization up to the period at which development is completed) must necessarily exert an influence upon the realization of this innate potentiality. Lastly, there is reason to think that the mode of transmission does not conform to Mendel's laws, but rather that there is a blending of the qualities of both parents such as occurs in the transmission of skin colour. These considerations afford an explanation of the varying manifestations of the neuropathic diathesis which we witness in different members of the same family, they also account for the occurrence of some otherwise very puzzling instances of mental defect.

Thus, according to this view, the manner in which mental defect arises is as follows. At its origin the germ impairment may be but slight and it may then not manifest itself in any gross structural defect, but merely in a defective function possibly of the higher cortical levels only. An individual so affected will be prone to hysteria, epilepsy, mental instabilities, impaired emotional control, or some mild form of psychosis—in short, to what we term a functional disorder of the nervous system. If it should happen that the circumstances of such an individual's life are entirely devoid of any stress or strain, then the tendency may remain latent and he may pass through life apparently normal. On the other hand should there be experienced any embarrassing factors of the environment during the period of rapid growth such, for instance, as serious ill health of the mother during gestation, a difficult and prolonged labour, or a serious illness of the child during the early months of life, then this additional handicap acting upon the already impaired potentiality, may prevent the normal multiplication and growth of the cortical neuroblasts and give rise to some degree of mental defect.

It is possible that such a mild degree of germ impairment as this might be 'bred out' by suitable mating. It often happens, however, that a person so tainted mates with one similarly affected, and then the tendency is towards an accentuation of the neuropathic condition. In this case the next generation tend to be characterized by defective neuronic durability rather than functional instability. This shows itself in the chronic forms of insanity, dementia praecox, and presenile dementia. Here again, however, some adverse environmental factor during intrauterine or early extrauterine life may result in a member of the generation becoming mentally defective. Should an individual of this generation mate with one of neuropathic stock there will be a still further impairment of neuronic potentiality and this may reach such a degree that development cannot attain a stage needed for transacting the affairs of ordinary life. In other words, the tendency will be for the offspring to suffer from mental defect and other forms of mental subnormality.

With regard to these two views of the origin of mental defect, which we may term respectively the Mendelian and the theory of germ impairment I must confess that my opinion is strongly in favour of the latter. Since I first advocated it nearly twenty-five years ago I have had opportunities of examining many hundreds of cases of every variety and grade of amentia, and of inquiring into their family histories, and the result has been to confirm me in the view I then took. It is perfectly true that from time to time one does meet cases of amentia for which no adequate cause can be discovered, but in the great majority of primary amentia careful inquiry will reveal the presence of neuropathic ancestry, and I therefore think that it is a germ impairment, or which such ancestry is the expression, which is the essential basis of this form of mental defect. If we also bear in mind the additional points to which I have alluded—namely, that inheritance is probably of the blended and not the Mendelian type, and that the environment exerts an influence upon the realization of the germ potentiality—then it seems to me that we

have a logical concept of the causation of mental defect as well as an explanation which is most in accordance with our clinical knowledge

Coming now to the question of prevention, it is apparent from what has been said that any attempt to eliminate mental defect by preventing the propagation of those who *are themselves defective* can only be attended with very limited results Although it is quite true that a certain number of defective fathers or mothers do produce children, and that such children are usually subnormal and often defective—or, to put it another way, although a certain number of defective children are the offspring of defective parents—the actual proportion of cases in which this happens is relatively small

I have no doubt whatever upon this point, and it is one which must not be lost sight of in considering the sterilization or segregation of defectives as a means of prevention Holding, as I do, the view that mental defect is not the result of the inheritance of a germ plasm devoid of one or more definite unit characters, but of a plasm which has undergone devitalization, and holding further that the inheritance of this does not follow Mendel's laws, I am not in the fortunate position of being able to furnish an exact mathematical forecast, as are the Mendelians, nevertheless I agree with them in their general statement that the effect of the sterilization or segregation of those who are actually defective would only be attended with very limited results Whichever view of the nature of the germ change we adopt it is evident that to produce any appreciable result we should have to prevent the propagation *of all those in whom the taint is present*—in other words, of all "carriers," or those suffering from the neuropathic diathesis It is obvious that any such compulsory prevention is not only quite impracticable, but impossible

The question arises, however, whether any considerable result in this direction might be brought about voluntarily by the education of public opinion This brings me to a subject into which I am extremely loath to enter, because I see a distinct possibility that it may act as the proverbial red herring and draw us away from our real objective Nevertheless, it is so pertinent to our discussion that it cannot be ignored I refer to the subject of birth control Now admitting that the arguments of Malthus are sound, and that the question of food supply will sooner or later compel mankind to limit the number of his progeny, I think it is clear that its adoption by one nation only, while the remainder of the peoples of the earth continue to propagate without restriction, would inevitably be attended with disaster to that nation Birth control may not aptly be compared with disarmament It is sound in principle, and would be beneficial if universally adopted, but, human nature being what it is, it would be a perilous procedure for a single nation to adopt It seems to me that the same argument applies to the different classes *within* a nation If birth control is not to be attended with any change in the ratio of the different sections it must be adopted by all sections of the community alike If it is not so adopted, but is partial, it must inevitably lead to a preponderance of that section not making use of it As we are well aware, birth control is no new thing It has been practised for many years, and I think you will probably agree when I say that it has been, and is, chiefly practised by that section of the community whose increase should be encouraged rather than discouraged In other words, it has not generally been adopted on the grounds of morbid inheritance or personal health, but for prudential reasons It has been used by the efficient, the thrifty, prudent, and ambitious, who wished to maintain a certain *standard of comfort* and at the same time ensure for their children the best start they could in life It has made no appeal to the biologically unfit, the thriftless, and the dependent and parasitic sections of the community The inevitable result has happened that the decline in the birth rate which has taken place during the past two generations has not been uniform throughout the whole community, but has been selective It has fallen principally upon the professional and best elements of the artisan classes, whilst the parasitic class and especially those of neuropathic constitution, have continued to propagate with little diminution It seems to me that any general advocacy of birth control must operate still further in the same direction, and must inevitably tend to increase the ratio of those to whom it makes no appeal, or who are lacking in the prudence and control to apply it Since I consider that neuropaths form a large proportion of this class, I am of the opinion that it will tend to an increase, and not a decrease, of mental defect It is for this reason that it has seemed necessary to refer to it What is wanted at the present time to restore the balance and conduce to human progress is not the indiscriminate advocacy of birth control, but the encouragement of the multiplication of the biologically sound and fit and the discouragement of the unsound and unfit Compulsion is out of the question, but it ought not to be beyond the power of the State to devise means which would contribute towards this end, and I cannot but feel that our profession might do more than it does to educate public opinion regarding the claims of posterity

At the same time, as all will admit, partial prevention is better than no prevention at all Although the number of aments who are the offspring of certifiable mental defectives is, in proportion to the whole, small, yet there is no doubt that such certifiable defectives do produce children, there is equally no doubt that the *majority* of these are subnormal or defective in mind, and their absolute number is by no means inconsiderable In short, whilst the prevention of propagation by aments would by no means eradicate mental deficiency, or come anywhere near a measurable distance of that end, yet it would undoubtedly do something towards limiting the number of this class This brings us to the discussion of the respective merits of sterilization and segregation

I cannot but feel that there is a tendency in some quarters to attach an importance to this subject greatly in excess of that which it really possesses Sterilization, in particular, has been advocated in terms which suggest that it has only to be adopted to bring about the complete elimination of mental defect It is necessary to emphasize the fact that this view is quite fallacious The most that the sterilization of defectives can do is to prevent that relatively small proportion of defectives who are the offspring of actually defective parents As to the relative advantages of the two methods, I am of the opinion that, as a practical policy, segregation is decidedly preferable to sterilization My reasons for this are as follows So many mental defectives are incapable of remunerative employment, or are possessed of antisocial propensities, that they can only be adequately cared for in an institution The same disabilities would in no wise be lessened if they were sterilized, and there is the distinct danger that a policy of sterilization would lead to a false sense of security and result in many who should be under care being allowed at large In addition to the difficulty of providing these with suitable employment, and the social menace resulting from their wayward and often criminal propensities, it is highly probable that the presence at large of such sterilized defectives would increase sexual assaults and encourage promiscuous sexual intercourse, with a consequent increase in the incidence of *venereal disease* On the other hand, segregation is attended with none of these disadvantages It does, *in fact*, not only all that sterilization can do, but more, it is therefore preferable as a general policy At the same time, sterilization has advantages in particular cases and where an individual can be employed outside to advantage, where conduct is satisfactory, and where the only danger attaching to his presence is that of reproduction, it is an appropriate procedure It is possible that there is a legal aspect to this *question* The amount of time at my disposal does not allow me to enter into this, but perhaps the matter is one which may be considered in our discussion

Up to this point we have been concerned with the question of preventing the propagation of those *who* are either themselves defective or are of neuropathic constitution, and who on this account may be regarded as possible "carriers" of mental deficiency It now becomes necessary to consider the matter from a wider standpoint, and to ask whether anything can be done to prevent that variation of the germ plasm which is the *fons et origo* of this condition Whether we regard this as a "defect

mutation" according to the Mendelians, or as a form of germ "devitalization," I think there can be little doubt that it is still being produced. *It follows*, that, even if we could ensure the sterility of not only every existing defective, but of every possible carrier, it is in the highest degree probable that a fresh crop would be produced in a very short time. The question therefore arises, Can any steps be taken to prevent this happening?

It may at once be said that while every biologist admits the immense importance of this question of the origin of germ variations, which, in fact, lies at the very root of evolution, nevertheless our actual knowledge of this subject is extremely meagre. *In my opinion clinical* evidence and genealogical inquiries are in favour of the view that the alteration in the germ neuronic determinant does not arise as a definite mutation in the biological sense, but rather as a pathological impairment of developmental potentiality, and various explanations of the cause of this may be suggested. One is that the germ plasm of certain stocks in the community is affected with a form of senescence. In consequence of this there is a defective durability of the offspring the change, however, being most marked in the central nervous system. It is suggested that this senescence may be due to in breeding, and there is evidence that close in breeding in certain animals is attended with germ impairment and deterioration of offspring. It is clear, however, that in breeding to this extent is quite unknown in human beings, *and inquiries* which have been made into the best examples of it in man do not support the view that it is attended with any markedly injurious consequences.

Another possible explanation is that the blending of germ and sperm cells possessing markedly *different racial or* other characteristics may be attended with new and untoward results to the offspring; in other words, that the effect may resemble that of chemical activity rather than mere mechanical mixture. This does appear to happen at times in mating between individuals of two widely differing races, but it is inadequate to explain mental defect in a tolerably homogeneous nation. A third explanation is that the germ plasm of one or both parents has been impaired owing to the presence of some adverse factor of the environment, such, for instance, as a circulating toxin of chemical or microbic origin. Regarding this there is in my opinion clear evidence that the vitality of the germ cell may be affected by such agents. It has been shown, in cases where the father alone *suffered from lead* or mercurial poisoning that a marked impairment of the vitality and growth potentiality of the offspring resulted. The same has been observed in the case of tuberculosis, and probably many of us have noticed that the children begotten by a father in an advanced stage of consumption compare unfavourably, especially in their nervous systems, with those born of healthy parents. I think that a similar result may occur in the case of markedly alcoholic fathers. I may remark that some recent biological experiments by Tower upon goldfish demonstrate the injurious effects which may be produced upon the germ plasm by the environment.

While I fully admit the need for further investigation into this very important subject, yet on the whole this last explanation seems to me to accord best with the facts known to us. I accordingly suggest that the devitalization of the germ plasm, which reveals itself in various abnormalities of the nervous system and which reaches its culminating manifestation in amentia is the result of adverse conditions of the environment probably of the nature of circulating toxins, or possibly of some disturbance of endocrine balance. It may be added that since the nervous system of man is at once the least organically fixed the most unstable and the most complex, it is not difficult to understand that any impairment of the vitality of the germ cell should be chiefly incident upon the neuronic determinant. It is worth noting, however, that in many parents, and in not a few other neuropathic individuals also there are indications of developmental imperfections in other tissues of the body, as witnessed by the "stigmata of degeneracy" so frequently present.

If this view of the origin of pathological germ variations which I have advocated for many years, is the correct one, then it is clear that *the outlook as to prevention* is very much more hopeful. So long as such variations were regarded as purely fortuitous, or the result of factors quite beyond our power to influence, then preventive medicine could only stand still with folded hands whilst degeneracy exacted its toll, *and, in so doing*, seriously crippled the evolution of the race. But if their origin lies in diseased conditions of the individual and adverse factors of the environment, then it is only a matter of further time and knowledge for medicine to play a successful part in preventing them, and thus cutting off the supply *of defect, disease, and disorder* of mind at its source. At the present time preventive medicine is almost entirely concerned with the individual. I will venture to hazard the statement that the time is not far distant when it will include the race within its scope, and the basis of this must be the ascertainment and elimination of those factors of the environment which injure the germ cell.

SECONDARY AMENTIA

I now pass to a consideration of secondary amentia. Cases belonging to this group stand on an entirely different footing from those we have just dealt with, *for the reason* that there is no germ defect and no innate impairment of the developmental potentiality of the neuroblasts. Development has, in fact, been proceeding normally until it has been arrested by some adverse factor operating directly upon the embryo or young child. From one aspect secondary amentia is of far less importance than *primary*. For one thing, such cases are less numerous, for another, the condition, not being germinal, is in all probability not transmissible. From another point of view, however, they are of more importance. Such cases may occur in any family, and one of the saddest things I know is to see, *perhaps* the only child of highly intellectual and efficient parents, a child ably endowed by nature converted into a hopeless idiot by the operation of some factor which medicine ought to be, but unfortunately at the present time is not, able to prevent.

As in the primary group, prevention depends upon a knowledge of the cause. These causes however are very varied so that it is necessary to consider separately the chief clinical varieties of this form of defect.

Amentia due to Vascular Lesions of the Brain.—The lesion in the cases is usually a haemorrhage which occurs during parturition. It is generally meningeal and results from tears of the membranes consequent on excessive constriction of the skull by forceps or the bony pelvis. The child, on being born, presents the signs of asphyxia, with feeble pulse and respiration, tense anterior fontanelle, contracted pupils and absent sucking reflex. Later on, in addition to the amentia epileptic convulsions and some degree of paralysis may be present. With regard to the prevention of the cases there are two points which I would suggest for discussion. First, I would ask our obstetrical colleagues whether improved technique in the management of difficult labours might not result in a decrease of cases of this type. Most of them are breech cases and I sometimes wonder whether there may not be faults in our present methods of delivering the after-coming head. Secondly, the child being born and its condition such as to indicate the presence of haemorrhage, I would ask our surgical colleagues whether operation might not avail to relieve the pressure which may otherwise result in destruction of cortical cells and mental defect. My experience of cases in the early stage is very slight because the mental specialist is not usually called in until some years later. By that time the damage has been done and operation is useless, but I cannot help thinking that in some instances, at any rate, it might have been attended with satisfactory results had it been performed within a few hours of birth. Apropos of brain surgery I may remark that, with the exception of these cases of haemorrhage, there are, in my experience, practically *no instances of mental defect* which can be benefited by operation, although this point is often raised by parents. At one time it was quite common to remove strips of bone from the skull of the microcephalic, in

the hope that the brain would thereby be permitted to grow But I have never seen, nor heard of, any good resulting from such procedure It was based upon inaccurate pathological knowledge

Amentia due to Toxic and Inflammatory Brain Lesions — Cases of this kind are probably more numerous than the preceding, the cause being an inflammatory process either primarily incident upon the brain or its membranes or secondary to some infection elsewhere As examples I may mention cerebro-spinal meningitis, polio-encephalitis, and encephalitis lethargica, all occurring in the early months or years of life With regard to cerebro-spinal fever, there is no doubt that the early injection of serum has a beneficial effect upon the course of the disease, and I certainly believe that the more prompt recognition of this condition in young children, and its treatment by serum, would reduce the number of cases of amentia due to this cause With regard to the other conditions we have at present no specific treatment, and we can only wait until the pathologist supplies us with one

I would also draw attention to the need for early special education and training in these cases, for I think that by these means the resulting defect may be considerably lessened

Mongolism —I think there is no doubt that this variety of amentia has increased very considerably during recent years Although it is here included under the secondary group, the cause is still quite unknown, and in the absence of such knowledge we are unfortunately powerless to prevent it Some amelioration does appear to result from endocrine treatment, but the mongol, unlike the cretin, is never cured by this

There are several other clinical varieties of secondary amentia, but the only further one to which I shall allude is that due to syphilis So far as my experience goes, when arrest of cerebral development has once been produced, no treatment is of any avail to remedy the deficiency It seems possible, however, that this occurrence might have been prevented had the infected mother received an adequate course of treatment before or during pregnancy

In conclusion, I would like to emphasize the fact that while mental deficiency is a medical, it is also a social problem of the utmost importance For not only are defectives non-efficient, and in many instances antisocial, members of the State, but, as we have seen, the condition is one which is closely related to many other forms of subnormality, instability, and defective durability of mind When we regard the important part which mind is called upon to play in a civilized community, and when we consider that it is in this direction that the further evolution of man must take place, the significance of this is obvious and prevention becomes a matter of the most urgent necessity The application of such knowledge as we have at present would, to a certain extent, help towards this end, but it is clear that on many points our knowledge is still very defective, and it cannot be doubted that it would be greatly to the benefit of the nation and the race if provision were made for scientific research into this question

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DR. TREDGOLD'S paper does not lend great encouragement to the hope that, as the result of this discussion, we are likely to discover any practical means of reducing the number of mentally deficient children in this country If there are four times as many primary as there are secondary defectives after the first decade of life, and if it would take twenty-two generations for either sterilization or segregation of such individuals to effect a reduction from 1 in 100 to 1 in 1,000, we are not likely to see much improvement in our time by putting either of these measures into the most stringent enforcement

I am glad, however, to learn from one who has had so much practical experience in dealing with this class of case that Dr. Tredgold does not trust in the infallibility of the Mendelian laws of inheritance, at least so far as the inheritance of mental defect is concerned Dr. J. G. Adami, in his Croonian Lectures for 1917, in my opinion gave the *coup de grace* to the detestable fatalism to which belief in Weismann's "ids," "determinants," and "biophores," and Mendel's laws of inheritance inevitably led, and although Dr. Tredgold still appears to have some lingering regard for the hypothetical "determinant" or "directive force," he still adopts the more optimistic view that the germ plasm is not immutable, and that a large proportion of the cases of hereditary mental defect are due to damage inflicted on it by its somatic or external environment, by some form of "devitalization," which is, I suppose, the same thing as Professor Forel's "blastophthoria" (*blastos*, germ, + *phthoria*, corruption)

If the germ plasm can be injured by such noxious agents as alcohol, lead, or mercury, or by the toxins of tuberculosis or syphilis with hereditary influences extending through several generations, as Stockard, Bertholet, Ford, and Tornier have shown to hold good in the case of the lower animals, we are surely justified in hoping that, with the cessation of these causes of injury, mild degrees of germ impairment may be "bred out" by suitable eugenic methods During the last few years the feeding experiment of McCollum, Osborne, Mendel, and others in America, conducted through several successive generations on colonies of animals, have indicated that the cumulative influences of wrong feeding, especially with respect to the accessory factors, can produce far-reaching effects on growth and powers of reproduction in successive generations, it appears almost certain that there must be elements in the food which have a selective influence on nerve elements or their representatives in the germ plasm Indeed, it seems to me that the influence of the element iodine in connexion with that particular class of mental defect known as cretinism, and the influence of maize and various biologically defective proteins in the production of pellagra and the influence of the water-soluble B factor in the production of the beri-beri type of neuritic degeneration, are instances in point A study of such influences acting, perhaps, quite mildly through several successive generations may actually lead to the discovery of what are at present the unknown causes of the devitalization of the germ plasm which leads to mental defect and degenerate offspring

The etiology of that large class of mental degeneration included in the category of mongols must probably be referred to damage inflicted on the germ plasm rather than to causes connected with uterine exhaustion or to endocrine defects in the mother as more generally believed, at least to this conclusion the observations of T. Haberstsma of Haarlem clearly lead

This Dutch physician has collected from the literature all the known instances of mongolism which have occurred among twins, and he finds that there are only two known instances of mongol twins, and these were identical twins, whereas there were sixteen cases of non-identical twins, in which one baby was a mongol and the other was normal It is impossible to imagine that if the etiology of mongolism is to be ascribed to uterine exhaustion or endocrine defect that one twin could be a mongol and the other a normal infant The germinal theory of mongolism would, however, fall to the ground if there were on record a single case of identical twins, with one chorion, one placenta, and of one sex, in which one twin was a mongol and the other normal On the other hand, the germinal theory of mongolism requires some explanation, inasmuch as mongolism does not run in families, and only in the rarest instances have two mongols been born to one mother If the germinal theory is correct we must suppose that the damage inflicted on the germ plasm is local and not general implicating a single ovum or a single spermatozoon, or at least a prescribed area of the ovum or testicle

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I SHALL not attempt to follow the opener of this discussion in his biological speculations, as, frankly, I do not fully understand them, but I shall deal with the subject from a purely clinical point of view We are all agreed that mental deficiency is not a disease but a symptom, and that some classification of its varieties is a necessary preliminary to a discussion of its prevention Dr. Tredgold has proposed

a division into primary and secondary forms but this does not carry us very far, and it is difficult to see why mongolism is regarded as secondary The classification I have used in my own cases is the ordinary one employed by clinicians, and is based partly on the physical appearance of the child and partly on the presence of other signs and symptoms such as paralysis or fits I have selected only cases seen in private practice, as the family history is more trustworthy in such cases than in those seen in hospitals and of 150 consecutive cases I have placed 35 per cent as mongols 2 per cent as microcephalics paralytic epileptic cases and cretins each make up 6 per cent whilst the remaining 45 per cent presented no distinguishing features except the presence of the mental defect and have therefore been classed as cases of simple primary amentia It will be noted that the last named cases and the mongols together make up 80 per cent of the total and it is evident that if we wish to make any serious inroad on the mass of mental deficiency in the country we must concentrate our attention on these two classes

(1) *Simple Primary Amentia*.—Dr Tredgold regards this as due to a "diminished developmental potentiality of the cerebral neuroblasts" which arises as a variation and is inherited and transmissible, but he also says that the devitalization of the germ plasm, which results in the developmental impairment, may be brought about by adverse influences in the environment, using that term in its widest sense Let us examine these two propositions As proof of the inheritance of mental deficiency Dr Tredgold says that he finds a neuropathic strain in the families from which such children come But we all have a neuropathic inheritance—all of us, at any rate, who are worth anything—and for my own part I have not been able to find that the family history in my cases of mental deficiency has been any worse in this respect than that of the average normal child The fact that it is quite exceptional to find more than one mentally defective child in a family is also evidence against heredity having much to do with it

I believe that the evidence for environmental influences acting on the germ plasm is equally unsatisfactory As examples of such possible influences Dr Tredgold is obliged to drag in our old friends 'toxins' and disturbance of the endocrine balance," whilst Dr Pritchard suggests those equally overworked conceptions "vitamin defect" in the mother's diet or the consumption of 'proteins of low biological value" These are the refuges of the etiologically destitute As a matter of fact, I have not in my own cases been able to find anything wrong with the health of the mother during her pregnancy her diet has been like that of anyone else and in at least one third of them she has afterwards produced one or more perfectly normal children

I have myself no theory of the genesis of primary amentia to offer but there is one clinical fact which must mean something and it is this, that in two-thirds of the cases the child was the first-born in the family, and often it was premature as well The Scottish poet said with more chivalry than scientific probability that Nature first "tried her practice hand on man and then she made the lasses" and it would almost seem as if in some families she tried her preventive hand on an amentia before making a normal child This however, does not help us at all in the prevention of primary amentia—unless, indeed we are prepared to imitate Herod and kill off all the first born

(2) *Mongolism*.—There is one striking clinical fact about this form of mental deficiency which has not been mentioned in the discussion, and it is that in 75 per cent of the cases the mother has been 35 years of age or upwards at the time of the child's birth this was so, at least, in my series and others have published very similar statistics What the bearing of this fact is on the pathogeny of the condition it is difficult to say, but it has been suggested that it indicates some connexion between exhaustion of the reproductive function and the production of a mongol there being perhaps an arrest of cerebral development at an early stage Here, again we are not helped in any attempt at prevention, for although one quarter of the mass of mental deficiency would disappear if no woman over 35 had a child yet no one would suggest that such an enactment is practical politics

Compared with the two that we have considered, the other varieties of mental deficiency comprise so few cases *that even if we knew any way of preventing them* the effect on the problem as a whole would be almost negligible In any case the only class that offers any scope for prevention is that which includes the cases resulting from injury to the head at birth At a liberal estimate these do not exceed 10 per cent of all defectives, but undoubtedly greater antenatal care and better obstetrics might lessen their number Syphilis as a factor in the production of mental deficiency is also negligible Dr John Thomson found it present in only 29 out of 952 cases, and it is doubtful if even then it was more than a concomitant

To sum up, then, I regard mental deficiency as arising in most cases as an unfavourable variation which is not more inherited than say, hare-lip I agree with Dr Tredgold that sterilization of the mentally defective is no solution of the problem of prevention, although I am entirely in favour of segregation I believe, however, that even if all defectives are segregated each generation of average stock will still produce its quota of them, just as it does of individuals of exceptional ability, and that there is no more likelihood of our being able to prevent this than of our being able to prevent supposing we wished to, the occasional birth of a man of genius I am aware that this may seem to some a pessimistic conclusion, but I confess I have little sympathy with that sort of optimism which supposes that we have only got to spend enough on "research" or pass a sufficient number of Acts of Parliament in order to abolish all human ills I hold rather with that robust realist Mrs Sairey Gamp that we were "born into a vale—and must take the consequences of such a situation"

W A POTTS M A, M D,
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As Dr Tredgold has said, we must first think of causation when we do so we find ourselves in a great difficulty It is not easy to prove the cause of mental defect, because such a long period of time must elapse before we can join up all the links in the chain, and we must make sure that both the first and last links have been studied and described by competent observers In one sense we do not know the cause, we cannot assert that that cause is always followed by mental defect in the way that a particular infectious disease always occurs after the introduction of special germs Even when we have tabulated all the causes of amentia we can think of we have to admit, not infrequently, that none of these can be blamed in a case under consideration Still, certain happenings do precede mental defect sufficiently often for us to say that they must be contributory factors Among such factors Dr Tredgold has put impairment of the germ plasm first I agree with him, as also in his statement that there is no proof yet of inheritance of amentia along Mendelian lines, although sometimes we find records which indicate that occasionally such inheritance does seem to conform to the laws governing a Mendelian recessive character I refer to family records in which there has been no defect till one of the parents has died, and the other has married again and produced a family in which mental defect occurs in the proportion of one in four, a happening which can be explained by the fact that the mate who died carried no mental defect in the germ cells, while both the other parents were carriers On the other hand my experience has often been that it is insanity which precedes amentia more often than amentia itself This confirms Dr Tredgold's idea that mental defect is not a unit character All the same I am sure that segregation will act favourably in reducing the number of defectives, though the process must be a very slow one if it is the only means we employ we must aim at hygiene and social betterment as well The remarks made by the opener about birth control are very appropriate those who advocate birth control often seem to have a limited outlook not realizing its far-reaching effects, and the fact that it is involved in many other social and national problems When the advocates of indiscriminate birth control say that it must be practised first by the intelligent members of the community, and that later the more degenerate and even the feeble minded will follow suit—and I have heard more

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In conclusion, I would like to emphasize the fact that while mental deficiency is a medical, it is also a social problem of the utmost importance For not only are defectives non-efficient, and in many instances antisocial, members of the State, but, as we have seen, the condition is one which is closely related to many other forms of subnormality, instability, and defective durability of mind When we regard the important part which mind is called upon to play in a civilized community, and when we consider that it is in this direction that the further evolution of man must take place, the significance of this is obvious and prevention becomes a matter of the most urgent necessity The application of such knowledge as we have at present would, to a certain extent, help towards this end, but it is clear that on many points our knowledge is still very defective, and it cannot be doubted that it would be greatly to the benefit of the nation and the race if provision were made for scientific research into this question

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I shall not attempt to follow the opener of this discussion in his biological speculations, as, frankly, I do not fully understand them, but I shall deal with the subject from a purely clinical point of view We are all agreed that mental deficiency is not a disease but a symptom, and that some classification of its varieties is a necessary preliminary to a discussion of its prevention Dr Tredgold has proposed

a division into primary and secondary forms but this does not carry us very far, and it is difficult to see why mongolism is regarded as secondary The classification I have used in my own cases is the ordinary one employed by clinicians and is based partly on the physical appearance of the child and partly on the presence of other signs and symptoms such as paralysis or fits I have selected only cases seen in private practice, as the family history is more trustworthy in such cases than in those seen in hospitals and of 150 consecutive cases I have placed 35 per cent as mongols, 2 per cent as microcephalics paralytic epileptic cases and cretins each make up 6 per cent whilst the remaining 45 per cent present no distinguishing features, except the presence of the mental defect and have therefore been classed as cases of simple primary amentia It will be noted that the last named cases and the mongols together make up 80 per cent of the total and it is evident that if we wish to make any serious inroad on the mass of mental deficiency in the country we must concentrate our attention on these two classes

(1) *Simple Primary Amentia*.—Dr Tredgold regards this as due to a "diminished developmental potentiality of the cerebral neuroblasts," which arises as a variation and is inherited and transmissible, but he also says that the devitalization of the germ plasm, which results in the developmental impairment, may be brought about by adverse influences in the environment, using that term in its widest sense Let us examine these two propositions As proof of the inheritance of mental deficiency Dr Tredgold says that he finds a neuropathic strain in the families from which such children come But we all have a neuropathic inheritance—all of us, at any rate, who are worth anything—and for my own part I have not been able to find that the family history in my cases of *mental deficiency* has been any worse in this respect than that of the average normal child The fact that it is quite exceptional to find more than one mentally defective child in a family is also evidence against heredity having much to do with it

I believe that the evidence for environmental influences acting on the germ plasm is equally unsatisfactory As examples of such possible influences Dr Tredgold is obliged to drag in our old friends 'toxins' and "disturbance of the endocrine balance" whilst Dr Pritchard suggests those equally overworked conceptions "vitamin defect' in the mother's diet or the consumption of proteins of low biological value" These are the refuges of the etiologically destitute As a matter of fact, I have not in my own cases been able to find anything wrong with the health of the mother during her pregnancy, her diet has been like that of anyone else, and in at least one third of them she has afterwards *produced one or more perfectly normal children*

I have myself no theory of the genesis of primary amentia to offer but there is one clinical fact which must mean something and it is this, that in two-thirds of the cases the child was the first born in the family, and often it was premature as well The Scottish poet said with more clinical than scientific probability that Nature first "tried her prentice hand on man and then she made the lasses" and it would almost seem as if in some families she tried her prentice hand on an amentia before making a normal child This, however, does not help us at all in the prevention of primary amentia—unless, indeed we are prepared to imitate Herod and kill off all the first born

(2) *Mongolism*.—There is one striking clinical fact about this form of mental deficiency which has not been mentioned in the discussion, and it is that in 75 per cent of the cases the mother has been 35 years of age or upwards at the time of the child's birth this was so, at least in my series and others have published very similar statistics What the bearing of this fact is on the pathogeny of the condition it is difficult to say, but it has been suggested that it indicates some connexion between exhaustion of the reproductive function and the production of a mongol, there being perhaps an arrest of cerebral development at an early stage Here, again we are not helped in any attempt at prevention, for although one quarter of the mass of mental deficiency would disappear if no woman over 35 had a child, yet no one would suggest that such an enactment is practical politics

Compared with the two that we have considered, the other varieties of mental deficiency comprise so few cases that even if we knew any way of preventing them the effect on the problem as a whole would be almost negligible In any case the only class that offers any scope for prevention is that which includes the cases resulting from injury to the head at birth At a liberal estimate these do not exceed 10 per cent of all defectives, but undoubtedly greater antenatal care and better obstetrics might lessen their number Syphilis as a factor in the production of mental deficiency is also negligible Dr John Thomson found it present in only 29 out of 952 cases and it is doubtful if even then it was more than a concomitant

To sum up, then I regard mental deficiency as arising in most cases as an unfavourable variation which is not more inherited than, say, hare lip I agree with Dr Tredgold that sterilization of the mentally defective is no solution of the problem of prevention, although I am entirely in favour of *segregation* I believe, however, that even if all defectives are segregated each generation of average stock will still produce its quota of them, just as it does of *individuals* of exceptional ability, and that there is no more likelihood of our being able to prevent this than of our being able to prevent supposing we wished to, the occasional birth of a man of genius *I am aware that this may seem to some a pessimistic conclusion, but I confess* I have little sympathy with that sort of optimism which supposes that we have only got to spend enough on 'research' or pass a sufficient number of Acts of Parliament in order to abolish all human ills I hold rather with that robust realist Mrs Sairey Gamp that we were "born into a vale—and must take the consequences of such a situation"

W A POTTS M A M D
Medical Officer Birmingham Mental Deficiency Act Committee

As Dr Tredgold has said, we must first think of causation when we do so we find ourselves in a great difficulty It is not easy to prove the cause of mental defect, because such a long period of time must elapse before we can join up all the links in the chain, and we must make sure that both the first and last links have been studied and described by competent observers In one sense we do not know the cause, we cannot assert that that cause is always followed by mental defect in the way that a particular infectious disease always occurs after the introduction of special germs Even when we have tabulated all the causes of amentia we can think of we have to admit not infrequently, that none of these can be blamed in a case under consideration Still, certain happenings do precede mental defect sufficiently often for us to say that they must be contributory factors Among such factors Dr Tredgold has put impairment of the germ plasm first I agree with him as also in his statement that there is no proof yet of inheritance of amentia along Mendelian lines, although sometimes we find records which indicate that occasionally such inheritance does seem to conform to the laws governing a Mendelian recessive character I refer to family records in which there has been no defect till one of the parents has died and the other has married again and produced a family in which mental defect occurs in the proportion of one in four a happening which can be explained by the fact that the mate who died carried no mental defect in the germ cells while both the other parents were carriers On the other hand my experience has often been that it is in unity which precedes amentia more often than amentia itself This confirms Dr Tredgold's idea that mental defect is not a unit character All the same I am sure that segregation will act favourably in reducing the number of defectives, though the process must be a very slow one if it is the only means we employ we must aim at hygiene and social betterment as well The remarks made by the opener about birth control are very appropriate those who advocate birth control often seem to have a limited outlook not realizing its far-reaching effects, and the fact that it is involved in many other social and national problems When the advocates of indiscriminate birth control say that it must be practised first by the intelligent members of the community, and that later the more degenerate and even the feeble-minded will follow suit—and I have heard more

them one advocat of birth control say that—they make themselves ridiculous

In spite of all the difficulties, however, we need not despair, as the opener has said, the environment must tell Here I would emphasize three unfavourable factors Last, toxic infection in pregnancy Drs Orr and Rows have shown how dangerous some infections are, and have shown that even a mild infection of the pregnant mother may have serious consequences hence the importance of the ante-natal clinic A difficulty in prevention arises from the fact that the most dangerous time is probably the first six weeks of pregnancy, before the adrenal secretion of the foetus is formed To deal with this, all young married women must be taught how important sound health is, pyorrhoea, in particular, must be eliminated Secondly, Professor MacBride, after first drawing attention to the frequent and extraordinary abnormalities produced in gold fish by bad hygiene, and lack of oxygen in particular, has stated how injurious rapidly repeated pregnancies are on the later offspring The careful pictorial and other complete records made by Dr Mark Jansen of families where the children rapidly succeed one mother leave no doubt as to the injurious effects Many records I have collected myself corroborate this Thirdly, I would confirm what Dr Tredgold has said with regard to the advantages we may expect from the better training that is now being arranged for medical students in obstetric work Dr Fairley Holland's epoch-making investigation in connexion with stillbirth has an important bearing on this matter He established the fact that the commonest cause of stillbirth is not syphilis, as has often been suggested, but injury to the head during delivery in a breech case or from the forceps in a vertex The injuries he found most frequently were not associated with any external sign, but consisted in tears of the falx cerebri and tentorium cerebelli, often associated with internal haemorrhages It is only reasonable to suppose that in some cases of such injury where death does not supervene the mental impairment may yet be serious This supposition is confirmed by reference to the records of a group of mental defectives, in which I found that as many as 20 per cent were the first-born of the family It is a matter of common knowledge that the first labour is often the most difficult, and that if special preventive obstetric treatment is carried out subsequently it is largely because the first time was such an ordeal Do not think I blame the obstetric forceps themselves used wisely they often prevent disaster It is the unskilful use of them, or the relying on them in a difficult case where induction of labour or a Caesarean section would have been the right course Encephalitis lethargica is undoubtedly a cause of secondary amentia though not a common one It must be taken seriously and every possible remedy employed including influenza vaccines which have seemed to me and to several others to be useful in spite of the fact that the virus is not the influenza germ

GENERAL DISCUSSION

Dr BERNARD MYERS (London) said that since mental deficiency was due to causes either innate in the germ plasm in the primary cases, or to environmental influences upon the embryo or foetus during gestation or the child after birth in the secondary cases, they must, where possible, stop the cause from acting if they wished to prevent the occurrence of this condition From the primary amentia point of view they should endeavour to influence public opinion, and especially those people immediately concerned, so that ments did not marry, more particularly those more seriously afflicted and those with a neuropathic inheritance Segregation was much more likely to help than sterilization the splendid success of the former method at Darenth Colony was full of hope Not only was the propagation of the species prevented, but the lives of those afflicted were made happy by suitable practical training, medical supervision, and care amid delightful surroundings, while the chances of them doing harm to the ordinary members of the community or vice versa, or, on the other hand, harming themselves, were greatly diminished Further, they were spared competing in the battle of life with normal members of society Men or women suffering from alcoholism, syphilis, active tuberculosis, lead poisoning, etc, should also not marry, since the effect of these upon the germ plasm was not unlikely to be injurious, and imentia might result

During pregnancy a woman should be placed in the best possible circumstances for preserving her health She should be properly housed, clothed, and fed, and her life made reasonably happy She ought to be kept away from all sources of infection lest the latter affect her unborn child Alcoholic beverages should be avoided If a victim of syphilis, efficient treatment should be immediately given in her own interest and to prevent the child being born syphilitic The treatment should be continued after parturition for as long as might be necessary During parturition any unnecessary manipulations should obviously be avoided, and head presentations should be maintained in preference to breech where possible From birth onwards every precaution should be taken to protect the child from polio-encephalitis, cerebro-spinal fever, encephalitis lethargica, etc, lest mental deficiency ensue Children should be brought up sensibly so as to bring out the best qualities and weed out undesirable ones The child must learn from a very early age to control itself and its actions No type of child needed more care and wisdom in upbringing than the nemotic, since so many of that type were potential hysterics, and not a few suffered from convulsions or, perhaps, epilepsy If they were efficiently brought up the result was excellent, but if not the child might become a nuisance to society and a potential father or mother of the mentally unfit Unfortunately many of the parents (nearly all the mothers) of nemotic children were themselves nemotic, and a new and suitable environment was called for temporarily in many instances to obtain the best results

Dr R L LANGDON-DOWN (*London*) thought that Goddard's work on the Mendelian theory of the propagation of mental deficiency was quite unproved He considered that segregation of mental defectives was much better than sterilization

Dr R M MARSHALL did not think the "neuropathic diathesis" was inherited on Mendelian principles, and he did not agree that it was likely to end in gross mental deficiency There was very little hope of improving the present condition of affairs

Dr C PAGET LAPAGE (*Manchester*) said that in his opinion there was no distinct gap in mental endowment the feeble-minded was different from the backward child, but the difference was not entirely of the nature of a distinct heredity change The dividing line was very narrow and transition might be very easy in some cases It was surprising how the child could change in a few weeks or months after encephalitis lethargica But still the influence of stock was very great, and under the best conditions in-breeding, and unions with bad stock, would sooner or later bring disaster He had not found much evidence of devitalizing factors having an effect, cases often occurred with every possible devitalizing factor, but without harm to the mental outfit of the offspring Again, the so-called neuropathic parent was often not a true neuropath, but a parent rendered abnormal by toxic influences, metabolic or infective Devitalization, therefore, was a very doubtful factor He preferred segregation to sterilization Recent experience had shown that polio-encephalitis (which gave meningitic symptoms) was often the cause of those cases which were once included in statistics as meningitis cases Mongols were very common, and in hospital many infant mongols were seen who never reached school age The condition was quite evident at birth, and the cause was to be looked for at or before conception Endocrine treatment must be given to the parent

In his reply Dr TREDGOLD did not agree that mental deficiency was due to pure chance He thought there was clear evidence that toxic influences produced changes in the germ plasm, and he considered that money devoted to the remedy of mental deficiency in children was well spent Many such children had improved so greatly that they could earn their own living under supervision

Memoranda:

MEDICAL, SURGICAL, OBSTETRICAL

CASE OF OTITIC CEREBRO-SPINAL MENINGITIS RECOVERY

THERE have been lately reports by Davis,[1] Jenkins, Martin,[2] Aslev Layton,[3] and Jobson of cases of otitic *meningitis* which recovered after various operative procedures In only three cases (Davis, Jobson, however had organisms been cultured from the cerebro-spinal fluid The following is worth recording, since recovery ensued without treatment after organisms had been grown from the cerebro spinal fluid

A boy aged 9 underwent Schwartze's operation on the left side in December 1922 at the Victoria Hospital for Children He was readmitted end on May 1st 1923 the old incision was reopened and a radical mastoid operation performed Extensive disease of the bone was found with involvement of the roof of the tympanum The diseased bone was removed draina e established through the external auditory meatus and the posterior wound closed

The wound behind the ear broke down and discharged On May 23rd there was still considerable discharge from the meatus and from the wound On May 24th over three weeks after the operation the patient vomited after his midday meal and complained of severe headache he continued to vomit all the afternoon and his temperature rose to 101 4° F

On May 25th there was slight rigidity of the neck and slightly increased tone in the hamstrings lumbar puncture yielded a slightly turbid fluid under increased pressure This was examined by Dr Stanley Ward who reported as follows A clear colourless fluid with deposit of pus Many of the cells are lymphocytes A few diplococci are seen In cultures pneumococci alone grew

The temperature that evening was 99 8° F The next day the temperature was not raised On May 27th the patient was sitting up and playing with toys and there was no headache On May 28th he had severe headache again after vomiting once during the night this passed off rapidly during the morning On May 30th he was noted as quite well

On June 19th on getting him up an ataxic gait was noticed He had a tendency to fall to the left and the right shoulder was rotated forwards By June 28th 1923 he could walk steadily

When seen in June, 1924 he was quite well, attending school and apparently normal in all respects

W FREDDY FEDDEN MS, FRCS
Surgeon St George's Hospital and the Victoria Hospital for Children
G M KENDALL MB MRCP,
Late Resident Medical Officer Victoria Hospital for Children

REFERENCE

[1] Davis *Journ Prev Med* xv 4 November 10th 1921 Jenkins *Ibid* xv 8 February 17th 1922 [2] Davis *Ibid* xv 3 March 17th 1922 [2] Martin *Lancet* March 16th 1923 [3] Aslev *Ibid* May 12th 1923 [3] Layton *Journ Prev Med* xvii 4 November 3rd 1923 Jobson *Ibid* xvii 5 December 8th 1923

VAGINAL OCCLUSION URINARY CALCULUS CAESAREAN SECTION

THE following case seems worthy of publication because of its general interest

On April 29th 1924 I was called to visit an East Indian woman who had been in labour for twelve hours She was conveyed to the company's hospital I found that there was absolute occlusion of the upper two-thirds of the vaginal canal due to a dense fibrous band It was impossible to make out the cervix and I could with great difficulty feel the apparent foetal head behind the adhesion On the anterior vaginal wall and in front of the adhesion there was a hard calcareous mass which on removal proved to be a phosphatic stone it weighed 3 292 grams and measured in inches 1 115 by 0 907 by 0 478 On its removal urine trickled into the vagina proving the presence of a fistula This fibrous obstruction I take it was due to the chronic irritation resulting from the fistula The patient was well nourished and was having strong labour pains Owing to the condition of the vagina I considered it justifiable to propose Caesarean operation this was agreed to

The anaesthetic (chloroform with ether) was administered by Dr Murray and Dr Doyle assisted me in the operation The abdomen was opened in the middle line The uterus was exposed and incised on its right anterior margin The placenta was anterior there was no difficulty in delivering this and a full term foetal child was delivered alive Owing to the position of the placenta there was considerable haemorrhage but this was controlled with hot saline and pituitrin All clots were removed and the lower abdominal cavity irrigated with saline The incision in the uterus was sutured with interrupted silk and the abdomen closed in the orthodox manner The patient did well up to the twelfth day when she suddenly became maniacal and refused absolutely to take any nourishment she died on the sixteenth day after the operation The child is alive and healthy

HENRY KING FOSTER, LRCS Edin
San Fernando Trinidad

Reviews.

THE MEDICAL HISTORY OF NAPOLEON

Dr CABANES must be congratulated upon the public ation of his book, *Le Cheval de l'Empereur*,[1] for it contains a complete and minute study of the medical history of the great Napoleon To this subject Dr Cabanes has brought his well known industry and skill in unravelling the *maze* of intricacies which surround the study of the illnesses and constitutional peculiarities of the emperor The result is an excellent work, which may be safely consulted by those multitudes of readers who are always fascinated by anything which deals with the most representative man of modern times From his birth to the tragic end of his stupendous career Dr Cabanes has traced and recorded all Napoleon's indispositions great or small, and when commenting he has shown a praiseworthy restraint, which adds value to his work

Those who have devoted time and attention to the medical side of Napoleon have found too often that it is *almost impossible to approach* the subject without becoming a partisan, for the career of Napoleon, although finished now for more than a century, still has the power to rouse all *the fiercest passions* that dominate mankind Even when we study the last illness and death of Napoleon we find ourselves whirled into the vortex of the storm of contention that raged round his death bed in St Helena Judgement become warped, passions are aroused and we take our places on one side or the other of the contestants engaged in the strife *But Dr Cabanes has been able in* large measure to divest himself of this partisanship, and has maintained with success that spirit of cold, critical judgement which makes his work so valuable *In common* with other workers in the field, he has a theory to account for the maladies of Napoleon, which culminated in death from cancer of the pylorus in St Helena, on May 5th 1821 at 5 49 p m He believes that the varying phases of Napoleon's illness may be traced to the influence of an arthritic diathesis,' and he adduces evidence in favour of that supposition He also calls attention to the unusual occurrence of both cancer and tuberculosis in the same subject conditions which were found at the *post-mortem* examination of the emperor

But theories are not so important as facts in connexion with Napoleon's medical history and in this book can be found a mass of facts of the greatest use to the student of the subject For the most part, Dr Cabanes has used documentary evidence of an unimpeachable kind in support of his contentions, but when he comes to consider the last phase of Napoleon's illness—in St Helena—it would have been better to have quoted the first-hand evidence to be found in the "Lowe Papers" in the British Museum and the documents in the Record Office it only as a counterbalance to the statements of Montholon and other *unswerving adherents to the cause of Napoleon at St Helena* But, in spite of this the accusations and recriminations which were indulged in by the parties gathered around that death bed are treated by Dr Cabanes *with sobriety* and judgement

It is too much to expect that any new facts will be found concerning the illness of Napoleon at St Helena, for the ground has been thoroughly explored by students in France and England But Dr Cabanes has contributed in this book one very important piece of documentary evidence which goes far to set at rest a controversy which arose about ten years ago concerning the authenticity of the two pieces of intestine in the Museum of the Royal College of Surgeons of England These pieces of intestine were given by O'Meara to Sir Astley Cooper as coming from the body of Napoleon But in a footnote on page 400, Dr Cabanes quotes a letter of O Meara to Sir Astley Cooper, in which O Meara states in unequivocal terms that he has grave doubts concerning the authenticity of these specimens It has never been stated who gave the specimens to O Meara, but if he had doubts as to their origin it may well be asked what authority exists for asserting that they came from the body of Napoleon

[1] *Le Cheval de l'Empereur* Par le Docteur Cabanes Paris Albin Michel 1924 (Extra fcap 8 pp and illustrations Fr 15)

CANCER RESEARCH

THE Cancer Research Committee of the Middlesex Hospital has published a survey of the various contributions to literature issued from the special research laboratories during the twenty-four years they have been in existence.[2] This survey gives in brief and readable form an idea of the many separate pieces of research undertaken by members of the staff. The hospital is to be congratulated on its policy of encouraging its junior members to spend a year or two in laboratory investigations before entering on the more practical aspects of medicine, and the success which many of these workers have achieved in after years may, in no small measure, be attributed to the methods of disciplined thought acquired or strengthened during the time spent in the laboratory. A bibliographical index of publications at the end of the book shows us that no fewer than 240 papers have emanated from the hospital since the laboratory was founded—a testimony to the industry of its staff. To most aspects of the cancer problem something has been contributed, and the very diversity of the subjects renders it difficult to give a connected story of the work done, but the editor has been familiar with the observations and aims of his former colleagues, and succeeds surprisingly well in his effort. Naturally no critical estimate of the value of the contributions has been attempted, nor is reference made to the progress in cancer research that has taken place elsewhere. It is a book which will be welcomed by old Middlesex men who are keen on the prestige of their school, and may be perused with interest by others who desire to learn what the Middlesex Hospital Cancer Research Laboratories have contributed to the growing knowledge of malignant disease.

SOME OPINIONS ON CANCER

THERE is a modern variation of Carlyle's famous sarcasm to the effect that the population of this country is forty millions, most of whom have a theory about cancer. Judging from the correspondence that breaks out occasionally in the lay press, and from the books and pamphlets published, it is the one subject in medicine on which a man who has no special knowledge, and who would not know a cancer if he saw one, feels prompted to expound his views to the world. Most of these writers are firmly convinced that cancer is the result of something we eat or drink, and though each has his own particular bogy, they are all sure that if we could shake off the shackles of civilization and get back to nature—that is, to the habits of the simple savage or the wild animal, to whom alone the secrets of health are revealed—"this terrible scourge which is increasing by leaps and bounds in civilized communities," "this mystery which baffles the medical profession" (and all the other clichés), would cease to afflict us.

MR J. ELLIS BARKER, a journalist who during the last twenty years or more has made many contributions to the English periodical press and published a number of books dealing chiefly with free trade and problems affecting the stability of the British Empire, has now issued a volume in which he sets out the conclusions he has reached with regard to the cause and prevention of cancer. The son, as he tells us, of a German physician, he has, he states, always been interested in medicine, and, having read all that has been written on cancer (a fairly tall order), besides experiencing in his own person the discomforts of an advanced precancerous condition (whatever that may mean), he feels called upon to deliver his thoughts to the public. It is claimed by his sponsor that it is an advantage that Mr Ellis Barker is not a member of the medical profession, for "medical training might have deprived him of that independence of opinion which he possesses to such a remarkable degree."

To Mr Ellis Barker's book, which is entitled *Cancer How it is Caused and How it can be Prevented*,[3] Sir W. Arbuthnot Lane has contributed a preface—four and a half pages of superlative praise—and the reader would be very guileless if he did not thus early harbour a suspicion that he was going to be treated to a disquisition on intestinal stasis. At any rate, Mr Ellis Barker shows that he is familiar with the writings and arguments of Sir W. Arbuthnot Lane, who has read the manuscript of the book and given the author instruction and advice.

Mr Barker's great discovery, after long and profound reflection, is that carcinoma (sarcoma for some reason is expressly excluded) is caused by intestinal stasis—or constipation, as the vulgar would say—and this in turn is due to chronic vitamin starvation. Or perhaps it may be the other way about: the author is not quite sure. And it is all due to our dreadful civilization. Uncivilized tribes do not have cancer, at any rate nothing to speak of, and if certain men engaged in cancer research have troubled to find evidence to the contrary that is due to their perversity. The lower animals do not suffer from cancer, with the possible exception of pet dogs, which, as everybody knows, copy the dietetic and constipated habits of their masters. Savages do not suffer from intestinal stasis, for their food is never deficient in vitamins, nor has it been tampered with by the chemists and other food-fakers. This, and much more of it, is "conclusively proved by the overwhelming evidence" of many 'distinguished," "famous," or "eminent" men, whose writings are quoted at length. Mr Barker, of course, cannot be expected to discriminate between "authorities" or to assess the value of their evidence. Perhaps it would be unkind to suggest that a man may be a very eminent plumber without necessarily being a recognized authority on metallurgy. All Mr Ellis Barker has to say we have heard before, though not at such wearisome length.

OPHTHALMOLOGY AND GENERAL MEDICINE

IN dealing with ocular manifestations in general disease the conditions can be described in one of two ways: the diseases may be taken in order and the various eye disorders met with grouped under each, or the various parts of the eye itself may be dealt with in succession and the ways in which each part may be affected in different diseases recounted. In a volume recently published by MM. Terrien and Cousin[4] both methods have to a certain extent been followed. The book consists of an introduction dealing with the anatomy and physiology of the eye, and three sections. The first section deals with visual acuity, the field of vision, colour perception, binocular vision, the motility of the eye, paralysis of the lids and muscles, squint, ties, and nystagmus. The second section describes the semeiological examination of the eye and its annexes, and the third part the ocular manifestations of general disease.

On the whole the work is very well done and up to date, as evidenced by the good account of encephalitis lethargica, which occupies about four and a half pages, the index, also, is quite full—more complete than is sometimes the case in French books. We are not very pleased with some of the illustrations: the picture of Hutchinson's teeth has been printed upside down, and some of the pictures really show very little, the figure of radio dialysis displays the lesion at the base of the iris but does not indicate the D-shaped distortion of the pupil, and many of the actual photographs of ocular conditions have come out badly.

We do not know whether there is any other book of a similar kind in the French tongue, if not, we foretell considerable popularity for it in France, but it is doubtful whether any great demand will arise in this country, in view of the excellent works of like nature we already possess.

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[2] *Cancer Research at the Middlesex Hospital 1900-1923: Retrospect and Prospect.* Compiled by members of the Staff of the Hospital and Medical School and issued by the authority of the Cancer and General Research Committee. Edited by W. Sampson Handley, M.S., F.R.C.S. London: Published for the Middlesex Hospital Press by John Murray. 1924. (Dem. 8vo, pp. ix + 90, 9 plates, 3s. 6d. net.)

[3] *Cancer: How it is Caused and How it can be Prevented.* By J. Ellis Barker. With an introduction by Sir W. Arbuthnot Lane, Bt., C.B., M.S., F.R.C.S. London: John Murray. 1924. (Cr. 8vo, pp. 432. 7s. 6d. net.)

[4] *Affections de l'œil en Médecine générale: Diagnostic et Traitement.* Par L. Terrien et C. Cousin. Paris: Masson et Cie. 1924. (Roy. 8vo, pp. viii + 510, 128 figures. Fr. 40.)

CHEMICAL EXAMINATION OF DUODENAL CONTENTS

In his book on the duodenal sound[5] Max Linhorn gives a brief historical sketch of the precursors of the instrument with which his name is associated The invention of the stomach pump was the starting point When its value in the analysis of the gastric secretion was recognized, efforts were made to extend the field of investigation further down the alimentary tract In 1889 Boas reported that by introducing the gastric sound into the empty stomach and massaging the liver he had succeeded in obtaining pancreatic secretion In 1897 Hemmeter claimed to have invented an apparatus by which a tube could be introduced into the duodenum This consisted of a rubber bag of the shape and size of the stomach and furnished with a tube in its upper margin, along which a sound could be pushed, when the bag was distended within the stomach its distal extremity was assumed to take up a suitable position enabling the sound to enter the duodenum A year later Kuhn designed a tube which appears to have displaced Hemmeter's instrument This contained a metal spiral, which gave it a certain degree of stiffness and resilience, and was tentatively pushed to and fro within the stomach until the duodenum was entered

No further advance, it is said, was made for several years, and Linhorn's instrument was developed from a different standpoint Desiring to study the motor functions of the bowel, he administered porcelain drops to his patients, recovering them from the stools by means of a sieve Extending his researches to the digestive functions, he tied fragments of food to the drops and noted the results, and, as a further elaboration of the method anchored the drops to varying lengths of string by which they could be drawn up again for examination To prove that the duodenum had been entered a small bag was attached to the porcelain drop, containing a substance to indicate the reaction of the fluid Proof having thus been obtained that the duodenum could be safely reached, the porcelain drop was replaced by a little bucket, by means of which the duodenal contents could be withdrawn Wishing to probe still further down the canal, Linhorn used the thread with its porcelain drop as a guide for a catheter passed into the jejunum, this, however, proved unpleasant to the patient, and a return was made to the principle of avoiding artificial pushing and allowing the stomach to act as the motor in the passage of the instrument Finally, a small, perforated metal capsule was designed, which, attached to a rubber tube one metre in length was swallowed by the patient The instrument, its application and uses, is fully described in Max Linhorn's book together with its modification for intestinal research, in which the tube is extended to a length of twenty feet

PUERPERAL ECLAMPSIA

The fact that practically every organ in the body of the pregnant woman suffering from eclampsia shows pathological changes, as well as the rather variable nature of the changes in any one organ, has been one of the baffling elements in the elucidation of the "disease of theories" It also accounts in some measure for the now enormous and unwieldy literature bearing upon the subject It has seemed to Dr Hinselmann of Bonn that progress in the research into this fell disease would be expedited if the task of inquiry were distributed amongst individuals with special knowledge of different branches of clinical work or physiology, and of pathology The obstetrician alone cannot be expected to solve the problem of a condition which affects the body far beyond the confines of the reproductive organs The author has therefore collected a band of colleagues who are experts in the different aspects of the problem, and set each to write upon his own particular aspect of the disease The result is a large volume, *Die Eklampsie*,[6] which aims at presenting a summary of the work done up to the present time as a basis for and a stimulus to further research, rather than at reaching any conclusions Thus, after a general introductory article by the editor, there is a series of special sections dealing particularly with the kidneys, with the liver, the blood and lymph, the peripheral circulation, the biochemistry of eclampsia, the eye changes, the central nervous system, the placenta, and the child in eclamptic pregnancies The volume concludes with several sections on treatment, to which Professor Stroganoff contributes an article descriptive of his well known method

The book certainly provides a most useful groundwork for future research, and this should recommend it to all who are studying the problem, were it not that, as so often happens with German books, British, American, and French literature and work are not adequately represented or acknowledged Some of the pathological articles are well illustrated in colour, and the bibliographies, although far from being exhaustive, will be found useful

OPERATIVE SURGERY

Probably the largest treatise ever written on operative surgery is that projected by Dr W S Bickham of New York[7] We gather that there are to be six volumes, and that the complete work will contain between 5,500 and 6,000 pages and over 6,000 illustrations We have now before us three volumes, the first reached us at the end of February and the third at the end of May If this rate is maintained the whole should be complete before the end of this year, as apparently the last volume is to consist of a general index each volume, however, is indexed separately The author would appear to have been engaged for some ten years in the task, which he describes as "seemingly endless," of compiling these volumes The result reminds us in its bulk at least, of the extraordinary labours of mediæval scholars

In the preface he outlines the object he had in view, and recognizes that, dealing as it does primarily with operative technique, it has to with only one of the conditions that must be considered in the safe conduct of the patient to complete recovery It is, as was to be expected from its bulk, a very comprehensive treatise, covering all the operations of general and special surgery rehearsing details and mentioning all the steps in an operation and the preparation of the patient to his after-care and general management The titles given to each operative procedure are as full as the author has been able to make them, for instance, McBurney's operation is entitled 'Appendicectomy, by the intramuscular method, McBurney," thus indicating what is done to the appendix, how that organ is approached, and the surgeon whose method is described The account of all groups of operations is preceded by a short introduction under the headings "surgical anatomy," "landmarks," "general surgical considerations" Each individual operation is likewise discussed under a series of subsections—namely, (*a*) description of the operation (*b*) preparation of the patient and the selection of the site of operation, (*c*) the position of the patient, the surgeon, and his assistants, (*d*) landmarks for operation (*e*) the incision and (*f*) the subsequent steps Finally we are presented with comments

The first volume consists of two parts the first discusses the general procedures employed in operation, including the choice of an anæsthetic, and the second deals with general operative surgery—principles of skin grafting, plastic surgery, transplantations of tissues and organs, methods of performing amputations and disarticulations, the selection of artificial limbs and the methods of performing excisions and osteoplastic resections of bones and joints In the second volume are discussed operative procedures on blood vessels, lymphatics nerves bones, muscles, fasciæ, tendons, bursæ cartilages, and joints Finally, there are two large sections on the surgery of the brain and spinal cord The section on plastic surgery and the correction of deformities by injections is very fully illustrated The account of amputations and excisions is full

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[5] *Die Duodenalsonde und ihre Anwendungsfähigkeit* Von Max Linhorn M D Deutsche Uebersetzung von Lillie Oberworth Leipzig C Thieme 1924 (Demy 8vo pp viii + 151 60 figures 1 20 dols bound 1 60 l 1s)

[6] *Die Eklampsie* Herausgegeben von Hans Hinselmann Bonn Fr Friedrich Cohen 1924 (Super roy 8vo pp vi + 952 52 figures 13 plates.)

[7] *Operative Surgery* By Warren Stone Bickham New York City M D and Phar M Tulane M D Columbia F A C S Vol I II and III Philadelphia and London W B Saunders Co 1924 (Roy 8 o Vol I pp xv + 840 921 figures Vol II pp iii + 847 1 662 figures Vol III pp iv + 1091 1 240 figures 50 net per volume ix in all)

TABLE I.—STANDARD DIETS

DIETS	Milk	20% Cream	5% Vegetable	Eggs	Lean Meat	Clear Soup	Bacon	Butter	Oatcake	Dry Meal (as porridge)	White Bread	Potato	Cheese	Orange Pulp	Olive Oil	White Fish	GRAMS: Carbo-hydrates	Protein	Fat	CALORIES: G	Ratio	F A	TOTAL CALORIES
GROUP A																							
A 24	20			2	3	16		1		3	6½	4		16½		1	271·5	127·8	91·2	3b4	2·5 : 1	142	2419
A 20	20			2	2	16		¾		2	6½	4		8½		2½	226	106	76	294	2·5 : 1	117	2014
A 17	20		6½	2	3	10		¾		1½	5	3					164·25	89	76	224	2 : 1	109	1700
GROUP B																							
B 18	5½		11½	2	2½	8	2	2¾	3	1½							94·25	76·3	130·5	1b2	1 : 1	152	1866
B 15	2		16¼	2	2		1½	2½	4								78	60	106·5	124	1 : 1	124	1510
B 12	3		16½	2	1		1	2	3								64·5	46·75	89·5	102	1 : 1	102	1244
B 9	2		15	2	1		1	1	2								46·5	41·25	62	7b	1 : 1	76	909
B 7	2	1	11½	1	1		1	¾	1½								37	32·85	52·85	61	1 : 1	63	7bb
B 5		2½	13½	1				½	½							2	22	28·4	34·25	43	1 : 1	44	5l0
B 3	2	2	11½	1													15	15	20	2b	1 : 1	25	300
Starve day *	2																3	2	2				28

Tea coffee and bovril *ad lib*

If not sugar free give coffee only every two hours till urine has been free of sugar for 24 hours

GROUP C																							
Starve day *			8½														7·5	3·75		9	1 : 0·2	2	45
C 1			16½														15	7·5		19	1 : 0·2	3	90
C 3	2	2	11	1													15	15	20	26	1 : 1	25	300
C 5	2	1	16½	1	1	8		½									19	29·5	34	39	1 : 1·1	44	500
C 7	2	2	16¼	2	1	8		¾	½								25	37·75	50·5	51	1 : 1·2	62	705
C 9	2	2	18½	2	1	8		1½	¾								31·5	39·75	72	62	1 : 1·5	83	900
C 11	2	4	16½	2	1		1	1½	1								37	42·25	83·5	70	1 : 1·4	98	1114
C 13	2	4	20	2	1		1	1¾	1½								17·5	45·6	104	8b	1 : 1·4	11b	1303
C 15	2	4	20	2	1	7	1	2¼	1¾								50	50·25	122·5	91	1 : 1·5	133	1500
C 17	2	4	20	3	1	7	1	2¾	2								55	57·3	139·5	101	1 : 1·5	151	1701
C 19	2	4	20	3	1	7	1	3¼	2	½							62·75	60·5	157·25	11b	1 : 1·5	169	1908
C 20	2	4	20	3	1	7	1	3½	1¾	1							68	60·6	165·25	119	1 : 1·5	177	2010
C 21	2	3	20	3	1½	7	1	4¼	1½	1		1					70·5	64	172·5	124	1 : 1·5	185	2100
C 22	2	3	20	3	2	7	1	4	1½	1		1¼			1		73·5	68·5	181·5	130	1 : 1·5	19b	2 01
C 23	2	3	19	3	2	7	1	4	1¾	1¾		1¾			1¼		77·6	69·4	190·5	136	1 : 1·5	203	2302
C 24	2	3	16½	3	2	7	1	4	1¾	1¾		1¾			2		80·75	69·5	200	141	1 : 1·5	211	2401
C 25	2	3	16¼	3	2	7	1	4	1¾	1¾		1¾			2¼		85·75	70·75	210·5	148	1 : 1·5	222	2570
C 26	2	3	16½	3	2	7	1	4	2	1¾		2			2¾		91·25	72	220·75	155	1 : 1·5	231	2639
C 28	2	3	16½	3	2	7	1	4	2¼	1¾		2			4¼		98·75	74	238	165	1 : 1·5	248	2837

* Tea coffee and bovril *ad lib*

High Maintenance GROUP D																							
D 20	4	4	15	3	2	8	2	2¾	2¼				1				61	80·75	164·25	124	1 : 1·5	185	2045
D 21	1	4	15	3	2¼	8	2	2¾	2¼			1	1				62·5	82·75	170	127	1 : 1·5	191	2112
D 22	1	4	15	3	3	8	2	3	2¼			1½	1				6b·5	87·25	177·75	134	1 : 1·5	200	2211
D 23	4	4½	15	3	3	8	2	3	2½			1¾	1				70·5	90·75	187·25	142	1 : 1·5	210	2330
D 24	4	4½	15	3	3	8	2	3¼	2½			2	1				73·5	91·25	195·25	146	1 : 1·5	218	2416
D 25	4	4½	15	3	3	8	2	3½	2¾	½		2	1				79	92·85	204	153	1 : 1·5	225	2513
D 26	4	4½	15	3	3	8	2½	3½	2½	¾		2	1				81·5	9b	211·5	158	1 : 1·5	234	2613
D 27	4	4½	15	3	3	8	2½	3¾	2¾	¾		2	1½				84	99·75	211	163	1 : 1·5	245	2723
D 28	4	4½	13	2	2½	8	2½	4	2¾	1		2	1½		1	2	87·5	103	228	170	1 : 1·5	252	2816
D 29	4	4½	13	2	2¾	8	2¾	4	2¾	1¼		2	1½		1¼	2	92·5	104	236·5	176	1 : 1·5	260	2912
D 30	4	4½	13	2	2½	8	2½	4	2	1¾		2	1¾		2	2	95·25	105	247	180	1 : 1·5	270	3020
D 31	4	4½	13	2	2½	8	2¾	4	2¾	1½		2	1¾		2¼	2	99	106	256	18b	1 : 1·5	279	3124
D 32	4	4½	13	2	2½	8	2½	4	2¼	1¾		2	1½		2½	2	102·75	107	262	191	1 : 1·5	285	3203
D 33	4	4½	13	2	2½	8	2¾	4	2¾	1¾		2	1½		3½	2½	105·25	108	271	19b	1 : 1·5	295	3301

N.B.—The measure for olive oil is a tablespoonful. The other figures indicate ounces except in the case of eggs. Oatmeal is shown in ounces (dry weight) before being made into porridge.

makes about four tablespoonfuls of porridge. Oatcake and porridge are interchangeable in the proportion of 1 oz. oatcake = 3 tablespoonfuls porridge. White bread has a calorific value very similar to that of oatcake, and a small quantity of it may replace the oatcake from time to time. We find, however, that large amounts of oatcake can be tolerated by patients who at once show sugar when a small quantity of bread is taken.

One of the difficulties in following out the regime of balanced dieting is the presence of large quantities of fat in the higher diets. Four ounces of butter is difficult to dispose of unless sufficient solid food is provided to carry it. It is therefore convenient to serve most of the starchy food as oatcake rather than porridge. If salad oil cannot be taken butter should replace it, and the excess of this can be served with the eggs or as sauce with the meat, fish, or potato. Tea, coffee, and bovril have no calorific value, and can be taken within reason with all these diets. They are required in considerable amount on those days when the diet is extremely low.

Vegetables containing 5 per cent. carbohydrate include: Lettuce, cucumber, spinach, asparagus, rhubarb, endive, marrow, celery, cauliflowers, sprouts, watercress, sea kale, cauliflower, leeks, broccoli.

Vegetables containing 10 per cent. carbohydrate include: French beans (young), turnip, carrots, onions, green peas (canned).

After the patient has been for some time on a maintenance diet he may be taught to vary it by substituting articles selected from a suitable list, or may even build up a complete menu to a prescription of so many grams of carbohydrate, protein, and fat yielding the desired number of calories. Food values for this purpose are to be found in the food tables of Harrison and Lawrence, and many other publications.

TABLE II.—*Quantity of Carbohydrate, Protein, and Fat in 30 grams or cubic centimetres or in 1 oz.*

	Carbohydrates	Protein	Fat	Calories
Milk	1.5	1	1	19
Skim milk	1.5	1	0.03	11
Buttermilk	1.5	1	0.15	11
Whey	1.5	0.25	0.03	8
20 per cent. cream	1	1	6	62
5 per cent. vegetable	1	0.5	0	6
10 per cent. vegetable	2	0.5	0	10
Eggs, each	0	6	6	78
Lean meat	0	8	5	77
Chicken	0	8	5	77
Boiled chicken without gravy	0	8	3	59
Bacon	0	5	15	150
Lean ham	0	6	6.5	83
Butter	0	0	25	225
Oatmeal	20	5	2	113
Oatcake	15	3.75	1.5	89
Porridge	10	2.5	1	60
White bread	16	3	0.5	81
Potato	6	1	0	28
Orange pulp	3	0	0	12
Cheese (average)	0	8	11	131
Olive oil (two tablespoonfuls)	0	0	30	270
Boiled fish	0	6	0	24
Clear soup	0	0.6	0.25	5

Summary.

It is pointed out that the directions usually given for drawing up individual diets are too complicated to be universally serviceable. A carefully balanced dietary scale is submitted to serve as a basis for treatment. The methods to be followed to clear up acidosis, to get rid of glycosuria, and to test the patient's carbohydrate food tolerance are also described.

THE STATE OF THE PUBLIC HEALTH

SIR GEORGE NEWMAN'S REPORT FOR 1923

[FIRST NOTICE.]

THE annual report of the Chief Medical Officer of the Ministry of Health for 1923[1] is the fifth made under the Ministry, but is the sixty-sixth of the series begun by Sir John Simon under the Privy Council and carried on by his successors under the Local Government Board.

Sir George Newman begins by pointing out that as there is no system of registration of sickness the sources of information available in considering the state of the public health are the returns made by the Registrar-General relating to births, deaths, and infectious disease, and the data and records in respect of invalidity under the National Health Insurance Acts. The information so available is, however, supplemented by annual and special reports of medical officers of health, by the results of investigations by medical officers of the Ministry and by other Government departments interested in the physical, industrial, and social welfare of the people.

AGE AND SEX DISTRIBUTION OF THE POPULATION.

The following table is given showing the age distribution of the population of England and Wales according to the censuses of 1841, 1911, and 1921:

Age	1841			1911			1921		
	M	F	Persons	M	F	Persons	M	F	Persons
0-5	6,587	6,549	13,136	5,468	5,319	10,787	4,408	4,359	8,767
5-10	5,929	5,541	11,470	5,121	5,128	10,249	4,663	4,625	9,288
10-15	5,533	5,302	10,835	4,845	4,858	9,703	4,899	4,811	9,710
15-20	4,912	5,060	9,972	4,588	4,662	9,250	4,561	4,686	9,247
20-25	4,546	5,196	9,742	4,166	4,638	8,804	3,823	4,495	8,318
25-35	7,348	8,006	15,354	7,840	8,662	16,502	6,919	8,288	15,207
35-45	5,471	5,667	11,138	6,477	6,927	13,434	6,569	7,522	14,111
45-55	3,900	4,099	7,999	4,658	5,084	9,782	5,600	6,046	11,666
55-65	2,506	2,720	5,226	3,009	3,464	6,573	3,600	4,038	7,683
65-75	1,412	1,628	3,040	1,671	2,100	3,771	1,926	2,410	4,336
75-85	509	601	1,190	579	749	1,328	595	916	1,511
85-	83	119	202	63	114	177	66	135	201
	48,872	51,128	100,000	48,465	51,635	100,000	47,709	52,291	100,000

M = Males. F = Females.

Upon this table Sir George Newman makes the following observations:

"It will be seen that the indirect consequence of the war, in accelerating the decline of the birth rate, has been much greater than the direct effect, the destruction of young male adults. This latter consequence is brought about in (*a*) the decreased proportion of males of 15-35, who formed 16·8 per cent. of the population in 1841 and almost as many (16·6 per cent.) in 1911, but only 15·3 per cent. in 1921, (*b*) the increased proportion of females to males, 51·1 per cent. of the population in 1841, 51·6 per cent. in 1911, and 52·3 per cent. in 1921. But owing to the declining birth rate, a decline temporarily accelerated by the war, the change in the proportion of children has been much greater. In 1841, children under 5 constituted 13·2 per cent. of the population, by 1911—after rather more than thirty years of a declining birth rate—the proportion had declined to 10·7 per cent., a decrement of 2·5 per cent. In 1921 only 8·8 per cent. of the population were under 5 years of age, the decrease in these ten years was more than 78 per cent. of the whole decrease over the previous seventy years and two and a half times as great as between 1901 and 1911. The proportion of young children was only 66 per cent. of what it had been eighty years ago. On the other hand, the proportion of persons over 65 was 35 per cent. greater than in 1841. In 1921, for the first time, the first quinquennium of life did not contain a larger number of living persons than any other quinquennial group of ages. Even

[1] *The State of the Public Health.* Annual Report of the Chief Medical Officer of the Ministry of Health for the year 1923. H.M. Stationery Office. (Med. 6s.) pp. 212. Price 2s. net.)

in 1911 there were more children under 5 than persons in any other quinquennial group, but in 1921 the most populous age group was 10-15 By 1923 it was estimated that the proportion of males aged 0-5 had increased sufficiently to make this the most populous group, but the maximum for females was in the age group 15-20"

BIRTH RATE AND DEATH RATE

The number of births recorded in England and Wales in 1923 was 758,131, which was equivalent to a birth rate of 19 7 per 1,000 of population This marked a decline of 0 7 per 1,000 on the previous year, and of 5 8 as compared with 1920 The death rate was 11 6 per 1,000 persons living, or 1 2 per 1,000 lower than in the previous year, and the lowest in the history of the country In 1923 there were 21,993 fewer births and 41,994 fewer deaths than in 1922

Before 1896, although the birth rate was declining, the decline was irregular, from 1896 to 1914, the last year for which the rates of married women have been published, the decline was regular, and by extending the curve obtained from the figures for those years it has become possible to calculate the probable birth rate in succeeding years The figures down to 1921 have not yet been published, but they have been made available for the purposes of this report, and it is found that the calculated rate per 1,000 married women aged 15 to 45 for 1921 was 172 6, the actual figure was 176 3 It is estimated that France in 1910-11 (a year in which deaths somewhat exceeded births) had a fertility of 133 per 1,000 married women aged 15 to 45 It is considered that this country may expect to reach that point in fourteen or fifteen years if the present trend continues, but even so the population would not be stationary, as our death rate is a good deal lower than that of France in 1910-11 In England and Wales in 1921, although the birth rate in terms of married women was 29 per cent smaller than in 1896, the excess of births over deaths was slightly larger—390,185 in 1921, and 388,604 in 1896 It is therefore considered unlikely that the population of England and Wales will become stationary in this generation

Judged by its rate of mortality 1923 was the healthiest year ever known in this country, and such statistics as are available of sickness seem to point in the same direction Some part of this favourable result is to be attributed to escape from certain infectious diseases, such as influenza, for which immunity neither the public nor the medical profession can take credit At the same time there is good evidence that the work of sanitary authorities is exerting a beneficent influence in the reduction of disease and the increase of the public health From a table in which the principal causes of death are classified it appears that the largest number of deaths due to any one of these causes was attributable to diseases of the heart next comes cancer, and next diseases of the nervous system, each of these causes was responsible for more than 10 per cent of the total number of deaths from all causes Tuberculosis comes next, then bronchitis, and then pneumonia but if diseases of the respiratory system, including pneumonia and bronchitis, be taken together, they caused more deaths than those of any other system (about 16 per cent)

Infant Mortality—As already said infantile mortality in 1923 was lower than in any preceding year A tendency to decline shown in the quinquennium 1901-5 has been accelerated in a remarkable way since 1918 A table of the infant death rate per 1,000 births registered for various age periods since 1881 shows that the reduction is affecting mainly the age period three to twelve months There has also been a fairly regular reduction in the rate for the age period from four weeks to three months, but the rate under four weeks still remains high, although there are indications that ante-natal work is beginning to have effect The fact that there has been no corresponding reduction in the number of deaths among women in childbirth, that there has in fact been little or no improvement in this respect since 1894, is one of the problems which demands and is receiving the attention of the medical profession and of the health authorities at this time

TUBERCULOSIS

Tuberculosis notifications increased slightly during 1923, this may have been due in part to the stimulus afforded by the increased provision by local authorities of residential treatment for non-pulmonary tuberculosis, and in part possibly to the circular sent out in August reminding practitioners of the statutory duty to notify cases of tuberculosis within forty-eight hours of their discovery The death rate, both for pulmonary and non-pulmonary tuberculosis, was the lowest on record This is to be associated with the fact, already mentioned, that 1923, judged by its general mortality rate, was the healthiest year ever known in this country Over 20,000 beds were available for tuberculosis patients, and on March 1st, 1924, 16,458 were occupied by patients, including 4,569 children Tuberculosis work was also being carried on in 446 dispensaries by 340 tuberculosis officers A warning is given against the tendency in several areas to conduct the tuberculosis dispensary on the lines of an out-patient department of a general hospital, as if the only object was the treatment of individuals This conception seems to ignore the wider function of the dispensary as the co-ordinating centre in the struggle against a national menace In the case of insured persons the tuberculosis officer should consider himself rather as a consultant than as the person primarily responsible for routine treatment, and close co-operation with the insurance practitioner is urged A circular dealing with this latter point was issued in December, 1923, and was noted in our columns on January 5th, 1924 (SUPPLEMENT, p 26) In June, 1923, another circular had dealt with closer co-operation between local authorities and boards of guardians in London, in order to make the services of the tuberculosis officer available in Poor Law cases A third circular in December, 1923, urged co-ordination between the medical officer of health of urban and rural districts and the county authorities Such co-operation is necessary if a comprehensive preventive attack is to be made on the disease

The Ministry conducted an inquiry during the year into the cost of residential institutions, and published a report of the returns in December, 1923 (Memorandum 87/T), noted in our columns on December 22nd (p 1239) Wide differences in expenditure were brought to light, and therefore it is again recommended that this memorandum should be studied carefully by the managers of various institutions, so that still greater economy may be secured without impairing efficiency Sir George Newman considers that pessimism as to the value of sanatorium treatment is not justified, inasmuch as information published in various countries indicates that this form of treatment has assisted in the cure of a considerable number of cases of tuberculosis, and in lengthening many useful lives He admits, however, that the duration of treatment should be extended, and that early diagnosis is essential if the maximum good is to be obtained Extension of treatment involves occupational training in a sanatorium, and the report contains an interesting note of the appointment by the Leicester City Council of a social welfare officer at its sanatorium, whose duty it is to provide work for the patients and to organize their recreations The Ministry approved this appointment as an experiment for one year the scheme, it is said, has worked well Vocational training, village settlements, and after-care measures are also considered in the report Up to March 31st, 1924, 370 men had been discharged after completing satisfactorily their courses of training, and 438 men were still receiving instruction Elementary tuition in business methods was also provided so as to enable the men to set up their own businesses and so as to find a remunerative outlet for their labour The report concludes with an account of various forms of treatment and diagnosis, including artificial pneumothorax, x rays, heliotherapy, bacteriological and serological diagnosis, heliodiathermy, and vaccine treatment The value of Professor Dreyer's diaphyte antigen is being tested, and though it is already clear that it is not effective as a rapid curative agent in well established pulmonary tuberculosis, yet there is reason to believe that it is very beneficial in certain types of tuberculous infection

British Medical Journal.

SATURDAY, AUGUST 23RD, 1924

LONDON UNIVERSITY AND THE MEDICAL SCHOOLS

THE death of Sir Sydney Russell-Wells, who succeeded Sir Philip Magnus as parliamentary representative of the University of London at the general election in 1922, has caused a vacancy which is to be filled up after the long vacation As has often happened before, there are three candidates Sir John Rose Bradford, F R S , Holme lecturer on clinical medicine in University College Hospital Medical School, nominated by the Unionist Association, Dr A F Pollard, the historian, professor of English history in the University (University College), nominated by the Liberal Association, and Dr E Graham Little a member of the senate of the University, who has been nominated as a non political candidate by the Graduates Association, of which he is president At the election in December last the majority of the Unionist candidate over the combined poll of the other two candidates—Professor Pollard and Mr H G Wells the novelist, who stood as a Labour Socialist—was small and on this occasion the result may be determined in some measure by questions of university politics

The internal question at issue has to do in the first place with the granting by the University of degrees to external students The electoral roll includes the names of a large number of graduates, especially in the Faculty of Arts who have never been students in any London college, and have no direct knowledge of, or any sympathy with the educational needs of London The Royal Commission on University Education in London considered that the abolition of external degrees was desirable in the interests alike of schools, teachers, and students in London, but recognized that it would not be politic for the University at present to abandon the granting of degrees on the result of examination alone The Commission proposed a scheme under which external students might still be admitted to the examinations for all degrees except those of medicine and technology but coupled with it a strongly expressed recommendation that the practice should be brought to an end as early as might prove practicable

It is over fifteen years since the Royal Commission was appointed, and more than eleven since its final report was published Only a few of its recommendations have been carried out, many of them would have involved the provision of a much larger annual income than the University and its constituent colleges and schools had at their disposal Something has been done towards remedying this deficiency by contributions from various sources—chiefly we believe by the increase of the parliamentary grant The recommendation for the introduction into London of the so-called unit system of medical education, which contemplated the establishment of three medical colleges in London, has been carried out and has had its influence on other medical schools in London and elsewhere in England Another principle enunciated by the Commission—that the intermediate sciences, anatomy, physiology, and pharmacology, should be taught in an institution separate from the medical college but in close connexion with it—appears to be working well where it has been put into operation Other recommendations have not yet been carried out for other reasons than want of money University College and King's College have cast in their lot with the University as the Royal Commission advised but the Imperial College of Science and Technology has declined to become a constituent part of the University on the ground, if we understand the attitude of the governors aright, that they are not disposed to submit to the authority of the senate as at present constituted Other interests also criticize the constitution of the senate, on the ground chiefly that it is 'autocratic' The Imperial College claims to be in itself virtually a science and technical university of three faculties—science mining and engineering—fully equipped for teaching and research and entitled to enjoy all the privileges of a university, including that of granting degrees The Inns of Court which together form something like a legal university have never come within the sphere of influence of the University, and in the other faculty in which London has always been strong the medical schools have followed their own natural line of development, and form part of the University rather as a polite or politic fiction than in fact

The history of the University of London is one of continual change imposed on it from without, sometimes it has seemed little better than meddling Though in the far away days of Thomas Young, the poet, and his supporters its foundation was a response to a genuine movement of opinion, it has never really grown into the educational life of London The strength of the motives by which the original promoters were actuated was greatly diminished by the abolition of ecclesiastical tests at Oxford and Cambridge, and still more by the foundation of universities in many provincial centres The latter in particular removed one of the chief reasons why the University of London should grant external degrees, and, as has been said, the Royal Commission thought that the sooner the power was abandoned the better it would be for university education in London

In the course of his speech on the estimates, on July 22nd the President of the Board of Education said that he had spent 'considerable time in exploring the possibility of getting a statutory settlement of London University' and in reply to a direct inquiry he stated on August 7th, that he proposed to appoint a departmental committee in order to lay down the basis upon which a statutory commission could act He had he said, taken this course after reviewing the present position and consulting with a selection of the most important academic authorities He added that while there was a strong desire for reform in many quarters there was also a general feeling that some of the findings of the Royal Commission called for reconsideration in view of the long period which had elapsed since it reported Lord Ernle is to be chairman of the new Departmental Committee the other members have not yet been announced and until the terms of reference are known no useful comment can be made It may be hoped, however, that the Committee will be very chary in interfering with existing medical arrangements The unit system is only just getting into good working order and, though it is open to criticism in some directions, it is we believe true to say that the large majority of the members of the staffs of the units consider that good work is being

done, and that their main regret is the want of any very sure prospect of promotion From the administrative point of view the medical schools had much better be left to work out their own salvation

UNIFORMITY OF MEAT INSPECTION

MEAT inspection has been defined as the professional investigation and judgement on the entrails and meat of slaughtered animals with reference to their fitness as human food, and it includes also the supervision of public and private slaughterhouses As thus defined the amount of meat inspection carried out in this country, if we except the large towns, is negligible Indeed, it would almost appear as though the Legislature intended this, for unless rural district councils obtain at some cost urban powers they cannot supervise slaughterhouses or the irregular slaughter of animals for human consumption Even in the towns there is no great uniformity in the detailed methods of inspection, although in recent years this defect has become less conspicuous as a result of special courses of instruction given by the Royal Sanitary Institute and other bodies In this connexion it is satisfactory to find that the London County Council has decided, in co operation with organizations representing the meat trade, to open a new institute, to be called the 'Smithfield Institute," for the training and instruction of men and boys employed in the meat trade The absence of uniformity of inspection was emphasized by Dr W J Howarth, C B E , in the Milroy Lectures delivered by him before the Royal College of Physicians of London in 1917 This lack of uniformity, he maintained, afforded opportunities for the practice of much deceit, with the result that both the public and the honest trader were prejudiced—the former since it was possible for meat of unsound character to be sold, and the latter because he was handicapped in trade by a competitor who took advantage of the local negligence known to exist

The Scottish Board of Health has made a determined effort to remedy the existing conditions so far as Scotland is concerned, and has drawn up regulations (the "Public Health (Meat) Regulations (Scotland), 1924"), which came into force on August 1st last They deserve careful study, for they are the outcome of recommendations made by three committees appointed by the Board, which dealt respectively with questions of administration, with inspection in rural areas, and with the system and standard of meat inspection to be adopted The chairman of each of these committees was Dr Gerald Leighton, the medical officer of the Foods Department of the Board, and he has now prepared a small handbook[1] in which the regulations are annotated and explained The duty of administering the regulations is to be carried out by a trained meat inspector, though a new class of official, to be called the detention officer, may be employed in smaller areas A meat inspector can no longer be any person, whether competent or not, to whom a local authority entrusts the duty of inspection He must be either the medical officer of health for the district or a veterinary surgeon, or he must have received special training in the work of meat inspection—that is to say, he must have had, prior to June 1st, 1923, not less than seven years' practical experience in the work, and have obtained from the Board of Health a certificate of competency It is realized that in certain areas it will be impracticable to have a qualified meat inspector, and in these a detention officer may be appointed, he must have had sufficient experience and training to enable him to recognize any departure from the normal in the carcass, organs, or viscera of an animal It will be his duty to detain suspected meat, but he has no power to seize or condemn This is a new procedure in British administration, and it is anticipated that it will be of assistance in securing uniformity

In the two schedules to the regulations instructions are given with reference to the details of inspection and as to the records to be kept with respect to inspections and seizures The manner in which the actual inspection should be carried out in well ordered sequence is clearly expressed in the first schedule, and to each separate instruction Dr Leighton has added a paragraph giving the reason for it The result leaves little to be desired, and the handbook might with advantage be included in the equipment of many medical officers of health and inspectors beyond the borders of Scotland

It is not the first time that Scotland has led the way in a public health reform, the regulations in which this new uniform standard of judgement are set out are compulsory in Scotland, and have been issued by the Ministry of Health as a recommendation to be followed by meat inspectors in England The next step should be to make them compulsory south of the Tweed

[1] *Pocket Handbook of Meat Inspection A Guide to the Public Health (Meat) Regulations (Scotland) 1924* By Gerald Leighton M D LRSL, Medical Officer (Foods) Scottish Board of Health Edinburgh and London William Hodge and Co, Ltd 1924 (Demy 8vo, pp viii + 126 6s net)

THE ANTIRACHITIC ACTION OF MILK

THE protection of children from rickets is a sociological problem of great importance We know that exposure to sunlight is an excellent prophylactic measure, but unfortunately sunlight is rarely available in an English town in winter, since the beams that struggle through the clouds are effectively cut off by the smoke pall that disgraces all our large towns It is therefore very necessary to feed infants on a diet containing an adequate amount of the antirachitic factor, and hence the antirachitic value of milk is a question of the greatest interest The relative importance in the causation of rickets of light deficiency and of a diet deficient in vitamins has been a subject of controversy for several years, but some interesting facts have been brought to light by an investigation recently conducted by Miss Ethel M Luce at the Lister Institute[1] A single cow was kept under varying conditions for more than a year, and the growth-promoting and antirachitic actions of her milk upon young rats was tested every month When the cow was on dry fodder in a dark stall (six months) the growth-promoting and antirachitic properties of the milk were poor, when the cow was on fresh green fodder in a dark stall (two months) the growth-promoting effect was good, but the antirachitic effect poor On pasture (three months) both were good, on dry fodder out of doors (two months) the growth-promoting properties were poor and the antirachitic moderate The "good" milk had about four times the activity of the "poor" milk These observations appear to indicate that the growth-promoting or vitamin-A factor in milk is not identical with the antirachitic factor, and, further, that the two factors can vary independently There is a considerable amount of collateral evidence for these conclusions It would seem that the amount of growth-promoting factor in cow's milk depends mainly, if not entirely, on the diet, whilst the amount of antirachitic factor is determined partly by the diet and partly by the amount of light to which the cow is exposed These

[1] *Biochem Journ*, 1924, xviii, p 716

conclusions are of considerable practical importance, for they lend strong support to the view that the milk of pasture-fed cows is greatly superior to that of animals fed on dry fodder This superiority is equally evident in the growth promoting and the antirachitic properties of the milk, for when cows are stall fed on green fodder their milk is satisfactory as regards growth promoting qualities, but not as regards antirachitic properties We find in this experiment support, also, for the belief that during the winter months there is a danger of infants developing rickets even when they are receiving large quantities of cow's milk This is a view that Hess has long maintained The liability to rickets is, of course, lessened by exposure to sunlight or to ultra-violet light, but these are not always available Fortunately all available evidence agrees in showing that cod liver oil contains a relatively enormous amount of the antirachitic factor, and the prophylactic use of this oil appears to be the means most generally available for the prevention of rickets

SOME MEDICAL PROVERBS

MANY definitions of a proverb have been given, perhaps Lord John Russell's, "the wisdom of many and the wit of one," is the worst Proverbs are not made by individuals, they are *formed* by *attrition* through many generations, they are "the people's wisdom," as a Russian saying puts it Bacon said that "the genius, wit, and spirit of a nation are discovered in its proverbs," and the Scots declare that "as the people, so the proverbs" Proverbs are less often used than in the past, even by the peasants in whose speech they were once very common Of those that survive perhaps the majority have to do with the weather and the times for sowing and reaping but the authors of *Wayside Sayings* give few if any of this class possibly they considered that the collection made by Inwards in his *Weather Lore* had covered the ground completely Their ambition is to collect the proverbs peculiar to each nation, with the twofold object of illustrating its character aspirations, traditions, and superstitions and of encouraging the coming race "burdened with its material education and modern literature" to make more use of them The first series which was reviewed in our columns on July 22nd, 1922 (p 130), contained seven hundred and fifty proverbs chosen out of fifty four languages, the second, which has just been issued,[1] seventeen hundred and fifty chosen out of forty-three languages, including sixteen not represented in the first Not only is the collection large, but the authors have chosen well The best proverbs, always excluding those about the weather and the crops, have to do with fundamental facts, emotions, and experience, and therefore bear translation well as these volumes prove The authors, when seeking the right English equivalent, must often have had in mind Macbeth's words (II, 3),

> the labour we delight in physics pain," though, oddly enough, they put them among Dutch sayings

Many proverbs are about domestic affairs, and judging from the way they handle wives, all of them must have been made by men Many others are about sickness and how to avoid it, the doctor often fares no better than the wife but the patient receives many a shrewd knock

> Fond of lawyer, little wealth, fond of doctor little health' says the Spaniard, and the Scotsman advises

> be long sick that you may be soon well" Point is given to the Russian proverb, 'if a man knew where he would fall he would spread a carpet first," by the English saying

"sickness cometh on horseback and goes away on foot," and "study sickness while you are well", from these flows the polite injunction which occurs both in English and Hebrew, 'honour a physician before thou hast need of him" The two sayings, "always take the fee when the tear's in the eye" (Scottish) and "the physician who accepts no fee is worth no fee" (Hebrew), are perhaps characteristic of the nations There is wisdom in the Arabian 'no man is a good physician who has never been sick," and the Chinese have a saying with a very modern ring, 'when you shut out the sun from coming through the window, the doctor comes in at the door", the same people wrap up a profound truth, which too many of us forget in the injunction if you have two loaves of bread, sell one and buy a lily' Mr Wheatley may like to be reminded that 'building is sweet impoverishing" But we must stop for is there not an Egyptian proverb which asserts that 'the fewer the words the better the letter"? And journalism began in letter writing

[1] *Wayside Sayings* By Selwyn Gurney Champion MD and Ethel M Champion Second series Lond London Duckworth and Co (Crown 8vo pp xvi + 200 7s 6d net)

A VOSGES SPA

THE same correspondent who sent us a general account, published a fortnight ago (p 245), of the Vosges country and its spas has supplemented the information he then gave by a special note on Bussang, which owing to its elevation and the wooded hills nature of the surrounding country, presents certain special characters which are likely to be attractive to English visitors It lies nearly at the head of a pass in the Vosges mountains leading into Alsace The village of the same name lies about a mile and a half further down The elevation of the spa and its connected hotel is about 2,200 ft It stands in a well wooded park, and most of the surrounding hills are covered by forests, the trees for the most part being pine with an admixture of beech From a motoring point of view the roads in the neighbourhood are good, and the Vosges Alpine Club has marked out a large number of mountain and forest expeditions of varying distances and difficulty There is evidence that the springs were used for medicinal purposes in the seventeenth century, and they were officially recognized some fifty years ago but it is only during the last twenty that there has been any considerable effort to use them on a large scale, and even as things are to-day the bathing arrangements are of quite a simple kind The place seems to owe its reputation chiefly to the internal use of the waters, but largely also to its altitude and picturesque surroundings Probably the majority of those who at present frequent it come from the larger towns in the north-east of France Among them figure a good many children and young people, the subjects of more or less pronounced anaemia, while so-called weak hearts neurasthenia, and simple lack of tone seem to be the principal troubles among the adults For all these conditions the place may be considered very suitable for children there is plenty of room to play about without troubling their seniors, and the latter can rest under the trees in the intervals between exploring the paths of various gradients interspersed among the thickets and woods The general atmosphere is that of a country house so possibly it should be regarded as a specially suitable place for those who, during their period of treatment it is desired shall not be exposed to the temptations offered at so many spas in the way of dancing halls gambling rooms, and theatrical performances It is about five hours from Paris with one change of train in about ten hours The two springs chiefly used vary much in taste but are practically identical in point of constitution except for the fact that one contains about twice as much iron carbonate as the other The principal ingredients of the stronger of the two are, according to the

official analysis, in parts per million as follows when reduced to round figures carbonates of sodium (628), potassium (61), lithium (6), calcium (380), magnesium (178), iron (8), manganese (3), with iron arsenate (1) and sodium sulphate (133) Free carbonic acid is present in the proportion of 179 parts per million It is also stated on the authority of Laborde that the radio-activity of this spring is unusually high

MALARIA AS AN EDUCATOR

THE discourse on the historical aspects of malaria which Dr Andrew Balfour, director of the London School of Hygiene and Tropical Medicine, gave last May at an evening meeting of the Royal Institution of Great Britain, as noted in our columns at the time, has been printed in full, and we may take occasion to call attention to the concluding passages, in which Dr Balfour rather whimsically contended that malaria had had an indirect beneficial action by stimulating man to thought and action From early days man began to show his ingenuity in protecting himself from fever Egyptian and Cretan fishermen slept under fishing nets folded again and again until their meshes were small, they probably believed they were excluding miasmata Any effect must in reality have been due to the exclusion of mosquitos, and men were inclined from early days to attribute the infection of fevers to mosquitos or other biting insects Susruta, an Indian physician who flourished in the fifth century B C, taught this, and Dr Balfour mentioned the existence of a picture of him expounding this doctrine to an eastern potentate Varro and Columella, at the beginning of the Christian era, associated mosquitos with insects bred in marshes, and Lancisi, in 1717, asserted that marshes were the cause of fever owing to the transformation of minute worms into "stridulous culices" which infused a poisoned liquid through the wounds they made Dr Balfour next traced the more recent history of the hypothesis that malaria was in some way connected with mosquitos, and mentioned Nott the American, Beauperthuy the famous French creole, and Finlay of Havana, of each of whom biographical accounts have been published at various times in our pages, he referred also to King, who, he said, was the soundest of them all They were not listened to, and Richard Burton described the belief of the people of Zayla in Somaliland, that mosquito bites occasioned deadly fevers, as a superstition *Richard Pfeiffer, from a study* of the coccidia of rabbits in 1889-90, was led to put forward the hypothesis that the malarial parasite, being incapable of producing a resistant form to withstand the dangers it would encounter in soil or water, went through an exogenous cycle of development in some blood-sucking insect, and in this he had the concurrence of Koch "This," Dr Balfour continued, "was, as events have shown, a prophetic utterance, but it was linked up with the earlier work of the great Sir Patrick Manson, who, long before, working in Amoy (China), far from books and skilled help, had proved that a mosquito served as the intermediate host of a human blood parasite, that tiny filarial worm, to the presence of which in the human body the disease elephantiasis is attributable He showed that the mosquito was a necessary link for the fulfilment of the life-cycle of the blood worm" Neither Koch nor Pfeiffer followed up the matter, and "the solution of the problem was left to Ross, who, at Manson's instigation, took up the work in India, and after *manifold trials and tribulations* emerged victorious" The discovery was at once turned to practical account, thus, Dr Balfour maintained, "malaria benefited man by stimulating him to undertake work for its own destruction" The American work on yellow fever was the sequel to these researches, and gave an immense fillip to the scientific study of tropical medicine and hygiene "One of the latest developments," Dr Balfour added, "has been the application of electricity to the destruction of mosquito larvæ and pupæ, Montelimo of Argentina introduced the method of electrocution which is now being given an extensive trial" Not only did malaria excite inquiry and interest, but it led to the establishment of schemes for the instruction of the public "Here it is," he continued, "that the Americans have forged ahead Malaria is a very serious problem throughout the Southern United States, and indeed has been the reason why some of them have until lately been backward and depressed The Americans are a practical people, and moreover are easily fired by that idealism which, if well regulated, so often spells success Hence they have spared neither time nor money in combating malaria" The truth of this assertion was demonstrated by the exhibition of a cinematograph film prepared by the Rockefeller Foundation

WOODEN HOUSES

AMONG those who are giving serious consideration to the housing problem among the working classes there are many who hold the opinion that the solution is to be found in the production of cheaper buildings rather than by the uneconomical method of subsidizing existing and, as some maintain, antiquated methods of construction It is urged that to continue the practice of our forefathers in joining together with studied deliberation 40,000 to 50,000 separate bricks or pieces of timber can no more be justified than would the continuance of the practice of putting out conflagrations by buckets of water to the exclusion of the steam fire engine The view that cheaper and quicker methods of construction than those which have held the field for thousands of years should be searched for found expression in the recent debates on the housing bills in the House of Commons, and it was very definitely stated that these methods had actually been found and could be put into operation An increasing number of persons advocate the utilization of wood in house construction, and emphasize their contention by a reference to the use of this material in the colonies and elsewhere In the JOURNAL of July 12th (p 70) attention was drawn to a report of Dr R Wright, medical officer of health for Trowbridge in Wiltshire, in which he urged the district council to erect a block of wooden huts in which to house *the large number* of persons who at present are living in houses totally unfit to be inhabited This proposal has been criticized by several of our readers, and the medical officer of health for Ebbw Vale (Dr F M Fonseca) in his report for 1923 reported adversely on temporary hutment dwellings in use in his district Very few of the huts, he said, were satisfactory Almost every tenant complained of the damp and draught The ceilings were leaking, and rain came down along the chimney stacks He recommended that the council should take the first available opportunity to discard the huts in favour of *permanent houses*, by which we understand buildings of brick or stone When commenting on Dr Wright's report we observed that there were at the present time many more people living in *wooden houses in this country* than was usually realized, but added that whether such dwellings were suited to English habits was a question on which opinions differed We might have added that the English climate—at any rate on the western side of the island—creates difficulties which do not exist, for instance, in Canada, where wooden houses are very common in rural districts A wet climate, such as that of western Wales, is a severe *test of the skill* of the builder of wooden houses The rainfall at Holyhead, the nearest station to Ebbw Vale, given in *The Book of Normals*, issued by the Meteoro-

logical Office, is 888 millimetres (34 inches) and the number of days with rain 201. At Greenwich the annual rainfall was 596 millimetres (23½ inches), and the number of days with rain 163.

SIR WILLIAM MACEWEN'S EARLY DAYS

GLASGOW has recently suffered very severely by the loss of its leading surgeons, and British surgery was left without its greatest ornament when, on March 22nd last, Sir William Macewen passed beyond these voices. At the time a full notice of the life and work of the Regius Professor of Surgery was published in our columns, and sympathetic accounts appeared also in the *Glasgow Herald* and the *Glasgow Medical Journal* (April) written with much personal knowledge by, it is believed, Dr Freeland Fergus and by Mr J. H. Pringle respectively. These would serve as a basis for any life that may be written of this outstanding personality, but as throwing further light on Sir William Macewen's early days at the Collegiate School, Garnet Hill, and the University of Glasgow attention may be directed to Dr J. W. Allan's reminiscences of his famous brother-in-law in the *Buteman and West Coast Chronicle* of August 8th. Lady Macewen is a sister of Dr J. W. Allan, affectionately remembered as the superintendent of the Belvidere Fever Hospital. Her husband, when 15 years old, is described as a big, ingenuous Rothesay boy, full of animal spirits, bright and intelligent, but indifferent to book learning, and more at home in the gymnasium than in the class-room, being a master at singlestick, as the black and blue bruises on the arms and legs of his opponents testified. His boyish carelessness vanished when he entered the university in 1865, and the two friends spent much time in the quiet Hunterian Museum, which they had practically to themselves. Macewen, like John Hunter, early began to think and observe for himself, and he soon came under the inspiring influence of Lister, who was then beginning his epoch-making work. The two friends then became house physician and house surgeon at the old Royal Infirmary. Macewen in the latter post served under Sir George Macleod, and showed his inventive ability by employing a method for keeping the lips of the flaps of an amputation wound together without sutures. Later he was house physician, but surgery had now become the pleasure and the passion of his life. His mental attitude was that of an independent seeker after truth: he took nothing for granted—current opinions and accepted views had no weight with him until tested by experiment or experience—and he was ever able to find opportunities for original observations and good surgical work in what would appear unpromising circumstances, such as the wards of the poor-house or the accident department of a police office.

BRITISH ASSOCIATION MEETING IN TORONTO

IN connexion with the concluding sessions of the British Association meeting a special convocation of the University of Toronto was held on August 13th, when the honorary degree of Doctor of Science was conferred upon the President, Sir David Bruce, the past-presidents, Sir Charles Parsons, the president of the Agricultural Section, Sir Edward Russell, and on Sir Ernest Rutherford, professor of experimental physics and director of the Cavendish Laboratory at Cambridge. One of the closing papers read echoed the note on preventive medicine sounded by Sir David Bruce in his presidential speech at the commencement of the meeting of the association. Mr F. A. Dallwin, addressing the Engineering Section on the subject of the engineer and public health, suggested that a great part of the work of specific sanitation came more particularly into the province of the engineer, and could be advantageously left to him in co-operation with the biologist. The medical personnel would thus be free to work in its own special fields of hygiene and nutrition, leaving to engineers such problems as the provision and supervision of public water supplies, the protection of streams, and the collection and disposal of garbage. He also expressed the more questionable opinion that the biologist and the engineer, working together, could deal with the control of flies and mosquitos, the extermination of rats and mice, and delousing stations. At the final session of the Psychological Section, Professor C. Ladd-Franklin considered the various theories of colour vision, and Dr J. Drever discussed critically the conceptions of the "conscious" and the "unconscious" in psychology. Dr Alexander Low contributed to the Anthropological Section a preliminary study of the results of the anthropometric examination of infants with a view to discovering how far sex, growth, and environment influenced physical characters. The meeting of the British Association this year has been perhaps more noteworthy for the practical value of the subjects considered than for the announcement of any outstanding scientific discoveries. This was especially evident in Sir David Bruce's presidential address on preventive medicine and Dr H. H. Dale's paper on chemotherapy, which appeared in our issue of August 9th (pp. 239 and 219 respectively). The survey of the work of the sections in last week's issue (p. 291) illustrated the same practical application of scientific research in the fields of anthropology, psychology, physiology, and chemistry to the advancement of individual and national efficiency, which has caused the association's meeting in Toronto this year to be of interest and importance to the medical profession.

THE NFA

THE "Not Forgotten" Association exists to give assistance over and above that afforded by the Ministry of Pensions to men wholly or severely disabled by wounds received in the war. This assistance is given mainly by way of personal service and the provision of small luxuries and distractions, but the association also possesses a home hospital at Clapham Park, where some thirty men suffering from severe forms of spinal disability are looked after and encouraged to do leather work and make baskets and other small things for which a good market has been found. Particular interest in the work has been shown by the King and Queen, Princess Mary and other members of the Royal Family who invite the men to garden parties at Buckingham Palace and entertain them in the riding school there at Christmas. The association is, of course, in want of funds and asks for contributions to be sent to its honorary treasurer at the organizing offices, 26, Ladbroke Road, Holland Park, W.11. These particulars are taken from a preface written by Sir Sidney Low for a volume which has been issued in the expectation which we hope may be fulfilled of adding to the funds of the N.F.A. The reason for this hope is that the volume, which has been compiled by F. de Burgh and Walter Stoneman, is in itself attractive. It contains over a score of articles contributed by some of the best known occasional writers of the day. Many of these articles are of great intrinsic value, but the interest of the volume will be increased to many by a series of twenty-one camera portraits of the contributors, among them are Mr Chesterton, Mr Maxwell, Mr John Galsworthy, Mr John Buchan, Sir Arthur Conan Doyle, Mr Pett Ridge, Mr Arnold Bennett, Sir Owen Seaman (the editor of *Punch*), and Sir Sidney Low himself. The volume is published by Messrs. Sampson Low, Marston and Co. Ltd., and its price is 7s. 6d. Its title is, very appropriately, *Posemary*.

A MEDICAL REVIEW OF SOVIET RUSSIA

II.—HOSPITALS AND HEALTH CONDITIONS

BY

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In a previous paper* it was stated that the present economic conditions in Russia, due more or less to the external and internal wars in that country, were the chief causes of the epidemics of disease there. It is now my purpose to describe in more detail those conditions that gave rise to such widespread disease, and to discuss the rôle of the hospitals in this period.

At the expense of repetition we must make some mention of recent events in Russia in order to understand the present morbid conditions. Even the extreme optimists cannot deny the effect of war and famine in producing disease. Whatever predictions may be made for the future of Russia, we must admit that the present health of its people is worse than formerly, and that the dire conditions there cast a fearful shadow over the future health of Russia, in spite of all that the Soviet Department of Public Health and relief organizations have done.

The disorder of war and revolution in an already disordered country like Russia was sufficient in itself to produce wholesale disease, but when three years of extensive famine were added to these factors it is small wonder that there should have resulted epidemics of a magnitude unrivalled in modern history.

GENERAL HEALTH CONDITIONS

Although 80 per cent. of the Russians have probably always been undernourished to the same degree as or even worse than the poor of other countries, as they existed chiefly on black bread, and though the food shortage had become progressively worse since 1916, there was not starvation until the drought and famine years† The year 1920 was probably the worst, when millions were starving and nearly all the population was seriously undernourished. Dogs, cats, horses, camels, and even rats were eaten in 1920, 1921, and the winter of 1922. In some places cannibalism existed then, quite frequently dogs and men could be seen in the streets of Leningrad fighting over the carcass of a horse. On many occasions I have seen people eating roots, wild berries, the bark and leaves of trees, and "bread" made of dirt, grass, and dung. As late as July, 1922, I saw personally two cases of cannibalism, and in September of that year, in a village of South-eastern Russia, in twenty out of twenty-five huts I inspected at random there was one or more persons actually dying of starvation, too weak to get up. The year 1923 was much better in regard to food.

Several other factors accelerated the spread of disease—namely, the lack of clothing,‡ dirt, overcrowding, and the refugee movement.

Most people in Russia have had no new clothing for seven or eight years, and have had to sell part of what they had for food. Owing to the lack of soap and hot water, bathing as a cleansing process was nearly altogether discontinued even by people who were normally neat. Most of the public baths had to be closed for lack of fuel and repairs, so that in 1919 they operated only one seventh as many days as formerly, and (according to Dr. Shamoff) "bathing was never popular in Russia."

Overcrowding is still a serious problem. The destruction of houses by civil war or for fuel, and the lack of plumbing for many years, makes the housing situation acute. Very few houses have been erected since 1916. It is common to see a whole family living in one or two rooms. Even to-day in a city like Leningrad, where there has been little fighting and consequent destruction, and where the population is less than one-half of the pre-war census, it is extremely difficult to find rooms, many of the houses are crumbling, and nearly all are out of repair.

Refugees from Famine Districts

A most pathetic picture was that of the Russian refugees. From 1919 through 1922 millions of them were wandering over Russia searching for food. Railroad stations and other accessible buildings were filled with these wretched creatures carrying an indescribable accumulation of rags and filth. One-tenth of Russia had turned gipsy. These forlorn wanderers went hopelessly from town to town in a vain attempt to find food, carrying their worldly goods in a bundle of rags, and often leading their ghastly children by the hand till they dropped dead from exhaustion. They almost swamped the trains, overcrowding the coaches, and riding wherever they could find a hold on the outside—all over the locomotive, between and on top of the carriages, and even swinging on beneath them—going they knew not where to escape the famine. They covered the country, and wherever they stopped they lived and died like locusts. I have seen the waiting-rooms of stations so cluttered with them that one could not force a passage through. There they lived, slept, had babies, and often died of typhus or starvation. Their mortality was very high. On a transport train from Saratov to Uralsk (450 miles) in April, 1922, forty out of ninety died *en route*.§ They were infested with lice and were veritable hotbeds of disease, they spread typhus, malaria, small-pox, and cholera from one end of Russia to the other. In 1923 the Soviet Government was faced with the immense task of returning these refugees to their homes.

The death rate rose from the Russian normal of 25 to 85, nearly every morning dead bodies were seen along the street and piled high in heaps to be carted away. It was during this period that men were forced back upon the primitive forces of nature, and it was said then that "civilized life in Russia is literally crumbling to pieces" (Dr. L. Haden Guest).

Epidemics

Under these conditions the great epidemics which had begun during the war, and had always been endemic in Russia, reached their maximum. It was impossible to keep accurate figures, but conservative estimates by Russians put the morbidity from typhus alone at 20 to 30 million, with a mortality of 3 million (Professor L. A. Tarasevitch). About one-third as many suffered from recurrent fever. In 1921 there were recorded officially 205,553 cases of cholera, 308,548 of typhoid and 83,016 of small-pox. Authorities put the total number of deaths from epidemics since 1916 at 8 to 10 million.

Through the combined efforts of the Soviet Government, the native medical profession, and the various foreign relief agencies these epidemics have been brought under control, but tuberculosis, and especially syphilis and malaria, are widespread now. Some diseases have decreased—for instance diabetes mellitus and some metabolic diseases like gout and cholelithiasis, alcoholism and its sequelæ have become rare under State prohibition. Those who have not succumbed to the famine and who have escaped the contagious diseases have had so many demands upon their strength, and have been in the midst of so much poverty and misery, that even if they have avoided physical disease their nerves have often been shattered.

To sum up the situation, we can say that, judged by Western standards, about one-half of the population of Russia would to-day require hospital treatment. This estimate is borne out by a medical examination concluded in March, 1924, of 1,833 students from twenty-nine different colleges in Kiev—students eating in the student relief kitchens of the World's Christian Student Federation. The

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* Medical Education in Soviet Russia, BRITISH MEDICAL JOURNAL, June 14th, 1924 (p. 1055).

† Famines have been frequent in Russia, and in the eighteenth century a famine similar to the recent one occurred when pies made of human meat were said to have been sold on the market and other acts of cannibalism were described. Periodic droughts in the grain producing regions, and the lack of adequate agricultural methods and of methods of harvesting, storing and distributing foodstuffs have been the chief factors in causing the famines. The famine just past came at a time when the world war and the revolution had left Russia prostrate. As late as 1907 there was a limited famine in Russia.

‡ There is still a great shortage of clothing—for example, the day after the parade for the funeral of Lenin twelve students presented themselves at the student dispensary of the European Relief alone for frozen ears and feet from a lack of proper clothing.

§ Reported by one of my associates, Mr. P. S. Clapp, who went with this train.

examination included 127 women. Of the total number, 15 per cent. were in *good health*, 40 per cent. were tuberculous, 22 per cent. had some form of cardiac disease, and 23 per cent. had other diseases. (Report received personally from Mr. Conrad Hoffmann, Executive Secretary, *European Student Relief*.)

This, briefly, has been the health of the Russian people. What aid were they able to receive from the medical profession and from the hospitals?

The Medical Round

The medical profession suffered not only from the conditions which *affected the general population*, but from conditions peculiar to itself. The circumstances of professional work were extremely distressing. Many had been mobilized (under Communism) and sent to new places to work in other specialties than those to which they were accustomed. Men of renown were to be seen frequently in some small out-of-the-way town, occupying a position of minor importance as dispensary physician. Their responsibilities were enormously increased. Themselves without warm clothing and in a state of chronic starvation, they had to care for ten patients where before they had one. They were thrown into more intimate contact with contagious diseases without the usual methods of disinfecting (soap, hot water, chemicals), and one fifth of the medical profession succumbed to typhus alone. But both Communist and non-Communist doctors responded nobly to the calls made upon them.

The following is a description of the life of a physician during the worst period of the epidemic, as given by Dr. Grekoff, chief surgeon of the Obookoff Hospital, Leningrad:

> From the early morning he is on foot awaiting his turn in various jobs for hours or running about the town in search of people with provisions, fuel or lamp oil to sell. On returning home he has to put in order his lodging often the street door to saw to pile to carry wood (if there is any) then to bring water from the first floor or the yard (if the pipes have burst) to peel potatoes, cale herring, *grind the grain to boil soup or gruel* to wash cups and plates, to look for a needle and thread to mend and wash the linen often in icy water to procure a lamp and some petroleum for it, then to go to the meeting of the House Committee etc. In the interval of these important affairs he has to go to his office if he is of service and if a physician to visit the hospital to visit several patients always going on foot. He may then consecrate his other time in preparing his lecture and scientific work (wrapped in overcoat and gloves), then go to bed muffling himself in the rags and clothes in his possession, perhaps to be aroused for two or more hours during the night by patients waiting at the gate. One could presume that I am caricaturing, but that is almost an exact reproduction of a winter day's routine (*in 1920*).

Let us now review the hospital situation in Russia in pre-war times, in the period of the epidemics, and in the present. General conditions were always extremely insanitary in Russia, and the old Government gave little encouragement to the advancement of public health. There were normally about 10,000 hospitals and 270,000 beds, under the charge of 17,000 doctors and 35,000 assistants. These were not enough to cope with the diseases even under normal Russian conditions.

Hospitals

There was as wide a variation in the hospitals of Russia as there was in the classes of society. In Leningrad and to a lesser extent in Moscow, Kiev, and Odessa there were some excellent hospitals. The Pasteur Hospital for Children (400 beds), the Orthopaedic Hospital (150 beds), and the Leningrad Obstetrical Hospital (200 beds) are hardly surpassed anywhere either in type of construction or equipment. But in towns where there were no medical schools the hospitals were antiquated and insufficient in *beds, equipment, and personnel*. They were frequently one-story log buildings without any plumbing or sewage facilities (persons not qualified to practise as doctors but with some practical experience in dispensing drugs and caring for the sick) often had charge of the ambulatories (dispensaries) and were frequently the only medical men in villages of two to five thousand. But though there was a scarcity of doctors, *the average Russian physician I met was better educated and better informed on medical and scientific subjects than the average American doctor.*

The equipment of the hospitals was good in the larger cities and rather poor in the smaller towns. The methods used were principally those of the German hospitals, and the medicines and apparatus were, like most manufactured goods in Russia, of German origin. These hospitals which were barely able to care for the normal needs of Russia, were faced after 1919 with overwhelming epidemics at a time when general conditions were *in extremis*: their staffs sadly incapacitated and their equipment depleted. In these circumstances they became morgues rather than hospitals.

During the period of epidemic, which coincided with the period of "nationalization" of buildings, the Soviet Government gave additional space for hospitals in some of the best buildings that it had taken over. There was also during this period a concentration of the population into *groups—for example, children's homes, industrial workers' homes*, etc.—and most of these had several *rooms which were converted into provisional hospitals*. In this way the number of beds for the sick was greatly increased but as there was *no equipment* and very little medicine for these places they had none of the essential attributes of a hospital, and served mainly to separate the sickest from the least sick. In the real hospitals (*and also outside the hospitals*) there was a shortage of beds. Many of the iron ones were too old to use, and most of the wooden ones had been broken up for fuel. Mattresses and linen had been *worn out*. I have frequently seen two adults or four or five children in a single hospital bed. From 1920 to 1922, owing to the shortage of fuel and want of repairs, over a hundred hospitals in Leningrad alone were closed.

During these years there was only one-fifth of the normal amount of fuel in Russia. The patients suffered from the cold, and the frost caused the water pipes to burst and the walls to crumble. *This was the condition in nearly all of the hospitals.* Many of the hospitals are even now unable to use their plumbing systems, hot water being carried by hand in the operating rooms in some of *the best hospitals in Russia*. The great crevices and rents in the hospital walls bear grim testimony to the cold they have endured.

Owing partly to the lack of fuel and partly to the Russian aversion to fresh air, all the windows of Russia, hospitals included, have in recent years been nailed and tightly sealed *from October to June and as the Russian house is built* with double walls, windows, and doors, it is almost airtight except for the icy blasts that leak in when one enters and leaves the building. This lack of fresh air gives the hospitals as well as other Russian buildings a characteristic and indescribable stench which well-nigh floors one when entering for the first time.

Dieting

The food situation in the hospitals was but a little better *than it was outside. During the period of Communism* all patients were furnished free with what the State could afford (from 1/4 lb. to 1 lb. of black bread, thin gruel or dried fish soup, perhaps some potatoes). The calories were about one third of the daily need, and the quality was far from fit even for the healthy. (I remember being nauseated by taking one large spoonful of this soup.) After the NEP"* the patients brought their own rations, if they had any, to the hospital. The shortage of food made it possible to do only emergency operations, very few patients were strong enough to be good risks for even simple operations, and then there was no proper post-operative nourishment.

In 1923 the calories were increased to about 1,200 and meat was added, and the quality although far from adequate, is much better and suffices for many cases. In 1922 and until August 1923 the American Relief Administration was issuing rations of rice, cocoa, white bread, and sugar, totalling about 1,000 calories to roughly one-fourth of the hospital beds in Russia—for example, in Moscow and Leningrad each 10,000 hospital rations, in Saratov, a city of 250,000, 17,000 rations. These meals were frequently all that the patients got; sometimes they were supplemented by another meal by the Soviet Government.

Equipment

The equipment of the hospitals has been steadily declining since 1914. The blockade of Russian *ports made* the shipment of all medical supplies impossible except

* The New Economic Policy instituted 1921.

through relief agencies, and later economic conditions prevented their import. They have thus received nothing new for ten years, except that little that was brought in by relief organizations and a very little more that the Soviet Government was able to add. Even that part of the apparatus that has not been worn out has usually become useless because of the lack of some little part that cannot be replaced—for example, x-ray machines are generally out of use because the tubes have been exhausted and there are no plates.

Nearly all important medicines are lacking—in particular salvarsan, quinine, opium, anæsthetics, and disinfectants. Moss was used in place of cotton-wool for pads, the *shortage of gauze* prevented all but the most urgent operations, rubber gloves were never used even in major operations. Most surgical instruments have been literally worn out, clamps, scissors, and scalpels were always in a disreputable condition. In many hospitals it was impossible to do a bloody operation like a hysterectomy because there were not enough good hæmostatic clamps, for the same reason two operations could not be performed at the same time, even when the staff was sufficiently large. Lack of catgut was almost universal, ordinary string was often used. In one of the hospitals in Vologda one of the chief doctors I knew gave the strings of his violin—his solo form of recreation—for an operation requiring catgut. One clinical thermometer had often to suffice for 200 patients, a hospital of the Volga region that I recall had no thermometers for its 205 patients except one which a patient had brought in with him.

Dr. Grekoff, one of the chief surgeons of Leningrad, says of the hospitals of that city, which were by far the best in Russia:

"A physician who had worked here in 1913 visiting the same place in 1917 or even in 1915 would hardly have recognized it, so changed were the surroundings and the patients. The corridors were dirty, the floors falling in the ceilings and walls damp black, and mouldy the air saturated so with the exhalations of patients and the odours of purulent wounds and gangrene of the lungs that he would soon be short of breath. The patients were extremely emaciated or œdematous and very pale or yellow and in throes of agony, amid them nurses and physicians stalked like ghosts, having lost their faith in surgical therapy, noting everywhere that their former powerful ally *vis medicatrix naturæ* had ceased to assist them. He would also have noticed that some forms of disease generally rare had become frequent, and that on the contrary many common diseases had almost disappeared and that the course of ordinary disease had become so changed that a surgeon of the old school would have to learn anew and to change radically the routine treatment and indications for operations.

Owing to the impoverishment of the hospitals patients were frequently better off in private dwellings. In some institutions beds were without any covers or mattresses, and the patient had to sleep on boards, and in a few instances I have seen totally naked patients. For lack of soap and hot water, patients could not be bathed. They came in infected with lice and remained so during their stay in the hospital, they often slept in their own clothes without ever undressing.

Condition of Patients

The resistance of the patients was greatly lowered. Those who did not succumb at once showed all kinds of complications—such as severe local infections from slight scratches, suppurations, extensive necroses, gangrenes, and particularly peptic ulcers from the irritant quality of the food. Amputations for gangrene increased in the Obookoff Hospital (1,500 beds) from 2½ per cent. of all operations in 1913 to 5 per cent. in 1918 and 12 per cent. in 1919. Hernias were present in 0·5 per cent. of the patients in 1913, 1 per cent. in 1918, and in 1919 in 2 per cent., the increase being due to emaciation and weakness of the muscles. The mortality of surgical diseases increased from 3·8 per cent. in 1913 to 7·9 per cent. in 1917, 11·1 per cent. in 1918, and 13 per cent. in 1919 (Miniloff).

Professor Waldman has the following to say about the lowering of resistance and the death rate of the patients:

"In 1918 the death rate in the Obookoff Hospital in 1,692 cases of 'famine disease' was 31·3 per cent. in 1919 the rate rose to 33·1 per cent. and in 1920 to 50 per cent. In 68·5 per cent. of these death occurred during the first two days as about one-half of them were dying when brought in. Prolonged underfeeding had lowered the power of resistance and though the people did their daily tasks, and their organism seemed to keep its equilibrium, there was an absence of reserve. The organism suddenly refused to function on the slightest tension. Most of the patients who died from hunger were brought to the hospital from the street. In such cases autopsy showed *inanitio maxima* and nothing more. This case is characteristic. G., aged 42, came home late one night at 1 o'clock, and could not get into his flat, for no one answered his bell. At 5 in the morning he was found on the staircase in an unconscious state and died immediately after he was brought into the hospital. This occurrence, so insignificant in itself, was sufficient to kill a man who did not consider himself ill. Another case: P. went to the country and brought back 30 lb. of potatoes, and on arriving home drank a glass of tea, fell down unconscious, and was dead half an hour later, though he had not been previously sick."

Those conditions which have been described for the famine years have not yet entirely disappeared. In 1923 the food was so insufficient that cases of scurvy frequently developed in the hospitals. There was then no food suitable for the pre-operative and post-operative care of patients, which lack was most severely felt in the treatment of gastric ulcers, one of the most frequent of the new diseases. The lack of ventilation and heating makes the air cold and damp, and forces the patient and staff to wrap themselves in all the warm things they possess, which does not contribute to the cleanliness of the wards.

"The irregularity of the laundry and the disinfecting chamber due to the lack of fuel are the reasons why the hospitals could not get rid of lice, they were often found on the clean linen just as it was brought from the laundry."

In June, 1923, Dr. Shimoff of the Military Medical Academy wrote:

"The custom of bathing the patients has fallen into disuse in most of the hospitals. Even before the operation the patients have no bath because of the scarcity of hot water and the dread of their catching cold. At some periods there was not enough soap and hot water to wash even the field of operation, and then the patients got hot water for their tea only once in twenty-four hours. The conditions of the hospitals are especially hard in the winters, and they have continued to be so through the winter of 1922-23."

Operations

Of the operating room Dr. Shimoff says:

"In most of the hospitals the operating room had not been repaired since the beginning of the European war. At the time of the fuel crisis nearly all heating was discontinued in them as well as in the other parts of the hospitals. The immense windows, *even though double*, were covered with ice stalactites which, when thawing, overflowed the operating room. The wet putty and the stucco of the walls cracked and fell off by bits. During the winter of 1918-19, when the population had not yet adapted itself to the struggle with the cold, the temperature in the operating room often went to 8° or 6° below zero (Reaumur), and under such conditions only the most urgent operations could be risked. The operator's fingers numbed by the cold, could not bend with sufficient agility, and operations on this account were performed with great risk. Beginning with the winter of 1920 small iron stoves with long pipes running all around the walls were placed in the operating rooms as well as in most of the other houses in Russia, to take the place of the larger Russian furnaces which required a great deal of wood. Owing to the lack of fuel and linen, surgeons were forced to minimize the protection of the operative field, and had to use one gown for several operations, or a sterilized sheet instead of a gown.

"The stock of surgical instruments which had not been renewed since 1914 got so overworn that many could no longer be used. One often had to work for many months in the operating room with one curved needle and one pair of forceps. There was also a lack of gloves, silk sutures, and surgical dressings. The hands of the surgeons were all covered with crevices and cracks, due to the chopping of wood and the preparing of food they had to do at home, and nearly all of them suffered with chrome chilblains, from having washed their hands in icy water. Silk sutures were replaced by common thread, and even this was difficult to get. In order to economize surgical dressings they were washed over and over again, but this could not be done systematically *owing to the irregularity* of the laundries. We were often forced to wash the dressings in a very primitive way in the operating room and hang them up there for the night to dry."

In spite of all these things the surgical work did not stop, on the other hand, the conditions forced an increase in the number of operations. For instance, the impossibility of curing gastric ulcers by diet, and the necessity of patients having to return to their work soon, made operation the only method of *relieving them*. In orthopædic cases the lack of the means of elementary hygiene, the impossibility of plaster-of-Paris, of corsets, and other orthopædic appliances made operation the only choice. I saw any number of Albee fixations of the vertebral column, as this was the only way of getting these patients on their feet again in a short time so that they could continue their

struggle for life In regard to the election of an operation, Dr Grekoff says

We always risk seeing the patient die on the table If he recovers from the operation the wound may not heal at all or its healing is very precarious in any case it requires an endless amount of time

In some cases the patients apparently got over their operation but dropped dead without any forebodings on the slightest exertion when they got up out of bed, particularly frequent was this in emaciated patients Dr Grekoff says that patients with hunger oedema stood operations better than might be expected, but their wounds healed very slowly and they were prone to infection owing to the presence of the large amount of water in their tissues Although amputations became much more frequent because they had to be done to save the patient's life, certain operations like those for hernia and appendicitis became less frequent

Hospitals in Smaller Towns

To give an idea of the hospitals in some of the smaller towns I shall describe them as I saw them a year ago on two of my inspection trips, one in the north and the other in the south-eastern part of Russia

Uralsk, near the Caspian Sea was in the centre of the famine region, and its population has been reduced from 60 000 in 1914 to 30,000 in 1923 Formerly it was an important milling town When I saw it most of the houses had been destroyed by the fighting between the Whites and the Reds Once a week a passenger train ran to Saratov on the Volga During a visit of three days I saw three automobiles in the city The drinking water was obtained from local wells Sewage was emptied into underground cisterns and left there for one to four weeks before it was carted away in barrels This system of disposing of refuse material was not new in Russia and the only difference between the past and the present is that now there are fewer camels and horses to haul the sewage as most of these beasts of burden have died or been eaten during the famine As in most other places there is a shortage of doctors, only twenty two are registered in the city and in the surrounding country there are practically none, in the fifteen villages through which I passed there was not one doctor Sixty per cent of the population was estimated to have malaria, and over half of the hospital beds were filled with these cases During a thorough inspection of all the hospitals I saw only one microscope Although there were no glass slides and no blood stains the young intern in this hospital was persevering in examining blood smears on pieces of glass he had carved from a broken window-pane

The following account of a hospital in Alexandropol is typical of these institutions during the worst period

Some 300 children had been gathered into two buildings which had been dignified by the name of hospital These buildings were in fair condition inasmuch as the windows roof and floors were complete but it would be difficult to conceive more abject filth or revolting conditions than those that obtained in the wards Each bed consisted of an iron frame partially covered by two planks Some of the children were clothed in little under shirts and drawers some of them were entirely nude From one to four patients were in each bed There was a bathroom in each building but the doors were locked and the key lost Every window in both buildings was either locked or nailed A filthy attendant in each ward part of the time slept in the corner while the children starved for the food she was stealing There were two bed pans in some of the wards but they were never used as it was easier for the children to soil the mattress which was seldom changed There was a small toilet in each building, but the floors were so frightfully soiled with excretory matter that the ambulatory children used the ground as their toilet so that at first it was almost impossible to walk through the yard The superintendent spent his time in fighting with the physician in-chief and in stealing for his personal use the food intended for the children There was practically nothing in the way of medical supplies and little was needed since food and hygiene were the real medicines required The children were dying at the rate of even a day chiefly of starvation (Report by Dr G L Pichards of the Near East Relief)

Chereponetz is the seat of government of a gubernia (state) bordering on Archangel with a million population The town itself has grown from 10 000 to 22,000 in the past few years many refugees having come up since the famine, as it was outside the famine region Improvement of waterways along the head waters of the Volga accounted also for part of the increase There were at that time 1 200 registered as unemployed Although housing conditions were better than in the south of Russia, because there was no fighting and destruction around Chereponetz, I saw several cases where five were living in a single room Water from the river was run into three fountains where it was sold by the bucket, but owing to its poor quality the inhabitants used local wells

In the children's homes that I inspected the children had no shoes or stockings and their clothes consisted of a one-piece suit that had been improvised from old sacks Nearly all of them had scabies and sores all over their faces The hospitals were kept exceedingly clean In all six hospitals (500 beds) I saw only three blankets, in most cases there were also no sheets, and the patients had only some light cover or an old garment thrown over them, and of course the windows had to be kept closed The surgical hospital had only fifteen haemostatic clamps and these were almost too old to use There were no stretchers, and I saw patients with fractures being carried in the arms Except for one microscope, which had been borrowed from a nearby town, there was none in the city and I was told that a routine urine analysis had never been done in the city Tongue depressors had been whittled out of wood at the hospital there was not a rubber glove anywhere Convalescents could not walk because they had no proper clothes or slippers

A special hospital for venereal cases had been in use for two years The head of the public health department told me that besides the epidemic diseases, 75 per cent of the population had tuberculosis and probably 45 per cent active syphilis 6 per cent of the population had appeared in the hospitals for treatment for that disease I saw many cases where several members of the same family were infected not by sexual means, but by ordinary contact, owing to the lack of soap and the usual means of keeping clean The facilities for treating the syphilities were reduced to almost nothing except symptomatic treatment, as there was very little mercury and no arsenicals

The health department had just received from the central Soviet department in Moscow 100 000 doses of small pox vaccine, but 50 000 more were needed

Children's Homes and Hospitals

Many children had been sent up to towns in the north of Russia from the famine region in the south, and most of these had been returned but a few had remained behind because they had no place to go Some of these had wandered out of the children's homes that were provided for them and were to be seen on the streets as beggars or thieves The chief doctor at one of the hospitals told me that many of them came in to the dispensaries not really sick but exhausted from emaciation and malnutrition Although famine had never been present in this district and there were no deaths from actual starvation there had been a diminished supply of food and part of that had to be used for refugees, the morbidity and mortality rates had both risen sharply

Russia is a land of contrasts and it was like coming to an oasis in the desert to enter some hospitals, which in order discipline, and cleanliness would have excelled or rivalled any American hospital Some of these were almost models in spite of the lack of equipment and one could not but admire the ingenuity and pluck of those Russians who worked to make them so

Efforts to Help

This sketch of the Russian hospitals can convey at best but a hazy impression of what has really happened within their walls in the past decade the conditions have beggared description Probably no institutions in Soviet Russia have suffered more than they and at the same time had greater duties to perform Although they have been able to receive not a tenth of their pre-war allocations, they have had more than ten times as much to do Their equipment has been reduced to almost nothing—most of the necessary medicines have been lacking and the personnel has been starving, sick, and trebly decimated by famine, epidemics, and war

As an example of the amounts the hospitals have received, the records of the four largest in Leningrad may be taken,

they show that 75 to 100 per cent of the most important medicines and surgical supplies received in 1922 were donations from the American Relief Administration The British Mission, besides giving large amounts through the Red Cross, supported, under the direction of Sir Herbert Waterhouse and others, a hospital in Leningrad for three years, and the German Red Cross still has a hospital there, although its activities have been greatly reduced in the past year

An enormous amount of relief work was done in Russia by the Swedish, German, French, and Dutch Red Cross Societies, the British Save the Children Fund, and the American Relief Administration Both the British and the American organizations sent not only medicines but food and clothing into Russia

Most of these relief expeditions have been withdrawn The European Student Relief,* however, which is supported mainly by British and American funds (although other countries, notably New Zealand, Australia, Holland, and South Africa, have also provided considerable funds), is doing a limited relief of an excellent nature, principally in the universities, among both students and professors Food and clothing are distributed to the most needy, and student dispensaries have been rendering a valuable service in most of the important universities of Russia It is, however, becoming increasingly difficult to obtain relief funds for Russia, and the European Student Relief, which is doing the most extensive medical relief at present among the universities and intelligentsia, will probably have to withdraw for lack of funds, leaving no medical relief of any consequence in Russia †

PRESENT AND FUTURE

How do the hospitals differ to-day from the conditions just described? Briefly, they have more food and linen and they are more orderly and cleanly Instead of epidemics they have the sequelae to contend with They are just as badly off as or worse than they were in equipment *and number* of personnel

But there has even been some reconstruction going on recently, not in new buildings or equipment, but in the plans and thought for the future "Necessity is the mother of invention," and many new ways of doing things have been introduced into the hospitals which have made for a more efficient use of the material in hand There has been a concentration of equipment and resources by closing many of the hospitals which were in the worst condition Many new institutions are being started for the syphilitic and tuberculous, units have been organized for the study *and eradication of malaria*, summer resorts have been opened around the larger cities and in the Crimea for some of those in need of rest, societies for educating the peasant how to care for his body and prevent disease have been started by the Soviet Department of Public Health, and great strides have been made in the education of pregnant women and nursing mothers These measures exist, not only in Moscow and the larger towns, but I have found *them in the most out-of-the-way* places at great distances from the medical centres The medical profession has shown great fortitude and perseverance all over Russia *in carrying on medical reforms even in the face of* overwhelming disaster I have seen the most neat and careful medical records kept by the public health authorities in small towns on pieces of wrapping paper, etc, and in the midst of the confusion and disorder of the great epidemics and famine I have been presented with the most elaborate and carefully worked out charts of disease and public health campaigns, made by doctors and their assistants who were ragged and undernourished, living on black bread, dried herring, and potatoes

To illustrate the fact that regeneration is taking place along some lines, I shall mention the position of the medical journals Publication of these was practically discontinued during the worst times—1918 and 1919 But now, although there is a great shortage of paper and printing machinery, and printing is more expensive than formerly, there are more medical journals in Russia than before the Revolution, and many towns which never published a journal before are now printing their own—for example, Vologda (population 50,000) and Chereporetz (population 22,000) each prints a medical journal

Were we to judge by material conditions alone the *outlook in Russia would be truly* pessimistic But when we see men who have lived through these conditions themselves continuing to work, devising new methods, and not losing faith, it is hard to believe that something good will *not come of their efforts* The future of the hospitals, however, must depend in a large measure on the economic reconstruction of Russia

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PUBLIC HEALTH IN ITALY

BY

PROFESSOR DR ARTURO CASTIGLIONI,

MEMBER OF THE HEAD COMMITTEE OF THE ITALIAN BOARD OF HEALTH

EVERY year, more especially since the war, very large numbers of English people visit with great interest the historical cities and the most romantic spots of Italy, attentively following the explanations of the guide, and bringing to mind, before the immortal monuments of ancient splendours, *the history of the* people who inhabited the Italian peninsula in bygone centuries But if, generally speaking, ancient Italy is unusually well known to the English, owing to frequent visits and from historical literature, on the other hand it is not possible to say as much for their knowledge of modern Italy, whose aspirations towards social progress and whose remarkable initiative in hygienic matters remain practically unrecognized, even among our colleagues in the United Kingdom As a rule they are more familiar with the names of the great Italian artists than with those of Italy's medical celebrities, and have a much more intimate acquaintance *with the wonderful hygienic* works of ancient Rome than with those of modern Italy, which, to say the least, are not altogether unworthy of notice

As a matter of fact, these great works of the ancient Romans, which in so many Italian cities have left indelible traces, very often induce too severe a criticism of the hygienic conditions of modern Italy For a number of visitors, many of whom are highly educated, the opinions and judgements of English travellers during the last century still hold good The views expressed by these travellers, who were great admirers of the beauties of our country and of its aspirations towards independence, might well have been justified in a period in which, as Gladstone said, the foreign government directing Italian affairs was a denial of God

Recent publications on the conditions of public health in Italy afford conclusive evidence that enormous progress has been made towards the perfecting of sanitary arrangements, both in the cities and in rural districts, through very strenuous work guided by the efforts of many eminent hygienists That the average mortality in Italy is diminishing rapidly and progressively is demonstrated by the fact that, whilst in pre-war years it was about 21 per 1,000, in 1920 and the following years it has been

In 1920	18·77 per 1,000
In 1921	17·43 ,,
In 1922	17·10 ,,
In 1923	16·48 ,,

If these figures are taken in conjunction with the continual increase in the birth rate in Italy, and the decreasing child mortality, it will be seen that the progress achieved has been very notable They would appear in an even more favourable light were it possible to calculate exactly all the factors which exercise an unfavourable influence on the mortality statistics—that is, the emigration of young and healthy men and the immigration of foreigners who arrive in Italy in a very precarious state of health The Italian population during a period of barely half a century has increased from 25 to 40 million The number of marriages,

*Headquarters, 16 Boulevard Philosophes Geneva Switzerland Executive Secretary Conrad Hoffmann

† At a recent meeting of the Executive Committee of the European Student Relief it was decided to obtain at least 100 000 dollars to continue its work during the collegiate year 1924 25

which decreased during the war, has rapidly increased since, though the increase in the number of births has not yet wholly compensated for the diminution which took place during the period of the war, owing to the tremendous upheaval of the social organization. It is nevertheless comforting to note that the birth rate is well on the way to reach the pre-war level, with an annual average of 30 to 31 births per 1,000 inhabitants, which corresponds to an average number of more than one million one hundred thousand births a year. Child mortality during the first year of life has diminished by 30 per cent. and the mortality of children up to the fifth year of life by 40 per cent., during the last fifteen years.

Malaria—the disease which, even in 1860, decimated the population of Italy, and was the cause of 710 deaths per million inhabitants in 1887—has now been definitely checked, and the deaths due to it were reduced to 57 per million inhabitants in 1914, and to approximately 50 in 1923.

Typhus fever, the frequency of which can be taken as indicative of the hygienic progress of a country, has progressively diminished, so that the mortality, which in 1887 was 67 deaths per 100,000 inhabitants, has been reduced to 23 per 100,000.

A fact which hygienists will find worthy of note is the progressive decline of pellagra, which in 1887 was responsible for 120 deaths per million inhabitants. This figure was reduced to 20 per million inhabitants in 1923. This malady has lost its virulent character from the time when suitable laws provided for the improvement in the nutrition of the Italian rural population, and introduced a strict control over maize, the flour of which, in the shape of "polenta" forms the principal diet of the great majority of the North Italian peasantry. This decline of pellagra in Italy, which has been reduced to a few score cases only, is mainly due to the spread of popular education, and to the steady improvement in the economic conditions of the peasant class.

The campaign waged in Italy against tuberculosis is being carried on with the utmost energy, more especially by the "antituberculosis" societies which have been founded by the State. In every province the borough council, the Board of Health, the big industries, and the philanthropic societies combine to form one central society, which has the right to receive from the various borough councils a contribution of a few centesimi per inhabitant. The societies of which there are thirty already in full activity, and forty-five more in process of organization, concentrate in each province the campaign against tuberculosis, thus obviating loss of money and energy, which is always so noticeable where several associations act separately. Though these societies are autonomous, they can obtain State grants and loans on very advantageous conditions for the purpose of founding sanatoriums and special hospitals. At present there are in Italy 30 large dispensaries, 23 sanatoriums with 4,200 beds, 12 tuberculosis hospitals with 1,500 beds for serious cases, 22 seaside homes with 2,700 beds, 23 preventive institutes with 2,300 beds, and 436 health centres which every year send either to the seaside or to the mountains almost one hundred thousand children. Those who remember the conditions prevailing in Italy fifty years ago must recognize the progress that has been made hygienically, especially during recent years, thanks to the unceasing work and effort on the part of the General Direction of Public Health, and of its director, Professor Lutrario, who represents Italy on the International Bureau of the League of Nations.

Some remarks and considerations on infectious diseases, submitted at the last meeting of the Superior Board of Health, may be of interest. Small groups of cases of amoebic dysentery observed in some centres are now rapidly diminishing. Mediterranean fever showed a small increase in 1922 and 1923 in Sicily, but has in general gradually decreased as a result of the strong measures taken by the health authorities to control the supply of goat's milk. It is nevertheless interesting to note that in some places, where goat's milk is not consumed at all, cases of this fever have been verified, this would indicate that other animals besides goats are capable of carrying the germs. The report, which has been presented to the head council by the General Director of Public Health, indicates further a very noticeable decline in the frequency of small-pox outbreaks. In 1923, 250 cases of small-pox were reported in Italy, and in February of that year a slight outbreak took place in the province of Treviso. It was caused by an Indian who landed at Venice with a very high temperature, but who showed no actual symptoms of small-pox. Only after several days did an eruption of boils make its appearance on the body of a nurse who had tended the Indian and on that of a lady who had been in the same wing of the hospital. This was the cause of the outbreak of infection, which nevertheless was soon checked by means of suitable prophylactic measures, and thanks to the very extensive resort to vaccination, which is compulsory in Italy. In this instance the epidemic was very slight and was quickly overcome, 20 cases were reported, from which 2 deaths resulted. These facts and figures are given with the object of showing that the Italian Government and the Council of Health, as well as private individuals also, are continually and energetically disseminating a knowledge of hygiene and of the prevention of disease. This propaganda is also being vigorously carried on through the medium of the schools. The new school law of the Ministro Gentile, which has encountered much criticism, not all of it justified, has, on the other hand, earned the praise of hygienists, for the reason that it has made compulsory the teaching of hygiene in the elementary schools.

Hygienic propaganda directed against venereal disease has already commenced to show excellent results, and it is therefore reasonable to expect that with regard to the solution of the very grave problems of public health, which in all civilized nations play so great a part, Italy will with dignity be able to maintain that standard which has been assigned to her by the traditions of her glorious past.

England and Wales.

JOINT COUNCIL OF THE ORDER OF ST JOHN OF JERUSALEM AND THE BRITISH RED CROSS SOCIETY

THE fourth annual report of the Joint Council of the Order of St John of Jerusalem in England and the British Red Cross Society deals with the year April 1st, 1923, to March 31st, 1924, and contains seven departmental reports, the report of the finance committee, and a statement of accounts. The Council has appointed Dr F. N. Kay Menzies to fill the place left vacant by the death of Sir Napier Burnett. He will not exercise the function of chief executive officer, but will be the director of the department of hospital and medical services. The departmental reports show that most valuable work is being carried on. The auxiliary hospitals officers' department has assisted 529 officers during the twelve months, of whom 226 were new cases, this brings the total number of cases assisted since August, 1914, to 17,022. A large proportion of the work was in connexion with the care and treatment of officers and ex-officers suffering from tuberculosis; some of them have been assisted in meeting the expenses of sanatorium treatment whilst their cases were under consideration by the Ministry of Pensions or the Officers' Appeal Tribunal. In many instances the ex-officers so helped have eventually established their claims, and the department has been able to recover from the Ministry of Pensions the greater part of the expenditure on sanatorium treatment. The emergency help committee has dealt with 20,000 new cases during the year. The administration expenses continue low, voluntary assistance being given by representatives of the Council throughout the country. There has been during the past year a marked increase in the amount voluntarily refunded by men and widows who have been assisted while their claims for pensions were pending. This emergency help scheme provides a great measure of relief not forthcoming from any other charitable source, and many thousands of deserving cases of sick and disabled servicemen and their dependants are benefiting by it. We have on a previous occasion given an account of the work done

under the direction of the home service ambulance committee, but we may recall that there are now 333 ambulance cars working in England, Wales, and Ireland In many districts it is the practice for members of the Order of St John or of the British Red Cross Society to accompany the ambulance—an example of service to the community which deserves fuller recognition than it receives at present The hospital service department has visited eight hospitals in the country during the year to discuss matters of administrative and general interest, with a view to helping the respective committees of management Reports of 666 hospitals were carefully examined and a report published by the late Sir Napier Burnett in July, 1923, with his comments and observations The joint women's V A D department, which was created in April, 1916, under Dame Katherine Furse, and had continued its activities under Lady Ampthill, was closed at the end of 1923 The stores department has dealt with over £19,000 worth of goods during the year, and has dispatched numerous gifts to the Ministry of Pensions hospitals The tuberculosis subcommittee was appointed in March, 1923, to deal with the administration and expenditure of the special grant of £100,000 voted to the Joint Council by the Joint Financial War Committee for the relief of ex-officers and men suffering from tuberculosis caused or aggravated by war service In addition to its other work the committee has reserved ten beds at the Brompton Hospital for Consumption for treating selected ex-service tuberculosis patients by the Dreyer method Sufficient time has not yet elapsed for a definite opinion as to the efficiency of the treatment

London Street Ambulances

There has been a steady increase in the calls to cases of accident received by the London County Council ambulance stations during the last seven years Thus Fulham calls rose from 1,360 in 1917 to 3,216 in 1923-24, Bloomsbury calls from 2,669 to 6,592, and the total calls in London from 12,632 to 28,270 At the present time it is reported that there are twelve active ambulances and two spares The chairman of the Traffic Subcommittee of the Metropolitan Boroughs Standing Joint Committee informs us that the percentage of cases in which ambulances were not immediately available on receipt of calls during the last two years was only 3·5 per cent, many cases being included where the delay was only a matter of a minute or so The average time taken to reach a case is eight and a half minutes from the time the call is received at the station, and it is desirable to decrease the interval between the occurrence of the accident and telephoning for an ambulance When an accident occurs the telephone exchange should be asked for "ambulance," and as soon as the caller is put in touch with the headquarters of the London Ambulance Service particulars as to the locality of the accident or illness should be given, together with the name of the caller No charge is made for the call, whether from a public call office or from a private telephone More facilities for telephoning are desired, and telephone subscribers who are willing to assist in this way will receive tablets containing the letter 'A," to be placed outside their premises, indicating that an ambulance may be summoned from there Those willing to help in this manner are invited to send their telephone numbers and addresses to the officer in charge of the Ambulance Service, 94, Southwark Bridge Road, S E 1

Scotland.

New Departments of Edinburgh Royal Infirmary

Plans have been approved for the erection of a completely new radiological department in the Royal Edinburgh Infirmary The building will be situated on ground at present vacant between the existing East Clinical Medical Theatre and the Pharmaceutical Laboratory, and it is estimated to cost over £12,000 A new and thoroughly modern installation of x-ray and other electrical apparatus will be housed in the building, and it is estimated that this will cost not less than £10,000 The building is to be a two-story structure In the upper flat there will be rooms for electro-therapeutics, physical therapy, and applications of radium, of which the Infirmary possesses a fair supply The ground story will be devoted to the heavier types of x-ray apparatus, including apparatus for deep x-ray therapy An order has been placed in Paris for the construction of a thoroughly modern outfit for this purpose Travelling apparatus will be supplied for use in the wards Some months ago an x-ray surgical theatre was equipped in the Infirmary and placed under the charge of Mr Henry Wade The work of this theatre has been eminently successful, and it will be continued as a branch of the new department

It is proposed to develop a school for instruction in radiology when the new department is available The present intention is that the course for radiologists shall last one year, at the end of which the University will award a diploma to successful candidates A shorter course will be given for the instruction of medical students The new department will be under the direction of Dr J M Woodburn Morison, who at present holds the position of consulting radiologist at the Ancoats Hospital, Manchester, and of assistant radiologist to the Manchester Royal Infirmary He will also act as University lecturer in radiology It is hoped that work on the new building may be started before the close of the present year, and that the apparatus will be completely installed under the supervision of Dr Morison by the autumn of 1925

Plans have been prepared for the erection of the Rockefeller Clinical Research Laboratory on a site in close proximity to this building, and extending from the East Clinical Theatre to the Meadow Walk The East Clinical Medicine Theatre will be reconstructed, and will be available to the workers in the Rockefeller Clinical Laboratory and to those in the radiological department The new clinical laboratory will contain rooms for research work and smaller wards sufficient to accommodate twelve beds (six male and six female), which will be available to all the staff of the Infirmary for any special clinical research work that it may appear desirable to carry out It is expected that this research laboratory will be ready during 1925 Owing to the elaborate character of the building designed, it will in all probability require for its construction all the money already presented for this specific purpose, but it is hoped that a further grant will be made by the Rockefeller Trust to meet the cost of its equipment

Chair of Surgery in the University of Glasgow

Mr Archibald Young, B Sc, M B, C M, F R F P S G, has been appointed by Royal Warrant to be Regius Professor of Surgery in the University of Glasgow, in succession to the late Sir William Macewen Mr Young was born in Glasgow fifty years ago, and received his education at Glasgow High School He continued his studies at Glasgow University, where he had a career of much distinction In 1893 he took his B Sc degree in natural science, and in 1895 he graduated M B, C M with high commendation Having gained experience as resident physician and surgeon in Glasgow infirmaries, he acted for a time as private assistant to the professor of pathology, the late Dr Joseph Coats In 1898 he was appointed assistant to Sir William Macewen, with whom he was associated in systematic and clinical teaching for some years During the South African war he served as a civilian surgeon attached to No 3 General Hospital in Kroonstad, where he made valuable observations on injuries to peripheral nerves, and the results of these were embodied in a paper which was included in the official surgical report of the war This report was published in 1905, and it is worthy of note that Mr Young's paper on "Gunshot wounds of peripheral nerves" was the only independent contribution from a civilian surgeon which appeared therein He had further war experience during the European war, as, after mobilization with his unit (the 4th Scottish General Hospital) with the rank of major, he was appointed by the Scottish Command to the post of neurological expert The valuable work which he carried out during his four years' tenancy of this post was recorded in a paper which he read to the International Congress of Surgery held in London last year Mr Young has been

recognized for many years as an enthusiastic and successful teacher of surgery In 1913 he was appointed professor of surgery in the Anderson College of Medicine, Glasgow, where for some years past he has acted as dean, and much of the success which has attended the work of this school in recent years is the direct result of his powers as a teacher and his organizing ability In 1913 he became a Fellow of the Royal Faculty of Physicians and Surgeons of Glasgow, for which body, and for the University, he has frequently acted as an examiner in surgery He has held from time to time other important surgical appointments notably those of visiting surgeon to the Eastern and Western District Hospitals in Glasgow, and to the Broadstone Jubilee Hospital, Port Glasgow Mr Young has for many years taken a very active part in the work of the Glasgow Royal Medico-Chirurgical Society, of which he was this year elected president In addition to the important papers already mentioned in connexion with war surgery, Mr Young has been a frequent contributor to surgical literature, on many and varied subjects Mention may be made of his work on skin grafting by the whole-skin method, on the operative treatment of fractures, and on the treatment of gastric and duodenal ulcers, which embodied the results of much original research Mr Young has in these and other contributions shown his natural gifts of earnest and painstaking research, and in his new post he will have *abundant opportunity to exercise* these gifts, and to foster the enthusiasm for research in his assistants and co-workers It is well known that he is a strong believer in the value of unselfish collaboration of workers for the advancement of scientific surgery, and it is confidently anticipated that in the hands of Mr Young the high traditions of the chair of surgery in Glasgow University will be well maintained

The Vale of Leven Cottage Hospital

A cottage hospital has been established at Broomley House, Balloch, for the use of the inhabitants of the Vale of Leven, in memory of the late Mr Henry Brock, who bequeathed £15,000 for the purpose Mr Brock's death occurred during the war, and since building at that time was not possible the money was invested and increased to over £20,000 The reconstruction of Broomley House was carried out under the general advice and supervision of Dr D J Mackintosh, medical superintendent of the Western Infirmary, Glasgow An excellent cottage hospital on an ideal site has now been obtained at a cost less than would have been the case had a new building been erected It is expected that after all costs have been paid a balance of about £10,000 will remain as the nucleus of an endowment fund Two general wards have been constructed adjoining the operating theatre, and with kitchens and sanitary annexes complete in every detail The children's ward with a balcony contains four balcony cots for open-air treatment A large room is available for private patients, and there is ample accommodation for the staff

East Fortune Sanatorium

The first annual report of the East Fortune Sanatorium at Drem, East Lothian, covers the period between the opening of the sanatorium in December, 1922, and May, 15th 1924 At the commencement sixteen beds for females were provided and forty-eight beds for children were added on January 1st, 1923 The sanatorium occupies the site of an aerodrome constructed during the war, and the demolition of the airship sheds and related structures was only completed by the middle of April, 1924, so that at first it was only possible to admit advanced cases in small numbers The institution when complete will have 199 beds—fifty-eight for the treatment of children, sixty-two for adult females and seventy nine for adult male Provision has been made for patients in all stages of the disease forty-four beds being allocated for advanced male and twenty-six for advanced female cases These beds will be placed in buildings specially designed to facilitate nursing, and the treatment of disease in other areas than the lungs The provision of an x ray outfit, operating theatre, artificial light room, and plaster and celluloid rooms is contemplated The treatment employed in the sanatorium includes the use of sunlight and a carbon arc light installed for the winter months Tuberculin administration by inunction was found *to be effective in children*, and for some months Professor Dreyer's new tuberculin has also been used, good results being obtained in cases of gland and bone tuberculosis

Glasgow Ophthalmic Institution

The following have been appointed visiting surgeons to the Ophthalmic Institution which is connected with the Glasgow Royal Infirmary Thomas Stewart Barrie, M B, Ch B, F R F P S G, Alexander Garrow, M D, Ch B

Ireland.

Kilkenny Mental Hospital

At the last meeting of the committee of the Kilkenny Mental Hospital a letter was read from the Ministry of Local Government with reference to the question of appointing an assistant medical officer to succeed Dr Grace The letter pointed out that under Section 84 (1) of the Local Government Act, 1898, at least one assistant medical officer must be appointed in each district lunatic asylum, and that it was therefore not open to the committee to adopt a motion to make no appointment The Minister went on to state that he was advised that, in view of the necessity of raising the standard of training of assistant medical officers, appointments to these posts should be probationary in the first instance, and that in advertising vacancies preference should be given to a candidate who had a recognized qualification in mental diseases, or was willing to undergo a course of instruction as early as practicable after taking up his duties It might be necessary that facilities by way of study leave should be given in order that the officer appointed might, during the probationary period, obtain special training, it was suggested that an increase of salary should be provided when the conditions had been fulfilled As there will be only one assistant medical officer, the Ministry considers it advisable, in the interests of the institution generally, that the vacancy should be filled by a man The practice of remunerating officers partly by a salary in cash and partly by allowances in kind is held to be open to objection on the ground of economy, and the Minister suggested that remuneration should be by an inclusive cash salary, with no allowances, except apartments The officer appointed might, if he so desired, make an arrangement with the committee with regard to having the use of official furniture In recent appointments in other mental hospitals the Minister has approved of proposals fixing the salary of £300 a year during the probationary period, with a proviso that it be increased to £350 when the appointment is made permanent The clerk stated that Dr Grace had a salary of £320, £120 cash in lieu of emoluments, and £20 for vegetables and laundry, total £520 The committee decided to fix the salary at £200 a year for Dr Grace's successor, and allow the same rations and allowances as enjoyed by Dr Grace

Correspondence.

CAPDIAC DELIRIUM

SIR,—I am late in reading the note concerning "cardiac delirium" by my friend, if I may venture so to call him, and brother graduate of Toronto, Dr Rudolf In the use of this name Dr Rudolf thinks I have fallen from my own standard of English, in any case, I am sure, no very giddy descent But have I fallen? Dr Rudolf says that the name "delirium cordis" is already given to an irregular action of the heart due to auricular fibrillation or other similar perversion

My reply must be that in all past time since the word came into use it has been used to signify a rage of the mind, and that its application to cardiac agitation is metaphorical only In scientific matters metaphors are rarely safe, and I am not sure that in this instance the name is very happily applied to somatic conditions? But this I say with great respect to my critic—I am, etc,

Whitby, Aug 16th. CLIFFORD ALLBUTT

X-RAY INTERPRETATION

Sir,—Judging by Dr Jordan's letter in the Journal of August 2nd (p 215), the point at issue between us is fundamental, and since we approach the matter from such different angles we are unlikely to achieve agreement To me the possibilities of radiology as a contribution to diagnosis are so great—possibilities to the demonstration of which Dr Jordan has himself so ably contributed—that it is all the more pathetic to see experts in this science attempt to build up complete theses, *from them data alone*, concerning difficult cases submitted to them for investigation The clinician does not attempt this feat, nor the bacteriologist, nor the biochemist—or they should not In his reference to the skilled oculist who "diagnoses that the characteristic retinitis he sees is due to albuminuria" Dr Jordan subscribes to a bastard pathology which is not even consistent with facts, and in doing so he proves the futility of the very licence for which he pleads The appearance mentioned may be present without albuminuria, and, when albuminuria is present, the most the oculist will say (if he be wise as well as skilled) is that the albuminuria and the retinitis are associated phenomena

Unfortunately the trouble does not end with bastard pathology, it is more mischievous than that hard in the wake of the effort to strain the potentiality of any method past its physical limit comes that very human desire to find the thing the observer looks for, be it the disease that occupies his fancy at the time, or the thesis he is anxious to establish by a multitude of cases From such human frailty Dr Jordan, no more than the rest of us, is likely to be free

For these two reasons, therefore, Sir, I abide by my criticism, made as it was in all frankness, and yet in all sympathy, looking anxiously to my own withers the while —I am, etc,

London, W 1 Aug 15th THOMAS HORDER

LYMPHANGOSTOMY, NOT LYMPHATICOSTOMY

Sir,—All your readers must have been interested and instructed by Mr Arthur Cooke's paper on lymphaticostomy in your issue of June 14th, but some of us of a philological turn of mind will have been set thinking about the name given to this new procedure, which dates apparently from 1922 Having no classical attainment I hesitated in the hope that some scholar, who could speak as one having authority, would protest against the new word, but as it has since been repeated in your pages without any protest I venture to rush in in place of those timid angels

I take it that 'lymphaticostomy" is a term meant to be descriptive of the *operation* of making a mouth in a lymphatic vessel It is the *vessel* in which the mouth is made, and surely, therefore, the Greek word ἀγγεῖον should be adopted as in the well established words "lymphangitis" and "lymphangiectasis," etc I therefore put in a plea for 'lymphangostomy" in place of 'lymphaticostomy" I am aware that it may be retorted on me that lymphangitis is a shameful hybrid, "that would have made Quintilian stare and gasp" as much as Gordon or Colkitto, for the word 'lymph" is not derived from the Greek Yet the compound's right to exist is established by prescription, and for the sake of uniformity new names for diseases and cures affecting the lymphatic vessels may best be formed on the same basis

We may regret the jumble of Greek and Latin in our medical terminology, but let us thank heaven and the classical tradition that we do not have to call our mucous membranes "slime-skins" or the much abused appendix a "worm process" after the chemist manner of our friend the late enemy!—I am, etc,

August 16th LEXICOLOGIST

NON-OPERATIVE TREATMENT OF TUBERCULOUS CERVICAL GLANDS

Sir,—A general practitioner, aged 44, had enlarged (left) cervical glands at the age of about 6 He was a "delicate child" with conspicuously poor appetite At age 9½ severe diphtheria (with all the sequelæ) left him in very poor health with considerable increase in size of the left cervical glands He lost two terms at school The question of operation was raised, but negatived At about 12 the glands, which had diminished in size, again enlarged, and this was accompanied by phlyctenular ulceration (both eyes) At 13½ he had pleurisy with effusion He lost one term at school From 16 he ceased to be "delicate," and by 17 the glands had become practically normal At 19, in his first term at hospital, he was admitted for corneal ulceration The ulcers healed without scarring, but an evening rise of temperature led to a physician being called to see him An enlarged spleen was found No further manifestations referable to tubercle have occurred, despite the ordinary stress of general practice from 25 to 34, a compound fracture, an attack of septicæmia, and several attacks of influenza

War service in France was from age 34 to 39, continuously from September, 1914, to June, 1919 (except for three months in England when wounded), and included more than a year as infantry medical officer He is again in general practice, and is, Sir, your obedient servant,

August 17th QUITE WELL

DIAPHRAGMATIC HERNIA

Sir,—I have read Dr McCabe's report of his case of diaphragmatic hernia with interest (August 9th, 1924, p 236) Many years ago my father and I had a case almost exactly similar, at any rate as far as the *post-mortem* appearances were concerned

A child aged 1 year and 3 months crawled under a thrashing engine and got squeezed between the firebox and the ground—a space of about six inches The child did not seem much the worse for the accident and soon regained its normal condition, and appeared to be much the same as the other children, except that he suffered from some dyspnœa and appeared worse after meals When he was 3½ years of age he was seized with violent pain and abdominal symptoms, and died in a few hours The necropsy revealed a hole in the left side of the diaphragm through which the whole of the stomach and a loop of colon had passed into the left pleural cavity The aperture in the diaphragm was of oval shape, two inches long and one inch wide The lung was compressed and the heart pushed well to the right side

The case was published in the Journal at that time, and, should Dr McCabe wish it, I should be happy to send him a copy of the original paper, with a sketch of the organs in the position they occupied—I am, etc,

CHARLES RANDOLPH, M R C S

Milverton, Somerset Aug 11th

R A M C (T A)

Sir,—With reference to the correspondence on the above subject may I be permitted to point out that there is a group of medical officers whose service could be made use of were the Territorial Army authorities so inclined—namely, the medical officers of the Territorial Cadet Force The formation of R A M C (T C F) or the granting of honorary commissions in R A M C (T A) to medical officers of cadet units somewhat on similar lines to the honorary commissions in R N V R granted to officers of naval cadet units would, in a measure, help to combat the shortage in the R A M C (T A)—I am, etc,

MEDICAL OFFICER, TERRITORIAL CADET FORCE

August 9th

The Services.

FOREIGN DECORATIONS

The following decorations have been conferred by the President of the French Republic for distinguished services rendered during the war 1914-19 *Médaille de la Reconnaissance Française en Argent*, Captain Alfred S Bruzaud, R A M C (T F) (now retired T A), temporary Captain Simon J Coulter Fraser, R A M C, temporary (Honorary) Major Louis F Knuthsen O B E, R A M C, *en Bronze* Captain Lionel T Chillenor, R A M C (T F), temporary Captain Richard B Johnson R A M C, temporary Captain Frederick A Ross, R A M C, *Médaille des Epidémies en Argent*, temporary (Honorary) Major Louis F Knuthsen, O B E, R A M C

DEATHS IN THE SERVICES

Colonel Benjamin Bloomfield Connolly, C B, Army Medical Staff (retired) died at Brighton on June 20th He was born on September 10th, 1845 He was the son of the Rev J C Connolly, R N, and was educated at Cambridge, where he gained an

exhibition at Gonville and Caius College and at Guy's Hospital he graduated B A in 1867 M A in 1871 and B Ch and M D in 1891 He also took the L S A in 1869, the M R C S in 1870 and the F R C S in 1889 After serving in the Franco-German war of 1870-71 he entered the army as assistant surgeon in 1871, and served in the 58th Foot now the South Lancashire regiment He became surgeon major in November, 1882 receiving special promotion for services in the Egyptian war He was promoted surgeon lieutenant-colonel after twenty years service and retired on October 21st of the same year During the South African war he was re-employed at Woolwich and promoted to colonel (his third special promotion) and during the recent war returned to duty again and held the post of A D M S Sussex district He had a long list of war service Besides the Franco-German war mentioned above he served in the Jowaki campaign on the North West Frontier of India in 1877-78 receiving the Frontier medal with a clasp in the Zulu war of 1879 in the Egyptian war of 1882 when he was present at the battle of Tel-el-Kebir received the medal with a clasp and the Khedive's bronze star and was specially promoted to surgeon major in the Eastern Sudan campaign of 1884, when he was at the battles of El Teb and Tamai was mentioned in dispatches in the *London Gazette* of May 6th 1884 and gained two clasps to the Egyptian medal and the Order of the Osmanieh and in the Nile campaign of 1884-85 in command of the camel bearer company, when he was present in the attack on the convoy of wounded on February 13th 1885 was mentioned in dispatches in the *London Gazette* of August 25th 1885 received another clasp to the Egyptian medal and was specially promoted to a higher rate of pay He also received the C B in 1900 He was the author of treatises on Asiatic cholera and on puerperal fever

Colonel George William Patrick Dennys C I E Bengal Medical Service (retired), died at Milford-on-Sea Hants on July 30th aged 67 He was born at Karachi on April 28th 1857 the son of Captain Julius Boutell Dennys 38th Bengal Infantry and educated at Bart's taking the M R C S and L R C P Lond in 1878 He entered the I M S as surgeon on August 31st, 1879 passing third into and first out of Netley became colonel on June 16th 1910 and retired on January 10th, 1917 Most of his service was passed in civil employment in the Punjab where he was civil surgeon of Peshawar and of Delhi, among other important stations Later in the administrative rank he was inspector general of hospitals in the Central Provinces He served in the Afghan war of 1878-80 receiving the medal and was given the C I E on January 1st 1915

Major Joseph FitzGerald Blood Bengal Medical Service (retired) died at Birkenhead on July 29th aged 71 He was the son of FitzGerald Blood Esq of Quin County Clare and was educated at Trinity College Dublin where he graduated as B A M B and M Ch in 1875 and as M A and M D in 1892 After serving as house surgeon and clinical ophthalmic assistant at the Adelaide Hospital Dublin he entered the I M S as surgeon on March 31st 1877 became surgeon major after twelve years service was placed on temporary half pay on account of ill health on December 21st 1890 and two years later was invalided out of the service After his retirement he settled at Birkenhead where he held the posts of surgeon and later of consulting surgeon to the Birkenhead Borough Hospital and was also for some time a lecturer in the Liverpool School of Tropical Medicine He served in the Afghan War in 1878-79 in the Kandahar and the Thal Chotiali Field Forces and received the medal

Major Philip John Veale Indian Medical Service (retired) died in London on July 30th aged 37 He was born on September 25th 1887 educated in the Bristol Medical School and took the M B and B S of London University in 1910 Entering the I M S as lieutenant on January 27th 1912 he became major in 1923 and was invalided on ill health so recently as March 1st 1924 He served in the recent war of 1914-19 and was mentioned in dispatches in the *London Gazette* of June 5th 1919

Obituary

GEORGE HEATON, F R C S,

Consulting Surgeon General Hospital Birmingham

WE greatly regret to announce the death of Mr George Heaton, which occurred on Tuesday August 12th Mr Heaton had been ill for some time, but he made a temporary recovery and the end came unexpectedly

For many years a prominent figure in the medical life of Birmingham George Heaton was 63 years of age, having been born on June 9th, 1861 He was the son of the late George Heaton of Handsworth, who was prominently associated with the Birmingham Mint He received his early education at Clifton College whence he went up to Magdalen College, Oxford, with a demyship in science, and took the degree of B A with a first class in the honours school of natural science in 1883 He proceeded to St Bartholomew's Hospital, where he became senior scholar and gold medallist, and afterwards house surgeon He obtained the M A, M B, Ch B Oxford and M R C S F R C P in 1888, and secured the F R C S Eng in 1891 Birmingham has always been the chief field of his professional activities, and he held many appointments in the city He served the General Hospital as honorary surgeon, and at the time of his death was on the consulting staff, he was consulting surgeon to the Birmingham and Midland Hospital for Sick Children, the Corbett Hospital, Stourbridge, the Birmingham General Dispensary, the Royal Institution for the Deaf and Dumb, and the Birmingham Blue Coat School He was examiner in surgery at the University of Oxford and lecturer on operative surgery in the University of Birmingham Mr Heaton was a vice-president of the Section of Diseases of Children at the Annual Meeting of the British Medical Association when it met in Birmingham in 1911 His published works include a book on *Surgical Interference in Diseases of the Stomach*, and a number of papers, mainly on the surgery of the abdomen, contributed to the columns of the BRITISH MEDICAL JOURNAL and other professional papers

Mr ALBERT LUCAS, senior surgeon to the General Hospital, Birmingham, sends us the following tribute to his late colleague's memory The tragically sudden death of my old friend and colleague George Heaton came as a great shock to me and the profession in the city We were students together in the same year at St Bartholomew Hospital, and later for many years colleagues at the General Hospital, Birmingham Heaton went up to St Bartholomew's with a great reputation from Oxford, and was soon recognized as the best man of the year, taking most of the prizes and scholarships He elected to settle down in his native city and was connected with the General Hospital continuously for thirty-five years His health was not over good, the result of an illness he suffered whilst resident surgical officer at the General Hospital He was an excellent teacher, good clinician, and a masterly operator The clinical notes of his cases struck me as models of what such notes should be His business capacity and his advice were, I know, much valued by the boards of management in the institutions with which he was connected His opinion as a consultant was greatly valued by practitioners in the city and the surrounding districts He was very fond of sailing, and was a keen golfer He was deeply interested in the work of the Birmingham Medical Benevolent Society, an institution which does a great deal of good in a quiet unostentatious manner He was buried on August 15th at Handsworth Parish Church in the presence of a very large number of his old colleagues and practitioners of the district We shall miss him, and the city will be the poorer by his death

THE LATE DR ANDREW SMITH

Mr GILES TURNER in the course of his appreciation of the life and work of the late Dr Andrew Smith of Whickham, *expressed the hope that some of Dr Smith's former* assistants would speak of their experiences while there In response to this suggestion 'A F W M" has sent us the following tribute

It was my privilege to be one of Dr Andrew Smith's assistants during a period of two years, and I look upon that experience as the most important in my medical life I think I am right in saying that the majority of men who were his assistants were "outdoor" assistants—they had the management of a branch of the practice—and in that lay a very valuable factor The real responsibility of practice was placed on their shoulders they felt they had to justify the faith placed in them by their chief, and this lead to a self reliance of inestimable value when the time came for their starting practice At the same time they had the satisfactory feeling that they had behind them, not only an able and shrewd diagnostician, but one ever ready to come to their aid at any time or day or night, and that invariably cheerfully

When I look back to these two years, those pleasant Sundays to which Mr Turner refers stand out most clearly a real red letter day after the hospitable meal—and at Dr Smith's house not only one, but many extra plates could always be set at a moment's notice—any new cases of interest or consequence or any new development in a case which had previously been under discussion, were talked over and looked at from every side As can well be

imagined in an extensive practice which at that time kept three men working hard—the hardest worker and least self-sparing being Dr Smith himself—there was no lack of material for discussion Nor were those post-prandial clinics purely discussive—patients who were able were brought to the consulting room for clinical demonstration, and there Dr Smith, without ever seeming to teach, yet taught us of the younger generation many things Most important of all, he taught us to love our work and infected us with the tremendous enthusiasm which he ever manifested He taught us, too, by example the importance of absolute thoroughness of examination In obscure cases his hard-headed and cautious analysis of all the evidence of signs and symptoms might be called typically Scottish His diagnoses were accurate because his methods were sound To me these medical discussions were of great interest and value, but I think I enjoyed even more those rich evenings when, till well beyond midnight, we could listen to him discoursing on literature or philosophy, and sometimes get him to re-read a paper from those numerous contributions he made to literary and philosophic societies His wide and varied knowledge of literature, his deep reading among the philosophers, and the evidences of his own thinking, made one wonder how his busy professional life left him any time for such recreations With all this the social side of medicine was not neglected, and I return happy memories of medical dinners to which he took me as his guest—dinners where the conversation was no less sparkling than the wine, and where his generality and kindliness added to the happiness of everyone

The sense of duty, integrity, and honesty were manifest in him, hard work seemed but a pleasure to him Deeply religious in the very truest sense of the word, he was an ideal doctor to serve under as an assistant His was a temper to envy and to try to emulate—never hasty, never visibly angry, never put out by hurry or worries He looked for and found the best in others, and his own best seemed ever to be uppermost To those of us who knew of his movements and doings his death came with most tragic suddenness, for up to the end his enjoyment of life, one might almost say his youthfulness, was manifest And yet I believe he would have had it no otherwise All who have been privileged to be assistants to Andrew Smith mourn the loss of a sincere friend, and will carry with him to his own journey's end the memory of an able doctor and an upright man

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Dr JOHN MACKENZIE died at his residence in Ingleton, Yorkshire, on June 30th at the age of 69 He was born at Lochinver, Sutherlandshire, and was educated in Edinburgh, where he received the diplomas of L R C P, L R C S, and L M in 1881 He was district medical officer and public vaccinator for the parishes of Ingleton, Thornton in Lonsdale and Burton in Lonsdale Settle Union He was also a justice of the peace His niece, Dr MARION E MACKENZIE, sends the following appreciation

Dr John MacKenzie of Ingleton, a country village in the Yorkshire hills, spent his life in the service of others, endearing himself to his patients by his cheery optimism and his ungrudging services At times the pressure of work was almost unbearable, and this was the case during the epidemic of influenza last winter, which laid the seeds of the illness which ended his life He had sometimes to walk to a house, inaccessible even in the days when he drove a dog-cart, and on one occasion he was only saved from being lost at the foot of Whernside in the snow by a light in a cottage window, all landmarks being obliterated Summoned once for a visitor who had been exploring the caves and had fallen down a pothole 100 feet deep, the doctor was lowered by a rope and splinted the broken leg This action was much admired by those to whom potholes were familiar and since it took seventeen hours to get the patient out one can realize the difficulties involved For the last three years of his life the pits were not working During the whole of that time he attended the families of the miners, supplying them with medicines, without charge It was characteristic of him that when faced with the necessity of parting with his old gardener, he broke down and said he could not do it On the Sunday following his death the view of the parish where he is buried comprised Dr MacKenzie's life to a river, with its strenuous overcoming of difficulties, its beauty, its trend towards the ocean—symbolic of the trend of man towards God He added that on the day he was laid to rest the people had shown what they thought of him by coming in such numbers to pay a last tribute that the church could not hold them

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Dr JOHN SAMUEL GREENE died at Estancia Bagual, Buenos Aires, on June 27th, aged 81 He received his medical education in Dublin at the Royal College of Surgeons in Ireland, took the diplomas of L R C S I and L M in 1863, L R C P I in 1864, and became M D Montevideo and Buenos Aires in the early seventies After serving for two years as surgeon to the Cape Mounted Rifles he settled in the Argentine in 1866, where he carried on a large practice He more or less retired from active practice in 1890, and invested in landed property His upright character and devotion to duty won for him the respect of a large circle of friends of all nationalities, as was shown by the attendance at the funeral ceremony on June 29th His son is Dr A C Greene of Grange-over-Sands

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Professor LUZZATTO, reader in microscopy and biochemistry in the University of Ferrara, Italy, died on July 13th at the age of 50 He had published a considerable number of papers on various medical subjects, and an important monograph on the cystic kidney

Universities and Colleges

UNIVERSITY OF OXFORD

AT a congregation held on August 6th the degree of Bachelor of Medicine (B M) was conferred on I M Sidley

Medical News.

DR ALGERNON D BRENCHLEY has been elected Master of the Society of Apothecaries of London

As the result of an appeal for funds to endow a bed in the Leeds General Infirmary in memory of the late Mr Walter Thompson, surgeon to the infirmary, who died in May last, Sir Berkeley Moynihan has handed the sum of £1 265 to the authorities of the institution It is proposed to fix a memorial plate over a bed in one of the wards

UNDER the auspices of the Fellowship of Medicine and Post Graduate Medical Association a special course in infants' diseases, for medical officers of welfare centres and others, will be given at the Infants Hospital, Vincent Square, Westminster, from September 15th to 27th The fee for the course will be £3 3s The names of practitioners wishing to attend (the number will be limited to fifteen) should be sent to the secretary to the Fellowship, 1, Wimpole Street, W 1

THE Nightingale Fund Committee of St Thomas's Hospital has established, as an experiment, a travelling fellowship, the holder of which is to visit the United States and Canada to examine and inquire into nursing, especially in relation to public health, and to report Miss Olive Baggallay has been appointed Nightingale Travelling Fellow, and the Battersea Borough Council, under which she is working, has granted her a year's leave for this purpose.

THE Wellcome Historical Medical Museum will be closed for cleaning and redecoration from September 1st to 30th inclusive

ON the occasion of the eighty eighth Congress of German Natural Science and Medicine the German Society of Epidemiology will hold its annual meeting at Innsbruck from September 23rd to 26th Papers will be read on the objects of epidemiological investigation, by G F Wolter of Hamburg, on what epidemiology can learn from outbreaks on ships, by H Gleitsmann of Kiel, on the first epidemic of syphilis (1495-97), by K Sudhoff, and on the history of the development of epidemiology, by G Sticker

DR PIERRE LUCCHINI, writing under the name of Pierre Dominique has obtained the Balzac prize for literature with a novel entitled *Notre Dame de la Sagesse*

A REUTER telegram from Peking states that the American Red Cross has given 100,000 gold dollars to the fund for the relief of the flood devastated areas in China

THE National Association for the Prevention of Infant Mortality (117, Piccadilly, London, W 1) is arranging a post graduate course of lectures on child welfare for health visitors, nurses, and midwives at Nottingham, Chesterfield, and Derby, from September 5th to October 4th inclusive Particulars may be obtained from the honorary secretary, Miss Halford

THE Automobile Association has prepared hotel location maps of England and Wales and Scotland, on which are shown the locations and classifications of the hotels appointed by the association The maps, which are supplied free to members, serve as a "territorial" key to the alphabetical list of towns given in the A A Handbook, in which full particulars of tariffs, telephone numbers, classifications, etc , are to be found

THE twelfth annual report of the British Dentists' Hospital records the large increase in the work carried on at the hospital centres and clinics during 1923, as compared with the previous year The number of patients attendances increased from 13,437 to 17,137, and this necessitated an increased number of sessions being held, the figure rising from 1,795 to 1,896 Progress is being made in opening new centres, and additions to the equipment of the clinics opened during war time under arrangements with the borough councils, will result in making these clinics models of their kind In seven London boroughs there is an arrangement for special work in connexion with the treatment of patients at the tuberculosis dispensaries The hospital deals with the large class of persons who, possessing limited means, are unable to pay the ordinary charges of dental surgeons in private practice

ARRANGEMENTS have been made for students of the Lahore Medical College to be received in Madras hospitals for midwifery training, since there has been difficulty in obtaining the requisite amount of this training in Lahore The Punjab Government has now decided to set aside a sum of 1½ lakhs of rupees for the purchase of a suitable site for the erection in Lahore of a special maternity hospital

THE second Spanish Congress of Medical Science will be held at Seville next October

THE Tokyo Imperial University, which was destroyed in the recent earthquake, is to be reconstructed at a cost of over £4 000 000

A NEW post graduate hospital, to be known by the name of Sydenham, is about to be established in New York The plans are ready and the estimated cost for building and equipment is 1,250,000 dollars

THE *Journal of the American Medical Association* states that the curious penalty of suspension of the right to practise for a period of thirty days has been imposed on Dr Dwight I Poush of Springfield by the Ohio State Board of Examiners He is, it is said, an exponent of the Abrams electronic reactions, and was charged with publishing false and misleading statements concerning the cure of incurable diseases

THE late Mrs Mary Frances Thorne of Lossiemouth and Heckfield Hants has bequeathed £1,000 each to the London Hospital and to the Royal Free Hospital, Gray's Inn Road, for the maintenance of a bed in each institution

THE French Society of Ophthalmology will hold its thirty eighth congress at Brussels on May 11th, 1925 Further information can be obtained from the General Secretary, Dr René Outray, 6, Avenue de La Motte Piquet, Paris VII e

A MEDICAL faculty has been established at the University of Omsk in Siberia

THE seventy seventh annual report of the Chinese Hospital, Shanghai the oldest existing British public institution in that city, contains a report of progress in the training of nurses three of whom were presented with certificates of the Nurses Association of China during 1923 Sixteen male and eleven female nurses were under training during the year The number of in patients during that period was 2,902 out patient visits amounted to 104,662 It is hoped that eventually the hospital may form part of a medical school for the training of Chinese doctors

IN connexion with the Exhibition of Pure Science at Wembley arranged by the council of the Royal Society, a handbook has been issued containing a series of articles by well known authors intended to give some indication of the state of science at the present time Professor E H Starling contributes an article on the circulation of the blood Professors A V Hill and E P Cathcart deal with the physiology of muscular work and Professor D F Harris discusses the biological action of light Professor Irvine Masson supplies an account of the origin of the Royal Society, and an illustration of its coat of arms, granted to it by Charles II, is given The handbook contains also a descriptive catalogue of the exhibits, and may be obtained from Messrs A and I Denny, Ltd , price Is , postage 3d

Letters, Notes, and Answers.

ORIGINAL ARTICLES and LETTERS *forwarded for publication are understood to be offered to the* BRITISH MEDICAL JOURNAL *alone unless the contrary be stated* Authors desiring reprints of their articles published in the BRITISH MEDICAL JOURNAL are requested to *communicate with the* Financial Secretary and Business Manager 429 Strand W C 2 on receipt of proof

Communications intended for the current issue should be posted so as to arrive by the first post on Monday or at latest be received not later than Tuesday morning

ALL communications with reference to advertisements as well as orders for copies of the JOURNAL should be addressed to the Financial Secretary and Business Manager 429 Strand London, W C Attention to this request will avoid delay Communications with reference to editorial business should be addressed to the Editor, BRITISH MEDICAL JOURNAL 429 Strand W C 2

CORRESPONDENTS who wish notice to be taken of their communications should authenticate them with their names—not necessarily for publication

THE telephone number of the BRITISH MEDICAL ASSOCIATION and BRITISH MEDICAL JOURNAL is Gerrard 2630 (Internal Exchange) The telegraphic addresses are

EDITOR of the BRITISH MEDICAL JOURNAL, *Aitiology Westrand, London*

FINANCIAL SECRETARY AND BUSINESS MANAGER (Advertisements etc) *Articulate Westrand London*

MEDICAL SECRETARY *Mediocre Westrand London*

The address of the Irish Office of the British Medical Association is 16 South Frederick Street Dublin (telegrams *Bacillus Dublin* telephone 4737 Dublin) and of the Scottish Office 6 Rutland Square Edinburgh (telegrams *Associate, Edinburgh* telephone 4361 Central)

QUERIES AND ANSWERS.

SUN BATHS

"H B" asks where in Great Britain treatment by sun baths can be obtained for a male adult suffering from worry and chronic nasal catarrh, nothing else

INCOME TAX

Damaged Motor

"AUTOVAC" had a motor smash which wrecked his car and put it out of commission for six months He bought a second hand car rather than hire one for so long a period and now has the two cars How does he stand as regards an allowance for the cost?

*** We cannot see that he has good grounds in law for a claim The fact that he could have claimed an allowance if he had decided to hire does not affect the fact that his purchase of the second car was a 'capital" transaction If he were to sell that car at once the local inspector might agree in the special circumstances to regard the loss incurred as part of the accident cost, on grounds of equity rather than law Strictly however, what 'Autovac" has done is to raise his equipment to a two-car standard, which will only enable him to claim a renewal allowance on that basis (instead of on a single car basis) in future

Motor Car Allowances

"H F A" inquires (*a*) as to the allowance to be made in respect of a motor car being purchased on the hire instalment system, and (*b*) as to an allowance for the fact that the car is driven by the practitioner's wife

*** (*a*) No allowance is due for depreciation, as the statutes discriminate between traders, etc (Case 1 Schedule D) and professional men (Case 2 Schedule D) If the purchased car is in fact a replacement of an old car we are of opinion that the instalments of the purchase price are allowable, subject to any proper adjustment in respect of capital if the car is of better grade than the old one (*b*) If the wife does in fact receive wages to the amount of £45 per annum for driving the car and such wages are reasonable in amount having regard to all the circumstances the allowance of £45 can be claimed but not otherwise

Succession Partner's Expenses

R W F " inquires (1) as to the basis of assessment and (2) as to expenses incurred by himself in doing partnership work

*** (1) Successors to a practice are assessable on the basis of the earnings of the three previous years notwithstanding the change It is however open to them to lodge an application at the end of the first year of the new partnership (as a so a the end of the second and third) if they can show that the profits have fallen short from some specific cause and the con to have the assessment reduced to the amount of the actual profits (2) A deduction should be made for expenses properly incurred by a partner in doing his share of the work of the practice, locomotion expenses are nearly always dealt with in this way The expenses must be deducted in calculating the profits of each of the years entering into the three years average, or of the

actual year's profits if the three years' average is displaced, if, for instance, the whole of the allowable expenses of "R W F's" predecessor have been deducted in arriving at the assessment, he cannot deduct further expenses from his share of that assessment

LETTERS, NOTES ETC

CYCLING FOR CONSTIPATION

DR G D MACKINTOSH (Bolton le Sands, Carnforth) writes Allow me to call attention to the great value of cycling as a cure for constipation

DERMATITIS DUE TO CATERPILLARS

DR CHARLES B ROSSITER (*London*) writes Dr Castle's note (August 2nd, p 218) *re* the dermatitis caused by hairy caterpillars reminds me of an observation I made when practising in Cape Colony many years ago At certain seasons of the year myriads of gaudy hairy caterpillars would cover the veld for very wide areas One day, picking up a very pretty specimen and allowing it to crawl over my hand, I noticed shortly afterwards that my fingers itched intolerably, and continued to do so for days after I at once examined my fingers with a lens and found innumerable short hairs sticking in the pores of my skin Putting the caterpillar under the lens and prodding it with a pencil I noticed a shower of short hairs propelled (like porcupine quills) from the insect It struck me that this was a method of self defence adopted by this creature, and that the hairs sticking in the skin caused the irritation Rubbing makes it worse as the hairs are apt to be either broken off short or pressed further in In a few days the hairs are gradually cast off from the skin and irritation then stops Until I made this observation I had imagined (like others) that the irritation was caused by some chemical emanation

TAPEWORM IN YOUNG CHILDREN

DR R V HOWELL writes According to Still, tapeworm in children under 3 years of age is very uncommon, so the following case may be of interest to your readers A visitor brought his boy aged 18 months to me and stated that his town doctor had said the child was suffering from tapeworm, from the parent's description of the segments passed I accepted the diagnosis, and instructed him to starve the child from midday, except for a drink of water when thirsty, until the following morning At bedtime 1 gr of calomel was given, and at 7, 7 30, and again at 8 the next morning, mx ext filicis liq, followed by a dose of saline About 9 30 a m the father called at my house and produced a tin containing a very long portion of the tapeworm, and when I called at the house later to see the child another 3 ft had been passed, and the head The total length of the worm passed was over 7 ft, and the number of segments contained in this was over 500 Under the microscope the head proved it to be that of *Taenia mediocanellata*

POST ANAESTHETIC VOMITING

DR L STUART WOOLI (Golders Green N W 11) writes The discussion on post anaesthetic vomiting is important There appears to me to be a large psychological element present as I have found that delicate handling of the patient before the anaesthetic, and slow but regular administration, appreciably diminish the distressing after effects Also, the amount should be the minimum required for the purposes of the surgeon

TREATMENT OF HAEMORRHOIDS BY SUBMUCOUS INJECTIONS

DR JOHN DUNBAR (Glasgow) writes I read the article (BRITISH MEDICAL JOURNAL, July 19th, p 100) by Mr H Graeme Anderson and Dr Cuthbert Dukes with great interest I have treated a large number of haemorrhoidal cases and have come to the same conclusions regarding those suitable for injections I would put the percentage of cases a little higher than Mr Pennington, as my experience has been that about 70 per cent are suitable If I am in doubt as to the suitability of a case I inject the piles, and if there is no marked improvement in a week I operate under local anaesthesia When operating for piles under a local anaesthetic it is very rare to have to overstretch the sphincter, and the operation is painless, except for initial needle puncture About 80 per cent of all ano rectal diseases can be operated on under a local anaesthetic As to technique, I also advise against enemata because of the congestion produced, and use glycerin suppositories instead In my opinion piles should not be injected whilst they are prolapsed, if this is done there is usually marked pain on attempting reduction There is now a plethora of instruments for this treatment, but no expensive instruments are required A long narrow syringe, such as is used for tuberculin injections, is very suitable along with a wide bored needle The needle should be inserted into the pile, not plunged in, as has been described I have never required any instrument to steady the pile I agree with Dr Anderson as to the site of injection He advises that the bowels be allowed to act forty eight hours after the injection My routine is to get the bowels to move daily, and for this reason if the bowels are confined for forty eight hours, the faeces are hard, requiring straining to get rid of them and causing prolapse and laceration of the swollen pile The result is that thrombosis is interfered with and owing to the laceration, infection may occur, leading to pyaemia Dr Anderson may have been fortunate in his cases if this has not occurred, but I prefer not to run the risk In my article on this treatment, published in the BRITISH MEDICAL JOURNAL of November 3rd, 1923 (p 808), I advised that not more than three piles be injected at one time, I also stated that if large quantities of carbolic were injected carboluria might result Dr Morley in a letter criticized this statement I have seen one case of carboluria where large doses were injected I have also experimented with various solutions but have come to the opinion that 10 per cent carbolic in liquid extract of hamamelis is the safest and best I have had the same experience as Dr Anderson when using 20 per cent —namely marginal abscesses In my article I stated that thrombosis was produced There is definite clinical and pathological evidence of this and I am glad to see that my statement is supported by Dr Dukes I have examined a number of piles removed fourteen to twenty one days after injection In every case there was thrombosis I have injected a number of varicose veins of the leg and, apart from the initial pain, which lasts less than a minute, there is no pain, although definite thrombosis is produced

A FORM OF HOUSEMAID'S KNEE

DR C J HILL AITKEN (Kilnhurst, near Rotherham) writes Two young girls complained of pain in the knees In neither case could I detect much, though in one the bursa under the right patella ligament was enlarged There was no history of injury Both improved with rest and in both relapses occurred, the pain being situated in the region of the tubercle of the tibia The sister of one of the patients suggested that dropping heavily on to the knees whilst scrubbing the floor might account for the knee trouble I experimented and found that when kneeling with the feet flexed the weight of the body fell chiefly on the patella, but when kneeling with the feet extended it fell on the tubercle of the tibia One patient admitted that she always came down heavily when she knelt She is tall and heavy, and whilst scrubbing keeps her feet extended I have not seen this type of housemaid's knee described in books, but I am told that it is not uncommon

NEURASTHENIA

DR MARY C DE GARIS (Geelong, Victoria, Australia) writes Why not attribute neurasthenia to variation in the constitution of the blood—perhaps of its mineral constituents (for example, calcium) or its endocrine factors (for example, hyperthyroidism), or its vitamins, or some of its other components, or, very frequently, to the presence of some toxin? Such a conception would give us the explanation of the wide distribution of the complaints in neurasthenia, and would offer a hopeful prospect of research In practice, when dealing with neurasthenia, I first suspect hidden dental sepsis, then insufficient diet (vitamins, etc), often prescribe lime and cod liver oil, as well as milk eggs, butter, green vegetables fruits, and even try a polyglandular endocrine capsule in accordance with any indications

SIMULTANEOUS EXISTENCE OF TUBERCULOSIS AND OTHER INFECTIONS

DR DOROTHY A DALY (Fairlight Sanatorium, Hastings) writes I am very anxious to learn whether any of your readers have carried out consistently at any time a suggestion I put forward in the treatment of tuberculosis We have all met that suspected case of phthisis with few or, perhaps, even no physical signs in the chest, and in which we rely almost entirely on symptoms taken in conjunction with rise of temperature, etc, the slight morning cough is free from sputum, so we are without the benefit of a pathological report I have on more than one occasion noted as an interesting fact, that, if such a case becomes infected with an ordinary catarrhal or pneumococcal cold the cough may change in character, becoming more bronchial, and if the resultant sputum be examined, tubercle bacilli are discovered in very small numbers, while the microscopic field may be swarming with various other organisms Unless the case begins to go to the bad, the patient recovers from the cold, and, but for the altered conditions during its course, we might never have established definitely the fact that the case was tuberculous To my mind, tubercle bacilli, to become active, need some secondary infection; the tuberculous focus lies dormant until some other toxin makes its appearance to stir up the fire We all realize that 80 per cent of the community are infected, but predisposition, lowered resistance, etc, are necessary for its activity Surely this points to the fact that, paradoxical as it may seem the tubercle bacillus is the secondary infection, following upon the lowering of the bodily resistance by some previous toxin In the routine examination of sputum a Gram stain is most enlightening, particularly when carried out consistently with the watching of a case Why not inoculate all patients showing activity with autogenous vaccines prepared from their own sputum, carefully noting from time to time lest there is an addition of some fresh organism?

A WARNING

DR W G NIALL (Chatham) writes to warn Irish doctors and nurses to be circumspect in dealing with a man about 40, clean shaven and with iron grey hair, who may represent himself to be an Irish tuberculosis and Local Government medical official, and seek to borrow money

VACANCIES

NOTIFICATIONS of offices vacant in universities, medical colleges, and of vacant resident and other appointments at hospitals, will be found at pages 28, 29, 32, and 33 of our advertisement columns, and advertisements as to partnerships, assistantships, and locumtenencies at pages 30 and 31

A short summary of vacant posts notified in the advertisement columns appears in the *Supplement* at page 119

EPITOME OF CURRENT MEDICAL LITERATURE.

Medicine

132 Serum Therapy in Tuberculosis.

ANDRÉ JOUSSET (*Bull et Mem Soc Med des Hop de Paris*, June 26th, 1924, p 923) attributes the frequent failure of serum therapy in tuberculosis to its indiscriminate use in every stage of the disease The limitations of serum therapy are very definite, and cases must be selected with care, since the treatment is useless in chronic cases with caseation, extensive fibrosis and cavitation Many regard serum therapy as a last resort, whereas it is actually the treatment to be employed as soon as the diagnosis of early tuberculosis has been made When employed in chronic cases actual harm may result, since these patients are very susceptible to ill effects following the injection of serum, only recent cases of acute or subacute type should be selected for serum treatment Fever is an indication for treatment, but its type should be carefully studied In recent cases the chart shows regular oscillations which never exceed a range of 4° F in adults and 5° in children In chronic cases the fever becomes remittent or intermittent—a more or less pronounced "hectic" type sometimes the curve is quite irregular *This* is a certain indication of caseation, and definitely contra indicates serum therapy Serum therapy is specially indicated in all forms of tuberculosis in children Such cases often yield the best results Jousset gives charts and clinical details of 15 illustrative cases, in some patients the temperature fell to normal after one injection of serum, and they made a speedy recovery, but in others slow recovery followed repeated injections, especially in cases with extensive consolidation and gross lesions Haemoptysis does not contra indicate the use of serum, remarkable results have followed its use when other measures have failed. Jousset's eighth case was that of a young woman who had a severe and prolonged haemoptysis for the fourth time She was very anaemic, and haemoptysis and fever had persisted for three weeks, but a single injection of 100 c cm of serum arrested the haemoptysis and rendered her afebrile Jousset's conclusions are as follows Initial febrile tuberculosis, tuberculous polyserositis, and consolidated pulmonary foci do well under serum treatment. Simple 'plastic' tuberculous lesions exhibit irregular and transient improvement Cases of advanced 'necrosing" tuberculosis do badly and may be actually aggravated by serum therapy

133 Lumbar Puncture for Asthma.

W SCHULTZ (*Deut med Woch*, May 2nd, 1924, p 576) has found lumbar puncture relieve for a considerable time not only the symptoms of ordinary asthma but also those of uraemia and the pre uraemic state One of his asthmatic patients was a widow, aged 34, whose symptoms had proved refractory to the usual remedies The withdrawal of a single cubic centimetre of cerebro-spinal fluid was followed by headache, nausea and vomiting which lasted for a couple of days After the third day she was much better, and she was free from her attacks of asthma for about three months In some cases the author has found this treatment unsuccessful, and he is inclined to reserve it for those cases which have proved refractory to less drastic remedies In a case of chronic glomerular nephritis with fits and asthmatic attacks, which occurred at night and were very distressing, he scored a great success by removing some of the cerebro-spinal fluid which was under considerable pressure In another case, in which the final stage of uraemia was marked by tracheal tales this symptom was banished for at least twenty four hours by lumbar puncture

131 Dental Infection in Chronic Gastro Intestinal Disorders

G R SALTEPLEE (*Med Journ and Record*, May 21st 1924, p 431) discussing the effects on chronic gastro-intestinal disorders of removing dental infection, points out that abdominal operations for ulcer, appendicitis, cholelithiasis, peritoneal and pelvic conditions are often disappointing in cases where oral sepsis has received no treatment while good oral or otherwise have been removed prior to operation He adds further that in a large number of patients presenting clinical symptoms of these diseases such symptoms have subsided after removal of all obvious foci of infection To what extent oral sepsis may be the primary factor in the causation of serious abdominal trouble is unknown, in only a few of the cases considered were infected teeth the sole findings, and their extraction the cause of improvement, so that all cases of chronic intestinal invalidism require thorough investigation of every possible source of focal infection In sinus infections a primary tonsillectomy, followed by removal of teeth, should be performed prior to operative drainage or direct treatment of the sinuses From a study of 72 cases it was found difficult to classify them according to diagnosis, since a lesion in one part may be succeeded or accompanied by another elsewhere, and the symptoms of the nervous system may predominate when the chief lesion is gastro intestinal Treatment aims at the gradual removal of all foci, with medical and vaccine therapy, and in even apparently hopeless instances of arthritis, neurasthenia, hemicrania, and cardio renal mischief marked improvement followed removal of foci Oral infection, even if not the primary, is the most frequent and important source of trouble, and complete surgical eradication of minor foci should precede abdominal operation when possible All foci should be removed as soon as discovered in order to prevent the occurrence of permanent lesions elsewhere

135 Swine Erysipelas in Man

K IDEL (*Nederl Tydschr v Geneesk*, February 2nd, 1924, p 452) of Haarlem states that, in contrast with Dutch literature, a large number of cases have been reported by foreign writers of infection in man by *Bacillus rhusiopathiae suis*, the organism of swine erysipelas It would be a mistake, however, to suppose that the disease is less frequent in Holland than elsewhere, as many medical practitioners are unfamiliar with the condition In most cases, but not in all, swine erysipelas runs a mild course in the human subject Three fatal cases have been recorded by Günther and one by Prausnitz At the autopsy in a fatal case in a butcher ulcerative endocarditis was present, which is a frequent finding in the disease in swine A wound infection, which for a long time was regarded as an independent infection—namely, Posenbach's erysipeloid—is probably identical with swine erysipelas The cause of the infection is almost always inoculation with some animal material, such as a scratch from a fish bone or a wound while killing a sheep or a fowl, and not necessarily a pig The symptoms are the same as in infection with the virus of swine erysipelas—namely, a slowly advancing erythema with a livid discoloration in the centre, occasionally some desquamation and tenderness, but without any constitutional disturbance The same minimal quantities of a broth culture of the virus of erysipeloid and of *B rhusiopathiae suis* are fatal for a mouse, while a fraction of 1 c cm of swine erysipelas anti erum protects mice not only against a fatal dose of a swine erysipelas bacillus culture, but also against the virus of erysipeloid Moreover, if a swine is infected with the virus of erysipeloid, it shows a few days later typical symptoms of swine erysipelas, which disappear after injection of anti swine erysipelas serum Erysipeloid and swine erysipelas may therefore be regarded as clinically, therapeutically, and epidemiologically identical The dose of the anti swine erysipelas ant serum for the adult is 10 to 15 c cm after injection of which the symptoms of pain, redness, and swelling rapidly subside in both diseases

136 Rectal Digitalis Therapy

P L LEVY (*Arch Intern Med* (U S A), June 15th, 1924, p 742) records the results of the administration of digitalis by rectum in 19 cases of auricular fibrillation and one case of auricular tachycardia (ectopic) It was also given in 12 surgical cases following operation The preparation employed was an aqueous solution of a purified extract of digitalis leaves 1 c cm contained the equivalent of 0 1 gram of powdered leaf The amounts given ranged from 8 to 20 c cm With one exception the total dose was administered at one time A good therapeutic effect was apparent in every instance, and in many cases the results were very rapid and beneficial, the usual effects of digitalis being observed The average time for the initial effect was two hours thirty five minutes, for a maximal effect nine and a half hours Digitalis given by the rectum is taken into the venous circulation, for the most part through the mesenteric and portal systems, and not by way of the inferior vena cava Rectal digitalis therapy is intended to supplement, not to supplant, the oral method of administration It is useful when the patient suffers from nausea and vomiting, or after surgical operations when digitalis cannot be given by the mouth The dose is comparable to that employed when a large single dose is given by the mouth

Surgery.

137 The Diagnosis of Peritoneal Carcinoma

R S BOLLS (*Journ Amer Med Assoc*, June 28th, 1924, p 2112), dealing with the difficult problem of the differential diagnosis of tuberculous peritonitis from disseminated peritoneal carcinoma, points out that it is almost universally agreed that tuberculous peritonitis is often associated with the development of a palpable mass in the abdomen He records two cases in which this resulted in tuberculous peritonitis being suspected, and apparently confirmed at operation, whereas subsequent necropsies made it evident that both patients were suffering from peritoneal carcinoma In one case the clinical findings and the family history were so definite that no doubt as to the condition was aroused until the necropsy, even though tubercle bacilli had not been recovered During an operation on this patient a portion of omentum was removed and histological examination supported the diagnosis of tuberculosis In the second case tubercle bacilli had been found in the sputum of the patient and a diagnosis of tuberculous peritonitis was made after laparotomy Boles therefore urges that the discovery of a primary focus of tuberculosis should not preclude the consideration of the possibility of carcinoma of the peritoneum, and, since both symptoms and signs may be so strikingly similar in tuberculous peritonitis and peritoneal carcinoma, the most careful consideration of the differential features is essential The tuberculin test does not furnish sufficiently reliable evidence for diagnosis, but heliotherapy he considers very valuable, since it produces definite improvement, as a rule, in tuberculous cases A history of a previous attack of ascites with sweats and tachycardia is said to favour tuberculosis, whereas fever and bradycardia are found more commonly in peritoneal carcinoma

138 Megacolon

G LARDINNOIS (*Bull et Mem Soc Nat de Chir*, May 17th, 1924, p 592) records the case of a child of 4 with an enormous dilatation of the colon The distension of the abdomen was very marked and caused pressure upwards upon the thorax The circumference of the abdomen was 31 inches, and the base of the thorax was greatly enlarged owing to the abdominal distension Respiratory movements and the action of the heart were both embarrassed by the pressure On the left side of the abdomen a large mass was found which at first was thought to be a tumour of the kidney, but was, however, a mass of faecal matter Below this the colon was softer and distended with gas, peristaltic waves accompanied by attacks of colic occurred from time to time Constipation was obstinate and difficult to deal with, the bowels acting only at irregular intervals Radiological examination showed extensive dilatation of the colon, a barium meal was still completely present in the colon after twenty four hours, and was only fully evacuated after eight days Rectal examination showed a marked hypertrophy and contracture of the muscular coat above the anal margin It appeared that this hypertrophy was the cause of the stasis and progressive distension Under general anaesthesia the muscle was dilated, careful dietary and purgative treatment followed, and the result was very satisfactory A second dilatation was performed later, and the boy now leads a normal life In later life, when the colon is hypertrophied, so that a resection is necessary, the removal of the cause as in this case should not be overlooked

139 Thrombosis of the Cerebral Sinuses in Children

W G WYLLIE (*Brit Journ Child Dis*, April–June, 1924, p 124) records three cases of thrombosis of the cerebral sinuses—two following pneumonia and the third in a child with infantile diarrhoea The age of each patient was under 18 months Thrombosis of the cerebral sinuses is seldom recognized clinically except in cases of otitic origin, owing to the fact that its symptomatology is common to other conditions which are more frequently encountered, such as meningitis and cerebral abscess Some help in the diagnosis may be obtained from examination of the cerebro spinal fluid In the primary cases it is usually under increased pressure In most cases it is clear, but it is occasionally blood stained The dextrose reaction and the number of cells per cubic millimetre are usually normal A slight increase in the percentage of albumin may be met with Sinus thrombosis may arise from causes other than inflammatory, as in cases of chlorosis The factors which produce this result are an altered state of the blood, weakness of the heart and degenerative changes in the intima of the blood vessels Cases secondary to middle ear disease are amenable to surgical treatment, but recovery in any of the other types of cases is exceptional

140 The Avoidance of Wounds of the Bile Ducts

A ZABOLA and A J BLENGOLLA (*Lyon Chir*, May–June, 1924, p 281) draw attention to the fact that many surgeons have, during the course of their operations, inflicted injuries on the bile ducts, specially in cases of stones, where the hepatic or common duct has been accidentally divided The authors themselves have not been able to avoid injuring the bile channels This has prompted them to find some means of avoiding this mishap Such accidents, owing to their disastrous results, have occupied the attention of surgeons for some time Their method depends first on an anatomical knowledge of the parts involved, gained from the dead body, and the technique adopted in the operation of cholecystectomy When the local conditions are altered by attacks of inflammation, with the loss of all landmarks, the application of their method is of great value One method advocated has been the mode of removing the gall bladder either from the fundus to the neck or in the opposite direction, this, however, gives uncertain results In the first place, every surgeon must have a thorough knowledge of the parts involved Allowing for this the parts may be altered by previous attacks of cholecystitis, or, again, a stone lodged in the cystic duct may make the juncture of the cystic and hepatic ducts impossible to identify In such cases they insist on the necessity of opening the gall bladder from the fundus to the neck and then removing it more or less completely A small portion may be left behind, if carefully drained, and thereby damage to neighbouring organs is avoided Bleeding is prevented by a catgut suture on the cut edges This method has given excellent results, and the dangers of injury to the ducts and their disagreeable after effects have been avoided

141 An Unusual Dermoid

W TRETHOWAN and J DALE (*Med Journ of Australia*, May 31st, 1924, p 540) report an unusual dermoid cyst in the right abdomen Springing from the level of the third lumbar vertebra, and growing forwards retroperitoneally in the fold of the mesentery, it had a coil of small intestine closely applied to its wall It was filled with sebaceous material and hair, and projecting into its cavity was a hard mass six inches long and three inches in diameter, with an oval opening at its free end from which protruded an incisor, canine, bicuspid, and two molar teeth firmly fixed in their bony sockets and showing normal pulp chamber and root canals The body of this tumour consisted chiefly of fat, with a slender rib like bone running through its length and enlarged at each end The teeth were set in a separate piece of bone, and among the tooth sockets another immature tooth and a cusp of a canine was found. The rib like bone was connected with the skin of the tumour by a fibrous canal suggestive of an external auditory meatus, since it was divided by a septum simulating an ear drum, but no ossicles were found Microscopically hair roots and hypertrophied sebaceous glands were present in the skin of the tumour, and ciliated columnar epithelium was present in the auditory portion

142 Bullet Wound of the Lung

S H CORRIGAN (*Canadian Med Journ*, July, 1924, p 628) reports a case of the accidental wounding of a boy of 15, a bullet from a 22 rifle entering the right side of the abdomen The boy did not realize he had been wounded until he felt blood flowing on his skin, and he walked a quarter of a mile to his home An hour and a half after the injury the abdomen was opened, a bleeding artery discovered in the omentum, and a wound like a furrow found near the edge of the liver, the diaphragm had been perforated also The patient recovered rapidly and left the hospital twelve days later Coarse râles were then present over the right lung, there was dullness at the base, and diminished lung expansion, but no pain or discomfort The dull area increased daily, evidently as the result of serous exudate, there was little cough, but some blood stained sputum Three weeks later radiological examination showed that the right side of the chest was full of fluid, and the bullet was detected under the first rib Twenty ounces of blood stained fluid were withdrawn, the lung rapidly expanded and appeared to be normal seven weeks after the injury The health of the patient was good and he returned to work The author points out that it is evident that such a bullet may enter the abdomen with muzzle velocity, wound the omentum and liver, perforate the diaphragm, and pass through the lung from the base to near the apex without producing any sensation of injury, shock, or suffering Within a week the lung was completely compressed by haemorrhage and serous exudate, yet after removal of a portion of the fluid the remainder was rapidly absorbed and the lung was apparently normal, therefore, it appeared to be good surgery not to attempt to remove the bullet

Neurology and Psychology.

143 Psychology in Medical Practice.

W P EAGLETON (*Journ Amer Med Assoc*, June 28th, 1924, p 2100) emphasizes the importance of the systematic treatment of patients both psychologically and medicinally Definite psychological benefit is derived from such manipulations as massage in the case of headaches and joint or muscle pains, in addition to the more direct benefits obtained, and such forms of treatment should not be neglected in other conditions, when applicable, even in the relief of the aches and pains of many of the acute infections, for, although the treatment be only symptomatic, yet it may materially shorten the disease The author adds that sufficient attention is not devoted to the small details of treatment Telling a patient in an offhand way to take exercise results often in this particular treatment being neglected after a day or two, generally because it proves to be inconvenient or dull If, however, the doctor orders a definite walk at a definite time, followed by a prescribed meal and the aid of the patient's imagination is enlisted by the use of a weighing machine a table of food values, and a little mathematics greater interest is aroused in the treatment and corresponding benefit is derived Moreover, the good results of such treatment are more likely to be ascribed to the doctor than if the patient be merely told to take up some exercise in a general way

144 Laryngeal Paralysis due to War Wounds

F J COLLET (*Arch Internat de Laryngol* May, 1924 p 569) publishes details of 25 cases of laryngeal paralysis due to war wounds, and concludes that this paralysis is mainly due to injury of the pneumogastric and only rarely to lesion of the recurrent laryngeal nerve Injury to one pneumogastric alone may set up cardiac trouble—most commonly tachycardia—which is likely to persist for several years in addition there may be irregularity of the pulse, extra systoles and suppression of the oculo-cardiac reflex The paralysis may be a pure hemiplegia in type or associated with other paralytic lesions of the parts in relation to the throat (tongue, palate, pharynx etc) In cases of pure laryngeal hemiplegia the presence of sensory troubles is the best indication of the implication of the superior laryngeal The presence of cardiac trouble serves to distinguish between a pneumogastric lesion below the level of the superior laryngeal and a lesion of the recurrent laryngeal In glosso-pharyngo laryngeal paralysis the epiglottis may be deviated Vasomotor changes are very rare unless the lesion is high up affecting the superior laryngeal, hypoglossal, and sympathetic nerves The paralysed vocal cord is usually in the cadaveric position Compensatory changes in the vocal cord are generally well established four or five months after the injury The fixation of the cord is a paralytic not an irritative, phenomenon The signs in traumatic laryngeal paralysis do not support a partial crossing over of laryngeal nerves, whether sensory or motor, with the exception of some filaments to the arytenoids

145 Progressive Heredo familial Spinal Amyotrophy

W L ALBO (*Arch de med, cir y esp*, June 7th, 1924, p 445) states that this condition was first distinguished from myopathies and chronic poliomyelitis by Schulze in 1884 Charcot and Pierre Marie in 1886 described a centripetal or distal form which is the most frequent, and Werdnig in 1891 and Hoffmann in 1893 described a rarer centrifugal or proximal form Its spinal origin was established by Marinesco in 1894 and by Sainton in 1902 The centripetal form is characterized by the appearance in the distal extremities of the limbs of a slow and progressive atrophy which begins in the muscles of the feet and legs, and after some months or years attacks the hands and forearms The first symptoms consist in hypotrophy and weakness of the small muscles of the feet, and dysaesthesia painful spasm and neuralgia in the lower limbs In exceptional cases the disease first starts in the upper extremities causing difficulty in movements of the fingers from involvement of the interossei thenar and hypothenar muscles In rare instances all four limbs are attacked at once The muscles of the proximal segments—that is the thighs and upper arms—are not affected until later, and then only in a slight degree or they may escape altogether The same may be said of the muscles of the face neck shoulders, thorax, spine abdomen, and pelvis The muscular atrophy is almost always accompanied by fibrillary contractions in the apparently healthy muscles as well as in those which are atrophied Sensation is affected in a fair number of cases The intelligence usually escapes In the last stage of the disease deformities occur such as pes cavus, pes equino-varus or valgus and dislocation of the ankle joint The course of the disease is very slow Cases of survival to an advanced age have been recorded such as 62 (Dejerine), 78, as in the mother of one of Albo's cases, and 81 (Sainton)

The rare proximal or centrifugal form, which shows a predilection for the male sex, begins in early infancy with weakness of the muscles of the nuchal region, trunk, spine, abdomen, pelvis, and buttocks, and then invades the neck, root of the limbs, and lastly the hands and feet The course is more rapid than that of the centripetal type, the duration being between three and ten years Death usually takes place between 13 and 15 from respiratory paralysis or broncho pneumonia The condition must be differentiated from primary progressive myopathy, congenital myatonia, and acute poliomyelitis The prognosis is good as regards life in the centripetal form, but very unfavourable in the centrifugal variety The prognosis as regards use of the limbs is not very unfavourable in the centripetal form as the patient can generally follow his usual occupation until an advanced age, complete paralysis either not occurring at all or not till late Except in the form due to syphilis, when intensive treatment by bismuth, arsenic, mercury, and iodide is indicated, drugs are useless, but relief may be obtained by mechano therapy, massage, baths, electro therapy, and orthopaedic measures

146 Atypical Forms of Funicular Myelitis

R HENNEBERG (*Klin Woch*, May 27th, 1924, p 970) considers that next to tabes and disseminated sclerosis, funicular, or tract myelitis (myelosis) is the most frequent organic spinal cord disease, though cases are usually included in the group of combined disease of the posterior and lateral columns In funicular myelitis the symptoms are those of lesion of both lateral and posterior columns Often both groups of symptoms are marked sometimes one group is much more prominent than the other Early symptoms are marked paraesthesia and feeling of heaviness in the legs Anaemia and general weakness are associated with the spinal symptoms Middle aged people, weakened by long deprivation and overwork, are chiefly affected In pernicious anaemia similar spinal symptoms may occur, but the symptoms of the blood affection are the more prominent Degenerative changes are found in the cord chiefly in the posterior columns, the lateral pyramidal and direct cerebellar tracts, and the region adjacent to the anterior longitudinal fissure In all marked cases the disease is related to anaemia, the cause is considered to be a toxin (or, according to Modes, avitaminosis) Atypical cases occur—one is reported in which the pathological changes were limited to the posterior columns, another in which the symptoms were those of spastic spinal paralysis, but pathological changes were found in both the posterior and lateral columns The occurrence of pure lateral column disease in funicular myelosis (myelitis) is uncertain, but the symptoms of pure spastic spinal paralysis are not infrequent Degenerative myelitis and compression myelitis must be separated from true infiltrative myelitis, which is very rare, and cannot be distinguished clinically Degenerative conditions are nine times more frequent than infiltrative changes In funicular myelitis the changes are not truly inflammatory, hence the term "myelosis" is suggested in place of "myelitis"

Obstetrics and Gynaecology.

147 Treatment of Carcinoma of the Cervix

E DOUAY (*Bull Soc d'Obstet et de Gynecol de Paris*, 1924, 5, p 341) states that at the Broca clinic treatment of cervical carcinoma by radium as a preliminary to operation has now been restricted to cases which are so late as to be at the border line of operability, these are frequently rendered operable, although the remote results are not on the whole favourable The advantages claimed for pre operative radium application are that (1) it diminishes the size of the cervix and facilitates operative removal (2) it renders the cervix less septic and favours its disinfection (3) it increases the motility of the uterus (4) it sterilizes the cancerous cells and diminishes the risk of transmitting malignant grafts at operation Of these advantages the fourth is a real one, but the first and second can be attained more rapidly and simply by curettage and applications of iodine immediately before surgical intervention as to the third, it is true that after radium treatment clinical examination shows apparent increase in the motility of the uterus but nevertheless dissection at the operation is found to be difficult by reason of the presence of a network of fibrous tissue in the parametria Pre operative radium application has the following drawbacks (1) Necroses—for example, in the cervix—may follow and increase the surgical risk, (2) the vitality of the tissue cells may be diminished, so that there is greater danger of post operative necroses, (3) latent adnexal inflammations may be lighted up—a dangerous preliminary to operation Faure and Douay have formed also the impressions that radium applications may lead to increased activity in

cancerous cells in the pelvic lymph glands, and that distant non pelvic metastases are more frequent in patients treated by radium Against the great improvement in the patient's general condition which sometimes follows radium therapy is to be set the fact that the illusory hopes thereby aroused may lead to refusal of operation The experience of the Broca clinic is definitely unfavourable to radium applications after wide hysterectomy, recurrences, it is stated, are more frequent when this has been done than after operation alone

148 Ovum Migration and Salpingectomy

H H SCHLINK (*Med Journ of Australia*, June 7th, 1924, p 555) concludes, from a review of the literature and his own cases, that there is ample clinical evidence of internal and external migration of the fertilized ovum, Mayrhofer estimating that it takes place at least once in ten ovulations The importance of excising the entire intramural or muscular section of the Fallopian tubes in salpingectomy is urged in order to avoid the occurrence of ectopic gestation, and to prevent the development of interstitial abscesses should any subsequent infective processes arise Three cases are reported, illustrating external migration, internal migration with ruptured interstitial ectopic gestation, and both internal and external migration with a similar complication

149 Rupture of the Uterus

A CAUCCI (*Rif Med*, July 7th, 1924, p 631) reports three cases of rupture of the uterus and adnexa in connexion with labour The first case was that of a woman, aged 36, in whom labour was induced at four months because of epilepsy It was then found that what were believed to be foetal parts were in reality a coil of intestine The patient was sent into hospital, and after laparotomy a perforation of the uterus was discovered, together with laceration of the rectum and colon Total hysterectomy was performed and partial colo rectal resection, with anastomosis by invagination of the bowel, the patient left the hospital quite well In the second case the woman was delivered of twins, and in the process of extraction (by the blunt hook) of the second child much bruising occurred, followed by signs of peritonitis On laparotomy the uterus was found to be ruptured subperitoneally, the bladder also was torn, and there was an extensive retroperitoneal uro haematoma The uterus was excised, and the bladder sewn up extraperitoneally, the patient left the hospital cured The third case was also a case of twins, with much difficulty in delivering the second child (pulling on the foot with the shoulder wedged) In this case the uterus was not ruptured but there was an extensive laceration of the bladder and vagina The lesions were sutured and complete recovery followed

Pathology.

150 Experimental Rickets and Strontium Intoxication

G PROTTI (*La Clin d Organd Mor*, June, 1924, p 470) made an examination of young animals, such as puppies, chickens, and rabbits, exposed to chronic intoxication by strontium salts, which had given rise to a severe systematized skeletal dystrophy closely resembling rickets, and found traces of the salts about fifty days after their first administration Comparison of the chemical composition and histological structure of the affected bones showed that the two phenomena of elimination of the poison from the skeleton and ebumation of the bones were closely associated with one another, so that the conclusion could be drawn that the presence of strontium in the bony trabeculae hindered calcification whereas ebumation was a sure sign of the elimination of the poison

151 Independence of Human and Bovine Tuberculosis

A LICHTENSTEIN (*Acta Paediatrica*, June 16th, 1924, p 397) has conducted a statistical survey of the incidence of tuberculosis in cattle in different counties in Sweden, comparing it with the death rate from tuberculosis among human beings during the first year and first five years of life It was found that the mortality from tuberculosis during the first year of life varied greatly in different parts of the country, and, as a rule, the infant mortality from tuberculosis was higher in the towns than in the country districts As for the incidence of bovine tuberculosis there were great differences in the various counties, in the large northern county of Norrbotten only five cattle were found to be tuberculous, but the infant mortality from tuberculosis was exceptionally high On the other hand, in the county of Kristianstad there was a low infantile death rate from tuberculosis, although the incidence of bovine tuberculosis was high The twenty four counties were divided into two equally large groups the twelve counties with much bovine tuberculosis being grouped in the one, and the twelve counties with little bovine tuberculosis being grouped in the other The average incidence of bovine tuberculosis in the first group was 2 7 per 10,000, whereas in the second group it was 13 8 In the first group the tuberculosis mortality among infants under the age of 1 was 16 6 per 10,000, in the second group it was 17 8 In other words, though the incidence of bovine tuberculosis was about five times greater in one group of counties than in the other, the infant mortality rate from tuberculosis was practically the same for both groups Following a second line of research the author has compared the death rate from tuberculosis among children in the first years of life with the tuberculosis death rate at all ages in the different Swedish counties It was found that counties with a high mortality from infantile tuberculosis also had a high tuberculosis rate for all ages, and vice versa

152 Experimental Diphtherial Keratitis

C ZOELLER and MANOUSSAKIS (*C R Soc de Biologie*, May 30th, 1924, p 1399) inoculated the eye of a guinea pig in which slight desquamation of the conjunctiva had been produced by instillation of diluted bile with a twenty four hours' growth of diphtheria bacilli At the end of twenty four hours the inoculated eye was closed, the lids swollen and united by a greyish exudate which covered the conjunctival culs de sac, and the cornea had not lost its transparency Diphtheria bacilli were obtained in smears and cultures At the end of forty eight hours the lesions were still more marked, and numerous colonies of diphtheria bacilli were obtained in pure culture After injecting a guinea pig with two doses of 1 c cm of anatoxin with ten days' interval between each injection, Zoeller (Ibid, p 1400) inoculated it on the sixteenth day in the right eye with diphtheria bacilli, as well as a control animal which did not receive anatoxin Forty eight hours later the control animal showed typical diphtheritic conjunctivo keratitis, while the immunized animal showed only slight corneal opacity without any signs of diphtheritic infection The same eye was then inoculated again with a large dose of diphtheria bacilli, which caused only a slight increase of corneal opacity, but did not give rise to any membrane or swelling Anatoxin thus renders a guinea pig refractory to infection by diphtheria bacilli after a period of sixteen days and two successive inoculations It does not, however, confer immediate protection as is shown by the fact that anatoxin, even when given subconjunctivally twenty four or forty eight hours after inoculation of the eye with bacilli, does not prevent local or systemic infection

153 Tuberculosis and Nutrition

B LEICHTENTRITT (*Zeit f Hyg und Infektionsk*, 1924, p 388) has carried out a number of experiments on guinea pigs in an endeavour to ascertain the relationship existing between the presence of accessory food factors in the dietary and the course of tuberculosis The animals were divided into three sets all were given a basal diet of greens, but whereas the first set received this alone, the second set was given in addition varying quantities of fresh lemon juice, and the third set varying quantities of cod liver oil The mode of infection varied in the different experiments, sometimes the tubercle bacilli were injected subcutaneously, sometimes intraperitoneally, sometimes they were derived from a culture at others from the sputum or the cerebro spinal fluid The general findings were as follows The control animals on the diet of simple greens died after varying periods of time, depending on the dose and the mode of injection having lost considerably in weight The animals fed on greens and lemon juice gen[illegible]ritols, and frequently —especi[illegible], such as 20 to 30 c cm of juice [illegible]it In spite of this improvement in the general nutrition, however, they were often found at autopsy to be affected with extensive tuberculosis It appears that the effect of the lemon juice is to improve the general nutrition of the animal—especially its fat storing powers—and to raise its resistance to the tubercle bacillus in such a way that this behaves more as a saprophyte than as a parasite—that is, it grows freely in the animal body, without exercising any definite toxic effect The animals fed on cod liver oil lost weight and died in much the same time as the controls, and after death widespread tuberculosis was found Leichtentritt reports that they also developed a curious disease, often after the first dose Its main characteristics were hypersecretion of the sebaceous glands [illegible]ously skin, dry and brittle hair, and extraor[illegible], manifested by a wild and aimless rushing about, stopping only when exhausted, and a spastic gait, the animals running about on their toes The animals died of exhaustion, at autopsy their fat reserves were found entirely depleted That this disease is due rather to the fat than to the vitamin A content of the oil is suggested by the fact that two animals fed on pig lard developed the same symptoms

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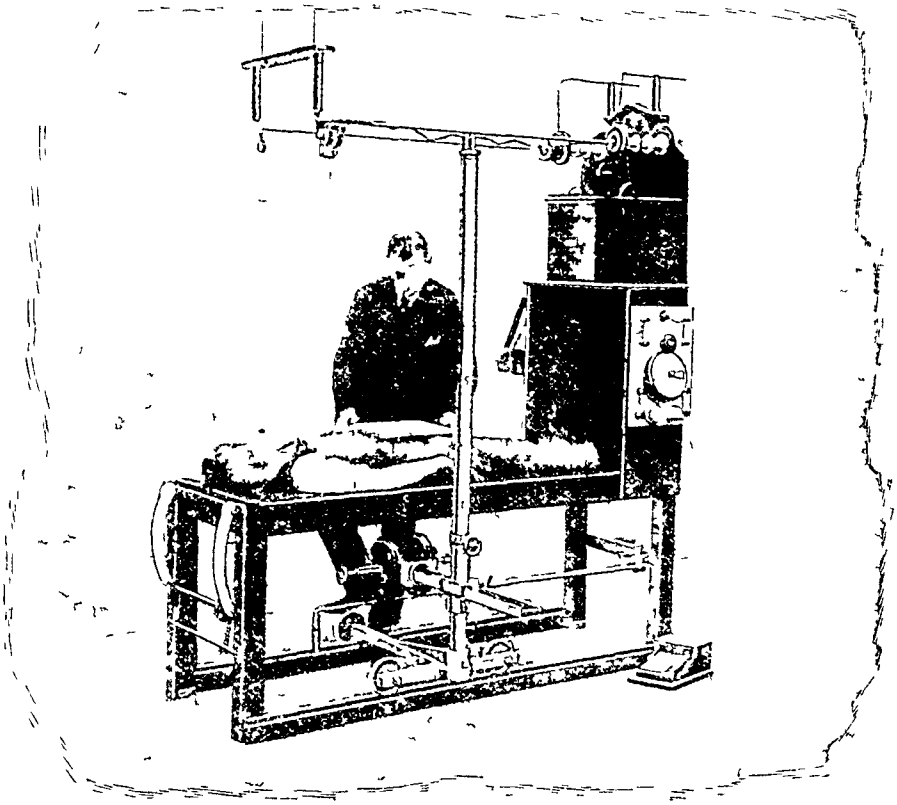
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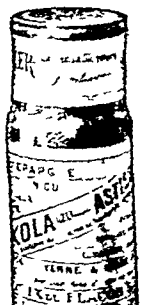
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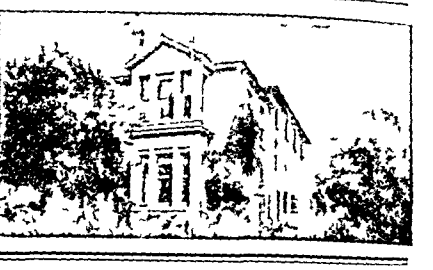
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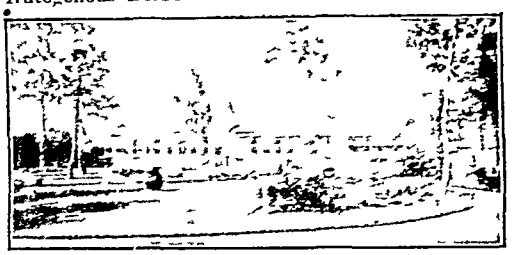
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These Sanatoria are situated amongst **Ideal Surroundings** in **Middle Deeside,** the reputation of whose **Climate** in the treatment of Lung Diseases is well established

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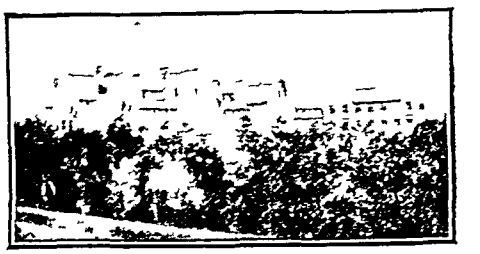


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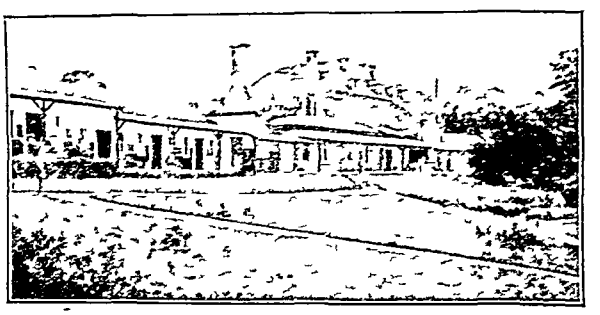
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For further particulars and illustrated prospectus apply to the School Secretary

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(University of London)

PRIMARY F R C.S. COURSE.

A Course of Instruction for the December Examination will begin on *Tuesday September 2nd, 1924* and will be conducted as follows —

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Full courses for the London M B B S Degrees and the Diplomas of the Royal Colleges of England are arranged including First Medical and Pre-Medical Courses

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Clinical instruction is Hospital and also at the Street Children's Cancer son, South London and Royal Ophthalmic Hospitals

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FINAL F.R.C.S.

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The fee for St Mary's Students will be £12 12s for others £16 16s and a very small extra charge for the Operative Surgery Class

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Parents and Guardians desiring information and advice with regard to the Medical Curriculum should write for full particulars to A E WEBB JOHNSON, C B E, D S O, F R C S, the Dean,

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BEGINS ON

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For Prospectus and further particulars apply to The Secretary, Endsleigh Gardens, N W

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COURSES OF INSTRUCTION (lasting three months) for the Diploma and also in Veterinary Parasitology commence about SEPTEMBER 15th and JANUARY 7th —Prospectus from the Hon DEAN, School of Tropical Medicine, University of Liverpool.

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A COURSE of LECTURES and PRACTICAL INSTRUCTION
FOR THE
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WILL BE GIVEN at the above Hospital, commencing SEPTEMBER 15TH, 1924

For Syllabus and further particulars apply to the Physician-Superintendent

UNIVERSITY OF BIRMINGHAM
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(Associated with the General and Queen's Hospitals for Clinical Teaching).

The following Hospitals are also associated with the University The Department for Midwifery and Diseases of Women at the Dudley Road Hospital (Birmingham Board of Guardians) The City Mental Hospital The City Infectious Diseases Hospital The Birmingham and Midland Eye Hospital The Royal Orthopædic and Spinal Hospital Birmingham The Birmingham and Mid and Ear and Throat Hospital The Children's Hospital The Maternity Hospital of the Birmingham Lying In Charity The Birmingham and Midland Hospital for Women.

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The Dental Hospital is situated close to the Medical Faculty Buildings of the University and has a large and varied Clinic.

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The University grants Degrees in Medicine Surgery and Public Health and a Diploma in Public Health also Degrees and a Diploma in Dental Surgery The courses of instruction are also adapted to meet the requirements of other Universities and Licensing Bodies.

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A large number of Resident hospital appointments in Birmingham and District are open to qualified students of the School.

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The necessary pre Medical Courses of Instruction in Chemistry Physics and Biology may be attended in the University

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F.R.C.S

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Examination of Clinical Cases Messrs. R. Howard and E C Lindsay
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Commentaries Messrs. R. Milne and H S Souttar
Surgical Pathology and Museum Work Mr R. Howard
Morbid Anatomy Prof H M Turnbull.
Bacteriology Dr P Fildes.
Surgical Anatomy Professor William Wright
Operative Surgery Mr R. Howard.
Ophthalmic Surgery Messrs. C B Gould and H P Jeremy
Aural Surgery Messrs. N Patterson and P F Mumford
Fees (exclusive of Operative Surgery) 20 guineas. Operative Surgery 5 guineas.
A separate entry can be made for all Classes other than those of a strictly Clinical character (Men students only are eligible for admission)
Further particulars may be obtained from Professor WILLIAM WRIGHT M.B. D.Sc., F.R.C.S. Dean, London Hospital Medical College, Mile End E.1.

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CLASSES for the Final F.R.C.S in November will begin on September 4th, 1924
For particulars apply to The Dean, St. Bartholomew's Hospital E.C.1.

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Members of the Class are given every facility to gain the necessary Clinical experience

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Physiology —A V HILL M A Sc D F R S , Jodrell Professor Sir WILLIAM M BAYLISS M A , LL D D Sc F R S Professor General Physiology)

[illegible] M S

[illegible] ONDAY

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Courses of instruction are arranged for the First Medical and the Second Medical Examinations of the University as well as for the corresponding Examinations of the Examining Board of the Royal College of Physicians and Surgeons and of other Licensing Bodies

Facilities for POSTGRADUATE and RESEARCH WORK are provided in all the Departments named above [illegible] do also for [illegible] Y OLOGY There [illegible] to- graphic [illegible] of animal movements

Courses for the Primary Fellowship Examination R C S , begin on September 1st 1924, and on March 2nd 1925

A Special Course for the Diploma in Public Health begins in October

WALTER W SETON Secretary

University College London (Gower Street W C 1)

July 30th 1924

Ministry of Education, Egypt

SCHOOL OF MEDICINE

Applications are invited for the vacant posts of —

(1) PROFESSOR OF PHYSICS
(2) PROFESSOR OF CLINICAL MEDICINE
(3) PROFESSOR OF CLINICAL SURGERY

The holders of these posts are expected to devote their whole time to teaching and research and are not allowed private practice of any kind

The initial salary is £L 900 a year in a class £L 900 1140

The appointment would be on probation for the permanent cadre for an Egyptian in the case of a foreigner on a three years' contract

The instruction must be given either in Arabic or in English

Applications should be accompanied by full record of teaching experience and research work and must reach the Director School of Medicine Cairo Egypt not later than September 15th 1924

Ministry of Education, Egypt

SCHOOL OF MEDICINE

Applications are invited for the vacant whole time post of LECTURER IN PHYSICS in the School of Medicine Cairo

Applicants must be of Egyptian nationality and should forward with their applications full particulars as to their qualifications research work and former teaching appointments with testimonials

The initial salary of the post is £L 540 in a class £L 540 840

Applications must reach the Director School of Medicine Cairo Egypt before September 15th 1924

Westminster Hospital (Opposite Westminster Abbey)

[illegible] didate is required to transmit a certificate of his age and 30 copies of his application with 30 copies each of three testimonials to the undersigned not later than 6th September, 1924 and to attend the House Committee on Tuesday the 9th September 1924 at 1 p m

By Order of the House Committee,
CHARLES M POWER Secretary

ROYAL NAVAL MEDICAL SERVICE.

SHORT SERVICE SCHEME

The Admiralty are prepared to accept applications for entry as SURGEON LIEUTENANTS for Short Service in the Royal Navy

Period of Service—3 years, with option to extend for further twelve months

Pay—25s per diem, or £456 5s per annum

Gratuity on discharge—£8 6s 8d for each completed month of service or £100 per annum

Equipment allowance—£50, payable on joining

Age of candidates—Not to exceed 30 years on the Short Service [illegible] ered for transfer to the [illegible] to under certain conditions after six months service

Regulations for entry and form to be filled up by candidates will be supplied on application to the Medical Director General, 69, Victoria Street London S W 1

Royal Manchester Children's HOSPITAL Out patients Department Gartside Street Manchester

Wanted for the Out patients Department an ASSISTANT MEDICAL OFFICER non resident (salary £150 per annum) who will be appointed for six months and be eligible for re appointment as Medical Officer for a further six months (salary £200 per annum

Candidates must be doubly qualified and on the Medical Register Particulars of the duties can be obtained from the Secretary The hours of duty are from 9 a m till about 1 p m daily Duties to commence October 1st

Applications stating age and accompanied by copies of not more than four testimonials to be sent to the undersigned not later than September 3rd Canvassing not allowed

By order
W M HUMPHREY

August 13th 1924 Secretary

Royal Manchester Children's HOSPITAL, Pendlebury Nr Manchester (100 Beds.)

Wanted a RESIDENT SURGICAL OFFICER (salary £80 per annum) who will be appointed for six months and be eligible for re appointment as Resident Medical Officer for a further six months (salary £120 per annum)

Candidates must be unmarried doubly qualified and duly registered Applications stating age and accompanied by copies of not more than four testimonials to be sent to the undersigned not later than September 3rd Duties to commence October 1st Canvassing not allowed

By order
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August 12th 1924 Secretary

Royal Devon and Exeter HOSPITAL Exeter

ASSISTANT PHYSICIAN

Applications are invited for the post of Honorary Assistant Physician at the Hospital must be Fellows or Members of Physicians of London or of some University of the United Kingdom

Particulars as to duties &c may be obtained from the undersigned

Applications together with certificate of birth and original testimonials should be delivered at the Hospital addressed to the President on or before Monday September 29th 1924

The Committee desire that there should be no canvassing by or on behalf of any candidate

Signed on behalf of the Committee
S S COLE Secretary

Dated August 18th 1924

Ancoats Hospital, Manchester

RESIDENT MEDICAL OFFICER required to commence duty October 1st, next Salary £175 per annum with board, residence, etc

The appointment is for 6 months but the successful candidate will be eligible for re-election for a further period of 6 months

Applications stating age qualifications and experience together with copies of 3 recent testimonials to be forwarded to the undersigned on or before September 6th

By order of the Board
HERBERT J DAFFORNE Secretary

The Samaritan Free Hospital FOR WOMEN Marylebone Road, London, N W 1

Applications are invited for the post of HOUSE SURGEON from September 20th 1924 to February 28th, 1925 Salary at the rate of £100 per annum Previous experience as House Surgeon essential

Applications, accompanied by copies of testimonials must reach the Secretary at the Hospital, on or before August 30th, 1924

G H HAWKINS Secretary

APPOINTMENTS—Important Notice.

(a) British Islands.

Medical Practitioners are requested not to apply for any appointment referred to in the following table without having first communicated with the Medical Secretary of the British Medical Association, 429, Strand, London, W C 2.

Town or District | Town or District | Town or District

CONTRACT PRACTICE.

ENGLAND.

CANNOCK CHASE AND DISTRICT
(Clubs and Friendly Societies Appointments)

MIDDLESBOROUGH
(Medical Aid Associations or Workmen's Clubs.)

SOUTH BANK & ESTON
(Medical Aid Associations or Workmen's Clubs.)

WALES

ABERTRIDWR GLAMORGAN
Windsor Colliery (Medical Scheme.)

EBBW VALE MON
(Workmen's Medical Society)

GILFACH GOCH GLAMORGAN
(Workmen's Medical Scheme.)

LLWYNYPIA CLYDACH VALE PENYGRAIG GLAMORGAN
(Workmen's Medical Scheme.)

MARDY GLAMORGAN
(Workmen's Medical Scheme)

OAKDALE MON
(Medical Officer for Medical Aid Association)

WALES (continued)

OGMORE VALLEY GLAMORGAN
(Wynnham Colliery Medical Aid Society)
(Workmen's Medical Scheme.)

TONDU & ABERKENFIG GLAMORGAN
(Workmen's Medical Scheme.)

PUBLIC HEALTH.

HUDDERSFIELD [illegible]
(Woman Assistant Medical Officer of Health)

HUNTINGDON ADMINISTRATIVE COUNTY
(Assistant County Medical Officer and Assistant School Medical Officer)

INVERNESS SHIRE EDUCATION AUTHORITY
(Temporary Assistant School Medical Officer)

LANARK COUNTY
(Medical Officer of Health)

PUBLIC HEALTH (continued)

LEEDS EDUCATION COMMITTEE
(Assistant School Medical Officer)

LINCOLN CITY EDUCATION AUTHORITY
(Woman Assistant School Medical Officer)

MIDDLESBROUGH EDUCATION COMMITTEE
(Assistant School Medical Officer)

MIDLOTHIAN EDUCATION AUTHORITY
(School Medical Officer)

NORTHUMBERLAND COUNTY COUNCIL
(Woman Assistant Medical Officer of Health)

NOTTINGHAMSHIRE
(County Medical Officer of Health)

SHEFFIELD EDUCATION COMMITTEE
(Woman School Medical Officer)

SOUTHWARK METROPOLITAN BOROUGH
(Tuberculosis Officer)

STOKE ON TRENT EDUCATION COMMITTEE.
(Assistant School Medical Officer)

YORKSHIRE NORTH RIDING COUNTY COUNCIL.
(Assistant School Medical Officer)

(b) Colonial Medical Service.—WINDWARD ISLANDS MEDICAL SERVICE (Grenada with Carriacou St. Vincent and St. Lucia)

(c) Overseas Appointments.

Medical Practitioners are requested not to apply to any appointment referred to in the following table without having first communicated with the Honorary Secretary of the Division or Branch named in the second column or with the Medical Secretary of the British Medical Association, 429, Strand, London, W C 2

Town or District.	Hon. Sec. of Division or Branch	Town or District	Hon. Sec. of Division or Branch	Town or District.	Hon. Sec. of Division or Branch
NEW SOUTH WALES. (All Friendly Societies Appointments)	Dr R H TODD (Hon Sec., New South Wales Branch) B M A. Building, 30-34 Elizabeth Street, Sydney N S W	QUEENSLAND (Brisbane Associated Friendly Societies' Practice)	Dr R MARSHALL ALLAN (Hon Sec Queensland Branch) Adelaide Street Brisbane	VICTORIA (All Institute or Medical Dispensaries.)	Dr FRANK DAVIES (Hon. Sec., Victorian Branch) Medical Society Hall E. Melbourne, Victoria.
				WESTERN AUSTRALIA. (Contract and Lodge Practices.)	Hon Sec Western Australian Branch No 6 Bank of New South Wales Chambers, St Georges Terrace, Perth.

Address 429, Strand, W C 2.
August 23th 1924.

By order of the Council of the British Medical Association.
ALFRED COX, Medical Secretary

The Gloucestershire Royal
INFIRMARY AND EYE INSTITUTION
Gloucester

There is a vacancy for an ASSISTANT PHYSICIAN and PATHOLOGIST on the Active Medical Staff of this Institution There are certain emoluments in connection with the above posts particulars of which can be obtained from the undersigned

By the rules of the Hospital the members of the Active Medical Staff shall be duly registered practitioners

Candidates should send in their applications diplomas and testimonials under cover to the Secretary G HULFORD
Gloucester July 31st, 1924 Secretary

The Royal Portsmouth
HOSPITAL, Portsmouth
(Three Resident Medical Officers)

[illegible] nted Male
To com
[illegible] Eligible on
completion of term for Senior appointment
Salary £150 per annum with Board etc Candidates selected for interview will be allowed not exceeding two guineas railway fare

Applications stating age nationality etc and copies of three recent testimonials to be sent to the undersigned, from whom full particulars can be obtained

B WAGSTAFF Secretary

Bristol Royal Infirmary

Applications are invited for the following resident appointments for the six months commencing October 1st 1924 —

1 CASUALTY HOUSE SURGEON
1 OBSTETRIC AND OPHTHALMIC HOUSE SURGEON
2 HOUSE PHYSICIANS
4 HOUSE SURGEONS
1 HOUSE SURGEON to the Ear Nose and Throat Department
1 ASSISTANT OBSTETRIC HOUSE SURGEON

Salary for the first two mentioned appointments at the rate of £100 per annum with Board Apartments and Laundry and for the last eight mentioned appointments at the rate of £80 per annum with Board Apartments and Laundry

1 DENTAL HOUSE SURGEON Resident Salary at the rate of £116 per annum with Board

Applications together with testimonials to be sent to the undersigned on or before August 25th 1924
ELLIS C SMITH FCIS Secretary

Dundee Royal Infirmary

HONORARY ASSISTANT PHYSICIAN for Diseases of Children

The Directors invite applications accompanied by 20 copies of three recent testimonials these must be lodged with the Secretary on or before September 1st

Bristol General Hospital

The Committee invites applications for the following appointments which become vacant on

[illegible]

CASUALTY HOUSE SURGEON

The appointments will be for six months at salaries at the rate of £80 per annum and in the event of a second appointment being held at the rate of £100 per annum with Board Residence etc provided in the Hospital.

Candidates must be registered under the Medical Acts and produce testimonials of good personal character and ability and must have had recent experience in the administration of anæsthetics

Forms of application to be obtained from the Secretary must be returned with copies of testimonials addressed to the undersigned not later than Monday September 1st next from whom further particulars may be obtained

THOMAS W GREGG Secretary

Liverpool School of Tropical MEDICINE

The Committee are about to appoint a Medical Graduate to the staff of the SIR ALFRED JONES RESEARCH LABORATORY Freetown Sierra Leone. For particulars apply to the Hon Dean Liverpool School of Tropical Medicine Pembroke Place Liverpool

Wanted, an indoor R C ASSISTANT to visit dispense, occasional midwifery and keep the books Work rather light One accustomed to ear, nose, and throat work Some medication and electrical work generally preferred Future prospects to a keen worker State age and other essential particulars —Address, No 4207, BRIT MED JOUR Office, 429 Strand, W C 2

Wanted immediately, experienced ASSISTANT (Male), single for panel and private practice, in pleasant part of Midland town Very little night-work or midwifery, but must be capible of doing obstetric work Good salary and half midwifery fees to suitable man Indoor, all found —Add , No 4234 B M J Office, 429 Strand

Wanted —Assistantship or LOCUM by M B , D P H , (Woman 26) Over two years Hospital experience Excellent references Loyal and reliable —Address No 4252, BRITISH MEDICAL JOURNAL Office, 429 Strand, W C 2

Wanted —Male Assistant (British) South Wales Colliery Town. Private and panel practice Usual bond £320 outdoor State age, qualifications etc —Address, No 4238 BRITISH MEDICAL JOURNAL Office, 429, Strand, W C 2

Wanted —Assistantship by lady M B Ch B (Aberdeen) in or near London Willing to take less salary till experienced Trained —Address, No 4204 BRITISH MEDICAL JOURNAL Office, 429 Strand, W C 2

Wanted — Medical Officership in any department of Public Health or to Sanatorium, long temporary or permanent Sanatorium and Clinic experience Ex M O H Temporary Major Director of Hygiene —Address No 3920, BRIT MED JOUR Office 429, Strand W C

Wanted by F R C S, M B. (Cambs), at present in practice and for 20 years on Surgical Hospital Staff OPENING for practising Surgery in Somerset or near —Address No 4121 BRITISH MEDICAL JOURNAL Office, 429, Strand W C 2

Wanted, urgently, West Country (especially Devon and Cornwall), Practices, Partnerships, Assistantships and Locum Tenencies for several clients of the WESTERN TRIPLE AGENCY, Woodfield Road Torquay (Phone 906) Tels , "Bazett Torquay 906 Nurses supplied

Assistantship wanted in London by Scotch graduate aged 26 keen abstainer must be with view Has had 2½ years experience in large general practice Free middle September —Address No 4223 BRITISH MEDICAL JOURNAL Office 429 Strand W C 2

Assistant wanted in a large general practice near London Either sex Cyclist preferred Usual bond In or out door —Address stating qualification age height references and other essential particulars No 4212 BRITISH MEDICAL JOURNAL Office 429, Strand W C

Assistantship wanted by woman B Sc M B , Ch B (St Andrs), aged 26 Exper in hospital panel, and private practice Special experience in anæsthetics and dispensing Cyclist Small remuneration accepted where time for reading allowed —Address No 4236 BRITISH MEDICAL JOURNAL Office, 429, Strand, W C 2

Assistant, male, outdoor Industrial, private, and panel Kent Good prospects State age height and all essential particulars —Address No 4235 BRITISH MEDICAL JOURNAL Office 429 Strand, W C 2

Doctors for Canada — Wanted by large Industrial Concern in Canada fully qualified DOCTOR for Mill Plant and ONE for Forest Operations State age experience, and give copies of references —Write to R I P Old Colony Club, Aldwych House, Aldwych London.

Doctor highly recommends his Lady HOUSEKEEPER good cook organiser very reliable extremely good knowledge of Medical work and the running of a doctors household Bright and active Nine years with other doctor —Add No 4224 B M J Office, 429 Strand

Doctor required to take full interest in modern well managed West End Nursing Home possessing good Theatre Replies treated strictly confidentially —Address No 4254 BRITISH MEDICAL JOURNAL Office 429, Strand W C 2

Part-time work (London) wanted by Woman, aged 29, M B Ch B, ex H S and general practitioner between August and December — Address, No 4209 BRITISH MEDICAL JOURNAL Office, 429, Strand W C 2

Part-time Work in London required by M B (Camb), M R C S Three years Hospital appointments Experienced in General Practice —Address No 4220 BRITISH MEDICAL JOURNAL Office 429, Strand W C 2

Practitioner, recently retired, 28 years part time M O H , anxious for work in Public Health Lectures, Propaganda &c Terms dates fees etc , address LOCKHART STEPHENS, C B E D L , The White House, Emsworth, Hants

Secretary-Chauffeuse (own two-seater car), or Secretary desires part time post (now or later) Shorthand, typewriting (own machine), fluent French, knowledge German *Some training and experience in nursing and social work* —Add , No 4227, B M J Office 429 Strand

Trained Nurse — Secretary (experienced), desires EVENING WORK with medical man Shorthand typing accounts etc West End or S W district preferred — Address, No 4211 BRITISH MEDICAL JOURNAL Office, 429 Strand W C 2

Vacancy —Far East Un- married Male ASSISTANT, under 28 with experience House Appointments, required for old-established private practice Three years engagement Good prospects Applicants should state age, qualifications and resident appointments held Address, No 4215 BRITISH MEDICAL JOURNAL Office, 429, Strand W C 2

X-Rays, Electrotherapy, &c —Fees moderate All cases under medical supervision —Apply, Secretary CITY X RAY AND ELECTRICAL INSTITUTE, 65-66, Basinghall Street, E C 2 *Telephone: London Wall 1381*

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Dispenser, thoroughly experienced in Surgery routine and Book keeping seeks POST in London Excellent references — Address, stating salary offered No 4232 BRITISH MEDICAL JOURNAL Office 429 Strand, W C 2

Dispenser-Secretary, woman, (30), Hall certif , well trained and recommended fully experienced all duties seeks POST with Doctor resident or otherwise Please state salary —Address No 4219 BRITISH MEDICAL JOURNAL Office 429 Strand W C 2

Experienced Dispenser-Book-keeper (lady), required for Holiday Locum 3-4 weeks Sept partnership practice 12 miles Victoria (L B & S C R) —Address, stating salary required and all particulars No 4220 BRITISH MEDICAL JOURNAL Office, 429 Strand W C 2

Female Dispenser desires POST with doctor or institute Knowledge of booking, nursing, and driving Manchester preferred *Disengaged October 1st* —CRABTREE, Glencoe ' Edge Lane Stretford

Lady Dispenser (Hall), long experience, excellent testimonials, wishes POST with doctor or hospital locum, permanency, or part time —Address No 4230 BRITISH MEDICAL JOURNAL Office 429, Strand W C 2

Lady (certified midwife) requires position as HOUSEKEEPER to Doctor Would assist with Midwifery Practice and undertake secretarial work —Address No 4217, BRITISH MEDICAL JOURNAL Office, 429, Strand W C 2

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Teleg : "Epsomian, L[illegible]

Wanted —Locum Work, or good Assistantship by medical man who has been in charge of a Military Hospital for the last three ye[illegible] testimonials [illegible] character [illegible] fully familiar with every kind of work —Address No 4206, BRIT MED JOUR 429, Strand, W C 2

Wanted —A reliable Locum for private and panel practice in Lancashire town, from September 5th to 11th inclusive State age, and other essential particulars References — Address, No 4221 BRITISH MEDICAL JOURNAL Office, 429, Strand, W C 2

As Locum —An experienced doctor who has had own practice d sires further engagements for Sept and Oct Terms from 6 gns p w according to work Does some 10 locums annually Well recommended —Apply, "Medicus" c/o Dr MOYLES 136 Stoke Newington Road, N 16

Gentleman just finishing five weeks LOCUM wishes to hear of another Experienced in panel and general practice Good references Conscientious worker —Address No 4231, BRITISH MEDICAL JOURNAL Office, 429 Strand, W C 2

Locum wanted by woman M B free September onwards Hospitality and travelling expenses accepted —Address No 4255, BRITISH MEDICAL JOURNAL Office, 429 Strand, W C

Locum wanted for end of August and September by Scotch Graduate (Woman) Previous experience References — Address No 4122 BRITISH MEDICAL JOURNAL Office, 429, Strand W C 2

Locum. — Well qualified middle-aged man, sold own Practice free to act as such between 3rd and 26th September References given —Address No 4218 BRITISH MEDICAL JOURNAL Office 429, Strand W C 2

Locum or Assistancy required by experienced reliable practitioner Good references —Address No 4214 BRITISH MEDICAL JOURNAL Office 429 Strand W C

Watford or District —Locum or TEMPORARY ASSISTANTSHIP (out door or indoor) required by M R C S (Eng) L R C P (Lond) abstainer own car, available immediately —Address No 4228, BRITISH MEDICAL JOURNAL 429, Strand W C 2

Woman Graduate, M B, Ch B is free for LOCUM work during September Experience in hospital and general practice Keen worker with excellent references Add , No 4226 B M J Office 429, Strand W C 2

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PROVIDED
Without fee to Principals.
Apply to
Mr. W. S. ATKINS
43, BEDFORD STREET, STRAND, W.C 2.
Telegraphic Address:
"Positions Westrand, London."
Telephone: Regent 229

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Lancs. Town —Partnership. Old established Practice Senior retiring Good house, garage &c £85. Receipts £2 400 Panel 2 140 Population 13 000 Opposition poor Price half share £1 800 part deferred —MANCHESTER MEDICAL & SCHOLASTIC ASSOCIATION Ltd , 6, Brown Street

Wanted—Partnership, London preferred or large town by M B Ch B (Glas) æt. 3 ex H S and H.P over three years exper in G P Capital limited. Free Oct or Nov panel or non panel Prelim assistantshipif necess.—Add No 4222, B M J Office 429 Strand

Wanted—Partnership with or without view to Succession. South or East Coast. Country town or seaside preferred Preliminary Assistantship entertained — Address No 3901 BRITISH MEDICAL JOURNAL Office 429 Strand W C.2.

Partnership offered—Half share in practice of £1 600 p.a. easily increased. Doctor's house available, with every convenience which can be rented on lease or purchased —Particulars from P PRINCE 3a Charing Cross London S W 1

Partnership wanted, within 20 miles of London by experienced well qualified graduate, aged 38 married Scotch energetic, keen Interview can be arranged. Ample capital.—All replies confidential Address No 4205 BRIT MED JOURN Office 429 Strand W C.2

Partner wanted (Roman Catholic preferred) in large panel practice in Scotland. Excellent prospects.—Address No 4253. BRITISH MEDICAL JOURNAL Office 429 Strand W C 2.

Splendid opportunity for graduate of Oxford or Cambridge. PARTNERSHIP in first-class practice in University Town ¼ share for disposal (£1,000 guaranteed) Option of increase later No panel no dispensing Partner must be well qualified with leaning towards medicine Prem. 2 yrs purchase (Other things equal, sportsman pref.)—Add. No 4233 B M J, 429 Strand.

Wanted.—A non-dispensing general PRACTICE in the suburbs of, or within easy reach of a large provincial town Income about £1,000 Moderately sized house with garden to rent —Address No 4237 BRITISH MEDICAL JOURNAL Office 429 Strand, W C.2

Wanted—Practice of about £800 p.a. Manchester or near suburb Good panel and mixed House preferably rented Capital available No agents —Address No 4225 BRITISH MEDICAL JOURNAL Office 429 Strand W C 2

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Wanted—Seaside Practice with good house (no basement kitchen) in Hants Devon or Somerset about £1,200 per annum. Cash available Address in strict confidence.—No 4010 BRITISH MEDICAL JOURNAL Office, 429 Strand W C 2

Wanted — F PRINCE, 32, Charing Cross London S W 1 always having clients desirous of PURCHASING PRACTICES or PARTNERSHIPS in Town & Country prepared to pay good premiums can usually effect quick sale Terms without obligation post free

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M D, B S (Lond), 20 years' in tropics wishes to settle at home bout March 1925 Would consider PRACTICE or PARTNERSHIP with early succession preferably where Surgery and/or Tropical Medicine would be of value London preferred or country town with chance of Hospital appointment Capital available —Address No 4208 BRIT MED JOUR. 429 Strand W C 2

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Required at once—Practices and PARTNERSHIPS —Mr W S. ATKINS (late of ARNOLD & SONS London) has a large number of Clients who are seeking Practices and Partnerships and wish to settle down at once — Send full particulars in confidence to Mr W S ATKINS Medical Transfer Agency 47 Bedford st. Strand London W C 2

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The instruments and equipment may be inspected at the Depot at any time between the hours of 9 a m and 5 p m, except Saturdays (9 a m to 12 noon) Offers to purchase should be addressed to The Controller of Supplies, H M Office of Works, King Charles Street, Whitehall, S W 1

Complete general operation outfit by Arnold mahogany brass bound outer case All instruments fitted into plated metal racks Cost £30 quite new £15—Address, No 4251 BRITISH MEDICAL JOURNAL Office 429, Strand W C 2

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West London Hospital, Hammersmith Road, W 6

Required one HOUSE PHYSICIAN and two HOUSE SURGEONS (Males) These appointments are tenable for six months from 1st October next Salary £100 per annum with board, lodging and washing allowance

Candidates are required to be registered under the Medical Act to send four copies of their letters of application and four copies of each testimonial submitted, so as to reach me not later than Tuesday, September 16th Selected candidates will be required to call upon such members of the Medical Staff as directed ...eting of the Medical Col... 26th, at 4 p m, and th... ng at 4 30 p m the same day when the appointments will be made H A MADGE Secretary

Hospital of St Cross, Rugby (General Hospital—10 Beds—with Special Departments)

TWO fully qualified LADY R M O s are required for October 1st

Applications are invited for the Senior post for which the present R M O intends to apply and for the Junior post The salaries offered are at the rate of £130 and £65 respectively, the appointment being for six months

This Hospital is recognized by the University of London for purposes of the M D and M S

Candidates should apply to me before Sept 1st sending particulars as to age qualification and previous experience, together with three recent testimonials

W J MUSTON, Secretary

August 18th 1924

Lancashire County Mental HOSPITAL, Winwick, Warrington

Male ASSISTANT MEDICAL OFFICER required Salary £300 per annum together with board, furnished apartments attendance, and washing, valued at £150 per annum for superannuation purposes, plus the Civil Service bonus which fluctuates and which at present is £140 16s 8d Candidates must be registered under the Medical Act

The appointment is subject to the provisions of the Asylums Officers Superannuation Act 1909

Applications, stating age whether married or single together with copies of testimonials &c should be received by the Medical Superintendent by first post on September 3rd

City of London Hospital for DISEASES OF THE HEART & LUNGS, Victoria Park E 2

(Bus, tram, & rail, Cambridge Heath, L & N E Rly)

Applications are invited for the post of half time MEDICAL OFFICER (Male) for attendance every afternoon at 2 p m, to assist the Out patient Physicians and to carry out certain other duties of a medical character The appointment will be for a period of six months from September 15th, 1924, with salary at the rate of £200 per annum

Applications accompanied by not more than three testimonials should reach the undersigned not later than Monday September 1st

GEORGE WATTS, Secretary

The Glasgow Eye Infirmary

The Directors invite applications from Registered Medical Practitioners (Males) for the appointment of RESIDENT ASSISTANT HOUSE SURGEON Salary at the rate of £75 per annum, with apartments and board The post will be vacant on October 1st next

Applications, with copies of testimonials, should be lodged with the undersigned All canvassing prohibited

HAROLD J BLACK
68, West Regent Street, Glasgow Secretary
August 11th, 1924

General Infirmary, Salisbury. (General Hospital of 111 Beds)

HOUSE SURGEON required to commence duty on September 10th Salary £150 with board apartments and washing Candidates must be unmarried fully qualified and registered

Applications with copies of testimonials, to be sent to the undersigned not later than August 31st

JOHN S BIRBECK
House Governor and Secretary

Manchester Ear Hospital, Grosvenor Square All Saints

The Board invite applications for the post of HOUSE SURGEON Twenty four beds State essential particulars Candidates must be duly qualified and registered Applications with four copies of recent testimonials, to be forwarded to Mr Frank Donner (Hon Sec, Manchester Ear Hospital) c/o Mr W J Elliam 33 Brazennose Street, Manchester

Royal Chest Hospital, City Road, E C (Royal Northern Group of Hospitals)

A vacancy occurs for a PHYSICIAN with charge... ess the degree on a Brit... s of the Royal ... Applications should be sent not later than Wednesday September 10th, to the undersigned from whom particulars of the office and details with regard to the submission of testimonial, etc may be obtained

GILBERT G PANTER Secretary
Royal Northern Hospital Holloway N

Royal Chest Hospital, City Road E C (Royal Northern Group of Hospitals)

The post of RESIDENT MEDICAL OFFICER at this Hospital will be vacant on October 1st The appointment is for six months Salary at the rate of £150 per annum, with board, lodging, and washing

Applications with copies of testimonials should be sent by Wednesday September 10th, to the undersigned from whom forms of application and rules of the post can be obtained

GILBERT G PANTER Secretary
Royal Northern Hospital Holloway N

Royal Chest Hospital, City Road, E C (Royal Northern Group of Hospitals)

The post of HOUSE PHYSICIAN at this Hospital will be vacant on October 1st The appointment is for six months Salary at the rate of £100 per annum with ... Applications ... should be sent by Wednesday ... be under signed from whom forms of application and rules of the post can be obtained

GILBERT G PANTER Secretary
Royal Northern Hospital Holloway, N

The Sheffield Royal Hospital

Applications are invited for the post of RESIDENT SURGICAL OFFICER, salary £200 per annum, with board residence and laundry Applicants must be registered Medical Practitioners and unmarried The appointment is tenable for one year The successful candidate will commence duty on October 1st Applications, with qualifications experience and copies of testimonials to be sent in to me not later than September 10th Ladies are not eligible

The Board Room JOE W ROBINSON,
August 11th 1924 Secretary

Bracebridge Mental Hospital, Lincolnshire

Applications are invited for the post of SENIOR ASSISTANT MEDICAL OFFICER (male) Salary £450 per annum rising by four annual increments to £550 per annum with emoluments (furnished apartments board, laundry and attendance)

Appointment subject to the provisions of the Asylums Officers Superannuation Act 1909

Applications stating age date of registration, with copies of three ... be received by the ... August 31st, 1924

Walthamstow, Wanstead, and LLYTON CHILDREN'S AND GENERAL HOSPITAL

JUNIOR RESIDENT HOUSE SURGEON (male) required 50 Beds and Out patient Department Salary offered £100 per annum with board and laundry Candidates must be duly qualified and registered

Applications with three testimonials (or copies) should be addressed to the Secretary, The Hospital Orford Road, Walthamstow E 17

Rochdale Infirmary and DISPENSARY (110 Beds)

Wanted JUNIOR HOUSE SURGEON (Male) Salary £200 p a, including board residence and laundry Applications stating age nationality, etc together with three recent testimonials to be sent to the Secretary endorsed "House Surgeon"

Conditions of appointment on application to

W WINNAL, Secretary

Consumption Sanatoria of SCOTLAND
COLONY OF MERCY FOR EPILEPTICS
Bridge of Weir

Wanted ASSISTANT RESIDENT MEDICAL OFFICER (Male), One with laboratory experience preferred Salary £200—£250

Apply, Dr CROCKET Medical Superintendent

City of Westminster

MEDICAL OFFICER OF HEALTH

The Westminster City Council invite applications from fully qualified medical practitioners not over 40 years of age for the appointment of Medical Officer of Health for the City of Westminster at a salary of £1,250 per annum, increasing by annual increments of £50 to £1,500 per annum (no bonus)

The appointment will be made subject to the provisions of the Public Health (London) Act, 1891 and the Sanitary Officers Order, 1922 made by the Minister of Health

The person appointed will be required to pass a medical examination as to his physical fitness to subscribe to the City Council's Superannuation Fund to be prepared to take up his duties on the 1st January 1925 to give the whole of his time to the service of the Council to reside in the City of Westminster and to give three calendar months prior notice before resigning his office

Forms, on which applications are to be made may be obtained on application to the undersigned, and such forms should be filled up and returned to the Westminster City Hall not later than 10 a.m. on the 15th September next.

Personal canvassing of any member of the City Council is prohibited and will be held to be a disqualification but candidates may send copies of their applications to the members of the Council.

Westminster City Hall, Charing Cross Road W C 2 — JOHN HUNT, Town Clerk. August 18th 1924

City of Nottingham

ASSISTANT MEDICAL OFFICER (RESIDENT)

The Guardians of the Poor of the City of Nottingham invite applications from duly qualified unmarried men for the appointment of Resident Assistant Medical Officer at their Bagthorpe Institution and Infirmary for a period of six months certain subject to renewal.

The Hospital is a separate modernly designed building comprising four pavilions and providing accommodation for 400 patients The Staff consists of a Consulting Surgeon Visiting Medical Officer and two Resident Assistant Medical Officers. There is opportunity for experience in all departments including Medical Surgical and Midwifery cases and Bacteriological work An X-ray apparatus is installed

Salary at the rate of £300 per annum with furnished apartments service, board laundry etc

Applications giving age and full particulars of experience and qualifications accompanied by copies of three recent testimonials to be sent to me on or before Wednesday September 3rd next

Poor Law Offices, Shakespeare Street, Nottingham. J ALLAN BATTERSBY, Clerk to the Board. August 14th 1924

West Riding County Council

APPOINTMENT OF DISTRICT TUBERCULOSIS OFFICER

The County Council of the West Riding of Yorkshire invite applications for the appointment of District Tuberculosis Officer for the Barnsley Area.

Salary £800 per annum rising by annual increments of £25 to £750

Further particulars and form of application may be obtained from the undersigned by whom all applications together with copies of not more than three recent testimonials must be received not later than Monday the 1st September 1924

County Hall, Wakefield 11th August — FRANCIS ALVEY DARWIN, Clerk of the County Council.

City of Bradford

MUNICIPAL GENERAL HOSPITAL, ST LUKE'S

HOUSE PHYSICIANS and HOUSE SURGEONS required.

Salary in each case £200 per annum with board and lodging

These appointments are for six months renewable for a further period of six months.

Application forms may be obtained from the Medical Officer of Health Town Hall, Bradford, and should be returned to him not later than August 27th 1924

Town Hall, Bradford July 31st, 1924 — N L FLEMING Town Clerk.

Stockton and Thornaby

HOSPITAL Stockton-on Tees. (80 Beds.)

Applications are invited for the post of JUNIOR HOUSE SURGEON at this Hospital duties to commence on October 1st 1924. Salary £200 per annum with residence board and laundry

Applicants must be doubly qualified male and unmarried

Applications stating age nationality and experience together with copies of three testimonials to be sent to the Secretary Superintendent, not later than August 31st.

ESTABLISHED 1868

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(Mr A HADLEY)

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19, Craven Street, Strand, W C 2.

Telegrams Herbana Westrand—London *Telephone* Central 1112

[illegible] tion. No charge made unless a sale be effected

LOCUM TENENS and ASSISTANTS supplied

FOR SALE.

1 NORTH OF ENGLAND — PARTNERSHIP with Succession in two years or sooner Total [illegible]

2 [illegible]

3 SUSSEX COAST TOWN—[illegible] for middle and working-class Practice Receipts [illegible]

4 [illegible] population with hospital General PRACTICE yielding about £2 000 a year Panel 1,100 Good residence rent £60 Premium £3 000

PRACTICE Panel [illegible] Rent £40 Premium £3 500

6 LONDON S W —HALF SHARE of old established Practice returning £3 000 a year Middle and working-class Good living accommodation available Premium £2,750 cash

7 NORTH LONDON —Club and Panel PRACTICE Receipts average £1,000 a year Panel 700 Plenty of scope small house. Rent £30 Premium £1,450

8 SOUTH LONDON —Working class PRACTICE Receipts about £950 p.a. Panel 600 Large house (10 rooms) held on lease 13 years to run, rent £80 Garage sub-let at £50

9 SOUTH LONDON —Good middle and working class PRACTICE held many years by the Vendor now retiring. Receipts £1,400 a year Panel 1 600 Excellent residence with garden Good lease

No charge to purchasers or for enquiries.

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Telegrams. "Assistamo, London.

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(Mrs) MILLICENT HICKS *Superintendent* W J HICKS *Secretary*

ST. LUKE'S HOSPITAL.

ESTABLISHED 1751

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TRAINED NURSES for MENTAL and NERVOUS CASES can be had immediately

Apply to LADY SUPERINTENDENT 19 Nottingham Place London, W 1 Telephone Mayfair 0151

NORTHERN BRANCH — Apply LADY SUPERINTENDENT, 91 Clarendon Rd. Leeds Phone Leeds 26156

York Road (General Lying-IN HOSPITAL) Lambeth, S E —Established 1830

Patrons H.M. THE QUEEN and H.M. QUEEN ALEXANDRA. Medical Students and Qualified Practitioners admitted to the Practice of this Hospital. Telephone 94 Central For rules fees etc. apply ROSE E. WHITE, Secretary

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Partners
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43, BEDFORD STREET, STRAND W C 2.

(A few doors from The Lancet" Office)
Telegrams Positions We[illegible] London."
Telephone Regent 2[illegible]

LOCUM TENENS and ASSISTANTS supplied

FOR DISPOSAL

Staffs —Partner required for a General Practice situated in an industrial district Receipts £2,500 Panel 1[illegible] House at rental. Premium for third share 1½ years' purchase Option increase to half share Folio 887

Sussex —A General Practice situated in [illegible] £1,400 Panel [illegible] wards Cottage Hos[illegible] 6 bedrooms etc Prem 1½ yrs purchase Folio 593

London — City Practice [illegible] pps £500 for retiring position at 37

Norfolk —A General PRACTICE, situated in a country district [illegible]

Midlands —General Practice situated in small Country Town. Receipts £1,200 Panel [illegible] Fees 3s 6d upwards Excellent house containing 6 bedrooms &c Premium 1½ years purchase —Folio 617

Glam —General Practice in thickly populated district on Coast Receipts £1 700 Fees 3/ upwards Panel 600 Considerable scope House, containing 4 bedrooms etc rent £50 p.a. Premium £1,500 Folio 887

Derbyshire —A General PRACTICE situated in an industrial district. Receipts about £800 Panel 600 Good fees Nice house containing 8 bedrooms &c at rental. Premium £1 000 —Folio 653

Purchasers stating their requirements can have details of other Practices not advertised

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31, BEDFORD ST., STRAND W C 2.

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No Charge to Purchasers. All Business receives Mr NEEDES personal attention.

1 WITHIN EASY REACH of the Marble Arch old-established Private PRACTICE of about £1,200 a year for sale, as Vendor is going abroad. No poor fees Very convenient residence on long lease if desired. Premium with good introduction, about £1,400

2 DEATH VACANCY —PRACTICE of £1,100—£1,200 a year in healthy Town within half an hour of London. Contract work about £600 Very large scope for active man. House on lease at £65 Efficient introduction assured

3 UNOPPOSED PRACTICE of £2,000 a year in a pleasant country within an hour of London Good panel and appts. Convenient residence with garage tennis lawn flower and kitchen gardens May be purchased or leased. Vendor retiring after over 30 years' tenure

4 VERY OLD-ESTABLISHED PRACTICE S.E.—Conducted as a "Local up" Surgery Receipts £1,300 a year No midwifery panel or night work Convenient house (main road) at low rent. Moderate terms conceded

5 [illegible]

6 [illegible] venient residence on long lease at £125 Premium £1,500

7 UNOPPOSED PRACTICE in charming district within 20 miles and averaging £1 200 a year including panel and appts. Good practice Old fashioned residence with land on lease. Premium £1,800

8 REQUIRED —Country or Country Town PRACTICE of about £2 000 a year within 60 miles of London with decent house to be bought If desired Details in confidence to Mr NEEDES.

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Under the personal direction of Dr. J FIELD HALL, and Mr J C NEEDES

An Accountant's certified report is required in respect of every practice or partnership the disposal of which is undertaken by the Agency

The commission chargeable in respect of any practice in Great Britain placed exclusively in the hands of the Agency for transfer has been fixed on an exceptionally favourable scale, the maximum chargeable on any transfer being £50 In the case of Foreign and Colonial practices similarly placed the maximum is £75

NO CHARGE IS MADE TO PRINCIPALS FOR THE INTRODUCTION OF LOCUM TENENS OR ASSISTANTS

Accountancy and Legal services furnished by the Agency, where desired, at moderate inclusive charges.

PRACTICES AND PARTNERSHIPS FOR SALE

1 HOME COUNTY —Hospital Town within 30 miles of London PARTNERSHIP A one half share in a mixed general practice held by se over £2 000 Panel of 780 s and medicine from 3/6 fronted house, with ample accommodation and good garden Price £2 000 of which £1 000 late Hospital ort schools et

2 SOUTH WEST OF ENGLAND — COUNTY TOWN —A ONE THIRD SHARE producing £800 (and increasing later) is offered in a good class non panel and non-dispensing practice with a considerable amount of surgical work There is a good Hospital in the town, and the incoming partner (who must hold the I R C S Eng) will eventually be elected on to the staff Premium £1 600

3 PARTNERSHIP —A Junior Partner is required in an extensive and old established non panel Practice situated in a large Town within 1 hours run of London The share (which can be increased after a time) produces £1 015 on average of past 3 years Visits 5/ upwards Good house available on lease at moderate rent Ample accommodation garden etc Married gentleman (under 30 years of age) with Hospital experience preferred and if possible well qualified Easy terms of purchase would be conceded if necessary to suitable man Premium about £1 500

4 PARTNERSHIP —Growing prosperous Town within 70 miles of London A one third share to commence with is for disposal in an old e tablished practice producing an income of nearly £5 000 a year including a panel of about 2 000 Visits 3 6 to 2/ Well situated freehold hou t on mortgage Excellent tak Hospital and the ingoi will be appointed to the Staff Premium 1½ years purchase

5 MIDLANDS —In a delightful Town (population over 15 000) amidst beautiful surroundings and within 4 hours run of London an old established lucrative PRACTICE worth over £3 000 per annum including large panel Good fees The house is well situated has ample accommodation and can be rented on lease at £100 a year Premium 1½ years ients Satisfactory reasons for selling sport of all kinds

6 RESIDENTIAL TOW of London Non dispensing chiefly b ducing an income of about £2 000 a y of about 600 Fees from 2/6 to 21/ mainly 7/6 upwards Only a fe es of mid wifery yearly mmodious house (3 recep £100 p a Good society purchase

7 EASTERN COU —UNOPPOSED COUNTRY PRACTICE within 30 miles of London Very old established and easily worked, and situated close to a County Town Average income for the last three years £1 314 including appts , worth about £70 and panel of 788 Advice and medicine 3 6 to 5/ , visits 5/ to 10/6 medicine u ually extra Midwifery 30/ upwards 10—15 cases yearly Very attractive residence, standing in its own grounds, containing consulting room surgery (with separate entrance) 3 re eption 4 be rooms, etc garage, stabling One acre of garden and two ac es of meadowland Price, freehold £1,200 part on mortgage Premium £2 000

8 LONDON NORTH —Old established middle and working class PRACTICE in well populated suburb Receipts for the last two years average £980 per annum (£488 for the first six months of this year) including panel of over 900 and Insurance Appts worth £30 Visits 3/6 upwards No midwifery Car not required Small house containing consulting and waiting rooms sittin room 3 bedrooms small garden Rent only £30 a year, on lease Premium £1 450

9 LONDON WEST END —PARTNERSHIP —A quarter share (to commence with), and up to one third in 2 years and one half in 4 or 5 years with ultimate succession if desired is for disposal in a first class general Practice Income for the immediate past year £3 020 Fees mostly 1 guinea upwards and a few at 10/6 Purchaser should be a Graduate or hold some higher qualification Premium for the quarter share £1,500

10 LONDON EAST —Old established sound middle and working class PRACTICE Income over £1 150 Panel of 1 00 Surgery fees 2 6 visits 3 6 upwards No midwifery Can be much increased if desired Sm case Would suit lady doctor

11 CHESHIRE —Twelve mo will be given to an old established middle class and panel Practice (1,600 patients on list) worth last year £2 100 Situated in a large town (population nearly 100 000) close to seaside resort Visits 2/6 to 5/ Midwifery 2 to 3 guineas about 100 cases yearly Car not required Good house with garage available at end of introduction Premium 1½ years purchase

12 PARTNERSHIP —LINCS Large Town The third share of an old established lucrative and money making Practice worth f r the last financial year, £3,722 can be acquired by a young unmarried man Panel list of over 1 800 and patients operative class Visits 2/ to 5/ Midwifery 2 to 3 guineas Ingoing partner could reside with Vendor or unfurnished rooms are available Golf to be had Premium 1½ years purchase

13 SOUTH COAST —LARGE TOWN PARTNERSHIP A quarter or one third share in a middle and working-class Practice Income over £4 000, with scope Panel of over 1,000 Fees 2 6 to 7 6 chiefly 3/6 to 5/ No midwifery and very little night work Purchaser should preferably be not over 30 Prem 2 years purch

14 YORKSHIRE —Large clean town Well-established middle and working class PRACTICE Income £1 300 includin £580 from Advice and medicine from Very little midwifery lowest fee guineas Good detached freehold house with small garden Electric light Garage Price £2 500 of which rtgage Premium £1 400 cash

15 with view to PARTNERSHIP of age and not over 30 who must be an F R C S Eng of good appearance and a sportsman) is required on a two years engagement to commence next March in a practice producing £7 000 a year Salary 650 Rupees month plus board and lodging (the total equals £800-£850 p a) At termination of engagement a one sixth share will be sold if satisfactory at one years purchase (f approximately up to one third e of the Partners is iterview during the n

16 CHANNEL 11 years by present I it of ill health Cash receipts for the past three years average nearly £750 per annum including an appointment worth £35 Visits 7/6 to 10/6 in the Town extra outside 8 to 10 cases yearly Car not required tion, 6 bedrooms, bathroom etc large ga by valuatio purchase ort of all kinds

17 NEW ZEAL and increasing PRACTICE about 36 miles from a large city and worth nearly £1 300 a year including easily worked appointment at £100 Visits into Township 10/ mileage 6/ midwifery 5 gns Good and up to-date house (built by Vendor's predecessor) 3 bedrooms and sleeping ground tennis court etc

18 NEW SOUTH WALES — TIDE unopposed, and situ School, Post Office Shops etc) in a very pretty distr ct Cash receipts for the past three years average £1 200 per annum including small Lodge worth £80 Visits 7/6 to 10/6 (mileage 7/6 to 10/6 per mile) Midwifery £5 5s 0d Attractive Bungalow residence, with consulting room, surgery (separate entrance) 3 large bedrooms, maid's room etc Garden Acetylene gas plant Rent £104 on lease Premium £1 000, half down and balance in 1 or 2 years

19 NORTH EAST COAST —FAVOURITE RESORT Old established non dispensing PRACTICE Income only about £400 per annum at present but there is very large scope for increase by a young well qualified man Good fees Excellent corner house with 3 recep , 6 bed garden Freehold Price for House and Practice £2 500

20 FAR EAST —Wanted, in November a young unmarried ASSISTANT (not over 30 years of age) on a two years agreement with possibility of succession at end of engagement Return passage paid Interview in London essential before ultimate engagement

Profits accruing to Bovril, Limited, from the Agency will be allocated amongst recognized Medical Charities.

Full Schedule of Terms and Conditions will be forwarded on application

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Printed Prospectus of Terms, etc., post free on application.

London, S W—Partnership £3 000 a year Half share for disposal Panel 1 500 Good fees Flat available—Apply No 7585

Suffolk—Nearly £1,600 a [illegible] garden [illegible]—Apply No 7583

Yorkshire—Average £1,286 Appointments £350 Visiting fees 3 6 to 10 6 Panel nearly 1 200 Few midwifery cases Good house every convenience—Apply No 7581

North-West County— [illegible]

North-West Coast— Increase [illegible] upwards of town Moderate rent—Apply No 7578

South Coast—About £450 6 upwards larger can 7577

London, N—About £450 p a Small non residential PRACTICE Panel about 200 Fees for visits 2 6 to 7 6 Good premises on lease No appointments or midwifery—Apply No 7574

London, N—Over £950 p a Cash and Panel Old-established Panel 1 No midwifery Waiting and Consulting rooms 3 bedrooms etc Rent £30 Premium £1,450—Apply No 7571

Near Manchester—Nearly £2,000 p a Panel worth about £600 p a Moderate house with separate surgery to rent Premium 1½ years purchase easy terms Good schools near—Apply No 7565

Eastern County Partnership About £2,200 p a Panel about 2 000 and other appointments Fees 3 6 up One-third share for disposal with succession in about 3 years Apply No 7564

London, W—About £1,100 a year Non-dispensing Very small panel Fees 5/ upwards Very few midwifery cases Corner house to rent—Apply No 7561

London, S W—Partnership and succession £2 000 a year Half share for disposal immediately Panel 1 400 Old established Good fees Excellent house and large garden Premises purchase—Apply No 7560

Yorkshire—About £1,700 a year Panel 1 120 Visits 2 6 to 10 6 and some extra About 40 midwifery cases up to £5 5 0 Appointments £60 Good house with garden and garage for sale or would let on lease—Apply No 7559

Death Vacancy—£1,000 a year Favourite Riviera Resort Very old established Same hands over 30 years Small and select panel Night work mostly refused Good house with garage and garden on lease Excellent opportunity for prompt purchaser Personally known and recommended—Apply No 7556

Cheshire—Nearly £4,000 a year Old-established Practice HALF SHARE for Sale at 1 year purchase Panel about 1 400 Appointments £45 Good fees Good house and garden to rent—Apply No 7538

South County—Over £1,000 p a Panel 610 other appointments £120 Practically unopposed Excellent house recently decorated Good garden All sport—Apply No 7535

Midland Town—About £1 100 a year Old-established PRACTICE Panel 8 Appointment £40 Very little midwifery Large house and garden Premium £1 600 including drugs etc—Apply No 7534

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FOR SALE.

NORTHANTS—Old-established G P situated in charming town Panel over 1 400 House of 9 bedrooms etc Large old world garden Rent £70 p a Premium £2,150

LONDON N—NUCLEUS G P (branch) Panel 1 0 Income £1,0 p a (great scope) Part 30 per week Premium £190

LANCS (Manufacturing Town)—Old-established G P Panel nearly 2 000 Income £3 300 House 4 bed 1 reception rooms let at £32 p a Premium 1½ years or would sell or take third share for £2,000 Suitable for young North Countryman Cottage Hospital

BIRMINGHAM (near)—Old-established G P Good house to rent situated in busy district Income over £1,700 p a Panel over 1 000 Premium 1½ years purchase

SOUTH WALES (Net Colliery)—Old-established G P situated in excellent surrounding Panel 2 500 Income over £2 700 Splendid house etc Suitable for two in partnership though not necessary Opposition negligible Premium 1½ years purchase Reasonable terms entertained

GLOS—Well established G P Panel over 1,400 Income nearly £1,700 Excellent house at rental Premium 1½ years purchase

YORKS (W R)—Old-established G P Nice house Panel nearly 1,400 2 appointments Premium £3 900 to include house (part can remain)

YORKS (E R)—Busy Industrial PRACTICE Panel over 1 100 Income £2,000 p a Scope for surgery Premium 1½ years purchase

MANCHESTER—NUCLEUS General Practice situated in busy quarter Small house (6 bedrooms) Panel and cash Income over £600 per annum Premium £1 450 to include house

YORKS—Old-established country town Panel 1 400 Income £2,500 three appointments Detached house with garden and garage to let on lease Premium £3,500

Purchasers stating their requirements will be sent particulars of other suitable Practices and Partnerships for sale free of charge

Please address all communications to the Manager Mr W H. GRANT Medical Transfer and Insurance Department.

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SCOTLAND.—(10) Glasgow Old estab PRACTICE over £900 p.a., capable of great Increase Good house with garden and garage

SOUTH MIDLANDS.—(11) PARTNER required in well established Practice over £3 700 per annum in first-rate Residential Town about an hour from London Panel 2 400 House with 5 or 6 bedrooms Rent £30 Premium one fourth share one and three quarters years purchase

YORKSHIRE, WEST RIDING.—(12) Well-established middle and working class PRACTICE over £1 300 (£920 from Panel and appts.) in large clean town Good detached corner house Prem £1 400

EAST COAST.—(13) Increasing PRACTICE over £500 in rapidly developing District Panel about 100 Nearest opponent 4 miles Bungalow residence (5 rooms) Premium £750

EGYPT.—(14) Well-established PRACTICE £700 to £800 mainly among English Residents and Visitors Excellent semi detached residence (5 bedrooms) Premium to include Furniture £1 100

EASTERN COUNTIES.—(15) Old-established unopposed Country PRACTICE of £826 p.a. Panel about 500 Very good house in 2 acres of garden also 18 acres of land attached to rent or purchase Nearest opponent 5 miles

MIDLANDS.—(16) PRACTICE over £2,200 in Country Town, near Birmingham Panel 1 800 Charming house (6 bedrooms), large garden Rent £100 Premium one and a half years purchase

SURREY.—(17) PARTNERSHIP in first-rate Practice, £7 000/£8,000 per annum, in one of the best Residential Districts House (7 bedrooms) to rent Premium one sixth share two years purchase Partner should be aged over 30 and have held hospital appointments

YORKSHIRE, WEST RIDING.—(18) Well-established mixed class PRACTICE nearly £1 500 p.a., in Manufacturing Town Panel 1 [illegible]8 Good house (5 bedrooms) to let on lease Premium one and a half years purchase

MIDLAND TOWN.—(19) Old-established PRACTICE about £1 100 per annum in Residential Suburb Panel 700 Good house and large garden Premium £1 500

LONDON, N.W.—(20) PRACTICE worth about £450 per annum in working class district Panel 450 increasing No midwifery Double fronted corner house Premium, Practice and freehold House £1 500 Great scope for young man

SOUTH MIDLANDS.—(21) PARTNERSHIP in old-estab Practice of £6 300 per annum in Country Town Panel about 2 000 Excellent house to rent Premium one fourth share, two years purchase

FIRST-RATE RESIDENTIAL DISTRICT up the THAMES.—(22) PARTNERSHIP in good class Practice averaging about £1 550 p.a. Not much Midwifery Good house, with garage, to be sold Premium one half share £1,200 Scope for Surgery

LONDON, E.C.—(23) PARTNERSHIP in Special City Practice Excellent opening for gentleman (aged 30-35) specialising in Skin work and experienced in Nervous and Digestive Disorders Share worth about £500, at one and a half years purchase

LONDON, S.W.—(24) Recently established Lock up PRACTICE, in new and developing, outlying Suburban District Rent of Consulting rooms £40 Prem to include lease furniture, and fittings £250

SCOTLAND, NORTHERN HIGHLANDS.—(25) PRACTICE averaging over £1 600 p.a., in a Town No panel. House (5 bedrooms, etc.) in best residential part Ample scope for midwifery and panel Premium £1,200

SOUTH OF ENGLAND.—(26) PARTNERSHIP in very old established Country Town Practice over £3 670 per annum in beautiful part within 10 miles of the Coast Panel over 1,300 Well appointed house (8 bedrooms etc.), with garden and lawn to rent on lease Cottage Hospital and scope for Surgery Premium one half share two years purchase.

WEST MIDLANDS.—(27) PARTNERSHIP in old established Country Town Practice, over £ [illegible] £60 Partner should be age 1 [illegible] 30 to 40 with equipped Cottage Hosp Prem one third sha

LONDON, S.W.—(28) Well-established PRACTICE of £600 to £700 p.a., in favourite Residential Suburb Panel [illegible]50 Not much midwifery. Excellent detached house (6 bedrooms) with good garden for Sale. Ample scope. Premium one and a half years purchase.

SOUTH OF ENGLAND.—(29) Unopposed Country PRACTICE nearly £500 per annum Panel 420 House (3 bedrooms 3 attics), with well stocked garden Rent £25 Premium £650

SURREY.—(30) PARTNERSHIP in good middle class compact practice over £2 650 in Residential District, easy distance of London Panel 1,200 Two fifths share at first at two years purchase

MIDLANDS.—(31) Unopposed Country PRACTICE over £1 150 in beautiful part Panel about 720 Detached house (4 bedrooms) with half an acre garden Mild climate

SOUTH AFRICA.—(32) PRACTICE about £1,000, in small Town in Cape Province Very comfortable house to rent Living very cheap Premium £800

EAST COAST.—(33) Old-established good class PRACTICE £1 700 per annum, in pleasant Seaside Town and favourite Resort Nice modern double-fronted house (6 bedrooms) Rent £75 on lease Moderate prem.

SOUTH OF ENGLAND.—(34) PARTNER required in very sound old established Practice in Seaport Town Panel under 3 000 Share worth £700 to £800 at two years purchase Partner must be keen and energetic and not much over 30

HOME COUNTY.—(35) Old-established PRACTICE, over £1 850 p.a. in a most desirable Residential District under 5 miles from London Panel about 600 Excellent detached house (8 bed and dressing rooms) Nearly acre garden Rent £75 on long lease Cottage Hospital near Premium one and a half years purchase

EAST ANGLIA.—(36) PARTNERSHIP in middle and working class Practice averaging about £2 200 p.a. in picturesque district near popular Seaside Resort Panel nearly 1 [illegible]00 Choice of houses One third share at first at two years purchase.

EASTERN COUNTIES.—(37) Very old established Country PRACTICE over £1 400 p.a. Panel 6[illegible] Suitable house (5 beds.) Rent about £40 Mild climate Premium one and a half years purchase

SOUTH WALES.—(38) Well-established PRACTICE nearly £1 250 p.a. in County Town Panel over [illegible]00 Fees 5 to £2 2s Well situated double fronted house (6 bedrooms) with large garden Rent £60 Educational facilities Premium £1 800

SOUTH WALES.—(39) Old-established working-class PRACTICE over £2 200 in good Town Panel 1 [illegible]00 Detached house with 4 bedrooms to rent on lease Premium £2 500

YORKSHIRE (WEST RIDING).—(40) PRACTICE over £1 500 p.a. in thriving Industrial Town Panel 1,500 Good house (5 bedrooms) Rent £80 Premium £2 250

SOUTH COAST.—(41) PARTNERSHIP in Practice, over £4 000 p.a. in popular Seaside Resort Panel 1 150 Premium one-third share two years purchase Partner must be energetic and not over 35

EASTERN COUNTIES.—(42) Old-established PRACTICE £1 855 p.a. in pleasant Market Town Panel 1 100 No midwifery Excellent detached house (7-8 bedrooms) Very good garden Cottage Hospital Premium one and half years purchase

SOUTH COAST.—(43) Good class PRACTICE of £1,350 per annum Excellent house Premium £1 250

YORKSHIRE (W. RIDING).—(44) Old-established PRACTICE over £1 700, in clean Manufacturing Town Panel 1 [illegible]9 House contains 3 bed and 2 dressing rooms Garden half an acre Pretty surrounding country Prem £2 000, to include book debts, tenant's fittings etc.

ESSEX.—(45) NUCLEUS of Practice in Industrial Village Panel and Midwifery refused Detached house (4 bedrooms and 2 attics) with garden. Premium, Practice, and House £1 000 Plenty of scope

MIDDLESEX.—(46) PARTNER required in very old-established and lucrative practice over £4 500 per annum in Industrial district. Panel 4,000 Small house (4 bedrooms) Rent £52 Premium one-third share two years purchase

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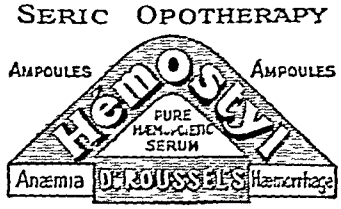
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Lancet, Nov 4th, 1922 *Tubercle*, May, 1923, May, 1924.

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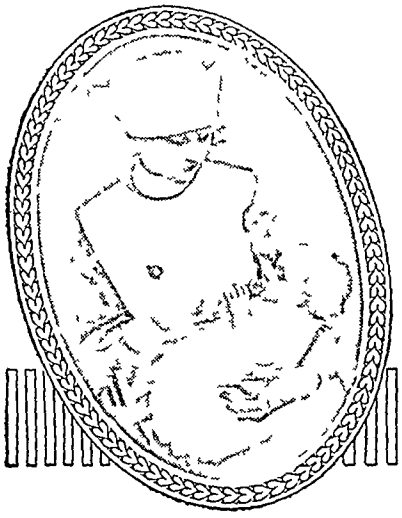
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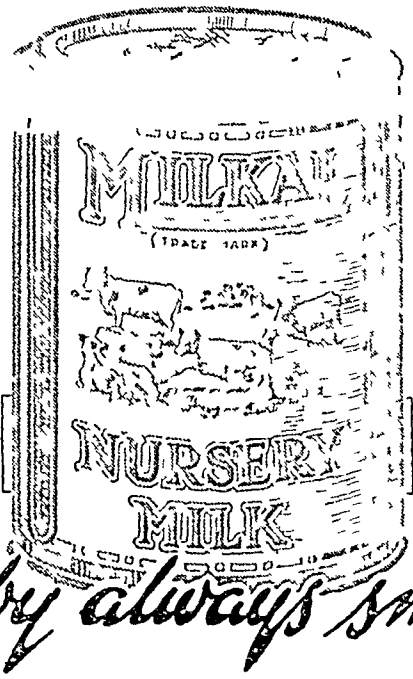
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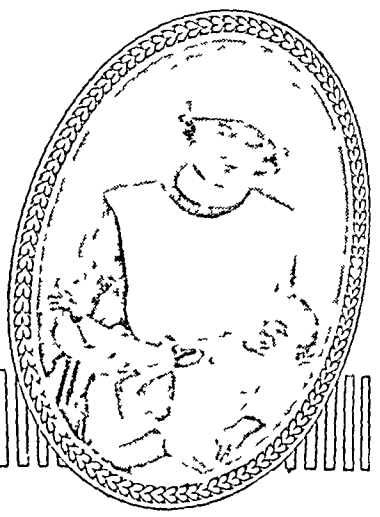
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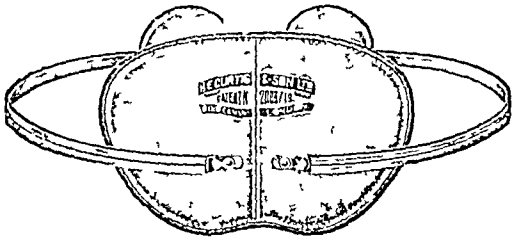
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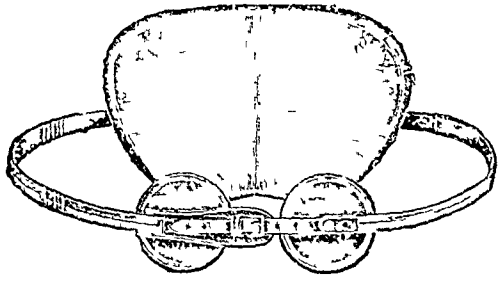
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British Medical Journal.

AUGUST 30TH, 1924

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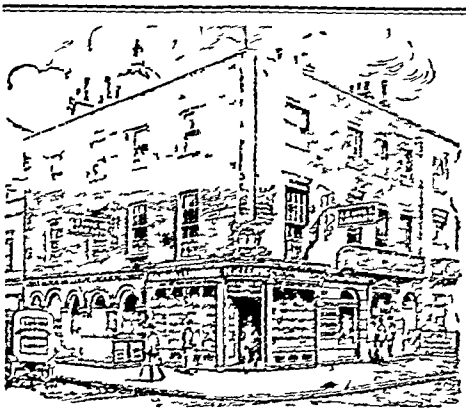
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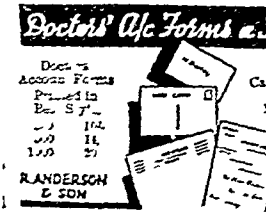
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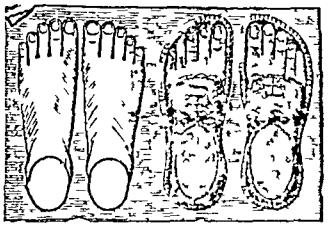
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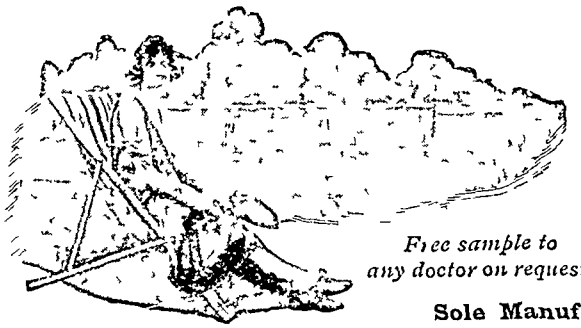
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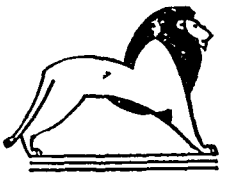
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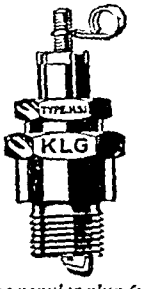
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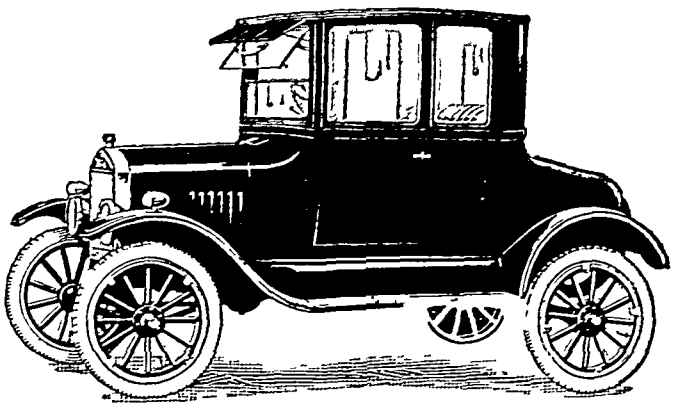
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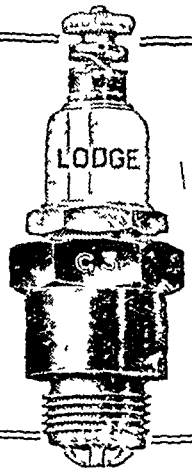
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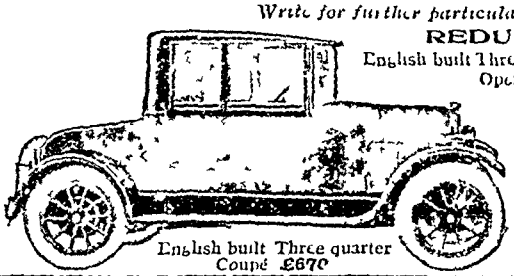
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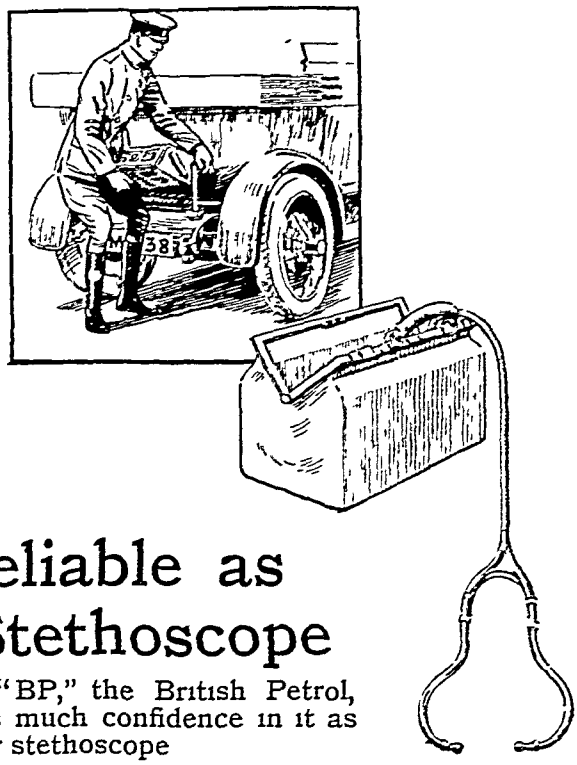
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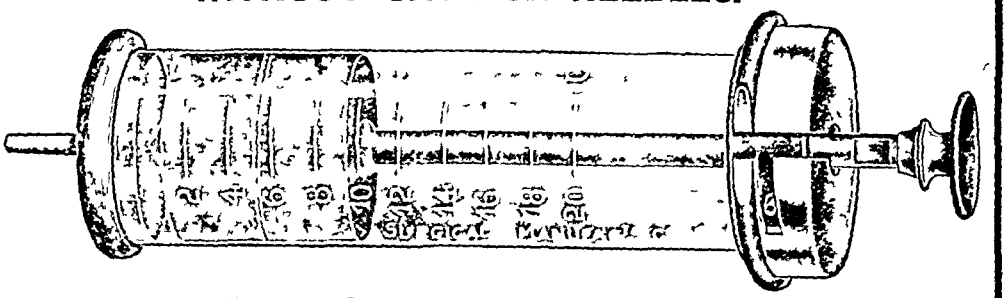
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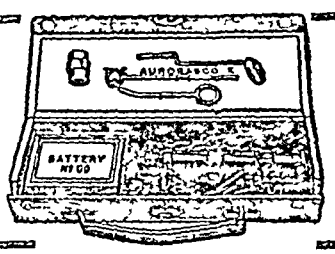


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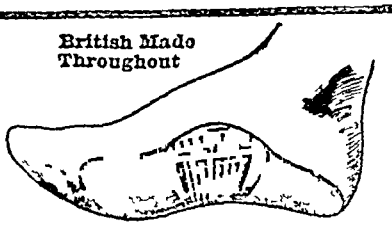
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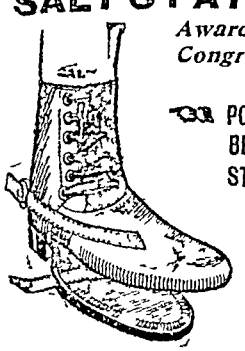
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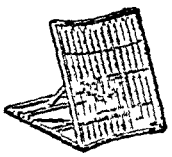
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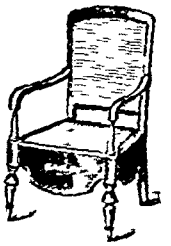
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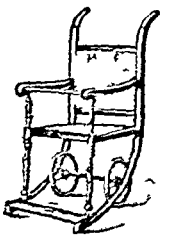
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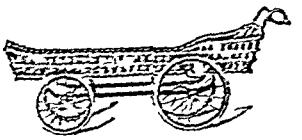


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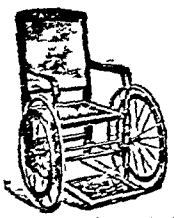
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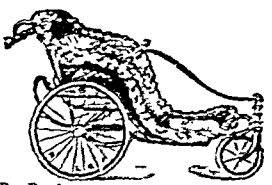
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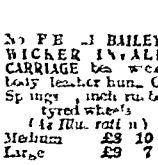
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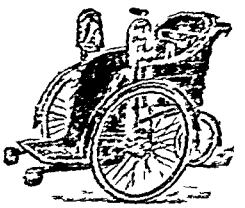
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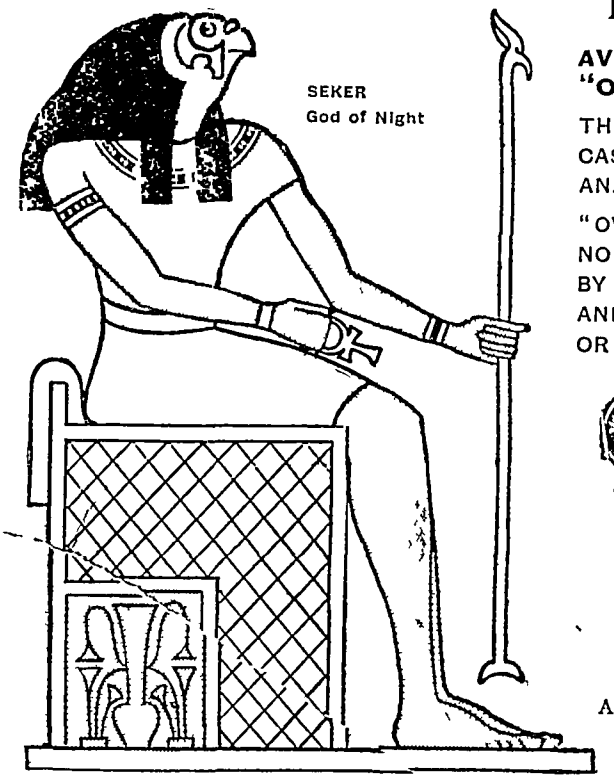
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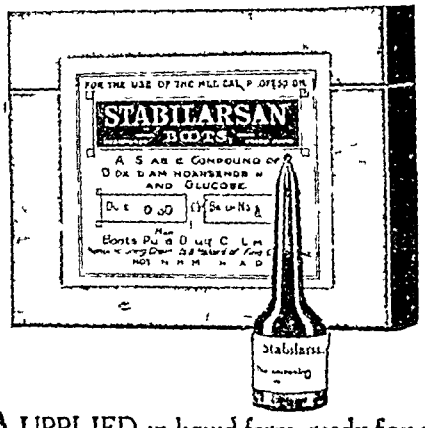
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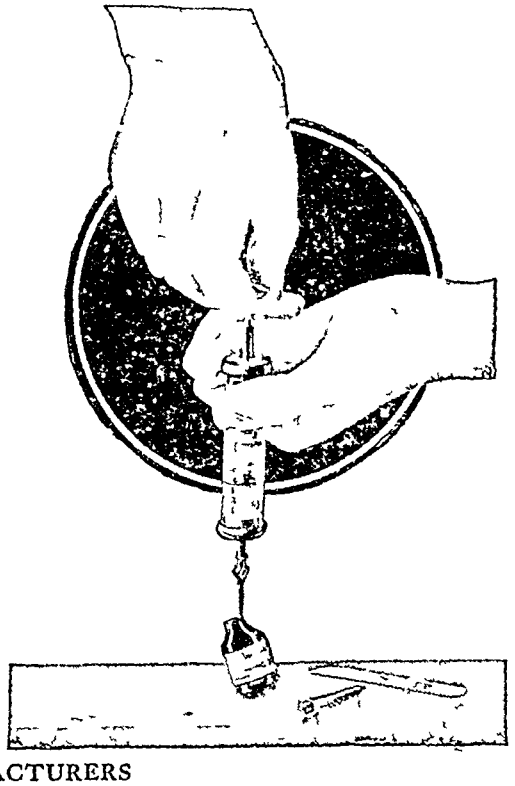
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PORTRAIT OF FU-HI LEGENDARY FOUNDER OF THE CHINESE EMPIRE.—Ancient Chinese historians relate that before the coming of Fu hi men hardly differed from brutes. Fu hi, whose official name as Emperor was T ai hau, 'The Great Almighty taught his people hunting fi hing the rearing of herds and flocks. Before him children knew only th ir mothers and not their fathers all this he changed by introducing matrimony Whereas for records they had possessed nothing but knotted cords like the Peruvian quipus, Fu hi gave them tablets and taught them how to write hieroglyphics Music also was his gift. But above all his other benefactions ranked that of the mystic Eight Trigrams," the Pa kua the symbols of the oldest system of Chinese philosophy by means of which it is attempted to account for all the changes and transmutations which take place in nature Fu hi is seen in the accompanying illustration tracing these symbols. It may here be remembered that the Chinese have always been much occupied with the philosophy of life There has been much controversy as to what the Chinese contributions to world progress actually are beyond silk and tea It would seem that China made certain discoveries and inventions at an early date but that she did not use them or bestow them upon the world In any case China influenced all Northern Asia. What Greece and Rome have been to Europe, China has been to the nations of the Far East Japan derived her first civilisation—her religion philosophy science arts and written characters—from China.

Date 2852 2738 B C. (Semi Legendary)

The portrait from a Chinese representation A D c 1600

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Ambulatory Treatment of Fractures of the Limbs;

Tuberculous and Arthritic Disease of Joints.

By CAREL A. HOEFFTCKE

7, Harley Street, London, W 1.

Extract from the Medical Press and Circular, *April 9th, 1924, pages 293—296.*

RHEUMATICS

By an eminent Physician

"Gentlemen—The subject you have chosen for discussion is one which, though of the greatest importance, happens to be, at the moment, very obscure and difficult .

" Thus one finds as one blunders about in this swamp of 'Rheumatics' that each stone you try to step upon tilts you up and plays you false

" Lastly, there is one method upon which I would like to say a few words, though I must deal with it cautiously There are cases of severe arthritis in which the disease has become quiescent, but in which, either owing to the initial severity, or from lack of knowledge, or the character of the patient, severe contractures have resulted, one or both knees, for example, have become fixed at a right angle and the patient has been unable to walk, possibly for years These are sometimes dealt with by forcible extension and elaborate splints—a treatment associated with the name of Mr Hoefftcke No one, I think, is more afraid than I am of forcible wrenching of joints, or more cognisant of the amount of suffering that patients have to face in the course of this method of treatment I am, moreover, not a surgeon, and have not the requisite knowledge to appreciate how much value the element of traction possesses This, however, I must say, that in three out of four cases, all of the worst type, in which I followed through the results, they were eventually remarkable The fourth case, a hip-joint affected with osteo-arthritis, was a failure, but I am not prepared to alter my mental attitude because this was a failure, for the cases I am dealing with are most difficult, and there must be failures I can only repeat that I have seen three remarkable successes When I am faced by a patient with contractures of long standing, unable to walk or earn his living, I ask myself What method other than this is open to use? Gradual extension is out of the question, at least I have never seen a great success If, then, forcible extension has to be undertaken, is this splint the best, or is it unnecessary, complex, and expensive? Can we deal with these extreme cases any other way? Is the traction an important factor in eventually restoring function? I have had conflicting answers, and yet it seems to me that it is of importance, and, if so, any splint that can achieve this must, I imagine, be complicated and expensive"

Two of this Physician's cases are described and illustrated in my book, entitled "The Ambulatory Treatment of Fractures and Diseased Joints," published by Messrs Heinemann, Medical Books, Ltd, London, price 10s

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Extract from the Medical Press and Circular, *May 14th, 1924, page 406*

RHEUMATICS

By Carel A Hoefftcke

" . The danger of injury does no doubt exist if the wrenching is done without extension Under such conditions the joint surfaces are pressed together by strong muscular tension, and as the surfaces are usually eroded there is serious danger of injury If, however, the joint surfaces are kept separated while the manipulation takes place this danger is avoided Such separation can only be obtained satisfactorily by an extension table or extension splint Further, the suffering which the patient has to face is in a large measure due to the contact of the diseased joint surfaces and is, accordingly, greatly reduced by suitable extension Cases treated by my ambulatory extension method in arthritic or tubercular disease need not be quiescent, in fact, the earlier the extension treatment is applied the sooner a good result can be expected "

"The Lancet," *January 5th, 1924 review* —

" And it should be stated clearly that he works only with the medical profession and not as one who offers a substitute for medical services . "

An Address
ON THE
RESULTS OBTAINED IN SOME EXPERIMENTS IN WHICH THE FACIAL AND RECURRENT LARYNGEAL NERVES WERE ANASTOMOSED WITH OTHER NERVES

BY
SIR CHARLES BALLANCE, K.C.M.G., C.B., M.S., F.R.C.S.

Before describing some of the experiments which have been performed, I must state that the results have been controlled by a team of workers, and that I am only one member of the team. Mr. Colledge has been responsible for reports on the condition of the vocal cords, and has actively helped me in many other ways; Dr. Lionel Bailey has reported on the electrical condition of muscles, and Dr. Edinow on the movement, or absence of movement, of the diaphragm. Further, I have had the great advantage of the inspiring presence of Sir David Ferrier at the majority of the experiments, and his enthusiasm and critical judgement of the results obtained have been of the greatest value. My friend, the late Professor Shattock, was always keenly interested and was present at each experiment till his physical strength alas! failed. Dr. Dale, too, has been of the greatest help to me in the carrying out of these experiments.

Each result, which I shall briefly mention has been obtained, not by one experiment, but by several. The animals used were monkeys, and the problems submitted to experiment could only be solved, I believe, by the method employed.

The Evolution of the Operation for the Cure of Facial Palsy

The first operation for the relief of facial palsy was done in 1895. The operation selected was an end-to-side anastomosis of the facial and spinal accessory nerves. Following this first operation surgeons devised several diverse methods of uniting the facial to the spinal accessory. For example, Grant of Denver and Kummer of Geneva divided the spinal accessory and united it end-to-end to the trunk of the facial. The descendens noni was then divided and its proximal end was united end-to-end to the distal cut end of the spinal accessory. This latter anastomosis was done in order to obviate the paralysis and atrophy of the sterno-mastoid and trapezius, but this was a vain hope: the nervous current passing through the descendens noni failed to prevent serious atrophy of the trapezius and, moreover, the depressor muscles of the larynx lost their nerve supply.

It was thought at first that injury to the spinal accessory nerve would be compensated for after a time by the direct cervical nerve supply of the sterno-mastoid and trapezius, but this idea soon proved fallacious.

The main result of all facial-spinal accessory anastomoses, and often the only permanent one, was associated movements of the face and shoulder. Symmetrical subconscious, emotional movements of the two sides of the face, the movement most desired, most frequently failed to appear, and thus real recovery eluded attainment. It is natural, then, that the search should be made for some other nerve which might give better results when anastomosed with the facial than with the spinalis.

The hypoglossal nerve was next anastomosed in various ways with the facial. Facial-hypoglossal end-to-side and facial-hypoglossal *end-to-end* anastomoses were performed, but these left partial or complete atrophy or halt the tongue, so attempts were made to prevent the atrophy of the tongue by *bringing a strip* of the spinalis across the neck and uniting it end-to-end to the divided distal end of the hypoglossal or by dividing the descendens noni and uniting the proximal end to the distal cut end of the hypoglossal.

The facial-hypoglossal anastomosis gave some excellent results, but for a long time, an indeterminable time, there was associated movement of the face with the act of eating and swallowing, so that in one patient *twenty months after operation* and in several monkeys, active movements of the muscles of the corresponding side of the face during a meal were observed, and in the case of the patient were embarrassing and annoying. The problem seemed one, as I have said, that could only be solved by experiment.

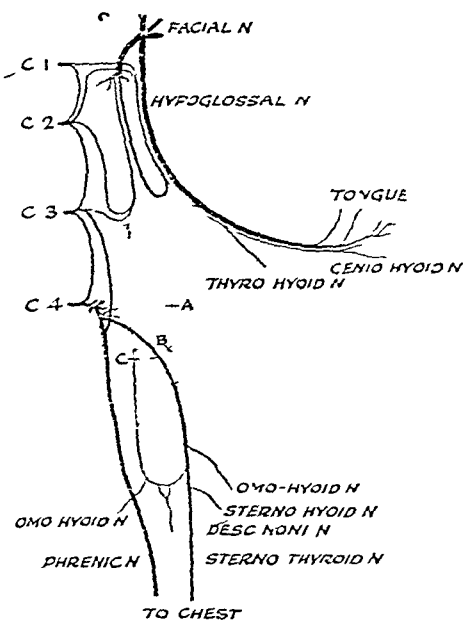


FIG. 1.—Diagram of Facial-Descendens noni anastomoses (end-to-end) and Facial-Communicans noni anastomoses (end-to-end). *Operation.*—A, Site of section of descendens noni nerve. B and C, Sites of section of communicans noni nerve. The figure shows (1) Descendens noni facialis anastomosis (end-to-end). (2) Descendens noni phrenicus anastomosis (end-to-side). (3) Communicans noni facialis anastomosis (end-to-end). (4) The distal cut end of the communicans noni was so minute that no attempt was made to unite it to another nerve. The operation was done on a fairly large monkey. The descendens noni was relatively a large nerve which descended into the chest while the communicans noni nerve was very small and could only be followed with the aid of a magnifying glass. It will be noticed that the two nerves communicated rather high up and that there was another anastomosis lower down from which the nerves to the depressor muscles of the larynx were given off.

The hypoglossal-facial anastomosis (Fig. 1) has not been a failure. The face has become symmetrical in repose and the palpebral fissure on the paralysed side is not wider than that of the face and shoulder, and deformity of the neck and shoulder. Symmetrical subconscious, emotional movements of the two sides of the face, the movement most desired, most frequently failed to appear, and thus real recovery eluded attainment. It is natural, then, that the search should be made for some other nerve which might give better results when anastomosed with the facial than with the spinalis.

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In the following table the results of facial-descendens noni anastomosis or facial-descendens noni and facial-communicans noni anastomoses, facial-lingual anastomosis, and facial-glosso-pharyngeal anastomosis are shown.

PERIOD OF RESPONSE TO FARADIC STIMULATION IN FACIAL MUSCLES

1 *Descendens noni-Facial Anastomosis (end-to-end)*
- 2 months. Response of all muscles except occipito-frontalis to strong current.
- 8 months. Response of all muscles to weak current.

2 *Descendens noni-Facial Anastomosis (end-to-end) and Communicans noni-Facial Anastomosis (end-to-end)*
- 1½ months. Slight response in orbicularis oris and levator labii superioris.
- 3 months. All muscles react to fairly strong current.
- 4 months. All muscles react to weak current.

3 *Lingual-Facial Anastomosis (end-to-end)*
- 2½ months. No response.
- 3 months. All muscles respond to strong current except occipito-frontalis.
- 4 months. All muscles respond—current less strong.
- 5 months. Same report—strong current still required.

4 *Glosso-pharyngeal-Facial Anastomosis (end-to-end)*
- 6 weeks. No response.
- 3 months. All face muscles respond to weak current. Face symmetrical during eating of an apple and when angry. Eyelids do not wink together quite harmoniously.

In another experiment in two months all muscles react to same strength of current as those of the opposite or normal side of face.

It is of great interest to note that the face recovered much more quickly when the communicans noni and descendens noni nerves (Figs. 1 and 1a) were both attached to the trunk of the facial nerve, than when the descendens noni nerve was alone attached to the facial.

The lingual-facial anastomosis (Fig. 2) has not been a failure. The face has become symmetrical in repose and the palpebral fissure on the paralysed side is not wider than that

Delivered at a joint meeting of the Sections of Laryngology and of Otology of the Royal Society of Medicine, June 27th, 1924.

on the normal side, but there has been a great delay in the return of normal faradic reaction in the muscles, and it is not yet clear that this will take place

As long ago as 1895 Sir Edward Sharpey Schafer recommended me to use the glosso-pharyngeal nerve for anastomosis with the facial, but the advice was not accepted The glosso-pharyngeal nerve is small and comparatively inaccessible The spinal portion of the spinal accessory nerve, and the hypoglossal nerve, appeared to be so placed and so much larger than the glosso-pharyngeal nerve that for the time the latter nerve was rejected

The remarkable results of the monkey experiments in which the facial was anastomosed to the glosso-pharyngeal *end-to-end* (Fig 3) appear to require some explanation

1 *Jacobson's nerve, which* arises from the petrous ganglion of the glosso pharyngeal, enters a small canal in the bone, ascends to the inner wall of the tympanum, and divides into branches which form the plexus tympanicus This plexus is in *communication with the facial* nerve

2 There is a branch of com*munication between the facial and glosso pharyngeal nerves* outside the skull which extends from the stylo mastoid foramen to the trunk of the glosso pharyngeal just below the petrous ganglion This communicating branch is not referred to in *detail in English and Scottish* "Anatomies" Testut (1905) figures it (Fig 4), but the *figure is copied from Bourgery's Atlas* (1844) Meckel (1825) described it, Sappey (1872) described it as the 'ansa of Haller,' and on looking up Alberto v Haller (1762) I found a description of this communication between the facial and *glosso pharyngeal nerves* It may be that this "ansa of Haller has some bearing on the rapid recovery of the paralysed face following facial glosso pharyngeal anastomosis

3 The motor nucleus of the facial nerve lies just above the motor nucleus of the glosso pharyngeal nerve in the medulla oblongata It is possible that there is some communication between these two nuclei

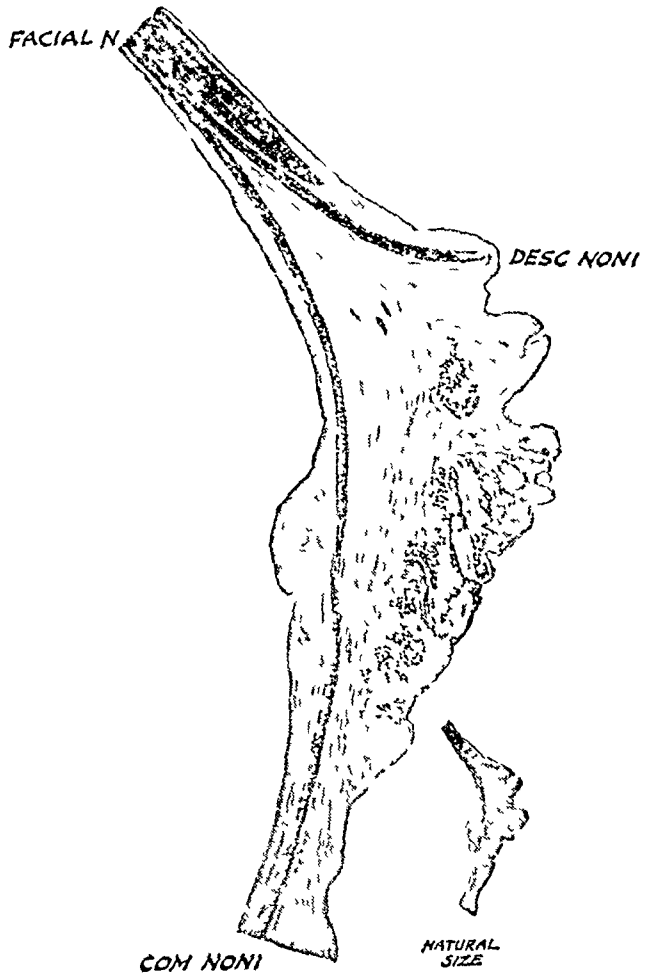


FIG 1.—Micro cope section (Strocbe stain for axis cylinders), showing anastomosis of the facial nerve with both the descendens noni nerve and the communicans noni nerve The drawing was made from a study of serial sections This specimen was obtained four months after the operation Same case as Fig 1

When the glosso-pharyngeal nerve is used for anastomosis with the facial, its branches of distribution — *tympanic* carotid, muscular, and tonsillar—are not interfered with in any way The nerve is divided beneath the upper and back part of the hyo-glossus muscle at the point where it commences to divide into lingual branches The only result of such division would appear to be the loss of sensation and loss of taste over the back of the corresponding side of the tongue for one-third of its surface

There is some difference among authorities in the description of the distribution of the glosso-pharyngeal nerve The muscles of the pharynx and palate receive their nerves from sources not yet completely determined Haliburton writes (*Handbook of Physiology*)

"It contains *motor fibres to the stylo pharyngeus and probably* to the levator palati and other muscles of the palate, except the tensor which is supplied by the fifth nerve The nerve also contains fibres concerned in common sensation, and the sense of taste, and secretory fibres for the parotid gland"

In *Quain's Anatomy* the following sentences occur

The glosso pharyngeal nerve divides as it passes beneath the hyo-glossus muscle into two parts One turns to the upper surface of the tongue, and divides into many branches, *which supply the* circumvallate papillae and the mucous membrane over the posterior third of the organ, the hindmost filaments reaching the anterior surface of the epiglottis The other is smaller, and is distributed to the mucous membrane of the side of the tongue, extending to about the middle of its length, where it forms a *communication with the* lingual nerve" "The constrictor muscles are supplied by the pharyngeal plexus *their motor fibres* being derived from the bulbar portion of the spinal accessory nerve, *and in the case of the middle constrictor from the glosso* pharyngeal The stylo pharyngeus is innervated by the glosso pharyngeal The inferior constrictor receives branches from the external and *inferior laryngeal nerves*"

Testut (*Traite d' Anatomie Humaine*) says the stylo-glossus and stylo-pharyngeus are supplied by the glosso-pharyngeal nerve

Morat (Fonction d'Innervation, in *Traite de Physiologie*, by Morat and Doyon) says that general sensibility and taste, *after section of the* glosso-pharyngeal nerve, are lost on the back of the tongue

Chauveau, on excitation of the nerve, has seen contraction of the inferior constrictor and of the muscles of one side of the palate, and Vulpian has seen congestion of the base of the tongue in the field of *distribution of the glosso-*pharyngeal nerve

Pozzi and Charpy figure branches of the glosso-pharyngeal nerve to the stylo-glossus, stylo-pharyngeus, and the pharyngeal plexus

"*The motor portion of the nerve* takes *part in* the innervation of the muscles of the pharynx, the *muscles of the soft* palate, and of certain muscles of the tongue"

Cunningham writes

"The glosso pharyngeal nerve consists of a smaller motor element which supplies the stylo pharyngeus and a larger sensory part which supplies the pharynx and tongue" "The lingual branches supply the mucous membrane and the vallate papillae of the dorsal *third and* lateral half of the tongue, extending backwards to the glosso epiglottic folds and the front of the epiglottis 'The constrictors of the pharynx receive their nerve supply *through the* pharyngeal plexus from the *accessory nerve* The inferior constrictor is supplied also by the external laryngeal and recurrent *branches of the vagus nerve*' "The stylo glossus is supplied by the hypoglossal nerve" "The *muscles of the soft* palate, except the tensor, are supplied through the pharyngeal plexus by the *accessory nerve*"

When deglutition is about to be performed the pharynx is drawn upwards and dilated in different directions to receive the food propelled into it from the mouth The larynx is raised up behind the hyoid bone and the soft palate is also raised, *so that* both the larynx and posterior nares are *protected against* the entrance of food

"The food when sufficiently masticated is by movements of the tongue gathered up into a bolus on the middle of the upper surface of the tongue—partly raised by the intrinsic muscles and partly by the *stylo glossi*—the bolus is thrust back through the isthmus faucium and received by the upper constrictor *By the* contraction of the stylo pharyngeus and palato pharyngeus, the funnel shaped bag of the pharynx is brought up to meet the descending morsel, very much as a glove may be brought up over the finger, deglutition is a reflex act—*the centre of the* reflex act lies in the medulla oblongata This centre lies at a higher level than that of respiration" (*Michael Foster*)

In facial-glosso-pharyngeal anastomosis we may therefore expect, from anatomical reasons, that in the act of deglutition—in which the stylo-pharyngeus and possibly other muscles (which are supplied in part at any rate by the motor element of the glosso-pharyngeal nerve) contract —associated movements would occur in the facial muscles

Whether such associated movements will be permanent we do not know Such movements have been observed in one of the experiments only Three months after a glo o pharyngeal anastomosis in a baboon, during the act of eating and swallowing, the eyelids on the side of the operation were noticed nearly to close, and the upper lip on this side was seen to be in movement

Whether the lack of sensation over the posterior third of the tongue, on one side only, will be of importance, we also do not know, but that it may interfere with the protection of the larynx from the entrance of food is possible, for in a baboon in which this anastomosis was done the swallowing of food seemed sometimes to bring on a cough but this did not happen in other monkeys in which a facial glosso-pharyngeal anastomosis had been done

I have done one operation in man in which the facial nerve was anastomosed with the glosso-pharyngeal nerve It appeared almost a forlorn hope, but it has by no means turned out so, the result so far is encouraging

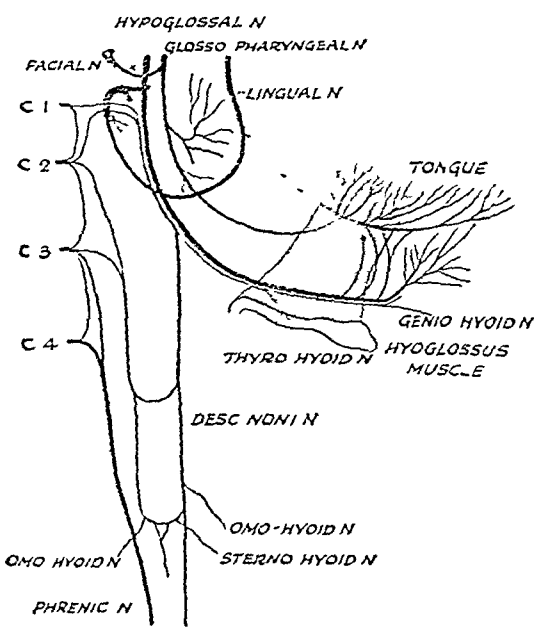


FIG 2.—Diagram of Facial Lingual anastomosis—end to end
Xmans of Haller

CASE.—*Facial Glosso-pharyngeal Anastomosis End to-End*

Mrs X aged 37 was operated on sixteen years ago by a well known aural surgeon for mastoid disease Since the operation she has suffered from total right-sided peripheral facial palsy The tears trickle over the face from the right inner canthus The eyelids on the right side are far apart and mastication is alway carried on on the left side of the mouth The distortion of the face in talking or smiling is very bad The tip of the nose is bent towards the left side of the face in fact the patient says it is crooked

From time to time during the sixteen years of facial palsy treatment of the face muscles has been carried out by means of massage and galvanism Dr Lionel Bailey examined the electrical reaction of the face muscles. He obtained a galvanic response in all the right facial muscles except the zygomatici It was typically sluggish indicating reaction of degeneration and was very feeble There was a slight faradic response in the levator menti and pyramidalis nasi Dr Bailey writes I do not attach any importance to the fact that a faradic response was obtained in the two muscles mentioned and consider this was due to overlapping nerve filaments supplying the muscles from the other side of the face I consider the case is one of complete interruption of the right facial nerve and that no recovery can take place without operation

The presence of galvanic response in the paralysed muscles justified operation

March 10th 1923 The operation of facial glosso-pharyngeal nerve anastomosis, end to-end was performed The facial nerve trunk was no longer white it looked more like a strand of reddish fibrous tissue than a nerve

March 17th The right face is, if possible, more flaccid—than it was before the operation. I have *frequently noticed* this phenomenon after section of the facial nerve at the stylo-mastoid foramen in order to unite it to another nerve for the cure of facial palsy What is the explanation?

April 23th The tone of the face is remarkably improved Tears no longer trickle over the cheek The right palpebral fissure is almost normal The patient complains of curious crawling sensations travelling over the right side of the face, she says that they make her feel that the face is getting alive again

June 6th Slight flicker of movement on faradic stimulation in orbicularis oris at right angle of mouth The patient could not bear a strong current in fact that employed was weak

June 31st Dr Bailey reports The galvanic response is more easily obtained in all the muscles, and though still sluggish is much less so than formerly

July 4th Further improvement in the tone of the face There is much less deformity than three months ago Mastication now takes place by choice on the right side of the mouth In repose there is little deformity The nose is now straight it is no longer bent to the left side There is *voluntary movement* in the corrugator supercilii and there is a slight flicker of response to a

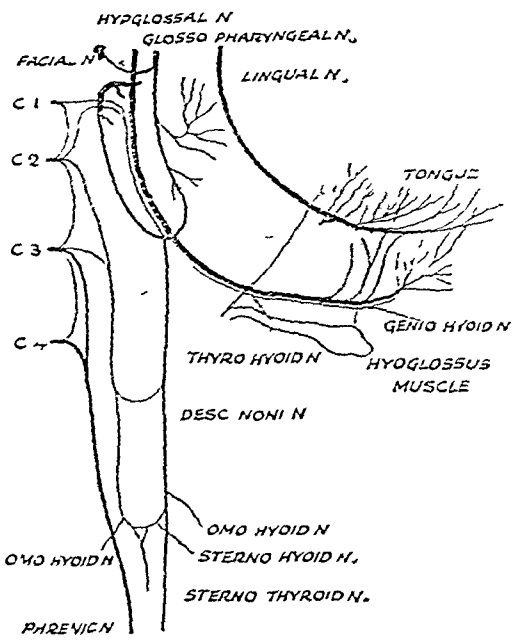


FIG 3.—Diagram of Facial-Glosso-pharyngeal anastomosis—end to-end.
Xmans of Haller

weak faradic current in the lower part of the orbicularis palpebrarum and at the angle of the mouth in the orbicularis oris (It is to be remembered that reaction of degeneration generally antedates the return of faradic excitability)

On touching the back of the right side of the tongue gently with a probe the patient felt it at once The common sensation of the mucous membrane in this region appeared to be as good as that on the corresponding surface on the left side

On testing the right and left sides of the tongue in the region of the circumvallate papillae with sugar and salt Mr Colledge and I were unable to distinguish any difference between the two sides (Note that the connexion of the right glosso-pharyngeal nerve with its lingual branches was severed four months ago) Is the recovery of common sensation and taste over the back of the right side of the tongue to be explained by overlapping filaments from the lingual branches of the left glosso-pharyngeal nerve?

In this case since the division of the glosso-pharyngeal nerve there has been no difficulty in swallowing, and during swallowing no movement of the right facial muscles has been observed There has thus been no indication that protection of the larynx against the entrance of food is impaired

As far as one's knowledge goes at present, the conclusion seems to be that facial-glosso-pharyngeal anastomosis, end-to-end, is the operation of choice to perform in cases of facial palsy

The Evolution of the Operation for the Cure of Paralysis of the Vocal Cord

Some time before the war I united the severed recurrent laryngeal nerve to the side of the vagus, but the patient disappeared, so the result of the anastomosis is not known.

It appears natural to employ the vagus for this anastomosis, but one, if not the chief, reason for the failure after anastomosis to obtain a movement of the vocal cord during tranquil respiration, such as was present before the injury to the recurrent laryngeal nerve, is the small chance there is of attaching the recurrent nerve to those bundles of fibres in the vagus trunk which were originally in continuity with it. The difficulty becomes obvious on studying a transverse microscopical section of the vagus nerve (Fig. 5). I have always performed a recurrent laryngeal-vagal anastomosis, end-to-side, on the tracheal side of the vagus, but have never seen afterwards a movement of the vocal cord during tranquil respiration.

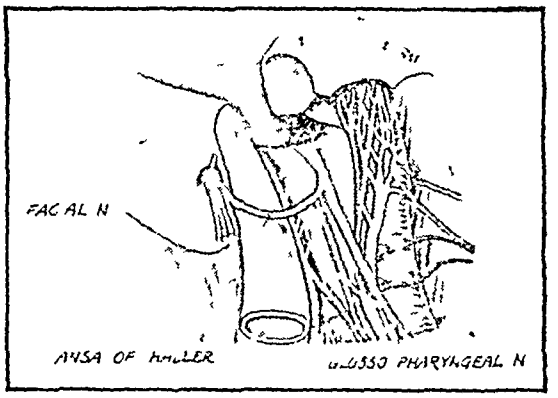


Fig. 4.—The ansa of Haller or communication between the facial and glossopharyngeal nerves outside the skull. This communication is said to be inconstant. The figure is taken from Testut's *Anatomy*, and Testut borrowed it from Bourgery.

The same result—no movement of the vocal cord during tranquil respiration—has followed recurrent laryngeal-descendens noni end-to-end anastomosis. The following table illustrates these points:

Result of the Anastomosis of the Recurrent Laryngeal Nerve to the Vagus and the Descendens Noni

1. *Recurrent laryngeal-Vagus (end to side anastomosis)*
   - 2½ months. Vocal cord no longer slack. It is straight and tense. There is no movement.
   - 6 months. No movement of vocal cord during quiet respiration. On partial asphyxiation slight movement observed which soon ceased.
   - 15 months. No movement of vocal cord during tranquil respiration. On opening the wound and stimulating the vagus above the anastomosis, active abduction of the vocal cord was seen.
   - 18 months. No movement of vocal cord even following partial asphyxiation (attested by Sir David Ferrier and Sir Frederick Mott).
2. *Recurrent laryngeal Descendens noni anastomosis (end to end)*
   - 2 months. Vocal cord shows tone, it is straight and no longer looks "cadaveric."
   - 7 months. No movement of vocal cord. Wound opened and hypoglossal stimulated above origin of descendens noni, active abduction of vocal cord observed.
   - 4½ months. On partial asphyxiation vocal cord seen to abduct, but movement soon ceased.
   - 9 months. No movement of vocal cord during tranquil respiration, or after partial asphyxiation.

That the anastomoses in these cases after a certain period were capable of conducting a nervous impulse is clear from—

(1) The result of partial asphyxiation, which caused a temporary abduction of the vocal cord during forced inspiration.

(2) The result of electrical stimulation of the vagus above the site of the anastomosis, and of the electrical stimulation of the hypoglossal above the origin of the descendens noni.

Partial asphyxiation failed to produce movement of the vocal cord at a varying period up to eighteen months after the anastomosis was done. It would appear that though the intrinsic muscles of the larynx were in connexion with a recurrent laryngeal nerve which had regenerated (as seen in microscopic sections), and that a nervous current could pass through the site of anastomosis, yet that the nervous mechanism which produces movement of the vocal cord in tranquil respiration had not been restored. The effect of absence of movement in the muscles of the vocal cord during many months would appear to be the cause of atrophy and shortening of these muscles, so that no movement could be obtained in them after partial asphyxiation, though we may fairly assume that the same nervous current was flowing through the recurrent nerve during partial asphyxiation, which previously was *effective in producing* contraction of the posterior crico-arytenoid muscle and abduction of the vocal cord.

From two to three months after an anastomosis had been done between the recurrent laryngeal nerve and either the vagus or descendens noni a remarkable change occurred in the appearance of the previously paralysed vocal cord. The inner border of the immobile vocal cord was no longer concave and slack. It had regained tone and had become straight and tense. This recovery of tone in the intrinsic muscles of the larynx may be compared to the gradual recovery of tone in the previously paralysed face muscles, after an anastomosis of the facial nerve, say, with the hypoglossal nerve.

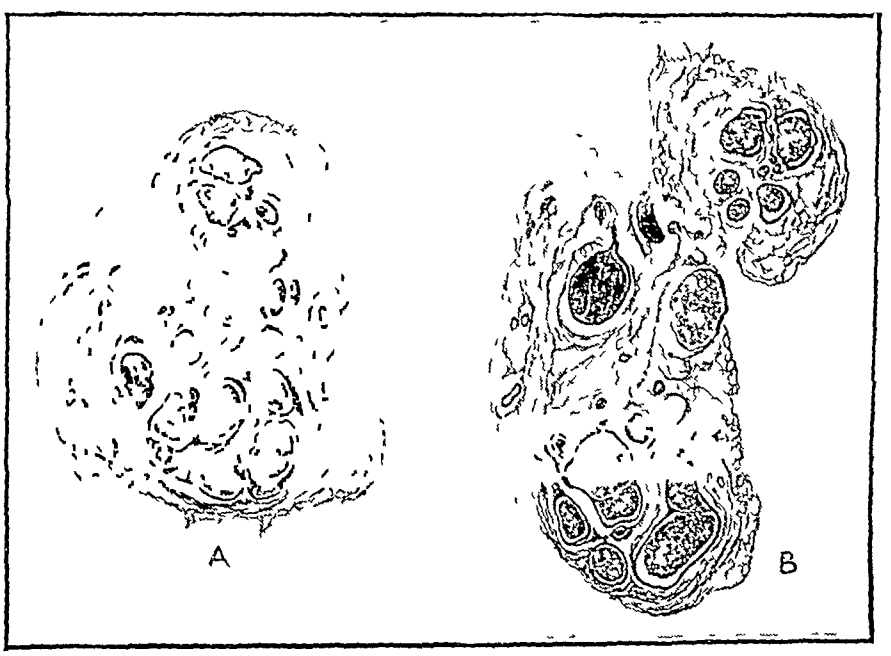


Fig. 5.—Transverse section of the vagus nerve of man, showing A, The nerve before the recurrent laryngeal is given off. B, The vagus and recurrent laryngeal nerves at the point where the recurrent nerve is separating from the vagus.
In each drawing it is obvious that certain bundles of nerve fibres have fallen out of the sections.

This change in the condition of the vocal cord was demonstrated by Mr. Colledge to Dr. Gabriel Tucker, Dr. Chevalier Jackson's first assistant, and to many members of the International Congress of Surgery which met in London during July, 1923.*

Dr. Frazier of Philadelphia (*Annals of Surgery*, February, 1923), at the instance of Dr. Chevalier Jackson, operated on two cases of recurrent laryngeal paralysis. He anastomosed the recurrent nerve to the divided descendens noni. The first case was operated on in June, 1923, and the second in September, 1923. The result of these

* See *British Journal of Surgery*, vol. xi, No. 42, 1923.

operations, as in our monkeys, has been "the return of tonus and tension in the vocal cord The crescentic form of the edge of the vocal cord has been replaced by a normal margin The patient notices a decided improvement, subjectively, in the laryngeal air-way" Dr Jackson appears to think that a vocal cord which does not move, but which is straight and tense, is better than one which is slack, curved, and cadaveric; in fact, he says it gives a better air-way

It is to be noted that end to-side anastomosis of the vagus and recurrent laryngeal nerves is not free from danger, for I did this operation on a baboon in good health The animal died on the twentieth day of acute lobar pneumonia on the side on which the operation had been done It is true that the interference with the vagus may have had nothing to do with the death of this baboon, but I cannot get it out of my mind that the operation and the pneumonia which followed were in some way related I may add that the wound healed by first intention The animal was anaesthetized with ether

The failure of the anastomosis of the recurrent nerve to the vagus and to the descendens noni to result in movement of the vocal cord in tranquil respiration naturally led to the search for another nerve which might do so The nerve to the serratus magnus muscle (the *nerve of Bell*) was considered but rejected, because the serratus magnus only comes into play, if at all, in forced respiration The *second intercostal nerve* might be brought up through the upper opening of the thorax and anastomosed to an injured recurrent laryngeal nerve, but it was thought that this was a too delicate and difficult operation to find favour with the ordinary surgeon, though the operation possessed this advantage, that the vocal cords move rhythmically with the contractions of the intercostal muscles and the diaphragm in tranquil respiration Mr Colledge and I were thus led to consider the phrenic nerve as the most likely to produce the desired effect on the vocal cord when anastomosed with the divided recurrent laryngeal During inspiration the vocal cord abducts and the dome-shaped lateral muscular parts of the diaphragm flatten at the same time The movements are rhythmical in tranquil respiration, and depend upon a nervous mechanism which sends an intermittent flow of nervous impulses down the recurrent laryngeal and phrenic nerves

The following is a description of the first experiment in which the recurrent laryngeal nerve was anastomosed with the phrenic Sir David Ferrier was present

Recurrent laryngeal Phrenic end to end anastomosis Descendens noni (proximal end) Phrenic (distal end) end to-end anastomosis Descendens noni (distal end) Hypoglossal end to-side anastomosis

4 months Both vocal cords move equally in tranquil respiration

6 months The previously paralysed vocal cord moves more strongly than the other

7 months Excessive, almost violent movement of the vocal cord as compared with that on the normal side (Attested by Sir David Ferrier and Sir Frederick Mott)

Movement of diaphragm normal (Seen by Dr Eidinow and Professor Leonard Hill) Reactions of depressor muscles of the hyoid bone and larynx normal

You can imagine the feelings of Mr Colledge and myself when we first saw the movements of the vocal cords taking place in the normal manner, and we knew that the experiment was successful It was also a remarkable event to observe the half of the diaphragm which had been paralysed contracting again through the nervous impulses passing down the descendens noni nerve * All three anastomoses were functioning, but by using the whole of the phrenic what had been attempted had been overdone—the previously paralysed vocal cord was working too vigorously This, however, was not a surprise, because the nerve current required to cause contraction of one half of the muscle of the diaphragm must be considerably stronger than that required to energize the small intrinsic muscles of the larynx What root of the phrenic nerve or what portion of the main trunk of the phrenic nerve (the phrenic on transverse microscopic section shows two or three bundles of nerve fibres) is sufficient to cause a normal rhythmical contraction of the muscles of the larynx is a problem which must be left for discussion on another occasion Suffice it to add that several experiments are in progress to throw light upon this question

It is not possible to determine with accuracy in a small monkey whether half the diaphragm is in part or completely paralysed by observing the movements of the abdominal wall and costal arches Dr Eidinow has made examinations for me by means of the radiographic screen During inspiration the dome-shaped lateral muscular masses of the diaphragm contract and flatten At the same time the central tendon descends In this way the vertical depth of the chest is increased

When one lateral half of the musculature of the diaphragm is paralysed the central tendon and the two lateral muscles still move up and down in tranquil respiration The *non-paralysed* lateral muscle contracts and flattens, and its dome-shaped outline loses much of its curved appearance The *paralysed* muscle of the other side still retains its dome-shaped form, and moves downwards and upwards in inspiration and expiration There is, of course, no flapping of the paralysed muscle of the diaphragm, as there are no free spaces within the living body, and it is always in close contact above with the pleura and lung, and below with the peritoneum and abdominal viscera

The experiment described above in which three anastomoses were performed could not be the final settlement of what the surgeon should do when he endeavours to cure recurrent laryngeal palsy It is too complicated, and what is required is some simple plan of anastomosing the recurrent nerve to the phrenic or one of its roots, so that, if possible, there should be no interference, or the minimal interference, with the function of the diaphragm, and no section of the descendens noni nerve

Another difficult question arises Has the exaggerated movement of the previously paralysed vocal cord, which is synchronous with the movements of the opposite or normal vocal cord, been obtained by the perfect linking up of the phrenic fibres with the cerebral mechanism of respiration which previously caused rhythmic and equal movements of both vocal cords? (One must remember that both the phrenic and recurrent laryngeal nerves are intimately associated in normal tranquil respiration) Or is it simply the intermittent flow of the normal current through the phrenic which had previously energized one-half of the diaphragm but now is switched over to the muscles of the vocal cord? I am inclined to take the latter view, and if this latter view be true is it possible that, in course of time, Nature will so adjust the mechanism of respiration that the flow of

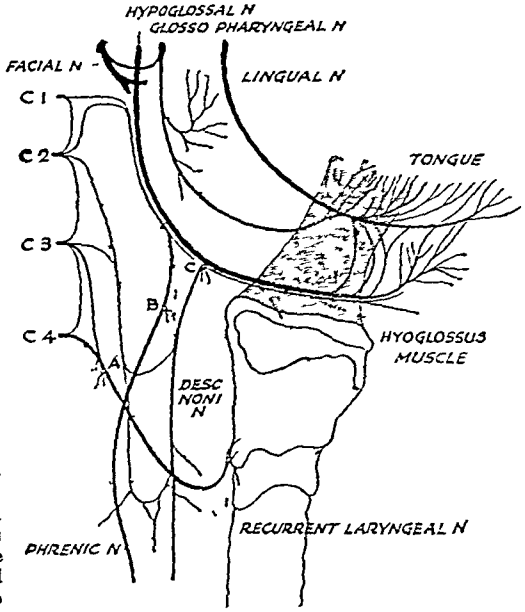


FIG 6—A Recurrent laryngeal Phrenic anastomosis (end to end) B Descendens noni (proximal end)-Phrenic (distal end)—end to-end anastomosis C Descendens noni (distal end)-Hypoglossal—end to-side anastomosis.

* It is strange that the descendens noni phrenic anastomosis should be followed by rhythmic contractions of the diaphragm in tranquil respiration and yet the descendens noni recurrent laryngeal anastomosis should fail to be followed by rhythmic contractions of the intrinsic muscles of the larynx. The observation needs confirmation by further experiment

nervous energy through the phrenic will diminish and lead to movements of the vocal cord in which the excursions will be equal to, and not greater than, those of the vocal cord on the opposite or normal side?

Another question also requires an answer When the vocal cord is moving normally through nervous impulses conveyed to it through the phrenic, will the patient be able to phonate? This is the question asked by Sir Frederick Mott The answer can hardly be decided by experiment on the monkey operation on man will give the reply This will be the decisive experiment

The conclusion, therefore, appears to be, that for the cure of recurrent laryngeal palsy and the attainment of normal movement of the vocal cord in tranquil respiration, anastomosis with the vagus or the descendens noni must be rejected, and some form of anastomosis should be carried out with the trunk or with one of the roots of the phrenic nerve

The Medical Research Council has defrayed the expenses of this research, and given me every possible assistance at the National Research Institute

THE EFFECT OF DIET ON THE DEVELOPMENT AND EXTENSION OF CARIES IN THE TEETH OF CHILDREN *

(Preliminary Note)

BY

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INTRODUCTION

It has been found by May Mellanby[1] in her experimental work on puppies, first published in 1918, that the structure of the teeth and their arrangement in the jaws are controlled by the diet and environment to which the animals are subjected during the period of development of their teeth Some dietetic factors tend to help, and others to hinder, the formation of well calcified, evenly arranged teeth In the former group are to be found substances rich in a vitamin closely allied, both as regards distribution and properties, to vitamin A This group of substances includes cod-liver oil, animal fats (except lard), milk, and yolk of egg Among those foods which lead to the development of badly formed teeth, cereals, and particularly oatmeal, occupy a prominent position Thus the total influence of a mixed diet on the structure and the arrangement of the teeth in the jaws of puppies is the outcome of a battle between different dietetic influences

In addition to the influence of diet, May Mellanby[2] has also shown that exposure of the animal to either sunlight or other sources of ultra-violet radiation has, under some conditions, an important influence on tooth formation It is probable that the effect of these radiations is to make active the calcifying vitamin stored in the body In fact, the interaction of the dietetic and environmental influences on tooth formation is certainly very close

Two questions arise from the experimental work on the factors influencing the formation of puppies' teeth first, Do the same factors control the formation of the teeth of human beings? and secondly, What relation have these facts to dental caries in man?

With regard to the first question, it is not yet possible to state that the results are applicable to man, in spite of the fact that the experimental work was published some years ago There seems, however, some justification for believing that they are It may be said also that if the results of this experimental work can be extended to man, a partial answer to the second question is supplied, for if teeth perfectly formed and well arranged in the jaws can be produced in children by feeding them along the lines suggested by the animal experiments, then such teeth will be less liable to caries than if they were imperfectly formed

Although such a relationship is obvious to some, yet the idea is not generally accepted by dental authorities, because of the supposed fact that children's teeth are in general well formed and yet very liable to become carious May Mellanby,[3] however, found, when examining a large number of children's teeth under the microscope, that on the whole the more perfectly formed teeth, as evidenced by microscopical examination, were the least carious There were, however, exceptions to this rule, for out of 302 teeth examined microscopically 11 were carious and yet well formed, while 13 were free from caries although of defective structure Closer examination revealed that when teeth were well formed and carious any secondary dentine present was usually poorly calcified, and, on the contrary, badly formed teeth free from caries, or in which caries had been arrested, generally had some well formed secondary dentine It appeared, in fact, that although the formation of the original enamel and dentine was as a rule a good indication of the susceptibility of a tooth to caries, the presence and structure of secondary dentine indicated a second line of defence dependent on resistance set up in the body and particularly in the tooth itself

These data, obtained by examination of deciduous teeth of children, were further correlated with some experimental results which showed in a few cases that good secondary dentine was formed in puppies' teeth on a "good" diet, and imperfect secondary dentine when they were on a "defective" diet Thus it appeared probable that in children also "good" diets might contribute to the arrest of decay On the contrary, diets compatible with the formation of bad enamel and dentine might be expected to offer less resistance to the initiation and spread of caries It may be noted here that the resistance of the puppies to infective processes generally was found to be closely dependent on their diet—a "good" diet affording them great resistance, and a "defective" diet rendering them more susceptible Reference must also be made to the *claim of* McCollum, Simmonds, Kinney, and Grieves[4] and Howe[5] that "caries-like" lesions can be produced in rats and guinea-pigs by diets defective in certain respects

OBJECT AND CONDITIONS OF INVESTIGATION

It is evident that the previous experimental work suggested most strongly that dental caries in human beings would be influenced by the small but specific differences in diet above mentioned It appeared necessary, therefore, to investigate this matter, because corroboration of the animal results and their extension in man to the problem of caries would, if forthcoming, raise this subject from a position of academic interest to one of immediate human utility

The children under observation were in an institution during the period of the investigation, and their diet and environment generally were under the close supervision of one of us (C L P), by whom the improvement in the health of the children was carefully watched

Three groups of children were taken One set (nine in number) were placed on diet (diet A) which included cod-liver oil, milk, and eggs, but no oatmeal On the basis of the investigations referred to above, this diet, which has a potent effect in bringing about calcification, might be expected to increase the resistance of the body, and especially the teeth, to bacterial infection The next group consisted of ten patients, who received a diet (diet B) similar on the whole to diet A—the chief differences being that it included oatmeal, very little egg, and less milk than diet A, and no cod-liver oil The third group consisted of thirteen children chosen from patients on the ordinary hospital diet (diet C) They were selected so as to be comparable with the first two groups in age, duration of institutional treatment, etc

The diets eaten by the three groups are indicated below, but naturally the quantities varied to some extent with the age of the child

It will be noticed that diet B, which contains more cereal, including oatmeal, and less calcium and vitamin A, is otherwise not very different from the ordinary hospital diet (diet C), which holds an intermediate position—so far as power to stimulate calcification in puppies is concerned —between diets B and A

The effect of the three diets on the patients was very carefully watched, and as far as could be observed there was no difference in the improvement of the general health

* The expenses of this research were defrayed in part by a grant from the Medical Research Council and the Dental Board of the United Kingdom to whom our thanks are due.

TABLE I.—*Daily Diet*

Diet	A.	B	C (Hospital Diet)
Milk	2 to 1½ pints	½ to ¼ pint	1½ pints
Bread	2 to 1½ oz.	5 oz.	*Ad lib*
Fat	1 oz. (butter)	1 oz (margarine except towards end)	1 oz (margarine except towards end)
Sugar (including cooking)	1½ oz	3 oz	1½ oz and jam etc
Oatmeal groats or gruel	—	2 to ½ oz.	Occasionally
Rice tapioca etc	½ oz	½ oz	½ oz.
Meat (cooked)	1½ oz	1 oz	2½ oz.
Potatoes	2 oz	½ oz.	4 oz.
Other vegetables	2 oz	½ oz	4 oz
Cocoa	Made with milk	Made with water	Made with milk
Eggs	1	Very little	Sometimes
Fruit etc	½ orange or ½ tomato or swede juice 1 or 2 dr	As in Diet A	As in Diet A.
Cod liver oil	3 to 6 dr	—	2 to 3 dr

in the three groups. The condition of the mouth and teeth of each child was charted at the beginning of the dietary and also after some months, the period varying slightly in different cases. The difficulties of correctly recording all the findings are obvious, but we have tried to retain the same criteria throughout.

Hypoplasia.—The general condition of the teeth as regards hypoplasia obvious to the naked eye was noted. A special standard (based on the observations mentioned above) was adopted, and as far as possible used, throughout the investigations.

Caries.—An attempt was made to record the position, extent, and degree of softness and hardness of each carious point in the individual teeth. After periods which varied in the three groups from an average of seven and a half to eight months the teeth were again examined and the results charted. The number of teeth in which new carious areas had occurred since the first inspection and the number of teeth previously carious in which the caries had increased were noted. In addition, an attempt was made to record the amount of hardening or softening of the carious areas. Radiograms were taken at intervals, for it was thought possible that there might be some alterations in the structure and development of the bone surrounding the teeth, of a similar nature to that observed by May Mellanby in puppies.

Histology.—In most cases at the beginning and also after some months of the dietary one or more carious teeth were extracted, mounted in balsam, and ground down so that a microscopic examination could be made. By this means the detailed structure of some of the teeth can be compared with that observed macroscopically. It was hoped also from these sections to get an indication as to whether the diet had had any action on the carious process—such, for instance, as arresting it. This question will be dealt with when the investigation is more complete.

Ultra violet Light Saliva.—The action of ultra-violet light together with the different diets is being investigated, but the results will not be referred to in this preliminary paper. C. Lee Pattison is estimating the calcium content and hydrogen-ion concentration of the saliva of these patients. This will also be discussed in a separate publication.

RESULTS

Before recording the results obtained the following points should be noted:

1. Children were selected for the three groups so that their home environment and diets from birth to admission to hospital were as nearly alike as possible—for example, particulars of the previous diet were obtained from the parents and although the value of these data is not great efforts were made to have the group as comparable as possible in this respect. In most cases the conditions of the homes were known from the personal observations of one of us (C. L. P.).

2. The average length of time during which patients were on the ordinary hospital diet before the first inspection of their teeth was in months: Group A, 7.5; Group B, 8.5; Group C, 8.5.

3. The average age of the patients at the beginning of the experiment was, in years: Group A, 7.5; Group B, 7.5; Group C, 7.1.

4. The average period covered by the investigations was, in months: Group A, 7.5; Group B, 7.5; Group C, 8.

5. The average amount of dental hypoplasia observed by the naked eye was practically the same in the three groups A, B, and C.

6. The average number of carious teeth in each child before commencing the diets was: Group A, 6.25; Group B, 6.125; Group C, 7.

TABLE II.—*Summary of Investigation and Results*

	A	B	C
Number of patients in each group	9	10	13
Average time between admission and first inspection (months)	7.5	8.5	8.5
Average age at which diet started (years)	7.5	7.5	7.63
Average period covered by the investigation (months)	7.5	7.5	8.0
Average number of erupted teeth per child at first inspection	18.75	19.25	21.0
Average number of carious teeth per child at first inspection	6.5	6.125	7.0
Extension of Caries			
Average number of erupted teeth per child at last inspection	17.75	18.0	20.5
Actual number of new teeth becoming carious between inspections	6.0	23.0	20.0
Average number of new teeth per child becoming carious	0.65	2.6	1.54
Number of teeth already carious in which caries increased	7.0	23.0	13.0
Average number of teeth per child in which caries increased	0.75	2.3	1.0
Total number of teeth showing new or increased caries	13.0	51.0	33.0
Average number of teeth per child with new or increased caries	1.4	5.1	2.9
Total number of carious teeth in which hardening has occurred	14.0	7.0	15.0
Softening has occurred in	0	4.0	1.0

It will be noted that the average age of the child, the period of investigation, and the dental condition before the first inspection were practically identical—in fact, the only obvious variation in the three groups was in the diet the children received. It is therefore this factor which is probably responsible for the differences observed in the dental changes.

TABLE III.—*Average number of teeth per child showing a spread of caries previously present and new carious areas, together with the main differences in the three diets*

Diet	Main Difference in Diet	Average No. of Teeth per Child in which Caries has Spread.
A.	Abundant calcifying vitamin and calcium; small amount of carbohydrate not including oatmeal	1.4
B	Less calcifying vitamin and calcium; much carbohydrates including oatmeal	5.1
C	Intermediate amount of vitamin A, calcium, and carbohydrate; some oatmeal	2.9

In other words, the tendency for caries to spread was greatest in children receiving diet B, least in those receiving diet A, and intermediate in those receiving diet C.

SUMMARY

It has been found that when children are fed on a diet which has been shown (by May Mellanby) in the case of puppies to result in the formation of well calcified teeth, then the initiation and spread of caries takes place at a slower rate than in the case of similar children fed on diets not having such potent calcifying activity. The diet giving the best results besides having the ordinary qualities of a normal diet, is rich both in calcium and the calcifying vitamin, and contains comparatively little cereal, none of which is in the form of oatmeal.

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SOME SUGGESTIONS IN THE TREATMENT OF PUERPERAL SEPSIS *

BY

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My plea in this paper is for increased effort in combating puerperal sepsis when and as soon as it appears Organisms may be present in large or small numbers in fragments of placenta, or membrane, or blood clot, and continue to multiply Very soon, if not there from the first, they enter the endometrium itself, generally at the placental site or around it, and they soon invade its deeper layers Thence easy entrance to the muscle wall is afforded by venous and lymphatic channels, the former in or around the placental site containing thrombi which supply an ideal culture medium for further multiplication If the patient has power to overcome the infection the organisms are gradually destroyed *in situ*, if not, the infection progresses, but unless exceptionally virulent it remains in the uterus for some days In the presence of infection involution of the uterus is never so rapid as normally, and frequently is arrested altogether In a patient lying on her back, as is usual for the first few days of the puerperium, the uterus with infection deep in its walls is flabby and bulky from arrested involution and quite unable to drain effectively, partly owing to the patient's position and partly to its lack of contractile power Any discharge which leaves the uterus will be unable to escape freely unless the patient's position is altered If the infection is not overcome spontaneously it will soon spread along the various channels open, along the deep veins and lymphatics, along the Fallopian tubes, or into the cellular tissues, and so on, and the organisms will gain the blood stream in varying numbers and produce bacteriemia Our efforts should be directed, first, to cleaning the inside of the uterus, secondly, to destroying organisms within the uterus, thirdly, to draining a septic cavity, and, lastly, to promoting involution

My contention is that small, perhaps almost microscopic, pieces of decidua can act as culture media In a case showing signs of intrauterine sepsis I do not think it matters how complete the placenta, etc, may have been on inspection or to the usual tests, because no one can tell whether minute pieces may not remain Every effort should be made to remove, with the greatest care and with all possible gentleness, any detritus, however small

Antiseptics tend to further tissue damage if used strong enough to kill virulent organisms, and therefore provide increased scope for the multiplication of the latter The efficacy of the new types of antiseptics, such as Dakin's solution, lies not only in the fact that they are used in solutions which are practically isotonic, but that they contain free chlorine, which is a powerful germicide Their application is continuous, or nearly so, by means of the method described by Carrel and Dakin, modified slightly to suit the structure of the female pelvis By this means a suitable antiseptic is applied to the infected area, and, what is more, it is continually applied

Drainage of the infected cavity takes place satisfactorily along the outer walls of the sheaf of Carrel-Dakin tubes as they emerge from the uterus It is improved by sitting or tilting the patient up in bed and gently washing out the vagina with a simple douche daily Patients should not only sit up on a bed-pan for evacuation of the bowels, but also upon every occasion upon which the bladder is emptied

The modified Carrel-Dakin method is as valuable in re-establishing involution as it is in other respects It will always promote some involution, and it will even do so when the infection has gone beyond the confines of the uterus or even of the pelvis, and when it is going to cause death One of the most favourable signs, as a general rule, is the expulsion of the tubes about the third or fourth day, and, although it can occur in cases which will eventually prove fatal, it generally shows that a great step towards recovery has been made If the infection be so severe that involution does not occur, the tubes will remain indefinitely *in situ* As further aids I sometimes give ergot, pituitrin, quinine, or digitalis, according to the requirements of the case This is the *basis* of treatment immediately sepsis is established, but before describing technique in detail I will briefly mention the treatment I adopt in the later stages of the disease, where the infection has progressed and the patient shows signs of severe bacteriemia

Soon after peptone shock was advocated for these cases by Dr Gow I began to use his formula for making the solution and his method of administering it (see British Medical Journal, August 21st, 1920, p 268) The essentials in giving it are to watch the pulse and the blood pressure and introduce the solution with extreme slowness Normally it should take from seven to ten minutes to inject 6 to 8 c.cm The introduction of peptone is usually soon followed by a rigor, but this is a favourable sign Marked benefit to the temperature and the patient's general state is frequently seen within twenty-four hours If the high temperature returns or persists, another larger dose is given in two or three days, and so on

The solution of eusol I have used is, 1 part of the ordinary strength to 5 of normal saline The injection of 10 to 12 c.cm intravenously is unattended by the alarming symptoms which may occur with the peptone solution I have employed it in so few cases that I cannot say of what value it really is It has, I fear, been rather in the nature of a "last resort" in my cases

In all cases a culture should be taken from within the uterus with a view to vaccine preparation, but of the use of vaccines I have had very little experience I understand, however, that generally their use is disappointing So far blood cultures have without exception proved negative in those cases of mine in which they have been taken A vaccine prepared from the blood would be expected to be more efficacious than one grown from the endometrium

Polyvalent antistreptococcic serum has its place in the treatment There is a tendency for the medical attendant to be content to give one or perhaps two doses at an interval of as long as two days This is likely to be of no avail If serum is to be used it must be used frequently and be persevered with Moderately large doses given every twelve hours for some days will in some cases produce the desired effect

It is extremely important to make a general examination of the patient, first to exclude any other cause for her symptoms, and secondly to discover the possible presence of lesions secondary to the uterine sepsis—such as pneumonia, pleural effusion, or abscess formation in abdomen or pelvis, The patient is shaved and prepared surgically in the ordinary way, but no douching is done by the nurse Under anaesthesia she is placed in the perineal position and a copious douche of 1 in 1,500 mercury bimiodide given The vagina is then swabbed dry and painted with a 3 per cent. solution of picric acid in spirit

An estimate of the size, position, mobility, etc, of the uterus is made by bimanual examination An Auvard's speculum is introduced and the cervix and vagina carefully inspected for the presence of bruising or ulcerations The os is gently grasped with sponge-holding forceps rather than with a vulsellum, because of its great friability, and a swab culture taken from within Next, with the greatest care, a finger is introduced and any massive detritus removed Then with a series of dry swabs of suitable size held by ring forceps the whole cavity is cleaned A dry swab pushed in and carefully rotated, repeating the manœuvre several times, will remove tags, small clots, coagulated mucus, and the like A blunt flushing curette is next used and the whole endometrium gently stroked all over, while a stream of double strength saline continually flows This removes still more fragments and ensures the retention of nothing which has become detached I used next to swab out the cavity with flavine, but this I discontinued, as flavine forms a thick coagulum with serum and blood, and so tends to prevent the efficient continuous irrigation of the cavity which is to follow For a similar reason I have never used flavine through the Carrel's tubes

The cavity having once more been dried with swabs—or

* Abridgement of a paper read before the Cambridge Medical Society

packed for a short time if there is bleeding, which usually stops very quickly—a sheaf of four Carrel's tubes is inserted The tubes are specially designed in order that the whole cavity can be kept in contact with the fluid introduced through them The tubes are then stitched in pairs to the labia majora by a double looped stitch Before the patient leaves the table each separate tube is tested for patency (as clotting of blood might rapidly obstruct them) by means of saline driven through them by a Higginson's syringe, they are then firmly tied to the glass leads on the connecting tube The latter is similarly tested with saline Pads are placed over the vulva and the connecting tube pinned to the binder I have found it unnecessary to protect the vulva with grease

A continuous flow of Dakin's fluid is thenceforward kept up if it can be satisfactorily maintained, but I think a better method is repeated copious injections every two hours Each twenty-four hours while the tubes remain in situ the flushing through with saline is repeated, thus ensuring patency of the tubes

Once a day a simple vaginal douche is gently given in order to wash away any discharge escaping along the sheaf of tubes By stitching the tubes in pairs on either side to the labia, the meatus urinarius is not interfered with and patients have no difficulty in emptying the bladder In the majority of cases temperature soon falls and in a day or two regains the normal Involution commences soon, as is seen by the sagging of the tubes into the vagina, and their expulsion is usually expected in three or four days

This modified Carrel-Dakin method is equally applicable to cases when sepsis follows abortion at any stage The same procedure is gone through, and even greater care is taken to ensure the removal of all detritus, which is generally more adherent It is sometimes exceedingly hard to remove adherent fragments from the wall of the uterus especially if only one finger can be introduced I sometimes use paper sorting finger caps pulled over my gloves for this purpose, though they tend to blunt the tactile sense

This is the procedure I now adopt in all cases where there is evident uterine sepsis in the puerperium, whether it appears to be very severe or only quite mild—that is to say, I proceed in exactly the same way when the condition commonly known as 'sapraemia" manifests itself I think active treatment in sapraemia or the greatest importance So-called "sapraemia" may well be the precursor of true septicaemia, and therefore should never be left untreated The policy of "waiting to see if the temperature falls in thirty-six hours," or "whether a decomposing piece of placenta will come away of itself," I believe to be wrong No clear distinction exists in the puerperium between so-called sapraemia and septicaemia, or between septicaemia and pyaemia In all there is probably a bacteriaemia of varied intensity, and in all there is also circulation in varied amount of toxins the products of bacterial activity One merges insensibly into the other, and it is quite impossible clinically to say where one ends and the other begins The tendency in the past has been to regard so-called sapraemia as a comparatively innocuous condition, and as a result there has been the tendency to delay active treatment of it I maintain that so-called sapraemia (by which is generally meant the presence of putrifying material in the uterus) can at any moment give rise to a septicaemia—namely, deep invasion of the uterine wall followed by liberation into the blood stream of much more toxin and many more micro-organisms Therefore, sapraemia *must* be dealt with as soon as it shows itself There is even less distinction between septicaemia and pyaemia clinically, but local treatment at this last stage is not of such importance and has less influence on the future course of the disease

A class of case I have found to be greatly benefited by the modified Carrel-Dakin treatment is that where some slight sepsis has occurred in the uterus, but has not done any harm till the later weeks of the puerperium These patients show signs of what might be described as "peritonism"—rigidity, immobility, and tenderness of the abdomen, sudden rise of temperature and pulse, with dryness of the tongue and so on In many the symptoms resemble acute appendicitis If examined by the vagina the uterus is generally found to be larger than would be expected at the given period of the puerperium, and there is generalized pelvic tenderness with no localizing signs These are the cases—namely, very early acute salpingitis—where the tendency is to avoid opening the peritoneum if possible I have treated two such cases with Carrel-Dakin irrigation, with good results Under anaesthesia the cervix was moderately dilated, some disorganized blood clot removed, and the tubes inserted Within a very short time the temperature fell to normal, all acute symptoms subsided, and involution was completed almost immediately Convalescence was in both cases exceedingly short Gross conditions such as abscess formation and the like must be most carefully excluded, but in those cases where signs of inflammation localized to any given organ are absent, and when the question arises as to the necessity for abdominal section, careful exploration and irrigation of the endometrium may save the patient a major operation and very considerably speed up convalescence When an abscess forms in the pelvis its evacuation is, of course, necessary, and if with safety it can be opened and drained by colpotomy I think this is the ideal route

Gross lacerations or sort parts I treat by means of frequent baths made up of weak solutions of borax or Milton solution Fistulae into the rectum or vagina, or both, after forcible instrumental delivery are less likely to remain permanently open if from the first means are adopted to avoid excretions of the rectum or bladder from escaping continuously into the vagina In one of my cases, seen by me on the third day, the patient had not only very extensive lacerations of the urethra, but a utero-rectal fistula also—that is to say, faecal matter could be seen escaping from the os, the communication with the rectum being at the level of the internal os through a tear there With much difficulty the portions of the urethra were found and a catheter stitched into and along them Similarly a large, thick-walled rubber tube was stitched into the lower four or five inches of the rectum. Meanwhile cleansing of the uterus was achieved by Carrel's tubes, and perfect healing ensued. This patient also had hyperpyrexia, and the symphysis pubis had been wrenched one inch asunder by the instruments Pyaemic abscess or effusion is treated by incision or tapping So far I have failed to get cultures of living organisms from these secondary foci

This paper is based on thirty cases of puerperal sepsis of different kinds which I have treated during the past few years, mostly at the hospital I regret to say that they are by no means nearly all, but of these I have complete records and charts Statistics are apt to be misleading, especially in a disease of this kind, because of the extraordinary variability of the factors concerned This would certainly apply to mortality rate, especially when the number of cases is comparatively small But one or two points are worth noting when the series is surveyed In only seven was labour uncomplicated In all the others there was one or more of the following:

Forceps or manual delivery in 7 manual removal of the placenta in 8 craniotomy in 3 untreated tears of the vagina or cervix in 4; albuminuria in 2, eclampsia in 2 placenta praevia in 2 post-partum haemorrhage in 2 maceration of the foetus and tertiary syphilis in 1

Thus in half the total number there was intrauterine interference or some sort, not counting the three in which craniotomy was performed In roughly a third there were conditions characterized by bleeding and consequent anaemia, or toxaemia and consequent debility

Here, then, we may be said to have two predisposing causes for the occurrence of sepsis—manipulations during delivery on the one hand, and anaemia or debility at or before delivery on the other Many cases of sepsis are caused by organisms already present in the patient, and in these debility or anaemia is the predisposing factor in lowering the patient's resistance to the action of those organisms Similarly, manipulations in a patient who already harbours the organisms will provide the damaged tissue upon which those organisms can flourish In like manner an unstitched tear will act as a predisposing cause as it is most likely to become mildly septic if communicating with the vagina or cervix, and by its proximity to the uterus act as a potential cause of infection

It must always be remembered, however, that manipulations of any kind can introduce virulent organisms into the uterus It is impossible to sterilize absolutely a vagina, however thoroughly it may be attempted, and many virulent organisms can and do exist and multiply there with no harmful results But if those same organisms gain access to the inside of the uterus they may do untold damage

Two of my cases were of that most fatal kind, the acute aplastic type of streptococcal infection Both had been infected with gonorrhoea, and one had subacute gonorrhoea at the time of delivery She was also hypermature, had a flat pelvis, and required craniotomy into the bargain

SUMMARY

1 When fever appears in the puerperium, having excluded maladies outside the pelvis which may cause it, it is far safer to give an anaesthetic and carefully examine the patient's pelvis than to "wait and see" If intrauterine sepsis is present, explore the uterus and take steps to empty it or clean it, or both To wait and see if the fever will subside may mean waste of precious time

2 A so-called sapraemia is quite often the precursor of the most virulent septicaemia, and anyhow a sapraemia will not be improved by leaving even small and removable fragments of placenta or membrane *in situ*, if they are poisoning the patient

3 The septic uterus will not involute, but the modified Carrel-Dakin treatment, assisted perhaps by drugs, will help involution better (in my opinion) than anything we have at our disposal

4 If antistreptococcal serum is to be used, use it frequently until the temperature falls

5 Further adjuncts are "peptone shock" and intravenous eusol

6 Take a culture from the endometrium and from the blood, as a vaccine later may be of value, especially if prepared from the blood

7 Pay careful attention to posture in the nursing of these patients Fowler's position will aid drainage, whereas the supine position will tend to dam back secretions Similarly micturition and defaecation in a complete sitting position are useful aids

8 In early infection of the adnexa, the modified Carrel-Dakin method may possibly prevent the necessity of abdominal section, and will certainly speed up recovery

9 Where anaemia or debility is caused by haemorrhage or toxaemia keep a special look-out for sepsis

10 Perform all manipulations or instrumentation with extreme gentleness whenever possible, and practise asepsis most punctiliously

11 Sew up all tears of soft parts immediately

Puerperal sepsis is a type of wound infection which will not improve by watching and waiting Operative measures and certain forms of medication have scope, though still limited, in its treatment There is no panacea, though we hope it may appear Until it does, each case will require careful study with a view not only to its own cure, but also to the discovery of a real antidote to this scourge

OCCLUSION OF THE OS FOLLOWING SURGICAL TREATMENT OF UTERINE AND VAGINAL PROLAPSE

BY

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MANY women are compelled to seek relief for the disability and discomfort arising from varying degrees of prolapse of the vaginal walls and uterus A pessary is the usual means of initial treatment, but often, after a while, it is found necessary to discard it because either it fails to afford sufficient support, or, if it is composed of vulcanite, its pressure upon the soft parts causes pain and irritation Not infrequently the patient herself becomes impatient and demands more radical treatment, having learned from experience that a pessary, especially a rubber ring demands personal attention which becomes irksome as well as several visits annually to or from her medical adviser

In the event of any of these circumstances occurring surgical treatment can with confidence be advised in the majority of cases It is now almost universally realized that plastic operations upon the perineum, the vaginal walls, and the cervix of the uterus are sufficient in the great majority of women to afford relief and ensure comfort The strenuous advocacy for many years of Fothergill and others has resulted in their theories having been accepted and their method of treatment adopted by the great majority of gynaecological surgeons

As a routine step in the operations, amputation of the cervix is nearly always performed, as it is followed by great benefit in more ways than one The cervix in conditions of bad prolapse is so often extensively lacerated, eroded, and ulcerated that it is a constant standing source of disease, and, at middle life, a menace as a likely seat of cancer The purulent discharge which has its origin in such a cervix is a fruitful source of local irritation and discomfort, while the absorption of the toxins is responsible, in my opinion, for much ill health, the prime cause of which is frequently unsuspected Removal brings about cessation of the discharge, and, in addition, tends to relieve the congestion and to lessen the weight of the generally enlarged and heavy uterus

Caution, however, must be exercised in the performance of this simple operation, should the patient be of parous age, or her last condition may be worse than her first I have seen several examples of repeated abortions subsequent to operation, caused without doubt by too high amputation of the cervix, and the following history of the yet more serious consequences which may result from an operation for prolapse in a woman before her menopause seems to be worth recording as a reminder that zeal must always be tempered with discretion

A multipara, aged 42, who had suffered for several years from a moderate but gradually increasing degree of prolapse, chiefly of the vaginal walls, consulted a well known and esteemed gynaecologist during the absence from home of her usual medical attendant She was ordered into a nursing home, where, apparently, the operations of anterior and posterior colporrhaphy, amputation of the cervix, and permeorrhaphy were performed, and in two to three weeks she was again at home

Shortly afterwards attacks of abdominal pain began, at first mild and soon passing away, but gradually becoming more severe until at last they were agonizing enough to call for a hypodermic injection of morphine Between the attacks the patient was fairly well and was able to go about, but, six months after the operation, she was seized with an attack of such unusual severity that it was considered necessary to have a consultation

The foregoing history was told to me, and I learned further that menstruation had not appeared since the operation, although it had previously been regular During the attacks there had never been a rise of temperature The patient was well coloured and stout On making a vaginal examination it was found that the operations had successfully effected the formation of a restored perineum and of a normal vaginal canal The vaginal vault was devoid of any trace of a cervix, its place being taken by a firm cicatrix Abdominal examination revealed the presence of a tense pyriform swelling, evidently the body of the uterus, rising mesially almost to the umbilical level Upon questioning the patient the fact was elicited that the pain from which she suffered came spasmodically and reminded her of labour pains

The diagnosis was apparent, and a day or two later I performed hysterectomy and double salpingectomy The walls of the uterus were greatly thickened and its cavity contained large quantities of thick blood of a dark brown colour No trace of the internal os could be found—the cavity was entirely shut off, stenosis was complete The Fallopian tubes were greatly distended by the same thick chocolate coloured fluid as was in the interior of the uterus

No other treatment could have been attempted with any hope of success Obviously, serious obstacles and dangers which readily occur to one's mind and need not be mentioned would have militated against a good result from any attempt to open up the uterus from below The patient having children and being 42 years of age, there was all the less objection to hysterectomy being performed She has remained in good health and has had no pain eight months after the operation

A too thoroughly radical removal of the cervix in a woman of child-bearing age may therefore be, as this case proves, a dangerous proceeding in the surgical treatment of prolapse, leading to stenosis which may occlude completely the canal at the internal os and so cause retention of menstrual blood.

British Medical Association

PROCEEDINGS OF SECTIONS AT THE ANNUAL MEETING, BRADFORD, 1924

SECTION OF DISEASES OF CHILDREN

LEONARD FINDLAY, M D, F R F P S, President

DISCUSSION ON PULMONARY TUBERCULOSIS IN CHILDHOOD

OPENING PAPERS

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THE CLINICAL ASPECT

A study of the Registrar-General's reports reminds us that there are two periods of life during which tuberculosis tends to assume a serious and fatal aspect—namely, the periods of infancy and of early adult life. But what of that *period between, of which* the Registrar-General has so little to say—roughly, the period of school life. Has the tubercle bacillus forgotten to claim these victims, has it retired vanquished, or is it only digging itself in for further onslaught? It is to intrathoracic and pulmonary tuberculosis in this interesting period of *comparative exemption*, roughly covered by the ages of school life, 5 to 15, *or thereabouts, that I wish to call your special attention* to-day, and elicit your views on some of the problems it unfolds.

What does the Registrar General actually say about pulmonary tuberculosis during school life? He tells us that but 3 per cent. of the deaths at all ages are *attributable* to this ten-year period—certainly a notable freedom from fatal disease. But if there are deaths there must also be recoveries, and we ought to hear something about these. Or once again can it be that the tubercle bacillus has forgotten the children of school age and that only those few that die have been infected? In either case we must ask—what has become of pulmonary tuberculosis at school age that it can be possible for certain physicians to hold the view, and hold it with fair impunity *on account of* the low death rate, that the disease does not exist? This is the problem we need to unravel.

INCIDENCE OF INFECTION AND DISEASE

First let us dispose of any *doubt that tubercle* infection is *missing* at these ages. The tuberculin tests, applied to modern communities, give the following answer:

	Edinburgh (McNeil)	Vienna (von Pirquet)
Under 1 year	1 1 per cent	5 1 per cent
1 to 2 years	29 9	22 4 ,,
3 to 4	46 6	37 9 ,,
5 to 6	63 8	62 3 ,,
7 to 10	51 9	53 6 ,,
11 to 14	55 0	73 8 ,,

These are for the von Pirquet test alone—higher figures than these are obtained (as by Hamburger) *by a combination* of tests.

Next as to structural lesions in other words disease discoverable *post mortem* during these early years of life. Some modern figures derived *from ordinary post-mortem* material are the following:

	Müller (Berlin)	Hamburger (Vienna)
0 to 1 year	12 per cent	15 per cent.
1 to 2 years	30	42
3 to 4	45	59
5 to 6	50	60
7 to 10	50	64 ,,
11 to 14	75	77 ,,

93 per cent. of Hamburger's cases had tuberculosis of the bronchial glands.

Clearly it is not for want of tubercle infection, or even of tuberculous lesions, that fatal tuberculosis is uncommon at school age, it must be that a notable immunity exists during this period of life. But among such material—infected but resistant—there must surely, in addition to a few deaths, be numerous cases of disease running a more benign course and ending in recovery. Both radiographic and *post-mortem* records show that it is so. Opie found that "in one of nine adults' x-ray plates disclosed such extreme calcified tuberculosis of the lung and its lymph nodes that a grave infection must have existed at some previous time." This was confirmed by an opinion over a large material. "In more than one in every ten individuals the calcified lesions present in the lung at autopsy show that the individual has suffered with widely disseminated tuberculosis of the lung and massive tuberculosis *of the adjacent lymph nodes*." Mark especially the "massive tuberculosis of the adjacent lymph nodes"—this was no apical tuberculosis of the adult. Are not these *the cases for which we are looking*, viewed from the standpoint of the *post-mortem* room?

How do these cases show themselves *clinically*? To those that hold the view that pulmonary tuberculosis *does not* exist at school age they do not, I think, show themselves at all. Those of a more inquiring turn who recognize that such cases exist, and are not satisfied that they should do so unrecognized and unrecorded, have, *or think they have*, in their searchings found the "lost tribe." They have discovered a *type of child who* to careful observation presents certain fixed characteristics. His symptoms are fairly representative, and, on due investigation, he presents certain characteristic physical signs. On suitable treatment, and even without treatment in many cases, the children giving these signs and symptoms for the most part recover, but certain of them get worse and die, and when they die it is *or acknowledged pulmonary* tuberculosis. On these grounds it is fairly claimed that those *which recovered were also suffering* with pulmonary tuberculosis, but of a slighter grade.

THE TUBERCULOUS CHILD

Let us look a little more closely into the points whereby this type or child *may be recognized*. His symptoms may be shortly dealt with—"a history of frequent coughs and colds, attacks of unexplained fever, loss of weight, anorexia, and asthenia"—so I saw them tersely stated in a recent article and we may let them go at that. Only I would add that in the hospital class malnutrition is often the most striking feature while among more prosperous children, subjected to strenuous school games, *unexplained attacks* of fever, often with cough and vomiting, more often bring them to the physician.

And now for the physical signs: these are as I said, *characteristic*, but they do not include any notable stethoscopic signs. And so it happens that the man with the stethoscope finds nothing, and passes the chest as healthy whereas the man who taps with his fingers is aware of certain abnormalities, and says, 'This is not a normal chest." A right-sided paravertebral dullness is the hallmark of the tuberculous child, and the diagnostic value *of this sign* is as good, in my opinion, as are the apical crepitations and impairment which mark a tuberculous infiltration in phthisis of the adult. It is, *moreover* quite as easy to detect as these latter signs in most cases easier and I have never had a house-physician who could *not learn to find it for himself when* he was shown how. To this it is necessary not only to compare this area with the same area on the opposite side, but also with the lung on the *same* side around the area of impairment. Thus we avoid the error likely to arise if there is also, as sometimes happens, a left paravertebral dullness also. The area has a well defined eccentric edge, and by percussing from without inwards it is quite easy to mark this out. Nevertheless, we hear talk about the difficulty of detecting loss of resonance in the interscapular area. You may take it from me that this is mere nonsense and I do not advise you to be frightened by it. Paravertebral dullness *as found* in the tuberculous child is as easy to detect and to demonstrate as any chest sign known to us, and it is only not found because it is not seriously looked for.

Now it is not seriously looked for, by certain physicians at least, because it, or its significance, is not believed in. I cannot help thinking this is attributable in part to the

false view once held that the dullness was due to gland masses or other gross tuberculous lesions We must disabuse our minds of this error, and accept the paravertebral area of impairment as a mere surface reflection of distant changes around the lung root We are not, when we find it, mapping out areas of disease, nor must we expect the x-ray picture to give any corresponding shadows The area is probably due to lung shrinkage round the root associated with a partial collapse It is always associated with a slight loss of resonance over the whole lung, and may be simulated, as a temporary condition, by postural underexpansion of a lung My own observations make me think it due to pressure of enlarged bifurcation glands on the right branch of the pulmonary artery—in any case it simply implies glandular enlargement, and, though this may be due to various causes, tubercle is by very far the commonest

Now I advise you to think, when you find a right paravertebral dullness, provisionally at least "This is a tuberculous child!" Also, where you do not find this sign be very wary of diagnosing intrathoracic tubercle—very few are the tuberculous children in whom this sign is absent On the other hand, do not imagine that it is present in the healthy, for this is not the case It may be found, it is true, in some children apparently robust, but so may other undoubted evidences of tuberculosis Moreover, these chest signs in tuberculous children persist long after the disease which produced them is quiescent They do not therefore by themselves speak for active disease The question of activity must be decided on symptoms, and not on physical signs

Having found a right paravertebral dullness, and mentally noted tuberculosis as a probable cause, we naturally then review all the other signs associated in various degrees of frequency with these cases These I shall here pass over to leave time for other matters What I now wish to insist on is the fact that with a right paravertebral dullness, and *with no other sign* present, we may yet be dealing with a serious case of tuberculous lung disease in the child Because we hear no crepitations with the stethoscope we must not therefore suppose that lung disease is absent or quiescent Only in the latter stages of progressive disease do localized crepitations, evidence of surface infiltration, appear to the stethoscope in these cases On the other hand, it must be noted that general râles due to bronchitis are not infrequent in mild glandular cases, and these must not be mistaken for the signs of generalized tuberculous disease In addition, apical phthisis of adult type is sometimes found in older children, but these cases I am omitting from present consideration

THE PRIMARY COMPLEX AND ITS SEQUELÆ

Now, although the stethoscope reveals nothing, yet the x rays may show extensive disease, and since such disease is *commonly most marked round the hilus region* it is convenient to speak of it as "hilus tuberculosis" We may do so, I think, without thereby committing ourselves to any opinion as to the origin or mode of spread, but the matter is of such great interest that I think we should devote some of our time to its consideration

Let us review, therefore, some of the points which appear to bear upon it Let us presume that the child has already received his "first infection," reacts to tuberculin, and *possesses the local and glandular lesions so well described* by Anton Ghon, and termed by Ranke the "primary complex" This consists, typically, when it occurs in the pulmonary area, of a single lung lesion, and caseous disease in the corresponding lymph glands at the hilus, often with involvement of "bifurcation" and tracheobronchial glands on the same side, with spread, in some cases, *to those of the opposite side* This march of events corresponds to the first phase of "Koch's phenomena," where tubercle inoculation of healthy animals led to an indolent ulcer with little reaction at the point of inoculation, and marked disease in the corresponding lymph glands Koch's further discovery was that reinoculation led to severe "reaction," with development of a local lesion proceeding to caseation and softening, but afterwards healing, and with no secondary involvement of lymph glands The virgin soil had become what has been termed "allergic"

Now the primary inoculation follows of necessity the normal channel of lung invasion, and we had best be clear what this is The bacilli will travel outwards into the lung by air passages or blood, from these they will, if arrested, pass into the lymphatics, and thence with the normal lymph flow back towards the hilus Recent work has demonstrated that the blood and air passages are but channels of conveyance, and that the development of the tubercle occurs in the lymphatic system outside their walls

Our school child is, now, presumed to possess a "primary complex" in the pulmonary area—he is becoming "allergic," but is perhaps not yet fully so What is the next stage of the process? Presumably, if disease progresses, it will do so for a time in the glands, these will become further involved and form larger masses, and it is from these that we derive the physical signs indicative of intrathoracic tuberculosis The lungs give no surface signs, but a radiogram may now reveal a mottling round the root on one or both sides How has this mottling arisen?

HOW DISEASE RETURNS TO THE LUNG

Now it is not the "primary complex" we are looking at This consists, nearly always, of a single small peripheral lesion, often out of sight of the x rays, whose lymphatic path to the root is but a narrow one How, then, has disease spread again from the glands into the lung? There are, indeed, various ways in which it might be achieved

First, there is spread by continuity, a process which is very real, but cannot of itself accomplish any wide dissemination But in this connexion it must be noted that the "spatial relations between *channels of communication*—vascular, lymphatic, and visceral—are microscopic, and the new formation must very quickly come in contact with these" (Krause) So that a limited spread by continuity may, once the lung is involved, open the door to other modes of spread

Secondly, there is the trachea or bronchus, but the rupture of caseous root glands into these is only an accidental occurrence and may be dismissed from immediate consideration

Thirdly, there is the blood stream, and Ghon favours the probability of a hæmatogenic invasion The primary focus, he says, may become latent, "sooner or later to give rise to an endogenous reinfection which usually has its source in the lympho-glandular components of the primary complex, and it can propagate in the regional lymphatic system until it breaks into the blood stream In the case of primary pulmonary infection it is no rare form of reinfection" Let us inquire what would in this case happen Whether the bacilli journeyed by normal lymphatic channels into the subclavian vein, or by rupture *within the glands into bronchial venous radicles, they* would pass to the heart, and thence to both lungs indiscriminately Those that were there arrested would, as has been found to happen, pass into lymphatic vessels, and again return by these towards the glands, provided any passage for return was open Such foci of disease as they might *initiate would* tend to be scattered, but would probably be especially *concentrated, as has been found* to occur, along the peribronchial lymphatics This presents a picture which we may find in some cases, but it is not, I think, typical of hilus tuberculosis

There remains another channel of spread, but one which is only available under conditions of disease—namely, a lymph stream blocked, as is this, by caseation of its draining *glands*, and therefore tending to overflow its valves, and change or reverse its normal direction of flow Even Dunham, an opponent of the conception of outward spread, seems to allow its feasibility "The blocking of the lymph flow towards the hilum is clearly shown," he says, "in tuberculous lungs It is a frequent observation to find dilated pleural lymphatic vessels over a lesion within the *lung*, and on section to find that pressure on the lymphatic vessels running towards the hilum has caused the lymph flow to seek out the collateral route towards the pleura The engorgement of the peripheral lymphatics may be brought

about either by a blocking of the central lymphatics, or by an overflow of exudate" Here, surely, are conditions which would permit the carriage of tubercle bacilli outwards from the diseased glands into the lung It is a mode of spread which even the morbid anatomist has sanctioned Tendeloo stresses especially the respiratory suction set up in the distensible lymphatics of the outer parts of the lung, as opposed to those of the less mobile root area, even apart from lymphatic blockage

Radiographic Evidence

What evidence do we get in the matter from x-ray examination? There may be seen but a heaviness and widening of the upward and downward "strands," suggestive of peribronchial and perivascular thickening, but with nothing to suggest its tuberculous nature or how it has originated But often the appearance is one of mottling around the root, and most typically of a fan-shaped area of disease extending out towards the axilla, but leaving, on account of its shape, both apex and base free of shadowing How, but by lymphatic reflux, can we explain this distribution of disease? It might be, perhaps, that in some cases the perihilar shadows were those of embedded pulmonary glands infected from the periphery In a few, also, it is conceivable that a bronchopneumonic process set up by aspiration of gross particles, as from a softened gland opening into a bronchus, might concentrate itself about the central portions of the lungs, but such instances can hardly cover the ground of hilus tuberculosis

A lymphatic backwash into the lung is very tempting as the explanation of the majority of them In cases, moreover, where the appearances are those of heavy root and thickened upward strands with mottling around these latter, it may well be—and the absence of surface signs seems to support it—that here again lymphatic backward spread is at work, and that bacilli are carried out from peribronchial lymphatics by increased suction of the surrounding lung tissue This appears to me much more probable than 'droplet infection" in such cases

What now do we see, typically, when we turn, radiologically, to the surface infiltration characteristic of apical phthisis of adult type? Here the x ray "fan" is based on the pleura and appears to spread back into the anatomic compartment bounded by the connective tissue layers around it Leroy Gardner demonstrated that in healthy guineapigs infected through inhalation the tubercles, and later a cellular infiltration, develop just below the pleura as in apical phthisis, while the primary lung lesion in childhood of necessity either a respiratory or blood infection, is found at the surface of the lung in nearly all cases These the antithesis to hilus tuberculosis, present a subpleural sowing, with return of disease towards the centre—they illustrate the bounds imposed by normal anatomy, whether in a virgin or "allergic" soil, on infection arriving from without

So much for the radiological findings and the interpretation to which I hold they lend themselves But still more strongly is this interpretation supported by clinical observation In the case of perihilar disease, whether in the child or in the adult, we find no surface signs as we should surely do if disease had spread inwards, as we may admit that it tends to in apical phthisis, from the periphery Even the "virgin soil" of Gardner's guineapigs was able to produce a surface infiltration, and Dunham's stand on the extensive exudate of the "allergic soil,' as explanation of surface signs in the adult and then absence in the child, seems to me an insecure one Surely any peripheral infiltration, if it existed—and it would have to be widespread to supply the lesions of perihilar disease—would reveal itself to the stethoscope

Resume of Theoretical Considerations

And now let us briefly review the assumptions I have put before you with regard to pulmonary tuberculosis as it *occurs when it does occur, in the school child* I would suggest that its characteristics are conditioned partly by the method of spread—for the most part through blocked lymph channels backwards from diseased glands, and partly by peculiar tissue reactions in a soil becoming "allergic," but not yet fully so This partial allergy may, indeed, itself constitute the protection of school age, apart from any concomitant immunity, since it appears to favour a repair unaccompanied by the disastrous cavitations of *adult disease* This tendency to softening may be seen sometimes in later childhood, whether with deep seated disease or with disease of apical distribution, and in either case surface infiltrations soon develop from "droplet" inhalation

Now these assumptions seem to carry with them the corollary that apical phthisis of adults owes its peculiarities to other modes of infection—namely, by the respiratory (and possibly the blood) channels (and hence a re-infection "from without" in most cases), conditioned by the special reactions of a fully "allergic" soil I do not gainsay this deduction, but it is *not germane to our present* discussion And this is just as well, since the evidence is not yet strong enough to support this tempting theory

The Radiogram of Childhood and its Interpretation

But too often, where there are clinical signs suggesting pulmonary tuberculosis and the x rays show but slight shadowings, it may only be possible to affirm that the radiogram is "consistent with a diagnosis of hilus tuberculosis" In infancy the shadows of disease fall on a *comparatively clean* surface, but in a child of 10 or 12 years the normal radiogram often shows considerable, and perhaps suspicious, shadowings How far these are due to silicosis from dusty streets, to carbon deposits from the air, or are the result of measles, whooping-cough, and other infective fevers, which were held by an American committee of investigation to thicken the linear lung shadows, and how far they may be due to occult or healed tuberculosis in the apparently normal child, is a question which has much vexed the minds and tempers of investigators during recent years As a result of the constant study of radiograms from my patients I have myself become much less afraid of tubercle, both as a disease and as a diagnosis, than I used to be It is no uncommon thing to find the indications of extensive slight or healed disease in unsuspected parts of the lungs in cases of manifest tuberculosis, and when one sees similar appearances without this corroborative evidence of its tuberculous nature one is at least duly impressed What, after all, is the lesson which increasing knowledge of tubercle and its distribution has been dinning into our ears ceaselessly, year after year, if not the wide dissemination of the seed both in the diseased body and in the community? The more we study the matter the more, I think, we must be impressed with the importance of the soil, and be prepared to accept the presence of the seed almost as a *sine qua non* The question should surely be *no longer*, "Is he tuberculous?" but rather, "How much is he tuberculous?" And even in this we may be thinking less in terms of the seed (that is, the extent of the sowing) than of the soil (that is, the resistance as shown *in the type of disease* and its behaviour) Let the balance tip well on the side of immunity, and we need not be over anxious as to how many tuberculous foci had been thrown into the other scale All the evidence shows us that tuberculosis is a very curable disease

The Problem of the Tuberculous School Child

Let us get back to our school *child, with his para*vertebral dullness and his perihilar shadowings, and see what becomes of him In actual practice he constitutes a problem that harasses the school medical officer and the tuberculosis officer alike *He has* been fully recognized in the school service, he is a familiar at the tuberculosis dispensary, but neither body is quite decided what, in fact ought to be done with him Those that ignore him will have a few deaths to their discredit, for he has the bad habit of sometimes getting worse and dying of the disease This, it must be admitted, is uncommon As a rule, under any possible hygienic excuse, he will get well, or at any rate get no worse The trouble is that it is so difficult to tell in the earlier stages what is going to be the course of his disease From physical signs, apart perhaps from x rays, it is impossible to decide, and only the symptoms and the course of the case will reveal the issue For this reason he crowds the dispensaries and fills

the open-air schools, and even lies in sanatorium beds under the county council scheme until such time as he can make up his mind which road, whether the upward or the downward, he has decided to take

For purposes of discussion I would now suggest to you some of the problems which hang around this tuberculous or subtuberculous school child First, his very existence seems to be ignored in some quarters, and I hope this discussion will help to establish it Next, given his existence, comes the detection and diagnosis of his disease, and following that the peculiar characteristics of pulmonary tuberculosis in childhood, and the points wherein it differs, both clinically and pathologically, from apical phthisis of adult type These I have myself tried to outline, and they present an interesting problem indeed Further, there remains the question of prognosis in the individual case, none the less difficult because the majority recover readily In addition there is the question of what is to be done with the subtuberculous child from the administrative point of view, both in the interests of the child himself and of the community

Finally, there remains the very important and interesting question of what eventually becomes of him, particularly on his emergence into adult life Does he recruit the ranks of phthisis in the adult, or is he, as some believe, peculiarly immune to further tuberculous disease? Or are there, perhaps, cases which are protected by their childhood disease, and others in which it has got so firm a foothold as again to become active in the guise of a hilus tuberculosis of adult life? These, among many, I would put to you as suitable problems for discussion within the limits of our subject-matter

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THE RADIOLOGICAL ASPECT

INCIDENCE OF THE DISEASE

IN the experience of the department pulmonary tuberculosis is comparatively uncommon and invariably fatal in children The majority of those affected die in hospital and compared with adults the duration of the disease is short, rarely exceeding a year, and usually lasting but a few months

The diagnosis of the disease is based on (1) the appearance of the typical radiogram, (2) the presence of tubercle bacilli in the sputum, (3) the pathological and histological report of the section

THE TECHNIQUE EMPLOYED

A *Apparatus*

Induction coil (16 inch spark) with 4045 ampères in primary circuit at 250 volts
Wehnelt electrolytic break (3 point)
Time switch which will give exposures of approximately 1/30 second
Gas tube of about 3 inch equivalent gap—25 to 30 ma in secondary circuit
Six high tension rectifiers in series to suppress the inverse current
Kodak "superspeed" films
Two intensifying screens
Tank development

B *Positions*

1 *The vertical position*, however useful it may be for demonstrating pyopneumothorax, etc, is not easy to arrange The patients are critically ill and are exhausted by the change of posture, the necessary restraining bands throw shadows on the film, and differences in the apparent opacity of each lung may be produced by the unequal chest expansion due to the lateral spinal curves, which also cause displacements of the mediastinal and heart shadows

2 *The postero anterior or horizontal* with tube below has the advantage of being less terrifying and allowing a preliminary screening, but the *disadvantages far outweigh these*, for proper apposition and immobilization of the cassette is very difficult to secure, and it is almost impossible to time the moment of exposure as the upper portion of the child's body is hidden, and also cases with retraction of the head cannot be immobilized in a correct antero posterior position

3 In consequence of the foregoing difficulties, the *antero posterior horizontal* with the tube above was adopted and standardized as follows

Distance of anticathode from cassette 24 inches Tube centred 1/2 inch below the jugular notch on the manubrium sterni The patient is placed with his back on the warmed cassette, the knees are raised on sand bags and the legs and arms immobilized by the same means If the head is retracted a cassette raised by a sand bag and with a deep notch in its upper border is used, the occipital portion of the head enters this notch and this allows the neck and upper dorsal region to come into good apposition

The technical difficulties may be summarized as follows

1 To make the exposure with such rapidity that all shadow outlines are clean cut, the brevity of the permissible time interval may be appreciated by the fact that pulse and respiration rates of over 150 and 60 respectively are not uncommon, and to these may be added an extreme degree of restlessness To minimize this latter, ether sprinkled on the abdomen allows an exposure to be made during the respiratory spasm so induced

2 To secure satisfactory apposition of cassette

3 To obtain true antero posterior views

The interpretation of radiograms is rendered fallacious by errors in technique or by the shadows of lesions being suppressed or distorted by faulty positions or by body movements

THE DIAGNOSIS OF TUBERCULOSIS

This is the disease in which the radiogram gives accurate pictures of small peripheral and larger central lesions which have reached the stage of consolidation or cavitation, *before* the corresponding clinical signs can be detected

The progression of the disease is evidenced by the *increasing opacity of the abnormal shadows, then spread* in extent, their edges becoming less distinct owing to surrounding consolidation, the signs of cavitation in their centres, and by the appearance of abnormal shadows in the other lung

Types of the Infection

The following are the types of tuberculous infection from the radiographic view-point

1 Miliary tuberculosis
2 Bronchopneumonic tuberculosis (Types A, B, and C)
3 Hilum tuberculosis
4 Chronic phthisis (adult type)

1 *Miliary Tuberculosis*

The chest is normal in contour, *there is no flattening of* the ribs, and no exaggeration of the normal costovertebral angle In adults suffering from phthisis the heart is frequently abnormally small and centrally situated The mediastinal shadow is not increased in width and it seldom shows shadows suggestive of enlarged caseous glands The apices and lung parenchyma generally are clear, the hilum shadows are not more prominent than those found in supposedly healthy children, and the levels of the diaphragm are normal as regards the chest and one another, yet despite these negative x-ray findings, on *post-mortem* examination there may be miliary tuberculosis present throughout the lungs with enlarged mediastinal glands I do not think that tuberculous glands show radiographically unless they have passed the stage of congestion and enlargement and have become caseous or calcareous This contention is supported by the *fact that enlarged cervical glands* (where the relatively smaller bulk of other tissues allows a much clearer differentiation of the soft tissues) cause very light shadows, and any marked opacity is due to abscess formation, caseation, or calcification (In this connexion it may be of interest to note that calcareous mesenteric glands have not been seen in children under 5 years of age)

2 *Bronchopneumonic Tuberculosis*

Type A—I have not seen this in the initial stages, possibly because its spread is so rapid The clinical history is short and is one of rapid wasting after a recent attack of either respiratory or infectious disease Frequently clinical examination is negative On x-ray examination the typical picture is seen The chest is not abnormal in outline, nor have the ribs the "fallen-in" appearance seen either in the chronic type or after long-standing pleurisies or empyemata There may or may not be widening of the median shadow, but the hilum shadows are almost invariably increased and the whole field of both lungs is dotted with rounded, sharply defined areas of opacity almost all of the same size and equally distributed The size of each of these shadows varies with each case, from about 1 mm to 3 mm in diameter, but their uniformity in extent and depth of opacity is striking They do not seem to coalesce until the individual lesion exceeds 3 mm , there after over large areas of lung dense shadows are produced, followed immediately by appearances indicative of cavitation The explanation of this picture depends on the fact,

substantiated by histological examination of individual tubercles, that round each area of consolidation is a zone of local emphysema By the aggregation of these surrounding zones the penetrability of the parenchyma to the rays is so increased that the shadows of the consolidation of all areas (except those nearest the film) are obliterated, and only these latter produce sharply defined shadows, by reason of their proximity and the afore-mentioned emphysematous zones, otherwise it is difficult to understand why the superposition of the shadows of so many opaque areas does not produce the appearance of massive consolidation Further, this surrounding emphysema masks the condition and renders the clinical findings negative, consequently children are sent to hospital with diagnosis of marasmus, wasting, weakness of spine, etc, and in one case after an operation for appendicitis it was thought that a subdiaphragmatic abscess was forming, however, x-ray examination showed the typical picture of this bronchopneumonic type Even after the nature of the disease is apparent, until gross consolidation and cavitation appears radiologically, there is no dullness, no loss of vocal resonance, and on auscultation only a prolongation of the expiratory phase can be determined, but rapidly increasing weakness and emaciation are present The spread of the infection is shown by the increase in size and coalescence of the shadows with appearances of cavity formation In many cases tubercle bacilli have not been found in the sputum, but the nature of the infection was proved on *post-mortem* examination Then caseous mediastinal glands and a generalized tuberculosis were noted frequently, but it is not easy to say which were the original lesions and from where the infection proceeded, and especially whether or not the lung infection and the general miliary infection, which was usually present, occurred at the same time (It is possible that the individual tubercles may grow and break down at a more rapid rate in the lung parenchyma than in other body tissues) Occasionally though the lungs have been studded with bronchopneumonic areas the mediastinal glands have been unaffected

Type B—Acute bronchopneumonic phthisis in children seems to be rare Radiologically it is indistinguishable from a bronchopneumonia which is breaking down, except that in this case the other lung is not usually affected Large cavities may be formed with spread of infection to the other lung

Type C—Occasionally, and usually in the lower lobes, a caseous area may be detected in the parenchyma which may have been the focus of the miliary spread

3 *Hilum Tuberculosis*

This is uncommon and shows first as an increase in the size and opacity of the hilum shadow Occasionally both are involved, but one increases at a much more rapid rate The normal variation in depth of the hilum opacity is replaced by a denser homogeneous shadow with diffuse and indefinite edges, except where these appear to connect with the interlobar fissures, spread seems to be more rapid along the latter, and from them opacities shade into the clear area of lung parenchyma Eventually the opacity may reach the lateral chest wall, but before this occurs an irregular area in the centre shows increased translucency, and within a short time a large irregularly shaped cavity is seen While these changes are taking place in one lung, the other also shows a spread of the infection, being studded with discrete shadows which rapidly increase in size and show signs of cavitation In tuberculosis of the lungs of the bronchopneumonic or hilum type in infancy a unilateral chest infection has not yet been seen

4 *Chronic Tuberculosis in Childhood*

After the period of infancy the resistance to general tuberculosis seems to increase and the typical picture of the bronchopneumonic type does not occur so often after the age of 8, but instead appearances suggestive of the adult type of chronic phthisis are visible The evidences of the disease are seen first as an increase in size and opacity of the hilum shadow, this opacity finally extends to the apex of the affected side as an elongated branching shadow showing at intervals along its course circular opacities with fairly well marked outlines These shadow areas are not discrete but communicate with each other, and at the apex, or below it, there is an area of consolidation with, at a later stage, cavity formation As the infection proceeds the hilum shadow increases in size and the outline of enlarged and presumably caseous mediastinal glands may be visible at the edge of the median shadow Occasionally small areas of extreme opacity are present close to the vertebral border in the region of the hilum, these are probably partially calcified lymphatic glands In some cases a small median heart is present, the so-called *cor pendulum*, and in very chronic infections there is flattening of the ribs on the affected side Rarely a large cavity or number of cavities with smooth walls have been seen, usually in the lower lobes, these contain fluid and air, but the tuberculous nature has not been demonstrated at necropsy

Secondary Tuberculosis—Tuberculosis of lungs and pleurae secondary to tuberculosis of spine or ribs is usually of the bronchopneumonic type

Differential Diagnosis

1 The apparently normal variations in extent and density of hilum shadows, clearness of parenchyma, tree-like branchings due to shadows of bronchi and their accompanying vessels, are very great

2 The variations which may be pathological are still more numerous, these comprise (1) The increased hilum and branching shadows which may persist for months after measles, whooping-cough, and influenza (2) Shadows in the position occupied by the thymus gland, these are curiously inconstant and a greatly enlarged gland may fail to produce a shadow (3) Deviation of trachea This is seen, on following the course of the shadow of the trachea downwards, as a sharp kink either to right or left, but more commonly to the right, followed almost immediately by another kink in the opposite direction, which brings the shadow into a line parallel to its former course This occurs near the level of the second dorsal vertebra, and is accompanied usually by an enlarged mediastinal shadow Possibly the condition may be produced by enlarged but invisible mediastinal glands

3 The lung pictures due to other pathological processes which must be differentiated from, or may obscure the lesions due to the tubercle bacilli, are:

Abnormal obesity patches of scleroderma
Splayed out rib ends in rickets
Pleural exudates.
Unresolved *pneumonia*; acute lung abscess, congenital atelectasis, bronchopneumonias due to other infections—for example septic influenzal etc
Syphilis of lung bronchiectasis fibrosis of lungs tumours—hypernephroma sarcoma chloroma

In the time allowed it is impossible to discuss each of these conditions, in my experience none of them produce the typical radiogram of bronchopneumonic phthisis In rickets the rib end shadows and the lack of aeration make accurate diagnosis difficult In acute lung abscess the history and the unilateral infection should suffice for a differential diagnosis, while in bronchiectasis the dense opacity, the altered rib angles, and the fact that it is unilateral and the median shadow is displaced towards the side of the lesion, indicate the likely diagnosis In septic bronchopneumonias the shadows of the lesions are neither discrete nor sharply defined

We have been unfortunate in not yet having secured a *post-mortem* examination on any case suffering from secondary tumours in the lung, but the examples seen differ from the bronchopneumonic type of phthisis in the lesser number of the lesions their larger size and indefinite edges, and in their marked tendency to produce pleural exudates

Summary

As indicated in the foregoing remarks, I believe the bronchopneumonic type "A" to be the most common form of pulmonary tuberculosis in children detectable radiologically, and that it produces the radiogram on which alone a diagnosis can be made with reasonable certainty

III.—C. PAGET LAPAGE, M.D., F.R.C.P.

DIAGNOSIS OF PULMONARY TUBERCULOSIS IN CHILDREN

ADOPTING Dr. *Riviere's* suggestion, I will state at the beginning that my remarks will deal with children of the age period 5 to 14. After a few references to severe pulmonary tuberculosis, I shall pass on to deal with the form which at the moment presents the greatest problem—hilus disease, be it only glandular or be it actual lung tissue disease.

The following figures given to me by Dr. Sutherland of the Public Health Department, Manchester, show that fatal pulmonary tuberculosis is diminishing, but that it does nevertheless often occur.

Pulmonary Tuberculosis. Primary Notifications and Deaths in Age Groups 5-10 and 10-15 Years.

Year	5 to 10 Years		10 to 15 Years	
	Notifications	Deaths	Notifications	Deaths
1917	152	20	165	42
1918	106	16	115	41
1919	118	19	120	26
1920	98	6	96	27
1921	104	7	99	18
1922	107	7	92	14
1923	103	8	84	18
Totals	788	83	772	186

My own impression, as a physician who sees both *in-patients and out-patients* at a general hospital for children, is that there have been fewer cases of severe pulmonary tuberculosis during the last ten years than during the previous ten.

During the earlier period, in a study by Dr. Man and myself of 150 consecutive autopsies on tuberculous children (150 out of 323 total autopsies), we found that 104 showed thoracic tuberculosis, 21 no gland disease, 21 no lung disease, 40 showed *cavity formation, more or less chronic, often with* secondary generalized changes, and 43 acute generalized changes. The surprise was the number with chronic cavities, and the numbers at age periods were 10 *under 2 years*, 11 at 2-5 years, 12 at 5-10 years, and 7 at 10-14 years. It is also to be noted that 83 had severe lung lesions. The school age may therefore be a resistant age, but severe pulmonary tuberculosis is not rare—or at least was not.

Dr. Riviere says that the wards are the places to see severe pulmonary cases. It is my practice not to admit such patients to a general ward for children, even with balcony arrangements they *are too dangerous to others*, and they need prolonged treatment for too long a period for the ordinary hospital. Cases *with sputum and tubercle* bacilli or with crepitations and signs of cavitation are advanced cases.

My remarks will be chiefly on the slighter and earlier cases of so-called hilus disease. Time will not permit me to give evidence of the high incidence of tuberculosis, but *it is so generally accepted that I need not do so.* With this high incidence there must be many cases never diagnosed, who make a spontaneous recovery, but many do not. We should therefore try to summon all our powers of observation to make the diagnosis as early as possible. What are the earliest symptoms and signs? First of all we find the child in a *toxic state*, there are other infections which cause a similar toxic state, such as rheumatism, influenza, etc., but of toxæmias, tuberculosis is the most common and a differential diagnosis can usually be made. The symptoms are as follows. The child is losing flesh and going downhill, *shows pallor, loss of appetite, and debility.* There is lassitude, the patient is always tired and sitting by the fire. Headaches are frequent and the child is moody and peevish. The mother may have noticed flushing in the afternoons, indicating rises of temperature, and night-sweats may occur. A chronic cough may have been present since an attack of *measles, whooping-cough*, or influenza. On inquiry it may be found that the child has frequent colds.

The following signs should be *looked for*. In the first place, there is usually a very striking loss of tone in the skin, in the muscles and ligaments, and in the system generally, as Sir Robert Philip says, the child looks "shabby." In the skin loss of tone is shown by a dry, dirty, dough-like appearance *with diminished elasticity*, by pallor, which incidentally does not always mean a great degree of anæmia, and by an excessive growth of downy hair. One can really form a pretty definite estimate from the first glance at the chest and the patient. In the muscles and ligaments loss of tone causes a giving way where an effort is needed to keep the structures in position. Scoliosis and flat-foot are the most common manifestation, and if examination is made for them they are found extremely often. Walking is an effort, and the muscles generally are suffering from toxic disturbance. Professor Lorrain Smith has pointed out to me that there are actual changes in the muscles due to toxins, and Sir Robert Philip states that "the tuberculous toxins seem to act especially on neuro-muscular structures. Their dystrophic influence is evidenced by the loss of sarcous substance and associated irritability of muscle." These neuro-muscular effects are in evidence long before a local lesion is apparent in the chest. The heart and blood vessels also suffer. An irritable state of the heart is present, and after an exercise test the pulse quickens unduly and takes too long to return to its normal. The general functions of the systems are all impaired for the *same reason—that is, the continual circulation* of toxins. Wasting is evident, and in thoracic infection the wasting is perhaps more marked at the back of the neck, in the upper arms, and between the scapulæ. Here also are the downy hair and the venules if present.

Having found all or some of these symptoms and signs we can place the child in the suspicious class and proceed to make examinations which point to tuberculosis, and to eliminate other causes of toxæmia. At this point it should be stated that the history of exposure to infection from a tuberculous person is very important. If *there is a* parent or relative or an attendant with tuberculosis in the house it is a very significant point; searching inquiries should therefore be made.

The tubercle bacillus may reach the lungs in other ways than by direct inhalation and especially in the case of the glands, but infection *from human sources* is so common and *in some cases so rapid that* it is difficult not to believe that the bronchial glands are infected from some source in the bronchi, just as the cervical are from the tonsil.

Having found our evidence of continued toxæmia, we next proceed to the chest examination by percussion, *auscultation, and other methods, such as the x rays.* We must remember that we do not expect to find crepitations, neither do we expect areas of dullness, except at the roots as *described* by Dr. Riviere. In the absence of decisive physical signs it is very important that examinations of *the chest*, and especially those of the x ray, must always be associated with the presence or absence of signs of toxæmia, the reason being that at the *roots* the areas of dullness to percussion or of opacity to x rays may remain in the case of a healed lesion. Consequently *there* is always the danger *of diagnosing a healed lesion as active* if reliance is put on slight changes to percussion in the chest or on the x-ray examination alone. On auscultation some points are of importance: harsh breathing, and especially cogwheel *breathing, should be listened for.* Cogwheel breathing may be heard at a base or at an apex in front, and is a very suspicious sign. It is sometimes accentuated by nasal breathing if there is *obstruction*, and *then the child should* be told to breathe deeply through the mouth. If this is done the abnormal breathing may be lessened, but it will not often actually disappear, though *obstruction does* accentuate it. D'Espine's sign of whispering pectoriloquy below the second *dorsal vertebra* when the child whispers "Three thirty-three" is another important sign of early trouble.

The interpretation of the x-ray examination is difficult, but if evidence of *enlarged glands can be made out*, or if woolly areas can be seen, and if at the same time the ordinary clinical examination and the symptoms point to

active toxaemia, then this examination is a most important one It confirms the cause of the toxaemia as tuberculous and also indicates the extent of the disease But by themselves x rays cannot always distinguish between active and healed lesions

The von Pirquet reaction does not distinguish active from healed lesions and is therefore of little use except in young children Even a negative result is not conclusive, because there may be no reaction in some active cases of pulmonary tuberculosis A reaction means that there has been a tuberculous infection at one time or another, and not that the present illness is tuberculous Faulty technique is a frequent source of error The sputum test is seldom of service, because we should, in children at any rate, diagnose tuberculosis and cut it short before it reaches the stage where bacilli are present in the sputum A final point in diagnosis is the reaction to treatment if the child steadily improves under the treatment which will now be briefly indicated, the diagnosis is confirmed

The great secret of success in the treatment of such cases is to take them early and treat them for a sufficiently long time We have to promote fibrosis and ultimately calcification, and both these processes take a long time We cannot promote fibrosis until we eliminate toxaemia, therefore our first effort is to eliminate toxaemia, and nothing is better for this than rest, physical and mental By rest we abolish strain, and, what is more important, we cut down toxaemia by lessening circulatory disturbance In addition we need air, sunlight, and, if possible, a sunny, breezy climate, even in town areas we can find breezy situations and use artificial light But first of all we need rest, much can be done even in town houses and town hospitals in the way of successful open air treatment if rest is enforced No doubt others will deal in more detail with the question of light and air Diet is also of great importance, a liberal protein diet often succeeds better than too much fat in the form of milk, eggs, cream, and emulsion These foods may defeat their own object by causing biliousness As a medicine nothing approaches creosote in its effect, even though it is so very nasty

Let me end by entering a plea for more schools for the child with mild thoracic tuberculosis The treatment is lengthy if fibrosis and ultimately calcification is to be complete Children's hospitals have other work to do than patching up these cases once a year The child spends its time in hospital or under treatment at home, but is always missing education, and later on the child may be an infective agent or at least a weakling We need residential schools for these cases on parallel lines to those for hip and spine cases These surgical cases have been dealt with first because their problem is the more obvious, but it is not any the more pressing

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IV—C W VINING, M D, M R C P

I WOULD like to express my thanks to Dr Riviere and Dr Suttie for their most able and important papers in connexion with this contentious and difficult subject

It is, I think, important that we should make some distinction between what we mean by a tuberculous infection and tuberculous disease We agree that infection with the tubercle bacillus is extremely common during childhood and, as Dr Riviere's figures show, by the age of 14 years 50 to 70 per cent react to tuberculin tests I take it that this means that over 50 per cent of the child population have had to mobilize their resistive forces against the bacillus The large majority defeat the bacillus, many so successfully that a macroscopic lesion does not appear, but others do not do so before a visible lesion of the gland has been produced It appears to me that the word 'disease" from the clinical standpoint should stand for a condition of ill health brought about by the toxins or the bacillus reaching the general circulation, or the effects of the local disease breaking down and producing local abscess formation

Whilst among children of school age local tuberculous disease is only too frequent yet I am one of those who are still very far from convinced that disease of the lung tissue is at all common during these years except in the form of more or less acute disease developing as a terminal event The problem which we are specially concerned with is the frequency of intrathoracic disease of a chronic nature sufficient to produce a state of ill health in a child of school age

Now there is here, I think, a danger of placing too much importance upon a tuberculous focus as the explanation of an existing state of impaired health If a tuberculous lesion is confined to a gland or group of glands—if as we say, it is strictly localized—it is hardly ever the cause of constitutional disturbance or any moment and will not explain constitutional debility of long standing For tuberculous disease to produce wasting, anaemia, listlessness, and debility that disease must be such that toxins are reaching the general circulation in considerable amounts, and when tubercle is strictly localized this does not take place If, therefore, in any case of impaired health it can be shown that the glands in the chest are infected with tubercle their presence is not necessarily an adequate explanation of the ill health unless active disease has already developed outside the glands, and in this case the child will almost certainly die

In the large majority of debilitated children even if 70 per cent of them have at one time been infected with tubercle, and even if some of them actually have tuberculous glands, their debility in the large majority of cases is due to chronic nutritional defects, chronic catarrhal dyspepsia, and chronic toxaemias arising from the bowel, the throat, or, in girls, the urinary tract That local tubercle if present, is a source of danger to them I agree, since there is always the risk—which, however, is not very considerable—of the bacillus getting free and setting up far reaching disease from which the child will probably die In my opinion the degree of risk is lessened or increased according to the frequency with which the cause or the child's debility is recognized and removed I feel that this point is of importance because the so-called pre-tuberculous child is treated so often with large quantities of milk, virol, and cod-liver oil, all of which frequently add to its digestive difficulty

As regards the frequency with which intrathoracic tuberculous lesions are present amongst the child population, I would like to ask Dr Riviere what proportion of school children of the cities show signs such as he has to-day described to us At the beginning of his paper he gave us some figures from Berlin and Vienna with reference to "structural lesions discoverable post mortem" amongst children, and these figures showed that during the age period 5 to 14 some 50 to 77 per cent of the cases had visible lesions Figures obtained from the post-mortem records of a children's hospital are of course of no value as indicating the incidence of tuberculous lesions amongst the child population of any community Knowing as we do the large proportion of cases of active tubercle that find their way to hospital, it naturally follows that statistics from a hospital source only prove that tubercle as a killing disease stands high amongst the causes of death, but they give us no idea as to the frequency of tubercle as a cause of death amongst the whole child population, or the incidence of the localized tuberculous lesion One can prove anything from statistics, of course, but I should like to put before this Section as briefly as possible figures that I have collected by an examination of the post-mortem records of the Leeds General Infirmary over a period of ten years they only refer to patients dying in hospital between the ages of 5 and 15 years At Leeds all cases are examined with the exception of a very small number indeed The records are carefully kept and the examinations are general, and although the cases are not all examined by the same individual yet the examination is always carried out by an experienced pathologist

I realize that there are already available statistics from several sources, including those brought forward some years ago by Dr Lapage, and the excuse I have for bringing mine before this Section is that they are compiled from the records of a general hospital, the causes of death being representative of all classes of disease, which is, I think, a point of some importance, as I think the figures are likely to represent the disease incidence of a community more closely than those of a special children's hospital

I also appreciate the fact that when tuberculosis is not specially looked for at autopsy small lesions may be missed, and therefore the figures I shall give you possibly underrate the frequency of the macroscopic lesion On the other hand, my figures are at least an accurate measure of disease likely to have caused signs and symptoms during life

During this ten years' period 563 *post-mortem* examinations were performed on children between and including the ages 5 and 15 Of the 563 cases 185 (32 8 per cent) presented tuberculous lesions, and in 98 (17 2 per cent) of the cases death had been directly brought about by tuberculosis Of the 465 cases where death had not been caused by tubercle 86 (18 6 per cent) had visible lesions Among the 465 cases there were 103 cases where death had been caused by accidents, and these, I think, are a fair example of the child population, amongst these 14 (13 5 per cent) showed *tuberculous lesions* Probably 50 per cent of these 103 children would have reacted to tuberculin if tested during life We are, however, specially concerned with intrathoracic tuberculosis Of the 563 cases 112 (19 7 per cent) had intrathoracic lesions, 18 of these were merely examples of miliary tubercle of the lung forming part of a generalized miliary termination In 83 (14 7 per cent) of the total cases lesions of the mediastinal glands were found, and in 64 of these the lesion of the gland was the only intrathoracic lesion present In 30 (5 3 per cent) of the total cases there were tuberculous lesions of the lung substance or pleura other than merely miliary lesions, and with or without lesions of the mediastinal glands Amongst the 465 cases where death was not directly due to tubercle 27 (5 8 per cent) presented intrathoracic lesions, 25 of them being lesions of the gland only Amongst the 103 cases of accidents 4 only had intrathoracic lesions, the glands only being affected

Considering the 30 cases which had tubercle affecting the lung tissue or pleura, miliary lesions only being excluded, the type of disease found in the different cases is as follows One case of acute tuberculous pleurisy, forming part of the termination in urinary tuberculosis, 3 cases with scarred apices, 4 cases with one or two small caseous foci of the substance of the lung, 7 cases with acute tuberculous bronchopneumonia, 8 cases with acute apical tuberculosis and early cavity formation, 3 at both apices and 5 on one side only, 7 cases of chronic tubercle with *acute disease around and comparable with the chronic phthisis of adults*—4 of these cases were over the age of 10 years, the youngest being 6 years So far as I could gather from the notes, there was no case of chronic lung disease starting from the hilus of the lung

As regards the cases showing tubercle of the thoracic glands, a considerable proportion—certainly more than half of them—had nothing more than a few recent foci in one or two of the glands, not sufficient to produce real enlargement of the glands Massive multiple enlargement *sufficient to produce a shadow at x-ray examination was the exception Of the 30 cases with lung tissue tuberculosis* more than miliary 12 had no disease of the tracheobronchial glands at all, 8 had quite recent and unimportant lesions, while the remainder had well marked tuberculization of the tracheo-bronchial glands

With reference to the possibility of making a diagnosis of tubercle affecting the glands at the roots of the lung, it is difficult to see how a localized group of infected glands in the root, say, of the right lung can produce a well defined area of paravertebral impaired resonance I understand Dr Riviere to say that this paravertebral dullness is not caused actually by the glands themselves, but by changes in the lung substance and *root* tissues in the neighbourhood of the glands While I have the greatest respect for the facts laid before us this morning, upon which I want to keep a perfectly open mind, yet anatomical *considerations make it difficult to see how this paravertebral* dullness can be brought about In an average child of school age the root of the lung lies slightly nearer the anterior surface of the chest than the back, and between the lung root and the percussing *finger over the back* at one side of the spine there is a distance of about three inches, filling up this interval there is the *voluminous* air-containing posterior lobe bordered on the inside by the bodies of the dorsal vertebræ *The root is therefore deep*, quite shut away, and covered over by a mass of lung One would have thought that an inflammatory mass or area *of collapsed lung* at the root, if it was able to produce impaired resonance over the back, would have done so in a more general way, being reflected, as it were, towards the back in a radiating manner and leading to an impaired note over a far more extended area than the paravertebral dullness described by Dr Riviere

As regards the x-ray evidence of tuberculous infection at the lung root, I, in common with many others, am continually being disturbed by the question as to what is within the normal range of shadow and what constitutes evidence of disease A short time ago I decided to have x-rayed after death children dying from disease affecting parts other than the chest, or from the results of accidents, and then compare the x-ray findings with the *post mortem* findings, and I should like to pass round some of these pictures I have so far only been able to procure five—too few to draw certain conclusions from, but sufficiently instructive perhaps to be of use in *this discussion*

I trust I shall not be thought to be trying to underestimate the dangers and importance of tuberculosis during childhood My object in entering this discussion has been to emphasize certain points in connexion with intrathoracic tubercle—namely (*a*) the danger of accepting the *post-mortem* records of a children's hospital as a measure of the incidence of terminal and localized tuberculosis amongst the child population, (*b*) the infrequency of chronic tuberculosis of the lung in children, (*c*) the doubtful possibility of being able to diagnose tuberculosis of the glands at the root by clinical signs or x-ray photographs, (*d*) and to emphasize the fact that the debilitated states of children, even when there is evidence of gland infection, are due to causes which in the large majority of cases have nothing to do with tuberculosis

GENERAL DISCUSSION

Dr CHARLES MCNEIL (Edinburgh) dealt with the clinical *type described by Dr Riviere—namely*, the school child, with or without cough, not seriously ill, and with no obvious signs of disease in lungs or pleurae This child was presumed to be suffering from thoracic tuberculosis, the disease *affecting the mediastinal* lymphatic glands and possibly also the tissues of the lung itself at the root The problem of the diagnosis of this deep-seated tuberculous disease was one that had perplexed and baffled a generation of physicians As an aid to diagnosis they had been offered a series of local signs—the Eustace Smith sign, the d'Espine sign, and the sign of parasternal dullness Each of these was occasionally present, but none was constant and reliable *Now Dr Riviere put forward a high claim for right-sided* paravertebral dullness as a cardinal diagnostic sign in mediastinal glandular tuberculosis Dr McNeil objected to this claim that it was not dullness but only impaired resonance, and therefore not easy to appreciate, and that there was already an area of physiological paravertebral dullness In his view too high a claim had been made for this new sign In many cases of this so-called tuberculous *school child, the diagnosis rested, not on any local sign in* the thorax, but on the general signs of malnutrition, together with a positive tuberculin reaction and the absence of disease in other parts of the body In such cases the diagnosis was only one of probability, not of certainty Some concluding remarks were made on the clinical value of the cutaneous tuberculin reaction Its chief value was in excluding tuberculous disease Where this reaction was negative they could at once cease to suspect tuberculous disease in the child under investigation Further, the test did not fail, as was often alleged, in cases of acute or advanced tuberculous disease, provided the test was properly performed and account was taken of late reactions

Dr F G CHANDLER (London) said that a physician to a famous children's hospital once told him that pulmonary tuberculosis did not occur in children, this was intended epigrammatically, but the statement could not be justified *Within the space of* ten years at the Victoria Park Chest

Hospital, where comparatively few children were admitted, he had been able to collect over 80 proved cases of chronic pulmonary tuberculosis in children from the ages of 3 to 14 (proved by the discovery of tubercle bacilli in the sputum), and 240 probable but unproved cases

Of the proved cases, 24 gave a history of symptoms extending over one month, 14 over six months, 12 over one year, 21 over two years, and 15 a long history with a sudden onset of severe symptoms

The predominant symptoms were cough, 72 cases, wasting 47 cases The next most frequent were haemoptysis, 14 cases, night-sweats, 11 cases He was, however, ready to admit that tuberculosis of this adult type might be uncommon in young children, but it *did occur*, and children could infect others He believed that tuberculosis of the mediastinal glands was common The seeds of the fully fledged disease in later life were probably sown in *infancy*, and the commonest situation of their long residence was in these glands Calmette (p 167, quoting G Hedren) gave a table showing that in 47 necropsies on tuberculous children under one year old the bronchial glands were affected in 100 per cent of the cases, and the mesenteric glands in only 57 per cent Repeatedly in making necropsies in all kinds of cases there was found evidence of old tuberculous lesions in the bifurcation glands, more commonly here probably than in any other part This being the case, it seemed reasonable to suppose that when this disease was active there existed symptoms, but it was just at this point that controversy was found That tuberculosis of the bronchial glands occurred no one *would dispute, but that it might* cause symptoms, spread to the neighbouring lung tissue, give physical signs, be diagnosable as hilus phthisis, and finally spread into the lung until it *reached the surface*, was regarded by many as a myth Kingston Fowler called it "shadows seen through a glass darkly," which was delightful as an apophthegm, but evaded the important issue

Absence of mortality did not imply absence of infection, *might it not be that* tuberculosis killed off all the most susceptible in the first year and then started slowly and insidiously on the rest? For many years the disease might be almost dormant The long chronicity of pulmonary tuberculosis was not sufficiently *recognized*, it might exist for ten or twenty years or even more, without a doubt it existed long before it caused haemoptysis, wasting, sputum, or night-sweats If, then, the *mortality* began to be appreciable at the age of 15, this was strong presumptive evidence that the infection began much earlier In diagnosis the following points were of *great help* A barking dry paroxysmal cough at night—often described by mothers as a croupy cough, vague ill health, fever, especially in the evening, night-sweats, *loss of weight*, or failure to gain weight There might be parasternal or paravertebral dullness, and Krönig's bands might be narrowed Whispering resonance might be heard loudly over the dorsal spines down to the fourth, fifth, or sixth This, d'Espine's sign, he considered of great value, though not absolutely pathognomonic of enlarged bronchial glands There might be functional systolic murmurs, but these were of *little help* in diagnosis Retraction of the lower lung border sometimes occurred, so that there appeared to be *impaired* resonance over one base There might be constant localized rales in any part of the chest, and the earliest stage of clubbing of the fingers the skin bordering the nail losing *the small* lines in it and becoming pink and shiny, while the nail bed became blue The more obvious signs included evidence of a small pleural effusion or when the lungs were *definitely* infected there might be the classical signs of dullness, crackling rales, and altered breath sounds

In making a diagnosis, other forms of chronic infection or toxaemia must first be excluded—for example, *B coli* infection of the urinary tract, infected tonsils and adenoids, and otitis media, and one must bear in mind the possibility of a foreign body in the bronchus, non tuberculous fibrosis, post pneumonic conditions, bronchiectasis, and tuberculous glands in other parts The smallest *particle* of sputum was worth examining but too commonly this examination was neglected Frequently no sputum could be obtained, and then an examination of the faeces might prove of value The faeces should always be examined for tubercle bacilli, since, under conditions where uninfected food was being taken, their presence was almost as pathognomonic of pulmonary tuberculosis as was tuberculous laryngitis X rays helped very little in establishing a diagnosis of tuberculosis of the mediastinal glands Whenever possible an x-ray examination should be made, to exclude in doubtful cases certain foreign bodies, and to reveal any spread of the disease into the lungs, moreover, in certain cases the hilus shadows were so dense that they must be regarded as abnormal There was, however, far *too great a tendency amongst many radiologists* to stigmatize all hilus shadows and striations as tuberculous, so much so that the constantly positive reports had become a jest

As regards treatment, a pure milk supply was necessary There were anatomical reasons why the mediastinal glands were the most subjected to bombardment by the tubercle bacillus, whatever its mode or site of entry, as Krause's experimental work had demonstrated It was impossible to believe that the bovine bacillus could not infect these glands Whether its long sojourn there—a sojourn perhaps of very many years—could effect a transmutation to the human type he could not assert, experimental evidence was against such a view, but no one, on the other hand, could assert dogmatically that such a metamorphosis was impossible

Dr Chandler was convinced that in every human case of open tuberculosis were diagnosed, and in every one so suffering—or so affected rather, for they might be suffering very little—saw to it that not one of their bacilli reached another human being, and that if a pure milk supply could be at once assured, then tuberculosis would be stamped out in a generation

Dr John A Watt (Derby) said that the most common form of pulmonary tuberculosis in school children was *hilar and peribilar disease* He agreed with Dr Riviere that a right-sided paravertebral dullness was the most constant and important physical sign in hilus tuberculosis It might extend out for two to three inches from the central line Left paravertebral dullness appeared later and was not so frequently seen The next sign in importance was d'Espine's whisper test In applying the test a number should be whispered and listened to either by the stethoscope or direct ear, when the characteristic tracheal echo might be heard downwards as far as the fifth to the seventh dorsal vertebra Krönig's areas could be mapped out with some precision in older children The venous signs on the front of the chest, or apical telangiectases, were of no value The sputum should always be examined by a concentration test If the whole film were carefully searched positive results would be frequently obtained *Screening of the* chest was never sufficient, a radiogram must be taken, after the examination of the sputum it was the most important aid to diagnosis Hilus disease *in children was benign*, the activity covering a period of twelve to eighteen months, and nearly all recovered *It might smoulder* for years, spreading further into the lung, and waking into slight *activity with each fresh catarrh* There was accumulating evidence that some of *these patients developed the adult type of disease and died in adolescence* Of 116 sanatorium patients, 56 *(nearly 50 per cent)* had a few tubercle bacilli in the sputum After an average period of four years there had been one death The adult types of fibrocaseous or fibroid *pulmonary tuberculosis, rare in infants*, became more common about the age of 12, and increasingly frequent thereafter They gave little difficulty in diagnosis, for the signs resembled those found in adults, and tubercle bacilli were nearly always present The mortality was very high—75 per cent were dead after an average period of three years Public money was being spent on dealing with the end-products of infections contracted in infancy The average duration of the disease from infection to death might be put at fifteen to twenty years The time was approaching for a reconsideration of the whole question, but no one could doubt the wisdom of

searching out cases of early pulmonary tuberculosis in children and treating them in sanatoriums

Dr Eric Pritchard (London) regarded the methods described by Dr Riviere and Dr Suttie as very valuable aids in the diagnosis of pulmonary tuberculosis and enlarged bronchial glands in children, but neither of them was readily available for the average practitioner This was of little moment, since they had such a valuable and reliable means of diagnosis as the reaction to the subcutaneous injection of tuberculin For many years past he had made use of this test in all doubtful cases, and he had been well satisfied with the results, the method was simple and free from danger In mild cases there was merely a slight constitutional reaction with rise of temperature, or a fall of temperature followed later by a rise, but in cases in which there was serious or extensive disease there was a focal reaction as well For the diagnostic test he almost invariably used Koch's old tuberculin, it was, however, important to remember that though there might be no reaction to tuberculin of human type, there might still be one if bovine tuberculin was used He agreed with Dr Vining that it was important to distinguish between malnutrition which predisposed to tuberculosis and malnutrition which was its result Most extensive tuberculous lesions were compatible with what appeared to be a perfect condition of nutrition The problem of tuberculosis was its prevention and not its cure Prophylaxis might be specific or non-specific, with respect to the latter, all such matters as housing, feeding, fresh air, sunshine, and exercise must be taken into consideration With respect to specific prophylaxis, they had to attend to the prevention of the conveyance of infection by appropriate means, and they could render the tissues relatively immune to the growth and development of the tubercle bacillus by the systematic injection of the appropriate antigen He believed that there were very few physicians in this country who had attempted prophylactic inoculation against tuberculosis Dr Crofton had practised it for many years, using his own specially prepared antigen Dr Nathan Raw had also recently made use of attenuated cultures of the living bacillus For the last thirteen years or so Dr Pritchard had used various tuberculins for this purpose, and he was now using Dr Crofton's tuberculin His series of cases was not a large one, for it was very difficult to persuade parents either to submit their infants to the treatment or to persevere for the length of time during which it was necessary to continue the inoculations—namely, about six months, with weekly inoculations Of the forty cases (all babies) in which he had completed the course of treatment all were alive, and the oldest child was 12 years of age The cases had all been infants who had been exposed to a dangerous environment of tubercle, either the father or the mother suffering from the active disease At the end of six months' treatment these infants could stand very large doses of tuberculin without giving any violent reactions, so large, indeed (in the case of certain tuberculins no less than 1 mg.), that it was highly improbable that any accidental or fortuitous infection even with massive dosage would cause any serious trouble He believed that the systematic inoculation of infants predisposed to tuberculosis or living in a dangerous environment was the real solution of the tuberculosis problem

Dr E E Prest said that the number of cases with infection was large, but the number with serious clinical symptoms was small In Ayrshire no patient could be admitted to a sanatorium without notification When these patients wished to get insured or go abroad years afterwards they were asked to say whether they had ever been in a sanatorium It might be as well to call sanatoriums by some other name to avoid prevarication It was a serious thing to be notified if this was to be carried through life It caused a stigma to be cast on patients who were often in better health than many other people Some insurance companies would not even take cases which had been exposed to infection until two years had elapsed

The President (Dr Leonard Findlay) also took part in the discussion

SECTION OF PUBLIC MEDICINE AND INDUSTRIAL DISEASES.

Herbert Jones, L R C S I, D P H, President

DISCUSSION ON INDUSTRIAL WELFARE.

OPENING PAPERS

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The giant was left behind it many legacies and whilst most of them have proved to be of a very unwelcome character there are undoubtedly some which show well marked indications of becoming exceedingly valuable to the legatees It certainly taught a very valuable lesson by showing how, in spite of the hugeness of *modern mechanical and scientific* equipment as used both in warfare itself and in the home preparation of war material, the human factor must be taken into account in the achievement of results It was the high pressure under which war industries were carried on, coupled, of course, with the long hours worked, that brought home to the national management the fact of the human machine being just as much liable to wear and tear and breakdown as the iron machine, and equally in need of being kept in good running order or alternatively being laid up for repairs What we now know as industrial welfare, which had hitherto been regarded as a suitable and interesting experiment for philanthropic employers, was thus shown to be a practical proposition of general application, and may be said to have been handed over to British industry by its sponsors, the Health of Munition Workers Committee, as a going concern It is undoubtedly a legacy of value, the real extent of which the future will reveal It will help to an appreciation of its real significance to know that the twenty-five whole-time welfare workers of pre-war days swelled to 800 female and 150 male supervisors during the height of war production, and that there are probably now some 600 to 700 supervisors in industry

The rapid rise to prominence of industrial welfare is certainly one of the marked features of the present time, and, as its advent involves the practical application of many principles of industrial hygiene, some discussion by this Section of its merits as a factor in the combating of industrial ill health and unfitness should prove of interest, not only to the profession, but to those outside who look to it for guidance

I must first endeavour to explain as clearly and as simply as possible what I understand by the term 'industrial welfare" To my mind it covers the devising and functioning of ways and means for bringing about and maintaining an improved standard of health, vigour, and well-being among those engaged in industrial pursuits This may not be considered a sufficiently broad view of the subject, but being a medical one is necessarily not taken from quite the same angle as would be the case with the employer or the welfare worker The employer does not look on welfare as purely a health question To him it has a very important economic aspect as well, though it must be admitted that this is mostly relegated to a subsidiary position in this country An employer is, however, bound to realize that a healthy and contented worker will stick to his situation longer, do his work better, and lose less time than one of the opposite variety A statement made by Professor Collis in the course of an excellent address delivered at the Glasgow meeting of the Association has a remarkable bearing on this phase of the question It was to the effect that industrial medicine, if properly applied, could bring about an annual saving in labour turnover of from sixty to seventy millions sterling, in lost time of fifty to sixty millions, and through industrial convalescence of many millions more Making what he considered to be a conservative estimate, he assessed the total possible saving to industry at £140,000,000 a year These figures are staggering, of course, but we may be quite sure that Professor Collis would not have published them unless he had been perfectly satisfied about his basic facts and figures

In America the economic aspect would appear to be paramount, but the results of the extensive schemes for health and social betterment necessarily benefit the workers as well as the shareholders According to Professor Sand[1] the National Cash Register Company, in 1892, noticing that a big proportion of their products were being returned on account of faulty construction, looked into the matter, and came to the conclusion that the root cause should be ascribed to the depressing conditions under which their employees lived They started gardens, dining rooms, schools, playing fields, sports, etc, and the work improved beyond anything they had hoped for This author also cites the case of the coal and steel production at Birmingham (Alabama) as typical of the American standpoint These products were first worked by nigger prison labour at little expense in the way of wages, but the results were so bad that free labour was substituted As the new workers had to lodge in the filthy and uncomfortable quarters of their predecessors the output was still behind In 1913, *purely with the object of improving production*, says Dr Sand, a big scheme of reforms was instituted, including housing, clubs, schools, hospitals and dispensaries, fresh water supply, baths, cloakrooms, and gardens, and this proved so effective that the output improved in quality, volume, and steadiness, and both wages and dividends increased The extent to which some of the big American firms push their social betterment schemes is extraordinary, but there appears to be no doubt that experience has taught them that their other great paying system of scientific management cannot be satisfactorily worked without the additional advantages of the social venture All those who have adopted such schemes declare the annual cost against turnover to be remarkably small, and are quite emphatic about the increased profits produced These projects in the United States are purely voluntary, and Dr Sand tells us that out of the thirty-eight millions of industrial workers over there eight millions are under some degree of medical supervision[1] The industrial physician is quite a factor in the profession Some of the universities, notably Harvard, have taken up research work in industrial medicine, and carry out special courses of training for medical men desiring to adopt this branch of the profession as a definite career

Industry is not quite on the same plane in this country as in America The huge mass production factories over the water do not require their workers to be skilled tradesmen, but take the raw material, in many cases fresh to the country and speaking several languages, and allocate to each individual the particular sectional work suitable to his physique and abilities Scientific management looks after the quality and quantity of output In this country the workers are trained in definite occupations, so that this class of scientific management is scarcely a feasible proposition Nevertheless, the proper recognition of the human factor in production is making distinct headway, and, as previously mentioned, many firms have taken up welfare Some of them have been carrying out a full medical and social programme from pre-war days The principal exponents are, however, mainly to be found in the luxury trades, but this in itself shows, to my mind, that the creative reason had nothing to do with multiplication of output, but belonged rather to a desire to have a clean trade carried on under the best hygienic conditions, by a healthy, well ordered, contented, and cleanly set of workers The impetus has not been of the commercial and money-making variety, but may be ascribed rather to a desire to spend money philanthropically, and these particular trades have, fortunately, been well able to afford the expenditure

The systems evolved form fine object-lessons for those who wish to emulate them, and well merit the closest study They start with the basic principle that the healthiest work is that carried on in the fresh clean air of the open country by placing their factories well outside the big towns, housing their departments in separate, well spaced out buildings, providing light, airy, and systematically ventilated workrooms, with scientifically designed artificial lighting arrangements, excellent and ample sanitary accommodation, and the best washing facilities, including baths, are to be found Cloakrooms, canteens and messrooms, rest room, first-aid and ambulance rooms, are part of the usual equipment A whole-time medical officer in a well fitted up department examines all employees on engagement, attends to accidents and sudden sickness, is available for advice on symptoms attributable to working condition, and supervises the general and particular hygienic arrangements of the factory In some cases he attends those under 16 years of age at their own homes A whole-time dentist examines the teeth of newcomers, attends to dental emergencies, and pays particular attention to the teeth of those under 18 years of age It is also usual to find an up-to-date nursing scheme Outside the factory buildings are flowers, trees, shrubs, grass lawns, tennis courts, and bowling greens, as well as cricket and football fields Halls, libraries, and swimming baths are also in evidence, and most, if not all, the firms referred to have developed their own housing schemes on modern lines Special efforts have been made to develop a works "spirit" among the employees by getting them to elect their own committees, both for works purposes and for social efforts All grades, from workers to managers, act on these committees, which are popularly elected and are given full control of the affairs which are assigned to them to manage One well known firm allocates £2,000 per annum to a social welfare fund administered entirely by one of these committees

These are, of course, the ideal schemes from the point of view of the medical hygienist, involving as they do the practical application, to a high degree, of probably every known general principle of industrial hygiene and being subject to expert medical guidance throughout

Many firms who are not able, for perfectly good and mostly obvious reasons, to establish these complete schemes for securing health conditions in industry, have found they can do a great deal in the direction of welfare, even though compelled to proceed on modified lines It is this class of firm which provides the greatest scope for the operations of welfare supervisors, and it is really marvellous what these workers are able to accomplish in the way of amelioration of adverse conditions in the factories concerned The obligations taken up by welfare workers vary in nature, extent, and degree in different factories and industries They may be limited to first-aid, investigation of sickness and accidents, home visiting of the sick, attending to the carrying out of the certifying surgeon's directions contained in certificates of fitness, and the acting as general adviser and counsellor to the workers, or they may be very extensive indeed The work is mostly taken up in factories employing female labour, so that consequently the posts are mainly in the occupation of the same sex There are, however, some highly successful schemes in charge of male supervisors at works employing men and boys, these including ironworks and shipyards Although the greater part of the work has relation to industrial hygiene, industrial medicine, or industrial psychology, the welfare supervisor looks upon her operations as coming more within the scope of industrial sociology The production of comfort and well-being, the counteraction of monotony, the easing or otherwise irksome restrictions, the promotion of safety measures, vocational selection in accordance with mutual suitability, time and motion study, selection of dietaries, fixing of rest pauses, the acting as intermediary or connecting link between employer and employed, the supervision of cloakrooms, rest rooms, washing and sanitary arrangements, and of canteens, the establishment of social functions and games, the running of works committees, and a general effort to establish what is known as a "works spirit" among all ranks of the employed, are all examples of a very wide scope of duties taken in hand All of these have for their aim the dealing with employment from the human side, and for their efficient carrying out require a great deal of tact combined with a varied and extensive knowledge and experience It is therefore not surprising that the occupation of welfare supervisor should now be looked upon as particularly suited to the well educated and experienced woman or man The university graduate is highly favoured for the work, but either he or she, before taking up the appointment, is required to undergo special courses of study and practical training, and to pass an examination Courses of study and the attendant examinations have been instituted by the London School of Economics and by several universities These deal

with economics, economic history, social and political philosophy, psychology, public administration, industrial law, business organization, industrial structure and problems.[2] University candidates take a one year's course, and all others take a two years' course.

Some of the work, however, may be claimed to constitute a definite medical side of the duties. Every welfare scheme includes a first-aid equipment and mostly some provision for ambulance as well. This may be established in a separate room, in a part of the rest room, or occupy a space in a general welfare room which has to fulfil all purposes. If the welfare supervisor has a nursing qualification, as not infrequently happens, the equipment and its housing are usually quite good. Most commonly the supervisor, however well qualified in economics, social philosophy, and such like subjects, has only the backing of St. John Ambulance or Red Cross certificates to indicate proficiency in first-aid and nursing. The accommodation, fittings, and equipment are thus very varied, as could only be expected where previous experience in a well arranged ambulance room has not been the lot of all these ladies. Most of the firms taking up welfare make the mistake of not seeking medical advice in the designing and equipment of their first-aid rooms. It would certainly pay them to adopt such a course, and if not caring to consult a practitioner in the neighbourhood it would be very easy to ask the certifying surgeon, during one of his ordinary visits, to plan out the requirements suitable for the particular factory. It must be realized that the first-aid experiences of a welfare worker are not by any means limited to the dressing of wounds and the application of boracic fomentations. She has naturally to deal with frequent menstrual emergencies—such as faintings, headaches, dysmenorrhœa, and hysterical bursts—wherever female labour is largely employed. Again, when she has succeeded in one of her principal aims—namely, to gain the confidence of the workers—it soon becomes a custom to consult her on any ailment which arises, either in the course of the work or otherwise. She may administer a palliative such as sal volatile or effervescing citrate of magnesia and recommend a visit to the panel doctor, but as the establishment of such a custom opens up an avenue for obtaining valuable information respecting the influence of trade processes on health it appears to me a pity not to make better use of it. There are other cases, such as workers returning after illness, where it must be somewhat difficult to decide on their fitness for resuming employment, and workers repeatedly staying away for apparently insufficient reasons present similar difficulties. There are also cases of physical defect, apparent ill health, or the effects of fatigue detected whilst carrying out routine duties in various parts of the factory.

Where there is a whole-time works doctor these practical difficulties which face the welfare worker in sole charge would not arise. But industry is not carried on in this country on anything like the lines laid down in America, and I am satisfied that the industrial physician will never be wanted here to anything like the same extent as across the water. The bulk of factory work in this country is particularly suited for the activities of the really purely British innovation, the welfare supervisor, who it has been proved can look after the human element in a highly satisfactory manner.

I think I have shown, however, that welfare work as carried out in British factories requires supplementing by a certain amount of assistance from the medical profession. I have gone very carefully into this matter, and may I say here that one of the most pleasing features attending my task has been the very willing and welcome help accorded to me by the principal officers of the Welfare Workers' Institute? You may, therefore, take it that what I have to say on the subject has the full support of welfare workers themselves. It is perfectly competent for any employer who has adopted welfare to obtain just as much or as little part-time service from a medical practitioner as may be requisite to ensure the proper working of his scheme. From my own experience I can say that a great deal can be accomplished in the required direction during attendances of an hour's duration once or twice a week. First-aid of all kinds is placed under proper supervision. The right appliances, drugs, and dressings for the particular industry and the particular factory can be provided and kept up to date, and the welfare supervisor will be able to carry out the various first-aid treatments under the direction of a competent adviser. Cases of doubtful fitness for resuming employment after illness, and loss of time through alleged sickness, can be looked into. An arrangement of this kind very soon causes the establishment of a small clinic, not only from the supervisor passing on cases requiring a medical opinion, but through the workpeople taking advantage of the doctor's visit. Medical treatment should not be undertaken, and really there is no call for it, the applicants are quite satisfied on being told they require treatment and should see the doctor. The value of this part of the system can perhaps best be illustrated by examples such as the following. Quite recently a welfare supervisor at a cotton mill referred to me two men from the card-room who had the well known dust symptoms peculiar to strippers and grinders. One was a stripper and grinder who was carrying on his work with a defective stripping brush cover, and the other was engaged in emptying the "dirt" boxes beneath the machines. Repair of the stripping brush cover in the one case, and the supply of a suitable respirator in the other case, met the requirements and resulted in the disappearance of the symptoms. Another man, at the same mill, came to ask me if he was suffering from cotton-spinners' cancer, and went back to his work a much happier man on being assured that such was not the case. At another works I was able to find out that a man was being regularly doped through working at a process believed by the firm to be quite harmless. There are also matters of hygiene upon which the supervisor is required to keep a vigilant eye and on which a little technical advice in season is very welcome.

Where a considerable number of young people are employed and the certifying surgeon is already making regular visits for the purpose of examining these, the practice of asking this officer to undertake this particular medical branch of welfare work is steadily gaining ground. In districts where factories are few, arrangements of this kind work out very well, but in large industrial districts the capacity of the certifying surgeon for taking on extra work is distinctly limited. If, therefore, the system spreads, as it appears likely to do, it seems to be somewhat obvious that prominent industrial areas must either have more certifying surgeons or the extra work must be more generally undertaken by the general practitioner. The advantage of employing the certifying surgeon is due to the welfare supervisor being required to give special care and attention to the younger end of the workers. If she does not actually engage these young people herself she has usually a say in the engagement and the allocation to a suitable department, so that she is able to proceed on safe ground when made aware of the exact state of health of the applicant and the type of employment suited to an ascertained physical condition. Where an arrangement such as I have outlined is in operation the medical examination is more detailed than is required for ordinary Factory Act purposes, and particular attention is given to eyesight, teeth, and tonsils. In big industrial towns the applicants requiring special treatment can be referred to eye, throat, and dental hospitals, or under certain other conditions to a private doctor, but in all circumstances the welfare supervisor makes it her business to see that the medical instructions are carried out. A large firm in my own district, which has many mills and a plentiful supply of welfare workers, has made private arrangements with an ophthalmic surgeon for special examination of all eye cases referred to him by the certifying surgeon, and has, I believe, under contemplation the establishment of a dental department. A medical card is made out for every young person and is designed to contain all the necessary factory medical record up to 18 years of age, or longer if thought desirable. Re-examinations, both periodical and when specially ordered, are part of the system, as is usually the taking of heights and weights. In some cases arrangements are made for the visiting medical man to take first-aid and home nursing classes.

Although, as I have previously indicated, no one in this country thinks of regarding welfare from the point of view of increasing output, I have no hesitation in expressing

the opinion that, as practised, it is a distinctly paying proposition Contented workers will certainly do better work than discontented workers, but apart from this truism a well directed supervision over lost time and labour turnover must effect a very considerable monetary saving for any firm which gives the system a fair trial It has undoubtedly come to stay, and already promises to become one of the most important features of industrial reconstruction To what extent my views on the necessity for some degree of medical supervision or co-operation will be acted upon I am not prepared to say, I do think, however, that any employer who adopts them will not lose anything by doing so, whether he confines his venture to the visiting practitioner or extends it to include the ophthalmic surgeon and the dentist I think I should say in conclusion that I have considered it to be my proper policy in compiling these introductory remarks to endeavour to give you, in the first place, a fairly comprehensive idea of what is generally understood by industrial welfare, and for the rest to point out, to the best of my ability, the possibilities presented for useful service by the medical profession from the clinical aspect I have not dealt with the purely public health phase of the subject, or with its influence upon the research worker, or with the extent to which physiotherapy comes within its scope, for I have felt quite satisfied that those who are to follow me will amply cover any deficiencies of mine in those directions

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WELFARE is an Anglo-Saxon compound meaning well-doing or well-being, industrial gives its special application Industrial welfare suggests that there is such a thing as its opposite, unfortunately, this is too true A slight modification of Burns's famous lines expresses the result of such action, or want of it, "Man's inhumanity to man makes countless thousands mourn"—that is, "miserable" There are still men who make no pretence to observe the common decencies of life in the workshops and factories controlled or owned by them, in the matter of cleanliness reasonable spacing and lighting, and sanitation Such social pariahs should be given short shrift when discovered by the authorized authorities A fair number are engaged in the sweetmeat and baking trades, and in their case the adage applies, "What the eye sees not, the heart grieves not" That welfare is required in cases like these goes without saying

The same may be said of all unhealthy and dangerous trades Here, also, it must be confessed, there are employers who sin against the light, and who find Balaams to bless what they ought to curse But with regard to the employments where the employer provides proper and healthy conditions, is there any need for so-called industrial welfare? The answer is both No and Yes

For all adult men no further welfare is needed than to provide proper working conditions (including hours of labour), and to pay the best wages compatible with economic demands, but always above a basal living rate To these may be added, payment for holidays (after all this is only a matter of adjustment), for all those in regular employment for one year or six months Any further excess profits may be distributed as a bonus The adult male is of age, and should make or mar his own life, so far as the community of which he is a part will permit him It is probably not advisable for him to be bound in his amusements to his workmates In such a case he is in much the same position as the young man of the family who remains at home—parental control is apt to repress his self expression and self realization Let him get out among his fellows, with their different experiences and there develop, for good or ill, the mettle that is in him

If our young man gets married he will find for some years at least that the home demands will make calls on most of his spare time, and welfare in the shape of recreation grounds may have little value for him during that time Besides, his school may have provided him with facilities which attract more, and from such a cause he may be lost to the other provisions All of these are arguments for the conclusion that, with the exception of a firm in a township which it has created, the provision of certain facilities is supererogatory Rather let groups of firms collaborate to secure certain public playing fields, with pavilions, excellent public baths and clubs, and public amusement halls, all under some joint control, and they will have served the community as a whole The provision of facilities for enjoyment of rest and recreation during the long winter season should receive more attention, at present there is only the amusement caterer to look to With the better housing of the people and the appeal of "wireless" ordinary home enjoyments will be rendered more attractive, but there will always remain that restlessness for change which is a characteristic of human nature, and therefore of all classes, to meet this some of the provisions mentioned should be made Take the case of baths, what stodgy affairs are the ordinary "public baths"! It will be objected that the newer houses have baths Yes, when the water is hot Many people get into the metaphorical 'hot water" by suggesting a bath when the occasion does not suit the domestic queen or when economy in coal or gas is in the ascendant But even though the fates are propitious how plain is an ordinary bath compared with the luxury of a bathing room, with its hot and cold sprays, its douches and its needles Many of our school children have already experienced these, but have to forgo their continuance from lack of opportunity The provisions need not stop at baths, there are gymnasiums and other things, for it is useless to ignore our climate, which especially in recent years has washed out most outdoor sports and pastimes, even in summer

The "Yes" answer refers to young persons, and to some extent to adult women With regard to young persons, industrial welfare is not only a praiseworthy and admirable action, but may be claimed to be a necessity In times of industrial activity the school boy or girl of (at present) 14 years of age is, within a few weeks of cessation of school attendance, entered on a new sphere of action The whole conditions are changed From attending school from 9, 9 15, or 9 30 a m to 12 30 p m, with a break for play and "piece" at 11 a m, the midday meal 12 30 to 1 30 p m, afternoon session 1 30 till 4, with a play break at 3 o'clock, the young person is switched on to hours 7 30 or 8 a m until 12 noon, or 12 30 or 1 p m, commonly without a break for rest or food, followed by an afternoon period of four, four and a half, or five hours, with or without a break These young people are at an important stage of their development into manhood and womanhood The boys have just begun the final spurt in their growth in length and bulk, which is notably shown between the ages of 13 and 17 years The girls are nearing the end of their rapid physical development, which in this country seems to take place between 11 and 15 years, and in their case the accompanying sexual changes are more obtrusive than in the male and more associated with physical and psychical phenomena

These facts suggest to the industrial student that there is room for supervision in the engagement and employment of young persons—in other words in their industrial welfare No doubt, in the domestic factory or workshop if the employer is gifted with kindly human nature any difficulties likely to crop up can be readily adjusted, but in the large modern factory, where systematization and organization are the watchwords, there is a definite need for an officer with executive authority whose duty it is to see that the necessary adjustments are made in the case of the young persons employed and who becomes experienced in solving the problems that arise and in forestalling their occurrence That officer is the welfare worker, and in large factories he or she, or he and she, assume all the duties formerly dispersed among the personnel of masters, foremen, and gatemen, by whom the raw material was added to the list of employees in the shape of apprentices and assistants Into the qualifications of such officers I do not propose to enter choose them well, and having done so and proved their value, trust them thoroughly and treat them well Far better for a firm

to avoid welfare work, if they are not convinced of its necessity, than to embark on it half-heartedly and with a disposition to carp If they do embark on it, let it rather be with a conviction that they are aiming at getting something of value, though intangible, and only visible to the eye which brings with it the power of seeing, though possibly accompanied by other values, to be seen and known of all men and women

I have stressed the fact that these young people are passing through an important phase in their physical development I wish to add that without any organized welfare department they are deriving much benefit from their absorption into the industrial system This is testified to by many It seems to be due to the fact that as wage-earners their allotment of food is increased and more nearly equals their growing needs I know that this is a two-edged argument, the other edge being that these children, previous to starting work, are underfed or partially so *Unfortunately, this is the case,* especially in the elder children in large families A boy of 14 will eat as much as the average woman, which is eight-tenths of the amount required for the average man doing moderate work, a girl, about seven-tenths, a child of 10 to 13 years, about SIX-tenths, 6 to 9 years, five-tenths, 2 to 5 years, four-tenths, and under 2 years, about three-tenths With a number of mouths of varying ages to feed, and none of the children working, and the worker's wage much the same as when he started housekeeping, it is easy to believe that the proportion of food allotted to each person in the household will be under, rather than over, the necessary amount Hence the great improvement seen when the household funds are increased ever so little by the first child's earnings

These and other matters worthy of careful study (and in some cases already receiving it) make one a believer in, and an advocate of, industrial welfare for the young, and strengthen its claims as a necessity of the case—namely, the engagement and selection of workers, supervision of young persons, arrangement of food and rest pauses, the supervision of first aid, and the keeping of records

With regard to adult women also, there are many kinds of usefulness for a woman welfare supervisor One of the main services in welfare work lies in helping the workers to have various minor ailments and symptoms attended to, with in many cases their cure and removal These may seem small matters, but in the sum are of great importance

In welfare work thus carried out we have a potent means of applying preventive medicine "Prevention is better than cure" When the worker has his or her various symptoms and minor ailments attended to on the spot, apart from the increased comfort and well-being, there is definite delay in the onset of, and probably total prevention of, industrial disease and decay

Summary

1 In all factories it is highly desirable that a definite scheme of welfare supervision should be in operation for all young persons

2 Where many women are employed the provision of welfare facilities is recommended

3 In dangerous and unhealthy trades welfare supervision for all adults should be compulsory

4 In food factories it is highly expedient that special welfare facilities should exist

5 Some degree of medical collaboration is necessary in all welfare work

GENERAL DISCUSSION

The President of the Section (DR HERBERT JONES), in opening the discussion, reminded his audience (amongst whom were a number of representatives of the large industrial firms in the neighbourhood, and several of them welfare workers, who had been invited to take part) that industrial welfare was no modern innovation, for the first Josiah Wedgwood carried it out in principle at the end of the eighteenth century, when he built houses and established in open-air swimming bath for the benefit of his employees His biographer, Llewellyn Jewitt, wrote "To be comfortable himself he must know that those around him were comfortable also, to be happy he must impart happiness to others, even to the most lowly of his employees, to sit at ease in his own new home he must know that those he employed were well and cosily housed He therefore set about building a village for his workmen and their families"

DR DAVID MCKAIL (Glasgow) thought that Dr Dearden's paper would be most helpful in settling the spheres of duties of works medical officers and welfare supervisors He agreed as to the necessity of having the supervisor acting in conjunction with the medical officer He could not speak from personal experience as to the American situation, but he would like to draw attention to one vital difference—namely, that here we had the workers insured for medical treatment, while there no such insurance was in vogue This made welfare work, in its medical part at least, an additional cost in this country No doubt it was with this in his mind that Dr Dearden recommended that the welfare doctor should not undertake treatment, but confine himself to the giving of advice, any treatment required being sought for in the proper quarter

DR G T WILLIS (Carlisle), speaking as a whole time works doctor, commented upon the expediency, convenience, and economy of having a doctor on the spot to attend to emergency work In doing this he did not trespass upon panel practice at all, for the panel doctor received his capitation fee in any case while the works doctor did the work, but it was necessary to have a satisfactory welfare system in order to gain the full advantage of having a doctor stationed at the works In his opinion where the employees numbered 2,500 or over it paid to have a works doctor, and there was an immense saving in time, sickness prevention, and voluntary absenteeism—the bugbears of all big industrial undertakings Further, the welfare department took up the young person of 14 to 16 years of age, a critical period of life which was not provided for in the big national schemes, it also looked after the injured and mutilated worker, and prevented him "going down the line" and ceasing to be an economic asset to the community

DR T W SINCLAIR (Melbourne, Australia) said he could hardly venture to accept the President's invitation to criticize, as he had come to learn He had great admiration for the work that was being done in this country, and during his travels in America he had noted that they looked to Great Britain for guidance in this as well as in other matters of public health He was interested to know that the foundations of industrial welfare had been laid so long ago by Josiah Wedgwood, and he thought the work could be rendered much more effective if those concerned in it agreed on a certain scheme and concentrated upon it

MR G ARMSTRONG (Bradford Dyers' Association) took up the subject from the employer's point of view Welfare work should commence with the young worker Young people of 14 to 16 years of age were not overlooked, for there were two Acts of Parliament dealing with them—namely, the Choice of Employment Act (1910) and the Fisher Education Act of 1918 These Acts should be put into operation, and the school medical and educational record should follow the young worker into the factory The doctor could be of great use in industry in the sphere of young workers, but welfare work of this kind could only be successful if done with the fullest approbation of the workers themselves

MISS SHUTE (Chief Welfare Adviser, Messrs Lister and Co) thanked the Section on behalf of the supervisors present for associating them with the discussion She felt that the movement would greatly benefit by the honour paid them She asked for consideration to be given to some compulsory method of dealing with young persons below insurable age, as that was the period when deterioration became so apparent, and seemed such a waste after the education authority had done so much for the health of the school child

Mr R J MACKAY (Bradford Dyers' Association, Ltd) entered a plea for closer co-operation between the medical practitioner and the industrial psychologist with regard to the elimination of "industrial misfits" Certain firms were experimenting with vocational tests, psychological and physiological, in order to evolve more scientific methods for the placing of industrial personnel Optical services for the benefit of the workers on processes demanding close eye-work and appreciation of colours were much needed Both mental and physical qualifications of the youth required, and should get, careful and systematic attention Let those responsible for these two fields of vocational diagnoses hold themselves in readiness for closer and more effective co-operation As an example of what had happened he quoted the experience of a certain engineering firm that found only 50 per cent of its apprentices "made good," and regarded this as "fairly satisfactory," while another firm had spent four years trying to instil the principles of dyeing into a person who proved to be colour blind!

MISS KERR (Supervisor, Ricketts, Ltd) raised the question of the attitude of the general practitioner or panel doctor towards putting boys or girls on the insurance in order to enable them to be sent away to convalescent homes in cases where such a stay might avert a breakdown or serious illness

Dr W CRAIG promptly answered that no conscientious doctor would give a sickness certificate merely in order that the boy or girl should have a holiday, but if it was clearly for the benefit of their health he would certainly do so He also inquired what were the duties of a full time factory doctor, and whether he had any supervision of the home conditions, dietary, etc, and, conversely, what was the attitude of the worker towards the employer paid official doctor?

Dr J JENKINS ROBB (Bournville), formerly medical officer at Cadbury's, expressed himself in favour of taking this work out of the hands of private firms and making it a national one The works doctor, he said, was apt to be influenced by his connexion with the firm, and he ought to be in an entirely independent position His experience had taught him that there was great need for care of the young person after the 18th or 19th year, because it was then that a falling off in health became marked, and after 23 to 25 years of age the decline was rapid This must be checked At the same time they must avoid anything of the nature of "coddling", the spirit of independence and self reliance must not be interfered with The medical man must protect the worker, who was rightfully fearful lest he should become a mere cog in the industrial wheel

Memoranda:

MEDICAL, SURGICAL, OBSTETRICAL

SPONTANEOUS RUPTURE OF THE HEART

THE following is a report of the case of an obese woman, aged 62, who had been an inmate here since 1887 certified as a melancholic and later as a dement On admission she was somewhat vaguely described as having 'heart disease' and a cardiac mitral murmur"

From 1895 until the day before her decease she worked in the laundry with the exception of four years (1915 to 1919) during which she was employed in the kitchens Part of her work in the laundry consisted in carrying buckets of coal a distance of twenty-five yards She enjoyed quite good health until recently but there is a note dated March 10th last stating that she was rather exhausted looking On July 10th she had gone to the laundry as usual he did not look well but in reply to the laundress said she was all right She ate a rather good dinner at midday but in the afternoon complained of feeling tagged and on sitting down and rested She appeared to be much as usual when put to bed by the nurse at 8 p m in a dormitory where she shared with seven other mental patients and which was visited every two hours by the night nurse Nothing out of the ordinary was noticed at the 4 a m round but on visiting the ward again at 6 o'clock the nurse found the deceased out of bed on the floor in a semi sitting posture apparently dead with head bent forward and face cyanosed I arrived a minute or so later and found no sign of life save what I thought was one slight sighing expiration when I raised the head and opened the mouth In the absence of signs suggesting cerebral haemorrhage I concluded that death was due to heart failure Unfortunately the other patients were unable to give a very reliable or even coherent account of what had taken place From what I could gather, however it appeared that he deceased had been noticed about 5 a m rolling on the bed groaning and evidently in some pain One patient saw her lurch out of bed later and fall on the floor, and endeavoured, though unsuccessfully to help her up

Post mortem Examination—The pericardial sac was found to be distended with blood clot surrounding the heart and slightly adherent The heart was enlarged and fatty (19½ oz) There was slight atheroma of the coronary arteries and also of the valves of the mitral cusp The left ventricle was enlarged and on the inner surface of its anterior wall was a mass of organized blood closely adherent to the wall and extending to the interventricular septum Opposite this mass on the external surface of the left ventricle was a small irregular perforation, but no apparent aneurysmal dilatation was present although the ventricular wall appeared thinner here than elsewhere Evidently there was leakage of blood for some time prior to death and the gradual stretching of the pericardium was probably responsible for the pain experienced shortly before death There was slight dilatation of the aortic arch and early atheroma was present and there was also advanced atheroma of the circle of Willis The kidneys weighed 5½ oz each and were granular and fatty but the capsules stripped fairly easily The liver was large and congested, weighing 59½ oz, and the lungs were emphysematous

A Wassermann reaction was never taken in this case but it is improbable that she had ever had syphilis

I have to thank Dr Bartlett, the medical superintendent, for permission to publish the case

E R GILMORE, M B, Ch B Vict

Derby County Mental Hospital Mickleover

CAESAREAN SECTION FOR PLACENTA PRAEVIA

THE following case presented a somewhat unusual combination of serious complications

A primipara aged 34, was first seen by me in consultation when her pregnancy had reached the thirty fourth or thirty fifth week Her doctor had been called three weeks previously on account of a sharp haemorrhage from the uterus lasting only a few minutes, and which cleared up completely after a few days rest in bed At that time he noticed that her legs were a little swollen at the ankles, and elicited that she was a little breathless when going about her ordinary housework She was accordingly kept in bed from that time until three weeks later when I was asked to see her on account of a second profuse uterine haemorrhage two days previously Examination revealed an eight and a half months pregnancy with the foetus in the first vertex position the head was freely movable above the brim foetal heart 144 The mother had a very loud harsh double aortic murmur with well marked Corrigan and capillary pulses she was short of breath even when lying in bed and had to be propped up at night Pelvic examination showed central placenta praevia no portion of the os cervix being clear and a slight degree of generally contracted pelvis the true conjugate measuring about 3¾ inches Well marked albuminuria was present and the legs were oedematous below the knees

She was not bleeding at the time of my examination and it was just possible to pass one finger through the internal os Regarding the placenta praevia as the most immediately serious complication I had the patient removed to the Princess Mary Maternity Hospital to be under close observation In my opinion Caesarean section presented the only safe method of delivery even though the slight degree of contracted pelvis could be ignored owing to the relatively small baby The generally accepted teaching that Caesarean section for placenta praevia should be confined to those cases which are at or near full term or nearly requires modification as the scope of this excellent operation is widened Originally the operation was regarded purely from the standpoint of the foetus but there can be no doubt now that it should be performed in some cases purely in the interests of the mother In the case under consideration it was decided that the alternative treatment by packing and bipolar version would end all much more shock and haemorrhage in a patient whose heart condition was ill fitted to stand it than would a rapid Caesarean section Moreover the chances of the survival of the child were considered to be vastly better with the latter form of treatment

The question of anaesthesia then arose and spinal stovaine was considered but in view of the fact that any fall in blood pressure in the presence of a grave aortic lesion would be undesirable it was decided to employ ordinary careful open chloroform and ether, which in my experience has always given excellent results in the presence of valvular heart lesions Ordinary diminutive and dietetic treatment was started for the albuminuria and no active measures were adopted in the absence of any bleeding in the hope of gaining time and obtaining a less premature baby Thirty-six hours after admission however the patient had a third profuse haemorrhage necessitating immediate packing of the vagina and about half an hour later a rapid Caesarean section was performed under open chloroform and ether anaesthesia The ordinary upper segment operation was performed and there was little haemorrhage The placenta was almost entirely in the lower uterine segment A healthy male child weighing 6½ lb was delivered and the mother made a complete aseptic recovery and left hospital three weeks later

HARVEY EVERS, M B, M S, F R C S.

Newcastle-upon-Tyne.

Reviews.

THE HIPPOCRATIC OATH

THE beautiful print and general get-up of *The Doctor's Oath An Essay in the History of Medicine*[1] is an appropriate setting to the scholarly contents of the text by Mr W H S JONES, who is so well known in connexion with his view that malarial infection was the cause of the decadence of the Greeks, and is, it may be noted, bursar of St. Catharine's College, where Sir Norman Moore, who subsequently did so much to popularize medical history, was the undergraduate librarian As a scholar Mr Jones is a welcome and invaluable recruit to the historians of medicine, and our gratitude goes out to him for what he has done and what it is to be hoped he will do in illuminating the dark places of medical history The preparation of this small and much condensed monograph has involved the labour of collating more than thirty manuscripts It is shown that the document called "the Hippocratic oath" presents many problems, and so will always interest the historian of ethics as well as the medical profession

There are two versions of the oath—the pagan and the Christian, and the variants, especially of the Christian version, suggest that the document was widely circulated and underwent alteration more freely than the comparatively pure text of classical authors, for the Hippocratic writings were textbooks, the general sense of which was the important point, and not literary masterpieces Mr Jones, indeed, exclaims on the freedom with which the writer of the Christian oath has treated the original, and seems at a loss to find a parallel instance The existing manuscripts of the oath are enumerated and critically discussed, and translations of the two main versions and of their variants given, as well as some of the originals, among which special attention should be directed to two facsimiles of the Christian oath

The question of the operative clause, which does not appear in the Christian version, is considered in an interesting manner, the two interpretations, which are to the effect "I will not operate, not even for stone," and "I will not operate for stone," are very different in their bearing, from their being out of place in a context referring to moral considerations it has been suggested that there is a hidden reference to castration, Mr Jones, however, shows reason to think that this explanation is unlikely, and puts forward the suggestion that this clause was not in the original, but was introduced later to suit the prejudices of some physicians The other differences between the pagan and the Christian oaths are detailed, and among them the omission in the Christian version of all clauses tending to encourage a trade union leads Mr Jones to believe that this version of the oath was written in the early age of Christianity before the benevolent communism of its first devotees was forgotten These are but a few of the problems so ably and attractively treated in this valuable monograph

RADIOLOGY

THE first edition of *Radium, X Rays, and the Living Cell*, by COLWELL and RUSS, was published in 1915 It at once supplied a want that had been greatly felt by radiologists, the second edition[2] has benefited from the accumulated experience and publications of the intervening years, and concisely embodies the many developments which have followed since 1915 The scope of several of the chapters has been extended to meet the growth of the subjects dealt with, and at the end of the book the reader is presented with a summary of the views held regarding the action of radiations, and with an attempt to enunciate a number of laws This has been a difficult task, but on the whole the authors show clearly that they are alive to the importance of attempting to lay down conclusions in regard to problems which interest all students of the effects produced by radiation A study of this chapter will encourage further research on similar lines

The action of radiations from an *x*-ray tube and radium is dealt with in a number of interesting chapters, each of which deals with a particular form of cell, from the simplest in structure to the most complicated each gives an admirable summary of the work of other investigators, and is thus a most valuable addition to the knowledge of the subject As a work of reference for research workers and radiologists in general we cannot speak too highly of the book The radiologist who is concerned with the treatment of disease, particularly malignant disease, will find in its pages information of the greatest value

It is fortunate that the authors should have dealt with the subject in such an interesting manner, and the book supplies a great want in the publications dealing with the new subject of radiotherapy The early chapters deal with the physical data of radiations, and these form a most attractive part of the work, being lucid, comprehensive, and not too voluminous Dr Colwell and Professor Russ are to be congratulated upon the production of a book which will live through many editions, and meet with the approval of all workers in radiology The publishers also deserve praise, for the general get-up of the book is good, the type clear, and the illustrations both numerous and instructive

The first edition of *X Rays and Crystal Structure*, by Sir WILLIAM BRAGG and his son, was published in 1915 Two years earlier Dr Laue had conceived the idea of employing a crystal as a "space diffraction grating" for *x* rays

"The successful realization of the idea by Freidrich and Kipping," we are told, "has opened up a wide field of research in which results of great interest and importance have already been obtained On the one hand, the analysis of *x* rays, which has thus been rendered possible, has led to remarkable conclusions concerning the atoms which emit them under the proper stimulus, and has thrown an entirely new light on the problems of atomic structure, on the other hand, the architecture of crystals has been laid open to examination"

The above lines appear in the opening of the preface to the first edition, two reprints have appeared in the interval between 1915 and the present year, when a fourth enlarged edition is published[3] In the preface to this edition the authors state that

"When this book was written, analysis of crystal structure by means of *x* rays was a new subject, of which no connected account was in existence During the last eight years the subject has been greatly studied and widely extended"

The fourth edition gives a fascinating account of the steps in the progress of this most interesting study, in which the authors have had so large a share The part played by other investigators in this and allied subjects is fully stated The reader is taken in an orderly way through the steps necessary for an understanding of the original work of the authors on crystal structure The chapter on the production of *x* rays gives a full description of the leading points It is instructive to read that

"The *x* ray bulb or tube is simply a convenient apparatus in which a vacuum is maintained so that the electron stream may be directed with sufficient velocity and without hindrance against the target or anticathode which arrests the motion"

The driving force is supplied by an induction coil, or, as is common in the work of powerful modern installations, by a high-tension transformer The applied potentials have been varied from 10 volts to 200,000 volts, with corresponding varying quality in the *x*-ray product The absorption of *x* rays is next discussed, in this section of the book interesting references are made to the work of a number of distinguished scientists who have been responsible for many important advances in our knowledge of this subject

From the year 1895, when Roentgen discovered the rays which bear his name, to the year 1912, when Laue showed that they could be diffracted by a crystalline structure, their relation to other forms of radiation was the subject

[1] *The Doctor's Oath An Essay in the History of Medicine* By W H S Jones M A Bursar of St Catharine's College Cambridge Cambridge At the University Press 1924 (Demy 8vo pp iv + 62, 2 facsimiles 7s 6d)

[2] *Radium X rays, and the Living Cell* By Hector A Colwell M B Lond and Sidney Russ D Sc Lond Second edition revised London G Bell and Sons Ltd 1924 (Demy 8vo pp xi + 365 52 figures 3 plates 21s net)

[3] *X Rays and Crystal Structure* By Sir W H Bragg K B E M A D Sc, F R S, and W L Bragg, F R S Fourth edition revised and enlarged London G Bell and Sons Ltd 1924 (Demy 8vo, pp xi + 322 100 figures, 8 plates 21s net)

of keenest investigation In many respects the rays resembled light They moved in straight lines, they traversed space without any obvious transference or intervention of matter, they acted on a photographic plate, excited certain materials to phosphorescence, and could bring about the ionization of a gas In other respects the rays seemed to differ from light

The first chapter of the book before us is introductory, and explains the steps in the progress of the elucidation of crystal structure by means of x rays An interesting chapter on deflection of waves leads up to a description of the x ray spectrometer, an instrument of precision in the hands of the skilled worker, an admirable working description of the instrument is given, by which the reader is enabled to appreciate the technical details of this most useful instrument Chapter VI deals at great length with the x-ray spectra, many valuable tables and data of experimental work are given in it Crystal structure is dealt with in a masterly manner, a large number of interesting experiments are quoted, and the steps in the work fully described

The book is a record of some of the most important scientific research ever undertaken, and it proves clearly how important a discovery Poentgen made when he found that a new ray was in action when a Crookes's tube was activated Roentgen foresaw the greatness of his discovery in a large measure but even he could not have imagined the immensity of his discovery or the great influence it was to exercise in scientific research In physics alone the advances have been remarkable In what concerns our readers more intimately—that is, the application of the rays to medicine—the advances have been no less striking, though perhaps not so dramatic, nor, owing to the complexity of the problem of tissue response to radiations, so precise Up to now students of medical radiology have been working more or less empirically, even under those conditions the advances made have been remarkable and with the discovery of x rays a new science has been slowly developed Radio-activity has been applied to treatment in a striking way, radium together with x rays offers a great field for research in scientific and applied medicine Many workers have entered the field

An appreciation of the work of the Braggs cannot but lead the medical research worker into new avenues, in which he must seek the help and collaboration of the physicist A comparison of Colwell and Russ's book reviewed above with this book will show clearly how important has been the discovery of Roentgen in its bearings upon the future of science and of medicine The book is charmingly written and lucidly expressed, after a perusal of its pages one realizes that in science there are new discoveries whose influence must ever be far reaching To the medical mind less deeply versed in the intricacies of modern science the conviction grows that if analytical work in cell structure could be initiated and executed with such masterly skill possibly as revolutionizing progress might be made in cell investigation as has been done in the study of matter by the aid of x rays Possibly the basis of cell activity might be found. The importance of a clear conception of biological processes in cellular structures might give the clue to the solving of the perplexing problems of modern medicine The application of the methods of the physicist to the elucidation of these problems might be of inestimable value

A HISTORY OF NOSOGRAPHY

IN his work on *Nosography in Modern Internal Medicine*[4] Professor KNUD FABER, who occupies the chair of internal medicine in the University of Copenhagen, has given an interesting and thoughtful account of the historical development of this subject from the time of Sydenham whom he calls the founder of scientific nosography, until the present day Emphasis is laid on Sydenham's doctrine of species because it is so intimately connected with his whole conception of diseases as specific natural phenomena subject to particular laws In the following chapter, in which an excellent description is given of the work of Pinel, Bichat, Laennec, Bretonneau, and Broussais, the author deals with the Paris school, which, though called a pathologico-anatomical school, was in reality a clinical school in which anatomy was always held subservient to clinical ends

The third chapter is devoted to German physiological medicine, which, it is said, was characterized by a disregard of the nosography of the Paris school and an effort to reconstruct clinical medicine on physiological lines The movement was retrograde, and was responsible for some curious errors, such as the distinction between scrofula and tuberculosis, and between diphtheria and croup, which Bretonneau had shown to be one disease Pasteur's fundamental researches, however, proved the truth of the teaching of Sydenham, Bretonneau and Trousseau as to the existence of really specific diseases and specific morbific causes In the fourth chapter, which is entitled "The Bacteriologic Clinic," it is asserted that, though etiological researches on the infectious diseases created a firm basis for the nosography of these conditions, other diseases were left unaffected by this movement

The author maintains that much greater progress has been made through the study of functional disturbances, especially in the domain of gastric and cardiac diseases, than when pathological anatomy was the only guide

In the concluding chapter, which deals with constitutional pathology, special reference is made to the work of British investigators, such as Gowers, Nettleship, Savage, and Mott, on hereditary diseases, as well as to the researches of Hueppe, Martius, and Kraus in Germany and Paltauf and Stiller in Austria Although this branch of clinical medicine is still in a state of evolution, many new points have been developed and new methods for estimating the state of health and power of resistance to injurious influences of each separate individual have been devised

The work which is illustrated by numerous excellent portraits may be warmly recommended to all who take a philosophical interest in the evolution of medical science

NOTES ON BOOKS

THE October addresses often advise medical men to cultivate a hobby, and very good advice no doubt it is Dr R T WILLIAMSON's hobby or one of them, is the study of the Anglo-Saxon Chronicle, Henry of Huntingdon, William of Malmesbury, and the like He has published recently a small book, *Before the Norman Conquest*,[5] in which he relates a series of episodes from this epoch in the history of England. He has much to say of the Saxon conquest, of the Danish invasion and of Alfred, and finally of Canute the Dane who made himself King of most of England The book is addressed to "Englishmen and friends of England from the colonies and overseas, and its special feature and interest will be found in the frequent and copious extracts from the original sources

The first edition of the *Treatise on Hygiene and Public Health in the Tropics* appeared twelve years ago It has deservedly found favour in India, and successive editions have appeared in 1914, 1917, 1921, and 1924[6] The name of Dr Johar Lal Das who was joint author of the first four editions, has been dropped from the title page, but Dr GHOSH thanks him for his help in the preface The whole work has been revised and rewritten since 1921, particularly the chapters on water with special regard to filtration and chlorination Sewage disposal is well treated, and types of latrines used in the war are described A new chapter has been written on sanitation of fairs and religious festivals, and anthrax has been added to the list of preventable diseases discussed in Chapter XX In spite of condensation, wherever practicable, this edition contains 79 pages more than the last, and 37 new diagrams have been added including several taken by permission from the *Medical History of the War* Though the wording is condensed the style is clear, and there are not many misprints

[4] *Nosography in Modern Internal Medicine* By Knud Faber M D With an introductory note by Rufus Cole M D Londn Humphrey Milford Oxford University Press 1923 (Pc 8vo, pp xiii+222 21 plates 16s net)

[5] *Before the Norman Conquest* Stories from Early English History Retold By R T Williamson Nelson's English Texts London Ltd 1924 Cr 8vo pp viii+172 2 plates)

[6] *A Treatise on Hygiene and Public Health with Special Reference to the Tropics* By Birendra Nath Ghosh M B F P and S Glasg Fifth edition Calcutta Hinton and Co London Simpkin Marshall Hamilton Kent and Co Ltd 1924 (Cr 8vo pp xvi+600 98 figures 8s 6d net)

INTERNATIONAL MEDICAL CONFERENCE IN JAMAICA

HEALTH PROBLEMS IN TROPICAL AMERICA

AN international conference on health problems in tropical America was held at Kingston, Jamaica, from July 22nd to 31st The President was DR W E DEEKS (New York), head of the medical department of the United Fruit Company, under whose auspices the conference was held A large number of medical men attended from North, South, and Central America, about eighteen medical visitors came from Great Britain, and others from the continent of Europe

The conference was formally opened by the Acting Governor of Jamaica, Colonel BRYAN, C M G, D S O, who expressed the gratitude of the island to the Rockefeller Foundation for the admirable work it had done there for the prevention of hookworm disease DR G E VINCENT, President of the Foundation, followed with a few words, in which he referred to the appropriateness of such a gathering under the British flag, because an American like himself had to admit what great things, alike in research and administration, the British had achieved in public health Subsequently, with SIR ARTHUR NEWSHOLME in the chair, DR VINCENT gave a popular lecture on public health in its international aspects

Presidential Address

DR DEEKS, in his presidential address from the chair, said that the Western hemisphere offered a good illustration of the influence of tropical diseases in retarding the development of countries In the American tropics the chief diseases, in the order of importance, were malaria, hookworm disease, yellow fever, and dysentery In the lowlands from 40 to 100 per cent of the native population suffered from malaria or hookworm or both Thanks to the work of sanitary officers of the Latin-American governments and commercial organizations, supported by the Rockefeller Foundation, yellow fever was well on its way to extinction, the fight against hookworm disease was being successfully waged, and the same was true of amoebic dysentery, here the value of emetine, introduced by Sir Leonard Rogers, supplemented by the administration of bismuth subnitrate, had been proved The problems involved in the eradication of malaria were tremendous, but progress was being made, as evidenced by the increasing acreage made habitable

The Control of Malaria

The whole of the second day's proceedings was devoted to the subject of malaria Dr C C BASS (New Orleans) spoke on the relation of the malaria carrier to malaria prevalence, and described some recent activities in the southern portion of the United States in the way of educating medical men in more effective treatment of their malaria cases, especially in so far as the cure of the infection was concerned A paper was read by DR N G MACPHAIL (Guatemala) on the value of intramuscular injections of quinine He preferred either the intramuscular or the oral administration, subcutaneous injection had nothing to recommend it as a routine measure, in his opinion He considered that the danger of tissue necrosis incident to intramuscular injection was insignificant, at all events when compared with the life-saving value of this method The discussion which followed revealed some differences of opinion SIR LEONARD ROGERS declared himself not a believer in such injections save in extreme cases

The Hookworm Campaign

DR B [illegible] VASHBURN, of the Rockefeller Foundation, the officer in charge of the hookworm campaign in Jamaica, said that of a population of 60,000 people in the areas concerned more than 99 per cent co-operated and were examined for hookworm disease, more than half the fourteen parochial boards of the island were enforcing the installation of sanitary latrines, and several parishes had now or were seeking whole-time medical officers of health There had been a marked decrease in the amount of sickness from all diseases, and the improved health of the labourers had had appreciable economic results Colonel BAILEY ASHFORD, in charge of a similar effort in Porto Rico, said that the result of the campaign there, in which, in the course of ten years, some 400,000 people had been treated, was to reduce the death rate of hookworm disease from 333 per 1,000 to 42 per 1,000

Yellow Fever and Dysentery

Several papers on yellow fever were read, one of them (SIR W ARBUTHNOT LANE presiding) was by DR H NOGUCHI, who gave an account of his research work in Brazil, Ecuador, Peru, and Mexico, which, with the co-operation of others, resulted in the isolation of the yellow-fever germ

The subject of dysentery occupied the conference for more than one very full day Among the many papers read was one by DR PIERRE LEPINE (Lyons), who urged that all the countries of Europe ought carefully to watch the entrance of immigrants or those who were repatriating themselves from hot countries In cases resistant to emetine, he found that, of arsenical drugs, stovarsol and acetylarsan were easier to administer and less toxic than novarsenobenzol, and also much more effective In the same discussion Sir Leonard Rogers read a paper on the prevention and treatment of amoebic hepatitis and liver abscess, and several medical administrators in the canal zone, in Honduras, and elsewhere, related their experiences in dealing with epidemic dysentery

Tuberculosis in the Tropics

SIR JAMES FOWLER pointed out that when tuberculosis appeared in a tropical country the natives manifested a degree of resisting power inferior to that shown by the people of countries in which the disease had existed for generations He outlined a scheme for a tuberculosis settlement DR DEEKS said that his experience was that in the case of the coloured man it was better to treat him locally, but he had invariably sent the white man who had tuberculosis in the tropics to Silver City, New Mexico, where the dry climate was wonderfully recuperative

The Cause of Cancer

SIR W ARBUTHNOT LANE read a paper on the causation of cancer, in which he urged that cancer was the result of chronic poisoning of the tissues of the body, in the vast majority of cases by the poisons absorbed from the gastro-intestinal tract SIR ARTHUR NEWSHOLME considered that Sir Arbuthnot Lane's hypothesis was very useful, and DR NOGUCHI, SIR THOMAS OLIVER, and others spoke to the same effect SIR JAMES FOWLER said that cancer was an uncontrolled cell activity Much more had yet to be learned about the causes of that cell activity, and although the cause of cancer would one day be elucidated he did not think that object would soon be attained

Insulin in Diabetes

A discussion on diabetes was opened by DR F G BANTING (Toronto) Insulin, he said, was a specific in the treatment of diabetes, but dietary management could not be neglected No stated dose could be given, as this must be determined in each case by actual trial Only a few of the more severe cases had required more than 45 units daily, and most cases treated had regained strength and weight on 10 to 20 units daily The secret of success lay in the correct balancing of the diet against the dose to be employed, and in the exercise of eternal vigilance by both physician and patient

Concluding Session

The final session was occupied with the subject of leprosy, SIR ARTHUR NEWSHOLME dealing with the historical aspect and SIR LEONARD ROGERS with the present position Among a host of other papers read during the conference was one on blackwater fever, by DR J W W STEPHENS (Liverpool), the use of vaccines and pneumonia antibody in the treatment and prevention of pneumonia, by DR W H PARK (New York), some aspects of influenzal pneumonia, by SIR THOMAS OLIVER (Newcastle)

Although various social functions were held, those attending the conference kept very closely to business The morning sessions began at 8 30, and there were afternoon and evening sessions almost every day

British Medical Journal.

SATURDAY, AUGUST 30TH, 1924

THE CONQUEST OF ENTERIC FEVER

THE report for 1923 of the Chief Medical Officer of the Ministry of Health, of which we have given some account in this and the last issues of the JOURNAL, contains a brief but very interesting discussion of the decline of enteric fever in this country. The statistics dealt with include paratyphoid. The mortality rate per million living has fallen from 371 in 1871 to 12 in 1922. Down to the year 1900 the diminution, though great, showed much fluctuation, but since the beginning of the century it has been practically uninterrupted. Outside of Britain, a comparison between the experience of our armies in the South African war (1899-1902) and in the recent world war is very striking. In the former the average strength of troops was 209,404, and the incidence of enteric fever was represented by the high figure of 25·8 per cent., while the case mortality was 13·8 per cent. In all theatres of the world war our average strength in troops was 2,000,000, but the enteric fever incidence was only 1 per cent. and the case mortality rate 5·9. If the comparison be confined to the French Front, where more than three-fourths of our total forces were employed, the incidence rate and case mortality were still lower, being only 0·4 per cent. and 3·3 per cent. respectively. Great as is the difference in enteric fever prevalence in the general population between 1870 and 1922, the difference in army prevalence in the much shorter period between the two wars is very much greater. The facts are matter for congratulation. The one preventive the armies possessed, and the civil population practically did not, was typhoid inoculation, but Sir George Newman wisely refuses to claim too much for that prophylactic, and holds that a great deal has been done for army sanitation by protection of water supplies, reduction of the fly nuisance, and segregation and care of the sick. He points out that in this country generally the age incidence of the disease has changed, the infection has been almost extinguished at each extremity of life and the prevalence is less now in females than in males.

Influenza has so far defied all efforts at control. That infection appears to snap its fingers at sanitation in the ordinary acceptation of the term, whilst in respect of individual immunization no such success has been achieved as in variola and enteric fever. But sanitation was already doing much to curb typhoid before the *Bacillus typhosus* was discovered to be its *causa causans*. In the days before the science of bacteriology had illumined so many paths leading to conquest of infectious disease, the sanitarian, whether lay or medical, had to stumble along following the great principle that cleanliness is a sure guide to health—cleanliness personal, domestic, municipal, and national; cleanliness in breathing and eating and drinking, cleanliness of air and soil and water and food. In fighting typhus fever the measures used were air and light and disinfection and isolation. Even yet the *contagium vivum* of typhus is not certainly known, but we have learnt that its ordinary way of dissemination is by lice, that all those means which were so blindly yet trustfully followed in the past were inimical to body vermin, and therefore to the conveyance of typhus. Even in the domain of modern surgery cleanliness is the very essence of asepsis, and in the old days a surgeon who was instinctively and empirically clean in all the details of his work could achieve great results.

In enteric fever the same principles apply. Sir George Newman, before discussing the factors which have led to its decline, urges that the disease shows little or no evidence of marked change in symptomatology, severity, fatality, or epidemiological type. He then proceeds to state five principal causes of diminution of prevalence, which he sets in the following order—improved water supply, prompt removal of faecal matter and house refuse, hospital isolation and treatment, advance in public education in personal and domestic hygiene, and, lastly, purity of food. Improved water supply was a large factor in the irregular diminution of enteric fever prior to 1900, and has had a share also in the more recent decline, but so lately as 1921 a local epidemic of 397 cases and 45 deaths was traced to an inadequately guarded supply. Wherever such conditions still exist, access of the bacillus to the water, and its multiplication there, may cause a similar calamity. The immense improvement which has taken place in the water supply of densely populated industrial areas has indeed had a tremendous effect in the reduction of enteric fever. But in addition the piping of this supply along streets and into dwellings has made possible the water carriage system of excreta removal in substitution for the dry privies which so long prevailed. These, with their accompanying middens in the backyard of every house in urban districts, not merely conveyed specific infectious disease, but polluted the whole atmosphere of crowded localities, and so, it is not unreasonable to believe, lowered the general health of the population. Daily scavenging and refuse removal are the ordinary accompaniments of the water closet system, and are of first class importance in every scheme of public sanitation. Closely related to scavenging is the diminution of the fly nuisance, with the risks of disease conveyance it entails.

To the same category belongs the higher standard of personal and domestic hygiene to which Sir George Newman calls attention. Education of the public has unquestionably played its part in the control of enteric fever, and in diminution of sickness and mortality. Much—very much—of course, remains to be done, but the intelligent and informed co-operation of the layman in the work of the health authorities and of the medical profession is of real and increasing value, though that value cannot be stated in percentages.

Purity of food, which Sir George Newman places last in his list, though with no suggestion that it is also least, finds its place more naturally here. The importance of clean milk is now universally recognized alike by health officers, by local authorities and by almost the whole community, for that knowledge is penetrating even to the slums. Tuberculosis is of much more importance than enteric fever in this connexion, and natural impatience at the slow progress made in the healthy housing of cattle and the eradication of bovine tuberculosis has led, especially in America, to the adoption of a short cut—pasteurization—towards elimination of the danger. The part played by shell-fish in conveyance of enteric fever was demonstrated in the classical investigations of the late Dr. Timbrell Bulstrode, whilst more recently Sir William Hamer

has shown how the use of immature and ungutted plaice from the estuary of the Elbe caused enteric fever in London until the war stopped the supply

Next, following our own order, we come to isolation of cases of the disease Enforcement of removal to hospital was at one time denounced as an infringement of the liberty of the subject, but that cry has not been heard for many a year It is true that resort to isolation is a confession of failure to prevent the disease by prior measures, but the practice has been, and is, of the utmost value, both for the public and the patient Destruction of infective material can be secured in hospital with a thoroughness which is rarely, and only with much trouble and difficulty, achieved in the house of the patient, especially in the houses of the poor But when the isolation hospital movement began on a large scale a generation ago, it was generally, if not universally, assumed that with the aid of proper disinfection *before discharge a patient who had* recovered from the definite illness caused by his infection could, after several weeks' detention, be safely sent out free from all risk of spreading the disease That belief has been shattered by observation, and, especially in the case of both enteric fever and diphtheria, by bacteriological investigation Yet with fuller appreciation of the limits of the value of hospitals there is no thought of dispensing with them The patient can be much better treated there than at home, and has a much greater likelihood, not only of recovery, but of freedom from the sequelæ of his infection, while at the same time the risks of spreading the disease are greatly diminished

Finally, throughout the entire sphere of preventive medicine the task of the administrator is constantly made easier by the aid he receives in his field work from the laboratory science of bacteriology It has revealed the specific causes of many diseases, both at home and in the tropics, it has largely dissipated his old-time fear of the air of sewers and drains, it guides him in judging the safety of water and milk and foods, it tells him when apparently healthy individuals are potential carriers of various infections, and it gives invaluable direction in the whole region of individual immunization General sanitation and individual immunization should both be utilized to the fullest practicable extent—the former mainly for improving environment and raising the average health so far as that is under the influence of environment, the latter for protecting the individual against dangerous diseases which sanitation has not been able to overcome—some of which, indeed, appear to be almost or quite outside the sphere of its influence

THE ETIOLOGY OF CHRONIC ULCERATIVE COLITIS

Past investigations into the cause of chronic ulcerative colitis have not yielded results at all convincing The disease is characterized by intractable bloody diarrhoea, continuous or intermittent, producing severe debility and often anaemia and fever Starting in the rectum or lower part of the colon—where, indeed, it may sometimes remain localized for months or even years—it spreads upwards, sometimes as far as the cæcum or rarely into the ileum The colonic mucosa appears inflamed, granular, and oedematous, bleeding easily and breaking down into ragged confluent ulcers which may be superficial or penetrate deeply Most of the organisms that have been implicated in the infection are ordinary inhabitants of the intestinal tract—the colon bacillus, proteus, pyocyaneus, gas bacilli, streptococci, and so forth The pneumococcus has been held by some to be the causal organism More recently the idea has been put forward that the condition follows a previous infection with dysentery bacilli, which, disappearing, leave the secondary invaders to maintain the chronicity of the lesions

Bargen of the Mayo Clinic[1] has isolated from the ulcers an organism somewhat resembling the pneumococcus, which is capable of reproducing in animals the main features of the disease He had endeavoured, without success, to find dysentery-like bacilli, but discovered instead in smear preparations from the bowel lesions large numbers of Gram-positive diplococci mixed with less numerous Gram negative bacilli Ordinary plating methods failed to isolate these diplococci, the bacilli—in all probability the colon bacillus and other saprophytes—masking or preventing their growth, but by the use of *Rosenow's medium* (glucose brain broth) in long test tubes, thus affording a gradient of oxygen tension, the diplococci were obtained in predominance in primary culture and could be purified The condition was studied in twenty two patients suffering from the disease—sporadic cases occurring in civil life, in whom no dysentery bacilli, tubercle bacilli, or amoebae had been discovered in the routine examination of the stools For the purposes of the bacteriological research the patients were given a castor oil purge in the evening and a cleansing warm-water enema in the morning immediately before examination Through a proctoscope sterile swabs were applied to the ulcers or inflamed mucous membrane, and transferred to the warm culture medium The diplococci were Gram-positive, plump, mostly lanceolate, about the size of pneumococci, not forming capsules, and with little tendency to grow in chain formation They differed from the pneumococcus and the faecal streptococcus in giving no reactions with inulin and mannite Healthy rabbits were injected intravenously with cultures derived from each patient, receiving either 2 to 5 c.cm of twenty-four hour cultures containing the diplococci in predominance or 3 to 8 c.cm of pure diplococci In from twenty-four hours to several days the animals developed violent diarrhoea, often with blood and mucus, and wasted rapidly The seat of election of the lesions, ranging from scattered petechial haemorrhages and extensive submucous ecchymoses to superficial ulcers of the mucosa, was in the colon from the rectum upwards In many instances only the lower part of the colon was affected, the most extensive lesions beginning at the anal mucocutaneous junction In certain rabbits the condition extended to the cæcum and in a few to the lower ileum, but only rarely higher This selective localization after intravenous injection is specially interesting in view of the fact that similar injection of streptococci or other organisms isolated from acute appendicitis, though sometimes resulting in lesions of the small intestine, is practically never followed by infections of the large bowel With this particular micro-organism no lesions were to be found outside the bowel Of 190 rabbits injected, 56 developed lesions, 45 of these having had mixed cultures of diplococci and coliform bacilli, and 11 pure cultures of the diplococcus In the main the lesions were more extensive and the diarrhoea more severe in the case of the mixed injections, but the administration of pure cultures of the Gram-negative bacilli killed the animals within twenty-four hours without producing bowel lesions In addition to the 56, 23 others developed diarrhoea but no

[1] *Journ. Amer. Med. Assoc.*, August 2nd, 1924, p. 332

gross lesion of the large intestines Of the 56 injected with diplococci isolated from 15 different patients, 38 had diarrhoea and many of them passed blood and mucus, 23 died, and the rest were killed at periods varying from one day to twenty eight days, all had mucus and haemorrhagic matter in the colon, even though there had been no diarrhoea In several cases Gram positive diplococci were isolated in pure culture from the mesenteric lymph glands, although mixed cultures had been injected intravenously Sections of the ulcers produced showed diplococci in the depths

The lack of more numerous controls is the weak spot of the investigation bowel cultures were taken from only four patients not suffering from chronic ulcerative colitis, and yet similar diplococci were recovered from one of these cases, these diplococci, on injection into a rabbit, produced diarrhoea and petechial haemorrhages in the colon Nevertheless the lesions produced experimentally in the rabbits by intravenous injection of the diplococci bear a very striking resemblance to those occurring in the human subject in their localization, progress, and extent, and give grounds for believing that the problem of the etiology of the disease is on the way to solution Bargen had an opportunity of using a vaccine prepared from the mixed cultures on five patients, and records that four of them were improved Anything which will curtail or cure this intractable malady is to be welcomed

LONDON S WATER SUPPLY

SIR ALEXANDER HOUSTON'S eighteenth annual report on London waters (for the year ended March 31st, 1924) has just been published [1] A regular reader of these yearly volumes cannot but be impressed with the number and variety of the problems calling for the consideration of the director of water examination, and with the real enthusiasm and energy exhibited in the performance of the work The circumstances of the supply account for the difficulties which have to be faced The needs of the metropolis are not met by gravitation from a single great lake receiving the rainfall of a remote and unpopulated upland area yielding water of stable composition and natural safety That would have been the kind of supply which the mountains of Wales would have provided if the scheme submitted to the committee presided over by Lord Balfour of Burleigh many years ago had been approved That proposal, however, was rejected, and it cannot be denied that some of the fears which prompted it have not been realized Though there have been times of scarcity, with some restriction in the watering of gardens and the washing of motor cars and so forth, there has never, not even after a sequence of dry years, been a real water famine Neither has the metropolis been afflicted with epidemics of water-borne enteric fever, though its water is taken from rivers liable to risks of contamination from human sources—rivers differing from each other in the problems they present, each of them also with its own seasonal variabilities which have to be dealt with The fact is that the Metropolitan Water Board and its director have risen to and been able to deal very successfully with the difficulties of their great task It is not our purpose this year to follow Sir Alexander Houston, even briefly, through the sixteen sections of his report He begins by discussing chlorination of Thames water and New River water, as well as superchlorination and dechlorination The use of chlorine, let it be remembered, originated with conditions or dangerous water supplies during the great war, and the world has now the benefit of what Britain in particular has discovered of its value America especially has adopted chlorination to an extent far beyond that reached in the country of its origin The questions which are now being considered in the light of experiment and experience relate to dosage, taste, cost, and details of methods The suspended solids in the raw water of the Thames amounted in one week last January to nearly a quarter of a ton in every million gallons, and four-fifths of it was non-volatile On such occasions intakes have to be closed against its admission to the supply The different reaction of different waters to filtration of suspended matters presents important practical problems as to the taste of the waters, and differences between Chelsea stored water and West Middlesex water are reported on Waters, of course, are examined previous to treatment, and are chlorinated or stored or both before and filtration is begun, so that when the filtration stage is reached the water has been improved from ten times up to a thousand times as judged by the colon bacillus test Experiments with rapid filtration were also carried out to save the heavy work of slow sand filters, and to eliminate cost Effort has been made to frighten sea-gulls from the West Middlesex works, apparently only to prevent pollution by their droppings But there may be an additional reason Though sea-gulls are not known to suffer from water-borne disease, yet if dumping grounds for town or domestic refuse are at hand the gulls may grub among these, and afterwards carry filth to a neighbouring reservoir Other subjects dealt with are the permanganate test and the condition of the Thames as regards dissolved oxygen, and the very remote possibility of the tidal portion ever being so pure as to allow the Thames again to become a salmon river The permanent hardness of the water of the Lee, especially in winter, is discussed, not as being important in respect of health, but as it affects manufactures and trades such as laundries It will be seen from these notes that the report, as usual, treats of many matters of interest and importance to London

[1] Foolscap pp 89 with plates and diagrams P S King and Son Price 1s.

THE PARATHYROIDS

THE sixth supplement of the *Acta Medica Scandinavica* is devoted entirely to Dr Salvesan's studies on the physiology of the parathyroids [1] The problem of the function of these glands is still unsettled, and at the present time three theories are held as to the cause of the symptoms of parathyroid insufficiency—namely, that they are due (1) to an intoxication, (2) to alkalosis, or (3) to calcium deficiency The first of these is that most widely accepted, and in a recent communication (Dragstedt and Peacock, 1923) the function of the glands is held to be the prevention of intoxication from the intestines The alkalosis theory does not seem to have found much support Doubt was thrown on the calcium deficiency theory through the observation of Joseph and Meltzer that the symptoms of tetany could, contrary to expectation, be checked by the injection of sodium chloride, which is known to increase muscular irritability The objection, however, is merely apparent, since the symptoms were checked only by large doses of chloride, and Loeb has shown that with such doses (or when the Na Ca ratio increases to a certain extent) muscular irritability is lost instead of being increased The earlier investigations on the metabolism in parathyroidectomized animals were almost entirely centred upon the acute period of tetany No studies were made of changes in the blood chemistry and metabolism of animals suffering from chronic tetany, or in the latent tetany of partially ectomized animals, and it is to these problems that Dr Salvesan has mainly turned his attention He

[1] Studies on the Parathyroids By Harald A Salvesan MD (from the Laboratory of Physiological Chemistry of the University of Christiania) *Acta Medica Scandinavica* Supplement IV Pp 1-288 (Royal 8vo) Stockholm Norstedt and Söner Publishing Co 1923 (Roy 8vo pp 1-288 17 figs)

planned to study the blood chemistry and the nitrogen and carbohydrate metabolism in animals from which three glands only had been removed, and also to perform complete excision and endeavour to keep the animals alive by calcium treatment He found that after complete excision dogs could readily be preserved by large doses of calcium chloride, after a time the doses could be lowered and finally stopped, milk alone sufficing to maintain a normal condition of health The possibility of the existence of accessory glands could not be excluded, but it was observed that the blood calcium remained low persistently after total excision, which would probably not have been the case if the recovery had been due to compensatory hypertrophy Low blood calcium is significant also because it characterizes latent tetany in contrast to cured tetany In no instance did the animals show any symptoms of tetany after partial thyroidectomy As the result of his observations, the author concludes that all the symptoms following parathyroidectomy are due to calcium deficiency, and that an increase of the Na Ca ratio is the cause of tetany in animals operated on and in infantile tetany It has recently been demonstrated that prolonged forced respiration also produces typical symptoms of tetany, this had been attributed by some to alkalosis, but by others, with greater probability, to anoxaemia, due partly to stabilization of the oxyhaemoglobin by the alkaline reaction Gastric tetany still remains unexplained, the ratio between sodium and calcium is not altered, and there is no change in the reaction to the alkaline side There thus appear to be three etiological factors in the production of tetany (1) *increased sodium-calcium ratio*, (2) *anoxaemia*, and (3) pyloric occlusion with loss of hydrochloric acid Blood analysis during acute tetany showed that the blood sugar was unchanged, the alkali reserve almost invariably decreased, the calcium always reduced below 7 mg per cent, *usually much lower, and the inorganic phosphorus of the* blood serum increased In dogs with latent tetany on a milk diet the blood calcium was lower than normal, the protein metabolism normal, and the blood sugar unchanged Spontaneous glycosuria was never observed There was a marked relation between the glucose tolerance and the blood calcium, the tolerance being low when the dogs had tetany and a low blood calcium, and rising with calcium feeding In a dog subjected to partial parathyroidectomy which did not present symptoms and with normal blood chemistry, guanidine injections, in amounts large enough to produce violent convulsions, did not alter the serum calcium, but produced hyperglycaemia and lowering of the alkali reserve, guanidine therefore acts as an independent convulsive poison

THE WORK OF AN ALMONER'S DEPARTMENT

In the report for 1923 of the Social Service Department, Samaritan Fund, and Northcote Trust at St Thomas's Hospital, the lady almoner again calls attention to the ideals of her department in linking the hospital with the patients' homes, in co-ordinating the efforts of the medical and nursing staffs with the resources for help of the community, and in representing the homes of the patients in the hospital and the hospital's activities in their homes The Charity Organization Society, the Invalid Children's Aid Association, church relief committees, and guilds of help are among the outside agencies from which the almoner obtains advice and assistance The co-operation of the hospital staff is most sympathetic, and the value of investigations such as that now being carried on into the prevalence and causes of rheumatism and chorea in children will, it is thought, be increased by inquiries made by the lady almoner's department into home conditions The almoner reports that in the casualty department there has been a marked increase in the number of patients presenting themselves for treatment who are in no way suitable for charity It appears that most of these people have no intention to deceive, and readily admit that they can pay for treatment Their motives seem to be, the reputation of the hospital for efficient treatment and the desire to help to relieve the hospital of debt by paying for the attention received In the specialized out-patient departments the work of the almoner is heavy The home of every patient applying for treatment of tonsils and adenoids is visited, and if the conditions are unsuitable arrangements are made for in-patient treatment A number of difficult and maladjusted children are investigated, and some are sent to suitable homes for a change of surroundings Convalescent children are sent to various institutions In the children's venereal disease clinic attempts are made to ensure regular attendance, but the number of defaulters remains very large The orthopaedic cases involve much work in finding suitable convalescent institutions, keeping surgical apparatus in repair, and instructing parents The almoner's department finds outlets for its energies in advising in workmen's compensation cases, in visiting chronic ophthalmic cases, in the after-care of mental cases, and in tracing the causes of stammering and other speech defects in patients attending the speech clinic In the female venereal disease department, though many patients still slip away before being discharged by the medical officer, the almoner carries on educative activities, consoles and sympathizes with innocently infected married women when they realize the truth as to the cause of their sufferings, and finds homes or occupations for some of the girls, many of whom have become "fed up" with domestic service In their case the almoner often realizes how dull and monotonous is the respectable work that she has to offer, though owing to the girl's education and outlook it is all for which she is fitted May it not be suggested, as a consolation to the lady almoner, that to many of these girls any kind of respectable work would be dull and monotonous? The Northcote Trust has a home for women and girls suffering from venereal disease, at which treatment and training are given The girls who have been especially difficult to deal with have nearly all been found to be mentally defective to some extent Under the trust help is also given to patients who ought to be admitted to the hospital but need help to enable them to leave their homes The Northcote Trust is responsible for the after-care of all patients, it has now taken definite responsibility for the patients under treatment by insulin, and it helps cancer patients to whom the hospital can no longer be of any benefit During 1923 the demands on the Samaritan Fund increased from every department of the hospital, but with the help received from other institutions no recommendation was refused on financial grounds The greatest difficulties of the lady almoner in dealing with the cases under her care have arisen from house shortage and unemployment The report is an excellent summary of most beneficent work

MOTOR CAR AND STREET LIGHTING

A most suggestive paper on illumination of highways from the motorist's point of view was read at the conference on illuminating engineering at the British Empire Exhibition on August 12th by Mr Edward H Fiyer, head of the road department of the Automobile Association The motorist's requirements, he said, fell into three groups his own installation, the street lighting, and warning lights The most satisfactory form of lighting for a motor car was by electricity There should be two headlights, the nearside focused straight ahead, and the offside focused slightly towards the nearside There should be an auxiliary light under the nearside dumb iron as low as possible and focused on the edge of the road (when driving a yard or so

from the edge) at a distance of eight to ten yards ahead of the car These three lights should be controlled by a couple of switches handy to the right thumb, and not on the left-hand side Of the two side lights the nearside one should be focused with a horizontal beam and the offside one depressed so as to avoid dazzling traffic The single tail light should be on the offside A national standard for street lighting was, he thought, desirable, for the reason that traffic on the roads at night is sure to increase Illumination of the road surface, of the footways, and road junctions and crossings, should be even, glare or dazzle from naked lights should be avoided, and shadows also, for they are disconcerting, and encourage the use of excessively powerful headlights The lights should be at a uniform height and equally spaced, especially on undulating and winding roads Danger and street signs should be illuminated, and auxiliary lights should be fitted to standards to obviate risk of impact His ideal of street lighting would be obtained from lamps fitted with parabolic reflectors projecting a strong beam in the direction of proceeding traffic, but fixed at such a height and angle as not to dazzle drivers on the other side of the highway proceeding in the opposite direction A fixed danger light if red, is a danger in itself, for most drivers took it to be a tail light and proceeded to pass on the offside, a fixed light should be green, as at Buckingham Palace, then there was a clear indication that it was to be passed on the nearside Mr Frver did not deal with the character of the motor lights or of the glass or lenses covering them, or suggest any methods whereby pedestrians might be protected from the terror of the sudden glare of an oncoming car

THE NATURE OF ANTISCORBUTIC VITAMIN

THE antiscorbutic vitamin is the least stable of all the vitamins and hence the investigation of its chemical nature is even more difficult than the investigation of any other of these elusive substances Work done recently at the Lister Institute by Zilva[1] and Connell shows, however, that the antiscorbutic vitamin is of fairly simple chemical nature, and that its molecule is approximately the same size as that of dextrose Other experiments suggest that this vitamin does not contain nitrogen, and that very possibly it does not contain phosphorus either The amount of the vitamin required to protect a guinea-pig from scurvy is less than 0 5 mg (1/120 grain) daily The antiscorbutic vitamin appears therefore to be quite a simple organic compound and to exert its action in extremely small doses It is, however, very easily oxidizable

THE PROFESSIONAL CLASSES AID COUNCIL

THE annual report for 1924 of the Professional Classes Aid Council states that this organization began as the Professional Classes War Relief Council, and that during six years it dealt with 12 000 applications for help It provided maternity homes for the wives of professional men it gave educational assistance to nearly 900 children it helped to save many hundreds of homes from ruin Distress among the professional classes did not end with the war, and the obligation remained to help those who suffer as much as any and make no parade of their sufferings Representatives of the societies interested in the council—and these include all types of professional men and women—resolved in 1920 that the organization should be continued The applications that arrive daily prove that there is permanent need for the council's work especially among those unpensioned sufferers from post-war conditions known as the "new poor" The council's balance sheet shows total receipts of £8,900, most of the amount is obtained by donations and subscriptions, in the list of benefactors the names of many medical men are found The largest item of expenditure is for the education of children (school fees, maintenance grants, travelling expenses, outfits, and books) Next comes assistance in training, twenty-seven students were helped Two medical students were helped to pass their final examinations, and two other medical students, two candidates for holy orders, a children's nurse, two matrons six teachers, one engineer, and one musician are still in training The council is careful not to encroach upon the functions of the benevolent funds of any profession A new applicant who appears likely to have a claim upon any fund is always referred first to that fund, and the connexion of the council with the case not infrequently ends there In many cases co-operation has been arranged for The year's work has left a deficit of £266, so that the work must be strictly limited unless further aid is forthcoming from the benevolent The address of the council is 251, Brompton Road, London, S W 3

[1] *Biochem. Journ.* Lxi xviii, p 6 2 Ibid. p 6 L

INTERNATIONAL CONGPESS OF PADIOLOGY

ARRANGEMENTS are being made for an International Congress of Radiology in London next summer It is proposed that the congress shall be opened on Tuesday, June 30th, and continue for four days of two sessions each, and that visits shall afterwards be paid to provincial centres The administrative and social centre of the congress will be at the house of the British Institute of Radiology in Welbeck Street It is hoped that an international committee will be formed by leading radiologists throughout the world, and that the congress will serve to initiate at the Institute a permanent nucleus for international collaboration on radiology and kindred subjects The secretaries of radiological societies in other countries are invited to form organizing committees and to send suggestions for the programme of proceedings for consideration by the provisional central committee which has been formed in this country This committee will meet in London early next month to consider the preliminary arrangements It is hoped that replies, at least in general terms, will then have been received from the societies interested, so that it may be possible to draw up a definite programme and fix the exact date of the congress All communications should be addressed to the Secretary, International Congress of Radiology, c/o The British Institute of Radiology, 32, Welbeck Street, London, W 1

WE are informed that the appeal for funds to found the Ross Institute is meeting with a satisfactory response, and that only the difficulty of finding a suitable freehold building to contain the institute and hospital is preventing the work being immediately commenced The proposal to establish this institute as a memorial of the work of Sir Ronald Ross was put forward in June, 1923 As we announced at the time, the primary object of the institute is to be research, but it will have a clinic, and there must be provision for training others in research A number of members of the International Medical Conference in Jamaica (p 376) sent Sir Ronald Ross a telegram heartily approving the foundation of the institute and offering him their warmest congratulations The committee of the fund has recently issued a pamphlet entitled *The War against Malaria*, containing a short essay by Mr Wilfred Partington and a foreword by Mr John Masefield

DR J W MCNEE, deputy director of the medical unit, University College Hospital, London, is starting for Baltimore to act at Johns Hopkins University as exchange associate-professor of medicine for the coming winter, in the place of Dr Arthur Bloomfield, who has now arrived in England and will work at University College Hospital

THE STATE OF THE PUBLIC HEALTH

SIR GEORGE NEWMAN'S REPORT FOR 1923

[SECOND NOTICE]

GENERAL EPIDEMIOLOGY

Small-pox.—The net number of cases was 2,504, of which only seven were fatal. The clinical features of mild small-pox are discussed, and an account is given of the Gloucester epidemic of 1923, in which the total number of known cases (698) falls short of the number which actually occurred. The largest number in any one week was 99. Three unvaccinated children, aged 5 years, 10 months, and 6 weeks respectively, died, and an unvaccinated man of 56 died in the small-pox hospital from what was recorded as "cerebro-haemorrhage and delirium tremens." Details are given of a limited outbreak of severe type in London in the summer, which caused two deaths. Eight cases occurred in port sanitary districts, seven of them from infection contracted abroad. Regarding vaccination, Sir George Newman says that in the absence of epidemic small-pox the public has taken dangerous advantage of the exemption facilitated by the Act of 1907. He again directs attention to the gravity of so large a proportion of the child population of the country being unprotected by vaccination, but states that objectors do not usually hesitate to accept vaccination in presence of small-pox.

Enteric fever is referred to elsewhere in our issue to-day, and it will suffice to mention here that the report gives a condensed account of several local outbreaks due to various causes.

Diphtheria.—Under this heading a useful and simple account is given of the *rationale* and success of the Schick test. *Influenza* caused 8,461 deaths in 1923, as against 21,498 in 1922.

Infectious Diseases of the Nervous System.—Cerebro-spinal fever, polio-myelitis, polio-encephalitis, and encephalitis lethargica are considered together at some length. Notifications of the first named show an uninterrupted decline since 1919, and the figure 301 for 1923 is the lowest on record. There were, however, considerably more notifications of the other three than in the previous year, the figures for acute polio-myelitis were 355 in 1922 and 587 in 1923, and for polio-encephalitis 31 and 57 in the two years. Encephalitis lethargica, of which only 454 notifications were made in 1922, rose to 1,025 in 1923. The cases of cerebro-spinal fever were distributed very equally over the four quarters of the year, the largest prevalence of acute polio-myelitis was in the third quarter and the next largest in the fourth, most of the cases of polio-encephalitis occurred in the second half of the year, while the distribution of encephalitis lethargica was just the reverse, its main prevalence was in the first quarter, though it continued to be high in the second. Of the total 1,025 cases of the last-named disease, no fewer than 531 proved fatal. Its clinical features and after-effects are discussed.

Typhus Fever.—Only four cases of typhus fever were notified in 1923, and three of these notifications were subsequently withdrawn, so that there was in England and Wales in 1923 only a single confirmed case of this formerly dreaded disease.

VENEREAL DISEASES

The total number of venereal disease centres at the close of 1923 was 183 in England and 9 in Wales, a total of 192, as compared with 191 at the end of the previous year. These centres provide approximately 820 weekly sessions—657 in voluntary hospitals, 110 in special premises used solely for venereal diseases, and 53 elsewhere. At 153 centres *provision is made for the intermediate treatment* of gonorrhoea. The 192 centres are staffed by 380 approved venereal disease officers, 38 of whom devote practically their whole time to the work, or are whole-time officers on the public health staffs of local authorities, giving part of their time to the treatment of venereal diseases. Beds for in-patient *treatment are available* in connexion with most of the treatment centres, 15 hostels have been provided and can accommodate 263 women and girls. In 1923, 1,045 cases were treated in these hostels—a considerable increase on the 584 cases so treated in the previous year. Ten institutions have been established for the reception of pregnant women suffering from venereal disease, either for ante-natal treatment or for special supervision of confinement. A considerable diminution in the number of fresh infections with syphilis seems to have occurred. The number of cases of gonorrhoea dealt with for the first time at treatment centres during 1923 exceeded the number of new cases in 1922, but was less than in any of the three previous years. It is thought probable that this slight increase does not indicate an increased incidence of the disease, but rather that the improved facilities for the efficient treatment of gonorrhoea have led to a larger proportion of new cases coming to the centres for treatment. The laboratory diagnosis of venereal diseases is carried on in 73 approved laboratories, which are regularly inspected by a medical officer of the Ministry, who discusses various problems, including the possibility of errors resulting *from modifications in test methods*. In one case it was found that a modification introduced had resulted in definite loss of delicacy in the test, and arrangements have now been made for the services of a pathologist who will carry out comparative investigations in other cases of variation from standard methods, with a view to ascertaining the effect of apparently trivial alterations in method, and to preventing the premature cessation of treatment. The comparison of various tests for the sero-diagnosis of syphilis is receiving the careful attention of the Ministry, which has taken part in international conferences on this subject in December, 1921, and more recently in Copenhagen at the end of 1923. The conclusions of this last conference were broadly that the Bordet-Wassermann test cannot be replaced at present by the flocculation tests.

MATERNITY AND CHILD WELFARE

There was a slight decrease in the number of deaths from puerperal sepsis, which caused 985 out of 2,892 maternal deaths. Haemorrhage was the second most important cause of maternal death (432), puerperal nephritis, albuminuria, and convulsions came third in order (418), and other accidents of childbirth came fourth (304). In 1922 there were more deaths from eclampsia, etc., than from haemorrhage. A report on maternal mortality, compiled by Dr. Janet Campbell, the Ministry's senior medical officer for maternity and child welfare, was issued last spring, and was reviewed in our columns of April 5th (p. 637). Dr. Campbell pleaded for an improvement in the quality of professional attendance, with special reference to unqualified midwifery practice, and recommended the provision of more ante-natal centres, maternity beds, domiciliary midwifery, investigation of causes of death, and general social and educational measures. Sir George Newman expresses the opinion that, broadly speaking, the key to the prevention of maternal mortality is efficient ante-natal supervision, which ought to be regarded by doctors and midwives as an essential part of midwifery attendance, and be expected and demanded by all pregnant women. At present 564 *ante-natal centres* exist, 346 of these are municipal and 218 under voluntary management. Most of them are separate centres or in connexion with infant welfare centres, but some are associated with maternity homes or hospitals, the average attendance is usually small.

The provision of maternity homes has been encouraged by the Ministry of Health for women anticipating some difficulty at the time of confinement, and for those who cannot be confined at home safely and satisfactorily. During 1923 there were, excluding hospitals, 118 voluntary and municipal maternity homes, with 1,442 beds. Of the 17,167 patients admitted, 13,541 were delivered by midwives and 2,935 by doctors. The maternal deaths in these homes numbered 76—in part due, it is suggested, to insufficient ante-natal care. 48 cases of puerperal fever were notified, of which 12 were fatal, there were 472 deaths of infants *within ten days of birth*, including stillborn cases, and 72 cases of ophthalmia neonatorum. Nearly all these

maternity homes provide only for confinements the admission of pregnant women needing observation or treatment for abortion or miscarriage, or of infective cases, being usually impracticable It is stated in the report that the Minister of Health favours the establishment of maternity homes by the larger local authorities, such as county councils and county borough councils rather than by small maternity and child welfare authorities, and it is added that for efficient and economical administration maternity homes should contain not less than from twelve to twenty beds Although the number of infant welfare centres has increased only slightly (from 1,946 in the previous year to 1,975 in the year under review), the number of women in attendance is certainly greater, and in many areas the centres appear to be seriously overcrowded

Health visiting is carried on by 3,587 whole- and part-time officers, 1,107 of these are whole time health visitors employed by local authorities, 891 undertaking only health visiting, whilst the remainder combine this work with other duties under the authority

For the care of sick infants eleven observation wards, with 101 beds under voluntary management, have been established, and 5 municipal wards, with 36 beds In addition to these there are 12 babies' hospitals, with 297 beds, under voluntary control, and 10 municipal hospitals, with 225 beds, making a total of 38 institutions, with 659 beds The observation wards are mainly intended for babies who are not thriving, and their mothers are encouraged to attend in order to learn correct methods of infant management Day nurseries are provided in certain areas for children of women who are compelled to go out to work The Ministry contributes grants to 110 of these day nurseries, 88 of which are voluntary and 22 municipal, together they have accommodation for 3,624 children Healthy children are received for residence in 5 other nurseries, usually for short periods during the illness or temporary absence of the mother More permanent care than is available in a resident nursery is provided by 31 homes for healthy children, and they accommodate 792, all but one of which are on a voluntary basis For unmarried mothers and their babies 103 homes exist with accommodation for 1,395 mothers and 1,316 babies, of these homes 102 are voluntary and one municipal It is recommended in the report that whenever possible the mother should be allowed to undertake day work while living at the home, so soon as she is fully restored to health, the baby receiving such supplementary feeding as may be necessary In this way it would often be possible to overcome the present difficulty of persuading young women to remain as long as they should in these homes

THE INSURANCE MEDICAL SERVICE

The part of the report dealing with the Insurance Medical Service begins with a generous appreciation of the place occupied by the insurance system in the domain of State medicine One of the chief aims of the service, it is claimed, is to preserve the intimate relation of doctor and patient, which finds expression in the phrase "the family doctor" That it does not provide more than the services of general practitioners is because the scheme of consultant services, for which funds were voted by Parliament in 1914 foundered in the great catastrophe of the war But the practitioner is not an isolated medical unit, and is urged to maintain close touch with workers in his area who are engaged in other fields of medical duty—that is, with the medical officers of health, with the staffs of voluntary hospitals, and with voluntary nursing associations Record cards show that the insurance practitioner gives to his patients attendances about three times as numerous as those stated in the Plender Report to have been given in private practice, so that he has greater opportunities to see, in their earliest stages, illnesses which may constitute the beginnings of serious disease In certification of incapacity for work the insurance medical practitioner has a serious and responsible duty, and also in the keeping of medical record as a basis for information concerning the incidence of disease and its results His relation to his patients also gives him the opportunity of being an educator in health The number of insurance practitioners in England and Wales in 1923 was, it is stated, 12 855, and the average number of persons on each list was 992 Only 2 1 per cent of practitioners had more than 3 000, and in no such case did the doctor work single-handed Less than 14 per cent had 2 000 on their lists and many of them had assistants It is calculated that a list of 2 000 with 300 working days, would give an average of about 8 visits and 16 surgery attendances for each working day Over 1 000 approved societies have devoted part of their surplus funds to schemes of additional "treatment benefits," of which dentistry is the most popular

Regional Medical Officers.—The number of cases referred to regional medical officers during 1923 was 146,381, an increase of 29 per cent over the previous year Of these, 144,556 were referred by approved societies, 542 by Insurance Committees, and 1,283 by practitioners Of the total, 60,261 declared off the funds without waiting for examination, 22,371 were found not incapable of work and 63,402 were found incapable Less than 44 per cent of the original number, therefore, remained on the roll of the incapacitated The regional officers made 5,903 visits for inspection of medical records, and the improvement recorded in the previous year was found to be maintained The officers also made 4,401 inspections under the Dangerous Drugs Acts The value of the regional staff is highly spoken of in the report

Disciplinary Cases.—Insurance Committees, through their medical service subcommittees, investigated 500 complaints against doctors In 107 of them the Minister decided to withhold varying amounts of the grant Grant was also withheld in 24 cases in which records had not been kept, and in 20 cases where practitioners had failed to furnish necessary information to the regional medical officer In 23 complaints against practitioners appeal against the Insurance Committees' decisions was made to the Minister The appeal was allowed in 6 cases, dismissed in 13, and the committee's decision was varied in one case Three practitioners appealed against findings of extravagant prescribing, one appeal was allowed and in the other two the surcharge was reduced Insulin is provided to insured persons as in the case of other "proper and sufficient medicines"

THE POOR LAW MEDICAL SERVICE

Medical assistance under the Poor Law is provided either as domiciliary or institutional treatment by the 650 Boards of Guardians in England and Wales The average population of a Board's area is close on 60,000, but the actual number varies from nearly a million to less than 10,000 Medical relief districts, each with its medical officer, have an average population of not over 15,000 and an average area of not over 15,000 acres, but there are wide variations Some populous urban districts have dispensaries where the medical officer attends and drugs and dressings are supplied District medical officers number about 3 500 Their work has been affected by the insurance service, and by development of institutional services Separate infirmaries under the Poor Law can accommodate over 36,000 patients, and other institutions can take well on to 84,000 In this total institutions for mental cases are not included, these can accommodate 12,000 patients Some institutions are allocated to children, others to special diseases Large institutions have, as a rule, whole-time medical superintendents, with assistants, and in some places consultants and specialists A large proportion of cases are "aged and infirm," but certain Poor Law infirmaries differ little from voluntary hospitals There is a growing tendency to associate such infirmaries with medical schools Some extension has taken place in 1923 of the practice of admitting 'paying" patients for whom fixed inclusive sums are contributed Such cases must be technically 'destitute"—that is, unable to meet expenditure necessary for the treatment they require As yet, however, these developments do not play a large part in the service Considerable attention was devoted during 1923 to the arrangements available in the Poor Law infirmaries for the training of nurses, under the Poor Law Institutions (Nursing) Order, 1913 At the end of 1922, twenty-six London infirmaries and fifty-nine provincial had complied

with the requirements of the Order, and twenty-five other provincial Poor Law institutions were specially recognized All the recognized training schools have sought formal approval from the Nursing Council, and very nearly all have obtained it There is much to be said for committing the supervision of breast-fed and bottle-fed infants, if not all infants, to the infirmary staff rather than to the workhouse staff

Provisional conclusions from three years' medical inspection are stated in some detail The work of district medical officers is not so closely linked up with that of the infirmaries as it might be for administrative purposes, little fault is to be found, it is said, with the provision for the sick in the large infirmaries, but many of the smaller institutions, especially rural, are not beyond criticism, sometimes busy practitioners devote too little time to infirmary patients It is considered that the classes of patients are too numerous to be dealt with in a single institution of moderate size, that areas for institutional provision should, therefore, be enlarged, and that greater use should be made of the consultant staff in many infirmaries Finally, the medical service should be such as to attract to it men and women equal to their high task

Medical Intelligence and International Health

An important section of the medical department is concerned with the collection from home and foreign sources of "all available medical information, whether of an administrative, legislative, statistical, epidemiological or technical nature, which may assist the Ministry in meeting its obligations in national and international public health affairs", it distributes what it receives to those concerned It forms a connecting link within the department and with other departments It supplies the League of Nations with information of colonial notifications of disease, and in 1923 took charge of the reception of medical visitors from other countries Office committees continue to be appointed on public health questions, and committees are now dealing with the supply of insulin, food preservatives and colouring matters, and the co-ordination of the Rockefeller School of Hygiene with other institutions Many reports and memorandums have been published on subjects of medical interest At the Ministry's laboratories pathological work has been continued and reports issued, whilst close co-operation has been maintained with the Medical Research Council The results of special inquiries have been set out in reports which have been noted in our columns International health work has related, among other matters, to the prevention of epidemics, the proper and gratuitous treatment at seaports of seamen of all nationalities suffering from venereal disease, the international standardization of serums and certain other remedies, international understanding in regard to vital statistics, and international studies of certain diseases

Food and Nutrition

After some general observations on the study of nutrition and the evil effects of undernutrition on the individual and public health, we are presented with a fairly full account of the present position and control of the milk supply This is a subject to which a great deal of space has been given in the JOURNAL during the last few years, and as recently as August 2nd (p 205) we published a notice of the monograph by Dr Stenhouse Williams of the National Institute for Research in Dairying, at Reading, which has been issued by the Ministry of Agriculture

Milk

Sir George Newman expresses the view that the consumption of milk should be increased, and observes that to attain this object the milk should be attractive and appetizing, of good keeping qualities, and of recognized economic value "The consumer," he says—and he puts his statement in italics—"can control his milk supply by his demand, the trade have shown that they can meet his demand, the local authority in every area should see that they do" He describes the method of grading the higher qualities of milk to be sold under special designations The number of producers and retailers holding licences under the Order with regard to the grading of milk has increased in a remarkable way since 1920 Reference is made to the pasteurization of milk, a subject upon which Dr Hamill made a report, noted in the JOURNAL last year (vol II, p 292) It is stated that manufacturers of dairy appliances have manifested considerable activity and ingenuity in devising apparatus which will enable the process to be carried out strictly in accordance with the Order issued by the Ministry of Health, but Sir George Newman considers it too early for useful comment on what has been done

Meat Inspection

This section of the report contains also observations on meat inspection, a subject to which we referred at some length last week (p 332) It is stated that of the total imports of meat into this country Smithfield market received 34 3 per cent of the beef, 39 2 per cent of the mutton, and 53 5 per cent of the pork, in addition a very large quantity of home-killed meat passes through the market The following table is given showing that while the amount of British meat passing through Smithfield market in the year 1923 was only one-fifth of that derived from foreign countries, the quantity of diseased meat in the home-killed carcasses was nearly twice as great as that found amongst the imported meat

Meat dealt with in Smithfield Market during the year 19 3

	British		Imported	
	Total Amount (Tons)	Amount Diseased (Pounds)	Total Amount (Tons)	Amount Diseased (Pounds)
Beef	43 514	53 894	219 783	38 448
Mutton	19 209	23 481	115 065	20 994
Pork	14 118	94 509	27 303	35 069
Total	76 841	171 884	362 151	94 511

With this table there is quoted from the report of Dr Howarth, medical officer of health for the City of London, a statement by Mr Dunlop Young suggesting that these statistics show that there has been no improvement in the inspection of meat in country districts The regulations now issued in Scotland, as related in the article published last week already mentioned, are calculated to diminish this reproach, and the Ministry has already recommended that the Scottish rules should be followed by meat inspectors in England and Wales

Food Poisoning

During 1923 a considerable number of outbreaks of illness attributed to food were investigated by local medical officers of health with the assistance of medical officers of the Ministry Bacteriological examinations were carried out for the most part by Mr Bruce White, B Sc, in pursuance of arrangements made by the Ministry and the Medical Research Council in 1921 In future this work will be conducted in the pathological laboratory of the Ministry Canned foods were responsible for seven outbreaks, three were attributed to canned beef, three to canned salmon, and one to canned tongue In none of these was a living food-poisoning organism discovered, and the symptoms were therefore attributed to the existence of bacteriological toxins in the food Four small outbreaks were reported in which organisms of the dysentery or pseudo-dysentery groups were isolated One outbreak, involving twenty-six cases and two deaths, was due to potted meat, and infection was believed to have been communicated by flies, in this instance Mr Bruce White isolated from the potted meat and from the organs of the two persons who died an organism closely resembling *B dysenteriae* Flexner An outbreak affecting ninety-five persons and involving twenty-nine households in Kent was not explained It was associated with the eating of shrimps, and the evidence seemed to show that the shrimps became infected after leaving Gravesend, where they were landed Another outbreak in and about Wycombe seemed to be due to the eating of ice-cream containing *B aertrycke*. In

outbreak at Harrogate following the eating of cheese was probably due to the existence of salmonella toxins in the food

FINANCE

The introduction to the section on local sanitation and environmental hygiene, including port sanitation, is so sound that it must be quoted in full, even if little more is added It is as follows

> In the early years of the Medical Department of the Privy Council and of the Local Government Board (1858 1865) it was the practice for the medical inspectors to undertake systematic investigations into the sanitary circumstances of certain districts This practice followed on the precedents set by the *Poor Law Commissioners* in 1838 and proved of great value The Medical Department wrote Sir John Simon had to develop a scientific basis for the progress of sanitary law and administration It took two forms first inquiries into the causes and conditions of *excess of disease* epidemic or endemic and secondly, inquiries into *sanitation and the necessaries of health* such as physical surroundings house accommodation, water supplies sewerage nuisances hospital provision food supply and industrial circumstances The records of these sanitary surveys proved to be of classic standard and they went far to establish not only a basis for legislation but the sure foundation of sound administration Public health is purchasable, but only in the long run, and only on a true understanding of scientific facts Merely to send post haste a medical inspector to visit on a preventive mission an area suffering from an acute and exceptional prevalence of disease is to shut the stable door when the horse has escaped or attempt to assuage or avoid the attacks of disease by a bottle of medicine It is neither statecraft nor science What is needed for the health of a community is that which is needed for the health of an individual a wholesome and resistant constitution—to be prepared, ready to resist In public health work this means *sanitation* nutrition the establishment of immunity and what Sir John Simon called the necessaries of health Now the advance of preventive medicine has *in recent years been so rapid* and Pelion has been piled upon Ossa so expeditiously in the attempt to reach Olympus speedily, that it has been found necessary to attend to the immediate demands of the present rather than the sounder process of true prevention The best practice of all would of course be the balanced combination—namely the main enhance of preparation and the prompt attack But it must be said quite plainly that the prompt attack has become so insistent centrally and locally that its tendency has been to absorb attention Here a'a' is an epidemic surely come upon us unjustly and surreptitiously like a thief in the night Let us chlorinate the water and inject the drains boil the milk provide a temporary hospital or get vaccinated These are in all probability the right and proper things to do under the circumstances but it would be better to be forearmed and have a wholesome water supply effective drainage clean milk an available hospital and a prepared immunity When the fire occurs it is too late to purchase a fire engine or take out an insurance The experience of each year confirms the view that both centrally and locally, we cannot afford to neglect the steady application of the bedrock principles of sanitation

Applying the above principles to the work of the present staff, Sir George Newman writes

> Certainly the routine claims upon the medical department are only met with some difficulty,—many have to be declined much routine inspection is in arrears and there is little or no opportunity for systematic sanitary surveys

The fifth annual report of the Ministry of Health (1923 24) has just been issued [1] It states that in the estimates laid before Parliament for the financial year 1924 the provision for the health service in respect of grants paid to local authorities has been increased with regard to tuberculosis, both generally (£30,000) and by the erection of cottages for tuberculous ex-service men at village settlements (£15,000), and for the welfare of the blind (£5,000) Reductions are shown in the capital grant towards the provision of sanatoriums for tuberculosis, due to the approaching completion of the programme of building, of the grants in aid of maternity and child welfare, and the treatment of venereal diseases The report is divided into five main sections, the first of which is public health Among the subjects of direct medical interest comprised in the report are the control of infectious diseases, maternity and child welfare, the welfare of the blind, the inspection and supervision of food, and some general health questions, including information with regard to international health work All, or nearly all, the information under these heads has already been noted in our columns on various occasions The second section is concerned with local government and local finance, the third with the administration of the Poor Law, the fourth with National Health Insurance, and the fifth with the Welsh Board of Health, of all these subjects financial particulars are given, but we have failed to find any general summary

The second report of the Select Committee on Estimates deals with the Ministry of Health It states that the net total of the estimates is £19,492,361, as compared with estimates for 1923-24 of £19,599,020, but with an actual expenditure for last year of £17,069 272 In 1913-14 the expenditure was £4,213,375 The main reason for the increase of expenditure is in connexion with housing and the expansion of the health services, which together account for about £14,500,000, to which must be added another £1,000,000 for increased cost of staff The Committee

> "tends to the conclusion that no further serious reduction of staff can be anticipated but on the other hand that unless further work is thrown upon the Ministry the existing staff ought not to be increased

This seems clearly not the opinion of the Chief Medical Officer The need for national economy in every reasonable direction is obvious to the whole nation, yet in the sphere of health it would seem that it can only be achieved if many routine claims on the medical department are declined, if routine inspection is allowed to continue in arrears, and if systematic sanitary surveys are not carried out

CONCLUSION

In an eloquent conclusion Sir George Newman sums up the work of what he calls the "*record year*" 1923 It was a record in respect of low death rate and low infant mortality, and a year exceptionally free from epidemic and infectious disease He points out, however, that even last year lost time due to sickness, most of which is preventable, probably cost the country "ten times more than that which it loses owing to strikes and labour disputes," and adds "We are in friendly competition with communities which are giving more public attention to social and health problems than we are ourselves" Far too many deaths occur under 50 years or age Local authorities should take a wide view of their duties "The public health is the primary asset of the nation's welfare, whether measured by employability and production, or by length of days, or by personal well being" The immediate future requires, he says, education of the people in hygiene, concentration on the strongholds of disease, co-ordination and direction of means to ends, and systematic research and investigation A health programme for local authorities was outlined and circulated in 1919,

> but there are still many authorities and many medical officers of health who have apparently paid no regard to it and who still muddle on from hand to mouth the victims of every passing whim or popular stunt instead of organizing their work as responsible and competent men charged with the duty of directing public service of their district on behalf of all who have the fortune or misfortune to live within its boundaries

As to the weaker authorities, he says

> It is not money they lack but will power and such careful economical and foreseeing co-ordination and direction as the particular needs of each area indicate the backward authority trying to emulate the more advanced and enlightened *The progress* of the science and art of medicine in the last quarter of a century has it is true outstripped the organization of our *sanitary Poor Law* and education authorities The new wine is being poured into old wine skins But what is much more pertinent to our labours *we fail in hundreds of sanitary districts to use the facilities provided* On the whole the existing facilities are reasonably well furnished but all too often people fail to use them, and the authorities fail to co-ordinate them

In a final paragraph, the Chief Medical Officer records with regret the death of Dr F W Higgs, C B E, and Dr R J Reece, C B Of the latter he writes

> I cannot easily express the irreparable loss which the Ministry and indeed the whole country has sustained in his sudden death To his friends and colleagues in the Ministry he was a man greatly beloved for his sterling character integrity and personal qualities

All who knew Dr Higgs and Dr Reece will agree with their official chief in his appreciation of their worth

[1] Cmd 2218 It is an octavo volume of 134 pages It can be obtained from the Stationery Office (Imperial House Kingsway, London W C 2) or from the usual Branch Offices and Agents. Price 5s. postage 2d. It can also be obtained through any bookseller

THE BRACKENBURY TESTIMONIAL

THE following letter has been addressed to the Secretaries of Local Medical and Panel Committees, and it is hoped that all individual subscribers who can attend the proposed soiree, on October 15th, will apply for tickets as soon as possible

129, Strand, London, W.C.2,
Room 17,
August 12th, 1924

DEAR SIR,

As previously notified, the official date for closing the Brackenbury Testimonial Fund was July 31st. It is desired that all contributions should be definitely in our hands by August 31st at the latest, so that we shall be glad if you will forward to us any further contributions which you may have received, by that date.

It has been decided that the presentation should be made on the evening of October 15th (the night before the Conference of Local Medical and Panel Committees), it will take place at a soiree to be held in London, further particulars of which will be furnished you later.

We shall be glad if you will let us know how many tickets you will require, each ticket will admit a lady and a gentleman.

The Executive Committee has been in consultation with Dr. Brackenbury, and the presentation will consist of a canteen of silver together with a gold watch, and the balance of the Fund will be handed to him by cheque.—Yours faithfully,

HAROLD S. BEADLES,
PETER MACDONALD,
Honorary Secretaries.

EIGHTH LIST—FROM AUGUST 1ST TO AUGUST 15TH, 1924

Amount previously acknowledged, £5,685 16s. 1d.

A. INDIVIDUAL CONTRIBUTIONS

£20 1s. 2d.—South Shields practitioners (per Mr. C. Ferguson Shepherd).
£2 2s.—Dr. J. S. Boden, and (per Mr. H. S. Souttar) Sir Humphry Rolleston.
£1 1s.—Drs. D. C. Kirkhope, John Masson, W. R. Wilson.
10s. 6d.—Drs. O. T. Evans, W. E. Porter, A. Paul Swanson.

	£	s.	d.
Total individual contributions	37	19	8

B. LOCAL PANEL COMMITTEES

Brighton Panel Committee—County Borough (per H. Wilfred Aldrich)	1	1	0
Subscribers: Drs. H. J. Bailey, D. M. Ross.			
Carlisle Panel Committee (per R. Simpson Duthie)	5	5	0
Herefordshire Medical and Panel Committee (per John Steed)	4	8	6
Subscribers: Drs. Anderson Baggs, Harrison and McKean Powell.			
Huddersfield Panel Committee (per W. H. Smailes)	1	1	0
Isle of Wight Panel Committee (per Dr. Reginald John Roberts)	11	2	3
Subscribers: Drs. A. W. Austen, H. T. Bassano, H. B. Billups, I. J. Carter, S. Churchill, J. Cowper, L. P. L. Irman Edwards, C. Fryer, S. Hartill, A. H. Hopkins, Hutchinson, W. J. Jolliffe, R. H. Jones, K. W. I. Mackenzie, H. V. Mansfield, T. A. Mayo, L. L. Preston, J. W. Pridmore, R. J. Roberts, R. Robertson, A. A. Stratton, G. B. Wood, S. L. O. Young, W. H. Frome Young.			
Lindsey (Lines) Panel Committee (per Dr. H. B. Willoughby Smith)	19	18	0
Merthyr Panel Committee (per E. J. Powell)	20	12	1
Middlesex Panel Committee (per Dr. James Johnstone)	12	12	0
Subscribers: Drs. Emlyn Cardinall, Abelson Banes, Farquharson, Yonge, Woolf, John Gordon, I. M. Matheson, Darby Bailey, Hildige, R. H. Martin, T. Sanders, Brook, G. C. Still.			
Monmouthshire Panel Committee (per Dr. J. D. O'Sullivan)	45	0	0
Montgomeryshire Panel Committee (per Dr. R. D. Thomas)	10	10	0
Northampton Panel Committee (per Dr. C. Mills)	8	18	6
Southend-on-Sea Local Medical and Panel Committees (per Dr. R. Sells)	1	1	0
Tynemouth Local Medical and Panel Committees (per Elias Lamble)	10	10	0
Wakefield Panel Committee (per T. Lister Croft)	13	13	0
Subscribers: Drs. G. G. Clarke, Donald Downie, S. S. Greaves, T. E. Lister, J. B. Lyle, D. M. Macleod, J. Patrick, D. Pundie, S. Render, T. J. Reynolds, T. Smith, G. W. Thomas, T. J. C. Tocher, T. Walker.			
Worcester (County of) Panel Committee (per T. W. J. Coaker)	71	4	0
Walsall Local Medical and Panel Committee (per Harry B. Webster)	1	1	0
West Ham Panel Committee (per Dr. Harold S. Beadles)	7	5	6
Subscribers: Drs. Gover and O'Driscoll, Kemp, Harcourt Weakly, Fairfax, McHardy.			
Wigan Borough Panel Committee (per Dr. T. L. Angior)	17	17	0
Subscribers: Drs. C. T. Prince, R. Girdwood, J. M. Boyd, W. Readman, T. H. Albinson, C. H. Ormsby, Jas. Orr, E. H. Monks, J. G. Nolan, J. Wood, A. J. Hynd, Hy. Winstanley, J. J. Shirlaw, J. Cook, T. M. Angior, J. Warburton, J. A. Watson, Jas. Ainscow, Hy. Whitehead, J. Bullough, Alex. Matheson, A. J. Cobban, R. O. Mather, A. R. Erskine, C. A. Sinclair, H. Aspinall, J. B. Macallan, K. Fraser, A. L. Ainscow, Wm. Taylor, C. L. Graham, J. T. Terry, Hy. Fitherland, T. J. Angior, J. P. Johnson.			
Rochdale Panel Committee (per Alan H. Richardson)	19	19	0
Lincs (Holland) Panel Committee (per Dr. J. R. Munro)	10	10	0
	331	8	6

COLLECTED BY THE HONORARY SECRETARY AND TREASURER FOR SCOTLAND (DR. C. E. DOUGLAS)

Individual Contributions

£1 1s.—Dr. J. S. Craig.
10s.—Dr. J. Broadfoot.

Total individual contributions	1	11	0
Panel Contributions			
West Lothian Panel Committee	16	0	6
Edinburgh Panel Committee	32	6	0
Paisley Panel Committee (second donation)	1	10	0
Renfrew County Panel Committee	18	0	0
Dumfries Panel Committee	11	0	0
	80	7	6
English and other contributions	331	8	6
Total from August 1st to August 15th	411	16	0
Amount previously acknowledged	5,685	16	1
Total to August 15th (morning)	6,097	12	1

Amounts Promised

Denbighshire Panel Committee (per George Harrison), £10 9s. 6d.
Glamorgan Panel Committee (per Gwilym Trehearne), £150.
Dr. D. McAskie (Southsea), £3 6s. 3d.

England and Wales.

VITAL STATISTICS OF 1923

THE Registrar-General's *Statistical Review* of England and Wales for 1923, Part I, Medical, has been issued. It is an octavo volume of nearly 500 pages, which can be obtained from the Stationery Office, price 15s. Following a recent practice it has been printed separately from another volume containing the text of the Annual Report. The statistics with regard to births, deaths, and infant mortality were given last week (p. 330) in our notice of the report of the Chief Medical Officer of the Ministry of Health, but it may be added that the natural increase of population by excess of births over deaths was 313,766, which was equivalent to a rate of 8·1 per 1,000 living. This shows an improvement upon 1922, when the natural increase was 293,895, equivalent to a rate of 7·6 per 1,000. The death rates from enteric fever, diphtheria, and phthisis are the lowest on record, and that from scarlet fever, with one exception, the lowest. Influenza shows the lowest mortality since 1917, and whooping-cough since 1919. Cancer shows the highest rate yet recorded.

REPORT OF THE METROPOLITAN ASYLUMS BOARD

The report of the Metropolitan Asylums Board for the year ending May 31st, 1924, is a little larger than the report for the previous year. The period dealt with would have been characterized by a low demand on the Board's hospitals for infectious diseases, in consequence of the great fall in scarlet fever, had it not been for the occurrence of an epidemic of measles. With regard to scarlet fever, 10,115 cases were notified—a smaller number than that in any year since 1891, with the exception of the years 1916-18. The deaths from scarlet fever in London numbered 116, representing a rate of 2·27 per 1,000 of the deaths, and 0·02 per 1,000 persons living. The high incidence of diphtheria during the scarlet fever epidemic in 1920-22 continued when the epidemic as a whole had waned, and persisted in a modified degree, during the year under review 8,363 patients were admitted, as compared with 12,752 in the previous year. The high level maintained by this disease indicates the importance of combating it more effectively by early antitoxin treatment and rapid removal

of patients to hospitals The Board arranged during the year for the application of the Schick test in connexion with the training ship *Exmouth* Out of 626 boys tested, 541 gave a negative result, indicating immunity from diphtheria, and 85 gave the positive reaction, showing that they were susceptible to the disease All except 8 of the susceptible patients received immunizing injections, and were retested at intervals, reinoculation being continued until immunity from diphtheria was established No cases of typhus fever have been admitted to the Board's hospitals during the last four years, this disease is therefore to be omitted henceforth from the annual tables of statistics, and the occurrence of any sporadic cases will be recorded by a special note in future *Enteric fever* has reached so low a level that it cannot be satisfactorily compared with scarlet fever and diphtheria by means of graphic charts, this disease in future will therefore be omitted from the charts, but the actual figures will continue to appear in the statistics The number of cases of enteric fever notified in the decade 1890 to 1899 was 33,013, in the following decade 22,073, in 1910 to 1919, 6,835 cases were notified, and during the four years 1920 to 1923 only 1 336 cases From this summary the striking nature of the fall in the incidence of the disease is clear Encephalitis lethargica, which first appeared in London about 1917 as a disease to be regarded with special consideration, has since increased considerably During 1920 there were 141 cases notified, and in 1921 233 cases of the disease occurred, in the two following years 67 and 101 cases, respectively, were notified, but during the first five months of 1924 the notifications totalled 337 The metropolis appears to experience a greater incidence of measles about every two years, this was observed last in 1922 Though the disease is not generally notifiable in London, some indication as to its prevalence during 1922 is derived from the fact that over 34,000 cases were reported among children attending the London County Council schools Towards the end of 1923 the number of cases showed a marked increase, having risen from 350 on November 30th to 624 on December 31st, thus, of the 817 cases admitted during 1923, over half were received during the last two months of the year In view of the fact that the incidence of this disease is usually greatest during the first quarter of the year, the Board made as large provision as possible, and from December 1st, 1923, to May 31st, 1924, 4,900 cases were received by the Board, on the latter date there were still 866 under treatment The highest number of patients under treatment at any one time was 1,611 on April 8th, the similar highest number recorded in any previous epidemic was 958, on March 19th, 1923 The Ministry of Health expressed appreciation of the Board's action in making this substantial provision for measles

In conjunction with the London County Council, the Board is engaged in investigating the cause of middle-ear disease, with a view to its prevention When a child who had had ear disease was discharged from the Western Hospital a report was sent to the London County Council, and so far no case had been traced in which the disease had started again Three of the Board's medical officers have received special training in otology, and the administrative procedure, which had been hitherto experimental and had been found to be satisfactory at the Western Hospital, will now be introduced into two other of the Board's hospitals A clinic was opened in January, 1924, at St Margaret's Hospital, Kentish Town, to deal, in the first instance, with the after-care of children who had been under treatment for ear disease at the Downs Hospital

Medical instruction in fevers during the year was given to 786 students, and 80 students attended courses of instruction in hospital administration for the diploma in public health The Board has revised the arrangements in this respect so as to comply with the new regulations of the General Medical Council for the diploma examination

The report contains a note to the effect that the deaths from cancer among patients aged 45 years and upward, certified under the Lunacy Acts in the Board's mental hospitals, were very low when compared with the cancer mortality for London at the corresponding ages For example in 1923, in the Board's mental hospitals, 15 out of 423 deaths were due to cancer, a percentage of 3 54, whereas among the population of London, out of a total of 33,050 deaths, 5,535 were due to cancer, a percentage of 16 74

The total expenditure for the year, other than out of loans, amounted to £2,443,926, of which £1,894,095 was chargeable to the rates, equivalent to a rate of 9 79 pence in the £ The estimated expenditure for the year 1924 25 indicates a reduction, it is stated, to a rate of 7½d in the £ The Metropolitan Asylums Board serves an area of 121 square miles, with a population of over four and a half million The Board's institutions include 14 hospitals for infectious diseases and 5 for mental diseases, 9 institutions for tuberculosis and 2 for venereal disease, a training colony for improvable imbeciles and one for sane epileptics, the *Exmouth* training ship, with its infirmary on shore, and a sea going tender accommodating 770 boys, 5 children's institutions, 10 casual wards, and a land and river ambulance service, which was responsible during the last year for 61,509 removals

Scotland.

LUNATICS AND MENTAL DEFECTIVES

THE tenth annual report of the General Board of Control for Scotland, dealing with the year 1923, states that the number of insane and mentally defective persons in Scotland on January 1st, 1924, was 21,078 Of this number 18,389 persons were certified insane and 381 persons were admitted voluntary inmates of asylums Of the total number of insane, 3,595 were inmates of Royal asylums and 11,649 of district asylums, 1,917 were maintained in a private asylum or in private dwellings licensed for the purpose, 1,105 were inmates of the lunatic wards of poorhouses, and 69 were detained as criminal lunatics The Board considered that the tendency to allow patients to enter voluntarily should be encouraged, as it gives them an opportunity of undergoing treatment by persons skilled in mental disorders at an early stage of mental illness while prospects of recovery are still great This procedure has been followed more in some asylums than in others, and in one of the Royal asylums the admission rate of voluntary private patients has actually exceeded that for certified private patients Voluntary entrance on the part of pauper patients is hindered by the fact that the lunacy grant of £115,000 is paid to parish councils towards the cost of certified lunatics only Nevertheless, ten parishes in Argyllshire have agreed to give facilities for any persons in their districts who require institutional care on account of their mental condition to enter a district asylum voluntarily as rate aided patients It is reasonable to suppose that pauper patients, like private patients, would prefer to enter asylums voluntarily if they were permitted to do so by a rearrangement of the incidence of the lunacy grant If this could be arranged, the certification of patients, which is not necessary for medical purposes, would decline to about 60 per cent, or even less, of the patients admitted to asylums The Board considers that this would be an advantage, as certification of the insane would then fall into its proper place as a social and legal necessity

Attention is directed to the question of how much an asylum should be allowed to grow While experience has shown that large institutions generally can be more economically managed from an administrative point of view, it is believed that, in the case of asylums large institutions tend to be less efficient from that of the interests and welfare of the patients The Board, therefore, will examine very closely any proposal so to extend an asylum that the number of 700 patients will be exceeded It is suggested that the necessity for increased accommodation can often be obviated either by the establishment of observation wards or by boarding out all quiet and harmless cases, or by separating all mentally defective persons from those who are of unsound mind Special attention is directed towards the last consideration

In some districts there appears to be a tendency to send mentally defective persons, who have been reported by an

Chevalier Jackson has illustrated, a sign resembling that to which Pavey-Smith has drawn attention It consists in a narrow, sharply limited, and very dark red zone on the anterior pillar in front of the tonsil Lott regards it as an important distinguishing feature of an infective tonsillar focus in which streptococci predominate In his experience when a tonsillar focus of this nature is present tonsillectomy will yield good results in arthritis, neuritis, etc

When a patient is sent to us suffering from a systemic disease which is known to be occasionally caused by a primary septic tonsillar focus, and we are asked whether the removal of the tonsils is likely to benefit the disease in question, on what grounds is an opinion to be based? Owing to the want of data it is often impossible to give a definite answer to this question, but in attempting to do so assistance may be obtained from consideration of the undernoted points

1 Is a focus of infection present in the tonsil? If such is present, or if a predisposition to tonsillitis or to swelling of the cervical tonsillar gland exist, tonsillectomy is indicated even although there is no evident connexion between the septic tonsil and the disease in question The patient should be told that the operation will cure the local affection and will almost certainly benefit the general health, but that improvement in the systemic disease cannot be guaranteed as it is doubtful whether the focus in the tonsil is the one causing trouble On the other hand, failure to discover a septic focus in the tonsil does not exclude its presence

2 Is the special focus for which search is being made in the tonsil? This is probable if, according to the clinical history, the onset of the tonsillar affection coincided with that of the secondary disease, or if varying states of the tonsil usher in or accompany corresponding phases of the former When such relations can be proved and a septic focus exists in the tonsil, the prospect of curing the secondary infection by tonsillectomy is brightest, but even if no focus is discoverable in the tonsil operation may be recommended In either case, however, a qualified prognosis should be given owing to the possible presence of a focus elsewhere than in the tonsils

3 Are foci of infection present elsewhere? This is a question of great importance and should be carefully investigated before operation on the tonsil is advised The regions which must be explored or taken into consideration are the gums and teeth, the nose and its accessory sinuses, the alimentary canal, and the genito-urinary tract For this purpose the laryngologist must seek the co-operation of other confreres A careful examination of the nose and its accessory cavities should be made, for, as Watson-Williams, Syme,[11] and others have proved, the tonsil in many cases has been infected by suppuration in the nose In this connexion it may be emphasized again that a free discharge of pus is less liable to cause a secondary infection than a small amount bottled up The state of the gums and teeth should be determined by a-ray examination Septic foci occur more frequently in connexion with teeth than in the tonsil, and when necessary their treatment should take precedence of a tonsillar operation and may even render this needless The family physician should consider the possible presence of a focus in the appendix, gall bladder, colon, etc Chalmers Watson[12] remarks that bacteriuria is often overlooked in this connexion If, then, in addition to a focus in the tonsil, one or several foci are found elsewhere, then respective importance must be weighed, and action taken accordingly

4 If the tonsil is clinically healthy, has caused little or no trouble in the past so that there are no local indications for its removal, and if there is nothing in the clinical history pointing to a relation between the tonsil and the systemic disease under investigation, tonsillectomy should not be recommended The only circumstances in which operation might be entertained in such a case would be the exclusion of all other likely foci, the fact that the disease in question was frequently associated with a septic tonsillar focus, and the urgent request of the patient to be treated

5 When a systemic disease caused by a primary septic focus in the tonsil has been long present, it may receive no benefit from the removal of the tonsil and focus The failure of the tonsillectomy is then probably owing to the development of secondary areas of infection which have become more potent than the primary, and which, after removal of the latter, continue to exercise a human influence

In all cases of systemic disease suspected of being due to a septic focus in the tonsils these general principles should be borne in mind before recommending tonsillectomy

I shall now refer to some of the results obtained by tonsillectomy in diseases which were due or assumed to be due to septic foci in the tonsils

Mention should first be made of chronic toxæmia, which is manifested by a lowering of the general health, with lassitude, want of energy, loss of appetite, anæmia, etc It is seldom that a patient does not express himself as feeling altogether better after the removal of diseased tonsils St Lawrence[10] states that no single factor (excepting prolonged country residence under regulation) stands out so strikingly in its effect on nutrition, well being, and general health as tonsillectomy in cases which present indications for the removal of the tonsils

Of all the systemic diseases etiologically related to focal infections in the tonsils, operation is most often indicated and successful in those belonging to the rheumatic group This includes acute rheumatic fever, chronic arthritis, myositis or myalgia, rheumatoid arthritis, chorea, and "sore throat", the last is not always accompanied by tonsillitis, as it may be met with in patients whose tonsils have been enucleated

St Lawrence has pointed out the importance of determining certain facts in order to estimate the value of tonsillectomy in those who have been subject to rheumatic manifestations prior to the operation Inquiry should be made as to when the symptoms first set in, the frequency of their recurrence, and the interval between the last recurrence and the operation Thus, a patient who has suffered from rheumatic symptoms for years with a recurrence or exacerbation every few months, or with bone and joint pains daily until immediately before the tonsillectomy, and who has no return of the symptoms after the operation, would certainly appear to have been benefited or cured thereby On the other hand, if tonsillectomy is performed after a first attack of acute rheumatic fever or chorea, it would be wrong to attribute to the operation the non recurrence of these affections, as single attacks are not uncommon Further, he has rightly maintained that other factors must remain constant before and after tonsillectomy to allow of correct deductions being drawn as to its value If, after the operation, the patient's habits are supervised and his housing, diet, general health, etc, are improved, due allowance must be made for the benefit accruing therefrom

One must also be careful not to be misled by improvement in the patient's condition immediately after tonsillectomy, this may be only temporary The effect of the anæsthetic, the rest in bed, and the restricted dietary often have a pronounced beneficial effect on rheumatism quite apart from any that may be due to the operation

Further, when benefit follows the operation only after a long interval, the possibility of its representing merely a halt in the progress of the disease should be kept in view

An elaborate investigation, to which repeated reference will be made, was carried out by Crowe, Watkins, and Rothholz[1] in the Johns Hopkins Hospital on the relation of tonsillar and naso-pharyngeal infections to general systemic disorders The statistics of cases treated by tonsillectomy show that in infectious arthritis (of 31 cases in 24 the joints became normal) and in myalgia (of 4 cases all were cured) the results were excellent In some cases the joints were much worse for a few days immediately following the tonsillectomy, but began to improve after two or three weeks Often it was six or eight months before all joint symptoms entirely disappeared

The results obtained after tonsillectomy in 200 consecutive cases of all types of myositis and arthritis by Iliff and Lyons[13] were unusually good Of those under 31 years of age, 81 per cent were better, of those over that age 77 per cent Statistics are given as to various post-operative benefits—for example, the regained ability for

work, and the return to normal size of enlarged joints In the entire series only 57 per cent gave a history of tonsillitis Operation was occasionally followed by an acute exacerbation of myositis or arthritis, which was hailed as a sign *that the tonsils were the active focus of infection, but* ultimate improvement was not noted in all such cases From their experience they conclude that it is justifiable to advise tonsillectomy in every frank case of myositis or arthritis and that marked improvement may be assured from this operation alone in 79 per cent of all cases

In 54 (60 per cent) of St Lawrence's cases there was no recurrence of any rheumatic manifestation after tonsillectomy, in 31 cases recurrence took place In 61 cases with myositis and bone or joint pains before operation there was no recurrence in 47 cases (77 per cent)

A paper by H S Chapman[19] serves as a corrective to any tendency to regard the tonsils as the chief or only seat of septic foci in chronic arthritis In a series of 125 cases the primary focus was believed to be located in the genito-urinary tract in 45 in the teeth in 62, and in the tonsils in only 18 All the patients in the last class gave a history of recurrent tonsillitis In 7 tonsillectomy was performed with marked improvement in 4 The most striking results were obtained in the cases in which the focus was in the genito-urinary tract, when in the teeth, recovery was very rapid

Of 477 adult tonsillectomies performed by H Hastings[9] 130 had suffered and sought operation because of rheumatism This term included chronic arthritis in 101 cases, acute arthritis in 3 neuritis in 6, and myalgia in 20 No operation was done in any case of definite rheumatoid arthritis In 46 cases tonsillar symptoms were absent According to the subsequent history cure was obtained in 40 (30 7 per cent) improvement in 40 (30 7 per cent) no improvement in 24 (18 4 per cent) and the results were unknown in 26 cases

Whitton's[4] statistics are based on cases treated by tonsillectomy in the Ear and Throat Department of the Royal Infirmary, Edinburgh They include examples of acute chronic and muscular rheumatism and rheumatoid arthritis Of 23 patients 14 were free from rheumatism at the time of writing 3 were improved, while 6 showed no improvement Of the 14 cured, 7 had acute rheumatism and 7 chronic arthritis Rheumatoid arthritis accounted for two of those unimproved, and chronic rheumatism for the remaining four

In rheumatoid arthritis the conclusion drawn from the results of the investigation in the Johns Hopkins Hospital (of 9 cases 2 were improved 2 unchanged and 5 worse) was that patients with this disease should be subjected to tonsillectomy only in very exceptional circumstances In spite of the operation being most carefully done, a stay of from six weeks to three months in hospital was required in several instances in order to regain the pre-operative physical level

Mollison's results in rheumatoid arthritis (of 36 cases 11 were cured and 25 improved) are encouraging and warrant operation in selected cases He found that the early cases did best, but that even in advanced cases pain might be relieved although deformity remained Instances of disappearance of slight deformity are known in these the thickenings were not bony but in the tendons above the joints He considers that age does not affect the question of operation, one of his most satisfactory cases was that of a woman aged 54

The tonsils are most liable to become acutely inflamed in young subjects and it is they who suffer oftenest from rheumatic fever and endocarditis following an attack of tonsillitis Tonsillectomy has therefore been employed in those who have had rheumatic fever in order to get rid of a likely source of infection and so reduce the tendency to recurrence with possible further involvement of the joints and heart

The Johns Hopkins workers reported the results of tonsillectomy in 25 cases, in 20 of which a cardiac lesion was present When last examined the joints were normal in 23, and only 4 had had one or more recurrences of the rheumatic fever with polyarthritis

St Lawrence has studied the effect of tonsillectomy on the recurrence of acute rheumatic fever and chorea in 94 cases in a special children's cardiac clinic Fifty-eight had organic disease of the heart They were under observation after tonsillectomy for a period of from two to six years The tonsils were hypertrophied in 77 cases (82 per cent) and not enlarged in 17 cases (18 per cent) They were the site of recurrent inflammation in 73 per cent of the cases After operation an appreciable amount of tonsillar tissue remained in 9 cases, which have therefore been eliminated The statistics are based on the remaining 85 cases and have been worked out with unusual care and impartiality

Recurring attacks of acute rheumatic fever were present in 42 of his cases After tonsillectomy there was no recurrence in 35 cases or 84 per cent St Lawrence concludes his valuable paper by stating that his experience has been such as to lead him to believe that the complete removal of the tonsils is the most important measure at present available for the prevention of acute rheumatic fever and the allied rheumatic manifestations

Hunt and Osman's[3] statistics are based on 144 carefully observed cases In 66 the tonsils were enucleated, and in 35 of these (53 per cent) recurrences took place, in 78 no operation was done and in 33 (42 per cent) there were recurrences These figures show that recurrences were more frequent in the patients whose tonsils had been removed The authors consider that if local indications for operation are present this is probably advisable in order to prevent further attacks of tonsillitis but they condemn operation in rheumatic children whose tonsils and lymphatic glands appear healthy It might be added that F J Poynton has expressed a similar opinion that it would be a mistake to suggest the wholesale removal of tonsils in rheumatic children and those suspected of rheumatism when there is no evidence that they are diseased" (BRITISH MEDICAL JOURNAL June 2nd 1923)

H J Starling[4] deals with the occurrence of tonsillar infection in cardio-vascular disease and the results obtained by tonsillectomy He had 64 cases of mitral or aortic or combined disease The total incidence of tonsillar infection was 71 45 while in 18 cases (28 45 per cent) there was no history or evidence of tonsillar infection

Enucleation was performed in 36 cases (aortic regurgitation 7 cases mitral stenosis with aortic regurgitation 3 mitral stenosis 23 pericarditis 1 enlarged heart 2), age from 6 to 44 Tonsillar infection in 36 The results were as follows no improvement 7 stationary 1 improvement 13, marked improvement 13 and no further record 2 No patient appeared to be the worse of the operation this should be performed if possible after the acute infection has subsided In apyrexial attacks of chorea and rheumatism tonsillectomy should be done at the earliest possible moment Cases of advanced valvular disease which are so bad as to require rest will not derive much benefit

Chorea being now regarded as a rheumatic or streptococcic infection of the nervous system and in the past having been occasionally cured by the removal of tonsils and adenoids the possibility of an etiological connexion between a septic focus in the tonsil and the disease should be kept in view

Crowe and his co-workers of the Johns Hopkins Hospital followed up 23 cases of chorea in which tonsillectomy had been performed in 13 of these there was no recurrence They consider the operation an unjustifiable risk but state that it may be advisable when the chorea is quiescent It should be performed with the idea of preventing damage to the heart and joint rather than as a curative measure

In 40 children suffering from chorea who were operated on by St Lawrence there was no recurrence in 50 per cent In general he considers that the effect of tonsillectomy on the recurrence of the condition is much less definite than existed in the case of the other rheumatic manifestations He also noted that chorea when associated with acute rheumatic fever or joint and bone pains recurred less frequently than when it occurred alone or with sore throat

J B Greene's[5] personal experience with tonsillectomy and adenoidectomy in chorea has been so satisfactory that

he is inclined to urge operation in this disease in the absence of other foci of infection

Whitton's statistics dealing with 11 cases of chorea are not very encouraging Of these patients, 2 have been well since the removal of tonsils and adenoids, 1 had attacks during the first two years following tonsillectomy, and in the remaining 8 chorea is still present, though 4 of these have improved

A type of nephritis, characterized by glomerular lesions, is believed to be due to streptococcic infection In most cases of this nature there is a recent history of tonsillitis, arthritis, rheumatic fever, or endocarditis In 18 such cases in which the tonsils were removed as a therapeutic measure, the Johns Hopkins Hospital investigators obtained a history of tonsillitis in all but 2 patients, and found a heart lesion in 4, and arthritis in 5 Two cases died Of those remaining they found that in 13 the urine was normal at the last examination, from eight months to three and a half years after operation

Cautley[6] remarks that it is not widely recognized that infection via the tonsils is frequently the explanation of an attack of haematuria and albuminuria or even an acute nephritis Such attacks are commoner in children than adults He emphasizes the importance of carefully examining the tonsils and of having them enucleated if there is any evidence that they are a focus of infection Generally he recommends delaying the operation until the local infection has subsided, but in severe cases it might be advisable to do it earlier

It has been shown that certain chronic skin diseases may have an etiological relation to focal infections, including those of the tonsil

H W Barber[7] has recorded cases of lupus erythematosus in which cure was obtained by removal of the tonsils and the use of an autogenous streptococcic vaccine prepared from them Similar good results in a few isolated cases have been obtained in a like manner by my colleague Dr Herbert Brown Disappearance of this skin affection has also been reported by Whitfield after removal of the tonsils without vaccine treatment

Barber[26] has also proved a connexion between chronic urticaria and focal sepsis, the latter being seated in some instances in the tonsils He is inclined to think that in most patients in whom chronic or recurrent urticaria, with or without angio-neurotic symptoms, first appears in adult life the underlying cause is sensitization to bacterial rather than food proteins, the same, he believes, holds good as regards asthma and that type of eczematous dermatitis which is apt to be associated with it The occurrence of pathological symptoms only in certain cases, and the difference in the symptoms in different individuals, are, in his opinion, also accounted for by sensitization

In alopecia areata Barber has found infected tonsils, with or without adenoids, in 62 per cent of a series of cases He and Zimmer have obtained rapid recovery in 7 cases after enucleation of the tonsils

Leslie Roberts[29] has reported cases of lichen planus, alopecia areata, and prurigo which were cured or favourably influenced by tonsillectomy All workers have not obtained the beneficial results above recorded

In the course of an interesting paper on focal infection, Leslie Roberts outlines the views held by Vaughan and Zinsser, according to which the toxic effects following the introduction of pathogenic bacteria into the animal body are due not to endotoxins, but result from the action of the products of toxic cleavage These products may be formed from all bacterial proteins—pathogenic and non-pathogenic—and from non-bacterial proteins He considers that Vaughan's theory affords a rational explanation of the fact that the most widely different dermatoses—for example, lupus erythematosus, alopecia areata, lichen planus, etc—may be associated with the same tonsillar flora

Whitton reports the results obtained in 15 cases of goitre All the patients were women In 7 the goitre was simple, in 1 of these the swelling disappeared in 2 it became less, and in 4 it was not improved Exophthalmic symptoms were present in 8, of these, 2 are well, 2 improved, and 4 unchanged His results show that tonsillectomy in simple goitre does not give good results, in the toxic variety of exophthalmic goitre it may be adopted

In 6 cases of epilepsy in Whitton's statistics cure was obtained in 4 and improvement in 2 In 5 children tonsils and adenoids were removed, and 1 adult was improved by tonsillectomy

Many other diseases are reported to have been benefited by removal of diseased tonsils—for example, appendicitis, osteomyelitis, tuberculosis, iritis, keratitis, neuritis, herpes, Hodgkin's disease, leukaemia, arterio sclerosis, etc The relation of these to a septic focus in the tonsil must, however, be rare

Opinions may differ as to the part played by septic tonsils in many of these affections, but it is established beyond doubt that the various rheumatic manifestations referred to are caused or maintained in many instances by tonsillar infection I have operated on a considerable number of such cases, in some with, and in others without, benefit to the rheumatism The great majority of those who still suffer have improved, I believe, in other respects I hoped to have furnished statistics, but the thought of the correspondence necessary to obtain the data required proved too strong a deterrent Moreover, information supplied, either direct or through the family doctor, to the laryngologist by a patient as to his own condition is apt to be biased by courtesy or policy If one may judge, however, from the ever-increasing number of cases sent for operation, it would appear that both the consulting physician and general practitioner view favourably the effects of tonsillectomy in rheumatism and its allied affections

In spite of the high percentage of cures reported as having followed the removal of the tonsils in cases in which tonsillar infection could not be detected, I do not recommend tonsillectomy to my patients unless the history indicates a connexion between the rheumatic ailment and the tonsils, or the latter are septic, or the tonsillar gland is involved The operation is then useful and beneficial even if the rheumatism is not improved

As time passes, we recognize more and more the capacity of the tonsils to do harm The number of children whose tonsils and adenoids require removal must be appalling Bryson Delavan,[30] in 1921, stated that relief would be required for 55,000 children of the public schools alone for that year Wherein does our civilization err to produce these multitudes of ailing children? The full answer will not be forthcoming until more is known about the physiology of the lymphadenoid tissue in the pharynx, and especially the cause of its hypertrophy To day our task is to determine the attitude to be assumed towards the various manifestations of chronic tonsillitis, particularly those in which the tonsil is not obviously diseased but is suspected of being the seat of a focal infection

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H—C A SCOTT RIDOUT, M B, F R C S
Portsmouth.

I must I should like to congratulate Dr Brown Kelly on his able paper on the subject with which we have to deal and the wide aspect from which he has approached it At any rate in the South of England the subject of the indications for treatment in chronic tonsillitis, both in the child and the adult, is becoming of extreme importance and I think it would serve a very useful purpose if this sectional meeting were to formulate some fairly definite line to guide the practitioner in recommending operative treatment in those cases in childhood which we might describe as border line I am not referring to the gross causes for operation, but rather to those cases where the symptoms of tonsillar trouble are entirely local, and not very marked at that For instance, a great number of children are recommended for operation, their only sign or symptom consisting of one or two heavy colds with the accompanying heavy breathing of a winter cold, which a little local treatment will entirely clear up At a later date no symptom whatever will be observed which would warrant one in advising operation It is in this class of case that it is most difficult to decide when an operation should be strongly advised The tonsils may be slightly enlarged as one would expect after any acute trouble and for the time being there may be some obstruction It is not always possible to operate on these cases at once, even if suitable owing to the number on the waiting list of a more urgent nature and it is my custom to give them some local preparatory treatment such as an alkaline nasal lotion and gargle especially in springtime and during epidemics when experience has shown us in Portsmouth that on account of the sequelae, it is unwise to attempt operative measures except in cases of urgent necessity It is probable that if every child were examined at some period or other during the winter or during an epidemic of colds or influenza some temporary increase of the lymphoid tissue of the tonsils would be noticed indiscriminate operation in these cases, in my opinion, tends to bring the whole procedure into disrepute The public is becoming alive to this fact, and there is already a tendency on the part of some parents to be a little diffident in consenting to have the operation done

There is another point on which I think the opinion of the meeting should be expressed in no uncertain terms One urgent cause for further treatment is the failure of the treatment already given—namely tonsillotomy Many children come having had, so it is said, their tonsils removed on one, two or more occasions there are still two very septic and definitely diseased stumps, half tonsil sometimes more than half, in the centre crypts of which are shut up large plugs of inspissated pus These conditions are generally associated with glandular enlargements in the neck and constant recurring colds they form a very urgent case for treatment When advising further operative treatment one is frequently met with the reply "Oh he had his tonsils removed only last year for the second time (possibly the third I have even known the fourth), and it did him no good" It is obvious in such cases that only enucleation will result in complete improvement This point, I think, falls well within the scope of our discussion, and, with the President permission I should like it debated whether it should not be definitely stated that for an absolute cure of a diseased tonsil total enucleation is the only operative procedure that should be done In connexion with this I should like the meeting to make a pronouncement that operations on the tonsil should not be classed as an entirely minor operation but be put into the category of the smaller major operations and that no practitioner without plenty of experience and confidence of being able to carry out the procedure properly should undertake the operation It is rather hard luck that a child—and there are many of them—should have to come into a hospital or nursing home after several ineffective attempts at cure, for treatment which could have been done on a single occasion I am sure that no one of us would wish our children to undergo such experiences

As regards the other conditions for operation, experience has taught me in my clinic, and it is now my practice to group the cases as follows

1 Great hypertrophy causing dyspnœa obstruction choking or swallowing or respiration
2 Hypertrophy with obvious infection of the tonsil crypts which are full of inflammatory matter
3 The presence of otitis media or deafness
4 The presence of enlarged cervical glands
5 The history of frequently recurring attacks of tonsillitis especially with joint pains or history of rheumatism
6 After any of the exanthemata if any tonsillar hypertrophy or obvious infection is present

The other class of case, previously dealt with is on the border line and it is my practice to keep the patients under observation My experience is that many entirely recover, and that often when they are kept waiting owing to want of accommodation it is remarked that an operation need not have been done at all

The public is also asking what is the use of a tonsil, is it not of some protective value It is very difficult to say that it is not When the public asks what is the use of removing a tonsil my argument an effective one, is that the tonsils may be compared with forts around a city useful at first but not when in possession of the enemy when therefore, it is necessary to destroy them

Chronic tonsillitis in adults is an increasingly important subject I have had during the last few years numbers of patients in whom the only septic focus discoverable was the tonsil or its remains This focus produces very definite symptoms of trouble and the patient comes complaining of frequent attacks of tonsillitis or quinsy This is I consider, a definite case for operative treatment if the patient is to be permanently relieved Chronic rheumatism or chronic pain in the joints with signs of osteo-arthritis is another frequent accompaniment and is the only septic focus that can be found in these cases teeth being excluded I fully agree with Dr Brown Kelly in his paper that the nasal sinuses should be examined at the same time as I find that in many cases of tonsillar infection the antrum and other sinuses show also a very definite infection Another common symptom is aching in the neck or a complaint of a distinct neuralgic pain shooting up to the ear and down to the clavicle Conditions of anæmia combined with indigestion from toxæmia with possibly light evening temperature and also general malaise form another group and also cases in which bronchitis frequently appears Many cases of retro-ocular neuritis and retinitis have been sent from ophthalmic surgeons for tonsillar treatment As regards the treatment of these various cases in my experience there is only one and that is complete removal by enucleation of the tonsils In the case of joint pains and osteo-arthritis if the pains have just begun and the condition has not progressed very far then relief is complete if at a later stage than this one cannot expect more than a cessation of the pains or an alleviation of the trouble Patients in poor health and anæmic improve at once and several cases of retinitis and retro-ocular neuritis have apparently benefited by the operation I have not sufficient record of these cases to say whether the results are *post hoc* or *propter hoc* Cases of valvular disease of the heart if of rheumatic or septic origin are very likely to improve considerably nephritis with albuminuria has been known to clear up There is one other very distinct symptom of which patient complain—foul breath—and plugs squeezed from the tonsil crypts are found to be stinking One patient the daughter of a naval officer apart from general anæmia and ill health complained that the symptom foul breath was preventing her from getting partners a dance Enucleation of the tonsils was performed and the crypts were found to be teeming with the fusiform bacillus Vincent The result has been complete recovery to good health

One word as to the bacteriological examination of tonsils I quite agree with Dr Brown Kelly that a very seldom if ever is a sterile tonsil discovered In my last four cases of examination of both tonsil of which I have record there were only three or four sterile ones probably due to some accidental cause Remembering the number of patients who come complaining of symptoms I have mentioned the number of cases at hospital and on the waiting list at my clinic with symptoms of increasing [illegible] I am

glad that this discussion has been started to-day There are numbers of these people going about with septic foci to whom relief can only be given by operative treatment—people of all ages, the question of treatment becomes more acute as the age of the patient increases These cases are often not recognized by the general practitioner Above and before all other methods, enucleation by dissection stands out as the best form of treatment I have not mentioned other forms of treatment, such as cauterization at several sittings, daily vigorous antiseptic painting, x-ray treatment, and also diathermy, these have their place in certain cases in certain circumstances

One other word as to the results in singers Last year I operated upon two ladies, one on the musical comedy stage, and the other an amateur singer at charities, etc Both have since told me that their voices have improved since the operation I must say that the operation was performed with some trepidation, but the results entirely justified it

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III—E D D DAVIS, F R C S,
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The enucleation of tonsils is so common to-day that it appears to have taken the place of the blood-letting of our ancestors The list of septic or general diseases said to be cured or benefited by the removal of tonsils is becoming longer and longer, and the following is a list of diseases or symptoms for which I have been asked to enucleate the tonsils Frequent and prolonged colds, pyrexia of unknown origin, tubercuous cervical glands, goitre (both exophthalmic and parenchymatous), infective arthritis, endocarditis, chorea, nephritis, colitis and chronic appendicitis, septic diseases of the skin, enuresis, asthma in children, and false croup

In addition, in the hunt for a septic focus, the tonsils are always under grave suspicion The time has now arrived when a serious attempt should be made to assess the value of enucleation of the tonsils in such systemic diseases, and in the course of my remarks later on I will endeavour to prove the tonsils guilty or innocent

There is ample clinical evidence to show that the tonsils are specialized lymphatic glands for the mouth, nose, and pharynx, and that such conditions as nasal sinus suppuration, septic teeth, or sepsis of the pharynx do produce tonsillitis or a chronic inflammatory condition of the tonsils, which disappears with the removal of the septic focus What is still more important, the tonsils are the portals of infection for some of the general infective diseases We may take tubercuous cervical adenitis as a good example of an infection which gains admission to the other structures of the body through the tonsil, and is one of the diseases of which we have the greatest scientific knowledge Mitchell[1] has shown that 90 per cent of the children residing in Edinburgh with tubercuous cervical adenitis were infected by tubercuous milk during the milk-drinking period (from birth to 5 years), and also states that in 64 consecutive cases of children suffering from tuberculosis of the upper deep cervical glands 24 (or 37 5 per cent) of these showed histological evidence of tuberculosis of the tonsil Again, the faucial tonsils have been removed from 90 children in whom the cervical glands showed no clinical evidence of tuberculosis, yet 9 (10 per cent) yielded positive results when inoculated into guinea-pigs

From the first observation and my own clinical experience, I consider it reasonable to assume that the tonsils can effectually prevent the tubercle bacillus and other organisms in moderate doses from entering the body, but if the dose is large, or the resistance of the individual is lowered, a general infection occurs It is significant that in those cases in which tuberculosis or a general infection has entered the body through the tonsil, it has been accompanied by tonsillitis of varying severity, and tonsillitis is one of the manifestations of such infections Therefore, when tonsillitis ushers in a general infective disease, one may conclude that the tonsil is guilty, and one always looks for this evidence in condemning the tonsil There is good clinical support for Digby's[2] claim that the tonsils have an immunizing function, and the presence of the varied and large number of organisms invariably found by bacteriological examination in the tonsils is additional evidence of this function When the tonsils are removed, the other adenoid or lymphatic tissue of the base of the tongue, pharyngeal mucosa, and cervical glands is sufficient to carry on the functions of the tonsils, and it has been observed that the adenoid tissue of the faucial and pharyngeal mucosa in the tonsil areas has become slightly hypertrophied Moreover, H H Dell of St Louis[3] has shown that in 20 patients who were carriers of the haemolytic streptococcus in the tonsils, in one to eight months after tonsillectomy the pharynx was found free of the streptococcus, and the same applies to the diphtheria carrier

In my own experience, and in that of others, it is found that the resistance to infections possessed by the individual whose tonsils have been removed is certainly not lowered, but is rather increased by the removal of a septic focus, and that such patients are not more but less susceptible to infections such as scarlet fever and diphtheria (Rolleston and Goadall) It is claimed with good reason that when the tonsil is septic it becomes functionless, and not only loses its immunizing properties, but becomes a source of infection and danger It is known that the tonsils commence to atrophy after the arrival of the permanent dentition or earlier, and some authors state that after this period the tonsil is functionless, and that there should be no hesitation in removing the tonsils should symptoms suggest the need, but there is ample clinical evidence to show that the tonsils are still active long after this period

When a patient with one of the above infective diseases is suspected of having septic tonsils and has been thoroughly overhauled by a physician, I have adopted the following procedure

I The tonsils are carefully examined for sepsis or disease The question at once arises, What is a septic or diseased tonsil? It is not easy to answer that question, because a septic tonsil shows varying degrees of tonsillitis, which often entirely disappear and no abnormality of the tonsil remains, moreover, the bacteriological examination is not reliable, as numerous and various organisms can always be detected in the normal tonsil For these reasons the diagnosis of tonsil sepsis or disease frequently depends on the history of symptoms and signs which can be attributed to the tonsils, and particularly to a history of tonsillitis associated with the infective disease However, the following signs, when present, indicate sepsis (1) A history of attacks of tonsillitis and of symptoms indicating tonsil infection (2) Slight enlargement of the corresponding cervical lymphatic glands (3) Varying degrees of redness and oedema of the pillars of the fauces, with occasional congestion and oedema of the uvula (4) The presence of pus in the crypts The yellow plugs of secretion found in the crypts, and particularly in the supratonsillar fossa, are harmless, they are frequently seen in the routine examination of the throats of healthy individuals, or in those where there is no question of tonsil infection The size of the tonsil is of comparatively little importance, and the buried tonsil, though hidden, is nearly equal in size to the superficially set and more prominent tonsil often seen in big men

II If the tonsils are found to be diseased, then it is necessary to eliminate any septic focus in the nose, pharynx, or mouth, which may be the cause of the tonsillitis

III In addition, the other paths of infection must be excluded—the teeth, urethra, and intestinal tract, in fact, all the orifices of the body must be considered

Looking through my case-books, I find that 94 per cent of the operations of enucleation of the tonsils have been performed for local reasons, such as middle-ear disease, frequent tonsillitis, enlarged cervical glands, mouth breathing, etc The great majority of these cases were in children, and the parents reported subsequently a marked improvement in the general health of the child, increased appetite and more alertness The evidence of a general practitioner who wrote a paper on this subject is significant, he stated that in some 30 cases in his practice, of children who had tonsils removed, he found that whereas before operation his visits were frequent and almost periodic, for

operation he had not been called in to see the children for eighteen months or longer J Keen of the Leicester School Clinic has also produced good evidence of the improvement in the nutrition and physique of the children who have had tonsils and adenoids removed

Frequent and prolonged colds are stated to be produced by septic tonsils and adenoids and I have satisfied myself that these catarrhal attacks are prolonged also that scarlet fever and measles patients with enlarged tonsils and adenoids are more prone to have otitis media and a severe infection On the other hand, I am not convinced that colds are less frequent after a tonsil operation and it is quite common to see children with severe colds after successful removal of tonsils and adenoids

Pyrexia of obscure origin in children has occurred in some of the tonsil cases The temperature persists after a cold or catarrhal attack the tonsillitis is overlooked, and there are no complaints of sore throat, but on examination the cervical glands are enlarged the tonsils are inflamed, and enucleation results in a normal temperature

Tuberculous cervical glands in the hypertrophic and acute stage rapidly improve with the enucleation of tonsils, and the disease becomes localized, but it must be admitted that this improvement occurs in some cases without enucleation If the glands are not suppurating it is distinctly advantageous to remove the tonsils and adenoids and then adopt antituberculosis treatment This results in the tuberculous adenitis becoming localized to the tonsillar gland in the angle between the internal jugular and common facial veins and it can then be easily and neatly excised I have done 9 such cases with excellent results in others my hand has been forced by suppuration and caseation of the glands and the tonsils and glands have been excised at the same sitting with very satisfactory results

Patients with exophthalmic and even parenchymatous goitres frequently have large prominent tonsils and in a few (5) I have enucleated the tonsils for tonsillitis there was no apparent effect on the thyroid and I think that even the most enthusiastic will not claim any beneficial effect on the goitre

In infective arthritis the best results have been obtained in young subjects who give a definite history of attacks of tonsillitis with an exacerbation in the joint symptoms and in whom there is evidence of tonsil sepsis The arthritis is usually recent and called acute rheumatism but in those cases in which the arthritis is of long duration with deformity and fixation, little real benefit results from enucleation In some of the chronic arthritis cases the removal of tonsils has a good psychological effect and for this reason it is advisable to wait at least twelve months before assessing the real value of the effect of enucleation However 14 of the cases with attacks of tonsillitis and recent rheumatism were decidedly better and the results were highly satisfactory Ten of the rheumatoid arthritis cases derived little benefit beyond the fact that the tonsil had been eliminated and that they had taken a fair sporting chance of relief from such a crippling malady

Mollison [3] who has made a special study of tonsil infection and chronic arthritis, states that (*a*) The tonsil supplies the focus in a large percentage of cases of fibrositis and arthritis the figure is a good deal higher in the young than in the old (*b*) The earlier the tonsil is removed the better the result though even advanced cases benefit Pain may be relieved though deformity remains and in some cases deformity is reduced (*c*) Cases showing bony changes on x-ray examination are the least favourable for operation

It would be interesting to know how many children who have had tonsils and adenoids removed suffer from acute rheumatism or rheumatic fever, and this question has been answered by the report of the Ministry of Health on their investigations of rheumatism 2 out of 332 males and 7 out of 515 female patients with acute or subacute rheumatism were recorded as having had their tonsils removed These figures can be interpreted to indicate that patients without tonsils are less susceptible to rheumatism

Choreic children were improved and certainly not worse after enucleation, but it must be remembered that chorea is a disease which is subject to fluctuations and tends to get well

So far only a few cases of endocarditis and nephritis have been treated, the physicians in charge of the patients were pleased, but I think the operations are too recent and too few to permit any definite conclusion All the diseases which accompanies some cases of tonsillitis suggest an association between nephritis and tonsillitis

I have seen tonsillitis both precede and follow in a few cases of appendicitis and the attack of appendicitis is usually very severe Poynton and Paine established the pathological relation between tonsillitis and rheumatism Personally, I believe the tonsillitis is part of the general intestinal infection Enucleation in the few cases of chorea treated had no effect

The removal of tonsils and adenoids in cases of true regular nocturnal enuresis has had no effect and consequently many children with enuresis show no signs of improvement The suffocative attacks accompanying adenoidal growths produce an occasional wet bed but that is not true enuresis The same applies to asthma in children the operation is without result in true spasmodic asthma which must be distinguished from the occasional suffocative attack of croup or bronchitis Croup, on the other hand in the absence of other causes is very definitely improved

Three or four cases of erythema nodosum have apparently been cured by enucleation of the tonsils and attacks of dermatitis have been known to accompany or appear to be more frequent in cases of nasal sinus or middle-ear suppuration

In conclusion if there are harmful symptoms and signs which can be definitely attributed to the tonsils enucleation benefit follows enucleation

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GENERAL DISCUSSION

DR J S FRASER (Edinburgh) called attention to the fact that tonsils varied in size and that the tonsil became enlarged when the child had a cold but shrunk within a few days He referred to the two varieties of tonsil—pedunculated and submerged the latter although less showy" were often the larger variety and were certainly more likely to give trouble He used to use Tilley's tonsil presser, Dr Fraser advocated the use of a glass-and-rubber suction apparatus the rubber hand-end of the glass tube being applied to the tonsil It was sometimes astonishing how much secretion could be sucked out of a septic tonsil by this means He did not share the opinion of certain American specialists who had advocated in the *Laryngoscope* that the tonsils of all children should be removed at the age of 4 he was rather averse to removing tonsils before the age of 4 years and agreed with the view that the tonsil was a defence concerned in bringing about active immunity in young children Last year in America he had heard that the treatment of enlarged tonsils by x-rays had proved a failure He always told patients that there was no hard and fast line of treatment in cases of recurrent tonsillitis between gargles on the one hand and enucleation on the other It was important that the parents should understand that it was not possible to promise freedom from a tendency to coryza even after complete removal of tonsils and adenoids Mothers were sometimes indignant because their children continued to take cold after the operation

Dr Fraser considered that the question of the tonsillar lymph gland in health was an important one enlargement of the tonsil and cervical adenitis showed that infection had passed the first line of defence The question of tonsillectomy to depend to a considerable extent on the [illegible] case—for example the child's mother or [illegible] report that the child suffered from frequent [illegible] throat with enlarged tonsils even though at the examination in the out-patient department tonsillar enlargement could be observed The mother was no a fool and many a child came to the infirmary of her own accord with a record of [illegible]

that she wanted the tonsils and adenoids removed, since her elder child, who had suffered from the same symptoms as the present one, was now "all right" In adults, even more than in children, the surgeon was bound to pay attention to the case history, for instance, a patient might state that he was off work for a week on several occasions each year on account of tonsillitis In such cases the tonsils should be enucleated, on the other hand, Dr Fraser did not think that a single attack of tonsillitis in an adult gave sufficient grounds for operation In patients over 45 or 50 years of age it was advisable to be very cautious about advising enucleation, since such patients took a much longer time to recover With regard to the question of focal infection, Dr Fraser, like others, had found that numerous cases were referred by the physician for enucleation of the tonsils to cure all kinds of diseases, quite apart from rheumatic affections—for example, epilepsy, pruritus, lupus erythematosus, chorea and various eye affections A very guarded prognosis should always be given in such cases, even when the tonsils were obviously unhealthy In many of these cases the operation had to be performed on the instructions of the physician, and Dr Fraser had found that the results were not nearly so good as those obtained in cases of rheumatism With regard to tuberculous cervical adenitis, the speaker was of opinion that it was bad surgery to remove tuberculous glands in the neck and to leave the tuberculous tonsils—the cause of the infection, the tonsillectomy should come first With regard to tonsillectomy in singers, Dr Fraser's experience had been very satisfactory

Dr W S Syme (Glasgow) said that Dr Brown Kelly had given a very clear and comprehensive survey of the question of the frequency of tonsillar disease and of its effects, his advocacy of radical measures in its treatment had the greater force because he had the reputation of being conservative in the matter of operation They must recognize that a healthy tonsil was the exception, except perhaps in the first year or two of life He was convinced that in the majority of cases of children who came to them with symptoms pointing to tonsillar disease the infection had already passed beyond the tonsil and invaded the glands, which were already palpable In the methods of examination of the tonsil there was still too much that was slipshod The tonsil could not be properly examined by merely illuminating the pharynx and placing a tongue depressor in position The tonsil surface looked towards the middle line, and to examine the tonsillar crypts properly it was necessary to turn the tonsil towards the observer This could be done either by making the patient "gag" or, better still, by hooking back the anterior pillar with the depressor and turning the face of the tonsil forward At the same time pressure could be made on the base of the tonsil and purulent or degenerate material expressed from the crypts While it was probable that sometimes tonsillar infection was the cause of other diseased conditions, he was quite convinced that rheumatic infections of all kinds were commonly dependent on infection from septic tonsils He had seen frequently instances of improvement, and some times of cure, of rheumatic conditions from tonsillectomy Naturally, in this connexion the extent of the benefit would depend much on the actual rheumatic affection present, and on the extent of the changes which had taken place in the joints Strong evidence of the value of complete removal of the tonsils in rheumatism was found in the fact that physicians in attendance on these cases were so convinced of this benefit that they sent them rheumatic patients to laryngologists in increasing numbers for examination, and, if necessary, for operation The laryngologist was, of course, not content with examination of the tonsils but looked also for a septic focus in the nose and accessory cavities, of which, indeed, the septic infection of the tonsils was often a result Apart from the rheumatism, the relief from the toxæmia showed itself in marked improvement in the general condition of the patients after removal of septic tonsils This toxæmia might manifest itself by effects on the kidneys During the past year in Dr Syme's department of the Western Infirmary, Glasgow, albumin-uria had been present in forty cases of diseased tonsils in children and adults, this was in about 3 per cent of the patients In most of these the albumin had disappeared after operation, but in a small number, evidently more severely affected, changes had taken place in the kidneys and the albumin persisted

It was not the large tonsil which was the most harmful, it was, indeed, probable that the large tonsil, which projected into the pharynx, was more easily kept free from gross infection by the movements of the tongue and pharynx It was the buried tonsil which was the greatest danger With regard to diseased tonsils in singers, Dr Syme could not think that the presence of these could have anything but a harmful effect on the voice, owing to the thickening of the pillars to which they give rise and to the frequently recurring attacks of laryngitis The tonsils should be removed, with special care, of course It had been his experience that as a general result the voice had improved, and in some the register was appreciably enlarged At least three, and probably six, months should elapse after the operation before singing was resumed

Mr J F O'Malley (London) asked what the function of the tonsil was The answer, in his opinion, was that it had the same function as was found in all lymphatic tissue —namely, to react to sepsis and confer immunity When this conferring of immunity was overdone the removal of the tonsils was indicated With reference to the types of tonsils, the large superficial one was often associated with good health, and was not prone to sepsis, because the drainage from its crypts was perfect The buried tonsil was a different proposition The tonsil was often described as a "naked gland," which was practically true of the superficial one, but the buried one was usually three parts covered, it was the cause of cervical gland infection and enlargement, which must be regarded as manifestations of systemic infection In adults the question of the tonsil being a focal centre of sepsis as the cause of some condition such as arthritis, the history of no pain in the throat was misleading A tonsil might be saturated with sepsis and still the patient did not complain of pain Pain in relation to tonsillitis was due to a myositis of the faucial pillars, the result of an inflammatory overflow Colds in the head could not be attributed to the influence of tonsils and adenoids, except inasmuch as the adenoids might cause some nasal obstruction The nose had a sheet of lymphatic tissue of its own, and continued to react to infection, just as the tonsils and adenoids did after the latter had been removed

Mr A B Pavey-Smith (Harrogate) said, with regard to the question of focal infection, that at the Royal Bath Hospital at Harrogate he had had the opportunity of seeing a large number of cases of chronic arthritis and allied conditions in which the tonsils were suspected as a possible infective focus He had now a detailed record of such cases in which a bacteriological examination had been made of the tonsils after removal All the cases operated on showed some signs of tonsil infection, though in some the signs were very meagre, but 99 per cent were found to be infected with streptococci In over 70 per cent the crypts were dilated and contained pus, and in 70 per cent the glands were palpably enlarged Now of these only one-third could be described clinically as cases of chronic tonsillitis In the remainder no throat symptoms were complained of, and the history was negative So far as could be judged, a tonsil which produced local symptoms was indistinguishable from one which produced none, as regards its infectivity, its contents, and its size He differed from Dr Brown Kelly with regard to the importance of the history He thought that a positive history of previous throat trouble was important, but that the fact that the history was negative was of little value in assessing the infectivity of the tonsil The points to which he paid particular attention were the enlargement of glands and the presence of pus in the crypts or of bleeding from the crypt mouths on slight pressure, which he regarded as evidence of granulations in the crypts If, then, a tonsil could thus be grossly infected and produce few signs and symptoms, it appeared to him unlikely that any treatment

short of enucleation could cure a declared case of chronic tonsillitis A tonsil which was a persistent source of symptoms, especially in adults, was almost certain to be a sink of iniquity, or at the best, a whited sepulchre For though the pus, the debris and the organisms might be only in the crypts, and not truly in the tissues, it was impossible to say when the barrier—whatever its nature whether capsule or crypt epithelium—would be broken down and infective material pass into the blood and cause much wider effects He thought that in this connexion tonsillectomy had a place not only as a curative but as a preventive measure

Mr H BELL TAWSE (Nottingham) said that in a small proportion of cases he found it extremely difficult to determine whether or not a tonsil was septic In children the usual methods of suction of the crypts and pressure on the tonsils, etc, were sharply resented and in the absence of other local evidence he reserved the decision until the child was under an anaesthetic Then he placed the ring of an open guillotine against the posterior pillar and gently pressed the tonsil against the angle of the jaw If no pus, cheesy material, or bloody mucus was squeezed out he considered the tonsil normal Enucleation was the only operation worth doing Investigations in London County Council schools as to the relation of tonsils and adenoids to the incidence of scarlet fever, etc, were made some years ago and it was found that (1) cases of enlarged tonsils and adenoids provided the largest numbers of cases of infectious disease, (2) children who never had enlarged tonsils and adenoids came next, (3) the least frequent were those who had had tonsils and adenoids removed The conclusion seemed to be that the frequency was reduced by removal The Board of Education and the Ministry of Health were now conducting an investigation into the causes of enlarged tonsils and adenoids and the results of treatment The school medical service and infant welfare centres were to be used, and he thought it would be well if the Section in its discussion would emphasize, for the help of the medical officers of these clinics the importance of carefully examining those tonsils which were not obviously enlarged, but which in many cases were the cause of rheumatism, repeated febrile attacks and other diseases

Mr T HOLT DIGGLE (Manchester) also stressed the importance of complete enucleation or removal of the tonsil as the only operation to be adopted In 1901 a consecutive series of 75 pairs of tonsils were examined histologically by him, of these, 5 were definitely tuberculous although there had been no clinical evidence The complete enucleation of the tonsil was all the more important in cases of cervical adenitis Cases were frequently seen where the cervical glands had been removed and the tonsils left During the last four years he had had 12 cases of marked enlargement of the cervical glands necessitating operation In all these cases the tonsils were enucleated at the time the glands were removed Eight of the cases examined three years after operation showed no further glandular enlargement, and the children were well and healthy In three of these cases the tonsils were histologically tuberculous Referring to the relationship of accessory sinusitis and tonsillitis particularly in adults, Mr Diggle considered that it was very important to examine the nose and its accessory sinuses before removing the tonsils Occasionally adults whose tonsils had been removed for recurrent tonsillitis were no better and they still had pain and aching in the throat, and the posterior wall of the pharynx and posterior pillars of the fauces were found to be inflamed and swollen These cases on closer examination often revealed some form of accessory sinusitis Considering the benefit of tonsillectomy in cases of chorea Mr Diggle said that during the last four years he had operated upon 12 cases with 6 cures 2 were no better and 4 were not traced He was undoubtedly of the opinion that children whose tonsils and adenoids had been removed were not liable to serious nasal or aural complications during the exanthemata, particularly measles He believed that many innocent tonsils were removed particularly in children It was common knowledge that the tonsils enlarged with any nasal catarrh and he did not consider a consultation on the question of the removal of the tonsils perhaps unfair He contended that a child suffering from a nasal cold at the time of examination for tonsils should be seen again when the cold had subsided before deciding the question of operation

Mr T B JOBSON (Guildford) said that during the past two years he had had two cases of convalescence in which he had removed septic tonsils and in a few hours all the symptoms which had endured for two years, though improvement under various forms of treatment had completely disappeared

At the end of the discussion the following resolutions were proposed by Mr C A SCOTT PITTS, seconded by Dr WILLIAM HILL and carried unanimously

1 That this meeting of the Section of Laryngology and Otology of the Annual Meeting of the British Medical Association records its opinion that for all cases the enucleation is the only efficient operation dealing with tonsil and that partial removal be operation not to be considered

2 That this meeting of the Section of Laryngology and Otology of the Annual Meeting of the British Medical Association considers that the operation of tonsillectomy should be no longer conducted as a minor operation but as one of the lesser major class of operation and should be undertaken in that spirit

3 That this meeting of the Section of Laryngology and Otology of the Annual Meeting of the British Medical Association considers that the discussion which has taken place on the indications for removal of the tonsils has shown that at the operation should only be undertaken after careful examination has been given

The PRESIDENT in summing up the discussion said he valuable co-ordination in the opening paper of recent work on the subject and the many points brought out by the subsequent papers and speakers fully justified the choice of this subject for general discussion He was not in favour of putting the four year-old tonsil on the same footing as the six year-old molars as things to be removed as a matter of routine procedure The tonsils in his opinion had a definite function or functions and one was—as he had learnt from animal experiments he performed some years ago[1]—bactericidal When that function ceased when the tonsil had lost its sterilizing action and when it was no longer not only not sterile but even septic as shown by the enlargement of the adjacent submaxillary tonsillar glands then the time had come for the complete removal of the tonsil Enlarged tonsils were not necessarily diseased or functionless tonsils The largest pair of tonsils he had met with could not have been squeezed through the largest guillotine made yet the occurred in a young man who had never suffered any inconvenience from them they were not removed The worst offenders were the invisible shrivelled septic tonsils skulking behind the pillars of the fauces—more difficult ones to remove and more often left The enlargement of the tonsil was evidence of a battle or battles fought and won The enlargement of the tonsillar lymphatic gland was evidence of the tonsil being put out of action and of its becoming a source of danger Climate—especially the climate of Britain—and exposure to damp and inclement weather were factors in the enlargement of lymphatic round the throat mentioned by one speaker in the case of phthisis and by Portsmouth boys It was unusual to speak of tonsil and adenoids[2] In many cases if the adenoid vegetations removed the tonsils might be left with benefit—and vice versa and it would therefore be incorrect to speak of adenoids and tonsil In urgency it would be sufficient to mention an operation for production of immediate and permanent benefit than that for the removal of adenoids and tonsils when effectively carried out Unfortunately it was not always treated with sufficient ceremony and little things when not treated with the ceremony were apt to be overlooked The resolutions were unanimously passed by the Section it probably should could bring nothing but good results

[1] *Journ. Laryng.* [illegible]

[2] [illegible]

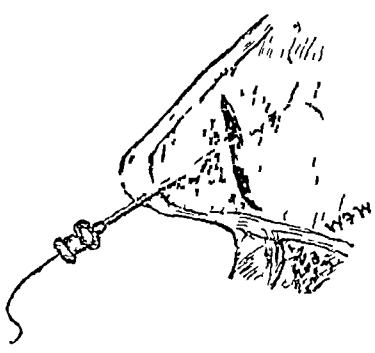
Memoranda:

MEDICAL, SURGICAL, OBSTETRICAL.

SUBMUCOUS RESECTION OF THE NASAL SEPTUM A SIMPLE FLAP SUTURE

I wish here to describe a simple method of suturing the original incision through the muco-perichondrium after completing the submucous resection of the nasal septum A variety of special needles are in use for the purpose, some of them are difficult to use, especially the small intestinal needles favoured by some operators, if the incision, for one or another reason, happens to have been made a little further back than usual They also soon lose their original sharpness and become dull owing to general wear and tear, and unless replaced or repaired are apt to tear the flap through or ragg it and make too large a hole, causing the suture to cut out Faulty apposition of the edges of the incision is another difficulty

Many surgeons have dropped out of the habit of suturing the incision and console themselves with the belief that it is not necessary, and that the opening in the muco-perichondrium provides useful drainage Such procedure does not hold good in any other operation that I know of, performed under aseptic conditions and where healing by first intention is desired We know also that, from one cause or another, the edges of the incision may afterwards separate more or less and healing will be delayed, and crusting will assuredly take place, and may result in a permanent "dry" area at that part of the septum This condition may be followed some weeks or even months later by a perforation of the septum I am inclined to think, therefore, that this incision would be sutured in every case if an efficient needle lay ready to the hand of the surgeon It does, in the shape of the ordinary hypodermic needle This needle is generally carried in the surgeon's bag, is always available in hospital and nursing home, and as a rule is in perfect order and does not suffer from any of the disabilities of needles specially designed for the job



Illustrating the method of suture of the incision through the muco perichondrium by the hypodermic needle

The method of using it is as follows a strand of sterilized horsehair, which is most commonly used for this suture, is passed through the needle from the point and is then drawn through the needle until the other end of the horsehair just disappears from sight The "butt" end of the needle is held between the first finger and thumb, while to avoid inadvertently withdrawing the horsehair altogether in passing the needle through the edges of the incision, a loop of slack is made, behind which the horsehair is held between the second and third fingers The needle is manipulated by the right hand in the case of suturing the right side of the septum, and vice versa After passing the needle through both edges of the incision, the horsehair is fed through it and the end grasped by any convenient forceps and held while the needle is withdrawn from the strand, the suture being then completed in the usual way The ease and accuracy with which this method of suture can be accomplished without any risk of damage to flaps will, I am sure, be appreciated, which is my reason for handing it on to others One precaution should be taken, and that is to see that the strand of horsehair runs quite freely through the needle from end to end, as there is a considerable variation in the thickness of the strands in the ordinary "hank"

W Frank Wilson, M B, B S,
Honorary Assistant Throat, Nose and Ear Department Royal Victoria Infirmary, Newcastle upon Tyne

OPIUM POISONING, PONTINE LESIONS, AND ENCEPHALITIS LETHARGICA

I have just seen in recent issues of the British Medical Journal two instructive cases illustrating the difficulties of diagnosis of pontine lesions, and I think it will be of interest to record a somewhat similar difficulty which I experienced as a house-physician

About 6 30 a m I was called to see a man, brought by the police, who had found him lying on the pavement in a state of partial coma and collapse I found him to be about 50, very dirty, obviously destitute, and in a cold and collapsed condition His temperature was subnormal and he was semi comatose, but at fairly regular intervals his whole body was shaken by clonic convulsions which increased in violence for about fifteen seconds and then gradually passed off in about half a minute There was no paralysis of muscles or limbs, and sensation to deep painful stimuli was intact, the patient being sufficiently conscious to resent the test, reflexes were a little exaggerated, there was no incontinence The cranial nerves could not be adequately tested at that time, but the pupils were seen to be pin point and fixed The patient's body was covered with that pigmentation of the skin which is caused by scratching and associated with phthiriasis

Being perhaps overfull of youthful ardour at the sight of the pupils I decided on immediate action, washed out the stomach, and then had him put to bed and warmed up with hot bottles His condition remained the same the whole of that day, and the diagnosis presumably still lay between opium poisoning and a pontine lesion Next day, however, the convulsions had diminished in frequency and intensity, the temperature was raised a little the pupils were bigger and he had some ptosis more marked on the left side, and a divergent squint on that side His lethargic condition continued for about a week but it was noticeable that he could be aroused sufficiently to take food During that time the temperature remained a little elevated but never went very high In the course of the second week his mind cleared the third nerve paralysis began to pass off and he finally apparently a complete recovery He left the hospital and never returned, so whether any mental symptoms followed I do not know I should add that on the day of his admission a lumbar puncture was made the fluid was found to be under pressure but was otherwise normal with the exception of the presence in increased quantity of some sugar reducing substance

The case was particularly interesting at the time, as on the second day it was recognized as one of a hitherto unclassified disease, which was just beginning to appear in epidemic form The disease was at first thought to be possibly botulism, and was later named mesencephalitis, and finally encephalitis lethargica

Humphrey W Toms, M B, B Ch, D P H
Bangkok, Siam

LABOUR OBSTRUCTED BY EXTENSION OF THE FOREARMS

The two cases here reported presented the unusual feature that the child was delivered with the forearms extended, the limbs being placed laterally The case was thus an obstruction, as the spine had not its usual facility of lateral movement in descent Considerable difficulty in the delivery of the shoulders arose also from the fact that an arm could not be brought out to reduce the bulk Both patients were primiparae and the presentation a first vertex

The first patient had been long in labour and was becoming fatigued It was decided to apply forceps in spite of the fact that the cervix was not fully dilated Dilatation was completed digitally and forceps applied No difficulty was met in extracting the head On the shoulders reaching the vaginal ostrum the hands were not observed in their normal position across the chest, and some delay occurred in extraction With the second patient the expulsion of the head was by the natural forces The same difficulty in extracting the shoulders arose

Extension of the lower limbs has been described as occurring *in utero* and has been observed in frozen sections Thus condition, if diagnosed before labour sets in, should be capable of correction The second patient was examined a day or so before labour and no abnormality was detected In this case the position of the arms seemed to have developed before labour set in In the first I had attributed the abnormal position to the forced extraction as I had not then met another similar case In neither patient was there pelvic contraction There is naturally an increased tendency to perineal tears in this condition

I H Lloyd-Williams, M B, B S
Burgess Hill

British Medical Association

CLINICAL AND SCIENTIFIC PROCEEDINGS

OXFORD DIVISION

A well-attended meeting of the Oxford Division of the British Medical Association was held in the Radcliffe Infirmary, on October 17th, when the President, Dr J O Summerhayes, extended a cordial welcome to the new members present

Mr Hugh Whitelocke reviewed the history and etiology of cervical ribs, giving notes of six patients operated on in hospital since 1912 He showed a case of bilateral rib of the second degree, in a woman, aged 30, who had had right brachial neuralgia for ten weeks At the operation a portion of the right rib was removed with consequent relief of symptoms

Dr R B Abraham read a short paper on the treatment of kala azar by antimony tartrate A 2 per cent solution of this salt in distilled water was freshly made for each patient, 0 5 c cm being given as a first injection and the dose being increased on alternate days until 2 grams had been administered The treatment lasted about three months, during which the patient might be very ill The mortality in all types of this disease was about 10 per cent

Dr J Rickards read notes on two cases of lymphadenoma in which the diagnosis during life presented great difficulty owing to the anomalous type of the disease Both were characterized by continuous, though more or less remittent fever, progressive weakness, sweats, cough, and expectoration About eighteen months elapsed between the onset of the illness of each patient, and in the second case the correct diagnosis was suggested by recalling symptoms of the first patient

Dr William Collier introduced a discussion on the value of morphine in heart and kidney cases After referring to the reluctance of many practitioners to use this remedy for these cases, Dr Collier quoted several instances of patients being definitely benefited by its use, and said that in cardiac and renal dyspnoea, or in cardiac cases where pain and insomnia were outstanding features, a hypodermic injection of morphine was indicated

Sir Archibald Garrod discussed the etiology and treatment of joint affections, and showed a patient with rheumatoid arthritis who was receiving treatment by the protein shock method

Dr A G Gibson showed a man, aged 51, suffering from epithelioma of the posterior nares, with perforated palate and enlarged cervical glands, proptosis, paralysis of the sixth nerve on the right side, and paresis of the fifth nerve on the same side, where the neoplasm appeared to be extending to the brain

Mr L C Bevers presented a case for diagnosis The patient, a girl aged 18, had had a swelling of the left forearm for three years, which was gradually becoming larger X rays showed the existence of calcification in the muscle and a suspicion of caries on the inner side of the coronoid process of the ulna Various diagnoses were suggested, and Mr Bevers undertook to report to a future meeting the condition found at operation He showed also a boy, aged 7, with congenital idiopathic dilatation of the colon who had suffered from frequent attacks of constipation, abdominal distension, and vomiting since birth By the use of enemata and liquid paraffin operation had hitherto been postponed

Mr A P Dodds-Parker showed a man aged 35, with bony thickening and tenderness of the right tibia, provisionally diagnosed as gumma The Sigma test was negative however, and the report on a piece of bone removed was osteitis fibrosa X-ray photographs of other bones showed commencing osteoporotic changes

Dr W T Collier read notes of the subsequent history of a patient with general paralysis of the insane whom he had shown at a previous meeting (British Medical Journal June 21st, 1924 p 1091), and who had been inoculated by Dr Manson Bahr with benign tertian malaria At the end of the consequent attack of malaria, which was terminated after fourteen days by the oral administration of quinine, the patient appeared to improve considerably and was able to return to work Dr Collier promised a later report after the lapse of two or three years Dr F S Good reported having had fourteen cases of general paralysis of the insane infected from malarial organisms recovered from Dr Collier's patient, in two early cases there had been marked improvement

Reports of Societies.

COMPARATIVE MEDICINE

Mr I T G Hobday the new president of the Section of Comparative Medicine of the Royal Society of Medicine, delivered his address from the chair on October 22nd, taking as his subject "The Comparative Section"

He gave a brief outline of the history of the formation of this the youngest Section of the Society When the formation of such a section was first mooted it was received enthusiastically by both the medical and veterinary professions The name, however, gave some difficulty, and "Comparative Medicine" was chosen in preference to "Comparative Pathology" or "Veterinary Medicine" in order to extend its activities and to avoid the suggestion of "watertightness" They had had a very successful first session, but there were still many problems for the Section to tackle In addition to diseases common to man and animals (such as tuberculosis and various parasitic diseases) there were many diseases which, although having a different etiology, were analogous to each other, such as influenza in man and in horses There was also the very large question why some animals were immune to diseases found in a related species for instance, why cattle should be immune to glanders when horses were not and so on Diseases of plants were also of importance Practically every Section of the Society, not even excepting Psychiatry, could benefit from its association with the Comparative Section, and he predicted a very active future for it

Mr R Eustace Montgomerie then read a paper on some diseases of Eastern Africa intercommunicable between animals and man Rabies he said, was of comparatively recent origin in British East Africa, and did not seem to be communicable to man The disease originated from a jackal, and although all the clinical and biological and histological tests were positive and there were instances of natives having been bitten, there were no records of any cases of hydrophobia Cysticerco is due to *Taenia solium* was at one time much more commonly reported than that due to *T saginata* Now, however, the positions were reversed, and *T solium* was relatively uncommon "Measles" in pork was rare, and he suggested that either the pork tapeworm had an unusual host in East Africa or else diagnosis had been faulty Sanitation was crude among the natives and cattle had every opportunity of becoming infected Steps should be taken to provide some sort of communal latrine from which cattle could be excluded Bovine tuberculosis was so rare as to be negligible in the country, but if cysticercosis was found to exist in beef it would seriously prejudice any future meat inspection industry Anthrax was not uncommon but although the natives always ate any cattle dying from that disease as from any other few deaths were recorded from this source, and an increased resistance to anthrax by the alimentary tract seemed to exist Malta fever was present but so far as he knew contagious bovine abortion due to a strain of the same bacillus was not Trypanosomiasis was common in cattle and Mr Montgomerie commented on the resemblances between *T gambiense* *T rhodesiense* *T brucei*, and *T pecaudi*—the two former affected man and all four occurred in cattle causing a comparatively benign chronic disease The spread of the tsetse fly was in his opinion partly due to the outbreaks of cattle plague which depriving the natives of their cattle had allowed scrub and brush to extend to places otherwise required for grazing and so enabled the fly to breed Foot-and-mouth disease in East Africa was benign, and man did not appear to be affected

Mr D S Pasculati in comparing the diseases in East Africa with those in Egypt, referred to a peculiar outbreak

of anthrax in that country The old women of a village developed pneumonic anthrax, while the children contracted malignant pustule on the arms and legs These were the only cases found, and all the other inhabitants of the village seemed to escape The explanation of this curious distribution was found in the fact that the children collecting moist anthrax-infected dung for use when dry as fuel had contracted the cutaneous form of the disease, while the old women, employed in cooking at home, had inhaled the dust from the breaking up of the cakes of dry dung

DR W H ANDREWS, commenting on the diseases of South Africa, mentioned a case in which a veterinary officer, at the commencement of a rabies outbreak, had toured the country warning the natives of the possible introduction of the disease and describing the symptoms they would be likely to notice in infected animals Returning a year later to one village he found that such a dog had indeed been seen, and that the natives had promptly killed it by the simple expedient of setting all the other dogs of the village on to it

SURGICAL TREATMENT OF PYLORIC STENOSIS

A MEETING of the Section for the Study of Disease in Children was held on October 24th at the house of the Royal Society of Medicine, DR H C CAMERON, the President, being in the chair

A paper was read by MR B E SCHLESINGER on the subsequent history of patients operated upon for pyloric stenosis, which was illustrated by an account of a continuous series of 37 cases The Rammstedt method of operation was used in all these cases, which had been under the care of DR Thursfield during the past four years at the Hospital for Sick Children Of the 37 patients, 12 died in hospital, 11 after operation, and 1 after five days' medical treatment, 3 patients were discharged as cured, 1 after surgical and 1 after medical treatment, but succumbed to intercurrent disease at intervals of a month to a year later Four of the remaining 22 patients were untraceable, the other 18 had been examined during the past month The first important fact noticed was that all these children had reached a high degree of general fitness the testimony of the mother was always that the child had been unusually free from gastric disturbances With regard to weight, the children under 1 year were at the present time under the normal, not having had time to make up their initial loss, but those about 15 months were from one to five pounds heavier than the average child With regard to height, 7 patients were measured, and 6 were found to be from one to four inches taller than the average child of corresponding age The supposition that this increase in weight and height was due to extraordinary care in the diet was apparently groundless, as 11 of the series were breast-fed, 2 were fed on cow's milk, and 4 on a preparation of dried milk No particular method of feeding seemed to have any direct bearing on the development All the children cut their first teeth at about 7 months and walked when they were 13 months The stools were all said to be normal and there was no recurrence of the vomiting A pyloric tumour was still palpable in 4 patients, one aged 6 months, two aged 3 years, and one 3½ years The tumour had not given rise to any untoward symptoms As further evidence of the slow subsidence of the tumour, a case was cited in which an autopsy was performed one year after the operation, the cause of death being tuberculous meningitis The pylorus was found to be still thickened and adherent to the under surface of the liver The old scar on the pylorus, though still visible, was becoming filled by partly fibrous and partly muscular tissue The immediate operative mortality was still very high, being nearly 32 per cent In all the cases of the present series pre-operative gastric lavage and infusion of saline were employed Gas and oxygen was the anaesthetic used Attention to pre-operative measures had reduced the mortality from 45 per cent in 1920 to 13 per cent in 1923, and it was interesting to note that the last 9 patients in this series had all been cured Of the fatal cases, 5 deaths were due to shock and collapse a few hours after operation, 5 to subsequent enteritis, and one patient who appeared to be progressing favourably succumbed five days after operation At necropsy, blood in the peritoneum was found on two occasions, and slight or no relief of the stenosis in 4 cases Medical treatment was adopted in 2 cases only, both patients died, one two days after the onset of treatment and the other from bronchitis three weeks after being discharged from the hospital apparently cured X-ray examination for the purpose of diagnosis was found to be useless, if not misleading With regard to the alleged association between pyloric stenosis and phimosis, some degree of phimosis was found in 10 of the 31 boys of this series

Before the meeting the following cases were shown (1) A case demonstrating the use of pituitary whole gland in chronic constipation, by DR Bernard Myers, (2) a case of congenital hypertrophy of both lower limbs, by MR Denis Browne and MR Twistington Higgins, (3) a case of cardiac disease with glycosuria, by DR F J Poynton, and (4) a case of "pink" disease, by DR Ruth Darby

ENCEPHALITIS LETHARGICA

AT a meeting of the Liverpool Medical Institution on October 23rd, DR GORDON GULLAN contributed a clinical study of sixty-two cases of encephalitis lethargica After giving a short historical note of the disease he described various types and cases, with details of the onset, special symptoms and syndromes, sequelae, diagnosis, prognosis, and treatment

In the ensuing discussion DR HENRY COHEN expressed surprise that pain was only present in one of the sixty-two cases, since in his own experience severe pain, probably of thalamic origin, was not uncommon Pain frequently preceded the onset of myoclonus, and had given rise to the mistaken diagnosis of an acute abdominal lesion in some cases on record Excessive classification was to be deprecated in view of the innumerable varieties of the disease encountered Walsh's classification, in which the symptoms and signs were regarded as (*a*) evidence of general infection and toxæmia, (*b*) evidence of excitation and depression of the nervous system, either general or local, was, on the whole, satisfactory, except that in its common manifestations—for example, the oculo-lethargic and myoclonic types—were insufficiently emphasized In the differential diagnosis, meningitis, both tuberculous and syphilitic, could be excluded in most cases by examining the spinal fluid Difficulty in diagnosis occurred occasionally in cases of sinusitis, especially frontal, and associated with brain abscess, also in cases of infective endocarditis of the cerebral type, uræmia associated with myoclonus, and post diphtheritic paralysis Papilloedema was so rare as to suggest intracranial neoplasm or abscess, and though undoubted fundus change occurred in epidemic encephalitis, it was rarely encountered and was slight in degree DR Cohen considered the figure for complete recovery given by DR Gullan (50 per cent) too high He had been disappointed with regard to treatment of the sequelæ, though he had found hyoscine hydrobromide useful in the Parkinsonism syndrome, luminal in myoclonic types with pain, and Lust's treatment helpful in cases presenting reversal of sleep rhythm In his experience Pitcairn's method and magnesium sulphate injections were disappointing

MEDICO-LEGAL SOCIETY

THE opening meeting of the winter session of the Medico-Legal Society was held in London on October 21st The President (Lord Justice ATKIN) took the chair, and Professor HARVEY LITTLEJOHN (Edinburgh) read two papers —one on judicial hanging and the other on strychnine poisoning

Judicial Hanging

Professor LITTLEJOHN advocated hanging as the most humane method of execution yet devised The "long drop" employed by the former executioner Calcraft—21 to 3 ft—did not in every instance result in instantaneous death This drop had also been employed in past days in the United States of America, and the results had been so unsatisfactory that the method of electrocution was substituted for hanging in that country Marwood, who succeeded Calcraft, had employed the "long drop"—7 to 10 ft or more—and while with this drop death was in all cases instantaneous, yet considerable risk was run of detaching the head from the body The drop at present employed was about 6 ft, and fulfilled the purpose of causing instant

death without detachment of the head In the past the knot had been placed under the chin or at the back of the neck but now it was invariably placed either just behind the left ear or beneath the angle of the left side of the lower jaw This position was most effective, causing dislocation at the upper part of the vertebral column between the second and third cervical vertebrae The rope was usually three-quarters of an inch in diameter Professor Littlejohn was acquainted with a case in which the time taken from the moment when the executioner appeared in the condemned cell to the moment of the drop was as short as 27 seconds Painful scenes had no doubt occurred when proper precautions had not been taken to ensure that the trap-door worked easily, as in the case of John Lee the Babbacombe murderer, when three attempts failed within half an hour, and the Home Secretary then granted a reprieve

In the course of the discussion Sir WILLIAM WILLCOX agreed that hanging was far more reliable than the method of electrocution adopted in the United States where several cases of disastrous failure had been reported Earl RUSSELL suggested the introduction of coal gas into the cell in the course of the night when the condemned man was asleep but the PRESIDENT said he could not imagine anything more horrible for the criminal than to know that on some unknown night he would go to sleep and that death as the *result of the cell being filled with gas would occur before* the morning He would say nothing of the difficulties that would result if for any reason the unfortunate man failed to succumb, but if the man was told which was to be the night of execution he would probably be unable to sleep and would be quite slowly and consciously suffocated by the coal gas On the whole the present method of execution seemed to be the best that could be adopted Dr BARLOW and Dr JAMES SCOTT also spoke

Strychnine Poisoning

In his second paper Professor LITTLEJOHN said that all the textbooks adopted Dr Warner's statement that half a grain was the minimum fatal dose of strychnine for an adult This was a very important question from the legal point of view in connection with criminal cases but there were comparatively few authentic records of the actual amount which had caused death In such a body as the Medico-Legal Society it would be important if exact details could be placed on record A fatal dose might be half a grain but persons might recover from a large dose of 40 grains In such cases however prompt remedial measures had saved the patient's life At the time of Palmer's case the alkaloid strychnine was practically an unknown drug There was no doubt that in the case of many drugs habitual administration might bring about tolerance, but it was impossible to ensure tolerance of strychnine whatever precautions might be taken

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IN a short opening address to the Odontological Section of the Royal Society of Medicine, the President (Mr J G TURNER) called attention to two points which he said if not strictly professional were at least of great professional importance His first point was the use of what he described as slipshod English In reading recent contributions to the Sectional proceedings he found six passages which to him were obscure What would be the value of such contributions to the student of fifty years hence? His second point was a suggestion that to ease the dental curriculum a few members of the Odontological Section chosen from practitioners and teachers might draw up a schedule of knowledge beginning with important facts and ending with theory from which schedule a curriculum less costly in time and money might be evolved The importance of this lay in the fact that the dental school were not turning out dentists enough to supply the wastage of the 20 000 or so now on the *Register* nor were those who could afford the cost of the present curriculum attracted by any but the highest class of dental practice A curriculum might possibly be devised which would turn out a sound working dentist and would attract men likely to be content with the income of the smaller dental practices If more dentists were not forthcoming the return of the unqualified practitioner was only a matter of time Easing of the curriculum would lead to easing of the preliminary examination As a teacher he would be content if the student showed a sound knowledge of the English language

Reviews.

MNEMIC PSYCHOLOGY

IN February of last year a short article appeared in this JOURNAL entitled The mnemic principle applied to biology and psychology" It was really a review of a translation of *The Mneme* by the late Richard Semon, published in 1911 I remarked that even if some of the premises upon which the author has founded the mnemic principle applied to memory, habit and heredity are unacceptable to most biologists nevertheless the attempts made by Semon to associate these three fundamental conditions of living matter in one common principle cannot fail to have a profound influence upon psychology and biological science The present work entitled *Mnemic Psychology*[1] is a translation by BELLA DUFFY of SEMON'S later work *Die Mnemische Empfindungen* published in 1909 VERNON LEE who has written a lucid and interesting introduction covering forty pages, takes upon herself the responsibility of giving it the title of mnemic psychology," and justifies the action by claiming that it is essentially psychological, because the author does not refer to questions relating to the application of the mnemic principle to heredity which is debatable and unacceptable to most biologists, as it implies *transmission of acquired characters* Moreover it is thought that the title "mnemic psychology" would be better understood by the English-speaking public Semon himself published this work with a subtitle "First Continuation of Mneme," showing that it is a first instalment and elaboration of only a part of his original work

A small volume of controversy on the transmissibility of individual modification and a posthumous fragment on the correlation of cerebral and mental phenomena (*Retrospektive Empfindungen und Gehirn Prozesse* Wiesbaden 1920) were all that he left after the publication of *Mnemische Empfindungen* Doubtless the war coupled with the death of his wife at Easter 1918 interfered with the continuation of his work Three days after Christmas of the same year as the death of his wife he was found dead in his bedroom lying on a German flag he had shot himself through the heart grief and disappointment had been more than he could bear Semon may be said, in his work to have laid the foundation of a new and original line of thought in psychology

Monsieur Ribot in his interesting work *La Vie Inconsciente et les Mouvements* thus refers to Semon's work *Die Mneme* It is full of original ideas but the terminology and neologisms discourage the reader", it is a functional dynamic study but of a metaphysical rather than of a psychological character Many people will agree with this criticism of Ribot regarding the terminology and the introduction of neologism and in reading the work one finds a difficulty in having a connected train of thought owing to the unaccustomed psychological terms employed It may be remarked however that the forty pages of the admirable introduction by Vernon Lee will help the reader considerably in overcoming this difficulty by giving a general review of the whole subject in more comprehensible and simple language There are many interesting chapters in this book in which are recorded experiments and observations relating to mnemic psychology and the theories of Semon which will be of interest to the psychologist Pathological conditions are only touched upon as the author had the idea of later continuing the work from a pathological standpoint Regarding the terminology one example may be taken Chronogenou localization of the engram stores The author by the layers of engrams occurring in succession period of time and by injuries this theory by the fact of brain injury and concussion— such as was so frequently seen during the war—leading to retrograde and anterograde amnesia [illegible]—

The layers of engrams generated in the [illegible] accident are the most severely injured [illegible] the older ones have the [illegible] destroyed by [illegible] or almost entirely—deprived of their power of recollection [illegible] the layers farther off from the accident in time [illegible] the [illegible]

[1] *Mnemic Psychology*. By Richard Semon. Translated from the German by Bella Duffy. With an introduction by Vernon Lee. London: George Allen and Unwin Ltd. [illegible] (Demy 8vo [illegible] pp.)

longest before it, are those which change least and the older layers, whose production has preceded the accident by months, have only sensibly altered in a very few cases"

This appears to be rather a mechanistic explanation

After reading this work one feels that it is difficult and requires close study and application to obtain a clear conception of the author's philosophical deductions However, the fact that so great a psychologist as Mr Bertrand Russell (*Analysis of Mind*, p 83) summarizes Semon's theory elaborately and adopts the essentials of his philosophical principles should be sufficient guarantee that the book is one that all interested in psychology should read

F W MOTT

THE INITIATION OF A PUBLIC HEALTH SERVICE

To be called upon to construct an entirely new State health department where no organized central health agency had previously existed is a task which does not often fall to the lot of public health officers As recently as 1919 this was, however, the experience of Dr G S Lockett and Mr H F Gray in the State of New Mexico They found at the outset some difficulty in explaining to local doctors their duties as part-time health officers, and it became necessary to issue special instructions to them which have been elaborated into a handbook published under the title of *The Elements of Public Health Administration* [2]

The volume is planned on much the same lines as other textbooks on public health, though the introductory chapter on the relation of the health officer to the physician and to the public is a welcome innovation which might well be copied by other authors The advice tendered in this chapter, if acted upon, ought to relieve the health officer of a great deal of worry and anxiety Nothing could be more correct than the suggestion that at all times his relation with the profession should be 'strictly ethical according to the accepted standards, which is nothing more than true courtesy" We cannot agree so heartily with the statement in a subsequent chapter that "the health officer ought to verify diagnoses" If this practice is carried out to any great extent in New Mexico it is to be feared that even the patience, tact, and courtesy which the health officers are told to exercise in the performance of their duties may fail to put them on the best of terms with their professional colleagues This dictum should have been followed by one equally precise—"Only under the most exceptional and urgent circumstances should a health officer see the patient of another medical man except in the presence of or with the consent of the medical practitioner in attendance on the patient" Observation of this rule does more to ensure the harmonious and sympathetic co-operation of the general practitioner with the public health officer than is perhaps always realized

The outlook of the authors is not that of pioneers but of men who, having a knowledge of the failures and successes of their predecessors, have the courage to adopt modern methods when convinced of the wisdom of such action This attitude should appeal to the present generation of medical officers of health Quite one half of the book is concerned with a consideration of the duties of a health officer in relation to communicable disease When dealing with methods of transmission the authors state with emphasis that it is persons and not things that are of primary importance in the origin and spread of infection

Although primarily written for the instruction of American public health officers, this handbook will be found by those connected with the public health service in this country to contain a great deal of valuable information

HETEROPHORIA

THE American ophthalmic surgeon is the apostle of the correction of errors in muscle balance, the subject is interesting and one to which possibly too little attention has hitherto been devoted in this country, and so we welcome the little book by Dr Marlow on *The Relative Position of Rest of the Eyes and the Prolonged Occlusion Test* [3]

The author, who is professor of ophthalmology in the College of Medicine, University of Syracuse, has produced a book which is at once clear and well written, remarkably free from 'Americanisms" in spelling and construction, and at the same time valuable—a book, in fact, which all engaged in ophthalmological practice will do well to study The numerous charts and diagrams make it rather difficult reading, but they add much value to the book

The author draws a parallel between the muscular spasm present to correct an error of hypermetropia or of hypermetropic astigmatism and the constant contraction of the external ocular muscles necessary to maintain single vision in cases of imbalance His work is based on 700 cases prolonged occlusion of one eye brings out startling errors of balance which would have been entirely missed or only partially estimated if the examiner had been content to complete the test, as is usual in this country, at the same sitting at which the refraction is worked out Unless a cycloplegic is used there is a risk of underestimating the total hypermetropic error, and unless a prolonged occlusion test is done there is a risk that a large amount of exophoria or of hyperphoria or of both may be missed We gather that the author considers occlusion should be maintained for a week As regards treatment, the choice lies between exercises, the constant wearing of prisms, and operative treatment Professor Marlow has not much faith in exercises, and holds that any improvement is, as a rule, only temporary, he is more satisfied apparently with the constant wearing of prisms Of operative treatment he says that his "experience is not great enough to attempt any but tentative generalizations, but I am satisfied that the degree of error which it should be the aim to correct, or materially diminish, is that which is found in the post-occlusion test"

We are very doubtful whether partial tenotomy of the external recti advocated in marked cases of exophoria will find favour in this country, where the majority of ophthalmic surgeons seem to prefer to advance the opponent rather than to cut the tendon of a muscle, and so sever its original connexion with the globe The author, perhaps, makes a little too much of his subject At the same time we feel little doubt that in a certain number of cases his method of testing will give important results, especially in patients who complain of eye-strain which is not relieved by the correction of the error of refraction

VACCINE AND SERUM THERAPY

TWO branches of medicine, often treated separately but having much in common, have been dealt with together by Professor D W CARMALT-JONES in his book *Organic Substances, Sera and Vaccines in Physiological Therapeutics*,[4] wherein organotherapy and vaccine and serum therapy are both described Part I, occupied with organotherapy, forms less than a quarter of the book Its five brief chapters deal successively with the functions of the ductless glands, the thyroid, the uses of adrenaline, pituitary extract, insulin, and minor products Its purpose appears to be to record the legitimate and trustworthy applications of glandular therapy and to guide the physician in the use of these substances Little space is given to general physiology it is the practical application of this science on which the author concentrates His recommendations are supported in many instances by quotations from books and medical journals and supplemented by an account of his own and his colleagues' experience The greater part of the book is concerned with vaccine and serum therapy, and it is apparent that the author has been greatly influenced by Sir Almroth Wright and his school, to whose opinions he frequently makes reference This

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[2] *The Elements of Public Health Administration* By George Sparr Lockett A B and M D and Harold Farnsworth Gray, B S M S Dr P H Philadelphia J Blakiston's Son and Co 1923 (Post 8vo pp 460 3 dollars)

[3] *The Relative Position of Rest of the Eyes and the Prolonged Occlusion Test* By F W Marlow, M D, M R C S Eng, F A C S Philadelphia F A Davis Company 1923 (Demy 8vo, pp vii + 56 illustrated 2 50 dollars)

[4] *Organic Substances, Sera and Vaccines in Physiological Therapeutics* By D W Carmalt Jones M D Oxon F R C P Lond Professor of Systematic Medicine University of Otago New Zealand London William Heinemann (Medical Books) Ltd 1924 (Demy 8vo pp xiii + 533 15s net)

part of the book is prefaced with a chapter on immunity, and a useful section on specific diagnosis describing the means available for the diagnosis of infectious disease. Then comes the description of the preparation and standardization of vaccines and information about modified vaccines, such as desensitized and detoxicated.

The remainder of the book deals with serum therapy and tuberculin. The second part of the book maintains the same practical bent as the first part, and the whole book will be a useful guide to those who seek information on the uses of internal secretions, vaccines, and serums in the treatment of disease.

QUANTITATIVE ORGANIC MICRO-ANALYSIS

In ordinary analytical chemistry for the operation of determining the proportion of sodium in a specimen of sodium chloride a quantity of about 100 milligrams would be required. In micro-analysis one-third of a milligram is regarded as sufficient. It is declared that even with that minute quantity accuracy is possible with an error no greater than 0·2 per cent. How this remarkable performance has been made possible is described in *Quantitative Organic Microanalysis*[1] by FRITZ PREGL. What has been stated of sodium is an extreme case, but only two or three milligrams at most are needed for the determination of carbon, hydrogen, nitrogen, sulphur, and halogens when present as components of organic materials. Without the methods here described the wonderful achievements of recent times in the realm of physiological chemistry could never have been realized. Many a substance which became the key to a critical conclusion was, even after great labour in its production, only isolated in a quantity of a few milligrams. A course of analytical procedure secure against error with a quantity of that magnitude could not be laid down from theory alone. The procedure had to be surveyed for the incidence and magnitude of all the errors possible. The first need was a special balance capable of weighing to about a thousandth of a milligram, the instrument having been constructed it became necessary to try the situations in which it could be mounted, the kind of support on which it might rest, and to fulfil a number of other conditions to ensure its freedom from perturbation.

Instructions derived from the results of those trials and instructions of corresponding character dealing with the preparation and use of the combustion tube and other apparatus form the main theme of Dr Pregl's book. The precautions indicated as necessary are eloquent of the difficulties met by those who undertook the survey of this unpromising field of work. The author has himself contributed the greater part of the experimental work by which this result has been attained: the book reveals the fact that he has himself experienced all the difficulties and probed the sources of error to their full depth. He has set forth with minute attention to detail the causes of disturbance to accuracy and the means by which they are to be avoided. It is not to be supposed that the book will enable a beginner to perform micro-analytical examinations without error until he has made many painstaking rehearsals. It is quite certain that all who would master these operations will be spared immeasurable pains by the help to be received from the author's description. The work of translation has been ably done, and the book contains much useful information which may be studied with advantage as well by chemists devoted to other systems of analysis as by those more particularly concerned with microscopic quantities.

NOTES ON BOOKS.

In *Aids to Physiology* Dr R. A. KRAUSE[2] lecturer in hygiene and physiology in the Heriot Watt College, Edinburgh, has written a book for "the student who is presenting himself for examination." It is doubtful if this compilation can be of much use to anyone who has attended a full course of lectures on physiology and taken practical courses in histology, biochemistry, and practical physiology for he will remember much more than this little work contains. In some respects it is not full enough for some of the examinations, *in others it is dogmatic where the* subject being treated of is still in doubt. As an example of this latter point we might allude to page 115, where it is stated that the secretion of pancreatic juice is entirely hormonic whereas many physiologists still believe that certain nerve impulses can also influence the pancreas. The account of speech, which occupies two lines, contains no information beyond that which every educated layman knows already. It is stated that globulins "do not crystallize," one of them has been made to crystallize by a special technique. There is no hint given that egg albumen has been made to crystallize. The classification of epithelia is confusing, to speak at the present time of a nerve cell as "multipolar" is out of date. The misprint of 'in' for "ion" on page 28 is unfortunate, while Ca_2HPO_4 is not the formula for calcium hydrogen phosphate. Those illustrations which are purely diagrammatic are good, but a number of figures such as that of the duodenum on page 111 and of a nerve ganglion on page 176, are far too sketchy to remind the student of anything.

The success of *Lippincott's Quick Reference Book for Medicine and Surgery*, by Dr GEORGE E. PFEIFFER, is shown by the appearance of a fourth edition so soon after the publication of the third, to which we drew attention less than a year ago. The present edition has been well brought up to date, more or less considerable changes having been made in nearly fifty subjects.

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[1] *Quantitative Organic Microanalysis*. By Fritz Pregl, D.Sc., Ph.D. Translated from the second German edition by Ernest Fyleman, B.Sc., Ph.D., F.I.C. London: J. and A. Churchill. 1924. (Roy. 8vo, pp. xv+150, 42 figures. 12s. 6d. net.)

[2] *Aids to Physiology*. By R. A. Krause, M.D., D.Sc. Second edition. London: Bailliere, Tindall and Cox. 1923. (Fcap. 8vo, pp. viii+250, 97 figures. 3s. 6d. net.)

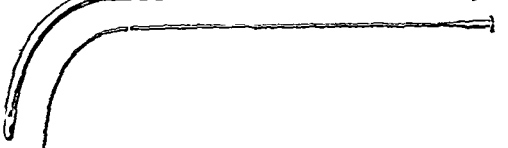
[3] *Lippincott's Quick Reference Book for Medicine and Surgery*. By George E. Pfeiffer, M.D. Fourth edition, revised. Philadelphia and London: J. B. Lippincott Company. 1924. (Sup. roy. 8vo, 15s. net.)

PREPARATIONS AND APPLIANCES

Prostatic Catheter

MR JOHN F. BROMLEY, M.B., Ch.B., house surgeon, Manchester Royal Infirmary, has devised a simple modification of the old fashioned prostatic catheter for use in cases of acute retention of urine, due to the type of enlarged prostate which bleeds with extreme readiness, so that the attempt to draw off urine by a catheter, whether metal, gum elastic, or even rubber, fails owing to blockage by long coils of blood clot.

The catheter (Mr Bromley writes) is an ordinary metal prostate one—originally I used a No. 12 English—with a single eye almost at the extreme tip. Down the hollow of the catheter is introduced a flexible metal stylette, on the end of which is fitted a pear shaped bulb. This bulb fits the eye of the catheter exactly. The flexibility of the stylette allows the bulb to be introduced or withdrawn at will. The catheter with bulb and stylette in place is passed in the ordinary way. When the bladder is well in



position the stylette is withdrawn, thus opening the catheter eye. The required amount of urine can now be drawn off, and if it is not desired to empty the bladder completely the stylette can be replaced at the proper moment. I have found it a most valuable instrument especially in cases of urgency. It may be argued that where technique is correct there should be no need for such a device. Cases do arise in which the bleeding is due quite as much to increased vascularity of the prostatic urethra as to any fault in the manipulation known as "hot-water douche."

The instrument was made to my design by Messrs. James Woolley Sons and Co., Ltd., 76, Deansgate, Manchester. The stylette can be used with a gum-elastic coudé catheter or with a soft rubber one.

Sodium Benedict Test

We have received from Messrs. Burroughs Wellcome and Co. a very convenient set of solids (comprised in a small case) for the performance of the Benedict test for sugar in urine.

The test simply consists in dissolving two grammes of the solid in 1·3 c.cm. of hot water, adding four drops of urine, and boiling for two minutes. The test will detect the presence of 0·1 per cent. sugar in the urine. The qualitative testing of urine for sugar is thus reduced to extreme simplicity.

The apparatus and solid is one that any patient, however ignorant and uneducated, ought to be able to perform. Half an hour after meals, when the tabloid is at its maximum solubility, Medical men who will find the tablets of extreme convenience for their own use. The solid is a brand Benedict test (qualitative) is issued in cartons containing twenty-four pairs of tablets, with directions for use.

ROYAL COMMISSION ON LUNACY AND MENTAL DISORDER

(*Continued from page 780*)

THE fourth sitting of the Royal Commission on Lunacy Law and Administration and Mental Disorder, which took place on October 22nd, with the Right Hon H P MACMILLAN, K C, in the chair, was devoted to evidence given by magistrates as to the work done by them under the Lunacy Acts

Evidence of Magistrates

SIR JOHN BARNSLEY, magistrate for the city of Birmingham and deputy chairman of the visiting justices of that city, brought forward certain suggestions and recommendations which had been made by the Birmingham justices at a special meeting

In reply to the CHAIRMAN, he said that as a rule he had no difficulty in signing a certificate for detention The alleged lunatics were seen either at his own residence, or, if they had been taken into custody, in a private room at the police station One of the recommendations to which he attached considerable importance was that if a doubt existed in the mind of the justice as to the condition of the person concerned, a preliminary observation in some place other than the workhouse or asylum—an observation clinic—should be compulsory He entirely agreed with the Chairman that it should be a place to which there would be a right to send persons of any social position, whether they could pay or not, and that the additional expenditure involved might be fully recovered, inasmuch as such a procedure would probably obviate the necessity of sending a number of cases to asylums Charges might be made for treatment, and the institution or clinic could serve as a centre for giving advice and assistance to outside cases It should also be possible for patients to enter the institution voluntarily for a period of treatment without any detention order having been given If such voluntary cases had dangerous tendencies some form of compulsory detention would have to be adopted, and naturally such tendencies would be manifest prior to treatment As to visitation, the witness thought that some independent authority should, on the lines provided under the Mental Deficiency Act, periodically visit and report upon all persons detained under the lunacy laws All patients should be visited at the end of the first year, again at the end of the second year, and subsequently every five years The rota for visitation under the Mental Deficiency Act was so arranged that one magistrate saw the same person each year, and could therefore note the progress that was being made It would, of course, be necessary to enlarge the judicial authority and increase the number of visitors if that method was adopted

In reply to the CHAIRMAN, who said that he had some difficulty in seeing how the visitor would decide that a case was one which ought to be liberated SIR JOHN BARNSLEY explained that he did not suggest that the visitor should have power to do anything more than to report to the Commissioners that he had visited the case and that in his opinion which was that of a layman, the patient might safely be discharged It would then be for the Commissioners either to accept that view or to give reasons why, in their judgement, effect should not be given to it

The next witness was MR W H LORD magistrate for the city of Birmingham who expressed his agreement with Sir John Barnsley with regard to observational treatment He confined his evidence to the admission of patients He remarked that it was his practice to interview alleged lunatics in the cab in which they were brought to his house by the relieving officer With regard to the medical certificates submitted to him, he had had no occasion to doubt them He was of opinion that it would be well to give pauper cases the same standing as private cases in the respect that a second certificate should be required Answering a question with regard to treatment, the witness said that in a large number of cases the proceedings and treatment were often too long delayed He was under the impression that treatment prior to the stage at which certification could take place might prove to be remedial

SIR ROBERT WALDEN, magistrate for the County of London and chairman of the visiting magistrates for the county agreed that personal contact between the justice and the alleged lunatic was a great advantage, though it did not exist when private patients were admitted He had had occasion to differ from medical men and had refused to sign certificates, he said retained certain cases back for further observation He knew he had the right to call in another medical practitioner to inquire into such cases but if they were difficult he would rather have the advice of an expert With regard to provisional or experimental treatment, he was in favour of the establishment of a hostel, under the management of an expert neurologist, assisted by trained nurses having psychological and other certificates, who should be able from time to time to report on the case To such a home suspected cases could be sent before a certificate was issued, and he thought that, there being no connexion with the workhouse or asylum, there might in many instances be a better chance of recovery There might be two such institutions—one north and the other south of the Thames In reply to the CHAIRMAN, he said that he thought quite half of the cases under provisional detention would benefit so greatly from the quiet and treatment as to effect a complete recovery He added that from his experience, gained by frequent personal visits to London mental hospitals, he had found in some instances a certain amount of justification for complaints made by patients with whom he was conversing, though frequently the complaints were not substantiated Naturally, patients had the feeling that they were being detained although sane, but in such cases inquiry was always made Asked for his views with regard to the institution of some independent tribunal of investigation, the witness said that this was a difficult point, but there were borderline cases on which it might be desirable to consult an expert

SIR HUMPHRY ROLLESTON said that he had been much impressed by the stress laid on the desirability that the judicial authorities should be highly experienced men and the medical men specialists He asked the witness whether he thought that justices should be specialized with regard to mind diseases in the same way as coroners with regard to investigation into the causes of death SIR ROBERT WALDEN said that this was desirable, but, he feared, impossible It would necessitate paid authorities With regard to the medical man, the medico psychological certificate should be held by all those dealing with such cases After care was another very important matter, but it was at present left entirely to voluntary agencies

Earl RUSSELL asked the witness if he thought it desirable that there should be instituted in England the practice prevalent in Scotland of boarding out suitable cases in villages The witness replied that provided both the cases and the foster parents were carefully selected that might prove a desirable course in certain instances

Councillor C F SANDERS, magistrate for the city of Cardiff, said he had no difficulty in regard to certifying cases He was, of course, bound to rely on the certificate of the medical men He did not understand it to be his task to examine a patient and satisfy himself from his own observation as to whether that patient was sane or insane

THE CHAIRMAN Are you not thereby very much reducing the value of the personal interview?

Councillor C F SANDERS I may be slightly reducing it, but I should say, judging from my own experience, that there is little danger on any such ground as that I should be very much surprised to find that any person has been committed to a mental hospital in Cardiff without due cause, speaking of the cases which come under my own observation—technically pauper cases

Continuing, the witness said that in the course of the past two years as many as 333 cases had passed through his hands, out of which number 58 had been discharged without a certificate having been granted The CHAIRMAN said that it would be interesting to know on what grounds proceedings were dropped in the 58 cases Councillor SANDERS replied that they were dropped for various reasons, a large proportion of the cases having been brought in suffering from delirium tremens and the taking of methylated spirits, whilst others apparently suffered from severe depression which had come on suddenly, but which, after a short rest, had passed off Many were not pauper cases, though he supposed in the legal sense they became such directly they had entered the workhouse He had had but little experience of private cases Questioned as to visitation, he said that when a patient had been certified and removed to an asylum he had frequently visited the case in his capacity as a member of the visiting committee There was sufficient accommodation in Cardiff for all cases arising in the area Asked by the CHAIRMAN whether he had any suggestions to make as to the necessity for further safeguards for personal liberty, Councillor SANDERS replied that he did not think anything arising out of his experience pointed in that direction

The CHAIRMAN pointed out that there were differences of procedure, according to the evidence, between Birmingham and Cardiff Whilst Councillor Sanders had said that in nineteen cases out of twenty which he had before him, he called for written statements from relatives and friends as to what they knew of the alleged lunatic, Mr Lord had said that he made no inquiry as to whether the patient had either relatives or friends In Cardiff again, but not in Birmingham the workhouse was used almost invariably as an original place of detention and as a place where the justice might visit the patient

The next meeting of the Commission will be held on November 4th.

British Medical Journal.

SATURDAY, NOVEMBER 1ST, 1924

PRESERVATIVES IN FOOD

THE final report of the findings of the Departmental Committee on Food Preservatives a summary of which will be found at page 828 is of a drastic nature, and the recommendations will if acted upon, mean the practical suppression of preservatives in food. The medical members—Professor W. E. Dixon, Dr. J. M. Hamill, Professor F. Gowland Hopkins, Dr. G. R. Leighton, Dr. A. P. Luff, and Dr. Charles Porter—represent varied experience, interests, and points of view, and the unanimity of the Committee's findings (apart from dissent on one point by Sir Daniel Hall) should carry much weight with Parliament and the responsible authorities. The evil of using drugs to preserve food substances has, we believe, been steadily growing in recent years, and it has become increasingly difficult to obtain food supplies free from these substances. From time to time, after some particularly objectionable case has been exposed in the law courts, such as the discovery of an excessive amount of boracic acid in sausages or sponge cakes, a public outcry is raised, but the matter quickly fades from memory, and the evil continues. As Samuel Johnson observed: "It is difficult to disturb the system of life," and this holds good even of a system which has grown up in comparatively recent times.

They order this matter better abroad. In many respects Britain is far behind other European countries and America. The law in many of these countries consists of a general prohibition of the sale of articles of food containing injurious substances, and often lays down specific regulations for the preparation of articles of food. Of course it is could be shown that preservatives were entirely lacking in harmful properties, something might be said for retaining them, though the Committee points out that they may be used to mask unsound food or to avoid proper care and cleanliness in the preparation of sound food. But these preservatives are not harmless. Boracic acid, which is the chemical most commonly used, is cumulative; a single dose is not completely excreted for about five days, and, as the general public probably take from three to fifteen grains of this substance daily in their food, it is not too much to say that their tissues are never free from it. One of the witnesses who gave evidence on behalf of the British Medical Association told the Committee that in some individuals quite small doses of boracic acid may produce gastric irritation, and that there is evidence that boracic acid tends to produce albuminuria and may have injurious effects on persons suffering from nephritis.

We entirely agree that the evil likely to result from the haphazard consumption of preservatives in food is certain to be enhanced in those suffering from renal disease, and that it is essential for the medical man to know the nature and amount of added preservatives in foods which his patients may be consuming. Cream, butter, margarine, sausages, brawn, potted meat, potted fish, bacon, ham, pickles, sauces, coffee extract, lemon curd, jellies, dried fruits, cakes, and beverages of various kinds may all contain preservatives, and it is not difficult to understand how the substance gets into the system. When it is remembered that this cumulative substance (boracic acid) may perhaps be taken for a lifetime, who is to say that even in the healthiest of people it may not lead to serious sickness? In invalids and children it is well known that boracic acid is not well tolerated, and may lead to distressing symptoms—often after only a few doses. For these reasons we think the Committee is right in recommending the prohibition of the use of so insidious a substance as boracic acid. If the Committee's recommendations are put into effect, all the dairy products sold in this country should in the future be free from preservatives.

The only preservatives which the Committee proposes should be allowed in the future are benzoic acid and the sulphites—substances which are relatively harmless according to evidence at present available. Moreover these chemicals are to be permitted only in beverages and in sausages. Even in those instances in which reasons are given for permitting small amounts of approved preservatives it is recommended that each article of food or drink shall bear a label stating the nature and amount of the preservative used. In principle this seems to meet the case exactly. But the matter bristles with practical difficulties. Such a stipulation might inflict hardship if its enforcement led the public to assume that the prescribed label carried with it a stigma. For instance, the Committee is unanimously agreed as to the desirability of allowing jam makers to preserve surplus fruit with sulphur dioxide rather than to discard it; but the manufacturers in that event must append a label, whereas no label is necessary for jam not made from fruit, so that the genuine article would be penalized. The manufacturers of fruit juices who, for example, use the natural lime or lemon with sugar, and who supply it to the public in sealed and sterile bottles, must use a preservative, otherwise fungus growth and fermentation will occur in the bottle twenty-four hours after it is opened, synthetic lime juice made perhaps from essential oil, citric acid, and saccharine requires no preservative, so here again the genuine article would be penalized. Bottled beer, brewed and aerated by the Neville rapid method, has no added preservative, yet it invariably contains a trace of SO from extraneous sources, and to protect themselves brewers would require to label their bottles. We venture to think that it may be in these cases such as these that the Committee recommends that if the declaration of the preservative is likely to cause undue harm without compensating advantage to the consumer exceptions to the requirement might be made by the Minister of Health.

The report leaves us with the impression that all the recommendations made can be carried out to the advantage of the public and with the approval of the medical profession without any increase in the cost of the food. The Committee deplores the absence of adequate facilities for refrigeration and cold storage in this country, and of adequate accommodation for cold transit by the railway companies. In this respect Great Britain is very far behind the United States—one reason because that country has cheap power and water power both of which we lack. We urge efficient provision for the cold storage and transport of perishable foodstuffs from overseas as a further argument for the use of preservatives should that be found

GALL STONES AND CHOLECYSTECTOMY

Gall stones, whether discussed with wit and wisdom or treated with soap pills and crab claw powder, can only be cured by operation, or they will accompany their victims to the grave The aggregate amount of pain that calculi of all sorts have caused humanity must be colossal Often the pangs of calculous colic —unexpected, sudden, and useless—are more acute and more prostrating than those of childbirth, because more terrifying to the sufferer Throughout his Lloyd Roberts Lecture, printed at page 795 this week, Sir John Bland-Sutton's polished shafts go winging in a manner that would have caused the founder of the lectureship many a quiet chuckle The present lecturer has always been an upholder of the unities, and in that respect he is a true member of the classic school He cannot think of calculi in one organ without thinking of those in others, and that leads him on to pearls (and beauty), and to enteroliths in cows and snakes, but he never wanders far from his main subject, and his talk Attic um has a savour and a utility all its own

In moments of enthusiasm it is perhaps well to bear in mind that the accepted treatment of one age is often the quackery of the next Before laughing too heartily at the absurd therapeutics of orthodox physicians of the eighteenth century it may be prudent to reflect on some official remedies of to-day and wonder what the Medicine of the future will find to say of them Our forefathers, like ourselves, were at least groping after the truth, and soap, given by them for gall stones, is in fact a solvent of cholesterin, though a feeble one It is possible, too, that the addition of the more florid constituents of the bygone prescription was but the early and picturesque contribution of a mind alive to the place of suggestion in treatment

Sir John Bland-Sutton's plea for cholecystectomy falls to-day on more receptive ears than it would have done twenty years ago The stream flows with him, and cholecystectomy is firmly established on its own merits The practice of this operation is admittedly no less beneficent in the acute forms of gall bladder disease than when infection is of slight intensity But it is worth remembering that in some countries the unchallenged popularity of cholecystectomy has sometimes led to disaster The manner in which the distended gall bladder pushes down from the hilum, overshadowing the neck and drawing a film of liver tissue incompletely with it, tends to obscure the depths of the wound Here again a large stone will often be found the cause of the obstructive cholecystitis The walls are thick and sodden, the neighbouring area oedematous The unskilled surgeon—and the skilful but unpractised surgeon too—may do irreparable harm in a few moments in this deep wound, injuring ducts and (though more rarely) vessels It is necessary, therefore, to proselytise with discretion The skilled and practised surgeon stands in no need of advice here The occasional surgeon will do well to remember the classical advice that a cholecystectomy should always be done, provided that it does not add to the risks of the operation, nor detract from the prospects of survival, or recovery It is indeed true—it has been proved in other countries—that one of the chief risks in an operation may be the operator himself So much, then, for cholecystectomy and the occasional surgeon

There is an interesting historical reference, in Sir John Bland Sutton's lecture at Manchester, to Lord Lister's advice against operating for gall stones It would seem that Lister apprehended rupture of the abdominal wound, most probably resulting from imperfect suture material, defective technique, or slight unhealthiness in the operation wound His observation was *true enough*, the lax abdominal parietes left after the removal of tumours rarely burst open however thin the walls might be, because tension had then decreased The silk and silkworm gut stitch through all layers appears to have afforded very fair results before it gave place to the modern suturing in layers Whether the almost universally used and fashionable stay suture, ensheathed in rubber tubing or tied as a "cracker dressing" over gauze, really helps much has been questioned Some surgeons hold that if these sutures are placed deeply enough to warrant their title, they cut through the soft muscle rapidly and do more harm than good Sutures placed in muscle are apt to be treacherous dense and avascular fasciae are the structures to seek and to bind Given average technique and good materials burst wounds are rare, but they come to every man at times when Nature, for some unknown reason, fails to respect the tacit bargain which the surgeon makes with her

WILLEM EINTHOVEN

The Nobel Prize for Medicine for 1924 has been awarded to Dr Willem Einthoven, professor of physiology in the University of Leyden Physiologists and physicians all over the world, especially those interested in the problems of the heart, will welcome the news and regard this as a well deserved honour The invention of the "string galvanometer" has been a wonderful gift to physiology and medicine—perhaps the greatest, in the elucidation of the action of the heart in health and disease, since Laennec's discovery of the stethoscope Kolliker and Muller in 1856 first demonstrated the presence of a current of action in the heart by means of a frog's nerve-muscle preparation Later, in 1887, the late Professor A D Waller showed that the human heart beat could be detected and registered by means of the capillary electrometer This instrument, however, was relatively insensitive, and Waller did not realize the remarkable possibilities of his discovery Professor Einthoven, *who had for some years been interested* in the electrical phenomena associated with the heart beat, introduced his string galvanometer in 1903, and it rapidly gained universal acceptance Its sensitivity surpasses that of all other galvanometers, and, in its present form, the ease and rapidity with which curves can be obtained render it an unrivalled instrument of precision The human electrocardiogram, from the usual three-limb leads, can be registered on a photographic plate with an accuracy expected in an animal experiment, but rarely found in clinical medicine Most large hospitals the world over possess an Einthoven galvanometer as an essential part of their equipment many physicians employ it regularly in their practice The clinical examination of the heart is hardly complete without an electrical examination, while it is wellnigh impossible to explain to students the various disorders of the cardiac rhythm without the help of electrocardiograms The debt of medicine to Professor Einthoven is clearly shown by reflecting on the remarkable advances that have been made during the last fifteen years by means of his galvanometer in the *elucidation of the* cardiac mechanism, both normal and abnormal In these researches he has himself been a laborious worker, and has made many and important contributions Most of Sir James Mackenzie's patient work found convincing proof In 1909 Lewis, Rothberger, and Winterberg simultaneously demonstrated the common occurrence of auricular fibrillation in man The site of origin and mode of propagation

of the normal heart beat are now known in minute detail, sites of new impulse formation in auricle or ventricle can be accurately located, different forms of tachycardia and bradycardia are distinguished with ease and certainty lesions hitherto unsuspected, such as those of the branches of the bundle of His, have been revealed Without the aid of this galvanometer Sir Thomas Lewis's brilliant proof that auricular flutter and fibrillation result from the 'circus phenomenon" of Mines would not have been possible Professor Einthoven has many friends in England, and he is no stranger to this country In 1912 and again in 1921, he lectured before the Royal Society of Medicine Only last year, in connexion with the eleventh International Physiological Congress at Edinburgh, he received the honorary LL D degree British workers headed by Lewis and his school, have reaped a rich harvest from his sowing, and no warmer greetings and congratulations will reach Professor Einthoven on his latest honour than those from his friends and colleagues in this country

SUBCUTANEOUS CELLULITIS IN MINERS

At the instance of the Mines Department the Medical Research Council undertook an inquiry into miner's 'beat knee," beat hand" and beat elbow"—the names given to forms of subcutaneous cellulitis which result from the miner's occupation[1] Miners though their general mortality is low, suffer more from occupational diseases which are subject to compensation than any other industrial workers The three diseases investigated do not equal in numbers afflicted the cases of miner's nystagmus but the cases of either beat knee or beat hand reported each year far exceed those in any other disease subject to compensation while cases of beat elbow are nearly as numerous as all cases of industrial lead poisoning The inquiry was undertaken by Professor E L Collis and Dr T I Llewellyn to see whether better means of preventing the afflictions could be suggested, and whether the need for knowledge called for new research work To judge from their conclusions it would appear that the investigators do not consider that further research work is needed The incidence of the diseases should be reduced by better observance of existing means of prevention, and by the extension of facilities for cleanliness The diseases, which are described as an acute localized inflammation of the deep layer of the skin, subcutaneous tissues, or underlying bursa are due to repeated trauma, directly connected with the method of work They are especially liable to occur in conditions of lowered vitality, softness" after absence from work or in new-comers, and sepsis or skin infection in the neighbourhood of the affected part or elsewhere The site of the cellulitis is determined by the lowered vitality produced by constant pressure The knee or elbow is affected in accordance with the position adopted by the miner in the particular seam he is working, while the hand is injured by hard coal or by using picks with rough handles It is probable that the sodden ing of the skin produced by working in wet seams is an additional cause of the diseases Contributory causes are deficient cleanliness, the practice of wearing a garter round the trousers below the knee, the use of unsuitable knee-pads and the neglect of small scratches and abrasions through which micro-organisms may gain access to the tissues Although the incidence of the diseases is great, their duration fortunately is not lengthy In beat knee and beat elbow the course of the disease is usually uneventful, and complete recovery of function may be expected in less than six weeks In beat hand severe infection may lead to involvement of the tendon sheaths and destruction of the tendons The crippling effects of an untreated or badly treated whitlow of beat hand may, as the investigators suggest be more serious than the results of a compound fracture of the femur Beat hand usually ends in suppuration, and as soon as pus is present an incision should be made on the palmar surface even though the local signs are more marked over the back of the hand Occasionally fatal results from septicaemia following one or other of these diseases have been recorded The conclusions of the report are (1) That repeated trauma should be guarded against, and its results minimized as far as possible (2) That the skin should be kept clean and the general health good (3) That properly equipped first-aid stations, with skilled surgical advice should be available (4) That lines of defence should be strengthened by the abolition of garters and constricting bands below the knee, the use in thin seams of suitable knee pads, attention to the smoothness of pick handles, the erection of pithead baths as soon as possible at collieries where thin seams are worked improvement of first aid stations under medical supervision, and a spread of knowledge concerning the importance of their use

[1] Medical Research Council Report on Miners Beat knee Beat Hand and Beat Elbow By Professor E L Collis M D M R C P and T I Llewellyn M D London H M Stationery Office 1924 Price 1 6d net

TESTING THE SOBRIETY OF MOTOR DRIVERS

For two years the police in Copenhagen have adopted the plan of submitting cases of alleged drunkenness in motor drivers to a medical examination by a doctor specializing in this branch of forensic medicine This task fell to Dr J Fog of the Medico-Legal Institute of the University of Copenhagen, and his earlier experiences with fifty cases of alleged drunkenness have already been briefly referred to in our columns[1] In his most recent communication he states that from June 1922 to June 1924 he examined 200 cases of alleged drunkenness in motor drivers whose conduct had aroused suspicions as to their sobriety and had brought them within the purview of the police These 200 cases were classified according as they were drunk (43) slightly under the influence of alcohol (121) or sober (36) Dr Fog considers this last figure expressive of leniency some of the 36 may well have taken sufficient alcohol to disturb their balance and judgement but it was considered advisable in borderland cases not to venture on a verdict likely to be upset in the event of an appeal Only three of the drivers were under the age of 20, and only six were over 50 sixty-five drivers were classed as private persons, the remainder being professionals Analysis of the cases according to the hour of the day or night that they occurred brought out the interesting fact that the frequency with which Copenhagen motor drivers fall into the hands of the police on the suspicion of drunkenness varies greatly from hour to hour It might have been thought that a most motoring is done in daylight most of the arrests would occur between 8 a m and 8 p m but only 71 of the men whom Dr Fog examined came before him during these twelve hours Amongst the night hours the two-hour period 12 to 2 a m was the one most crowded with medical examinations 42 (or 21 per cent of the total) being made at this time At first about forty five minutes were required for each examination, but with practice Dr Fog has found it seldom necessary to spend more than half an hour on each case His original plan was to conduct a tete-a-tete examination interview with the alleged drunken driver, who he thought would be less embarrassed by a dialogue conducted in strict privacy than by one to which a third party was witness But largely with a view to the possibility of appeal Dr Fog has found it wiser to have a third person present in the room—though in plain clothes rather than in uniform If such a person is not available

[1] British Medical Journal Dec 2nd 1922 Ugeskrift for Laeger October 2nd 1924

engaged in some routine clerical task he is not likely to upset a driver attempting to show unimpeachable sobriety It should be noted that a certain proportion of Dr Fog's cases were of the recurrent, perennial type, within less than four months he had to examine the same driver three times, the consecutive verdicts being sober, sober, and slightly under the influence of alcohol This was a case in which reckless driving was complicated by a luxuriant vocabulary, the volume and quality of which had aroused the suspicions of the police

INFANT MORTALITY IN SOUTH AFRICA AND NEW ZEALAND

The wide difference between the infant mortality rates in South Africa and New Zealand—80 and 40 per cent respectively—has prompted Dr J J Boyd of Pretoria to investigate the question whether the comparison that has been made between the health and welfare work in the two countries, with unfavourable comments in the case of South Africa, is at all justified A paper read by him on this subject before the South African Medical Congress of 1924 is published in the *South African Medical Record* for July 26th (p 321), the case of European infants alone being considered Dr Boyd doubts whether the methods employed by Dr Truby King and his followers in New Zealand are of general applicability, and draws attention to certain fundamental factors in the problem of infant mortality which operate quite apart from any health or welfare work Pointing out that a high birth rate is more apt to be accompanied by a high infant mortality than is a low birth rate, he remarks that, whereas the average European birth rate in the South African Union for the period 1911-18 was 29 8, during this period in New Zealand the corresponding figure was 25 5, and in later years it was still lower The social standing of the parents, connoting superior intelligence, a healthier environment, and greater care, has a definite influence on infant mortality, and it is pointed out that whereas in New Zealand the "poor white" is a comparatively rare person, in South Africa this class contributes very appreciably to the infant death rate General climatic conditions, the rural environment of the majority of the population, and the relatively more restricted use of native nurses, are also said to be important factors in the favourable position of New Zealand With the help of a detailed statistical report it is claimed to be proved that New Zealand at no time in its history has experienced such high infant mortality rates as those prevalent in South Africa down to the end of the nineteenth century, and that in both countries since 1904 there has been an approximately equal fall of 50 per cent, which is largely attributable in both countries to other factors than the teaching of mothercraft Moreover, figures are quoted to show that several South African towns have already attained infant mortality rates little, if at all, inferior to the average New Zealand town With no desire to minimize the good work of Dr Truby King and the Plunket nurses, which commenced about 1908, Dr Boyd suggests that the benefit can hardly have been generally appreciable before 1912 In the period 1871-75 the death rate in New Zealand was 107 per 1,000, in 1883-92 it was 87, in 1893-1902, 82, in 1904-8, 71 45, and in 1909-12, 59 16 Other factors, such as housing and sanitation, were obviously concerned, therefore, in the reduction, and it would appear hardly justifiable to claim that the Truby King system was the sole, or even the principal, factor to be considered The author produces much statistical information in support of his views, including reports from ninety-three small towns in South Africa, as well as from the more densely populated areas, he insists that "without a proper foundation in the shape of good sanitation in the broadest sense of the term a great deal of mothercraft teaching will be useless The people will not be in a position to profit by it" He does not deny that the Truby King system appears to be very successful and well worth study, but urges that other methods also require energetic application In the *South African Medical Record* for September 27th (p 429) Dr A Simpson Wells discusses Dr Boyd's statements, and points out that the active work in New Zealand on the lines laid down by Dr Truby King commenced officially in 1907, though active propaganda had been in progress during the previous two years The fall in the New Zealand infantile death rate might, therefore, be definitely attributable to this welfare work Dr Wells gives a detailed account of the methods in New Zealand, and urges that these must be adopted in South Africa with necessary adaptations

BRETONNEAU

In his presidential address on Bretonneau, his life and work, recently delivered before the Section of the History of Medicine of the Royal Society of Medicine, Dr J D Rolleston said that Pierre Bretonneau (1778 1862) was a remarkable personality whose services to medicine could be summarized as follows In the first place he established the specificity of diphtheria and typhoid fever At the beginning of the nineteenth century the whole subject of sore throat, including its different varieties and its relation to croup, was in a state of confusion Bretonneau's great achievement was to have shown the identity of malignant angina and croup, and to have differentiated malignant angina from all other forms of sore throat, mainly by its progressive course and contagious character The identification by Bretonneau of malignant angina with croup was established as follows (1) by elaborate researches into the morbid anatomy of the disease, by which he showed that the membrane in the fauces was continuous with that in the larynx and trachea, (2) by clinical observation, by which he proved that the angina, if left to itself, almost invariably tended to attack the larynx, and thus give rise to symptoms of croup, (3) by chemical examination, by which he proved the identity in composition of the membranous deposit in the fauces with that in the larynx and trachea, (4) by the study of the works of the earlier writers A considerable part of his second memoir on diphtheria, which he read before the Academie de Medecine in 1821, is taken up by quotations from Aretæus and the Spanish and Italian writers in the seventeenth century, as well as from Ghisi, Starr, and Bard in the eighteenth century, to show that the disease started in the fauces and finally attacked the trachea The prevailing ideas on the continued fevers were in much the same chaotic condition as those held regarding the different forms of sore throat As in the case of diphtheria, Bretonneau succeeded in establishing the specificity of typhoid fever, not only by a careful clinical study, but also by numerous autopsies Bretonneau's next achievement was his doctrine of specificity, by which he foreshadowed the germ theory of disease This doctrine is now so well established that it is one of the commonplaces of medicine, but it has only comparatively recently become so, and in Bretonneau's time was vigorously opposed by Broussais, the leader of the "physiological" school, who stigmatized as "ontologists" those who studied medicine from this point of view In opposition to Broussais, who had discarded the materia medica and reduced treatment to bleeding, leeching, and a starvation diet, Bretonneau made several valuable contributions to therapeutics Apart from the introduction of tracheotomy for laryngeal diphtheria and a new method of administration of quinine in malaria, described by Trousseau as a happy combination of the methods of Sydenham and Torti, he was the first to employ belladonna in constipation and enuresis, resuscitated the use of purgatives in dysentery and of martial prepara

tions in anæmia, and was the first to introduce cod liver oil into France for the treatment of rickets. Lastly, his work, especially his researches on diphtheria, shows the practical value of the study of the history of medicine.

THE MEDICAL HISTORY OF LOUIS XIV

Much has been written about the health of Louis XIV, nearly all of it is derived from the *Journal de Santé du Roi* kept by his physicians Vallot, d'Aquin, and Fagon. Dr. D. F. H. R. Degueret has gone over the story again in his thesis (*These de Paris*, 1924, No. 169) and it may be interesting to recall some of the points he brings out. Louis was born with two teeth which caused some injury to the breasts of his wet nurses for until the appearance of Rousseau's Emile, it was not fashionable for royal personages or court ladies to suckle their children. His first illness occurred at the age of 9, when he contracted small pox, for which he was bled four times as well as purged. The attack, though severe, does not appear to have disfigured him. At the age of 17 he had gonorrhœa which was attributed by the courtly Vallot to congenital local weakness aggravated by riding on horseback. During the campaign in Flanders at the age of 20 he fell ill with typhus, for which he was treated by purges and emetics in the form of antimony. Five years later he had a severe attack of measles, his recovery from which was celebrated by an ode composed for the occasion by Racine. From this time onward the journal of his health makes frequent allusions to attacks of giddiness, headache, and "vapours." There does not appear to be any evidence for attributing these symptoms to the presence of a tapeworm as has been suggested, they were most probably due to indigestion caused by a voracious appetite, defective dentition and his habit of bolting his food. Dr. Degueret is inclined to the view that the frequent purgation to which the monarch was subjected acted beneficially and enabled him to attain the age of 77. In 1681 the unskilful removal of a tooth was followed by a naso-palatine fistula for which he underwent cauterization on several occasions; the final result was successful. Five years later he developed fissure of the anus for which he was operated on by the surgeon Felix in the presence of d'Aquin and Fagon. Louis appears to have submitted to operation on each occasion with considerable fortitude. He had attacks of intermittent fever between the years 1686 and 1695, due to the presence at Marly of indigenous malaria, he was successfully treated with quinine by d'Aquin. Save for these attacks and a carbuncle from which he suffered in 1696, the principal illnesses Louis experienced during the last thirty years of his life were gout and renal calculus. The cause of his death was senile gangrene. Dr. Degueret pays a tribute to the devotion of the king's physicians, whose constant attentions enabled him to attain an advanced age in spite of the deplorable hygienic circumstances in which he lived.

THE BENJAMIN WARD RICHARDSON LECTURE

The Model Abattoir Society was founded in 1886 by Sir Benjamin Ward Richardson. It aims at the substitution of public abattoirs in the place of private slaughterhouses. It seeks to encourage the use of rapid and humane methods of slaughtering animals, and to remove all those influences which lead to unnecessary suffering of animals prior to slaughter. Besides educational and propaganda work which the society carries on throughout the year it arranges each autumn for a Benjamin Ward Richardson Memorial Lecture to be given in London. The first lecture was delivered in 1922 by Sir William Collins who took as his subject "Benjamin Ward Richardson the man and his work as a sanitarian and humanitarian." Last year Sir Arthur Newsholme lectured on "Humane slaughtering and the public health." This year's lecturer Dr. Chalmers Mitchell selected as his theme "Hygiene in animal food: evidence from the Zoological Gardens." He spoke at the Royal Society of Medicine on October 23rd and Sir James Crichton-Browne presided at the meeting. Dr. Chalmers Mitchell described the method adopted for the slaughtering of animals required for food at the Zoological Gardens. For large animals such as horses they use the rifle which experience has shown to be a most expeditious and humane method of killing. In the course of more than twenty years a second shot has been necessary only on two occasions. Dr. Chalmers Mitchell considers the rifle preferable to any "humane killers" which he has seen. The suffering of animals prior to slaughter is almost altogether due to fright at the strange and unexpected surroundings. Fright is greatly increased by rough handling, and the method of electrocution, which is advocated by many, although offering a painless death, is open to the objection that it necessitates much handling of the animals and is therefore likely to be attended with suffering. He does not find much to choose between the rifle the pole axe, the humane killer or the knife in the hands of experts used with skill each may result in a swift and painless death. It is the preliminary arrangements and not the actual lethal agent which account for the brutality of common methods of slaughtering, and reforms should aim at the avoidance of discomfort and fright in the hours prior to the actual killing. Dr. Chalmers Mitchell believes that animals have no foreknowledge or presentiment of death, and are not frightened by the presence of dead bodies or by the smells of the slaughterhouse. He gave many observations from his own experience to prove this point. On the other hand, all animals have a great fear of unfamiliar faces voices and handling; their skin in particular is extremely sensitive to an unaccustomed touch which may cause extreme fright. They are reassured by the sight sounds and smell of other animals—facts which point to the need for homely surroundings in the accommodation provided for the animals at the abattoir prior to slaughter. Turning from the deaths to the lives of animals Dr. Chalmers Mitchell made some interesting observations on the diet and housing of inmates of the London Zoological Gardens. He pointed out that the intestinal tract of primitive mammals was adapted for an omnivorous diet, and that man though highly specialized in other directions, has retained this primitive type of alimentary tract. Herbivorous and carnivorous animals have a specialized intestinal tract resulting not only in an alteration in design, but enabling them also to assimilate food quite repugnant to omnivorous feeders. Thus carnivorous animals such as lions and tigers, are able to digest and enjoy putrid flesh which would be repulsive to omnivorous animals. The aim of the management of the Zoological Gardens is to keep the animals as happy and comfortable as possible, and improvements are constantly being made in accordance with the advancement of scientific knowledge. It has been found that new warm blooded animal remain healthy in an environment where everything is arranged for them so that they can never exercise the freedom of choice. To avoid this housing is being arranged so that animals may choose between out door air and shelter, and new methods of ventilation are being installed to avoid stuffiness or stagnant and to allow plenty of fresh air. Animals suffer also from lack of sunshine due to being deprived of ultra violet radiation. To cure this a new experimental house is being constructed with a special glass roof which will allow the ultra-violet rays to penetrate into the interior. Certain of the houses are to be lighted also with special electric light providing ultra-violet radiation. In such ways as these the disadvantages of captivity are being balanced by a share in the experience which comes from the progress of scientific knowledge.

THIRD INTERNATIONAL CONGRESS OF MILITARY MEDICINE AND PHARMACY

During the war the allied nations instituted surgical conferences in which joint rules were formulated for treatment, so that all the wounded might profit by improvements achieved by the individual countries. After the war the Belgian Army Medical Corps convened a congress at Brussels in order to perpetuate this fruitful scientific collaboration, and two years later another congress was held in Rome. The third international congress is to be held in Paris from April 20th to 25th, 1925, at the Val-de-Grâce—the cradle of army medicine. The following questions have been put down for discussion: Technical specialization as the basis of field medical service work, methods for selecting the military contingent, etiology and treatment of traumatic arthritis and its sequelæ, methods of analysis of dressing and suturing materials. Tests and demonstrations will simultaneously be arranged of technical equipment formed into field sanitary units, and an industrial and commercial exhibition is being organized. The entertainments include official receptions and a gala night at the Paris opera, and excursions have been arranged in connexion with the congress to the spas and climatic cure stations of France. All past and present officers of the army or navy medical corps of an allied, associate, or neutral nation are invited to the congress, together with their wives and daughters. The subscription is 30 francs for men and 20 francs for ladies, and application should be sent in before December 1st, if possible, and in no case later than February 1st, addressed to the Commissariat du Congrès, 66, rue de Bellechasse, Paris (VII). Uniform should be worn at the inaugural sitting, official receptions, and fêtes, and is optional during the congress. Reductions in railway fares have been arranged, and a committee has been organized to provide information about lodgings.

The Bradshaw Lecture before the Royal College of Physicians of London will be delivered on Tuesday, November 4th, by Dr. F. J. Poynton, on "The prevention of acute rheumatism." The Mitchell Lecture, as stated last week, will be given on November 6th, by Sir StClair Thomson, on "Tuberculosis of the larynx and its significance to the physician." The Fitz-Patrick Lectures will be given by Dr. Charles Singer on November 11th and 13th, on "The history of anatomy." The lectures will be delivered at the College, Pall Mall East, at 5 o'clock. Any member of the medical profession will be admitted on presentation of his card.

Nova et Vetera.

THE MEDICAL INTEREST OF CASANOVA'S "MEMOIRS"

"Every properly constituted man of letters" wrote Mr. Havelock Ellis, "has always recognized that any public allusion to Casanova should begin and end with lofty moral reprobation of his unspeakable turpitude," a fact which, aided by ignorance of the French language, prevents Casanova from securing a wide circle of readers in suburban England, at the present rate of exchange, his complete memoirs, six volumes of them, cost less than a couple of the psycho-neurotic sexual fantasies of popular novelists which encounter little or no moral reprobation. The suburban neglect of Casanova is compensated by the assiduity of serious readers and there can be few aspects of his life and character which have not been closely investigated. In 1917 Dr. J. D. Rolleston published in *Janus* a detailed study of Casanova's medical history. Dr. Rolleston has focused the information Casanova provides respecting his various illnesses, mostly, of course, venereal, and also contrives to throw light upon the conditions of medical practice in the eighteenth century. This light is at times lurid, thus Dr. Rolleston remarks that the contract between a Venetian courtesan, named Ancilla, and her doctor "should be read as an interesting example of medical deontology in the eighteenth century." The contract was to the effect that before the doctor, one Tuchest, should receive payment for his (mercurial) treatment, he must give a very convincing practical testimony to his belief that a cure had been effected. When it came to the point, the doctor declined to fulfil the condition, and sued for his fees. The court decided in his favour on the ground that the condition was void as criminal in nature. Casanova says—thereby displaying ignorance of English law—that had the suit been brought in England, where, according to him, any agreement is enforceable, Ancilla would have won.

Casanova speaks with respect of two eminent medical men, Hiller and Tronchin, but he has little good to say of them profession, although, like other satirists of the faculty, he usually called in a doctor when he was really ill. He employed a medical man in six of the eleven attacks of venereal disease which he records. Speaking of Tronchin, Casanova mentions a report that he had cured a phthisical patient of a venereal disorder by means of the rub of an ass which had been anointed with mercury. Dr. Perrot's comment on this passage is that "Tronchin was evidently a smart fellow. It is a difficult job administering mercury to phthisical patients, and one has to go slowly and tread carefully in treating syphilis in such. Rather than subject the patient to direct mercurial unctions, which might have killed him, Tronchin wisely chose a *pons asinorum* way to get over the problem, an unusual way I admit, but rather original."

Casanova was, as Dr. Rolleston remarks, the more ready to criticize the faculty because he was himself in an item physician, usually combining simple treatment with mystical humbug. All his life he dabbled in magic, and his reiterated contempt for his dupes does not altogether remove the suspicion that the Prince de Ligne's sneer—Casanova believed in nothing except the incredible—was well founded. Casanova was indeed much less acute than he supposed; often enough he played the part of Dryden's Duke of Buckingham, and in London the self-confident adventurer was plucked as easily as Lord Frederick Verisopht.

The *Memoires* have been described by an eminent critic as "one of the greatest autobiographies," but the medical reader may suggest that this is a trifle eccentric. It is not our province to discuss the literary style, although we wonder whether a Frenchman would rate it high; but it seems to us that a really great autobiography can only exist when the character described is remarkable and the skill in self-analysis consummate.

Casanova, we are philistine enough to think, was *not* a remarkable character. We have all met many Casanovas—men blessed with strong constitutions, physical courage, quick parts, much self-confidence, and few scruples. Few of them indeed have rubbed shoulders with so many famous people and none of them have described their erotic adventures in such detail—we make this latter statement with reserve, since before it is in print Dr. Stekel of Vienna may have produced two or three more volumes of the *in infimo* of his patients. But Casanova's conversations with celebrities consist mostly of smart impertinences and well merited snubs, while it is possible to be bored by the description of sexual intercourse.

We should say that the defenders of religion and morality, instead of loftily reprobating Casanova's moral turpitude, would have done better to use him as a horrible example. He had his good hours no doubt, but there were many bad hours, and the sorrowful picture of the last years of the greedy, boastful, quarrelsome old pensioner, drawn by the Prince de Ligne, is not that of a worldly success. Horace and Mr. Pepys were not perhaps better moralists, but they were better philosophers and far better autobiographers.

MEDICAL WOMEN'S JUBILEE

LONDON SCHOOL OF MEDICINE FOR WOMEN



THE service of thanksgiving to commemorate the jubilee of the London (Royal Free Hospital) School of Medicine for Women was held at St Paul's Cathedral on Saturday afternoon, October 25th Princess Beatrice and Princess Arthur of Connaught were present The struggle entered upon fifty years ago by the founders of the first medical school for women in the British Empire resulted not only in the admission of women to the medical profession but also opened the door to all branches of work wherein women could prove their ability to take a more active part than hitherto in the body politic

Thanksgiving Service in St Paul's

The long procession which entered the cathedral was composed of the President, Dean and Warden of the school the President and Secretary of the hospital the heads of departments of both school and hospital and representatives of most of the phases of work in which women now participate—women's medical service in India, nursing and allied services, women's colleges the teaching profession, women civil servants, and social service workers The occasion was regarded by earnest thinking women as one of unique importance A more representative gathering of women workers could not well be imagined and every seat in the great cathedral was occupied The processional hymn was St Patrick's Breastplate set to an ancient Irish hymn melody

During the service the following words were read by the Archdeacon of London (the Venerable E E Holmes)

Through the ages there have been women in spirit born *before their time* They had vision and faith and by their toil and sacrifice by their persistence and courage opportunities for women in training work and service have been won Three pioneers opened the doors of medicine to women Elizabeth Blackwell Elizabeth Garrett Anderson Sophia Jex Blake With love and reverence our hearts turn to them

The sermon was preached by the Bishop of Lichfield (the Right Rev J A Kempthorne D D) from the text 'I beseech you that ye walk worthy of the vocation wherewith ye are called" The service was brought to a close with Elgar's Imperial March as a concluding voluntary, played by members of the London Symphony Orchestra conducted by Dr C Macpherson, organist of the cathedral

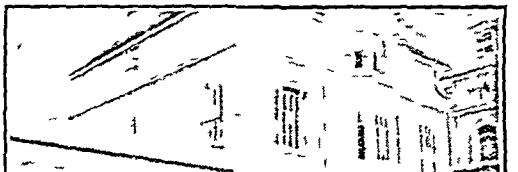
Guildhall Dinner

By the kindness of the City Corporation the Jubilee Dinner was held in the Guildhall on the evening of Friday October 24th Dr Mary Scharlieb occupied the chair and remarked that English people never felt satisfied that any undertaking could be launched blessed or completed without its friends and promoters sharing a meal

Gog and Magog (writes our representative a former student of the school) have looked down unmoved upon many historic scenes, but certain it is that they have never before beheld some five hundred medical women enthusiastically acclaiming their President and Dean, in turn as "jolly good fellows" It was with sincere gratitude we paid our tribute of remembrance to the three pioneers and with earnest enthusiasm we approved the suggestion to endow three chairs at the school—in anatomy, physiology, and pathology—to bear their honoured names

The toast of "Women's Work" was proposed by the Very Rev the Dean of St Paul's who, after saying many delightful things about the work of women added that he himself still thought that the highest occupation for women was to be found in the home Lady Barrett, in replying, *reminded us of the old days of suffrage processions* when the cry hurled at us was 'Why don't you go home and mind the baby' And yet in the last session of Parliament a woman member was obliged to bring in a bill to allow women to have the guardianship of their own children Mrs Fawcett LL D, who also responded, commented on the general ignorance concerning the number of medical women now in practice A relative of hers had remarked that he intended going to St Paul's 'to help the women along" She then told him that there were 2 000 medical women of whom over 1 100 were graduates of the London School

Professor L A Gardner (Vice-Chancellor of the University of London), who proposed the toast of the London (Royal Free Hospital) School of Medicine for Women, said that it was particularly appropriate that London University should be associated with this toast The foundation of the Women's Medical School in 1874 was given the seal of academic approval when the University in 1878 accepted *from the Crown a supplemental* charter making every degree honour, and prize offered by the University accessible to students of both sexes on perfectly equal terms It was thus the first academic body in the United Kingdom to admit women as candidates for its degrees and by so doing it had grasped a great opportunity



London School of Medicine for Women.

Miss Aldrich Blake M S the Dean of the School in her reply stated that although after fifty years' service the school is still free from debt it was desirable in the interests of future students to endow three chairs and at the same time commemorate the founders of the school The Dean then presented to Mr Langton chairman of the Royal Free Hospital a roll containing the names of new subscribers and donors secured by past and present students during the *jubilee year*

Professor Winifred Cullis in proposing The Chairman" *remarked* that Mrs Scharlieb combined the traditions of the past the achievements of the present and the imagination of the future Mrs Scharlieb in replying bade us consider the founders of the school its friends and its future The two first had been proved worthy and in spite of occasional murmurings to the contrary she felt confident of the last

Congratulatory telegrams were read from Miss Penrose Principal of Somerville College the Glasgow Medical School for Women the Scottish Branch of the Medical Women's Federation and one from Dr Poonen a former student of the school and now occupying a high official position in her native country India The band of the Royal Regiment of Artillery played a light selection during the dinner

Evening Entertainment at the School

A very delightful evening party was given to the present students at the school on Saturday October 25th After the reception by the Dean musical entertainment and demonstrations were given in various theatres and there was no lack of amusement In the course of the evening

all sides one heard continually the question, "What are you doing now?" And the answer was just as often, "Looking after my own children" as "Working at so-and-so"—perhaps more often a combination of the two—thereby showing that Dean Inge's wish that all the ladies at the Guildhall banquet should not be vowed to celibacy was already fulfilled

Women who were unable to participate in the celebrations will gladly learn that, in spite of alterations in staff, new buildings, many generations of new students, the atmosphere at the school is still a "happy" one

It is fitting to conclude with a word of thanks to all who so excellently organized the jubilee celebrations, especially the Secretary and Warden, Miss L M Brooks

PRESERVATIVES AND COLOURING MATTERS IN FOOD

The Departmental Committee's Report

As briefly announced in our last issue, the Committee appointed by the Minister of Health to inquire into the use of preservatives and colouring matters in food has now issued its final report[1] The members of the Committee are Sir H C Monro, K S B (chairman), Professor W E Dixon, M D, F R S, Sir A Daniel Hall, K C B, F R S, Dr J M Hamill, Professor F Gowland Hopkins, M B, F R S, Dr G R Leighton, Dr A P Luff, Dr Charles Porter, Mr P A Ellis Richards, and Mr G Stubbs Its terms of reference were

"To inquire into the use of preservatives and colouring matters in food, and to report—

(1) Whether the use of such materials, or any of them, for the preservation and colouring of food, is injurious to health, and, if so, in what quantities does their use become injurious
(2) Whether it should be required that the presence of such materials, and the quantities present, in food offered or exposed for sale should be declared"

The Committee has heard a very wide range of opinions, on both the medical and the commercial sides of the problem, from medical officers of health and public analysts, physicians, pharmacologists, chemists, and a great number of persons connected with the trades which would be affected

This is not the first Committee which has investigated this subject In 1889 a Committee was appointed, with Sir Herbert Maxwell as chairman, "to inquire into the use of preservatives and colouring matters in the preservation and colouring of food," but its report led to no direct action Nevertheless, since 1899 a series of regulations relating directly or indirectly to food preservatives have been made by the Local Government Board In 1903 and 1909 respectively the Public Health (Foreign Meat) Regulations and Amending Regulations were made, in 1908 the Public Health (First Series, Unsound Food) Regulation, and in 1912 the Public Health (Milk and Cream) Regulations, to amend which an Amendment Order was made in 1917

Most foreign countries have legislation on this subject, in many cases this consists of a general prohibition of the sale of articles of food containing injurious substances, together with specific regulations relating to processes of preparation of articles of food For example, every country or state which has legislated prohibits the use of fluorides and formaldehyde as a preservative In Sweden boron preservatives are absolutely prohibited in Australia, New Zealand, and Canada they are permitted specifically in certain dairy products only, while their use is apparently tolerated to some extent in Holland Sulphur dioxide is commonly permitted in wine, beer, cider, and non-alcoholic drinks, and preserved and dried fruits, but not in meat products, except in Australia and New Zealand Salicylic acid is permitted in a few instances, sometimes as a substitute for sulphur dioxide

The Committee does not include in the word "preservative" such substances as salt, saltpetre, sugar, vinegar, acetic acid, alcohol or spices, or the minute quantities of preservative agents introduced by the process of curing known as "smoking," or substances such as saccharin It draws attention to the fact that preservatives may be used to mask unsoundness in food due to one cause or another, or be a cloak for careless or inexpert methods of production, storage, or distribution

Great Britain differs from other European countries in that a large proportion of the food is imported, much of it from very long distances, and on arrival at the ports has to be distributed to all parts of the country The facilities for distribution, the provision of cold storage and cold transport are far less than in some other countries, notably the United States, no doubt because we have no cheap source of energy

Boracic acid, which is tasteless, is the most commonly used of all preservatives, and occurs in many different foods, so that considerable quantities may be taken by the general public daily, and as a single dose is probably not completely excreted for five days (although half the amount taken may be excreted in twelve hours) the tissues are never free The Committee thought that the prohibition of boric acid as a food preservative, in force in many countries, is justified It regards benzoates as amongst the least harmful of preservatives because the evidence as to their deleterious effects is negative It is careful to point out, however, that the investigations have so far been confined almost entirely to healthy people, and suggests that minute effects too slight to influence normal people may yet affect disadvantageously invalids and sick people, more especially those suffering from intestinal and renal trouble

Sodium sulphite in the amounts employed in foods has no specific toxic action, since it is rapidly converted into sulphate in the tissues Nevertheless, the Committee does not regard it as harmless, for if food is taken daily which contains sulphites, the sulphur dioxide liberated in the stomach may cause dyspeptic symptoms In most countries, even when sulphites are permitted in certain foods and beverages, they are strictly forbidden for meat, one reason being that the putrefactive odour of decaying meat can be removed by treatment with sodium sulphite and the bright red fresh appearance restored, that is to say, the preservative may be employed to conceal the condition of the meat

A representative of the British Medical Association, Professor A J Clark, who appeared before the Committee, gave it as his opinion that the following substances should be forbidden as food preservatives formaldehyde and fluorides, because they are definitely toxic, boron preparations on account of their cumulative action, and salicylic acid and salicylates on account of their powerful physiological action

For practical purposes the commonly used preservatives are classified in the following groups, according to their relative degrees of undesirability, Group I being the most undesirable

Group I Formaldehyde and fluorides
Group II Boric acid and salicylic acid and their derivatives
Group III Benzoic acid and sulphurous acid and their derivatives

Preservatives are used at present in a haphazard way and sometimes as a trade practice, or even in ignorance Often no effort has been made to do without them Even in cases in which the plea that preservatives are indispensable has been put forward by responsible firms or persons, it was ascertained that other firms acting under similar conditions had been enabled to do without them, and, where experts have agreed that a preservative cannot be discarded, the divergence of views as to the minimum necessary for safety suggests that finality has not been reached

Preservatives are largely used in butter, cream, imported liquid eggs, margarine, sausages, potted meat and potted fish, and some beverages, while boric acid is used for pickling bacon and hams for export to this country, and is occasionally dusted over these articles of food in this country Even such excessive amounts as 175, 140, and 110 grains per pound of boric acid have been found in margarine, butter, and bacon respectively Nevertheless, it is pointed out that in normal circumstances the figures do not exceed and rarely amount to 35 grains per pound, or 0 5 per cent

Salicylic acid and salicylates are found in a number of articles in regular consumption, chiefly beverages The occurrence of this preservative in solid food is not common, though as much as 17 grains per pound has been found in

[1] Final Report of the Departmental Committee on the Use of Preservatives and Colouring Matters in Food. London H M Stationery Office 1924. Price 1s 6d net

sausages It has been found in beverages to the extent of 13 grains per pint in some wine The amounts considered necessary by the trade vary between 5 and 8 75 grains per pint for lemon squash lime juice cordial and non alcoholic fruit wines and cordials, 1 and 3 grains per pint in brewed ginger beer and 2 and 3 5 grains per pound in coffee extract while 1 75 grains per pint has been suggested as being necessary in mineral waters Sulphurous acid and sulphites are extensively used in beer and alcoholic wine, to some smaller extent in non alcoholic beverages, and in preserving fruits and fruit juice dried fruits gelatine and sausages This preservative is also commonly used by butchers and by game and poultry dealers In beer and wines, and in fruit and fruit juices the introduction comes partly from the treatment of the vessels of preparation and storage, partly from the materials used and partly from the direct addition of preservative in the course of manufacture or treatment for trade In the treatment of meat in shops it is applied in the form of a wash on the surface of the meat In sausage it is mixed with the other ingredients

It is pointed out that preservative in milk are prohibited by law and the Committee sees no sufficient reason why the sale of cream should not be conducted along lines similar to that of milk The solution of the problem of dispensing with preservatives in cream consists in giving appropriate care to preparation and the provision of suitable methods of transport storage and distribution It is similarly recommended that after a period of two years' grace the addition of any preservative to butter should be prohibited The Australian and New Zealand trade, with possibly the Argentine as well is the only quarter in which any difficulty is to be apprehended and from both the former countries a considerable quantity of butter is already being sent without preservatives There is no reason to regard the supplies of home made and of imported margarine in this country as of a more perishable nature than butter On the contrary, a well made margarine keeps fully as well as, or even better than butter and it is therefore recommended that the addition of preservatives to margarine should be prohibited

Sausages clearly present a difficulty The recognized brands often have long distances to travel, and they form an important source of food for the poor It is recommended that sulphurous acid—either in solution or as normal or acid sulphite—should be permitted up to a maximum of not more than 3 grains calculated as sulphur dioxide (SO_2) per pound It is emphasized, however that the addition of preservative to sausages is undesirable and should be regarded as a concession to trade necessities as they exist at present Improvements in methods of preparation, storage and distribution should eventually enable preservatives in sausage to be dispensed with

The use of preservative for the packing or dusting of bacon and hams is not considered necessary cool accommodation merely is required which would be equally available and suitable for cargoes of other kinds, and it was ascertained from the companies that such accommodation can readily be provided to meet all requirements Regarding 'boracized' eggs, imported in great quantities from China and employed so largely by pastry cooks, the Committee has no hesitation in recommending that the use of preservatives in liquid egg should be prohibited it suggests that the importation of liquid eggs preserved by freezing only would furnish an adequate means of supplying all the demands which are at present met in part by the importation of boracized eggs

Preservatives should be unnecessary in alcoholic wines of ordinary strength there may be circumstances, however, which render the entire elimination of preservatives impracticable for the present For this purpose it is recommended that sulphur dioxide should be permitted but in amounts not exceeding 3 grains of sulphur dioxide, free and combined, per pint Non alcoholic beverages on account of the sugar which they contain are liable to fermentation although this is inhibited to some extent by the carbon dioxide with which they are aerated It is recommended that benzoic acid only should be permitted, and that 1 grain per pint should be adequate

The Committee urges that the present defective methods of transport cannot justify the use of preservatives any steps taken in the direction of limiting or controlling preservatives should create a pressing demand for improved arrangements and will be effective in securing them It recommends that when preservatives such as are permitted, are used they must be declared in a prescribed manner

The report also deals with colouring matters in foods these we shall not refer to except to note that copper is condemned for the greening of vegetables On this point the Committee states that "The evidence which has been accumulating as to the pharmacological action of copper in small but repeated doses is disquieting" The report ends with certain suggested amendments of the law which will be required if the findings of the Committee are put into effect

For purposes of reference we print the following summary, giving the proportions of allowable preservatives recommended by the Committee

Preservatives (as defined) should be prohibited in all articles of food and drink offered or exposed for sale which are manufactured in the country or imported

except that

(A) Sulphur dioxide only should be permitted

(i) in sausages in amounts not exceeding 3 grains per pound
(ii) in jam in amounts not exceeding 40 grain per pound
(iii) in dried fruit in amounts not exceeding 7 grains per pound
(iv) in preserved (but not dried) whole fruit or fruit pulp in amounts not exceeding 50 grains per pound
(v) in beer and cider whether in bottle or in cask in amounts not exceeding 2 grains per gallon
(vi) in alcoholic and non alcoholic wines and cordials and fruit juices sweetened and unsweetened and in amounts not exceeding 3 grains per pint

(B) Benzoic acid only should be permitted

(i) in beef extract in amounts not exceeding 3 grains per pound
(ii) in non alcoholic wines and cordials and sweetened and unsweetened fruit juices (as an alternative to sulphur dioxide) in amounts not exceeding 5 grains per pint
(iii) in sweetened mineral waters and in brewed ginger beer in amounts not exceeding 1 grain per pint

The method of estimating the foregoing preservatives should be prescribed by the Minister of Health

The sale of any preparation as a food preservative or for use in such circumstances that it may be introduced into food should be declared illegal unless such preparation (*a*) bears a description clearly indicating its composition and strength (*b*) is free from impurities and in particular contains not more than 1/100th part of 1 grain of arsenic per pound or more than 1/7th part of 1 grain of lead per pound

THE HOSPITAL FOR SICK CHILDPEN

Plans for a Research Department

The Hospital for Sick Children Great Ormond Street, London, has recently reorganized its pathological and biochemical work, and the laboratory staff has been increased by the appointment of a biochemist and assistant pathologist New rooms have been fitted up as laboratories since the previous accommodation was altogether inadequate for the volume of laboratory work which such a modern hospital sends to the pathological department But even with these recent extensions the space allotted for this vitally important branch of the hospital work leaves the workers in cramped quarters compels them to work in rooms not designed for chemical and bacteriological investigation and provides no room for a special research department At present the laboratories are only just large enough for the carrying out of the routine work of the hospital for research work and post-graduate laboratory studies no accommodation is available

To meet this need the hospital committee acting on the advice of the medical staff is appealing for funds in order to build a new research department A public meeting was held at the hospital on Thursday October 23rd to discuss plans Mr John Murray the vice-chairman of the hospital recalled the many improvements which he had witnessed in the hospital equipment during the thirty-eight years of his association with it In management all hospitals which wished to keep up to date must be continually making additions to its special department for both diagnosis and prevention or disease such enlargement added a heavy financial burden, as witness the fact that in 1886 the amount paid in salaries was £2 500 whereas last year it amounted to £17,560 Mr Murray read a list of some of the larger

donations to the new research department, and acknowledged in particular the generous gift of £2,000 from the Prudential Insurance Company

Dr G F Still declared that one of the main objects of the foundation of the hospital by Dr Charles West, in 1852, was the study of the diseases of children with a view to their better understanding and treatment Great Ormond Street hospital soon became a centre of enlightenment to which doctors, students, and patients travelled from all parts of the world He instanced a number of researches undertaken in the hospital, particularly the investigation of infantile scurvy, and stated that there was scarcely a single disease of childhood which did not owe some step in its elucidation to work carried out at the Hospital for Sick Children New methods of investigation were now essential for the diagnosis of disease Bedside skill was no longer sufficient in itself it must be supplemented with aid given by the pathologist and biochemist It was essential that the hospital should have a thoroughly equipped research laboratory for the study of the nature and cause of children's diseases

Dr F J Poynton expressed the opinion that the Great Ormond Street hospital should not be looked on as a local hospital or even merely as a London hospital it was essentially an international hospital and a universally respected centre of authority in all matters relating to the health of children A danger existed that unless the hospital was provided with much more extensive laboratory accommodation it would not be able to preserve the eminent position it had hitherto occupied The research which the hospital staff wished to commence would be of benefit to all, and Dr Poynton thought that the view should always be kept well to the fore that the hospital existed not only for the children in the neighbourhood, but also as a centre of enlightenment for the whole civilized world The sum of £50,000 was needed for the building and endowment of the research department at which the hospital committee aimed

Dr D N Navarro recounted some of the notable advances in medical treatment which had followed from laboratory research He showed a series of lantern slides illustrating the treatment of rickets by cod-liver oil and ultra-violet rays, and spoke of the discovery of insulin and its revolutionizing effect on the treatment of diabetes But much more still required to be done Nearly 80,000 children under 5 years of age died in England and Wales during the year 1923, and of this number more than 52,000 were infants under the age of 12 months Rheumatism in particular was a disease which demanded investigation In 1922, as Sir George Newman had pointed out in his annual report, 372,000 insured persons sought advice from their insurance practitioners for rheumatic diseases, and £1,800,000 was paid annually to, and 3,141,000 weeks of work were lost annually by, insured workers on account of rheumatic diseases The weeks of work lost were equivalent to the work of 70,159 persons In acute rheumatism it had been shown that nearly 50 per cent of patients had either enlarged or septic tonsils and the relation of these conditions to rheumatism was a fruitful field for research A singular instance of the important place which rheumatism occupied amongst children's diseases was illustrated by the fact that on October 24th, 1924, out of a total of 92 medical in-patients in the Hospital for Sick Children there were 9 cases of endocarditis, 11 cases of chorea, 4 of rheumatic fever, and 2 of arthritis, making a total of 26 cases Thus over a quarter of the medical cases in the hospital were rheumatic in nature As further example of the heavy toll which rheumatism took of life and health, he quoted from the report of the chief medical officer of the Ministry of Health for the year 1923, to the effect that in that year 56,886 persons died from diseases of the heart, many of these being rheumatic in origin He appealed for the establishment of a new research department for the study of the prevention of disease The hospital needed more laboratory accommodation and more laboratory workers

At the close of the meeting the visitors were invited to inspect the existing pathological department and the new biochemical laboratories, the wards, and out-patient and electrical treatment departments

BRITISH TRADE IN MORPHINE AND HEROIN

The following table has been issued by the Home Office to show the effect on British trade in morphine and heroin of the restrictive measures imposed by the British Government under the Dangerous Drugs Act, 1920, in fulfilment of the International Opium Convention of 1912

Years 1910 to 1923

Year	1 Quantity of Morphine and its Salts Manufactured	2 Quantity of Morphine and its Salts Exported	3 Quantity of Heroin and its Salts Manufactured
	oz	oz	oz
1910	486 975	—	10 272
1911	406 877	208 541	3 785
1912	425 408	276 560	3 034
1913	564 035	406 160	11,665
1914	735 628	504 016	12 249
1915	926 743	295,568	29 756
1916	1 033,162	225 616	26 761
1917	751 851	124 593	46 338
1918	294 703	136,832	34 669
1919	547 347	322 912	81 414
1920	643 985	322 464	76 145
1921	115 734	77 364	12 385
1922	131 028	131 658	31 673
1923	87,940	98 831	11,576

Notes

1 Col 1 The figures of manufacture are the net amounts of morphine manufactured for use as such and do not include morphine manufactured for conversion into heroin, codeine, or other alkaloids

2 Col 2 The export figures for 1911 to 1920 are compiled from the Customs Returns and do *not* include exports by parcel post or exports of preparations containing the drugs The figures for 1921 23 are compiled from the returns made to the Home Office and include both exports by parcel post and exports of preparations containing the drugs

3 Col 2 The export figures for 1914 17 do not include exports on Government account between August 4th, 1914, and June 30th, 1917

4 Col 3 Particulars of *exports* of heroin and its salts are not available before 1921

Canada.

[From our Correspondent]

Chairs of Medicine in Montreal

Two important appointments in the Department of Medicine at McGill University, Montreal, have recently been made Dr Jonathan C Meakins, a graduate of McGill, and since 1909 Christison Professor of Therapeutics and Clinical Medicine at Edinburgh, has been made Professor of Medicine and Director of the Department Through the generosity of the Rockefeller Foundation a university clinic has been formed at the Royal Victoria Hospital, and Dr Meakins is to be at its head Dr Campbell Howard, also a graduate of McGill, who since 1910 has occupied the chair of the theory and practice of medicine in the State University of Iowa, returns to his Alma Mater as Professor of Medicine, and has been appointed chief physician to the Montreal General Hospital These two men have distinguished themselves as teachers and investigators, and have been warmly welcomed on their return to McGill University and to these two hospitals, in both of which clinical medicine is taught

The Lister Memorial Club and Oration

In 1922, at the Winnipeg meeting of the Canadian Medical Association, it was suggested that a Lister Memorial Club should be formed, and that at every third annual meeting of the Association there should be a Listerian Oration On June 18th, 1924, at the annual meeting of the Canadian Medical Association, the first of these orations was delivered by Dr John Stewart of Halifax, Nova Scotia It was a worthy tribute of a worthy disciple to the life and achievement of his master Lister showed to a remarkable degree the power of gaining and holding the affection of his students and assistants, and

this was made evident in Dr Stewart's address by quotations from Lister's letters reflecting the affection which existed between the teacher and student The Association has wisely decided to issue the first Listerian Oration as a special number of its *Journal* shortly to be published All members will receive a copy gratis, and those in the Old Country who desire copies may obtain them for a small sum

The other day, on turning to a copy of the menu of the "Banquet offered to Lord Lister P R S by his former House Surgeons, Clerks, and Dressers, 26 May, 1897, I was interested in noting the names and dates of Lister's Canadian pupils The late Dr George A Heron, who for years practised as a physician in London was born in the Ottawa Valley and was a dresser at Glasgow in 1863-64 the late Archibald E Malloch of Hamilton, Ontario, was Lister's house surgeon at Glasgow in 1867 68, F Lemaitre Grassett of Toronto was his clerk in 1871 and house-surgeon in 1874, after Lister had returned to Edinburgh A Harris Russell Canada" was house surgeon in 1873-74 John Stewart of Halifax, Nova Scotia, was dresser in 1875 and clerk in 1876 at Edinburgh, and clerk in 1877 78 and house surgeon in 1878 at King's College Hospital London J St George Baldwin of Toronto was house surgeon at Edinburgh in 1875-76

Pacific North-West and Alberta Medical Associations

A very successful meeting of the Pacific North-West Medical Association was held at Vancouver from June 26th to 28th, with a registered attendance of 589 medical men Quite a large number of those who gave addresses and papers had journeyed across the continent after attending the annual meeting of the Canadian Medical Association held at Ottawa earlier in the month Among these were Sir John Thomson-Walker and Dr S A Kinnier Wilson of London, Dr F N G Starr associate professor of clinical surgery, and Dr George Sills Young associate in medicine, Toronto John Tait professor of physiology, Dr Horst Oertel, Strathcona professor of pathology, and Dr W W Chipman, professor of obstetrics and gynaecology at McGill University, Montreal Dr L G Rowntree, professor of medicine, Mayo Foundation for Medical Research Dr L J Austin, professor of clinical surgery Queen's University, Kingston, Ontario, Dr Charles Hunter associate professor, University of Manitoba Winnipeg and Dr F C Routley secretary of the Canadian Medical Association The meeting was very happily timed for the visit of the Special Service Squadron of the British Navy and almost all the members of the association went over H M S *Hood* and other ships Later on (July 2nd to 4th) many of the visitors attended and read papers at the annual meeting of the Alberta Medical Association, held at Edmonton, 175 persons registered, and a particularly pleasing feature was the number who came from the country districts of the province

Post Graduate Course in Halifax

Under the auspices of the medical faculty of Dalhousie University, a short post-graduate course was given in Halifax during the first two weeks of September The mornings were devoted to operations and clinics by members of the local faculty, and in the afternoons Sir Henry Gray and Drs W W Chipman and L J Rhea of Montreal Dr R D Rudolf of Toronto, and Drs Luther Mackenzie and Ross Faulkner of New York each gave three lectures

French Canadian Medical Association

The Association des Medecins Français de l'Amerique du Nord met at Quebec on September 10th to 12th From France came Professor Emile Sergent of the Faculte de Medecine, his *chef de clinique* Dr F Bordet and Dr L Ribadeau-Dumas The two former delivered a course of fifteen lectures upon the fight against tuberculosis the different forms, the laboratory and immunological aspects and the general and special methods of treatment of the disease Dr Ribadeau-Dumas gave ten lectures upon pediatrics At the request of the Provincial Government these foreign delegates repeated their lectures at the Universite de Montreal on September 22nd to 26th At both Quebec and Montreal the lectures were cordially received and listened to with great attention It may be remarked that French-Canadian medical men are going to Paris in larger numbers every year for post-graduate work

Scotland.

Tribute to Sir Donald MacAlister

An interesting ceremony took place in the Randolph Hall of the University of Glasgow, on October 24th when two portraits and a bust of the Principal, Sir Donald MacAlister Bt M D, were presented, in the presence of a large and representative gathering of town and gown over which Sir Hector C Cameron presided One portrait by Mr George Henry of Sir Donald in his robes as Vice Chancellor was subscribed for by the University a number of interested citizens and the General Medical Council of which Sir Donald is chairman This was presented by Sir Hector Cameron to the University on behalf of the subscribers He said their object in making the gift was twofold First, they desired to continue the handsome series of portraits of the Principals who had held office since 1803 In the second place they desired to pay tribute to Sir Donald for the great services he had rendered to the University since his advent among them seventeen years ago The efficiency of the University had been greatly furthered by his wise administration and by his forceful influence, great additions had been made to the teaching staff while buildings had been designed and erected for teaching and research The Lord Provost of Glasgow Mr M W Montgomery accepted the portrait on behalf of the University Court Sir Thomas Paxton Bt, presented the second portrait a replica of that painted for the General Medical Council by Mr Maurice Greiffenhagen R A and a bust of Sir Donald in bronze by Mr G H Paulin A R S A to Lady MacAlister He referred to the many services she had rendered to the community in a public capacity and also as head of the social life of their University Sir Donald MacAlister in acknowledging the gifts on behalf of Lady MacAlister and himself said that they could not do otherwise than recognize cordially that these were intended to hearten and encourage them in their efforts to do their duty worthily in the sphere to which they had been called They would treasure the tribute in their hearts not as a duly weighed and strictly measured appraisal of the past but as a constant incentive for the future He referred to the wonderful expansion of the resources of the University to meet the growing needs of education and felt it was a great privilege to be allowed to help in its advance

New Medical Ordinance for Edinburgh University

At a meeting of the University Court of the University of Edinburgh last week it was reported that among a number of ordinances recently approved is one by which medical students who have passed in some subject of the first or second professional examinations at another university may have these passes credited to them for the purpose of subsequent study at Edinburgh University This will have the effect of enabling students who have studied the preliminary part of their course at other medical schools to come to Edinburgh if they so desire for the study of clinical subjects Another ordinance recently approved provides for the superannuation and pensioning of principals and professors and other ordinances relate to degrees in science in the subjects of forestry and engineering and new regulations for the degree of bachelor of divinity The University Court appointed Mr William Arnot Fleming M A LL B Advocate, a secretary to the University in succession to Professor Wilson resigned Mr Fleming will devote his whole time to the discharge of duties as Secretary to the University

Dundee Deaf and Dumb Institution

The annual meeting of the Dundee Institution for the Education of the Deaf and Dumb was held in the Old Town House on October 22nd Sir George W Baxter presiding The financial report showed a balance of £166 12s 6d on the

year's work In his report the headmaster, Mr David Hensall, made an appeal for a larger institution, and other speakers in supporting this appeal described the wider degree of usefulness which could be attained in Dundee by an extension of the efforts on behalf of this class of afflicted persons

Sir Malcolm Watson's Lectures in Glasgow

Sir Malcolm Watson, M D , LL D , in the concluding lecture of the series on antimosquito work in the tropics, emphasized the great importance of a scientific knowledge of the mosquito and its habits He described the different breeding places in which the various species of anopheles live, and showed that a method of control which gave a perfect result in one place might produce a disastrous outbreak of the disease in another He described in detail the malaria control work in the Federated Malay States with which he had been primarily and particularly associated This was begun in 1901 in the small town of Klang, where, by means of swamp drainage and jungle felling, malaria practically disappeared, with consequent great saving of human life At the end of the same year a new port, Port Swettenham, was opened, but a severe outbreak of malaria threatened its closure A thorough system of drainage cleared out both the mosquitos and the malaria He described how in some areas the clearing of jungle caused the malaria to become even worse than before, and explained this by the appearance of a new species, *Anopheles maculatus*, in the clear running sunlit streams These streams and springs had then to be oiled or drained by underground pipes, as was done in Singapore, with a resultant saving of 35,000 lives over a period of eleven years Slides were shown illustrating the work done in Malaya, and also in Java, British Guiana, and India In conclusion Sir Malcolm Watson emphasized the need for further research, which would doubtless lead directly to a reduction in the cost of measures for the control of the disease

Domestic Welfare Exhibition in Glasgow

The Domestic Welfare Exhibition in Kelvin Hall, Glasgow, continues to excite a great deal of interest Various matters connected with the health and comfort of the population are demonstrated, and on October 21st deputations of housing committees from Glasgow, Cumnock, Perth, and Rutherglen Town Councils inspected the Atholl steel house, which is on exhibition, and which was described on page 740 of our issue of October 18th as a new departure in house construction

England and Wales.

Birmingham St Luke's Day Service

On Sunday, October 19th, the morrow of St Luke's Day, a special morning service was held in the Parish Church of St Martin's, Birmingham, to which, at the wish of the new Bishop (Dr J W Birnes, F R S), all the members of the medical profession in Birmingham were invited Some two hundred medical men and women attended the service, which was conducted by the rector, Canon E Grose Hodge, the lessons being read by Sir Gilbert Barling and Dr H Guy Dain Tribute must be paid to the beautiful rendering of the musical part of the service The Bishop delivered an address upon the text, "Honour a physician with the honour due unto him for the uses which ye may have of him for the Lord hath created him For of the Most High cometh healing" (Ecclesiasticus xxxviii, 1) After commenting on the combination in the text of true religious feeling and high regard for medical thought and skill, the Bishop traced the growth of rational medicine from its origin among the Ionian Greeks circa 600 B C , and sketched the many vicissitudes through which it had passed He remarked that the writer of the text had held the balance truly with regard to two aspects of human life which can never be in opposition without danger to both "Man's spiritual and intellectual faculties must be conjoined if both are to reach perfection Throughout the ages scientific medicine has had to fight against irrational forces which claim a religious sanction, and the warfare is not yet at an end But equally if medical practice ceases to be ethical, and ignores the spiritual activities of the mind, it impedes its own progress" He felt it was unnecessary to lay stress on the therapeutic value of mental health, which, with spiritual serenity and confidence, were religious gifts not despised by the wise physician A family physician was often a moral guide In a modern community, more than any priest, he received confidences, and, without granting formal absolution, gave advice by which the patient might win that self-control and newness of life which brought peace to the soul After centuries of futile conflict the right kind of harmony between scientific and religious thought was gradually being established Progress was being made towards a new joint scientific and religious interpretation of the nature and destiny of man which would be, he believed, more coherent and more essentially Christian than the dogmatic schemes of the past He welcomed the new friendliness shown by men of science towards the Christian religion, and the toleration of scientific truth on the part of the clergy He pleaded powerfully for close co operation in connexion with social problems, especially the propagation of the mentally deficient, and maintained that the Church ought not to bless an unhealthy union In conclusion, the Bishop said that though some might feel that he had not sufficiently emphasized his own faith in Christ, yet in pleading for a unity of purpose common to the great profession of medicine and the Christian Churches he was assuredly preaching Christ

Manchester Prize for Cancer Research

The Committee of the Christie Hospital, Manchester, is offering a prize of £300 for cancer research Candidates must be qualified in medicine or in science cognate to medicine, and must submit evidence of original research work bearing on cancer done and projected which shall in the opinion of the assessors qualify him for the prize The object of the prize is to support research work already in progress The assessors will take into consideration promising work which might fail for want of financial help The successful candidate will be required to send results of his work in a report ready for publication, or to give a lecture in Manchester The prize will be awarded in two instalments The competition is open to research workers of any nationality provided that all documents are submitted in the English language Applications must be sent to the Chairman of the Medical Board, Christie Hospital, Manchester, on or before December 31st, 1924 The decision of the assessors will be final, and they have power to divide or withhold the prize as they think fit

Royal Southern Hospital, Liverpool

The new department of electro-therapeutics and massage was formally opened by Lord Derby on October 24th The cost of the building, £3,000, has been met by public subscription, but the equipment has been given by Sir Alexander and Lady Bicket, generous donors to the hospital, who provided over £900 A school of massage and medical gymnastics has been instituted, the first of its kind in any Liverpool hospital The orthopaedic branch of surgery, ever associated with Sir Robert Jones, has always been cultivated at the Royal Southern Hospital Owing to the increase of the number of patients Mr Armour has become surgeon to the department of orthopaedics, devoting his whole time to this branch of surgery The new building consists of three rooms one is to be used for massage and electrical treatment, the second is devoted to medical gymnastics and various forms of apparatus in treating impaired movement the third is set apart for various kinds of baths—spray and whirling systems, and melted paraffin wax baths are also instituted Mr H Sutton Timmis, vice-president of the hospital, presided, and there were present, besides the honorary staff of the hospital, Sir Maurice Craig and Sir Dyce and Lady Duckworth, and many supporters and well-wishers of the hospital A pleasing event in the proceedings was the presentation by Lord Derby of prizes and certificates to the nurses who had passed the hospital examinations in nursing

Public Health in Cardiff

At a meeting of the Cardiff Medical Society on October 15th Dr R M Picken, medical officer of health for the city, gave an address on "Present-day Health Tendencies in Cardiff." After referring to the importance of the medical profession reviewing locally from time to time the results of public health activities Dr Picken emphasized the value of the statistical method of inquiry. The absence of reliable local statistics of sickness resulted in information in the main being available only from death returns. The death rate in Cardiff since 1851 had fallen more rapidly than in England and Wales and at the present time Cardiff was favourably placed in relation to the acute infectious diseases. So far as infant mortality was concerned there had been a satisfactory decline, shared in almost equal degree by all other towns of importance. Dr Picken dealt at some length with the various explanations given for this decline, in his opinion the continuous fall in the birth rate was probably the most important factor. Examples were given of towns where there did not appear to be any definite correlation between a low birth rate and a low infant mortality, but in places like Bradford and Huddersfield this might be due to special circumstances affecting the employment of married women. The fact that *the commencement of the fall in the birth rate preceded the decline of the infant mortality* by twenty-five years was not necessarily an argument against the former being the result of the latter. The problem of tuberculosis was dealt with at some length, and it was shown that in Cardiff, unlike other cities, the death rate from pulmonary tuberculosis was actually increasing, more particularly among males. Various possible reasons for this were considered, and Dr Picken showed that the cause could not be found in excessive unemployment as compared with other places, in the presence of a foreign-suffering population who admittedly suffered heavily from tuberculosis, or in the migration of the population in such a way as to increase the number of susceptible persons in the city. The problem remained unsolved. Having considered briefly the increase of cancer and the tendency for the male cancer mortality to approximate the female, Dr Picken discussed some practical questions affecting the administration of public health and hospitals in Cardiff. He pleaded for better local sickness statistics and for greater use to be made of the general practitioner's opportunities for gathering and pooling information which might solve some of these problems.

A Medical Lord Mayor

Dr George Stevens Pope, who has been elected Lord Mayor of Norwich for the coming year, was educated in Manchester and Edinburgh, obtaining the diplomas L R C P, L R C S Edin. and L R F P S Glasg. in 1888. He specialized in mental science and held medical appointments at the London County Asylum, Cane Hill, and "The Retreat," York. He was formerly medical superintendent of Middlesbrough Asylum, and of the Somerset and Bath County Asylum, Wells. Since his appointment, some five years ago, to the post of medical superintendent of Heigham Hall, Norwich, Dr Pope has taken an active part in the municipal and political life of the city. He is a past member of the Representative Body of the British Medical Association.

Ireland.

Royal Victoria Hospital, Belfast: Opening of Winter Session

Professor W W D Thomson, M D., gave the opening address in the King Edward Memorial Hall of the hospital on October 16th. In the absence of the chairman (Mr Mitchell), Mr Kirk, senior member of the medical staff, occupied the chair. The lecturer made a sympathetic reference to the loss by death of three friends of the hospital during the year: Sir John Walton Browne, consulting surgeon and the doyen of the profession in Ulster, Miss Riddel a large benefactor, and Lord Pirrie to whose genius and ever-ready counsel they owed so much, both in its erection, its equipment, and its improvement. A silent vote of condolence was passed by all present, it being intended to be sent to their beloved president Lady Pirrie. Professor Thomson regretted the loss of two of their senior physicians, Dr Calwell and Dr McKisack, by age limit as members of the teaching staff and as active colleagues, but they would still have them as members of the consulting staff, and Dr Calwell was carrying on the dermatological department for the winter. They gave a hearty welcome to the new members: Mr Jefferson, assistant surgeon in the ophthalmological department; Mr Hardy Greer, assistant surgeon in the gynaecological department; Dr Smyth, in charge of the biochemical department, and Dr Marshall and Dr Turkington, the two new assistant physicians. An additional scholarship had been founded in surgery by the late Dr Smith, Naas, County Kildare. The new wards and the new common room for students would soon be open, and would prove of great convenience and advantage. The old relation of student and teacher had greatly altered. They now recognized that they were all learners—the student was a junior learner, the teacher a senior, always willing to help his younger brother. The student should learn and practise on the normal—normal percussion, auscultation, and palpation—before he turned to the abnormal, and he should retain his chemistry and physics as well as his anatomy and physiology, and take them all with him into the ward and clinical laboratories. The second-year hospital student should haunt the wards and avail himself of every chance of getting familiar with all the technique required; he should go from ward to laboratory and *post-mortem* room and then to his book in a constant repetition. To master the art years of constant practice were required, graduation simply meant that the student could pursue his work without the immediate superintendence of his teacher. What were the prospects offered by the profession? The lecturer had followed up the careers of the students of his own year, which consisted of 57 men, of these 45 ultimately graduated, and 11 fell out, some to enter business, some from ill-health, some from death, and some from worshipping at the shrine of Bacchus more than at that of Aesculapius. Of the 45, 11 were now dead, 4 of these due to causes originating in the war; of the 34 remaining, 8 were practising in Ireland, and the rest were scattered through England, Wales, and the Colonies, from the Windward Isles to Rhodesia; none were found in Scotland, 22 of the 34 were general practitioners, of whom 14 at least had excellent practices; 8 had entered the public services, asylum work, inspectorships; 3 were engaged in consulting work, 1 was a medical missionary. Professor Lindsay proposed a hearty vote of thanks to Dr Thomson for his able, comprehensive, and stimulating address. Professor Sinclair seconded, and remarked on the great interest of the statistical table. This was conveyed by the chairman, and Dr Thomson replied.

Local Government Bill 1924 (Irish Free State)

A deputation from the Irish Medical Committee recently met the Minister of Local Government and Public Health and discussed with him the Local Government Bill with regard to its pension clauses as they affect medical officials in the medical services. Mr McCarron, Secretary of the Ministry of Local Government, and Mr Miles were with the Minister and took part in the discussion. The members of the deputation were Drs J M Day, H Rafferty, P J Shanley, Mr C H Gick, and Dr T Hennessy (Irish Medical Secretary). Sir James Craig, M D., also attended and took part in the discussion. Dr R J Powlette was unable to be present as he was attending a meeting of the Committee of Inquiry in connexion with the Insurance Act and medical services. The following is a brief summary of the medical officials will probably be affected if the Local Government Bill becomes law:

(1) Section 8 of the Local Government Act 1919 the mandatory provisions for pensions will be altered so as to allow for all existing medical officials who within a prescribed period which may be three or six months after the coming into operation of this section for the purpose of their pensions. It is believed, however, that the basis for calculating the amount of pensions will be so altered so as to secure a more uniform and adequate

(2) Added years for meritorious and professional services will remain optional with the local authorities, but, in the event of a refusal, there will be provided the right of appeal to the Minister

(3) Pensions of medical officials, appointed after the passing of the Local Government Bill, will be as heretofore permissive, but in case of refusal by a local authority, or dispute as to the amount, the right of appeal to the Minister will be provided for

It was pointed out on behalf of the Ministry that there is no mandatory provision for pensions for civil servants, and that the appeal to the Minister will place medical and other officials of local authorities on the same footing as civil servants with regard to pension rights The Minister's attention was drawn to Section 32, which provides that where an officer has been granted an allowance in respect of his ceasing to hold his office, the local body shall, until such officer attains the age of 65 years, satisfy themselves, yearly or otherwise, that the incapacity continues, and, in the event of the incapacity ceasing before such officer has attained the age of 65 years, the local body may cancel such allowance and may require him to resume his office or any like office at a rate of salary and emoluments not less than the rate which he received before he ceased to hold such office The deputation pointed out various reasons why this section would be impracticable, especially in the case of medical officials In reply, the Minister stated he was not satisfied that the section would work satisfactorily in all cases and that he would either delete or modify it In addition to the pension section other matters arising out of the bill were discussed, and the Minister promised to give them his consideration

District Hospital Appointment

Dr O'Driscoll, Drimoleague, has been elected medical officer of Dunmanway District Hospital at a salary of £100 per annum A deputation of the West Cork Medical Association appealed to Mr Monahan, Commissioner at Clonakilty County Home, to have this sum increased to £150, but without result The Commissioner said it was only a part-time occupation, and the duties would not entail more than an hour's attendance daily

Correspondence.

THE "REAL" DEATH RATE

Sir,—Dr Dunlop raises some interesting questions I am not sure that the general public does take the unstandardized death rate—that is the ratio of deaths to mean population—as a truly reliable measure of the health of a people, but I am quite sure that if it does the error involved is not greater but less than the error introduced by persuading it that some function of the so-called 'expectation of life" is the "real" measure

After all, the unstandardized death rate is a fact—at least is near being a fact as any statistical constant can approach It does tell us what proportion of the nation dies annually The 'expectation of life" is a fiction—a very useful fiction for certain specific purposes, but still a fiction When the statistician says that the expectation of life at birth of males by English Life Table No 7 is 48 5 years, he does *not* mean that English males living in 1901-10 were likely on the average to live 48 5 years apiece What he means is that an imaginary population of males subjected from the cradle to the grave to the average rates of mortality at ages observed in 1901-10 would, on the average, live 48 5 years—a very different conception, because the death rates at ages are changing Far from encouraging the general public to think in terms of expectation of life, we should try to confine the use of that very technical expression to professional circles

It is, of course, impossible to condense the variable elements of a mortality rate into a single constant, just as it is impossible to get a quart into a pint pot Those people who will not take the little trouble of studying the complete system of rates of mortality in fairly narrow age groups and demand some one figure must run the risk of error On the whole, I think, they will make fewest mistakes by comparing the age-standardized ratios of mortality provided by the Registrar-General These, like the Life Table constants, are fictions, but they are less readily misconceived because they do not involve the use of words, like expectation of life, used in one sense in popular speech and in another in technical jargon

Even if the Life Table death rate were a safe constant for popular use, I do not think that Dr Dunlop's short method of computing it is correct If I understand him rightly, he thinks that 1,000 divided by half the sum of the birth rate and death rate (per unit of population) gives a close approximation to the expectation of life This is true if the population is stationary in the Life Table sense, and involves a coefficient of regression of unity of birth rate upon death rate Although there is a substantial correlation between birth rate and death rate in most secular comparisons, the regression is not unity The mean birth and death rates (persons) of England and Wales for 1901-10 were 27 2 and 15 4 per 1,000 living, and Dr Dunlop's method gives an expectation of life of 46 9 years The English Life Table for this decennium gives 48 5 years for males and 52 4 for females, the difference is substantial Dr Brownlee published some years ago a much closer approximation to Life Table death rates, and I am afraid that no simple manipulation of the unstandardized rates will enable us to avoid relatively heavy arithmetical work

A piece of educational work which is important is to impress upon the public that, given a falling birth rate, the unstandardized death rate, if the rates of mortality at ages remain constant or slacken in their rates of decrement, must increase We have now well passed the point at which our age constitution is an optimum for a general rate of mortality Dr Dunlop is quite correct in holding that an increasing general death rate does not necessarily imply increasing rates of mortality at ages This truth can be enforced without the desperate expedient of suggesting that poor approximations to a statistical fiction measure "real" death rates.—I am, etc,

Loughton, Oct 27th MAJOR GREENWOOD

TREATMENT OF EXOPHTHALMIC GOITRE WITH INSULIN

Sir,—The interesting and valuable article by Dr R D Lawrence in the Journal of October 25th (p 753) has stimulated me to make a few preliminary remarks on an investigation into the clinical pathology and treatment of exophthalmic goitre and "hyperthyroidism" in which I have been engaged for the past year, and of which I hope to give a full account later on

My experience of the use of insulin in this connexion dates from mid-November, 1923, when, through the kindness of Professor Langmead, to whom also I am indebted for advocacy of the measure, I began my research on two of his patients in the Medical Unit wards of St Mary's Hospital Since then I have examined the effects of this remedy in nine cases—five as in-patients and four as out-patients, none of these appeared to be of the toxic adenoma class

Insulin was employed because of its recognized antagonism, in many points, to the secretion of the thyroid The procedure was to test thoroughly the effect of rest before giving insulin treatment To ensure precision each patient was placed, from the outset, on a diet of which the carbohydrate, protein, and fat content was known Besides the antagonism of the secretions referred to, two other considerations influenced my plan of investigation First, the knowledge that the specific dynamic action of *protein* in heat production is very much greater than that of carbohydrate, fat occupying an intermediate position, and also that this dynamic action of protein is markedly increased in cases of hyperthyroidism, while carbohydrate yields only a relatively small increase, not far removed from the normal, due allowance being made for the severity of the condition Secondly, I have found in cases of hyperthyroidism evidence of very varying degrees of utilization of carbohydrate—variations that are not at all parallel with the activity of the disease For example, in one instance the blood sugar curve, starting from a normal or slightly supranormal level, may show (as it generally does in the majority) a considerable post-absorptive hyper-

glycæmia (care being taken to exclude the usual causes), while in another of equal or even much greater severity the curve is perfectly normal. Indeed, in one moderate case the consistently early return of the curve to the fasting level suggested hyperinsulinism, or at least storage powers greater than normal.

One aim, therefore, in treatment was to reduce the stimulating proteins of the diet to a minimum compatible with health say 1/2 gram per pound body-weight or less, and compensate for this by increasing considerably the carbohydrates, fats being allowed in rather subnormal amounts. The part played by the insulin injections was that of producing a normal metabolism of carbohydrates as judged by frequent blood sugar estimations. As expected the ingestion of a large quantity of carbohydrate aggravated any defect of storage or caused a departure from the normal, until the amount consumed was sufficiently covered by insulin. In this way therefore, the stimulating effect of protein on an already accelerated metabolism may be reduced to a minimum.

Under the treatment all the patients benefited very appreciably, and some appeared to be restored to normal. It is difficult to be certain, but on the whole it seems to me that it is the cases with the diabetic type of blood sugar curve that respond best to insulin treatment when the hospital ordinary "full diet" is being given, whereas those with little or no defect of storage appear to behave more satisfactorily when special attention is directed to placing the burden of metabolism, so to speak, more on the pancreas and less on the thyroid. In my opinion optimum result is obtained when the blood sugar variations are maintained within or perhaps a little under, normal limits, and not when the insulin effect is pushed further in the direction of "hypoglycæmia" with the view to producing still greater inhibition of thyroid activity.

I have been able to follow up the cases. In all except one the insulin has been discontinued (for periods up to nine months) in order to permit of observations of a different nature or for other reasons. In all these there has been a certain degree of return of symptoms especially tachycardia, weakness, feeling of heat and enlargement of the thyroid. One case retrogressed completely and has just been readmitted to hospital, but the remainder show evidence of lasting improvement, some considerably more than others; probably a better general hygiene inculcated during treatment largely accounts for any permanency of good results.

Space precludes the illustration of my remarks with case-notes, so I shall conclude by stating that the doses of insulin given ranged from 5 to 30 units twice daily, and that all the symptoms were more or less ameliorated, the weakness, tachycardia and swelling of the thyroid showed early and concurrent improvement, while the exophthalmos was the most resistant to treatment.—I am, etc.,

London, W., October 23rd. LEWIN G. B. CALVERT.

EPITHELIOMA OF SCROTUM IN COTTON-SPINNERS IN THEIR APPRENTICEROUS STAGE

SIR,—Owing to the great importance of this condition among the mule spinners employed in the cotton industry, the following case appears worthy of record. I am indebted to my chief at the infirmary, Dr. Douglas Gray, for permission to publish it.

A man aged 49 was admitted to Bolton Infirmary on September 17th, 1924. He has been a mule-spinner since 1867. He first noticed a small wart-like nodule on the scrotum five years ago. This only troubled him by itching. A clear fluid sometimes came from it. It sometimes broke down and ulcerated but never healed—another wart-like projection again forming. His reason for attending our out-patient department was that one of his friends had just undergone an operation for crotal cancer and had urged upon him the necessity of taking medical advice.

On examination there was a small wart on the scrotum with ulceration at the base. There was a slight hydrocele; no glands were palpable in the inguinal and femoral areæ. On September 18th the ulcer was widely excised. The glands were not excised. I was doubtful about the presence of malignancy and decided to wait for the pathological report. Dr. Pollard, pathologist to the Bolton Infirmary, reported on the specimen as follows: "This is a chronic inflammatory condition. There is an area of granulation tissue just under the epithelium which consists of new capillaries, lymphocytes and polymorphs. There is no evidence of tubercle nor of malignancy."

Nearly all the patients with crotal cancer one meets with in Bolton give a very long history. They nearly all state that the condition has existed for many years. One of our recent cases was that of a man of 76 who had ceased work as a mule spinner seven years previously.

It seems possible, therefore, that there may be a definite premalignant stage in the cases—in which the prognosis is good if the proper treatment of wide excision is adopted. From the very long duration of the condition in many of these cases it is doubtful if they are all primarily malignant.

If this supposition is correct the importance of warning mule spinners of the possibility of the condition arising in the course of their employment and the urgent necessity of seeking medical advice immediately, cannot be over-emphasized.—I am, etc.,

October 23rd. ANDREW COCHRANE, M.B., Ch.B., Honorary Assistant Surgeon, Bolton Infirmary.

CARBON MONOXIDE POISONING

SIR,—Dr. Leonard Hill (BRITISH MEDICAL JOURNAL, October 18th, p. 743) agrees with me in one all important contention, and that is that poisonous air in industrial areas are given off when certain fuel is burned—even more poisonous than I mentioned. These children were not in heated stagnant air at all, that can easily be inferred from what I wrote.

Carbon monoxide poisons in more ways than by the deprivation of oxygen. There is serious deterioration of the vitality of the red blood corpuscles and a great alteration of the haemoglobin with all the consequent effects on the nutrition, if exposure to this poison be prolonged and repeated.

The sensation in my head on entering the room, where there was a large amount of this deadly gas present, was due to shock in its presence. I have repeatedly noticed this but never to the same extent. Being possessed of an idiosyncrasy in regard to the action of the gas I can immediately tell when it is present even in small quantities.

It should be noted that the experiments mentioned by Dr. Leonard Hill were performed on mice and the conclusion does not necessarily apply to all human beings. Some persons' blood and nervous system are peculiarly and in a disastrous way affected by CO. There is more to remember when considering the public effect of this poison, than its effect on the blood of mice.—I am, etc.,

Penmaenbachlas, Colwyn Bay, Oct. 20th. R. CUNLIFFE-OWEN.

ASSISTANTS IN GENERAL PRACTICE

SIR,—I am glad to see the matter of assistants in general practice ventilated by our two correspondents. "Assistant" and "H. W. I." I noticed an indoor assistantship advertised in the JOURNAL at £200 per annum.

May I call attention to one or two further abuses. First, the means by which some men obtain whole time or part time slaves by luring assistants from hospital surgery or some similar way, placing the assistant in such a position that he is practically compelled to do whole time work. Then there are the hospitals which in the past have come to demand the services of part time exploitation or medical women at unpaid whole time assistant under the euphemistic phrase of tuition occasionally advertised in medical journals and deliberately connived at by some of the medical agencies.

We are a profession not a trade union but surely we can put an end to these things. Surely honest work for honest pay must seem preferable to tolerating a code of ethics so flabby and so dubious.—I am, etc.,

October 17th. MEDICUS, B.M.A.

SIR,—I think one ought to distinguish in this question not between men and women but between the trained and experienced one and the inexperienced one. £350 intern fair for a young doctor or one of experience. To know how to handle patients but equally £50 or £100 intern enough for a newly qualified man or woman who has to be taught

all the routine, and wishes six or twelve months' practical work The hospitals get interns for this, why not the general practitioner?—I am, etc,

October 19th W D

PETER LOWE'S "CHIRURGERIE"

Sir,—The note in your issue of October 18th is not only incorrect in regard to the number of copies of the first edition (1597) known, but also in respect of the rarity and date of the second edition, which is given as 1611 The proper date is 1612 The writer of the note also states that only two copies of the second edition are extant This is very unlikely I myself possess an imperfect copy, and am under the impression that a perfect specimen was offered for sale recently in one of the catalogues

Finlayson, whose excellent *Account of the Life and Works of Master Peter Lowe* may be consulted, says, "The second, third, and fourth editions of the *Chirurgerie* are by no means scarce" There is a copy, apparently perfect, of the fourth edition (1654) in the library of the Liverpool Medical Institute The author just mentioned also writes "An interesting peculiarity in the first edition is that, although fifteen years earlier, it is not in black letter as the second, third, and fourth editions are" It would be interesting to know whether this inverse sequence is unique, and how many books were printed in black letter so late as 1654—I am, etc,

Liverpool Oct 28th W Blair Bell

Obituary.

NATHANIEL T BREWIS, M B, F R C P Edin, F R C S Edin,

Consulting Gynaecologist, Edinburgh Royal Infirmary

The death took place, on October 21st, at his residence in Drumsheugh Gardens, Edinburgh, at the age of 67, of Dr N T Brewis, who for a period of years acted as gynaecologist to the Royal Infirmary of Edinburgh

Nathaniel Thomas Brewis was the second son of the late Thomas Brewis of Eshott Hall, Northumberland He was educated at Edinburgh Institution and at the University of Edinburgh, where he graduated in medicine in 1882 While a student Brewis attained great distinction as a Rugby football player, and he represented Scotland in international matches on no fewer than five occasions, at a later period being elected president of the Scottish Rugby Football Union The club for which he played was that of the Edinburgh Institution After graduation, he acted as house-surgeon to the Edinburgh Royal Infirmary and to the Glasgow Maternity Hospital

At an early stage of professional life he devoted himself to the specialty of gynaecology, becoming obstetrician and gynaecologist to the Edinburgh New Town Dispensary and afterwards gynaecologist to Leith Hospital He became a Fellow of the Royal College of Physicians of Edinburgh in 1887, and twelve years later a Fellow of the Royal College of Surgeons His nursing home in Cambridge Street, Edinburgh, was well known all over Scotland for the valuable operative work which he carried out over a period of many years His eminence in this department of professional activity was recognized by his election as president of the Edinburgh Obstetrical Society and by his appointment as examiner in gynaecology in Edinburgh University On his retirement from the post of gynaecologist to the Royal Infirmary of Edinburgh in 1922 he was elected by the managers consulting gynaecologist As a clinical lecturer his teaching was much appreciated by students, and he was possessed of a clear, quiet, and direct method of exposition As a consultant his help was greatly sought and much valued by his professional colleagues, although it was for his great skill and successful results in operating that he was especially distinguished

Dr Brewis contributed several important publications to the medical press dealing with his specialty Some of the best known of these were a textbook on the *Outlines of Gynaecological Diagnosis* and an article on "Uterine displacements" in the *Encyclopaedia Medica* Other writings were a critical article dealing with his experience of hysterotomy, which was embodied in a "Series of abdominal sections," contributed to the Edinburgh Obstetrical Society's *Transactions* in 1892, "Some renal cases," appearing in the same publication in 1904, "Cases of pregnancy complicated by fibroid tumours treated by hysterectomy," and "Six cases of vaginal Caesarean section," all contributed to the Obstetrical Society's *Transactions*

In later life, when increasing years prevented his active participation in football matches, Dr Brewis continued to take great interest in other forms of sport He was a keen fisherman and golfer, and horseback riding formed his favourite method of exercise He was twice married, first to Annie Eliza, eldest daughter of the late Mr R S Douglas, Acton House, Northumberland, by whom he had one son and one daughter, who survive him His second wife was Miss Lena McLean, to whom he was married in 1922, and by whom he is also survived The interment took place at the Dean Cemetery, Edinburgh, on October 24th, and was attended by a very large number of representatives of the medical profession and of various Edinburgh bodies

LOUISA ATKINS, M D

The death of Dr Louisa Atkins, at the age of 82, took place in the seclusion of her retreat at Northwood, Middlesex, she was a pioneer in the cause of medicine as a profession for women Her passing was characteristic, it was her wish that her death should not appear in the obituary columns of the papers, and so it came about that the event escaped the notice even of those among the circle of her intimate friends This was not due to any indifference on her part to the feelings of her friends—far from it, she had the genius for friendship and held and was held by the firmest bonds of attachment, it was dictated by a proud humility which valued itself at small price and eschewed the ways of publicity

Highly connected by birth, it was a spirit of independence which, as a young girl, caused her to leave her home She went to India, and soon after her arrival was married to an officer, Colonel Atkins, many years her senior Upon the death of her husband some two or three years later she was left to face life single-handed Prizing independence before all things, she was led to take up medicine as a profession, and to this end studied at Zurich, and there, in 1872, graduated M D She had had a Continental upbringing, having been educated in France, and at that time the London School of Medicine for Women had not come into being, hence probably her selection of Zurich Subsequently she took the Licence of the King's and Queen's Colleges of Physicians of Ireland, when in 1877 that body consented to examine women The next important step in her career was her appointment as resident medical officer to the Birmingham Hospital for Women, where she did excellent work, and by reason of this and of her personality made valued friends, among them Mr Arthur Chamberlain, brother of Joseph Chamberlain, this remained a life-long friendship We find her next in London, elected on to the staff of the New Hospital for Women, since changed to the Elizabeth Garrett Anderson Hospital She held this appointment for some years Somewhere towards the latter end of the eighties she resigned her hospital appointment and not after migrated from Hanwell, where she had till then resided, to Northwood, where she had had a house built for her The writer cannot help feeling that a compelling factor in this withdrawal from official life must have been the spirit of the recluse which was strong within her From Northwood and from her consulting rooms in London she continued her private practice This work engaged her powers and absorbed her interest, to the great advantage of her patients' health (she was more successful in her practice) and to the acquisition of more than her share of devoted friends (she was much beloved) Henceforth it was her personality which struck the dominant note in her life's activities, informing her career and raising it to the level of an art—the art of medicine This and her solitude at Northwood, and her garden, in particular her roses, and her books, for she had a keen literary taste—these sufficed

Dr Louisa Atkins was an earnest student, an ab-

physician, very human very kind She possessed an open mind, nimble in its workings and if she suffered at times from depression, at other times she could be very gay, delighting her company by her lively ales She was quite fearless in the expression of her mind and in the practice of her principles wherever they might lead Essentially individual she went her own way in quiet self possession, thus living up to the motto of Patriclt "Be thegeman to thyself and to none other (Sis sibi quisque alter us qui nunc esse potest) Above all she was a great friend She will not be forgotten by those who had the privilege of her friendship H S

Dr DUNCAN JOHN MACKENZIE died at his residence Loch Maree House Glossop, on October 12 th He was born in 1840, and received his medical education in Aberdeen University, where he graduated M B C M in 1872 and proceeded M D in 1874 After holding the post of assistant surgeon to Leith Hospital he commenced general practice in Glossop, and continued until his retirement in November, 1923 For twenty two years he was also medical officer of health for the borough and rural district of Glossop, and for a few years the school medical officer Dr S Kelly writes Dr Mackenzie was a great reader maintaining to the last his interest in general and medical science and his study of the Latin and Greek classics For forty nine years in Glossop he lived a life of constant devotion to his professional and public work and apart from his reading, he took no other form of relaxation Though by nature retiring, he was always ready to help in any public work or noble cause As medical officer of health, and on various borough committees he filled official positions with dignity and wisdom His kindness and consideration for others endeared him to patients and fellow citizens, by whom he was esteemed not only for his medical skill, his wise advice in private and public affairs his love of learning or all kinds, but also for his deeply religious character He published many valuable papers chiefly on public health subjects He was a former chairman of the Lancashire and Cheshire Branch of the British Medical Association His death is greatly regretted and the funeral was attended by the local medical practitioners including representatives of the British Medical Association, the Mayor and borough officials, and representatives of many public bodies He leaves a widow, one son, who is in the medical profession, and two daughters

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Dr JOHN JAMES MURPHY who died on September 18 th at St John's Newfoundland, obtained the diplomas of M R C S, L R C P in 1916 and from then until the end of the war he held a commission in the R A M C After demobilization he started practice in his native town of St John's, Newfoundland where he gained considerable reputation as a surgeon and gynaecologist His colleague Dr Nutting Fraser, writes Dr Murphy's illness, which lasted a little over a week, was a particularly painful one Stricken with ascending spinal paralysis, the muscles of respiration ceased work, and for a week he was kept alive by artificial respiration Medical practitioners of St John's responded nobly to the call, and for the eight days never ceased, one relieving another night and day keeping up the respiration He remained conscious throughout his illness, and was always deeply grateful to his brother practitioners for the attempts they were making to relieve him Of a kindly, lovable disposition, Dr Murphy had endeared himself to his colleagues and the community as was evidenced by the expressions of sympathy, particularly at his funeral He leaves a widow and three young children

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We regret to record the death, on October 19th of Dr JAMES THOMSON DICK, the recently appointed medical officer of health for Lanarkshire Dr Dick graduated with honours at Glasgow University in 1910, and two years later obtained the D P H of Cambridge He acted as resident officer in the Victoria Infirmary, the Royal Infirmary and the Belvidere Fever Hospital of Glasgow and thereafter filled the post of deputy medical officer of health for Buckinghamshire Since 1913 he had held the appointment of assistant medical officer of health for the county of Lanark, and discharged [illegible] with marked efficiency [illegible] he was appointed to succeed him as medical officer [illegible] The appointment was unanimously [illegible] which was due to earlier [illegible] courses of his professional [illegible]

Dr ARTHUR MORTON died from pneumonia at Exeter on October 7th aged 47 He was the son of the late Mr Joseph Morton of Siddal Halifax and received his medical education at Leeds where he graduated M B C B in 1905 He also took the degrees of M B C B Victoria years later After serving as house physician and house surgeon at the Leeds General Infirmary he practised in Burley Road, Leeds but subsequently removed to Exeter During the war he served as Captain R A M C with the expeditionary forces in Egypt and the East Dr Morton who was a member of the Halifax Division of the British Medical Association is survived by his wife and two children

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Mr THOMAS ROBINSON formerly a surgeon in Leeds died at Bordighera Italy on October 9th He was the son of Mr John Robinson and was born at Honley near Huddersfield, in November, 1844 He was educated at Huddersfield College and subsequently studied for the medical profession at the Leeds Medical School, taking the diploma of M.R.C.S Eng in 1867 and that of L S A four years later He became assistant to the late Mr C G Wheelhouse and on the latter's retirement set up practice at Leeds For many years he was lecturer on osteology and also on anatomy at the Leeds Medical School with which institution he was connected for a number of years Mr Robinson retired from practice in 1894 and went to live at Bordighera He had visited England on one occasion

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Lieut-Colonel J M J P PELLETIER Agent-General for Quebec in London died at Ottawa on October 19th aged 60 and was buried in the Belgian cemetery He was educated at St Anne's College and Laval University Quebec and took his degree of M D He practised at Sherbrooke Quebec and served as a lieutenant of the Student's Company of the 9th Quebec Battalion during the suppression of the Fenian rebellion He acted as coroner of the St Francois district from 1880 to 1890 when he was returned to the Quebec Provincial Legislature for Sherbrooke County in 1896 he was unanimously elected Speaker of the Legislative Assembly In 1911 he was appointed Agent-General in London for the Province of Quebec

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Medico-Legal.

A LIBEL ACTION

In the King's Bench Division of the High Court [illegible] October 27th Mr James McCardie [illegible] defendants in two actions brought by Miss [illegible] a lodging house keeper at the corner of Stamford Street and Blackfriars Road Southwark Guardians claiming damages for alleged libel Dr John Brodie Fuller of Cornwall Terrace Regent's Park and Dr Henry Hall Hearn of the Southwark Board of Guardians and Mr Edward Bevan the clerk to the Guardians Mr [illegible] and Mr [illegible] appeared for the plaintiff and Mr [illegible] and Mr [illegible] for the defendants

The plaintiff who appeared in person said that [illegible] between January and June 1923 she was employed by the Southwark Board of Guardians as a nurse at the Stamford Street Casual Ward [illegible] suffering from tuberculosis [illegible] examined by Dr Fuller [illegible] but she was told that [illegible] Dr Fuller [illegible] Miss [illegible] Dr Fuller [illegible] South Western Hospital [illegible] Hodgkin [illegible] and [illegible] [illegible] Mr [illegible] was [illegible] Dr Fuller [illegible] Mr [illegible] Dr Fuller [illegible] Mr [illegible] Dr Fuller [illegible] Mr

The Services.

DEATHS IN THE SERVICES

Major-General Richard Henry Quill, C B, Army Medical Service (retired), died at Cheltenham on October 18th, aged 76 He was born at Tralee, in June, 1848, the eldest son of the late Jerome Quill, J P, of Kilmorly, co Kerry, and was educated at Trinity College, Dublin, where he graduated as M B and M Ch in 1871, and as M D in 1877 Entering the army as assistant surgeon in March, 1872, he reached the rank of colonel in March, 1902, and of surgeon general in April, 1905 retiring in June, 1908 He served in the Afghan war of 1878 80, when he was with the Hurram Field Force, and took part in the Zimmukht expedition, and received the medal He was employed during the recent war, and received the C.B in 1917 As an administrative officer he served successively in the Thames district, at Chatham, in Ceylon, in the South East district from 1902 5 and as P M O of the Royal Victoria Hospital, Netley, from 1905 till his retirement in 1908 While in Ceylon he won the amateur golf championship of the island, and while holding the command at Netley he received the Prussian Order of the Red Eagle, 2nd class, in 1907 He leaves a widow and one son

Lieut Colonel Gerald Stewart Mansfield R A M C (ret), died in Queen Alexandra's Military Hospital, Millbank, on September 27th, aged 57 He was born at Blandford, Dorset, on October 28th, 1867, the son of the late Rev Joseph Mansfield, and was educated at Edinburgh, where he graduated as M B and C.M in 1890 After filling the posts of house surgeon of the Belgrave Hospital for Children and of senior house surgeon of the London Temperance Hospital, he entered the army as surgeon lieutenant on July 27th, 1892, becoming major after twelve years' service, and retiring on July 27th 1912 After retirement he was employed at St Peter's, Jersey He served in the South African war in 1900 1, when he took part in the operations in the Orange Free State and in the Transvaal, including the actions at Houtnek Thoba Mountain and Wittebergen, and received the Queen's medal with four clasps During the recent war he served as A D M S in the Home Forces, with the rank of lieutenant colonel

Universities and Colleges.

UNIVERSITY OF LONDON

At a meeting of the Senate held on October 22nd a University Chair of Anatomy, tenable at the Middlesex Hospital Medical School, was instituted as the result of a munificent gift of £20,000 by Mr S A Courtauld, the title of the chair will be "The S A Courtauld Chair of Anatomy," and Dr Thomas Yeates, C M, D P H, at present University Professor of Anatomy at the school, was appointed as the first occupant

A course of four lectures on enzymes will be given by Professor John Mellanby, M D, at St Thomas's Hospital Medical School, Albert Embankment, S E 1, on Thursdays, November 6th, 13th, 20th, and 27th, at 4 30 p m, admission free without ticket

UNIVERSITY OF LEEDS

The Council of the University of Leeds has appointed Dr F S Fowweather to the Lectureship in Chemical Pathology recently instituted Dr Fowweather holds the M Sc, M B, and Ch B degrees of the University of Liverpool and the D P H He has been in general practice in Ellesmere Port and has had chemical experience in industry

NATIONAL UNIVERSITY OF IRELAND

The following prizes and scholarships have been awarded *Travelling Studentship in Anatomy*—Joseph Paul *The Dr Henry Hutchinson Stewart Medical Scholarships*—(*a*) Anatomy, (*b*) physiology H R Clom *The Dr and Mrs W A Browne Gold Medal and Prize*—Gold Medal not awarded Prize John Bolton

Mr Michael G O'Malley, M B, B Ch, F R C S Eng, has been appointed Professor of Surgery at University College, Cork

The special final medical examination will be held in January, 1925, in Dublin, Cork, and Galway, provided that not less than 100 enter and pay the prescribed special entry fee on or before November 13th, 1924

The Dr Henry Hutchinson Stewart scholarships in arts in medicine and in mental and nervous diseases will be offered for competition in 1925

SOCIETY OF APOTHECARIES OF LONDON

The following candidates have passed in the subjects indicated

SURGERY—J O W Bland E F Hotinger W R S Jaecques J P McGuire A J Moody C M Moody W L Pennington C J Rozario

MEDICINE—H L Bernstein J O W Bland L K Htoe R D Jones, K Samaan R Schofield

FORENSIC MEDICINE—A Kaplan

MIDWIFERY—T G L Davies B M Francis L K Htoe P B P Mellows C M Moody A B Osbourne B V Perott C J Rozario K Samaan

The Diploma of the Society has been granted to Messrs H L Bernstein, J O W Bland, L K Htoe, W R S Jaecques R D Jones W E Pennington and R Schofield

Medical News.

The subject of the notification of puerperal sepsis will be discussed at a joint meeting of the Sections of Obstetrics and Gynaecology and of Epidemiology and State Medicine of the Royal Society of Medicine, together with the Society of Medical Officers of Health, to be held at 1, Wimpole Street, W 1, on Thursday next, November 6th, at 8 p m The meeting will be open to non members engaged in practice who are interested in the subject

A LECTURE on cancer of the rectum will be delivered at No 1 Wimpole Street, at 5 30 p m on November 3rd, by Mr W Ernest Miles A course in venereal disease will be held at the London Lock Hospital (Dean Street) from November 3rd to 29th A month's course in dermatology at the St John's Hospital for Diseases of the Skin begins also on November 3rd Demonstrations will be given in the various departments From November 10th to 22nd St Mark's Hospital will hold a course in proctology A course in gynaecology has been arranged by the Chelsea Hospital for Women from November 21st to December 6th At the Royal Waterloo Hospital for Children and Women a four weeks' course in medicine, surgery, and gynaecology will begin on November 24th Syllabuses of the courses may be obtained from the Secretary of the Fellowship of Medicine at Wimpole Street, W 1

As already announced, the annual dinner of Fellows and members of sections of the Royal Society of Medicine will be held on Wednesday, November 26th, at 8 p m, at the Hotel Victoria, Northumberland Avenue We are asked to state that private guests, including ladies, may be invited, and that tables are to be arranged so as to accommodate parties of friends and guests

THE Rontgen Society will hold its meetings during the coming session on the first Tuesday in each month, at the British Institute of Radiology, 32, Welbeck Street Dr A L Barclay will deliver his presidential address at the first meeting (on November 4th, at 8 15 p m) on the subject of "The growth of radiology has the Röntgen Society kept pace with it?"

THE Tuberculosis Society commenced its meetings for the session 1924-25 on Friday, October 17th, with a discussion on cutaneous tuberculosis, introduced by Dr W J O'Donovan The next meeting, on November 21st, will deal with tuberculosis of the eye, the lecturer being Mr Charles Goulden Other subjects to be discussed subsequently include tuberculous peritonitis, tuberculosis and the central nervous system, pneumothorax, and pulmonary conditions simulating tuberculosis The provincial meeting of the society will be held in April at Cambridge The ordinary meetings of the society will be held in future at the house of the Society of Medical Officers of Health, 1, Upper Montague Street, Russell Square

THE King has granted Lieutenant Colonel Benjamin Biggar, R A M C, permission to wear the Insignia of the Third Class of the Order of the Nile conferred upon him by the King of Egypt in recognition of services rendered

THE annual dinner of the Chelsea Clinical Society was held at the Cafe Royal on October 21st The president, Dr Gordon Lane, was supported by the presidents of the Royal Society of Medicine, the Medical Society of London, and the Hunterian Society, and the officer commanding the Military Hospital, Millbank The toast of "Success and progress to the society" was proposed by Sir StClair Thomson, who maintained that every medical practitioner ought to join his local medical society, and cited Sir Clifford Allbutt's dictum that "practice not sweetened by service becomes a trade" The president, in responding, mentioned the gratifying fact that the membership of the society was now larger than ever before The society had been originally founded for the benefit of general practitioners, who were the mainstay of medicine, in the coming session their requirements were receiving special attention, in that the meetings would deal with the prevalent diseases of the four periods of life The November meeting would be devoted to childhood, the December one to adolescence, with especial reference to endocrine disturbances the February meeting to the climacteric period, and the March meeting to diseases of old age The January and April meetings would be clinical in nature, and in May the discussion would take the form of a summary of the work of the session, with especial reference to facultative diagnosis The toast of "The Guests" was proposed by Dr J Campbell McClure, and Mr H W Carson replied The toast of "The President" was proposed by Dr G Crewdson Thomas, the late president, and Dr Gordon Lane, in his reply, paid a warm tribute to the good work of Dr P S Price and the other officers of the society.

THE KING has appointed Mr Francis D Donovan L D S R C S Eng, to be Surgeon Dentist to His Majesty's household

ON November 13th Mr Walter Spencer will give a lecture to the Guthrie Society of Westminster Hospital on Pliny's natural history and some anticipations of modern knowledge

THE annual old students dinner of St Thomas's Hospital was held at the Princes Restaurant on October 24th with Dr Seymour Taylor in the chair Among those at the high table were the Hon Sir Arthur Stanley treasurer of the hospital Sir Cuthbert Lee dean of the medical school and senior surgeon Sir Charles Sherrington, President of the Royal Society and formerly lecturer on physiology in the medical school Sir John Bland Sutton President of the Royal College of Surgeons Surgeon Vice Admiral J Chambers Medical Director General R N Lieut General Sir William Leishman, D C Army Medical Department Sir Havelock Charles late President of the Medical Local Indra Office Sir George Makins and Sir Charles Wallace, consulting surgeons and Sir Hector Mackenzie Sir Seymour Sharkey and Dr H G Turney consulting physicians to the hospital In proposing St Thomas's Hospital and medical school the chairman said he was the senior St Thomas's man present that evening (for he entered the hospital in 1869), and gave some interesting reminiscences of Simon, Croft, Bristowe and other teachers of his student days Sir Arthur Stanley in his reply, told something of recent events at the hospital, and spoke in particular of the plans for the new dental college and club which he said, were now within sight of realization Sir Cuthbert Wallace who also replied gave an outline of the year's gains and losses He mentioned in particular the deaths of Professor Shattock Sir Archibald Reid, and Dr Henry Gervis He stated that the number of students on the register last year was 509 of whom 417 had entered for the full curriculum 61 new full time students had entered of whom a good many were the sons of old St Thomas's men Both in work and play and in the distinctions gained the medical school was holding its own In conclusion, the dean proposed the health of the chairman whom he described as an honest and enthusiastic friend of the hospital After Dr Taylor's acknowledgement, Sir George Makins proposed the health of the visitors St Thomas's men, he said, were so hung if not hospitable, and all their guests were their friends Sir John Bland Sutton in reply expressed his pleasure at being admitted to this family gathering and recalled many agreeable associations with St Thomas's teachers

NEW wards and an operating theatre have now been equipped at the Heritage Craft Schools at Chailey in order that the necessary orthopaedic work amongst the cripple boys and girls in the institution may be carried out on the spot and thus secure the continuity of treatment and education which has proved of such value in these cases

THE KING has granted Mr Arthur F MacCallan O B E, M D, F R C S formerly Director of Ophthalmic Hospitals, Egyptian Department of Public Health, authority to wear the Insignia of the Second Class of the Order of the Nile conferred upon him by the King of Egypt in recognition of valuable services rendered

MR C W DEAN F R C S E surgeon to the Royal Lancaster Infirmary, has been appointed honorary consulting surgeon to the County Mental Hospital, Lancaster

THE Warren Triennial Prize is awarded for the best dissertation considered worthy of a premium on some subject in physiology surgery or pathological anatomy the arbitrators being the committee of the Massachusetts General Hospital, Boston Theses submitted for competition in 1925 must be on some special subject in physiology, surgery, or pathology They must be in English, French, or German typewritten, and suitably bound so as to be easily handled Work published previously will not be considered The name of the writer must be enclosed in a sealed envelope on which is written a motto corresponding with one on the accompanying dissertation The amount of the prize is $500 Dissertations will be received until April 15th 1925 A high value will be placed on original work

THE Congress of Natural Science and Medicine held at Innsbruck on September 24th numbered 6 000 members The next Congress will be held at Dusseldorf in 1926

UNDER the name of Journees medicales marocaines a congress will be held at Casablanca and Rabat from December 26th to 29th, when the following papers will be read Report on cancer in Morocco, by MM De Pester Penard and Speder the fight against cancer, by Profes or Bergonie the surgery of cancer by Professor J L Faure report on amoebiasis in Morocco by MM Boros Jobard and Vendremer lecture on amoebiasis by Profes or Garin of Lyons vaccine therapy and morbid anatomy of blastomycoses, by Mr or Velu

PROFESSOR LUCATELLO of Padua has been nominated successor of Professor Maraghano in the chair of internal medicine at Genoa

THE Berlin Dermatological Society have elected Drs Ehrmann of Vienna Hoffmann of Lodz Jansen of Copenhagen Kreibisch of Prague and Alibrandt of Neuhaus, as honorary members

THE late Mr George Heaton consulting surgeon to the Birmingham General Hospital has left estate provided at £57 959 gross with net personalty £55 337 He bequeathed among other legacies £1,000 to the Birmingham General Hospital in trust for investment and to pay the income annually, one half to the person whom the medical committee of the hospital shall decide to be the best resident medical officer of the hospital for the year one fourth to the sister or staff nurse who in the matron shall decide to be the best of the year, and one fourth to the sister or staff nurse selected by vote of the whole of the sisters nurses and probationers of the hospital £500 each to the Birmingham University St Dunstan's Hostel for Blinded Sailors and Soldiers the Medical Institute Birmingham the Medical Benevolent Society Birmingham and the Birmingham and Midland Free Hospital for Sick Children He directed that Mr Frank Barnes and Mr H H Scrimgeour should have option of the purchase of any of his surgical instruments, drugs appliances, and books and that any not so elected should be divided equally between the Corbett Hospital, Scarbridge and the Sutton Cottage Hospital

HOLLAND, which has a population of about seven millions has 3,700 medical practitioners 950 dentists and 251 hospitals with about 30 000 beds There are thirty four communes with over 2 000 inhabitants in which no doctor is resident

DR EMILE ROUX and Dr Louis Marten of the Institut Pasteur Professor Pojer, Dean of the Faculty of Medicine, Inspector General H Vincent and Professors Achard Carlo Legueu and Widal of Paris have been elected honorary, foreign members of the Academy of Medicine of Rome

A Indian Science Congress will be held at Benares in January 1925 The president elect of the medical research section is Lieut Colonel J P Mackie, M D F R C P I D P H, professor of pathology in the University of Calcutta

DR DOUGLAS W A BELL has been appointed a magistrate for Stony Stratford Bucks

THE senators recently nominated by the Italian Government included the ophthalmic surgeon Dr G Cirincione of Rome the surgeon Professor D Giordano of Venice and Professor Luigi Simonetta of Perugia

THE first Hispano American Congress of Otorhinolaryngology will be held at Saragossa next April Further information can be obtained from the general secretary, Dr Bertran Fernando V I N 10 Madrid

THE twenty ninth Congress of French speaking Alienists and Neurologists will be held in Paris from May 25 h to 28th, 1925, under the presidency of Dr Arglade of Bordeaux when the following subjects will be discussed Late recovery from mental disease by Dr J Lobert director of the Asylum familial infantile encephalopathies by Dr O Crouzon president of the Societe de Neurologie medical jurisprudence and states of mental enfeeblement by Dr Briand principal physician of the Seine asylums

THE trial of Dr W P Hadwen on a charge of alleged manslaughter was opened at Gloucester Assizes on October 27th before Mr Justice Lush Dr Hadwen who stood committed on the coroner's indictment (on a majority verdict of the jury) and also by the city magistrates pleaded Not guilty to the charge of unlawfully killing Nellie Burnham aged 10 on August 10 h last Mr C F Vachell K C and Mr St J Micklethwait appeared on behalf of the Director of Public Prosecutions and Sir E Marshall Hall K C and Mr A F Clements for the defence At the conclusion of the case for the prosecution on October 28th Dr Hadwen went into the witness box The jury on October 29th after a retirement of twenty minutes found a verdict of Not guilty and Dr Hadwen was accordingly discharged A report of the proceedings will appear in a later issue

IN the general election results issued on Wednesday night the following medical candidates were successful Dr Haden Guest retains Hackney for Southwark North Sir Richard Luce has gained one of the two Derby seats Dr A Salter has regained his former seat in Portsmouth and Dr F Watts has regained his former seat in Nottingham Professor Thomas Sinclair has been returned for one of the Queen's University Belfast Dr C Addison has held Churchill Dr P Doyle at Dr O Glossop for Sheffield Hastings Dr J J Lynch Dr P O Meara and Dr Ernest Pobin were unsuccessful

Letters, Notes, and Answers.

ORIGINAL ARTICLES and LETTERS *forwarded for publication are understood to be offered to the* British Medical Journal *alone unless the contrary be stated* Authors desiring reprints of their articles published in the British Medical Journal are requested to communicate with the Financial Secretary and Business Manager, 429, Strand, W C 2, on receipt of proof

All communications with reference to advertisements as well as orders for copies of the Journal should be addressed to the Financial Secretary and Business Manager, 429, Strand, London, W C 2 Attention to this request will avoid delay Communications with reference to editorial business should be addressed to the Editor, British Medical Journal, 429, Strand, W C 2

Correspondents who wish notice to be taken of their communications should authenticate them with their names—not necessarily for publication

Communications intended for the current issue should be posted so as to arrive by the first post on Monday or at latest be received not later than Tuesday morning

The telephone number of the British Medical Association and British Medical Journal is Gerrard 2630 (Internal Exchange) The telegraphic addresses are

EDITOR of the British Medical Journal, *Aitiology Westrand, London*

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QUERIES AND ANSWERS

Liquid Paraffin and Cancer

"B K" asks if those who see many cases of malignant disease of the alimentary tract suspect that liquid paraffin taken internally for constipation is responsible for any increase in the occurrence of the disease Liquid paraffin, he remarks, has now been used internally for some fourteen or fifteen years, and enormous amounts must be consumed annually

Erythema Nodosum

Mr G F Walker (General Infirmary, Leeds) invites practitioners who have met with cases of erythema nodosum in endemic or epidemic form, or examples of the infectious nature of this disease, to communicate with him

Income Tax

"T A D" inquires what is payable on the following Investments £80, professional earnings £50 pension £42, expenses—purchase of second hand car £34, servants 35s per week including board, rent of house £50

*** No information is given as to the proportion of the house used for professional purposes, but the calculation would work out somewhat as follows

			£
Income Investments			80
Pension (presumably earned)			42
Earnings		£50	
Less servant	£26		
Less rent and rates	£30		
	—	£56	
		—	*nil*
			122
Earned income allowance			4
			118

As the personal allowance is £135 no tax is payable

Dispenser's Salary

"L B C" employs a dispenser at £208 per annum (*a*) Can she claim any deduction for the cost of her board and lodging, and (*b*) would it make any difference if, say, £50 of the amount were paid to her landlady?

*** (*a*) The answer is in the negative Such expenses are primarily personal and are not incurred exclusively *in the performance* of the duties (*b*) No The leading case is Tennant *v* Smith, in which the rule was laid down that emoluments are assessable to tax if they are received in money or in a form capable of conversion into money We are of opinion that if £50 be paid to the dispenser's landlady in discharge or part discharge of a debt due by the dispenser, it forms part of the income of the latter for income tax purposes If, however, "L B C" were to engage and pay for rooms himself and then permit his dispenser to live in them the matter would, however illogically, be put on a different footing, and the benefit of residing rent free in those rooms would not be income taxable in the dispenser's hands

War Loan Interest

"W H" was for a few years in receipt of £285 interest on 5 per cent War Loan In April he converted it into 4½ per cent War Loan, the interest on which is taxed by deduction and has since received only £142 10s untaxed instead of £285 The inspector of taxes, however, informs him that he is correctly assessed on the amount of the previous year's receipts and that the conversion does not affect the assessment for the current year

*** Assuming that the whole of such untaxed interest bearing loans were converted, "W H" should point out to the inspector that there was, in fact, a "cessation" of the income during the year, with the result that the assessment for that year is reducible to the amount of the untaxed interest of the year of assessment

LETTERS NOTES ETC

"Universal Cures, Ancient and Modern"

The presidential address delivered by Professor A J Clark before the Therapeutic Section of the Royal Society of Medicine on October 14th, 1924, and printed in our issue of October 18th p 731, has brought us some correspondence more or less relevant to the main subject of Professor Clark's address Among the letters received is one from Mr A E Baines, who notes that his name was referred to in connexion with Abrams's theories Mr Baines wishes to state that he is in no way concerned with the soundness or otherwise of these theories, but he himself claims that he has a method of galvanometric diagnosis which is "an infallible method of detecting and locating disease," and, furthermore, is prepared to prove the same

Cancer in African Natives

With reference to the following passage in the letter from Dr Old of Nyasaland, published on October 11th (p 689)

> Some causes that have been advanced such as dietetic ones have only a nutritional effect on embryonic cells that may predispose to growths —

Dr A W Crawford (Bolton) writes I have frequently pointed out that unsuitable food constantly supplied to the lining membrane of the alimentary canal paralyses the powers of the epithelium, and therefore interferes with the nutrition of the embryonic cells which maintain all the tissues of the body, and thus weaken the epithelial supply, which I consider one of the main causes of cancer

Thymol for Threadworms

In reply to Dr William Corbet (October 11th, p 695), Dr R Gethen (Stanford le Hope) writes He apparently doubts the veracity of my statements The dose I prescribed was not an experiment, but what I have seen used quite commonly in the tropics (Calcutta) Again, Sir W Hale White, in his *Materia Medica*, recommends three successive doses of 30 grains each, with a little alcohol to facilitate the aqueous solution, as was also prescribed by me I have never seen any untoward results It certainly was an experiment when I tried it for threadworms, with a happy issue

Medical Golfing Society

The autumn meeting of the Medical Golfing Society was held at Princes, Sandwich, on October 18th and 19th Seventy members took part in the competitions, the whole meeting being a great success and most enjoyable All competitions were played under handicap The results were as follows

Best Return v Bogey (Cup presented by the President, Mr Ernest Clarke)—First T P Kolesar, C Hott, and C I Imny —all square Won on replay by T P Kolesar

Foursomes v Bogey (prizes presented by Dr J Grace)—The following couples tied for first place L Pavensworth Hart and H W Carson, H D Gillies and W H Lumplough Won on replay by H W Carson and E Ravensworth Hart

The Canny Ryall Cup (Medal Play)—First, H D Gillies 72 + 2 = 74 Second, G S Moriarty 87 − 8 = 79 The fine score of Mr Gillies constitutes an amateur record for the course, though perhaps not official

Healthy Plague Carriers

In the brief report of Dr Andrew Balfour's recent address at the Anderson College of Medicine Glasgow printed in our Scottish column on October 25th (p 783), he was stated to have referred to French work on healthy human and healthy cattle carriers of plague The word 'cattle' should read 'rat' We hope to publish in an early issue a full abstract of Dr Balfour's address

Vacancies

Notifications of offices vacant in universities medical colleges, and of vacant resident and other appointments at hospitals, will be found at pages 34, 35 33 and 39 of our Advertisement columns, and advertisements as to partnerships, assistantships, and locumtenencies at pages 36 and 37

A short summary of vacant posts not fee l in the Advertisement columns appears in the *Supplement* at page 1*1

EPITOME OF CURRENT MEDICAL LITERATURE

Medicine.

329 The Space of Traube

E SERGENT (*Ann de Med*, August 1924 p 7) denies the practical importance of the limits laid down in 1868 by Traube of the space at the lower part of the left side of the thorax where the percussion note is tympanitic This area of tympanicity, he states, is dependent on the play of the diaphragm being concerned with its position, range of movement and tonicity The more important conditions leading to enlargement are said to be gaseous distensions of the stomach or colon with attendant compression of the diaphragm, and a gaseous subphrenic abscess Conditions leading to diminution or obliteration of the space include hepatic enlargements which encroach from within outwards and splenic enlargements which act from without inwards Pericardial effusions affect the supero-internal part of the space, as also do cases of adhesive pericarditis with pleural adhesions A basal pneumonia will affect the upper and middle portions of the area and Paillard is cited as having observed a diminution of resonance of the upper limit in fifty cases of tuberculous pneumonia the result, in Sergent's opinion, of phrenocostal adhesions The author insists that it is not safe to estimate the amount of pleural effusion by the level of dullness in Traube's space other factors to be considered include displacements of the heart fixation of the diaphragm by adhesions pulmonary consolidation, and thickening of the pleura inflammation of the diaphragm eventually induces a degree of paresis, and a consequent alteration of the level of dullness An encysted pleural effusion at the left base can completely obliterate the resonance of Traube's space Phrenocostal adhesions may obliterate the space they are distinguished from general effusion by the absence of the distension of the thoracico abdominal region, fixation of the lower thorax and occasional reversed diaphragmatic movement The tone of the diaphragm according to the author, is the key to correct interpretation and he claims to have verified his contentions by radiological examination

330 Sequels of Encephalitis in Childhood.

JOPGEP (*Schweiz med Woch* July 24th, 1924 p 679) gives an account of the results of a questionary about encephalitis in children addressed to the doctors of Switzerland Reports were received from thirty doctors concerning 77 patients between the ages of 6 and 32 years The 5 patients over the age of 20 were still so ill that they required hospital treatment Most of the patients were between the ages 10 and 17 years, and there were 48 males to 29 females On the assumption, which is borne out by statistics that the numbers of males and females contracting encephalitis are approximately equal, it would seem that so far as late effects are concerned the male brain is more easily damaged by encephalitis than the female brain These 77 post-encephalitic cases could be classed in two approximately equal groups which the author describes as 'active' and apathetic The active cases were those in which there was little evidence of gross organic disease the most prominent changes being concerned with the patient's character While Parkinsonism, disturbances of respiration excessive salivation, and paralyses gave comparatively little trouble in this group difficult problems were raised by the irritability moral depravity, and general mental instability of the patients The most prominent characteristics of the 'apathetic' group were the general helplessness paralyses and Parkinsonism An extreme example of this group was a patient aged 22 whose post-encephalitic symptoms had gradually become worse for some five years He showed catatonic rigidity without the tremor of Parkinsonism and when he attempted to write he would stop suddenly in the process and continue after a short interval The author pleads for the provision of special institutional treatment for these post-encephalitic cases many of which do not fit well into the existing institutions for diseases of the mind and body

331 Chlorosis and Tight lacing

J DENKF (*Deut med Woch*, July 4th 1924 p 902) publishes statistics showing how enormously the incidence of chlorosis has declined of late His statistics deal with the period 1895 onwards and his material consists of patients treated at a hospital in Hamburg In 1901 there were about 12 000 patients admitted to this hospital and among them there were 201 cases of chlorosis In 1923 there were about 20 000 patients admitted to the same hospital yet among them were only 3 suffering from chlorosis A graphic representation of the incidence of chlorosis shows a rise from 1895 to 1901 and a very rapid decline after this year The author discusses and dismisses the hypothesis that this decline is due to early wholesale treatment with iron and the hypothesis to which he leans is that woman's emancipation from tight lacing has rid her of chlorosis, agreeing with Koch and Bickel (BRITISH MEDICAL JOURNAL May 31st, 1924 Epitome para 431) He states that formerly it was the fashion for girls who were inclined to be stout at the age of puberty to lace most conscientiously hardly discarding their corsets when they went to bed The frequency with which country girls used to develop chlorosis when they moved into a town could be traced to tight lacing being enforced more in towns than in the country The association of fatness with chlorosis was merely an indication that the fatter the girl the more desperately did she lace herself up The geographical distribution of chlorosis was exactly that of the corset Persian and Japanese women being blessed (or cursed) with neither Again, discarding corsets has been known to cure chlorosis without the aid of any other remedy and the good effect of rest in bed in severe cases may be explained on the same ground The author anticipates that the fashion of tight lacing will return some day, and that the correctness of his views will then be proved by the return of chlorosis to its former frequency Since chlorosis is easy to cure and is a condition on which to build a great therapeutic reputation the author thinks that the advent of this era may be awaited with equanimity

332. Venereal Statistics in Germany

M GUMPERT (*Dermatol Woch*, July 19th, 1924 p 852, has collected statistics from the female patients attending the dermatological clinic of the Rudolf Virchow Hospitals, Berlin during the period 1913–23 In these eleven years the total number of female venereal cases was 6,860, the lowest annual total was 448 (1915), and the highest 860 (1-23) Gumpert takes three groups of cases (1) primary syphilis, (2) soft ulcer (3) condyloma The primary syphilis curve varies greatly—for example, from 2 5 per cent in 1913 it rose to 3 2 per cent in 1914 fell to 1 5 per cent in 1915 rose to 3 7 per cent in 1916 to 4 3 per cent in 1919 and to 10 per cent in December, 1923 The curves of the other diseases also vary widely—for example the number of cases of soft ulcer was 10 per cent of the total in 1914, 11 per cent in 1919 falling to 3 per cent in 1922, and rising to 4 8 per cent in December 1923 The highest number of cases of condyloma occurred in December, 1922 when they formed 7 per cent of the total Gumpert compares these statistics with others from Würzburg and Brussels but finds no parallelism he attributes the increase of venereal disease in Germany during the war period to the social conditions and the subsequent rapid rise of the syphilis curve to the pressure of adverse economic forces

Surgery

333 Long standing Primary Growth of the Liver

AFTER a review of recent work on growths of the liver, E TRENTI (*Il Policlinico* September 1st 1924 p 961) reports the case of a married woman aged 30 of good family history who first complained in September, 1921 of sudden severe abdominal pain unaccompanied by vomiting or cough but associated with severe nocturnal headache In November menstruation ceased and about this time a swelling in the right hypochondrium was noted When admitted into hospital in March 1922 the liver was found to be much enlarged there was no jaundice and only slight ascites (the fluid was of secretory rather than transudatory type) The woman was much wasted and suffered from occasional attacks of diarrhoea there was a network of dilated veins on the abdomen no changes were noted in the urine and the blood tests showed nothing pathological The patient remained in hospital eighteen months and during this time beyond a steady wasting and abdominal pains showed no symptoms In the last six months some swelling of the cervical glands on the left side were noted At the autopsy the growth was found to be a primary lympho-angio-endothelioma made up of round cells in a stroma of dense connective tissue some cylindroma-like cells were present, with central degeneration and lymphangiectasis

groups Some small secondary nodules were present in the left lung The fluid in the peritoneum was directly due to secondary growths in the omentum A photograph of the patient gives a good idea of the size of the abdomen and the marked wasting of the body

334 Chronic Glanders

A Reverdin and A Grumbach (*Ann de med*, 1924, xv, p 42) record cases in two brothers who had been engaged in attending horses suffering from chronic glanders In both cases the disease commenced in the soles in the form of ulceration, followed by osteitis, with elimination of bony fragments, and accompanied by attacks of lymphangitis The first brother attacked was ill for seven years, but at the time of publication appeared to have been cured for four years The second brother showed no signs of the disease until four years after the first, though both were probably infected at the same source In the second brother the disease assumed a more severe course, giving rise to absolute segmental anæsthesia of one of the limbs All the corresponding metatarsals sloughed off or had to be removed, and finally the limb had to be amputated The diagnosis of tuberculosis, syphilis, syringomyelia, hypothyroidism, gangrene, ergotism, leprosy, and mycetoma were successively considered, until investigations made after amputation of the limb showed a glanders bacillus somewhat different from the ordinary type, which the authors called a paraglanders bacillus The mallein and sero agglutination tests did not yield any results, but the deviation of complement test was strikingly positive in the presence of three different antigens

335 Carcinoma of the Penis

D B Gilliam (*Urol and Cut Rev*, July, 1924, p 390), who reports two cases in men aged 68 and 71, states that carcinoma of the penis forms from 1 to 3 per cent of all cancers in males It arises principally from the glans and prepuce, both of which are usually involved when the patient is first seen As a rule, it is a disease of advanced life, though Freyer has reported a case in a youth aged 17, and Kaufmann states that 6 per cent of all cases occur in the sixth decade Warts and chronic balanitis are the commonest causes Other factors are scars resulting from injuries or left by venereal ulcers, with a long continued source of irritation, such as a fistula No fewer than 29 out of 33 cases collected by Kaufmann began as benign warts Phimosis is a frequent predisposing cause, as is shown by the fact that it was present in 42 out of Demarquay's 59 cases, as well as by the freedom of Jews from cancer of the penis Trauma, which occurred in one of Gilliam's cases, is an occasional factor The subjective symptoms at the onset merely consist of slight itching, but as the growth increases in size it tends to interfere with micturition and causes painful erections The progress of the tumour is slow Extension of the growth may involve the scrotum, testes, prostate, bladder, rectum, and pelvic cavity The corpora cavernosa are not attacked early, as the tunica albuginea offers an obstruction to their invasion The condition, when once established, may long remain as a warty tumour of considerable dimensions, but usually ulceration supervenes The liver is a favourite site for metastases, which may occur early in the disease The diagnosis is difficult in the early stage without microscopical examination At the onset, carcinoma, which is hard and deeply situated, must be differentiated from condyloma, which is soft and superficial The prognosis is grave unless operation is undertaken in the earliest stage Recurrences are usually observed in the first year, but may develop after an interval of five years Treatment is operative or palliative, according to the duration and progress of the disease If the diagnosis is made very early, total excision of the involved area, with cauterization of the wound, may suffice but when cancer is well developed excision of the organ is required X rays and radium, though in no sense curative are valuable adjuncts to the treatment, both before and after operation

336 Insulin in Surgery

P Mauriac (*Rev de laryngol d'otol et de rhinol*, August 15th, 1924, p 501) points out that diabetics have been avoided as patients by surgeons on account of the danger associated with active treatment in their case There are two main dangers in dealing surgically with a diabetic patient The first is the risk of infection A slight failure of asepsis which would have no ill effect in a normal patient may be, and usually is, followed by an infection to which incompetent tissues very unsatisfactorily, and which may [illegible] very serious conditions Similarly an infection may [illegible] the dry gangrene of diabetes and the virulence [illegible] the organism be much increased Any operative measure [illegible] must be performed with the most scrupulous asepsis precautions, and must be completed in the shortest possible time The second danger is that of grave acidosis and coma, which are more likely to occur in the diabetic with emaciation or the obese diabetic with slight acidosis Long operations, those involving shock, and particularly chloroform anæsthesia, dispose to coma The author sums up the use of insulin in the treatment of surgical cases and has drawn the following conclusions Insulin is of the greatest value in those cases in which the operation can be deferred until the insulin treatment has had time to reduce the hyperglycæmia and acidosis, but in cases where the operation must be performed at once the insulin is not able to act until the operative shock has passed off and the anæsthetic been eliminated from the system In the post operative stages it assists in the cicatrization of wounds, and allows the patient to ingest an adequate amount of carbohydrate In cases with acidosis or profuse suppuration it usually has no effect In all surgical cases the very purest insulin must be used, since impurities tend to diminish the coagulability of the blood

Therapeutics.

337 Treatment of Nephritis and Oedema with Calcium Salts

N M Keith, C W Barrile, and Mary Whelan (*Journ Amer Med Assoc*, August 30th, 1924, p 666) review the various theories of the diuretic action of calcium salts, and give details of two cases of oedema so treated (1) A miner, aged 22, was admitted to the Mayo Clinic complaining of extreme generalized oedema which had commenced nine months previously His weight had increased 11 lb Ascites was present and there was much fluid in both pleuræ The heart was moderately enlarged, the systolic blood pressure was 205 mm, and the diastolic 125 Oedema of the optic discs and retinæ was present About 17 oz of urine were passed daily It contained a large amount of albumin, hyaline and granular casts, and a few pus cells For eleven days he was purged and sweated freely, and the weight decreased by 5 lb, though the urine was not increased During the next seven days he received 4½ drachms of calcium chloride daily, the daily urine excretion rose to 30 oz, but there was no loss of weight At the end of seven days the abdomen was tapped and 14 pints of fluid removed, thereby reducing the weight by 23 lb Calcium was discontinued for four days and then given for ten days, during that period the weight was reduced by a further 8 lb and the daily urine excretion increased to 55 oz, the fluid intake being 20 oz The patient was put on a "high calorie" diet and the calcium treatment was continued for nine days, during which he lost a further 21 lb and excreted 77 oz of urine in the twenty four hours When calcium chloride was discontinued the urine became less in amount but remained highly acid The loss in weight with gain in strength continued slowly in spite of the "high calorie" diet at the end of sixty five days he weighed 8½ st, as compared with 14½ st on admission Four months after discharge he weighed 11 st, there was no oedema and he had improved in health and strength The urine still contained much albumin, numerous casts, and a few red and white corpuscles The systolic blood pressure had fallen to 140 mm Hg (2) In a woman, aged 21, severe generalized oedema developed seven years after diphtheria Calcium chloride was given up to 2½ drachms daily Free diuresis occurred, and at the end of treatment all oedema had disappeared except for slight pitting over the lower ends of the tibiæ The authors add that at the end of diuresis both patients were much below their normal weight and both had normal renal function, the calcium treatment appeared to accelerate greatly the disappearance of the oedema The authors give the salt in capsules and find that it is well borne They preferred the chloride to the lactate They note that ammonium chloride is more easily taken than calcium chloride, and they suggest that the former may perhaps supersede the latter in the treatment of these cases

333 The Preparations of Iron and Arsenic

In the report made by Professor Mopawitz (Wurzburg) for the German General Pharmacological Commission (abstract, *Klinische Wochenschrift*, October 7th, 1924, p 1886) the author points out that the preparations of iron used in medical practice should be (1) absorbable, (2) they should produce no injurious effects in therapeutic doses, and especially no dyspeptic symptoms To prevent the formation of astringent iron salts in the stomach, it is advisable that iron should never be given on an empty stomach, and that all alkalies should be administered with these drugs The author divides iron preparations into two groups (1) those easily decomposed (2) those from which the iron is separated with greater difficulty He recommends reduced iron, pills of reduced iron saccharated carbonate of iron Blaud's pills saccharate ferrous

oxide, tinctura ferri pomata (prepared with ferrated extract of apples), liquor ferri alb iminati, lactate of iron, and pills of lactate of iron, in private practice and when a rapid effect of iron is desired He thinks that the numerous haemoglobin preparations need not be considered amongst the active iron preparations, though they may be of service independently of the iron they contain Arsenic should be given by mouth in cachexia, nervous affections, lichen psoriasis etc, but by injection in parasitic diseases When a powerful action of arsenic is required and dyspeptic symptoms are not feared, the form of the 'Asiatic' pill containing arsenious anhydride is recommended Arsacetin (sodium acetyl arsanilicum) is the preparation especially recommended by the author in pernicious anaemia leukaemia and lymphadenoma Atoxyl has produced injurious effects Salvarsan preparations may, he thinks, be of service in addition to their effects in syphilis in recent cases of gangrene of the lungs in alveolar pyorrhoea, in Vincent's angina and periarteritis nodosa, they are very useful in recurrent fever and in malaria (except in the malignant form) as an aid to the quinine treatment Neosalvarsan and silver salvarsan are the preparations recommended

339 Treatment of Chronic Epidemic Encephalitis

M POCH and S KATZENELBOGE (*Schweiz. med Woch*, September 11th 1924, p 834) record five cases of chronic epidemic encephalitis treated by intraspinal injections of casein A 10 per cent solution was used, of which 1/2 c cm (0 05 gram of casein) was added to 10 c cm of normal saline The mixture, still further diluted by part of the cerebrospinal fluid withdrawn by lumbar puncture, was slowly injected into the spinal canal The injection produced a meningeal reaction, which might be severe but was always transient, in the form of fever, headache, nuchal rigidity, and Kernig's sign, lasting from twenty four to forty eight hours The intensity of the reaction which was of the nature of an aseptic meningitis, depended as much (or even more) on the susceptibility of the individual as on the dose of the casein It is always advisable to start with a small dose, such as 1/2 mg, which may be increased in subsequent injections if the reaction produced is too slight All the five cases, of which four were kept under observation more than five months, derived benefit from the treatment Unlike Netter and Guillain, the authors are of opinion that the meningeal reaction caused by the intraspinal injection is beneficial, and consider that a certain proportion of the good results obtained by the vaccine virus employed by Marie and Poincloux in the treatment of epidemic encephalitis is due to this reaction

Ophthalmology

340 Diagnosis of Vertical Deviations of the Eyes

R O CONNOR (*Brit Journ of Ophthalmol*, October, 1924, p 449) emphasizes the importance of prolonged uniocular occlusion as a means for manifesting the full error of heterophoria in any given case He states that often the ordinary tests for heterophoria not only reveal no error, but may actually give wrong information He instances a case of apparent esophoria as shown by the ordinary tests, which, after prolonged occlusion, turned out to be one of right hyperphoria In this case the esophoria was the resultant of the strain upon the intraocular muscles produced by the attempt to counteract the right hyperphoria When the real lesion has been revealed by monocular occlusion great relief will be obtained by the use of prisms if the lesion is not too great Why prisms have so often failed to give relief in the past is, according to O Connor because the full lesion was not manifested For very high degrees he advises advancement of the weaker muscle

341 A New Theory of Accommodation

L JOHNSON (*Arch of Ophthalmol* September 1924 p 426) propounds a new theory of accommodation The usually accepted theory, that of Helmholtz, supposes that the ciliary muscle, by contracting, pulls forward the ciliary processes and by so doing, relaxes the suspensory ligament of the lens, which is attached to the ciliary processes The suspensory ligament being relaxed, the resilient lens is allowed to expand and to become more convex and so to acquire a greater refractive power This explanation gives no place in the mechanism of accommodation to the circular muscle—the fibres of Muller—which surround the margin of the lens and the author suggests the following theory The two ciliary muscles (the radiating and circular muscles) both contract in the process of accommodation and by their combined action, drag forward the choroid and ciliary processes the latter chiefly by the action of the circular muscle, being squeezed into the circumlental space, thereby compressing the fluid in it The compressed fluid in its turn, will press upon the capsule and equator of the lens, causing the surfaces of the lens to bulge The posterior surface cannot bulge into the vitreous, which is incompressible and the increase of pressure is relieved by some of the aqueous fluid flowing into the spaces and clefts between the base of the iris and the cornea—the spaces of Fontana

342 Trichinosis affecting the Eyes and Frontal Sinuses

THOMAS and WARD COOPER (*Amer Journ of Ophthalmol*, July 1924 p 511) describe a case of trichinosis in which the predominant symptoms were referable to the eyes and frontal sinuses The patient came for advice on account of oedema of the eyelids and pain in the frontal region He had also suffered from pains in the joints and muscles and from feverish attacks Much oedema of the lids was found and marked chemosis of the ocular and bulbar conjunctiva In other respects the eyes were normal The blood examination revealed a condition of eosinophilia amounting to 39 per cent This suggested a parasitical cause for the condition and the history of having eaten corned pork a month previously was obtained A piece of gastrocnemius muscle was removed and numerous encysted trichinae were found in it The patient made a slow recovery under symptomatic treatment

Obstetrics and Gynaecology.

343. Fixation of Ovary in the Uterus after Salpingectomy

T TUFFIER (*Surg Gynecol, and Obstet* October 1924 p 401) gives an account of the operation of transposition of the ovary with its vascular pedicle into the uterus after salpingectomy which he has performed on twenty three occasions, in order to preserve menstruation and the possibility of pregnancy The results were excellent in twenty one cases but in two cases late hysterectomy was necessitated, on one occasion for intestinal obstruction not related to the ovarian transposition These two patients completely recovered, and Tuffier adds that the accidents were due to imperfections inseparable from the evolution of a new technique The operation includes the division of the broad ligaments close to the tube the separation of the ovary from all surface adhesions, and its transposition into the previously dilated uterus the greater part of the uterine wound is subsequently closed by three or four interrupted catgut sutures, and a second series of Lembert serous sutures close together The peritoneum of the ovary pedicle which occupies the lower portion of the wound, is accurately sutured to the uterine peritoneum without any compression resulting Tuffier remarks that menstrual periods reappear after two to six months

344 Pathogenesis and Treatment of Uterine Fibroids

P PETIT DUTAILLIS (*La Gynecologie* June 1924, p 32) discusses the theory that a uterine fibroid results from the failure of the uterus to function normally It occurs in women who either have not borne children or who have ceased to bear them while still sexually active He supposes that the fibroid is a manifestation—in a uterus which has menstruated too long without becoming pregnant—of an often repeated intoxication which menstruation has been unable to dispel He argues that menstruation is not to be considered as the normal function of the ovary It occurs independently of the existence or the maturity of the corpus luteum (according to the researches of Schickele) and is a mechanism on the part of the uterus to get rid of reserves which in the absence of fertilization are not needed The normal event for the woman is pregnancy and menstruation is an abnormal phenomenon indicating a failure in function not only of her genital organs but of her whole body The latter is regulated with a view to preserving the species and only when she is pregnant can a woman be said to be in perfect health If menstruation then is a substitute for a normal function he continues it is not surprising that the continued repetition of this palliative results in trophic disturbances to those organs most intimately connected with reproduction When hypertrophy of the uterus is frustrated by the absence of fertilization this potential activity changed by endocrine influence into degeneration Treatment depends on whether local complications are present or absent In the first case myomectomy is recommended in women under 40 for subperitoneal fibroids single or of small number according to Goullioud this treatment results in fertility in at least 25 per cent of cases Special care must be given to the sutures although rupture of the uterus is exceptional Should pregnancy occur the possible existence

of further tumours must be remembered and preparations made in case operative treatment should be necessary Partial hysterectomy is suggested in cases of multiple fibroids local ized in one area, the advantage being that it preserves more of the normal genital function In one kind of operation the fundus is removed with or without the appendages, in the other—unilateral hysterectomy—a unicornate uterus is left behind Myomectomy by the vaginal route is the best operation for accessible fibroids It is usually effective, since such fibroids are generally single Before the era of radiotherapy castration was employed in cases of extreme anaemia To be successful it must be complete, the ovaries being entirely removed, and there must be no inflammatory or degenerative changes in the fibroid Operative treatment has a mortality of 5 per cent, and therefore, according to the author, as a safer procedure, radiotherapy is to be preferred, though it abolishes the possibility of pregnancy At least twelve x ray exposures are required, they may do much harm, but they penetrate where the fibroids have spread out into the parametrium and are out of reach of radium Radium is best administered in the uterus after preliminary dilatation of the cervix, in which procedure, however, care must be taken not to damage the uterine mucosa A small dose left in for four or five days is more efficacious than a larger dose over a shorter period In the second case, where there are local complications, operative treatment is imperative if there is degenerative change or infection Pressure symptoms, though seldom so urgent as to call for immediate hysterectomy, will, however, often turn the balance in favour of operation The symptoms may be relieved by a mild dose of radium Polypoid submucous fibroids may be removed through the vagina, or they may be treated by radium The latter treatment, however, is often followed by temporary flooding, which may last as long as six weeks The author does not suggest that radium will cure all fibroids A certain number may receive palliative treatment, such as thermal waters, for about 25 per cent operation is indicated, and for the remainder radium is the treatment of choice He has treated forty two patients thus, in one the symptoms persisted, four have been lost sight of, and the remainder were cured

345 Premature Rupture of Foetal Membranes

MILDRED VAN CLEVE (*Journ Amer Med Assoc*, August 23rd, 1924, p 612) reports a case of rupture of the foetal membranes about the twenty fifth week of pregnancy, followed by the birth of a living healthy, though premature, infant eight weeks later There was no evidence of amniotic adhesions and no infection of cord, umbilicus, or endometrium The pregnancy began within a few weeks after an abortion and was complicated by a slight premature separation of the placenta The author adds that such a rupture so long before delivery is very rare, and she refers to the few reported cases

Pathology.

346 Susceptibility to Infection of Children and Adults

I NEUFELD (*Zeit f Hyg und Infekt*, July 15th, 1924, p 471) considers the difference in susceptibility to infection which exists between children and adults To such diseases as epidemic meningitis and poliomyelitis, diphtheria, tuberculosis and the various respiratory infections caused by pneumococci and streptococci, children, particularly infants, are considerably more susceptible than adults On the other hand, in the case of such diseases as typhus fever, enteric, and small pox it is the adult population which shows the greater susceptibility On what do these differences rest? It appears fairly certain to Neufeld that they are not to be explained entirely on the ground of acquired immunity children, for example who are brought for the first time into contact with tuberculosis have a higher resistance than have sucklings, moreover, with such a disease as poliomyelitis, infection is not sufficiently widespread to produce any extensive immunization of the population The difference, then, appears to rest on some peculiarity of the natural resistance of the younger members of the community Some years ago Behring maintained that the mucosa lining the digestive tract was more permeable to proteins and to micro organisms in children than in adults, these observations, which might explain the difference have not, however, received any definite confirmation There has recently, nevertheless, accumulated a certain amount of evidence to suggest that, in passing through the digestive mucosa, micro organisms receive in adults some injury which they do not receive in children To test this more fully, the author made some experiments on mice He had found previously that it was quite impossible to infect adult mice with trypanosomes by feeding He now fed young mice, 11 to 13 days old, with blood containing a virulent strain of the nagana trypanosome, and found that three of the animals died of acute infection with these protozoa Arguing from this and from other experiments, he comes to the conclusion that in young individuals the resisting powers of the skin, the mucous membranes, and the lymphatics draining these structures are less fully developed than in the adult In the latter however, the formation of humoral antibodies is not so rapid as in the former On the interplay and mixture of these two resisting mechanisms he explains the difference in susceptibility to infection of the young and the old

347 Relationship of the Suprarenal Gland and the Thymus

H L JAFFE (*Journ Exp Med*, September, 1924, p 375) presents experimental evidence showing that the thymus gland of the rat enlarges rapidly in those animals which survive double suprarenalectomy in good condition for from three to five weeks The thymus enlarges even though the animal loses some weight after the operation This secondary hyperplasia is more marked in the female and is independent of pregnancy The interrelation between the gonads and the thymus is classical, castration before puberty delaying thymus involution for a long time The close association between the gonads and the suprarenals is evident in the enlargement of the latter in pregnancy, ovulation, and castration, and the hypertrophy of the ovaries after suprarenalectomy The author notes that the suprarenal glands are much larger in the female than in the male, and suggests that the sex difference in the secondary thymus hyperplasia is due to the suprarenal glands standing in closer relation to the sex organs of the females than in the male, and the consequent greater disturbances between gonads, suprarenals, and thymus following on double suprarenalectomy Enlargement of the thymus is a feature of the autopsy in cases of Addison's disease, status lymphaticus, and Graves's disease The author believes that the persistence of the thymus which occurs in status lymphaticus, and the regeneration which occurs in Addison's and Graves's diseases, are brought about by the same disturbances in glandular interrelations which bring about regeneration of the thymus in the experimental animal after suprarenalectomy

348 The Vitamin Content of Bananas

EVA SOPP (*Norsk Mag f Laegevidenskaben*, September, 1924, p 732) notes that, while most authorities agree as to the presence of B and C vitamins in bananas, there are divergences of opinions as to the presence of A vitamins She has therefore conducted an experiment on young rats fed on a basal A vitamin free diet The 25 rats used in this experiment were grouped in three classes, and when they had begun to show signs of A vitamin deficiency, and most of them had developed advanced xerophthalmia, they were given different quantities of banana The rats in the first class were given as much banana as they could eat, in addition to the basal A vitamin free diet The rats in the second class were given only 1 gram of banana daily The rats in the third class were given 2 grams of banana daily It was anticipated that, even if there were A vitamins in the banana, only 1 gram a day would be insufficient to cure the xerophthalmia and generally to counteract the effects of the previous A vitamin free diet But it was found that the rats in the second class did practically as well as the rats given a larger banana ration They did not improve much during the first fortnight of the banana feeding, but afterwards they recovered rapidly, and when the experiment was completed after ten to twelve weeks the xerophthalmia had in most cases vanished The daily dose of banana for the rats in the second class being 1 gram for every 50 grams of body weight, the author calculates that a 5 year old child weighing between 26 and 30 lb would require four or five bananas a day, but she adds that a much smaller quantity would probably be sufficient to provide the necessary quantity of A vitamins Her experiments lead her to suggest that the banana is an excellent food for children, not merely because of its pleasant taste, digestibility, high content of sugar and starch (19 to 20 per cent) of protein (4 to 5 per cent), and of fat (0 5 to 1 per cent), but also because of its high vitamin content

349 Balantidiasis

L DE SOUZA CAMPOS (*C R Soc de Biologie*, May 23rd, 1924, p 1341) records a fatal case of dysentery in a child in which stools *Balantidium coli* was found The necropsy, which was performed seven hours after death, showed minute ulcers of the caecum appendix, colon and rectum and more or less extensive areas of superficial necrosis His microscopical examination showed that *Balantidium coli* had penetrated all the coats of the large intestine and had also invaded the lymphatic glands and blood vessels in which it had given rise to an inflammatory reaction, especially of the lymphocytes and plasma cells The superficial necrosis was probably due to secondary infection

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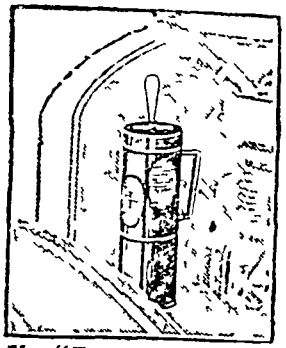
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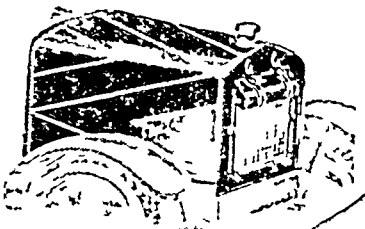


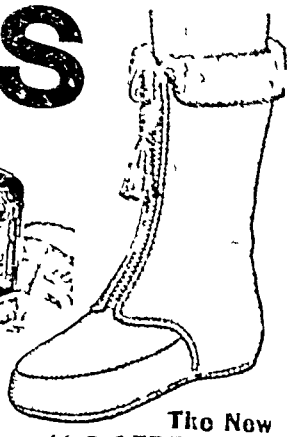
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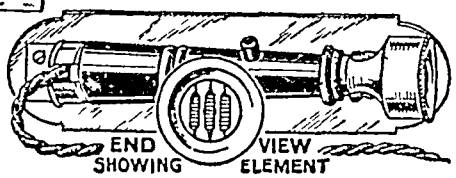
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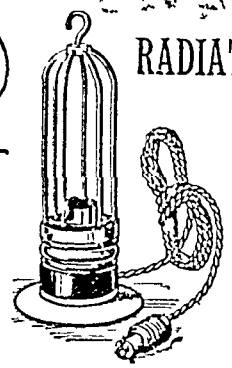
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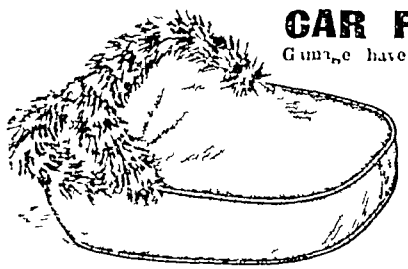
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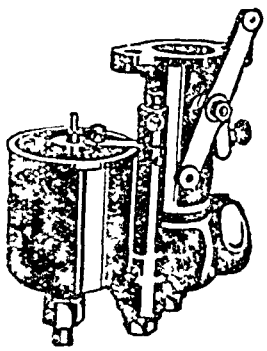
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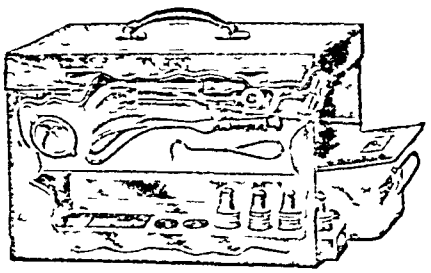
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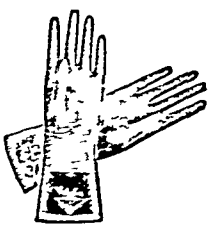
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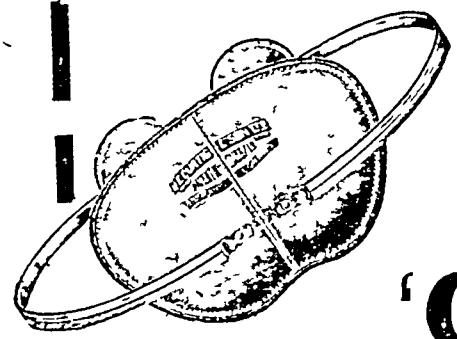
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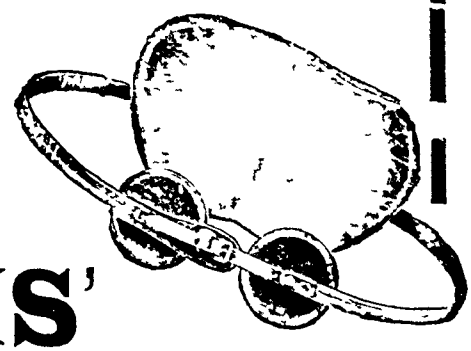
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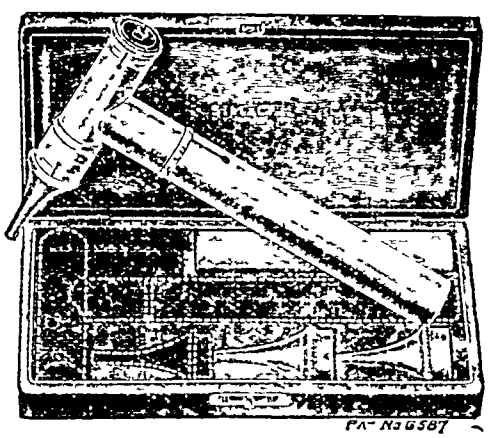
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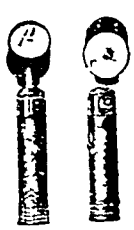
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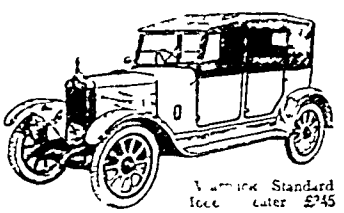
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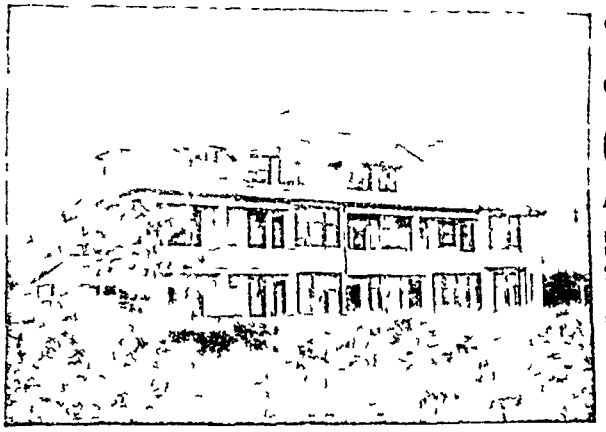
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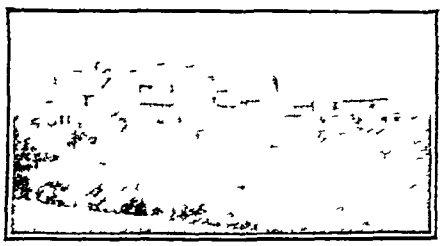
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AT MURTLE, ABERDEENSHIRE

Senior Physician Dr J M JOHNSTON

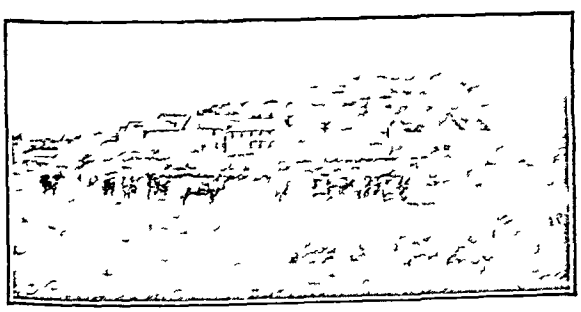
Assistant Physicians Dr JAMES LAWSON & Dr A. C FOWLER

The South Branch of the British Red Cross Society is prepared to contribute to the payment of the fees of ex Officers and other persons recommended by the Society and such Officers and Nurses obtain priority of admission.

Inclusive terms **7 Guineas a week.**

For further particulars apply SECRETARY

MUNDESLEY SANATORIUM,



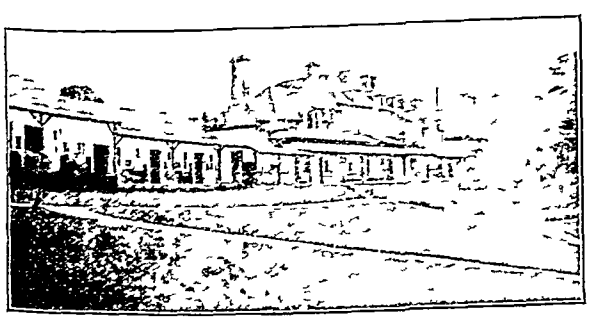
Specially built for the treatment of Pulmonary and other forms of Tuberculosis Aspect S S W on a carefully chosen site Pure, bracing air High sunshine record Heliotherapy Arc light treatment One mile from the coast Electric light throughout X ray installation Full day and night Nursing Staff

Resident Physicians

S VERE PEARSON, M D (Camb), M R C P (Lond), GEOFFREY LUCAS, B A (Camb), M D (Durham), L WHITTAKER SHAPP, M B (Camb)

Apply the Secretary, Sanatorium, Mundesley, Norfolk.

THE COTSWOLD SANATORIUM



Specially built in 1898 on the Cotswold Hills seven miles from Cheltenham, for the treatment of Pulmonary Tuberculosis on Nordrach lines S S W aspect, elevation 800 ft Pure bracing air Heliotherapy All forms of treatment available X Ray installation Electric light Hot and cold basins Radiators in all rooms

Full day and night Nursing Staff

Resident Physicians ARTHUR H HOFFMAN, M D and G A HOFFMAN, M B

Apply The Secretary, The Cotswold Sanatorium, Cranham, Gloucester

Telephone — Painswick Telegrams "Human Birdlip"

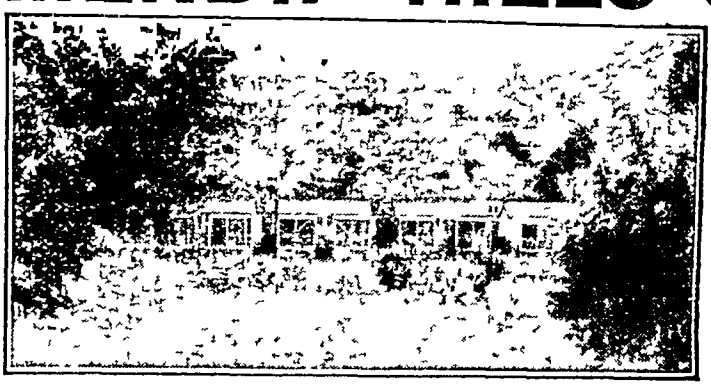
FARMWOOD SANATORIUM, ASCOT.



This Sanatorium has recently been opened A large country house has been entirely re decorated and equipped for the treatment of patients suffering from PULMONARY and other forms of TUBERCULOSIS It is situated one mile from Ascot and twenty four miles from London The Medical Staff consists of a consulting Physician and two visiting Physicians

For full particulars, apply to the Lady Superintendent, Farmwood, Ascot

MENDIP HILLS SANATORIUM



Specially built, facing south 300 acres of Sanatorium grounds—meadow and woodland, sheltered pine avenues Altitude 850ft Magnificent view for miles south, hot water radiators and electric light in each room and chalet

All forms of treatment, including X ray, Vaccines, and Pneumothorax in suitable cases Trained Nurses Individual attention

For particulars, apply SECRETARY, Hillgrove, Wells, Somerset Telegrams Hillgrove Wells, Somerset

Resident Physicians Dr C MUTHU, Dr F C BRENTNALL

PRIOR PLACE SANATORIUM - HEATHERSIDE, CAMBERLEY.

Recently opened for the Treatment of PULMONARY TUBERCULOSIS

Well situated on high ground and surrounded by pines and heather

Resident Medical Superintendent DR H O BLANFORD, late Medical Superintendent, King Edward VII Sanatorium, Midhurst to whom applications for particulars may be made

PENDYFFRYN HALL SANATORIUM (EST. 1900)

Artificial Pneumothorax and all Modern Methods of Treating Tuberculosis available under Ideal Conditions
Insulin Administration (with Blood Sugar Control) available for Suitable Cases

Resident Physicians BERKELEY ASH, M R C S, L R C P, late First Assistant to King Edward VII Sanatorium, MIDHURST,
C H BRODRIBB, M B B S Lond, M R C S, L R C P late Physician in Charge King Edward VII Memorial Hospital, Secunderabad,
P L T BENNETT, M C, L R C P T D D late Assistant Resident Medical Officer to BROMPTON Hospital for Diseases of the Chest.
Matron Miss L HANSON, late King Edward VII Sanatorium, MIDHURST assisted by a full Day and Night Nursing Staff
For full particulars apply to S GUTHRIE Esq Assistant Secretary PENDYFFRYN HALL, PENMAENMAWR N WALES

LINFORD SANATORIUM,

RINGWOOD, NEW FOREST, HANTS.

Established 1898 for the treatment of Tuberculosis Radiators and Electric Light throughout Hot and cold Spray and shower baths in nearly all rooms Powerful X ray Plant Full Nursing Staff All forms of treatment available Farm of 120 acres, including 40 acres of wood Herd of Tuberculin-tested Guernsey cows kept.

Resident Physicians—ARTHUR DE W SNOWDEN, M D, B Ch (Cantab), JAMES D MACRAE, M B, Ch B (Glas.), A G L WILLCOCK, M R C S, L R C P



HOSPITAL FOR CONSUMPTION

AND DISEASES OF THE CHEST,

BROMPTON,

and FRIMLEY SANATORIUM.

SPECIAL WARDS FOR PAYING PATIENTS

3 to 3½ Guineas per week.

Apply to the Secretary, Brompton Hospital, S.W. 3

GRAMPIAN SANATORIUM

KINGUSSIE, INVERNESS SHIRE.

Specially built for the Open Air Treatment of Tuberculosis at 1,050 feet above sea level. Beautiful situation in pine wood. Graduated exercise. Electric light throughout. Hot and cold water in all rooms. Fully equipped X Ray Plant. In case of vacancies available at present — The Trial of [illegible] days all night. **A few rooms are now reserved for Surgical Cases not requiring immediate operation.** For terms and further particulars apply to Medical Superintendent, KINGUSSIE, N.B.

THE FELLOWSHIP OF MEDICINE AND POST-GRADUATE MEDICAL ASSOCIATION

1, Wimpole Street, London, W. 1.

Telephone MAYFAIR 2236

Post-Graduate Courses in the Associated General and Special Hospitals are arranged for November and December in the following subjects: Dermatology Gynæcology Proctology Venereal Disease Intensive Courses in Medicine Surgery and the Special Departments Dermatology and Diseases of Infants.

Further particulars of these Courses and the *Bulletin* giving information of the clinical opportunities at the London Hospitals may be had from the Secretariat.

HERBERT J PATERSON M.C. ARTHUR J WHITING M.D. Hon. Secretaries.

MEDICAL CORRESPONDENCE COLLEGE

19, WELBECK STREET, LONDON, W 1

Telephone LANGHAM

PROVIDES HIGHLY SUCCESSFUL ORAL AND POSTAL COACHING FOR ALL MEDICAL EXAMINATIONS

Special Preparations for all Surgical Qualifications

F.R.C.S. ENGLAND (Primary & Final) — CH.M. EDINBURGH
F.R.C.S. EDINBURGH — M.C. CANTAB
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And all other Surgical Degrees and Diplomas

"The remarkable success of students of the Medical [illegible] the first attempt, and Candidates who have failed at these Exams. on several previous [illegible] and up-to-date, and the test questions are carefully selected from those set at previous Exam. nations so as to embrace all parts of the subject. By working systematically through the Course the Student is brought up to the examination standard in the minimum time and much unnecessary reading is saved.

VALUABLE BOOK

How to Pass the F.R.C.S." free on application to the Secretary.

M. D. THESIS

(Cambr., Edin., Glasg., Durham, &c.)

SKILLED COACHING, GUIDANCE, and ADVICE from Special Tutors in conformity with the Regulations of the various Universities. Apply for particulars and free booklet Hints on Writing a Thesis for the M.D. Degree to the SECRETARY, Medical Correspondence College, 19 Welbeck Street, London, W.1.

REALLY GOOD GIRLS' SCHOOL AT REASONABLE INCLUSIVE FEES

MARLBOROUGH COLLEGE

Tytherington Hall, Cheshire, nr. Macclesfield

Sound Education. Upper and Lower Schools. Preparation when desired for all University Entrance Exams. The Staff includes M.A., B.A., Higher Local (Cam.), Inter. B.A., Mus. Bac., L.R.A.M., L.T.C.M., B.I.B., &c. Games. Coached by Varsity Man. Splendid Health Record. Prospectus from Secretary.

PORTH EAST LONDON POST GRADUATE COLLEGE,
PRINCE OF WALES'S GENERAL HOSPITAL, N.15

The Practice of the Hospital is limited to Medical Practitioners. For particulars apply to A. J. WHITING, M.D., Dean.

Classes and Practice Dances held

UNIVERSITY EXAMINATION POSTAL INSTITUTION.

17, RED LION SQUARE, LONDON, W.C.1

Telephone CENTRAL 5313

Principal: Mr. E. S. WEYMOUTH, M.A. (Lond.)

POSTAL OR ORAL PREPARATION FOR ALL MEDICAL EXAMINATIONS

(Forty years' experience in Postal Tuition.)

SOME SUCCESSES

M.D. (Lond.), 1901-24, (9 Gold Medalists during 1913-24)	273
M.S. (Lond.), 1902-24 (including 3 Gold Medalists)	18
M.B., B.S. (Lond.) *Final* 1906-24 (Completed Exam.)	163
Primary F.R.C.S. (Eng.), 1906-24	115
Final F.R.C.S. (Eng.), 1900-24	83
M.R.C.P. (Lond.), 1914-24	81
D.P.H. (Various) 1906-24 (Complete Exam.)	224
F.R.C.S. (Edin.), 1918-24	21
M.R.C.S., L.R.C.P. *Final* 1910-24 (Completed Exam.)	233
M.D. (Dur.) (Practitioners) 1906-24	33

M.D. Various, B. Theses. Numerous successes. M.B. (Cantab., &c.), First, Second and Final.

Special Postal Courses for these Diplomas —

DPM | DLO
D.T.M. & H. | D.O.M.S.

ORAL CLASSES for M.D., M.R.C.P. & F.R.C.S., also M.B., B.S. and Conjoint (2nd and Final). Also private tuition.

Medical and Surgical Clinics.

List of examinations.

LONDON SCHOOL OF HYGIENE & TROPICAL MEDICINE,

Division of Tropical Medicine & Hygiene,

Endsleigh Gardens, N.W.1.

Next Session will commence Sept. 30th and Oct. 22nd, 1924.

For Prospectus and further particulars apply to The Secretary, Endsleigh Gardens, N.W.

University of Cambridge

DIPLOMA IN MEDICAL RADIOLOGY AND ELECTROLOGY

Six Months' Courses of LECTURES and PRACTICAL INSTRUCTION in Part I. (Physics and Electro-technics) and in Part II. (Radiology and Electrology) will be given in London beginning October 1st, 1924, and in Cambridge and London beginning January 7th, 1925, for Examination at the end of the Courses.

For further particulars of the London Course apply to STANLEY MELVILLE, M.D., British Institute of Radiology, 2 Wimpole Street, London, W. and of the Cambridge Courses to F. SHILLINGTON SCALES, M.A., M.D., Medical School, Cambridge.

POST-GRADUATE TEACHING

WEST LONDON HOSPITAL.

Continuous Clinical Work in all Departments—

CLINICAL ASSISTANTSHIPS—

F.R.C.S. (FINAL) COURSE.

For further particulars apply to Mr. H. J. SIMSON, Dean, West London Hospital, Hammersmith, W.6.

STAMMERING, SPEECH DEFECTS

BEHNKE METHOD. Established 1901. Classes now resident at Cavendish Hotel, Jermyn Street, S.W., and Princes Mansions, Princes Street, Kensington, W. Individual lessons in the Summer holidays at Miss BEHNKE's House on the Chilterns.

Permanent success in the education and treatment of stammering and other speech defects.—*The Times.*

"Thoroughly psychological principles."—*The Lancet.*

"The method is scientifically correct and perfectly effective."—*Guy's Hospital Gazette.*

STAMMERING, CLEFT PALATE SPEECH, LISPING, &c. Pupils of Miss BEHNKE, 6 Earl's Court Sq., S.W.5.

ST. MICHAEL'S, BUXTON, BOARDING SCHOOL FOR GIRLS

Graduate Staff. Preparation for University Examinations. Splendid health record. Special attention given to delicate girls. Moderate Fees. Apply Principals.

SCHOOL FOR THE DEAF.

Also for nervous and defective speech in hearing children.

KINGSFIELD HOUSE, Oxhey, Herts.

Principal: Miss A. BULLOCK, Qualified Teacher of the Deaf. Large House and garden. Outdoor-life games. Close Bushey & Oxhey Stations. L.M.S.R. & Bakerloo.

University of London

The SIMON LECTURE for 1924 entitled "MALIGNANT DISEASE OF THE GULLET" will be given by Dr. D. GUILFORD BAIN at the Rooms of the Royal Society of Medicine, 1 Wimpole Street, W.1, by kind permission, on Thursday, November 6th, at 5 p.m. The Lecture will be delivered in French and illustrated with lantern slides. The Chair will be taken by Sir WILLIAM HENRY HALE WHARTON, K.B.E., C.B.

Admission free without ticket.

A Course of Four Lectures on ENZYMES will be given by Professor JOHN MELLANBY (Professor of Physiology in the University) at St. Thomas's Hospital Medical School, Albert Embankment, S.E.1, on Thursday, November 13th, 20th and 27th, 1924, at 4.30 p.m.

Admission free without ticket.

EDWIN DELLER, Academic Registrar.

Glasgow Post Graduate

MEDICAL ASSOCIATION

A SERIES OF WEEKLY DEMONSTRATIONS for Medical Practitioners has been arranged in the various hospitals of Glasgow from the beginning of September till the end of May. Six shorter SPECIAL COURSES will also be conducted. An CLINICAL ASSISTANTSHIPS are available in some of the hospitals.

The Syllabus of these Demonstrations may be had on application to the Secretary, Post-Graduate Medical Association, The University, Glasgow.

Courses of Post-Graduate

Instruction in UROLOGY at the HALLIDAY ST. MARK'S HOSPITAL, Vauxhall Bridge Road, S.W.1, the next course commencing early in November. The Fee for the three months Course is Five Guineas.

Applications to be made to the Secretary, who will furnish any additional information required.

Shropshire Orthopædic

HOSPITAL, Goldstone, near Oswestry.

COUNTY OPEN 111 WARDS 78 BEDS

GIPS—STUDENTS WANTED to train Out-Patient Work and help prepare for the Conjoint Exam. and the C.S.M.M.G. Three years training, salary first year £16, second year £20, and found. Interview—Apply Miss HUSSEY, R.N.C.

Examining Board in England

BY THE
ROYAL COLLEGE OF PHYSICIANS OF LONDON
AND THE
ROYAL COLLEGE OF SURGEONS OF ENGLAND

PRE MEDICAL EXAMINATION

This Examination will commence on Tuesday 30th December 1924

FIRST EXAMINATION

This Examination will commence on Tuesday, 30th December 1924

SECOND EXAMINATION

This Examination will commence on Thursday 1st January 1925

THIRD OR FINAL EXAMINATION

This Examination will commence on Tuesday, 6th January 1925

DIPLOMA IN LARYNGOLOGY AND OTOLOGY

Part I of this Examination will commence on Monday, 1st December and Part II on Friday, 5th December 1924

DIPLOMA IN PSYCHOLOGICAL MEDICINE

Part I of this Examination will commence on Monday, 8th December and Part II on Friday, 12th December 1924

DIPLOMA IN PUBLIC HEALTH

Part I of this Examination will commence on Monday 15th December and Part II on Monday 29th December 1924

DIPLOMA IN TROPICAL MEDICINE AND HYGIENE.

This Examination will commence on Monday, 15th December 1924

DIPLOMA IN OPHTHALMIC MEDICINE AND SURGERY

Part I of this Examination will commence on Monday 5th January and Part II on Friday, 9th January, 1925

Candidates who have completed the prescribed courses, and who desire to present themselves for Examination must forward the necessary schedule or schedules through the post to the Examination Hall Queen Square Bloomsbury London, W C fourteen days before the Examination commences

FREDERIC G HALLETT
October 21st 1924 Secretary

Royal College of Surgeons of ENGLAND

DIPLOMA OF FELLOW (with Ophthalmology)

Notice is hereby given that the next Examination for the DIPLOMA of FELLOW (with Ophthalmology) will commence on Friday December 12th 1924

Candidates are required to give not less than four weeks notice of their desire to present themselves for Examination

Particulars relating to this Examination may be obtained from the Director of Examinations (Mr F G HALLETT) Examination Hall Queen Square Bloomsbury London W C, to whom all applications should be addressed

The required fees must be paid three days prior to the Examination

October 21st 1924

Royal College of Physicians OF LONDON

Dr F JOHN POYNTON will deliver the BRADSHAW LECTURE on TUESDAY November 4th

Subject 'The Prevention of Acute Rheumatism'

Sir STCLAIR THOMSON will deliver the MITCHELL LECTURE on THURSDAY November 6th

Subject 'Tuberculosis of the Larynx, and its significance to the Physician'

Any member of the Medical Profession admitted on presentation of card

H M BARLOW
Bedell and Secretary

Liverpool School of Tropical MEDICINE

COURSES OF INSTRUCTION (lasting three months) for the Diploma, and also in Veterinary Parasitology commence about SEPTEMBER 15th and JANUARY 7th —Prospectus from the Hon DEAN School of Tropical Medicine University of Liverpool

Small Private Residential

SCHOOL established 21 yrs. for the Physical and Mental Development of ABNORMAL and BACKWARD PUPILS Special Department Pupils over school age Under Medical supervision — Prospectus Mrs MITCHELSON Principal St Paul's House Upper Maze Hill, St Leonards-on Sea.

Leicester Royal Infirmary

There are vacancies for two SURGICAL DRESSERS—final year students preferred An honorarium of 10 6d per week is paid Board apartments and laundry are provided Applications to the House Governor and Secretary of the Infirmary

ROYAL NAVAL MEDICAL SERVICE.

SHORT SERVICE SCHEME

The Admiralty are prepared to accept applications for entry as SURGEON LIEUTENANTS for Short Service in the Royal Navy

Period of Service—3 years, with option to extend for further twelve months

Pay—25s per diem, or £456 5s. per annum

Gratuity on discharge—£8 6s 8d for each completed month of service or £100 per annum.

Equipment allowance—£50, payable on joining.

Age of candidates—Not to exceed 30 years

Surgeon Lieutenants on the Short Service Scheme will be considered for transfer to the Permanent Service under certain conditions after six months service.

Regulations for entry and form to be filled up by candidates will be supplied on application to the Medical Director General 68, Victoria Street, London S W 1

County Borough of Bolton

ASSISTANT (WOMAN) MEDICAL OFFICER OF HEALTH AND SCHOOL MEDICAL OFFICER

The Public Health and Education Committees invite applications for the appointment of an Assistant Medical Officer of Health and School Medical Officer, who must be a woman

The person appointed will be required to give half her time to the Medical Examination of School Children, under the Education (Administrative Provisions) Act, 1907, and half her time to Maternity and Child Welfare She will work under the control of the School Medical Officer and Medical Officer of Health She must be prepared to devote the whole of her time to the duties of the offices and will not be allowed to engage in private practice.

Preference will be given to applicants who —

(a) Have had some definite experience in school Hygiene
(b) Have had special opportunities for the study of children and have had practical experience in maternity and child welfare work
(c) Have had experience in the diagnosis and treatment of venereal diseases

The D P H is not essential.

The salary will be £600 per annum, without bonus.

Applications, endorsed "Assistant Medical Officer, stating age qualifications, and previous experience and accompanied by not more than three recent testimonials must be sent not later than Monday November 17th 1924 to Dr C W PAGET MOFFATT Medical Officer of Health Public Health Department, Bolton, Lancs

Canvassing either directly or indirectly will be a disqualification

Education Offices, Nelson Square, Bolton — FRED WILKINSON Director of Education.

Saint Bartholomew's Hospital, ROCHESTER (120 Beds)

Rochester, Chatham Gillingham & District

Applications are invited for the post of THIRD RESIDENT MEDICAL OFFICER to act as Casualty Officer, which will become vacant on November 22nd, 1924

Candidates must be unmarried qualified and registered Medical Men The appointment is for six months which may be renewed for a further period if desirable Salary is at the rate of £200 per annum, with board residence, and laundry

Applications, stating age, qualifications experience, etc, accompanied by copies of three recent testimonials to be sent to the Secretary not later than Monday November 10th 1924

St Mary's Hospital for WOMEN AND CHILDREN, Plaistow E 13

Applications are invited for the posts of RESIDENT MEDICAL OFFICER and ASSISTANT RESIDENT MEDICAL OFFICER, (vacant November 30th) male or female The appointments are six months Board residence and laundry are provided Salaries at the rate of £175 and £130 per annum respectively The duties of the R M O are mainly administrative and surgical and those of the A R M O mainly medical.

Personal canvassing not desired

Applications with copies of three recent testimonials to be sent to the undersigned not later than November 5th

ERNEST WILKES Secretary

The Kensington Fulham and CHELSEA GENERAL HOSPITAL,

Fulham Road Earl's Court S W 6

Applications are invited for the posts of SENIOR and JUNIOR RESIDENT MEDICAL OFFICERS The appointments are for six months from January 1st, 1925 Salaries —

£100 per annum Senior
£75 per annum Junior

Applications stating age with copies of three recent testimonials should be forwarded to the undersigned on or before November 11th 1924

Mr FREDK J JONES Secretary

County Borough of Plymouth

MEDICAL OFFICER OF HEALTH

The Council of the County Borough of Plymouth invite applications for the post of Medical Officer of Health for the Borough

Applicants must be duly qualified and registered Medical Practitioners holding the Diploma of Public Health, must be not more than 45 years of age and must have had previous experience of the duties of a Medical Officer of Health of a County or a Borough.

The person appointed must devote the whole of his time to the duties of the office, and must pass an examination as to his health. The duties of the office include those of the Port Medical Officer and Medical Inspector of Aliens, General Medical Superintendent of the Plymouth Borough Hospitals, and Medical Officer in connection with the Schools, Maternity and Child Welfare Treatment of Tuberculosis and Venereal Diseases and such duties as are ordinarily performed by a Medical Officer of Health and such as may from time to time be delegated by the Council

The present Medical Staff consists of a Deputy Medical Officer of Health nine Assistant Medical Officers, and a Pathologist

The salary will be £1 200 per annum, rising by annual increments of £50 to £1 100 per annum

The engagement to be determinable by three months notice on either side

Applications, accompanied by copies of not more than three recent testimonials and endorsed "Medical Officer of Health, must be delivered to me not later than November 5th 1924

Forms of application will not be provided.

Canvassing will be a disqualification, but fifteen copies of the application and testimonials may be forwarded to me for the use of members of the Public Health Committee

R J PITTALL, Town Clerk.
Municipal Office Plymouth October 15th 1924

Wilts County Council

APPOINTMENT OF ASSISTANT COUNTY MEDICAL OFFICER OF HEALTH AND ASSISTANT SCHOOL MEDICAL INSPECTOR

The Wilts County Council invite applications for the appointment of an Assistant County Medical Officer of Health and Assistant School Medical Inspector Applicants must be fully qualified Medical Men, holding a diploma in Public Health or an equivalent qualification and have had some special experience in Tuberculosis A practical knowledge of Mental Deficiency is also desirable

The duties of the post will be chiefly concerned with the School Medical Service but a proportion of the Officer's time will be allocated to the Public Health work of the County He will be required to devote his whole time to the duties of the office and to act under the direction and control of the County Medical Officer of Health, who is also School Medical Officer

The salary will be £600 per annum and will be subject to a deduction of 5 per cent. for superannuation under the Local Government and other Officers Superannuation Act 1922 and the candidate selected will be required to pass a medical examination The appointment will be determinable by three months notice on either side

Applications, on form to be obtained from the undersigned, together with copies of not more than three recent testimonials are enclosed in envelope marked "Assistant County Medical Officer" to be lodged with the undersigned not later than Thursday, November 6th 1924

Canvassing, either directly or indirectly is strictly prohibited and will be regarded as a disqualification

W L BOWN
Clerk of the County Council
County Offices Trowbridge October 17th 1924

Parish of Fulham.

THIRD ASSISTANT MEDICAL OFFICER

The Guardians of the above named Parish require a Third Assistant Medical Officer at their Infirmary, St Dunstan's Road Hammersmith W 6

Salary at the rate of £250 increasing £25 yearly to £300 per annum with board furnished apartments and washing, subject to the provisions of the Poor Law Officers Superannuation Act 1896

Applications stating full qualifications and experience to me by 10 a.m., on Tuesday November 11th 1924

Guardians Offices, 129 Fulham Palace Rd, London W 6 — E J MOTT Clerk to the Guardians

Countess of Dufferin's Fund

WOMEN MEDICAL SERVICE FOR INDIA

Two Medical Women required for General service to proceed to India in January next on probation at a salary of Rs 550 per month, furnished quarters provided, passage and outfit allowance Applications on prescribed form (which will be sent on receipt of stamped addressed envelope) should be addressed to the Hon Secretary, Indian Branch, Dufferin Fund, 19 Hyde Park Mansions, London, N W 1, and must reach there not later than November 15th 1924

APPOINTMENTS—Important Notice.

(a) British Islands.

Medical Practitioners are requested not to apply for any appointment referred to in the following table without having first communicated with the Medical Secretary of the British Medical Association, 429, Strand, London, W.C.2.

Town or District | Town or District | Town or District

CONTRACT PRACTICE.

ENGLAND.

CANNOCK CHASE AND DISTRICT
(Contract Friendly Societies Appointment.)

MIDDLESBOROUGH
(Medical Aid Associations or Workmen's Clubs.)

SOUTH BANK & ESTON
(Medical Aid Associations or Workmen's Clubs.)

WALES.

ABERTRIDWR GLAMORGAN
(Workmen's Medical Society.)

EBBW VALE MON
(Workmen's Medical Society.)

GILFACH GOCH GLAMORGAN
(Workmen's Medical Scheme.)

LLWYNYPIA CLYDACH VALE, PENYGRAIG GLAMORGAN
(Workmen's Medical Scheme.)

MARDY GLAMORGAN
(Workmen's Medical Scheme.)

WALES (continued)

OAKDALE MON
(Medical Officer for Medical Aid Association.)

OGMORE VALLEY GLAMORGAN
(Workmen's Cottage Hospital Society.)
(Workmen's Medical Scheme.)

TONDU & ABERKENFIG GLAMORGAN
(Workmen's Medical Scheme.)

PUBLIC HEALTH.

ARGYLLSHIRE EDUCATION AUTHORITY.
(Assistant School Medical Officer.)

CHELSEA METROPOLITAN BOROUGH
(Part-time Medical Officer of Health.)

CHESTER LE STREET RURAL DISTRICT COUNCIL.
(Medical Officer of Health.)

COLCHESTER BOROUGH
(Assistant School Medical Officer.)

GLASGOW EDUCATION AUTHORITY
(Assistant School Medical Officers.)

PUBLIC HEALTH (continued)

LANARK COUNTY
(Medical Officer of Health.)

LINCOLN CITY EDUCATION AUTHORITY.
(Whole-time Assistant School Medical Officer.)

MIDLOTHIAN EDUCATION AUTHORITY.
(School Medical Officer.)

NORTHUMBERLAND COUNTY COUNCIL.
(Woman Assistant Medical Officer of Health.)

NOTTINGHAMSHIRE.
(County Medical Officer of Health.)

PORTSMOUTH EDUCATION COMMITTEE
(Whole-time Assistant School Medical Officer.)

SOUTHWARK METROPOLITAN BOROUGH
(Tuberculosis Officer.)

STIRLING ROYAL BURGH
(Medical Officer of Health, Tuberculosis Maternity and Child Welfare and V.D. Officer, Part-time Doctor and Medical Attendant at Combination Infectious Diseases Hospital.)

WIGAN COUNTY BOROUGH
(Assistant School Medical Officer.)

(b) Colonial Medical Service.

WINDWARD ISLANDS MEDICAL SERVICE
(Grenada with Carriacou, St. Vincent and St. Lucia).

(c) Overseas Appointments.

Medical Practitioners are requested not to apply to any appointment referred to in the following table without having first communicated with the Honorary Secretary of the Division or Branch named in the second column or with the Medical Secretary of the British Medical Association, 429 Strand, London, W.C.2

Town or District.	Hon. Sec. of Division or Branch	Town or District.	Hon. Sec. of Division or Branch	Town or District	Hon. Sec. of Division or Branch.
NEW SOUTH WALES. (All Friendly Society Appointments.)	Dr. R. H. TODD (Hon. Sec. New South Wales Branch) B.M.A. Building 30-34 Elizabeth Street, Sydney N.S.W.	QUEENSLAND (Brisbane Associated Friendly Societies' Institute.)	Dr. E. MARSHALL ALLAN (Hon. Sec. Queensland Branch) Adelaide Street Brisbane.	VICTORIA (All Institute or Medical Dispensaries.)	Dr. FRANK DAVIES (Hon. Sec. Victorian Branch) Medical Society Hall, East Melbourne, Victoria.
				WESTERN AUSTRALIA (Contract and Lodge Practices.)	Hon. Sec. Western Australian Branch, No. 9 Bank of New South Wales Chambers, 5 Georges Terrace, Perth.

Address 429 Strand, W.C.2.
October 29th 1924

By order of the Council of the British Medical Association,
ALFRED COX, Medical Secretary

Hampshire County Council

WHOLE-TIME DENTAL SURGEON

Applications are invited for the appointment of Whole Time Dental Surgeon (L.D.S.) on the staff of the County Medical Officer at a salary of £500 per annum, with travelling and subsistence allowances in accordance with the County scale.

Particulars of the appointment and forms of application may be obtained from the County Medical Officer The Castle Winchester and applications must be delivered to him not later than November 20th 1924

Royal Edinburgh Mental HOSPITAL

ASSISTANT PHYSICIAN (Resident) wanted Preference given to candidates with General Hospital experience and to those holding a Diploma in Psychological Medicine Ample facilities for research Salary £350 with board lodging and laundry Apply to Professor GEORGE ROBERTSON Tipperlinn House Edinburgh

Resident Secretary and SURGICAL SUPERINTENDENT SCHIFF HOME OF RECOVERY Cobham Surrey Married, without children living at home Age over 40 Salary £600 with board for self and wife Beds 100 Farm and garden of 40 acres. Applications (by letter only) on or before November 10th 1924 to D. L. HAWKER 9 Thurloe Square S.W.

Queen Charlotte's Maternity HOSPITAL

(Formerly Queen Charlotte's Lying-in Hospital)
Marylebone Road N.W.1

TWO ASSISTANT RESIDENT MEDICAL OFFICERS male or female required to commence their duties on December 1st 1924 Applicants must be registered Appointment for four months The selected candidates will take alternate duty in the In-patient Department and on the District

The post of SENIOR RESIDENT MEDICAL OFFICER will also become vacant on December 1st 1924 The salary of the Assistant Resident Medical Officers is at the rate of £80 per annum and of the Senior Resident Medical Officer £100 per annum with board residence and washing allowance (4/- weekly) The present Assistant Resident Medical Officers are candidates for the senior post

Applications, with copies (not originals, of not more than three testimonials will be received by the Secretary up to November 5th.

London Hospital, E.1

Applications are invited for the post of FIRST ASSISTANT to one of the four Medical Firms.

The salary will be £400 per annum which will be paid by the Hospital and the Medical College jointly

Applications will be received up to first post on Friday November 7th

Particulars of the appointment may be obtained from the House Governor London Hospital E.1

The Queen's Hospital for CHILDREN

Hackney Road Bethnal Green, E.2
(Telephones: 201 and 204 Cassond.)

The Committee invite applications for the post of PHYSICIAN-IN-CHARGE of the Skin Department. Candidates who must be Fellows or Members of the Royal College of Physicians of London should send in their applications with copies of testimonials on or before November 1st and should be prepared to take up the duties immediately after appointment

Information re duties and times of attendance on application.

T. GLESTON-KERR Secretary

October 11th 1924

Applications are invited for the post of ASSISTANT MEDICAL OFFICER, British Honduras. The appointment is on probation for three years, and if confirmed made pensionable for the whole period of service. Salary $2,420-$120-$3,150 Local dollar is approximately of same value as United States dollar. Private practice and other duties may be allowed to exceed $500 per annum. Free quarters are provided or an allowance of $360 per annum in lieu. Free passage to the Colony for the officer and his wife and child or children not exceeding four in number.

Further particulars and if necessary a form of application can be obtained from the Private Secretary (Appointments Column), Colonial Office, Downing Street, London.

Wanted — Assistantship (outdoor) or APPOINTMENT in or near London or provincial city by well qualified practitioner aged 28 Over 3 years experience general practice Total abstainer Keen on surgery and obstetrics —Address No 5506 B M J, 429 Strand

Wanted —Assistantship, LOCUM or any medical post, by M B, B Ch (Hons) Belfast now in London Male, single æt 26 Abstainer Newly qualified Well received energetic reliable Free now Excel testis Apply Doctor Broad Elms Alexandra Grove N 12

Wanted — Assistantship by L R C P, L M L R C S (Irel) æt 38 General experience including tropical and a little panel Pormancy with prospects desired if possible —Address No 5518, BRITISH MEDICAL JOURNAL Office 429 Strand W C 2

Wanted, short Assistantship or LOCUM WORK (Dec to Feb) Scotsman, M B Ch B 21 years Since qualification study D P H (Camb) Part I passed Post grad courses Glasgow Some exp pri and panel practice Keen worker —Add, No 5505, B M J 429 Strand W C

Wanted — Assistant, Glamorganshire £200 indoors Please give fullest particulars first application —Address No 5522 BRITISH MEDICAL JOURNAL Office 429, Strand, W C 2

Wanted — An outdoor qualified ASSISTANT in a South Wales Colliery Practice Usual bond —Address giving age references and all essential particulars No 5523 BRITISH MEDICAL JOURNAL Office 429, Strand W C 2

Wanted by M B, B S, D P H, ASSISTANTSHIP with or without view, or part time work Long experience panel and private practice Married Total abstainer Recent testimonials —Address No 5511 BRITISH MEDICAL JOURNAL Office, 429, Strand, W C 2

Wanted immediately — ASSISTANT (male) Liverpool Panel, no midwifery, time for reading Rooms, light and attendance Advantageous if Catholic —Address No 5520 BRITISH MEDICAL JOURNAL Office, 429, Strand W C 2

Assistantship wanted by M B Dublin, 1921 age 27 single energetic competent, sober loyal, reliable well received accustomed to sole charge when required locum taken special experience in mid Excellent testimonials Free —Add, No 5306 B M J Office 429, Strand

Assistantship wanted by M B B Ch (Dub Univ) woman qualified 1923 Some experience Cyclist can drive car Keen Excellent testimonials —Address No 5513 BRIT MED JOURN Office 429 Strand W C 2

Assistantship wanted by Woman (M B Ch B 1921), Scotch Hospital experience—general, maternity children anæsthetics Free now —Address No 5412, BRITISH MEDICAL JOURNAL Office 429 Strand, W C

Assistantship wanted by conjoint man single ex H S experienced in G I and Panel work Address, No 5533 BRITISH MEDICAL JOURNAL 429 Strand W C 2

Assistantship —University Graduate (male) desires assistantship to busy practitioner for the winter 4 years exp panel and priv Efficient accouch Capable Energetic Abst Loyal worker Highest refs London or coast preferred Free Nov 1st —Add 5527 B M J Strand

Assistantship, preferably in Coast Town required by M B Ch B Scotsman Aged 29 Experience G P Good testimonials Single —Address No 5530 BRITISH MEDICAL JOURNAL Office 429 Strand W C 2

Assistant required in Country PRACTICE Welsh essential Midwifery experience preferred Partnership considered to suitable person after six months.—Address No 5510 BRITISH MEDICAL JOURNAL Office 429 Strand W C

Assistant (man or woman) wanted Indoor Church of England Country town Public Health private panel State and all other essential particulars —Address No 5521 BRITISH MEDICAL JOURNAL Office 429 Strand W C

Chauffeuse, nine years' experience, refined smart appearance splendid references Careful driver clean licence used to a doctor's practice long distances Willing to go to any part Please state particulars —Address, No 5208 B M J Office 429 Strand W C 2

Christian Graduate, M B, Ch B (Commendation Glasgow), desires ASSISTANTSHIP Good references —Address No 5536 BRITISH MEDICAL JOURNAL Office 429, Strand W C 2

Foreign Appointment — Further India —Qualified Englishman under 30 years wanted to take up a lucrative appointment on rubber estate with a view to Partnership Four years agreement Passage paid Commencing salary about £630 per annum Principals can be seen in London —Apply in first instance by letter to No 7626 c/o PERCIVAL TURNER 4, Adam Street, Strand W C 2

Gentlewoman of 30 desires SECRETARIAL POST part or whole time, preferably with Doctor or Dentist in London Eleven years experience dispensing and secretarial Ten months with eminent bacteriologist Excellent testimonials —Miss K WILMER GREEN 314, Camden Road N 7

Indoor qualified Assistant, (Male) with panel experience, wanted for London £100 per annum, with Hospitality and time for Post graduate work No nightwork —Address No 5502 BRITISH MEDICAL JOURNAL Office 429 Strand, W C 2

M B, B Ch (male), wishes ASSISTANTSHIP Aged 24 Height 6 ft Good knowledge of midwifery anæsthetic etc Excellent references —Address No 5516 BRITISH MEDICAL JOURNAL Office 429 Strand W C 2

M B (T C D.), æt 27, male, 3 years experience Hospital and General Practice, wants PART TIME work in or near London Working for M D and mornings occupied with hospital appointments —Address, No 5535, B M J Office 429 Strand W C 2

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Dispenser, qualified, requires POST with doctor or chemist Six years experience Excellent references —Mr J K 518 CURE DRACONS Advertising Offices Fleet Street E C

Wanted shortly, Dispenser. BOOK KEEPER to Panel Practice Would suit married man or lady with slight experience could cook for Doctor Free rooms and board arranged Salary £3 weekly —Write full particulars to No 5526 B M J Office 429 Strand

Wanted, for Country Town In North Lady DISPENSER BOOK KEEPER live out better class practice State age salary and experience —Address No 5519 BRITISH MEDICAL JOURNAL Office 429 Strand W C

Doctors requiring Lady DISPENSERS should write to Mr J H WALDEN Westminster College 113 St Georges Road S E 1 (only address) No fees to Doctors 30 years experience Daughters and other relatives of medical men always in training

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Partnership —One-third share for disposal in a well established remunerative middle and working class Practice in a pleasant residential open London suburb on the Surrey side Panel over 7,000 good appointments midwifery about 100 p a from £3 3 Fees from 3 6 Value of share over £1 700 Price £3 000 terms £2 000 down bal out of receipts House on lease —Add No 5517 B M J, 429 Strand W C

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Woman, 31, M D, M R C P, D P H etc very experienced Institute and practice centres to invite Very Small Capital in SHARE or PARTNERSHIP city practice London or Liverpool preferred or would make branch (commencing January) at his well known Institute in Manchester Will take on a few weeks work in case of contract to be suitable —Address 5538 BRIT MED JOURN Office 429 Strand W C

15/- per diem —An experienced Doctor who has had a town practice and now sees some ten persons annually will UNDERTAKE LOCUM ENTS of any length locum rotherwise London preferred Disengaged Nov the well recommended—Address Medicus 38 Talbot Bayswater W

Birmingham or Midlands —Wanted PARTNERSHIP about £1 000 in good-class, preferably non panel non-dispensing Practice by young M D experience Hospital and general practice.—Address No 5525 British Medical Journal Office 429 Strand W C 2

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Wanted — Practice or PARTNERSHIP by Scotch M B Ex H S 3 years experience privately and panel Small house to rent Good testimonials £900 available —Address No 5531 British Medical Journal Office 429 Strand W C

Wanted —Small Practice (£500–£800) with or without panel in S W S E or W district Good house to rent if possible Details in confidence to Medico c o The Surveyor 321 Brixton Lane E C 1

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Nursing Home, Devon Riviera For sale or lease and sale of goodwill receipts well over £2 000 p a favourable terms NURSES (women) SW Eng for sale WANTED several S W Practs and Partnerships — Western Triple Agency Woodside Hill Torquay

Practices wanted —(1) £2,000 p a good middle class mall panel town or county town good house. (2) Over £2,000 p a minimum panel 2 00 good town with educational facilities — Griffiths Medical Agency Trafalgar Chambers Newport Mon

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For Sale —Cromwell House, Nunton Gloucestershire Old world house Lovely Cotswold village Freehold Vacant Perfect order Seven Rooms Walled garden and paddock Pop 100 Large district Suit doctor —Dighton, The Maples Charlton Kings Cheltenham

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Ground floor consulting room available for whole or part time with door plate adjoining Harley St Also be taken if required —Address No Office 429, Strand Journal Office 429

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Harley Street —Exceptionally bright CONSULTING ROOM (20ft x 15ft) with dark room eminently suitable for X ray to be Let Also smaller Consulting Room available —Apply Baxter, Payne & Lepper 11 Sackville Street W 1

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South Devon Coast —To Let, Modern Detached HOUSE ideal position suitable for a semi retired doctor wishing to do small practice or take resident patient now in occupation of a doctor Furniture to be purchased Further particulars on application —Address No 5530 B M J Strand

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West Derby Union

RESIDENT ASSISTANT MEDICAL OFFICER (Male)

The Guardians invite applications for the above position at the ALDER HEY CHILDREN'S HOSPITAL Liverpool at a salary at the rate of £200 per annum together with the usual resident allowances

Candidates must be single, not exceeding 30 years of age fully qualified and registered Appointment will be for 1 year out of one year in the first instance subject to extension for a further period not exceeding twelve months at the option of the Guardians

Applications to be sent stating age qualifications etc with copies of three recent testimonials to the undersigned not later than November 8th 1921

G W COSTER
Clerk to the Guardians

Union Offices Brougham Terrace Liverpool

St Peter's Hospital for

STONE, etc
Henrietta St, Covent Garden W C 2

Applications are invited for the appointment of THIRD ANASTHETIST to fill an impending vacancy Normal attendance one afternoon weekly Honorarium £25 per annum Applications together with copies of testimonials should be lodged with the undersigned not later than 10 a m Thursday, 13th November

BELCHLY ROGERS, Secretary

Aberdeen Royal Mental HOSPITAL

Applications are invited for the post of THIRD ASSISTANT PHYSICIAN (Male)

Salary £250 per annum, with board residence and laundry Applications stating age qualifications and experience with copies of recent testimonials should be addressed to the Physician Superintendent

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East Suffolk and 9/- 1/6 and contains six words ances by Post Office Orders

st be made payable at the General Post Office, London No responsibility will be accepted for any such remittance not being so safeguarded

Advertisements should be delivered, addressed to the Manag Ipswich London W C 2

HOSPITAL

Wanted, HOUSE SURGEON (male), also to act as Casualty Officer Salary £100 per annum with board apartments and laundry

Apply stating qualifications and experience to
ARTHUR GRIFFITHS
The Hospital, Secretary
Ipswich

Royal National Orthopædic HOSPITAL

The Committee propose to appoint two additional SURGICAL REGISTRARS (male) honorarium £105 a year Applications with copies of three recent testimonials should reach the Secretary at 234 Gt Portland Street, W 1, not later than November 15th

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THE COMMITTEE OF THE

Royal National Orthopædic HOSPITAL

proposes to appoint Two HONORARY ASSISTANT SURGEONS Applications with copies of three recent testimonials, should reach the Secretary at 234 Great Portland Street not later than Monday, Nov 10th 1921

There is a vacancy for a HOUSE SURGEON at the new Orthopædic Surgical Department connected with the HERITAGE CRAFT SCHOOLS at Chailey Salary £200 per annum with board and lodging Applications with three copies of three recent testimonials should be sent to the Secretary Heritage Craft Schools Chailey, Sussex before November 14th 1921

Wanted by the Guardians of the PARISH OF BARROW IN FURNESS a MEDICAL OFFICER (whole time) salary £550 increasing £20 annually to £650 a year Particulars and form of application from P W Taylor Clerk to the Guardians 10 Cornwallis Street Barrow in Furness

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The [illegible] cations [illegible] Sch of M Medical Off of school chil required by [illegible] n enquiring [illegible] rs BOOKSELLER LOCATION DEPT [illegible] increments of £25 to £ed man or lady travelling allowance for Doctor ASSISTANT SCHOOL MEDICAL OFF [illegible] The successful candidate will be required to devote his whole time to the duty £3 we [illegible] his entire service to the 5526 B M J Strand [illegible] r side interest to disqualify attached to a post of [illegible] Committee

The appointment will be for Child Guidance to Lady Diver [illegible] month not exceeding one month better experience [illegible] day of any calendar month Experience in the W [illegible] hild experience an advantage Journal Office 429 Strand [illegible] Inspection and preference [illegible] dates who —

(a) Have had experience [illegible] equirin [illegible] ech school children should write [illegible]

(b) Have been a minister Colleg [illegible] reports only address) No fe [illegible] ually [illegible] Daughter and [illegible] always in training

(c) [illegible] Lady Dispenser [illegible]

Copies of not more than three recent testimonials are required Candidates will be POST with Doctor Bo [illegible] prohibited and will disqualify Five in preferred —Apply [illegible] A deduction of 5/- will be made for each MEDICAL Journal [illegible] In accordance with the provisions of the Government and Other Pensions Agreement Act 1920 which has been adopted by the [illegible] and the appointment will be subject to the County Council's medical [illegible] connection therewith

Forms of application to be returned [illegible] Monday November 7th 1921 marked Children

the undersigned A J DAVIES Director of Education Shire Hall Durham

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The Metropolitan

BOARD invite applications from registered medical practitioners for the appointment as JUNIOR ASSISTANT MEDICAL OFFICER in their Mental Hospitals service at 100 per annum and at the FOUNTAIN MENTAL Hospital Bec Road Tooting Graveney London, S W 17

Candidates appointed must be under 30 years of age and will be expected to read for the Diploma in Psychological Medicine

At both Hospitals assistant medical officers will be required to undertake *post mortem* work

At the Fountain Mental Hospital the appointee will be required to undertake routine work in the Pathological Laboratory

Application forms [illegible]

Wanted —Short preliminary Assistantship For rapidly increasing general practice (panel and private) in large town near N L Coast Share for disposal at present worth £300 or £350, 2 years purchase half down remainder deferred payments or at 3 years purchase bought outright Splendid opening Any investigation accorded Incoming man must be young R C —Address giving particulars [illegible] qualifications also experienced and [illegible] Déjà met Including [illegible] Examination of Specimens particularly [illegible] Knowledge of Photography desirable

Commencing salary £600 per annum

The appointments at Tooting Bec Hospital are resident and at present a charge of £130 per annum is made for board lodging and washing The appointment at the Fountain Mental Hospital will until further ordered be non resident

Form of application may be obtained by sending stamped addressed foolscap envelope to the Clerk Metropolitan Asylums Board Victoria Embankment L C 4

The Metropolitan Asylums

BOARD invite applications for the appointment of JUNIOR ASSISTANT MEDICAL OFFICER in the Infectious Hospitals service

Candidates must be unmarried not to exceed 30 years of age and must be duly registered and qualified by law to practise both medicine and surgery in England Junior assistant medical officers are subject to annual re election

Salary £500 per annum

Assistant medical officers *are required to reside* at the hospitals and to pay for board lodging and washing at the rate fixed from time to time by the Board's Finance Committee At present the charge is £130 per annum

Application to be made not later than 10 a m on Monday November 14th 1921 on forms to be obtained by sending stamped addressed foolscap envelope to the Clerk Metropolitan Asylums Board Victoria Embankment London E C 4

Royal Northern Hospital,

Holloway London N

Applications are invited for the following appointments each for six months from December 1921 to May 1922

HOUSE SURGEON £75 per annum
JOINT HOUSE PHYSICIAN AND SURGEON £75 per annum
CASUALTY OFFICER £125 per annum
Board residence and laundry in each case

Applicants should have had experience in their respective departments and preference will be given to those who have had some hospital training

Forms of application may be obtained from the Secretary to whom they must be returned not later than Monday November 7th 1921

GILBERT G IA TH Secret

London Hospital,

ammersmith Road, W

are invited for an appointment as FOR DISEASES OF WOMEN (for nt member of the Staff is a candidate appointment will be a vacancy for ANT SURGEON FOR DISEASES OF or which applications are also invited mus be Fellows of one of the Royal Colleges of Physicians of England Edinburgh or

candidate will be required in to her duties to undertake such teaching of Post-Graduate College as the Board may

lications accompanied by copies of testis should reach me not later than Wednesday nber 16th 1924. Candidates must attend a Meeting of the Medical Council on Friday mber 21st at 4.30 p.m. and prior to that date ion and send copies of application and testimonials to each member thereof. They must not canvass members of the Board, but nevertheless a copy of application and testimonials to each member thereof, and be in attendance at a meeting of the Board at 5 p.m. on Tuesday November 25th when the election will be made.

H. A. MADGE, Secretary.

West London Hospital,

Hammersmith Road, W.6

HONORARY MEDICAL RADIOLOGIST (DIAGNOSIS) required. Candidates must be fully qualified Medical Practitioners and have had experience of Radiological work, especially X-Ray diagnosis. The successful candidate will have full control and be fully responsible for the department in all matters relating to X-Ray diagnosis.

by copies of testimonials, later than Wednesday, must attend a Special [illegible] Committee on Friday, November 21st, at 4.30 p.m., and prior to that date call upon and send copies of application and testimonials to each member thereof. They must not canvass members of the Board, but nevertheless must send copies of application and testimonials to each member thereof, and be in attendance at a meeting of the Board at 5 p.m. on Tuesday, November 25th, when the election will be made.

H. A. MADGE, Secretary.

Victoria Central Hospital,

Wallasey

experience £100 cations

ST. LUKE'S HOSPITAL.

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NORTHERN BRANCH.—Apply LADY SUPERINTENDENT, Clarendon Rd., Leeds. 'Phone, Leeds 21160.

[illegible] Secretary.

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(*Please refer to "The Lancet Office" Telegrams. Positions Wanted, London." Telephone, Regent 2*)

LOCUM TENENS and ASSISTANTS supplied

FOR DISPOSAL

Lincs.—An unopposed General PRACTICE situated in an industrial district. Receipts £1,800. Panel 650. Good class. Excellent house, 4 bedrooms, etc. Rent £75. Premium 1½ years' purchase. Folio 660.

South Coast.—A General PRACTICE situated in large Coast Town. Receipts over £2,000. Panel 1,100. Fees 3 6 upward. Excellent house, 4 bedrooms, etc. Premium 1½ years' purchase. Folio 673.

Surrey.—Partner required in a rural district. Plenty of time left for hobbies, etc. Excellent £750 p.a. Premium 1 year's purchase or one-third. Large.—Folio 930.

Staffs.—Partner required for a General Practice situated in an industrial district. Receipts £2,500. Panel 1,300. House at rental. Premium for third share 1½ years' purchase. Opportunity to obtain fixture.—Folio 887.

South England.—A Coast PRACTICE situated in a charming district. Receipts £1,250. Excellent fees. Hospital appointment held. Opportunity for dispensing. Nice house in good position at rental. Premium £2,500.—Folio 675.

Glam.—A General Practice situated in a Coast Town. Receipts £2,200. Panel 1,400. Fees 3 6 upwards. Shipping fees 21/- upwards. Ample accommodation. Nice house with 4 bedrooms, etc., garden and garage. Rent £75 per annum. Premium 1½ years' purchase.—Folio 661.

Notts.—A Middle and working-class PRACTICE (town and country). Receipts £1,200. Fees 3 6 upwards. Small corner house containing 3 bedrooms, etc. Rent £60 per annum.—Folio 662.

Purchasers stating their requirements can have details of other Practices not advertised.

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W. J. HICKS, *Secretary.*

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31, BEDFORD ST., STRAND, W.C.

(Gerrard 3[illegible]) (Established 19[illegible])

This Agency (the Oldest in the Kingdom for [illegible]) takes the SALE of PRACTICES and PARTNERSHIPS, AUDITS and VALUATIONS, and the SUPPLY of LOCUMS and ASSISTANTS (no Charge to Purchasers). All Business fees MR. NEEDES personal attention.

1. COUNTRY TOWN PRACTICE within [illegible] of London and carrying £8,500 p.a. [illegible] Panel and Appointments transferable. Change of Hospital appointment. Commencement with [illegible] Premises [illegible] about 1 year's purchase.

2. UNOPPOSED PRACTICE for [illegible] North Central London and Garden City. Income £775 a year [illegible] Excellent. Charming [illegible] grounds for [illegible] Early occupation [illegible] surroundings.

3. Near LIVERPOOL.—PRACTICE [illegible] over £1,500 a year with [illegible] Convenient [illegible] garage, etc. Rent £100. Price for prompt sale £2,000.

4. WITHIN EASY REACH of the Middle [illegible] panel PRACTICE of about £1,200 a year; early sale. Very [illegible] House and [illegible] Moderate rent. Price for quick sale £1,100.

PRACTICE of £1,400 a year in the Thames district for Sale with Private House at £300. Fees from 3 6. Vendor retires. Price for the two only £5,300.

5. LONDON (Central).—General PRACTICE of about £1,250 for sale. Good class. £900. Small panel. [illegible] House [illegible] lease at £125. Price £1,900.

LONDON (S.E.).—Old established PRACTICE conducted as a Lock-up [illegible] £1,300 a year. Small [illegible] work. Expenses [illegible].

PROFITED.—PRACTICE AND PARTNERSHIP producing £1,000–£1,200 a year. In one of the [illegible] Yearly Grant with experience and capital [illegible] PRACTICE where [illegible]

Mr. Needes will be pleased to [illegible]

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(Mr. A. HADLEY)

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[illegible] the [illegible] and [illegible] PARTNERSHIPS on reasonable terms which can be obtained on application. No charge made unless a sale be effected.

LOCUM TENENS and ASSISTANTS supplied.

FOR SALE.

1. DEATH VACANCY.—Western Suburb. General and Panel PRACTICE. Receipts £2,500 a year. Panel 2,100. Large corner house with garage. Freehold for sale with practice.

2. EAST LONDON.—Cash and Panel PRACTICE easily worked. Receipts improving £500 p.a. from panel about £1,000. [illegible] House in main thoroughfare [illegible] bathroom, kitchen, etc. Rent £75. Long lease.

3. SEASIDE TOWN, 40 miles from London.—PARTNER wanted for [illegible] good General Practice. Share for deposit worth about £2,400 a year. Good house facing sea, on lease. Premises £3,000, scope for surgery.

4. OUTLYING SUBURB, SURREY.—[illegible] PARTNER wanted for General and [illegible] Practice. Receipts £1,000 a year. Third share for sale at [illegible] year's purchase. House [illegible] Share for deposit worth £1,500 a year. Good house available.

5. SUBURB OF MANCHESTER.—General PRACTICE capable of being greatly increased. Receipts £750 p.a. Good house. [illegible] situated. To be Let or Sold. Premium £1,000.

7. SOUTH WALES.—Exceptionally good [illegible] Contract and Panel PRACTICE. [illegible] £2,000 years by Vendor, possession [illegible] £2,000 a year. Convenient residence with [illegible] attached. To be Let at £52 per [illegible] Hospital town. Premium £2,000.

8. MIDLANDS.—Small [illegible] PRACTICE returning about £2,000. Panel 1,360. Convenient residence with [illegible] Premium £3,500. [illegible] age, or to be Taken Over as PRACTICE.

9. YORKS.—[illegible] £900 a year. [illegible] dwelling. Electric light and heating. Will be Let or Sold. Premium £1,300 [illegible] or near offer.

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NO CHARGE IS MADE TO PRINCIPALS FOR THE INTRODUCTION OF LOCUM TENENS OR ASSISTANTS

Accountancy and legal services furnished by the Agency, where desired, at moderate inclusive charges

PRACTICES AND PARTNERSHIPS FOR SALE.

1 SOUTH COAST WATERING PLACE —(Population 30 000)— Partnership with view to succession in four years, to an old established PRACTICE, averaging for the past three years over £1 150 per annum, including panel of 900 Visits 3/6 5/, and 7/6 No midwifery Very nice house available with ample accommodation garden etc will be sold or can be rented Half share for disposal at 2 years purchase Good society, and sport of all kinds etc Small Hospital Scope for increase

2 DEATH VACANCY.—HAMPSHIRE —A very old established mixed general country PRACTICE situated within 7 miles of a large town Steady average income of £1 039 including appointments and panel of about 900 Good scope for increase Advice and medicine from 2/6 Visits 5 to 20/, medicine extra Very little midwifery House contains lounge hall dining and drawing rooms consulting room and dispensary, 5 bedrooms, 2 bathrooms Lit with petrol gas Garage Half an acre of garden Freehold price £1 000 Excellent hunting, shooting fishing etc Premium £1 000 Locum in charge

3 PARTNERSHIP —SOUTH OF ENGLAND —In a large flourishing Seaport Town a fourth Partner is required in a lucrative mixed class PRACTICE averaging about £5 000 per annum, including appointments and panel of nearly 3 000 The sixth share (producing over £800 a year) is for disposal Visits 4/ upwards Midwifery 3 guineas Comfortable rooms at the Surgery are available for the incoming partner Rent £60 p a Premium required for share 2 years purchase Golf, tennis, etc and there is scope for development

4 HOME COUNTY —Hospital Town within 50 miles of London, PARTNERSHIP A one half share in a mixed general practice, held by [illegible] Panel of 780 from 3/6 [illegible] with ample accommodation and good garden Price £2 000 of which £1 000 can remain on mortgage There is an up to date Hospital and nearly vacancy on the staff is probable Good sport, school etc Premium 2 years purchase half by arrangement

5 NORTH MIDLANDS —In a pleasant Cathedral City a well established middle and working class PRACTICE held 11 years by present Incumbent who is relinquishing on account of indifferent health Cash receipts average £1 400 per annum for the past three years including panel of over 1 000 Visits 5/ and 7/6 Midwifery 3 guineas 30 cases yearly The house which is Vendor's property contains 12 rooms garden etc, and will be let on lease at £60 a year or sold for £1 100 Premium £2 100 Excellent educational facilities

6 KENT —S[illegible] Old established [illegible] ne about £1 800 [illegible] erable and panel of nearly 1 200 Fees 3/- to 10/- Twenty cases of midwifery yearly at 2 to 5 guineas Excellent house containing 3 reception and 8 bedrooms separate entrance to professional rooms standing in its own grounds of ¾ of an acre with full sized tennis court etc Vendor's freehold price £2 300 Good Hospital in town and Vendor on the Staff Premium £2 700 Introduction if desired up to six months

7 MIDLANDS —In a delightful town (population over 1 000) amidst beautiful surroundings and within 4 hours run of London an old established lucrative PRACTICE worth over £2 500 per annum including large panel Good fees The house is well situated and has ample accommodation and can be rented on lease at £100 a year Premium 1½ years purchase Satisfactory reasons for selling Educational facilities and sport of all kind

8 RESIDENTIAL TOWN within 100 miles of London Non dispensing chiefly better class PRACTICE producing an income of about £2 000 a year including small panel of about 600 Fees from 2/6 to 21/ mainly 7/6 upwards Only a few cases of midwifery yearly at 2 to 25 guineas Attractive and commodious house (3 reception 7 bedrooms etc) garden Rent or rental £100 p a Good society and sport of all kinds Premium £4 000 payable £2 000 cash and £2 000 by instalment

9 EASTERN COUNTIES —Within 4 hours run of London Practically unopposed PRACTICE old established and fully in a very pretty Country Town with beautiful surroundings Cash receipts for last financial year £2 022 including appointment of £50 and panel of 500 Visits up to 21/ Very little midwifery Car optional Railway station Charming residence (with ample accommodation) in its own grounds [illegible] Price £2 900 all of which can remain on mortgage at 5 per cent £2 000 Excellent [illegible] etc

10 [illegible] TOWN within easy reach of University City Well established middle and working class PRACTICE, averaging about £2 000 per annum including panel of nearly 1 200 (rapidly increasing) [illegible] £1 800 down [illegible] easy 1 000) [illegible] and increasing PRACTICE worth last year £2 100 including 1 000 panel patients Visits 2/6 to 5/ Midwifery 2 to 4 guineas about 100 cases yearly Good house with garage available Vendor's property and will be let to Successor at £100 a year or can be purchased Premium 1½ yrs purchase Efficient Introduction

12 GROWING COAST TOWN within easy access of London Old established very sound mixed general PRACTICE Average income over £1 800 Fees mainly 3/6 to 10/6 Very little midwifery Very good corner house with small garden There is a Cottage Hospital in the place and the Partner of very good prospects to a Surgeon Premium 1½ years purchase

13 FAVOURITE INLAND SPA —PARTNERSHIP A well qualified and experienced man with a good personality is desired by a Consulting, Physician as Partner with ultimate succession The present income is only about £1 500 a year but there is very considerable scope for increase and the newcomer would be encouraged to undertake general practice without relinquishing to the partnership for the fees so obtained There is a choice of houses both on rental and to buy in the Residential part of the town At present the fees are mainly 1 and 2 guineas but there are a few at 10/6 Premium for the half share £1 500

14 LONDON NORTH —Old established PRACTICE producing an income of £1 400 a year including appointments worth £120 Panel of 700 but this can be largely increased Visits and medicine 3/6 to 7/6 Practice is easily worked with motor conveyance Nice house in good decorative repair Rent £125 Garage can be let off at £20 or £54 Premium £2 000

15 SOUTH AMERICA —MEDICAL OFFICER required immediately for Railway Must be married and aged 30 to 40 Salary £700 a year with house and board provided for both Two years engagement passage paid out and home (except for wife) Other resident English families Personal application, if possible to Bovril Medical Agency

16 SOUTH WEST OF ENGLAND —ASSISTANTSHIP with view to Partnership in a good mixed general practice worth over £2 500 a year Scope for increase with the right suitable man Applicants should be about 30 years of age and experienced in Surgery

17 FAR EAST —MEDICAL OFFICER required for railways Salary about £600 a year increasing annually Three years engagement First class passage out and home Applicants must be of English nationality essential Personal application if possible to Bovril Medical Agency

18 FAR EAST —ASSISTANTSHIP with view to PARTNERSHIP and ultimate succession in two years to extensive practice Salary £800-£1 000 with furnished quarters Practical knowledge of Tropical Medicine necessary Applicants must be bachelor essential Personal application if possible to Bovril Medical Agency

19 FAR EAST —ASSISTANT required Must be single under 30 years of age and with some experience Four years engagement Salary £630 first 18 months rising by £70 yearly Passage out and home Car provided Good chance to qualify of social life tennis golf etc Only fair salary but extras to be retained

20 REQUIRED FOR PRIVATE ASYLUM —(1) MALE SUPERIOR INDOOR ASSISTANT with [illegible] Mental experience over 30 years of age Salary £350 per annum

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London, N—About £1,500 a year Old established PRACTICE Small panel Appointments about £400 Visiting fees 3/6 to 15/ Good house on lease with garden and garage. Can be rented or lease purchased—Apply No. 7634

Eastern County—ASSISTANTSHIP with view to Partnership About £3,000 a year One-fourth or one-third share for disposal Half later Visiting fees 5/ to 31/6 Panel 1,000 Appointments about £250 Good house to rent—Apply No 7632

South Coast—Partnership About £2,700 a year Non-dispensing small panel One third share or dispensing ship to one-half later Visiting fees chiefly 10/6 Applicant should be Graduate and F R C S for preference.—Apply No 7631.

West of England—Easy terms Non-dispensing panel PRACTICE situated in high-class suburb of Important Town estimated to produce about £1,500 a year Fees 5/ to £5 5s Old Excellent house to let on lease—Apply No 7627

London, S E—Over £1,750 a year Old-established PRACTICE Densely populated district Appointments Panel Visiting fees 5/ to 21/ Midwifery average £5 Corner house ample accommodation rent £50 on lease.—Apply No 7625

Yorkshire—£2,100 a year Panel 1,100 Visits 4,800 up Midwifery 2 to 3 gns Good house with garage rent £65 on lease Hospital in town Premium 1½ years purchase—Apply No 7619

South-East Coast—Over £2,000 a year Good fees Panel nearly 1,000 House with ample accommodation and garage to let or immediate rent—Apply No 7618

Lancashire—£2,000 a year Old established Panel 1,600 Fees 2/6 to 10/6 Midwifery 2 to 4 gns House with good garden and garage Can be rented or purchased Premium 1 year's purchase—Apply No 7617

South Wales—£2,000 a year Very safe PRACTICE Appointment and Panel about £1,700 Visiting fees 3/6 to 10/6 Convenient house rent £52 on lease Hospital appointment Premium for quick sale £2,000 terms could be arranged—Apply No 7616

Lancashire—About £1,200 a year Non-panel Old-established Vendor retiring No midwifery or appointment Fees 2/6 to 10/6 Small house rent £36 including rates and taxes Ample scope for town and country and panel—Apply No 7612

Home County—Nearly £1,400 a year Old established Good fees Very little midwifery Small panel Good house and garden Introduction as arranged—Apply No 7606

Eastern County—Partnership at or at £1,800 a year One third now and ultimate succession Panel over 1,000 Visiting fees 2/6 up Midwifery from 2 guineas House of rooms suitable Good sporting locality—Apply No 7605

South Coast—For disposal, pa
21s
12gu
rent Great scope for increase panel etc Good school—Apply No 7594

Lincoln—Country Town, about
Panel over
about £70
of an acre

Yorkshire—Average £1,286
Appo
10/6 Panel
Good house

London Suburb South—About £750 a year Non-dispensing No panel Partnership Visiting fees 3/6 to 21/ Consultations 3/ No midwifery taken but ample room Detached house good accommodation rent £55 p.a. Premium £1,100 introduction fee—Apply No 7545

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MANCHESTER—Old-established *Income* over £3,000 p.a. Panel Suitable for two in partnership Excellent house Premium £1,000

LINCS—Country town Large house (hotel rooms) Garden Garage Panel over 900 Income £1,460 Premium to include house £4,000

DERBYSHIRE—Manufacturing town Old established Panel Income £800/ope Premium £1,000 Suitable for single man

SHROPSHIRE—PARTNERSHIP in old established GP Country town Panel 1,500 Income £2,300 One-third to one-half share 5 years Purchase (Oxon, Varsity Graduate preferred)

LONDON W—Old-established GP situated in suburban district Income £1,711 £2,500 cash

NORTHANTS—Old-established GP situated in nice town within 2 hours of London Panel 1,200 Average Income £1,304 Charming house 6 bedrooms reception rooms to let on lease at £70 p.a. Premium £2,100

LONDON W—Well-established NON-PANEL Income nearly £2,000 No night-work or Midwifery Premium £5,000 (cash) to include free hold House.

SOUTH WALES—Well established Colliery and Contract PRACTICE Income £2,000 Panel 1,000 House to let Premium £2,000 £1,000 down balance by arrangement

LINCS—Old-established GP Panel 2,000 Income £3,300 Two appointments House to let Cottage Hospital Premium 1½ years purchase or one-third share for £2,000 Suitable for young North Country man

Purchasers stating their requirements will be *sent particulars of other suitable Practices and Partnerships* for sale free of charge

Please address all communications to the Manager Mr W H. GRANT Medical Transfer and Insurance Department.

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Telephone 5932 CITY

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ASSISTANTS & LOCUM TENENS SUPPLIED
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Glos—Country Town Practice of £1,700 to £2,000 Panel 1,000 Appointment £125 Good house with grounds etc Low rent.

North London—Practice of £950 Increasing Panel 1,000 House in main road with small garden can be let off

Opening in growing residential new house with garage and MUCH GOODWILL about £200

Colliery Practice of £2,300 Panel 1,000 Rent £65 Opportunity for Hospital and other Appointments

Near Peak District—Unopposed PRACTICE £1,400 including Appointments £100 Panel 1,000 Midwifery £100 Station and Golf House Valuable

New Zealand—Unopposed PRACTICE £1,800 including Allowances with good roads Low rent £100 Premium £1,500 including Furniture

South London—Very old-established Practice £1,000 Appointments £190 Panel 1,800 Midwifery Nice house with small garden and garage Rent £70

F R C S, required as Partner Practice in Country Town Share worth £800 with increasing later Fine opportunity for young man

Lancashire—Practice of £800 with great scope Panel 1,250 Opportunity Large population

Colonial Appointment—ASSISTANT required with view to Partnership Should be single and under 30 Must be fond of Society

London, S W—Partnership with success assured First share of about £1,500 to rapidly growing Practice Great scope Substantial house on easy terms

Liverpool—Non-panel PRACTICE of £1,200 Detached house with garage Premium 1 year's income

North-West London—Vendor retiring Middle-class PRACTICE £600 including Dispensary Great scope for Active man Large house can be bought or small ones can be hired Premium £750

West Riding—Practice of £1,500 Panel 1,200 Opportunity for Good house rent £85 Premium £2,000

Midlands—Town and country PRACTICE of £1,200 Panel 900 Good corner house with garage rent £60

Liverpool—Middle and working-class PRACTICE of £700 with great scope, for sale, owing to illness Panel 450 Very little midwifery Premium only £300 for quick sale. Convenient house can be bought cheaply

North London—Practice of £1,600 Panel 1,100 Appointments £420 House with side entrance to surgery and small garden Rent £65

Cornwall—Unopposed PRACTICE of £1,500 in beautiful district near the sea Panel over £650 Appointments £60 House with surgery Rent £40 or lease. Premium if taken purchase

Within 100 Miles—Country PRACTICE £1,000 in golfing neighbourhood Panel and Appointments £200 Excellent opening Good house with tennis court and 11 acres of land £80 Fee £1,000

Notts—Partnership with succession House of 8 rooms £160 Premium three guineas for each patient under care Valuable centre

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EAST ANGLIA.—(1) Old established unopposed Country PRACTICE averaging £3 845 p.a. in picturesque but easy distance of important Town. Panel about 2,500. Good house (9 bedrooms) in grounds about 4 acres to be sold. Considerable scope for increase. Premium one and a half years purchase.

WEST MIDLANDS.—(2) PARTNERSHIP in old established PRACTICE about £3 000 p.a. in first-rate County Town. Panel 1,010. Very good house (7 bedrooms). Rent £75 on lease. One half share at two years purchase. Partner must be good anaesthetist and experienced in X-ray work.

YORKSHIRE (NORTH RIDING).—(3) PARTNERSHIP in old established Country Town Practice about £3 200 in first-class district. Panel 90. Rent of house with large walled in garden £56 per annum. Three eighths shares first at two years purchase. Cottage Hospital.

SOUTH WEST OF ENGLAND.—(4) Good-class non-dispensing PRACTICE £1,570 p.a., in desirable Seaside Town. No panel. Very little midwifery. Good house (7 bedrooms) to be sold. Cottage Hospital. Premium one and a half years purchase.

WEST OF ENGLAND.—(5) Well established PRACTICE averaging £1 240 p.a. in important City. Panel 1,500. Midwifery discouraged. Specially built house (6 bed and dressing rooms). Price £2 000, part on mortgage. Premium for Practice £1,800 to include Fittings.

EAST ANGLIA.—(6) PARTNERSHIP (with preliminary ASSISTANTSHIP) in very old established Practice nearly £3 000 per p.a. in delightfully situated Country Town. Panel about 1,000. Visits 5/- to £1 1s. 6d., medicine usually extra. One fourth or one third share at first to substantive sum. Applicant should be good Anaesthetist. Good Cottage Hospital.

FAVOURITE HOME COUNTY.—(7) PARTNERSHIP in well established Practice £2,300 p.a. in charming and select Country Town. Panel 1,000. Premium one half share two years purchase. Cottage Hospital.

NORTH OF ENGLAND.—(8) NUCLEUS of Practice with panel of 1,118 (rapidly increasing) in Health Resort. Very good and well situated house. Rent £60. Premium one and a half years purchase.

SOUTH MIDLANDS.—(9) ASSISTANTSHIP with view to Partnership in an old established and steadily increasing Practice in County Town. Applicant should be London man, aged about 30 and experienced in General Practice.

LONDON N.W.—(10) PARTNERSHIP in very old-established non-dispensing Practice in one of the best Residential Suburbs. No panel. House to rent. Share worth between £800 and £900 at two years purchase. Option to increase later.

EASTERN COUNTIES.—(11) Unopposed PRACTICE, with beautiful house and garden near coast. Splendid wild fowling. Income nearly £2 000 per annum. Panel 650. Premium one and a half years purchase.

HOME COUNTY.—(12) PARTNERSHIP in well-established and increasing PRACTICE over £2 200 in delightful Residential Country Town within 30 miles of London. Panel 800. Cottage Hospital. Premium one third share £1 425. Great scope.

EAST ANGLIA.—(13) PARTNERSHIP in middle and working class Practice averaging about £2 200 p.a. in picturesque district near popular Seaside Resort. Panel nearly 1,200. Choice of houses. One hundred shares at first at two years purchase.

SOUTH OF ENGLAND.—(14) ASSISTANT required with view to Partnership in good class Practice in Cathedral City. Applicant must be well qualified and be a capable anaesthetist. To suitable man share with about £800 p.a. at two years purchase.

SOUTH OF ENGLAND.—(15) PARTNER required in very sound old established Practice in Seaport Town. Panel under 1,000. Share worth £700 to £800 at two years purchase. *Partner must be keen* and energetic and not much over 30.

NORTH OF ENGLAND.—(16) Old-established PRACTICE of £1 460 p.a. in Industrial District. Panel 810. Very good house (5 bedrooms), in charming grounds two acres. Premium, practice house and grounds £1 000. Mortgage could be had on house.

LONDON, N.—(17) Recently established "lock-up" SURGERY in East Finchley.

NORTH OF ENGLAND.—(18) Well-established PRACTICE in first-rate Cathedral City. Cash receipts average £2 111 p.a. Panel 2,025. Good house (11 bedrooms). Rent £80. Premium one and a half years purchase.

ESSEX.—(19) Old established easily worked PRACTICE averaging £1 315 p.a. In populous Suburban District close to Epping Forest. Panel 750. Beautifully situated house (6 bedrooms), in third of an acre of ground. Premium one and a half years purchase.

SOUTH WALES.—(20) Well-established PRACTICE nearly £1 250 p.a. in Country Town. Panel over 500. Fees 5/- to £2 2. Well situated substantial house (8 bedrooms), with large garden. Rent £60. Excellent professional facilities. Premium £1 500.

EASTERN COUNTIES.—(21) Old-established PRACTICE £1 855 p.a. in prosperous Market Town. Panel 1,100. No midwifery. Excellent detached house (8 bedrooms). Very good hunting. Cottage Hospital. Premium one and a half years purchase.

YORKSHIRE (WEST RIDING).—(22) PRACTICE over £1 500 p.a. in thriving Industrial Town. Panel 1,600. Good house (6 bedrooms). Rent £80. Premium £2 250.

SOMERSET.—(23) Country PRACTICE £1,100. Panel 800. Good well appointed 12 roomed house with bathroom. Garage. Educational facilities. Premium £1 100.

DEATH VACANCY.—(24) University Town. Good class PRACTICE about £900 p.a. No panel. Detached house (9 rooms) to rent.

LANCASHIRE.—(25) Well-established PRACTICE averaging £2 100 p.a. on outskirts of PRESTON. Panel 1,811. Motor. Detached house. Premium £2 000.

EAST COAST.—(26) PARTNERSHIP in well established PRACTICE £3 800 in rapidly developing Seaside Town. House with 4 bedrooms to rent. Incoming partner should be aged between 30 and 35. Premium two thirds share £3 000.

YORKS.—(27) PARTNERSHIP in very old established Panel Practice in good Town. Receipts average about £3 000 and £4 000 p.a. Panel 1,200. One fourth share at two years purchase payable by instalments. Preliminary Assistantship of six months.

SOUTH WALES.—(28) Very old established PRACTICE, over £1,550, in beautifully situated Country Town. Panel nearly 1,000. Fine old mansion house with half acre garden to be sold. Good shooting and sport. Premium £2 250.

WEST OF ENGLAND.—(29) ASSISTANTSHIP with view to partnership in mixed practice of over £2 800 p.a. in Country Town. Panel 800. One fourth or one third share at two years purchase. Applicant should be keen on surgery. Hospital in town.

SOUTH OF ENGLAND.—(30) PARTNERSHIP in good class non-panel practice of about £3 500 p.a. in beautifully situated country town. Applicants should be Oxford or Cambridge Graduates not over 30 and preferably F.R.C.S. Eng.

SURREY.—(31) PARTNERSHIP in good-class non-dispensing Practice in most desirable Residential Country Town. No panel. Suitable house could be obtained. Partner must be graduate of Oxford Cambridge or London University aged 30/35. Share worth about £1 000 p.a. at first. Hospital in town.

FIRST-RATE RESIDENTIAL DISTRICT up the THAMES.—(32) PARTNERSHIP in good class Practice averaging about £1 550 p.a. Not much Midwifery. Good house with garage to be sold. Premium one half share £1 200. Scope for Surgery.

YORK (near).—(33) Unopposed Country PRACTICE between £700 and £800 p.a. £210 of which is panel, in picturesque growing Village. Modernised detached house with garden, garage, electric light, bath (h. & c.) etc. for sale. Premium one and a half years purchase.

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SPECIAL OPHTHALMIC PRACTICE.—(38) About £1 100 in high class mixed Health Resort. Operative and Consulting cases refused for five years. Considerable scope for increase. Premium £1 100.

YORKSHIRE WEST RIDING.—(39) Well established middle and working-class PRACTICE over £1 300 (£920 from panel and appts.) in large clean town. Good detached corner house. Prem. £1 150.

EAST COAST.—(40) Increasing PRACTICE over £500 in rapidly developing District. Panel about 400. Nearest other practice 4 miles. Bungalow residence (5 rooms). Premium £750.

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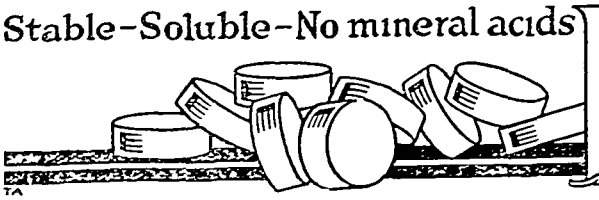
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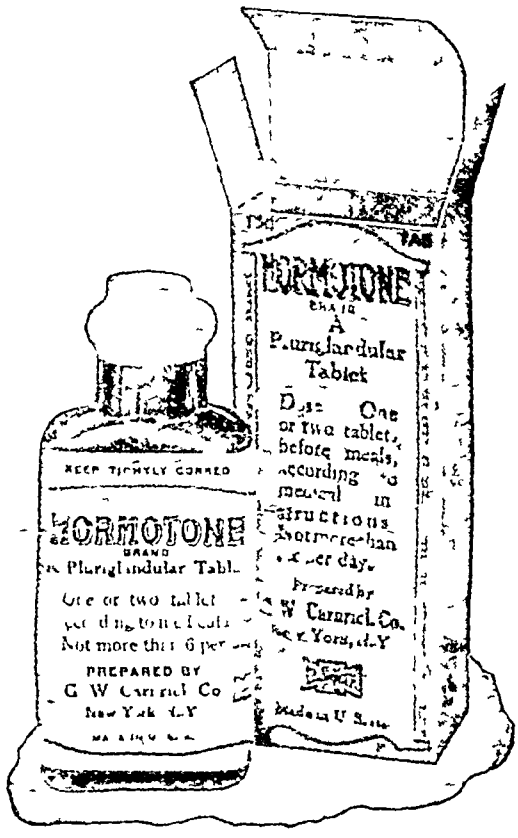


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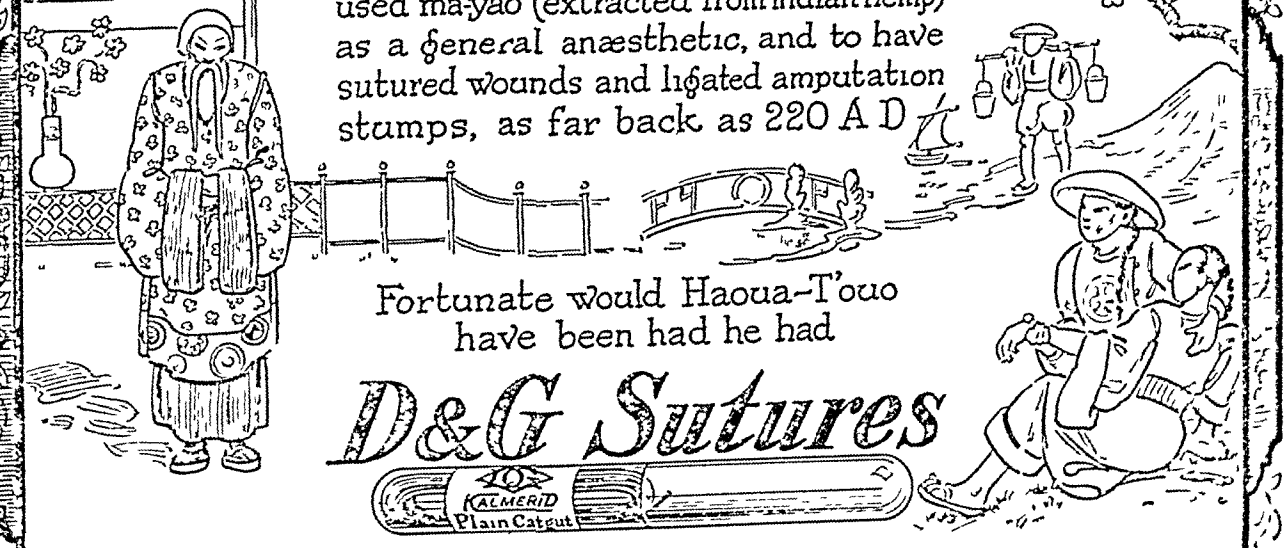
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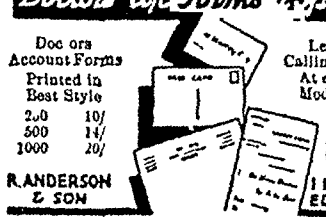
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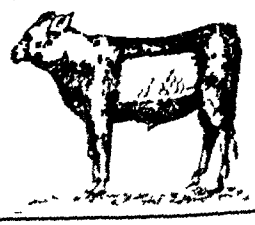
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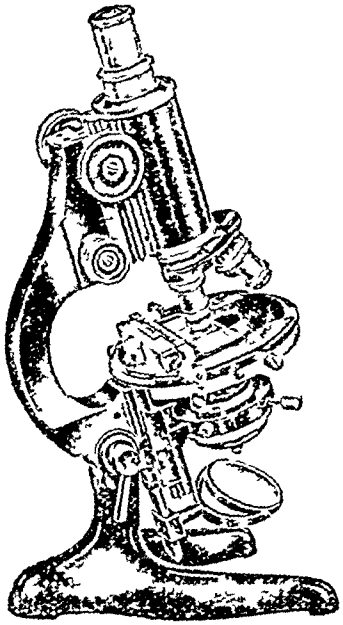
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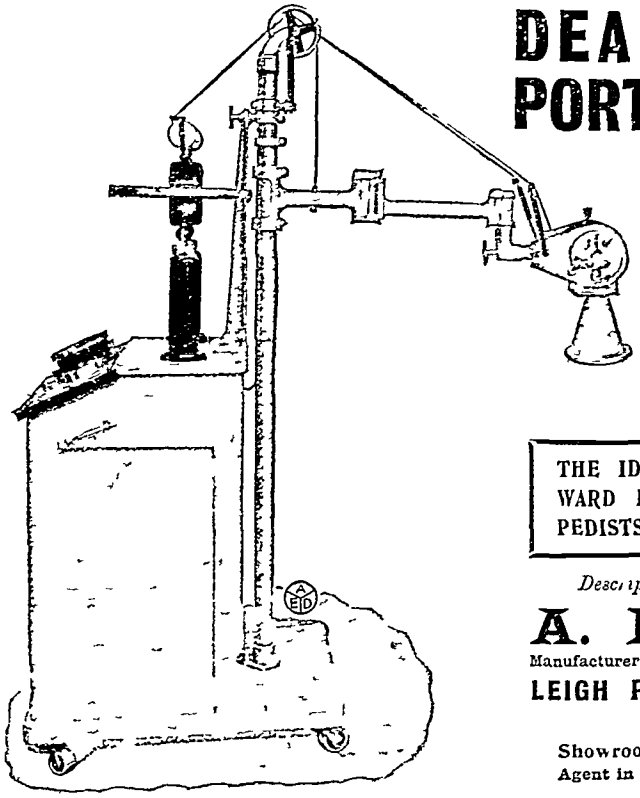
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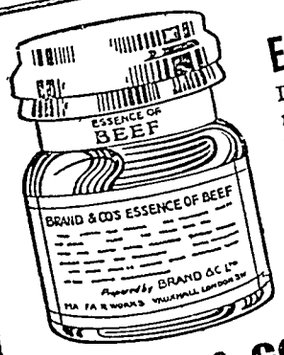
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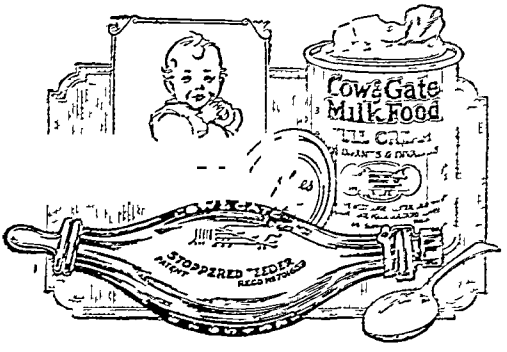
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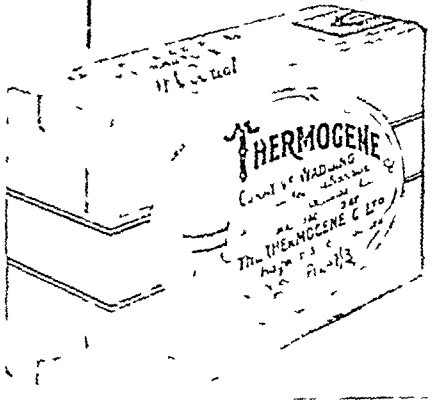
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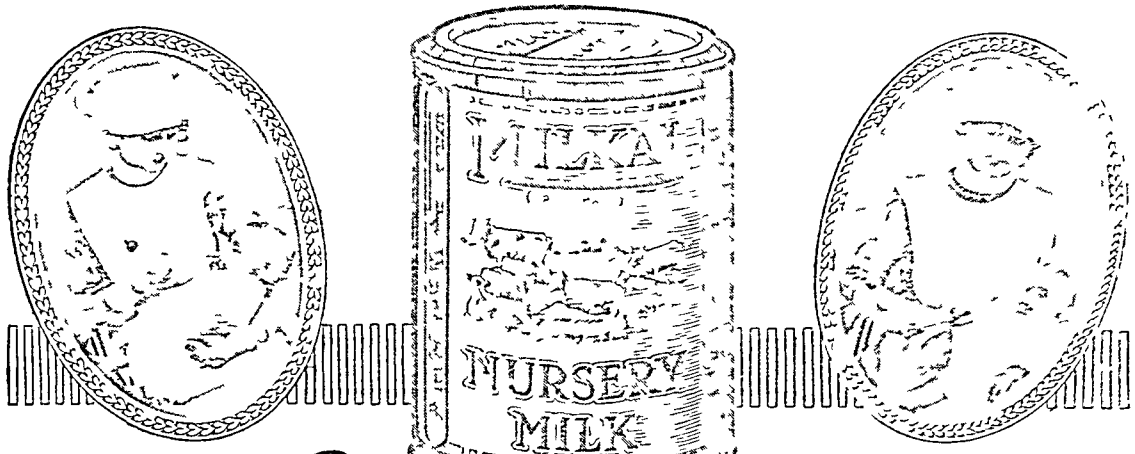
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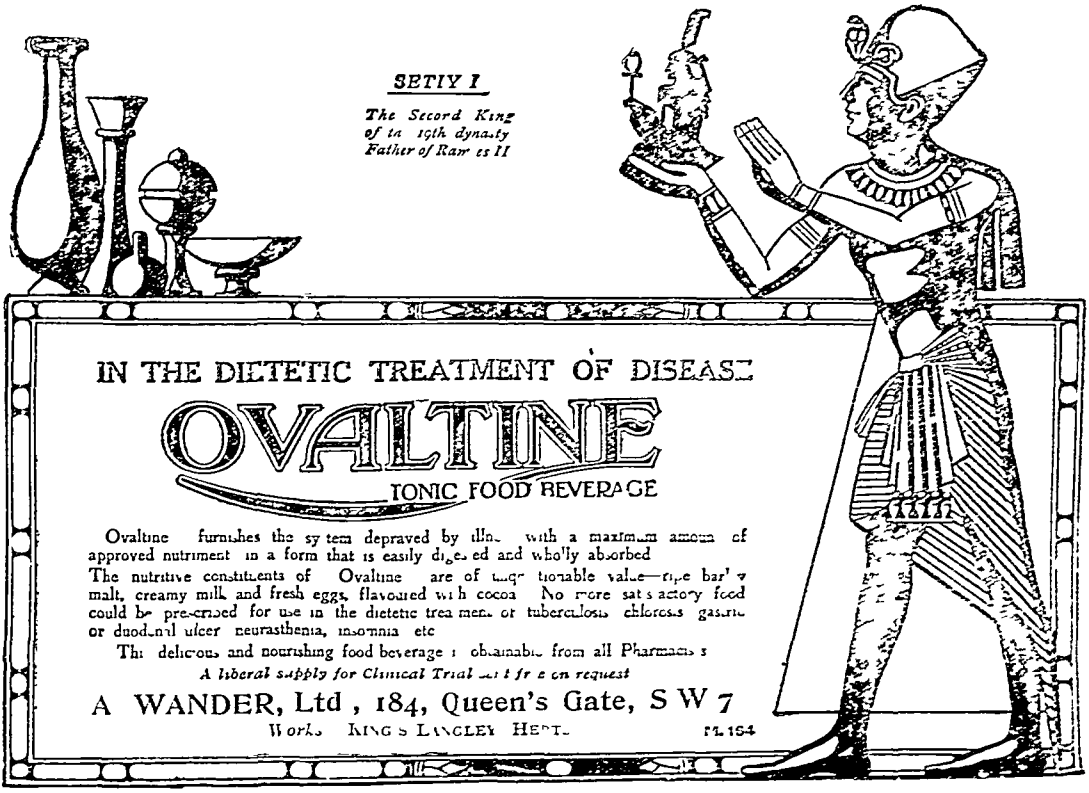
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(Vide "British Medical Journal," 24th March, 1923, page 493)

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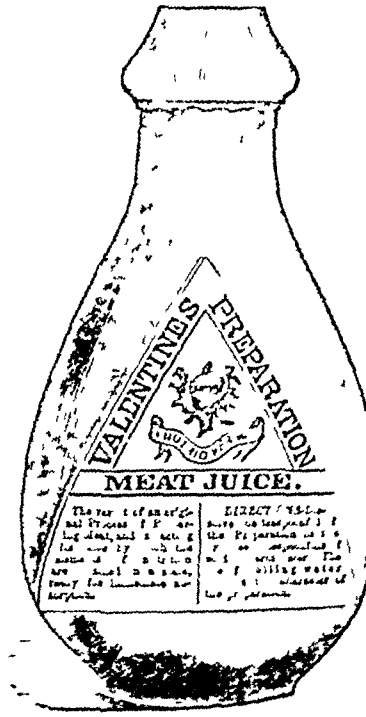
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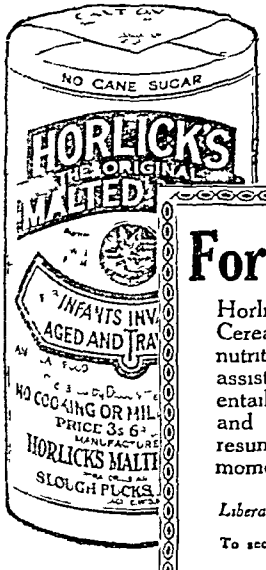
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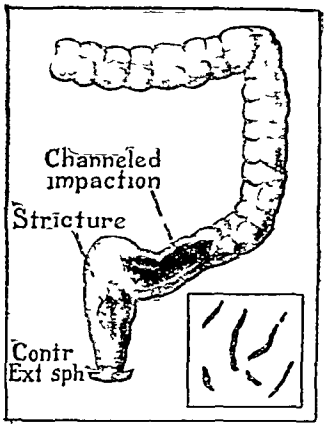
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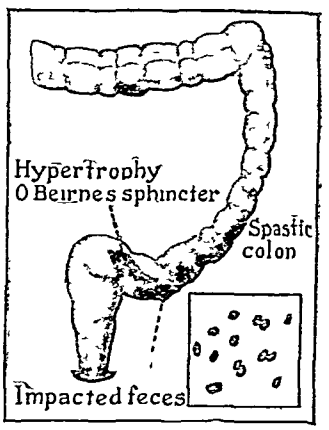
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The Feces as an Aid in Diagnosis

EXAMINATION of feces is a valuable aid in diagnosis, says a prominent gastro-enterologist

Size is no criterion of normalcy Since over 90% of the dried stool is bacteria, a copious evacuation may even be a sign of colonic disease, *i e*, typhoid

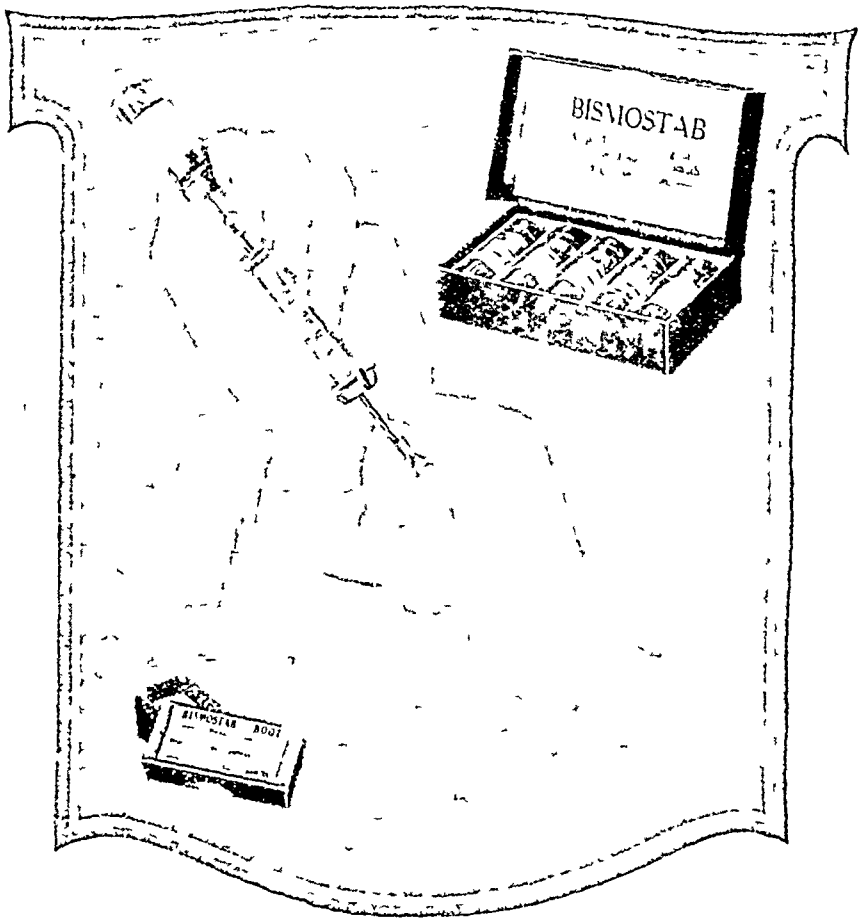
Colour The normal stool should be a golden brown Clay colour indicates either liver or pancreatic trouble A black stool indicates bismuth or iron medication or bleeding in the upper gastro-intestinal tract A green stool indicates intestinal fermentation or unchanged bile Red blood in the stool is usually due to hemorrhoids

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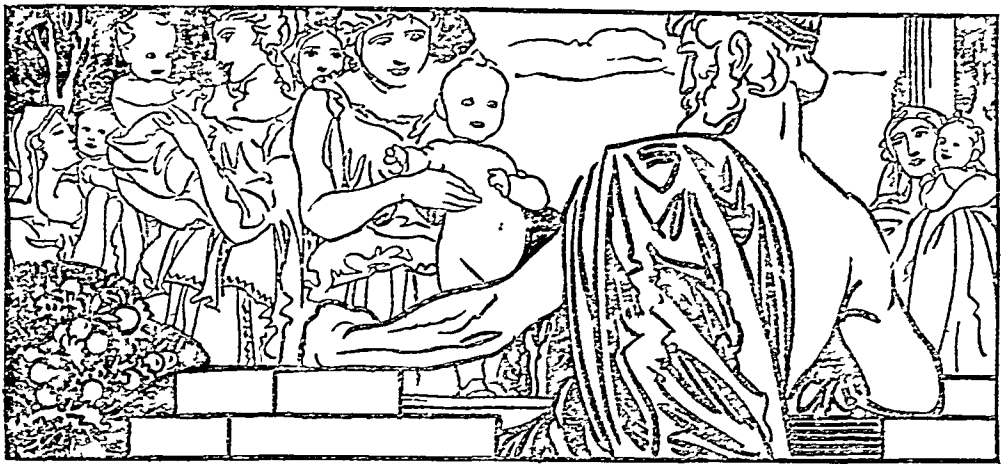
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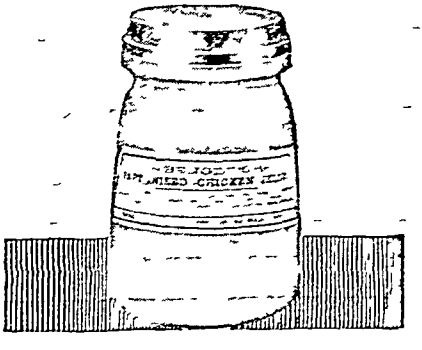
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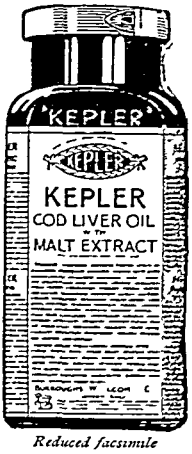
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ARCHAIC CLAY FIGURE OF A SHAMAN 'A MASTER OF PRESCRIPTIONS —Shamanism is found in many parts of the earth among peoples practising a primitive religion of polytheism and polydemonism and conspicuously among Mongolian tribes It probably reached China in he earliest times through the Mongol Tartars The Shaman exercised a dual function He was both priest and medicine man the latter role more often predominating His methods consisted partly in the performance of magico religious rites—in which by reason of his relations with the spirits he was able to cajole or threaten and ultimately drive out the demon whose presence in the patient caused disease—and partly in the application of a rough empirical knowledge of crude surgery and of remedies such as herbal concoctions sweat baths etc The whole proce s was accompanied by wild ecstatic behaviour on the part of the Shaman who also made as much noise as he possibly could with drums rattles and other instruments The Shaman in spite of the crudity of his methods is entitled to be considered a pioneer in the art and science of medicine. According to Chinese tradition miniature clay models of Shamans were buried with the dead in Chou times and the inference is that as the Shaman cured disease and warded off pestilence during life he would through his image continue to perform the same service for the departed The name of the Chou exorcists—the Fang Siang Shi—appears to be built up thus Fang shi a master of prescriptions and Siang to judge of by looks Down to quite recent times diagnosis among the Chinese has been a very rough and ready process the "look of the patient being one of the physician s chief guides



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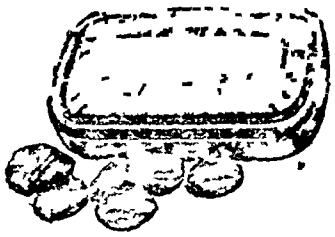


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on

TUBERCULOSIS OF THE LARYNX:

ITS SIGNIFICANCE TO THE PHYSICIAN

Delivered before the Royal College of Physicians of London, November 6th, 1924,

by

Sir Sclair Thomson, M.D.

It would not be an exaggeration to say that to-day in England and Wales, there are 106,990 individuals afflicted with tuberculosis of the larynx. This figure is arrived at in the following manner. In the year 1923 the deaths from pulmonary tuberculosis amounted to 32,097.* Now, statisticians are of opinion that for every single case which succumbs during a year there are ten others still suffering from it, this gives us 320,970 as the number of consumptive invalids in one year. Of these 320,970 patients the proportion who must have a laryngeal complication is at least one in three, and so we arrive at 106,990 as a modest estimate of the number of those who, in this country to-day, require relief or cure for tuberculosis of the larynx.

Of every ten persons born one is going to die of tuberculosis, and as a rule he will succumb while in the prime of life. Tuberculosis is the most important disease with which humanity has to cope. There is no other specific disease so common in the larynx. As the 106,990 cases in this country to-day must look principally to the physician for guidance and help, it is well worth while considering what assistance in his task can be offered by a laryngologist who, during a period of ten years, has carefully watched the progress of 477 instances of laryngeal disease, in 2,541 patients with pulmonary tuberculosis.[1]

Proportion of Laryngeal Cases in Pulmonary Tuberculosis

In the early years of this investigation one case out of every four had trouble in the larynx, while the average of the whole decade showed a proportion of 18·77 per cent. These patients were seen in a sanatorium and were relatively early cases, for the records of the *post mortem* room show that the larynx is diseased in 48 to 83 per cent. of all fatal cases.

Suggestive Symptoms.—The physician would therefore be well advised to be prepared to encounter a laryngeal lesion in a considerable number of his consumptive patients. The importance of this recognition will be brought out later on. The two most suggestive symptoms to him will be—first, slight but persistent hoarseness and secondly, discomfort referred to the throat or even pain in swallowing. The latter is a symptom which is more frequent with advanced cases, therefore for the all important attainment of an early diagnosis, any hoarseness or any slight change in voice which does not clear up in two or three weeks should rouse suspicion and entail an expert examination of the larynx.

Without Change of Voice.—But we must not forget that tubercle occasionally invades the larynx without causing the slightest alteration of voice or any other local symptom. This is quite understandable if we remember that disease may be deposited in the epiglottis on a ventricular band or on the arvepiglottic fold without interfering with the glottis or impeding the clear vibration of the vocal cords. Of the 477 cases of laryngeal tuberculosis I found no less than 57 (34 men and 23 women) who had no complaint of their throat, and whose voices—both to their own ear and to mine—sounded quite clear and normal. The regular physician should therefore be prepared for the possibility of a laryngeal lesion with his consumptive patients even when they have a clear voice. The proportion is small, my 57 cases occurred in 2,541 patients—an average of only 2·2 per cent., still an examination of a patient with pulmonary tuberculosis—or even suspected of it—cannot be regarded as complete without a laryngeal inspection.

Proportion of Laryngeal Cases in Relation to Sex

Since the days when change could be diagnosed in the larynx by the aid of the laryngoscope (invented by Manuel Garcia in 1854) it has been accepted that men are more prone to develop laryngeal tuberculosis than women just as the male larynx is regarded as more disposed than the female to be attacked with any disease. It used even to be thought that the female sex was less subject than the male to contract pulmonary tuberculosis. But it has been shown that any difference between the sexes in this respect is *not*, as regards tubercle due to any sexual predisposition, but simply to the fact that, until recent times, women have led a more sheltered life and have been less exposed both to fatigue and to infection than men who work in office or factory. When both sexes are exposed to the same conditions woman is just as subject to tuberculosis (in lungs or in larynx) as man—perhaps more so. A glance at Fig. 1 will show that the difference of laryngeal disease in the two sexes is so slight that it may be disregarded. The conclusion is that, amongst bread-winners, we must be prepared to find tubercle just as frequently in the larynx of the female as of the male. Another conclusion is that man's greater indulgence in alcohol and tobacco does not seem to render his larynx more vulnerable to tuberculosis.

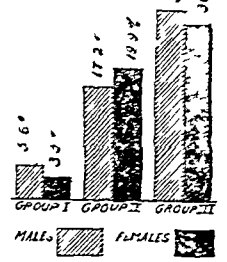


Fig. 1.—Percentage incidence of laryngeal cases in the two sexes and in the three stages of pulmonary tuberculosis.

Proportion of Laryngeal Cases in Relation to Stage of Pulmonary Disease

It has long been established that the frequency with which the larynx is invaded increases with the progress of the pulmonary disease. This may occur even in 4·8 per cent. of cases in an early stage of the disease. These are cases with limited lesions, and, at this period, might well be called 'favourable.' In severe cases the proportion mounts up to 18·3 per cent., while in the advanced type of disease, which forms Group III. of the Turban-Gerhardt classification, the proportion of laryngeal disease is almost double—namely, 31·5 per cent.

An inspection of the diagram (Fig. 1) shows that both women and men are increasingly liable to a laryngeal lesion with the progress of the pulmonary disease. Only one out of every twenty *poitrinaires* with an early lesion is liable to throat trouble; in more serious cases (that is, those in Group II. of the Turban-Gerhardt classification) the proportion may be one in five, and in the advanced cases of Group III. one patient in every three will have the disease in the larynx. This development—as will be shown later—diminishes so markedly the prospect of recovery that it emphasizes the great importance of diagnosing pulmonary tubercle in its early stage and persuading the patient to submit to the best treatment.

Region of Larynx Attacked

Tubercle may deposit in any part of the larynx, but it may help towards an early diagnosis if a keen look-out is kept on the region most commonly attacked. It is quite certain that the favourite site is the neighbourhood of the posterior commissure—that is, the inter-arytenoid area, the anterior surface of the arytenoid bodies, and the vocal processes (Fig. 2). The vocal cords come next in frequency, while the epiglottis and the region of the anterior commissure are attacked more rarely, and are generally late extensions of the disease. Now, I impress the importance of bearing this fact in mind, that it is just around the margin of the posterior commissure that the disease

* On the State of the Public Health. Annual Report of the Chief Medical Officer of the Ministry of Health for the year 1923. His Majesty's Stationery Office, London. 1924. Price 6s.

is most curable, and yet it is an area which is frequently overlooked Reports are very commonly sent up with the remark that "the arytenoids are swollen," or that "the

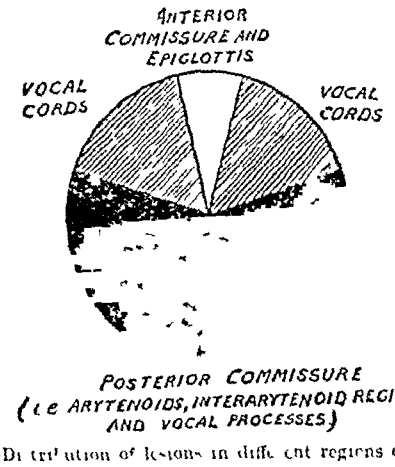


Fig 2.—Distribution of lesions in different regions of the larynx

cords are not ulcerated" But the latter is not the most common lesion, and by the time that an arytenoid is swollen the disease is advanced and generally hopeless

Prognosis of Tuberculosis in the Larynx

To forecast the possible course of a lesion in the larynx requires the careful balancing of a huge number of factors, general and local, and hardly comes within the scope of this lecture What the prospect is of a local cure may be estimated by a study of the accompanying table (p 843) which shows the results of treatment in nearly 500 cases of the disease Of much more importance to the general physician is an appreciation of what tuberculosis in the larynx counts for in regard to the mortality of pulmonary cases

The Prognostic Value of Tuberculosis of the Larynx in regard to Mortality

In treatises on medicine or on pulmonary tuberculosis it is not unusual to read that, if the disease attacks the larynx it "adds distressing features to the case," or increases the gravity of the outlook" These statements I entirely endorse, but I hardly think it is generally realized that this complication is such a serious one—only less in gravity than a secondary invasion of the meninges—and I hope that the following observations may help to strengthen the position of the physician by encouraging him to work for an early diagnosis and to insist on prompt and suitable treatment

Of the 2541 patients with pulmonary tuberculosis who were discharged from the King Edward VII Sanatorium Midhurst between 1911 and 1921 the proportion of those alive between one and ten years later was amongst those with a sound larynx, double that of those with tuberculous laryngitis Of patients found to have tubercle in the larynx during these ten years two out of every three were dead Of those with a sound larynx it is the reverse—two out of three were still alive Of all the 477 cases of laryngeal tuberculosis which passed through my service at Midhurst between 1911 and 1921 no less than 70·5 per cent are now dead

This darkening of the prognosis occurs in all stages of the disease (see Fig 3) Of patients with lesions in the lungs so limited that they were subdued in Group I (of the Turban-Gerhardt classification) 82·6 were alive at a date when 50 per cent of the patients with similar lung lesion but with the addition of a deposit in the larynx were dead In Group II the mortality of laryngeal cases is more marked—two out of three cases are dead while of those with a free larynx two out of three were still alive In Group III—that is advanced cases—the difference is not so marked, for the mortality is so much higher with advanced pulmonary tuberculosis that the added danger of a laryngeal lesion is not so noticeable Even in this group 42·3 per cent of the patients were still alive amongst those with a free larynx when only 22·7 per cent survived at the same date of those in whom it was affected

A glance at Fig 3 will show that the mortality of laryngeal cases in Group I is higher than it is among pulmonary cases with more extensive lesions of Group II but with a normal larynx (that is, a mortality of 50 per cent compared with 39·08 per cent) In Group II this mortality is 66·3 per cent, compared with a rate of 57·4 per cent in the larynx-free patients of Group III

Put in another way, a Group I patient (that is, a "slight" case) with a laryngeal lesion has a worse prospect than a Group II case with a sound larynx And a Group II case (that is, a "severe" case) with throat trouble has a gloomier expectation than if he had had a healthy larynx but lungs so involved as to be classed in Group III (that is, an "advanced" case)

Differently expressed, the discovery of a laryngeal lesion at once moves a case down to a lower group In fact, in our tabulation *of cases in King Edward Sanatorium* there are no laryngeal cases in Group I We think so badly of this complication that, even if only associated with quite early lung trouble, disease in the larynx moves such a patient down to Group II Therefore laryngeal tuberculosis cannot be listed in any group which might be termed "slight" or "favourable" Its discovery at once labels a case is "severe," and authorizes a physician to warn his client that treatment will necessarily, even in the most hopeful cases, be long and arduous In only too many instances (in 70·5 per cent of my fairly favourable selection) it will be his duty to advise the friends that the prospect of a recovery is so slight that it may be unjustifiable to submit the sufferer to any trying, dangerous, or expensive treatment

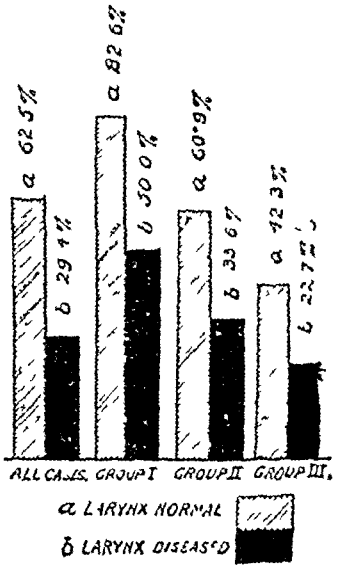


Fig 3.—Percentages surviving in (a) of patients (a) with larynx normal (b) with larynx diseased from 1911 to 1921

Results of Treatment

From these rather gloomy conclusions let us turn to my record of 119 cures To appraise them at their value I may be permitted to say that such a large total of well authenticated cases of healing in a larynx with tuberculosis has never before been published in this country The satisfaction of quoting this record is enhanced when I recall that in 1880 Morell Mackenzie wrote "The prognosis of laryngeal phthisis is always extremely unfavourable and it is not certain that any cases ever recover", and that as late as 1908 a well known German authority stated that

The cure of tuberculosis of the larynx is still to-day an exception" Sixteen years after these words were published I am able to refer to 119 "exceptions", many of them have been shown before sections of the Royal Society of Medicine, and some idea of the extent of lesion in which repair can be effected may be obtained by studying the illustrations shown on the screen A complete repair of the larynx has been obtained in no less than 25 per cent of patients with tuberculous laryngitis

Cures How Obtained

I have no doubt that the principal factor in obtaining these arrests has been sanatorium regime and the practical prescription of one or more of the three chief methods of local treatment namely, rest, silence, and the gain of cure is It certainly would be difficult to carry out the first two methods thoroughly except in a sanatorium In fact employment has always preceded the adoption of either application

But patients are cured—so far as local disease is concerned—*by the simple reduction of one's conditions*

whispers This figure gave 14 8 per cent as the proportion of cures in the 336 cases in which it was ordered It may seem a small proportion, but it is low because all laryngeal patients are advised to limit voice use to whispers, many of them had no expectation of complete cure and were only put on "whispers" to avoid aggravation of the local trouble, others amongst them had, in addition, cautery treatment, and are therefore listed under that rubric

Complete silence resulted in a cure in 23 instances, or in 34 3 per cent of the cases in which it was ordered The total of 23 cures out of 477 cases may seem small, but it was only carried out in 67 instances, for it was felt that such an ordeal should only be advised in promising cases The number is also reduced by the subtraction of some who, in addition, had cautery treatment The silence treatment was more successful with the women patients (41 6 per cent) than with the men (25 8 per cent) Women give a slightly higher percentage of cures, both with whispers and silence Their greater patience and endurance—or recovery power?—being most noteworthy in the ordeal of the silence cure

The *galvano-cautery* yielded 46 cures This method gives the highest proportion of satisfactory results in the 74 cases in which I tried it (=46 per cent), doubtless because the cases were carefully selected after being first watched, as a rule, for some months while under "whispers" or even silence In one case the patient was fourteen months in the sanatorium before his larynx and general condition justified galvano cautery treatment[3] This patient was able to earn his livelihood and remained well and active for years He then died of pulmonary haemorrhage the larynx never relapsed Another patient was a year under observation before the cautery could be used She required fourteen treatments It is seven years since the last, she is now free of bacilli and she earns her livelihood as a postmistress These cases show that this method may be long and costly, fulfilling part of the saying that 'the cure of tuberculosis requires a good stomach and a large purse!"

Results of Treatment by all Three Methods of Silence Whispers and Galvano cautery in 477 Cases

	Males	Females	Totals	Per Cent
Arrested	70	49	119	24 94
Improved	83	53	141	29.39
Status quo	111	76	187	39 20
Worse	15	15	30	6 29
Total	284	193	477	

Durability of Cure

After Silence—Of 8 men cured by silence, 3 are alive at periods of one, two, and four years after discharge The other 5 remained healed of their laryngeal lesions but have died from their pulmonary tubercle Of 15 women, no less than 10 are alive and well after the lapse of two to ten years

After Whispers—Healing has been maintained in some cases for three, four, and even ten years Fifteen out of 27 men, and 13 out of 23 women, are still alive and well

After Galvano cautery—Of 46 cures, 28 are still alive, and in 6 of them the cured condition has persisted for ten years As with the two preceding groups, the patients who are dead have succumbed to their pulmonary disease and, generally, without any laryngeal recurrence Even of these I have been able to calculate that the average duration of life, after healing was complete, varied from two years and eight months in the men and to five years and two months in the women

Benefit of a Healed Larynx—During these years the patients were able to use their voices, and this voice use was not only a pleasure to them, but it removed the anxiety and depression which so many patients suffer from when tubercle attacks the larynx The recovered voice also assisted them in their social duties and in gaining a livelihood

Lasting Laryngeal Cures—Thus of the 119 cases in which complete healing took place in the larynx 69 are alive at periods varying from two to ten years afterward Fifty are dead, and they have died, as a rule, with a still cicatrized larynx Their death usually, were due to the extent or virulence of their pulmonary disease

Proportionate Progress of Pulmonary and Laryngeal Lesions

The above references to the durability of healing in the larynx, while the disease in the lungs progresses, are sufficient to show that tubercle does not necessarily progress *pari passu* in both situations This latter view is still maintained, and, as it is not correct, it may occasionally mislead the physician

Improvement very commonly does proceed along parallel lines, and in the same way a retrogression in one is often followed by progress of the disease in the other For instance, a "flare up" of temperature is generally followed by development of active signs in the chest and an increase of the disease in the larynx But this is not constant I have known of tubercle developing in the larynx just as the disease had become arrested in the lungs (and remaining so for twenty years) and the bacilli had disappeared from the sputum On the other hand, I have frequently noted that the laryngeal disease had so far improved that the use of the cautery was indicated to complete the cicatrization, when I have received the report that the pulmonary disease was progressing Indeed, as recorded in the preceding paragraphs, spontaneous cure has taken place in the larynx in many cases, and has been maintained till the patient died of his pulmonary disease years afterwards But the reverse has never occurred—that is I have never seen a larynx getting worse while the pulmonary disease has improved It has occasionally in such instances, been reported to me that the lung trouble was *status quo*, but if the larynx did not mend the pulmonary disease inevitably, within a definite period, took on activity

This is useful knowledge for the physician a larynx may improve or get well, while the lung disease remains quiescent or gets worse, but if the disease in the larynx advances the pulmonary disease cannot possibly become arrested, and soon makes progress This again shows the value to the physician from the point of prognosis of periodic examination of the larynx

The Pessimistic Past of Tuberculous Laryngitis with its more Optimistic Outlook

The realization that of all my 477 cases, treated in a sanatorium during ten years 70 5 per cent are now dead is an arresting and a saddening thought Nearly all of them were young people, few of them had induced their disease by vicious living, many of them had incurred it largely by excess of unselfishness or by a too ardent devotion to duty, and in no inconsiderable number it was directly due to their patriotic services in defending their country in the great war This heavy toll demonstrates that tuberculosis in the larynx is always a serious complication of pulmonary disease Physicians would be well advised to assure themselves of its presence or absence in any case of tuberculosis It present it adds considerably to the seriousness of the prognosis and to the prolongation of the care and time required for successful treatment, even in cases otherwise early and promising

When the laryngeal lesion is extensive and active the outlook is particularly serious If the lesion is limited and becomes inactive it may be arrested, although the prospect of life may not be great From prolonged observations on nearly 500 sanatorium patients a cure of the laryngeal lesion may be secured in one out of every four patients These were, comparatively speaking, early cases But a much higher proportion of cures could certainly be obtained

if more cases of pulmonary tuberculosis were diagnosed while they are still Group I patients (that is, with only 4·8 per cent showing laryngeal lesions) instead of Group III (that is, with 31·5 per cent with the larynx involved) More cures could be effected if every case of persistent hoarseness or throat discomfort were earlier submitted to a skilled examination

Principles of Success in Treatment

It is manifest that a patient has a more sure hope of a quicker cure inside a well conducted sanatorium than he can expect otherwise Even if he remains in a sanatorium only long enough to learn how to manage himself, this sojourn is highly beneficial This is shown by the number of my cases which left Midhurst with the larynx still diseased but who kept up sanatorium principles and later on obtained complete and lasting cicatrization of their throat trouble

The chief local requirement is voice rest, which can be so easily carried out in a sanatorium but is elsewhere so difficult Out of 119 cases which were cured, the healing was obtained without other local treatment than voice rest (whispers or silence) in no fewer than 73 instances That such a simple treatment—though long and arduous for the patient—can be so effective should encourage perseverance with it when indicated

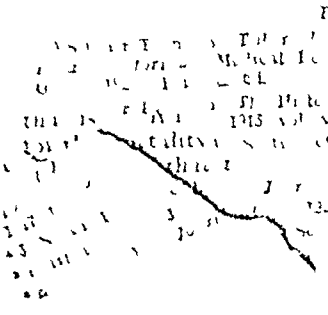
Local surgical methods of cure have all been abandoned by me as useless and frequently harmful My statistics show that a laryngeal lesion generally indicates an extensive lung lesion, or a very virulent infection, or lowered resistance As things are at present, the majority of patients with laryngeal tuberculosis soon die (70·5 per cent), they generally die of their lung disease Topical surgical measures in the larynx are only apt to hasten this, then successful local results have never been frequent or enduring, and we have, in the galvano-cautery, a safer and more certain help The galvano-cautery has, in my practice, superseded all other topical measures—cutting, injections, insufflations, application of lactic acid or other caustics I have never seen a single case in which it has done harm, although in some it has been abandoned as useless It effected a cure in 46 out of 74 cases in which it was tried (=62·1 per cent) Of these 46 cures, 29 are alive and well, 12 of them have now maintained their cure for ten years The galvano-cautery is the best local treatment we have at present In suitable cases it has replaced all other methods

Conclusions

The majority of cases of tuberculosis of the larynx do not recover It is necessary for the physician to recognize this, to try and determine which cases come within this category, and to act accordingly But these 119 cures are witnesses of the more hopeful outlook we now have for a fair proportion of patients of whom an authority has said that, forty-five years ago, "all were doomed to die the appearance of the disease in the larynx was the warrant of death"

The pessimistic past has now a more optimistic outlook As the Minister of Health said lately on a public occasion

The fight against tuberculosis was a long one, but it was a winning one At the recent Congress on Tuberculosis in Lausanne (August, 1924) it was shown by Sir Robert Philip that this fight is being won, not simply by the population becoming immunized or by such general advances as improved national health and hygiene, but by the measures of direct attack organized and inspired by our profession



CERVICAL RIBS IN CHILDREN.

BY

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Ever since Sir William Thorburn[1] in 1905 showed that certain symptoms in the upper limb were associated with the presence of cervical ribs, an increasing number of reports upon this condition have appeared in medical literature Supernumerary ribs have been recorded in both sexes and at all ages Thorburn states that the earliest age he has met with them was the seventeenth year Sir William Turner[2] refers to a case described by Rosenmuller in an embryo of six months, and Stiles[3] has also recorded a case in a female infant of 18 months Nevertheless, comparatively little attention has been directed to the presence of cervical ribs as a possible cause of symptoms in children, and this paucity of data is all the more striking when one considers the increasing use of radiography at the present time It is undoubtedly true that in the majority of cases the symptoms produced by cervical ribs do not appear until adult life is reached, and that in young children attention is perhaps only drawn to their presence by a prominence in the neck or by the accidental discovery of the condition in a radiograph of the neck

The four cases of cervical ribs in children described in this paper have recently come under our observation and have led us to make further investigation into the frequency of their occurrence The result has been to convince us that this condition has not received the consideration which it deserves

The first of the four cases occurred in a girl 4 years of age, and although the ribs were causing no pressure symptoms, the child was brought to the Royal Manchester Children's Hospital early this year on account of two hard masses above the clavicle The swellings were very prominent and extended from the spine to the first dorsal rib Radiological examination showed that bilateral cervical ribs were present In the absence of any symptoms no treatment has been deemed necessary up to the present time

In the second case, however, the pressure effects were so definite that operative treatment was clearly indicated The case is worthy of detailed record, as it is unusual to find such typical symptoms at so early an age

M. G., a girl aged 12 years, was brought to the Manchester Northern Hospital in June, 1923, complaining of neuralgic pain in the left forearm and hand, and a constant irritating cough She was first seen by Dr. Mather, who was unable to find any clinical signs in the chest to account for the cough, but discovered a swelling in the left side of the neck He referred the child to one of us for further investigation and treatment as being a case of suspected cervical rib Examination revealed a hard bony tumour above the left clavicle with some atrophy of the [illegible] muscles of the left hand Pain was complained of along the ulnar border of the forearm and hand, but no vasomotor or trophic disturbances were present A radiogram demonstrated the presence of a large cervical rib on the left side arising from the [illegible] cervical vertebra Operation for its removal was advised, and was carried out shortly afterwards A flap was raised [illegible] upon a border of the clavicle and behind the sterno-mastoid muscle, the brachial plexus being thus exposed The [illegible] connecting the cervical rib to the anterior trunk [illegible] to the first rib was clearly demonstrated and dissected free [illegible] rib at its dorsal end firmly [illegible] Division [illegible] anterior portion [illegible] The [illegible] was damaged, but [illegible]

Bleeding points were secured and the wound closed firm pressure being applied with a pad and bandage Recovery has been satisfactory the wasting has now practically disappeared with massage and there is no longer any pain

The portion of the rib removed measured 1¾ inches in length. The anterior extremity ended in a joint with an articular cartilage and synovial membrane which joined it to the first rib The attachments for the scalene muscles were clearly seen after its removal

In the third case, also a girl aged 12 years, there was a pair of cervical ribs causing distinct swellings on either side of the neck there were no pressure symptoms in this patient requiring treatment

The fourth case was also found in a girl, here symptoms made their appearance at the age of 15 A right cervical rib was subsequently removed on account of the pain in the arm and the wasting of the small muscles in the hand, with fairly satisfactory results

This succession of cases in the course of a few months suggested to us that it would be of interest to examine the records of the x ray department of the Royal Manchester Children's Hospital On doing so we discovered that in the last two thousand x ray examinations, including all parts of the body, in no less than nine cases were cervical ribs reported to be present The details of these cases are as follows

No	Sex	Age		Clinical Diagnosis or Symptoms
1	F	12 years	3 months	Cervical rib
2	F	4		Cervical caries
3	F	10	11	Torticollis
4	M	9	7	Cervical caries
5	M	2	1	? Cervical caries—? trauma
6	F	12	10	Cervical rib; paresis of left arm
7	M	5		Torticollis—? cervical caries
8	F	4		Cervical rib
9	F	7	7	Torticollis—? cervical caries

It is interesting to note that the disturbances due to the presence of cervical ribs gave rise to the clinical diagnosis of cervical caries in five cases, whilst in three instances their presence was associated with spasmodic torticollis In many instances the differential diagnosis can only be made by means of radiography, and in most of these cases the presence of cervical ribs could not be definitely established on palpation, even after their demonstration by x rays

The incidence of such a large number of cases in the course of fifteen months has convinced us that the occurrence of cervical ribs is more frequent in childhood than is generally supposed to be the case, and that we are well advised in drawing attention to the condition

Most radiologists will we think, agree that cervical ribs are less frequently detected in children than adults Although the records of the Royal Manchester Children's Hospital show a comparatively large number of cases in a short period, we are inclined to think this is a somewhat unusual occurrence

With regard to the relative frequency with which cervical ribs are found, there are no definite data available Fischel of Prague[1] reports that in routine necropsy examinations over a period of four years the condition was found in 1 per cent of all bodies examined From the x ray appearances observed in our group it appears that in the majority of cases cervical ribs are only partially ossified at birth and are not revealed by x rays until later in life In one of our cases where well marked cervical ribs were palpable a radiograph showed that only a small portion of the rib was ossified The dorsal ribs are ossified at birth, but at puberty secondary centres appear, and ossification and growth are not completed until about the twenty-fifth year It is probable, therefore, that the ossification of a more or less rudimentary rib may be still further delayed, and this is suggested in our series of radiographs We have seldom met with really large cervical ribs in children demonstrable by x rays, and this supports the view that their growth and ossification are not complete till later life when the incidence of cervical rib appears to be more frequently recognized With the growth of the child the dorsal ribs increase in size and length, and cervical ribs will no doubt do likewise

The fact that the onset of symptoms in these cases is usually delayed until after adolescence is accounted for by Todd[2] as being due to the descent of the shoulder-girdle, which is not complete till the third decade of life An additional factor in causing dropping of the shoulder-girdle has been suggested by Stopford[3]—namely weakness of the supporting muscles, producing stretching of the nerve trunks over the rib We suggest, as a further explanation why symptoms are delayed till adult life is reached the fact that ossification is not complete till after adolescence It is natural to suppose that the increase in growth and size of the rib may lead to greater pressure on the nerve trunks resulting in the nervous disturbances encountered in these cases It is interesting to note in this respect that in our cases the pressure effects were most marked in those children possessing more completely ossified and therefore larger ribs On the other hand it is undoubtedly true that in adults severe symptoms are sometimes caused by comparatively small ribs and that even a large pair of cervical ribs may produce no ill effects of any kind

Cervical ribs are for some unknown reason found to be more frequent in women than men and this is also borne out in our series, where ten out of thirteen cases occurred in the female sex They are said to be bilateral in about 60 per cent of cases, and in the group under review were bilateral in all except one case

In many cases of cervical ribs no treatment will be found necessary Where, however symptoms are present a short course of non-operative treatment to promote development of the muscles supporting the shoulder girdle should be tried Should however no improvement result after two or three weeks, surgical treatment consisting in removal of the rib is indicated When there is marked atrophy of the muscles of the hand their recovery is rarely complete and this should be an additional reason for avoiding unnecessary delay Where operation is undertaken before there is serious damage to the nerves it usually results in rapid subsidence of the disturbances

Our thanks are due to Professor Stopford for valuable assistance and advice in the preparation of this paper

Conclusions

1 Cervical ribs are congenital abnormalities and may be found in children at all ages

2 In thirteen recorded cases twelve were bilateral and ten occurred in girls

3 Their diagnosis will frequently only be made after radiographic examination

4 In the majority of cases symptoms do not appear till adult life is reached

5 The delay in the onset of symptoms may be due to delayed ossification of the rib, which is not complete till about the twenty-fifth year

6 In young children, however, there occasionally give rise to very definite symptoms in the upper limb similar to those seen in adults

7 In others their presence may lead to a diagnosis of spinal caries or torticollis and the differential diagnosis can be established only by radiography

8 Only rarely will treatment by operation be found necessary

References

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VENOUS PULSATIONS AND VENOUS TRACINGS.

(A Supplementary Note)

BY

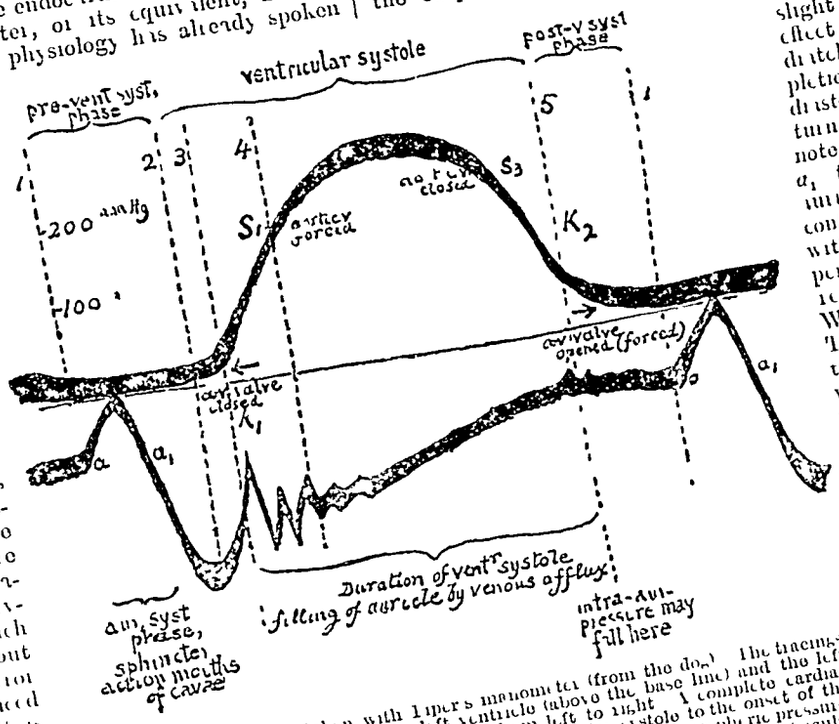
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In the BRITISH MEDICAL JOURNAL of April 14th, 1923 (p. 626), certain criticisms on the current interpretation of the polygraphic tracings, obtained from the root of the neck, were brought forward, and, in view of the discrepancies which seemed to show between the interpretation and the actual sequence of events in the cardiac cycle, I ventured to suggest that the whole subject should be referred to the physiologists. Upon further consideration of the matter, and after careful study of the endocardiac pressure tracings taken with Piper's manometer, or its equivalent, I have come to think that perhaps physiology has already spoken to some purpose, and it is this pronouncement which I desire now to bring forward in an endeavour to complete and confirm the argument previously presented.

In Piper's manometer the elimination of the instrumental error, by the utilization of the beam of light in lieu of the mechanical lever seems to have brought the recording apparatus almost as near perfection is possible. There still remains the inertia of the vibrating membrane carrying the mirror which reflects the beam, but this source of error has also been reduced to a minimum. It is this instrument which has disproved the presence of negative pressures in the chambers of the heart during the act of diastole.

The figure is reproduced from Starling's *Human Physiology* (third edition, 1920) by kind permission of the author and the publishers (Messrs. J. and A. Churchill). Some letterings and numberings have been added to the figure, also some descriptive words, but no alteration of any kind has been made in the tracing itself.



Intracardiac tracings taken with Piper's manometer (from the dog). The tracings are taken simultaneously from the left ventricle (above the base line) and the left auricle (below). The curves are to be read from left to right. 1 complete cardiac cycle is shown, namely from the onset of one auricular systole to the onset of the next. The base line (with opened thorax) represents the zero of atmospheric pressure. Ordinate 1 marks the onset of the auricular systole. Ord. 2 the onset of ventricular systole. Ord. 3 the point of closure of the auricular valve. Ord. 4 at S_1 the forcing of the aortic valve. Ord. 5 K the opening (forcing) of the auriculo-ventricular valve. The point of closure of the aortic valve has been placed arbitrarily at the point S, to indicate that it will stand higher on the curve than S_1 because the intra-aortic pressure will be at its highest towards the end of ventricular systole at which time the aorta will be most distended. On the auricular curve, a marks the onset at the ending of the auricular systole.

Let us now endeavour, along these curves, to follow the sequence of events within the auricle during the cardiac cycle. We start with the auricular systole.

At whatever level of pressure the intra-auricular pressure may have stood at the moment immediately preceding auricular systole, this event now superimposes its own reinforcement. The pressure line starts at *a*, rises more or less abruptly, culminates, and then falls, until it reaches the point a_1, the fall of the line reproducing approximately the line of ascent. At the point a_1 the auricular systole is wholly spent, at the same moment the ventricular diastole is completed. At this point Hurthle has detected a slight intraventricular rise of pressure which will stand for the auricular systolic effort now transformed into tension of the ventricle.* Upon withdrawal of the auricular systolic effort thus intraventricular pressure, however slight its rise, will be positive as compared with the intra-auricular diastolic pressure then ruling, and it must take effect backwards (since there is no outlet forwards). But in opposition to the ventricular recoil stands the auriculo-ventricular valve, the cusps of which, therefore, will first be floated into position and then carried back under slight tension. This effect will follow immediately upon the completion of the auricular diastole. It now we turn to the tracing we note that at the point a_1 the falling intra-auricular pressure line continues its descent without any break or perturbation until it reaches its minimum. What is the conclusion? That this primary ventricular recoil is too weak in effect to register itself within the auricle or let alone to record itself in the internal jugular vein."†

Auricular diastole is thus silent, but what of its antecedent auricular systole? The tracing precents very definite wave like rise and fall. Is this an undulation? No, it is just a pressure or tension curve, no more, corresponding in this respect exactly to the curve of the ventricular systole above the base line, but it may beget an undulation if there be any point of outlet from the auricular chamber. There are two outlets—one forwards into the ventricle, one backwards into the veins feeding the auricle. Without doubt there will be a fully developed *forward* effect as the blood is propelled into the ventricle, but this can have nothing to say to us who are watching events at the root of the neck,‡ for the internal jugular vein can only register backward developments arising within the auricle. Now, as to these latter, let us consider first the purpose of the auricular systole and ask, What is the auricular walls reinforced with muscular fibre? The answer is, In order that the auricles may become contractile chambers, and so may reinforce the spent blood of the circulation, fallen to a minimum in the great thus they will ensure a better filling of the ventricle,

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* It must be borne in mind that the tracings above and below the line shown bear no relation to each other in regard of their *force values*. For whilst the intraventricular values are measured in millimetres of mercury and in hundreds the auricular values are measured in millimetres of water and in tens, so that an actuality the auricular curve is but one-tenth the height into which it is brought into relation with the ventricular curve. Another point should be kept in mind, if brought into the figure as it stands for with the base line on practically its upper and lower limit

will facilitate the general onward movement of the venous blood. Let us next look at the disposition of the fibres, and in particular take note of their arrangement at the mouths of the tributary veins. It will be seen that they encircle these inlets and in the act of contraction must sphincter-like, close them more or less. Here comes the crux of the matter: how complete is their action? As to this, I understand from Professor Starling that precise physiological determination is lacking, but in its absence it is probable that certain conclusions may be drawn and will find general acceptance, these are:

That in health we may expect the sphincter action at the mouths of the two cavae and of the pulmonary veins to be a very appreciable quantity during auricular systole: seeing that both structure and purpose point in this direction, for how is the auricle to get up a sufficient head of pressure to complete the ventricular filling if there is an abundant reflux leakage into the great veins at each systole? At any rate it must be clear that by *as much as there is backward reflux at each systole the auricle will fail in its propulsive effort*. And again, the object of the auricular systole being to facilitate the general onward movement of the venous blood, how would that purpose be served by an abundant reflux, which must oppose that movement? The argument gains in authority when we regard the great capacity of the tributary veins, especially of the cavae, their thin, therefore distensible, walls, and further when we remember that in health the veins are underfilled, all the circumstances thus conspiring to favour reflux in the absence of a pronounced sphincter action.

The force of these deductions will not be weakened because in disease, marked by engorgement of the right heart and of its tributary veins, we are obliged to admit that sphincter action is almost certainly in default, more or less, and that in paralysis of the auricle (fibrillation) it must be in complete abeyance, rather will the argument be strengthened because we then see before us the circulatory failure which attends upon or is accentuated by a failure of sphincter action. Pending the physiological determination of this matter we may sum up as follows:

(*a*) Supposing that in health sphincter action at the mouths of the cavae is complete, there will be no possibility of an *a* wave in the internal jugular vein as a backward propagation effect due to auricular systole.

(*b*) Supposing, on the other hand, an *incompleteness* of sphincter action, whether in health or disease, this, *pro tanto* will favour the propagation of an auricular systolic wave into the superior cava, which may or may not reach the internal jugular vein in measurable strength.

(*c*) But that, in respect of the last-named conclusion we must *not forget* that even in health the force value of the auricular contraction is very small, whilst in disease with right-sided congestion of the heart, it will be more or less impaired even to complete extinction.†

(*d*) Finally, it must be repeated, Piper's tracing of the auricular systole tells us only of a rise and fall of pressure *within the auricle* of events within the tributary veins, associated or not, it says nothing, directly: that is a matter of inference and as such is debatable.

Are there any possibilities of an *a* wave caused by the auricular systole yet not due to propagation backwards from the cavity of the auricle? Physicists have contended that there are, they point to the effect of suddenly interrupting the flow of a stream of liquid as by the turning of a tap. The rebound which then takes place at the site of the interruption is a familiar manifestation. Dr Samways‡ in particular has argued for this mode of origin of an *a* wave propagated back from the *closed* mouths of the tributary veins, and Professor Starling also admit the possibility of this mode of action. Whether a phenomenon which holds for a stream of water flowing under considerable pressure (as compared with the venous pressures of health and disease) through a system of rigid tubes would find its counterpart in the low pressured afflux of the great cardiac vein, the walls of which are thin and elastic and in general incompletely filled, this I must leave to the physiologists and physicists to decide, but if it should be established it would surely demand *complete occlusion* of the mouths of the auricular veins during the early auricular systole.

The next intra-auricular event comes with the forcible recoil of the auriculo-ventricular valve, which is effected by the onset of ventricular systole. We have already referred to a slight recoil of this valve bringing the cusps into position which will take place at the end of auricular systole when the force which completes the filling of the ventricle is withdrawn. The cusps thus in position will present the valve as a cone with its apex towards the ventricle, but now with the rapid and forcible contraction of the ventricle the valve will be driven back towards the auricle along with the contents of the cone, and an impulse imparted to such residual blood as may have been left over in the auricle at the end of auricular systole augmented further by influx from the cavae, which upon cessation of auricular systole will *at once unload their excess of blood* accumulated during its persistence. This stronger movement of the valve begins quite early in ventricular systole, as shown at K_1. What is its effect within the auricle?

We see in immediate sequence certain sharp-peaked oscillations of the pressure line, at times still more pronounced than here shown, according to Professor Starling. These oscillations have the characters of true undulation of the ridge and trough type and we note their gradual subsidence whilst keeping to type. Evidently the contents of the relaxed auricle have been set in motion by the impulse they have received. The dying away of the perturbation is a familiar inertia effect which may apply to the contents of the auricle only or be due to the swinging of the valve, the result of a jerking action of its attached muscles, which would communicate itself to the contents. Be this as it may, here is the *onset* of ventricular systole announcing itself unmistakably. But the contents of the auricle are in free fluid communication with the blood in the tributary veins, since in the relaxed auricle there is *no* obstructing sphincter action, therefore to the development of an early or earliest ventricular systolic wave in the internal jugular vein there is no impediment. It is for this that I have contended—namely, that admitting, for argument's sake, the presence of a pre-ventricular systolic *a* wave, the next event in the cardiac cycle must be styled a *c* wave, since it marks the onset of ventricular systole.

From this point onwards, proceeding with the cardiac happenings, the contents of the auricle are shut off from all communication with the ventricle (assuming that the auriculo-ventricular valve holds), so that nothing occurring within the ventricle can propagate itself backwards into the auricle until the auriculo-ventricular valve opens again, and till this happens the auricular contents are solely under the influence of the venous afflux via the cavae.

It will be convenient here to leave the intra-auricular developments for a while in order to discuss a wave marked *c* on the polygraphic tracing. This wave is placed directly after the *a* wave, and, so situated, it does not merely take precedence of the wave caused by the onset of ventricular systole which we have just been considering, and which figures so prominently on Piper's tracings, but completely ousts it inasmuch as the latter appears nowhere on the polygraphic record. The *c* wave is held to originate in the impulse which the carotid beat transmits to the adjacent internal jugular vein, and that all adjacent structures must feel this impulse is indisputable. The contents of the vein therefore will be set in motion, but the question is, At what point of time does this incidence take place? The arterial pulse originates on the left side of the heart at the aortic valve at the moment when

* See Henle's *Handb. d. Gefass lehre d. Menschen* (second edition 1876), Fig. 35 and 36, pp. 48 and 49). These figures have the more authority in that I do not discover them to have any *ad hoc* applicat on by Henle.

† The question of hypertrophy of the right auricle is so rare an occurrence as to be negligible clinically, and left auricle activities of course do not record themselves in the internal jugular.

‡ BRITISH MEDICAL JOURNAL, April 13th 1912. I regret that I had never looked Dr. Samways's views as to the sphincter action of the mouths of the auricular veins when I wrote my paper (BRITISH MEDICAL JOURNAL, April 14th 1923).

the rising intraventricular pressure forces the valve This moment is marked S_1 on Piper's tracing If now we look at the figure we see that a very appreciable interval* lies between the closure of the auriculo-ventricular valve, which takes place almost immediately after ventricular systole has begun, sometimes "synchronously with it,"† and the opening of the aortic valve The actual length of the interval can be found by measuring the distance of the point S_1 from the ordinates 3 and 2 respectively, and if we do this with compasses we find that it varies from one-fifth to somewhat over one-fourth of the total duration of the ventricular systole, counting from the closure of the auriculo-ventricular valve until the opening again

From Piper's tracing, then, it is quite clear that in early ventricular systole undulation arises within the auricle, at or immediately after the closure of the auriculo-ventricular valve, and that it precedes the arising of the arterial pulse at the aortic valve by a well marked interval How are we to reconcile the conflict here seen between the heart happenings and the polygraphic record?‡ As it stands there are two cardiac events which are capable theoretically of wave production within the internal jugular vein—yet the polygraph shows us only one wave, and that wave is attributed to the second event, to the complete exclusion of event No 1 Why? Let us suppose that each cardiac event starts a wave, and that each wave makes for the same point in the internal jugular vein—what will happen? (1) There will be two waves, if these arrive at different points of time, (2) if they happen to arrive simultaneously, there will be one large wave, provided that the two waves are in like phase, for then they will reinforce each other, (3) there will be one diminished wave if they are in opposite phase, for then they will clash and cancel each other more or less, (4) there remains as a final possibility that, still being simultaneous, the two waves will cancel each other wholly, they being not only in opposite phase but of equal force value, according to the well known physical law of interference

Let us now return to the intra-auricular happenings which upon the subsidence of the perturbation caused by the abrupt closure of the auriculo-ventricular valve, were left under the sole influence of the venous afflux gathering behind the shut valve As I have previously stated, this afflux itself begets no pulsation Under these conditions what should we expect? What else but a gradually mounting pressure line as the blood accumulates in the auricle This rise of pressure would of necessity communicate itself backwards to the tributary veins the cave and their branchings including of course, the internal jugular, indeed the cave and their branchings, together with the auricle will form but one continuous cavity, since the auricle is in diastole and therefore no sphincter action is in operation The auricular congestion would therefore involve a venous congestion, and in the veins the pressure rise would follow the same course, mounting steadily by a summation of small quantities And what do we see in Piper's tracing? This seltsame gradual and smooth rise throughout the continuance of ventricular systole, which rise presents nothing of the nature of a wave, being just a tension curve At the end of the systole, upon the opening of the auriculo-ventricular valve, we do see, however, a slight perturbation and the ascending pressure line gives place to an almost horizontal plateau What has happened? The word opening is applied to the valve makes a wrong impression it suggests the active opening of a door This is not the case we may liken the valve action to that of a swing door open, freely in one direction but unable to move in the opposite direction beyond the point of closure The rising intraventricular pressure held the door closed during the whole of the systole, but upon its cessation—that is, upon the withdrawal of the muscular contraction—there was simultaneously a withdrawal of the holding force and the door was left, a passive structure, free to move under the force of the accumulated intra auricular congestion This force is, comparatively, very small, it is represented by the stretch of the auricle and the stretch of the thin-walled veins which feed it, but in the end these distensions do suffice to push open the valve (which opposes only its own inertia, a negligible quantity), and then they proceed to separate the relaxed ventricular walls, filling the ventricle as far as they are able In this act of ventricular filling the relaxed walls play a wholly passive part (for there is no negative pressure generated therefrom, no suction exerted), but the walls of the ventricle being much thicker than those of the auricle and, *a fortiori*, than those of the veins, these do oppose an appreciable inertia to the unloading of the auricle and its veins Accordingly we shall not be surprised to discover that, considering the smallness of the forces engaged, the unloading takes place quickly and with but slight falling off of the intra-auricular pressure line Consulting the figure, this corresponds precisely with what we have been led to expect from the physics of the problem I gather from Professor Starling that Piper's tracing is a typical one—that is, it represents an average result—and consequently the typical pressure curve within the veins communicating with the auricle will repeat exactly the form of the curve of the intra-auricular pressure as shown in the tracing The average case, therefore, will present no wave of venous "stasis" (accumulation) either in auricle or vein during the course of the ventricular systole subsequent to the disturbance on the closure of the auriculo-ventricular valve

But whilst we may regard this course of things as the rule, the exception may show us a more or less pronounced divergence In fact, Straub's intra-auricular tracing (taken from the cat)* does show us such a variant with a marked fall of pressure at the end of the ventricular systole How is this to be explained? Perhaps as follows Supposing the walls of the right ventricle to be less developed muscularly than usual, and therefore to approach more nearly to the auricular wall in thickness, supposing for some reason or other the tone of the muscular fibres be lowered—then upon cessation of ventricular systole the forces opposing ventricular dilatation will be greatly diminished and the congested auricle will be able to unload itself with comparative ease, causing therewith a more or less marked fall of pressure Straub's result would then be reproduced †

Be the explanation what it may, the fact of the variability remains, but the point to observe is that in those cases where the fall in pressure is "very distinct" at the end of ventricular systole, the rise and fall of the auricular pressure line may simulate a wave However, that we are then dealing with a simulacrum and not with a true undulation appears unmistakably in this, that the upstroke of the tracing is not repeated in the down stroke, the pseudo wave presenting a *gradual* ascent but a *sudden* descent ‡ Accordingly this asymmetrical tracing which the auricle yields, and which the contents of the internal jugular must reproduce exactly, will always contradict the curve of the polygraphic tracing, which in its sharp rise and fall, as figured, reproduces exactly the characters of the waves *a* and *c*, and therefore does not correspond in any sense to the theory of its production—namely, *by slow accumulation and sudden relief* In point of fact the intra auricular tracing which obtains after closure of the auriculo-ventricular valve and persists till it reopens is just a pressure curve and nothing else

Briefly, then, it comes to this, that when we compare the polygraphic record of the pulsations at the root of the neck, *as interpreted at present*, with the sequence of acts in which the cardiac cycle exhibits, according to the experimental findings of physiology, we discover a point of disagreement which forbids the utilization of that record for these purposes so long as the disagreement lasts

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Sir James Mackenzie describes this interval as a minute portion of time (*Diseases of the Heart* third edition p 52)

† Cf Starling, op cit loc cit

‡ If this interval will be found by examining out the propagation of the auricular pulse and of the arterial pulse from the heart to the arm, points to the seat of the lesion remain to be found

* Starling, *Physiology* p 250

† Wenckebach op cit p 69 draws a similar conclusion from the behaviour of the intra-auricular pressure line in auriculo-ventricular dissociation [illegible] auriculo-ventricular dissociation [illegible] venous pressure [illegible] *auricular* it is a very little [illegible] it does not [illegible]

‡ [illegible] Fig 3

A CLASSIFICATION OF CHOREA IN RELATION TO ITS CAUSES *

BY

CHARLES J MACALISTER, M D, F R C P

Over a period of many years a large number of cases of chorea have passed through my hands at the Royal Liverpool Hospital for Children at Heswall, and an opportunity has thus been afforded for investigating the causes of the disorder Although chorea is classed as a disease and is described as such in the textbooks, it really is a condition of a neuro-muscular inco-ordination which may result from very different causes It is a symptom rather than a disease, and I have come to classify it with reference to its origin, and not to mass all the cases under a single generic title Thus we have

1 The ordinary rheumatic or toxic type
2 "Stock-brained" cases related to an inherited tendency
3 A climacteric type

There is often little to distinguish these cases so far as the movements of inco-ordination are concerned but some of the associated phenomena present considerable distinctions

One of the first lines of inquiry consisted in a primary classification of all the cases into those which were rheumatic or developed endocarditis or pericarditis and those which did not and it appeared that the latter were often ascribed to fright or mental upset or some peripheral source of irritation, so that we had (1) rheumatic choreas, and (2) fright, etc , choreas

Next came a careful scrutiny of the histories of both types, and the interesting fact was revealed that in the second class the children were sometimes left-handed themselves or, being right-handed, came of a left handed stock, whereas the rheumatic children presented this kind of history in a very limited number of cases—probably representing rheumatism in children having the hereditary factor referred to It was on this account that the non-rheumatic cases became styled "stock brained choreas" and it is with these that I shall mainly deal here

In a few instances children suffering from this form of chorea have belonged to families in which there were stammerers—a fact which throws some light on the nature of the condition The choreic movements probably represent a gross motor ataxia or inco-ordination which may be regarded as analogous to vocal stammering An example of this was seen in a boy (Robert S), aged 6, who had well marked chorea, ascribed to the excitement of going to school for the first time He was left-handed The only other child, a boy, was right-handed and a stammerer The father was a left-handed stammerer and so was his brother Another similar case was seen in a girl who had chorea accompanied by acute vocal stammering which resulted from terror She was left-handed and had a stock brained history I mention these cases simply to indicate the suggestive relationship which probably exists between this type of chorea and stammering which has long been known to be in some way associated with familial left-handedness

I have a large collection of cases of chorea presenting this stock brained history, many of them acute, and so far as general symptoms are concerned in no way different from the rheumatic ones The history is in some cases direct in others collateral It will suffice if I quote some examples of each to illustrate my point

1 Margaret K aged 9 Severe and prolonged chorea Left handed Both parents right handed Four maternal uncles left-handed This child had rheumatism two years before the attack

2 John D aged 13 Mild chorea no history of rheumatism attack followed a small operation Left handed Has a right handed sister Father's family all right handed Mother mother's paternal grandmother father and sister left handed

3 Robert S aged 6 Severe chorea the result of fright no rheumatism no cardiac symptoms Left handed Father left handed and a stammerer one brother right handed and a stammerer Father's brother stammered Mother even letters and a second brother right handed and normal

4 Henrietta H aged 8 Severe chorea the result of being knocked down by motor Right hand d Father right hand d mother left handed No history of rheumatism no cardiac symptoms

5 Edward J aged 7 Severe chorea no rheumatism or cardiac symptom Left hand d tammered occasionally for three months before the attack Mother father left handed

6 Thomas F aged 11 Severe chorea the result of accident No rheumatism or cardiac symptom Right handed Father and mother right handed Mother has two left hand d brothers Second attack of chorea followed dog bite

7 Elsie C aged 6 Severe chorea the result of dog bite No rheumatism or cardiac symptoms Right handed Father and brother left handed

8 Eileen A aged 8 Severe chorea the result of fright (father threw paraffin on fire) Left handed. Father left handed mother right handed

9 Hilda O aged 8 Severe chorea—frightened by a dog Right handed Parents right handed Has left handed brother and aunt

10 Muriel D aged 6 Severe chorea—knocked down by bicycle No rheumatism or cardiac symptoms Right handed Mother mother and brother left handed

11 Ada D aged 12 (sister of above) Severe chorea—a cribbed to sister's illness

In all probability these choreas do not occur in children who come of a pure right-handed strain, nor would they in a purely left handed one if such existed Right-handedness and left sidedness are both hereditary, but the vastly larger proportion of right-handed people renders it impossible that there should be a pure left-handed strain in any family – that is one uninfluenced by a right handed dominance

From the histories which I have collected I gather that it is where there is a partial or reproduced transposition of cerebral function that we find the explanation of these cases—that is, they occur in children who are right-handed, but where there is a stock brained left-handed influence at work and in left-handed children where a reproduced right-handed inheritance produces its influences As a consequence of fright or other disturbance an unbalancing of co-ordination is brought about owing to some unusual relationship of function on the opposite sides of the brain

To revert to the stammerer we have this kind of involvement of the speech apparatus Stammering in a right handed person may result from a determination towards left-handedness with a dominant left cerebral speech centre whereas in the left handed person it may result from there being a determination towards right-handedness with a dominant right cerebral speech centre Hughlings Jackson, in his writings on the speech centre regarded the centre in the left brain as being the leading centre, its fellow in the right brain as an automatic one

It was on this basis that he accounted for the repetition of words and recurring utterances or sentences in a barrel organ" way in some cases of right aphasic hemiplegia He gave examples showing that these utterances often expressed the last call of the individual when struck down by the apoplexy I recollect a case of the kind where the patient from the time of his seizure until his death repeated the words "I want some brandy"—no doubt the result of his feeling sick and faint when the haemorrhage occurred Hughlings Jackson explained that these expressions probably come from the undamaged right automatic centre after being initiated in the left one immediately before it was put out of action Thus there is a double cerebral service It this be the case, it no doubt throws light on the relative functions of the two centres in a normal individual One can well imagine that where a stock brained influence impresses a tendency for automatism in a leading centre or for a centre having automatic functions to also on leading one the inco-ordinations expressed as chorea might easily be brought about the slender balance being upset under the influence of fright or other emotional or peripheral disturbance Whatever the explanation, the fact remains that here is this type of chorea which occurs in children presenting a stock brained history

Before parting from this type I may mention three examples of congenital aphasia which have come to my notice Two of them (girls) were left-handed, and all presented a collateral maternal history One of the two girls was mentally defective, the other, aged 6 was absolutely bright and quite up to the standard of intelligence

* Presented at the Association of Physicians of Great Britain and Ireland in 1923 and read at the Liverpool meeting of the Children's Section of the Royal Society of Medicine at Liverpool June 1924 with illustrative cases

for her age Although she could not speak, like the lesional aphasics, she could hum tunes and tried to sing with words The third case was a boy (G B) aged 2 years and 10 months, who has never spoken He makes efforts to speak like a child stammering very badly He is a well proportioned child for his age, but his mental condition is difficult to estimate His mother considers him quite intelligent He is right-handed, but comes of a left-handed stock —that is to say, his mother is right-handed but her brother and sister and her mother also are left-handed In these cases suggestion of lack of cerebral correlation again arises I had one case of a left-handed boy who only began to stammer when an attempt was made to make him a right-handed writer

A further outcome of this inquiry into the histories of the non-rheumatic choreas has indicated another causal factor which must not be overlooked The condition occurs in both sexes, but the majority of the cases recorded were girls at or about the period of puberty presenting, as so frequently happens, certain constitutional disturbances manifested by the complexion becoming blush or heliotrope, the hands and feet cold and blue, the heart large and palpitating, the liver somewhat small, and the thyroid enlarging Here we have an unestablished balance of the internal secretions and a tendency to nervous upset Chorea is not uncommonly related to this condition, and the cases constitute a class by themselves—the climacteric choreas As in the stock-brained cases, the disorder is often precipitated by emotional causes In the one it results from a chemical or metabolic inco-ordination, in the other from an anatomical one

I am indebted to Dr Simonne Thompson and to my resident physician, Miss Norah Walker MB, ChB for having taken much trouble in tracing the stock brained histories of every case of chorea, whether rheumatic or otherwise Since leaving the Royal Liverpool Children's Hospital at Heswall Miss Walker has carried out an independent investigation and has collected a considerable number of cases which confirm the above findings

ACUTE APPENDICITIS IN A CHILD COMMENCING WITH DIARRHOEA AND CONVULSIONS

BY

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The case here recorded presents many points of interest In the first place it had to be determined whether the child was suffering from meningitis with abdominal symptoms or from abdominal symptoms with meningismus, or possibly from two separate diseases The one thing that seemed essential was to open the abdomen quickly and deal with the appendix Presumably the very severe diarrhoea was an attempt on the part of the body to get rid of some of the toxin The convulsive attacks also were apparently due to the same cause, for the operation seemed to produce an almost magical effect upon the appearance and condition of the child Personally I have never seen an attack of appendicitis commencing with severe diarrhoea and convulsions and I think that the case may be of interest to other clinicians, doubtless some surgeons have seen similar cases

Mary A— was admitted into one of my cots in the Royal Waterloo Hospital for operation on enlarged tonsils and adenoids Four days after admission the child had a sudden very severe and continuous diarrhoea for fifteen minutes The ward sister who was with the child all the time stated that she had never known a more severe one For several days afterwards constipation followed Shortly after the diarrhoea ceased general convulsions occurred the whole body seemed to be affected but especially the limbs and tongue The attacks continued for four hours before they could be checked There were twitchings of the lips tongue eyes and hands The child at first appeared to be weaker on the right side of the body but later the left side was noted to be weaker than the right The pupils became dilated the colour was first pallid but later on the child became cyanotic There was stated to be foaming at the mouth

When examined during the attacks showed nothing abnormal The child was given potassium bromide 10 grains and chloral hydrate 2 grains by the rectum one hour after the convulsions began but this had no result Later 30 grains of the bromide and 5 grains of the chloral were injected, but ultimately chloroform had to be administered to check the attacks During the night the attacks lessened and the child finally fell asleep Later on was awakened by three or four attacks of vomiting The vomit being of a greenish fluid nature

The next day when the child was examined the tongue was furred The lips showed a small trauma from the application of the forceps to the tongue on the previous night The child seemed to be in a semi-comatose condition Vomiting continued The bowels had not acted since the initial short attack of diarrhoea Urine showed the presence of acetone which possibly was due to the administration of chloroform during the attacks

The child complained of pain in the upper part of the abdomen and there was tenderness in that region No tenderness was elicited by Mr Cockell, my house physician, at this period of either iliac fossa but when he examined the child later in the day there seemed to be some tenderness in the right iliac fossa which appeared to be a little more noticeable over McBurney's point than anywhere else in this area compared with the left side I saw the case a few hours later on the same day and the child still appeared to be semi-comatose The pupils were markedly dilated, the left perhaps more so than the right Ophthalmoscopic examination was not made Photophobia was present No stiffness of the neck was elicited, nor discharge from the ear, nose, or throat The tongue was dry and furred The tonsils were distinctly enlarged, and very slightly red on the surface There was slight stiffness of the left arm and left leg compared with the right side and the left knee-jerk was also a little brisker than the right On the left side there was slight ankle clonus Babinski's sign was not obtained Kernig's sign was just present on the left side on this occasion only The abdomen was retracted tenderness was evident in the right iliac fossa in the region of McBurney's point Resistance was noted Dulness over the right iliac fossa was slightly unpitched upon light percussion there was no discharge from the vagina Examination by the rectum disclosed nothing definite The heart and lungs appeared to be normal

The diagnosis of appendicitis was made and Mr Cairns Lorrain came down to the hospital and operated immediately The appendix was found to be very long distinctly distended and acutely inflamed It was filled with hardened faeces A large number of shotty glands were seen in the mesentery The child made an uninterrupted recovery No further diarrhoea occurred, and the mental state cleared up wonderfully immediately the child came round after the operation There were no more convulsions, and all the limbs appeared to be quite normal next day

British Medical Association

PROCEEDINGS OF SECTIONS AT THE ANNUAL MEETING, BRADFORD, 1924

SECTION OF SURGERY.

SIR CUTHBERT WALLACE, K.C.M.G., C.B., F.R.C.S.,
President

DISCUSSION ON POST-OPERATIVE PULMONARY EMBOLISM.

OPENING PAPER

BY

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PULMONARY embolism may occur as the result of many different morbid conditions, but the most important and that to which I shall chiefly confine my remarks is as the after-result of an operation Pulmonary embolism by no means always fatal, and although no really reliable statistics on this point are available I should estimate that not more than one out of every ten cases of pulmonary embolism causes the death of the patient, in the remainder of the patient recovers There is little doubt that many of the cases of so-called post-operative pneumonia are in reality cases of pulmonary embolism

Pulmonary embolism may occur at any period after operation up to several weeks The most frequent period is about the eighth or ninth day, but it has occurred as early as from 24 hours of an operation and in one case as late as three weeks later Statistics are difficult to obtain, but the condition is comparatively infrequent and careful observation and records kept at most hospitals which will also of course

got out The following table gives some idea of the incidence of the condition, but shows only fatal cases

Chelsea Hospital	9 cases out of 5 406 operations
St Mark's Hospital	6 , , 7 327
St George's Hospital	12 , 11 604
St Bartholomew's Hospital	8 , 17 757
Mayo Clinic	47 63 573

This gives an incidence or rather less than one fatal case per 1 000 operations The Adelaide Hospital figures show 2 5 per cent of the post-operative deaths as due to pulmonary embolism, while St Mark's Hospital shows 5 per cent of the deaths as due to this disaster

Cases of Recovery.—When a pulmonary embolus occurs the dangerous period is during the first few minutes and as a rule if the patient can survive for ten minutes he will recover, provided that secondary pneumonia does not supervene In the non fatal cases the dyspnoea soon passes off and the pain in the chest, which is at first acute, subsides The temperature generally rises in the course of a few hours following the onset to 100° or 101° F and a cough develops in the course of the next day or two During the next few days the patient may bring up blood stained sputum Examination of the chest as a rule reveals an area of dullness and tubular breathing and sometimes friction sounds These sounds may be absent if the infarction is not near the surface and is small in area The symptoms generally pass off within a period varying from a week to ten days The distinction from ordinary pneumonia lies chiefly in the character of the onset In embolism or infarction the first symptom is always pain, and the temperature does not go up until afterwards, nor are there any previous signs of illness In pneumonia, on the other hand, the rise of temperature occurs first, as a rule, and the dyspnoea is a comparatively late symptom Also in pneumonia the temperature is much higher and the illness much longer

We may divide cases of pulmonary embolism into three categories

(1) Cases in which death occurs instantaneously and without premonitory symptoms

(2) Cases in which death occurs in a few minutes or hours following an acute and sudden crisis, characterized by dyspnoea and pain in the chest

(3) Cases in which the patient after a similar crisis develops signs of consolidation of part or the lung and recovers

Case of Instantaneous Death.—In such cases death takes place without warning in a few seconds A patient aged 51 at St Mark's Hospital, woke up in the morning ten days after an operation for excision of the rectum, and while speaking to the nurse, died while in the middle of a sentence There were no premonitory symptoms at all I think it is certain that such deaths as this must be due to a detached clot reaching the medulla of the brain as it seems impossible that a normal heart would stop so suddenly as the result of blocking the pulmonary artery

I have always thought that these cases must be due to pulmonary thrombosis, and a portion of the clot detaching and being swept through the pulmonary veins into the heart and thence to the brain via the carotid It is, of course obvious that a clot from the inferior vena cava could not reach the brain unless there was a patent ductus arteriosus There is, however, a specimen in the London Hospital museum showing such a condition but it could only account for a small number of the cases Valve thrombi may also account for cerebral embolism, but *post-mortem* examination has only very rarely demonstrated their presence Among the cases collected at the Mayo Clinic by Wilson 20 per cent were cases of cerebral embolism It was this fact which led me to the conclusion that primary pulmonary embolism must occur When I wrote my former paper on this subject I made a number of inquiries among pathologists as to whether they had seen cases of primary pulmonary thrombosis, but although I received answers that the condition must exist I could find no certain evidence of it I was therefore particularly pleased when I read Professor Glynn's paper (British Medical Journal, February 23rd, 1924, p 333), in which he brought forward proof that primary pulmonary thrombosis does exist He has, I think, shown beyond doubt that pulmonary thrombosis is a definite entity and thus we have a satisfactory explanation of these cases of cerebral embolism

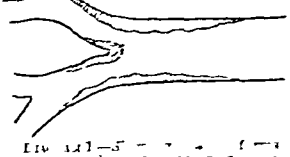
Symptoms of Pulmonary Embolism

When the area of lung involved is small the dyspnoea is only temporary and soon passes off On the other hand, when a large area of the arterial field in the lungs is suddenly blocked the dyspnoea is very acute and accompanied by all the symptoms of great cardiac distress The dyspnoea is not due to the fact that part of the lung is put out of action, but to the strain put upon the heart by the sudden limitation of the area of pulmonary circulation It is not the sudden reduction in the breathing surface, but the obstruction to the circulation of blood between the right and left auricles which causes dyspnoea It is the sudden strain on the heart which causes death, and not the limitation of the ventilating surface This cannot be generally recognized as the usual treatment is to administer oxygen or a stimulant such as strychnine when a patient first gets signs of a pulmonary embolus This is wrong, as it is useless to kick a willing horse The heart is straining against a very sudden and serious obstruction in the arterial field from the right ventricle and it is in danger of dilating from the strain stimulants only increase this difficulty What is indicated is to try and relieve the pressure in front of the heart by dilating the vessels as far as possible and for this purpose amyl nitrite is probably the most valuable drug or in its absence atropine and morphine Should it be administered, but stimulants should be avoided

Pathology

When a portion of loose clot passes into the right side of the heart it is driven into the pulmonary artery If large enough it may block the main pulmonary artery at its bifurcation, or it may obstruct either the right or left pulmonary arteries, thus completely blocking off the blood from an entire lung Such an embolism almost certainly causes death in a few minutes from the strain thrown upon the heart If the clot is not very large it passes further into the lung and blocks one of the smaller pulmonary arteries and arrests the circulation in a cone-shaped portion of lung corresponding to the distribution of the artery concerned The condition thus produced is called an *infarct* It produces signs of localized pneumonia, but is seldom fatal It seems certain that clots cannot pass through the lung capillaries but it must be concluded that fat embolism does do so since fat emboli in the brain are well known to result from fractures of the bones and the only channel by which the fat can reach the brain is by way of the lungs Fat is a fluid and probably passes easily through the lung capillaries Emboli may lodge in the coronary arteries and one such case is included in the figures from the Mayo Clinic Such cases are probably extremely rare but will account for some of the cases of instantaneous death

It is, of course obvious that pulmonary embolism is a secondary condition and that the primary and important one from the point of view of this disease is the formation of the primary intravascular clot It is only in a few cases that we have any evidence of the situation of the primary clot When such evidence is available it generally shows that the primary clot is in the internal or external iliac veins or at the point when they join to form the inferior vena cava (see Diagram 1)



[illegible]

In some cases the inferior vena cava [illegible] with clot Many writers have assumed that originated at or near the area of [illegible] of this has been disproved [illegible]

In connection with [illegible] to remember [illegible]

for instance, said that he believed ligaturing portions of the omentum by transfixion was liable to result in embolism, forgetting that the omental veins drain into the liver (see Diagram 2)

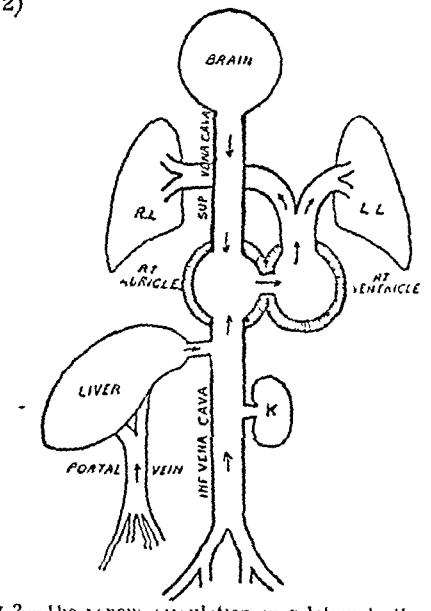


Diagram 2.—The venous circulation in relation to the formation of pulmonary embolism

The following table of fatal cases, taken from the Mayo Clinic, showing the operations most commonly followed by pulmonary embolism, is of particular interest

Site of operation	No. of deaths
Thyroid	2
Mouth	1
Stomach	3
Gall bladder	9
Small intestine	1
Appendix	4
Colon and rectum	5
Hernia	5
Kidney	1
Prostate	4
Uterus and appendages	10

N.B.—The operations in italics were in areas drained by the portal vein

The embolus was—

Pulmonary in	36 cases
Cerebral in	10 ,,
Coronary in	1 case

You will notice that a large proportion of the operations were performed upon parts of the alimentary canal which drain into the portal veins. In fact operations upon the gall bladder, stomach, and appendix, all of which have their veins draining into the portal veins, account for over half of the cases. Yet the embolus which caused death passed into the right auricle and plugged the pulmonary artery. The clot therefore did not form in the operation area, but almost certainly in the iliac veins or vena cava.

The obvious conclusion from these facts is that the primary clot forms in the vena cava, or its branches, quite irrespective of the operation area, and is due to stasis in the great venous trunks rather than to any injury of contributory veins. Another important point is the marked difference as regards liability to post-operative embolism between the upper and lower parts of the body. Any study of cases of post-operative pulmonary embolism will show that in almost all the cases the operation has been upon the abdomen and lower limbs. Thus in only 3 out of 47 cases at the Mayo Clinic was the operation area in the upper part of the trunk, while in 9 cases at the Ad Lude Hospital all were due to lesions in the lower part of the trunk.

Operations on the breast, head, neck, and arms are common enough, and yet are very rarely followed by pulmonary embolism. Why is this? I believe the explanation to be that operations upon the upper part of the body do not tend to cause such a degree of venous stasis in the veins as operations upon the abdomen. Venous stasis cannot occur in the superior vena cava as a free flow of blood through the brain is essential to life. The brain is the controlling factor, and the vaso-motor centre will starve the rest of the circulation if necessary in order to maintain an adequate circulation through the coronaries and superior vena cava.

The fact that operations upon the pelvic organs more frequently result in pulmonary embolism than operations on other parts has called for many different theories in explanation. It has been suggested that pelvic operations are more liable to result in injury to large veins. It has also been pointed out that there are no valves in the ovarian veins, but there is no evidence that valves, even when present, have any influence in arresting the spread of thrombosis. A much more reasonable explanation, it seems to me, is that operations upon the pelvic organs tend to a greater degree of immobility both during and after the operation than operations elsewhere. The position of the patient during most pelvic operations, and the presence of retractors and packs in the pelvis, must tend to arrest the circulation in the inferior vena cava, both by direct pressure and by interfering with the action of the diaphragm, which, as you know, is most important in aiding the flow of blood in the abdominal veins.

As I have already pointed out, operations upon the areas of the abdomen drained by the portal vein account for more cases of pulmonary embolism than operations on the pelvic organs (see Diagram 1), and it cannot be suggested that injury to the branches of the portal vein can cause a pulmonary embolism.

A further argument in favour of venous stasis as the chief cause of post-operative pulmonary embolism is that we find it is more liable to occur in patients whose circulation is poor—as, for instance, in cases where there has been *loss of blood*, in anæmic persons, and those suffering from chronic toxæmia. The conditions predisposing to venous stasis are immobility of the lower part of the body in a constrained position, a poor circulation such as is present in a patient with anæmia, and an open abdomen which will do away with the effect of respiration upon the abdominal contents. If we add to these the pressure of packs and retractors in the abdomen, and a certain degree of haemorrhage, it is not unlikely that a considerable degree of stasis occurs in the inferior vena cava and iliac veins during operations upon the pelvic and abdominal organs.

When fluid is flowing through a channel or pipe the stream is fastest in the centre of the channel and slowest at the sides. This can be observed in any river, and is equally true of the inferior vena cava. If for any reason the flow is considerably slowed there may be complete stagnation of the flow against the walls of the channel, although a fair current is still maintained in the centre (see Diagram 3). This stagnation will be accentuated at places where side channels come in, as there would be a tendency to the formation of back eddies at the corners. This is what I conceive occurs in the inferior vena cava during certain operations.

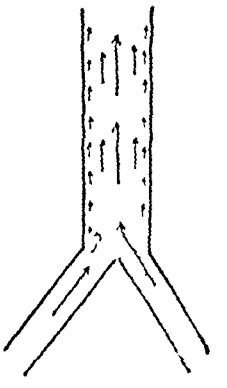


Diagram 2.—Shows how the current is slowed near the wall of the inferior vena cava.

If we grant that venous stasis is the most important predisposing cause of pulmonary embolism, it will explain many of the facts. It explains why abdominal and pelvic operations account for the vast majority of cases. It explains why patients with anæmia or with abnormalities of the blood or circulation are more liable to pulmonary embolism. It also explains why children do not appear to suffer from embolism after operation. It is rare in children, no doubt owing to their more active circulation, which does not allow of stasis in the veins. Children suffer from pneumonia after operations, but it is always of the bronchopneumonic type.

Sepsis

There is a very prevalent belief that embolism is due to sepsis. I cannot accept this belief. The majority of cases followed by pulmonary embolism are clean cases, and there is no evidence of sepsis at all. Beer, in his review of 6,825 operations, came to the conclusion that sepsis cannot be the cause of thrombosis. This is confirmed by the figures of the Chelsea Hospital, which only one case of mine was definitely septic.

surgeons say that embolism results from a mild form of sepsis unaccompanied by the breaking down of the wound This surely, is merely begging the facts If sepsis is the cause of the condition the secondary focus caused by the embolus becoming arrested should become septic and then would have a pyaemia This is, however, not the case true, a secondary pneumonia often develops but this is not as a rule a septic pneumonia but a pneumonia due to the ordinary pneumococcus having been able to obtain entry to the damaged lung Moreover the time at which the embolus occurs does not fit in with its being due to sepsis Embolism sometimes occurs within a few hours after operation on which would seem to be altogether too soon On the other hand in not a few cases it does not occur for three weeks, or even longer I have notes of one case in which an infarct formed three weeks after a simple laparotomy which had healed by first intention, of another case in which a fatal embolism occurred six weeks after a normal confinement and Wilson records a fatal case of embolism nine weeks after operation We have to remember that septic wounds are usually more painful than non septic wounds so that the patient probably keeps much quieter Further the patient's general health is lowered and blood changes probably occur which encourage the formation of intravascular clotting In these ways I believe sepsis is a contributory cause, but I am certain it is not the direct cause

It seems at present impossible to determine what if any is the exact relationship between sepsis in the wound and post-operative embolism and infarction There is no proof that the presence of septic organisms or their toxins in the blood induces intravascular clotting and, on the other hand septic diseases which are not the result of wounds such as whitlows and abscesses, sapraemia scarlet fever etc, are not complicated by emboli and infarcts We are however still very much in the dark as regards the exact morbid physiology of phlebitis

A further argument against sepsis being the cause of the condition is that it will not account for cases of embolism following such operations as simple laparotomy, hernia interval operation for appendicitis, or operations for piles Moreover it will not account for the cases of crossed thrombosis It is not uncommon to find thrombosis occur for instance, in the left saphena vein or femoral vein after an operation on the right side, or vice versa On looking through the records of cases of embolism one is struck by the fact that in quite a number of cases thrombosis in the leg has been present, either before the occurrence of the embolus or afterwards, and that this thrombosis is not always on the same side as the operation where the latter is unilateral

When a thrombosis occurs in one of the veins of the lower limbs it is naturally detected, but obviously if thrombosis occurs in one of the pelvic or abdominal veins it is not likely that this could be detected unless it is able to cause such an arrest of the circulation as to produce swelling in one of the lower limbs, or other signs of inadequate venous circulation in the parts drained by that vein Quite extensive thrombosis may take place within the abdomen without producing any obvious signs of its presence in a recumbent patient It is true that it would almost certainly cause pain, as pain is always a first symptom of thrombosis but as the pain would be referred to some part of the abdomen its real cause may easily be overlooked, in fact in looking through the notes of some of the cases of embolism I find that in several it is stated that vague pains in the abdomen have been complained of by the patient before the occurrence of the embolism

It seems to me that all the evidence points to venous stasis in the large veins of the abdomen as the chief factor in producing pulmonary embolism after operation but when we turn to the experimental side of the subject we come up against a serious difficulty Venous stasis cannot be the only cause as there is no evidence that mere recumbency or lack of movement will result in thrombosis apart from operation Embolism does not occur after rest cures or in paralysed persons who have lain in bed for months, or even years Obviously were mere venous stasis the cause we should be liable to get thrombosis and embolism as the result of normal sleep The physiological proof that mere venous stasis does not cause thrombosis is of very ancient date, over one hundred years ago Hunter proved that intravascular clotting does not take place in an intact vein even when both ends are ligatured His now famous "living test tube" experiment was made by tying at both ends six inches of the jugular vein of a horse He found that the blood was still fluid at the end of six days

The physiologists have shown that in order to produce clotting of the blood a substance called thrombokinase must be present in contact with it This substance, thrombokinase, is present in the blood, but is found in varying quantities in all the other tissues of the body and a certain quantity is liberated whenever a wound is made It is the contact of the escaping blood with the thrombokinase present in the wound tissues that determines the formation of the clot which seals up the vessels after a cut has been made The change which takes place to produce a clot when thrombokinase comes into contact with blood may be expressed as follows

Thrombokinase + a calcium ion + thrombogen (normally present in the blood) = thrombin
Thrombin + fibrinogen (present in the blood) produce fibrin (clot)

Thrombokinase introduced into a vein produces intravascular clotting if the blood is stationary but apparently fails to do so if the circulation is active

Recently Professor Collingwood has shown that intravascular clotting does not follow the intravenous injection of thrombin even when injected in relatively enormous quantities, *if the blood is in a condition of movement or circulation*, although the amount or thrombin injected is actually sufficient to clot every drop in the animal's body if removed from the vessels

It has been stated that increasing the calcium content of the blood would cause intravascular clotting, but more recent work has proved this not to be the case The amount of calcium present in the blood is the maximum required, and the addition of more calcium tends to reduce the clotting capacity rather than to increase it

It would seem, therefore that before a thrombus can occur two factors must be present

(1) A certain amount of thrombokinase derived from the tissues and liberated by the wound must be present in the blood but the amount would appear to be very slight

(2) There must be venous stasis

Neither factor alone can produce a thrombus but both must be present at the same time (N B —The reason why intravascular clotting occurs when a vein is damaged or inflamed, is that thrombokinase is liberated at the point where the intima is damaged)

The sequence of events seems to be somewhat as follows As the result of the wound thrombokinase is liberated from the tissues and passes via the lymph stream into the circulation (or possibly passes direct into the vein) this enables a clot to form in those veins in which the blood is for the time being stagnant or nearly so

Time when the Thrombus Occurs —We have in any given case of pulmonary embolism only got evidence of the time when the clot separates and sticks in the pulmonary artery obviously the thrombus which formed this clot, or from which it has broken off, must have formed much earlier but there is no means of ascertaining when this occurs It seems to me that everything points to the conclusion that the original thrombus formed on the walls of the veins during the operation and that it spreads during the period of quiescence immediately following the operation The danger period is in fact the time of operation and at any period after this from a few hours up to many weeks a portion may become detached and produce an embolus, the subsequent result depending on the size of the embolus the part of the circulation in which it starts and where it becomes arrested

My theory of pulmonary embolism is that the operation predisposes to the condition in two ways it results in the liberation into the circulation of thrombokinase from the cut surfaces, and at the same time tends to produce clot stasis near the walls of the great veins If these two conditions occur in a sufficient degree a thrombus forms and the train is laid for a pulmonary embolism a late

period I do not think that sepsis is at all an important factor, if it is a factor at all I think for once sepsis may be found not guilty

Treatment

At present there is no known means of ascertaining when a thrombus has formed in the great veins and much less is there any means of treating it We might, it is true, take steps to reduce the coagulability of the blood of the patient previous to operation, but I do not think that this would meet with the approval of the surgeons as it would be liable to result in equally serious disasters of another kind

Trendelenburg has suggested operating in order to remove the thrombus from the pulmonary artery, and there are records of this being done, but it does not seem sound, as patients who have survived a pulmonary embolism long enough to undergo an operation will probably recover anyway It is to prevention rather than cure that we must look if we want to get rid of the mortality after operations from pulmonary embolism

The present methods of anæsthesia, which include a preliminary injection of morphine probably tend to encourage thrombosis by slowing the blood stream during the dangerous period This possibly explains the greater frequency of cases of embolism during the last ten years, as compared with the time when most patients were given gas and ether, with consequent vomiting as soon as they had left the table

The best method of preventing patients from getting post-operative thrombosis does not consist in altering the technique of operations, but rather in altering the methods of preparation and of after-treatment Preliminary purgation of the patient should be entirely abolished, if necessary it should be carried out five or six days before operation The practice of starving the patient both before and after operation should be discontinued The supply of proper mattresses on the tops of operating tables, and the prevention of the patient assuming a constrained position during the operation which would cause pressure upon the veins, are points requiring greater attention The frequency of embolism after gynæcological and gall-bladder operations is possibly attributable to the unnatural positions in which the patients are placed I think we should attach more importance to the comfort of the patient on the operating table than we do at present The patient being under an anæsthetic we not unnaturally consider our own comfort and the accessibility of the operation area in placing the patient on the operating table, and do not think that the patient may for an hour or more be in a most constrained position, which will embarrass the circulation in the lower limbs and pelvic veins

Although the subject is such a difficult one and the means of preventing embolism are so uncertain, it is, I think, a great thing that surgeons have at last begun to try and find out the cause of the condition and to inquire how they may prevent this dreadful complication The fact that they are no longer satisfied to accept pulmonary embolism as an act of God, but are anxious to try and ascertain what fault of their own it is that causes it, is a great step in the right direction and I feel sure that the number of cases of pulmonary embolism in the next ten years will be much reduced

Discussion

Sir Charles Gordon Watson (London) said that with the great progress in surgical technique post-operative risks had been greatly diminished and in the up-to-date clinic terminations were carried out the risk of sepsis The abolition of drastic purgation and starvation before operation, the introduction of gas-oxygen anæsthesia, gentler handling of the tissues and the revival of whole-blood transfusion had reduced the risks from shock to a minimum Yet the bogey of embolism with its tragic suddenness remained unchecked, and if they might draw conclusions from limited statistics, was actually on the increase

This risk, as Mr Lockhart-Mummery had stated, was put as at more than 1 in 1,000 operations A rough index of the incidence might be gathered from the following figures, obtained from the surgical necropsy records at St Bartholomew's

1912 13 14 Operations, 10,604 necropsies, 591 Deaths from pulmonary embolism, 3 = 0·5 per cent Average age, 52
1919 20 21 Operations, 9,558 necropsies 538 Deaths from pulmonary embolism 9 = 1·7 per cent Average age 60
1922 23 Operations, 8,839 necropsies, 358 Deaths from pulmonary embolism, 10 = 2·79 per cent
Total operations, 29,001 Deaths from pulmonary embolism, 22

These figures indicated that at St Bartholomew's Hospital pulmonary embolism was on the increase, but the series was too small for general conclusions to be drawn Mr Lockhart-Mummery, however, had arrived at a similar conclusion from his study of collected cases

He thought it would be helpful to draw a distinction between massive pulmonary embolism and pulmonary infarction, he did not propose to discuss pulmonary thrombosis Pulmonary infarction followed the detachment of a small particle of clot, and was liable to be multiple and recurrent Pulmonary embolism could only occur when a massive clot was detached and became impacted in the main pulmonary artery When thrombosis occurred as a result of active inflammation, the clot became firmly fixed to the vessel wall, and was not likely to become detached *en bloc* except in the very early stages If suppuration began the clot would soften, and fragments were then liable to be detached and carried off into the blood stream, causing infarction Detachment of a large, recently formed, firm clot would seem to be less likely to occur when the wall of the vein was inflamed than when the wall was relatively smooth and a clot formed as the result of stagnation rather than inflammation

He agreed with Mr Lockhart-Mummery that in most instances of pulmonary embolism passive clotting had occurred in the large veins in the pelvis under certain favourable conditions during operation or quite early after operation These clots remained for some time loosely attached to the wall of the vein, and were easily detached by sudden movement, active muscular contraction, or sudden acceleration of the heart's action The fifth to the tenth day was the most likely period for this accident to occur Though the majority of these emboli could be traced to an origin in the iliac or femoral veins, others had their origin in the right auricular appendix In most instances, prior to a massive embolism, thrombosis had been neither observed nor suspected Phlebitis, with pain and swelling of the limb, seldom preceded this sudden catastrophe In the great majority of the cases there was no preceding rise of temperature, nor was there any feature in the clinical course to sound a note of warning of an impending disaster On the other hand, in many cases of pulmonary infarction the post-operative pulse, temperature, and respiration often failed to settle down to normal The surgeon might recognize that, without any definite explanation, the patient was not quite so fit as he ought to be, even though there was no evidence of phlebitis In many instances when pulmonary infarction occurred a low grade of inflammation in connexion with the wound or with phlebitis preceded the onset

Excluding post-operative infection, what were the controlling factors in post-operative thrombosis? Thrombokinase, as Mr Lockhart-Mummery suggested, when released at operation and absorbed into the blood might be the exciting factor in thrombosis under favourable conditions If they assumed that thrombosis might occur in a large venous current when thrombokinase was present in the blood, what other factors, if any, were essential? Was trauma essential? Though, as Mr Lockhart-Mummery had pointed out, Hunter failed to secure intravascular clotting in an intact vein, it might be quite possible for a thrombus starting in a small vein ligatured, crushed, traumatized, twisted, or torn during operation to extend and involve a healthy vein Might not injury to the deep epigastric veins—for example, by retractors—give rise to thrombus which might spread to the external iliac vein, or injury to uterine vein excite a thrombosis which might spread to the internal iliac? Unnecessary injury to veins in the abdominal wall during an operation might be cause for

violent stretching and undue pressure with powerful retractors Transfixion of the pedicle containing large veins, as in the broad ligament, clamping of structures in bulk as opposed to clamping of individual vessels and twisting of veins were points worthy of consideration in this respect also The application of forceps, followed by the ligaturing of small venous branches close up to their junction with a large vessel, might result in injury to the wall of the main vessel beyond the site of ligature The presence of a haematoma in the abdominal wall might be the cause of thrombosis in one of the epigastric veins In a fatal case of pulmonary embolism at St Bartholomew's after an operation for hernia, a haemorrhage in the inguinal area had produced pressure on and thrombosis in the femoral vein Haemorrhage into the tissues of the broad ligament or the mesentery might, by producing pressure on the iliac veins, start a thrombosis When a needle pierced or wounded a vessel, or when the lining of a vessel was injured by torsion, if a ligature was not applied above the point of injury thrombosis might easily occur in a sluggish blood stream Septic pulmonary infarction was a very common complication of war wounds and one of the common causes of a fatal issue, but massive pulmonary embolism was by no means common The fact that nearly all wounds were primarily infected and phlebitis was a very common complication while massive pulmonary embolism was rare, was presumptive evidence that sepsis played an unimportant part in pulmonary embolism as distinct from infarction

The factors responsible for a sluggish circulation might be grouped under the following headings

(A) *Loss of Fluid*—(1) Before operation by purging (2) during operation by haemorrhage and sweating (3) after operation by vomiting and the limitation of fluid by the mouth or rectum

(B) *Loss of Blood Pressure*—(1) Through post operative shock (2) prolonged anaesthesia especially chloroform (3) by injection of morphine before and after operation, (4) by a recumbent fixed position after operation with a minimum of movement and muscular action of the lower extremities (5) by diminished respiratory effort during convalescence in recumbency

(C) *The effect of posture during operation* on the return of blood through the inferior vena cava

It was difficult, if not impossible, to show to what extent if any the factors enumerated under these headings might be contributory causes, but it was clear that all of them were more or less under the control of the surgeon, and it seemed at least reasonable to argue that much might be done on these lines to prevent the onset of passive thrombosis For the past four years he had had respiratory exercises followed by massage carried out in his wards after abdominal operations, and he allowed patients to *move about in bed and to get up very much earlier than he* used to do He had no doubt that preliminary and excessive purging immediately prior to operation was a factor in the production of post-operative shock. Many a gallant soldier *must owe his life to the fact that he was operated on in* a casualty clearing station where there was neither time nor inclination to purge him!

So far as the posture at operation was concerned it was *interesting to note that operations on the pelvic viscera* were responsible for more pulmonary embolisms than any other class, and that gall bladder operations stood very high in the list The following questions might be asked in this connexion Did the *constrained and tilted position* of the spine often adopted during operations on the gall bladder, kink the inferior vena cava and obstruct the return of blood? Did the high Trendelenburg position, by upsetting *the normal position of the heart, act in a similar manner* causing undue pressure of the ventricles on the auricles and so on the inferior vena cava, and did not this position often produce pressure on the popliteal vein?

The clinical picture of pulmonary embolism was too distinctive and dramatic to escape recognition during life but the embolus might sometimes escape detection after death if the heart was severed from the lung before the pulmonary artery had been opened He had seen an embolus drop out in this manner When death occurred from pulmonary embolism an *ante-mortem* laminated clot was found usually coiled up at the pulmonary inlet and *projecting into one or both main branches* The surface of the clot when inspected closely had a finely granular appearance, it was firm to the touch and showed no sign of breaking down It was often branched when it arose from the internal iliac If the pulmonary artery was opened with the heart *in situ* the embolus could usually be removed intact and might be many inches long when unravelled On one occasion when surgical registrar at St Bartholomew's he had found in a case of fracture of the leg a firm clot in the internal iliac which came to an abrupt and irregular termination at its junction with the external iliac He removed a curled up embolus from the pulmonary artery, and found that it accurately fitted on to the existing clot and had obviously been broken off by the current of blood from the external iliac vein In that case, there was no femoral phlebitis or thrombosis in relation to the fracture

The lungs of a patient who died of sudden pulmonary embolism showed oedema and congestion Such congestion would be more pronounced in a lung when the artery was completely blocked than when partly blocked and would vary in intensity with the duration of time after the block had occurred Under normal conditions the pressure on the outside of the capillaries in the lung was negative When a forced inspiration occurred after blocking of the pulmonary artery, it was probable that blood was sucked back from the left auricle via the pulmonary veins into the pulmonary capillaries and stagnated there in the absence of any flow *of blood from the pulmonary artery In that way much* blood was withdrawn from the general circulation, an important factor in the shock which occurred Signs of infarction were absent unless a fatal embolism had followed on a previous infarction

The right heart even in sudden death under these conditions was found dilated, and there was little doubt, as Mr Lockhart-Mummery had stated that the main cause of death was heart failure from dilatation of the right ventricle though shock was an important additional factor One element in the shock was probably the withdrawal of a considerable volume of blood from the systemic circulation by stagnation in the pulmonary area and another was the fear of impending death so commonly noted in these cases

With regard to prophylaxis Sir C Gordon-Watson remarked that by gentleness in operating they might avoid unnecessary trauma and eliminate an important excitant cause, by the careful control of haemorrhage they might check the absorption of thrombokinase and avoid thrombosis due to pressure from a haematoma If they did not reduce a patient to pulp before operation, allow him to bleed at operation, or fail to be generous with fluid after they should at any rate not impoverish his blood supply If they avoided constrained positions at operation and fixed positions after it they stimulated respiratory and muscular effort during convalescence, they should do no harm and would perhaps avoid disaster

Once an embolism had occurred he was in thorough agreement with Mr Lockhart Mummery on the importance of relieving the great strain on the heart with amyl nitrite and combating the shock by morphine He was present on one occasion in a private house within a few minutes of the onset of an attack With the aid of morphine and oxygen (amyl nitrite was not available) he reduced the mental distress and lowered down both the heart and respiration but he could not overcome the asphyxia or change the ashen grey hue which was a combination of the pallor of shock with the blue of deficient oxygenation nor could he prevent the ultimate heart failure which occurred just over two hours after the onset On another occasion in a case of abdomino-perineal excision, the house-surgeon of St Mark's Hospital kept the patient going with continuous oxygen from 11 a m to 7 o clock next morning It was unusual for a patient to survive so long and not recover and he thought it was probable that had morphine and amyl nitrite been employed the heart might have been equal to the strain while the pulmonary circulation was becoming adjusted to the altered condition The late Professor Bainbridge, shortly before his death, had commenced work on this subject and had obtained some interesting results from the ligature of one pulmonary artery in the cat Was it too much to ask of the British Medical Association to devote a sum of money to research in this subject, which had long baffled medical science

Professor J Shaw Dunn (Manchester) said that in his general survey of the subject Mr Lockhart-Mummery had shown that, as a sequel to modern operative procedures, pulmonary embolism was a comparatively infrequent occurrence, and he had also offered some evidence that even when it did occur it was not usually attended by a fatal result In agreement with this it might be said that in the *post-mortem* room pulmonary embolism was relatively seldom found to be the cause of post-operative deaths Still, such cases did appear from time to time, and the circumstances of their occurrence as revealed in the clinical notes were usually of a sufficiently tragic character to excite considerable interest and to lead to an intimate inquiry into their causation If attention was restricted to immediately fatal cases the morbid appearances were found to be fairly uniform an elongated mass of dark-red clot was found coiled up and impacted in the bifurcation of the main pulmonary artery or in one of the main branches When this was being looked for it was essential to open up the right ventricle and pulmonary artery before the thoracic organs were disturbed in any way, for in some instances the clot was sufficiently loosely held to slip out from its significant situation, and thus left the nature of the condition in doubt In a typical example of the kind the cause of death was not in question, for there was ample evidence of a sudden arrest of the circulation as a whole

The important question that did arise, as Mr Lockhart-Mummery had pointed out, was that of the original site of the thrombus Having in mind the importance of circulatory stasis and of damage of vascular endothelium in the promotion of thrombosis, it was not unnatural that this site should first be looked for in some large vein near the operation area, where tissues had been more or less injured and vessels had probably been tied In what proportion of instances the thrombus did come from this area it was impossible to say, but in his own experience of seven or eight cases it had always been traced thither when sufficient care had been taken in dissection of the wound When the larger veins, of a size which could have accommodated the fatal embolus, had been opened up they had been found to be empty, this was to be expected, for if the thrombus had remained *in situ* the patient would not have died of pulmonary embolism But at some point on the wall of the large vessel, or often protruding into it from the opening of a small tributary, there might be found a tiny tag of formed thrombus, the broken end from which the large mass had become detached Further examination of small veins might readily reveal a greater extent of thrombus still *in situ*, but sometimes the amount remaining was not large

The next question of vital importance was, of course, why massive thrombosis of this type occurred in some cases and not in others To this question it was evident that the experience of different observers had led to varying answers Mr Lockhart-Mummery regarded the part played by sepsis as insignificant, but with that conclusion there must be many surgeons and pathologists alike, who would fundamentally disagree In support of this statement reference might be made to a discussion by the North of England Obstetrical and Gynæcological Society of a paper by Professor Glynn on pulmonary embolism and thrombosis[1] Considering for a moment the condition of frankly declared septic infections one could not but recognize how frequently thrombosis was an associated phenomenon there was the familiar development of cerebral sinus thrombosis in otitis media where a suppurative focus impinged directly on a large vessel channel the thrombosis of the veins in relation to septic uterine disorders, and of the portal vein to appendicitis or other septic focus in the intestinal tract Not only did sepsis have as one of its serious consequences the development of local thrombi, but the general poisoning of the system might result in the formation of *ante-mortem* clots in the heart itself, as was commonly seen at the termination of pneumonias, but also in surgical forms of septic infection

It was no doubt perfectly true that in cases of post-operative pulmonary embolism there was not as a rule gross and frankly declared septic infection of the surgical wound, but infection of some degree could frequently be found—so frequently that one was inclined to believe it invariable In illustration of the type and extent of wound infection which could determine fatal embolism it might be permissible to refer briefly to two cases

Case I—A woman, aged 69 years, had the left mamma amputated, and after the operation appeared to be making an entirely satisfactory recovery When allowed to sit up twelve days after the operation she fell back and died in a few seconds At the *post mortem* examination the superficial wound appeared quite satisfactory, the skin incision having healed A large elongated cylindrical thrombus was found coiled up in the bifurcation of the main pulmonary artery, completely blocking both branches The imprint of valves was clearly visible on this thrombus leaving no doubt that it had been transported from a vein The left subclavian vein when slit up was found patent and normal, except that a small ragged mass of reddish-yellow thrombus was found adherent to its wall at the orifice of a branch which entered from the region of the mammary wound This small vein contained similar solid material in the rest of its extent When the innominate vein was opened up it was found to be dry and healing anteriorly, but in the posterior part the tissues were œdematous and slightly turbid fluid exuded from them on pressure Pools of morphonuclear leucocytes and streptococci were found in this fluid on bacteriological examination

Case II—A young woman had varicose veins removed from the right leg and thigh by dissection The long skin wound was completely closed by sutures and healing appeared to proceed normally, but the patient died suddenly about a week after the operation After death a coiled embolus was found in the pulmonary artery In examination of the operation wound after the operation the healing conditions in the skin and subcutaneous tissues, and it appeared as if for once some other explanation than local sepsis must be sought to account for the fatal embolism It was only when a close inspection was made of the stump of the internal saphenous vein that the nature of the fatal embolism was found to be bathed in sanious fluid in which streptococci and polymorph leucocytes were subsequently demonstrable by films On the inner aspect of the venous stump there was present a thin, ragged layer of thrombus from which, no doubt, the embolus had broken away The recognizable septic focus was in this case extremely limited, being less in size than a pea, but it occurred just on the wall of a large vein, where it was most liable to produce a serious result

In other cases of the same type to which reference might be made the evidences of wound infection were usually rather more obvious though never very advanced, and the impression that remained from a consideration of all of them was that all cases of post-operative pulmonary embolism were suspect of being derived from sepsis unless cleared of this suspicion by a most thorough investigation

Professor Ernest Glynn, associated with Dr Maurice Cohen, detailed the evidence that primary pulmonary thrombosis was a cause of sudden death, and was more frequent than pulmonary embolism Stasis and mild sepsis were two main factors in the production of the thrombosis Stasis could be diminished by post-operative exercises, including deep breathing

Mr James Berry (London) confined his remarks to post-operative pulmonary embolism He thought that this was due in the main to the bad practice, still much too common, of keeping patients quite quiet in bed for days or weeks after operation In the case of operations upon parts above the diaphragm, such as those for carcinoma of the tongue and large operations of all kinds upon the neck, there were but very few patients who could not with advantage be got out of bed on the first, or at latest on the second, day after operation This had been his practice for many years, and he had not yet seen embolism after any such operation Nevertheless, he well remembered being solemnly warned some twenty-five years ago by a senior colleague that this practice was highly dangerous, and that it would result in the occurrence of embolism this being the view that was generally held at the time In the case of operations on the abdomen pelvis and lower limbs it was, of course, impracticable to get the patient out of bed quite so early Nevertheless, much might be

[1] Brit Med J, February 23rd and April 19th, 1912, pp 353 and 712

done in such cases to prevent the occurrence of embolism by letting the patient sit up in bed at a very early stage, by encouraging him to turn from side to side and to move his legs and arms (unless actually the seat of operation) Such treatment prevented stasis of blood in the larger veins and the dangerous formation of large passive clots, which in turn led to embolism

He could not remember having had more than one fatal case of embolism after this class of operation This was the case of a woman operated upon for varicose veins and who had erroneously, been kept in bed much too long She died quite suddenly of embolism as she was leaving the hospital Another contributory cause of embolism, especially after pelvic operations was, in his opinion, the blind transfixion of tissues with ligatures Ligatures passed in this way could easily be made inadvertently to transfix pathologically enlarged veins, and, without causing noticeable haemorrhage, create a focus for the subsequent formation of a clot, thus leading to embolism

Mr Harold Burrows (Portsmouth) referred to two cases in which pulmonary embolism followed thrombosis of varicose veins in the calf of the leg In both instances the patients had been treated by splinting and absolute immobility and the occurrence of fatal embolism in these conditions seemed to lend support to the suggestion that strain played a part in the causation of the thrombosis

Sir Cuthbert Wallace (London) thought that Professor Glynn had rendered great service in bringing forward the question of the part played by pulmonary thrombosis apart from embolism As regards embolism, this was only a catastrophe in the course of a fatal common disease—namely, systemic thrombosis If a proper perspective was to be got, all cases of thrombosis must be tabulated and the number of dislodgements of the clot enumerated In addition the investigation must not be confined to surgeons but must be carried out by all branches of the profession, so that all cases of thrombosis and embolism would be put on record

Professor G E Gask (London) stated that the action of the Council in choosing this subject had been justified It had produced a most valuable discussion of an obscure condition He gathered that the surgeons were of the opinion that sepsis would not explain all the cases and the pathologists were of a different opinion He complimented Professor Glynn, who had introduced a mass of new and original work of the greatest value

Mr Lockhart-Mummery, replying, said he had not meant to suggest that sepsis might not be a cause of thrombosis, but that it was not an essential cause One speaker had argued that in a large number of cases there was evidence of a slight rise in temperature to 99° or 100° previous to the onset of a pulmonary embolism, and had considered that this was evidence of epsis Mr Lockhart-Mummery did not agree, since it was a well known fact that thrombosis itself was almost invariably associated with a slight rise of temperature Even haematomata caused rise of temperature, and it was not, therefore, safe to argue that in such circumstances a rise of temperature indicated sepsis Even when definite evidence of sepsis was present it did not necessarily follow that thrombosis was due to the sepsis On the other hand, in quite a considerable number of cases of thrombosis there was no evidence of any kind of sepsis He would like to congratulate Professor Glynn on his paper in which he had undoubtedly proved that primary pulmonary thrombosis did occur and was an important factor This was a valuable contribution to their knowledge of this difficult subject If surgeons all over the country would make a point of carefully recording all cases of pulmonary embolism with careful records of the microscopical and macroscopical findings, it would be a great help in elucidating the problem With regard to treatment he was pleased to see that there was a general agreement that constrained positions on the operating table and lack of movement after operations were important contributing factors in producing pulmonary embolism

Memoranda:

MEDICAL, SURGICAL, OBSTETRICAL

FATAL FOOD POISONING DUE TO BACILLUS SUIPESTIFER B

The following notes of a fatal case of bacterial food poisoning seem worthy of record

On June 8th 1924 a man aged 43 had for breakfast a pork chop and bacon for dinner some pig's tongue beet and potatoes and for tea some cake and bread and butter The same evening he had a drinking bout during the course of which he is believed to have eaten some periwinkles favoured in the Black Country as a reputed preventive of alcoholic intoxication On June 9th he remained in bed he did not eat anything but drank a bottle of beer and some tap water during the afternoon he complained of slight diarrhoea On the next day the diarrhoea got steadily worse and he occasionally vomited By noon on June 11th the patient was seriously ill with slight abdominal pain and constant purging some abdominal distension was present the temperature was subnormal and the pulse rate a little over 90 The motions were yellowish and slimy but no blood was seen in them On the following morning he got up and had a wash he then returned to bed was very restless all day and complained of severe tenesmus and constant purging his mental condition however was quite clear At 9.30 p m he was *in extremis* and at 10 15 he died

At the necropsy signs of septicaemia were present The small and large intestines were acutely congested fatty degeneration was present in the liver and cloudy swelling in the spleen and kidney At the base of the left lung there was a small patch of pneumonia Samples from the heart blood gall bladder spleen and small and large intestines were sent to the laboratory for investigation and Dr Herbert Henry isolated from all the specimens the *Bacillus suipestifer* B

The *Bacillus suipestifer* (*aertrycl*), or the hog cholera bacillus, occurs in the intestines of normal pigs and may cause meat poisoning Pork and preparations made from it become infected by contamination with infected pig's excreta The bacillus may also be found in mutton and beef Meat from healthy animals which has been in contact with that from diseased animals may become infected It has been noted that the bacteria or their toxins may be distributed unevenly in the meat eaten, so that one person consuming the meat may be made very ill while others eating it escape infection The disease varies much in severity, fatal results are uncommon Children old people and debilitated persons are the most vulnerable In this case the public health officials made careful inquiry but were unable to obtain any remnants of food for examination as it had all been eaten No other cases of illness occurred in the house

West Bromwich. DUDLEY GILL, M B, Ch B, D P H

LYMPHATICOSTOMY IN PERITONITIS *

Normal physiological processes do not occur in disease and this fact dominated the experimental work which laid the foundation for the operation of lymphaticostomy The disease was set up first and the processes actually occurring in the disease studied The findings were that septic absorption in peritonitis occurs to a lethal degree through the lymphatics to the thoracic duct This absorption is from the peritoneal cavity and the lumen of the bowel through the lymphatics proper and the lacteal There is a suction force on the thoracic duct due to the venous blood passing the opening of the duct similar to that created by the Sprengel pump *plus* a negative pressure which may be present—and probably is always present in peritonitis—in the large veins near the heart This suction increases with the rapidity of the heart beat and with the dehydration of the blood, which tend to produce a greater negative pressure in the large vein This would help to explain the beneficial action of large quantities of saline and the giving of morphine by which the blood vessels are kept filled and the heart action lowered

In lymphaticostomy the ligature cuts off this suction, and when the duct is opened there is a flow of lymph The duct does not become distended when ligated and the lymph flow is less than one would expect from observing the leak through the duct before ligating and opening The duct

* Slightly curtailed for publication.

is transparent, and, according to the character of the fluid, one sees a translucent or a milky white cord when lymph or chyle is flowing, and to the experienced eye it is unmistakable. In peritonitis, however, the fluid may be bloody and the duct may resemble a vein and must then be distinguished by its position. In the experiments I noted that the introduction of tap water into the intestine through a duodenal tube produced an immediate rapid increase in the flow of lymph from the opened duct, and that the lymph became less coagulable. While ordinarily the giving of fluids by mouth in peritonitis will increase the absorption, when lymphaticostomy has been done it is safe to give them, thus ensuring a steady flow of lymph and a washing away of the toxins.

I have had the opportunity of performing the operation in only one case since that reported in March, 1923.[1]

The operation was done on April 21st, 1924, on a boy aged 10 years, who was referred to me by Dr. A. J. Williusky of Toronto. He had opened the abdomen after the boy had been ill four days, and found a ruptured appendix and diffuse peritonitis. He removed the appendix and drained the abdomen and the ileum close to the caecum. When I saw the boy, a day later, he was clearly going downhill. Gas and oxygen were given and the duct drained. The flow was profuse for forty-eight hours, lessened on the third day, and had ceased by the fifth. The flow of lymph *on opening the duct obscured a view of the opening*, so that I had to use a piece of silkworm gut which was passed about an inch down the duct. A rubber tube was then threaded over the silkworm gut down to the duct and wrapped round with a little plain gauze. Mackenzie's silver cannula, which he describes in the BRITISH MEDICAL JOURNAL of June 21st, 1924 (p. 1114), might well be used, provided the lymph was not too highly coagulable. The tube and silkworm gut were removed on the second day and the gauze on the third. The boy made a good recovery, and his family physician states that he is now in good health.

Five cases have been recorded in the literature, of which four were successful. All the cases were apparently hopeless. Edwards[2] operated successfully under local anaesthesia in a woman suffering from puerperal peritonitis. Cooke[3] reported the first case of peritonitis secondary to appendicitis which was successful. The case of "ruptured intestine" reported by Mitchell[4] was unsuccessful.

The difficulty of finding the duct in the cadaver is due to the fact that the duct is collapsed and in that condition resembles fibrous tissue. It is more difficult to find in the dog than in man.

The indications for the operation are not yet clear. It is not an easy matter to say when the patient is experiencing a continual septic absorption which is going to prove fatal, and surgeons are not unanimous in accepting the theory that most of the post-operative symptoms considered to be complications are due to that absorption. Septic absorption in peritonitis leads to increasing distension, obstipation, vomiting, and that peculiar combination of subnormal temperature, rapid pulse and respirations, and mental acuteness which renders the patient aware of the impending end.

In secondary peritonitis such as the case which Coole described, the operation is definitely indicated as an adjunct to dealing with the condition locally. It may be necessary in certain cases to submit the patient to the two procedures simultaneously. In all cases of secondary peritonitis when only the abdominal operation has been done in the first instance, lymphaticostomy is indicated when in the post-operative course the patient shows symptoms of a continuation of the absorption, and it is highly desirable that the operation be not delayed until the measure could not carry any hope of recovery. It is indicated in those cases of primary peritonitis, especially the pneumococcic, in which the diagnosis is clearly established. When the diagnosis is doubtful the abdomen should be opened first in order to verify the condition.

I believe that with good judgement in election and skill in the performance lymphaticostomy will lower the mortality rate in diffuse peritonitis by saving those to whom relief could not otherwise come.

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REFERENCES.

1. Can. Med. Ass. Journ., October, 1923, p. 523.
2. Edwards, Ibid., March, 1923, p. 259.
3. Cooke, Boston Medical and Surgical Journal, June 1st, 1922, p. 623.
4. Mitchell, Medical Record, March 31st, 1923, p. 1.

Reports of Societies.

UTERINE BACKWARD DISPLACEMENTS

A MEETING of the North of England Obstetrical and Gynaecological Society was held at Liverpool on October 17th, the President, Professor A. DONALD (Manchester) in the chair.

The PRESIDENT opened a discussion *on the treatment* of mobile backward displacements of the uterus. After referring to the significance of backward displacement, he drew attention to the difference of opinion amongst writers on the subject, and gave an account of the beginning of the passive congestion theory. Passing then to the later explanations of various modern writers, he cited the objections to the congestion theory, and emphasized the point that retroversion was not the cause of endometritis or chronic metritis. There was some difficulty in explaining the effects sometimes produced by a pessary. As a result of investigating the symptoms he concluded that *complications* were generally the only things that mattered in cases of retroversion. The complications were disordered uterine function, increased weight, prolapse, and adhesions. None of these complications were produced by retroversion. In a small proportion of cases an apparently simple retroversion caused local pelvic discomfort, and even a certain unexplained effect on the nervous system. The treatment of retroversion was nearly always *the treatment of complications*. *More than 90 per cent. of all the patients sought relief from symptoms* which were common to all cases of endometritis and chronic metritis, and for these curetting was nearly always advisable. A series of cases in which curetting had been the only treatment was recorded. Mechanical treatment included pessaries and fixation or suspension operations. Pessaries seemed to be of use as a temporary measure in cases of sterility and early pregnancy, and very occasionally in uncomplicated retroversion. There were far too many operations for fixing and suspending the uterus; the great majority were unnecessary, and many *of them were harmful*.

Professor HENRY BRIGGS considered that a student, ignorant of all gynaecology, including its nomenclature, would naturally classify the backwardly displaced uterus within the pouch of Douglas as a hernia, and would aim at strengthening the deep portion of the pelvic floor and rectifying the position of the uterus. The earlier the effort the better *the prospect of the radical cure of a hernia*. There were still gaps in the foreground of the picture of obstetrical progress. It was, for example, more than singular to have to acknowledge that the best use *of a 3-in. or 3½ in.* ring pessary in the treatment of the retroflexed gravid uterus was advocated twenty-four years ago by the late Sir William Sinclair (*Trans. Obstet. Soc.*, 1900), even to-day this advance was not to be found in obstetrical textbooks. Professor Briggs had not the least doubt that the pessary and frequent urinary catheterism in their gentle and persistent effect totally outclassed *manual reposition*.

Dr. G. W. FITZGERALD (Manchester) agreed *that all retro-displaced uteri did not require treatment, and that symptoms accompanying the displacement were not necessarily due to it. The important matter* was to determine which treatment would give the best results. If the curette could show results equal to those of abdominal section, then the minor treatment was to be preferred. He curetted all cases in which symptoms were present, and only rarely found more radical treatment necessary.

Dr. J. E. GEMMELL (Liverpool) agreed with Professor Donald that *simple retroversion* in single women was symptomless in the majority of cases. In parous women however, he thought that this displacement was in itself capable of producing a *definite train of symptoms*. He believed that there was a world of difference between an organ *that had developed* in a particular position of version and one that acquired such a position. The one was in its proper physiological place, the other had acquired a pathological displacement. The vessels of the former had been congenitally adapted to meet the requirements of the uterus in [illegible]

embarrassment to the circulation, whilst in cases of acquired retroversion the vessels shared in the displacement, and were thereby exposed to abnormal pressures that chiefly fell on the veins, and led consequently to back pressure and congestion The resulting symptoms simulated those of endometritis and metritis, but he believed they were essentially due to congestion, the result of acquired displacement He was therefore a supporter of the mechanical theory, and considered there were three clinical types which demanded correction and fixation (1) A limited number of congenital cases in which the patient complained of sterility, repeated abortions, dysmenorrhœa, or dyspareunia the type with neurosis and backache was expressly excluded (2) Obstetric types with the following cardinal signs—a bulky, tender, œdematous and often incarcerated (but not fixed) uterus, associated with pain, menorrhagia, leucorrhœa or dyspareunia (3) Cases of simple retroversion accompanied by early prolapse in young women of childbearing age This third group was not included in the tables given later Although pessaries and general therapeutic measures were useful adjuncts and might even be curative in mild cases, he limited himself to the surgical treatment of this condition, and based his remarks upon 125 cases of simple retroversion published by himself in collaboration with Mr Leyland Robinson [1] The principles of ventrifixation were not generally understood, and he believed that this procedure had acquired an unpopular reputation because most gynaecologists had studied the wrong type of operation The type he favoured was planned to fulfil the three essentials upon which the success of all gynaecological operations depended—namely (1) freedom from immediate risks, such as intestinal obstruction, (2) freedom from the risk of interfering adversely with subsequent conception and parturition, (3) ability to relieve symptoms The proof that ventrifixation met these requirements was furnished by the following facts

1 In upwards of seven hundred ventrifixation operations performed by him only one patient had died from sepsis and this one in circumstances that had nothing to do with the operative procedure The patient became unmanageable removed her dressings and escaped from the ward to the lavatory on the day after the operation There were no cases of post operative strangulation of gut

2 In 220 cases in which a complete after history was obtained 63 women subsequently became pregnant and were safely delivered of 104 children without a single case of dystocia or stillbirth occurring

3 The effect of ventrifixation on symptoms (85 6 per cent cures)

Successful operative technique depended upon three chief factors the choice of a suitable fixation point, the prevention of adventitious intraperitoneal bands and holes through which the gut might strangulate, and the achievement of a fibromuscular fixation and not of a peritoneal suspension Operations which fixed the fundus, or anchored the upper part of the uterine body, were naturally prone to accidents which demonstrated the danger of such methods These accidents had also been widely advertised to discredit the principle of ventrifixation The level of the utero vesical fold was unaffected by the changes of pregnancy, and remained passive during labour, it might therefore be described as a normally fixed point There could be no serious anatomical or physiological objection to fixing a point that was already stationary, and he therefore selected this area as his fixation point, attaching it by means of two silkworm gut sutures to the rectus fascia immediately above the symphysis pubis The prevention of adventitious bands was brought about by the construction of a bladder septum, the peritoneum covering the bladder was picked up by a series of Spencer Wells forceps from the utero-vesical reflection above to the parietal peritoneum below at the lower angle of the incision A fold was thus made across the middle of the utero-vesical pouch through which a continuous catgut stitch was passed, tied and, lastly, attached to the fascia just above the symphysis pubis This septum obliterated the supravesical space that would otherwise persist below the fixation area it formed with the new supporting ligament one continuous wedge shaped structure that effectually eliminated the possibility of loose bands or peritoneal hole It should be noted that the septum was formed of peritoneum only, and played no part in supporting the uterus The efficiency and permanence of both the septum and the new fibromuscular ligament had been repeatedly seen at long intervals after the original operation, when such patients had returned with other lesions requiring abdominal section He believed in short, that retroversion was a mechanical defect that was competent to produce symptoms, and he was convinced of the utility of the operation of ventrifixation

Mr W Gough (Leeds) agreed that many patients with retrodisplacements had no symptoms If the patient was made aware of the retrodisplacement a vicious cycle might be set up Briefly, his practice was if no symptoms were present to leave the patient alone if symptoms were present he curetted the uterus and replaced it If the displacement recurred the uterus was replaced and a Hodge pessary inserted for two to three months If the patient was thereby relieved, nothing further was done but if her symptoms returned he then operated He had tried all types of operation except absolute fixation, and found them all equally successful

Mr Robert A Hendry (Liverpool) read conclusions abstracted from the opening report on the "Indications for surgical intervention in retrodeviations of the uterus apart from pregnancy," presented to the Congress of the Association of French-speaking Gynaecologists and Obstetricians, Geneva, 1923 These were to the effect that surgical intervention in uterine deviations, apart from pregnancy, was indicated as follows

1 In retrodeviations accompanying uterine ovarian or parovarian tumours in so far as these tumours did not necessitate the sacrifice of the uterus the pexy was a complementary operation

2 In fixed and painful retrodeviations

3 In fixed retrodeviations accompanied by appendage lesions unilateral or bilateral which had resisted medical treatment If the appendage lesions required ablation it might be necessary to practise total or subtotal hysterectomy if such was not the case the uterine pexy was only a complementary operation

4 In painful mobile retrodeviations surgical intervention was only indicated if when the uterus was replaced the painful phenomena disappeared In other cases the pains are (*a*) from hysterical state etc (*b*) from multiple visceral ptoses

5 In certain rare cases of obstinate sterility where no other apparent cause could be discovered

6 In retrodeviations accompanied by repeated abortion where carcinomatous examination eliminated the possibility of syphilis

7 In all cases where in addition to the retrodeviation there was a tendency even if slight to prolapse with or without perineal lesions If the perineum was damaged the pexy ought to be preceded by careful vagino perineal repair

8 Painless mobile retrodeviations did not require any treatment

The discussion was adjourned until the next meeting which will be held at Sheffield on November 21st

Prior to this discussion Professor Blair Bell (Liverpool) described a case of manual perforation of the puerperal uterus Abdominal pain followed a normal confinement on the third day of the puerperium the temperature rose to 103° F, intrauterine douches were employed Fourteen days after the confinement the uterus was explored and a large quantity of tissue—subsequently found to be uterine muscle—was removed manually Suddenly the operator found his fingers pass through the uterine wall Three hours later panhysterectomy was performed with removal of a left sided, twisted, ovarian cyst, which was in front of, and was mistaken for, the fundus of the uterus The patient made an excellent recovery

Professor Henry Briggs (Liverpool) remarked on the escape from gross infection during and after the labour The occurrence of embarrassment arising from lack of acquaintance with the interior of the full term uterus after a complete labour pointed to the necessity for more practical work in museums and classroom

Dr J H Willett (Liverpool) commented on the difficulty of removing the placenta in certain cases and referred to a specimen in the University obstetrical museum in which the placenta could not even be separated in the laboratory after the uterus had been removed

Professor A Donald (Liverpool) emphasized the facility with which the uterus could be perforated during the puerperium, especially if infected

Professor Blair Bell also described a case of thrombophlebitis of the right ovarian vein associated with abscess in the uterine wall The confinement was normal Nine

[1] *Lancet* June 18th 1921.

days later the temperature rose, the uterus was curetted and washed out with iodine, and a rigor followed The temperature subsequently ranged between 103° F and 105° F The patient was removed to hospital a fortnight after the delivery *Streptococcus longus* was recovered from the uterus, which was washed out three-hourly with 1 in 20 hypochlorite solution without any definite improvement A fortnight later panhysterectomy with removal of both appendages and thrombosed ovarian veins was performed A portion of the ovary was used as a graft The temperature subsided, and the patient made a good recovery

Professor Henry Briggs deduced that the bacterial infection in this case was of a mild character and that the lymphatic inflammation was localized

Mrs Dobbin Crawford (Liverpool) reported a case of primary carcinoma of the vagina in a patient, aged 68, who complained of backache and dysuria, on one occasion, three weeks before, a blood stain was found on the sheet Her previous health was good, her husband had died two years previously of gastric cancer In the upper part of the vaginal wall, in front and to the left, were several flat bluish-purple bosses, fixed to the underlying tissues but not ulcerated, the cervix was normal and was not encroached upon by the tumour Cystoscopy showed a dusky area in the base of the bladder The growth was curetted and cauterized with zinc chloride On section the growth proved to be a squamous-celled carcinoma A vesico-vaginal fistula occurred eventually, the patient survived the operation only four months

SPONTANEOUS UTERINE RUPTURE

The Plymouth Medical Society held a clinical meeting on October 21st, with the President (Mr C Ll Linder) in the chair

Mr James Riddell showed a specimen of spontaneous rupture of the uterus during pregnancy at about seven months The predisposing causes were described as (*a*) curettage and douching of the uterus, (*b*) manual removal of the placenta, (*c*) syphilis, and the exciting cause as sexual intercourse and indirect traumatism The site of the rupture was on the anterior wall near the fundus, it was transversely placed over the placental site and was one inch in length The diagnosis made was ruptured extrauterine pregnancy with internal haemorrhage, the treatment included laparotomy and subtotal hysterectomy The patient recovered Dr Eric Wordley said that the uterus in this case was devoid of muscular tissue at the fundus Sections of muscular tissue from other parts of the uterus showed hyaline degeneration, cloudy swelling, thickened and thrombosed vessels, and diffuse fibrosis throughout The degeneration was of long standing No spirochaetes were seen

Dr Twining showed a man, aged 79, with symmetrical tumours on the inner sides of both thighs which were believed to be fibromata or, in view of the rapidity of growth—nine months—fibrosarcomata Operative treatment was deemed inadvisable for reasons of age Mr H G Pinker showed a specimen of carcinoma of the splenic flexure of the colon which had produced a chronic intussusception in a man aged 53 After removal of the growth and intussusception the transverse colon was anastomosed to the pelvic portion, and the patient made a good recovery

Dr Thomas showed a specimen of sarcoma of the kidney removed from a child aged 4½ The growth was extremely rapid, only a small portion of healthy kidney substance remained Mr Hamilton Whiteford showed a breast removed on account of carcinoma, and emphasized the importance of (1) radiography of the thorax to exclude secondary deposits in the lungs, (2) incision into the growth itself before carrying out a radical operation He exhibited the radiogram of the chest in his case, in which there were shadows of doubtful significance, he had considered it advisable in all the circumstances to carry out a radical operation

Reviews.

BLACKWATER FEVER IN SOUTHERN RHODESIA

The London School of Hygiene and Tropical Medicine has just published a record and report of investigations carried out by the Director of its Protozoological Department, Dr J Gordon Thomson, into blackwater fever during 1922 and 1923 in Southern Rhodesia, where he went in charge of a Research Commission to study the subject[1] Funds for the undertaking were supplied by the Rhodesian Government, the disease being one of serious moment in that territory The publication sets out how much has been achieved, and, as in other cases, so now again it is shown that money devoted to the cause of public health is not lost, but is, on the contrary, a lucrative investment The Rhodesian authorities will be able to realize that their money was wisely entrusted, and to congratulate themselves on their public spirit, since this work in their country will be of benefit to all tropical countries where malaria and blackwater fever are found Those who were present at the meeting of the Tropical Section of the Royal Society of Medicine when Dr Thomson discussed the relations between malaria and blackwater fever will welcome this fuller account of what was put before them briefly on that occasion

After a short introductory chapter Dr Thomson describes the topography of Southern Rhodesia and the geographical distribution of blackwater fever throughout the world giving a concise history of the disease Next follows an interesting summary of its relationship with malaria, a subject further developed in the succeeding chapter, when the association of the malignant tertian parasite with blackwater fever is discussed The author shows that the older asexual forms, by bringing about the malignant stippling, or Maurer's dots, lead to the production of the "brassy corpuscles", these, he believes, then become, as it were, foreign bodies, which provoke the formation of a specific haemolytic amboceptor This haemolysin in the presence of complement acts on corpuscles so altered, but not on normal corpuscles, nor on those harbouring young parasites Consequently, these last persist throughout the paroxysm, and the fact that they may be very few in number accounts for the discrepant statements of different authors, some maintaining that malarial parasites persist throughout the attack, others denying their presence The hypothetical *Spirochaeta* or *Leptospira haemoglobinuriae* disappears, for "pseudo-spirochaetes" indistinguishable from those described have been obtained by the author in blood from normal individuals, and he has shown that they originate from blood platelets and damaged corpuscle Moreover, inoculation experiments with them gave negative results invariably

Haemolysis in general is discussed, and the various agents which may bring it about It is shown also that the mode of its production in blackwater fever differs essentially from that in other conditions The chapter on pathology is comprehensive and deals with the blood plasma, the red corpuscles, the leucocytes, various tissues, and organs Special sections are devoted to jaundice and its mode of production in this disease, and also to the urinary changes The clinical aspect is treated very briefly, within three pages, but since this subject receives such detailed consideration in textbooks, anything more would be mere repetition The chapter on treatment and prophylaxis is most instructive, the questions of the employment of quinine and of the method of its administration when used are ably discussed and cases are described showing that in some patients an attack of blackwater is precipitated by this drug It is shown, however, that quinine in the blood stream probably plays no direct part in the haemolysis of blackwater fever, but that its action must be indirect and in association with some other factor Other forms of treatment, such as Sternberg's mixture, Hyem's serum,

[1] *Researches on Blackwater Fever in Southern Rhodesia* By Gordon Thomson MA MB ChB London School of Tropical Medicine Research Memoir Series No VI London 1924 (7 × 9 in viii+149 pp 10 plates 12 charts 5s)

Calmette's antivenine, and auto-haemotherapy, also receive mention

The publication contains some good reproductions of photographs showing "blackwater fever houses", there are also two excellent coloured plates depicting various forms of corpuscles and the parasites, in which the close resemblance to Babesia is clearly brought out The photomicrographs of tissue sections are on the whole good, but such a process does not lend itself to the satisfactory reproduction of the prussian blue reaction, for example There is an exceptionally good bibliography, but no index

One of the charms of the work is that the author states fairly the findings and pronouncements of others, and, while defining clearly the results of his own work, he makes no claim to have solved this great problem Since he mentions the views of others, a somewhat more detailed discussion of them would have been welcome, but perhaps that would hardly come within the scope of the present record The impression derived from this report is that the foundation has now been laid for a solid structure of knowledge Much has been accomplished, but much more remains to be done

PHYSIOLOGY IN THERAPEUTICS

Since its first appearance in 1903 Dr W Langdon Brown's *Physiological Principles in Treatment* has established its position as a readable and practical exposition of the current views of physiology and pathology and their application to practice The fifth edition contains nearly a hundred pages more than its predecessor in 1919 (reviewed in our columns early in 1920) as the result of the addition of new chapters on the work of the liver and on the problems of asthma, and fresh sections on fractional test *meals, insulin, uraemia, and dyspnoea* Dr Langdon Brown points out that the earlier and simpler tests for hepatic function failed because the reserve power of the organ was not realized, so that the tests were positive only when the destruction of the liver was so advanced as to render cure impossible, and, further, that its various functions are not equally affected by disease and so individual tests are necessary The laevulose test, however, as estimated by the blood sugar, is regarded as one of the best methods of estimating hepatic efficiency The section on jaundice is largely based on the recent work of Dr J W McNee, and in it the van den Bergh test is clearly explained In dealing with asthma Dr A F Hurst's definition is accepted, and without adopting Eppinger and Hess's theories in their entirety, the asthmatic patient is regarded as a vagotonic and liable to other manifestations of vagotonia In both these new chapters the general plan of lucidly correlating the lines of treatment with the most recent knowledge is followed With regard to Voronoff's grafting operations Dr Langdon Brown, who has seen some promising results, preserves an open mind The rapidly changing history of the treatment of diabetes in recent years is briefly sketched, and this outline gains in interest because the author has had ample opportunity of watching his colleague Dr George Graham's scheme of the "ladder diet" This diet is compared with Allen's, and the view is expressed that it is perhaps less rapid in removing glycosuria, but less likely to injure the general health of the patient The uses and indications for insulin are carefully indicated While not overladen with references, the work of others is freely mentioned This edition fully maintains the well established claim to popularity of a pleasantly written and useful work

CYTOLOGY

General Cytology,[3] described as a textbook of cellular structure and function for students of biology and medicine, is a collection of monographs on the fundamental structure and functions of the cell It has been written by research workers connected with the Marine Biological Laboratory at Wood Hole, Massachusetts, and no less than thirteen authors, all of them being recognized authorities in their respective fields, have contributed chapters

They have produced an imposing volume of 754 pages with hundreds of illustrations, and with bibliographies containing thousands of references The functions and structures of the cell have been studied from every angle, and the result is a comprehensive and authoritative summary of present knowledge concerning the laws governing the ultimate units of living protoplasm

The most original and striking contribution is that by Professor A P Matthews, who has had the courage to tackle anew, in an essay of eighty pages the age-old problem of the nature of life With the aid of relativity the quantum theory and the recent advances in our conception of the ultimate structure of atoms and molecules, he finally arrives at the following conclusion

> The great difference between the living and dead is a difference in the energy content of the molecules and atoms in the two states All substances electrons atoms and molecules can and do exist in two forms energy rich and energy poor form I have proposed to call the former the anakinetomere and the latter the katakinetomere The former is the living the latter is the dead form The creation of life is the creation of the anakinetomere form

This seems to be little more than a restatement of the problem with the introduction of two new terms, and does not help very much The other monographs proceed along more usual lines of thought, and deal with more concrete and prosaic problems Professor M H Jacobs gives a brilliant summary of knowledge regarding the permeability of the cell, his article is of particular value as it incorporates a large amount of recent American work which is of fundamental importance for the consideration of this difficult problem Dr P S Lillie deals with the reactivity of the cell and discusses the general nature of the response of protoplasm The consideration of the problem involves discussion of the nature of the electrical and chemical changes occurring as a response to stimulation and the manner in which the response is modified by changes in temperature, by anaesthetics and other agencies The author also gives a summary of his own interesting views as to the nature of protoplasmic transmission He considers that the process consists of a wave of surface change passing along the cells, and indicates interesting analogies between the transmission of excitation in protoplasm and the waves of surface change that occur when iron made passive by treatment with strong nitric acid is dipped into weak acid

The article on fertilization, by F P Lillie and E E Just, gives an account of the physiology of the process, and describes the various chemical treatment by which fertilization can be induced or inhibited a subject with which American workers are particularly associated

The majority of the remaining articles are devoted chiefly to the microscopic structure of cells and this is dealt with from various aspect The book concludes with two chapters on the chromosome theory of Mendelian inheritance and an account is given of the experimental work done chiefly on the fly drosophila, which has led not merely to assigning specific characters to each chromosome, but even to the production of schemes showing the exact way in which the genetic characters are arranged or packed in each chromosome—an achievement which impresses the imagination as much as the physicists' efforts in tracing the movements and habits of individual atoms

This summary shows how wide is the range covered by the articles in a book which should appeal to a large circle of readers, cytologists physiologists and pathologists Each will find that the article on the subject he knows best is comprehensive and considered summary of the latest knowledge and that the articles on less familiar subjects are clearly written and easy to follow The book thus gives the reader the opportunity not only of acquiring recent information and useful references in those branches of cytology with which he is best acquainted but also of obtaining a reliable summary of the state of modern knowledge in less familiar fields

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[3] *Physiological Principles in Treatment* By W Langdon Brown M A M D Cantab F R C P Fifth edition London Baillière Tindall and Cox 1924 (Cr 8vo pp viii + 511 10s 6d net)

General Cytology A Textbook of Cellular Structure and Function for Students of Biology and Medicine Edited by E V Cowdry Chicago Illinois University of Chicago Press 1924 (Post 8vo pp viii — 754 illustrated 7 50 dollars)

INDIAN STORIES

Some forty years ago the late Mr C H Tawney prepared a translation of the Sanskrit *Ocean of Story*, but unfortunately, as the very apt publisher's circular issued with Mr Penzer's edition explains, it was issued in Bengal and was never reprinted, and hence this wonderful collection of Oriental tales is little known

In the first instance we owe this collection of stories to Somadeva, a Brahman who lived in the eleventh century A D But, albeit they are overlaid with a strong Brahmanic tinge, they are certainly not all Aryan in origin, and it is the opinion of Sir Richard Temple, expressed in his foreword, that they go back to a much older period, having been taken by the editor from the popular Indian folklore of his day This, as he says, opens up a series of problems for discussion, the first being whence this non-Aryan element came?

"The Aryan invasions of India were spread over a long period and the progress about the country was very slow The Aryans came across at least one race, the Dravidians, equal to themselves in mental capacity The consequent development was on the recognized lines of evolution it was fundamentally Aryan, with accretions from every race with which the Aryans had come in close contact"

This is the problem on which Mr Penzer's voluminous notes and discussions are intended to throw light He has had nothing to do with the translation, which is practically Mr Tawney's original text, supplemented in a few details by Dr L D Barnett, his has been the labour obviously of love, to try to trace the migrations and origin of these stories with their wealth of folklore containing so many finger-posts to their connexions with the past We are a long way yet from the earliest *jongleurs* of history, but a book such as this is a fresh foothold across the difficult morass of antiquity Probably the most important note in the book is Mr Penzer's discussion of sacred prostitution—a most difficult problem In the *Ocean* a lady named Rupinika is a courtesan who at the time of worship went into the temple to perform her duty, and it is to this quotation that the consideration of the question is appended Briefly, Mr Penzer's opinion is that it is difficult to say to what extent the custom existed in ancient India, although it seems clear that from the Buddhist age onwards the prostitute was held in some esteem, in fact "in Vedic times reliable evidence is insufficient to enable us to form any definite conclusion as to the possibility of distinct connexion between religion and prostitution", even is late as the early Christian era ("we still find no direct reference to the *dêva-dâsi*" (hand-maid of the gods) About the twelfth century, however, the evidence becomes more definite and geographical, and it appears that the further south in India the inquiry is pushed the more is the custom found to be recognized Mr Penzer then correctly makes full comparison with the ancient Babylonian customs similar to this, there is no doubt that at Erech, the seat of the worship of the mother-goddess Ishtar, religious prostitution was definitely recognized, and had been so from time immemorial Other nations in the Near East maintained the custom too indeed, Mr Penzer goes further afield into West Africa for his material It is one of those lines of comparison which throw light equally on the old temple rituals and the migrations not only of people but of traditions

We have no space to go into the other discussions—the shoes baked in queer shapes, the magical shoes which, like the seven-leagued boots transport the wearer out of danger, the legend of the bitch and the pepper We could suggest another parallel (that of the Babylonian Etana borne up by the eagle) which might have been included in the note on the mythical Garuda bird But the reader will have seen from what has here been said that great interest attaches to this book, and, if he have an leanings towards Eastern folklore, we can heartily recommend it to him The translation of such a wealth of stories offers to the student particularly those who are not Sanskrit scholars, a mine of quee parallels to the legends in their several spheres, and Mr Penzer's illuminating notes are full of pregnant suggestion A most admirable index completes the first volume

R Campbell Thompson

GUY'S HOSPITAL REPORTS

Of the nine papers in the third quarterly instalment of this year's volume of the *Guy's Hospital Reports*,[1] the first three deal with the biliary tract and three others with the stomach In their investigation of the duodenal contents and bile in man, Drs J F Venables and F A Knott of the New Lodge Clinic review 100 consecutive examinations of the duodenal and gall bladder contents, in no instance was it possible to recognize the three types of bile—from the common bile duct the gall bladder, and the liver —described by Lyon of Philadelphia, and, contrary to Rosenow, the infecting organism in cholecystitis was almost invariably *B coli* and never streptococci From a careful microscopical examination of ten recently removed gall bladders Drs Knott and Bowell discuss the formation of gall stones, and conclude that neither the infective theory put forward by Yamyn nor Aschoff and Bacmeister's bio chemical hypothesis will alone prove to be satisfactory, but that both factors must at one time or another act in a complementary manner They describe as the initial stage of a gall stone an intramural deposit of cholesterin in con junction with damaged or necrotic epithelium Mr W L Tanner's analysis of 117 operation cases of cholelithiasis shows that removal is preferable to drainage of the gall bladder In a successfully illustrated paper on the diagnosis of gastric and duodenal ulcers by x rays, Drs A F Hurst and P J Briggs describe both the indirect evidence, to which comparatively little has been added since 1914, and the direct evidence—namely, the deformity pro-duced by the ulcer in the outline of the stomach or duodenum—which has become much more available as the result of the improved technique during the last five years In fact, every chronic peptic ulcer, however small, can now be recognized by the direct evidence, though a small congenital diverticulum close to the cardia may closely resemble the "crater" of a large gastric ulcer Drs J M H Campbell contributes two interesting papers—the first with Mr M Burd and Mr J R Hein, the second with Dr J J Conyberre—on the correlation of physical fitness and physique with gastric conditions, so as to throw light on the existence of an underlying diathesis favouring the occurrence of peptic ulcer The examinations conducted on healthy students at Guy's Hospital confirmed the view that certain anatomical and physiological variations present in health may be the physical basis of the subject's diathesis to develop gastric disorders under appropriate conditions In describing the insulin treatment of diabetes, Dr W W Parne, working under Dr E P Poulton, records a large number of observations, including some to test the effect of combining parathyroid treatment with insulin, some of the few cases thus tested showed evidence that the parathyroid therapy might diminish the blood sugar Drs R D Passy and J Cuter Brune find that in the intestinal sprue and of *Dibothriocephalus latus* infection the red blood corpuscles show the same increase in size and in the distribution curves as in Addison's anaemia Mr G E Gibbard[2] note on two cases of neurofibroma of the cervical sympathetic is the last in this interesting instalment

NOTES ON BOOKS

The new edition of the small handbook on the diagnosis of internal diseases[3] by the late Dr Georg Klemperer, who died shortly after completion of the manuscript in November, 1922, has appeared within three years of the last edition (see JOURNAL November 5th, 1921, p 751) The work has undergone general revision and has been well brought up to date, special attention having been paid to roentgeno copi

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[1] *Guy's Hospital Reports* Vol lxxiv (3rd fourth series) No 3 Jul 1924 Edited by Arthur F Hurst M D London Wakley and Son (1 Ld 10s 6d (Med 8vo pp 245-368 63 figures 12s 6d each) volume of four parts single numbers 12s 6d each)

[2] "Differential diagnosis of the nerves and their tumours" Part Dr C Ellis mann Eighth and ninth edition Leipsic J A Barth 1924 (Med 8vo pp viii + 253)

[3] *The Ocean of Story* Being C H Tawney's translation of Somadeva's Kathâ Sarit Sâgara Now edited with introduction footnotes and illustrative matter by N M Penzer M A F R G S F G S With foreword by Sir Richard Carnac Temple In ten volumes Vol I Privately printed for subscription only by C J Sawyer, Ltd London 1924 (Demy 8vo pp xii + 350 12 2s per volume)

The *Collana Medica "Murri"* is a series of eight medical booklets which have been published by L Cappelli of Bologna apparently with the object of popularizing the treatment of the more common complaints such as neurasthenia and nerve troubles, syphilis, constipation defects of vision, infantile diseases, insomnia, and tuberculosis The volumes on infantile diseases, insomnia, and tuberculosis[7] have been the last to appear They give a clear description of the causes of the complaints with which they deal and their treatment They are evidently intended to enable the patient, or those on whom in home life he is dependent, to help in the treatment by individual effort and by an appreciation of the causes and rational treatment of the complaints, and not for the purpose of eliminating the medical attendant The booklet on insomnia for example, concludes with a sentence to the effect that, after all, and especially in insomnia of nervous origin the wise course is to consult a physician in whom one has confidence, to whom one may unburden one's mind, and from whom one will get good advice This is the kind of advice popular books on medical subjects should give the reader

Dr W STEKEL of Vienna seems to be one of the most voluminous of living writers It would appear that a number of his books are to be translated into English, and the first of these has been issued under the title *Conditions of Nervous Anxiety*[8] Dr Stekel considers that in the progress in chemistry, physics, bacteriology, and pathology we have neglected the psychic components of disease, and his book is intended to serve as an introduction to psychotherapy for practitioners He claims the credit of having built up the real psychology of neurotic anxiety by the amplification of Freud's teaching and by modification of some of his errors Formerly he thought with Freud that all anxiety was of sexual origin, but during the war he became convinced that the instinct of self preservation can produce an elety without any sexual constituent owing to the conflict arising between the instinct of self preservation and the sense of duty The greater part of the book, however is taken up with the detailed description of cases illustrating the occurrence of anxiety conditions as the result of repression and violation of the sex instinct There are chapters also on anxiety neurosis in children and the technique of psychotherapy The translator, on the whole, has done her work well although her lack of familiarity with medical terminology is a drawback

The cult of beauty in woman (and man) is ancient, it is modern and is not likely to diminish in the future The standard of human beauty has varied and varies to-day but it has never failed to attract and be desired and there have been many attempts to cultivate it M MASQUILIER[9] in his book bursts into rhapsody on the practice of 'morphotherapy,' or the education of the beauty of the human body He conceives of beauty of form of movement, and of expression, and tells how they have been sought after in systems old and new For him the modern town dweller waxes old before he is young he is like a slow combustion stove that has become clogged and needs the forced draught of physical cultivation All women—he must mean all who don't work or take to sports—are atrophic hiding wasted muscles under an adipose coating Yet even he can see some improvement since they have discarded the corset and freed the neck bosom and lower limbs from the thraldom of clothes The cult that he urges is summed up in the word "re education —the discovery of the undeveloped or wasted function and the recovery of it Movements—active and passive, free and controlled—massage the reform of diet ary and of the mode of life, all are made servants to the idea of re education and in that there is beauty for all It is an essay not without truth, and not without interest, albeit the adjectives are too often in the superlative

DRS IRVING J SANDS and PHYLLIS BLANCHARD have conjointly written a book on *Abnormal Behaviour*[10] which serves to demonstrate the change which is taking place in the attitude of the community towards the individual who does not conform to its customs and standards of conduct Formerly, as the authors point out the person who showed aberrant behaviour traits was looked upon as a social outcast whereas now the tendency is to look upon such an individual as mentally ill and to seek for the cause of his abnormal conduct The book deals largely with concrete cases of the various forms of abnormality full descriptions are given, the causes discussed and the mode of dealing with them indicated The treatment of the subject is elementary and the book is thoroughly suited to the needs of the social worker

[7] *Come si cura il bambino*, by G Finzio (pp 68) *Come si cura la tubercolosi* by I Ramunia (pp 87) *Come si cura la insonnia* by L Cappelli (pp 122) (4 lire each)

[8] *Conditions of Nervous Anxiety and their Treatment* By Dr W Stekel Authorized translation by Rosalie Gabler London Kegan Paul Trench and Co Ltd 1923 (Demy 8vo pp xii + 260 20s)

[9] *La Education de la Beauté du Corps Humain Traité pratique de Morphothérapie* Par M Masquilier Paris Gaston Doin 1923 (Demy 16mo pp 128 Fr 10)

[10] *Abnormal Behaviour Pitfalls of our Minds* An Introduction to the Study of Abnormal and Anti social Behaviour By Irving J Sands LD Instructor in Neurology Columbia University Medical School and Phyllis Blanchard PhD formerly Psychologist Bellevue Hospital London George Routledge and Sons Ltd 1923 (Demy 8vo pp xiii + 332 illustrated 16s net)

PREPARATIONS AND APPLIANCES

Oxo id Glandular Preparations

We have received samples of a series of Oxoid glandular preparations recently placed on the market by Messrs Oxo Ltd The following are the chief preparations

Thyroid gland tablets gr 5 2 1 1/2.

Pituitary gland
- Anterior lobe tablets gr 5
- Posterior lobe tablets gr 2
- Whole gland tablets gr 5
- Liquor hypophysis 20 per cent and 10 per cent extracts

Suprarenal body
- Suprarenal gland tablets gr 5
- Adrenaline tablets gr 1/60 and 1/120
- Adrenaline solution 1 per 1000

The makers claim that the fresh glands are desiccated by methods devised to give the maximum preservation to the active principle that all subsequent chemical processes are conducted with extreme care and that the final products are standardized to a uniform strength by modern chemical and biological tests.

Tests made for the BRITISH MEDICAL JOURNAL upon the adrenalin and posterior lobe pituitary preparations showed that they had a high physiological activity

It is interesting to note that Messrs Oxo are applying their thyroid preparations to pharmacological and therapeutic tests This is a very satisfactory departure for it gives the medical practitioner receiving thyroid preparations of uniform activity This of course is not ensured by the ordinary chemical tests The prices charged for the preparations are moderate and reasonable

A Packing for Surgical Dressings

Under the name Steradis Messrs Robert Bailey and Son of Marriott Street Mills Stockport have devised a simple method of packing for urgical dressings It consists of a double cylinder of cardboard the inner cylinder containing 3 or 6 yards of plain or medicated absorbent gauze Each cylinder is slotted or perforated its full length By rotating a flange at the bottom of the inner cylinder the edge of the gauze appears in the slot of the outer cylinder When the two slots are opposite one another the amount of gauze required can be drawn out and cut off the apparatus is closed by turning the flange in the opposite direction The principle is simple and effective and prevents the exposure of the dressings to the atmosphere or to handling It should prove a very handy method of keeping dressings in the surgery and for first aid purposes.

ROYAL MEDICAL BENEVOLENT FUND

At the last meeting of the Committee fifty seven cases were considered and £673 0s 9d voted to forty-seven applicants The following is a summary of some of the new cases relieved

Widow of M D Edin who died from influenza a few days after the birth of her fifth child two days after Applicant is left with three young children aged 11 5 and 2 Her total income is £1 5 She asks the Fund to help with clothes for the second boy A small grant was made and the case handed over to the Guild.

Daughter aged 20 of L R C P and S Edin who died of heart disease in an artist and was employed by a firm of firework makers at Her income her out of employment Her rent is 14s 6d per week From January to April he managed to make £4 a week but since then has only been paid £2 0

Widow aged 61 of L R C P Edin who died in 1922 after a long illness received £40 for the good will of the practice and also a private annuity of £50 a year from his wife's brother and has only £1 a week to live on

Daughter aged 19 of M R C S Eng who died in 1922 after a long illness and left his family in poor circumstances Applicant suffers from chronic catarrh and has recently undergone an operation for adenoids She is only able to help support by means of her income pupil and has a total income of £5

Daughter aged 9 of M R C S Eng who died in 1922 after a long illness Applicant is living with her mother and brother in a furnished house which they are about to leave as they cannot afford to keep the furniture Would be glad to have a small grant of £5

Subscriptions may be sent to the Honorary Treasurer Sir Charters Symonds K B E C B Messrs Hill Cranch Street Cavendish Square London W 1

The Royal Medical Benevolent Fund Guild has received many applications for clothing consisting of overcoats and shirts for ladies and girls holding ecclesiastical posts and suits for working boys The Guild appeals for second hand clothes and household articles The gifts could be sent to the Secretary of the Guild, 58, Great Marlborough Street, W 1

ROYAL COMMISSION ON LUNACY AND MENTAL DISORDER

(*Continued from page 820*)

The sittings of the Royal Commission on Lunacy and Mental Disorder were resumed on November 4th, under the chairmanship of the Right Hon H P Macmillan, K C

Evidence of Medical Superintendent of Poor Law Infirmaries

Dr A L Baly, medical superintendent of Lambeth Infirmary, was the first witness He said that the accommodation for mental cases in his institution consisted of four wards with 50 beds for women, and one ward with 11 beds for men, he hoped to increase the accommodation on the male side within the next few months The cases which came under observation ranged through every degree of mental disorder A magistrate attended two days a week for the purpose of certification During the year ending March 31st last the number of persons brought before this magistrate was 615, the majority (453) were admitted on the request of the relieving officer of the police under Section 20 of the Lunacy Act, which provided for three days' detention, other cases were transferred to the mental department from the general wards of his own or another institution Of the 453 cases on three days detention, 193 were afterwards transferred to mental hospitals, in 111 other cases the orders were allowed to lapse, and the remaining 149 were either eventually discharged or transferred to the general wards Very many of these cases were technically short of lunacy, and yet it was advantageous to the patient to be for a time under control The cases transferred to mental hospitals were those amenable to treatment, for which there was no provision in the Poor Law infirmary, cases returned in the infirmary were chronic, and mostly senile The constant difficulty with which he was faced was not in saying whether a person was of unsound mind but whether it was proper to place him in a mental hospital, the answer to this second question depended largely on the patient's home conditions A scheme whereby persons of unsound mind might be placed on trial without certification would remove a great deal of the difficulty The friends of the patient were almost invariably anxious that he should not be certified, and many of the cases of mental unsoundness which found then way to a Poor Law infirmary were obviously of a temporary nature Domestic troubles accounted for not a few of them, and he had actually had cases in which husband and wife alternately sent one another to the receiving institution Unemployment was a fertile cause of mental instability Cases which proved after observation to be clearly not certifiable were mentioned to the magistrate on his visit and discharged at once, unless the patients happened to be suffering from physical ailments, in which case they were sent to the general wards In certain cases in which it was not clear that discharge should be given, and which it was desirable to keep under observation for a longer time, he had certified but suspended the certificate, so that the patient was not sent immediately to a mental hospital and if he recovered neither he nor anyone else was aware of the fact of certification

The witness was examined at some length on this expedient, and Earl Russell pointed out that although no harm might be done, the person so dealt with could not bring in action for slander against someone who asserted that he had been certified Asked as to his own position should an aggrieved patient take action, the witness expressed the view that any medical practitioner giving a certificate of any kind ought to be protected in the same way as a witness giving evidence on oath He had taken legal advice on his own liability and had received some reassurance Asked from whom the advice had been taken, he said that it was from a Commissioner of the Board of Control, at which there was some laughter among the members of the public present The witness added that the apprehension of legal troubles was now very acute among private practitioners, who were showing a disinclination to participate in the administration of lunacy law

Asked with regard to the position of the relatives of a patient Dr Baly said that in every case an effort was made by the relieving officer, and if necessary by the police to trace the relatives The charge ability for the patient was the motive in so doing but as a medical officer he wanted the assistance of the relatives for another reason—namely, that he might learn the history of the case and then wishe with regard to the patient

Some discussion arose on the cases of patients suffering from delirium or other mental symptoms accompanying fevers, and the witness said that in his experience these cases occasionally came within the operation of lunacy administration Such cases as uræmia were sometimes transferred, for greater convenience in administration, from the general wards in another institution to the mental wards in his own, and the Lunacy Act had to be invoked to secure the transfer Only a small percentage of such people were eventually certified, and it appeared to be due to a physical condition he always did his utmost to retain the patient instead of letting him go to a mental hospital With regard to alcoholic cases, it appeared to be a matter of chance whether a person whose mental condition was due to alcoholic excess was taken to the police station or the lunacy ward

In reply to other questions, Dr Baly put forward an objection to the hard and fast segregation of mental cases He thought there were advantages in treating mental cases in a general institution, not only because the stigma was thereby removed, but because the patient had the advantage of superior vision and treatment by a general medical staff He thought that it would be sufficient to have, in addition to the staff of a general hospital, a special mental consultant The Chairman said that the Commission would certainly desire to diminish the distinction between mental and other illnesses, but the fact could not be overlooked that mental disease had the peculiar feature of disturbing the responsibility of the citizen More over, the stay of a patient in a general hospital was usually short, but mental disease, unhappily, ran a long course, and was often permanent The symptoms in many cases were also such as to make it undesirable to associate persons suffering from mental disorder with rational patients The witness replied that this was not necessarily the case He maintained that a very large class of mental cases could be treated in a general ward, for others a separate ward would be necessary, and for incurable cases there had better be a separate block or not a separate institution In reply to Sir Humphry Rolleston, he agreed that it would be an advantage for assistant medical officers in Poor Law institutions to be seconded for a short period to mental hospitals, if Poor Law institutions obtained power to retain curable patients for a longer period than was at present allowed it would certainly be necessary to have on the staff medical officers who were expert in the treatment of mental disorder A member of the public desired that some questions should be put to the witness with regard to the provision in the medical curriculum for the study of mental cases, but the Chairman said that this information would be forthcoming from a representative of the General Medical Council whom it was intended to call

Dr J Dundeon Giles, medical superintendent, Salford Union Infirmary, said that he had one male ward with 70 beds for mental cases, and two female wards with a total of 100 beds Among about 900 patients in his infirmary he had an average of 150 mental cases About 80 per cent of these patients were brought to the institution by a relieving officer or the police, and kept on a three days' detention order A very small proportion of these were discharged within the three days, and the remainder were placed on the fourteen day order for observation, Section 24 of the Act being invoked to admit of the fourteen day detention A certain number were then found to be certifiable and were removed to the mental hospital, others—chronic cases—were placed under a permanent detention order It one order lapsed without a definite step being taken the patient was discharged altogether to another ward and "tried out" for a day or two, and if the symptoms still remained the matter was taken up *de novo* He felt strongly that a period of observation and provisional treatment, with some sort of control, should be allowed by law before certification But it was very necessary to have some power to say to relatives that a particular patient during a certain period must not be taken out of the institution Provision for treatment without certification would certainly encourage people to come forward voluntarily at an early stage of then malady He thought that the fourteen days detention period might usefully be extended to a month He agreed with the Chairman, as the previous witness had done, that the programme of action as set out in the Lunacy Acts was not at all well defined, the system, interpreted as it had been by intelligent and sympathetic medical officers, had not worked badly, but it was very desirable to have some simplification

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An International Catholic Missionary Exhibition will be opened in Rome on December 25th, and will remain open during next year The medical section of this exhibition is being organized by several professors, and special attention is being paid to tropical diseases Educational exhibits are being collected from various countries, including England

We have received a copy of *Revista dos Cursos*, 1924, Anno V, N 10, the official organ of the Faculty of Medicine of Porto Alegre, Brazil The issue contains an introductory address by Professor Fabio Barros, occupant of the chair of physiology, followed by seventeen clinical lectures on various medical and surgical subjects, which are illustrated by numerous photographs and skiagrams

British Medical Journal.

SATURDAY, NOVEMBER 8TH, 1924

PARLIAMENT AND MEDICINE

To DAY we give a brief account (at page 872) of the election fortunes, or misfortunes, of all the members of the medical profession who have been candidates for Parliament with the single exception of the Scottish Universities constituency, in which the polling has not yet closed Five who were in the House of Commons recently dissolved have been re elected, and there are six new members, two of whom however, had been in a previous Parliament Four who sat in the last Parliament have been rejected this time and thirteen others have also been unsuccessful, some of them having formerly been candidates or members, the unsuccessful include three medical women All parties are represented amongst the defeated but Labour predominates to the extent of ten of the seventeen The eleven so far elected consist of six Conservatives, four Labour members, and one Independent, the setback of the Liberals leaving that party without a medical member in the House

It is important that, apart from political colour, the voice of medicine should be heard in Parliament when questions involving professional knowledge and experience are under discussion, and the group as now elected contains all the necessary qualifications For the most part they have not been appointed as doctors but as belonging to one or other of the two main political parties and, as it happens the general composition of the new House of Commons is not unfairly reflected in the fact that six are Conservatives, one is Independent and four are Labour members On university education, the Health Insurance Acts the fostering of research and the regulation of animal experiments the promotion of vaccination, the welfare movements in respect of mothers infants and school children, the control of tuberculosis, the extension of institutional accommodation as preferable to home treatment for many diseases—on all these and other such questions to have at hand a body of expert knowledge and opinion within Parliament itself is unquestionably a great advantage

But the medical members would be taking up an entirely false position—indeed, would be destroying their own influence—if they were to assume too much of an *ex cathedra* attitude in the discussion of subjects which admittedly are in their special ambit It is true that within less than a generation the science of medicine has made marvellous advances in the prevention and the curing of disease It is true also that the country realizes as never before the tremendous national service which modern medicine can give in fostering the common weal But that realization enables laymen in Parliament to take a large part in developing a policy for utilizing the newer knowledge In particular the financial aspects of every proposal must in these times be most carefully considered The anti waste stunt has fortunately subsided but the reckless extravagances and profiteerings which were perhaps largely inevitable in the war have not been forgotten and render rigid scrutiny of contemplated new outlays all the more obligatory This does not mean refusal to spend where expenditure can be demonstrated to be profitable, even if the profit be not immediate Not so long ago advocacy of casting bread upon the waters to have it returned after many days could have met with the rejoinder that before the many days had elapsed death from starvation would have occurred The country, however seems now turning on the way to recovery and can afford to take longer view The national buoyancy already in evidence is itself a sign of improving communal health, and when projects for subsidizing from public funds schemes making for public health come before the Legislature, boldness and enterprise may be the truest economy Always, however, this attitude is subject to one reservation To justify boldness necessary preliminaries are the making sure that a scheme is fundamentally sound, and that there will be no incidental evil reaction on the character of those to whom it is to be applied There is now very general recognition that the system of doles which has been so largely resorted to during prevalent unemployment tends to be most harmful to the character of many recipients It fosters both idleness and discontent The old workhouse practice of setting casual inmates to labour of little or no intrinsic value, such as oakum picking or stone breaking for which many of them were quite unfitted, was bad but at least it showed a glimmering appreciation of the evils of absolute idleness The dole policy does not even do that it fosters idleness That being perceived new methods of house building which are to diminish greatly the need for bricklaying and to provide occupation for unskilled labour are obviously on the right lines, and Parliament should not hesitate to afford them reasonable support The same principle should hold throughout the whole sphere of public assistance In questions of health the giving of aid should be accompanied by compulsion towards obedience and discipline That applies in respect of venereal disease, tuberculosis, rickets and any other conditions which are coming within the operations of State aided or rate aided schemes

We would press on the consideration of the new Government, as soon as Lord Onslow's Poor Law Commission has reported one question of the utmost public importance which has long awaited solution It is the reorganization of the whole system of local government, including the relationship of the two great departments of Poor Law and Health Apart from the county boroughs the areas for public health administration in England are as a rule absurdly too small Each of them is in the way responsible for administering (with certain exceptions) the numerous Acts relating to sanitation water supply drainage scavenging the healthiness of workshops the enforcement of building by laws the appointment of medical officers of health, sanitary inspectors and veterinary officers the supervision of meat and milk and food supply, and the control of tuberculosis acute infectious diseases and venereal disease By sheer force of circumstances voluntary agreements have been made for combined action in many adjoining areas while in respect of some matters especially institutional accommodation, the law has intervened for the creation of wider amalgamations But hand to mouth measures are made quate and incomplete Reform on national lines is urgently necessary The task should definitely be undertaken by the new Government It has all the qualifications for the purpose—sufficient time to give careful departmental consideration to the whole complicated subject and an ample majority to carry out its ultimate decisions It may meet with many difficulties particularly opposition from small local interests and prepossessions Some existing authorities, however limited their areas, and some officers, however

small then salaries, may be expected in such circumstances to offer objection to interference, but in any wise scheme care would be taken to deal tenderly with such difficulties, and a measure of national importance cannot be indefinitely postponed in deference to local sensitiveness

Britain now indulges in the hope that for at least another lustrum it will have a Government wise enough to develop a sound national policy, and strong enough to persist in it A health programme must be an essential part of that policy, and its guidance and control will require a strong and broad-minded Minister a man whose standing and reputation will inspire confidence, who will be allowed by the Prime Minister to remain in the one office long enough to set his mark, not only on the physical health of the community, but also on its character for self-reliance and independence Mr Baldwin has many great offices to fill, and he has at his disposal men qualified to do justice to most of them As years pass some departments of government lose in importance and others gain To be Minister of Health in England at the present time affords a field of work worthy of the talents and ambition and patriotism of the best man to whom the offer of the post may be made

A GENERAL VIEW OF LARYNGEAL TUBERCULOSIS

It is a common reproach of specialism that it tends to detach itself from the general commonwealth of medicine, and, by concentrating its attention on a limited area, to cultivate a small district to the neglect of the interests of the whole body politic This may be true of the more myopic exponents of a special subject, but there are others with greater range of vision It is from amongst this number that some of the most valuable additions have been made to the general knowledge of the medical profession and to its capacity to cure Of those who have thus contributed in the past the names of Hughlings Jackson and Spencer Wells rise to our memory Modern, if less striking, instances are, we are glad to say, becoming more frequent, and the Mitchell Lecture, delivered before the Royal College of Physicians of London this week, and printed at page 841, is a case in point The subject of tuberculosis of the larynx was therein dealt with by an expert, but, instead of focusing attention on local lesions and technical points—interesting and valuable to the laryngologist, but not to others—Sir StClair Thomson, out of the wealth of his experience and observation, shows the general physician the urgency of detecting the presence of developing tuberculosis in the larynx

It is scarcely too much to say that after Sir StClair Thomson's exposition no case of pulmonary tuberculosis presenting a laryngeal complication can hence forward be looked on as 'slight,' for of all the laryngeal patients he saw during ten years in the King Edward VII Sanatorium at Midhurst (early and "favourable" cases, as things are at present), no less than 70 per cent were dead within a few years Between 1911 and 1921 some 2 540 patients with pulmonary tuberculosis were discharged from that institution Of the patients found to have tuberculosis of the larynx during those ten years, two out of every three were dead by 1922, but of those with a sound larynx two out of three were still alive Another valuable lesson for the general physician is that progress or the reverse does not necessarily take place *pari passu* in the lungs and in the larynx It generally does so, but not always Hence a diseased larynx may become arrested or even heal completely while the lungs deteriorate But the converse never occurs that is to say, while the laryngeal disease is advancing no arrest of the mischief in the lungs is possible This is a very valuable prognostic point which the attendant physician might well bear in mind

In the words of the lecturer, the 70 per cent mortality among his 477 throat cases is "an arresting and a saddening thought" But it must be heed His abandonment of all local surgical measures, together with the entire armamentarium of caustics, paints, insufflations, and sprays, introduces a simpler, gentler, and more effective scheme of therapeutics He claims that the principal factor in treatment should be the sanatorium régime and a co-ordination of the study of the patient's laryngeal with that of his pulmonary and general condition As regards local care, good results were obtained from the simple method of local rest, secured by limiting the voice to a whisper, or by enforcing the more heroic rule of strict silence The only local application employed was that of the galvano cautery, which was used in 74 cases and yielded 46 cures, the method of "whispers" and "silence" arrested the disease in 73 cases These 119 arrests among 477 laryngeal cases show a cure in 25 per cent of cases, the highest proportion hitherto recorded in this country The conclusion to be drawn from these figures is in striking contrast with Morell Mackenzie's opinion forty four years ago, "it is not certain that any cases ever recover," and that of another authority of the same period, who said, in reference to patients with tuberculosis of the larynx, "all are doomed to die the appearance of the disease in the larynx is the warrant of death"

The laryngeal manifestation still remains one of the most serious complications of pulmonary tuberculosis, but Sir StClair Thomson's record of his experience gives encouragement by showing that nowadays one case in four may be arrested Still better results could be obtained by what we all invoke—early diagnosis The Mitchell Lecture throws light on this, as on many other points

THE PROGRESS OF RADIOLOGY.

Twenty-nine years ago Roentgen made his great discovery as the result of physical investigations with a Crookes's tube Since that time progress has been steady, and the value of x rays in diagnosis and in treatment has steadily increased Great improvements sprang from the discovery of a hitherto unrecognized property of radiations, and their action upon a fluorescent screen From this simple beginning a new science has grown up, and its applications to medicine have been many Diagnostic aid has been given in various branches of medicine and surgery, and radiations have been applied therapeutically to a large number of diseases For diagnosis and treatment very elaborate technique has been evolved Mechanical and physical devices have been invented for the estimation of the penetrative value of radiations, and for the establishment of a system of dosage for particular diseases

The part played in these advances by British radiologists has been noteworthy Many of the pioneers suffered grievously as a result of their devotion to the advancement of the new science, and several lost their lives A fitting memorial to those early workers—James Mackenzie Davidson, Cecil Lyster, Ironside

Bruce Archibald Reid, and others—is now approaching completion. The British Institute of Radiology (an account of which appears on another page) will, when fully equipped, commemorate the work of these men, and hold out to their successors facilities for adding still further to the lustre of British radiology.

It is but seven years since a number of radiologists, physicists and electrotherapists of this country realized the need for concerted action. To realize was to act, and almost immediately they drew up a complete scheme for the necessary teaching in the twin subjects of radiology and electrology. The University of Cambridge was approached, and with commendable foresight agreed to grant a diploma in the two subjects; courses of lectures and practical work were instituted all over the country, followed soon after by the establishment of a diploma at Liverpool. The original plans included the founding of an institute which would provide a centre for radiologists and become the co-ordinating body for this work throughout the British Empire. In 1923 this question of an institute was revived by the formation of a committee representing the Roentgen Society, the Electro-Therapeutic Section of the Royal Society of Medicine, and the British Association for the Advancement of Radiology and Physiotherapy. The late Sir Archibald Reid was the chairman of the committee at the time of his death, and it was largely due to his acumen that a suitable building at 32 Welbeck Street was acquired. Financial support for the venture was given by the trustees of the Mackenzie Davidson Memorial Fund, who handed over this fund for the purchase of the lease of the building and for the housing of the Mackenzie Davidson library. The British Association for the Advancement of Radiology and Physiotherapy by a change of name became the sponsor for the institute. It is hoped in the near future to incorporate in some way the Roentgen Society and other allied societies, so that the interests and activities of kindred bodies may find suitable headquarters in the same building.

Members of the medical profession, physicists and technicians will be welcomed at the institute either as full members or associates. It is hoped that the institute may in this way become a common meeting place where members and professional colleagues may discuss matters of mutual interest. Radiology has been regarded by some as a speciality which can and should exist alone, but radiologists insist that its greatest benefits can only come through collaboration with other branches of the profession. In furtherance of this aim it is intended to build up a collection of negatives and lantern slides covering the whole of the diagnostic field. The institute is the last of the objectives originally aimed at by the committee formed in 1917, to consider the steps to be taken to advance British radiology and to improve the status of those practising in these subjects.

INJURIES OF THE SPINAL CORD AND CAUDA EQUINA

THE committee appointed by the Medical Research Council to report upon injuries of the nervous system arising in the war has lately issued its Report No. 2 on injuries of the spinal cord and cauda equina.[1] The committee is to be warmly congratulated on the result of its labours, which forms a very valuable and interesting document. It may indeed, be hoped that this report will succeed in reaching a wide public in the medical profession, for it is much more than a mere record of the injuries of warfare. The broad lines on which the committee has wisely conceived the report have enabled it to apply the lessons of the war to the injuries and diseases of civil life. The importance of applied anatomy and physiology in diagnosis is steadily kept in view, while the disturbance in function arising from injury or disease are considered in relation to the various structural, functional, or psychical abnormalities encountered. After a brief introduction, in which the secondary importance of injuries to the bones of the spinal column is stressed as compared with the greater importance of damage to the nervous elements, a short but highly practical and informing chapter on the applied anatomy of the spinal cord follows. A discussion on the applied physiology of the spinal cord includes a useful description of the not uncommon case of unilateral injury of the cord (Brown-Sequard lesions), especially in relation to the alterations of sensation which may be found in these examples of incomplete lesions familiar to neurologists but often unrecognized by others. A careful account of the phenomenon known as "spinal shock" is given: this condition is manifested by a complete flaccid paralysis, with abolition of all reflex activity and all forms of sensation below the level of the lesion, and by retention of urine and faeces. In favourable cases—that is, in the absence of septic infection of the bladder or of bed-sores and of gross secondary changes in the part of the cord below the lesion—the effects of this spinal shock begin to pass off in from seven to ten days. It will therefore be obvious that until this shock has passed a very great difficulty will be found in deciding whether any given case is one of complete lesion of the cord or not. Though at first sight perhaps superfluous, the chapter devoted to methods of examination is one of the most valuable in the whole report, for not only are the methods themselves described, but the significance of the various signs elicited is carefully considered. The examination of the changes in the reflexes, in the power of voluntary movement, in sensation and in the functions of the bladder and rectum, is duly set out, while the added remarks on the characteristic features of hysterical paralysis and other hysterical manifestations should prove most helpful. In the committee's view the value of the tuning-fork in testing the functional integrity of the posterior columns of the cord is definitely established, and it may be hoped that this simple and useful method of examination will be more widely adopted. The actual diagnosis of spinal cord injuries is considered under three heads: (1) the distinction of organic symptoms from those of psychical origin, (2) the occurrence of organic symptoms arising from injury in cases where disease is already present in the spinal cord, and (3) the regional diagnosis or more exact localization of injuries of the spinal cord. It is hardly possible here even to summarize all the conclusions reached on these important issues. But in view of the misleading appearances often produced by different involuntary and reflex movements of the paralysed limb, as well as by the occasional return of the deep reflexes even in cases of complete transverse lesions of the cord, it is well to record the opinion of the committee that the only trustworthy signs that the cord has not been completely divided are: (1) the return of sensation and (2) the return of voluntary power. Much valuable advice on the treatment of injuries of the spinal cord is given, especially in regard to the prevention and treatment of urinary infections, the care of the bowel, and the prevention of bed-sore. The indications for laminectomy are considered, and the technique of this operation briefly described. The attitude of the committee towards laminectomy will probably be considered as distinctly conservative, but it is undoubtedly right in insisting that no useful purpose is served by operation in the early stages except in the presence of certain definite indications, tabulated as follows: (1) The presence of a gli-

[1] Medical Research Council. Report of the Committee upon Injuries of the Nervous System. II. Injuries of the Spinal Cord and Cauda Equina. London: H.M. Stationery Office. 1924. Pp. 164. 1s. 6d. net.

bony deformity or a missile demonstrated radiographically, with signs that the cord is not immediately damaged, (2) an arrest in the recovery of conduction through the damaged cord after the effects of spinal shock have presumably passed away, and (3) the presence of severe and persistent root pains It is interesting to learn that the committee finds that the old teaching—"the lower the injury the better the prognosis"—has not proved true, the records of the war show that the survival period depends more on the severity of the lesion than upon its segmental level in the cord The report treats the injuries of the cauda equina on the same plan as those of the spinal cord Thus anatomy and the motor and sensory functions are first briefly described The severe pains which often complicate these injuries are rightly emphasized, while the disturbances in the functions of the bladder and rectum and their mechanisms are explained in detail It has been found that the period of retention of urine and fæces is longer than in the cases of injury to the cord itself, but even here in favourable cases automatic micturition and defæcation may be established in from four to eighteen months after the injury A greater risk of urinary infection and a greater risk to life naturally follows The clinical picture presented by lesions of the conus medullaris very closely resembles that when the cauda equina is affected, and indeed in some examples it is not possible clearly to differentiate between them, occasionally the presence of some form of dissociation of sensation may favour the diagnosis of a conus as opposed to a cauda equina lesion While traumatic lesions of the cauda equina are generally easy of diagnosis, it is far otherwise with conditions such as tumours or chronic meningitis of the nerve roots in this region The various forms of sciatica, true sciatic neuritis, osteoarthritis of the lumbar vertebræ, for example, are all states where accurate diagnosis may for some time be very difficult The methods of examination and the interpretation of symptoms detailed in the report will be found of as much value in civil practice as they have been in the injuries of war The anterior nerve roots of the cauda equina possess a definite power of recovery which is not shared by the posterior roots, the nerves, however, the lesion is to the spinal cord the less is the prospect of regeneration A number of cases are now on record in which foreign bodies, bullets, or pieces of metal have remained embedded in the nerve roots for considerable periods of time, and the nerve roots have been in the of chronic neuritis which have largely disappeared after such removal Towards operations on the cauda equina a conservative attitude is again recommended It is very rarely possible to identify or suture any individual nerve roots, though foreign bodies can be removed and adhesions divided The report concludes with a brief description of the various orthopædic measures which may be used in the correction of the residual palsies following lesions of the cauda equina

PATENT MEDICINES

An excellent article by Sir Thomas Horder on "The scandal of secret remedies" appears in the current number of *The World Today* The author does not devote much space to proving the obvious—namely, the worthlessness of the quack nostrums that fill the advertisement columns of so many newspapers and other periodicals—but he discusses the means of remedying the scandal The law to-day is the same as it was when summarized by the Select Committee on Patent Medicines in 1914 in the following statement "For all practical purposes British law is powerless to prevent any person from procuring any drug or making any mixture whether potent or without any therapeutical activity whatever (so long as it does not contain a scheduled poison), advertising it in any decent terms as a cure for any disease or ailment, recommending it by bogus testimonials and the invented opinions and *facsimile* signatures of fictitious physicians, and selling it under any name he chooses, on the payment of a small stamp duty, for any price he can persuade a credulous public to pay" It is difficult to add anything to this simple authoritative statement, but the question is how to remedy the evil it reveals As the editor of *The World Today* observes, the quack medicine trade occupies a position of extraordinary power, for through their advertisements the proprietors largely control the press, and in this and other ways influence Parliament Ten years ago the Select Committee pointed out the crying scandal of the present state of affairs, and as the Committee prophesied, its report was allowed to drop unnoticed by the press, and for ten years nothing has been done in the matter Sir Thomas Horder mentions many other familiar examples of the power of this trade to oppose legislation adverse to its interests, and even to suppress the spread of any information *The World Today* deserves the gratitude of the public and the medical profession for publishing the present article, it is continuing the good work begun by its predecessor, *The World's Work*, which published in 1906 a scathing exposure of quack medicines Legislation on the subject of patent medicines is long overdue, for at present this particular form of fraud is positively pampered by the Legislature, but the chief remedy undoubtedly lies in educating the public The more the public know about the elementary laws of hygiene the less readily will they be exploited by quack medicine vendors, and Sir Thomas Horder points out that it is the duty and interest of the medical profession to further such education The author takes as an instance the education of the public in self-medication in the case of minor common ailments "A man will never go to a doctor for every headache that he suffers, nor every time that he is constipated—nor is it desirable that he should But the salient point is this he is surely running a much smaller risk if he attempts to correct the defect by a remedy the exact nature of which he and everybody knows, than by taking a patent medicine whose formula is secret, and may be changed from time to time without his knowledge" The medical profession, very rightly, has always been most suspicious of measures likely to encourage self-medication, but we think Sir Thomas Horder's statement of plain facts is unanswerable There are a certain number of minor ailments which the public always have treated, and probably always will treat, by themselves, and the profession ought to do its best to see that the disadvantages and dangers of this practice are minimized as far as possible by the supply of accurate information

ST LUKE'S DAY SERVICE IN TORONTO

The Toronto Academy of Medicine, the largest local medical organization in Canada, instituted this year an annual service on St Luke's Day Fellows of the Academy with their wives, together with many trained nurses from various hospitals, and a large body of medical students, assembled in the Convocation Hall of the University to the number of about one thousand Before the service began the President, Dr Harley Smith, outlined the action taken by the Academy as follows "It is fitting that we, in this daughter Dominion, loyal as we are in our devotion to the Motherland, should follow her example in many things that tend to raise us to a higher plane of living Sixty years ago some medical students in England organized a Guild of St Luke This was later extended so as to include medical graduates and associate members During all these years there have gathered in St Paul's and other cathedrals in the old land thousands of our

colleagues with students and nurses, many of them clad in academic robes, to worship the Divine Master of that disciple who, by his faithfulness in the practice of his profession and by his loving obedience to his Master, earned for himself the beautiful title of the Beloved Physician His gospel has been described as the gospel of the rejoicing spirit of God our Saviour The healing art has been recognized by the Saviour as an essential part of His work of reconciliation Three years ago the then president of the Toronto Academy of Medicine had the happy thought of instituting a similar service in our city The subject was further developed by his two successors and their respective councils, and last spring the Academy decided to hold this year the first St Luke's Day service The beautiful and appropriate order of service used on this occasion, dating back at least to the earlier half of the sixteenth century, was chosen by our immediate past-president, Dr R T Noble, in conference with the librarian of one of our theological colleges To stimulate and strengthen the members of a noble profession in faithful adherence to the highest ideals in their difficult work for mankind, and in their relations to one another, is one of the objects of our assembling to-day in this divine worship" The service was conducted by the Rev A L Rose, rector of St Mary Magdalene's Church, and the choir of the church, assisted by the Toronto University Glee Club, rendered the musical part of the service The sermon was preached by the Rev Provost Seager of Trinity College

THE ROCKEFELLER FOUNDATION IN 1923

THE annual report for 1923 of the Rockefeller Foundation[1] contains, in addition to the attractively written review by the President (Dr G E Vincent), the more detailed reports of the general director (Dr F R Russell) of the International Health Board, of the directors of the China Medical Board (Dr Roger Greene), and of the Division of Medical Education (Dr R M Pearce), the last of whom is familiar to many medical men in this country from his visits and their results During 1923 the condition of scientific medical workers in Germany was so urgent that the Rockefeller Foundation granted 194 resident fellowships, which thus provide small stipends and sums for laboratory expenses, altogether in that year the Foundation supplied 636 individuals in twenty-nine countries with fellowship funds The training of nurses has been studied and as a result active steps have been taken to facilitate a more systematic organization of education with a shorter period of instruction (twenty eight months) and the inclusion of public health in the course so as to obtain capable *staffs of visiting nurses The latest, and it is hoped the* final, bout with yellow fever in Brazil recalls the memory of Oswaldo Cruz, who, before his death in 1917, had by his efforts "made Rio de Janeiro as safe as it is beautiful" The phrase 'Parasites lost and Parasites regained," uttered by a Fijian schoolboy after listening on the same day to a talk on hookworm disease and an address on Milton, exactly describes what happens if the precautions so widely promulgated by the International Health Board are not properly obeyed Since the Rockefeller Foundation began to take a part in medical education it has helped 117 medical schools in thirty-one countries, one of the conditions being that it contributes a part only of the funds needed for a given project, with the understanding that the remainder will be provided from other sources The Peking Union Medical College, built, equipped, and maintained by the Rockefeller Foundation through the China Medical Board, is carried on by well trained men and women from many parts of the world, the seventy eight members of the medical school and hospital staffs coming from thirty-eight medical colleges in eleven different countries During 1923 there were no less than eighty-five publications from this centre in the Orient, among which special attention should be directed to Dr C W Young's account of improved method for detecting and cultivating the parasite of kala azar It is difficult to express adequately our admiration for the way in which the Rockefeller Foundation is carrying out the purpose of its charter, "the well being of mankind throughout the world"

[1] The Rockefeller Foundation Annual Report for 1923 (Foap to Pl xiii—389—79 figures.

IN OPEN BOATS

WITH the coming of the steamship and the passing of the beautiful sailing ship, the romance of the sea was considered past But now and again something happens a ship is wrecked or founders, and the old spirit of British seamanship reappears When on June 4th, 1923, the news was first flashed over the world that an open boat containing survivors from the ss *Theresa* had landed at Rodrigues Island, a sense of pride as well as relief was felt by every man and woman of our race The story has now been given to the public by Mr Cecil Foster, captain of the ship, in a book entitled *Seventeen Hundred Miles in Open Boats*[1] This plain unvarnished tale is practically the log kept by the commanders of the two open boats that carried the crew of the *Theresa* to safety—one to Rodrigues Island, the other to Mauritius It is impossible to read the account of the hardships of crews crowded into open boats—exposed to all weathers, rationed in drinking water down to the bare limit which will support life—without recalling other famous exploits in which British sailors escaped innumerable dangers in a like manner We are naturally reminded of Bligh's famous voyage, when his crew in the *Bounty* mutinied and sent their captain and the loyal members of his crew afloat in an open boat in the neighbourhood of the Friendly Islands That was in the year 1789, the voyage ending when the starved and battered heroes arrived at the Dutch island of Timor Another voyage, in many ways curiously like Bligh's was that of Captain Edwards, who commanded H M frigate *Pandora*, which sailed in 1790 to the South Seas to hunt for the mutineers of the *Bounty* and bring back for trial any they could find Edwards, who must have been a particularly hard and difficult commander to serve under, was undoubtedly a fine seaman, although he lost his ship on a reef through gross carelessness The narrative of his long voyage in an open boat, which (like Bligh's) ended at Timor, was written by his surgeon George Hamilton who was among his crew who survived the voyage this rare volume was published at Berwick in 1793 The accounts of these three voyages bring to light the fact that in each instance success was due to the stern discipline maintained by the commanding officer Food, and still more water had to be rationed to the smallest possible amount while those who broke the rule that forbade the drinking of sea water always perished Captain Foster had experienced the hardships of voyages in open boat during the war when he was more than once torpedoed by German submarines His experiences on those occasions had moved him so much that he had often discussed with his chief steward in the *Theresa* the question of how a ship's boat should be provisioned in the event of having to leave the ship on the high seas Owing to this foresight on the part of the captain he was not taken altogether by surprise when the disaster came for the steward knew exactly what provisions to put into the lifeboat The three chief items were water, condensed milk, and cigarettes The water had to be most sparingly used while generally the men

[1] *Seventeen Hundred Miles in Open Boats* By Cecil Foster Master Mariner Captain of the "Theresa" London Martin Hopkinson (Ltd (Demy 8vo pp xii—173 2 maps 2 plates 5s net)

mouths were so dry that the biscuits issued for food were seldom touched Again and again Captain Foster remarks on the benefit they all received from the cigarettes, smoking appears to have comforted and soothed the sufferers, indeed, Captain Foster, writing of this, says "When indulged in it revived everyone's spirits and added the touch of cheerfulness necessary to enable us to carry on and keep smiling" The daily ration of water allotted to every man was one-third of a cigarette tin, this was issued at 2 o'clock in the afternoon, when the worst of the heat of the day was over At 8 a m each man had a ration of milk—one cigarette-tin full—and one biscuit, and another small ration of milk in the evening While those who drank sea-water died of thirst, much relief was derived from bathing the head and body in sea-water, also from soaking the clothes in the sea, and, after partially wringing them out, putting them on again, the men who did this suffered less from thirst than those who relied only upon their ration of drinking water

AUSTRALIAN MEDICAL PUBLICATIONS

The Health Department of the Commonwealth of Australia is issuing a series of publications, under the authority of the Minister of Health, dealing with a variety of medical questions particularly as they interest the Australian practitioner The authors are all men of experience in the matters on which they have written, and all are connected with the Institute of Tropical Medicine at Townsville, North Queensland Though dealing primarily with tropical conditions as found in Australia, the subjects treated have a far wider range of application than that of a single continent, since it is by a scientific consideration of these and cognate matters that the oft-debated question of the ability of the white man to colonize and make his permanent home in the tropics will be finally decided Pamphlet No 6 of the series is concerned more directly with this problem, summarizing certain studies on acclimatization This is stated to be a preliminary communication for which the well known studies of Breinl, Young, and others, issued some years ago from the Townsville institute, form the basis Further information on this problem will be awaited with much interest Four other pamphlets (Nos 2, 3, 4, and 8) treat directly or indirectly with mosquitos No 2, a synonymic list of the more important Culicidæ of the Australian region, by Mr L E Cooling entomologist on the staff of the institute, will prove very useful for future workers, and will save much time which would otherwise have to be spent in the tedious work of 'running down" species of mosquitos No 8 by the same author, takes up the question of the bionomics of some of the commoner species mentioned in the preceding Two other issues (Nos 3 and 4) specialize on the mosquito-borne diseases, malaria and filariasis respectively There are both written by Dr Cilento, director of the institute The former is of particular importance, since this disease has hitherto proved the most vital factor in preventing the successful permanent settling of the white man in the tropics, the latter comprises a general review of the subject of *Filaria bancrofti*, the parasite, the diseases to which it gives rise and their treatment, compiled from the standard textbooks and reports Pamphlet No 5, on the diagnosis of bowel diseases, is likewise mainly a compilation, though a valuable one It deals with the prevalence of intestinal affections in Australia, dividing them into three main groups helminthic, in particular ankylostomiasis, sprue, consisting largely of extracts from Dr Manson-Bahr's writings, and the dysenteric group, amœbic and bacillary The final pages, on helminthological matters, need considerable revision in the light of more recent work Even though these publications contain little or no new matter, they will doubtless be very useful for the practitioner in Australia, for whose benefit they have been written They will not only save him time in looking up points in larger text books, but they indicate when it is necessary or advisable to send material for special examination, they tell him how to take the specimens and how to interpret and evaluate the reports he receives from the laboratories Though the issues before us consist largely of compilations they form an excellent foundation for the erection of a superstructure of new material, and if the standard is maintained when dealing with special subjects the series should in time prove as valuable as the publications of the Washington Bureau, and be as widely read

GOLD TREATMENT OF TUBERCULOSIS

For some time past Professor Holger Mollgaard and his fellow workers in Copenhagen have been investigating the direct chemical action of gold salts upon the tubercle bacillus At a meeting of the Danish Medical Society held in Copenhagen on October 28th Professor Mollgaard gave a preliminary account of the experimental work and the clinical results, and we understand that full details are now in course of publication in book form in English The method is a form of chemotherapy A solution of the gold salt is injected intravenously or intramuscularly Its destructive action on the tubercle bacillus appears to liberate a toxin, often with serious results to the patient To neutralize this reaction a protective serum obtained from an immunized horse is administered beforehand The constitution of the gold salt is said to be such that the risk of metallic poisoning is slight Arrangements have been made for producing it in bulk in Denmark under the name "sanocrysin," but we understand that Professor Mollgaard is not making it generally available at present He has asked the Medical Research Council to organize the investigation of its properties in this country The new method of treatment is obviously one which should only be applied with great care, and with full knowledge of the laboratory and clinical tests already made

The three hundredth anniversary of the birth of Thomas Sydenham will be commemorated at a meeting of the President and Fellows of the Royal College of Physicians of London at the College, Pall Mall East, on Wednesday next, November 12th There will be a reception at 8.30 p.m., followed by a short address by the President, Sir Humphry Rolleston, Bt., K.C.B.

The Schorstein Memorial Lecture will be delivered by Sir Arthur Keith, F.R.S., in the anatomical theatre of the London Hospital Medical College on Wednesday, December 17th, at 4.15 p.m., the subject chosen is the clinical importance of the bulbus cordis The lecture will be illustrated by lantern slides Members of the medical profession are cordially invited

By an Order of the Privy Council, Professor E. P. Cathcart, C.B.E., M.D., D.Sc., F.R.S., Professor of Chemical Physiology in the University of Glasgow, has been appointed a member of the Medical Research Council in the place of Professor D. Noel Paton, M.D., F.R.S., who has retired

Dr. Herbert R. Spencer will deliver the second David Lloyd Roberts Lecture on the renaissance of midwifery, illustrated by books and lantern slides, on Wednesday, November 19th, at 5 o'clock, at the house of the Medical Society, of London, 11, Chandos Street, Cavendish Square

BRITISH INSTITUTE OF RADIOLOGY

In the diagnosis of disease radioscopy and radiography are being increasingly employed, and it is also recognized that radiotherapy constitutes a great advance in the treatment of many kinds of disease. Still greater progress would become possible at closer and more intelligent co-operation could be effected between radiologists and medical practitioners on the one hand, and between radiologists, physicists, and technicians on the other. The interest of medical practitioners generally would be deepened and their more effective co-operation secured if convenient opportunities were afforded them of observing the improvements that are being made in the application of radiology to diagnosis and treatment.

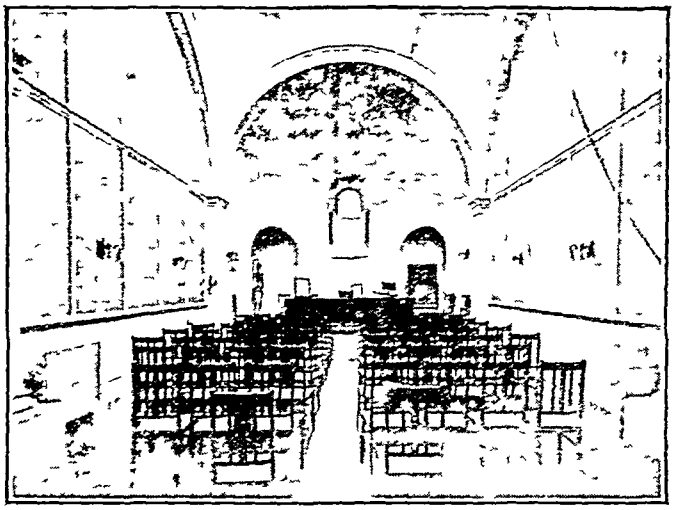


FIG 1.—The Lecture Hall—old church of the Russian Embassy.

Isolated radiologists often encounter problems the solution of which is rendered difficult by the want of necessary apparatus and advice. Comparison of technique and methods is necessary, and facilities are very desirable for testing suggestions made by workers who though in actual practice have inadequate laboratory equipment. The practice of radiology is inevitably associated with the use of apparatus, upon the efficiency of which the excellency of the work must depend. If the manufacturer of this apparatus is clearly aware of the requirements of the medical radiologist, and of the nature of any projected research, he could in many cases make valuable suggestions and provide the necessary facilities. Consultation between the two would result in improvements in the design and detail of apparatus, which would lead to further advances in diagnosis and treatment. In this country there has been so far less co-operation between technicians, physicists, and medical radiologists than in other countries and it is indisputable that the British prestige in such matters would be enhanced by the mutual association made possible by a central institute the membership of which would combine representatives of all the interests involved and through which a general co-ordination of individual efforts could be established.

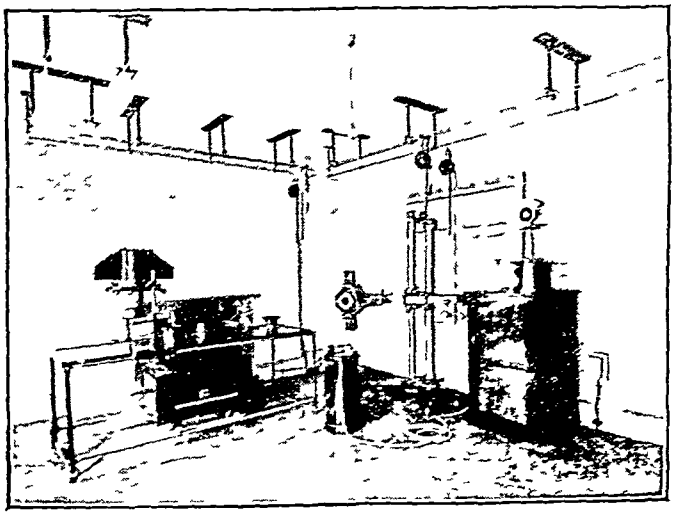


FIG 2.—A corner of the Demonstration Room.

Origins and Aims of the Institute

In the spring of 1923 a committee, under the chairmanship of the late Sir Archibald Reid, was formed for this purpose, representatives being included from the Royal Society of Medicine, the Roentgen Society, and the British Association for the Advancement of Radiology and Physiotherapy. This committee having considered for some time the establishment of a central organization along the lines just indicated, resolved to found a British Institute of Radiology, and issued a preliminary and limited appeal for funds. The nucleus of a library had already been provided by Lady Mackenzie Davidson, who had presented to the Institute the valuable collection of books which had belonged to her husband. In addition to this a definite status had been conferred upon the Institute by the action of the trustees of the Mackenzie Davidson Fund in handing over to the organizing committee of the Institute the sum of money collected. With this money the purchase price of the lease of 32, Welbeck Street, London was paid and it was estimated that the completion of the equipping of the premises would involve a further initial expenditure of about £2,000, towards which there was a balance from the Mackenzie Davidson Fund of £300. Sir Archibald Reid was actively engaged in the detail of the work of establishing the Institute when his death last January deprived the organization of a great driving force.

In April 1924, articles of association of the British Institute of Radiology were adopted and confirmed with the sanction of the Board of Trade, this being achieved by the alteration of title of the pre-existing British Association for the Advancement of Radiology and Physiotherapy, among whose main objects had been the formation of such an institute.

The objectives of the British Institute of Radiology are as follows: (*a*) to promote the advancement of radiology and physiotherapy on scientific lines under the direct control of the medical profession, protecting in every way possible the interests of those engaged in these subjects; (*b*) to effect legislative improvements in this connexion; (*c*) to provide for the delivery of lectures, the holding of classes and examinations, the establishment of scholarships and the granting of prizes, diploma and certificates, (*d*) to arrange for the publication of papers, communications, or treatises, (*e*) to promote and provide for research in experimental work, and to establish, grant, and award in connexion therewith, (*f*) to establish and maintain

a library and museum, and to organize exhibitions of apparatus, (*g*) to establish charitable and benevolent funds for the benefit of persons engaged in radiology and physiotherapy

Equipment of the Institute

The property in Welbeck Street includes the old church of the Russian Embassy, which has now been adapted to serve as a lecture hall Heating apparatus has been installed, and a special lining has been applied to the walls so as to improve the acoustics A smaller lecture room has been equipped with desks and accommodation for the Mackenzie Davidson memorial reference library Another room has been fitted with apparatus for demonstration purposes, and part of the extensive cellars will be available for individual research work The problems of diagnostic technique and the physics concerned in radiology provide also opportunities for research Examples of improvements in apparatus will also be exhibited as they are devised With a view to establishing the possibility of comparing the results of different workers it is hoped that some form of standard technique may eventually be adopted Developing tanks have been installed in a small room, and an ingenious arrangement provides for the exclusion of light even when the door is open A handsomely decorated room on the ground floor is available for committee meetings and meetings of affiliated societies In memory of Sir Archibald Reid a reference collection of radiograms is being established, this was a matter in which he took very great interest during his life Radiograms of normal conditions, as well as of such diseased conditions as osteomyelitis, tuberculosis, and bone growths, will be carefully collected, and duplicate sets will be prepared for the use of medical schools or individual lecturers where facilities exist for their demonstration Lantern slides of these radiograms will also be prepared, and will be available for loan These lantern slides will be of great value in radiological teaching in medical schools, and it is probable that a syllabus of lectures will eventually be drawn up The Institute also will be able to provide medical post-graduate courses and classes for the makers of radiological apparatus and their assistants

It is proposed to hold an International Congress of Radiology at the house of the Institute in the summer of 1925, when it is suggested that four days should be employed in discussions, and subsequent visits should be arranged to provincial centres It is hoped that an international committee may result from the congress, and that a permanent nucleus for international collaboration on radiology and kindred subjects will be so initiated

An appeal has just been issued on behalf of the British Institute of Radiology asking for a sum of £6,000 to pay off the bank loan of £2,000 and to provide a nucleus for further development Donations are invited to the general foundation fund or for the Reid memorial collection The subscription for membership of the Institute, including receipt of the *British Journal of Radiology*, is 3 guineas annually, and there is a fee of 1 guinea payable on entrance, the subscription for life membership is £30, associates pay 10s 6d on entrance and £1 11s 6d annually

THE GENERAL ELECTION

Medical Members of the New Parliament

The following five medical men who were members of the last Parliament have been re-elected to the House of Commons at the recent general election

Dr Walter E Elliot, M C (C), Glasgow, Kelvingrove
Dr F E Fremantle, O B E (C), St Albans
Dr L Haden Guest (Lab), Southwark North
Professor Thomas Sinclair (C), Queen's University, Belfast Returned unopposed
Dr J H Williams (Lab), Llanelly

New Members

The following six members of the medical profession have also been elected, two of whom have already sat as members of the House of Commons

Sir Henry Jackson (C), Wandsworth Central
Dr E Graham Little (Ind), University of London
Sir Richard Luce, K C M G (C), Derby
Dr A Salter (Lab), Bermondsey West

Dr Salter was elected for Bermondsey West at the November, 1922, election, but was unsuccessful in the 1923 election

Dr Thomas Drummond Shiels, M C (Lab), Edinburgh East
Dr T Watts (C), Manchester, Withington

Dr Watts was elected for the Withington Division of Manchester in November, 1922, but was defeated at the 1923 election

The Scottish Universities

The polling for the combined Scottish Universities (three seats) will not close till 10 a m on Tuesday next At the last election two Conservatives and one Liberal were returned unopposed—namely, Sir Henry Craik, K C B, and Sir George Berry, F R C S Ed (Conservatives), and Mr D M Cowan (Liberal) It is to be hoped that all medical practitioners who have votes in this constituency will take their part in the election for which there are several new candidates Sir George Berry is the only medical man standing, but it will be remembered that Sir Henry Craik is an honorary member of the British Medical Association and a valued friend of Medicine in Parliament

Unsuccessful Candidates

The following four medical men who sat in the last Parliament were defeated at the polls—namely Dr W A Chapple (L) Dumfriesshire, who represented Stirlingshire from 1910-18 and Dumfriesshire since 1922, Mr Somerville Hastings (Lab) was elected in 1923 to represent Reading, Dr G E Spero (L), Stoke Newington, who, after being an unsuccessful candidate at Leicester in the 1922 contest, was elected to represent Stoke Newington in 1923, Lieut-Colonel T S Beauchamp Williams (Lab), Kennington, who was elected in 1923 to represent the Kennington Division of Lambeth

The following members of the profession were also unsuccessful Several of them had previously represented or contested either the same or other constituencies

The Right Hon C Addison (Lab), Hammersmith South
Dr Ethel Bentham (Lab), Islington East
Sir John Rose Bradford (C), University of London
Dr F G Bushnell (Lab), University of London
Dr Stella Churchill (Lab), Hackney North
Dr R Dunstan (Communist), Birmingham West
Dr O Gleeson (Lab), Portsmouth North
Dr J J Lynch (Ind), Walsall
Dr I H MacIver (Lab), Argyllshire
Dr R O Moon (L), Oxford
Dr H B Morgan (Lab), Camberwell North West
Dr Joseph Robinson (Lab), Stretford
Dr Laura Sandeman (C), Aberdeen North

Polling Figures

The following are the polling figures at all the contested elections in which there were medical candidates on October 29th The names of the medical representatives are printed in italics, and an asterisk denotes that the candidate sat in the last Parliament

Glasgow, Kelvingrove	
*Dr *Walter E Elliot, M C* (C)	18 924
F Kerr (Lab)	12 844
Conservative majority	6 080
St Albans	
*Dr *F E Fremantle* (C)	18 004
Frank Herbert (Lab)	8 682
Conservative majority	9 322
Southwark North	
*Dr *L Haden Guest* (Lab)	8 115
I A St John (L)	7 089
J J Llewellin (C)	3 566
Labour majority	1 026
Wandsworth Central	
Sir *H Jackson* (C)	13 231
C Latham (Lab)	8 252
Conservative majority	4 979
University of London	
Dr *E Graham Little* (Ind)	7 [illegible]
Sir *J Rose Bradford* (C)	2 813
Prof. or A E Pollard (L)	1 533
Dr *E C Bushnell* (Lab)	1 037
Independent majority	[illegible]

DERBY
Right Hon J H Thomas (Lab) 27 23
Sir Richard Luce (C) 25 25
*W R Raynes (Lab) 25 172
Mrs E J Hulse (C) 21 00
J H Stewart (L) 7 083
Labour majority 2 251
Conservative majority 253

BERMONDSEY WEST
Dr A Salter (Lab) 11 518
*Rev R M Hedward (L) 8 616
Labour majority 2 902

EDINBURGH EAST
Dr T Drummond Shiels (Lab) 9,350
C Milne (C) 6 105
J M Hogge (L) 5 625
Labour majority 3 225

MANCHESTER WITHINGTON
Dr T Watts (C) 13 633
E D Simon (L) 10 475
E Whiteley (Lab) 2 467
K Burke (Ind) 2,6
Conservative majority 3 158

LLANELLY
Dr J H Williams (Lab) 20,516
R T Evans (L) 18 257
Labour majority 2 259

HAMMERSMITH SOUTH
Right Hon Sir William Bull (C) 12 619
Right Hon C Addison (Lab) 8 804
E Welton (L) 1 383
Conservative majority 3 875

ILLINGTON EAST
Major R Tasker (C) 14 144
Dr Ethel Bentham (Lab) 10 280
*A S Comyns Carr (I) 7 406
Conservative majority 3 894

DUMFRIESSHIRE
General J Charteris (C) 12 718
Dr W A Chapple (L) 8 472
Mrs A Dollan (Lab) 6 342
Conservative majority 4 246

HACKNEY NORTH
Captain A Hudson (C) 11 915
J H Harris (I) 7 181
Dr Stella Churchill (Lab) 6 087
Conservative majority 4 734

BIRMINGHAM WEST
Right Hon Austen Chamberlain (C) 14 801
Dr R Dunstan (Communist) 7 158
Conservative majority 7 643

PORTSMOUTH NORTH
Major Sir Bertram Falle (C) 17 597
Dr O Gleeson (Lab) 10 279
Conservative majority 7 318

READING
H G Williams (C) 21 358
Mr Somerville Hastings (Lab) 18 337
Conservative majority 3 001

WALSALL
W Ireton (C) 15,168
Pat Collins (L) 12 734
Captain L Small (Lab) 11 474
Dr J J Lynch (Ind) 622
Conservative majority 2 434

ARGYLLSHIRE
F A Macquisten (C) 9 2 0
Right Hon Sir W Sutherland (L) 6 211
Dr I H Maclver (Lab) 4 532
Conservative majority 3 029

OXFORD
R C Bourne (C) 12 196
Dr R O Mson (I) 6 8.6
F Ludlow (Lab) 2 260
Conservative majority 5 3?0

CAMBERWELL NORTH WEST
F T Campbell (C) 9 626
Dr H B Morgan (Lab) 9 432
*Right Hon T J Macnamara (L) 5 L8
Conservative majority 194

STRETFORD DIVES
Sir T Robinson (L) 20 826
Dr Joseph Robinson (Lab) 11 520
Liberal majority 9 ,06

ABERDEEN NORTH
F Roose (Lab) 13 2 9
Dr Laura Sandeman (C) 8 5..
Labour majority 4 704

STOKE NEWINGTON
H G Jones (C) 10 688
Dr G E Spero (L) 4 ,58
L Silkin (Lab) 3 ,0
Conservative majority 5 9.0

LAMBETH KENNINGTON
George Harvey (C) 14 8-3
Lieut Colonel T S Beachamp Williams (Lab) 11 572
Conservative majority ?,6

England and Wales.

RABIES IN ENGLAND AND WALES

On July 12th, 1919 (p 50), we referred to the issue by the Ministry of Health of a revised memorandum on the procedure to be adopted in the case of a person bitten by a dog suspected or being rabid The Minister of Health has now stated that in view of the disappearance of this disease in England and Wales, no case having occurred since December, 1921, he has decided that special arrangements for antirabic treatment are no longer necessary A further revision of the memorandum with regard to treatment has therefore been issued, and it is announced that arrangements may still be made with Professor Dudgeon (Department of Pathology, St Thomas's Hospital, S E 1) for antirabic treatment with carbolized vaccine prepared at the Ministry's laboratory The cost of the treatment and other expenses must be borne by the patient or by local sanitary authorities The centres for treatment at Plymouth, Cardiff, Birmingham, Manchester, and Newcastle upon-Tyne have accordingly been closed In the revised edition there is no other radical change, as compared with the earlier memorandum, and the concluding paragraph repeats the injunction to use all possible expedition in following the procedure laid down

FINANCE OF LONDON HOSPITALS

Under the direction of the Hospital Economy Committee of King Edward's Hospital Fund for London, a statistical report has been published based on the accounts of 116 hospitals and on returns made to the Fund General particulars of the work and accommodation in these hospitals are given, and their incomes and ordinary expenditures are analysed so that the cost of working in respect of the more controllable items of expenditure can be estimated The tables which deal with working costs will assist hospital managers in controlling expenditure and in avoiding increases in cost which are not associated with increase in the quantity or quality of the work The expenditure in each hospital is compared with the expenditure in other hospitals and with the average of those hospitals with which it is most comparable Increases common to all hospitals can thus be distinguished from those peculiar to any particular institution Hospital managers may in this way find out whether at their own hospitals the cost appears to be unduly high, and, if so in what departments the cause of the excess is present They can thus reduce it wherever it cannot be justified, and so carry out one of the recommendations of Lord Cave's committee for the re establishment of the finances of the voluntary hospital system In a general review of hospital work it is stated that between 1921 and 1923 there was an increase in the available beds of 360 but a decrease in the average occupied beds of 130 leaving a net increase in 1923 over 1913 of 1 200 available beds, and 330 average occupied beds This contrast is due to several causes the chief of which was that six hospitals, aggregating 542 beds were entirely closed to in patients during 1923 for periods ranging from three to ten months Between 1921 and 1923 there was an increase of 3,600 new patients, resulting in a net increase in 1923 over 1913 of 22 600 The patient rate per bed also increased in 1913 it was 14 3 in 1921 15 5, in 1922, 15 6 and in 1923 16 This increased rate of work may be stated in another way—namely that the average duration of stay for each patient fell from 25 5 days in 1913 to 23 5 in 1921 and 22 8 in 1923 The income of the 116 hospitals apart from special distributions—as for instance emergency grants from the King's Fund and from the National Relief Fund—increased from £2,415,000 in 1922 to £2 857 000 in 1923 An outstanding feature of this last year was the large total of legacies which aggregated £473 000 of this £247 000 came from a single source Discounting such factors however it may be stated that since 1920 the income of these hospitals from normal sources shows a steady increase The hospital expenditure in 1923 was £2 630 000 an increase of £40 0 0 over 1922, but representing a considerable drop since 1917

when the figure was £2,813,000 From the figures of hospital work set out it is obvious that the greater part of this fall in expenditure is not due to decrease in the volume of work, but to reduction in cost The most critical year for the voluntary hospitals in London was 1920, when the gap between income and expenditure was at its widest The improvement, which began in 1921 and continued in 1922, is shown to have bridged the gap in 1923, when, for the first time in the post-war period, the total general fund expenditure, taking the hospitals as a whole, was met out of the revenue of the year from normal sources The improvement may also be indicated by taking the figures of surpluses and deficits separately Thus in 1922, 60 hospitals had surpluses for the year amounting to £67,000, and 56 had deficits amounting to £242,000, while in 1923, 62 hospitals had surpluses amounting to £382,000, and 54 had deficits amounting to £155,000

The London County Council Mental Hospitals

During the three months ending September 30th the number of new patients admitted to the nine mental hospitals under the control of the London County Council was 794, and the number transferred to them from some other institution 195 During the same period 218 patients were discharged recovered, 168 relieved, and 219 died The number on the register on September 30th was 18,374 At Maudsley Hospital the number of private boarders admitted during the quarter was 103, 90 were discharged, 13 died, and the number remaining in residence is 135 In the out-patients' department of this hospital 197 persons (64 men, 117 women, and 16 children) have received treatment since its opening The London County Council has given permission for the Eugenics Education Society to take photographs at mental institutions for use in the production of a "eugenic film" for educational purposes These photographs are to contain no recognizable portraits of patients

Salaries of L C C Medical Officers

The London County Council Establishment Committee is recommending that the maximum basic salary of three principal assistant medical officers should be increased by £100 a year, making the scale in each case £700, rising by annual increments of £50 to £1,000 a year (instead of £900 as hitherto), based on pre-war conditions This last provision means that a salary nominally of £1,000 a year will be subject to temporary additions making it at the present time £1,219 The officers concerned are Dr McC Wanklyn, Dr J A Brincker, and Dr N D Bardswell, and in regard to their work the following considerations are put forward by the committee The first officer is concerned with general public health matters, in particular in connexion with small-pox, typhus fever, etc, and it is pointed out that the task of safeguarding the population of London against the introduction of such diseases from abroad has become much more onerous owing to the existing conditions on the Continent and the removal of migration restrictions which existed during the war The second officer is in charge of the bacteriological laboratory and the control of infectious diseases in schools The demands on the laboratory have increased with the development of the school medical service and the opportunity afforded by a large staff of school doctors for the more frequent visitation of schools The third officer has to do with the administration of sanatorium benefit and must necessarily be an expert in the diagnosis of tuberculosis and a clinician of the first rank

Central Association for Mental Welfare

The Board of Education issued on September 12th a circular (No 1341) in which important suggestions were made regarding the supervision of defective children up to the age of 16 and their further protection after that age The Central Association for Mental Welfare has just issued a memorandum to local education authorities drawing special attention to this circular and offering its help in the carrying out of these suggestions The branches of the Mental Welfare Association are mainly concerned in the care of defective children and adults in their own homes This care is exercised in the following ways (1) friendly visits in the home of the defective, (2) advice to the parents as to the best methods of training and teaching, (3) teaching the defectives simple handicrafts, (4) systematic inquiry as to possible employment for defectives in the area, and supervision of defectives when employed, (5) providing occupation centres for young defectives These centres are arranged for defective children excluded from special schools notified to the local control authorities, defective children of the lower feeble-minded grade excluded from elementary schools but for whom no special school is available, young defectives over 14 unemployable in ordinary industries Fifty of these centres have already been established by local mental welfare associations and have given ample proof of success The administrative machinery for carrying out this work is simple, efficient, and economical A small voluntary committee composed of representatives of authorities (local education authorities, mental deficiency committees, and Poor Law guardians) and of societies engaged in social work is formed A paid secretary and visitor is appointed and a paid supervisor for occupation centres where these are opened Payments for such committees are received from the local education authorities In addition, special grants are received from the Board of Control and the local authority under the Mental Deficiency Act for the expense of the occupation centre

The association desires to assist local authorities in forming local mental welfare associations The honorary secretary, Miss Evelyn Fox, will be glad to visit any area where the authorities are considering plans for carrying out the suggestions in the Board's circular and to explain the methods to be adopted The association has also a staff of competent organizers whose services can be placed at the disposal of any authority for organizing and starting the work The charge merely covers the salary of the organizer for the time being (at the rate of about £5 per week) and out-of-pocket travelling expenses The organizer can also train a local worker to take up the permanent post Two points are specially emphasized the local Mental Welfare Association would work under the direction of the responsible officers of the authorities from whom payments are received, thus avoiding any overlapping, co-operation with the mental deficiency committees ensures the continuity of care of the individual defective from childhood onwards The memorandum is signed by Sir Leslie Scott, K C, M P (President), Dr H B Brackenbury (Chairman, Education Committee), Dr A F Tredgold, and the Honorary Secretary It is to be hoped that all education authorities in whose areas there is not a local association for mental welfare will welcome the help and co-operation of the Central Association in establishing these

Appointments at the Bristol Royal Infirmary

Dr Stuart Hardy Kingston has been appointed dermatologist to the Bristol Royal Infirmary This is a new post Formerly one of the physicians had charge of skin cases as well as medical Dr J A Nixon resigned the skin department on being appointed professor of medicine in the University of Bristol, but remains physician at the Infirmary Mr Eric Watson-Williams, M C, M Ch, son of Dr P Watson-Williams, has been appointed assistant surgeon to the ear, nose, and throat department

Scotland.

University of Edinburgh

At a meeting of the General Council of Edinburgh University, held on October 31st, Principal Sir Alfred Ewing reported that the number of students who had matriculated for the year 1924 up to date was 3,541, as against 3,379 at the corresponding date last year There was a definite reason for this increase this year, for the first time, a penalty was attached to those who did not matriculate before the end of October At the same time he did not think that the figures showed there was going to be any large falling off in the total numbers for the coming session as compared with last session At a graduation ceremony, held in the Old University on October 27th, the Principal referred to the loss which the University had

sustained by the death of Professor Alexis Thomson (Surgery) and Professor Hunter (Public Health) in the Faculty of Medicine He also referred to the fact that during the past year the number of matriculated students had included 1,195 women A great social change was indicated by the comparatively large number of women now entering the University and by the fact that there was not a single faculty in which women were not represented, even in the Faculty of Divinity during the past year there had been two women students The falling off of students in the Faculties of Medicine and Science had been serious, although there had been an increase in the Faculty of Arts to balance this The decrease in numbers was, however, a serious financial loss to the University, which had necessitated reduction of the staff and the making of other small economie

New Professor of Surgery in Glasgow

The governors of the Anderson College of Medicine, Glasgow have appointed Mr James Russell MB, FRCS to the chair of surgery in the Anderson College rendered vacant by the appointment of Professor Young to be *Regius Professor of Surgery in the University of Glasgow*

Glasgow University Medico-Chirurgical Society

At the opening meeting of this society Lieut General Sir William Leishman Director General of the Army Medical Department, delivered an address to the students on 'The army as a field of medical research" He referred to the high place taken by Glasgow students in research work in the army and elsewhere, and emphasized the fact that such work was not necessarily confined to the laboratory He described the various kinds of research work carried on in the army under peace conditions, and outlined the training necessary for such work

Aberdeen University Rectorial Election

The election of a Lord Rector for Aberdeen University takes place to day (Saturday, November 8th) The candidates nominated are the Viscount Cecil, KC, who has been nominated by the Unionists, Lord Meston of Agra, a former pupil of Aberdeen Grammar School and alumnus of Aberdeen University, who has been nominated by the Liberals because of his distinguished career in the Civil Service and the Right Hon C P Trevelyan, MP, Minister of Education under the Labour Government who has been nominated as Labour candidate The retiring Rector is the Right Hon Sir Robert Horne, KC, MP, a former Chancellor of the Exchequer

Physical Training in Scottish Schools

The Carnegie Dunfermline Trustees, at a meeting last week, had before them a report from the Committee of the Dunfermline College of Hygiene and Physical Education regarding an important development in the work of the college For some years the Trustees have offered facilities to qualified male teachers to take a course of one year at the college and so add a qualification in physical training to their general certificate, but until the present year this course had attracted no applicants Last month the Glasgow Education Authority, in view of the lack of suitable instructors of physical education, had agreed to give a year's leave of absence to seven of their staff in order to enable them to proceed to the Dunfermline College for the *purpose of taking this one year's course in physical* training It was reported to the Trustees that several other education authorities had the matter under consideration and it is expected that some of these will follow the example set by the Glasgow authority

Care of the Feeble-Minded in Scotland

The fourth annual conference of the Scottish Council of Women Citizens' Associations was held last week at Falkirk At the concluding meeting Lady Leslie Mackenzie chairman of the Council moved a resolution that the establishment throughout Scotland of residential industrial communities for the permanent care of the feeble minded should be taken in hand without delay She felt that the time had come for the women of Scotland to band themselves together to secure the rectification of defects in civilization so that *people who could not care for themselves* should be permanently cared for This did not affect the insane but that class of people who were born with mental defects and who could not develop sufficiently no matter how much education and training they were given In 1906 an Act had been passed by Parliament allowing school board to educate the children in special school but this protection stopped at the age of 16 years, when they were turned out into the world Some of them got employment which they were able to hold only for a short time with the result that many gravitated to poor houses or penal institutions instead of leading lives which might be made useful, happy and safe in a normal environment A colony system had been established in several English counties, under which mental defectives of all ages were kept under permanent supervision and given work for which they were suited Such colonies had also been established experimentally in other countries The Women Citizens' Council had decided to collect sufficient money for the establishment of such a colony in Scotland and it was a work which women should be proud to undertake Dr R D Clarkson Medical Superintendent of the Royal Scottish Institution for the Feeble minded at Larbert seconded the motion He said that thirty years of experience in this work had convinced him that on the solution of the problem of the feeble minded the solution of many other social problems depended Feeble minded persons turned loose in the community became drunkards, paupers, and inmates of rescue homes their condition then became incurable The institution at Larbert had been established over sixty years ago mainly by philanthropists and doctors who thought that by such education for five or six years mental defectives might be transformed into normal citizens After many years of experiment however, it was found that if a child was mentally defective it would remain so for life and the best thing for many of them was to be kept in institutions or colonies all their lives where they could be trained for some particular work in the colony and could be drafted out for work in the fields and for hand work of various kinds, thus diminishing the cost of their maintenance Teaching mental defectives was a matter requiring a special gift not necessarily of an intellectual type Many mental defectives were well adapted to look after persons more feeble-minded than themselves and would go on doing it for years without feeling it so great a burden as it would become to more *highly strung people* Plenty of work would be found for a colony if one were to be established The motion was unanimously carried

West of Scotland Foreign Service Medical Club

The sixth annual meeting and dinner of this club was held in the Grosvenor Restaurant Glasgow on October 28th under the presidency of Lieut-Colonel John McKie, DSO TD The large gathering included the following as guests Major-General H L Reed VC CB CMG, General Officer Commanding 52nd (Lowland) Division, Lieut Colonel G H Rae Gibson DSO East of Scotland Overseas Medical Club Dr W T Gairdner MC honorary secretary East of Scotland Overseas Medical Club Major J D Richmond DSO OBE Senior Medical Officer Maryhill Barracks Glasgow After the toasts of "The King" and 'Our Fallen Comrades" had been given from the chair the toast of The Club was proposed by Lieut Colonel George Gibson of Edinburgh in a humorous speech to which the President suitably replied General Reed expressed appreciation of the work of his comrades in the RAMC and of the large body of practitioners who served in the great war A varied musical programme added greatly to the enjoyment of the evening and to this Drs Laird Wright Thomson Wallace Anderson Gibson, Gardiner Templeton McKie Adam Burns and Scouller Buchanan contributed Officers were appointed for the year as follows President Dr John M Corran, Vice-President, Dr W B Armstrong, Honorary Secretary and Treasurer, Dr David Shannon

Central Midwives Board for Scotland

At a meeting of the Central Midwives Board for Scotland for the hearing of penal cases, Dr Michael Dewar, deputy chairman, presiding, a certified midwife appeared in answer to charges of negligence and breaches of the rules and also failure to notify immediately a case of ophthalmia neonatorum, which were found proved. In order to give her an opportunity of proving amendment, sentence was postponed for reports at the end of three months from the local supervising authority on her conduct and methods of practice, and also at the end of six months. Failing satisfactory reports being received the secretary was instructed to remove her name from the roll.

Nurses' Examination in Scotland

The number of nurses who presented themselves for the preliminary examination in all subjects held recently by the General Nursing Council for Scotland was 94, of whom 69 passed in anatomy and physiology, 70 in hygiene, and 77 in elementary theory and practice of nursing. In addition, a number of candidates who had failed at a previous examination presented themselves again, and of those 21 passed in the subjects for which they appeared.

Co-operation in Chemistry

The first joint meeting for the present session of the Edinburgh and East of Scotland sections of the Institute of Chemistry and of the Society of Chemical Industry was held on October 22nd in the hall of the Pharmaceutical Society, York Place, Edinburgh, Dr Alexander Lauder presiding. An address was delivered on "Co-operation in chemical science" by Mr W. J. Woolcock, C.B.E., President of the Society of Chemical Industry. The lecturer especially dealt with the activities of various chemical societies which had organized exhibits in the industrial section of the British Empire Exhibition, and he pressed for a closer co-operation between chemists and those who develop chemistry in the various industries, with a view to the mutual advantage of both types of activity.

Correspondence.

TONSILLECTOMY

SIR,—The three resolutions regarding tonsillectomy passed unanimously at the meeting of the Section of Laryngology and Otology at the Annual Meeting of the British Medical Association (BRITISH MEDICAL JOURNAL, November 1st, p. 813) are presumably idealistic, but the first resolution, at any rate, surely goes too far. It says that tonsillectomy by enucleation is the only efficient operation in dealing with tonsillar disease."

Tonsil enucleation came into vogue only towards the end of the twelve years during which I was in charge of the throat department at Guy's, but I refuse to believe that every one of the hundreds of tonsil operations, excepting those of enucleation, for which I was responsible was a failure. As a fact I know that this was not so, and it must be common knowledge that enormous numbers of patients have been cured of their throat troubles by partial removal of their tonsils with a guillotine. Of course there are failures, but so also are there failures after enucleation. Unsuspected remnants have given rise to further troubles after the operation in a few of my own cases, and I have been consulted on various occasions by patients whose tonsils well-known laryngologists had failed to completely enucleate.

Tonsillectomy by enucleation is therefore not the *only* efficient operation, although it is without doubt the *most* efficient.

But even if the most efficient is it in all circumstances the most desirable? Is the practitioner—whoever and wherever he be—to feel that he is in duty bound to attempt the major operation of enucleation rather than the minor one of guillotining, when called upon to treat cases of hypertrophied tonsils? In my humble opinion this would be asking too much, and would certainly result in an increase in the proportion of unsatisfactory results. It may, of course, be argued that tonsils should only be removed by those specially skilled in the operation of enucleation. This is perfectly correct, but I doubt whether there is a sufficiency of skilled operators for the work, further, it must be remembered that many of these operations are, and always will be, undertaken by those who no doubt do their best but who have no great amount of skill.—I am, etc.,

London, W.1, Nov. 3rd. F. J. STIWARD.

TREATMENT OF EXOPHTHALMIC GOITRE WITH INSULIN

SIR,—The idea of treating hyperthyroidism with insulin, described in the important paper by Dr. R. D. Lawrence in the JOURNAL of October 25th (p. 753), has probably occurred to many clinical physicians. During the latter part of 1923, and in the earlier months of this year, I used insulin in the treatment of three such cases. In one of them the hyperthyroidism was associated with the presence of adenomata of the thyroid, and no improvement resulted, the other two cases both improved to a remarkable degree, but as the improvement was estimated purely on clinical grounds I could not consider that insulin had been shown to be the decisive factor in the treatment. I was sufficiently impressed, however, with the possibilities of insulin in this connexion to resolve that at the first opportunity I would treat a case of acute Graves's disease with it. A recent experience has so completely confirmed this impression that I venture to record the particulars at some length.

On October 19th (before the publication of Dr. Lawrence's paper) I was asked by Dr. A. W. Weston of Dudley to see a woman of middle age who, three weeks previously, had developed acute exophthalmic goitre. One of her sisters had died of the same disease and mother, I am told, has hyperthyroidism. When I first saw the patient she was almost maniacal, she moaned and cried incessantly and threw herself continually about the bed, incoherently complaining of violent upper abdominal pain. Vomiting was frequent and distressing, she had kept nothing down for four days. All the cardinal signs of Graves's disease were present: the eyes were prominent and staring, the thyroid was diffusely and markedly enlarged and a thrill was palpable over it, the hands were tremulous and sweaty, the pulse rate was 150 to the minute, and occasionally a beat was missed.

In view of the obvious gravity of her condition, Dr. Weston and I were doubtful if the risk of her removal to the General Hospital in Birmingham, ten miles away, should, properly, be faced, but the unsuitability of the home surroundings for insulin or any other treatment eventually decided us in favour of that course. On arrival at the hospital all her symptoms were exaggerated, in view of the extreme restlessness she was given morphine gr. 1/6 and hyoscine gr. 1/100 hypodermically without any effect. The morphine was repeated the next morning, but by the evening of the same day she was worse. Restlessness and delirium were marked, and auricular fibrillation was evident. A dose of quinidine was vomited, as was everything else, and her condition seemed desperate (I telephoned to Dr. Weston that evening to say I thought that she would die).

At this point I stopped all other treatment and ordered insulin (5 units) three times a day, together with frequent sweetened drinks. There had been no glycosuria, but she complained often of thirst and her mouth was parched. Within a few hours improvement was definite: she rapidly became quiet, the heart rhythm returned to normal, and after two days her condition ceased to cause any anxiety. A most striking feature was the fact that shortly after the first dose of 5 units of insulin she had some hours of natural sleep.

After reading Dr. Lawrence's paper on October 25th I felt that the dose of insulin might be increased, and 20 units were given before her midday meal, symptoms of hypoglycæmia ensued, which were relieved without difficulty by giving glucose by the mouth, the daily dose since has been 10 units, given in two equal parts. The general appearance of the patient has improved in an extraordinary way, the exophthalmos has almost entirely disappeared, the conjunctivæ still have an injected tinge, which was noticed for the first time two days after her admission, the heart rate is 120 and is regular; the thyroid is very much smaller, she eats a liberal diet and has obviously gained weight, there has been no vomiting since insulin treatment began and abdominal distress rapidly disappeared, mentally she is much calmer but is still inclined to be emotional, she sleeps well, and sat up for an hour without ill effect on the eighth day after her admission.

My object in writing this letter is to draw attention to the fact that a very acute case of Graves's disease strikingly improved in the unsatisfactory environment of a general hospital ward, which contained one or two noisy patients, after the administration of small doses of insulin, and, further, in view of the caution of the fourth paragraph of Dr Lawrence's summary, to point out that elaborate laboratory control was found, in this case at all events, to be superfluous.—I am, etc,

Birmingham, Oct 29th A P THOMSON

PORPHYRINURIA

SIR,—In his account of a case of haematoporphyria congenita, in the BRITISH MEDICAL JOURNAL of November 1st (p 803), Dr H T Ashby mentions the fact that most cases of porphyrinuria are the result of taking sulphonal or an allied drug for a considerable period. I should like to draw attention to veronal, one of these allied drugs, as a rare cause of porphyrinuria, hardly yet generally acknowledged.

In September, 1923, I saw a woman, aged 39, recovering from a very painful organic illness, who for more than two months had been having 5 grains of veronal almost every night as a hypnotic. Her urine for a considerable time had been deep red or red brown in colour, and free from haemoglobin and albumin. The colour was due to the presence of haematoporphyrin and disappeared gradually in the course of two weeks after the discontinuance of the veronal.

For a time the patient also suffered from paresis of the lower extremities (right knee-jerk absent), with pains in the calf muscles, possibly due to "haematoporphyrinuric polyneuritis."—I am, etc,

F PARKES WEBER, M D, F R C P

London W Nov 1st

EPITHELIOMA OF THE SCROTUM IN COTTON-SPINNERS

SIR,—Dr Cochrane's letter on epithelioma of the scrotum (November 1st, p 835) is interesting. I have frequently seen something like a papulo-vesicular eczema—or as I should rather call it a papulo dermatitis—in the flexures of the scrotum and thigh when the two epidermic surfaces have been subjected to the influence of oil and collected perspiration for a long time.

Dr Leitch has clearly shown that a cancerous condition can be produced by a long continued enclosure of epithelial excretion, which I consider the most cancer producing substance known—in fact, the only thing which does produce cancer, in my opinion, is the product of dead and decaying epithelial cells. No one has ever pointed out anything else, amongst the multitude of causes and cures which have been put forward, that can outweigh this view.

Chimney-sweeps and others are not much given to frequent ablutions, so that the scrotal flexures suffer very much from neglect, often of long duration, and the deposits in the wrinkles of the scrotum are often not disturbed for years. Now, these conditions will certainly keep up a chronic irritation of the epidermis, which will some day result in epithelioma. Dr Cochrane has evidently caught this in the stage before malignancy has ensued, as the polymorphs described by Polland are, in my opinion, epithelial cells in the progress of their development. The dermatitis always yields to bathing with hot water and suitable applications unless the part has become malignant. Then I would say surgical intervention is necessary.

I can see no reason why spinners and chimney-sweep should exclusively possess this part for the expression of epithelioma. The only reason is the long neglect of conditions produced by the exposure to the exigencies of their occupation.—I am, etc,

Bolton Nov 3rd A W CRAWFORD, M B, C M

THE LEAGUE OF REMEMBRANCE

SIR,—On the eve of the sixth anniversary of Armistice Day it gives us great pleasure to testify to the activities of the League of Remembrance (1914-1919).

Having now had several years of experience of the work of the League, we are in a position to form an opinion of its usefulness. It confers practical benefits to all institutions connected with the health of the nation which care to seek its assistance. This opinion is based not only on an inspection of the work carried on at the League of Remembrance but also on our practical experience from the hospital point of view of its value in the work of the wards. Hospitals, infant welfare centres, and organizations of a similar kind have only to send materials and pattern and the League makes them up into the finished article required, without making any charge for its service.

We have personally inspected the workroom, the specially equipped department in which the surgical dressings are made receives our warmest commendation, and also the hygienic and aseptic principles which are exercised throughout the whole establishment. We can moreover testify to the promptitude, accuracy, and excellence with which the work is performed.

The League of Remembrance a continuation of the War Hospital Supply Depot movement is we believe the only institution of the kind in the world. It has proved of great service to the hospitals, and the number of appeals for help is continuously increasing. These appeals are straining its present resources to the utmost and we strongly recommend to public attention and support this organization, which has taken as an important part of its business of remembering, the relief of the sick and suffering.

All communications should be addressed to Mrs F H Gibson C B E Honorary General Manager League of Remembrance (1914-1919) 1, Marlborough Gate London, W 2.—We are, etc

WILLIAM ARBUTHNOT LANE	ALFRED J PICKOVEY
ARTHUR SLOGGETT	H J F SIMSON
ROBERT HILL	JOHN MURRAY
JAMES PURVES STEWART	C KNOX-SHAW
ALFRED FRIPP	R H JOCELYN SWAN
JOSEPH SHEVINGTON	HERBERT SMALE
ROBERT JONES	LESLIE PATON
FRANK CLIVER	MARION VAUGHAN

November 1924

ASSISTANTS IN GENERAL PRACTICE

SIR,—I was very pleased to read the correspondence in the JOURNAL on this subject. The poor remuneration received by assistants should certainly be made subject to inquiry by a responsible body, such as the British Medical Association, and a minimum should be fixed. It depends a good deal on the situation and style of practice but assistants are shamefully underpaid and overworked. The densely populated districts especially Stepney Bethnal Green, and Whitechapel, are the worst offenders in this respect. I know of one instance, not a hundred miles from Whitechapel where a male assistant is paid under £200 per annum and only gets half a day off per week.

The pay is inadequate enough but the hardest thing for a young assistant is to be deprived of liberty. During his student days he was used to hard work but he had ample time for sport and social intercourse when he enters into general practice as an assistant then he finds that he is suddenly cut off from all these. Nominally he is a member of his Branch of the British Medical Association but he never get an opportunity for attending meetings of the Branch or Division. His hopes of keeping up and improving his medical knowledge by attending a hospital for a few hours a week are doomed to disappointment for the reason he has not the leisure.

The surgery hours are far too long: two and a half hours in the morning and three to three and a half at night are unnecessary. There should not be any Sunday morning surgery. On Saturday the evening surgery should be in the afternoon between 3 and 5 o'clock in order to give the working men a chance to work a 1 p m on Saturday and can well attend in the afternoon. An assistant is on duty for twenty four hours daily. The weakness and the temptation for an assistant to become addicted to drink is that there is no alternative in front of him but [illegible] more fortunate than I am.—I am, etc,

F [illegible]

October 31st

CROWNER'S LAW

SIR,—Will you permit me through the courtesy of your columns to draw attention to a matter of very grave concern to the profession at large and at the same time to expose one more case of "official" interference and ineptitude? The official concerned is one of our non-medical coroners and the circumstances of his interference as detailed

In the course of my midwifery practice I had occasion to resort to forceps delivery on the supervention of signs of maternal and foetal distress *in a primipara*, aged 25 The baby was born *in a state of white asphyxia* at 4 30 p m on September 20th After an hour's artificial respiration I succeeded in resuscitating the child, which, however, died seventeen hours later I issued the usual death certificate of (1) obstructed labour, (2) asphyxia and convulsions (the "asphyxia" referred to "asphyxia neonatorum"), on the morning of September 22nd

On the morning of the 24th I received an insolent letter from the coroner telling me that "the cause of death as stated by you must have convinced you that this was a case which ought to be reported to the coroner," and formally calling upon me for *an explanation of my* conduct before "taking steps for the disinterment of the child and the holding of an inquest" It furthermore stated that "by your action the child has been buried before registration and without the registrar's authority or mine"

Accordingly I *made an appointment to interview* the coroner on the same afternoon, but found on arrival that he could not see me for "probably two hours" Shades of Chesterfield! At an interview on the following morning I learnt that the underlying cause of the commotion was the fact that the baby had been buried, but that the certificate of death, which the parents had in their possession some forty-eight hours, had not been delivered to the registrar until after the burial

I suspected that there was an attempt to place the neglect of the superintendent of the cemetery on my shoulders, and asked for a *precedent for the reporting of such deaths* I failed to learn of any legal enactment whereby one was bound to report such a death Incidentally, I pointed out that if the child had been stillborn there would have been *no occasion for this display of forensic acumen*

We agreed that I *should write a full report* of the case and forward it to the coroner I have never received any acknowledgement of my report—a fact which does not surprise me in view of my previous experience I have learnt since from many *of my friends in various parts of* the country that they invariably deal with such cases as I have done

Perhaps you would insert this letter as a warning to my professional brothers.—I am, etc,

NE OBLIVISCARIS

October 24th

Obituary.

HENRY CARTER MACTIER, M B, B Ch,

Wolverhampton

WE have to record, with much regret, the death of Dr H C Mactier on October 28th Henry Carter Mactier was born in 1872, and was educated at Trinity College, Dublin, where he graduated M B, B Ch, B A O *in* 1894 He filled the post of house-surgeon at St Mark's Ophthalmic and Aural Hospital, Dublin, in 1894, and in the following year was house-surgeon in the Wolverhampton and Midland Counties Eye Infirmary In 1900 he was appointed honorary surgeon to the Wolverhampton and District Hospital for Women, and assistant surgeon to the Wolverhampton Eye Infirmary in 1903 later on becoming honorary surgeon His other appointments included those of honorary ophthalmic surgeon to the Royal Orphanage Wolverhampton, ophthalmic surgeon to the Bilston Education Committee, honorary surgeon to the Church Mission to the Deaf and Dumb in Staffordshire, and medical referee to various insurance societies In 1920 he was awarded the M B E for services in connexion with the war He was elected a member of the British Medical Association in 1897, and was a member of the Council from 1913 to 1921 He had been a representative of the South Staffordshire Division since 1910 and its honorary secretary since 1911 He was a member since 1912 of the Staffordshire Branch Council He was formerly a member of the Central Ethical, Medico-Legal, and Welsh Committees, and also of the Contract Practice, Maternity and Child Welfare, and Ministry of Pensions Subcommittees He was, *in short*, a fine representative of the kind of man who is always ready to undertake any kind of work for his profession, and who becomes the pivot *of that kind of work in his neighbourhood* Dr Mactier was also a member of the Midland Ophthalmological Society and had been a member of the Wolverhampton Borough Council He was the author of various papers in medical publications, including "The dangers of cocaine," "The effects of shock on chronic glaucoma," and "The indiscriminate use of atropine in eye diseases," which appeared in the BRITISH MEDICAL JOURNAL He was one of the founders of the Wolverhampton Rugby Football Club He also played cricket, and was an original member of the Newbridge Tennis Club

The funeral service on October 30th was attended by Dr T Ridley Bailey, representing the Council of the British Medical Association, and representatives of the South Staffordshire Division, the Eye Infirmary, and the Wolverhampton Insurance Committee, of which Dr Mactier had been re-elected chairman at the last annual meeting

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IT was with much regret that the announcement of the unexpected death of Dr J L RENTOUL was received in the North of Ireland Dr Rentoul had had a mild attack of encephalitis lethargica in the early part of the year, and had *recovered and resumed* his work, although he *never quite regained his usual form* Lately severe abdominal and thoracic symptoms began to trouble him, which only very partially yielded to treatment, and it was decided to perform an exploratory laparotomy, although the great risk was *manifest, to obtain relief Unfortunately he succumbed in the attempt* John Lawrence Rentoul was a son of the Rev James Rentoul of Dromore, co Down He graduated M B Edin in 1900, and soon settled in Lisburn, co Antrim, where he acquired a large practice, but his bent was always towards the scientific side of the *profession* Soon after the war broke out he obtained a commission in the R A M C as temporary captain, and later was appointed bacteriologist to the hospital ship *Britannic*, and was serving on board when she was torpedoed in the Aegean Sea in 1916 *He was saved, and was put in* charge of a field laboratory in France, and remained in France till the war was over When he was demobilized he settled in Belfast as a clinical bacteriologist, and rapidly gained a large connexion *among the medical men and the public Latterly he devoted much time to tuberculosis*, and was testing a new serum treatment, which he was soon to put on the market, he had carried out many experiments and observations Dr Rentoul was a great favourite, and played a good game of golf, his reputation was extending rapidly, and his untimely loss is being deeply mourned by many, both in and out of the profession Much sympathy is felt for his widow, and his brother, the Rev Steele Rentoul of Glasgow

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Dr J HORNE WILSON, who died recently, was the son of Councillor R G Wilson of Aberdeen, where he was born in 1876 After receiving his early education at the Grammar School and Gordon's College, he went to Marischal College, and graduated M B, Ch B Aberd *in* 1899 and M D with honours in 1903 He had served as house-physician to the Royal Hospital for Sick Children, Aberdeen, assistant to the Glasgow Maternity Hospital, and assistant physician at the Chief Tuberculin Dispensary, Chelsea He joined the R A M C in July, 1916, served with the 37th and 20 casualty clearing stations in France, being invalided on with the rank *of captain in* December, 1917 On returning to civil life he was appointed as a consultant to the Ministry of Pensions, but his continued ill health led to his retirement *in practice in* 1922, and he returned to Aberdeen He is survived by his widow, two sons, and a daughter

PROFESSOR AUGUSTE BROCA died on October 2nd, a few hours before the publication of his last work, *La Tuberculose chirurgicale*. He was born in 1859, the son of the late Professor Paul Broca, founder of the modern surgery of the brain. After a distinguished medical career, during which he specialized in the surgery of children, Auguste Broca entered the French Faculty of Medicine in 1913, first as professor of operative surgery, and later, as professor of topographical anatomy. After the war he was appointed to the chair of surgery of children and orthopædics. Professor Broca's more important works include *La chirurgie infantile*, issued in 1914, *La chirurgie de guerre et d'après guerre*, in 1921, and his posthumous publication on surgical tuberculosis.

DR. EUGÈNE ROCHARD, a well known Paris surgeon and member of the Académie de Médecine, has recently died, at the age of 71.

CORRECTION.—In the notice of Mr. R. Binyon's death published last week at page 837 the Christian name should be Edmund, not Thomas.

Universities and Colleges

UNIVERSITY OF CAMBRIDGE

At a congregation held on October 31st the following medical degrees were conferred:

M.B., B.Ch.—D. E. Cuffey, A. G. Story.
M.B.—G. A. Thorn.

UNIVERSITY OF LONDON

SIR CUTHBERT WALLACE, K.C.M.G., C.B., has been elected Dean of the Faculty of Medicine.

A course of clinical lectures will be delivered by Dr. [illegible] at the Hospital Medical School on Tuesday, December 4th, at 4.15 p.m.

The first lecture will deal with recent light on the origin of syphilis; the second with the beginning of anatomical study; and the third with the scientific work of Robert Koch. The lectures are open to all medical students.

UNIVERSITY OF DURHAM

At a convocation held on October 29th the following medical degrees were conferred:

M.D. (Practitioners).—Ralph E. Drake Brockman.
M.B., B.S.—F. W. Marshall.

UNIVERSITY OF DUBLIN

THE Board of Trinity College has appointed Mr. James Edmond Hogan to be Lecturer in Dental Surgery and Pathology in the School of Physic, Dublin University, in the place of the late Dr. Arthur W. W. Baker.

ROYAL COLLEGE OF PHYSICIANS OF LONDON

AN ordinary quarterly comitia of the Royal College of Physicians of London was held on October 30th, the chair being taken by the President, Sir Humphry Rolleston.

Membership

The following were admitted to the Membership, having passed the required examination:

Stanley Batchelor, *M.C.*, M.D. Lond., L.R.C.P.; Davis Evan Bedford, M.B. Lond., L.R.C.P.; Jyotish Chandra De, M.B. Calcutta, L.R.C.P.; William Devereux Forrest, M.P. Dunb., L.R.C.P.; Malcolm Kennedy, M.B. New Zealand; Anis Salama, L.R.C.P.; Kenneth James Livingstone Scott, M.D. New Zealand; Terence Watson Turner, L.R.C.P.

Licence

Licences to practise Physic were granted to the following 245 candidates who had passed the necessary examinations and had conformed to the bye laws and regulations:

C. H. Ackroyd, F. N. Adam, Iris I. G. Adams, C. Adamson, B. Addington, G. L. Alexander, A. J. Amor, S. M. Anger, on, T. F. Anderson, L. V. Angelo, H. Ankhorn, George the Patriarch, J. M. Bailey, H. C. J. Baker, G. W. Ambrose, L. J. Barford, Alison E. M. Barnaby, C. F. J. Baron, R. McG. Barron, S. A. Bearder, L. I. Beccle, A. E. Beith, P. C. Bennion, S. Perman, E. H. J. Berry, A. G. Perrick, H. E. Black, R. H. Bogason, A. J. S. L. Bond, W. H. Braddick, J. H. Broadhead, G. C. W. Brown, E. Buchler, G. H. Buncombe, F. C. Burge, M. Byrala, A. Canard, T. E. Cawthorne, F. Chandler, W. T. J. Chapman, F. W. Charman, K. T. Chaudhuri, W. J. F. Chidlow, Victor Cecil Churcher, S. Cleman, T. A. Clarke, F. E. Caxton, I. Cohen, W. R. F. Colli, W. S. C. Copeman, J. W. F. Cox, A. B. Cowley, B. W. Cross, B. Crowthwaite, W. I. Dagett, A. A. Dalby, A. F. C. Davey, D. Davies, D. J. Davies, E. W. P. Davies, Kathleen Davies, J. E. Davies, I. M. Deighton, G. W. S. de Jersey, P. H. Diemer, J. M. Dobie, W. A. Drake, C. S. Drarmer, J. Dresdon, W. A. D. Drummond, G. D. Dur, H. A. Dunlop, J. D. Durance, S. E. Durrans, D. E. Durward, H. C. Edmund, J. T. R. Edward, Josephine O. Ellen, J. P. Ellis, Marguerite Eman, H. G. English, A. J. Enzer, J. A. Evan, J. L. Evans, Sarah Evans, A. F. Ewan, W. G. Evans, N. J. Everard, S. Abdel Fadl, Fam, W. J. C. Fenton, F. E. Fox, D. Frost, G. A. Fulton, J. H. Gadsdon, H. C. Gage, J. A. Gallety, J. Gaughan, M. George, T. G. Gann, S. Gelb, Minnie Cohen, B. Green, F. G. Greenwood, C. E. Griffiths, J. I. Griffith, J. F. Hamilton, A. C. Hampson, C. L. Harding, H. E. Harparanes, Irma, J. H. Harper, V. E. Harris, Margaret I. Harford, W. A. Herbert, A. H. Hepworth, F. H. F. Hewer, J. G. Hume, W. F. Hunter, D. S. Hutton, H. V. Ingram, Ada H. Jacob, H. James, Beatrice Jessie, Nutter, Ira, S. H. A. Jay, R. S. Johnson, I. L. Johnstone, Ina, M. Jones, F. M. J. Jones, D. Jones, I. M. Jones, Lola, Jones, Joseph H. Jones, C. J. Jones, I. S. Kaman, C. F. Kaye, A. J. Kim, G. King, J. F. L. Kin, F. H. S. Knight, Knowl[illegible], Nancy T. Lancaster, I. L. Lancaster, S. Wake, Mary K. Lawlor, C. H. Lee, Neera Leesmith, J. Leigh, T. C. L. E. J. Liberman, K. S. Lim, D. T. Lloyd, F. O. Lord, W. F. Low, G. K. Loveday, M. F. B. Lynch, L. H. Macdonald, H. B. Mackay, D. M. Maclay, I. I. Mackenzie, H. Maclennan, I. B. Mevis, J. I. B. Mirais, G. R. Marcano, D. P. Marx, F. Marsden, 'Gerande M. Marshall, J. D. Mill, F. G. M. [illegible], Frances C. Nairn, C. T. Norris, T. J. O'Donnell, G. C. L. Oliver, L. F. Orr, W. B. O'Rorke, M. Y. Paget, T. B. Pallajani, A. E. G. Parry, Sybil de Hart, Patterson, Milroy, A. Paul, C. F. Pearson, [illegible] Pinhorn, P. J. Pinniger, J. F. Pleyte, L. P. Plant, F. D. S. [illegible], Beatrice M. Powell, C. V. Powell, L. V. Pyrah, Vera V. Quilter, Sidney mantzik, F. C. Read, [illegible] E. Rendell, W. Richards, D. H. W. G. Robert, C. H. H. Robertson, V. B. Robinson, W. F. Rose, 'Annie E. C. Rowland, C. Sabhapati, J. H. Saint, [illegible] Salafo, H. I. Savage, F. W. Schofield, C. M. Scott, W. C. Searle, J. S. H. P. Shone, J. H. Simpson, D. A. S. Sinclair, H. Smith, F. [illegible], L. Spray, Letty Stainer, [illegible] Stanford, L. Stange, E. H. H. St. Adman, J. Stein, J. A. F. Storr, Grace M. Summerhayes, A. Swain, Victor A. W. Symond, F. C. Tamplin, F. [illegible] Tate, G. W. P. Thomson, C. H. C. Tomlinson, A. B. Trapman, Beatrice Turner, J. H. M. Walker, J. Waltman, S. L. Wanless, E. J. Webster, N. C. A. Wells, L. G. Whales, H. D. E. Whitmore, C. H. Wright, G. Wirasinha, E. R. I. Williams, H. K. Williams, F. J. Wilson, Ellen E. Wirtz.

* Under the Medical Act, 1886.

An alteration in By-law 194 was proposed permitting the election of women as Fellows of the College. This was passed for the first time. It will require to pass a second enactment subsequent to confirmation before becoming operative.

Dr. W. S. A. Griffith drew attention to a paragraph in the SUPPLEMENT to the BRITISH MEDICAL JOURNAL of October 4th, 1924, relating to an instruction by the American immigration authorities that persons who desire to emigrate from this country to the United States must be examined by medical practitioners who are members of the British Medical Association. After discussion in which Dr. I. A. Bolam, who was present, moved a resolution was passed drawing the attention of the President of the General Medical Council to the injustice the proposed arrangement would inflict on medical practitioners in this country who are not members of the Association and who would be precluded from giving medical certificates even to intending immigrants who were their own patients.

A report was received from Dr. Drewitt concerning the Chair of Physic Garden. It was directed that this should be considered on the minutes.

The President announced the award by the Royal College of Surgeons of the Jenks Scholarship for 1924 to Mr. Antonio J. C. Higham.

A report was received from the Committee of Management in regard to the institutions recognized for the courses of instruction for the several special diplomas.

Sir William Hale White was reappointed a member of the Committee of Management. Books and other gifts presented to the library during the past quarter were received and the thanks of the College were returned to the donors. After some formal College business had been transacted the President dissolved the comitia.

CORRECTION.—The announcement published last week (page 837) of Mr. Michael C. O'Malley's appointment as Professor of Surgery in the University College, Galway, and not Cork as previously stated, Professor C. Lambert Patterson, still holds the Professorship of Surgery at University College, Cork.

The Services

TEMPORARY DECORATION

THE Territorial Decoration has been conferred upon the following officer of the R.A.M.C.(T.A.): Majors F. W. B. Young, A. Walker, D.S.O., and G. B. Gill, and Captain E. B. Keen.

14TH STATIONARY HOSPITAL DINNER

THE fifth annual dinner of the medical officers of the 14th Stationary Hospital will be held on Friday, December 12th, at the Trocadero Restaurant, Piccadilly, at 7.15 for 7.30 p.m. Lieut.-Colonel J. T. Harper, C.B.E., will be in the chair. The privilege of the Loving Cup will be exercised. Dress: evening dress or lounge suit with miniature medals optional. The Honorary Secretaries are Lieut.-Colonel J. H. M. Perry and Dr. H. L. [illegible], 39, Devonshire Place, W.1.

V.A.D. TRAINING IN MILITARY HOSPITALS

THE War Office announces that arrangements have been made for a short course of annual training in military hospitals for a limited number of Voluntary Aid Detachment members. The instruction is to be held in certain [illegible] centres. The War Office will pay all [illegible] for the [illegible] of the training. The course will have a duration of [illegible] days, and will be open to members of Class A [illegible] at the discretion of the Commandant of the Hospital. Military Nursing Service.

Medico-Legal.

REX v HADWEN

MANSLAUGHTER CHARGE AT GLOUCESTER ASSIZES

THE trial of Dr W R Hadwen of Gloucester, on an indictment for manslaughter arising out of the death of a child whom he had attended, took place at Gloucester Assizes on October 27th, 28th, and 29th before Mr Justice Lush The counsel in the case were Mr C F Vachell, K C, and Mr StJohn G Micklethwait, on behalf of the Director of Public Prosecutions, and Sir E Marshall Hall, K C, and Mr A F Clements for the defence Dr Hadwen pleaded "Not guilty"

Case for the Prosecution

Mr VACHELL, in opening the case, said that Nellie Burnham, aged 10, died on August 10th last from diphtheria and pneumonia which followed it She was attended in her illness by Dr Hadwen, who, the prosecution alleged, failed, through gross inattention and lack of skill or knowledge, or both, to detect the disease from which the child was suffering and to administer the proper remedy Counsel then described the common symptoms of diphtheria and the general procedure of the medical profession in such cases, more particularly the taking of a swab from the patient's throat and the administration of antitoxin He went on to review at length the circumstances of the case and said that in spite of the highly suspicious symptoms Dr Hadwen never took a swab from the throat or administered antitoxin A fact to which, he understood, the defence attached importance was that two days before her death, while the mother was away from home, the child left her bed and went barefooted downstairs into the scullery to get a drink of water, but the evidence to be called with regard to the *post mortem* examination would show that the pneumonia was of the type which followed diphtheria, and not of the type which followed a chill

Mrs BURNHAM said that her daughter was taken ill on July 30th, and Dr Hadwen, her club doctor, was called in on August 1st He remarked that the case looked like scarlet fever He put two fingers in the girl's mouth and examined her throat, and examined her back and chest for any rash He prescribed a gargle of vinegar and water His examination occupied only three minutes The breath was very offensive, and there was a yellowish discharge, tinged with blood, from the nose She mentioned the foulness of the breath to the doctor on his second visit on August 4th, when he looked down the child's throat using his finger as before, but did not feel her pulse or take her temperature He came next on August 6th by which time she was weaker and the breath more offensive By this time the nose had a yellowish, spongy appearance like the throat The doctor's next visit was on August 9th, when, the child being weaker, she sent for him He looked down the throat felt the pulse and sounded the chest, but did not take the temperature He said that the throat was clearing nicely He stayed about five minutes At the previous visit he had prescribed a tonic He did not take a swab at any time The child vomited on August 8th On the evening of August 9th, the child being evidently worse there was a family consultation, and Dr Ellis summoned He took a swab of the throat and examined the child's chest and back, but she was then in a very grave state, and died on the early morning of the 10th

In cross-examination certain discrepancies in the evidence given by the witness compared with the evidence she gave at the coroner's court were pointed out, these related to the date on which she first suspected the case to be one of diphtheria In reply to further questions she said that she sent for Dr Ellis on the recommendation of her brother in law She knew nothing of an acrimonious dispute between Dr Ellis and Dr Hadwen in the public press She did not tell Dr Ellis that Dr Hadwen had seen the child earlier the case and was told what Dr Hadwen had done Dr Hadwen had been attending willing to give a death certificate, but she did not wish for one because being dissatisfied with Dr Hadwen's treatment, she wanted to have an inquest It had not occurred to her that it was not quite fair to Dr Hadwen not to tell him that the child was dead, so that he might be present at the *post mortem* examination She admitted that it was a rule of her society that in an emergency patients might send for the doctor at any time and that she did not send for Dr Hadwen after his visit on the 6th until the morning of the 9th, but she thought it was his place to come when the doctor came two days after the child had been down-stairs Re-examined she said that when Dr Ellis was called in three hours before the child died, it was the first time she had ever seen him He stayed two hours, he showed no ill feeling towards Dr Hadwen and said nothing about Dr Hadwen's treatment

Other witnesses—members of the family and neighbours—were called and gave similar evidence A brother in law of Mrs Burnham said that late on the evening before the child's death, he was at a family council telephoned Dr Hadwen to the effect that they were not satisfied with his treatment and had decided to call in another doctor Dr Hadwen replied that he had done his best Dr Ellis had been the witness's own doctor

Dr L S ELLIS said that when called to attend the child he found her seriously ill with a temperature of 102·5° and a pulse rate of 150 Her general condition was terrible When he came he was told that it was probably a case of diphtheria He noticed her very rapid breathing and at once thought of pneumonia He found the right lung solid and the left bronchitic In the throat he found membrane right across from tonsil to tonsil There was a discharge from one nostril—a greenish dirty discharge, just tinged with blood There might not be fluid in the chest, but on exploration found no fluid In his opinion the child was suffering from diphtheria and pneumonia He had no doubt whatever as to the diphtheria and before the result of the examination of the swab was available, even he notified it at once there was such obvious diphtheritic membrane He did not administer antitoxin because it was too late, the child was dying

In the course of a long cross-examination by Sir E Marshall Hall, Dr Ellis expressed the opinion that the diphtheria spread down into the lung, it was really all one disease The pneumonia in this case was unilateral according to the *post mortem* findings

Have you ever known a case of pneumonia, the sequel of diphtheria, which has been unilateral?

Witness No, bilateral either

Must it not be one or the other?

Witness I have never come across a case before—the cases go to the hospital It is a question for the pathologist

Was the pneumonia in this case lobar or lobular?

Witness When I auscultated that chest it was so like the whole thing was solid it might have been either

At a later stage in cross-examination counsel asked the witness whether, in August, 1923, he wrote to the editors of two London daily papers inviting them to send representatives to interview him with reference to Dr Hadwen, and whether in the course of his communication, which was not printed, he made a violent attack on Dr Hadwen and his professional status? Dr Ellis said there was certainly some discrepancy between Dr Hadwen's qualifications as given in the *Medical Register* and in a book printed locally There had been a very acrimonious correspondence between Dr Hadwen and a reporter called for information by the London newspapers and a reporter called upon him Dr Hadwen over the vaccination question I later he was asked to discuss matters with a view to the time this case arose there were some overtures with a view to making up the differences between the medical men in Gloucester

Dr W WASHBOURN, city bacteriologist, who made the *post mortem* examination, described his findings The back of the throat tonsils, soft palate, and larynx were intensely inflamed, almost black in one or two places An adherent patch of membrane at the back of the epiglottis was characteristic of diphtheria Both bronchial tubes were congested The right lung was solid throughout from inflammation The right bronchial tubes were filled with dense membrane, some of which was adherent and had evidently been formed *in situ* At the top of the bronchus was a piece of loose diphtheritic membrane, measuring about three inches by one inch In the pleural cavity there was a small quantity of fluid—about three ounces He could give an opinion with confidence as to the cause of death It was due to diphtheria and pneumonia He found the diphtheria bacillus present in the swab received on the day of the girl's death He received other swabs a day or two later from the medical officer of the isolation hospital He learned afterwards that these were taken from members of the family of the dead girl, and a playmate Two were negative, and two positive

In cross-examination the witness expressed the opinion that the condition of the right lung was that of lobar pneumonia of recent date—not more than two or three days old When he examined the swab he was not aware that the child from whom it had been taken was dead Although the Klebs-Loeffler bacillus was recognized by the great majority of the profession to be the specific bacillus of diphtheria it could be found also in some cases where there was no diphtheria He was aware just before starting the *post mortem* examination, that the child had been Dr Hadwen's patient, and that there was some charge of negligence against Dr Hadwen in his treatment of the case Dr Bell, deputy coroner (then acting coroner), was present at the examination not at his invitation but as a right, and he (witness) asked him whether Dr Hadwen was going to be present He thought the deputy coroner answered that Dr Hadwen had not been invited or that he was not coming After replying to further questions mainly about the symptoms of diphtheria and pneumonia, the witness said that the membrane he found *post mortem* was undoubtedly diphtheritic but he did not examine it microscopically he thought it so clear that it was not necessary to examine further Later the witness said that in this case, so far as he could judge the heart was healthy In a great many cases but by no means in all fatty degeneration would accompany acute diphtheria The duration of the pneumonia found *post mortem* would fit in although a "tight fit"—with the theory that the pneumonia was set up when the girl, two nights before her death got out of bed and went downstairs He did not think pneumonia caused by such a chill would have begun to manifest itself until from twelve to twenty four hours afterward but it was impossible to eliminate the circumstance as a cause of the pneumonia Nevertheless, in

felt sure that the diphtheria was a very large determining factor in the death of the child the right bronchial tubes were so extensively involved in membrane that this would have been likely to set up right sided pneumonia

Dr P B Berry M O H for Gloucester and medical superintendent of the city isolation hospital described the proper course to take when a doctor found the familiar symptoms of diphtheria present He spoke of members of the Burnham family who had been admitted to the isolation hospital during August suffering from diphtheria In cross-examination he admitted that antitoxin treatment was not always successful He considered the pneumonia in this case was secondary to the diphtheria The child died from diphtheria progressing through pneumonia to death

Dr E Graham of Gloucester said that he attended as her panel doctor an elder sister of Nellie Burnham on the day after the girl's death He took a swab of the throat and sent it to the medical officer of health In cross-examination he acknowledged himself a strong opponent of Dr Hadwen

Sir William Willcox in reply to Mr Vachell gave a description of diphtheria its origin and symptoms Vomiting might occur at the onset and again at a later stage when the disease became dangerous, it was a grave sign after the first or second day He outlined the prudent course for a medical man to take on finding a patient suffering from sore throat thickness of utterance offensive breath coloured discharge from the nose and drowsiness A swab should be taken and if there was to the naked eye a reasonable suspicion of diphtheria as evidenced by visible membrane or patches of exudation in the throat, then it would be his duty to give antitoxin without waiting for the result of bacteriological examination Diphtheria antitoxin had reduced the mortality from diphtheria from 30 or 40 per cent down to 10 per cent and under In 1895—two years before the antitoxin treatment was first used in this country—the mortality from diphtheria was 389 per million in England and Wales the figure in 1923 was 71 per million In his judgement the cause of this child's death was diphtheria and pneumonia Hearing the evidence he had no doubt the pneumonia was secondary to the diphtheria It was uncommon for this kind of pneumonia to be unilateral but he had seen it occur in diphtheria It was very difficult to say whether this was lobar or lobular but in view of the condition of the right bronchial tubes he thought this was a massive or very extensive bronchopneumonia In his opinion the child's journey downstairs would not cause the pneumonia such as was found in this case though it would of course be harmful at that stage of the disease and would subject the child to grave risk of heart failure In further evidence the witness said that Dr Ellis did quite the right thing in using the exploratory needle two hours before death It was difficult in children from clinical examination to be certain whether there was solid lung or fluid The risk in using the needle was infinitesimal In diphtheria the only treatment of any value was antitoxin treatment with general hygienic care Supposing the pneumonia was independent of the diphtheria the fact that the child was already suffering from neglected diphtheria would greatly diminish the resistance to the pneumonia however caused

Sir William Willcox in cross-examination said he saw quite a number of early cases of diphtheria in his hospital practice A long argument then ensued on the figure in the Registrar General's returns which counsel contended did not bear out the statement that diphtheria was now a less deadly disease than formerly Witness explained the meaning of the categories and the significance of the figures under each head and repeated that there had been a steady decline in the death rate from this disease in 1895 it was 313 per million of the population and now it was 71 Counsel next referred to statistics for 1922, which showed that 2 021 cases wrongly diagnosed as diphtheria had been admitted to the Metropolitan Asylum Board's hospitals and of these patients 77 had died Witness pointed out that these figures were for the London fever hospitals that the poorer districts of London were much overcrowded and that there was a tendency for practitioners to send cases to hospital when at all suspicious of diphtheria without waiting for the result of a swab lest other inmates of the crowded dwelling became infected These wrong diagnoses were cases of bad throats in which diphtheria was suspected but the bacteriological examination proved negative If these mistakes were not made the amount of diphtheria in London would be much greater Counsel next quoted from Sir George Newman's report for 1921 in which he referred to the increase in the figures for diphtheria due to the notification as diphtheria of cases of mild illness which seldom presented any definite clinical evidence and would not be regarded as cases of this disease apart from the fact of contact or the receipt of a positive report on throat swabs Witness said that this was true some doctors were over-cautious and notified diphtheria when the signs were by no means conclusive Counsel asked why the same argument should not apply to the Registrar General's returns Witness pointed out that these returns were based simply on the death certificate He was next cross-examined on Dr Washbourn's account of the *post mortem* finding In reply to the judge he gave a brief account of the nature and preparation of antitoxins and vaccines and was questioned as to a doctor's duty if he went counter to the opinion of the vast majority of his profession At the close of these questions his lordship addressing Sir E Marshall Hall said

You are faced with this difficulty Sir Edward that a person may hold a bona fide belief in some remedy without calling in a doctor at all but the courts have held that an honest belief that doctors do no good and that prayers alone have efficacy does not dispose of a charge of wilful neglect for not calling in a doctor The Legislature compels a parent to call in a doctor to his child

Counsel But no Legislature has yet compelled a doctor to inoculate with antidiphtheritic serum

His Lordship No but the difficulty still remains which I have pointed out.

Counsel next produced a work on differential diagnosis and asked whether in view of the diagram in that book the diagnosis between follicular tonsillitis and diphtheria might be very difficult Witness said that it might be impossible unless a swab was taken Asked whether there was not real danger in inoculation owing to anaphylaxis he replied that there might be a danger if the patient had previously been inoculated with serum but he had never in any fatal case through the use of antidiphtheritic serum Had a patient had had serum previously the record de was given with special precautions After further questions by counsel for the defence and a short re-examination by Mr Vachell his lordship asked Sir William Willcox a number of questions about the science of diphtheria antitoxin generally, and its efficacy when given early or late in the disease

Case for the Defence

Dr Hadwen giving evidence in his own behalf stated that his qualification — M D St Andrew L R C P L and M R C S Eng L M S S A He said he had practised for over thirty years He had had a fair amount of experience of diphtheria and about twenty five years ago was practising in Bristol when an epidemic of diphtheria occurred and most of the cases came under his care He had never administered antitoxin and all his cases had been successful Dr Hadwen then described his treatment of the dead child's brother Leonard who was suffering from septic tonsillitis He suspected diphtheria in Leonard's case and satisfied himself absolutely that no diphtheria was there He next attended another child of the same family who had the affection in a lighter degree When called first to Nellie he had been ill for two days He examined the throat and found a few raised patches on the right tonsil two on the left the throat was red He found no rash but there was a watery discharge from the nose He found a little harsh breathing in the chest pointing to light bronchial catarrh He ordered an expectorant mixture and a gargle of vinegar and Lotwater and gave a few general directions He left the child's pulse as a matter of course on every visit The pulse was quicker than normal and the temperature 100 His visit lasted roughly ten minutes The child was a poorly nourished rather stunted girl He saw no yellow blood-streaked discharge nor detected any offensive breath and the mother never said a word to him about such thing At his visits on August 4th and 6th the throat was better the bronchial catarrh had cleared up and the child was much better He intended to go again on the 6th but was too busy he was on his way there on the 9th when he was sent for He was thunderstruck at the change in the child and saw at once that her condition was serious The throat had cleared up nicely there was not a vestige of ulceration on the tonsils there was no membrane either upon the uvula or soft palate The breath sounds were deficient temperature 101° pulse 120 and he concluded pneumonia The mother never told him that the child had been downstairs He intended to call again that night but was informed by telephone that the family had called in another doctor He heard of the child's death about an hour before the inquest was held He had no notice of the *post mortem* examination He reaffirmed his opinion that the child had been suffering from ulcerative or septic tonsillitis and that she developed fatal lobar pneumonia

In cross-examination by Mr Vachell Dr Hadwen said that he doubted whether during the last three years he had had any case of diphtheria at all To administer antitoxin was against his views and his conscience he considered it a very dangerous remedy All these inoculations were based upon experiments on animals he objected to them on that ground but he objected to the antitoxin independently as a medical man He was taken through the usual symptoms of diphtheria and their relative importance and questioned by the judge on antitoxin at long discussion then ensued between his lordship counsel and witness on the Registrar General's statistics Dr Hadwen went on to say that he believed the bacillus to be the result of the disease not the cause and he saw no sense in taking a swab He discarded the whole germ theory of disease Asked by the judge what was his theory of the communication of disease he spoke of a chemical poison in the atmosphere The specific cause could not be discovered but unsanitary conditions affecting the atmosphere produced the disease Asked what would have been his treatment had he found diphtheria he said he would have put hot compresses around the throat painted the tonsils with glycerin three or four times a day and cautioned the mother to keep the child in a recumbent position He would of course have notified the case and in the circumstances would have advised the child's removal to the isolation hospital He contested Dr Washbourn's opinion that the membrane he found was diphtheritic

In re-examination by his counsel Dr Hadwen returned to the question of statistics He said that with the introduction of antitoxin diphtheria instead of being diagnosed in the old fashioned way became diagnosed by a very different method with the result that a great many common sore throats which would have got well in any circumstances were called diphtheria and this led to an apparent decrease of case mortality

Speeches of Counsel

Mr Vachell then addressed the jury at some length criticising the evidence which had been called on behalf of the prosecution He made a strong point of the fact that the only evidence other than Dr Hadwen's was medical Sir E Marshall Hall followed with a speech of many hours in support of the defence He brought attacks upon the character of the witnesses who had altered their evidence as to the sick child She had undergone a searching examination and quite a different thing in the post mortem after having in the meantime heard the medical evidence He described

it as most unfortunate that the second doctor called in by the family in this case was one who had been a most bitter opponent of Dr Hadwen in the press Dr Lilis never communicated the fact of the child's death to Dr Hadwen, and, what was still worse, the deputy coroner (Dr Bell) gave no notice of the *post mortem* examination to the man against whom, on the result of the examination, it was intended to prefer a charge Counsel hoped it would not be inferred that Dr Hadwen was the only medical man in England opposed to the administration of antitoxin He could not afford to keep eminent specialists at the court for three or four days

The Judge's Summing up

Mr Justice Lush, at the opening of his charge to the jury, said that the case was a serious one, with consequences to others than the immediate defendant

> It is a matter of great importance also to the public, and, I may say, to the medical profession, because while, on the one hand, persons are entitled to be, and must be, protected against criminal neglect or criminal misconduct on the part of a medical man, it would be deplorable—disastrous—if a medical man, following his profession according to the best of his judgement and acting honestly in the treatment of his patient, were to have hanging over his head a fear that if anything went wrong with his patient there might be a prosecution such as this

It was a case also which called for strong and clear proof on the part of the Crown The jury was not sitting merely to criticize Dr Hadwen's views It was not a case merely of saying whether he had or had not adopted views which a wise medical man should have adopted The charge against him was that he "did feloniously kill" the child, and it was necessary for the Crown to establish, not only that he neglected her, but that his neglect did actually cause her death Many cases had been tried in which a medical man, qualified or unqualified, had, in endeavouring to cure his patient, chosen to administer a dangerous drug or perform some operation, and if the drug was administered or the operation performed in a disgraceful and careless fashion, or with a disgraceful ignorance as to what the effect of the drug would be or as to the way in which the operation should have been performed, and the patient died, there was no difficulty in saying that the doctor or operator caused the death of the patient What was said in this case was very different It was that Dr Hadwen was so neglectful in his diagnosis and treatment that the child, whose life would have been saved if proper care had been taken, died through that neglect

> If a doctor is culpably negligent in his treatment of a patient, and the patient dies it is not enough for the Crown, in supporting an indictment of manslaughter, to prove that if the doctor had been careful the patient would have had a chance of getting successfully through the illness, the Crown must prove more than that, they must prove that in all human probability if care had been used the child would have recovered If the Crown have established to your reasonable satisfaction, first that the doctor did neglect the child, and secondly that in all human probability the child would have recovered if he had not neglected her, then, and then only, you will bring in a verdict of 'guilty"

His lordship considered that August 1st—the date on which Dr Hadwen first saw the patient—was the important date in the case The doctor had already attended the child's brother for a similar illness and the boy had recovered When he was called to see the child who subsequently died he found her not as bad as her brother had been and although he had called on the brother every day he did not call on the girl again until after three days Did the child on that first visit show such signs as would make an ordinary doctor suspect diphtheria or did she only show the signs of sore throat? Sir William Willcox had stated that unless antitoxin was given within six days from the commencement of the illness it was practically useless, and if Dr Hadwen had no reason on his first visit to suspect anything seriously wrong with the child's throat the child having already been ill for two days any neglect of the child from the second visit onwards would not make the withholding of the antitoxin a matter of very serious importance The Crown had to prove to the reasonable satisfaction of the jury that on the first visit the child showed signs of a serious malady which the doctor refused to consider

Next came the question of the pneumonia If the pneumonia was really a sequel of diphtheria then supposing the doctor to be responsible for the diphtheritic condition he was equally responsible for the pneumonic But if the pneumonia was brought about by an unfortunate act on the part of the child—going downstairs with bare feet on the tiled floor—which set up a chill and the pneumonia caused her death no one could say that neglect on the part of the doctor in the early days of the case had anything to do with causing the death of the child

> I come now to this question of neglect The law does not say that if a doctor is unfortunate enough to commit an error of judgement and the patient dies he is guilty of manslaughter The law does not cast upon anybody who is merely careless, and whose carelessness is the cause of the death of another, the responsibility of defending himself in the dock on this charge
>
> Unless the negligence of which a person is guilty is of so gross a character as to make one say of it that it is wicked negligence—not a careless but a wickedly careless thing to have done—the person concerned cannot be convicted of manslaughter There must be something evil in the negligence, something culpable, something criminal, before an indictment of manslaughter can be established You have got to ask yourselves, not whether Dr Hadwen failed to exercise that care which a doctor or anybody else ought to exercise, but whether he was guilty of what I have called culpable and wicked negligence If he was then the Crown have proved the first of the two things they have to prove, if he was not, the Crown have failed to prove even the first step

His lordship then reviewed the evidence of the mother and her friends, reminding the jury that the mother's evidence as to the bad condition of the child on the first visit was uncorroborated One could make all allowances for the mother, but he had not behaved in all respects quite in the way one would have expected her to behave She never told the doctor the very important circumstance of the child's visit to the kitchen and the jury might come to the conclusion that the mother's evidence was exaggerated as to the condition of the child on August 1st If the condition of the child was as Dr Hadwen said it was, his lordship could not conceive any ground for considering him guilty of criminal negligence in not taking a swab He next dealt with the evidence relating to the second and subsequent visits of the doctor and pointed out how the stories of the relatives and of the doctor conflicted

Coming to the medical evidence, his lordship said that if the child never had diphtheria then away went the case for the prosecution The child undoubtedly had pneumonia, if there was no diphtheria to cause the pneumonia it was probably caused by the chill It did not follow that if it was proved that the child had diphtheria the doctor was criminally neglectful, but here came the singular aspect of the case Dr Hadwen's views and mental attitude were different from those general in his profession The jury was not a tribunal to criticize his views

> But I think it is legitimate to say that it would be very unfortunate if any doctor were to close his eyes to the improvements in medical treatment which were accepted by the great majority of his profession, and to say, "I prefer the old-fashioned treatment, I do not believe in these others" After all, medical science is a very great science, and the medical profession a very great profession, and unless a doctor is going to wall himself off the discoveries made from time to time one is not likely to see that development of medical science which one hopes to see It does not follow from that, of course, that a man who will stick to his own views is guilty of culpable and wicked neglect A doctor, if properly qualified is allowed by law to follow and practise his profession in the way he accepts, and if a doctor does hold peculiar views—honestly holds them—and works them out and follows them, one cannot say that there is any culpable and wicked neglect, even though he is terribly and seriously mistaken But a doctor or anybody else—it is not for me to pass judgement on Dr Hadwen—may get his mind into such a state of prejudice and allow his judgement to be so blinded that really his position comes to this that he would rather sacrifice his patient than sacrifice his prejudice I do not say that is true of Dr Hadwen at all But there comes a stage when a man must be judged by what he does

Was the child (continued his lordship) suffering from diphtheria? The prosecution had got a very powerful body of evidence bearing on that question—the positive result of the swab the commencement of the membrane, the positive results found in the two other children Curiously enough, however there was a very strong difference of opinion between Sir William Willcox and Dr Washbourn Dr Washbourn's opinion—though it was only natural that in deference to Sir William Willcox's views, he should not hold it quite so strongly as at first—was that the pneumonia which caused the death was lobar pneumonia, and that would be an indication not of a secondary pneumonia brought on by diphtheria, but of a pneumonia caused by a chill Sir William Willcox took the opposite view, and stated that the pneumonia must have been lobular and a sequel of diphtheria It was for the Crown to prove that there was no reasonable doubt and if the doubt still remained he would warn the jury that they must be very careful before they convicted the defendant of manslaughter The neglect alleged against him was not in allowing the pneumonia to supervene, but in not discovering that there was diphtheria and taking proper steps His lordship added

> I cannot help saying that I agree with Sir E Marshall Hall that in a case like this, when this step, not often taken of bringing a charge against a practising doctor in respect to his treatment of a case was in contemplation, it is unfortunate that he was not allowed an opportunity of being present at that *post mortem* examination in order that he might see for himself what was shown to elucidate the case He was not there The microscopical examination of the membrane might have assisted him for aught one knows It is an unfortunate incident I do not advise you to attach too much importance to it but I do not think it right to pass over without expressing my agreement with Sir E Marshall Hall's statement

Verdict

The jury deliberated for twenty minutes On their return the foreman announced that they had agreed upon a verdict of *Not guilty*, an announcement which was received with loud applause in the crowded court Dr Hadwen was accordingly discharged

Medical News.

IN connexion with the forthcoming election of direct representatives to the General Medical Council, a meeting has been arranged by the Birmingham Branch of the British Medical Association to be held at the Medical Institute 154 Great Charles Street, Birmingham, on Monday November 10th at 4 15 p m , when Dr J A Macdonald and Sir Jenner Verrall will address their prospective constituents At a meeting convened by the Lancashire and Cheshire Branch to be held at the Brasenose Club 94, Mosley Street, Manchester, on Tuesday, November 11th at 4 15 p m , Dr R A Lolam and Dr H B Brackenbury will speak The election addresses of the four British Medical Association candidates was published in the SUPPLEMENT of last week (p 161), together with the first list of supporters, a further list of supporters appears in the SUPPLEMENT this week

THE next Chadwick public lecture will be on "The rat menace—its true significance and how it can be minimized by Mr T Mark Hovell, F R C S , in the Barnes Hall, Royal Society of Medicine, 1, Wimpole Street, on Monday, November 10th, at 8 p m

DURING November a course in venereal diseases will be held at the London School of Dermatology (St John's Hospital) At St Mark's Hospital a two weeks course in proctology will be held from November 10th to 22nd, and at the Chelsea Hospital for Women a course from Friday November 21st to December 6th At the Royal Waterloo Hospital a course in medicine, surgery, gynaecology and children's diseases will be given from November 24th to December 12th Syllabuses of the courses may be obtained from the Secretary of the Fellowship of Medicine, at No 1 Wimpole Street, W 1

UNDER the Workmen's Compensation Act a medical board will probably be appointed shortly to undertake the examinations required by the Refractories Industries (Silicosis) Scheme, and in our advertisement columns to-day there appears an announcement about the two whole time medical officers who will be required The board will have its centre at Sheffield, and the senior medical officer appointed must have had not less than ten years practice in the diagnosis of respiratory diseases, with special experience of silicosis It is intended to imitate as far as possible the South African scheme and provide opportunities for systematic scientific research

AT the quarterly meeting of the Medico Psychological Association of Great Britain and Ireland, to be held at 11 Chandos Street W 1, on November 20th, at 2 30 p m Dr G de M Pudolf will read a paper entitled "Malarial treatment of general paralysis some psychological and physical observations

THE new home for nurses of the Royal Northern Hospital, Holloway, was opened by Princess Louise, Duchess of Argyll on October 30th The new building affording accommodation for 58 nurses is part of a scheme to provide for 120 nurses, with administrative offices, classrooms, and dining rooms

THE post graduate lecture at the Royal Dental Hospital of London by Mr D P Gabell announced for November 19th, has been postponed until January 30th, 1925

THE meeting of the Royal Sanitary Institute at 90 Buckingham Palace Road, S W 1, on Tuesday, November 18th at 6 p m , will be devoted to a discussion on the economic value of the healthy infant and the New Zealand welfare work to the State

AT a meeting of the Pathological Section of the Liverpool Medical Institution on October 30th Professor J M Beattie read a paper on the carriage of infection by rats with special reference to foot and mouth disease From the lymphatic glands of an animal not considered by the Ministry of Agriculture to be infected he had obtained a virus which by inoculation caused lesions of the feet and mouth in rats, and was transferable from one rat to another In the routine examination to protect the community from plague 55 rats out of 279 examined were found to have lesions of the feet and mouth similar to those produced by this virus and the frequency varied with the outbreaks of foot and mouth disease in the city A map shown demonstrated clearly that these diseased rats were mostly obtained from sewers leading from the abattoirs, farms, and butchers shops where the disease was known to have occurred Other rats from the infected areas showed similar lesions, even gelatinous degeneration of the lungs

SIR GEORGE WILLS is making a gift of £60 000 to the Bristol General Hospital, of which he is president, for providing an additional nurses home and a new out patient and casualty department

THE annual Armistice Dinner of the Belfast University Services Club will be held in Thompson's Restaurant Belfast on Tuesday November 11th, at 7 15 p m At 11 a m on Armistice Day wreaths in memory of fallen Queen's men will be placed at the Cenotaph Whitehall, and at the War Memorial in the University grounds

THE Royal Anthropological Institute announces that the Huxley Memorial Lecture will be delivered this year on Tuesday November 25th at 8 30 p m in the rooms of the Royal Society, Burlington House Piccadilly, by Professor Pere Verneau, who has chosen as his subject La Race de Neanderthal et la Race de Grimaldi leur role dans l Humanite

A MEMORIAL to Italian doctors who fell in the war was unveiled at Florence on November 1st in the presence of the King and Queen of Italy

THE November issue of the *Traveller in France*, an official publication issued by the Office Français du Tourisme (55, Haymarket, S W 1) gives an account of the mountain passes in the Alps considered as winter health resorts Brief descriptions are given of Vernet les Bains, Corsica, and Grenoble

THE late Sir Frederick Needham, M D , formerly a Commissioner of the Board of Control has left estate of the gross value of £29 381 with net personalty £28 905

THE medical school of Pondicherry in French India which was founded in 1823 and reorganized in 1863, has granted nineteen medical diplomas during the last ten years The average yearly number of medical students during this period has been 14 5

WE have received a well illustrated pamphlet on open air schools in New Zealand—published in Christchurch—by I G MacInnes, Dr N B Philipps assisting in its preparation The measures for dealing with adverse winds are shown, and an account is given of the progress of this movement since 1904 As the author states "the open air school is the logical sequel to the Plunket scheme

Letters, Notes, and Answers.

ORIGINAL ARTICLES and LETTERS *forwarded for publication are understood to be offered to the* BRITISH MEDICAL JOURNAL *alone unless the contrary be stated* Authors desiring reprints of their articles published in the BRITISH MEDICAL JOURNAL are requested to communicate with the Financial Secretary and Business Manager 429 Strand W C 2 on receipt of proof

ALL communications with reference to advertisements as well as orders for copies of the JOURNAL should be addressed to the Financial Secretary and Business Manager 429 Strand London W C 2 Attention to this request will avoid delay Communications with reference to editorial business should be addressed to the Editor BRITISH MEDICAL JOURNAL 429 Strand W C 2

CORRESPONDENTS who wish notice to be taken of their communications should authenticate them with their names—not necessarily for publication

Communications intended for the current issue should reach the office not later than first post on Monday or at latest by the first post on Tuesday morning

THE telephone number of the BRITISH MEDICAL ASSOCIATION and BRITISH MEDICAL JOURNAL is Gerrard 2630 (Internal Exchange) The telegraphic addresses are

EDITOR of the BRITISH MEDICAL JOURNAL *Articulate Westrand London*

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The address of the Irish Office of the British Medical Association is 16 South Frederick Street Dublin (telegraphic address *Bacillus Dublin* telephone 4737 Dublin) and of the Scottish Office 6 Rutland Square Edinburgh (telegraphic address *Associate Edinburgh* telephone 4361 Central)

QUERIES AND ANSWERS

EPILEPTOID FIT

"H C B " asks for suggestions for the treatment of epileptoid attacks in a little girl aged 9 The attacks resemble those of grand mal and sometimes those of petit mal they began at 4 months old A first and typical attack occurred every two or three weeks but the attacks much more frequent—about every two days The bromide bromural belladonna luminal diallace in and glandulare acetate have been tried but our correspondent could not ascertain whether any one of them had an real effect she is now controlled them when as an infant she had whooping cough threatened with status epilepticus She is backward, but "mentally", he physical condition perfect

Treatment of Asthma

"J G G" asks for suggestions for the treatment of a lady aged 60, who has suffered from asthma for five years Her present attack has lasted over six months There is no history of heredity or neurosis, and there is no naso pharyngeal abnormality Potassium iodide over prolonged periods, adrenaline, morphine, lobelia, stramonium, and the exclusion of cats, feathers, etc , have all proved failures

Liquid Paraffin and Cancer

Dr S Watson Smith (Bournemouth) writes In your issue of November 1st, p 840 "B K" asks whether those who see many cases of malignant disease of the alimentary tract suspect the taking of liquid paraffin as a cause Shortly after liquid paraffin came into more general use, the late Dr Allan Jamieson of Edinburgh, in a letter to the British Medical Journal, issued a warning and a reminder of the fact that paraffin workers were, on account of their employment, particularly liable to cancer An enormous amount of paraffin, solid as well as liquid, must be consumed daily in this country, and chiefly by those who are past the age of full development One cannot easily avoid ordering it when so many preparations and so called "foods" have paraffin *entering into their composition* Even with a guarantee it is impossible to be absolutely certain of purity or of the absence of all impurity Paraffin used in ointments and pastes seems to harm few skins, if it cannot be tolerated, another vehicle is substituted It has however, to be remembered that ointments containing paraffins have only an occasional use for any particular patient and for seldom longer than days or weeks at a time *Taken internally for* months or years, as it commonly is nowadays, may make all the difference in risk, and the few who have the misfortune not to tolerate paraffin well may run a greater risk of future malignant trouble Within the past few years I have seen three cases of a dry form of dermatitis of both hands in motor car mechanics, apparently caused by handling petrol and lubricants It is understood that *paraffin causes cancer because of impurities in it* If little or no absorption takes place in the intestine, the paraffin being supposed to be inert such impurities, if they exist, may yet quite easily exert their action anywhere in the body by becoming assimilated The risk attending the taking of paraffin in any form has for some years prevented my prescribing it except in special cases If the Imperial Cancer Research Fund could give some guidance or advice in the matter of the internal use of paraffin, I for one should be grateful

Income Tax

Partnership Assessment

"Delta" inquires whether the inspector of taxes is justified in refusing to issue separate notices of assessment to two partners

*** The answer is "Yes" In 1907 the system of making separate assessments on partners was abolished by statute, and since then the assessment is required to be made in one sum on the firm At the same time it is the practice—so far as we know, without exception—for the inspector of taxes to give any reasonable assistance he can to the members of the firm in the task of dividing the firm's liability correctly between the partners If the inspector absolutely refuses to amplify the brief partnership statement he has given "Delta" might send the statement to us with such further information on the point as he may be able to give

Change in Appointment

"H A H" was appointed to a lectureship at £750 per annum as from December 12th 1921, and has been assessed to pay £61 10s income tax for the period to April 5th 1922 Is this correct? He was previously assessed in another district at the rate of £800 per annum for the year 1921, up to November of that year

*** The sum of £61 10s is correct provided that "H A H" has had all his personal allowances from the assessment on his *previous earnings*, we gather from the inspector's letter that this is the case The only possibility of any adjustment being due to "H A H" is that the previous assessment should be for the period April 5th (and not January 1st) 1921, to the date in November as from which his former appointment terminated "H A H" might find it advisable to obtain particulars from the inspector who dealt with that liability setting out exactly how the duty he paid for 1921-22 in that district was calculated

LETTERS, NOTES ETC

Obstinate Nasal Catarrh in an Infant

Dr Fred Nash lecturer in osteology University of Sheffield in reply to "G L" (October 18th p 749), writes that the nasal catarrh is probably kept up by the frequent insertion of cotton wool soaked in various things in to the nose, with a mistaken idea of cleansing it All such applications should be stopped and sneezing induced The child will clear the nose by its own efforts and fresh supplies of the bactericidal mucus will be able to act when the *debris of old mucus is* removed by the sneezing To induce sneezing manipulation should be tried first gentle massage of the forehead particularly over the distribution area of the supraorbital nerve with the hand or with hair brush Another way is tickling the orifice with dry *cotton wool taking* care not to poke any up the nose If these manipulations fail success can be induced by gently touching the septum of the nose with a probe covered with a few grains of powdered Castile soap, other substances with the same effect are Hudson's scap ginger, or pepper Only a few grains are required for a baby When the sneeze has occurred the nose should be stroked gently downwards, as if "milking" it

Rapid Sterilization of Hypodermic Syringe and Needle

Dr W Johnson Smith (Bournemouth West), who has recently had occasion to note several instances of bad arms, sends the following simple method of sterilizing hypodermic syringes and needles Place them in an ordinary test tube one third full of water and heat to boiling point a disc of cork as big as a sixpence placed in the bottom of the tube will prevent the point of needle from injury

Cancer in African Natives

Writing with regard to Dr Old's letter published on October 11th (p 689) Dr Charles F Harford (London) refers to the suggestion that malignant disease may be due to bad auto suggestion, and that suggestion and auto suggestion may be employed in their treatment Dr Harford thinks the clue should be followed up and that the leaders in cancer research should widen the scope of their inquiries and make use of the light which may come through modern psychology He adds The psychological factor in malignant disease has been considered by many and in June, 1923, I had some correspondence on this subject with Dr Archibald Leitch In a letter which he was good enough to write to me on June 2nd of *that year he gave various reasons* for doubting the importance of mental stress in connexion with cancer and in the course of his argument he wrote as follows "But above all certain animal species which do not impress us as having mental processes subject to the influence of emotions, contract malignant disease as commonly as and in some cases more commonly than, human beings The *tame mouse*, as you know, kept in laboratories, *well fed, well cared for*, and removed from the vicissitudes *of life that the wild mouse* has to face develops cancer even more *frequently than does the human* being Dogs, cats, horses, and even placid cows develop cancer Where does the mental stress come in?" Needless to say I have given much thought to this interesting reply and I have been led to connect this statement about cancer in animals with *the knowledge* we have about primitive races The animals referred to are domestic animals, and in particular the tame mouse is "*removed from the vicissitudes* of life that the wild mouse has to face" This means that the life of liberty with its sporting chances has been exchanged for the *enforced confinement* of the laboratory Is there not a close analogy between these and the primitive races who have too quickly exchanged the habits of generations for the artificial life of a *civilization* strictly European in pattern? In each case there has been a violent dislocation of instinctive forces with greater liability to interference even with physical processes

Dental Skiagrams

Sir John O'Conor (Buenos Aires) writes As complement to my note published in the British Medical Journal, August 16th (p 299) I should be obliged if you could allow me to state that I have every hope that within a short period, as confirmatory diagnostic routine, we shall see in every well appointed clinic radiological general examination of the teeth linked with exhaustive logical, etc , examination of the blood

A Surgical Sling

Dr J M Dewar (Edinburgh) informs us that a patient of his, a partially disabled ex soldier, has recently patented an adjustment for carrying surgical slings which eliminates strain on the wearer's neck It is in the form of a waistbelt *fitted with* adjustable brace straps (each bearing a flat hook), which fit into slides on an ordinary sling The weight is thus hung from the shoulders and equally distributed When adjusted it remains firm and there is no discomfort, such as is caused by a slipping knot The adjustment has been worn *for* seven months with comfort to the wearer, who formerly suffered pain and inconvenience from pressure on the neck

A Death Certification Problem

Dr H L Pearson (Newcastle) writes I recently attended a young primipara in a premature labour—about the eighth month She gave birth to a *live child*, which, however, lived for only fifteen minutes The features were Mongolian in type the right forearm was deformed, and *there was only one bone* of *limb arising from* the centre of the pelvis The child resembled a "Punch and Judy" doll mounted on a stick *The most* interesting *feature* was the entire absence of anus or external genitalia As the child had had a distinct separate existence a certificate of *death had to be supplied*, raising the difficult question—how to fill up the form

Correction

In the report of the scientific meeting of the Oxford Division published *last week at page* 815, for "fourteen" (col 2, fourth line from top) read "four"

Vacancies

Notifications of offices vacant in universities, medical colleges, and of acting resident and other appointments it has been will be found at pages 40, 41 44, and 45 of our advertisement columns, and advertisements as to partnerships, assistantships, and locumtenencies at pages 42 and 43

A short summary of vacan posts notified in the advertisement columns appears in the *Supplement* at page 179

EPITOME OF CURRENT MEDICAL LITERATURE.

Medicine.

350 Total Heart-block due to Gumma

G J VAN DEN BOVENKAMP (*Nederl Tijdschr v Geneesk*, September 20th 1924 p 1502) states that total heart block is the condition in which no impulses pass from the sinus to the ventricle The latter then contracts regularly by itself with a frequency of about thirty beats a minute while the sinus contracts with much greater frequency The cause of the condition is to be found either in arterio sclerosis of the vessels supplying the bundle of His or in a gumma affecting the bundle It is obvious that a cure is impossible in arterio sclerosis, whereas in a case of gumma recovery may take place Van Bovenkamp records a case in a man, aged 60, who presented a systolic murmur at the apex, a pulse of 33, a systolic blood pressure of 225, and a diastolic pressure of 100 mm Hg The patient complained of shortness of breath was pale, and slightly cyanosed Signs of arterio sclerosis were present in the peripheral vessels, as was to be expected in a man of his age Although there was no history or evidence of syphilis, specific treatment by intramuscular injections of mercury perchloride and potassium iodide internally was instituted, with the result that after a period of partial heart block the pulse rose to 90 and the blood pressure fell to 170 systolic and 95 diastolic, and all the other symptoms disappeared It is not unlikely that the gumma was situated in the bundle of His as it could not have disappeared without leaving a trace of its presence, but it is more probable that its close juxtaposition caused pressure on the bundle or interfered with its blood supply

351 Asthma and other Anaphylactic Idiosyncrasies

K BAAGÖE (*Ugeskrift for Laeger* July 31st, 1924 p 577) publishes investigations which suggest that several apparently independent idiosyncrasies may depend on a common factor In support of this thesis he refers to the case of a 9 year old boy who suffered from attacks of asthma and who also showed a marked idiosyncrasy to eggs As soon as he ate a particle of egg he suffered from nausea and vomiting but on these occasions he never suffered from an attack of asthma To overcome his idiosyncrasy to eggs he was given egg powder in gelatin capsules the amount being gradually increased from a few milligrams to 5 grams All went well till one day when a capsule of egg powder having been broken he inhaled a little in the act of swallowing the capsule A few minutes later his lips and mouth became very much swollen he developed a violent coryza his voice became hoarse and piping, and an attack of asthma set in The author concludes that the boy's idiosyncrasy to eggs was not due to their absorption by the stomach but to nausea caused by oedema of the fauces provoked by eggs in the act of swallowing The sequence of events—first oedema of the mouth with a coryza, then hoarseness, and finally an attack of asthma—suggested that the whole attack including the asthma, was due to urticaria of the respiratory tract rapidly spreading from the mouth and nose to the bronchioles

352. Incidence of Tuberculosis among Nurses and Ward Maids

O SCHEEL (*Tidsskrift f d Norske Laegeforening* August 1st, 1924 p 709) has investigated the incidence of tuberculous diseases among the 2 913 nurses and 1 411 ward maids employed in the communal hospitals of Christiania in the six year period 1918 to 1923 There were 63 cases among the nurses (2 16 per cent) and 23 cases among the ward maids (1 63 per cent) The pleurisies alone were almost as numerous as all the other tuberculous diseases put together and it was significant that of the 27 cases of pleurisy among the nurses as many as 15 occurred during the first year of service There were 8 cases in the second year 3 in the third year 1 in the fourth year, and none in the later years of hospital service The author suggests that these figures may indicate a state of affairs requiring reform A young probationer who may have come from the country and be still negative to von Pirquet's test is given daily hard work of body and mind for nine hours or more and is exposed to infection if stationed in a tuberculosis ward The author's remedy is that every probationer should be tested with the von Pirquet tuberculin reaction and if no reaction to it she should be kept out of contact with tuberculous patients, at any rate for the first year

353 The Contagiousness of Lethargic Encephalitis

G STIEFLER (*Wien Klin Woch*, August 28th 1924 p 850) has seen twelve examples of the transmission of the contagion of lethargic encephalitis In six infection was probably caused by direct contact including three cases in which there was a familial or house infection In five cases there was probably indirect contagion through a healthy third person, and in one case it was uncertain whether the contagion occurred directly or indirectly The incubation period in the six cases of direct contagion ranged between six and twenty one days Of the infecting cases eight were in the acute stage and four were in the late stage, including three in which an acute exacerbation occurred Those who deny the possibility of transmission of lethargic encephalitis may be reminded of the epidemiology of acute poliomyelitis, which for a long time was not regarded as contagious until it was at last proved to be so, mainly owing to the investigations of Ivar Wickman In view of the contagiousness of lethargic encephalitis isolation should be carried out as early as possible, both in acute cases and in chronic cases during a relapse

Surgery.

354 Acute Osteomyelitis of the Ilium in Childhood

P BUONSANTI (*Arch Ital di Chirurg* September 1924 p 1) publishes four cases of this rare condition—how rare is shown by the fact that out of 170 cases of osteomyelitis seen by him in the last fourteen years these four are the only iliac cases he has encountered. Full details with skiagrams are given of three of the cases, and a bibliography of some twenty references is appended As in other cases of osteomyelitis the *Staphylococcus aureus* is usually the causative agent, and in half the author's cases there was a history of previous trauma Diagnosis is very difficult owing to the deep-seated position of the lesion, and radiography apart from showing a definite periosteal reaction does not help much in distinguishing it from new growth Owing to the ease with which metastatic visceral lesions are set up the disease is of marked gravity and the mortality high Early treatment of the diseased bone is essential and when the sequestrum is immersed in pus it should be removed In the author's cases the osteomyelitis started primarily in the ilium Grouping the statistics of 1 469 cases of osteomyelitis only 23 were localized in the ilium Osteomyelitis may be called a 'furunculosis of bone since the staphylococcus plays such a prominent part in its causation In the fourth case the boy suffered from cutaneous furunculosis which might have been the starting point of his osteomyelitis The internal surface of the ilium is more vulnerable to osteomyelitis than the external, the pelvic organs do not seem to be affected as a rule in osteomyelitis of the ilium and in metastasis He concludes that vaccine therapy has not given particularly good results in these severe cases, but should be tried.

355 Tumours of the Carotid Gland

A BIPLEX (*Deut Zeit f Chir* July 1924 p 384) has collected 90 cases of tumour of the carotid gland including one of his own and places them in two groups In the first group the tumours are benign in character and more or less closely resemble the normal carotid gland in structure It is uncertain, however whether these growths are merely hyperplasia or examples of true blastoma and for this reason stroma appears to be the most suitable term to apply to them The second group consists of malignant growths which invade the surrounding tissues Regional metastases are rare and distant metastases have hitherto not been observed Severe symptoms are exceptional and in many cases the patient seeks advice on cosmetic grounds The diagnosis is difficult and can hardly ever be made except by exclusion It is important however to remember the possibility of these tumours owing to the prognosis and indications for operation The treatment is purely surgical Operation however should only be undertaken when the tumour is small or the pain is very severe and there is suspicion of malignancy Only about 13 per cent of those operated on recover this unfavourable result being largely due to following circumstances The common internal carotid artery is removed in 70 per cent of all cases of which a quarter develop hemiplegia which in about 50 per cent In 20 per cent the vagus is resected half the cases developing deglutition bronchopneumonia The other deaths are due

an embolism, sepsis following operation, haemorrhage from slipping of a ligature, and intercurrent disease Apart from hemiplegia and shock, the most frequent sequelae of the operation are narrowing of the pupils, paralysis of the vocal cords, hoarseness, and difficulty in swallowing Birman's patient was a man, aged 54, who had noticed a swelling on the right side of the neck for five years without its having caused any symptoms It was only within the last few weeks before consulting Birman that there had been a rapid increase in its size, with a dragging sensation on the right side of the neck The patient had never been hoarse, and only wished to have the tumour removed for cosmetic reasons The growth, which was about the size of a hen's egg, was removed after ligature of the right internal carotid Two days later left hemiplegia developed When seen three months later the patient was able to walk without support, but had only a little movement in the left arm and complained of occasional epileptiform attacks Histological examination of the tumour showed that it was a hyperplasia of the carotid gland

353 Snap-finger and Polyarthritis

J HELWEG (*Ugeskrift f Laeger*, July 17th, 1924, p 546) notes that, while in the healthy snap finger seems to occur only in connexion with prolonged trauma inflicted by such acts as gripping the handle bars of a motor bicycle too firmly, this condition may arise almost spontaneously in the subjects of polyarthritis, whose tissues appear to be peculiarly vulnerable in this respect Among 413 cases of polyarthritis treated at the author's hospital in the period 1918–23, there were 21 with a record of snap finger Since he began to study this condition intensively the author has found it often in the subjects of polyarthritis, 11 out of 23 cases seen since January 1st, 1924, showing one or more snap fingers In many cases of polyarthritis it was the snap finger, rather than the articular changes in the fingers, which caused pain, interfered with the usefulness of the hands, and was responsible for the swelling As in healthy persons, the subjects of polyarthritis develop snap finger most readily when prolonged pressure on the palm of the hand is produced by such acts as resting heavily on a stick If this condition is neglected, a stage may be reached when the finger ceases to snap because the fibrous infiltration of the tendon and its sheath has become so great that movements of one in relation to the other are no longer possible This stage is not reached simultaneously by all the snapping fingers, some continuing to snap after others have become silent Early in the disease the most troublesome symptom is the pain felt at rest as well as on movement, later, the purely mechanical limitation of the finger movements gives more trouble The author insists on the importance of prophylaxis—that is, avoiding acts calculated to injure the hands of the subjects of polyarthritis Such prophylaxis may also prevent the further development of the disease, but, as one of the author's cases shows, transferring a walking stick from one hand to the other, because the fingers of the first hand have begun to snap, may merely mean provoking the disease in the other hand Massage is usually effective in banishing pain and tenderness, even in chronic cases in which great infiltration of the tissues has occurred This treatment also increases the range of movement of the fingers The author refers to operative treatment in no flattering terms.

Therapeutics.

357 Metallic Mercury Suspensions in Treatment

H N COLE, J G HUTTON, J RAUSCHKOLB, and T SOLLMANN (*Journ Amer Med Assoc*, August 23rd, 1924, p 593) discuss in considerable detail the therapeutic results of the intravenous and intramuscular injections of metallic mercury suspensions, with especial reference to the use of mercodel," "uration of mercury with glucose in the LETTEfive They found that intravenous produced a rapid disappearance

OBSTINATE NASAL Cas of primary syphilis, prompt

Dr IAN MARSH lecturer in ossions, and improvement in the n reply to G L (October 18th observable within a day or catarrh is probably kept up by the lapses occurred unless the wool soaked in various things into in six injections being nea of cleansing it All such applica e amount of mercury and sneezing induce? The child will c ut was much greater efforts and fresh supplies of the bacteria cts on the kidneys to act when the debris of old mucus is rem to induce sneezing manipulation should seemed to be some mas age of the forehead particularly over the nto severe and of the supraorbital nerve with the hand or w the repeated Another way is tickling the orifice with dry cotton y reactions care no to pole any up the nose If these manipul similar sneezing can be induced by gently touching the sep nt They

therefore consider the risks too great to justify at present the therapeutic use of this suspension They give details of the treatment of 23 cases to illustrate their contentions.

358. Treatment of Epidemic Encephalitis with Trypaflavine.

BUSS and PELTZER (*Deut med Woch*, July 25th, 1924, p 1014) confirm an earlier publication by Buss in which he showed that intravenous injections of trypaflavine were remarkably effective in the early stage of epidemic encephalitis The authors' present paper includes a detailed record of sixteen cases, many of them severe, in which trypaflavine was given with more or less good results even when, as happened in some cases, the disease had lasted for some time before the treatment was instituted The usual dose of trypaflavine was from 5 to 15 grams injected every day, in one case, which terminated in recovery, as many as forty four injections were given over a period of three months, a total of 400 c cm of the 0 5 per cent solution of the drug being given in this period This was the only case in which the injections seemed to provoke bladder symptoms Though in none of the published cases was the daily dose of trypaflavine more than 20 grams, the authors recommend doses of 20 to 60 grams a day by intravenous injection They suggest that timid dosage comparatively late in the disease may well be responsible for the lack of faith in the efficacy of trypaflavine in this disease

359 The Action of Digitalis

H VAQUEZ (*Arch Mal du Coeur, des Vaisseaux et du Sang*, October, 1924, p 609) reviews modern theories of the action of digitalis, the indications for its use, and the method of prescribing it He remarks that the collection of digitalis leaves is particularly unsatisfactory, many specimens of the drug are almost inert owing to improper methods of collecting and drying the leaves, which contain oxydases capable of producing profound chemical changes in the glucosides should fermentation occur He finds "digitaline cristallisée" (Nativelle, 1868) still the most reliable preparation Vaquez advances several objections to standardization of the infusion and tincture by animal experiment, and asserts that advances in our knowledge of the action of digitalis have been due to clinical observation rather than to physiology He maintains that Lauder Brunton's description of the phases of the action of large doses of digitalis still holds good, except that he was in error in stating that the drug is diuretic even in health Vaquez points out that digitalis acts directly on the myocardium, and when this is damaged digitalis may interfere with the transmission of the impulse from auricle to ventricle, causing pulsus bigeminus and extra systoles by increasing the muscular irritability When this is very marked it may indicate disease of the myocardium or of the bundle of His and necessitate a grave prognosis Vaquez objects to the term "cardiac tonic" as applied to digitalis, and observes that Harris has described three phases in its action (1) Diastole and systole are both prolonged, without augmentation of systolic contraction or of the volume of blood The heart is "slowed," probably as a result of action on the sinus, this is of small value in relieving the circulation (2) Systole becomes slower and more forcible, the quantity of blood poured into the aorta is increased, and the intraventricular pressure rises At that moment disturbance of conduction may be observed (3) The heart beats are accelerated, the quantity of blood is diminished, and intraventricular pressure falls this is the toxic phase Study of electrocardiograms has thrown light on the action of digitalis, but the ultimate proof is clinical The promiscuous prescription of digitalis for every form of cardiac arrhythmia, whether organic or purely functional, is unjustifiable Vaquez insists that digitalis is of little value in mitral regurgitation until cardiac dilatation is so advanced that there is definite oedema Similarly in aortic regurgitation digitalis is not indicated until arrhythmia occurs with symptoms of secondary dilatation He holds that the fear that digitalis will raise the blood pressure in these cases is illusory, and may be very prejudicial to the patient's welfare The drug should not be withheld in the belief that it has produced or increased bigeminism or arrhythmia, on the contrary, as the drug acts it is usual for the rhythm to be restored Permanent bradycardia definitely contraindicates digitalis Vaquez considers that the use of small doses of digitalis is forbidden by logic and experience, and that the dangers of its cumulative effect have been exaggerated He cites the case of a man suffering from high blood pressure with cardio renal derangement and generalized oedema who had had 5 drops of digitaline solution daily for a long period without improvement The drug was withheld for ten days, the patient then received 40 drops in one dose, followed by 10 drops on each of the next two days After forty eight hours there was abundant diuresis, and the week he passed 740 ounces of urine and the oedema disappeared

Radiology and Electrology.

360 Radium in Carcinoma of the Uterus.

H Schmitz (*Urol and Cutan Rev*, August, 1924, p 447), from a study of 418 consecutive cases of carcinoma of the cervix treated by radium has come to the following conclusions (1) Patients with carcinoma free from necrosis and of limited extent may be safely given the total radiation dose within the shortest time practicable (2) Patients with extensive and necrosing carcinoma should be treated by fractional doses at definite intervals At the first course a dose should be applied which will arrest the haemorrhage and the necrosis and temporarily check the growth of the carcinoma As soon as the patient has passed the period of radium intoxication the balance of the radiation dose may be applied The danger of radium intoxication is thus reduced (3) Patients with extensive carcinoma almost filling the small pelvis or with large necrosing areas and advanced cachexia should not be subjected to a full course of radium treatment and one should be content to arrest the bleeding by a small dose of filtered radium (4) Recurrences following the application of a correctly measured and full radium dose should not receive further radium treatment as the tissues are now refractory to the rays and have lost their recuperative powers *In such cases ulceration and necrosis of the* normal tissues often follow the reapplication of radium

361 Radium Treatment of Cataract

McKee and Swett (*Amer Journ Ophthalmol* August, 1924, p 587) report upon a series of 25 cases of incipient cataract which were treated by radium A dose of 10 mg hours was applied twice a week for eight treatments, the same dose was then applied once a week for eight treatments and subsequently every two weeks Their conclusions are *that in no case was any definite permanent improvement* obtained Some of the patients said they were better shortly after the treatment but such improvement probably depended upon psychological causes as no alteration such as absorption of the opacities was seen The application of the radium caused no apparent injury to any of the structures of the eye apart from an occasional slight erythema of the lids

362. Diagnosis of Biliary Calculi

P Ligniac and A Devois (*Journ de Radiol et d Electrol* July 1924 p 307) state that French *radiologists* were surprised at the American statistics which showed 80 per cent of successes in skiagraphy of biliary calculi The authors consider that the success of American radiologists is almost entirely due to the fact that while European patients are unwilling to allow more than fifteen to thirty minutes for radiographic examination American patients do not hesitate to go *into hospital for four to eight days for diagnostic* purposes During this period the radiologist has ample opportunity to examine the patient every day as often as he likes, and in any position that he deems necessary, consequently as many as twenty to forty skiagrams may be taken Since the adoption of American methods Ligniac and Devois are satisfied that without special preparation the multiplication of films will enable the great majority of biliary calculi to be demonstrated The authors give skiagrams of three typical cases *in married women* in whom the suspected calculi were demonstrated only after a series of skiagrams had been taken In their third case a deformity of the duodenum diagnosed as due to periduodenitis was shown to result from pressure by a large gall stone which had been invisible previously They conclude that it is not only useful but also essential to take as many films and screenings as may be required for diagnosis

363 X ray Diagnosis of Acute Osteomyelitis

I W O'Brien (*Boston Med and Surg Journ* September 11th 1924 p 484) states that an unqualified diagnosis of this disease by x rays is fallacious The changes taking place are chiefly microscopic and a skiagram is a photographic visualization of the varying densities of a substance or substances exposed to x rays The progress of the disease is too rapid for the production of gross changes in the density of the bone During the past year O'Brien has seen an increasing number of cases of acute osteomyelitis in which he had to report No x ray evidence of bony changes recognized This appeared to act as a deterrent to the surgeon he therefore restates the cardinal signs of acute osteomyelitis, and urges that the diagnosis should be made on the general and local clinical symptoms especially a differential blood count since marked leucocytosis occurs usually within six or eight hours from the onset of pain He adds that x rays are of the greatest value in atypical bone lesions near joints simulating acute osteomyelitis and cites the case of a 15 year old boy with a history of a fall on the knee one week before, followed by pain in the thigh A skiagram showed such gross bony changes that it was evidently either a chronic osteomyelitis or a malignant bone tumour it proved to be a sarcoma The author quotes Starr's observation that 'x rays are of no assistance in early *diagnosis, but qualifies his as follows* With the clinical signs present and an x ray examination that shows no positive bone changes the diagnosis is clinched and surgery is indicated to wait for bone changes is folly

Obstetrics and Gynaecology

364 Dysmenorrhoea and Bicornuate Uterus.

C G Noë (*Nederl Tijdschr v Geneesk*, September 27th, 1924 p 1606), who records an illustrative case states that uterus bicornis is due to a disturbance of development in the second month of intrauterine life during which period the Mullerian ducts are hollow The cause of the dysmenorrhoea frequently associated with a bicornuate uterus is not always to be found in the rudimentary condition as is generally supposed The uterus may be removed under the belief that the symptoms may disappear but the patient returns some time after with the same symptoms as before Noë considers that the cause of dysmenorrhoea associated with bicornuate uterus, when the uterine mucosa is histologically abnormal, is both psychical and ovarian and that when the mucosa is normal and there is an absence of infantilism the cause is entirely psychical In both cases the malformation has no causal significance, unless damming back of the uterine *secretion occurs in the rudimentary cornu in which* case there is a mechanical cause for the condition Not infrequently a bicornuate uterus is associated with other abnormalities, which may lead to a wrong diagnosis Thus a pelvic kidney may be mistaken for an ovarian tumour If the bicornate uterus is not diagnosed the dysmenorrhoea may be attributed to a tumour, and the true condition is not discovered until laparotomy Noë's patient was a nullipara aged 24, who had always had violent pain during menstruation, which occurred every four weeks and lasted about eight days during which she lost much blood The first period had occurred at the age of 14 Several practitioners including a specialist had made a diagnosis of bilateral ovarian tumour On examination by Noë a diagnosis was made of left pelvic kidney right movable kidney and a bicornuate uterus with a rudimentary left cornu Operation which was carried out under sacral anaesthesia confirmed this diagnosis The *rudimentary cornu* was removed As diuresis was not affected nephropexis was not considered necessary

33 The Blood in Pregnancy Toxaemias.

C W O Bunker and J J Mundell (*Journ Amer Med Ass oc*, September 13th, 1924 p 836) have investigated the chemistry of the blood in pregnancy with a view to obtaining some warning sign of impending toxaemia They were surprised to find no appreciable change in undoubted cases of eclampsia Some patients with toxic symptoms, but without convulsive seizures appearing, to be imminent gave evidence of a decided nitrogen retention in the blood and the authors consider that the combination of blood examination clinical picture, and subsequent *examination some months later*, justifies them in classifying toxic cases into eclamptic and nephritic toxaemias They conclude that if nitrogen retention is present in a case of pregnancy toxaemia either in the *case of the non protein nitrogen or of the uric acid it strongly* suggests that nephritis is the predominating factor

366 Radioscopy in Obstetrics

M N Moss (*Minnesota Med* vol 7 No 9 p 526) is an enthusiastic advocate of the use of x rays in obstetrics especially during the last month of pregnancy in the case of all primiparous patients and also of multiparae in whom some problem is present By their use (1) the normality or otherwise of the relationship between the head and pelvis can be determined and thus large head can be recognized and dealt with (2) multiple pregnancy can be discovered (3) the foetal position and presentation can be ascertained (4) a monstrosity may be diagnosed—a point of great importance in the after treatment since if any difficulty is encountered at labour perforat on of the head will be performed in preference to a difficult forceps delivery symphysiotomy, or Caesarean section (5) death of the child can be recognized by the detection of overlapping of the cranial bones which gives the head an irregular outline (6) a certain diagnosis of pregnancy can be made in some obscure cases He adds that x rays used carefully are in no way harmful to the baby and are especially useful in any case in which there is a prospect of difficult labour or Caesarean section

367 Fibromyomatosis of the Corpus Uteri

H L Murray and E Glynn (*Brit Journ of Obstet. and Gynaecol*, Autumn Number, 1924, p 398) describe a case in which the whole of the body of the uterus was the seat of a diffuse fibromyomatous change No isolated or encapsulated tumour nodules were present, the cervix was completely unaffected, and no trace of adenomyomatous tissue was found A similar case has been described by Cullen under the name "general myomatous tendency," but the authors suggest the term "complete fibromyomatosis" Histological examination of the specimen in their case showed remarkable vascularity with numerous capillaries and arterioles of an embryonic or *naevoid type, these conditions are probably associated with* the genesis of the morbid condition The patient, a woman aged 31, had had menorrhagia and aching in the back, hips, and groin for six or seven months, the rounded enlarged uterus was 6 inches long and 5½ inches broad, and together with the appendages weighed nearly 3 lb. Uninterrupted recovery followed the removal of the uterus.

368 Treatment of Severe Dysmenorrhoea

F. A Cleland (*Amer Journ of Obstet and Gynecol*, September, 1924, p 337) has found that in severe dysmenorrhoea the administration of ovarian, thyroid, pituitary, corpus luteum, and mammary extracts, alone or in combination, is no more effective than exhibition of iron, aloes, strychnine, and manganese In 230 cases of severe disabling dysmenorrhoea, in 117 of which the patients were unmarried, he has had good results from an operative treatment of which the essential step is the division of the muscular fibres at the level of the internal os, with the object of causing the nulliparous to resemble the parous uterus One is apt to forget, he remarks, that essential dysmenorrhoea is always cured by childbirth Dilatation to No 10 or 11 (Hegar) having been effected, two lateral incisions about 1/12 in to 1/16 in are made with a blunt pointed bistoury in the internal os, dilatation is now continued to 14 or 15 To prevent subsequent contraction the uterus and cervix are firmly packed with iodoform gauze, which is left undisturbed for eight days The strictest aseptic precautions are, of course, necessary A slight rise of temperature usually occurs on the second day Twenty-nine of the author's patients were only partially relieved, and eight were no better after this operation

Pathology.

369 A Bipolar Theory of Cancer

G W Crile (*Annals of Surgery*, September, 1924, p 289) urges the importance of considering the struggle for survival between the cancer cell and the normal cell, and of studying their nature and structure, so as to discover the physical differences that enable the cancer cell to multiply at the expense of surrounding tissues He compares the phenomena of fertilization with those of malignant cell growth "the whole histologic picture of malignancy indicates that it is primarily nuclear in origin" He believes that as the process of cancerous cell division is analogous to the segmentation of fertilized cells certain facts show that cancer falls within the domain of the electro-chemical, or bipolar, theory which is said to apply to normal living processes Certain analogies exist, according to Crile, between cancer and pyogenic infection Neither process usually attacks tissues of "high oxidative capacity," such as heart muscle, voluntary muscle, cerebral cortex, normal thyroid, liver, kidney, or spleen, they rather attack regions where the "cellular defence" is weaker Once the invading force of cancer cells or pyogenic organisms has passed the first line of defence it takes the path of least resistance—namely, the lymph channels and connective tissue—*rather than attacking solid cellular organs* Both cancer and septic infection are opposed by vigorous metabolic activity in the defending structures Crile has come to the conclusion that (1) the difference between the living and the non-living tissues depends on the accumulation of free energy on the di-electric lipoid films which surround the nucleus, the cytoplasm, and the numerous spherules within the cells (2) the charges are derived from oxidation, (3) intracellular oxidation is governed by the differences in energy potential between the nucleus and the cytoplasm, (4) therefore cellular growth and special function are both dependent upon structure and energy potential This interpretation of cancer assumes that the difference between the cancer cell and neighbouring cells of lower potential is analogous to the difference between the unfertilized and the fertilized ovum The analogy ends with the establishment of cell division, for cancer cells have little or no differentiation Crile states that if this biophysical interpretation be correct *cancer tissue* must fulfil the following requirements (1) the *cancer cells must* have a high storage capacity for electric charges, (2) the conductivity of cancer tissue must show specific variations *from that* of normal tissues—that is, the lipoid films (*a*) of cancer cells, (*b*) of normal cells, and (*c*) of fertilized cells would take electric charges in a direct ratio to the combined surface area of their lipoid films He adds that the investigations of his collaborators tend to establish this theory of cancer

370. The Serological Grouping of Streptococci from Scarlet Fever

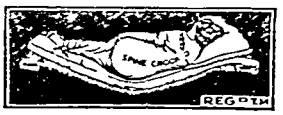
G H Eagles (*Brit Journ Exper Path*, August, 1924, p 199) examined 51 strains of haemolytic streptococci, of these 19 came from cases of scarlatina, 13 from cases of puerperal sepsis, 5 from cases of erysipelas, and 14 from miscellaneous sources Against one or more strains from each of these groups immune serums were prepared by injecting rabbits first with heat killed and later with living organisms The suspensions for agglutination were made up by suspending the deposit from a centrifuged broth culture, twenty four hours old, in broth of pH 7 6, shaking vigorously, and standardizing to a fixed opacity All serum dilutions were prepared with the same lot of broth as was used for making the suspensions The tubes were incubated in a water bath at 56° C for two hours and read immediately The results showed quite clearly that the scarlatinal organisms formed a group of their own, *with only one exception all of the* scarlatinal strains were agglutinated by each of the seven serums prepared against strains of scarlatinal origin, whereas they responded only slightly, if at all, to any of the serums prepared against organisms of non-scarlatinal origin Having in this way confirmed the findings of other workers, he set himself to trace the fate of streptococci in the throats of patients recovering from scarlet fever Throat swabs from 11 such cases were cultured on blood agar at intervals of three or four days, 10 colonies picked, and each tested with an agglutinating serum prepared against a scarlatinal strain On the whole it was found that the haemolytic streptococci tended to diminish in numbers after the second week, but more important than this was the loss in agglutinability which they displayed whereas the organisms which were isolated during the early phase of convalescence generally agglutinated highly with the specific serum, those isolated during the latter part were agglutinated hardly at all The explanation of this may lie in the fact that the *Streptococcus scarlatinae* is replaced by other types of streptococci during convalescence, or that under the influence of antitoxin generated by the patient the *Streptococcus scarlatinae* suffers an injury which alters its specific antigenic properties The author seems to favour this latter view

371 Bacteriology of Scarlet Fever

F A Stevens and A R Dochez (*Journ Exper Med*, October, 1924, p 493) describe the isolation of a group of streptococci which agglutinates with scarlatinal immune serums These streptococci have been recovered from the throats of 65 per cent of cases of scarlet fever during the first week of the disease, and also from the throats of patients at the termination of quarantine—thirty days These carriers of specific streptococci are usually those in whom tonsillar inflammation has not entirely subsided The authors suggest, as a result of their findings, that the complications occurring in scarlet fever are either due to the original scarlatinal strain of streptococci or may be the result of a secondary infection with pyogenic strains of streptococci Both contingencies were shown to occur

372 The Pathogenesis of Purpura Haemorrhagica

M Casten (*Il Policlinico*, October 1st, 1924, p 510), after referring to the numerous classifications of purpura haemorrhagica and the various theories as to its etiology and pathogenesis, quotes two cases observed by him, which in his opinion go a long way towards supporting the nervous theory of its origin Both patients were the subjects of uterine sclerosis, and died of terminal pneumonia At the necropsy marked changes were found in the medulla at the level of the superior lateral sympathetic nucleus, the rest of the nervous system was healthy Gordon recorded a similar case of purpura where changes were noted in the corresponding part of the medulla In all cases of purpura there is probably an infection the toxin of which has an elective affinity for this part of the medulla The symmetry and radicular distribution of the rash is also suggestive of a peripheral lesion There is nothing extraordinary in suggesting that a toxin, like other poisons, should show a preference for one particular part of the body.



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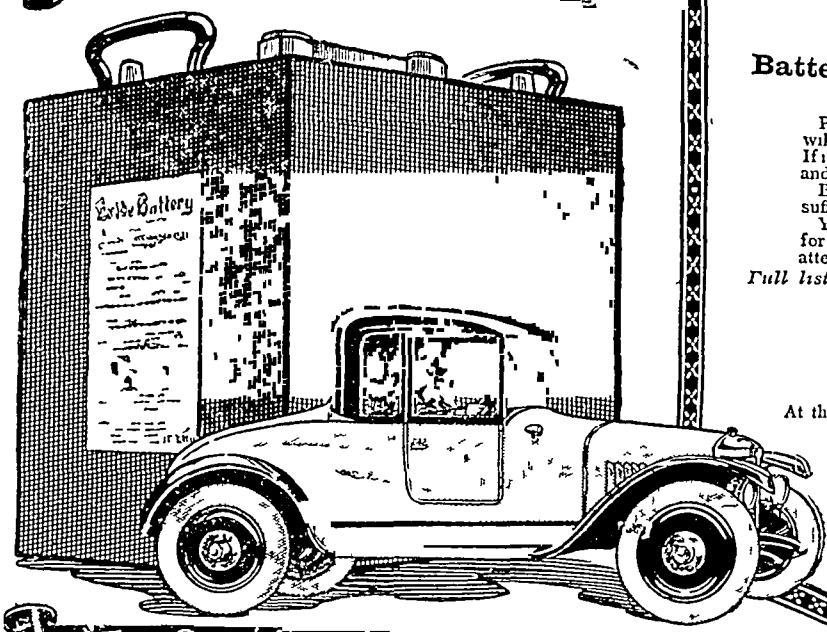
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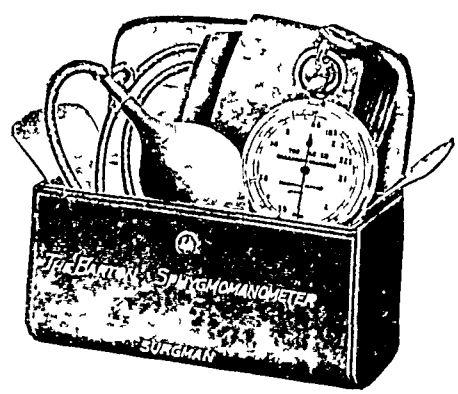
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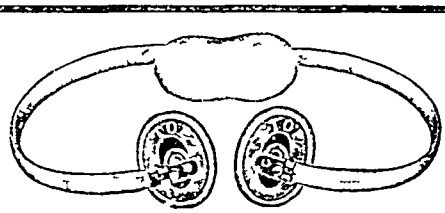
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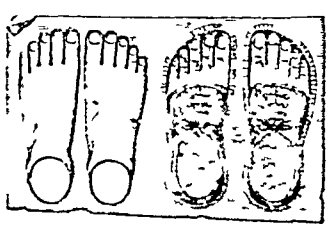
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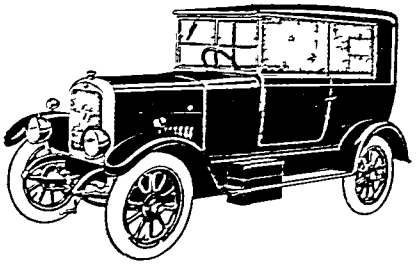
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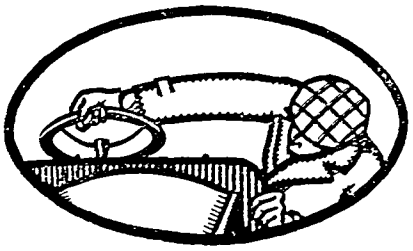
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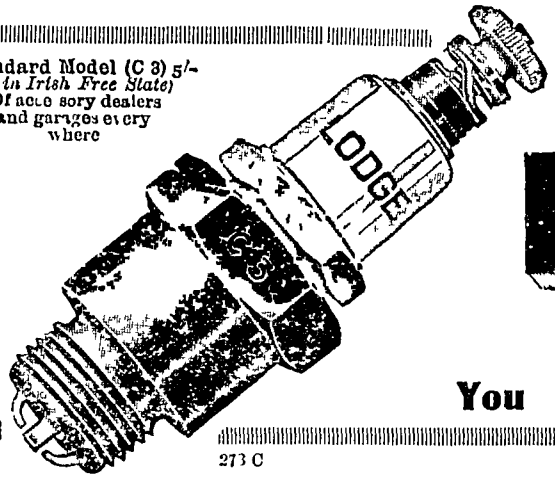
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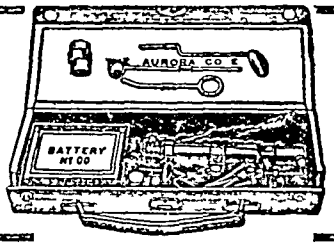
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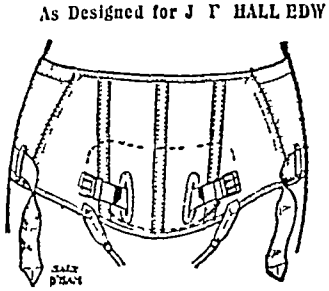
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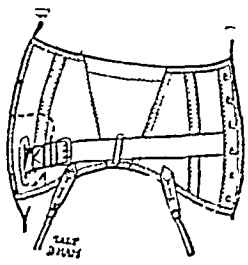
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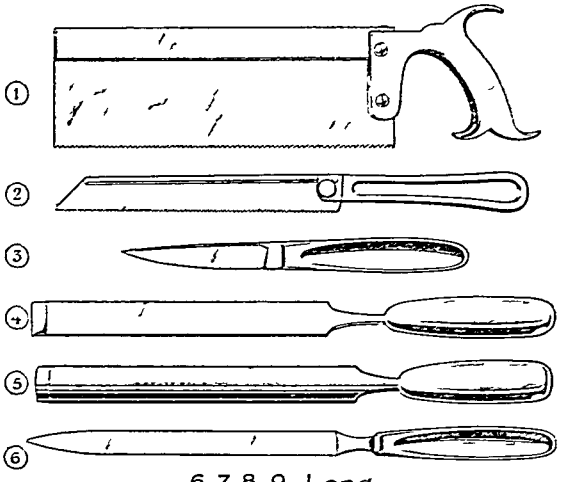
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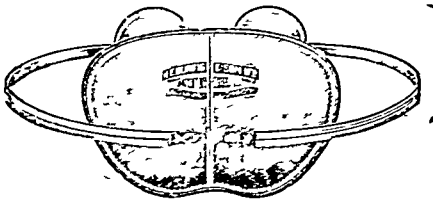
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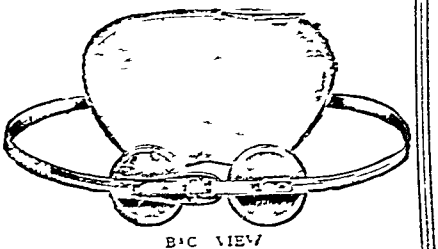
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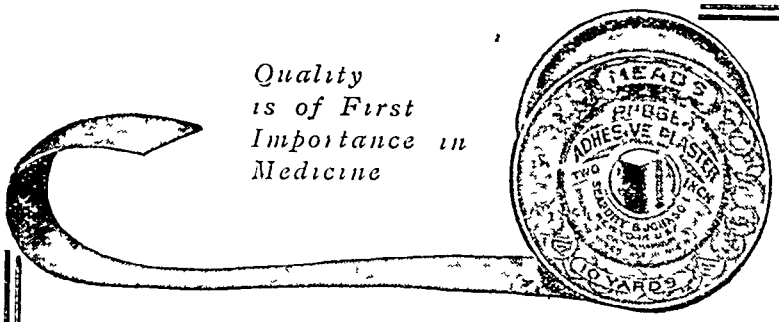
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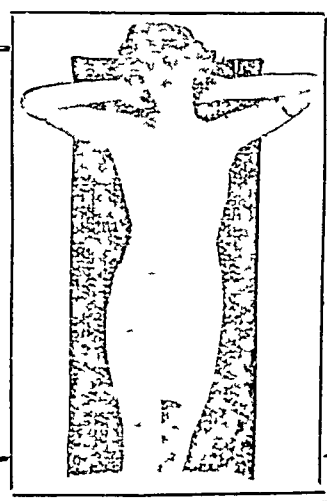
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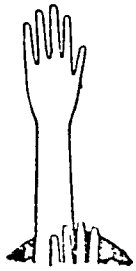
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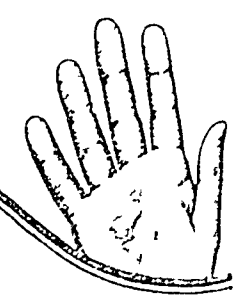
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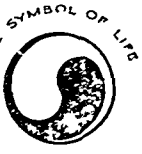
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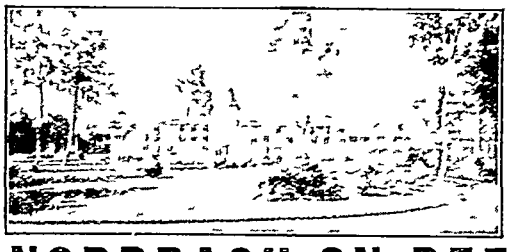
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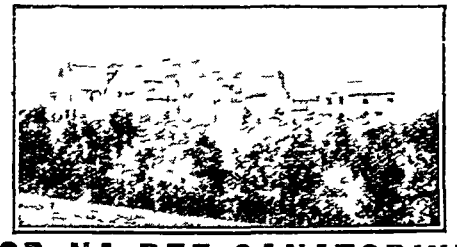
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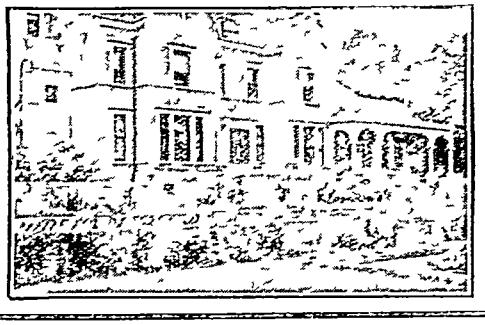
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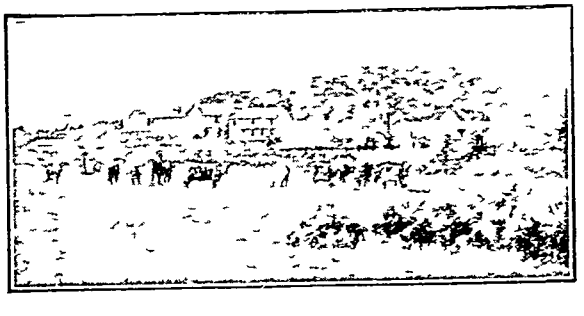
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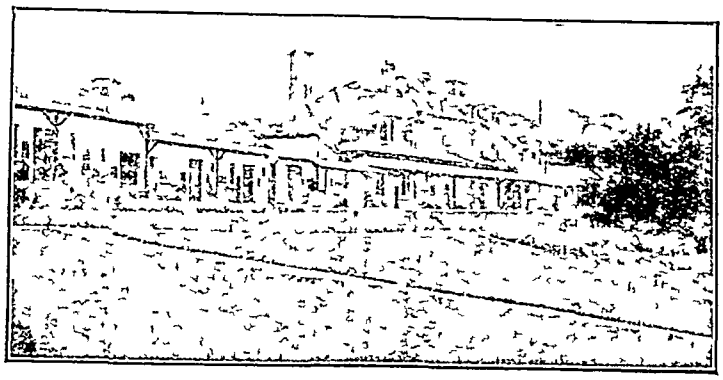
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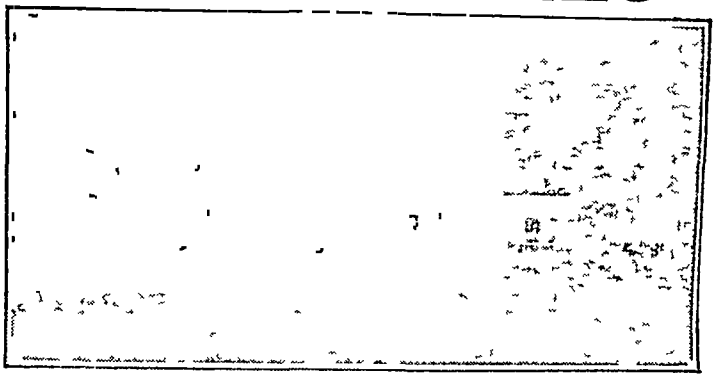
Full day and night Nursing Staff

Resident Physicians ARTHUR H HOFFMAN, M D and G A HOFFMAN, M B

Apply The Secretary, The Cotswold Sanatorium, Cranham, Gloucester

Telephone 22 Painswick Telegrams Hoffman Birdlip

MENDIP HILLS SANATORIUM

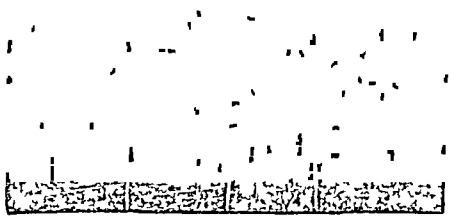


Specially built, facing south 300 acres of Sanatorium grounds—meadow and woodland, sheltered pine avenues Altitude 850 ft Magnificent view for miles south, hot water radiators and electric light in each room and chalet

All forms of treatment, including X ray, Vaccines, and Pneumothorax in suitable cases Trained Nurses Individual attention

For particulars, apply SECRETARY, Hillgrove, Wells, Somerset Telegrams Hillgrove Wells Somerset

Resident Physicians { Dr O MUTHU / Dr T C BRENTNALL



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THE GRAMPIAN SANATORIUM,

Situated in the Upper Speyside district of Inverness shire One of the highest inhabited districts in Britain— The Switzerland of the British Isles Bracing and dry mountain climate well sheltered Sanatorium specially built for the Open Air Treatment of Tuberculosis. Opened in 1901 Elevation 860 ft above sea level Electric light throughout buildings and in rest shelters Fully equipped X Ray Plant All forms of treatment available including Artificial Pneumothorax A few rooms are now reserved for Surgical Cases not requiring immediate operation Terms 1 to 6 Guineas weekly

MEDICAL SUPERINTENDENT FELIX SAVY, M B, Ch B

For particulars apply to the Secretary

CROOKSBURY SANATORIUM.

Specially built for the Treatment of PULMONARY TUBERCULOSIS Recently redecorated and largely refurnished Ideal Situation on the Crooksbury Ridges, amidst pine trees and heather (opposite Farnham Golf Links) in the most beautiful part of Surrey Electric lighting throughout

Medical Director F R WALTERS, M D, M R C P Lond, F R C S, assisted by a competent staff

For particulars, apply to the SECRETARY, Crooksbury Sanatorium, Farnham, Surrey

NORDRACH-UPON-MENDIP SANATORIUM

FOR THE TREATMENT OF TUBERCULOSIS

OPENED IN JANUARY 1899

This SANATORIUM was the first to be established in England for carrying out treatment on Nordrach lines Patients are received for open air inoculation or operative treatment, the latter under X ray control Full Nursing Staff The Sanatorium stands in grand and private grounds of 65 acres at an elevation of 862 feet above sea level surrounded by woods and moorland, the rooms are heated by hot water pipes and lighted by electricity ROWLAND THURNAM M D, DANIEL KENNEDY, L R C S L R C P

For full particulars apply to THE SECRETARY, Nordrach upon Mendip Sanatorium, Blagdon, near Bristol Telegrams "Nordrach, Blagdon"

PRIOR PLACE SANATORIUM - HEATHERSIDE, CAMBERLEY.

Recently opened for the Treatment of PULMONARY TUBERCULOSIS

Well situated on high ground and surrounded by pines and heather

Resident Medical Superintendent DR H O BRANFORD late Medical Superintendent, King Edward VII Sanatorium, Midhurst to whom applications for particulars may be made

VALE OF CLWYD SANATORIUM.

This Sanatorium is established for the treatment of Tuberculosis of the Lungs and of the Pleural Cavities. It is situated on the midst of a large area of park land at a height of 450 feet above sea level on the south west slopes of mountains rising to over 1,800 feet which protect it from north and east winds and provide many miles of graduated walks with magnificent views

Trained nursing staff day and night X Ray apparatus. Treatment by Artificial Pneumothorax in suitable cases. Electric lighting in every room. Heating by Radiators

For particulars apply to the Medical Superintendent H MORRISTON DAVIES M.D., M.Ch.Cantab F.R.C.S. Llanbedr Hall Pathin N. Wales.

PALACE SANATORIUM, MONTANA-SUR-SIERRE

Tuberculosis Cure Station, 5,000 feet high, SWITZERLAND.

Accommodation for 100 Patients.

Principal Resident Medical Officer BERNARD HUDSON M.D. (Cantab) M.R.C.P.,
Late Physician to the Queen Alexandra Sanatorium Davos Platz

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ASHOVER SANATORIUM, Derbyshire

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Bracing situation 620 feet above sea-level sheltered from north and east

All forms of recognized Treatment including Artificial Pneumo-thorax available

[illegible] operative

[illegible] large [illegible] eas

For particulars and prospectus apply to Dr STUART F. CHEADLE Resident Medical Supt

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OSWESTRY

(Station Gobowen, G.W.R.)

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LONDON SCHOOL OF HYGIENE & TROPICAL MEDICINE,

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Next Session will commence September 2nd 1924

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BEHNKE METHOD Estab 1882 Cases non resident treated at 39 Earl's Court Square S W 5 and in residence in the Summer holidays at Miss BEHNKE's house on the Chilterns

The method is scientifically correct and perfectly effective —*Guy's Hospital Gazette*

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Personal tuition in all Modern Ballroom Dancing

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Applications to be made to the Secretary who will furnish any additional information required

Preliminary Examinations

The COLLEGE OF PRECEPTORS holds Preliminary Examinations for Medical and Dental Students in London and at Provincial Centres in March June September and December For particulars apply to the Secretary College of Preceptors Bloomsbury Square London W C 1

University of Durham.

The EXAMINATIONS FOR DEGREES Etc., in MEDICINE SURGERY, HYGIENE, and DENTISTRY will be commenced at the University of Durham College of Medicine, Newcastle upon Tyne on December 8th 1924

Full particulars may be obtained on application to Prof R HOWDEN Secretary of Examinations.

Royal College of Physicians

Dr CHARLES SINGER will deliver the FITZPATRICK LECTURES at 5 p m, on November 11th and 13th at the College, Pall Mall East, S W 1

Subject 'The History of Anatomy'

Any Member of the Medical Profession admitted on presentation of card

H M BARROW Bedell & Secretary

Liverpool School of Tropical MEDICINE

COURSES OF INSTRUCTION (lasting three months) for the Diploma and also in Veterinary Parasitology commence about SEPTEMBER 15th and JANUARY 7th —Prospectus from the Hon DEAN School of Tropical Medicine University of Liverpool

Royal Society

GOVERNMENT GRANT FOR SCIENTIFIC INVESTIGATIONS

Applications for the year 19 5 must be received at the offices of the Royal Society not later than January 1st next, and must be made on printed forms to be obtained from the Clerk, to the Government Grant Committee, Royal Society Burlington House London W 1

Workmen's Compensation (SILICOSIS) ACTS

REFRACTORIES IN USTRIES (SILICOSIS) SCHEME

Under the revised Scheme for the Refractories Industries which is about to be issued in accordance with the recommendations of the Departmental Committee on Workmen's Compensation for Silicosis the Home Secretary expects shortly to APPOINT A MEDICAL BOARD to undertake the periodic and other medical examinations required under the Scheme This Board which will have its centre at Sheffield, will consist of two whole time Medical Officers, the senior of whom must have had not less than ten years practice in the diagnosis of respiratory diseases with special experience of silicosis

The scales of salary would be in the case of the senior Medical Officer £900 per annum rising by £50 a year to £1 000 and in the case of the junior Medical Officer £700 rising by £25 a year to £900 The appointments would be for a definite term—not less than three years—and would be capable of renewal but would be subject to termination at the discretion of the Secretary of State Travelling expenses and subsistence allowances would be paid

The salaries &c, of the Medical Board would be payable out of the Refractories Industries Compensation Fund but the Board would work under Instructions issued by the Secretary of State and would be directly responsible to him

Further particulars and forms of application may be obtained from the Industrial Division Home Office Whitehall S W 1 Applications should be made not later than the 9th November 1924

Home Office Whitehall N ovember 1st 1924

The Milroy Lectures on State MEDICINE AND PUBLIC HEALTH

[illegible] ysicians office of

MILROY LECTURE [illegible]

Applications must be addressed to the Registrar, Royal College of Physicians Pall Mall East on or before January 1st and should contain a statement of the division of the subject selected by the candidate

The course must comprise not less than three nor more than six Lectures

The Lecture are to be given on Tuesdays and Thursdays in February or March 1925

A copy of Dr MILROY'S Suggestions on the subject of his bequest and information as to the emolument may be obtained from

J A OLDMILROD M D

November 1921 Registrar

Forster Green Hospital for CONSUMPTION AND CHEST DISEASES, Fortbrein Belfast

MEDICAL SUPERINTENDENT wanted Salary £600 per annum with detached residence, (Furnished

Applications stating age and previous experience together with copies of testimonials to be sent on or before the 15th inst to the Secretary 99 Scottish Provident Buildings Belfast

ROYAL NAVAL MEDICAL SERVICE.

SHORT SERVICE SCHEME.

The Admiralty are prepared to accept applications for entry as SURGEON LIEUTENANTS for Short Service in the Royal Navy

Period of Service—3 years with option to extend for further twelve months

Pay—25s per diem or £456 5s. per annum

Gratuity on discharge—£8 6s 8d for each completed month of service or £100 per annum.

Equipment allowance—£50, payable on joining.

Age of candidates—*Not to exceed* 30 years.

Surgeon Lieutenants on the Short Service Scheme will be considered for transfer to the Permanent Service under certain conditions after six months service

Regulations for entry and form to be filled up by candidates will be supplied on application to the Medical Director General 68, Victoria Street London S W 1

Virol Scholarship in HAEMATOLOGY

The Directors of VIROL LTD offer a scholarship of the annual value of £200 for the encouragement of British research in Haematology

Candidates must be of British birth and other to registered Medical Practitioners or hold approved scientific degrees They must have taken up the study of pathology physiology, or clinical medicine at a recognized Medical School or Laboratory in Great Britain

approved research

For this purpose of the histology, embryology or pathology of the blood corpuscles and haemopoietic organs Serological bacteriological biochemical or clinical investigations will be accepted only when necessary to elucidate or supplement the above

The scholarship will be tenable for one year and renewable for a second year at the discretion of the examiners

In awarding the scholarship regard will be held by the examiners to the following points:—

(*a*) Original work published or intended for publication by the candidate or

(*b*) Evidence of ability and opportunity to pursue original research in Haematology

(*c*) The previous record of the candidate before and after graduation Evidence submitted under [illegible] more than three is purpose [illegible] mined orally and practically of the knowledge of haematology

The examiners are:—

Sir WILLIAM WILLCOX, K C I E, C B, C M G, M D F R C P

Prof ALFRED PINEY M D, M R C P

A KNAVETT GORDON M B

Applications should be sent to Dr KNAVETT GORDON, 10 Bedford Square London W C 1 by December 1st 1924 marked Virol Scholarship in Haematology and must be typewritten They should cover the points mentioned above and evidence of the permission of the director of the institution where the candidate is at present working for his or her entry for the scholarship must be supplied Original testimonials should not be sent in the first instance

The holder of the scholarship will be required to begin research early in January 1925

The candidate will be expected to publish results of the research in a recognized scientific journal

Addenbrooke's Hospital, Cambridge

Applications are invited for the Post of HOUSE SURGEON (Male) The appointment will be for six months from [illegible] £130 per annum [illegible] dry Candidates [illegible] requested to forward their applications to [illegible] qualifications etc together with copies of not more than four recent testimonials to the undersigned on or before Wednesday November 12th, 1924

W H HLAD

November 3rd 1924 Secretary Surg

Bristol General Hospital

The Committee invite applications for the appointment of HONORARY MEDICAL REGISTRAR to the Throat and Nose Department

Candidates, who must be fully qualified and registered, are requested to forward their applications accompanied by copies of testimonials to the undersigned on or before Monday November 17th next from whom further particulars may be obtained

THOMAS W GRIGG Secretary

Cornelia Hospital, Poole

Applications are invited for the post of HOUSE SURGEON Unmarried Salary £130 per annum with board residence and laundry Applications stating age and qualifications accompanied by copies of three testimonials to be sent to the Honorary Secretary, not later than Thursday November [illegible]

HILBERT HALL, Hon Secretary

APPOINTMENTS—Important Notice.

(a) British Islands.

Medical Practitioners are requested not to apply for any appointment referred to in the following table without having first communicated with the Medical Secretary of the British Medical Association, 423, Strand, London, W.C.2.

Town or District.	Town or District.	Town or District.
CONTRACT PRACTICE.		
ENGLAND.	**WALES** (continued)	**PUBLIC HEALTH** (continued)
CANNOCK CHASE AND DISTRICT (Collieries' Friendly Societies' Appointments)	OAKDALE NON (Medical Officer for Medical Aid Association)	KENT EDUCATION COMMITTEE. (Woman Assistant Medical Inspector)
MIDDLESBROUGH (Medical Aid Association for Workmen's Clubs)	OGMORE VALLEY GLAMORGAN (Wyndham Colliery Medical Aid Society) (Workmen's Medical Scheme)	LANARK COUNTY (Medical Officer of Health)
SOUTH BANK & ESTON (Medical Aid Association for Workmen's Clubs)	TONDU & ABERKENFIG GLAMORGAN (Workmen's Medical Scheme)	LINCOLN CITY EDUCATION AUTHORITY (Woman Assistant School Medical Officer)
WALES	**PUBLIC HEALTH.**	NORTHUMBERLAND COUNTY COUNCIL (Woman Assistant Medical Officer of Health)
ABERTRIDWR GLAMORGAN (Windsor Colliery (Medical Scheme))	ARGYLLSHIRE EDUCATION AUTHORITY (Executive School Medical Officer)	PORTSMOUTH EDUCATION COMMITTEE (Whole-time Assistant School Medical Officer)
EBBW VALE NON (Workmen's Medical Society)	CHELSEA METROPOLITAN BOROUGH (Assistant Medical Officer of Health)	SOUTHWARK METROPOLITAN BOROUGH (Tuberculosis Officer)
GILFACH GOCH GLAMORGAN (Workmen's Medical Scheme)	CHESTER LE STREET RURAL DISTRICT COUNCIL (Medical Officer of Health)	STIRLING ROYAL BURGH (Medical Officer of Health, Tuberculosis Officer, and Child Welfare and V.D. Officer, Police Surgeon and Medical Officer of Combination Prison, Diseases Hospital)
LLWYNYPIA CLYDACH VALE PENYGRAIG GLAMORGAN (Workmen's Medical Scheme)	COLCHESTER BOROUGH (Assistant School Medical Officer)	WIGAN COUNTY BOROUGH (Assistant School Medical Officer)
MARDY GLAMORGAN (Workmen's Medical Scheme)		

(b) Colonial Medical Service.

WINDWARD ISLANDS MEDICAL SERVICE (Grenada with Carriacou & St. Vincent and Dependencies)

(c) Overseas Appointments.

Medical Practitioners are requested not to apply to any appointment referred to in the following table without having first communicated with the Honorary Secretary of the Division or Branch named in the second column or with the Medical Secretary of the British Medical Association, 429, Strand, London, W.C.2.

Town or District.	Hon. Sec. of Division or Branch	Town or District.	Hon. Sec. of Division or Branch	Town or District.	Hon. Sec. of Division or Branch
NEW SOUTH WALES (All Friendly Society Appointments.)	Dr. R. H. TODD (Hon. Sec. New South Wales Branch), B.M.A. Building, 20-24, Elizabeth Street, Sydney, N.S.W.	QUEENSLAND (Brisbane Associated Friendly Societies' Institute.)	Dr. J. MARSHALL ALLAN (Hon. Sec. Queensland Branch), Adelaide Street, Brisbane.	VICTORIA (All Institute or Medical Dispensaries.)	Dr. FRANK DAVIES (Hon. Sec. Victorian Branch), Medical Society Hall, 103, Collins Street, Melbourne.
				WESTERN AUSTRALIA. (Contract and Lodge Practices.)	Hon. Sec. Western Australian Branch, No. 8, Barrack Chambers, New South Wales Chambers, St. George's Terrace, Perth.

Address, 429, Strand, W.C.2.
November 5th, 1924.

By order of the Council of the British Medical Association,
ALFRED COX, Medical Secretary.

London Jewish Hospital,
Stepney Green, E.1.

Applications are invited for the following posts:—
RESIDENT MEDICAL OFFICER. Salary at the rate of £150 per annum, with board, residence, and laundry.
Applications for this post should be addressed to the Secretary.
JUNIOR RESIDENT MEDICAL OFFICER. Salary at the rate of £100 per annum, with board and residence; appointment for six months.
Applications, with copies of three recent testimonials to be sent to the Secretary on or before November 21st, 1924. The successful candidates will be required to take up their duties on December 1st, 1924.

The Elizabeth Garrett Anderson Hospital,
Euston Rd., N.W.1.

Wanted fully qualified medical women for the following posts: HOUSE PHYSICIAN, two HOUSE SURGEONS, and an OBSTETRIC ASSISTANT. Board and residence and laundry. Salary at the rate of £50 per annum. Three months' [illegible] visits and [illegible] at the rate of £50 per annum, with board and residence.
Applications with copies of three testimonials to be sent to the undersigned on or before the 15th inst.
[illegible]

Salford Royal Hospital
(and Workhouses).

Application are invited for the appointment of RESIDENT SURGICAL OFFICER (Male) which will become vacant on the 20th January. Salary at the rate of £200 per annum.
The period of appointment is from December 1st, 1924, to December 31st, 1925, with board and residence.
Candidates must be registered under the Medical Act.
[illegible]
without delay.
By Order of the Board,
Salford Royal Hospital, GEORGE RUDDLE,
Manchester. General Supt. & Secretary.
November 3rd, 1924.

St. Mary's Hospitals,
Manchester.

Two HOUSE SURGEONS for the Whitworth Street, West, and High Street, each for a period of six months, commencing in January next. Salaries at the rate of £50 per annum, with board and residence.
Applications, with copies of three testimonials to be sent to the undersigned on or before the 15th inst.
[illegible]

Birmingham Maternity Hospital.

The Committee invite applications for the appointment of HONORARY ASSISTANT OBSTETRIC SURGEON AND REGISTRAR.
Candidates must be [illegible] of the F.F.C.S. England. Full particulars may be obtained from and applications with copies of testimonials should be sent not later than November 21st, 1924, to Hugh C. Ashton, Newhall Street, Birmingham.

Aberdeen Royal Mental Hospital.

Applications are invited for the [illegible] of ASSISTANT PHYSICIAN. Salary £250 per annum, with board, residence, and laundry. [illegible] Preference will be given to candidates who have had [illegible] Further particulars may be obtained from the undersigned.

Royal Edinburgh Mental Hospital.

ASSISTANT PHYSICIAN. [illegible] Preference given to candidates who have had [illegible] Hospital. Commencing salary £250 per annum, with board, residence, and laundry. Applications to be addressed to the Physician Superintendent, Royal Edinburgh Mental Hospital, Morningside, Edinburgh.

Wanted — Assistantship, Locum or Part time work in or near London, by M B B Ch (N U I), now in London Abstainer 2½ years experience Ex H S and R M O 1 year's exp panel and G P Free now Excel testimonials Address, No 5619 B M J Office, 429 Strand W C

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Wanted —Assistant, single Provincial Town in Midlands Busy practice panel and private £300 indoor Usual bond —Address No 5630 British Medical Journal Office 429 Strand, W C 2

Wanted, an Assistant for large Colliery and Industrial Practice salary £300 per annum indoors —Address stating age and all other essential particulars to No 5636, British Medical Journal Office, 429 Strand W C

Wanted by M B, D P H, outdoor ASSISTANTSHIP, with or without view to Partnership, aged 37 Special experience in midwery Can be well recommended —Address, No 5625 British Medical Journal Office, 429, Strand, W C 2

Wanted, M.R.C.S., L.R.C.P., ASSISTANTSHIP, part time employment or Locum, by single man aged 26 R M O General Hospital one year anæsthetist, used to dispensing Excellent references abstainer cyclist Free now —Add No 5225 B M J Office, 429 Strand W C

Wanted —Light Work in pleasant neighbourhood, by G P, aged 61 of quiet habits —Address No 5325 British Medical Journal Office, 429 Strand, W C 2

Assistantship wanted by M B Ch B (Glasgow 1921) woman aged 27 18 months Hospital also G P experience as locum Special experience Gynæcology Anæsthetics dispensing Locum taken Free now —Address No 5610 B M J Office 429, Strand W C 2

Assistantship wanted by M B, Ch B Edin woman aged 25 experienced in post grad midwifery and general practice Good testimonials —Address No 5631, British Medical Journal Office 429 Strand, W C 2

Assistantship required by M B Ch B experienced in panel and private practice willing to do midwifery — Address No 5653 British Medical Journal Office 429 Strand W C 2

Assistant (woman) required for cash practice in S E London Some years experience in general practice Salary to start £150, with board residence Good appearance and pleasant manner necessary —Address Medicus, 11 Bookdale Road Catford S E 6

Assistant (man or woman) wanted indoor, Church of England County town Public Health private panel State age and all other essential particulars — Address No 5521 British Medical Journal Office 429 Strand W C

Assistant wanted to help two two Partners large practice young, energetic cyclist — Address No 5632 British Medical Journal Office 429 Strand W C 2

Assistant, 28 to 30 years of age for old established practice wanted — Apply G M A Ltd, 12, Victoria Street, Nottingham

Assistantship or Locum required by M B B Ch aged 32 married Several years experience in panel and private practice Excellent testimonials Now free — Dr Fawcett 27 Vernon Terrace Manchester Road Sheffield

Assistantship or Locum, preferably in Coast Town required by M B, Ch B Scotsman Aged 29 Experience G P Good testimonial Single —Address No 5614 British Medical Journal Office 429 Strand W C

A M O wanted for Private Mental Hospital in London on Dec 1st 1924 Previous experience not essential —For further particulars address No 5651 British Medical Journal Office 429 Strand, W C

Chauffeuse, nine years' experience, refined smart appearance splendid references Careful driver clean licence used to a doctor's practice long distances Willing to go to any part Please state particulars —Address, No 5615 B M J Office, 429 Strand W C 2

Chauffeuse —Lady desires post as CHAUFFEUSE and RECEPTIONIST ASSISTANT to Medical practitioner Trained Nurse and very domesticated young —Address, No 5652 British Medical Journal Office, 429 Strand W C 2

Doctor, preferably engaged on work during day, wanted to Sleep at Surgery Work practically nil Bed bath, breakfast provided Attendance on patients extra—one evening per week —Address No 5626 British Medical Journal Office 429 Strand W C 2

Gentlewoman, unqualified, seeks post as doctor's SURGERY ASSISTANT Experienced in laboratory work book keeping secretary Willing to help where needed Small salary —Address No 5620 British Medical Journal Office, 429, Strand W C 2

Gentlewoman of 30 desires SECRETARIAL POST, part or whole time, preferably to Doctor or Dentist in London Eleven years exper dispensing and sec Ten months with eminent bacteriologist Excellent testims —Miss K Wilmer Green, Dunkirk, 311 Camden Road N 7

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Partnership or Practice £700 to £1,200 p.a required by experienced middle aged man No objection to panel Good house containing at least 4 bedrooms essential Necessary capital available.—Address No 5634 BRITISH MEDICAL JOURNAL Office 429 Strand

Small Partnership wanted (with scope) or ASSISTANTSHIP with view by [illegible] of the public service Ex-married Licentiate Police general experience DPH available about £800 down —No 5635 B M J Office 429 Strand W C 2

Wanted —Practice or PARTNERSHIP yielding £1,000 to £3 000 a year in or near London or large Provincial Town Necessary capital available.—Apply PEACOCK & HADLEY 19 Craven Street Strand W C 2 (No charge unless sale effected)

Wanted —Practice (£600 or more with scope). Industrial and middle class town panel House to rent. Can put £1,000 down Preferably Midlands —Address No 5609 BRITISH MEDICAL JOURNAL Office, 429 Strand W C 2

Wanted —General Practice yielding from £800 to £1,500 a year in any pleasant Residential District House to let or Apply PEACOCK & HADLEY 19 Craven Street, Strand W C (No charge unless sale effected)

Wanted —Small Practice (£500—£800) with or without panel in S W S E or W districts Good house to rent if possible. Details in confidence to "MEDICO" c/o The Surveyor 21 Bride Lane F C 4

Wanted —Small Practice in Northern or Eastern Suburb of London Capital available —Address No 5605 BRITISH MEDICAL JOURNAL Office 429 Strand, W C 2

Wanted in Country district a General PRACTICE of £1,000 to £2,000 a year House with garden near London or in South of England Kent etc. Applicant has ample means and can buy at once Details received in confidence by 5052 c/o Mr PERCIVAL TURNER, 4 Adam Street Strand W C 2

Wanted, by lady doctor, a PRACTICE in or near London with an income of approximately £1,000 Panel not objected to House to rent if possible.—Full details in confidence to Mr W H GRANT 30 Wigmore Street W 1 (No charge unless sale effected)

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Cardiff, or near —Wanted, an old-established PRACTICE £1,000-£1,500 per annum with good panel Would consider Partnership with succession. Capital available —Address No 5624 BRITISH MEDICAL JOURNAL Office 429 Strand W C 2

Cheshire (Suburban) — Old established Panel 1,000 Income over £2,000 per annum Good house in own grounds Vendor's property Premium 3 years purchase Full details —P B, W A WARRAM, LTD 31 Lady Lane Leeds

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Death Vacancy — Western Suburb General and Panel PRACTICE Receipts £2,500 a year Panel 2 100 Large corner house with garage Freehold for Sale with practice.—Apply PEACOCK & HADLEY 19 Craven Street, Strand W C

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For Sale —(1) Western City Suburban PRACTICE (over £1,000 p.a) and HOUSE easy terms to prompt purchaser (2) Woman's NUCLEUS South West Town (3) NURSING HOME Devon Riviera (for lease) —WESTERN TRIPLE AGENCY Wo dfield Rd., Torquay

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Hampstead, or similar locality —Wanted a small PRACTICE with or without panel Income not less than £500 p.a. House to rent if possible.—Full details in confidence, to Mr W H GRANT 30 Wigmore Street, W 1. (No charge unless sale effected)

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Old-established Catholic PRACTICE (the only one in the town) vacant through death in fashionable Yorkshire Seaside Health Resort. Panel about 1 000 and private practice for sale —Address No 5601 BRITISH MEDICAL JOURNAL Office, 429 Strand

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Bournemouth —In local Harley Street CONSULTING ROOM and use of Waiting Room to Let Dark room available Suitable for Radiologist or other Specialist — Address No 5618 BRITISH MEDICAL JOURNAL Office 429 Strand W C 2

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CORNWALL HOSPITAL, Plymouth
(180 Beds)

Applications are invited for the post of SURGICAL REGISTRAR
Applicants must be registered and hold a Medical and Surgical qualification
Applications, accompanied by diplomas certificates of registration and testimonials must be sent on or before December 1st to the undersigned
H KINGSLEY PEARCE Secretary

St. Peter's Hospital for
STONE, etc
Henrietta St, Covent Garden, W C 2

Applications are invited for the appointment of THIRD ANÆSTHETIST to fill an impending vacancy Normal attendance one afternoon weekly Honorarium £25 per annum Applications together with copies of testimonials should be lodged with the undersigned not later than 10 a.m Thursday, 13th November
BEECHEY ROGERS, Secretary

Chester Royal Infirmary
(200 Beds)

Applications are invited for the appointment of Two HONORARY ASSISTANT ANÆSTHETISTS
Applications stating age and qualifications and with testimonials should be delivered addressed to the Chairman of the Board of Management Royal Infirmary Chester on or before Friday November 28th 1924 Canvassing is prohibited
By order of the Board of Management
J ROWSELL MITCHELL Secretary
Chester, November 4th 1924

The Queen's Hospital,
Birmingham

There is a vacancy for a PHYSICIAN for Outpatients and the appointment will be made early in [illegible] The undersigned will be very pleased to supply further information
HEDLEY LUCAS House Governor

County Borough of
MIDDLESBROUGH
APPOINTMENT OF ASSISTANT TO MEDICAL OFFICER OF HEALTH

Applications are invited for the whole time services of a medical man (unmarried) holding a Public Health qualification Salary £150 per annum with board and lodgings
The candidate appointed will be required to act under the direction of the Medical Officer of Health and to assist that Officer in his duties, including the treatment of cases at the Infectious Disease Hospitals and also as Medical Officer to the River Tees Port Sanitary Authority
Previous experience of Fever and Port work will be a recommendation
Applications, stating age experience, and qualifications accompanied by copies of three recent testimonials, and endorsed "Assistant to Medical Officer" to be sent to the undersigned on or before Friday November 21st 1924
Canvassing in any form will disqualify
PRESTON KITCHEN
Town Clerk's Office Town Clerk
Middlesbrough Oct 31st 1924

Nottinghamshire
APPOINTMENT OF COUNTY MEDICAL OFFICER

Applications are invited for the appointment of Medical Officer of Health for Nottingham Hire from duly qualified persons and preference will be given to those applicants who have already had experience of the work of a Medical Officer of Health
The salary will be £1 200 rising by four annual increments of £50 to £1 100 per annum and offices staff, stationery, and travelling expenses will also be provided
A print of the conditions and duties appertaining to the appointment can be obtained on application to me
Applications giving particulars of experience qualifications, and medical degrees must be forwarded to me together with copies of not more than three recent testimonials marked County Medical Officer of Health, not later than Monday November 24th 1924
County House, H TWEEDALE MEADY,
Nottingham Clerk of the County Council
4th November 1924

Ruthin Castle (Duff House),
North Wales

Wanted, additional ASSISTANT PHYSICIAN with charge of beds Candidates should be about 30 years of age, having done House Office and had subsequent experience of Scientific and Clinical work The post would be held in the first instance for six months (terminable on one month's notice on either side) with the intention of entering into an agreement for a period of years at the end of six months Salary during probationary period at the rate of £700 a year If agreement is entered into then £800 There is no house attached to the post
Applications accompanied by not more than three testimonials to reach the Secretary Ruthin Castle by Wednesday November 19th

Medical Officer and Public VACCINATOR The Guardians of the Poor of the [illegible] Officer
The [illegible] yearly with the usual extra fees for such cases as come within the provisions of the Consolidated Orders
[illegible] Vaccination for are payable under the Vaccination Act
Applications stating age and accompanied by copies of three testimonials of recent date shall be sent to my office in Newport before 5 o'clock in the afternoon of Tuesday November 11th
By Order
19 Quay Street A G HARRISON
Newport I W Clerk to the Guardians.
October 23th 1924

County Hospital, York
(165 Beds.)

HOUSE PHYSICIAN wanted Salary £150 a year with board residence etc
Applications stating age, together with copies of not more than three recent testimonials to be sent to the undersigned not later than the 28th inst
FREDK WALDEN Secretary

There is a vacancy for a HOUSE SURGEON at the new Orthopædic Surgical Department connected with the HERITAGE CRAFT SCHOOLS at Chalfey Surrey £200 per annum with board and lodging Applications, with three copies of three recent testimonials, should be sent to the Secretary Heritage Craft School, Chalfey, Surrey [illegible] November 14th, 1924

West London Hospital,
Hammersmith Road, W 6

Applications are invited for an appointment as SURGEON FOR DISEASES OF WOMEN (for which a present member of the Staff is a candidate) Should he be appointed there will be a vacancy for an ASSISTANT SURGEON FOR DISEASES OF WOMEN for which applications are also invited Candidates must be Fellows of one of the Royal Colleges of Surgeons of England Edinburgh or Ireland

The successful candidate will be required in addition to other duties to undertake such teaching for the Post Graduate College as the Board may approve

Applications accompanied by copies of testimonials should reach me not later than Wednesday November 19th 1924 Candidates must attend a Special Meeting of the Medical Council on Friday November 21st at 4 30 p m and prior to that date call upon and send copies of application and testimonials to each member thereof They must not canvass members of the Board but nevertheless must send copies of application and testimonials to each member thereof and be in attendance at a meeting of the Board at 5 p m on Tuesday November 25th when the election will be made

H A. MADGE Secretary

West London Hospital,
Hammersmith Road W 6

Applications are invited for the post of DERMATOLOGIST Candidates must have degrees from one
General
Member
London
Colleges
Ireland The successful candidate will be required in addition to his other duties to undertake such teaching for the Post Graduate College as the Board may approve

Applications accompanied by copies of testimonials should reach me not later than Wednesday November 19th 1924 Candidates must attend a

monials to each member thereof They must not canvass members of the Board but nevertheless must send copies of application and testimonials to each member thereof and be in attendance at a Meeting of the Board at 5 p m on Tuesday November 25th 1924 when the election will be made

H A MADGE Secretary

West London Hospital,
Hammersmith Road W 6

HONORARY MEDICAL RADIOLOGIST (DIAGNOSIS) required Candidates must be duly qualified Medical Practitioners and have had experience of Radiological work, especially X Ray diagnosis The successful candidate will have full control of and be fully responsible for his department in all matters relating to X Ray diagnosis

Applications accompanied by copies of testimonials should reach me not later than Wednesday November 19th Candidates must attend a Special Meeting of the Medical Council on Friday November 21st at 4 30 p m and prior to that date call upon and send copies of application and testimonials to each member thereof They must not canvass members of the Board but nevertheless must send

when the election will be made

H A MADGE Secretary

Wolverhampton and Midland
COUNTIES EYE INFIRMARY

HOUSE SURGEON wanted It is essential that candidates must possess a knowledge of Refraction work Duties to commence about December 15th There are 50 beds for In patients and large Out patient Department Salary £200 a year with furnished apartments board and laundry

Gentlemen applying should state age and send copies of three recent testimonials to reach the Secretary not later than November 22nd

Wolverhampton EUSTACE LEES
November 3rd 1924 Secretary

The Kensington, Fulham and
CHELSEA GENERAL HOSPITAL,
Richmond Road Earl's Court S W 5

Applications are invited for the posts of SENIOR and JUNIOR RESIDENT MEDICAL OFFICERS The appointments are for six months from Jan. 1st 19.. Salaries —

£100 per annum Senior
£75 per annum Junior

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The D P H is not essential

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Application
Officer st
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South Coast — A General PRACTICE situated in large Coast Town Receipts over £2 000 Panel 1 00 Fees 3 6 upward Excellent house 4 bedrooms etc Premium 1½ years purchase Folio 673

Surrey —Partner required in a market town [illegible] area Plenty of [illegible] accommodated Premises in central position containing 4 bedrooms etc Rent £75 p.a Premium 1 year purchase for one-third share —Folio 900

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Notts — A Middle and working-class PRACTICE (town and country Receipts £1,200 Fees 3 6 upwards Small corner house containing 3 bedrooms etc Rent £30 per annum —Folio 662.

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Sussex Coast—Nearly £800 p a Old established Panel 900 Visiting fees 5/ to 10/ Very few midwifery cases Appointments £80 Good house on lease—Apply, No 7638

Gloucestershire — Over £1 750 p a Old established country PRACTICE Panel over 1 800 Visits to 10/6 Midwifery 2 to 10 guineas Exceptionally good house garage tennis lawn &c to rent £60 p a—Apply, No 7637

Surrey—Partnership About £1 300 Share worth £500 p a, for disposal now half later and ultimate succession Panel 1 600 Visiting fees 3 6 up Few midwifery cases Ample scope—Apply, No 7636

London, N—About £1,500 a year Old established PRACTICE Small panel Appointments about £400 Visiting fees 3 6 to 15/ Good house on lease with garden and garage Can be rented or lease purchased—Apply No 7634

Eastern County—Assistantship with view to Partnership About £3 000 a year One fourth or one third share first at present half later Visiting fees 5/ to 31/6 Panel 1 000 Appointments about £250 Good house to rent—Apply, No 7632

South Coast — Partnership About £2 700 a year Non dispensing small panel One third share for disposal now up to one half later Visiting fees chiefly 10/6 Applicants should be Graduate and F R C S for preference—Apply No 7631

West of England—Easy terms Non dispensing non panel PRACTICE situated in high class suburb of Important town estimated to produce about £1 500 a year Fees 5/ to £5 5s Od Excellent house to let on lease—Apply, No 7627

London, S.E—Over £1,750 a year Old established PRACTICE Densely populated district Appointments Panel 750 Visiting fees 5/ to 21/ Midwifery average £5 5s Corner house ample accommodation, rent £55 on lease—Apply, No 7625

Yorkshire—£2,100 a year Panel 1 170 Visits 4/8 up Midwifery 2 to 3 gns Good house with garage rent £65 on lease Hospital in town Premium 1½ years purchase—Apply No 7619

South-East Coast—Over £2 000 a year Good fees Panel nearly 1 000 House, with am le accommodation and garage on lease a most desirable one—Apply No 7618

South Wales—£ 000 a year Very safe PRACTICE Appointments and Panel about £1 700 Visiting fees 3/6 to 10 Convenient house rent £52 on lease Hospital 50 beds Premium for quick sale £2 000 terms could be arranged—Apply, No 7616

Lancashire—About £1 200 a year Non panel Old established Vendor retiring No midwifery or appointments Fees 2 6 to 10/6 Small house rent £36 including rates and taxes Ample scope for both midwifery and panel Easy terms—Apply No 7612

Home County—Nearly £1 400 a year Old established Good fees Very little midwifery Small panel Good house and garden Introduction as arranged—Apply No 7606

South Coast—For disposal, good practice pa No 1 21s Appo guineas Great scope for increase panel etc Good school—Apply No 7594

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LONDON, W—Well established NON-PANEL Income nearly £2 000 No night-work or Midwifery Premium £5 000 (cash) to include freehold house

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Derbyshire—Partnership Half share of £1 300 Panel 1 200 Appointments £180 Schools near Premium £750

Glos—Country Town Practice of £1 750 in beautiful district Panel 1 850 Appointments £125 Good house with tennis court etc Low rent

North London—Practice of £950 Increasing Panel 800 House in main road, with small garden, can be bought

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North-West London—Vendor retiring Middle class PRACTICE of £600 including 200 panel Great scope for active man Large house can be bought or smaller ones can be had Premium £750

West Riding—Practice of £1 500 Panel 1 200 Opposition's Good house rent £80 Premium £2,000

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Liverpool—Middle and working class PRACTICE of £700 great scope, for 1 0 Very little £300 for quick sale bought cheaply

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tamin[illegible] 6 rooms bathroom etc and ample land attached Rent £86 a year Premium £1 000 half down and balance in 1[illegible] mo th There is a small Hospital (with 6 beds) in the place Sport

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INLAND HEALTH RESORT, SOUTH.—(3) Well-established PRACTICE £1,800, including panel £1,000. House (7 or 8 bedrooms); price £700. Premium for practice £2,400.

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WEST MIDLANDS.—(6) Well-established good-class PRACTICE about £3,400 p.a., in beautifully situated Country Town. Panel about 1,200. Attractive house (6 bedrooms), with very good garden, to be sold. Cottage Hospital and scope for surgery.

LONDON, S.W.—(7) Well-established PRACTICE of £600 to £700 p.a. in favourite Residential Suburb. Panel 750. Not much midwifery. Excellent detached house (6 bedrooms), with good garden, for sale. Ample scope. Premium one and a half years purchase.

EAST ANGLIA.—(8) Old-established unopposed Country PRACTICE, averaging £3,845 p.a., in picturesque part, easy distance of important Town. Panel about 2,200. Good house (6 bedrooms), in grounds about 3 acres, to be sold. Considerable scope for increase. Premium one and a half years purchase.

WEST MIDLANDS.—(9) PARTNERSHIP in old established PRACTICE about £3,000 p.a., in first-rate Country Town. Panel 1,040. Very good house (7 bedrooms). Rent £75 on lease. One half share at two years purchase.

YORKSHIRE (NORTH RIDING).—(10) PARTNERSHIP in old established Country Town Practice about £3,200, in first-class district. Panel 900. Rent of house with large walled in garden £56 p.a. Three-eighths share at first, at two years purchase. Cottage Hospital.

SOUTH WEST OF ENGLAND.—(11) Good-class non-dispensing PRACTICE £1,570 p.a., in desirable Seaside Town. No panel. Very little midwifery. Good house (7 bedrooms) to be sold. Cottage Hospital. Premium one and a half years purchase.

WEST OF ENGLAND.—(12) Well-established PRACTICE averaging £1,240 p.a., in important City. Panel 1,450. Midwifery discouraged. Specially built house (6 bed and dressing rooms). Price £2,000, part on mortgage. Premium for Practice £1,800, to include Fittings.

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FAVOURITE HOME COUNTY.—(14) PARTNERSHIP in well-established Practice, £2,300 p.a., in charming and select Country Town. Panel 1,000. Premium one-half share two years purchase. Cottage Hospital.

NORTH OF ENGLAND.—(15) NUCLEUS of Practice with panel of 1,418 (rapidly increasing), in Health Resort. Very good and well-situated house. Rent £60. Premium one and a half years purchase.

SOUTH MIDLANDS.—(16) ASSISTANTSHIP with view to Partnership in an old established and steadily increasing practice in County Town. Applicant should be London man, aged about 30, and experienced in General Practice.

LONDON, N.W.—(17) PARTNERSHIP in very old-established non-dispensing Practice in one of the best Residential Suburbs. No panel. House to rent. Share worth between £800 and £900 at two years purchase. Option to increase later.

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SOUTH OF ENGLAND.—(22) PARTNER required in very much sold established Practice in Seaport Town. Panel under 3,000. Share worth £700 to £800 at two years purchase. Partner must be keen and energetic. Age not much over 30.

NORTH OF ENGLAND.—(23) Old established PRACTICE of £1,400 p.a. in Industrial District. Panel 1,0[illegible]. Very good house (5 bedrooms) in charming ground, two acres. Practice house and grounds £4,000. Mortgage could be had on house.

LONDON, N.—(24) Recently established "lock up" SURGERY in East Finchley.

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SOUTH WALES.—(26) Well-established PRACTICE, nearly £1,250 p.a., in Country Town. Panel over 500. Fees 5s. to £2 2s. Well situated double-fronted house (6 bedrooms), with large garden. Rent £50. Educational facilities. Premium £1,500.

EASTERN COUNTIES.—(27) Old established PRACTICE £1,805 p.a., in important Market Town. Panel 1,100. No midwifery. Excellent detached house (7 or 8 bedrooms). Very good garden. Cottage Hospital. Premium one and a half years purchase.

YORKSHIRE (WEST RIDING).—(28) PRACTICE over £1,500 p.a., in thriving Industrial Town. Panel 1,500. Good house (5 bedrooms). Rent £80. Premium £2,250.

SOMERSET.—(29) Country PRACTICE £1,100. Panel 800. Good well-appointed 12-roomed house with bathroom. Garden and garage. Educational facilities. Premium £1,100.

EAST COAST.—(30) PARTNERSHIP in well-established PRACTICE £3,800 in rapidly developing Seaside Town. House with 4 bedrooms to rent. Incoming partner should be aged between 30 and 35. Premium two-thirds share £3,000.

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WEST OF ENGLAND.—(32) ASSISTANTSHIP with view to partnership in mixed practice of over £2,800 p.a. in Country Town. Panel 850. One-fourth or one-third share at two years purchase. Applicant should be keen on surgery. Hospital in town.

SOUTH OF ENGLAND.—(33) PARTNERSHIP in good-class non-panel practice of about £2,000 p.a., in beautifully situated country town. Applicants should be Oxford or Cambridge Graduate, not over 30, and preferably F.R.C.S. Eng.

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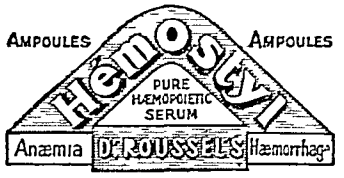
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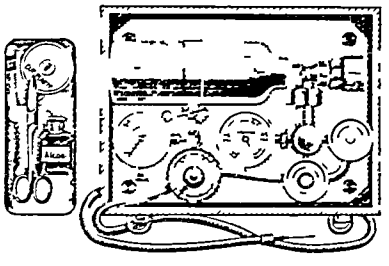
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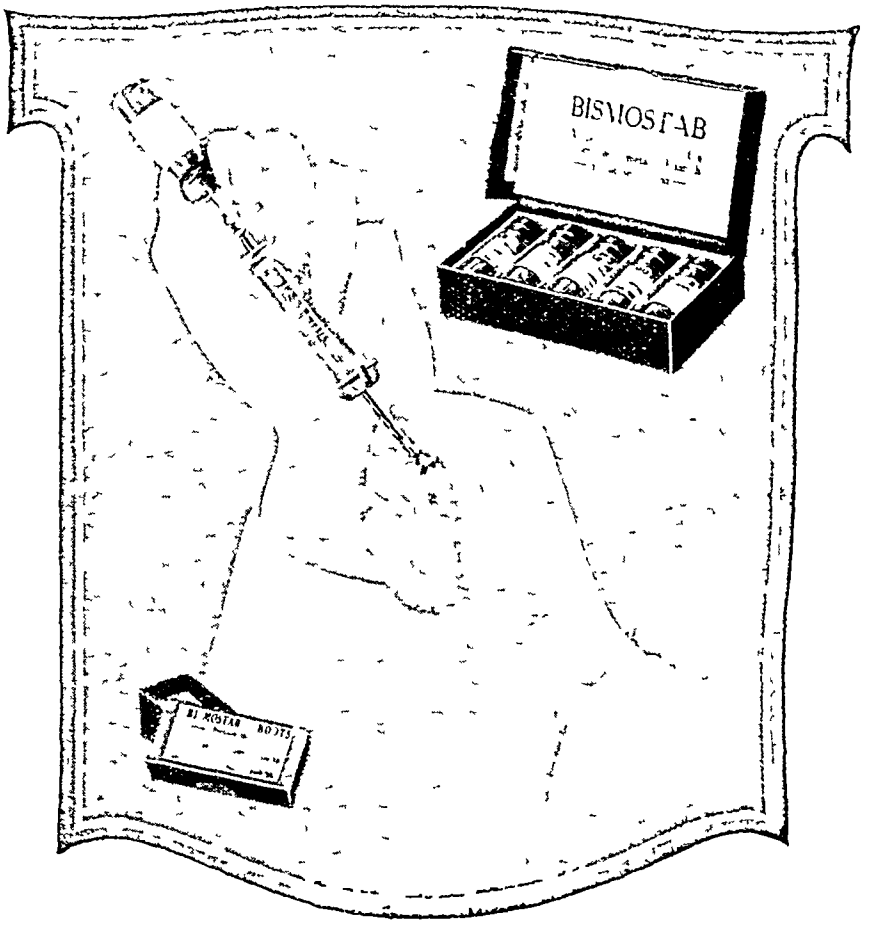
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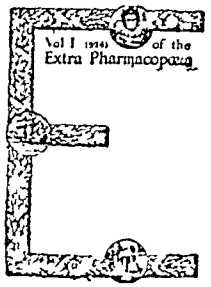
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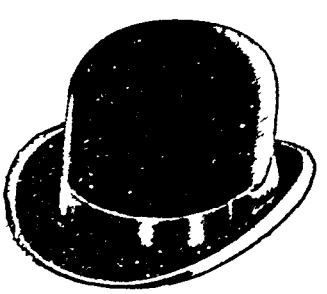
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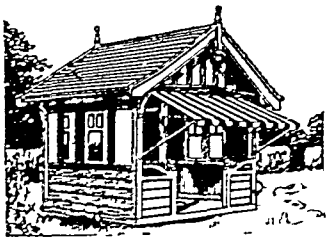
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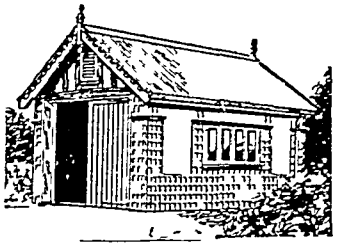
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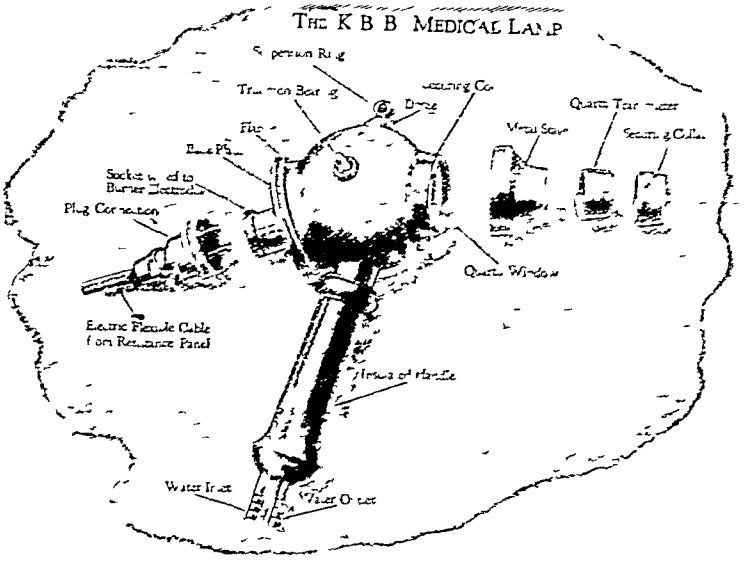
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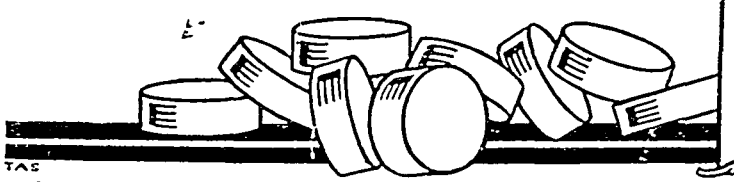
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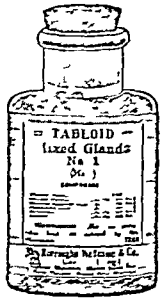
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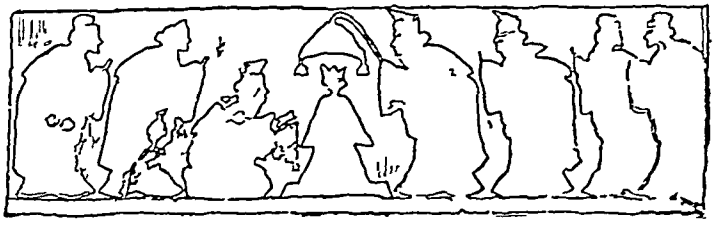
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In the centre of the scene here reproduced the young king is seated on a platform an umbrella held over him by an attendant. On the left kneels Tan Duke of Chou.

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A Lecture on ACCLIMATIZATION TO HIGH ALTITUDES

Delivered to University College Medical Society, October, 1924,

by

J. S. HALDANE, M.D., F.R.S.,
Oxford

The great physiological difficulties met with at very high altitudes in the Mount Everest expeditions, and so far conquered, have recently drawn much attention to acclimatization to high altitudes, but apart from this the phenomena of acclimatization, whether to high altitudes or to other unusual conditions of environment, are of the deepest biological interest and significance. In my book on *Respiration*, published two years ago, I discussed this subject piecemeal, but I wish to take this opportunity of reviewing it as a whole in the light of the additional facts revealed by the Mount Everest expeditions and the recent Anglo-American expedition to the Andes.

It was proved quite clearly by Paul Bert nearly fifty years ago that the abnormal symptoms experienced at very low atmospheric pressures such as those existing at high altitudes, are due entirely to the low partial pressure of the oxygen in the air and consequent abnormally low partial pressure of the oxygen supplied to the tissues by the blood. It took about thirty years before the significance of his experiments and reasoning was generally understood by physiologists, but I think I need hardly go back upon this. He was also well aware that considerable acclimatization to low atmospheric pressure occurs, but as to the manner in which this acclimatization is brought about, or the extent to which it could be carried, his knowledge was limited.

Effects of Low Atmospheric Pressure on Unacclimatized Persons

The effects of a temporary exposure to low barometric pressure can be studied conveniently in a steel chamber such as that originally employed for this purpose by Paul Bert. The air of the chamber is exhausted by means of a pump, and the pressure inside regulated by varying the amount of air which is allowed to leak in through a tap. We can also study these effects during ascents in balloons or aeroplanes, or after comparatively rapid ascents, whether on foot or otherwise, to high mountain altitudes.

On going within a few hours to a barometric pressure corresponding to an altitude of as little as five or six thousand feet we first begin to notice that any considerable exertion, such as walking uphill, is accompanied by unusual panting and increase of pulse rate. At three or four thousand feet higher this effect is much more marked, and is commonly accompanied by other more serious effects, showing themselves after a time even during rest. One of these effects is what is known as mountain sickness. Its chief symptoms are nausea, vomiting, and headache, though several hours of exposure are needed before they appear. With greater altitudes or depressions of barometric pressure these effects become more and more marked, and show themselves in more and more persons. More or less of blueness of the lips can also be observed, and various abnormal mental symptoms. Breathing also tends in many persons to become periodic, and sleep to be disturbed. When a pressure of only half an atmosphere is reached, corresponding to a height of about 18,000 feet, the acuity of vision and hearing begin to be distinctly affected, as well as the power of remembering the events which are happening, and forming a clear judgement about them. This loss of sensory and mental power becomes more and more marked as the barometric pressure is further reduced, until at about 25,000 feet or less a condition of complete helplessness, accompanied by very marked blueness of the lips, is commonly produced after a quite short exposure. Power over the limbs, beginning with the legs, fails, the pulse and respirations become rapid but feeble, consciousness is lost, and the condition is one of impending death from failure in the depth of respiration.

Influence of Acclimatization

These symptoms are wiped out completely if, by substituting oxygen for nitrogen in the rarefied air breathed, the fall in the partial pressure of oxygen in the air is prevented, but they can also be prevented or got rid of to a large extent by acclimatization. Persons who ascend gradually day after day, to heights of 20,000 feet or more will probably never experience mountain sickness or any of the other more formidable effects of great altitude; and persons who have gone rapidly to great height and stayed there for several days will recover from the more formidable effects, provided they have not gone too high for acclimatization to occur before their death. The Mount Everest achievement of this year has shown that persons can even reach the height of 28,000 feet without mountain sickness.

Causes of Low Oxygen Pressure in the Arterial Blood

In order to follow the means by which acclimatization is brought about we must first understand the means by which an abnormally low partial pressure of oxygen is produced in the tissues and particularly those of the central nervous system. Paul Bert and others showed that when air with a normal pressure of oxygen in the inspired air the arterial blood is bright scarlet and its haemoglobin almost completely saturated with oxygen during rest it becomes more or less blue, with the haemoglobin imperfectly saturated, when the oxygen pressure of the inspired air is very low. This is due to the oxygen pressure in the arterial blood being no longer sufficient to permit combination of oxygen to a normal extent with the haemoglobin, since oxyhaemoglobin is easily dissociable. Thus the blood reaching the tissues has an abnormally low oxygen pressure. It may, and does, still contain abundance of dissociable oxygen to cover all the normal consumption of oxygen by the tissues, but the pressure of this oxygen is too low, and the observed symptom are evidently due to the low oxygen pressure and not to mere insufficiency in the amount of oxygen in the blood.

The most natural explanation of the low oxygen pressure in the arterial blood is that the oxygen pressure in the lung alveoli is correspondingly low, and that since the passage of oxygen inwards depends presumably on simple diffusion, the arterial blood cannot be saturated to a higher oxygen pressure than that of the alveolar air. This reasoning, however, takes no account of acclimatization or of the fact that between the alveolar air and blood there is a thin layer of living protoplasm which might upset the reasoning altogether by actively driving oxygen inwards into the blood. The suspicion that this may be the case originated with Ludwig and was transmitted by him to his pupil Christian Bohr of Copenhagen, and thence to a pupil of the latter—myself. It is pretty clear that Ludwig's idea was suggested by the experiments of Moreau a French physiologist on the physiology of active secretion of oxygen by the living wall of the swim bladder. I have in my library Ludwig's own copy of one of Moreau's papers. Moreau's work was inspired by the remarkable discovery made at the beginning of last century by Biot. Pasteur's early master that the swim-bladder may contain almost pure oxygen. In a deep-sea fish the pressure of oxygen may be nine hundred times that in the surrounding sea water. Its secreting epithelial cells are thick and cubical while the epithelial cells of the lung alveoli are extremely thin, but for secretory activity to be of great importance in the lungs it would only be necessary for the secreting cells to overcome an oxygen pressure of less than a four-thousandth of that overcome by the cells of the swim-bladder. In considering acclimatization to high altitudes I shall first discuss the evidence for and against active secretion of oxygen inwards, and its relation to acclimatization.

We must first distinguish the oxygen secretion controversy from another one relating to gaseous exchanges in the lungs, and also emanating from Ludwig. He suggested that the process of oxygenation of blood in the lungs may help to expel carbon dioxide, and one of his pupils published experiments which gave some support to this idea.

With the help of the aerotonometer devised by Pflüger, evidence was, however, brought forward by the latter's pupils which seemed to negative Ludwig's idea. Bohr failed also to substantiate it. Finally, however, Christiansen, *Douglas, and I, with the help of far better methods of blood-gas analysis, showed clearly, about eleven years ago, that* Ludwig was right, and our results are now everywhere accepted, particularly as they explained how the aerotonometer experiments of Pflüger's pupils had been fallacious.[1]

Experiments with Aerotonometers

It was Bohr who first, in 1891, brought forward definite experimental evidence in favour of the oxygen secretion theory.[2] He used an improved form of the Pflüger aerotonometer. The arterial blood, which was rendered incoagulable by the injection of peptone or leech extract, was allowed to flow for a short time alternately in and out of two glass vessels connected together above, and containing a gas mixture with which the blood came into contact, so that free diffusion could occur between the blood and gas mixture *before the blood returned to the animal*. It was found that although the pressure of oxygen in the gas mixture usually *fell below that of the alveolar air*, it occasionally rose distinctly higher. Bohr regarded these results as showing that active secretion of oxygen may occur in the lungs.

The investigation was then taken up by Fredericq.[3] Using a slightly simpler form of aerotonometer, permitting less interference with the animal's circulation, he found that, when sufficient time was given for complete diffusion equilibrium to occur between the gas mixture and arterial blood, the oxygen pressure in the gas of the aerotonometer was, in his experiments, always very considerably below that of the alveolar air. He therefore concluded that there is no real evidence for oxygen secretion, and that the apparent positive results of Bohr were due to experimental error. The results of Fredericq's experiments are definite and unmistakable, and they were fully confirmed by later experiments made by Krogh with a still better apparatus.[4] They certainly showed no evidence of oxygen secretion, but they had a further significance, which to my mind has emerged more and more clearly as our knowledge of respiration and the blood gases has increased. That significance is that neither the aerotonometer method nor the corresponding method of analysing the gases of arterial blood and calculating the oxygen pressure from the results is reliable in testing the theory of oxygen secretion.

On examining Fredericq's results we find that they give two values, one being the pressure of carbon dioxide, and the other of oxygen, in the arterial blood. For carbon dioxide the value corresponds to an excess of about 3 per cent of carbon dioxide in air, while for oxygen it corresponds to a deficiency of about 8 per cent. *If we assume*, as we can do with practical certainty, *that the pressure of carbon dioxide corresponded to the percentage of carbon* dioxide in the alveolar air, it is quite impossible that the deficiency of oxygen can also have corresponded to the deficiency of oxygen in the alveolar air. The respiratory quotient would be a *quite impossibly low one*, particularly in some of the experiments. We thus seem at first sight driven to conclude, as Fredericq did, that even when an animal is at rest, and breathing pure air at ordinary pressure, the oxygen pressure in the blood and alveolar air may be far *from coming into diffusion equilibrium* with one another. But if this is so even during rest what would happen during muscular exertion, when more than ten times as much oxygen has to be taken up *from the alveolar air*? The arterial blood would certainly be of a deep blue colour *which is not the case*, and a simple calculation shows that the absorption of the amount of oxygen which is actually absorbed during muscular work at a high altitude *would be quite impossible*.

It is thus perfectly evident that in these experiments some cause was preventing the gas pressures in the arterial blood passing through the aerotonometer from representing the degree of equilibrium which is reached between the oxygen pressures in the alveolar air and blood passing through the alveoli, so that neither the aerotonometer method nor the corresponding method of inferring the oxygen pressure in the arterial blood from the degree of saturation with oxygen of the haemoglobin in it could possibly give reliable measurements relating to the question of oxygen secretion. We thought for long that this cause was most probably that during the period which elapsed between saturation of the blood in the lungs and its passage through the aerotonometer, or into the blood gas apparatus, a certain amount of oxygen enters into stable chemical combination. The real cause was, however, revealed quite clearly by the investigations published in 1919 by Meakins, Priestley, and myself on the effects of shallow breathing, and by the light which our results threw on the composition of arterial blood.[5]

Uneven Composition of the Alveolar Air

We found that when the breathing is shallow, even if it is very rapid, and even if the oxygen percentage in the mixed alveolar air is above normal owing to great increase in the amount of air breathed with the rapid respirations, unmistakable symptoms of oxygen shortage are produced, and are promptly relieved by raising the oxygen percentage in the inspired air. The evident explanation of these facts is that the air in the different alveoli, instead of being uniform in composition as had *formerly been* assumed, varies in composition at different parts of the lungs. A sample of alveolar air, taken by *the ordinary method* introduced by Priestley and myself, represents, therefore, only the mean composition *of the air in the deep alveoli*. *In* some alveoli the oxygen *percentage must* be much lower than the mean and the carbon dioxide percentage higher, and conversely in *other alveoli*. With shallow breathing this irregularity is much exaggerated, owing to the uneven manner in which *different parts* of the lungs expand, as was pointed out by Sir Arthur Keith.

Owing to the different shapes of the dissociation curves of the oxyhaemoglobin and the bicarbonate, in the forms of which the oxygen and carbon dioxide in the blood are *respectively combined, the irregularity* will affect quite differently the partial pressures of carbon dioxide and oxygen in the mixed arterial blood. This can be seen at a glance on looking at the two curves, which are reproduced side by side in our paper. The carbon dioxide pressure in the mixed arterial *blood* will depend simply on the average carbon dioxide pressure in the alveolar air, since the effects on the blood of excesses of carbon dioxide in some alveoli are neutralized by those of the deficiencies in others. But a deficiency of oxygen brings the blood down the steeper part of the *dissociation* curve, while an excess brings it along the flatter part. The inevitable result is that the pressure of oxygen in the mixed arterial blood is lower, and may be far lower, than that of the mixed alveolar air. This effect will also, it can be seen, be much exaggerated *in its effect* on the percentage saturation *of the* mixed arterial blood with oxygen if the mean oxygen pressure in the alveolar air is low, as at high altitudes. An experiment of Krogh's on an animal breathing a low percentage of oxygen shows this clearly. We have thus a simple explanation of why, *before acclimatization occurs*, there is far more cyanosis than could otherwise be accounted for.

It is an entire mistake to suppose that this want of correspondence occurs only during shallow breathing, though it is much exaggerated by *shallow breathing*. Whether we use aerotonometers or the method of inferring the oxygen pressure of the arterial blood from the degree of saturation of the haemoglobin in it, as shown by blood-gas analysis, the result always is that under normal resting *conditions* the oxygen pressure *of arterial blood is below* that of the mixed *alveolar air*. *In my own case*, for instance, blood-gas analysis showed an oxygen pressure about 14 per cent below that of the alveolar air. Perhaps no experiment brings the facts home to us more clearly than observations on the effects of *holding the breath*. If we distend the lungs with a *deep breath of air*, and then *hold the breath* as long as we can, we find, by repeating the experiment with air enriched with oxygen, that it is not merely excess of carbon dioxide but also as Leonard Hill and Flack first found want of oxygen that has limited the time during which the breath can be held. With the enriched air the breath can be held far longer. Douglas and I found that the current

ment still existed although the mixed alveolar air at the breaking point contained more oxygen than normal, while Davies and Meakins proved by analyses of the arterial blood that at the breaking point the oxygen pressure in the arterial blood is far below that of the mixed alveolar air

The Carbon Monoxide Method of Investigation

The fact that it is quite impossible to obtain reliable results as to the presence or absence of oxygen secretion by the aerotonometer method, or by analysing the arterial blood, led me to introduce a quite different method of experiment This method depends on the fact that oxygen and carbon monoxide compete with one another in accordance with a perfectly sharp and definite physical law when they both strive to enter into combination with the haemoglobin of the blood The equilibrium which is reached depends on the relative pressures of the two gases, so that if we know (1) the percentage saturation of the blood with carbon monoxide when equilibrium is reached and (2) the pressure of carbon monoxide, we can infer the pressure of oxygen It is evident that by this method we can infer the mean pressure of oxygen, not in the mixed arterial blood but in the unmixed blood leaving the lung alveoli This is the method used, first by Lorrain Smith and myself later, in an extremely careful series of experiments, by Douglas and myself with greatly improved technique[6] and later still in the Anglo-American expedition to Pike's Peal by Douglas, Yandell Henderson Schneider, and myself for the investigation of acclimatization to high altitudes[7] For further details of the method I must refer to the original papers, or to my book on *Respiration* I need only give here the results which were reached

Experiments at Normal Atmospheric Pressures

We first investigated partly on man and partly on mice, what happens under perfectly normal conditions at ordinary atmospheric pressure during rest The experiments showed unmistakably that very exact diffusion equilibrium is reached between the oxygen in the alveolar air and that in the blood This is what one would expect on purely physical grounds and the experiments showed clearly the fallacy in the experiments of Fredericq Krogh and others who have inferred from experiments with the aerotonometer or from analyses of arterial blood that sensible diffusion equilibrium does not occur The result is what one would expect on physiological grounds for oxygen secretion if it occurred would be of singularly little use since it could increase but little the normal saturation of the arterial blood with oxygen

We then examined in mice what occurs in fairly prolonged exposure to the oxygen shortage of carbon monoxide poisoning The result was that as the oxygen shortage increased the mean oxygen pressure in the blood leaving the alveoli gradually rose high above that of the alveolar air and even the inspired air With oxygen shortage produced rapidly in man by lowering the percentage of oxygen in the inspired air the oxygen pressure in the blood leaving the alveoli rose only very slightly above that in the alveolar air This is in good agreement with the fact that acclimatization to the low oxygen pressure in the air at a high altitude requires a considerable time

Our next step was to examine what happen during muscular exertion It is during muscular exertion that we should expect to find oxygen secretion coming into play The reason for this inference is that during hard muscular exertion shortage of oxygen occurs very readily and this shortage in so far as it affects the breathing must be due to deficient saturation of the arterial blood with oxygen The breathing during hard muscular exertion becomes usually of the type produced not by mere excess of carbon dioxide, but by a combination of this with shortage of oxygen In other words, the rate of breathing and volume of air breathed increase out of proportion to the rise of carbon dioxide in the alveolar air and finally the percentage of carbon dioxide in the alveolar air falls below normal We have also now direct evidence first obtained by Harrop, that with hard enough work there is a great fall in the oxygen pressure of the arterial blood Further indirect evidence is furnished by the fact that the doing of very hard work is greatly facilitated by air in which the percentage or pressure of oxygen is raised

The physiological function of oxygen secretion (if it occurs) during muscular work is presumably to prevent or diminish the fall which would otherwise occur in the oxygen pressure of the arterial blood Hence it is not to be expected that an actual rise above that of the alveolar air will occur readily during muscular work when active secretion occurs On the other hand it is evident from our observations of oxygen secretion in connexion with carbon monoxide poisoning that the stimulus to oxygen secretion originates in the tissues, not in the lung, and is probably due to some substance carried to the lung or possibly the central nervous system, from tissues which are short of oxygen Hence we thought that the best chance of producing an actual rise of oxygen pressure in the blood leaving the alveoli would be to do exhausting work with only one arm so as to furnish the stimulus to secretion without at the same time so raising the consumption of oxygen in the body as to occasion, apart from secretion, any appreciable fall in the oxygen pressure of the arterial blood Our expectations were justified, and we found a very considerable rise in the mean oxygen pressure of the blood leaving the alveoli over that of the alveolar air This occurred in every experiment and was quite unmistakable It seems probable that the occasional positive result in Bohr's experiments depended on stimuli arising from interference with the circulation in his method of experiment

If the response to want of oxygen by oxygen secretion in the lungs is a normal response we should expect to find that it becomes more ready and powerful with use just as other functions are improved by use Evidence on this point has been furnished by a series of observations made by Professor Briggs of Edinburgh[8] While experimenting with mine-rescue apparatus during the use of which air greatly enriched with oxygen is breathed, he found that men who are in good muscular training receive hardly any benefit from the enriched air during comparatively hard muscular work Men who are not in training receive on the other hand great benefit—a fact which is well known to me from personal experience The difference can be measured easily by analyses of the expired air or alveolar air and these are evidently a good test of physical training It thus seems evident that a man in good physical training can prevent shortage of oxygen in his arterial blood, and active secretion of oxygen is the only known means of doing this

Experiments on Pike's Peal

The final experiments were made during our stay of some weeks on the summit of Pike's Peak at a height of 14,000 ft The results were again quite definite The mean oxygen pressure of the blood leaving the alveoli was found 6 b, after, but not before, acclimatization had occurred at least 50 per cent higher than in the alveolar air, and only a little lower than at sea level Let us see what this result did and did not mean It meant that the mean oxygen pressure of the blood leaving the lung alveoli was 50 per cent higher than in the alveolar air, but certainly not that the mixed arterial blood as we find it in an artery or in blood taken from an artery had almost a normal oxygen pressure or saturation with oxygen The whole of the phenomena of acclimatization are dependent on the continued stimulus of oxygen shortage in the blood as we said again and again in the Pike's Peak report

We thought at the time when the report was written that the shortage was almost entirely due to increased oxidation in the blood during the period which elapsed between its leaving the lungs and reaching the tissues for we did not then know of the irregularity of the composition of the air in the lung alveoli and the consequence of this which I have already pointed out With a lowered partial pressure of oxygen in the inspired air the consequence must be far more marked as already remarked and this accounts for the very marked blueness of unacclimatized persons on Pike's Peak Mealins, Priestley, and I found that in neurasthenic cases suffering from the nervous disturbance of respiration, which makes the breathing

abnormally shallow and rapid (so called "D A H" or "disordered action of the heart"), even a slight diminution of atmospheric pressure, such as produced no appreciable reaction whatever in normal persons, produced the most urgent symptoms when these patients were tested in a steel chamber.

In the persons carefully observed on Pike's Peak—at least in the cases of Douglas, Yandell Henderson, and myself—the shortage of oxygen in the arterial blood was so slight after acclimatization that we could observe no diminution at all in the normal redness of the lips, though we were all very distinctly blue in the lips during the day or two which elapsed before acclimatization, when we were still suffering from mountain sickness. In the many persons who came up temporarily by train, on donkeys, or on foot, the blueness was also nearly always well marked, and sometimes not only extreme, but accompanied by clouding, or even complete temporary loss of consciousness. In unacclimatized persons who were walking up along the railway track and who were not in physical training the cyanosis during the exertion became extreme, and rests were necessary every few steps.

It is well known to mountaineers that persons who are in good training are much less susceptible to mountain sickness than others. In the light of Briggs's observations and their interpretation we can now understand this readily, for persons in good training are also ready to secrete oxygen.

Increased Percentage of Haemoglobin at High Altitudes

I must now pass on to the discussion of other factors in acclimatization. The best, and longest, known of these is increase in the percentage of haemoglobin in the blood. This must help in the following manner. With a higher percentage of haemoglobin in the blood there must be, other things being equal, a larger store of dissociable oxygen in the arterial blood. This is of no direct help in combating the symptoms, which, as we have already seen, are due to deficiency in the partial pressure of the oxygen, but it must help indirectly in the following manner. With a given disappearance of free oxygen in the tissues the pressure of oxygen will not fall so low if there is an increased proportion of haemoglobin in the blood. In this indirect way the mean pressure of oxygen will be kept higher, and it is the pressure of oxygen round the living tissues, and not merely in the arterial blood, that matters.

The extent and the rapidity with which the haemoglobin percentage in the blood increases in different individuals are very variable, and the more essential physiological changes during acclimatization may be almost complete before there is much increase in the haemoglobin. The mean percentage of haemoglobin, however, increases quite regularly with fall in barometric pressure, as was shown by Miss FitzGerald. The importance of increase in the haemoglobin percentage was formerly much exaggerated, at a time when the other more decisive factors in acclimatization were not yet understood, but in the long run, and at very high altitudes, increase of haemoglobin is probably of considerable indirect importance.

Increased Breathing at High Altitudes

I now come to a factor which is certainly of very great importance. Those not familiar with the physiology of respiration and circulation might easily imagine that in order to combat the effects of defective saturation of the arterial blood with oxygen what is chiefly necessary is merely to increase the amount of air breathed, for by this means the pressure of oxygen in the alveolar air and arterial blood can be raised considerably. It is evident also that in persons under greatly reduced atmospheric pressure whether they are acclimatized or not, the breathing is much increased, and more increase in breathing is thus apt to be taken as a sign of acclimatization. But we know now how amazingly delicate is the normal regulation of the hydrogen-ion concentration of the blood, and that this regulation is at once upset with serious effects if, by unnaturally increased breathing, too much carbon dioxide is washed out of the blood. Under the stimulus of want of oxygen the breathing tends to be increased, but this, by washing out carbon dioxide, makes the blood and whole body more alkaline—in other words, produces a state of alkalosis, and since the *normal regulator* of respiration is increase or diminution in the hydrogen-ion concentration round the respiratory centre or centres the increase in breathing from the direct action of want of oxygen is limited, though just at first, before the alkalosis has developed fully, it may be very considerable. The alkalosis also tends to diminish the circulation rate and thus prevent relief which might otherwise be brought by an increase in the circulation rate and consequent rise of oxygen pressure in the tissues.

Although during acclimatization the oxygen pressure of the arterial blood is rising, as already explained, the breathing continues for many days to increase, as shown by the continued fall in the pressure of carbon dioxide in the alveolar air. This increase in breathing cannot, therefore, be due merely to want of oxygen. We followed it closely on Pike's Peak, and in our report attributed it to the gradual development of an acidosis owing to a special action of want of oxygen in stimulating the kidneys to excrete alkali. We had not then realized the alkalosis produced by the slightly increased breathing owing to the stimulus of want of oxygen.

The true facts were revealed in an investigation carried out in steel chambers in London by Kellas, Kennaway, and myself shortly after the war.[9] We found that during the want of oxygen which is immediately produced by exposure to low atmospheric pressure the urine becomes alkaline or much less acid and the amount of ammonia in the urine diminishes greatly, just as in any ordinary alkalosis produced by forced breathing or ingestion of alkali. In other words, the kidneys and formation of ammonia in the body were reacting normally to an alkalosis. The increase in breathing during the process of acclimatization is thus due, not to an acidosis, but to the gradual compensation in a normal manner of an alkalosis produced by the slightly increased breathing caused directly by want of oxygen. As the alkalosis becomes compensated the full effect on the breathing of the slight oxygen want is unmasked more and more, even though the oxygen want itself is continuously diminishing as acclimatization advances. In this connexion I should like to point out that the regulation of the reaction in the body is an active physiological process, and not, as the confused accounts in many textbooks and papers seem to represent, a mere result of the physico-chemical buffering in body fluids, blood corpuscles, etc.

We can thus see why it is that with acclimatization at higher and higher altitudes the breathing during rest is more and more increased, just as in a true acidosis. On Pike's Peak the increase was only about 50 per cent., but on the higher slopes of Mount Everest it would be at least 100 per cent. Graphs constructed by Miss FitzGerald from her observations in connexion with the Pike's Peak expedition in various villages or towns of the Rocky Mountains and elsewhere show the mean decreases in alveolar carbon dioxide pressure and oxygen pressure at different altitudes, together with the increases in haemoglobin percentage. These graphs, which are reproduced in my book on *Respiration*, give us a clear idea of the probable increase in the breathing and haemoglobin during the Mount Everest expedition. But for the tragic death of Dr Kellas from, as appears to have been the case, want of oxygen owing to failure of acclimatization during illness, we should by this time have had full information on the increase of breathing and haemoglobin at great altitudes.

An increase of 100 per cent. in the breathing during rest is noticeable enough, but not uncomfortable. But when the breathing during muscular exertion, such as walking or climbing, is also, as must happen in persons acclimatized at high altitudes, increased by at least 100 per cent., the distress caused becomes very great and at once limits the exertion. I have for long been familiar with this in connexion with observations of the effects of carbon dioxide in mines and submarines and on divers. Owing to a recent discovery by my son, we can now reproduce this phenomenon by causing acidosis in a healthy person breathing ordinary air at sea level.[10] I confess that when he first produced

the acidosis on himself I was almost ashamed to walk with him at a leisurely pace along the streets of Oxford, for he was panting so hard as to attract everyone's attention

We found on Pike's Peak that some part of the greatly increased breathing on considerable exertion was due to the immediate effects of want of oxygen, but comparatively little. Air enriched with oxygen would not give more than very partial relief to the breathing in a person acclimatized to a high altitude, and the benefit might be more than neutralized by the inconvenience caused by the weight of the apparatus. In the case of a person not acclimatized, however, the relief to all the symptoms would be complete if the oxygen was sufficient. He would breathe during exertion just as easily as at sea level, but if he were not acclimatized, and the apparatus failed at an altitude of about 25,000 ft. or even less, he would certainly perish. The cause of death would be a fatal combination of oxygen-want and alkalosis, and the immediate cause would, to judge from our observations in steel chambers, be failure in the depth of breathing.

Acquired Toleration of the Tissues to Low Oxygen Pressure

I now come to a fourth factor in acclimatization. This factor, as it seems to me, has been revealed by the recent Anglo-American expedition to a high altitude in Peru under Mr. Barcroft's leadership.[11] The Peruvian expedition differed from that to Pike's Peak owing to the fact that observations could be made on persons who were natives of the place, or who had been acclimatized for long periods. Owing to improved technique, analyses could now also be made of the gases in arterial blood. The new factor is that persons who have been long acclimatized become able to exist normally with a considerably lowered pressure of oxygen in the arterial blood. Apparently the tissues themselves become acclimatized to the lowered oxygen pressure, and this, of course, diminishes the stimulus to secretion. At any rate numerous individuals were found who were living healthily with their lips and skins of an abnormally bluish tinge, and who became very distinctly pinker when they were moved to a lower altitude or breathed air enriched with oxygen. The haemoglobin of their arterial blood was found to be only about 83 per cent. saturated with oxygen, whereas such a low saturation if it were produced rapidly, as in patients with certain acute lung affections, would be indicative of danger to life.

We are familiar clinically with what appears to be a similar phenomenon, and I have referred to it in my book on *Respiration*. We see persons with chronic emphysema, or certain chronic heart affections, going about and leading a fairly normal life with their lips and skin more or less blue, and there is no doubt that in many of these cases the blueness depends on imperfect saturation of the arterial blood with oxygen, and that the patients in question have become acclimatized to it. This fact has for long obscured the deadly significance of any appreciable degree of arterial cyanosis in ordinary patients who are not gradually acclimatized, and the urgent need, so strongly emphasized recently by Meakins, of combating the cyanosis by continuous enrichment of the inspired air with oxygen or by any other means.

We observed no such cases among acclimatized persons in the Pike's Peak expedition, but this was probably due to the very limited number of persons observed, and the fact that the duration of acclimatization had been so short or the acclimatization so perfect. Had we been able to analyse the arterial blood we should certainly, however, have found a distinct diminution in the normal saturation with oxygen, and a corresponding considerable diminution in the arterial oxygen pressure, for had this not existed the whole of the phenomena would have been quite unintelligible as already pointed out. In the case of Meakins there was after acclimatization in the Peru expedition, a diminution of 4 per cent. in the arterial saturation, and this small difference is just about what we should have expected from the Pike's Peak results.

The Inferences of Mr. Barcroft and Professor Krogh

In his report on the expedition Mr. Barcroft draws what seems to me to be the amazing inference that the blood gas analyses indicated that no active secretion of oxygen exist. I have already given the evidence that it is practically impossible to decide this question directly by means of either aerotonometers or blood gas apparatus, together with a summary of the evidence, both direct and indirect, in favour of the secretion theory. It seems to me that without a shadow of doubt this theory still holds the field completely, though I am sorry to have to differ so emphatically from Mr. Barcroft, to whom physiology owes so much. The secretion theory rests not merely on the direct evidence furnished by the carbon monoxide method, but also on a mass of indirect evidence, part or which I have summarized. The blood gas analyses on members of the Peru expedition seem to me, when these analyses are interpreted in the light of existing knowledge, to afford very strong evidence in favour of the secretion theory, but it is much to be regretted that the carbon monoxide method was not employed. The details of the analyses bear out up to the very hilt, the conclusions of the Pike's Peak expedition. The only observations which at first sight seem to bear out the diffusion theory are the results of determinations by a modified aerotonometer method of the oxygen pressure of arterial blood at sea levels. These results are however, quite inconsistent with the aerotonometer results for animals, and were I am confident, erroneous for reasons which can be surmised easily.

Not only Mr. Barcroft, but also Professor Krogh of Copenhagen has opposed the secretion theory. The time at my disposal prevents me from dealing with the later experimental method relied on by Professor Krogh for determining the rates of diffusion of gases into the blood. This method seems to me fallacious, but the point may be waived for the present. What is essential is that if the measurements are even very approximately correct the aerotonometer results of Frederieq and Krogh are hopelessly inconsistent with the theory that the oxygen pressure of the mixed arterial blood represents the mean oxygen pressure of blood leaving the lung alveoli. While I admire so much of Professor Krogh's work, I think he suffered the misfortune of putting his money on the wrong horse when he definitely opposed the oxygen secretion theory of his former chief, Professor Christian Bohr.

The Mount Everest Expedition of this Year

In the Mount Everest expedition of this year Colonel Norton and Dr. Somervell climbed without oxygen to a height of 28,100 feet, and had slept well at 27,000 feet. But for an affection of Dr. Somervell's throat, and the limited time for return, they could have gone higher, and Colonel Norton actually did climb some distance further up an extremely difficult and dangerous slope. He reports that although the panting on exertion was, of course, very great, he had none of the mental symptoms of serious lack of oxygen. He considers that so far as the physiological difficulties are concerned it is quite possible to get to the top without oxygen, and he doubts whether the advantages of an oxygen apparatus such as that used are sufficient to outweigh the disadvantage.

At 28,100 feet the resting alveolar oxygen pressure would, to judge from Mrs. FitzGerald's graph, be only about 26 millimetres. Arterial blood such a that of the observers on Pike's Peak could even during complete rest only be about half-saturated with oxygen at this pressure apart from secretion of oxygen, and the person to whom it belonged would be black in the face. If considerable alkalosis existed the blood would be more highly saturated, but the alkalosis would in its bad effect counteract the good effects of the increased saturation. It seems to me that with the publication of the Mount Everest results the opposition to the oxygen secretion theory of acclimatization is in a position more hopeless than ever before.

In the Pike's Peak report the author (Douglas, Yandell Henderson, Schneider and myself) expressed the conclusion that though it would be *hopeless* for an unacclimatized person to reach the top of Mount Everest even by aeroplane or balloon without the use of oxygen, there was no known physiological reason why an acclimatized person should not succeed in climbing it. At this point I would like to refer to an unfortunate misunderstanding which arose

crept into a paper (in the *Geographical Journal*, vol lx, p 410, 1922) by the late Mr Mallory He mentioned that he had been told by the Professor of English Literature at Oxford that the physiologists had proved in a pressure-reducing chamber that it was impossible to climb to the top of Mount Everest without oxygen There was evidently some misunderstanding about this statement The experiments referred to were possibly those made on *unacclimatized* persons by Kellas, Kennaway, and myself The Oxford physiologists who have concerned themselves with the subject have never regarded the ascent of Mount Everest as impossible, on physiological grounds, without oxygen, or supposed for a moment that any experiments hitherto made in steel chambers indicated such an impossibility, but it is quite evident that the less complete the acclimatization, the more benefit will be obtained from oxygen In this connexion it would be interesting to try whether acclimatization at the highest camps could not be hastened by administering small doses of an acid salt or of ammonium chloride, so as to get rid of the alkalosis more rapidly than in the natural slow way

The Acclimatization Phenomena as a Whole

When we regard as a whole the phenomena of acclimatization to a low atmospheric pressure we see at once that when acclimatization is complete the organism is still in a physiologically different state from what it was before exposure to the low pressure The breathing is greatly increased, the concentration of the blood in haemoglobin and red corpuscles is also increased, as well as the blood volume, the blood plasma is altered in composition, the blood-forming bone-marrow is increased, and if we could detect them we should probably find histological changes in the lung epithelium All these changes, and probably many more which are not yet discovered, centre, quite evidently, round what may metaphorically be called an attempt to keep the oxygen pressure, and simultaneously the hydrogen-ion concentration, about and within the living tissues constant But the attempt is not completely successful a slight deficiency in both oxygen pressure and hydrogen-ion concentration remains over, and doubtless becomes more appreciable the greater the altitude This deficiency is necessary as the stimulus for maintaining the state of adaptation The primary stimulus is the deficiency in oxygen pressure, and the hydrogen-ion deficiency is secondary to this If we ask why the hydrogen-ion deficiency at least should not be fully compensated, the probable answer is that this would involve such a loss of sodium, and perhaps potassium, as is resisted

Although from its very nature the process of acclimatization cannot be theoretically complete, yet it has the unmistakable effect of keeping the oxygen pressure within the body approximately constant without more than slight disturbance of other important factors in environment The carrying out of this involves both functional and structural changes These changes are intelligible and predictable on the assumption that life tends to assert and maintain structure, activity, and environment in a normal and definitely co-ordinated manner Without this assumption biology is to my mind nothing but a jumble of disconnected and unintelligible observations It was a true physiological sense that led Ludwig and Bohr to suspect the existence of oxygen secretion by the lungs, and that led Claude Bernard to his great generalization about the active maintenance of the constancy of the internal environment The everyday reactions of living organisms to change in environment seem to me not in any way different in kind from the reactions during acclimatization to higher altitudes, and I cannot myself see that physiology is ever likely to get anywhere worth getting to unless it makes the fundamental assumption just referred to

This assumption differentiates it completely from mere applied physics and chemistry Biological reality is something which our present physical and chemical conceptions fail to represent and can never come near representing until they have been profoundly modified This modification may come in the future, but meanwhile biology must regard itself as an independent science It is also an exact science, since it is everywhere dealing with and revealing exact regulation and co-ordination Nothing gives us, perhaps, a clearer and more comprehensive idea of this regulation than thorough study of the phenomena of acclimatization to higher altitudes That study must, however, be based on exact quantitative results and coherent reasoning and it is this paper I have had to point out incoherency in the reasoning of scientific friends who in other directions have made most valuable contributions to physiology, I hope that both you and they will understand that any other course would be inconsistent with scientific honesty on my part

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The Vicary Lecture

ON

RICHARD OWEN AS CONSERVATOR.

GIVEN IN THE THEATRE OF THE ROYAL COLLEGE OF SURGEONS OF ENGLAND, NOVEMBER 12TH, 1924,

BY

SIR ARTHUR KEITH, M.D., F.R.S.,
CONSERVATOR OF THE MUSEUM

(Abstract)

In the Vicary Lecture of last year* I gave an account of the dramatic proceedings which culminated in the confession by Sir Everard Home that he had burnt the Hunterian manuscripts These proceedings were enacted in this College during the summer of 1824—just a century ago The Board of Curators, six members of the Council of the College, to whom the management of the museum was delegated, then met to consider afresh the problem of describing and cataloguing John Hunter's specimens—some 17,000 in number The Board sent for its conservator, William Clift, and told him to proceed with the preparation of catalogues forthwith

William Clift

Let us see how William Clift was situated He was then 50 years of age, *from* Hunter's death in 1793 until the summer of 1824 he had, in reality, been servant to Sir Everard Home, all he knew he had picked up for himself, time after time he had made fruitless attempts under Sir Everard Home to carry out the task just imposed upon him His daily duty of meeting parties at the door of the College and conducting them round the floor-space and galleries of the museum—a single great room, which had been built for the display of Hunter's treasures—was altogether a joyful task *for him* But when it came to stepping into John Hunter's shoes and explaining and interpreting to all the world the harvest of the greatest medical genius of the eighteenth century—a much abler man than the faithful, modest William Clift might well have shrunk back He set to work in his old way pen in hand, and in his finest script copied from such Hunterian documents as he had saved, and from other sources such extracts as these had on the collections made by Owen. The Board met from time to time and examined these extracts but by the end of 1826 it had become apparent to John Abernethy, surgeon to St Bartholomew's Hospital and at this time President of the College that these and those helpful friend William Clift had that hard [illegible] must be given a [illegible]

* See [illegible] which [illegible] there [illegible] Oct 25 [illegible]

The required assistance as we must suppose Abernethy knew, was close at hand. In the autumn of 1826, when cataloguing production was becoming urgent, Mr Richard Owen, having become a member of the College at the age of 22, put up his plate in Cook's Court, Carey Street (within a stone's throw of the museum), to practise his profession—mostly among young lawyers. Little more than two years had elapsed since he had finished his apprenticeship to a surgeon in Lancaster, in which town he was born and bred. One year he had spent in Edinburgh winning the golden opinion of that most enlightened anatomist Dr John Barclay. The second year he spent at St Bartholomew's Abernethy at once took him on as a prosector and found that Barclay's strong letter of recommendation in nowise exaggerated Owen's abilities. From Barclay young Owen had learned to appreciate Hunter as well as the more modern anatomical schools of France represented by Cuvier and Cuvier's rivals—the philosophic anatomists. In Edinburgh Owen had taken the initiative in founding a Hunterian Society. As a student at St Bartholomew's he wrote two papers on surgical subjects—one on a case of aneurysm of the gluteal artery, the other on a case of encysted calculus of the bladder. Taking all these circumstances into account one cannot help thinking that Abernethy had something to do with the selection of the site at which Owen sought to establish himself in practice during the autumn of 1826.

Clift and Owen

When the Board of Curators met in February, 1827, Richard Owen was asked to attend. He was engaged to assist Mr Clift, his emoluments being £30 a quarter, with permission to attend to his practice in the intervals of his duties. Thus William Clift and Richard Owen were brought together—one of the strangest partnerships to be found anywhere in the annals of medicine or science. They were contrasted types. Clift was a small man—only a little over 5 ft., Owen stood 6 ft. in his stocking soles. Years later Carlyle described him as "the tall man with the great glittering eyes" for his eyes were great and full and Clift's were small and sunken. Clift was born of humble people—he was happier as servant than as master. Owen came of a good family—his father was a West Indian merchant who fell on evil times. Owen was born to command, he claimed equality with the best. Clift was the meticulous gatherer of small facts. Owen we shall see, dealt with big things, he could imagine, create, and discover—he was a statesman, he could conceive and execute. But Clift and Owen had this in common—partisanship—they raised common enmities with ease and maintained them with vigour. Thus it came about that Richard Owen was engaged to assist William Clift to prepare catalogues, but in the course of events, as one could have foreseen, it soon came about that the roles were reversed, and later still Owen dispensed with the conservator's assistance altogether.

Leaving these two men to pursue their vocations in the museum throughout the year of Owen's appointment (1827), we turn aside to note certain events which happened outside their daily routine and which had a very important bearing on the history of the museum. The conservator's house looked out on the trees of Lincoln's Inn Fields, its back staircase served the gallery of the museum as well as the conservator's bedrooms. In September 1827, the inmates of this house were the conservator, his wife and their two children—William Home Clift a young man of 26 and Caroline Amelia Clift, aged 25. Young Home Clift was to be his father's successor. His father had trained him in museum ways, and at present he was struggling very ineffectively at the compilation of catalogues. He was light, gay, and fond of company, a source of anxiety to his father. It was otherwise with Caroline, she had inherited her father's slight build of body and could pull his heart-strings as she would. Years afterwards Caroline Fox described her as "a very perfect little fact in the great history of the world."

Caroline Clift

It so happened on a September day in this year that little Caroline mounted some steps to put a bell pull to rights, overbalanced, and fell. Her brother fetched Richard Owen from the museum to render first aid. The tall young surgeon with "the great glittering eyes" speed is proceeded to fall in love with his patient—"the perfect little fact." In a brief wooing by Christmas-time he had presented her with a carved tortoise shell comb, a volume of Cowper's poems and an engagement ring. He was 23 and he was 25. She knew well that she had linked her fortunes with those of a man destined to greatness. This apparently insignificant affair of the bell pull, we can now see, turned out to be a critical event in the history of the museum. It not only gave Richard Owen a perfect wife but it secured for the Hunterian Collection the services of the one man then in England who had the ability and energy to grapple with its problems.

Two years later, although still in practice, Owen was regarded as a permanent member of the museum staff and paid at the rate of £150 a year. But even in 1829 such an income was altogether insufficient to set up house on. Hence early in 1830 we find Owen in Birmingham in search of a house-surgeoncy. From there he wrote a letter to Caroline which permits us to see what kind of man and lover he was. "You know not" he writes, "how rapidly I have succeeded in gaining golden opinions from all sorts of men in this place. You have lent me your attractions and have prompted me in all my interviews." He saw no prospect of an early marriage by settling in Birmingham, his heart, he wrote, longed for the "happy Fields." The true lover at the end of this letter exclaims, "The die is cast, you shall be with me ever and guide and prompt and see my exertions." He returned from Birmingham in this mood, and within twelve months the College was in possession of its first batch of catalogues—for which it had waited wellnigh thirty years.

We find entries in William Clift's private notebook which show us that Owen did not return to his rooms in Cook's Court but became an inmate of the conservator's household. He paid £15 a quarter for board and lodgings and young Clift paid the same. But there was this difference. Owen settled his account promptly on pay day whereas the easy-going Clift was always behindhand and had usually to borrow part of his belated payment to meet present needs. Pitched however, borrowed only when setting out to see his mother in Lancaster—which he did every year, and often had to wait for an advance to bring him back to work. In September, 1832, these entries in William Clift's private notebook suddenly cease. When we turn to his diary we find the explanation. On the evening of this day (September 11th, 1832) a most unfortunate and fatal accident occurred to my dear son, in alighting from a cabriolet near the lower end of Chancery Lane at about 10 o'clock p.m." September 17th "This morning about half-past-three my poor son breathed his last." The cab accident comes into the history of our museum, for it left the ultimate succession to the conservatorship open to Richard Owen.

The amount of work which Owen got through after his return from Birmingham, the researches he carried out and the discoveries he made, leave one in wonderment with the death of William Home Clift in 1832 they became almost incredible. But his Herculean effort did not impress the Board of Curators—for a reason I shall explain presently. In 1833 Owen protested he complained to the Board that he was worse paid than the meanest country apothecary and that he had to carry on his work in a draughty thoroughfare. The Board raised his salary to £200 a year and gave him a more comfortable workplace. In 1834 the museum had to be rebuilt and extended. All the responsibilities of the change fell on Owen. In the following year, 1835 when the building alterations were completed, quarters were provided for Owen, now the assistant conservator, behind the museum with a door opening on Portugal Street on which "Mr Owen" had his name inscribed for he still regarded himself as a surgeon waiting for practice. In this year 1835 his salary was raised to £300 a year, which apparently justified him in embarking on marriage. Early in the morning of his thirty-first birthday July 20th he and Caroline Clift drove to St Pancras Church where they brought an eight years' engagement to an end by a happy marriage and a brief honeymoon. And then back to catalogues! Here however I must note a little but significant entry in William Clift's cashbook. He drew from the bank

500 golden sovereigns at this time, 30 he put in one bag for the bride, 30 in another for the bridegroom, and 440 went to their bank account John Hunter's apprentice was proud of his son-in-law, and well he might be

Cataloguing the Museum

I must now turn back and briefly trace the course of events in the museum from the time Owen was engaged as assistant to the conservator until his marriage From the *minute-books of the Board of Curators* we find an ever-recurring call for catalogues The conservator always responds "coming," but never comes When Owen returned from Birmingham matters rapidly changed—catalogues were prepared in rapid succession In the spring of 1831 six volumes had been written, printed, and published, six sections of John Hunter's collection had at last been supplied with catalogues—namely (1) Morbid specimens in spirits, (2) Morbid specimens in a dried state, (3) Human and comparative osteology, (4) Natural history preparations, (5) Monsters, (6) Vascular and miscellaneous preparations The two largest and most important sections still remained untouched—namely, the physiological series, about four thousand preparations, by which Hunter had sought to illustrate the manner in which the functions of the animal body are carried on in all forms of living things—movement, circulation, respiration, digestion, reproduction, development, and growth Even more difficult to handle was his collection of fossils—enigmas to the men of Hunter's time, but not to him

The Board ordered Owen to prepare a catalogue of the physiological series It was estimated that it would occupy him for three years Part I, which covered the preparations illustrating the modes in which locomotion and digestion were carried out in the animal kingdom, occupied two years While cataloguing this single section of the physiological series Owen found it necessary to dissect two hundred animals in order to identify Hunter's preparations and to complete the founder's formulated design He became *the most active Fellow of the recently founded* Zoological Society, somehow he scraped the money together to become a life member He claimed and obtained the first call on all the animals which died in the gardens of the Zoological Society He gave such vivid and full accounts of his dissections as had never before appeared in England A single example, chosen from scores at our disposal, will serve to illustrate the quality of his genius A member of the College, Mr George Bennett, brought home from the Pacific in 1831, and presented to the museum, a specimen of the pearly nautilus—a "living fossil," almost the first to reach Europe In 1832 the Board entrusted it to Owen and requested him to dissect it and prepare a description for publication He spent *five months on it*, and, although imperfectly preserved, he unravelled its exact structure, and fathomed its relations to all other living cephalopods as well as *the relations of these to one another*, he applied to it Hunter's methods, and noted how its bodily functions had been carried out during life He was his own dissector and his own draughtsman—a *finished workman* in both capacities The monograph was published by the Council at a cost of £365 It drew unstinted praise from every source except that from which Owen had expected most—his own Board Clift thought "Owen was much to be pitied", Sir Anthony Carlisle, a member of the Council of the College, bluntly said that "his pearls had been cast before swine"!

Conflicts with the Board

On reading the minutes of the Board of Curators at this time one is made conscious of a feeling of antagonism between the members of the Board and its servants Clift and Owen—an antagonism which flared up into open strife in 1841 and reached a climax in 1842 *In* the spring of 1841 Owen finished the fifth and last volume of the catalogue of Hunter's physiological series The preparation of this catalogue occupied him ten years, during which time he passed from being an obscure member of his College to being acclaimed the first anatomist of the age" Honours were being showered on him by learned societies at home and abroad The ladder by which he reached greatness was made by Hunter, but it was just because Owen understood Hunter's aim and design and knew how to make the steps secure that success came to him As he proceeded from volume to volume of this catalogue he encountered innumerable problems which required laborious research and uncommon insight for their solution In the ten years spent on it he contributed to learned societies 157 papers—all of them abiding additions to knowledge, many of them opening up great unchartered territories of animal life Besides these he wrote ten volumes in the form of catalogues or treatises Every year, from 1837 onwards, he gave in the theatre of the College twenty-four Hunterian lectures, in which he expounded fresh observations and generalizations gleaned in the course of his work in the museum and in the Zoological Gardens One marvels at what he accomplished, and how he managed to get so much out of his body, his brain, and his purse For the scientific societies to which he belonged were expensive he was fond of society, of the theatre, of music, of dining out, and of famous men Yet his income was his salary of £300 with £50 additional for lectures, for *soon after his marriage* he abandoned all thought of gaining money from practice Caroline Owen must have managed well

In 1839 the Board of Curators was *reconstituted* and became the Museum Committee Three members of this committee require our attention—Mr Robert Keate, *surgeon to St George's*, Mr George James Guthrie, *surgeon* to Westminster Hospital, and Mr John P Vincent, surgeon to St Bartholomew's Their patience with Mr Owen was well-nigh exhausted by 1840 The committee informed *him* that it was dissatisfied with the way he was spending his time, particularly as regards the study of fossils Owen defended the collection and *study of fossils and declared* he worked solely for the credit of the College Mr Darwin had presented to the College the remarkable fossils he had gathered in South America *while* on board the *Beagle*, and Owen had described them "When," asked Mr Guthrie, "had Mr Owen obtained permission to do such a thing" "had Mr Owen obtained permission to do such a thing," Mr Keate, *who* was then president, told him "he must give his full time to the museum or resign" The committee threatened to stop lectures and all forms of research *until* catalogues were completed The painting of a portrait of a chimpanzee, which Owen was having made for the museum, was left on his hands because it had not been sanctioned The attendants in the museum were ordered to report directly to the committee every week, not through their officers Mr Guthrie went into the museum and altered the arrangement of the specimens

The climax came on January 25th, 1842 A special meeting of the Museum Committee, with certain additional representatives from the Council of the College, was summoned to consider *Owen's position* Clift and Owen waited by the door, Owen was called in The president of the College, Mr Guthrie, informed him that there was grave dissatisfaction in the Council concerning the manner in which he performed his duties Owen expressed his regret if he had given cause for offence and was conciliatory He was then asked if he would take over the duties of conservator with the proviso that he would publish nothing without having first obtained the permission of the Council Owen expressed his willingness *to take over the duties of conservator* with one exception—namely, the daily task of conducting parties round the museum This difficulty was overcome, William Clift, *who was to become* senior conservator, wished to retain the conduct of parties Poor William Clift was merely a spectator in these proceedings He was given £400 a year for life He vacated the conservator's official residence and his *son-in-law* moved into it And here we must leave Owen as he enters the second period of his conservatorship, it was to last fourteen years—until 1856, when he *became* superintendent of the Natural History Department of the British Museum Suffice it to say that it was even busier more brilliant, and *more turbulent* than *his first period*

Clash of Ideals

What was the cause of these conflicts between Owen and his committee? He was proud, imperious, overbearing and, it must be owned selfish and jealous, especially towards his rivals and juniors His committee may be accused of short-sightedness Although the opposing qualities may be

contributed to the quarrel, yet the real cause of the conflict lies elsewhere The truth is that Owen had yoked John Hunter's chariot to Cuvier's steeds and his committee if it did not know exactly what had happened did see that the chariot was moving in a wrong direction as far as surgery and medicine were concerned Hunter pursued his studies and built up his museum to throw light on man—on the nature of his disorders and diseases, and on the manner in which the functions and actions of his body are accomplished He knew well that the collections he had assembled might be employed for two other purposes His dissections might be used, not for the study of function, but for the classification of all living things into natural groups and orders He knew that his great collections of fossils opened vistas into past ages of the world John Hunter turned his back on such aims but two years after his death Cuvier set to work He built up anatomical collections just for the two purposes which Hunter refused to entertain, and by his genius and industry enthralled the world by his discoveries during the first three decades of the nineteenth century At first Owen's sympathies were with Hunter's original aims but they soon became dissipated under the brilliance of Cuvier's sun When Cuvier visited our museum in 1830, two years before his death he fired young Owen with his aims and zeal We must remember that in Owen's time the Natural History Departments of the British Museum were in abeyance and Owen set out to make our museum supply a national deficiency He intended to make it the home for the classification of all forms of animal life—for the separation of the animal kingdom into natural groups according to structure More particularly he intended that the museum should become the headquarters for the interpretation of past worlds of life If we are to understand the continual friction recorded in our minutes throughout Owen's time we have to keep in mind the clash of ideals—the ideal the Museum Committee had in view and the ideal which Owen nursed as if it were his religion The committee was for ever trying to get Owen to go its way and he was for ever breaking off to follow his own path It was in Cuvier's world that Owen lived, not John Hunter's If we are to study structure and function as a service to medicine we must go back to Hunter"

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PROCEEDINGS OF SECTIONS AT THE ANNUAL MEETING, BRADFORD, 1924

SECTION OF PATHOLOGY AND BACTERIOLOGY

Professor C H Browning, M D, President

XANTHOMA AND XANTHOSIS

BY

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The importance of the part played by cholesterin and its esters in pathological processes is receiving increasing recognition, an outcome of the large amount of work—anatomical, chemical, and experimental—which has been done on this subject in the last twenty years The purpose of the present communication is to integrate a number of different pathological states in which the deposition of cholesterin fat is the salient anatomical feature and to show at the same time how frequent is the occurrence of minor grades of this condition in relation to a large series of pathological processes

When cholesterin fat is deposited in a cell in crystalline form it causes the cytoplasm to assume a "foamy" appearance in paraffin sections while a sufficient aggregation of such cells gives rise to an area opaquely yellow to the naked eye The gross and microscopic appearances are exemplified normally by the outer two-thirds of the adrenal cortex and in the female by the corpus luteum, especially the corpus luteum of pregnancy in its later stages Pathologically, foamy cells are, in the main, phagocytic cells of endothelial origin, but there is evidence to show that fibroblasts may become similarly affected, and in the central nervous system a corresponding part is played by the neuroglia

In a previous communication[1] I have classified local cholesterin fat deposits into those which are due solely or principally to local tissue changes and those which are the focal expression of a condition of hypercholesterinaemia The latter group is much the smaller, its principal constituents being the various forms of cutaneous xanthoma the "strawberry gall bladder" cholesteatomata of the choroid plexus, and probably certain cases of arterial atheroma The former group includes a large number of local necrotic and chronic inflammatory lesions of various kinds, and, especially conditions in which there is retention in the tissues of lipoid rich secretions or transudations, and exudations A third group might be added lesions in which the deposit of cholesterin fat is merely the continuation of a normal function of the cells or the part—for example, adenoma of the adrenal cortex

The extracellular deposition of crystals of pure or nearly pure cholesterin in many of these lesions and the frequent occurrence of foreign body giant cells in relation thereto is described in detail in the paper referred to above Suffice it to say here that the condition is usually associated with some form of cellular death, and especially with lesion in which large aggregations of foamy cells are themselves becoming or have already become, disintegrated Thus I found that whereas small early cholesteatomata of the choroid plexus are composed simply of closely packed aggregations of foamy cells in the meshes of a delicate connective-tissue stroma, the corresponding tumours of larger size are mere encapsuled collections of cholesterin plates with or without related foreign body giant cells

A short account may now be given of some of the more important examples of cholesterin fat deposit

A Hypercholesterinaemic Xanthosis

1 *Xanthoma*

This is a cutaneous disorder in which one or more bright yellow plaques or nodules make their appearance on various parts of the body Several clinical varieties are recognized according to the site, character, and etiology of the lesion When it is confined to the eyelids—and this is much the most common form—it is termed 'xanthoma palpebrarum", when it is more widely disseminated 'xanthoma multiplex" Sometimes the lesions are flat (xanthoma planum), sometimes nodular (xanthoma tuberosum) In a small proportion of cases usually of multiplex type, there is an underlying diabetes—hence xanthoma diabeticorum The essential lesion is the same in all—the accumulation in the subepithelial layers of the skin of numerous phagocytic cells laden with esters of cholesterin These cells are present in great profusion as a rule, and to begin with are most abundant around the smaller blood vessels In lesions of longer standing especially those of tuberose type there is also much proliferation of fibrous tissue which leads ultimately to a relative reduction in the number of foamy cells, as well as to diminished vascularity

The presence of giant cells in cutaneous xanthoma has often been noted For the most part these are giant foam cells in which the nuclei numbering from two to twelve or so are situated centrally, and the peripheral cytoplasm is exactly similar to that of the uninucleated form Occasionally giant cell of the ordinary foreign body type is seen deeply eosin staining non foamy cytoplasm and large nuclei more widely scattered nuclei are seen These are more frequent in xanthomas of large size and long standing and are often related as above described to extracellular crystals of pure or nearly pure cholesterin which have been formed by disintegration of the foamy cells If there is evidence to show that such cells pass through a foamy giant-cell stage

Cutaneous xanthoma especially the multiple nodular type is sometimes accompanied by similar lesions affecting

tendons and tendon sheaths and the capsules of joints These lesions should be clearly distinguished from the myeloid tumour of tendon sheaths, to which they bear superficially a close resemblance The latter is a strictly local affection, always single, and occurring chiefly on the fingers and hands, true xanthomatous tumours are frequently multiple, are often associated with cutaneous lesions, and occur most commonly in the tendo Achillis and the tendo patellae The case recently reported by Ollerenshaw (1923)[2] is apparently of this kind Microscopically the *myeloid tumour of tendon sheaths is a fibro-endothelioma, with numerous osteoclast-like giant cells uniformly distributed throughout it, and either with or without local patches of* xanthosis The other *is essentially xanthomatous, with occasional foamy giant cells, or foreign-body giant cells related to cholesterin plates*

The association of cutaneous xanthoma with an increased cholesterin content of the blood was first reported by Chauffard and Laroche (1910),[3] who found it in two of the four cases which they examined Many records by various observers are now available, *and have recently been reviewed* by Harrison and Whitfield (1923) [4] In the great majority some degree of hypercholesterinaemia was present at the time of examination, and there are good grounds for supposing that even in those which gave a low figure a state of hypercholesterinaemia had existed at the time of onset of the cutaneous lesion Cases are on record, for example, where xanthomas have continued to exist long after the hypercholesterinaemia which produced them had disappeared This is due to the chronic inflammatory thickening and fibrosis *which have taken place, resulting in* greatly *reduced* vascularity, and consequent interference with the reabsorption of the lipoid In xanthoma diabeticorum, on the other hand, the skin lesions, especially if small, sometimes disappear *quite* rapidly This is due to two factors, as Major (1924)[5] has *emphasized* a disappearance of *lipaemia* and hypercholesterinaemia on the one hand, and the presence of a good blood supply to the skin lesions on the other

The *normal cholesterin content of the blood plasma* is *given* by Chauffard, Laroche, and *Grigaut (1911)*[6] *as varying from 0 11 to 0 18 per cent In a series of twelve* normal individuals investigated by Dr Cecilia Shaikin (1922)[7] in my laboratory (by a modification of Myers and Wardell's colorimetric method) the figures for blood plasma ranged from 0 13 to 0 19 per cent In xanthoma the highest readings are given by diabetic cases, and higher figures are obtained in xanthoma multiplex than in xanthoma palpebrarum In a series of six cases of xanthoma palpebrarum which we have examined* the figures ranged from 0 124 to 0 4 per cent, and in four they were *distinctly above the* normal maximum *In a case of xanthoma diabeticorum* now under observation two analyses at an interval of ten days gave the extraordinarily high figures of 3 8 and 4 2 per cent In two similar cases reported by Hoffmann (1918)[8] the blood cholesterin was 2 5 per cent, and in Kahn's (1920)[9] case it was 1 4 per cent In published cases of xanthoma multiplex and xanthoma tuberosum other than diabetic, figures ranging *from* 0 4 to 0 7 per cent are not *uncommon*

It is generally supposed, *then that cutaneous xanthoma is the result of a focal outpouring of cholesterin fat from* the overcharged blood into the superficial layers of the corium, where it is speedily taken up by mononuclear (endothelial) phagocytes Local trauma is of some importance in determining the onset of the lesion, as is well seen in a case recently reported by Major (1924)[5] A diabetic of 16 (blood sugar 0 322 per cent, cholesterin 0 4 per cent) was bitten at two places *on the forearm* by a mosquito Two small inflammatory nodules were produced, and a few days later a deposit of yellowish-orange pigment appeared The nodules became quite hard, and presented the typical appearance of the lesions of xanthoma diabeticorum They cleared up promptly under insulin treatment

The *disturbances of cholesterin metabolism which lead* to the *formation* of xanthoma are *beyond the* scope of the present paper, but reference may be made to the recent review of the subject by Harrison and Whitfield (1923) [4]

It is obvious from what has been said that xanthoma is quite definitely a non-neoplastic disease, and the term is therefore strictly a misnomer The condition is one of cellular reaction to the presence of a definite chemical substance, and when this stimulus is removed the tendency is for the lesions to regress, certainly they cease to grow Nor is there histological evidence of actual proliferation of xanthoma cells once formed Indeed, there are good grounds for believing that this is an effete cell which has gone beyond the possibility of recovery of the powers of *proliferation Xanthoma, on the other hand, is a quite* convenient term, belonging as it does to the same category as tuberculoma, haematoma, and syphiloma, and one hesitates to suggest its replacement by "cutaneous xanthosis"

2 *The Strawberry Gall Bladder*

This peculiar and characteristic lesion was *first described* by Moynihan in 1909[10] as "a condition of the gall bladder in which fine grains of calculous material are embedded in the mucosa"—a description by no means wide of the mark although based on naked-eye examination only The cholesterin-fatty nature of the deposit was confirmed microscopically by the writer in 1915 (unpublished observation), and since then a large number of specimens of this kind have been examined *histologically* The term "strawberry gall bladder" was first used by *MacCarty* in 1910,[11] and *is an excellent descriptive name for a definite pathological* entity In the first instance this author wrongly attributed *the appearance to erosion of the spaces at the villi, with replacement of the epithelium by scar tissue* In a subsequent paper on *papilloma* of the gall bladder (1915)[12] he refers to fat-containing cells in the stroma, and later still (1919)[13] speaks of the strawberry gall bladder as due to the presence of a lipoid substance *within the swollen connective tissue* cells which lie just beneath the epithelium A very full description of the lesion has been given by Boyd (1923) [14]

The cholesterin-fat deposit of the strawberry gall bladder is present in greatest abundance superficially—that is, in the tips of the mucosal folds It is mainly contained in groups of foamy cells indistinguishable from those of cutaneous xanthoma, and the peculiar "strawberry" appearance *seen by the naked* eye is due to its irregular *distribution in streaks and patches* A closely related *condition which may* accompany the other or may occur independently is that of lipoid polyposis Here the large amount of deposited cholesterin has led to the formation of polypi, bright yellow bodies of irregular shape, which usually measure from 1 to 3 mm in diameter, and which are often attached to the mucosa by an extremely slender pedicle In several instances I have seen these polypi broken off and lying free in the lumen of the gall bladder Microscopically they consist of solid masses of foamy cells enclosed in the meshes of a thin and delicate *fibrous stroma*, with or without a covering *layer of epithelium* Obviously, lipoid polyposis is merely a *further development* of the strawberry gall bladder, but inasmuch as polypi may be present without any general lipoid stippling, I would suggest that they are more permanent formations which remain behind when the general lipoid deposit is absorbed The lack of vascularity and slenderness of the pedicle would account for this An important practical point is the possible relationship of these conditions, and especially of lipoid polyposis, to gall-stone *formation* The strawberry gall bladder may or may *not be* accompanied by gall stones and when it is, the latter may be of two types—either the solitary *cholesterin* stone, or multiple mulberry calculi, also mainly composed of cholesterin The mulberry stones are usually few in number, *and those of* smaller size bear a remarkably close resemblance to the *lipoid contents* of polypi above described *It seems highly probable* that there is here a direct *etiological relationship*, as Chauffard (1922)[15] *suggests*, and the experimental work of Dyer (1916)[16] may be regarded as affording support for such a view

I am not aware that there are any records of the cholesterin content of the blood in these cases, but from

* I am indebted to Dr Dorothy Priestly and Dr Cecilia Shaikin for the estimations.

post-mortem room experience and other collateral evidence I think there can be little doubt that the strawberry gall bladder is only another local manifestation of the hypercholesterinaemic state Whether the cholesterin fat is excreted directly from the blood into the gall bladder mucosa as in cutaneous xanthoma, or whether as Aschoff and Lacmeister (1909)[1] suggest, it is reabsorbed from an overcharged bile, is still undetermined although the latter seems, *a priori*, much the more likely event The amount of cholesterin fat in the mucosa of the strawberry gall bladder may be very large in six examples investigated by Boyd it varied from 34 to 60 per cent of the dry weight as compared with 0 5 and 1 5 per cent in normal controls

3 *Cholesteatoma of the Choroid Plexus*

This is another form of local xanthosis which is probably the direct result of hypercholesterinaemia The lesion consists of a number of yellow nodules of various sizes usually small, irregularly scattered throughout the choroid plexuses, especially of the lateral ventricles Microscopically they consist merely of a close aggregation of foamy cells within the interstices of a delicate fibrous stroma In cholesteatomas of larger size and longer standing such as occur rarely in man though commonly in the horse (Rous 1912)[18] the occurrence of necrotic changes with cell disintegration leads to extracellular deposition in great abundance of crystals of pure cholesterin These in turn stimulate the production of foreign body giant cells so that the histological picture comes to be entirely different from that seen in the first instance In the cases of cholesteatoma of the choroid plexus which I have examined the lesions have almost invariably been symmetrical and this, together with the state of the suprarenal leads me to the view that here again we are dealing with the local expression of a hypercholesterinaemic state †

4 *Arterial Atheroma*

The yellow colour of the early flat patches of arterial atheroma is largely due to the presence of cholesterin fat in the intima Often it can be seen to be contained within foamy cells but as the patch becomes thickened necrosis and disintegration take place the lipoid becomes largely de esterized, and crystals of pure cholesterin are deposited In man the relationship between hypercholesterinaemia and atheroma is uncertain Experimentally Anitschkow (1913)[19] and others have produced a condition of atheroma in rabbits by overfeeding with cholesterin or cholesterin rich foods, and the collateral lesions met with in some human cases of atheroma point to the presence of a hypercholesterinaemic factor

B XANTHOSIS FROM LOCAL TISSUE CHANGES

1 *The Hyelin Kidney*

In a certain proportion of cases of subacute glomerulo-tubular nephritis deposits of cholesterin fat make their appearance in the cortex especially that part which borders on the medullary pyramids In the earlier stages the lipoid is contained within the epithelial cells of the convoluted tubules, but later, presumably when these cells disintegrate, it is taken up by phagocytic cells in the stroma The naked-eye appearance is highly characteristic at the line of junction of cortex and medulla there is a broad, irregular, streaky zone of yellow colour and opaque aspect, often extending well out into the cortex Microscopically there are groups of foamy cells irregularly scattered throughout the stroma of the cortex, especially its inner half with of course, the characteristic changes of subacute nephritis as well It has been suggested (McNee, 1922)[9] that this unusual lipoid change is due to the damage to the tubular epithelium being of more severe degree than is usual in glomerulo-tubular nephritis Ordinarily it is neutral (glyceryl) fat which is deposited in these cases but when the cells are damaged beyond repair lipoid degeneration takes place

† Cholesteatomata in other situations—middle ear breast brain etc—are of course entirely different from those of the choroid plexuses The latter are the typical 'onion knot' tumours of squamous epithelial origin and almost their only point of similarity to the other is that here also cholesterin plates become deposited in large number a direct derivative of the keratinized epithelial cells

2 *The Myeloid Tumours of Tendon Sheaths*

This is a slowly growing simple tumour most frequently met with on the fingers and hand Microscopically it has the character of an endothelioma (Stewart and Flint 1917) but it also contains numerous giant cells of osteoclast type Large quantities of haemosiderin are liable to become deposited giving a rich brown colour to the affected area and very often patches of local lipoid deposit also make their appearance The latter are of a bright yellow colour to the naked eye, and are composed microscopically of aggregations of foamy cells

It has been suggested by Fleisig (1913)[3] that this is a granulomatous lesion and not a tumour but from the fact that it is xanthomatous in nature My own view is that it is a true tumour an endothelioma and that the deposition of cholesterin fat in certain parts is a purely local phenomenon dependent on local tissue disintegration The xanthomatous nodules occasionally met with in tendon and tendon sheaths should be clearly differentiated (*vide antea*)

3 *Subacute Inflammation of Adipose Tissue*

When adipose tissue is involved in a subacute inflammatory process it is not uncommon for aggregations of large foamy endothelial cells to make their appearance in the interstices of the tissue between the oil droplets Like *foamy cells do here they are filled with cholesterin fat* and often they may be seen going on to the formation of foamy giant cells Rarely pure cholesterin crystallizes out and a remarkable histological picture results in which foamy cells giant cells cholesterin clefts and foci of necrosis are mixed up together Similar changes may be met with in the quieter forms of fat necrosis

4 *Subacute and Chronic Salpingitis*

Even in the early stages of subacute salpingitis while the epithelium is still intact foamy cells may be present in the mucosa in large numbers Later when the pus tube has become lined by granulation tissue and the epithelium has completely disappeared they may be present in the greatest profusion in the inner layers of the wall which they assume in consequence a bright yellow colour The appearances clearly indicate that this lipoid is absorbed from the inspissating pus retained within the tube by closure of the ostium Later pure cholesterin crystallizes out *in situ*, with formation of numerous clefts and giant cells

5 *Subacute and Chronic Abscesses*

These occur in many situations, notably in the liver and kidney, and may show a similar thick yellow wall with innumerable foamy cells in microscopic section I have seen this in portal pyaemia following appendix abscess or low-virulence in chronic pyonephrosis in suppurating papillary kidney in suppurating gumma and many other conditions Often the contained pus is sterile and inspissated and may itself be the seat of crystallization out of cholesterin

6 *Retention Lesions of the Breast*

These have been described in some detail in two previous papers (Stewart 1914[17] and Stewart and Forman 1920[4]) Briefly it may be stated that in certain breast lesions associated with duct obstruction and the retention of secretory and other products a great local concentration of cholesterin fat takes place with the usual cellular response In the earlier lesions even while the dilated ducts are still lined by epithelium the lumen comes to be occupied it may be completely by large numbers of typical foam cells The appearance presented sometimes suggests that the duct epithelium itself is undergoing foamy change but if so the end result is a cell indistinguishable from the ordinary foamy cell of mesoblastic origin In more advanced lesions the epithelial lining of the dilated ducts becomes replaced by granulation tissue in which foam cells are present in large numbers Giant cells also make their appearance either in relation to deposited lipoid plates or in the form of rosettes around branches of the circulatory cholesterin The lesions in which these changes chiefly occur are subacute mastitis and abscess Some

infrequently the patients are multiparae in whom maldevelopment or recession of the nipple has led to non-use of the affected breast

7 *Cerebral Softening, etc*

The lipoid-containing phagocyte or compound granular corpuscle is a prominent feature of all lesions of the central nervous system in which disintegration of myelin is taking place They are seen in greatest profusion at a certain stage of cerebral softening, and account for the bright yellow colour of the wall which, in the course of a few weeks, comes to surround the focus of liquefaction From the local lesion they pass to the perivascular lymph spaces, especially those of the veins While it is probably true that most of these cells are of endothelial origin, like foamy cells elsewhere, there is evidence that some at least are derived from neuroglia, others possibly from fibroblasts (Buzzard and Greenfield, 1921[24])

8 *Dermoid Cysts*

When dermoid cysts lose their epithelial lining, whether from increase in size or from inflammatory or degenerative changes, the exposed connective tissue wall tends to become covered by a layer of granulation tissue in which foamy cells and giant cells are a prominent feature The former owe their presence to absorption of cholesterin fat from the sebaceous and other epidermic contents of the cyst, the latter to unabsorbable keratinous debris, plate cholesterin, hairs, and the like (Stewart, 1913[25]) Rarely, foamy cells are present in such profusion that yellow nodules are formed whose structure is almost indistinguishable from that of cutaneous xanthoma

9 *Mycosis Fungoides*

In the only example of this disease in which I have had the opportunity of making a *post-mortem* examination, a remarkable change was observed to occur in connexion with *the cutaneous tumours of the final stage* The well known phenomenon of disappearance of tumours was a prominent feature in this case Large sarcoma-like skin nodules as *big as a hen's egg would disappear*, without ulceration, in the course of a few weeks, leaving behind areas of mixed yellowish and brownish pigmentation Microscopically the latter was found to be due to the presence of patches of haemosiderin in the subepithelial layers of the skin, the former to a broad zone of foamy-cell accumulation in the cutis vera Here and there narrow strands of closely aggregated small round cells could be seen, relics of the original tumour It would appear that rapid cellular disintegration had taken place, *with absorption of most of the* degradation products, but retention *in situ* of the lipoid and haemosiderin

10 *Lesions of the Thyroid*

In many necrotic, neoplastic, and subacute inflammatory lesions of the thyroid foamy cells appear in large numbers, both within the glandular acini and in the stroma Frequently the process goes on to the deposition of plate cholesterin, with or without foreign body giant-cell reaction The process is a strictly local one, the result of tissue disintegration

11 *Tumours*

The occurrence of cholesterin and other crystals in tumours has been carefully studied by Powell White, 1909,[26] to whose paper reference should be made With the exception of the myeloid tumour of tendon sheaths above referred to, however, it is unusual for a xanthic reaction of the ordinary type to occur Either the crystals are contained within the tumour cells, or they are embedded in necrotic debris so that no cytological response is possible

Summary

A number of lesions of various kinds are grouped together on account of the common characteristic of cholesterin fat deposition In the first group are placed those in which the phenomenon is regarded as the local expression of a condition of *hypercholesterinaemia*—namely, cutaneous xanthoma strawberry gall bladder cholesteatoma of the choroid plexus, and arterial atheroma The second group includes a long list of local lesions, necrotic, inflammatory, and neoplastic, in which the xanthosis is the result of absorption from disintegrating tissues or exudates

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IMPROVED METHODS OF OBTAINING CULTURES FROM THE COLON A "SIGMOID LEICH"

BY

CUTHBERT DUKES, O B E, M D, M Sc, D P H

The customary bacteriological methods of examining the faeces in cases of *inflammatory diseases of the intestine* need some improvement Most of the pathogenic intestinal bacilli for which the bacteriologist searches, such as the typhoid, paratyphoid, and dysentery bacilli, are non fermenters of lactose, yet to detect them the faeces are plated out on nutrient media containing lactose, a carbohydrate of *no value to the bacteria sought*, but a readily available source of energy to the unwanted lactose fermenters Consequently such methods yield a plentiful growth of non *pathogenic* lactose fermenters such as *B coli*, whilst the pathogenic non lactose fermenters are notoriously difficult to cultivate An ideal medium would be one which *promoted* the growth of pathogens and inhibited the harmless, this remains to be discovered In the meantime it is better to employ a medium which at any rate gives an equal chance to all

Another reason why the customary methods are open to criticism is because the sampling accepts the host of microbes in the faeces without discrimination, so that the task remains to separate significant bacteria from the multitude of insignificant When disease of the *intestines* exists it is plain that the investigator is more likely to discover the disease-producing germs if he obtains his specimen from the lesion than at a considerable distance In a case of diphtheria of the throat better chances of discovering diphtheria bacilli are offered when the throat is swabbed than would be by an examination of *the sputum*, similarly, in a case of dysentery more success attends the scraping of an intestinal ulcer than the examination of a mass of faeces The vast majority of the microbes to be *found in the faeces of a patient suffering from an intestinal* infection have nothing to do with the disease We should aim at reaching merely the infected area and *avoiding* this massive admixture with saprophytic germs

In looking for better methods for cultivating the pathogenic bacteria of such intestinal diseases as chronic ulcerative colitis and mucous colitis I elaborated the following improved technique The two principles on which this is based are (1) that the cultures should *if possible*, be made direct from the inflamed area and not from the faeces, and (2) the media used should be such as will support the most delicate bacteria with which we are familiar I use a special piece of apparatus which I have designed and which is very simple in working It consists of a glass bottle from which air can be exhausted by a hand pump or water pump it is convenient to have a vacuum gauge fitted to the bottle to record the reduced pressure Attached to the bottle by *stout* rubber connexions is a piece of glass tubing 12 to 18 inches long, the extremity of which is blown into a little cup which will accommodate a plug of cotton-wool The patient is sigmoidoscoped and the

mucous membrane of the rectum and sigmoid carefully examined If an inflamed area or patch of ulceration is observed the cultures are taken from this in the following way A moist plug of sterile cotton wool is placed in the cup at the end of the glass tubing and the long line of glass is passed up the sigmoidoscope till the cup, with its contained cotton wool plug, is pressed on to the region to be examined The tap of the aspirating bottle is then turned and gentle suction exerted for two minutes The secretions and bacteria which are in the mucous membrane are sucked into the plug of cotton-wool, through the sigmoidoscope this can be seen to become coloured red if the patch of intestine is hyperaemic or ulcerated I use a pressure of 20 centimetres on the gauge during the suction After two minutes the "leech" is removed, the cotton-wool plug taken from the glass cup with sterile forceps and dropped into a waiting tube of nutrient broth The 'leech" may be applied to several places, being charged each time with a fresh cotton-wool plug

For the cultivation of the bacteria which have been sucked by the "leech" from the ulcerated areas I use media such as serum agar, blood agar, or ascitic fluid agar It is best to squeeze out the bacteria from the cotton-wool plug with a sterile glass rod which is pushed into the tube of broth and presses the cotton-wool plug against the bottom of the test tube From this tube of broth streak cultures are made at once on to the solid media The incubated plates yield a surprisingly small number of such common intestinal microbes as *B coli*, they bring to light many types of bacteria not often met with in cultures of the faeces It is beyond the scope of this paper to discuss the bacteriology of chronic inflammatory diseases of the large intestine which still await a clearer definition My object is simply to report this improved technique which I have found useful in my work at St Mark's Hospital in the hope that it may be helpful to others The chief advantage this method possesses is that it provides an opportunity for the study of the bacteria living in the diseased patches of intestine without gross admixture with the unwanted population of the lumen of the gut

THE SPREAD AND INCIDENCE OF PROTOZOAL INFECTIONS IN THE POPULATION OF THIS COUNTRY

BY

A MALINS SMITH

In this paper are presented some of the main results of investigations on the intestinal protozoa of the inhabitants of Great Britain, investigations which were carried out at the Liverpool School of Tropical Medicine in the years 1916 to 1919 These results have already been published[1-4] and have also been summarized by Dobell[5] with other investigations of a similar nature They are presented here because of their significance for public health workers and for clinicians, and because they have not yet received such wide dissemination as their importance deserves

The Position in 1916

In 1916 it was believed that *Entamoeba histolytica* was a parasite of man in the tropics and subtropics and that it was absent from Great Britain and most temperate countries, that amoebic dysentery was a disease of tropical regions caused by this pathogenic amoeba and that it was amenable to treatment by emetine which had in fact a remarkably specific curative action upon it It was known that in tropical countries the intestine of man was inhabited by other protozoa belonging to the classes Rhizopoda and Mastigophora About the pathogenicity or otherwise of these, various opinions were held but it was widely believed that one other—*Giardia* (*Lamblia*) *intestinalis*—was harmful At that time no work had been done upon the occurrence of these other protozoa in the population of Great Britain There was very little information as to the incidence of amoebic dysentery in any country and there existed no statistics of the percentage of cases due to *E histolytica* in any outbreak of dysentery Medical opinion was to the effect that the almost complete absence of amoebic dysentery from this country implied the absence of the causal parasite In consequence, if any person in this country suffered from amoebic dysentery or was found to pass *E histolytica* cysts in his stools, some residence abroad, or some contact with persons who had been resident abroad, was immediately postulated

Entamoeba histolytica found in Healthy Youths never out of England

The first step in the investigations which have so profoundly modified this outlook as far as this country is concerned was taken when the stools of a number of healthy recruits in training at a camp in the vicinity of Liverpool were examined microscopically for protozoa These youths were 18 years of age and had never been out of this country The cysts of *E histolytica* were found in a number of the stools, and there was no doubt that these cysts were morphologically indistinguishable from the cysts passed by people who had resided abroad The recruits were all healthy, with no symptoms of dysentery, and it remained to test the pathogenicity of the *E histolytica* they were carrying Four kittens were fed on milk contaminated by the faeces of four of the cases

A few amoebae were found in the faeces of one of the animals six days after the infective feed on the twelfth day symptoms of acute dysentery developed the animal passing mucus blood epithelium and many amoebae Acute dysenteric symptoms persisted to the death of the animal which occurred on the twenty-third day During the whole of this time large numbers of amoebae were passed with the faeces Neither in the fresh nor in stained preparation could these be distinguished from those found in the stools of human beings suffering from acute amoebic dysentery On *post mortem* examination of the kitten a large portion of the mucosa of the large intestine appeared to be superficially necrosed In scrapings enormous numbers of amoebae were found Scattered throughout the large intestine were small discrete ulcers Bacteriological examination of the faeces of the case on which the kitten was fed and also of the kitten itself during the period of acute dysentery and of a scraping of the large intestine were made by Professor Glynn No bacilli of the dysenteric group were found

Thus the youth in question was proved to be a healthy carrier of *E histolytica* in the same sense as are 'contact carriers" from the tropics

Entamoeba histolytica found in all Sections of the Population of Great Britain

Other sections of the population were afterwards examined and infections with *E histolytica* were found in members of every one of these The other intestinal protozoa were also found in all the groups In all 1 093 army recruits 459 adult civilians in hospital, 548 children under 12 in hospital and 207 asylum patients (Whittingham) were examined Not one member of these groups had ever been out of England In addition 504 asylum patients from another asylum (Rainhill) 470 of whom had never been abroad, were examined The percentage of *F histolytica* carriers in these groups, as found by only one examination per case, was

Army recruits	5.6
Adult civilians	1.5
Children	1.3
Whittingham Asylum	9.7
Rainhill Asylum	4.2

Thus in every section of the population, including all ages and both sexes these infections were found This work establishing the wide occurrence of *E histolytica* in the home population, has altered fundamentally the point of view of any person dealing with a case of dysentery or of *F histolytica* infection in this country Since it is almost certain that such a frequent and widespread parasite has not recently established itself in this country it is no longer necessary to presume foreign origin for any home case of amoebic dysentery or for any infection with *F histolytica*

Earliest Age of Infection

The investigations among the children had aspects of further interest It was established that an infection with *E histolytica* had been acquired by a child in the third year of her life and infections with *F coli* and *Giardia intestinalis* had been acquired in the second year of life Later Miss Nutt at Leeds and Sheffield found infections of *Giardia* in a child of 3 weeks and in others of 3 months, 9 months, 11 months, and 12 months respectively

Spread of the Infections

As regards the spread of the infections further investigations were made in connexion with some of the cases of children who were positive for *E. histolytica*, and it was found that the families from which they came were much more highly infected than the average population. The findings for one of these families are given:

Protozoa Found	Parents		Children					
	J. S.	L. S.	L. S.	F. S.	Ja. S.	J. S.	M. S.	D. S.
Entamoeba histolytica	+	+	+	+	+		+	+
E. coli		+	+	+	+	+	+	
Endolimax nana	+	+	+	+	+		+	+
Giardia intestinalis							+	+
Chilomastix mesnili						+		
Ages	41	41	16	13	11	9	7	3

Thus in this one family only there were almost as many *E. histolytica* infections as were found in the 548 cases taken from single members of different families. Such families therefore form, in all probability, isolated pockets among a general population fairly free from infection. Further speculation as to the spread of these infections would perhaps be unprofitable.

Acute Amoebic Dysentery in this Country

Since indigenous infections had been shown to be not infrequent, the question arose whether indigenous cases of acute amoebic dysentery occurred in this country. If they did, probably the place in which they were likely to be found was in a mental asylum, where outbreaks of dysentery still occurred. Accordingly an outbreak of dysentery at Rainhill Asylum was investigated, and there were found among 60 cases of acute dysentery 3 with pathogenic entamoebae in the stools. Two of these patients had never been out of England. All three were much improved by the administration of emetine, and all completely recovered. It was thus shown by microscopic examination that indigenous cases of acute amoebic dysentery do occur in this country, though it still remains almost certain that the great majority of the cases in this outbreak were bacillary in origin.

Conveyance of Entamoeba histolytica from One Person to Another

The method of conveyance of the parasite from one person to another is clear in so far as we know that *E. histolytica* must be conveyed by contamination of food or drink with fresh faecal matter containing the cysts. The amoebae are very short-lived and cannot spread the infection. Even the cysts cannot withstand drying nor live long outside the human body. In the case of other similar diseases the suspicion of acting as carriers often falls upon domestic or other animals accompanying man. In this disease, however, there is no evidence of the intervention of any animal. The cat is easily infected with amoebic dysentery, which usually ends fatally in this animal. So far as the evidence goes, however, it seems certain that it never becomes a carrier—that is, that cysts are never found in its stools. A few other animals—the dog, the rat, the rabbit—have been experimentally infected, but there is no good evidence of the occurrence of the parasite in them except under experimental conditions. It is to be concluded that infection is direct from one human being to another. It can only take place by ingestion of fresh faeces containing the cysts. Flies may play a part in the conveyance of cysts, for Wenyon and O'Connor[5] have shown that cysts can pass through the fly without being injured. The excrement of flies, however, soon dries, and only that which is voided upon food and eaten almost immediately could be effective. Water may be contaminated with infective faeces and the cysts may be thus conveyed.

Significance of the Results

The work which has established the existence of *E. histolytica* in many parts of this country, and has shown that in a special part of the population acute amoebic dysentery still exists, has a significance for the sanitarian. It shows that our personal and social hygiene is still far from what it might be. Differences in the different sections of the population tend to emphasize the significance of personal hygiene in this matter. The highest percentage of infections was found in an asylum population. There seems also to be a significantly high frequency of infection among miners, among whom certain helminthic infections are known to be prevalent. The environment in which they work is probably defective from the point of view of sanitation. The high figures for natives of tropical countries may partly depend on the same factor. Wenyon and O'Connor[5] found a very high percentage of infections (13·5 per cent. found on one examination) among 524 healthy natives in Alexandria. Nevertheless, that it is by no means easy to prevent the spread of these infections is seen from the fact that they occurred among 41 university and school cadets examined at Liverpool—youths whose home surroundings would be satisfactory. Some of the homes visited in the course of the investigations of Liverpool children were poor and dirty, but others were clean and comfortable, yet *E. histolytica* infections were found in both.

The tendency of this work, confirmed by and confirming most of the other work on this subject during and after the war, has been to reduce the importance of *E. histolytica* as a cause of disease. Although this parasite is widely prevalent in this country, yet dysentery is very infrequently caused by it. Nor does it appear now that the facts are very different in tropical countries. We owe chiefly to Dobell[4] the conception that *E. histolytica* occurs normally in the healthy carrier, who passes cysts, and is therefore the medium through which the infection is spread. In him the tissue of the intestine destroyed by the parasite is replaced at an equal rate by new tissue and so no dire results ensue. Any departure from this balance between host and parasite is dangerous to both—to the host because he contracts dysentery, to the parasite because in acute dysentery its chance of finding another host is very much reduced. This reduction depends on the fact that in acute dysentery the amoebae, which are powerless to spread the infection, are passed in the stools. Since the sufferer with acute dysentery is not dangerous to others, amoebic dysentery cannot become epidemic in the same sense as do many diseases of bacillary origin. Outbreaks of dysentery, whether at home or abroad, are mainly bacillary. Even in tropical countries only a small percentage of dysentery is amoebic. It must be noted, however, that acute amoebic dysentery may be more common in Great Britain than has been supposed. Ludlaw[7] found three cases of indigenous amoebic dysentery in no long period after he began to search for them. They may in this country be concealed under such names as "hepatitis," or "ulcerative colitis," for it was among such cases that Ludlaw found the examples just cited. Perhaps the chief significance of this work for the British physician is that he should have the possibility of amoebic infection in mind when diagnosing such cases.

Yet, when all is said, there remains an impression, which may be well founded, that the acute case is significantly less common in this country than abroad, in comparison with the number of persons infected with the parasite. The possibility that this impression is correct should be kept in mind, and wherever possible statistical evidence relating to it should be obtained. Speculations as to the cause of this difference are obviously of little value until we are quite sure that the difference exists.

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Memoranda:

MEDICAL, SURGICAL, OBSTETRICAL

EXTRAGENITAL CHANCRE

THE situation of the chancre seems to make the following case worthy of record

A Chinese woman of the farmer class 23 years of age married for four years but without children came to hospital complaining of considerable swelling and pain in the right eye of twenty days duration

On examination the whole of the conjunctiva of the right eye was found to be oedematous and chemotic The cornea was clear A hard mass occupied the bulbar conjunctiva below and to the inner side of the cornea This mass had a very definitely cartilaginous feel was well circumscribed and was slightly concave forward



It was ulcerated in the centre leaving a raw area with a thin serous discharge which on removal produced a free serous discharge and a few fine points of haemorrhage The whole mass could be dislocated outwards by making the patient look upwards and by drawing down the lower lid The submaxillary gland on the same side was enormously enlarged and very hard but the preauricular gland had escaped and no other glands were palpable

After a preliminary washing with saline smears were made from the sore and were stained by Noguchi method The slides showed *Treponema pallidum* to be present in very large numbers The blood serum of both the patient and her husband were at this time negative to a modified Sachs-Georgi precipitation test The husband and the father of the patient were seen at the same time and no sign of a recent or old syphilitic infection could be found Active syphilis in other members of the family was denied

It is not possible to trace the source of infection in this case Syphilis is very rife in this town (a large garrison town just outside the Great Wall of China), and a very large number of extragenital chancres are seen In the course of two years' work in this place extragenital chancres have been seen in the following situations lips (several) tongue (frenum and body), tonsil, mammae, abdominal wall and rectum

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BISMUTH SODIUM POTASSIUM TARTRATE IN THE TREATMENT OF EPILEPSY

IN this Territory there are many cases of epilepsy, and one meets numerous cases of epileptic insanity In some of these cases I have found *post mortem* pachymeningitis with adhesions between the dura and the pia arachnoid Considering that syphilis was the cause of this, I treated similar cases with weekly injections of the compound bismuth salt, in 3-grain doses intramuscularly This treatment was begun in October 1923 A report was sent to the P M O of this Territory in December of that year, to be incorporated in his annual report The acting P M O has now suggested that I publish some notes of the cases treated

Case A—Admitted in October 1923 suffering from epileptic insanity Just after a severe fit this man broke the arm of another native with a stick He was given 3 grains of the bismuth salt weekly for six weeks No fit occurred for nine months and he appeared normal On August 21st 1924 he had three fits He is now receiving 3-grain injections every four days and there has been no further recurrence of the fits

Case F—Admitted in March 1923 suffering from epileptic insanity This man had I understand been sick for some years in his own village but as he had become very noisy and obstreperous the chief of his village brought him to the administrative officer In the mental hospital he could with difficulty be controlled and had from time to time to be forcibly restrained as he threatened to kill attendants and other patients One curious symptom was noted when an attack was about to come on he spoke and sang in a falsetto voice The chief attendant observed that this always preceded a fit or an attack of noisy obstreperousness From October to December 1923 he received ten injections of the bismuth tartrate Since January he has been quiet and amenable gives no trouble and is quite rational

Case K—An epileptic maniac aged 18 had had epileptic fits for at least three years He was admitted because he killed his mother after an acute attack of epilepsy Treatment by [illegible] was started in October 1923 the night when he had been almost daily occurrences ceased after one week and he became quite rational Ten injections were given This man returned to his station after January 1924 He was quite well till August 1924 when he had a fit Injections have again been started

Case N—A female aged about 30 admitted under magistrate's order to the lunatic asylum on August 10th 1924 showing [illegible] symptoms of acute mania She talked or shouted incessantly slept very little refused to wear any garment and would not answer when spoken to On August 12th she was discovered to have white and native staff to such an extent that [illegible] a 3 grain injection of the bismuth salt The result was marvellous she slept on that night and has been quiet and tractable ever since The injections are being repeated every four days till ten have been given

In my opinion in the majority of instances native insanity in the Territory is related to syphilis As a routine treatment now all patients receive injections of the bismuth salt In cases where no improvement results I take it that the disease is not syphilitic in origin

I add short notes of a case seen in the civil hospital

A girl aged 6 was admitted with epilepsy complicated with incontinence of urine each night From October to December 1923 she received weekly injections of 1 grain of the bismuth salt After the first injection the fits which had been of almost daily occurrence ceased and also did the nocturnal incontinence She was discharged in March 1924 apparently cured She was seen again to hospital in June because of a recurrence of the fits She received other ten injections and so far there have been no further fits The incontinence of urine did not recur

Whether the cure or relief of patients treated in this way will be permanent or not it is not yet possible to say but when one considers the improvement in the condition of the patients themselves and the increased comfort of the attendants and other patients, and as long as one sees no bad result from the injections I think it is well worth while to continue this treatment

The bismuth sodium potassium tartrate used is that made at Nairobi by the Kenya Medical Department

J G MCNAUGHTON M D

Tungan Inland Territories East Africa

ACUTE TORSION OF THE APPENDIX

As I can find no record of this condition in the literature at my disposal I venture to record the case in the hope that it may be of interest

The patient a man aged 43 sent for me on October 5th 1924 as he had severe cramping pains in his right side He had had pains for two or three days previously but had been able to go about his work—selling butcher meat from his cart in the street He had never had any previous illness that he could remember

On examination I found a hard firm swelling over the appendix area and considerable tenderness on deep pressure There was little rigidity of the abdominal muscles The pulse rate was 100 and the temperature 98.2° The tongue was dry and coated and the breath often sour He was removed to Hawick Cottage Hospital for operation

Operation—When I opened the abdomen some clear fluid escaped A deep purple patch of fat presented at the ileo-caecal region This was adherent to the parietes by recent adhesions which were easily separated The mass was then delivered It was found to contain the appendix which was acutely twisted near its base as the pedicle of an ovarian tumour with twisted pedicle—and the fat was the mesentery of the appendix rolled round and round The centre of the mass was quite black The mass was removed in the usual way it measured about 3 in long and 1 in broad The abdomen was then closed Recovery was uneventful and the patient was discharged from the hospital on October 24th

There was an excessive amount of subcutaneous fat and the mesenteric fat was also increased in amount I imagine that this unusual amount of fat in the mesentery of the appendix may have determined a torsion

Hawick A C MALLACE M C M S M B, Ch B

POST-OPERATIVE THIRST

THE boracic acid spray suggested by Dr T D Hart (October 18th p 717) for this distressing condition seems to be quite efficient but the prevention of it is even more desirable This is carried out in abdominal operations by pouring into the peritoneal cavity just prior to closure of the wound, a quantity of warm normal saline A pint of fluid may advantageously be administered by this route There is rapid absorption and no unfavourable effects The treatment is now to be recommended in septic cases

[illegible] O C [illegible] F R C S E I

Reports of Societies.

NOTIFICATION OF PUERPERAL SEPSIS

COMBINED DISCUSSION AT THE ROYAL SOCIETY OF MEDICINE

THE Sections of Obstetrics and Gynæcology and of Epidemiology and State Medicine and the Society of Medical Officers of Health united in a discussion at the Royal Society of Medicine, on November 6th, on "The notification of puerperal sepsis." Dr. H. RUSSELL ANDREWS (President of the Obstetrical Section) was in the chair, and there was a very large attendance.

Origin and Scope of the Discussion

The CHAIRMAN said that the idea of such a discussion originated in a letter addressed by Sir George Newman in May last to the Section of Obstetrics and Gynæcology, in which he stated that the Minister of Health was anxious to take such steps as were possible to reduce the incidence of maternal mortality, and particularly of puerperal sepsis, and asked for observations as to the administrative action which might suitably be taken. The Council of the Section referred the matter to a subcommittee, consisting of Sir Lewis Mackern, Mr. Aleck Bourne, Dame Janet Campbell, and himself, which reported as follows:

"Any case in which there is a rigor or a temperature of 102° or higher for twenty-four hours, during the first ten days after confinement or abortion must be notified. Get rid of the official term 'puerperal fever' and use in its place the term 'puerperal sepsis.' Puerperal sepsis is a febrile condition of the nature of *wound infection*, arising after labour or abortion, due to bacterial invasion from, or absorption of, products of bacterial action from some portion of the genital tract."

In reply to this Sir George Newman had pointed out how important the matter was, as it might influence future legislation, and therefore it was thought well to arrange for a combined discussion. Whatever reply was decided upon at that meeting might be taken by the Ministry of Health as the considered opinion of the two Sections and the Society taking part. The present position of the notification of puerperal sepsis was most unsatisfactory. Many patients suffering from this condition were left without adequate treatment, and the cases were not notified until death was imminent. Dr. Fothergill of Manchester had stated that in 1911-14, out of 200 areas, in 93 the total of deaths from puerperal fever was larger than the total of notifications. One of the results of the present discussion ought to be the provision of beds for women suffering from puerperal sepsis. Cases were sent to hospital frequently too late for treatment—chiefly adequate nursing—to be of value. The subject bristled with difficulties, but he called for constructive criticism. The discussion must be limited to administrative action, terminology, and definition of notification. Ample opportunity would be afforded at the Congress of Obstetrics and Gynæcology in London in April next to discuss causation, prevention, and treatment. He read a letter from Sir Francis Champneys, who suggested that a resolution should be sent to the Ministry of Health asking for arrangements to be made whereby the notification of all fatal cases—or, if preferred, all cases of puerperal fever—should be accompanied by the statement as to who actually delivered the woman. Until this was known, Sir Francis Champneys said, they could not get on the track of the cause.

Notification of Suspected Cases

Dr. J. S. FAIRBAIRN said that the general principle underlying the recommendation of the subcommittee was that notification was useless unless the early and suspected cases were included. He found it helpful to bear in mind the type of case that would be considered a danger to be nursed in a ward with other lying-in patients. True, the risk of contagion was very much less when the patient was already isolated in her own home, although then there was a risk of the conveyance of infection to others by doctor, midwife, or maternity nurse. In domiciliary practice, however, and in nursing homes and small maternity homes, there were not the facilities for the thorough investigation of suspected cases which a large hospital afforded, and this disadvantage might be set against the lessened risk of spread. Dr. W. E. Fothergill had remarked upon the curious fascination which notification possessed for some minds. The best way to escape from being fascinated was to look upon notification as a means to an end, the end being in this case the reduction of the septic death rate in childbirth. Administrative action following notification fell into two categories—one dominated by concern for the individual case, from which point of view it was necessary first to determine the nature of the infection and then to arrange for nursing and treatment, and the other by concern for the public health, which took the form of prevention of the spread of infection and the obtaining and collating of information. The cases notified as suspect should be narrowed down to true genital infection calling for special management and precaution to prevent spread. The care of the individual patient must, however, be kept in the forefront, and the public health measures made as little obtrusive as possible. The doubt must arise whether notification of all suspicious cases was a possibility, and, if it were, whether it would make much impression on the incidence of the disease. In confinements the temperature was often not taken or recorded properly, and many slight fevers escaped notice and developed into serious infections. Some conditions might cause relatively little disturbance to the patient herself and yet be extremely infectious. In all infections it was the carriers and the unrecognized cases which were the greatest danger. The wider casting of the net would certainly add to the burden of the practitioner who did much midwifery, moreover, patients and their households were not altruistic enough always to consider the point of view of the public health or the value of statistical information. One form of notification which did seem reasonable was an addition to the birth notification of the name and qualification of the person actually present at and responsible for the delivery of the woman. The speaker considered that the immediate notification of all suspected cases was out of the question, it would probably involve some amendment of the Notification Act, and certainly some years must elapse before effective measures following on such notification could be set up throughout the country. But was it not possible to organize in some areas obstetric consultations, bacteriological investigations, domiciliary nursing, and a certain amount of hospital accommodation, both for observation and treatment, in which areas practitioners might be asked to notify voluntarily cases of fever in childbed? Much valuable experience would be gained both to the administrative and practising sides of the profession.

Dr. R. DUDFIELD (M.O.H. Paddington) also spoke on the notification of suspected cases. He reminded the meeting that this question was considered by the British Medical Association in, he thought, 1906, and a report was published that any temperature of over 100° lasting for more than twenty-four hours should be regarded as indicating a septic case, and it was implied that this was a case for notification. He would like to see the profession in a position to certify suspected cases. At present the profession was handicapped by being obliged to say yes or nay. He thought also that the Ministry of Health should set up a committee of experts and that questionaries should be circulated to medical officers of health, and through them to the certifying practitioners, the returns being sent to the Ministry for reference to the expert committee. For this work the certifying practitioner ought to receive a fee. If such a procedure was followed it would render needless a great deal of the work of inquiry at present carried out by members of the staff of public health authorities. He suggested that the first part of the subcommittee's report be altered to read:

"Any case in which there is a rigor or a temperature exceeding 100° for twenty-four hours at any time during the first ten days following confinement or abortion must be notified in the instance as a suspected case of puerperal fever."

Although there was a widespread desire to get rid of the official term "puerperal fever" struck out, for legal purposes he thought the term should be retained, it was the term which was in use in other countries.

Better Supervision of Midwifery Practice

Dr R A Lyster (M O H Hampshire) said that investigation into the possible causes of maternal mortality always led to one result—namely, that the chief and almost sole cause was bad midwifery practice The level of midwifery practice could be substantially raised by efficient supervision and inspection The Midwives Act was intended to create a body of midwives practising under close supervision and inspection, but that intention had never been carried out By influence through their societies midwives had successfully prevented the organization of schemes whereby their work could be properly checked and supervised with the result that twenty years' working of the Midwives Act had resulted in little or no improvement in mortality connected with midwifery or mortality among newly born infants The speaker referred in this connexion to the working of the Notification of Births Act, 1907 midwives although they had to notify the birth within thirty six hours had succeeded with the support of the Central Midwives Board in preventing any official visits to the house by health visitors during the first ten days, and it was a striking fact that it was during those ten days that the mortality among mothers and infants had shown so small a diminution during the last twenty years In an area in which for a time the health visitor called during the ten days it was notorious that nearly all breaches of the Central Midwives Board rules by midwives were discovered by the health visitor, it was also flagrant that a very large proportion of the ophthalmia cases discovered were noticed for the first time on the day when the health visitor first called His experience was that a sufficient service of competent midwives—for which the Ministry of Health suggested that large public payments, either direct to midwives or to nursing associations, should be made—could be secured at once in most districts by increasing the supervision of their work In practice the payment of subsidies to midwives in sparsely populated districts was unreasonably costly and it was far cheaper and more satisfactory to provide maternity homes With regard to notification the speaker referred to the pathetic faith exhibited by some people in this procedure Notification unless accompanied by substantial schemes of practical utility, was worthless from the preventive point of view A document issued by the Ministry of Health stated that there should be investigation by the medical officers of health of all maternal deaths due to childbirth and of all cases of puerperal infection whether fatal or not Apparently it was to be left to the medical officers of health to get into all kinds of trouble and difficulty in making inquiries concerning the work of private practitioners He hoped that no medical officer of health would undertake such investigations unless and until the medical profession assented to the proposal This proposal of the Ministry should be considered at once by the British Medical Association and that body should advise its members as to their attitude

1 General Inquiry into Puerperal Morbidity

Dr T Watts Eden said that evidently the notification of puerperal fever was not satisfactory Dame Janet Campbell had said, with official moderation, that it was unsatisfactory and incomplete and Dr W E Fothergill had stated that not 4 per cent of the cases of puerperal fever were notified To the speaker this was the salient fact of the situation The present system of notification had completely broken down Those who saw cases of puerperal fever in consultation were always asked two questions was it a case of puerperal fever, and if so must it be notified? There was a good deal of honest doubt especially in the early stages as to whether a case was puerperal fever or not and even if it was the practitioner liked to call it by some other name if he could The idea was fixed in the public mind that if puerperal fever occurred the doctor was to blame The doctor would notify tuberculosis or eruptive fevers but not puerperal fever if he could help it Until the support of practitioners was forthcoming there could be no progress He thought it a mistake to approach the subject at all from the narrow portal of notification What was required was to bring under review the whole field of puerperal morbidity This would evade the difficulty caused by reluctance of the practitioner to notify How often was a mild febrile disturbance in the puerperium converted into a severe case of sepsis by injudicious management or some operative procedure? The whole field of puerperal morbidity could be explored if provision were made for the reception of midwifery cases at hospitals The present provision was scandalously inadequate If a system of puerperal visitation wards were organized to which practitioners were encouraged to send all the case that went wrong—the lacerations that did not heal the cases that became febrile—the notification of cases properly diagnosable as puerperal septicaemia would be made by the institution not by the doctor from whom the odium of notification would be removed Such a scheme could not be undertaken under the voluntary hospital system but only with State assistance Dr Herbert Williamson had suggested that it was a subject for a Royal Commission That might be the enthusiasm of the obstetrician but it was certainly worthy of inquiry by a strong committee, partly medical, partly lay The evolution of some form of national midwifery service was overdue Such a study as he had suggested would enable the Ministry of Health to get in touch with clinical realities and the practical needs of the situation

The Difficulties of the General Practitioner

Dr C E S Flemming (Bradford-on Avon) said the notification was only a part and by no means the most important part of the process of prevention He agreed with the proposal to replace the term "puerperal fever" by "puerperal sepsis" he still term made notification a burden to the conscientious practitioner it forced him to notify every case with a temperature or to look for a definite specific disease and that without any spots or stigmata to guide him There were, no doubt, conditions not due to sepsis in which there was equally a rise of temperature within ten days and lasting for more than twenty-four hours, one of the most frequent being influenza The diagnosis and selection of cases for notification must be left to the medical man in attendance who would be only too grateful if the suggestion made by previous speakers materialized that a second opinion should be made available The speaker believed that notification at the present time in county areas was made to the wrong person, for it often happened that the practitioner was required to his natural disinclination, to notify a case to a medical officer who was his rival in practice He knew of a medical man who had a case of severe puerperal sepsis, and eventually discovered that the district midwife looking after the case was at the same time nursing two other cases in the same condition (both of them patients of the district medical officer) neither of which had been notified nor had the nurse been informed that they were septic Another reason why notification should be made direct to the medical officer for the county was that he was the officer controlling the midwifery service It should be made not only a moral obligation but a statutory duty to inform the midwife or maternity nurse in attendance of the fact that a case was septic He thought also that when a medical man giving ante natal treatment discovered that the surroundings of the patient were not suitable he should have the duty of notifying the local authority What was the good of notifying a septic case unless it could be removed out of harm's way and to some place where it would receive efficient treatment At present in most districts, the isolation hospital was the only suitable place

1 Comprehensive Definition

Dr W Butler (Medical Officer L C C) said [illegible] came about after so many years of statutory notification, that a disease remained so elusive The truth was that on the one hand, there existed a series of pathological phenomena associated with the puerperal state of a variable character, both in origin and symptomatology as to [illegible] obligatory inclusion under any term or group of terms,

and, on the other hand, there was the tragic history of puerperal sepsis, the sombre background of the past projecting itself and presenting what, in the light of modern medicine, seemed an anachronism—a preventable catastrophe that would suggest a culpable responsibility The general practitioner was not less solicitous than the medical officer that the dangers of childbirth should be reduced, but he approached the problem from a different angle, and he had *personal interests which he naturally thought* had a claim to consideration The difficulties of the practitioner were real, and should be sympathetically apprehended Dr Butler thought that the *suggestion* of the subcommittee as to what cases should be notified had *the merit* of precision, and, quite fortunately, it embraced a variety of conditions which it would be incorrect and misleading to describe as puerperal sepsis—such, for instance, as a common cold, not infrequently contracted during labour, an attack of influenza, or the kindling of a latent tuberculosis Why not call it a sustained puerperal pyrexia, and thereby get rid once and for all of a bugbear? Sustained puerperal pyrexia was a suitable condition for notification, although how far it was compatible with the provisions of the Infectious Diseases Notification Act to make known only a clinical condition common to a number of diverse diseases was another matter which need not be discussed at the moment This would certainly be an innovation, but it would lead to administrative action involving the closest co-operation of medical officer and practitioner, and would be likely to be very fruitful in results It was, in fact, the only kind of action appropriate to the circumstances, and if a departure from the stereotyped procedure had to be made and special measures devised accordingly, the occasion justified such an innovation

Administrative Measures

Dr H Scurfield (late M O H Sheffield) said that all the speakers appeared to be agreed that the notification of puerperal sepsis had failed One reason was an idea prevailing in many districts that sepsis occurring after miscarriage did not require to be notified His own feeling was that it would be better to put forward a proper administrative scheme before bothering about the question of the exact condition to be notified One speaker had said that the notification of tuberculosis was actually carried out, he did not think that medical officers would agree as to that, but the zeal in carrying out the notification of tuberculosis varied in different areas with the efficiency of the administrative measures that could follow upon notification Another disease now notifiable, ophthalmia neonatorum, was like *puerperal fever in the respect that it* seemed to imply a slur upon the practitioner, but the notification of this disease was fairly well carried out, again because administrative measures had certainly become more efficient This idea of a slur upon the practitioner would not interfere with the proper notification of puerperal fever when such administrative measures were available In Sheffield the only institutional provision was the Poor Law hospitals, and that raised a big question Such cases were not admitted into the infectious diseases hospitals under the control of the corporation, if they were so admitted in any area it would be necessary to engage a special staff of nurses, and to have gynaecological specialists at call He urged that this question of a slight alteration in the definition of puerperal fever should be coupled with a strong recommendation that an administrative scheme be organized for every district, urban or rural

Popular Prejudice against Notification

Sir Ewen Maclean said that those familiar with the subject were aware that Wales was an 'awful example' in the matter of maternal mortality, and in particular of mortality from puerperal sepsis When the figures for the country generally were 4 11 deaths per 1,000 births, the figure for Wales was 5 41, and the single factor which was most prominent in these late figures was puerperal sepsis The Consultative Council of the Welsh Board of Health was so much impressed with the high puerperal mortality in Wales that it sought and obtained the consent of the Ministry of Health to visits by its members in several parts of Wales to investigate conditions on the spot In Wales, as in other parts of the country, non-notification was largely practised The cause for this which emerged in the course of the inquiry was one which went rather deeper than the suggestions made in the present discussion Directly or by implication the blame had been laid upon the doctor or the midwife, but the real reason why notification was not much more successful was found to be, in Wales, the extraordinary complacency of the people themselves They did not mind whether the condition was notified, and in many cases they did not want it to be notified It was the patient who raised objection, or at least was indifferent But if it became a matter of experience that notification resulted in advantage to the individual patient, then notification would become a popular thing, and thus would sweep away all the disabilities now attached to notification by practitioner or midwife

Hospital Accommodation for Puerperal Cases

Professor Louise McIlroy considered that notification under present conditions would always be a failure It would always bring practitioners into disgrace Enormous courage was required on the part of the practitioner to suggest it to his patient If he was conscientious he had many black marks against him at the Ministry of Health, while the unconscientious practitioner had a clean record there Again, to rely on temperature as a mark of puerperal sepsis was out of date Was it to be said that a case of puerperal sepsis with streptococci in the blood was in the same category as another case in which there was a slight laceration of the cervix and a temperature and which cleared up after a day or two? Another reason for the failure of notification was the lack of adequate treatment for the notified patient She agreed that some influential committee should sit on the question of the whole organization of obstetric practice, and one of the great reforms which the Ministry of Health might bring about would be the setting up of a large hospital, preferably in London, devoted entirely to the treatment of puerperal sepsis If cases were notified to the medical officer of health of a district he had no power to carry out any adequate treatment, and patients did not like to be sent to a Poor Law infirmary This discussion on notification was merely a small part of the question Another matter which might be taken into account was the absence of facilities for practitioners to take intensive courses in midwifery

Dr L W Goodall (medical superintendent North Western Fever Hospital) said that cases of this character had been admitted to the infectious fever hospitals of the Metropolitan Asylums Board since 1912, and were placed under the charge of the medical officer who had been in the service the longest and had the most experience of this disease, moreover, the authorities of the hospital were always at liberty to call in specialists, and frequently did so The misfortune was that many of the cases came too late—practically dying—while others which came were travel cases, not puerperal sepsis at all It would be a good thing to concentrate cases of puerperal sepsis in one or two hospitals

Other Points in Discussion

Dr Mary Kidd regretted to hear so much criticism of midwives, who were an excellent, hardworking body of women They were ill paid, and incidentally it would be a good thing if local authorities could make them an allowance for rubber gloves and sterilized outfits With regard to health visitors, many mothers of the poorer class would resent the appearance of a health visitor in the very early days after confinement Many of these health visitors knew nothing about midwifery, and their interference might be hard on the midwives With regard to Poor Law institutional accommodation, this might be acceptable if only the relieving officer could be got out of the way

Dr Stevenson (Registrar-General's Department) said that it would be useful to know in what practice—whether midwives' or midwives'—the cases of puerperal sepsis occurred This could be readily established from existing records He had been struck by the fact that, indeed not after the war, when, presumably, the proportion of the

attended by midwives declined owing to the return of practitioners to civil duties, there was a sudden and considerable rise of mortality from puerperal fever He added that the Registrar General no longer used the term 'puerperal fever" but puerperal sepsis" His own view was that the former was the proper term but strong representations were made a few years ago, and he bowed his head to the storm

Dr J ROBERTSON (M O H Birmingham) agreed with previous speakers that it very frequently happened that cases arrived at hospital so late that it was impossible for the best specialists to prevent a fatal issue The whole question of obstetric administration needed to be reviewed, and he was convinced that not only practitioners, but midwives and local authorities, desired to co-operate in a general scheme for the betterment of midwifery

Dr REMINGTON HOBBS thought that the limitation of notification to cases which had a rigor or a temperature of 102° would leave a vast number of patients in jeopardy It would leave many women in pain and suffering for days when they could be relieved Many cases did not show these manifestations some indeed, ended fatally in which the temperature had been little above normal He would like to add to the definition that there were cases in which the uterus became absolutely obstructed and others in which it became partially obstructed, and that septicaemia could occur in both

The Chairman (Dr PISSELL ANDREWS) said that the discussion had been very useful and it remained now for the subcommittee to draft a reply to the Ministry of Health Whatever answer was sent would deal not with small points, but with broad policy and would most probably include a request for such an inquiry as had been suggested by Dr Eden and other speakers

TUMOURS OF THE BREAST

A MEETING of the Aberdeen Medico-Chirurgical Society was held on October 30th, when the President Dr G M DUNCAN, delivered his presidential address on tumours of the breast

Dr Duncan's experience included several hundred of such cases After some preliminary remarks upon the importance and difficulties of histological examination he dealt first with the carcinomas Points of interest in these tumours were the rarity of their occurrence in the male breast (in his series only six occurred in males) the difficulties of diagnosis in the early stages and the extraordinarily high percentage of carcinoma in the case of breast tumours Dr Duncan described the method of rapid diagnosis by examining sections during an operation, and thought that this method might be more extensively used provided that the pathologist had the necessary experience of preparing and diagnosing such sections Illustrative cases were described where the method had been of considerable value The different varieties of breast cancer were then described, and special reference was made to the difficulty of differentiating cancer commencing in a mastitis breast and of distinguishing the malignant types of papilliferous cyst-adenoma Dr Duncan drew four general conclusions (1) Cancer of the breast in young women tended to be much more malignant than in those of greater age (2) Cancer associated with inflammatory conditions of the breast often tended to be peculiarly malignant (3) As a general rule, the more cellular the growth the more malignant it was (4) It was unwise to draw merely from the size of the growth any definite conclusion as to malignancy locally, and also as regards the occurrence of metastatic deposits Cases were cited to show that while a large growth might be removed with complete success rapid local recurrence or the development of metastatic deposits might follow the removal of a small growth Emphasis was laid on the occasional occurrence of metastatic growths producing definite physical signs where the primary tumour in the breast was so small as to require the most careful examination for its detection Dr Duncan then described other types of breast tumour such as fibro-adenoma and the very rare sarcoma he referred also to inflammatory conditions including syphilis and tuberculosis He suggested that some of the vague fibrous conditions found in the breast might be of syphilitic origin

THE SEMON LECTURE

MALIGNANT DISEASE OF THE OESOPHAGUS

On November 6th, with SIR WILLIAM HALE-WHITE, K C M G, C B, in the chair Dr I GUTZEIT [illegible] delivered the University of London Semon Lecture on malignant disease of the oesophagus The lecturer spoke in French and illustrated his remarks with a number of lantern slides

Dr GUTZEIT stated that cancer was the most frequent affection of the oesophagus and occurred in about [illegible] patients suffering from disease of the oesophagus It was six times more frequent in males than in females and [illegible] for the most part between the ages of 55 and 65 the youngest patient referred to by Dr Gutzeit was a boy 14 years of age The most frequent site was the lower third and after that the middle third the upper third Inflammation of the mucous membrane due to chronic irritation especially of alcoholic origin, was held to be an etiological factor but the lecturer also drew attention to the effects of psychical factors which predisposed to cancer of the oesophagus, and he quoted instances of patients who had developed carcinoma of this part after [illegible] from spasm of psychical origin In the course of inflammation of the mucous membrane patches of leucoplakia developed and it was in these patches that cancer [illegible] appeared later

Symptomatology

Coming to the symptoms of carcinoma of the oesophagus, Dr Gutzeit stated that dysphagia occurred in 93 per cent of cases This dysphagia was painful and it began in an abruptly the patient suddenly finding difficulty in swallowing a morsel of bread or meat This feature was responsible for the so-called latent period of disease pain only occurring when the growth had [illegible] structures Another frequent symptom was excessive salivation a implying reproduction canal of the [illegible] length of time during which food had to be rejected Dr Gutzeit emphasized that the tumour [illegible] and completely the wall of the oesophagus [illegible] was uncommon in the early stages and dilatation with so-called regurgitant vomiting was only [illegible] The extreme emaciation in this disease [illegible] to starvation it was not a malignant cachexia Other minor signs included the expectoration of [illegible] phlegm a peculiar fetor of the breath and a [illegible] coating of the base of the tongue and [illegible] lingual leucoplakia

While spread of malignant disease to the [illegible] by tastes in the veins and lymphatics was rare [illegible] continuity frequently occurred Extension to the mediastinum of the tumour or [illegible] gave rise not only to pressure on the air passages but also to inflammation and destruction of the trunk The left recurrent laryngeal was often involved this was found to be the case in 20 [illegible] and especially the left [illegible] perforation occurred as a late [illegible] Pleurisy complication such as bronchopneumonia or abscess of the lung frequently resulted from [illegible] and extension of the growth to the [illegible] occurred Pulmonary tuberculosis was a [illegible] complication Severe haemorrhage resulting from [illegible] or a large vessel was not infrequent [illegible] this disease

Clinical Varieties

Dr GUTZEIT next dealt with the [illegible] part disease of the oesophagus A [illegible] where the growth was [illegible] was very rare Ulceration [illegible] slow but in young subjects [illegible] carcinoma of the [illegible] was usually pulmonary [illegible] while in [illegible] was the [illegible] part to [illegible] [illegible] In the case of malignant disease [illegible] [illegible] occurred [illegible]

Carcinoma secondary to growths in the trachea and in the breast had also been reported. Multiple growths sometimes occurred, and in cases treated by radium the growth sometimes appeared in other parts of the oesophagus while the primary carcinoma remained fibrosed. Apart from oesophagoscopy, the physical signs of malignant disease of the oesophagus were few. The passage of a tube or bougie revealed only the presence of stenosis, and a radiographic examination after an opaque meal showed little more. Direct examination through an oesophagoscope, however, would show the growth in its earliest stages. Dr Guisez then described his method of using this instrument.

The common varieties of oesophageal growths were polypoid, ulcerous, and scirrhous in type. The first consisted of more or less pedunculated exuberant masses of epithelium which occupied the lumen of the canal and bled freely on being touched. The ulcerous form consisted of infiltrated patches of denuded epithelium with raised, hard edges. The scirrhous variety was rare except in the lower third of the oesophagus, it consisted of hard, fixed masses under the epithelium which rapidly infiltrated a segment of the wall and gave rise to stenosis.

These three varieties were sometimes combined. The constant features were the immobility of the growth and the bleeding on touching, while a microscopical examination of portions removed through the oesophagoscope would clinch the diagnosis. Malignant disease of the oesophagus had to be diagnosed from simple stenosis, from spasm, and from pressure on the oesophagus from the outside, and the oesophagoscope would enable any of these conditions to be eliminated.

Prognosis and Treatment

The prognosis of the disease was naturally grave, but factors such as the slowness of the growth, the absence of pain, and the relative absence of generalization rendered disease in this part not so distressing, at any rate in the early stages, as malignant disease of other portions of the alimentary canal.

The ideal treatment of carcinoma of the oesophagus was complete removal or destruction of the growth. Surgical removal was up to the present generally out of the question. Attempts had been made to resect growths of the upper end of the oesophagus, but the mortality rate was very high. Intrathoracic growths had also been operated upon, but only one successful case was so far reported in 1919 a patient operated upon by Thoreck was still living, eight years after removal of the growth.

Application of radium seemed a more hopeful method of treatment, particularly as the growths generally consisted of squamous epithelium of the basal-celled type, which was most susceptible to the action of radium. Dr Guisez stated that he had employed radium in the treatment of 270 cases during the last fifteen years, always after a microscopical confirmation of the nature of the growth. In some cases the use of radium proved purely palliative, but in 39 cases life had been prolonged for more than eighteen months, and in several the growth had not reappeared—in one case for as long as eleven years. The disappearance of these tumours was watched through the oesophagoscope and generally no trace was left.

The lecturer then described his methods of using radium. It was essential that the exact site of the growth be known, that the patient be not too exhausted, that neighbouring structures be not involved, and that the patency of the tube be still sufficient to allow radium to be applied. The distance of the growth from the mouth was first accurately measured and radium introduced on a special carrier so that it was exactly opposite the neoplasm in the oesophagus, the upper extremity of the carrier being firmly fixed by tapes round the head. These carriers were special long sounds, which were very liable to slip up above the growth. The radium bromide usually employed was about 10 to 12 centigrams of platinum platinum screens (1·5 mm.). Five or six applications of up to ten hours every other day were generally given. If the growths were observed through the oesophagoscope the action which happened was the disappearance of the tendency to bleed on touching with a sound, and in favourable cases the growth gradually disappeared. (Some striking illustrations, drawn from actual oesophagoscopic views, were shown to demonstrate this.) In summarizing the results of this treatment, Dr Guisez remarked that in recent years they had been much more favourable, particularly when it was remembered that he had an increasing number of advanced cases sent to him.

The lecturer finally dealt with other palliative methods of treatment, referring to the operation of gastrostomy, which was often, he said, delayed too long. He also described the use of soft rubber tubes of the Pezzer catheter type, which were more easily tolerated than the solid tubes usually recommended, and he regarded such intubation as preferable to gastrostomy.

PROGRESS IN PREVENTIVE MEDICINE

Dr McVail's Address

The presidential address was delivered by Dr J. C. McVail before the Section of Epidemiology and State Medicine of the Royal Society of Medicine on October 23rd. Taking the progress of preventive medicine as his subject, the President reviewed the advances that have been made since the commencement of the modern sanitary era, when William Farr began his great work at the General Register Office, and then proceeded to indicate the directions in which further progress may be made.

Early in his official experience Dr McVail became impressed with a fact which had since become obvious to the most cursory observer. In modern schemes of public assistance there was risk of diminution of the sense of personal and family responsibility, and a tendency to rely on imperial taxes or local rates for services which should be provided by individuals for themselves and by parents for their children. No progress could be regarded as satisfactory which tended to undermine a man's independence and strength of character. In order to guard against such results, whatever measures were adopted in the future should be subject to three principles: (1) Insurance in the provision of services which the individual cannot be safely left to secure for himself. Definite personal contribution to a fund created beforehand for meeting the cost of contingent outlay on behalf of individuals was incomparably better than resort to current rates and taxes. (2) The establishment in practice of the principle of conditional relief as distinguished from unconditional relief, and exercise of due discipline over beneficiaries. (3) Effective education in personal and family health, especially of parents in the rearing of their children, education in self-reliance and foresight, and in the responsibilities of citizenship. Subject to these principles, Dr McVail emphasized two of the directions in which further progress should be made—the routine medical examination of individuals apart from illness and the concentration of matters relating to health alike of the community at large and of the pauper class—under a single authority.

In 1907, at the request of the Royal Commission on Poor Law, Dr McVail investigated Poor Law medical relief in England and Wales, and in a memorandum to his report advised that systematic medical inspection should be established in respect of all ages of life. The family doctor, he said, should at reasonable intervals offer to make examination of those for whose health generally he is responsible. He would acquaint himself with the family history, and note pathological tendencies requiring to be checked. With regard to the children, he would note their physical condition as a whole, their state of development in relation to age, indications of rickets, tubercle, or glandular disease, defects of sight or hearing, and enlargement of tonsils and the like. In connexion with the occurrence of actual illness, he would ascertain whether there was any threatening of dangerous sequelæ, such as endocarditis after acute infectious disease. He would note whether the child's nervous system was being properly developed, and its functional activity sufficiently restrained. As regards the school child, he would see whether school work was being overdone, whether the child was being taught to practise steady application in any specified task, whether it was

being permitted to read books of too exciting or too advanced a character, whether it was being sent sufficiently early to bed and made to rise early enough in the morning, whether it was being punished unwisely for faults due to its physical and mental condition As the child continued to grow into youth, note would be taken whether athletic exercise was excessive and injury to the heart or other vital organ threatened whether, on the other hand, the youth was leading too sedentary a life When the time came the doctor would advise as to the most suitable occupation, having regard to the general condition of health Among women he would see that due care was taken to prevent mischievous sequelae of childbirth, such as uterine displacements or inflammations Among men he would observe any tendency to trade disease, whether their employment was such as made special calls on any vital organs, and if so whether these were reacting properly to the stimulus or threatened to break down Independently of age sex and occupation, the inmates of a household would be offered a general examination of their vital organs, and advice would be given where it appeared to be necessary In old persons attention would be paid to the condition of the arteries in relation to apoplexy, and to parts likely to be attacked by cancerous disease

Though periodical medical examination did not commend itself to the Poyal Commission, there had since that time been a remarkable development on the lines indicated Infant welfare, child welfare, school medical inspection and treatment carried out the principle as regards the young though the work was not done by the family medical attendant but by school doctors and nurses Even as regards adult life much progress was now being made In America several of the large life insurance companies provided and paid for medical inspection of the insured They did so, not on grounds of benevolence but of economy and finance, and it was claimed that a large saving in life and capacity for work was made under this scheme The work was done by medical men employed, not directly by the insurance companies, but by a life extension institute

Evidence was accumulating rapidly to show that this common sense method, generally applied and followed by necessary remedial treatment or regulation of personal hygiene would do more to prolong health and vigour than any other measure During the administration of President Roosevelt the system was introduced into the United States Army in respect of commissioned officers and it was reported to be of great value in conserving health A circular by the War Department in 1921 urged the necessity of examinations being carried out with thoroughness attention to detail, so as to enable the Department to apply practically on a large scale the principles of health preservation Between 1914 and 1921 the Metropolitan Life Insurance Company authorized nearly 95,000 physical examinations, and reported that it had been established to the satisfaction of the company that periodic medical examination was justified by the benefit in added life expectancy to the policy holders The question was raised in the address, how far the average general practitioner was at present qualified by his training to detect the very beginnings of disease, but on that point attention was drawn to the fact that under the General Medical Council's regulation such training is now an essential feature of the whole medical curriculum Periodic examination should never be made without the free consent of the individual—the adult for himself the parent for the children

The second matter discussed by Dr McVail had reference to the Poor Law He supported the view that there ought not to be two separate sets of local authorities dealing with health—one for the community at large the other for the pauper class The health functions of the boards of guardians should be transferred to the local authorities under the Public Health Act The Majority Report was however against the policy of break up of the Poor Law including the transference of health functions Recent reconsiderations by a specially appointed body had resulted in a reversal of the majority conclusion on the subject but the important point was that it should be the duty of the health authority to take charge of the health of the pauper class not only in the interest of the latter but of the population at large Excluding lunatics and vagrant paupers numbered perhaps only about 25 per 1,000 of the population, but pauperism, though destitution was a legal criterion, connoted far more than mere poverty and whether it resulted from tuberculosis or alcoholism instability of character, or other cause the public interest required that paupers be under more skilled control in respect of health and character Doubtless many board of guardians went beyond the limits prescribed for them, and on the other hand the area and population under many a public health authority were far too small for efficient administration But the situation should be frankly faced and a great reform in the whole scheme of local government be undertaken

Finally, Dr McVail dealt with the familiar argument that their sanitary efforts would simply result in the widespread survival of the unfit, and lead ultimately to the production of a degenerate race He pointed out that assuming that one-tenth of the births fell below the line of viability during the first ten years of life under present sanitary conditions, and that these could be saved by improvement in the environment, it must not be forgotten that the remaining nine-tenths also shared in the benefits of the improved condition It it was considered a loss to have preserved the weaklings, there was, on the other side of the account, nine times the gain in the form of increased vigour of the fit, and the same condition which strengthened the weakest made also for the survival of the fittest

X-RAY TREATMENT OF UTERINE FIBROIDS

A clinical meeting of the Newport Medical Society was held at the Royal Gwent Hospital on November 5 th

Dr T I Cundy read a short communication on the treatment by x rays of menorrhagia due to uterine fibroid The type of case he considered best suited for this method of treatment was menorrhagia occurring in a patient over 40 years of age, causing weakness and impairment of the general health, and postponing the onset of the menopause It was necessary to exclude the presence of malignancy and suppurative pelvic condition His practice was to administer at one sitting the dose necessary to produce amenorrhoea The improved methods of measurement now available and the increase of knowledge of the biological action of x rays enabled this to be done with a considerable degree of precision He found that the best time for treatment was within the first ten days after the cessation of menstruation The next menstrual period came on as usual but the loss was always very much reduced and thereafter complete amenorrhoea became established In each of the twelve selected cases which he had treated the clinical results had been all that could be desired

Dr Morrell Thomas showed a pathological specimen from a case of haematometra following pregnancy Dr Cuthbert Johnson showed a case of aneurysm of the femoral artery associated with dilatation of the aorta Mr P J Ivens reported upon a case of sarcoma of the upper jaw in which the growth retrogressed in a remarkable manner without treatment but which subsequently recurred The diagnosis had been confirmed by pathological examination The President Mr R J Coulter, showed a small piece of iron copper wire which he had removed from the vitreous of a patient who had been struck on the eye by a shot or cartridge Dr Inchley showed a case of gumma of the lip successfully treated three years ago, and which now showed on x ray examination, extensive deposits in both lungs

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On October 21 st Dr J A Murray delivered the presidential address to the Section of Pathology Poyal Society of Medicine He dealt with the possibility of remedying the increasing bulkiness of the literature of experimental pathology by developing a pictographic convention which would obviate or at any rate reduce the necessity for long verbal descriptions The difficulties in the way of such a change were exemplified in a series of clear cut experiments in cancer research lantern slides and the peak recommended to the member of the Section the making of further experiments on uniform lines of presentation of their results

Reviews.

INTERNAL SECRETIONS

A work on the *Biology of the Internal Secretions*[1] by Professor F X Dercum of Philadelphia, who described adiposis dolorosa as far back as 1888, would in any case attract attention, and the interesting and suggestive manner in which it deals with the endocrine factor in development, in subnormalities, in neoplasms, in nervous and mental diseases, and in heredity, more than justifies this anticipation This comparatively small book contains much original thought and its hypotheses break new ground, but, though cautiously made, some of these new conceptions can hardly be regarded as proved until confirmed by the necessary research they may well stimulate Tracing the internal secretions from the cellular products of the protozoa into the higher animals, stress is laid on the interrelations of the endocrine glands, and it is definitely stated that *there is no uniglandular disorder*, for more than one endocrine gland is always involved, possibly all of them, and accordingly the relations of the various glands are fully discussed

Perhaps the most striking points in this mature expression of the views of an experienced physician are the importance he ascribes to the thymus gland and his suggestion that the cause of malignant disease may be disorder of the endocrine glands To the pineal gland also Professor Dercum attributes considerable importance as a controlling influence during the period of growth of the body, it undergoes involution at the time of puberty when its work has been completed, and accordingly the symptoms of pineal disease, mainly due to hypopinealism, are explained is due to premature removal of its restraining action Professor Dercum lays much stress on the endocrine function of the epithelial thymus (Hassall's corpuscles) He considers that this provides a substance favourable to lymphocytic life, and that in the status lymphaticus, which is regarded as an expression of inherent feebleness of tissue development, it secretes a vagotonic toxin responsible for sudden death Further, he suggests that enlargement of the thymus, as part of the feeble state of development, leads to overactivity of the antagonistic thyroid and so to exophthalmic goitre, and that as a result of this the chromaffin system also takes on excessive activity, and occasionally the anterior lobe of the pituitary enlarges, also in order to overcome the depressing effect of the enlarged thymus, as is shown by acromegalic features Indeed, acromegaly is ascribed to an enlarged thymus stimulating the anterior lobe of the pituitary to overactivity As the parathyroids contain thymus elements they are placed in synergic relation to the thymus and in antagonism to the thyroid Hypoplasia of one endocrine gland leads to hyperplasia of the antagonistic glands, and disease may result Enlargement of the thymus and lymphatic system is thought to play the principal part in disturbing the balance between the endocrine glands and so favouring the development of neoplasms, for the healing of abrasions, fissures, and ulcers, if no longer controlled by the sympathetic group of endocrine glands (the adrenal medulla, the posterior pituitary, and thyroid), may take the form of riotous hyperplasia This hypothesis helps to explain the usually accepted influence of chronic irritation in the production of new growths But the statement, apparently made in support of this view, that primary malignant disease of the thyroid and of the chromaffin system is practically unknown, cannot be accepted

The discussion of the relation of the endocrine glands to nervous and mental diseases is especially interesting as coming from such a distinguished neurologist, neurasthenia is regarded as the result of functional failure of the chromaffin system, the thyroid, and the pituitary in a neuropath—that is an individual with a morphological and biological defect in the endocrine glands In the chapter on neuropathy and the problem of heredity the transmission of acquired characters is firmly asserted and Weismann's theory controverted on the grounds of clinical experience

[1] *The Biology of the Internal Secretions* By Francis X Dercum, M D Ph D Philadelphia and London W B Saunders Company 1924 (10 in 6½ 238 pp 21s net)

ANAPHYLAXIS

The title of Dr Cranston Low's monograph, *Anaphylaxis and Sensitisation*, scarcely reveals the wealth of material dealt with by the author, who, besides giving a full analysis of anaphylaxis, has made a notable contribution to the pathology of diseases of the skin[2] No problem directly or indirectly related to anaphylaxis has been overlooked in this survey, which is brought down to as late a date as the present year Some idea of the scope of the work may be obtained from an enumeration of the subjects examined Anaphylaxis in man, urticaria, drug eruptions, the erythemata, sensitization in tuberculosis, syphilis, and fungus infections, dermatitis venenata, dermatitis exfoliativa, focal infections, sensitiveness of the skin to light, tests for cutaneous hypersensitiveness, and finally desensitization Dr Low makes it quite clear that there is no one explanation acceptable by all the workers on anaphylaxis regarding its own physico-chemistry or the relations of the sensitizing substance (anaphylactogen) to the antibodies or ferments to which presumably it gives rise

The relations of anaphylaxis to immunity must be very close, and Dr Cranston Low, following Vaughan and Wheeler, summarizes them thus the injected foreign protein causes the tissues to produce a specific ferment (antibody) which splits the protein into a non-toxic and a toxic portion Any "specificity" in the reaction is due to the non-toxic moiety The toxic portion, common to all proteins, causes the morbid stimulation of nonstriated muscle, which is the essence of anaphylactic shock, hence the uniformity of symptoms in the same species of animal whatever the protein used When the ferment splits up the protein (bacterium, etc) before it has time to multiply, the animal is said to be immune When the cleavage is less prompt, but sufficiently so to break up the protein before it elaborates the fatal amount of poison, the animal sickens but recovers When the action of the ferment is still less prompt, the protein elaborates enough poison to kill the host In an animal which has recovered, the proteolytic ferment is stored in the cells of the body as a zymogen, which is activated by the second injection of the same protein—this is anaphylaxis This is by no means the only sort of explanation of anaphylaxis that can be given Friedberger's, for instance, is based on Ehrlich's side-chain theory, as follows the injection of the foreign protein calls forth the production of receptors which neutralize the antigen Similar receptors continue to be formed, but remain "sessile" in the cells, when the protein is injected a second time the antigen combines with the antibody and complement to form "anaphylatoxin," which, being a poison, produces the symptoms of shock This theory explains the absence of complement from the blood in anaphylactic shock

One of the most interesting chapters is that on hydroa aestivale, which is a discussion of the biochemistry of photo-dynamic sensitizers It appears that the worst cases of buckwheat poisoning in cattle occur when white or spotted animals eat the plant when in bloom One of the symptoms is an itching erythema Black animals are not affected, nor even are white ones if kept indoors or under cloudy skies White animals put out into the sunshine rapidly develop the dermatitis Ultra-violet light is therefore one of the causal agents But buckwheat contains phytoporphyrin, an ally of chlorophyll and of haematoporphyrin The inference is that the pigment is a photic sensitizer Now in hydroa aestivale haematoporphyrin is very often found in the urine, and is presumably in the blood The inference here is that that pigment is the photic sensitizer of the skin in which there is induced a destructive process Chlorophyll or haematoporphyrin added to a suspension of red blood cells in a strong light causes them to be haemolysed, while in a control tube in the dark no haemolysis occurs

To such an extent are clinical conditions being brought under the category of anaphylaxis that Dr Low writes "Taking everything into consideration, the course which acute fevers run can be explained fairly satisfactorily on the assumption that they are due to bacterial anaphylaxis"

[2] *Anaphylaxis and Sensitisation with Special Reference to the Skin and its Diseases* By R Cranston Low M D F R C P Edinburgh W Green and Son Ltd 1924 (Demy 8vo, pp xiii + 234 16 plates, 7 half-tone illustrations 25s net)

PRACTICAL BIOCHEMISTRY

We heartily welcome *Elementary Practical Biochemistry*,[1] by Professor W A Osborne and Dr W J Young, lecturer on biochemistry in the University of Melbourne, as one of the best handbooks to the laboratory for the junior student that has been published in English But it is more than a laboratory guide, for it gives, under the heading 'Theoretical" (didactic would be a better term), a summary of the points of physiological interest in the subject about to be dealt with practically

The treatment throughout is condensed without any sacrifice of clearness A number of topics are introduced which are of the utmost importance for the beginner, but which are hardly ever dealt with sufficiently fully for him in his textbooks, some of these are "basal metabolism" colloids, and hydrogen ion concentration A feature of the book is that certain subjects of special importance for veterinary students are discussed The treatment of vitamins, chemistry of milk, preservatives of food, and drugs in the urine is admirable, and just what the junior man should know The book is no mere repetition of a course which might have been excellent twenty years ago—it is up to date, it authors are alive to pre ent-day requirements

The only quantitative estimations described are those for the chlorides and phosphates of urine for urea and for glucose even in an elementary treatise the estimations of *uric acid, creatinin, and hydrochloric acid in gastric juice* should have been included Newer quantitative microchemical methods such as those of Folin and others are not described, and there are no figures of apparatus Probably the authors hold that these micro methods do not belong to an elementary work, hence no method is given for estimating the sugar in the blood Possibly for the same reason there is no reference to the colorimeter, to the polarimeter, or to filtration through a Berkefeld filter We have found nothing about the chemistry of the faeces or the chemical aspect of respiration Considerably more might with advantage have been said in the didactic part of the chapter on the physiology of alcohol, and a fuller description given of the chemistry of the washing of the skin—a subject about which the medical student's views are very hazy No method for the quantitative estimation of protein in urine is given, nor, indeed, of protein anywhere, this omission may be excused on the ground that these subjects belong to pathological chemistry, though in reality only the former does No directions are given for the preparation of substances in a pure state We hold with Liebig that nothing in physiological chemistry trains the beginner like having to prepare some of these The acetone method for urea is so extremely simple that it should have been included in any case Every laboratory manual for the junior student should contain a simple method for demonstrating the reducing powers of the tissues whether or not "reductase" is believed in on theoretical grounds There are one or two minor inelegancies, such as 'Points in Pavy," and 'a new lot of Pavy" Probably "Fehling solution" for "Fehling's solution" is an oversight, but "crystallized" has still two l's, on page 114 it is given only one The blank leaf between every two printed pages is an excellent feature of the book, and there is an index

THE PROLONGATION OF LIFE

Under the title of *Health Building and Life Extension*[2] Dr E L Fisk gives a very interesting account of American activities in the prolongation of life and the increase of working capacity The book is a survey of industrial health conditions made by the Life Extension Institute of New York on behalf of a Committee on the Elimination of Waste in Industry, the committee having been appointed by a federation of engineering societies Dr Fisk holds that all forms of disease and physical deficiency can be combated on lines correctly laid down The problem of fatigue has to be solved at its source and the committee's study and research had to be extended so as to include not only industrial problems, but health factors affecting mankind in general

The book is in three parts, entitled respectively "The physical state of civilized man", "The problem of industrial health and working capacity" and 'Preventive, remedial, and constructive measures" In the first part there is discussion of the question of physical degeneration, the extent of disabling illness, the possibility of further extension of the life cycle, the health cycle, and the work cycle, and the value of periodic examination and health supervision In a Government report on national vitality in 1909 it was stated that about three million persons were seriously ill at all times in the United States, and that 42 per cent of this was preventable, with a resulting life extension of more than fifteen years Since that time certain statistics have indicated that an estimated annual loss of thirteen days per head from illness has been reduced by at least a third and the expectation of life has been extended by about nine year In Part II of the volume the effect of many agencies injurious to health is considered including infections, harmful drugs and beverages, *alcohol, and tobacco* food deficiency and excess, foul air, hormone deficiency and excess, physical and psychic strain and apathy and injuries to sight This section of the volume concludes with a brief chapter on the economic loss from preventable disease and *sub-standard health conditions* Part III is devoted mainly to questions of organization or control measures, by the Federal Government, by individual States of the Union, by communities, and by industries Voluntary agencies are also dealt with, and the concluding chapter relates to special drives against disease

It will be seen from this indication of its contents that Dr Fisk's volume covers a wide field It is vigorously written and graphically illustrated To health authorities and health officers in the country it reveals in convenient compass what is being done in the United States That country admittedly followed the lead of Britain, but in freshness of outlook and initiative it is now in some directions perhaps surpassing its teachers who in their turn ought to be willing to profit from their pupils

PSYCHOTHERAPY

The revised edition of *Psychotherapy* by Dr James J Walsh contains four entirely new chapters and some other material It is a massive work containing an enormous amount of information, historical and other In a sense the book may be described as "old fashioned", the author makes the briefest references to psycho-analysis, he does not mention the various mental mechanisms and makes no attempt to discuss psychopathology as it is now commonly understood For Dr Walsh psychotherapy means suggestion in the broadest sense of the word, and his teaching is designed to show the importance of this process in the treatment of all forms of disease both functional and organic His outlook is perhaps best expressed in his quotation of Mandeville (fourteenth century) from Avicenna the Arab Galen of the eleventh century, who owed it to the ancient Greeks 'Often the confidence of the patient in his physician does more for the cure of his disease than all the physician's remedies" This quotation is printed on the title page and its spirit permeates the whole of the author's teaching He holds no exaggerated notions as to the possibilities of cure by suggestion in organic diseases, but he is no doubt correct in his opinion that all disease is favourably influenced or at least its pains alleviated by an attitude of faith and hope on the part of the patient

This book approximates to being a textbook of medicine because its author in accordance with his aim deals exhaustively with psychotherapeutic procedure in disorders of the digestive tract cardiac disease respiratory disease affections of the joints and muscle gynaecological disorders genito-urinary and skin disease and organic

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[1] *Elementary Practical Biochemistry* By W A Osborne and W J Young Second edition Melbourne W Pamas 1924 (Demy 8 vo pp 151 12 6d net)

[2] *Health Building and Life Extension* By Eugene Lyman Fisk M D Medical Director Life Extension Institute of New York New York The Macmillan Company 1923 (Cr 8vo pp xvi + 571 16s net)

[3] *Psychotherapy Suggestion in the Treatment of Disease with the Principles for the Employment of Energies Derived from the Will for the Relief of Functional Illness* By James J Walsh M D Ph D Sc D Revised edition New York and London D Appleton and Company 1923 (Med 8vo pp xxix + 600 with figures)

nervous conditions, as well as the functional nervous disorders There is a great deal in the book which should recommend it to the medical practitioner, it is true that much which is now regarded as so essential for the effective treatment of nervous disorders is omitted, but at the same time a great deal of strictly practical advice is given which the family doctor will find very helpful, in some respects it may prove more helpful than some of the more "modern" works, the theories of which the practitioner is apt to find almost incomprehensible The book would perhaps have been more useful to the busy doctor if it had been considerably contracted, but the historical survey given by Dr Walsh is certainly interesting

SURGICAL OPERATIONS

The fourth edition of *The Student's Handbook of Surgical Operations*,[6] by Treves and Hutchinson, makes a very welcome appearance Although its new lease of life rests entirely in the hands of Mr Jonathan Hutchinson, it revives the memory of the distinguished author of the first edition Of its kind this book is a classic, a model of concise and literary description of operative procedure The increase in size is about forty pages, and the number of illustrations has grown to 167 New operations are substituted and those considered obsolete are discarded For instance, partial gastrectomy, operations for congenital pyloric stenosis, displaced semilunar cartilages, meningeal hæmorrhage, fractured patella, are now fully described, whereas Chopart's and Pirogoff's amputations pass into oblivion We could wish Mr Hutchinson had applied the axe with a heavier hand to this chapter Although the "classical" operations must of necessity exercise the mind of the student at examinations for want of better material, it seems that this section is too laboured with alternative methods The average student sees comparatively few of these operations in hospital, and their description certainly could be simplified in view of the experience gained during the war Nevertheless, Mr Hutchinson has moved in the right direction, and we feel sure the popularity of this excellent handbook will be further enhanced

NOTES ON BOOKS

We have received copies of two publications dealing with income tax In his little volume[7] Mr Ronald Staples, who pleads guilty to holding an official position in the department responsible for income tax administration, has addressed himself to the task of putting into brief and clear form sufficient explanation of the working of the system to enable the average taxpayer to surmount the difficulties of rendering returns, checking the claims made on his pocket, and getting back from the State what is due to him The little book is not without blemishes, for instance, the method of computing repayments shown in the useful chapter entitled "How to secure repayment" is obsolete and apt to mislead, and we differ from him in thinking that the chapter on inhabited house duty justifies its inclusion in spite of the recent repeal of that tax It is, however, clearly set out, and should be found very useful by the class of person for whom it was written Oliver and Boyd's *Tabular Views*[8] is, in the main, a statistical chart, setting out such details as the rates of income tax from 1842 onwards, the money value of various totals of allowances, etc, but contains also a useful section setting out the various allowances and the conditions attaching to them, and gives illustrations showing the rules in operation It is a triumph of ingenious condensation, but has the unavoidable defects of that quality it is not "readable," and covers the normal rather than the unusual case

The novel entitled *Dr Porteous*[9] is a posthumous work by the late Dr Arthur Brebner, the author of two other well written stories, *The Shadows of the Ship* and *Patches and Tornander*, who died of tuberculosis aggravated by war service a few years ago It is a record of the struggles of a young doctor in an uncongenial profession subsequently changed for that of an artist in which the future promises to be brighter

[6] *The Student's Handbook of Surgical Operations*. By the late Sir Frederick Treves, Bt, G.C.V.O., C.B., LL.D., F.R.C.S., and Jonathan Hutchinson, F.R.C.S. Fourth edition, enlarged. London: Cassell and Co. Ltd. 1924. (Cr. 8vo, pp. xv+552, 167 figures, 10s. 6d. net.)

[7] *Income Tax*. By Ronald Staples. Third edition. 1924. 2s. London: Effingham Wilson, Findall and Cox. 1924. (Cr. 8vo, pp. 128. 2s. 6d. net.)

[8] *Tabular View of Income Tax and Super Tax Rates*. Edinburgh: Oliver and Boyd. Price 1s.

[9] *Dr Porteous*. By Arthur Brebner. London: A. M. Philpot, Ltd. (Cr. 8vo, pp. 256. 7s. 6d. net.)

ROYAL COMMISSION ON LUNACY AND MENTAL DISORDER

(*Continued from page 864*)

A further sitting of the Royal Commission on Lunacy and Mental Disorder was held on November 5th, under the chairmanship of Mr H P Macmillan, K.C.

Evidence of Masters of Poor Law Institutions

Evidence was tendered by Mr H Senior and Mr G Ushi on behalf of the National Association of Masters and Matrons of Poor Law Institutions Their principal contention was that a longer period of detention was desirable than the fourteen days allowed by the Act, the period they suggested was twenty eight days This longer period would enable the justice and the doctor to come to a more deliberate decision on the case, and possibly fewer cases would have to be certified Even as it was, it was found unnecessary to certify quite 50 per cent of the people who came in under temporary orders The witnesses also spoke of the unsuitability of small Poor Law institutions in rural districts for the handling of mental cases, owing to the inexperience of the officials, and they contended that in each considerable area there should be one Poor Law institution selected and equipped for the purpose of dealing with the cases The witnesses also felt that the medical officer should be given power to discharge the patient at any time within the detention period Cases of permanent detention should be subject to periodical revision by a medical officer in conjunction with a justice of the peace

The Judicial Authorities

Mr L Whitemore, J.P., a judicial authority under the Lunacy Acts for the County of London, gave evidence from his considerable experience in dealing with petitions for reception orders in the case of private patients He complained of an unnecessary duplication of authorities, and also suggested an intermediate period of observation before a final judgement was pronounced upon any case He was quite in sympathy with the views already expressed that a longer term to consideration was desirable before final certification either of a private or a Poor Law patient, but if this longer period were granted an additional safeguard should be provided in the shape of an order from the Board of Control

Colonel P Broome Giles, C.B., F.R.C.S., J.P., lately of Buckinghamshire and now of Folkestone, speaking as a judicial authority in lunacy, considered that it should be made obligatory on the magistrate to visit every patient who was the subject of an application for an order It was true that the justice had the medical certificates to go upon, but he was not doing his duty unless he saw the patient for himself It had been his own practice not to pay regard to the information contained in any document until after a personal interview He felt it to be his duty as a magistrate to make up his mind from the facts he discovered for himself The Chairman pointed out that the witness was in an exceptional position in that he was a qualified doctor as well as a magistrate, and asked what would be the duty of magistrates who had no medical qualification The witness considered that they must still use their own judgement, but, of course, in dealing with an alleged lunatic the information given on the certificates would be their chief guidance It had been his practice in some cases, when the patient was brought to him by a relative and he was not sure as to the nature of the case, to adjourn it for fourteen days for further consideration In reply to a question as to what would happen to the patient in the meantime, the witness said that if the patient's house was sufficiently large he would retain there, nurses being called in, and the man carefully watched, in some cases the workhouse was the only place for such reception, but it was not at all a proper place, and it was the duty of the country to provide houses of reception for such cases The Chairman said that it was a possible recommendation of the Commission that there should be places for the treatment of non certified cases but he thought it inevitable that the patient should be subject to some degree of control or compulsory detention during that interval

The witness was next questioned on his experience as a member of visiting committees, and was asked whether the visits gave patients in institutions a satisfactory opportunity of access to the outside world The witness replied that few complaints were made to visitors but few of them proceed to inquiry to be of a tangible nature No difficulty, in his experience, was put in the way of a patient interviewing the visiting magistrate He had given private interviews to lunatics in some cases in a locked room no other person being present Asked whether this was not rather a dangerous proceeding in view of any possible homicidal tendency on the part of the patient the witness replied that in doing so a certain risk must be taken, and personally he was one of a middle weight gloves in his earlier days and to be on the case of ill treatment had been brought to his knowledge

medical officer and the attendant dismissed In another case the complaint was brought by the patient and sustained, and a negligent attendant was dealt with

In reply to further questions he said that in his conversations with alleged lunatics preliminary to an order he was careful never to disclose the fact that he was a judicial authority Earl Russell asked whether this was quite fair to the patient, who finding a stranger appearing in the character of a friend, would never know when he had to fight an order The intention of the Act was that the justice should represent the public, and that the patient should thus be given a chance of making his protest The witness replied that persons in this state were very impressionable and the knowledge on their part that he was there as a magistrate with a view to their detention would upset them to such a degree as to make it impossible for him to arrive at their true condition Lord Eustace Percy asked to what extent a magistrate could be a check on the medical authority The witness replied that the magistrate had got the Act to administer and if he found nothing contrary to what the medical men had certified he was obliged to sign the order He added that he had only known one magistrate who went against medical opinion and he was one of that class of men who ought not to be magistrates This magistrate refused to certify a lunatic and within two hours the lunatic had seriously injured his wife and committed suicide The witness did not think that any magistrate would go against medical opinion but it was very necessary that the magistrate should personally verify as far as possible the facts stated on the certificate He himself always took steps to verify those statements on the certificate which were put down by the medical man as not having been observed by him but as having been obtained by hearsay evidence He thought that the verification of such information ought to be made obligatory on the justice He said, in reply to Sir Humphry Polleston that he had not found during recent months any particular indisposition on the part of private medical men to sign certificates

FUTURE OF MEDICINE AND HYGIENE IN THE TROPICS*

DR ANDREW BALFOUR'S ADDRESS

THE inaugural address at the opening of the Anderson College of Medicine in Glasgow was delivered by Dr ANDREW BALFOUR Director of the London School of Hygiene and Tropical Medicine The title of the address was "Vistas and Visions Some Aspects of the Colonial Medical Services" In it he drew a sketch of our present knowledge of tropical pathology, and endeavoured to awaken in his hearers a realization of the fact that for those of our somewhat overcrowded profession who are keenly interested in pathological research the tropics still furnish innumerable problems calling for solution

Dr Balfour continued Owing to the remarkable advances that have been made in our knowledge of tropical diseases in recent years, there exists perhaps, a tendency to regard this field of inquiry as having been worked out and consequently, as lacking in interest The reverse is the fact The discoveries already made have opened up new problems, and lacunæ in our knowledge retard in many ways their fruitful application Until comparatively recent times the coastal belt from the Gambia to the Niger bore an evil reputation as the white man's grave through the work of Manson and Ross that region has been transformed, and it might be supposed that we have little more to learn with regard to malaria Laveran discovered its cause Ross and others showed how the infection is conveyed and the Countess of Cinchon many years ago introduced its specific cure Yet thirteen years ago Professor Stephens of the Liverpool School of Tropical Medicine called attention to the following points on which our knowledge was defective (1) the presence of bodies of uncertain significance in the salivary glands of anophelines (2) the alleged transmission of malarial infection through the eggs of the mosquito (3) conditions determining the successful infection of anophelines fed on infected blood, (4) the number of persons that one anopheline can infect (5) the variation in the percentage of infected anophelines from month to month, and its extent (6) the duration of infection in an anopheline once infected, (7) the penetration of the red cell by sporozoites, (8) the properties of the salivary secretion of mosquitos Some of these problems have been solved Bruce Mayne has shown that one anopheline can infect as many as five persons, Wright has worked at the functions of the œsophageal diverticula, the contents of which mingle with the saliva, and Yorke and Macfie have carried out researches on the salivary secretion itself and have found that it does not contain a haemolysin As to the remaining questions, our knowledge is still defective, although Sinton seems to have confirmed Rowley Low's view that the sporozoites do not enter the red cells, but adhere externally to their envelopes

Again, yellow fever is a disease concerning which much has been learnt in recent years The Americans have solved the problem of its conveyance Noguchi has discovered its virus, the *Leptospira icteroides*, and a preventive vaccine and curative serum have been prepared Yet we have still much to learn regarding this deadly malady on the African West Coast We do not certainly know whether it is the same disease that once ravaged the ports of South America the West Indies, Bermuda, and the eastern seaboard of the United States Dr Carter of the United States Public Health Service is of opinion that it is of African origin but the leptospira has not yet been demonstrated in West Coast cases Moreover we do not know it more than one species of stegomyia or aedes acts as its vector in Africa, we are not sure if any of the lower animals serve as reservoirs for the parasite and we have great difficulty in distinguishing the malady from Weil's disease the spirochætosis icterohæmorrhagica, which not long ago played havoc in a Scottish coal mine Recently a discovery has been made by Hoffmann of Havana which if confirmed is of importance He has demonstrated the presence of lime casts in the kidneys of patients who have died from yellow fever, their occurrence is apparently, pathognomonic and will serve to distinguish yellow fever *post mortem*, from other febrile maladies associated with jaundice

To take another instance—bubonic plague This disease is at the present moment taking toll of human life on the Gold Coast, in Ashanti and in Nigeria Its pathology has been fully worked out the rôle of the rat and of other rodents has been established the flea has been incriminated, and there is a plague vaccine and plague serum What further knowledge can be required Yet plague persists it slays millions in India and the rat, its carrier, defies our efforts to cope with him plague serum is too often a broken reed and our drugs are usually powerless Rodier's method of killing all female rats caught and letting loose the males —a plan that has been successful in the case of Australian rabbits and used to good effect against rats in some limited areas—has been tried we have attempted to interfere with the animal's family life its fertility and fecundity, and, generally speaking we have failed We are only beginning to realize the importance of certain factors French observers have drawn attention to the possible presence of healthy human and healthy rat carriers of the disease It is obvious, therefore that in the group of British colonies referred to, and considering only three of the diseases met with in them, there is plenty to engage the attention of a keen and trained observer and it may be assumed with tolerable certainty that other diseases remain to be discovered—diseases which at present are mistaken for disorders with which we are more or less familiar and which have to be separated and worked out

To turn to another region—the Sudan Although the Sudan Medical Service is not under the Colonial Office the Anglo-Egyptian Sudan possesses a Government service well worth the attention of the young medical graduate It is many years since Sir William Leishman a Glasgow man discovered the protozoal parasite of the tropical malady, which is found in certain parts of the Sudan called, after him leishmania is and by the Indian kala azar or black fever We are still ignorant how the parasite effects a lodgement in the human body There is a fine field for work in this direction although we may conjecture that it is about to be explored with considerable thoroughness by Colonel Megaw and his companions in the Calcutta School of Tropical Medicine There is moreover, a new disease existing in the Northern Sudan which requires particular attention It is associated with the

*Abstract of inaugural address at the opening of the winter session of the Anderson College of Medicine Glasgow October 14th 1924

presence of a peculiar bacillus which Dr Andrew Balfour found in the throat and mouth of a British officer in Khartoum, producing ulceration and exercising a markedly depressant effect on the heart Owing to loss of the culture through no fault of his own, Dr Balfour was unable to pursue the study of the organism, but it has since been rediscovered by a Canadian medical officer while investigating an outbreak of sore throat among British troops in Khartoum With regard to sleeping sickness, which is a well known malady in Southern Sudan, although we know the trypanosomes which cause it and the tsetse flies which act as their intermediate hosts, and can cure many cases by atoxyl, antimony, Bayer 205, or tryparsamide, we are very far from having exhausted the subject of the old negro lethargy We are not yet certain whether *Trypanosoma gambiense* and *T rhodesiense* are one and the same parasite or different species, we still dispute over the question of wild animals as reservoirs of infection, we are uncertain as to the feeding habits of glossinae, and are still seeking for the best drug to use in the treatment of the disease

Nor in the adjoining territory of Uganda is there any lack of medical problems Plague, malaria, and sleeping sickness are rife in the protectorate, and cerebro-spinal meningitis continues to take toll of the natives Syphilis is one of the curses of the country, and despite all that has been accomplished in working out its etiology and pathology, there is still much to be discovered, especially in relation to its ravages among the natives and the life-history of the parasite Another spirochætal disease prevalent in Uganda is tick fever, and it may be said with regard to spirochaetal diseases generally that we are still in the dark as to the morphology and development of the organisms that cause them In Kenya plague again presents its problems, and in addition there occur there a strange complaint simulating pneumonic plague, and a malady recalling typhus fever, but apparently not louse-borne, both of which require elucidation, in this region there is also the important and deeply interesting question of the acclimatization of the white settlers in the highlands The Germans have worked hard in Tanganyika Territory, but have by no means exhausted its possibilities for the British student as a field for inquiry There is leprosy, for example—we remain ignorant of its mode of spread, despite theory after theory, and tuberculosis, too common in the coastal towns, it would be very far from the mark to suppose that tuberculosis is a completed chapter in pathology and therapeutics, especially if regarded from the tropical standpoint Dysentery is also common in both forms in Tanganyika, and far from the war having taught us all we need to know about that disease, it served rather to show us how ignorant we are on the subject So far as bacillary dysentery is concerned there are undoubtedly facts to be unearthed regarding its relation to flies In some places there is very little dysentery when flies swarm, the infection is there but the flies do not seem to act as carriers Nor can it be affirmed that we have reached finality in the treatment of chronic amoebic dysentery, and the man who discovers a cure for that disease will earn the gratitude of many a hapless sufferer

Rhodesia, the youngest of Crown colonies, presents new subjects for inquiry At the present moment Northern Rhodesia is disturbed by the occurrence of cases of splenic abscesses among the natives, the etiology of which so far remains obscure, and in Southern Rhodesia blackwater fever is attracting much attention Even if we admit that the latter is intimately bound up with malaria, we have yet to learn the precise relationship and how really bad cases fall be— There is, it may be said, little to be brighter for fault of an artist We thought we knew all ——lulant fever, since Bruce, the *Micrococcus melitensis*

[1] *Student's Handbook of Surgical Technique* By Frederick Treves Bt CVO CB LL Fourth edition Pp xvi+1024 (Cr 8vo) London Cassell and Co Ltd 1924 (Cr 8vo pp xvi+582) Bevan in Southern Rhodesia Tax By Ronald Stark Third edition Pp 128 London Tindall and Cox 1924 (Cr 8vo pp 128) Tables for Income Tax and Super Tax Edinburgh Oliver and Boyd Price 1 Income Tax By Arthur Brebner London Pitman (Cr 8vo pp xii+240 7s 6d net)

in miniature, the finest and smallest of British colonies Its disease furnish food for thought apart from those already mentioned Why is it that yaws does not occur there? Its disease is first cousin to syphilis, and yet it is not a venereal complaint It has undoubtedly been introduced into Mauritius, but it has not spread Why has cholera, the water-borne disease *par excellence*, which has played such havoc in the island on several occasions, disappeared from it entirely, although to all appearance there was everything in favour of its continuance and extension? Why has the chigger flea which burrows into the skin of the feet, never gained a footing in the colony? In Ceylon we may ask ourselves how we stand with regard to sprue, that malady of frothy stools, sore mouth, emaciation, and anaemia, which hurries many a tropical sojourner to the grave If Scott is right—and there is good reason to credit his findings as regards calcium metabolism and the control of the parathyroids—one puzzle will have been solved, but even so there are points about sprue that will still require investigation The hookworm also causes much mischief in Ceylon, and although, thanks to the Rockefeller workers and others it has been tracked and can be treated, we have yet to learn definitely the nature and action of its toxin

Passing on to Singapore and the Malay States, we greet a worthy son of Glasgow, Sir Malcolm Watson, a household name in Malaya, whose energy, pertinacity, and enthusiasm in antimalarial work have saved many thousands of lives Malaya has a fine record of research and the practical application of results but if we take beri-beri as an instance it is safe to affirm that we have not heard the last about that disease, either there or elsewhere It is possible that more than one disease masquerades under that name Diet deficiency, the lack of antineuritic vitamin, will explain much, but it is doubtful if it will explain all There may be a toxic factor, it present merely suspected and remaining for definite elucidation Malaya well exemplifies our opportunities, for it was only recently that Stanton and Fletcher determined the cause and worked out the pathology of what they called melioidosis, formerly described by Whitmore as morphine injector's disease

It is possible that there are no more fruitful fields of research than are to be found in Borneo and New Guinea Passing these over, however, we find the South Sea Islands presenting many problems of pathological interest Here we are faced by the mysteries of filariasis Bancroft and Manson first shed light on the life-history of the blood worm, and Low completed the tale That is an old story, yet the disease remains incurable, save where the surgeon's knife can give relief In Fiji we have yet to learn why the island is practically immune from syphilis, and how best to prevent the extinction of a fine race, decaying under the influence of a civilization that is alien to its sentiment There is work to be done in those islands, and although Dr Buxton has it well in hand at the present time we may be very sure he will leave something for his successors to accomplish Filariasis will be met with again in Demerara, but, in addition, epidemics of dengue will from time to time occupy the attention Dengue, dandy, or breakbone fever is one of those partly explored diseases as to the cause of which we are still somewhat uncertain, although there seems little doubt that a blood spirochæte is to blame, as is the case with the very similar sand-fly or phlebotomus fever common in Palestine and Mesopotamia Do we know the cause of pellagra, which will be met with in the Leeward and Windward Islands? Though there is little doubt of its being a dietetic disease we are not yet certain of its precise etiology, notwithstanding the valuable work of Goldberger Can we say why Barbados is free from anopheline mosquitos? Is it wholly attributable to the presence of the tiny larvivorous millions fish? It seems doubtful Why is Bermuda free from mopheliines? What do we know about the peculiar form of peripheral neuritis met with in Jamaica? Very little indeed And so it is wherever we cast our eyes—everywhere a burden of disease, everywhere work to be done So far from the interest in tropical research having been exhausted, it may be truly said that the earth is literally encircled with unsolved problems awaiting their solution at the hands of the younger scientists of our generation

British Medical Journal.

SATURDAY, NOVEMBER 15TH, 1924

MEDICINE A SCIENCE

When Boerhaave (1668 1738) called Sydenham (1624 1689) the British Hippocrates he intended not a mere general compliment but a discriminating judgement He meant that Sydenham had revived and sympathetically employed the methods of the Father of Medicine Nor is it a mere compliment to call Hippocrates by that title Doubtless in its primitive beginnings medicine was an art with magic for its sister but since Hippocrates it has been a science with its own methods and as the Regius Professor of Medicine at Oxford pointed out in his Harveian Oration (British Medical Journal, October 25th, p 747) it is the mother of the sciences

Ever since the renaissance of learning there has been an indisposition frankly to admit that medicine is a science of itself At the time of Sydenham as Sir George Newman has well said the equipment of the medical man was classical he was drilled in the traditions of Aristotle the aphorisms of Hippocrates the doctrines of Galen and the canon of Avicenna but of systematic clinical observation and instruction there was none The only direct contact with nature in the curriculum was for the majority, through botany, for the few through anatomy also and for fewer still through physiology Harvey, not being satisfied that medicine should confine itself to observation and the method of trial and error in the human patient insisted on the need for seeking out the secrets of nature by way of experiment By so doing he founded physiology but not many in his own or the succeeding generation understood

On the other hand, there has been since the middle of the nineteenth century, a disposition to deny autonomy to medicine for other, and it might also be said converse reasons It has had to endure the allegation that it is not a science of itself, but is no more than an art dependent for its advance on other sciences—on chemistry and on biology, including bacteriology and parasitology but especially on physiology which claims insistently to be an independent science supplying the practice of medicine with facts Sir Archibald Garrod referring to this matter in the Harveian Oration, spoke wisely and aptly but the subject might with advantage be more fully developed by some future orator The time seems ripe for we are witnessing a linking up of the laboratory with study at the bedside While commending the tendency of many young workers imbued with the scientific spirit to elect to follow the path which leads through the laboratory Sir Archibald Garrod deprecated the disposition which undoubtedly exists among some of them to look down on the clinician forgetting that clinical medicine can and should be pursued in the scientific spirit it presents immense fields for scientific research which must be conducted in accordance with certain special methods peculiar to itself it is not only the mother of the sciences but itself one of them

Sydenham entered on the study of medicine at a time when it was dominated by the authority of the ancients and by speculations founded on various preconceived theories He went back to the bedside to observe as Sir Humphry Rolleston puts it the natural history of disease Both Dr Arnold Chaplin in the contribution he makes to our columns this week and Sir George Newman in the thoughtful and entertaining essay (p 922) he has published for the tercentenary, ask us to believe that Sydenham's Puritan breeding and upbringing had much to do in determining his attitude towards medicine It may be so but it was a time of mental questioning and unrest in politics as well as in science and religion At any rate circumstances of heredity and environment had prepared Sydenham's mind to understand and apply the Hippocratic doctrine and method That he did so to the great advantage of medicine at a critical moment is his great claim to remembrance we can afford to forget that in his singleness of purpose he did not attempt an integration which is only now being brought about and that he disregarded the new knowledge Harvey and his successors were rapidly accumulating around him It detracts from his glory, but it may have been all to the good in the long run

THE GENERAL PRACTITIONER AND THE MATERNITY SERVICE.

However harassed and long suffering he may be the general practitioner is not as a rule inarticulate and has many ways of making his voice heard It is therefore difficult to understand why he has remained apparently oblivious of the storm that is now raging over the shortcomings of the maternity service—a service in which he plays a leading part

This Journal cannot be blamed for not giving full publicity to the matter frequent articles and notes have called attention to it Four weeks ago a leading article announced a joint meeting at the Royal Society of Medicine, of the Obstetrical and Epidemiological and State Medicine Sections with the Society of Medical Officers of Health, to be held on November 6th to consider the notification of puerperal sepsis and other kindred questions That article in our issue of October 18th contained a special invitation from the Council of the Obstetrical Section to general practitioners to come and express their views and, in order to make clear the problems for discussion and how those engaged in midwifery practice might be affected a retrospect was given of the various papers and abstracts that had appeared in our columns The proceedings of that meeting are fully reported this week at page 900 and attention may be drawn to the fact that apart from the one speaker announced to present the point of view of the family practitioner—the branch of the profession most concerned—there was no audible response to the invitation The report of the meeting may serve as a text to urge the immediate need for discussion of the official reports and their recommendations by all Branches of the British Medical Association so that the views of its members may carry due weight Only by mature consideration and full discussion will it be possible for the Association to express the views of its members

Like other Government publications the report from the Ministry of Health (No 25) by Dame Janet Campbell and that of the Departmental Committee of the Scottish Board of Health are read and studied by those of the general public interested in health matters These reports have already prompted questions in Parliament to the Minister of Health and have stimulated conferences such as that reported in

our issue of October 11th (p 685) in which the public take part, showing that there is now a body of opinion that will press politically for immediate action by the central and local health authorities Circular 517, issued by the Ministry of Health to local authorities, *urging the adoption of measures to reduce the risk* in childbearing, is further proof of official movement

The discussion at last week's joint meeting had its origin in a request from the Ministry of Health for advice *from the Obstetrical Section* as to what administrative action might be taken to reduce the incidence of puerperal sepsis, and particularly as to the measures that should be taken to lead to its prompt notification *The feeling of the meeting* seemed to be that, though notification, to be effective, must include early and suspected cases—for example, those with a temperature of 102° or over, continued for twenty-four hours or accompanied by a rigor—so wide a form of notification is useless at present because of the impossibility of providing facilities for further observation of the patient, for accurate diagnosis of the cause of the fever, and for treatment It appeared to be felt also that a more thorough survey of the maternity services in the country is needed, particularly in regard to the organization of specialist services and better hospital provision On this account the setting up of a Royal Commission or other method of exhaustive inquiry was strongly advocated Though the discussion may have had little in the way of definite result, it revealed the difficulties with which the question bristles, and the opportunity may be taken to remind the profession as a whole of the various proposals put forward in official reports and elsewhere, all of which need careful consideration

Besides a more thorough system of notification of puerperal fever, investigation by the local health authority of all deaths in childbed or deaths within four weeks of the termination of a pregnancy is proposed in the Scottish report, and to aid in this it is suggested that there be added to the birth notification form a line giving the name of the person present at the birth and responsible for the delivery (whether doctor, midwife, or nurse) In some of the conferences on the subject it has been urged also that power should be obtained to conduct *post-mortem* examinations on all deaths in childbed As will be seen from our report of the

the subject So[illegible]ng at the Royal Society of Medicine, Dr there are undoubtedly presented the general practitioner's its relation to the made clear the importance of deciding dysentery when flies were of investigation into childbed flies do not seem to in the hands of the larger or the [illegible] one meeting we have thorities These investigations and Flemming, whic[illegible] dysen public assistance should surely be point of view, [illegible]t disease councils and the councils of county whether the per[illegible] delegated to the smaller sanitary deaths should be [illegible]ungest[illegible]on done in the case of the Mater- smaller health auth[illegible]y Act The less parochialism the organization of [illegible]ed by the native outlook upon the provision for reserved to county [illegible]id in more efficient are these services boroughs, and not [illegible]much the method of reviewing the authorities, is has be[illegible]timately nity service, and of deciding nity and Child Welf[illegible]precise led and how it can best be and the wider the o[illegible]. There lv ntages in the appoint maternity ser[illegible]ices, the first [illegible]. W[illegible]rather than the che[illegible]per likely to be As to t[illegible]ul Committee With its present state of the mate[illegible]urgent the[illegible]nd not merely a report where amendment is need[illegible]enlarged effected there are many [illegible]l Commission offers ment of a Royal Commissio[illegible]hird [illegible]greed decisions and less effective Departmen[illegible]ry Committee powers of printing evidence [illegible]Session and [illegible]s subject will be recommendations a Roy[illegible]ral practitioners great [illegible]portunities for arriving

of the country to a realization of the necessity for immediate consideration of all aspects of the problem of the reduction of maternal mortality in childbed Their case must not be allowed to go by default To wait until public opinion has so far crystallized into administrative action that it has become difficult to mould would be most unfortunate, alike for the general practitioners and for the public health Their co-operation must be an integral part of all schemes for the betterment of the maternity service Provided discussion is carried on from the wide viewpoint of the public good, and not from the narrow one of professional interest, the reasoned opinion of those who have hitherto borne the burden of the maternity service is the most essential element in bringing about wise amendment

THE NEW MINISTER OF HEALTH

Last week we urged the importance to the nation of the appointment at the present juncture of a strong Minister of Health, and by the time our plea was published the announcement had been made that Mr Baldwin's choice had fallen on Mr Neville Chamberlain That selection exactly meets the case We believe that Mr Chamberlain's brief tenure of the same office in 1923 impressed the staff at Whitehall with his high qualifications as their chief, and his work on housing commended him to the country generally One fact which has been divulged regarding his appointment possesses a special significance He was offered the higher post of Chancellor of the Exchequer, but declined it in favour of the Health Ministry A man who can make a sacrifice like that for an ideal will go far in the sphere he has deliberately chosen He appreciates its possibilities, and will surely turn the possibilities into actualities The safety and security of the kingdom largely depend on the solution of the housing problem That, evidently, is the first task to which Mr Neville Chamberlain will apply himself, and his success should go far towards establishing peace and contentment throughout the land But also, as indicated last week, we trust he will find time to tackle and reform the whole system of local government in England Constructive statesmanship in these two directions would give him a great place in the history of our times

THE METHOD OF PRESENTING SCIENTIFIC COMMUNICATIONS

The enormous growth of modern scientific literature is no doubt, alarming—eight journals, for example, are regularly appear on the subject of cancer research alone—and the scientific student will soon have to develop a protective mechanism against the multiplicity of papers with which he is supposed to keep pace We are not sure, however, that the method suggested by Dr J A Murray in his recent presidential address to the Pathological Section of the Royal Society of Medicine quite meets the situation Dr Murray traces the traditional form of the scientific paper to the thesis required in Continental universities of candidates for doctorates in medicine and science All such theses contain long verbal descriptions including a laborious summary of existing literature, and it has been taken for granted, even in this country, that is the proper form for a scientific communication, though it takes up a great amount of printed space and makes heavy demands on the time of the reader Dr Murray also said, quite truly, that the art of writing a narrative is one which few people acquire, and that in scientific work in particular—say, the description of pathological experiments—it is hardly to be expected Meanwhile the verbiage grows apace Dr Murray's

tion is to fall back frankly upon a pictorial method of presentation After all, our written or printed characters have been developed from the primitive picture writing, although to day they appeal to the eye only by association through the medium of the memory for sound In some respects already the pictorial method of presentation has been adopted, as witness the kinematograph, which, with a minimum of words or no description at all, can convey the details of a scientific process A number of medical or scientific films have been produced, but this method, of course, is far too laborious for the man who has new work to communicate Dr Murray's idea is to use photographs sketches, diagrams, and symbols, liberally interspersed in the minimum of text He thinks it possible to convey in a rough sketch some details which would require a page of more of written description To illustrate his contention he "read" a paper through the episcope on some experiments in mouse cancer The paper ran to about half a dozen cliches, with various drawings, diagrammatic conventions, and a few necessary words on each Perhaps it is a little unfair to say that, although protesting against the use of many words, he spent half an hour of excellent talk in developing his idea, and a further half hour of equally excellent talk in explaining his sketches We imagine that, block illustrations being more costly than type, the widespread adoption of a pictorial method would be a serious matter for the publisher, and we are not sure that it would even attain the end in view for words, cumbersome as they are, have a certain precision, whereas pictures may lend themselves to a variety of interpretation, and thus obscure rather than elucidate the theme If scientific writers cannot master the art of brevity, the only hope appears to lie in the development by the scientific public of a capacity for rapid assessment and discrimination

CONGRESS OF OBSTETRICS AND GYNAECOLOGY

The fifth Congress of Obstetrics and Gynaecology will be held in London at the house of the Royal Society of Medicine, from April 22nd to 24th, 1925 The first congress was held in London in 1920 subsequent congresses met in Birmingham, Liverpool, and Edinburgh The purpose of the congress is to bring together members of the various British and Irish societies devoted to the subjects of gynaecology and obstetrics It includes the Section of Obstetrics and Gynaecology of the Royal Society of Medicine the Midland Obstetrical and Gynaecological Society, the North of England Obstetrical and Gynaecological Society, the Edinburgh Obstetrical Society and the Section of Obstetrics and Gynaecology of the Royal Academy of Medicine in Ireland Dr H Russell Andrews will preside over the congress next year in his capacity as President of the Section of Obstetrics and Gynaecology of the Royal Society of Medicine The programme of business will include a set discussion on the diagnosis and treatment of puerperal sepsis, which is expected to occupy one whole day of two sessions This discussion will be introduced by a report upon which a special London committee has been working for more than a year already, and another report is expected from the North of England Other sessions will be allotted to the reading of individual communications and to episcopic demonstrations on histological subjects and a preliminary report on eclampsia will be communicated by the Special Eclampsia Committee Operative demonstrations will also be given at the various hospitals by their gynaecological surgeons and an exhibition of pathological specimens will be arranged Notice of intention to read papers should reach the honorary secretaries, Dr Clifford White 62 Harley Street W 1, and Dr J D Barris 50, Welbeck Street, W 1, before December 31st and the papers should be in their hands by February 28th 1925 It is hoped to publish in advance a short extract of each paper accepted by the congress committee Communications respecting papers should be addressed to the honorary secretaries of the congress and those relating to the exhibition of specimens to the honorary secretary of the Pathology Subcommittee, Dr Eric Gerard Williams, 5 Wimpole Street, W 1 The London members of the congress will entertain the visiting members at lunch on April 22nd, and the President will hold a reception in the rooms of the Royal Society of Medicine the same evening On April 23rd the members of the congress and their guests will dine together

INTELLECT AND POSTURE

Dr W Colin Mackenzie, well known to orthopaedic surgeons as the author of a treatise on the action of muscles has issued a neatly printed booklet to support a bold and somewhat novel thesis[1] He believes that the impetus in development from the reptile to the highest mammal is improvement in muscle function culminating in the erect posture" In another passage he amplifies his meaning by the following comparison 'If we examine anatomically the body of the lowest mammal (echidna) with that of the highest mammal (man), we find little difference between them The general structure scheme, in spite of the millions of years intervening is the same We have in both a four-chambered heart, complete respiratory piston or diaphragm big spleen lungs similar and confined to the chest and the grey matter of the richly convoluted brain of both is external and not the white as in the reptile's brain Furthermore if we examine the organs microscopically we find the same structures as in man" "What then" asks Dr Mackenzie constitutes the great difference" His answer is The great difference between the lowly echidna and us is actually a muscular one We have the erect posture and it has not And that is really what I meant by higher mammalian evolution' For Dr Mackenzie posture maketh the man If we can explain how he has come by his posture then we shall have solved the origin of his brain and body This is a thesis which will require much fuller proof than Dr Mackenzie has succeeded in bringing forward in his present work On the other hand everyone must feel a real sympathy for the object which has prompted Dr Mackenzie to write this book When he returned to Australia at the end of the war he resolved to devote his life and resources to the study and preservation of the living fossils" of his native land —platypus, echidna and the many forms of marsupial— all of which are threatened with a speedy extinction He has set up an institution to carry out his aim and the proceeds of this book are to be devoted to it He reminds his readers that John Hunter was the first anatomist to study the archaic mammals of Australia and he proposes to follow Hunter by making function rather than structure the main end of his inquiry Our animals he writes 'are teeming with points of scientific interest In them the complexities of the human body are revealed in their simpler form A study of them is really a study of living human embryology—that is embryos in which we can study not only function on which structure depends for to the medical scientist the latter must be regarded as the register of the former It can be truly said that there is no problem in human anatomy or physiology on which a study of these animals fails to throw light As far as possible we have allowed Dr Mackenzie to speak for himself In the brief pace at his disposal in the present work he has been obliged to touch his theme lightly allowing matter to serve as evidence but we expect proofs will be forthcoming in full measure

[1] Intellect and Deviation to the Erect Posture By William C Mackenzie MD FRCS Director of the National Institute for Health Australia Foreword by Major Allan Graham [illegible] (Percy [illegible] 6d net)

THE FUTURE OF THE RONTGEN SOCIETY

SIR OLIVER LODGE relinquished the chair of the Rontgen Society on November 4th, and inaugurated his successor, DR W. E. BARCLAY of Manchester. The retiring president had some interesting philosophical observations to make on the subject of incredulity, both scientific and popular. The disbelief of some scientists—not, he thought, the most eminent—in the existence of the ether, the very ripples and vibrations of which lighted their path to knowledge, led him to consider the naturally sceptical habit of the human mind in general. He had known persons who disbelieved in the telephone, and who thought that x-ray photographs were in some way faked. Why, indeed, did people ever come to believe in certain things at all? Not because they understood them. Very few things in the universe were understood. The nature of almost everything, including the x rays and such forces as gravity and cohesion, was still a closed book. But things were believed simply because they became customary, familiar, and available. Sir Oliver Lodge added that such belief as was possessed required to be constantly fortified by fresh experience. He hinted that even a belief in the positive results of psychical research depended upon continuous discovery, unless fresh evidence was forthcoming, the evidence already gathered tended to evaporate. It was easy to see things one day, but after a time to doubt whether one had seen them. Sir Oliver Lodge looked forward to amazing new conceptions in physics resulting from the discovery—only just missed by Crookes—of the pressure of light. Infinitesimal as this pressure was, he said that it must be of immense cosmic importance, sweeping the universe of dust and inflating the biggest stars like footballs. Dr. Barclay's presidential address, which followed Sir Oliver's valedictory, ranged nearer home. He traced the history of radiology since the day, nearly thirty years ago, when the British Medical Association appointed a special commissioner to investigate "the application of the new photography to medicine and surgery," and dwelt especially upon the growth, separations, and fusions of radiological societies. Looking through the *Transactions of the Rontgen Society* during recent years he gained an impression that, taken as a whole, the proceedings had tended more and more towards pure physics, sometimes scarcely coming within the scope of the society's work as originally outlined. In view of the fact that out of the society's membership of 370 fully half were medical men, it did not appear that a proper balance between medicine and physics was maintained. Incidentally he found it interesting to note the contrast between the physical papers of the early years and those of the present day. Whereas the old papers seldom contained formulae, to-day formulae were so much to the fore as to suggest that to physicists they had become a dialect. Medical members, who did not know the dialect, were made to feel very illiterate, although, to be sure, a medical man had no right to criticize these things in view of the ancient convention whereby prescriptions were still written in Latin. But was the society bringing its medical members into touch with the scientists and others on whom there were dependent? Judging by the attendance of medical members at the meetings he feared that it was not, and that it was tending more and more away from the basis laid down by the late Professor Silvanus Thompson, as reported in the BRITISH MEDICAL JOURNAL in 1897, that of focusing the interests, in relation to x rays, of medicine, physics, and photography. Physics on the one side and medicine on the other had become so widely separated that very few medical men had been able to keep pace with the advances in physics while the medical problems were quite out of the beat of the physicist. The true function of the society lay on the borderline between the two, but to keep strictly to that line would mean that while the majority of the medical members were almost out of their depth, the physicists would be bored by the elementary character of the discussions. The establishment of the British Institute of Radiology (which was the subject of an article in the BRITISH MEDICAL JOURNAL of November 8th, p. 871) presented, he thought, a solution of the difficulty. This institute, an almost purely medical body, was anxious to join forces with the society. The fusion would enable the society to further the study of radiations in all their applications to medicine and the sciences and art. He asked whether the society was content to go on as at present, fulfilling a certain limited function to its eminent satisfaction, hugging a bank balance as a sickness insurance policy or possibly as a burial fund for which the Prince of Wales, at the last dinner of the Royal Society of Medicine, called a "learned corpse." Or was it prepared to empower its executive to take whatever steps were necessary, without endangering the society's individual identity, to extend its sphere of usefulness by direct fusion with the institute or by something short of that? Only by some such departure, so far as he could see, was the society likely to fulfil the objects laid down at its foundation in 1897—to promote the study of x rays in all its aspects. It is not customary to have any discussion after a presidential address, and therefore it remains to be seen how this proposal will be received.

THE CLIMATE OF THE ZOO

IN our issue of October 18th (p. 714) DR. N. B. LUCAS contributed an article giving notes of a careful series of observations, extending over four years, on the influence of the London climate on captive animals and on man—the animals in the Zoological Gardens in Regent's Park, and the human population in the borough of Marylebone. The effects of weather on health is a subject which has always been of medical and general interest, and has from time to time been dealt with by doctors and meteorologists, sometimes in combination, as in a research carried on by Mitchell and Buchan in Scotland many years ago. The results have not always been commensurate with the labour expended on inquiry, but that is owing to the inherent obscurities of the facts. So many influences operate in producing a given effect that it is particularly difficult to work back from effect to causes and to disentangle and measure the part played by each agency supposed to be involved. In no sphere of investigation is it more important to have an abundance of data on which to base conclusions, and Dr. Lucas is performing a service to science in extending research into the field of comparative biology, by comparing the influence of climate and weather on the mammalians of the Zoological Gardens with that of the human mammalians who make up the population of the area in which the gardens are situated. Manifestly there is one fundamental difference between the two groups. The inhabitants of the Zoo are, for the most part, in a foreign country, the human inhabitants of the borough are at home, in their natural climate and surroundings. In his study of the subject Dr. Lucas has brought together the four years' monthly facts regarding maximum temperature in the shade, mean minimum temperature of the air (not on the grass), atmospheric humidity, rainfall, north-east winds, sunshine, and fogs, in their bearing on mortality. He finds that the figures of deaths and of atmospheric temperature do not correspond when duly examined, though deaths are fewer in the warm summer months than in the cold winter ones. Rapid changes in temperature from day to day, even a drop of ten degrees in twenty-four hours, seem to have had absolutely no effect on the animals, as [illegible]

points out that this is not surprising, seeing that in the semi-tropical parts of the world the daily range of temperature is far greater than here Leaving out temperature, therefore, he proceeds to consider the influence of rainfall, humidity, and direction of wind Here, contrasting very opposite conditions which have existed as between February, 1921 and January, 1922 he holds that the data constitute a nearly perfect example of the importance for health, of a reasonably dry atmosphere Another contrast, involving factors of wind—north to east—rain and sunshine, is found between December, 1920, and October, 1922 The differences are adduced to support the argument that rain without cold winds is harmless, and the converse also applies That conclusion brings to mind the urgent advocacy, by Dr William Gordon of Exeter of avoiding localities under the influence of wet winds in selecting sites for the erection of sanatoriums for tuberculosis Log has been found a factor of little moment in Regent's Park there having been only forty one foggy days in the four years On the other hand the value of sunshine is now universally recognized and is illustrated in respect of the low human and mammalian death rate in the remarkably sunny year 1921, though in November and December Marylebone had an exceptionally high death rate both from all causes and from pulmonary disease Dr Lucas's provisional conclusions are, first, that neither a dry nor a warm moist atmosphere is harmful but a cold damp atmosphere is most deleterious both to the higher and the lower animals secondly that sunshine is beneficial to both, but apparently more lasting in the case of the lower mammals Though the four years' study must have involved much care and attention, the deductions from the facts are, as Dr Lucas realizes, only provisional, and the hope may be expressed that he will continue his observations in what, so far as we are aware is a fresh field of study in comparative biology and pathology

CANCER AND INFECTION

A CORRESPONDENT who has given much attention to this aspect of malignant disease writes The problem of cancer growth has been attacked from many sides during the last quarter of a century, and although the position is still untaken to use a military metaphor it is in fact being steadily sapped, and there seems more certainty of its fall *to-day than could have been claimed a few years ago* The characteristic habits of the cancer cell have been elucidated, and the history of its parasite like life has been written The solution of this part of the problem is in debt chiefly to the embryologists and the cytologists We know that cells of the soma may become free of the control under which they normally live, and that the essential features of cells so released are a reproductive activity similar to that of germ cells and a power of nourishing themselves without the aid of any coferments such as are necessary for the maintenance of normal somatic tissues Possessing these qualities the cells of cancer multiply indefinitely and infiltrate With many details left out, this is the manner of life of the cancer cell, of its birth however our knowledge is far from being precise We do know that it may be born from a somatic cell under the influence of a variety of stimuli The list of such stimuli is already long mere mechanical irritation, certain chemical substances (tar soot paraffin), x rays, and radium The cells of the epidermis may assume cancerous characters under the influence of any of these stimulants With regard to cancer of the internal organs it has been shown by Fibiger that cancer of the stomach may be experimentally produced in rats and in mice by feeding with the *Spiroptera neoplastica*, a nematode which infests the cockroach in its larval stage None of the stimulants in this list can be the activating agent in internal cancers in the human subject, but the fact that they are efficient agents in the production of the cancer cell is presumptive evidence that a stimulant of analogous sort is responsible for the cancer revolution in the internal organs such as the breast and the bowel If the proposition is accepted that a stimulant of foreign origin can start the cancer process in epidermis and mucous membrane it is worth while seeking for evidence of the presence of some foreign stimulating agent in for example, cancer of the breast If this be admitted, the first step will be the review of the work of those who have already reported the finding of organisms of a parasitic type in cancerous tumours The "parasitic theory" of cancer in the crude form in which it has sometimes been stated has resulted the orthodox pathologist and parasitologist the morbid anatomy and the pathology of the disease being so far removed from the reactions of the body to known parasitic infections The part which stimulation of somatic cells has been shown to play in the initiation of epidermal cancer forces attention anew to the question whether irritation or stimulation by parasitic infections of some sort may not be among the influences capable of transforming the somatic cell into the cancer cell The list of those who have published the discovery of parasitic organisms in cancerous tumours is long Among the most prominent are Doyen in France, Sanfelice in Italy, Gaylord in America In this country Pansell, and subsequently Plimmer, alleged the presence of "parasites" on histological evidence Morrant isolated an organism from cancer of the breast described its life cycle and demonstrated that it set up proliferative lesions in the guinea pig and the dog Ford Robertson described cultures of organisms derived from mouse cancer which he considered protozoan Lewton isolated from sarcomata a streptothrix which produced sarcoma-like growths in rats and lastly, Dr James Young has returned to the attack and related the isolation of organisms belonging to the vegetable kingdom with a peculiar and characteristic life history Parasitologists have dismissed these many independent reports as cytological errors and contaminations In view of our present-day knowledge of the relation of stimulation to cancer production the subject of the possible part played by parasitic invasion deserves an open minded reconsideration and investigation

RHEUMATIC FEVER IN THE SERVICES

At a meeting of the War Section of the Royal Society of Medicine on November 10th, Surgeon Commander T B Shaw, R N, brought forward some figures showing the incidence of rheumatic fever in the Navy From 1907 to 1910 the case ratio per 1,000 rose gradually to 8 53 and in the subsequent years *down to* 1915 *declined* to 6 3 then came a gap in the records owing to the war but in 1921 the figure fell to 2 28 and by 1922 to 1 95 A striking fall was found also in those conditions including chronic rheumatic affections, which came under the heading of diseases of the organs of locomotion the case ratio per 1 000 in 1914 was 14 25, in 1915 it was 20 75 and in 1921 it had fallen to 9 32 In the pre war period the incidence of rheumatic fever was highest on the home station, and lowest on the Mediterranean and the East Indies stations This might seem to confirm the general belief that rheumatic fever was more prevalent in the British Isles than elsewhere but the returns for the home station included those for boys' training establishments, which contained a number of subjects specially prone to the disease Rheumatic fever, from the service point of view was important chiefly for the heart lesions caused and the final invaliding which resulted The ratio per 1,000 invalided out for organic disease of the heart during the years of this survey showed no such reduction as appeared in the rheumatic fever incidence, and was more or less a constant figure Surgeon Commander Shaw thought it important in this connexion to have regard to the incidence of disease of the teeth,

gums, palate, fauces, and pharynx, where the case ratio per 1,000 in 1915 was 23 3, and in 1921 had fallen to 10 5, a similar decrease to that shown in rheumatic fever In the Navy increasing attention had been given during the years under review to oral hygiene and dental treatment, and although the causal agent of rheumatic fever had not yet been determined, it seemed likely that oral hygiene played an important part in prevention Greater attention was also given to environmental conditions, the men were protected as far as possible from damp and from exposure to sudden changes of temperature, and this again might account in part for the decrease in the number of cases of rheumatic fever In the case of boys particularly every effort should be made to maintain the tonsils in a healthy condition, and affections of the throat should be regarded more seriously than in the past Youths who complained of growing pains should not be dismissed too lightly, they should at least be excused all drills and exercises and ordered complete rest in bed Colonel J C Kennedy followed with some comparative figures for the Army Here also there has been a distinct fall in the rheumatic fever incidence For the period 1908-12 the case ratio per 1,000 was 5 9, in 1913 it was 4 3, and in 1921 it had fallen to 2 1 These were statistics for the whole Army, at home and abroad, but the drop was more striking if the United Kingdom alone were taken In 1913 the incidence of rheumatic fever per 1,000 in the United Kingdom was 5, and in 1921 it was 1 6 Of the home commands in the latter year London showed the highest incidence (5 4), the Eastern Command was next (2 4), the Southern, Western, Aldershot, Scottish, and Irish Commands ranged from 1 7 to 1, and the Northern Command was 0 8 The bad eminence of London might be put down to the old-fashioned barracks accommodation, and fog might be a contributing factor Among garrisons abroad the highest incidence in 1921 was on the Rhine and in Silesia (3 6) next came India (3 1), and Egypt and Mesopotamia (1 9) The figure for India was only slightly less than the figure in 1913 (3 8), although in the years 1904-7 rheumatic fever was comparatively rare in the Indian garrison—something like 0 8 per 1,000 The case ratio of tonsilitis had actually increased in the Army from 22 in 1913 to 32 in 1921 Squadron Leader E W Craig gave some figures for the Royal Air Force, which showed that the case incidence rate of acute rheumatism in 1921 was 0 9 per 1,000, in 1922 it was 1 1, and in 1923 it was 0 8 Tonsilitis had shown a downward tendency during these years and so had diseases of the teeth and gums

TUBERCULOSIS DISPENSARIES IN NEW YORK

The Year Book for 1922 and 1923 of the Association of Tuberculosis Clinics of Greater New York records that in the year 1908, when the association came into being, the population of the city was 4,469,248, and there were 10,157 deaths due to tuberculosis In 1923 the population had increased to 5 927 617, but the deaths from tuberculosis had dropped to 5 673 Apart from improved conditions of life the work performed by the Association must be largely credited with this satisfactory achievement In the period 1908-23 no fewer than 314 210 patients, including 106,268 children have been advised and treated, 43 455 tuberculous patients were placed in hospitals and sanatoriums, and trained nurses paid 1 193 172 visits The association at present comprises thirty-one dispensaries, with districts covering the entire city area Nineteen of these dispensaries are conducted by the Department of Health, nine by hospitals two is part of a general dispensary service, and one as part of a health centre service This active and close co-operation between municipal departments and private institutions leads to uniformity of procedure, prevents overlapping, and co-ordinates clinical and research work Monthly reports are sent by the dispensaries to the association, which, in its turn, sends back to them quarterly statements of the progress of the campaign throughout the city, including a comparative analysis of the dispensary attendances and studies of the city tuberculosis morbidity and mortality Approximately a third of all cases of this disease reported annually in New York are treated at the dispensaries, where also supervision is arranged for some thirty thousand relatives of these patients

RESEARCH DEFENCE SOCIETY

The ninth annual issue of the *Fight Against Disease*, the publication of the Research Defence Society, contains under the heading "Old stories re-told," notes of certain physiological discoveries made as the result of animal experiments The discovery of the lacteals by Asellius in 1662, Sir Charles Bell's experiments on the nervous system at the beginning of the nineteenth century, and Claude Bernard's discovery of the function of the sympathetic nerve in the rabbit's ear, were important achievements on which, subsequently, valuable researches were based Attention is drawn to the Home Office report published last July, which showed that during the year 14,031 experiments were performed by fifteen investigators in the course of cancer investigations Nearly 39,000 experiments were performed for public authorities by 139 holders of licences, and twenty-eight research workers performed nearly 48 000 experiments for the preparation and testing of antitoxic serums and vaccines, and for the testing and standardizing of drugs The annual subscription for membership of the Research Defence Society is 10s, associate members pay 5s, undergraduates and students of medicine are eligible for membership on subscription of 2s 6d Further information may be obtained from the Secretary, at 11, Chandos Street, Cavendish Square, W 1

At the anniversary meeting of the Royal Society on December 1st it will be proposed to re-elect Sir Charles Sherrington, G B E, M D, as *President*, and Sir David Prain, C M G, M B, as treasurer Among the members proposed to be elected to the Council are Sir Frederick Andrewes, M D, Dr H H Dale, and Professor J B Leathes, M B The Copley Medal has been awarded to Sir E Sharpey-Schafer for his valuable work in physiology and histology, and a Royal Medal to Dr Dale for his researches in pharmacology and physiology

After the ceremony at the Cenotaph in Whitehall, on Tuesday, November 11th, Colonel J W H Houghton, Assistant Director of Medical Services, Eastern Command, laid a wreath on the Royal Army Medical Corps memorial in Westminster Abbey

Dr Walter F Elliot, M C, M P, has been appointed Parliamentary Under Secretary for Health for Scotland in the new Conservative Ministry Dr Elliot held the same office in Mr Baldwin's last Government

THE GENERAL ELECTION

To the list of successful medical candidates at the recent parliamentary general election, published in our issue of last week, the following two names should be added

Dr Arthur Vernon Davies, O B E, was returned as Conservative for the Royton Division of Lancashire with a majority of 2 420 Dr Davies formerly practised at Colne, Lancs, where he was medical officer of health from 1919 to 1924 On retiring he went to live at Woking and is chairman of the Woking Central Conservative and Unionist Association

Dr Henry Cobden Hastam of Cambridge was returned as a Conservative for the Hornchurch Division of Essex with a majority of 11 109 He took the degree of M A, M D, B Ch Camb in 1897 and the D Sc in 1911

Tercentenary of Thomas Sydenham (1624-1689).

SYDENHAM FATHER OF CLINICAL MEDICINE IN BRITAIN *

BY

SIR HUMPHRY ROLLESTON, BT., K.C.B.,
HON. D.SC. OXON., M.D.
PRESIDENT OF THE ROYAL COLLEGE OF PHYSICIANS OF LONDON

AMONG the great names of this College those of Thomas Linacre, John Caius, William Harvey, and Thomas Sydenham stand out as the apostles and prototypes of the scholar physicians, of the anatomists, of those who search out and study the secrets of Nature by way of experiment—the physiologist—and of the clinicians, and thus represent important and complementary facets of the ideal physician. Sydenham, the British Hippocrates following in the footsteps of the Father of Medicine not only revived but put into practice the dictum that medicine depends on the observation of not on hypotheses about, disease, and after an interval of twenty centuries he gave a new birth to clinical medicine by concentrating on the study of the patient instead of relying on authority. To books he paid comparatively little heed, it being his nature to think where others read", his attention indeed, was almost confined to the works of Hippocrates, Cicero, Francis Bacon and to *Don Quixote*, the last of which we can picture him recommending with an inscrutable if not somewhat sardonic smile in response to that prolific poetaster Richard Blackmore's inquiry as to what medical books he should read.



After the portrait of Sydenham painted from life by Mary Beale in the possession of the Royal College of Physicians of London.

Coming of an old and distinguished West Country stock the vigour of which is shown by its survival until this present as represented by a direct descendant the Rev. W. B. Vaillant who has spent many years in working at the family pedigree, Thomas Sydenham was baptized at Wynford Eagle in Dorset on September 10th, 1624 but the day of his birth is not known. There has been a good deal of confusion about the date of the birth and baptism of Sydenham, but investigations by the late Dr. J. F. Payne and more recently by Sir Dawson Williams, make it clear that the date of his baptism only is known. The house in which he was born was rebuilt in 1630 and still stands. He was the fifth son and eighth child in a family of ten children, the strongly Puritan atmosphere of which no doubt left its mark on his hereditary character, moulding his character of sturdy independence, modesty, and freedom from self seeking.

In May 1642, when about 18 he went as a Battle Commoner to Magdalen Hall (now Hertford College) then the centre of Puritanism in Royalist Oxford but after a few months the civil war interrupted the course of his life. He was slightly wounded at Weymouth in 1645, and did not return to Oxford until late in 1646. On his way back he visited his brother, Colonel William Sydenham then under the medical care of Dr. Thomas Cove afterwards President of this College (1682), whose kindly interest and advice directed Sydenham to a profession of which he had never previously thought but by which he will never be forgotten.

Returning first to Magdalen Hall he migrated in 1647 to Wadham and on April 14th 1648 was by the Chancellor's (Lord Pembroke) patronage created Bachelor of Medicine, thus reversing the natural order of a degree concluding the course of study. On October 3rd 1648 he was made a Fellow in place of an expelled Royalist and in the following year Bursar, of All Souls, and thus became the friend and a member of the same society as Thomas Millington afterwards President of our College (1696). In passing it may be noted that our founder Thomas Linacre, whose death occurred just 400 years ago on October 20th, 1524, was also a Fellow of All Souls (1484). In 1651 the recrudescence of civil war bore Sydenham away from Oxford for some months as a captain of horse an incident responsible for the phrase "trooper turned physician". Four years later he resigned his Fellowship at All Souls on marrying Mary Gee, and then migrated to London to start practice in King Street in the then aristocratic quarter of Westminster, with its political attraction of the Protector's Court in Whitehall while its swampy and malarial character provided material for his future writings on fevers. That practice did not at once become a gigantic one seems probable from his contesting in his third year of residence, the parliamentary representation of Weymouth and by his acceptance as a consolation for his failure to the office of Comptroller of the Pipe" (1659). But the danger of his becoming absorbed in the duties of a secular was almost at once averted by the restoration of Charles II in May 1660. It was probably about this time (1658) that he visited Montpellier which differed from other French schools in preferring Hippocrates to Galen. The popular teacher there was a Protestant Charles Barbeyrac and the most interesting question arises whether he induced Sydenham's

* Address at a Reception at the Royal College of Physicians of London on November 12th to commemorate the 300th Anniversary of the birth of Thomas Sydenham.



Wynford Eagle Manor Sydenham's birthplace

devotion to Hippocratic simplicity in practice and treatment as Picard and Chauffard patriotically suggest, or whether the two were kindred spirits However this may be, then association confers an additional title to fame on the French physician

As Sydenham's observations on weather and disease in London began in 1661, almost synchronously with the appearance of John Graunt's first *Observations on the Bills of Mortality of the City of London*, he must then have been in practice there again, although it was not until June 25th, 1663, that he obtained from the Royal College of Physicians the licence necessary for legitimate practice, but in those troublous times many others were in the same case until, in 1664, Sir Edward Alston, the energetic President, took the matter up and brought in no less than seventy of them as honorary Fellows That Sydenham was never a Fellow must at first sight excite surprise, and indeed it has been stated by J C Lettsom to have been due to the envy and enmity of the College authorities With his independent and somewhat polemic spirit Sydenham may well in those times of political unrest have had opponents, especially in such a Royalist society as the College, and of this he was fully conscious but a more pleasant and perhaps more solid explanation is that until 1676, when he became an M D —choosing Cambridge, where his eldest son William, also a licentiate at a later date, was then in residence, rather than his own university—Sydenham was not eligible for the Fellowship and at the age of 52 he would naturally be unwilling to submit to an examination and was probably indifferent to any academic advancement Indeed, throughout life he was strikingly devoid of ambition for worldly honours or distinctions he never, so far as is known, applied for any post at the few existing London hospitals or sought for a medical appointment at Court Had he been really anxious to obtain the Fellowship he might have taken the doctor's degree at an earlier period though it is possible that his political associations might have made this a matter of some difficulty That he had many friends in the hierarchy of the College and that his name is mentioned in the most cordial terms in the annals from 1680 onwards is well established

Sydenham's early practice in Westminster included his first case of ascites—Mrs Saltmarsh—described in his *Tractatus de Podagra et Hydrope* (1683), dedicated to Thomas Short, a Fellow of this College, which recall other famous though less successfully treated cases, such as Dame Page, who in sixty seven months was tapped sixty six times and 240 gallons of water taken away "without ever once fearing the operation," and Pye-Smith's patient, Mrs S——, with papilloma of both ovaries, who was tapped 299 times in nine years "without once complaining of her lot" During the plague of 1665 Sydenham with his wife and young family left London—a course of action which has aroused some adverse comment, but at this distance of time a just judgement of circumstances is not so easy as offhand condemnation His practice eventually became extensive, but as he was a Puritan amongst Royalists it was somewhat slow in developing, and he may have been handicapped by his outspoken opinions, candour in expression of his doubts, independence in ploughing a lonely furrow, and by his new methods—such as the cooling treatment in small pox and the use of quinine, or "Jesuits' bark," against which medical prejudice persisted many years after his death His fondness for prescribing opium ("laudanum Sydenham's") earned him the title of "Opiophilos," and he relied much on the *vis medicatrix Naturae* Dr John Brown in *Horae Subsecivae* called him "the Prince of Practical Physicians," and rightly, if alliteratively, so, for his sole ambition was to examine his patients thoroughly and do the best possible for them

Thomas Dover, buccaneer and 'the quicksilver Doctor' whom he treated for small-pox, and Hans Sloane, the future President of the Royal Society and of this College, who whimsically advised to drown himself in Pomfret's pond in St James's Park rather than go on a botanical expedition to Jamaica were for a time his resident pupils

His face has been described as puritanical yet benign "the fine brow, melancholy eye, and sensitive mouth remain a nature stoical rather than harsh, and rather that of a Puritan under protest" (J H Garrison)

The gout claimed Sydenham before, in Sir Thomas Browne's phrase, his 'pulse beat thirty years,' a stone attacked him at the age said to be fatal to genius, or 37 Erasmus's epigram, I have renal colic, you gout we have married sisters," makes Sydenham unfortunate The gained on him, sadly hampering

practice and literary output, and eventually he died on December 29th, 1689, in his house in Pall Mall, where he had lived since 1667, and was buried in St James's Church, Piccadilly, where a tablet, erected in 1810 by the College of Physicians, in the south wall aisle eloquently describes him as 'Medicus in omne aevum nobilis."

To recall his works by name would be as unnecessary as it would be lengthy, for they are immortal, especially those dealing with fevers, the distinction for the first time of scarlet fever from measles and of rheumatism from gout, and the classical descriptions of chorea and of hysteria. Scholarly criticism has been much concerned about the question whether Sydenham originally wrote in English or in Latin, the conclusion that appears to have most in its favour is that he composed in the language he spoke and that Dr John Mapletoft and Gilbert Havers, a scholar, did his text into Latin. But whatever medium he used he painted from Nature, and, with the artistic instinct of a great clinician emphasized the essential and kept the immaterial in due proportion.

In his attitude of "back to Hippocrates," whom he called 'the divine old man," and the principle of observation rather than the precepts of authority Sydenham insisted on the importance of the accurate description of the natural history of diseases, the constant and essential symptoms being distinguished from the accidental; he also advocated their separation into species, as in the classification of animals and plants there being a common resemblance in their seasonal variations. Thus regarding diseases as specific, he urged that specific remedies should be sought for them. Sydenham has accordingly been regarded as the founder of scientific nosology. Further, he urged that a definite system of treatment should be established on rational grounds instead of on polypharmacy. As J. F. Payne, in comparing these two Masters of Medicine, who, as far as we know, never met, writes, Sydenham was the Master of Practice, while his contemporary William Harvey was the Master of Science.

The importance of Sydenham's practical outlook on medicine can hardly be over-emphasized, but this is not his only claim on our remembrance, for in his attempts to obtain a cure for epidemic fevers he made observations on their incidence and variations which led to his famous hypothesis of epidemic constitutions"—a somewhat mysterious conception of a more elaborate character than those of Hippocrates and Ballonius (Guillaume Baillou) in 1574. His view of acute especially epidemic diseases was to the effect that they were modified by the additional factor of a constitution or influence derived not only from the atmospheric and weather conditions, as Hippocrates believed but from telluric and other sources; thus upon a specific disease in the modern bacteriological sense, are superimposed features due to a common factor, which however varies in the course of years and gives rise to what he termed "stationary fevers." Thus in the years 1661-64 "the epidemic constitution" was malarial; in 1665-66 plague like; and in 1666-69 like small-pox. That accomplished scholar physician, the late Joseph Frank Payne—sometime our Harveian Librarian—in his masterly life of Sydenham expressed the hope that his sketch should induce some readers to study for themselves Sydenham's own works." Since then several Fellows of the College—Sir William Hamer, Dr F. G. Crookshank and Dr Major Greenwood—have devoted much thoughtful consideration to the epidemic constitutions and Sydenham has been rightly described by Dr E. W. Goodall as "the founder of the modern science of epidemiology." By a kind of prophetic sense he seems to have foreseen that bacteriology might appear and be held to explain the whole question of the incidence of acute disease, and at any rate he provided reservations to such a simple and exclusive conception.

Thus the three hundredth anniversary of the birth of the Father of Clinical Medicine in Britain and the Prince of Practical Physicians of the Founder of the modern science of epidemiology and of the originator of scientific nosology—"the incomparable Sydenham"—should be kept in grateful and proud remembrance in his Country and College.

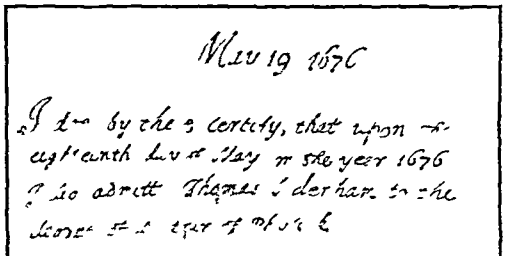
THOMAS SYDENHAM: HIS WORK AND CHARACTER

BY

ARNOLD CHAPLIN, M.D., F.R.C.P.,

HARVEIAN LIBRARIAN

In the annals of medicine in this country three men may be found who by universal consent are honoured above all others. They are William Harvey, John Hunter, and Thomas Sydenham. Special measures have been taken to prevent the glory belonging to Harvey and Hunter from ever becoming dim, for a wise provision has established societies and annual orations designed to perpetuate in the minds of medical men the memory of those great pioneers in medical and surgical science. But Thomas Sydenham, although his labours have left an effect upon medicine scarcely less than the work of the other two, has never been honoured by an annual oration for the purpose of keeping alive the memory of his great achievements. Indeed, apart from the society for medical publications bearing his name, the issue from time to time of his collected writings, and attempts sometimes inadequate to portray his life and activities, but little has been done to fix the public gaze upon the monumental work of this



May 19 1676

I do by these certify, that upon the eighteenth Day of May in the year 1676 I did admit Thomas Sydenham to the degree of the right of Physick

Isaac Barrow Regius Professor Cantabrigiae

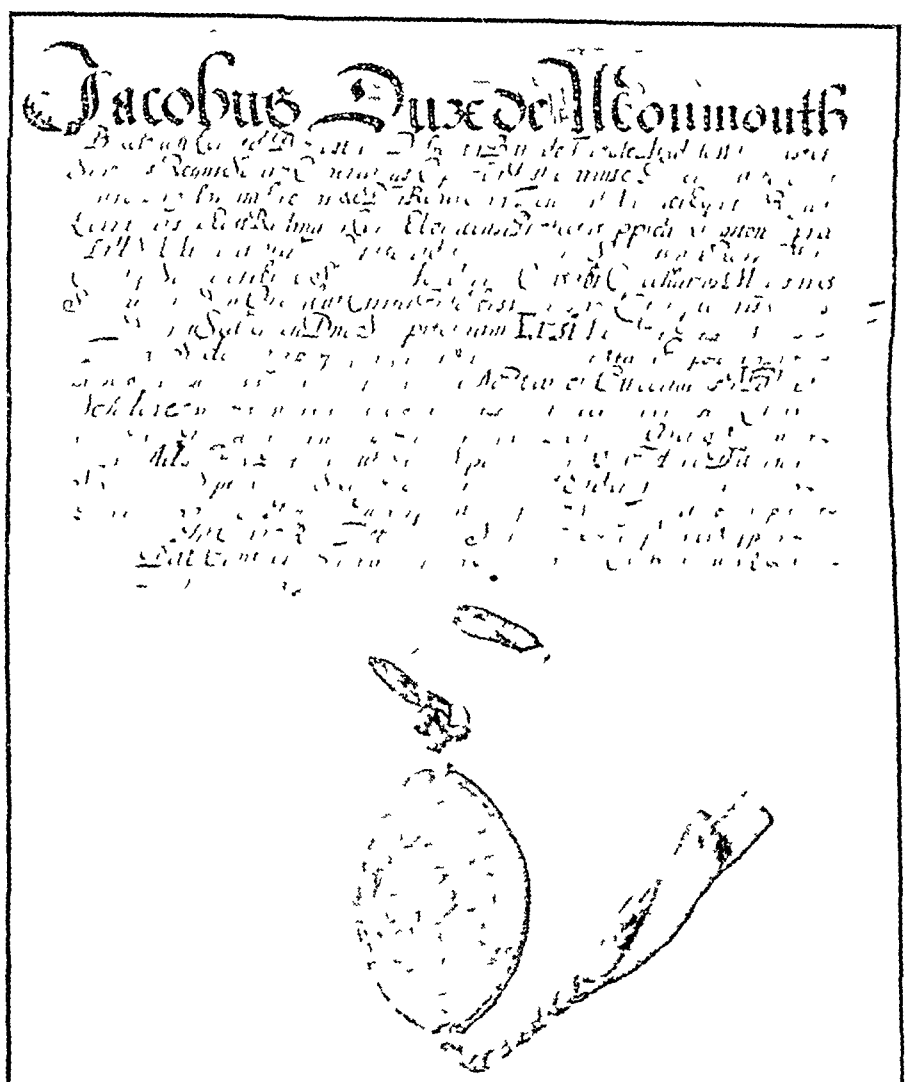
Isaac Barrow's certificate showing the date of Sydenham's degree in the possession of the Royal College of Physicians.

most 'English" of English physicians—this rugged genius who unaided laid the sure foundations of clinical medicine. Now in this year 1924, three hundred years after his birth a tardy recognition of his merit is being laid at his shrine. French medicine, ever ready to award a scientific crown wherever it is deserved irrespective of nationality, has already paid its tribute to one of England's greatest medical sons. And now a great journal voicing the thoughts of thousands of British medical practitioners in the tongue that Sydenham spake and in the land that bred him is placing on record its deep appreciation of the work he accomplished. At the same time the Royal College of Physicians of which body Sydenham was a distinguished member has held a special evening session and through the mouth of its President Sir Humphry Rolleston himself a great clinical physician has paid the debt it owes for the glory of having the name of Sydenham on its roll. This action of the College of Physicians is peculiarly fitting for it is well known that for reasons somewhat obscure to us at the present time Sydenham never applied for the Fellowship of the College nor was that honour ever offered him although for the last thirteen years of his life he was in every way eligible. But this gathering of the Fellows of the College in the twentieth century for the purpose of doing honour to Sydenham's name will surely be regarded as an adequate act of penance for its omission three centuries ago. Nor must we feel aggrieved that medicine in a foreign land has paid its tribute earlier to our Sydenham in this year the tercentenary of his birth for his influence upon medicine was so great that it left its mark in whatsoever land it was practised. It knew no national boundaries. That vigorous influence wrought for all time

and for all countries, and we do not, therefore, grudge our colleagues their first-offerings of homage to the name of Thomas Sydenham.

It is not the purpose of this article to write a biography of Sydenham, for that has been done with great ability and discrimination by the late Dr Payne, but rather to consider his character, his mental environment, and the results for us to-day of his work. Some biographical details will, however, be necessary in order to appreciate the true position occupied by Sydenham as a great medical reformer.

Thomas Sydenham was born in 1624, at the Manor House of Wynford Eagle, in the county of Dorset. The exact date of his birth is not recorded, and it can only be stated that he was baptized on September 10th of that year. He came from an old Somersetshire family dating back to the time of King John, which multiplied exceedingly for no less than eight branches were founded in that county. One of the branches was settled at Aller, and a cadet of this branch acquired, in the middle of the sixteenth century, the Manor of Wynford Eagle from Zouch, Lord of Harringworth. The Manor of Wynford Eagle once formed part of the great Honor of the Eagle, granted by the Conqueror to one of his companions, Gilbert, whose chief castle was at Pevensey in Sussex. Gilbert came from Aigle (Aquilla) in Normandy, and the Honor no doubt derived its name from that source.



Diploma granted to Sydenham on taking the degree of M.D. at Cambridge. From the document in the possession of the Royal College of Physicians.

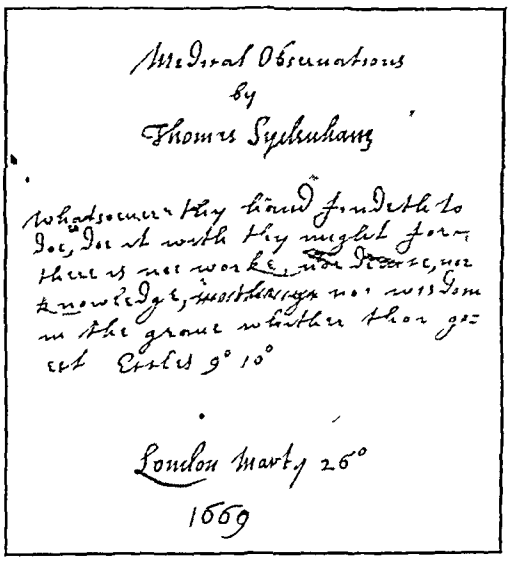
The Manor House of Wynford Eagle stands by itself at the bottom of a shallow valley in the downs of Dorsetshire, with a clear chalk stream flowing swiftly in a mossoned channel at the end of the garden. It is a well kept substantial building of grey stone stained with lichen. Its chimneys are of red brick in the picturesque style of the early seventeenth century. It has the large casemented windows of the period and the garden walls and parts of the side walls of the house are composed of the characteristic local chipped flints in panels. In the centre of the front of the house, which faces west, is a projecting porch with a room over it. On its gable is placed an eagle in stone and under it the date 1630. Another eagle of older date and much battered, taken down probably when the house was repaired, still stands at the top of some steps in the yard. In 1630 Thomas Sydenham was 6 years old and save for some inconspicuous farm buildings the place must be now very much as it was in his boyhood. It looks to-day a very home of ancient peace though in Sydenham's time it gave shelter to a family of valiant sons who issued forth to the stern business of fighting for the Puritans against the Royalists.

Long before the actual struggle began, the Sydenham family had become deeply committed to the Puritan cause, and Thomas Sydenham was therefore brought up under strict Puritan influences. The adherence of the family to this cause was no mere formal acceptance of its tenets, for, when the civil war broke out, the father and his two sons bore arms for the sake of their consciences on the side of the Puritans, and two of them lost their lives in battle. Thomas Sydenham had only been at Oxford for a few months when the summons came. He at once threw aside the gown for the sword, and took his place beside his valiant brothers, ready to risk all for the honour of his belief.

So far as is known, only one other member of the College of Physicians, Dr Martin Llewellyn, actually bore arms in the civil war. At the conclusion of the first civil war Sydenham again returned to Oxford in 1646, and, acting on the advice of Dr Thomas Coxe, a physician in the Parliamentary army, devoted himself to the study of medicine. In 1648, being then a Fellow Commoner of Wadham College, he took the degree of M.B. on the recommendation of the Chancellor, the Earl of Pembroke, and a few months later was elected a Fellow of All Souls. In 1650 he again obeyed the call to serve in the army, and was employed in Scotland and elsewhere, but there is no evidence that he was present at the battle of Worcester, as has been asserted. After this Sydenham remained at Oxford until 1656, when he removed to London and settled himself in practice in Westminster. During the year 1659 he paid a visit to Montpellier, but with the exception of that brief period of study, lasting less than a year, Sydenham's career was unconnected with any of the medical schools abroad. It was not until 1663, although he had already been in practice in London for some years, that he obtained the Licence of the College of Physicians to practise, and the Licence of the College of Physicians to practise, and the 1676 he took the M.D. degree at Cambridge. When the great plague devastated London, Sydenham followed the example of nearly all the London physicians, and absented himself with his family from Westminster. This action must always be a matter for regret, for, had he remained in London, we might have possessed an almost perfect picture of that great epidemic. But during his absence from London he was not idle, for he began to plan to record the results of his own observations concerning disease, and especially fevers. Since the year 1661 he had been engaged in taking these notes, and in 1666 he had

to the world his first work, *Methodus Curandi Febres*, in which the treatment of disease was approached from an entirely new standpoint

This book of Sydenham may be regarded as epoch making, for it was the first treatise founded on the personal observation of the physician at the bedside when attending cases. Before his time it was the almost universal practice of physicians when writing of disease to appeal entirely to the ancient authorities and to neglect what their own senses had taught them. Vesalius and Harvey had already definitely broken with this tradition in the sciences of anatomy and physiology and it was reserved for Sydenham to take the same bold step in medicine. With a knowledge, scant it may be, of the principles of medicine, he literally rejected all that had been written concerning the practice and relied absolutely on his own unrivalled powers of observation. With two important exceptions, Sydenham had a profound contempt for the knowledge of medicine to be found in books both ancient and modern and to the last refused to be influenced by their authority. The teachings of anatomy and physiology which had received such an impetus from the work of Vesalius and Harvey made no impression upon him and he dismissed them from his system almost with contemptuous disdain. He was wedded to the *belief that personal observation*, and personal observation alone, could unravel the mysteries of disease. Chemistry, physiology, and anatomy might be amusing and perhaps instructive as sciences, but he thought that they could lend no aid to the purpose he had in view. The two important exceptions mentioned above, to which he accorded his approval, were the Hippocratic writings and the philosophy of Bacon. For the former he had unbounded respect, because he was convinced that the teaching of the Father of Medicine was based on clinical observation, while from the latter he took the main principles of Bacon's system and applied it to the study of disease. The essence, therefore, of Sydenham's great innovation is to be found in the fact that he was the first to teach the great truth that disease could only be understood by watching its progress at the bedside of the patient, or, in other words, by studying Nature herself. The fine apophthegm of Bacon, which being translated reads "We must not imagine or think, but find out what Nature does or produces," most aptly expresses the essentials of Sydenham's work.



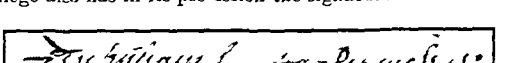
Title page of Medical Observations in Sydenham's handwriting. From the manuscript in the possession of the Royal College of Physicians.

We must not be astonished to find that Sydenham's method was often responsible for faulty ideas concerning disease. That was inevitable for the method was far from perfect, and much progress in the knowledge of disease had to take place before it could yield definite results. Nevertheless from the time that Sydenham launched upon the world his clinical method that branch of medicine has continued to advance and has been seen in its highest excellence in the hands of Heberden, and Boerhaave in the eighteenth century and of Bright, Addison, Watson and Trousseau in the nineteenth century.

Sydenham's book on fevers was considerably expanded in successive editions until it embraced nearly the whole of his observations concerning disease as he saw it and a particular merit of his writings is the clear and faithful descriptions of the clinical features of various ailments. Indeed, as Dr Payne observed, his descriptions of many diseases are "so admirable that they have never been surpassed nor are likely to be." This was particularly the case in his dissertation on gout, where his account of the symptoms of that complaint is so vivid and true that writers have been content to follow it without alteration. While advocating his new clinical method in his book on fevers Sydenham laid the foundation of the study of epidemiology and may therefore be regarded as the father of that branch of medicine in this country.

In estimating the cast of mind of Sydenham regard must be paid to his upbringing. He was nurtured in a strict Puritan household, and throughout his work the Puritan influence is abundantly evident. He had risked his life on the field of battle for the cause he believed to be right and he was just as ready to risk unpopularity and criticism in promulgating views concerning the practice of medicine which were new and therefore suspect. He often complained, somewhat bitterly, of the adverse criticism of his contemporaries but like a true Puritan it could not turn him a hair's breadth from the course he had planned. In medicine his was a voice crying in the wilderness, and again as a Puritan he probably accepted the position with some satisfaction. He drove home the great truth that the solution of the problem of disease, its manifestations, and its cure must be sought at the bedside by means of observation and inquiry, and not by an appeal to theory and authority sanctified by time. Before the end of his life he saw that his work had not been in vain but it was not until the eighteenth century dawned that the full effect of Sydenham's teaching was felt. In that century it may be truly said that the whole of practical medicine was dominated by the system of Thomas Sydenham. At the present day the influence of his great work is not so apparent. Nevertheless in this the three hundredth anniversary of his birth our homage is no less sincere for in him we recognize the master who made straight the road up which countless physicians have toiled to realms of more perfect medical knowledge.

Very little has been left by Sydenham in the shape of letters and manuscript. The Royal College of Physicians possesses one most important manuscript entitled *Medical Observations by Thomas Sydenham*, a folio volume containing his observation on various diseases the first page of which is reproduced above. It is not a manuscript of any complete work of Sydenham but merely his notes probably written down from time to time and it is doubtful if the whole of it is in the handwriting of Sydenham. The College also has in its possession the signature of Sydenham



Sydenham's signature. From the subscription book of the Royal College of Physicians.

on admission as a licentiate in the subscription book of the Fellows, and this has also been reproduced. Two interesting exhibits referring to Sydenham have been reproduced. One is the certificate given by Isaac Barrow in which he was Vice Chancellor at Cambridge and in his hand certifying that Sydenham had taken his degree of M.D. The other is the diploma given to him by the University on taking his degree.

Several portraits of Sydenham are in existence and three belong to the College. The most important is the portrait painted from life by Mary Beale, and this is reproduced

at page 917 Another in the possession of the College is attributed to Lely or Closterman, and fine portraits are in the possession of the Wellcome History Museum and Sir Thomas Barlow The Mary Beale portrait, and that attributed to Closterman or Lely, have been engraved in line and mezzotint by Houbraken, Seiller, and McArdell

SYDENHAM REFORMER OF ENGLISH MEDICINE

To celebrate the tercentenary of the birth of Sydenham Sir George Newman has written a biographical essay[1] which is among his happiest efforts It is not long, it is comprehensive, and it is, almost needless to say, intensely sympathetic, for Sir George Newman, like Dr Arnold Chaplin, comes of Puritan stock Though Puritanism was at its beginning a religious movement, it was in its essence a habit of mind, which those possessed by it applied to all institutions and all departments of mental activity Thus Sydenham, who held strong religious and political views as to individual liberty, and fought for them in the field, applied the same principles and showed the same love of independence when he came to study and practise medicine

Sir George Newman's essay contains five chapters or sections dealing successively with Sydenham at Oxford, and in London, with Sydenham as a physician, with his little books, and with Sydenham the man Rather more is said in the essay than in the two articles published above about the Oxford period, with a few months interruption, when Sydenham fought again under Cromwell, it lasted for fully eight years That he took an active part in the life of the University is shown by the fact that he was bursar as well as Fellow of All Souls College, he must have known every one he wished to know, and certainly numbered among his friends many men already distinguished or afterwards to become so Whether he became acquainted with John Locke at Oxford may be doubted, but they afterwards grew to be fast friends, and Locke's resolve to begin the study of the principles of philosophy by setting down "on a piece of paper" the limits of human understanding must have been much to Sydenham's taste

Of the Westminster to which he took his bride in 1655 we have a graphic sketch There were the Abbey and Westminster Hall, and Whitehall Palace, some houses of courtiers and official persons, and hovels of the poor, with the swamps and marshes of the unconfined Thames around

> 'The Palace consisted of a vast congeries of buildings and pleasure grounds, covering almost the whole of what we call Whitehall through which passed the public highway King Street between the glorious Holbein Gate (which stood until 1759) and the High Gate built by Richard II It was a narrow street with a network of smaller streets and courts on either side at its southern end Here Sydenham lived The houses rose three or four storeys gabled all, with projecting fronts the timbers painted or gilt some of them bearing escutcheons or brightly blazoned arms or carven beams or signs There were taverns and much coming and going wagons, packhorses, pedestrians, and the motley crowd which frequent camps and courts Down it passed the pageantry of funerals, coronations and State shows Lord Howard of Effingham set out from King Street to fight the Spanish Armada Charles came down it to his trial in Westminster Hall Cromwell lived in it, and Colonel Sydenham and many of the parliamentary leaders and soldiers

There and afterwards in Pall Mall, Sydenham lived until his death, with apparently only two long absences, one in 1659, possibly, we may suggest, connected with the approaching Restoration, when he went to Montpellier to study under Barbeyrac, the other in 1665 when the plague was in London, when he retired a few miles "Had he remained," Sir George Newman drily remarks, "medical literature might have been enriched by an adequate description of the plague"

Of Sydenham's disregard of the contemporaneous or almost contemporaneous work of others, Sir George Newman has no explanation *It seems very strange,* he writes Perhaps it was temperamental, perhaps a studied effort to exclude the influence of others upon his own mind Yet it is rightly claimed for him that 'the principles of direct clinical study, or the non-reliance on tradition and the return to Nature, of the scientific method of observation and induction, laid down by Sydenham as the foundation of sound medical practice, will endure for ever" It must be remembered that Sydenham's practice was very largely concerned with fevers, and he set himself to define in orderly and systematic scheme of clinical study to consist of three parts (1) an exact description of the disease before him, (2) a method of remedy, and (3), where he could discover them, the use of specific forms of treatment" Sir George Newman looks on Sydenham as having laid the foundation of modern epidemiology he saw that certain fevers had an epidemic character which bred true, but there were, he thought, variations, the same disease manifesting itself with dissimilar aspects as to origin, formation, and decline While he began 'to feel out after the idea of contagion, though not very much," yet he believed that "both typical and atypical fevers prevailed at certain times, dependent, he thought, upon meteorological or atmospheric conditions, or other external influences" Associated with these views was his theory of epidemic constitution, which he seems to have derived from Hippocrates We find in the essay no very definite opinion on its worth The controversies to which it has given rise have perhaps rather tended to obscure the great merit of Sydenham, which lies in his insistence on accurate bedside observation *coupled with a system of rational therapeutics* founded on careful record of the action of remedies administered with the intention of assisting Nature's own efforts to overcome the disease

[1] *Sydenham: Reformer of English Medicine.* By Sir George Newman, K.C.B., M.D., D.C.L. London: The British Periodicals Ltd. (Crown 8vo, pp. 38. Price 1s.)

Scotland.

THE Branch Council for Scotland has certified to the returning officer that Sir Norman Walker, M.D., has been duly elected a direct representative for Scotland upon the General Medical Council in accordance with the regulations made by the Privy Council

HOUSING IN GLASGOW

The provision of dwelling-houses is a serious problem for Britain as a whole, and it seems to be admitted that the general standard is lower in Scotland than in England Within Scotland it is difficult to believe that any locality can be worse off than Glasgow Whether private enterprise could have continued to meet the needs of the city, as it did in a fashion until within the last score of years, we do not profess to say, but clearly the no-rent developments in Clydebank are sufficient to deter the cautious Scot from risking his money in any such speculation, and so the problem is transferred to the local and central authorities The valuable report for 1923 of Dr Chalmers, the medical officer of health, shows how deplorable the whole position is, notwithstanding building schemes at present being carried out A margin of 325 unoccupied houses in 1923 is wholly inadequate, even if all of them were suitable in size and otherwise for the families requiring them In the past five years the average annual addition to the number of new houses has been slightly more than 1,200 But the average by which the births exceeded the deaths in the past four years has been more than 10,000 The Registrar-General for England assumes two persons per room as a permissible standard, but a room in Scotland being commonly larger than in England, Dr Chalmers takes three persons per room as his measure of existing needs Following the 1921 census report for Scotland, and leaving aside 24,653 houses of one apartment occupied by not more than three persons each, 86,425 houses of two apartments occupied by not more than six persons each, and so on for larger houses, Dr Chalmers says there remain 14,131 one-roomed houses occupied by from four to six persons each, 1,643 occupied by seven to nine persons each, and 62 houses of one apartment in which there are between ten and twelve persons each Of two-apartment houses there are 19,590, occupied by from seven to nine persons each, 2,832 by from ten to twelve persons, and 117 by more than twelve occupants If the rate or increase of house accommodation in the decade 1891-1901 persisted now, the annual provision would have

been 3,804 new houses instead of 1,200 In fact, he urges, 'instead of the shortage becoming reduced, it is increasing" He then proceeds to show that the average size of the apartments under the Glasgow housing scheme is considerably less than under the building regulations, as regards both floor area and cubic space, and he remarks that "the size of the smaller bedrooms cannot be regarded without some apprehension of its effect on our conception of a healthy house" He follows up the whole statement by giving statistics to show that pulmonary tuberculosis prevails broadly speaking, in a kind of inverse ratio to the number of apartments in the houses The percentage of population in one roomed houses is 12 9, but they have 17 96 of the pulmonary tuberculosis, while the corresponding figures for two roomed houses (the commonest size in Glasgow) are 49 5 and 49 93 per cent Beyond that size of house the position is reversed Three roomed houses have 21 0 per cent of the population, but only 15 74 per cent of the pulmonary tuberculosis while houses of four apartments and upwards have 16 0 per cent of the population and only 8 41 of the pulmonary tuberculosis The rest of the cases are in institutions *Corrections for age and sex* distribution make some change in these percentages, but no essential alteration in the lesson they teach

Successful Glasgow Medical Charity

Last week a three days' bazaar was held in St Andrew's Hall, Glasgow with the object of raising a sum of £70 000 in aid of the Royal Samaritan Hospital for Women in Glasgow The promoters were gratified by being able to announce that the total sum realized on behalf of the hospital was £77 786, which with other sums still to come in, would eventually amount to £80,000 The bazaar was opened on the three successive days by the Duchess of Brandon and Hamilton, Sir John Stirling Maxwell, and Lady Blythswood

Longmore Hospital for Incurables

The annual meeting of the Royal Edinburgh Hospital for Incurables was held on November 7th, Sir Henry Cook, *Chairman of the Board of Managers*, in the chair Sir Leslie Mackenzie of the Scottish Board of Health, moved the adoption of the annual report, which was seconded by Sir Herbert Stiles The report pointed out that the hospital had now been in existence for fifty years, having been founded as the result of a public meeting held on December 1st 1874 In consequence of the original effort, a house in Salisbury Place, Edinburgh, was purchased and fitted with twenty two beds At the present date there are two hospitals—one on the original site, and one at Liberton, some distance outside Edinburgh, the two together providing accommodation for over two hundred patients The report drew attention to the benefits coming to sufferers from such a disease as cancer from the ministrations of the skilled nurse and daily medical supervision, benefits wholly beyond the resources of the average small household The same might be said of patients suffering from other forms of incurable disease, such as heart disease, tuberculosis, affections of the spine, etc, but cancer was especially considered because such cases were often very urgent and short-lived During the fifty years the managers had made every effort to extend the benefits of the hospitals, but practically all the time they had had to face a shortage of income During the first twenty years of the hospitals' existence the total deficiency was under £2 000 but for the whole period of fifty years the total sum drawn from capital to meet deficiencies on annual income had amounted to over £93,000 In pre war years there had been a considerable margin between the legacies received and the amount of the deficit for each year so that after making up the deficit the managers had been able to put aside fairly large sums for extensions and similar purposes Unfortunately, the same could not be said with regard to post-war years, and thus the possibility of future extensions would be seriously curtailed The total number of patients treated during the past year had been 345, and the average cost per occupied bed for the year taking both hospitals into consideration, was approximately £82 10s 1d which was a decrease of 1s on the cost for the preceding year, this cost compared very favourably with that of other institutions *The report* particularly noted that the two Longmore Hospital receives cases from every part of Scotland, and occasionally from England they are intended for the treatment of those for whom the general hospitals had done all in their power, but who are still in need of hospital treatment, and for this reason a preference is always given to cases of cancer advanced heart disease, tuberculous disease, and some of the more devastating forms of nervous disease But the aged and infirm, who only need general attention and assistance are not cases suitable for treatment in these hospitals The medical report stated that 73 of the patients were suffering from cancer 58 from advanced tuberculosis, 30 from disease of the circulation, and 99 from diseases of the brain and spinal cord These formed over two-thirds of the total admissions

Edinburgh Royal Infirmary

At the fortnightly meeting of the Board of Managers of Edinburgh Royal Infirmary last week it was reported that the receipts since the previous meeting had amounted to £6,896 It was reported further that 1,501 patients had been under treatment in the wards during the period, and that *the number of cases awaiting admission to the* institution was 1,813 at November 1st

Ireland.

THE Branch Council for Ireland has certified to the returning officer that Dr Leonard Kidd has been duly elected a direct representative for Ireland upon the General Medical Council in accordance with the regulations made by the Privy Council

Irish Medical Committee

A *special meeting of the Irish Medical Committee* was held recently in the Royal College of Surgeons Dublin, with Dr Joseph Power in the chair The chief business the *Committee* considered was a draft statement of evidence prepared by the Executive Subcommittee to be submitted to the Committee of Inquiry appointed by the Irish Free State Government to report in connexion with the Insurance Act in its application to the Free State and also the extent of the reforms that would be necessary in the existing medical services to bring them more up to date and more efficient generally The report of the Executive Committee was considered at length and, with some alterations, was adopted The following deputation was appointed, and waited on the Committee of Inquiry on November 7th Dr J Power, Senator W O'Sullivan, M D, Dr J M Day, Dr P Magner, Dr J P Shanley Dr J Counihan, Dr Hennessy (Medical Secretary) and Mr C H Gick (Secretary) The deputation amongst other matters, urged upon the Committee of Inquiry the acceptance of the following recommendations

1 The co-ordination of the system of central control of the medical and public health services in Ireland by the establishment of a Ministry of Health for Ireland (Free State)

2 The formation within the Ministry of a Health Council composed of representatives of public and professional interests to which will be entrusted the general direction of policy in regard to the administration of the medical and health services in Ireland

3 The establishment of an Irish Medical Service appointed by competitive examination of an entirely practical nature and paid by the Ministry from which will be provided the medical and veterinary officers of health the medical and surgical staffs of the various public hospitals sanatoriums asylums etc as well as the medical officers engaged in the treatment of the insane and of poor persons

4 The transformation and development of the present dispensary medical system freed from association with Poor Law administration and under which certain classes of persons will be entitled to receive medical hospital and special treatment

5 The modification of the existing scheme of Salaries and Conditions for medical and public health service and the substitution therefor

of a scheme under which the net expenditure of the local health boards, after deducting receipts from insurance etc sources, will be defrayed in equal proportions by the rates and the State

6 The classes entitled to medical treatment both general and hospital, under the new service would be (1) insured persons, (2) the poor and destitute, and (3) a class of persons who though not insured, correspond socially or industrially to the insured, and who might be included as voluntary contributors The income limitation of (1) and (3) and the terms and conditions of their inclusion should be a matter for arrangement between the Ministry and the representatives of the profession

7 The proposal to provide medical benefit for dependants presents considerable difficulties, particularly in urban areas, where it would interfere very largely with the work at present done by private practitioners The Irish Public Health Council recognized this difficulty and postponed any proposals for dealing with dependants The Irish Medical Committee cannot advise that medical benefits should be given to dependants It must, moreover, be borne in mind that the provision of medical benefit for dependants would treble or quadruple the cost of providing medical benefit for insured persons alone

8 In connexion with public health the deputation recommended (1) the appointment of whole time county medical officers of health (2) the medical inspection of school children, (3) mother and child welfare schemes

The Irish Medical Committee passed resolutions protesting against exclusion of any existing medical officials from the advantages (for superannuation purposes) of Section 8 of the Local Government (Ireland) Act of 1919, and urging that all future medical officials should have compulsory pension rights

On the motion of the chairman a very warm vote of thanks was passed to Dr R J Rowlette, F R C P I, for his long and invaluable services to the Irish medical profession, especially as a member of the Irish Public Health Council and the Committee of Inquiry now sitting in connexion with the Insurance Act and the medical services in the Free State

Ulster Medical Society

The first meeting of the winter session of the Ulster Medical Society was held in the Medical Institute, Belfast, on the evening of November 6th Professor Symmers, the retiring president, introduced his successor, Dr Singleton Darling (Lurgan) in felicitous terms Dr Darling proposed, and Dr McKisack seconded, a warm vote of thanks to Professor Symmers for his conduct in the chair, for all his efforts on behalf of the society, and for his hospitality This was passed by acclamation and conveyed to Professor Symmers Before taking up the subject of his address, "Some Observations on Public Health and Poor Law Medical Service," Dr Darling referred in feeling terms to the five deaths that had taken place in the last year Sir Wilton Browne, Professor Symington and Dr J McCan, all past-presidents of the society, and Dr Agnew, of Lurgan, and Dr J L Rentoul, of Belfast, both vice-presidents He returned his grateful thanks for the honour of being president Dr John Campbell proposed, and Dr R J Johnstone M P, seconded a hearty vote of thanks for the address this was supported by Colonel Dawson, Chief Medical Officer to the Government Dr William Burns, and Dr Patton (Lurgan), and passed with acclamation

County Mayo Doctors' Salaries

At a meeting of the County Mayo Board of Health a letter was read from the Ministry of Local Government relative to a graded scale of salaries for dispensary medical officers existing prior to the amalgamation scheme The Minister desired to point out that as far back as 1920 Westport Union recognized the inadequacy of the salaries of medical officers and submitted a scale rising to £250 per annum This received the sanction of the old Local Government Board The Minister considered that the time had now come when a settlement of the claims should be arrived at, and requested the Board to take the matter into consideration and formulate a reasonable scale and submit it for the approval of the Ministry The Board, one member dissenting, refused to formulate a scale of salaries as suggested in the letter of the Minister of Local Government and Public Health

England and Wales.

The voting papers for the election of direct representatives for England and Wales upon the General Medical Council were posted on November 12th They must be returned to the Registrar not later than November 20th

Tuberculosis in Lancashire

The annual report for 1923 of the central tuberculosis officer for Lancashire (Dr G Lissant Cox) has just been published The population dealt with under the county scheme was estimated at the end of the year to be 1,772,658, and the number of cases of non-pulmonary tuberculosis under supervision was reported as 5·65 per 1,000 of the population The death rate for the year from pulmonary tuberculosis was 0·70 per 1,000—the lowest ever recorded in the administrative county The death rate from non-pulmonary tuberculosis was, however, 0·23 per 1,000, fractionally above that of the previous year Sanatorium and hospital accommodation was slightly increased during the year, the number of beds under occupation at the end of each year rising from 678 in 1922 to 750 in 1923 The care committee organization of the county has been increased, there now being 17 voluntary care committees dealing with a population of 780,173, but leaving out a population of nearly one million An amended scheme is therefore being brought into force to extend this valuable work to cover the whole of the administrative county During the present financial year the county grant for care work is to be increased, and, where these committees do not exist, fixed sums have been allotted for the first six months to be disbursed on the recommendation of the consulting tuberculosis officer in the relief of necessitous patients In this way help can be given in the purchase of clothing by patients going to a sanatorium or hospital, and food and clothes provided for patients under treatment at home The proportion of consumptive patients sleeping in the same bed with other persons has decreased from 17·1 per cent in 1921 to 10·1 per cent in 1923, as a result of the council lending bedsteads and mattresses to patients unable to provide for themselves Dr Cox draws attention to the unsatisfactory feature that only a quarter of the 1,238 adult patients applying for treatment for the first time in 1923 were in the early stage of pulmonary tuberculosis, and he urges the importance of educating the public further in this respect Improvement is reported in the matter of notification, less than 7 per cent of the deaths from this disease in 1923 occurred without previous notification, as compared with 18 per cent in 1918 In only 7 per cent of the cases of death in which notification had not taken place was there no reasonable excuse for the omission

Continued improvement is recorded in the matter of co-operation with sanitary authorities, medical practitioners, and health officials In the year under review 76·6 per cent of the new cases, excluding contacts, were referred to the tuberculosis officers by practitioners, poor law authorities, school medical officers, or other health officials Tuberculosis officers occasionally visit Poor Law infirmaries for consultation purposes, and in one dispensary area the consultant tuberculosis officer pays such a visit at regular monthly intervals Research work of different kinds is proceeding, and the county tuberculosis committee has decided to set apart a sum of money specifically for research by the tuberculosis staff, so as to prevent the cost of this falling as an extra charge on particular institutions Whereas during the years 1881 to 1910 the prevailing type of tuberculosis in Lancashire was the "middle age" type affecting persons between 35 and 55 years, Dr Cox's examination of the returns for 1923 showed that the mortality was now heaviest among the "young adult" group, aged 20 to 25 The cost of the county scheme for tuberculosis, allowing for Government grants, has required a county rate of a little over 1½d in the £ for the current financial year For dispensary purposes the county is divided into five large areas and two sub areas, five of these and eighteen branch dispensaries being in active op-

tion The complete county scheme requires three more branch dispensaries During the year 1 535 contacts were examined, of whom 119 were diagnosed as cases of definite tuberculosis, representing 77 5 per 1 000 contacts examined, a much higher figure than any random sampling of the ordinary population would give The x ray work increased considerably as compared with previous years

Dr Lissant Cox has come to a definite conclusion as regards the value of sanatorium treatment A statistical analysis is given of the after-histories of 2 228 patients who received sanatorium treatment and of 1,640 patients who received treatment at home or in institutions other than sanatoriums Of 927 sanatorium patients, and 700 non-sanatorium patients, in the early and intermediate stages of disease, 17 per cent of the sanatorium patients had died as compared with 45 3 per cent of the non-sanatorium patients at the end of 1923 Similarly, of 1,301 sanatorium patients and 940 non sanatorium patients in later stages, 69 2 per cent of sanatorium patients as compared with 87 4 per cent of non sanatorium patients, had died by the end of 1923 He adds that the educational value of sanatorium treatment is also a point of very great importance

Maudsley Hospital Clinics

The Maudsley Hospital offers facilities for the clinical study of all types of neurosis and psychosis, more especially those forms in which recovery is possible and those in which the mental symptoms are associated with organic disease in the nervous system or elsewhere The hospital itself deals with nearly 1 000 out-patients and 500 voluntary in-patients annually and can, moreover draw upon the mental hospitals of the County of London, which accommodate nearly 20,000 patients The following opportunities are open to medical practitioners and students without charge Dr W S Dawson is now giving a series of clinical lectures on Tuesday afternoons on the physical causes and accompaniments of mental disorders, Dr Edward Mapother lectures each Wednesday afternoon on mental symptoms and the mechanism of their development and Dr A A W Petrie, on Thursday afternoons on clinical mental syndromes These afternoon lectures commence at 2 30 Each Tuesday morning at 11 30 there is a discussion on cases in the hospital and on the last Friday of each month a monthly meeting at 4 p m of the medical staffs of the various mental hospitals of London at which each hospital in turn gives a demonstration of cases from its own wards The out-patient department is open on Mondays and Thursdays for male patients, and on Tuesdays and Fridays for female patients at 2 p m Appointments as clinical assistants are open, without fee to practitioners of either sex specializing in psychological medicine These posts can be either whole or part time and include work in the wards out-patient department or the laboratories as desired They may be held in conjunction with attendance at either of the courses for the diploma in psychological medicine or apart from this and they satisfy the requirements of the examining bodies for the D P M or for the M D in psychological medicine in respect of clinical experience of mental disorders Students may attend the clinical demonstrations required for their qualifying examination subject to the consent of the authorities of their own medical school, the Maudsley Hospital being recognized for this purpose by examining bodies

Medical Treatment of London School children

In making arrangements for the medical and dental treatment of children attending elementary schools and certain scholars attending secondary schools for the year beginning April 1st next, the London County Council has authorized provision for the treatment of 34 600 cases of eye defects 13,200 cases of ear, nose and throat defects 1 750 ringworm cases (the numbers of children suffering from ringworm are steadily declining) 67,000 cases of minor ailments and 120,000 dental cases The total number of cases is slightly in excess of those provided for in the previous year, and the total charge, £90 950 represents an increase of some £4,000 A scheme has been approved for dealing with children with discharging ears Five special inspection centres will be established to which children suffering from discharging ears will be referred for expert advice by one of the divisional medical officers who is an aural specialist and two half time assistants It has been decided to withdraw the grants to all the remedial exercise centres save one (at Woolwich) because the results obtained are held not to justify their continuation but the question of facilitating the extension of special daily physical exercise classes for children suffering from incipient and postural deformities is being considered For some types of deformity, when the children are unable to profit from attendance at an elementary school owing to their disability there is in London an abundance of provision at out-patient departments of hospitals, and one of the difficulties experienced by a number of voluntary remedial exercise and massage centres has been that of obtaining out-patients, because the hospital surgeons prefer to keep them under observation in their own departments The chief surgical causes of crippling found amongst London school-children are surgical tuberculosis and infantile paralysis It is stated that the provision made with regard to the first is satisfactory, and with regard to the second a complete scheme has been agreed to by the Council, in conjunction with the Ministry of Health and the Metropolitan Asylums Board for filling a gap which was found to exist in the provision for infantile paralysis cases

Correspondence.

THE PHYSICIAN'S OUTLOOK ON TUBERCULOSIS

SIR,—In the comprehensive and authoritative lecture on "Tuberculosis of the larynx its significance to the physician," delivered before the Royal College of Physicians of London on November 6th (BRITISH MEDICAL JOURNAL November 8th p 841), Sir StClair Thomson has justly pressed two points which are but insufficiently appreciated—namely, (1) the frequency in cases of pulmonary tuberculosis of associated laryngeal involvement in less or greater degree, and (2) the favourable outlook in respect of laryngeal tuberculosis when the condition has been early recognized

The grave prognosis we are compelled to give in many cases of laryngeal tuberculosis seen for the first time results inherently not from the character or localization of the disease, but from the fact that the laryngeal involvement has been determined only when the disease has made formidable headway

The position is much as it used to be in former days in respect of pulmonary tuberculosis Why was the prognosis in pulmonary tuberculosis thirty years ago—and even more recently—largely pessimistic In largest part because through ignorance of the natural history of the disease and the principles of preventive treatment the diagnosis was reached too late to be effective

With the widened outlook on tuberculosis which the past thirty years have brought, the physician is hardly just to himself or to his patient who does not proceed to the *examination of the larynx in every case of present or suspected pulmonary tuberculosis* Such examination determines immediately the presence or absence of laryngeal involvement In case of involvement early determination enhances much the chance of recovery under treatment Even in the absence of laryngeal tuberculosis, detailed inspection of mucous surfaces (buccal tonsillar pharyngeal and laryngeal) which laryngoscopic examination implies sometimes contributes considerably to the diagnosis in doubtful cases of lung disease

I have always held and taught that the physician is not entitled to conclude a diagnosis or prognosis in pulmonary tuberculosis without thorough examination of the laryngeal and contiguous mucous surfaces In most cases of suspected tuberculosis the up-to-date physician will go further Granted that there is evidence that a patient is suffering from tuberculous infection, he will feel it incumbent, to do

rest satisfied with the discovery of *one focus* of disease, but to investigate the various organs in succession, in order to determine precisely the extent and limits of tuberculous invasion Even when tuberculosis appears to be localized in one or other viscus, its import as a systemic disease—with further possible local outcrops at almost any point—must appeal to the scientific imagination and interest of the doctor He cannot nowadays content himself with the old view that tuberculosis present in a given organ constitutes, in any strict sense, a localized disease—I am, etc,

University of Edinburgh, Nov 8th R W Philip

CARBON MONOXIDE POISONING

Sir,—It is evident from various letters on carbon monoxide poisoning which have appeared in the Journal during the last twelve months that there is much difference of opinion as to the effects of inhaling this gas Two sets of statements are made which appear to me to be in conflict

We are told that carbon monoxide can only accumulate in the blood up to the saturation corresponding to its partial pressure in the air, and no further

The other statement is best defined by quoting from Rosenau's *Preventive Medicine and Hygiene*, p 1308, 1921 edition

"The poisonous properties of carbon monoxide are according to Haldane, due to the great affinity it has for the haemoglobin of the red corpuscles'

'It has from 140 to 250 times greater chemical affinity for haemoglobin than oxygen"

The first statement appears to me to lay down the principle that carbon monoxide behaves, as far as accumulation in blood is concerned, precisely as any other gas would behave If this is so, it does not matter what affinity carbon monoxide has for haemoglobin, it is beside the point, and pronouncements like Dr Haldane's quoted above become meaningless It is, however, difficult to accept this position because those of us who are familiar with industrial conditions of life can produce evidence that the inhalation of small quantities of coal gas is hurtful

Is it possible that the transient combination of CO with haemoglobin damages the latter, and leaves it damaged after the CO has been eliminated? It is desirable that some of our leading physiologists should give us a clear explanation of what actually does occur—I am, etc,

Macclesfield Nov 8th John N Laird, M D

TONSILLECTOMY

Sir—In his letter in your issue of November 8th (p 876) Mr F J Steward criticizes the resolutions passed at the Annual Meeting by the Section of Laryngology and Otology Surely some of his criticism is based on a wrong interpretation of the term "enucleation"

"Enucleation of tonsils" and "enucleation by dissection" are not synonymous terms Enucleation means the complete removal of the tonsil with its capsule This result can be achieved by several methods, of which removal by dissection is only one Tonsils can also be enucleated with the guillotine, by the snare, and by the Waring suction method

Since Whillis and Pybus published their epoch-making paper in 1910 guillotine tonsillectomy has been revolutionized This method was elaborated by Sluder in America and has been brought back to us as "the Sluder technic" It has now been developed to a very high degree of efficiency Sluder claims that after skill is acquired 99 per cent of tonsils can be enucleated by the guillotine Guillotine enucleation requires no more time nor anæsthetic than guillotine tonsillotomy It has many advantages over the dissection method, but it requires frequent and prolonged practice to acquire the desired skill in this method In a recent publication I have gone more fully into this subject[1]

To return to the resolutions of the Section of Laryngology and Otology, it is the old question of tonsillectomy *v* tonsillotomy The Section *unanimously* recommended tonsillectomy It is hard to realize that anyone can seriously think of going back to the old method of 'snipping a bit off the tonsil"—I am, etc

Guildford Nov 9th T B Johnson

[1] Tonsillectomy *Practitioner*, August, 1924

Sir,—I was very glad to read Mr Steward's letter in your last issue Is the guillotine operation to be entirely condemned? The difference between the guillotine operation and set enucleation is the difference between a minor and a major operation—if, indeed, any operation on the tonsil is ever a minor one

Undoubtedly most guillotine operations in competent hands are clinically successful But the occasional failure may well spell disaster to the operator, I own As a matter of fact cases requiring tonsillectomy differ so much in ease or difficulty that it is impossible to assess the operation at its proper value I believe myself that the problem could be solved by the invention of a properly designed guillotine What is wanted is a properly curved frame to sink in between the faucial pillars, act as a protecting frame, and a guide wherein to withdraw a flexible blade to excise the tonsil Is such an instrument possible?—I am, etc,

Sevenoaks, Nov 9th Gerald Sichel

PICRIC ACID ITS USE AND ABUSE

Sir,—I read with some interest the correspondence which appeared in recent issues of the Journal (September 20th and 27th) regarding picric acid dermatitis Dr Semon is anxious to absolve the dermatologist from having opened the door to this "yellow peril" among the antiseptics

Priority in the matter of its introduction is not of real importance, and at this date may be difficult to determine, but as long ago as 1889 Ceresi and Gaucher insisted on the value of picric acid in many inflammatory skin affections, apparently before it obtained a place in surgical therapeutics In 1896 Thiery, a Paris surgeon, advocated its use in the treatment of burns, and, impressed by his work, we tried it, presenting equally favourable conclusions in a thesis (1898) for graduation at Edinburgh In England Sir D'Arcy Power, in 1896, wrote of the use of picric acid that "a scar remains which is as much superior to the ordinary scar from a burn as our present surgical cure is superior to that obtained by our predecessors who allowed their wounds to granulate" In Scotland, Mr Miles said "Picric acid at least brings the burn into the condition of a healthy healing ulcer, more simply, more safely, and more rapidly than do other methods"

Supported by such strong opinions we cannot wonder that the value of this antiseptic was "widely promulgated in British medical literature"

But if picric acid is used on a burnt surface a definite method must be employed In the first place, Thiery's formula is Picric acid 12 grams, boiled water (tepid) 1 litre, allow to cool and decant Secondly, sterile gauze (never lint) is dipped in this solution, squeezed fairly dry, and applied to the burnt area The gauze is covered with a very thin layer of wool and fixed with a gauze bandage The value of this dressing is obtained from its rapid evaporation

In over twenty-five years' experience of picric acid in burns my partner and I have never seen the slightest dermatitis when it is applied in aqueous solution One case when a 5 per cent alcoholic solution was used as an antiseptic before operation on a breast case, dermatitis followed, curiously similar to the case mentioned by Dr Semon, the difference being that in our case the dermatitis appeared after the operation, not before But the alcoholic solution used elsewhere in the body for disinfecting the skin has never produced the slightest irritation in our experience

Picric acid, therefore, if used on burns, must be applied in aqueous solution, never in an ointment, never on lint

But the use of picric acid is not limited to the treatment of burns, for as a medium for preparing catgut the surgeon will find it most satisfactory For many years we have used a saturated solution of picric acid in clove oil for this purpose, as recommended by Roeder of Nebraska, with one slight modification Any variety of dry catgut, plain or medicated, is simply placed in this solution, where it remains indefinitely For use, the spools of catgut are transferred to absolute alcohol and are at once ready for use Personally we prefer chromic catgut, 6,0 or 3,0 for fine-ligatures and all gastro-intestinal work, and 1,0 or formalin strand for larger vessels, small pedicles, and suture of muscle and aponeurosis Prepared in this way

way the e types of catgut l come pliable, acquire considerable tensile strength and are perfectly antiseptic when manipulated with a gloved hand

We believe, therefore, that picric acid is still of considerable value in surgical practice But it re embles another valuable and powerful drug—chloroform—in this respect picric acid should never be applied to the skin, nor chloroform on a mask for anaesthesia, through the medium of that impermeable sub tance called 'surgical lint' The use of lint in either case iolates the essential principles on which their successful use depends—I am, etc,

Huelva Spain Oct 31 t. IAN MACDONALD, M D

SIR,—In view of the notes appearing in your issues of September 20th and 27th pp 520 and 569 with reference to picric acid dermatitis, the following case may be of interest

A woman aged 25 was admitted to the extern department of Dr Steevens s Hospital on Augu t 3rd 1924 suffering from a scald on the dorsum of the left hand This was dre sed at once with a 1 per cent aqueous solution of picric acid and subse quently daily with this dressing until August 24th when the left forearm became very sore and on examination was found to be marked all over the flexor surface with a linear dis coloration the long axis of which corresponded with that of the arm These marks were about 2½ inches long and about three eighths of an inch wide they resembled in appearance the con dition of the skin in burns of the second degree, after the bullae have burst

I saw the patient on October 17th and I thought the condition was due to the picric acid I obtained her consent to do a test on her right arm I did a cutaneous test with a similar solution of picric acid in a manner resembling the von Pirquet tuberculin reaction The next day there appeared a raised red papule about half an inch in diameter very tender to touch on the following day the lower part of the forearm presented an appearance exactly similar to the left forearm the entire right arm became gradually affected

The patient is still attending the hospital and seems to be much improved by her treatment with alcohol locally —I am, etc,

FRANCIS S BOURKE
Assi tant Pathologi t Dr Steevens s Ho pital.

Dublin Nov 3rd

THE IMPROVEMENT OF OBSTETRICS

SIR,—Dr Louise McIlroy's letter in your issue of October 4th and other letters in the issue of October 18th are full of interesting suggestions for the improvement of obstetrics but there is a curious conflict of views as to how improvement is to be obtained and the value of present methods for dealing with difficult cases Dr McIlroy sugge ts that *the midwife is rapidly cutting out the medical practitioner* and points out that 50 per cent of confinements are managed by midwives, whom she describes as 'a highly skilled body of specialists" The fact is that 50 per cent or even 70 per cent of all cases can be efficiently managed by a midwife because they require no management at all being normal cases and the less interfered with the better The remaining 30 per cent of cases are those requiring manage ment, and in this respect intelligent ob ervation rather than active treatment is required Nearly all complica tions occurring in labour present signs or symptoms at *the start of labour indicating that the condition is not* normal It may be difficult or even impossible for the most skilled specialist to say what the final result of some such cases will be the majority will be easily dealt with if recognized and treated at the proper time, instead of which as so often occurs, the early signs not being recog nized the ca e is treated as a normal one until actual difficulty or distress has developed The practitioner is then called in whether skilled or otherwise he is asked not only to treat the primary abnormality but to do so in spite of the further complications that have developed through neglect of the condition If the practitioner is skilled he may be able to make the best of a bad job, but as he is often little more skilled than the midwife, he is most likely to overlook the primary cause of the difficulty and concentrate on getting the case finished off as soon as possible by any means, and often the wrong means

Many general practitioners and midwives are highly skilled, and their skill chiefly lies in diagnosis, when they meet complicated cases they recognize them and, being wi e in their generation, they send such ca es into ho p al, where such treatment as is necessary can be applied when applicable Much of the difficulty in ob tetrics at pre ent ari es from the fact that in 80 per cent of ca es the patients are able to deliver themselves, and do so but since more than half the people conducting midwifery ca es are not capable of saying whether a ca e is normal or abnormal a large number of the remaining 20 per cent of ca es is mixed up with the 80 per cent At the start of labour each one of those 20 per cent or patient look and l, perfectly well and the amount by which they vary from the normal case may be very small but the variation is always there, and will prevent anyone with a proper know*ledge of the normal from cla ing the ca e as normal* The ignorant attendant does not recognize the variation or worse, having noticed it, thinks it is so little as not to matter and lets the ca e continue until di tress develop

There are a few but very few midwifery ca es in which labour starts normally and which do not terminate normally, with the exception of simple low forceps applica tion for the end of the second stage such cases never come to much harm In a moderate number of cases complica tions only develop in the third stage and here again the vast majority have early signs that the process is not progressing normally long before any symptom of the chief complication of the third stage excessive haemorrhage has developed A number of cases are, however allowed to continue in spite of the early signs until the patie its are suffering from actual lo s of blood So far as the midwife is concerned this is a ked for by the Central Midwives Board regulations, which instruct her to end for medical aid when there is exce ive bleeding' after two hours delay" That is not the time when aid should have been sought, help will probably arrive when the patient is moribund

With regard to ante natal management nearly all the complications of pregnancy develop gradually, and are amenable to treatment if treated early most are prevent able by maintaining a healthy mode of life Pregnancy is not a di ease, it occurs in health and generally as a result of good health Nevertheless the state of pregnancy upsets metabolism and the organs of metabolism may require a little help during pregnancy they must be pro tected from abuse and advice and guidance rather than treatment i what is required If a woman is found during pregnancy to be suffering from some condition which will cau e difficulty in labour she should be at the time of labour where that disability can be treated or such measures should be taken as will obviate the con equences of the disability She probably does not require any treatment during pregnancy Taking things all round diagnosis is what is required during pregnancy and labour rather than treatment There are ample means of placing any complicated ca e of pregnancy or labour under efficient treatment in the hospitals and infirmaries if only the abnormalities, or the probability of complications were recognized as soon as they are recognizable I this were done the midwives would not have complica ion becoming neglected and the practitioners would not be called in to treat debilitated patients nor allow their own cases to develop dystocia To effect this in practice it is neces ary to alter the present view of ob tetrics ta en by the public and the profe sion and to alter the lines of teaching My suggestions for this are as follow

Midwives should be taught normal labour and how to conduct a normal ca e This should include the ability to sa con fidently that a case is normal a the re ult of recognizing the characteristics of a vertex pre entation properly applied to the pelvic brim It the midwife cannot es ablish that act l palpation the case comes under the clas ification of Where no presentation can be made a o A malpr en ation I personally greatly doubt the ju ical lit of leaving a l l presentation to a midwife When a pre ening head is above the pelvic brim the condi on do not conte m th le normal start of labour 70 p r cent of ann ca ill spontaneous but leaving all uch ca es to e ha happen results in ol tructed labour in the le 30 p It is not necessary for the mid ife to d a e the particular abnormality it is sufficient f her to re ognize that the ca is no normal, and therefore hi n o the

province to conduct A midwife should be able to recognize that labour is progressing normally, when it ceases to do so *the case should be referred, instead of* waiting till distress sets in A midwife should hardly ever make a vaginal examination If labour is progressing normally none is required, if labour *ceases to progress* the fewer examinations made the better, if operative interference is required A malpresentation *can seldom* be diagnosed early per vaginam, and there will always be the facts referred to above to prevent the case being considered normal A midwife should understand the normal third stage and know exactly how to assist it, if it does not follow the normal course she should send for aid, and in the meantime simple methods of control will prevent excessive loss until aid arrives Those occasional cases of very rapid loss of blood *early in the third stage following* a normal delivery always occur *in multiparæ*, and there is always a history of a minor degree of the same complication happening in former labours This history should be obtained *by ante natal investigation, but the attending mid* wife is seldom unaware of the previous history, and the patient should be advised to go into hospital or have assistance *at the birth of the infant* The patient will never *object* when she is told that the complication can be prevented by early treatment and the risk of delay is explained To sum up, the duties of a *midwife should be to conduct normal labour* in normal cases, and be competent to recognize when a case is "not normal" It is quite unnecessary for her to diagnose the exact abnormality, or know the treatment, she may have a rudimentary knowledge of what is required if she knows what is wrong, but, is the treatment of any complication will vary with the associated conditions, she cannot be expected to know the proper treatment to be applied in the individual case

With regard to the training of midwives, a woman with no *previous medical training* is expected at present to be trained in six months If at the end of that time a woman has learnt to recognize and conduct a normal case, manage the baby and breast feeding, and do things with a reasonably safe degree of surgical cleanliness, she has done extremely well, and will be a safe midwife without being able to diagnose more than that a case is not a normal vertex presentation

Now, as regards the teaching of *obstetrics in the medical* schools, the student is expected to take practical obstetrics in his fourth or fifth year, but he has to fit it in as best he can with his other hospital practice There should be a definite period, say three months, at the end of the fourth or during the fifth year when the student would devote the whole of his time in hospital to the study of obstetrics, and during that time be excused from general hospital attendance During these three months a student should learn normal labour thoroughly and be absolutely confident in saying a case is normal and that progress is normal, or that a case is not normal or progress is not normal He should know at the end of his time how to conduct a normal case, manage the third stage, and how to examine thoroughly a patient to establish the fact that the case is normal or abnormal During the process of obtaining *this knowledge* he will meet a certain *number of* abnormalities and become cognizant of their characters, but, what is more important, he will learn to detect any cases which do not conform with the normal It is essential that a student *should conduct a number* of normal cases, since without doing this he can have no opportunity of learning the characteristics of the process In pneumonia the physical signs are present for days, and so a number of students can learn them and repeatedly observe them in a single case In labour the characters are *constantly changing, so that* even one student cannot repeatedly observe them, several cases are therefore required to teach one *case to one* student so that he will become reasonably cognizant of it In the same way instruction must be given in obstetric wards or hospitals, and *normal* cases are required for this instruction so that the student may be taught to palpate and practise diagnosis

With the present curriculum so little time is given to work in obstetric wards that nearly all or it has to be devoted to conducting labour cases, while the essential knowledge of diagnosis and prognosis is *neglected* The number of times a student is likely to see an abnormal presentation in three months is not sufficient to teach him anything of the individual conditions Take, for example the last report of Queen Charlotte's Hospital Confinements 1,779, breech presentations 83 transverse presentations 11, brow presentations 3, face presentations 2, on the other hand, there is no excuse for a student *not* learning all the characteristics of a normal vertex—1 702 cases Of course, in a number of these there were other complications 130 were contracted pelvis cases *The points indicating this* condition can be learnt and such cases be distinguished from frankly normal ones The treatment is seldom such as can justifiably be undertaken in a patient's home, but the condition can and should be recognized before labour or early in it

At the final examination a student should know normal labour as well as he is expected to know anatomy and physiology, should have a theoretical knowledge of *abnormal* labour and a thorough knowledge of the progress and management of normal labour so as to recognize any alteration as it develops When the student becomes qualified, if he wishes to take up obstetrics let him devote time to the further study of this branch in the same way as he would if taking up ophthalmology, pathology, or surgery

The general public require to learn that although the vast majority of confinements can be conducted by anyone with a small knowledge and the ability to recognize that the case is normal, the same person is not qualified to deal with an abnormality When the public learn this they will cease to ask the practitioner who looks after the family to treat the mother for abnormal labour, or, when the *midwife says she wants assistance*, be satisfied with the calling in of the nearest doctor or the family physician The general practitioner with a real knowledge of obstetrics in any district is the one who, from his special knowledge *sends patients into hospital at an early stage for treatment which cannot be carried out safely in the patient's home*

Dr McIlroy's suggestion of whole-time specialists is quite impracticable She points out that there are 700 000 *confinements in the year* in the extern department of the Rotunda about 2,000 cases are attended yearly, there are two extern assistants with the *hospital behind them* to supervise these cases, although many of the abnormal cases are weeded out during pregnancy and brought into hospital From my own experience as extern assistant I would not take it on as a life occupation, anyone who did so would be a lunatic or a drug maniac within two years The responsibility would be unendurable, to say *nothing* of the constancy and irregularity of the work At this rate something over 700 specialists would be required Where could they be obtained, and what would be their qualifications?

As it is, with the present obstetric hospitals and wards of hospitals in the large towns and the cottage hospitals and infirmaries in the country, there are ample means of dealing with abnormal midwifery—if the abnormal cases were recognized early instead of when *complications have* developed, and have to be dealt with as best can be in unsuitable surroundings, short-handed, and by someone who has never met a similar case before The present faults in obstetric practice will not be overcome *by a new body of* officials, nor by making the present midwives and doctors afraid to undertake anything because everything they do is to be scrutinized by a superior official *who probably has* no knowledge of obstetrics It can be overcome by teaching doctors, midwives, and the public the limitations of the *man* or woman midwife, and utilizing the present institutional facilities—I am, etc,

Rotunda Hospital, Dublin, Oct 18th GEORGE FITZGIBBON

RECTAL INJECTIONS OF SEA-WATER FOR THIRST

SIR,—Your article "In open boats," reviewing Captain Foster's book on his remarkable voyage, recalls to my mind some correspondence in the *Journal* six *and a half* years ago In the issue of February 16th, 1918 (p 220), appeared two letters, one based on actual experimental evidence advocating rectal injections of sea-water for the alleviation of thirst due to a lack of drinking water

I cannot at the moment put my hands on an analysis of sea-water showing its exact saline content, but what I want to know is Is hypertonic saline of a strength akin to salt water tolerated by *the bowel*, and will it be absorbed from it in the colon, as in the case of a *normal saline*, or will it produce, as in the case of purgative salts held in hypertonic solution in the intestine, a flow of fluid *from* the tissues *into the bowel*? *In* either statement is urgently *needed on these points*

If water can indeed be absorbed from hypertonic enemata, then surely steps should be taken to propagate knowledge to those who go down to the sea in ships It is dreadful to think of brave lives perishing in the midst of plenty Responsibility for a clear declaration as to efficacy or the reverse of such hypertonic solutions should rest with the medical profession—I am, etc,

W. BEVAN-BAKER

Reading, Oct 16th.

POST MORTEM EXAMINATIONS

SIR,—As a general practitioner of many years' standing I feel very strongly that a special department with paid medical officers should be created to conduct *post-mortem* examinations The medical officers might well be attached to boroughs or districts, and be paid by the State or the county council, as are the tuberculosis and health officers The usual *post mortem* examination made by the general practitioner is of little real value and, unless the cause of death is perfectly obvious, it is an extremely difficult procedure, requiring skill and technique which an ordinary practitioner cannot be expected to retain as years go on I believe that the valuable information gained by such expert examinations would benefit both the profession and the public The present system is wrong and antiquated this, if I remember rightly has been recognized long since in Canada where such a pecial department has been created —I am, etc ,

Horley Nov 2nd S A CLARKE, M R C S, I R C P

PERNICIOUS VOMITING OF PREGNANCY

SIR,—Dr Denver's account (September 13th, p 455) of a case of pernicious vomiting treated by lavage of the stomach and glucose in accordance with the theory of hepatic origin suggested by Duncan and Harding, is very interesting in the light of Cramer's[1] work on the action of insulin on the glycogenic function of the liver Cramer seems to have shown that the glycogenic function of the liver is an 'autonomous secretory function" which is inhibited by insulin and stimulated by thyroid and adrenal hormones

Glucose has been shown to be a safeguard against post-salvarsan jaundice, and someone has suggested insulin to combat the worst phases of acute hepatic crises (Unfortunately the reference to the latter suggestion has slipped my memory) The two methods seemed contradictory until the work of Cramer showed their connexion According to him the glycogenic function of the liver is continuous, whether there is carbohydrate to act on or not If no carbohydrate is available it converts protein into glycogen This glycogen is secreted into the blood as glucose at a rate depending on the concentration of glucose in the blood The introduction of glucose into the blood, therefore, whether directly or indirectly through the alimentary tract, would lessen the work of that organ in so far as it would obviate the necessity of secretion of sugar into the blood The administration of insulin over and above the use of glucose would still further rest the liver in that it would arrest its glycogenic function also The principle involved in both methods of treatment is therefore the same—resting the damaged organ, a principle well known in medicine

Personal opportunity has so far been lacking for the administration of insulin in hepatic crises, but among a number of patients at present under observation with disordered livers I hope soon to put the theory to the test It would be interesting to know if any general practitioner or hospital physician has yet used insulin in such cases —I am, etc ,

CRAWFORD LUNDIE M D

Thaba Nchu Orange Free State
Oct 10th

ASSISTANTS IN GENERAL PRACTICE

SIR —I have been an assistant in general practice now for five years during which time I have held two posts other than my present one I left my previous posts entirely on my own account as there were no prospects and I have excellent testimonials all through My present salary is £300

Owing to family calls on my limited income I have been so far unable to save sufficient capital with which to purchase a practice or even a share of one

I have been a member of the British Medical Association since starting in practice but I fail to see what it has done for the good of an assistant generally The Association has done some very excellent work for the profession in other ways but at the moment I feel constrained to advise all newly qualified doctors who intend to commence as assistants not to join the British Medical Association until they have at least completed the assistant stage

My first employer said to me You are very lucky there I was an assistant twenty-five years ago I only had £120 a year" But times have changed during the past quarter of a century For my next employer I had to sign a bond which excluded me (on leaving) from practice for ten years within a twelve miles radius from where I then resided I ascertained that such a bond was quite in order for a country practice, but why should it be so ridiculously stringent?

Let us hope that the very able suggestion of "F - Assistant" (October 11th p 690) will be carried out, and that the Association will investigate the conditions which he rightly refers to For our membership subscriptions we expect to get some consideration other than a copy of the JOURNAL once a week —I am, etc ,

October 25th. ANXIOUS

SIR —In view of the large number of newly qualified practitioners now joining the British Medical Association I think more attention should be directed to the conditions under which many of these have, owing to lack of capital to serve as assistant I notice in advertisements in the JOURNAL that the salary offered to some assistants is not mentioned, and I am aware of a case in which the post was given to the candidate willing to take the lowest salary Many assistants are ungenerously treated as regards off-duty, and are not later taken into partnership as it is cheaper to obtain a new assistant fresh from hospital

It is not a true comparison to declare the salary of a house-officer at a hospital enough for an assistant because the opportunities for learning are not the same How many practitioners take the trouble to teach their assistants anything?—I am, etc ,

November 2nd OXONIAN

THE GENERAL MEDICAL COUNCIL ELECTION

SIR —Will you allow me through your columns to thank the registered medical practitioners of Scotland for the expression of their confidence shown by my unopposed return to the General Medical Council as their Direct Representative?

It shall be my constant endeavour to continue to merit their trust —I am etc ,

Edinburgh Nov 11th NORMAN WALKER

Medico-Legal

CLAIM AND COUNTER-CLAIM

IN the Leeds County Court on October 3rd Dr J Logan of Chapeltown Road Leeds succeeded in recovering from Mr J Gilston of Chapeltown the amount of charges for professional attendance by Dr Logan upon the defendant's child and also resisted a counter-claim by the defendant who alleged negligence and unskilful treatment the jury being unanimously of the opinion that there had been no negligence whatever and that Dr Logan did his best in difficult circumstances

It appears from the reports in the *Yorkshire Evening Post* that Dr Logan diagnosed a serious bowel obstruction and advised a strict diet of breast milk for the baby The illness continuing Dr Vining of Leeds was called in and he whilst confirming Dr Logan's diagnosis suggested stomach washing which was carried out daily Dr Watson another Leeds specialist was also called in and approved this treatment but Mr Gilston being dissatisfied called in Dr Friend who adopted the method of administering cod liver oil by injection The child eventually recovered

Counsel for the defendant submitted to the jury that Dr Logan had been negligent in not adopting some form of treatment other than that which he said was not having the beneficial effect he hoped it would have upon the defendant's child The method of Dr Friend before the recovery of the child were recognised as ordinary feeding methods Nobody had suggested Dr Logan did not know them He admitted that Dr Logan was negligent because he did not take the advice of anybody for four weeks while the child was getting weaker and rejecting everything given in the ordinary way as food and because he did not resort to the method of feeding through the pores No child could vomit cod liver oil rubbed in through the pores of the skin

Judge Woodcock in summing up said there was no amount of man in the country however eminent who dared go into the box and swear that Mr Gilston's child would have died if it had not been treated by Dr Friend or that it was pure the treatment

[1] Cramer *Brit Journ of Exper Path* 1924 5 No 3 p 18

given by Dr Friend which resulted in its recovery It was just as likely that the treatment given by Dr Logan and approved by the specialists was the effective treatment in the case, because apparently it was usual for some time to elapse before improvement was noted It could only be a matter of opinion, and there could be no possible evidence either way

Dr Logan's case was undertaken on his behalf by the London and Counties Medical Protection Society

Universities and Colleges.

UNIVERSITY OF OXFORD

Scholarships and Exhibitions in Natural Science are announced for competition as under December 9th, 1924, at University, Balliol, Oriel Lincoln, and Magdalen Colleges, Christ Church, Trinity, St John's and Hertford Colleges, March 17th, 1925 at Merton, Exeter, New, Brasenose, Corpus Christi, and Wadham Colleges

The University has granted, by a decree of congregation, a sum of £3 000 towards the expense of providing a joint lecture room, library, and workshop for the departments of physiology and bio-chemistry

At a recent congregation the degrees of B M , B Ch were conferred on J W Alden

UNIVERSITY OF LONDON

Dr E Mapother has been recognized as a teacher of mental diseases at King's College Hospital Medical School and Mr Gerald R Lynch as a teacher of forensic medicine at Westminster Hospital Medical School

Mr H J Waring has been appointed to represent the University and King's College at the celebration of the fiftieth anniversary of the School of Technology of the University of Brussels this month

The University Medal in Branch I (Medicine) of the M D examination for internal and external students, July, 1924, has been awarded to John Norman Kerr, B S , an external student of St Bartholomew's Hospital, and the University Medal in Branch IV (Laryngology, Otology, and Rhinology) of the M S examination for internal and external students, July, 1924, has been awarded to Victor Ewings Negus, an internal student of King's College Hospital

UNIVERSITY OF BIRMINGHAM.

The Council of the University of Birmingham has decided to confer the title of Emeritus Professor upon Dr Thomas Wilson, late Professor of Midwifery and Diseases of Women

NATIONAL UNIVERSITY OF IRELAND

The following degrees and diplomas were conferred on November 3rd

M D—Kathleen B White

M B B Ch B A O—M J [illegible]
Spain F Plunkett J P
A L Butler L H Gar
Aughney F R Bourke [illegible] Browne A J Cantwell
P J Conwell Kathleen M Cunningham W J Doody K Egan
P R Fanning Agnes C Farrell T W FitzGerald Mary B Flynn
E Gallagher R Gardiner R E Gordon J Hardy N J Hardy
M S Honan C F Keane J L Kearns Maggie J McColgan
T G A McElhinney F B McEvoy G F McMahan P A McGarvey
J P McGorry P W McGowan S P McGrath Annie M T
McGreen Hilda K McKernan D Mulcahy Eveleen J O Brien
J S O Brien J O Connor M O Leary J A Pierse Catherine
Portley Mary M B Reavy W Shortis Anne M Stafford J J J
Sweeney R H Taylor, J C A Woods

B Sc in Public Health.—Annie Scully

D P H—N A Canton Marie S Moore J C Troy Kathleen G McColgan J Phelan

ROYAL COLLEGE OF SURGEONS OF ENGLAND

The annual meeting of Fellows and members will be held on November 20th at 3 p m at Lincoln's Inn Fields

We are informed that the following resolution will be moved by Dr W E A Worley and seconded by Dr M I Finucane on behalf of the Society of Members of the Royal College of Surgeons of England

That this thirty seventh annual meeting of Fellows and members again affirms the desirability of admitting members to direct representation upon the Council of the College moreover this meeting requests that the President shall hereupon reply in detail to the two resolutions passed at the last annual meeting and that he shall also state whether his Council has seriously considered any means whatever whereby the collective views of members of the College may be ascertained on matters affecting their interests as members

ROYAL COLLEGE OF PHYSICIANS OF IRELAND

The following candidates have, after examination been duly admitted Members and Licentiates in Medicine of the College

A H Davidson, C J C Earl, R H Micks

V A Newton, having passed the required examination, has been admitted to the Licence in Midwifery of the College

ROYAL FACULTY OF PHYSICIANS AND SURGEONS OF GLASGOW

At the annual meeting of the Royal Faculty of Physicians and Surgeons of Glasgow on November 3rd the following officers were appointed *President*, Dr T K. Monro, *Visitor*, Mr J H Pringle *Treasurer* Mr J H MacDonald, *Honorary Librarian*, Dr E H L. Oliphant.

Obituary.

ALFRED JASPER ANDERSON, M A , M B , D P H, Formerly M O H Capetown

The death of Dr Jasper Anderson, late medical officer of health of Capetown, which occurred on October 2nd is deeply regretted throughout South Africa, and particularly by members of the British Medical Association of which he had been for many years one of the ablest and most loyal supporters

Alfred Jasper Anderson was born at Manchester in 1859 From Manchester Grammar School he went to Oxford, and studied medicine at St Bartholomew's Hospital London He obtained the diploma of M R C S in 1882 and graduated M B Oxon in 1883 He received the D P H Camb in 1888 He won the Radcliffe Travelling Fellowship at Oxford, and spent much time in Leipzig and Vienna After a period of general practice in Salford he took up Public Health work and became medical officer of health for Blackpool In 1901 he became the first whole time medical officer of health of Capetown and was responsible for the organization of the Health Department and its administration until his retirement, owing to ill health, at the end of 1922 Until last year he had held the professorship of hygiene at Capetown University He devoted himself enthusiastically to work in connexion with the British Medical Association, both in England and in South Africa, and, after holding various offices in the Cape of Good Hope—Western Province Branch, he became its president in 1909 He was a member of the Branch Council from 1909 to 1920, and represented the Branch at the Overseas Conference held in London in July, 1921 Dr Anderson was one of the original members of the South African Committee from 1911, and succeeded the late Sir Kendal Franks as president Until prevented by impaired health in 1922, he had been a regular attendant at the medical congresses In 1919 he was elected to the Colonial Medical Council, and remained a member of it until his death

He is survived by a widow, one son, who is a Major in the Indian Medical Service, and a daughter

Dr George Augustus Thompson of Darwen died from pneumonia on October 29th, aged 48 He was the son of the late Mr James Thompson, for twenty-five years head master of Holy Trinity School, Darwen, and was educated at St Mungo's College, Glasgow He took the triple Scottish qualification in 1899, and had been in practice in Darwen for the past twenty years He was a member of the Blackburn Division of the British Medical Association and of the Darwen Medical Society, of which he had been president and secretary During the war he served with a temporary commission in the R A M C , and was attached as medical officer to the Royal Field Artillery He leaves a widow and two sons

Dr Oliver H A Maggs of Haworth died on October 19th, aged 72 He was a native of Bourton, Dorsetshire, was educated at Uppingham School, and subsequently became a student at Charing Cross Hospital Medical School He took the diploma of L S A in 1892 and that of L M S S A in 1908 After practising in London and Horbury he went to Haworth, where he continued to practise for twenty-four years, until ill health caused his retirement He took much interest in public affairs, and was for eighteen years a member of the Haworth District Council, during which time he served on many committees He was second in command of the Keighley Volunteer Training Corps in 1915, and captain and second in command of the West Riding Volunteers From 1916 18 he was chairman of the Haworth Military Service Tribunal, and was visiting radiographer at the Keighley and Bingley Hospital Dr Maggs, who was honorary anæsthetist to the Victoria Hospital, Keighley, was appointed a justice of the peace for the West Riding of Yorkshire some three or four years ago He was a member of the Bradford Division of the British Medical Association He is survived by a widow and a son

Medical News.

THE next session of the General Medical Council will commence on Tuesday, November 25th when the president Sir Donald MacAlister, Bt, K C B, M D, will take the chair at 2 p m and give an address

THE twentieth South African Medical Congress will open on July 6th 1925, at Pietermaritzburg The president is Dr D Campbell Watt, the treasurer Dr A W H Cheyne, and the general secretary Dr C G Kay Sharp, Education Department, Pietermaritzburg The secretaries of the sections are as follows Medicine and Mental Hygiene, Dr W J May, Surgery Dr H T Rymer Obstetrics and Gynaecology, Dr H E Allanson Public Health Dr Nellie Wall Mesham Special Subjects, Dr E W Ingle Early notification of intention to read papers should be sent to the secretary of the appropriate section

THE annual dinner of past and present students of the Royal Dental Hospital of London will be held at the Trocadero Restaurant on Saturday November 22nd, at 7 o'clock with Mr W Warwick James O B E, in the chair

THE staff of the Royal Dental Hospital of London will hold their annual clinical 'At Home' at the hospital Leicester Square W C 2 on Saturday November 22nd, at 2 p m Cases of special clinical interest which have come under observation and treatment during the past year will be shown and demonstrations given The various departments of the hospital will also be open for inspection The medical committee extends a cordial invitation to any medical practitioners who may like to attend. Tea will be provided

LORD DAWSON OF PENN G C V O M D will read a paper before the Insurance Institute of London on Monday November 17th on the need for extended sickness insurance The place of meeting is the lecture theatre of the School of Oriental Studies London Institution, Finsbury Circus, and the time 5 30 p m

THE Institute for Clinical Research at St Andrews Fife, has arranged for a series of papers on renal efficiency to be read on Tuesday afternoons at 4 o clock The first was on Tuesday last when Professor Herring dealt with the physiology of the kidney he will continue his discussion of this subject on November 18th Dr Hynd will discuss the chemical constitution of the urine and blood in health and disease on November 25th and December 2nd and Dr Macfennan the clinical pathology of the urine on December 9th and the pathology of the kidney on December 16th All practitioners are cordially invited to the lectures

AT the meeting of the Hunterian Society to be held at the Cutlers Hall Warwick Lane E C, on Monday next November 17th, at 8 45 p m a discussion on the medical witness will be opened by Mr Justice Horridge and Sir William Willcox K C I E The following are expected to take part Sir Francis Newbolt K C, Sir E Marshall Hall K C Sir Bernard Spilsbury Mr J A. Cairns (Magistrate Thames Police Court), Mr Freke Palmer, and Dr Spurgin

A CHADWICK public lecture on Smoke cause nature effects, and methods of prevention (illustrated by lantern slides) will be given by Professor J B Cohen Ph D, F R S on Wednesday, November 19th at 8 p m at the Royal Institute of British Architects, 9 Conduit Street London W

THE annual general meeting of the Medical Officers of Schools Association will be held at 11 Chandos Street, W 1 on Friday, November 21st at 5 p m (tea, 4 30 p m) when the president Dr L R Lempriere, will read a paper on preventive hygiene in public schools, based on twenty years experience

THE first meeting of the session of the Yorkshire Tuberculosis Society was held at the Sheffield Tuberculosis Dispensary on October 25th Dr Rennie took the chair, and a paper on surgery in the treatment of pulmonary tuberculosis was read by Dr H Morriston Davies superintendent of the Vale of Clwyd Sanatorium

THE Langley Memorial Prize of the London School of Hygiene and Tropical Medicine has this year been awarded to Dr P S Selwyn Clarke, M C D P H, of the West African Medical Service for his monograph on small pox in the negro and negroid tribes of British West Africa, with special reference to the Gold Coast Colony The prize was founded by the friends of the late Dr W H Langley C M G, Principal Medical Officer of Southern Nigeria, to commemorate his work and this is the first year of award

THE Harben Lectures which were to have been given on November 24th 25th, and 27th by Professor Edgar L Collis, M D, on phthisis and industrialism (national and occupational) with reference to other infectious diseases, have unavoidably been postponed

THE seventh, eighth, and ninth lectures of the series on cancer open to members of the profession and arranged by the Fellowship of Medicine, will be delivered in the West Lecture Hall at 5 30 p m on Monday November 17th by Mr Cyril A P Nitch on 'Cancer of the Intestines' on Wednesday November 19th by Mr W Sampson Handley, "Cancer of the Breast" and on Friday November 21st by Mr H. S Souttar, Carcinoma of the Oesophagus The Chelsea Hospital for Women has arranged a special course from November 21st to December 8th. A four weeks course, starting on November 24th, will be given at the Royal Waterloo Hospital for Children and Women, in medicine surgery, and gynaecology, with special reference to diseases of the blood, nervous system heart diseases, feeding of infants etc During the first fortnight in December the Royal Northern Hospital, in conjunction with the Royal Chest Hospital will hold an intensive course in medicine surgery and the special departments the Infants Hospital a course on the study of infants and the Hospital for Diseases of the Skin (Blackfriars), a short course in dermatology, including venereal clinics Copies of the syllabus of each of the above mentioned courses may be obtained from the Secretary to the Fellowship of Medicine, 1, Wimpole Street, W 1

DR GRENVILLE MACDONALD will give a public lecture on "Octavia Hill her personality and inspiration, at the Royal Society of Arts 5, John Street Adelphi, W C, on Thursday November 20th at 5 p m

AT a meeting of the National Baby Week Council, on November 12th, a discussion on propaganda work in connexion with ante-natal care was opened by Dr F Watts Eden, who dealt with the relation of ante natal care to maternity and child welfare Miss Hester Viney honorary secretary of the Public Health Section of the College of Nursing spoke on propaganda among mothers and Mr E B Turner F R C S raised the question of the fathers Dr Vincent Denne dental surgeon of the Infants Hospital, Westminster, opened a discussion on propaganda in favour of extending dental clinics for nursing and expectant mothers and for children under 5 At the end of the meeting the council's new film, The work of an infant welfare centre, was exhibited

APPLICATIONS for the year 1925 for the Government grant for scientific investigations must be received at the offices of the Royal Society not later than January 1st They must be made on printed forms obtainable from the clerk to the Government Grant Committee, Royal Society Burlington House W 1

THE following are among the medical men elected on November 10th to the office of Mayor Dr G R Anderson (Southport) Alderman Dr C W Buckley (Buxton) Alderman Dr W J Cale (Bury St Edmunds) re elected Dr H J Campbell (Dartmouth) re elected Alderman Dr J W Clegg (Burnley) re elected, Alderman Dr W I Fern J P (Congleton) re elected Alderman Dr O W Griffith J P (Pwllheli), re elected Dr E J Toye (Bideford) As already announced, Dr G S Pope has been elected Lord Mayor of Norwich

THE College of Physicians of Philadelphia announces that the next award of the Alvarenga Prize, amounting to about 300 dollars will be made in 1925 Essays may be upon any subject in medicine but cannot have been published they must be typewritten and in English and they must be received by the Secretary of the College 19 South 22nd Street Philadelphia U S A on or before May 1st 1925 Each essay must be unsigned but marked with a motto and accompanied by a sealed envelope having on its outside the motto and within the name and address of the author The prize for 1924 has been awarded to Dr Gordon Cameron of Victoria Australia for his essay on pancreatic anomalies

DR WILLIAM BUSBY COLLTEP senior medical officer has been appointed an official member of the executive council of the presidency of Montserrat.

THE Right Hon Neville Chamberlain M P Minister of Health has appointed Mr Douglas Veale to be his private secretary and Mr A Noyil Rucker assistant private secretary

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WE have to announce with deep regret that Dr G E Hislip died on the afternoon of Wednesday November 12th after a long and painful illness For eight years—from 1916 until last June—Dr Hislip held the office of Treasurer of the British Medical Association and devoted his time and energies with characteristic abilities to the [illegible] of the Association's building [illegible] publish a memoir in our next issue The [illegible] funeral service will be held at St Martin-in-the-Fields Trafalgar Square to-day (Friday November 14th) at 11 o'clock, the cremation at Woking Parish Church

Letters, Notes, and Answers.

ORIGINAL ARTICLES and LETTERS *forwarded for publication are understood to be offered to the* BRITISH MEDICAL JOURNAL *alone unless the contrary be stated* Authors desiring reprints of their articles published in the BRITISH MEDICAL JOURNAL are requested to communicate with the Financial Secretary and Business Manager, 429, Strand, W C 2, on receipt of proof

ALL communications with reference to advertisements as well as orders for copies of the JOURNAL should be addressed to the Financial Secretary and Business Manager, 429, Strand, London, W C 2 Attention to this request will avoid delay Communications with reference to editorial business should be addressed to the Editor, BRITISH MEDICAL JOURNAL, 129, Strand, W C 2

CORRESPONDENTS who wish notice to be taken of their communications should authenticate them with their names—not necessarily for publication

Communications intended for the current issue should be posted so as to arrive by the first post on Monday or at latest be received not later than Tuesday morning

THE telephone number of the BRITISH MEDICAL ASSOCIATION and BRITISH MEDICAL JOURNAL is Gerrard 2630 (Internal Exchange) The telegraphic addresses are

EDITOR of the BRITISH MEDICAL JOURNAL, *Articulate Westrand, London*

FINANCIAL SECRETARY AND BUSINESS MANAGER (Advertisements, etc) *Articulate Westrand, London*

MEDICAL SECRETARY, *Mediocre Westrand, London*

The address of the Irish Office of the British Medical Association is 16, South Frederick Street, Dublin (telegrams *Bacillus Dublin*, telephone 4737, Dublin) and of the Scottish Office, 6 Rutland Square, Edinburgh (telegrams *Associate, Edinburgh*, telephone 4361 Central)

QUERIES AND ANSWERS.

EPILEPTIFORM FITS

DR P MERRIN (Mount Clarence, Kingstown) writes If "H C B" (November 8th, p 883) will try bromocamphin one teaspoonful in water three times a day before meals and 1/2 grain thyroid extract twice a day after food he will find it of advantage to his patient

SUGGESTION DURING SLEEP

"EXPATRIATED" asks for detailed information, or a reference to literature containing it on how to employ the method of suggestion during sleep in order to assist a child of 13 to overcome certain weaknesses These include a stoop, for which regular exercises are being done, and a weak memory Suggestion might, he thinks, be valuable also in removing a dislike to a language the child is learning, the lessons in which are easy in themselves The father, a medical man, wakes the child every morning, he wishes to know how long a time should elapse between the making of the suggestions and the waking up of the child

LIQUID PARAFFIN AND CANCER

DR A C JORDAN (London) writes in reply to "B K" (November 1st, p 840) and DR S Watson Smith (November 8th, p 884) (1) Crude industrial oils contain irritant impurities, these cause cancer (2) Medicinal paraffin, properly purified, is free from all irritant impurities, it is quite incapable of causing cancer Hence one question only need be asked "Are all medicinal paraffins pure?" The reply is, "Yes, all those that are colourless, odourless, and tasteless" So far from causing cancer medicinal paraffin undoubtedly prevents cancer by rendering the faeces soft, pliable, and non irritant

STERILIZATION OF HYPODERMIC OUTFIT

"E H" writes Reading the letter in your issue of November 8th (p 884) by Dr W Johnson Smyth, on rapid sterilization of hypodermic syringe and needle, I would like to inquire if it is quite 'safe" to use one of the outfits on the market in which the syringe is kept immersed in an antiseptic fluid The fluid advised is absolute alcohol, but this being so expensive I have substituted methylated ether and even petrol Both of these evaporate so readily that it is not necessary to wash with sterile water

INCOME TAX

Change of Practice—Cash Receipt

"A W" sold his practice at the end of September 1923 He is now being asked by the inspector of taxes for a statement of account showing the amount of his cash profits for his last six months in order that his successor may be correctly assessed, and also for a statement as to the amount of cash recovered since the practice was sold in order that he may be charged to tax thereon

*** As regards the first point if "A W" does not now possess the necessary records his only course is to try so and leave his successor to come to some arrangement with the inspector as to the assessment It is of course unfortunate that the particulars necessary for a correct assessment are not available The second point is more serious in its application and has been dealt with in this column more than once The inspector's suggestion that A W is liable to account for tax on cash received for past debts involves a misapprehension of the position He is not liable to assessment in respect of professional earnings receipts for such periods as he was in the practice which earned those debts It is true that in the past he has paid tax on the basis of the cash received, but that was in reality because, as a matter of mutual convenience, the amounts so received were taken as equivalent to the true gross receipts—that is, to the value of the year's bookings

LETTERS, NOTES, ETC

THE DOSE OF TRYPARSAMIDE

PROFESSOR C H BROWNING (Glasgow) writes with reference to paragraph 358 on page 66 of the *Epitome* in our issue of November 8th, and suggests that there must be a serious mistake in the recommendation of 5 to 15 grams as the dose of tryparsamide for daily intravenous injection In his experience the maximum single dose intravenously is about 0 3 gram He adds that such administration would lead to serious results

*** The doses given in our abstract were those recommended by the two writers of the original article

ELECTRIC SHOCK

DR J O'C FITZSIMONS (Blaina, Monmouthshire) writes At a Hackney inquest recently on a man who died from heart failure consequent upon an electric shock Dr R M Bronte said there was a case recorded in America where 20,000 volts passed through the body without causing death I had a case recently in which 20,000 volts at a colliery passed through a man He recovered consciousness after twenty minutes' artificial respiration He was none the worse after a few days, except for a large piece of flesh which sloughed from the sole of one of his feet He was standing at the time of the shock on a dry concrete floor, but totally unprotected as regards gloves or rubber shoes

ARSENIC IN URINE

MR H E COX PH D, M SC, reporting on November 5th to the Society of Public Analysts, said that the inquiry of the Swedish Commission into chronic arsenical poisoning had been carefully tested and the conclusion had been reached that the nitric and sulphuric acid digestion process described by Bang and Ramberg gave higher and more accurate results than the older wet combustion method adopted by the Joint Committee of the Society of Public Analysts and the Society of Chemical Industry in 1902 It was found that normal urine might contain quantities of arsenic which had been thought to be associated only with chronic arsenical poisoning, the amounts present in the urine of persons on known diets varied from 0 0 up to 0 53 mg per litre An increase in the excretion of arsenic was traceable to the eating of fish, and it had been shown that fish, especially plaice, might contain arsenic up to three parts per million The eating of such fish led to the appearance of arsenic in the urine within twenty four hours

THE M D BRUX DEGREE

DR ARTHUR HAYDON (2, Crossfield Road, N W 3), Hon Secretary, Brussels Medical Graduates' Association informs us that he has recently had interviews with the University authorities in Brussels regarding the M D degree for foreigners He has ascertained that all candidates will be required to submit their degrees or diplomas for consideration to the Secretary of the University, and be prepared to spend at least one year at the University by attending the lectures, clinics, and practical work before being allowed to enter for the examinations These are conducted in French, viva voce The degree does not confer the right to practise in Belgium The period of residence required will vary according to the standard of the diploma submitted by the candidate for the consideration of the University authorities The fees for the year are Courses, 525 francs, laboratory 250 francs, examinations, 110 francs

MISSING NUMBERS

DR J ALLMAN POWELL, Hon Secretary, Cheltenham Medical Library, writes I am anxious to obtain the following copies for the *Lancet* to complete the collection of this library July 7th, 1919, December 6th, 1919, February 7th, 1920, March 6th, 1920, April 10th 1920, October 23rd 1920, November 5th 1921, August 26th, 1922, May 12th, 1923, May 24th, 1924 I would be very grateful if any of your readers could let me have any of these numbers

CORRECTION

DR MORRIS J COHEN (Liverpool) calls attention to the incorrect spelling of his name in the reports of the discussion on post-operative pulmonary embolism published in the JOURNAL of August 2nd (p 184) and November 8th (p 856)

VACANCIES

NOTIFICATIONS of offices vacant in universities, medical corporations and of vacant resident and other appointments at will be found at pages 38 37 40 and 41 of our advertisement columns and advertisements as to partnerships, etc, and locumtenencies at pages 33 and 39

A short summary of vacant posts notified in the advertisement columns appears in the *Supplement* at page 157

EPITOME OF CURRENT MEDICAL LITERATURE.

Medicine.

373 Intracranial Aneurysm

R LITZ (*Boston Med and Surg Journ*, September 18th, 1924 p 521) states that cerebral aneurysm is not a remarkably rare condition, Beadles (1907) collected particulars of 505 cases Fitz refers to recent papers by Charters Symonds and Harvey Cushing, who have described a fairly typical clinical syndrome found in many cases The symptoms may be threefold (A) Pressure symptoms referable to the base of the brain or the outer wall of the cavernous sinus (B) Symptoms due to the systemic disease which caused the aneurysm (C) Symptoms due to leakage from the sac In Class A Symonds includes (1) pain in the region supplied by the first division of the fifth nerve, paresis or paralysis of the third fourth, and sixth nerves, exophthalmos and amblyopia due to pressure on the optic nerve In Class B are symptoms of cerebral arterio sclerosis or, more rarely, of infective endocarditis Fearnsides (1916) stated that syphilis was an exceedingly rare cause of cerebral aneurysm In Class C are sudden headache or backache followed by syncope The cerebro spinal fluid is blood stained and relatively large fundal haemorrhages occur frequently Cushing states that aneurysm should always be suspected when one or more sudden apoplectic attacks are followed by symptoms relating to the intracranial portion of the internal carotid If there is subhyaloid haemorrhage or blood in the cerebro spinal fluid the diagnosis is comparatively obvious Fitz reports a typical case in a woman aged 43, who had had one child no miscarriages and whose Wassermann reaction was negative She had a history of eclampsia, convulsions, and Caesarean section Evidence of high blood pressure was present at that time this persisted, and more than two years before death there was oedema of the ankles and high blood pressure In October 1923 she had a sudden attack of unconsciousness with vomiting and epileptiform convulsions On recovering consciousness the left eye was blind and the right amblyopic Oedema of both discs was present, more marked in the right, and with evidence of old and recent haemorrhages more plentiful in this eye Three months later she complained of frequent headache and was easily fatigued The systolic blood pressure was 190 mm the diastolic 110 mm, and the second aortic sound was loud and ringing In the urine there was a faint trace of albumin, a little renal epithelium a few red and white corpuscles and hyaline casts Three months later she had a second attack of sudden unconsciousness with generalized convulsions On recovering consciousness there was no paralysis, but tendon reflexes were absent, there was no ankle clonus, and Babinski's, Oppenheim's and Kernig's signs were absent The blood count showed excess of red corpuscles (7,420 000) and of leucocytes (33,700) the haemoglobin percentage was 135 The urine contained albumin, a small trace of sugar, red and white cells and a moderate number of granular casts On lumbar puncture 35 c cm of uniformly blood stained fluid under great pressure escaped she then regained consciousness rapidly, but a partial lower facial paralysis was observed Stupor returned and she died twenty four hours after admission The necropsy showed the entire right cerebral hemisphere covered by dark red clot, except for a small area on the anterior surface of the frontal lobe There was a sacculated aneurysm of the right internal carotid, which measured 16 mm by 13 mm and had ruptured this pressed on the chiasma and the right optic nerve With the exception of absence of unilateral oculo motor paralysis and occipito frontal pain all the symptoms corresponded with Charters Symonds's and Harvey Cushing's descriptions in *Guy's Hospital Reports* (April, 1923)

374 Melaena Neonatorum

D V RAISZ (*Zentralbl f Gynäk* July 12th, 1924, p 1550) points out that melaena neonatorum is not a clinical entity, but is a symptom of many diseases during infancy Having satisfied himself that the milk supply was uncontaminated he examined the stools of infants during the first three days of life, and in a series of 53 cases detected blood present in 34 He therefore holds that in a large number of newly born children there is occult bleeding from the bowel the infants being in no other sense abnormal He thinks that such bleeding can be considered as physiological rather than pathological, and that it may be compared with the catarrh of the newly born, which, beginning on the third day when the colostrum is replaced by milk, is a manifestation of the activity of milk borne flora Remembering the delicacy of the mucous membrane of the bowel he adds, it is no surprising that this milk invasion followed by the inevitable bacterial activities should produce a hyperaemic or even a haemorrhagic reaction in the bowel melaena neonatorum is only a further degree of this reaction due to an additional endogenous or exogenous factor

37 Purpura in the Serum Disease

L PITAP (*These de Paris*, 1924, No 419) reviews the literature and classifies the varieties of purpura occurring during the serum treatment of diphtheria in the following three groups In the first group purpura appears in the form of ecchymosis at the site of injection Several cases of malignant diphtheria belong to this group in which the purpura is of diphtheritic origin The second form of purpura in the course of diphtheria occurs at the time of the serum disease The lesions of purpura are closely intermingled with those of the serum eruption, especially urticaria, and are often associated with a scarlatiniform or morbilliform erythema Pitar records two examples of this group, in which the purpura is probably due to streptococcic septicaemia The third form of purpura is associated with an urticarial eruption but the blood culture is negative In this variety of which Pitar records one example, the purpura is entirely due to serum disease, being merely a further stage of the capillary dilatation which ordinarily accompanies this condition

376 Nephritis due to Tuberculosis

C HOLTE (*Ugeskrift for Laeger*, September 18th and 25th, 1924, pp 687 and 711) has investigated the frequency with which nephritis of tuberculous origin occurs among the subjects of pulmonary tuberculosis He notes that it is difficult to establish a definite connexion between pulmonary tuberculosis on the one hand and inflammatory but not specifically tuberculous, changes in the kidney on the other His material was obtained from his hospital, in which 1 200 to 1,400 patients with pulmonary tuberculosis are treated every year In the period 1917-21 there were 3 619 cases of pulmonary tuberculosis, 20 to 25 per cent of which were readmissions Among them there were 124 cases of albuminuria nephritis and amyloid disease In 45 cases there were reasons for believing that the renal disease though not tuberculosis, was the outcome of the pulmonary tuberculosis These 45 cases could thus be classified haemorrhagic nephritis 12 haemorrhagic nephritis with amyloid dis ase 3 amyloid disease 23, amyloid disease complicated by renal tuberculosis 4 transitory albuminuria 2, granular kidney 1 The author concludes that amyloid disease is the most common of the non specific renal complications of pulmonary tuberculosis, and that haemorrhagic nephritis comes next in frequency

Surgery.

377 The Prognosis in Perforation o Gastric and Duodenal Ulcers

O E CEDERBERG (*Finska Läkaresällskapets Handlingar*, July-August 1924 p 636) has collected 71 cases of operation for perforation of gastric and duodenal ulcers in his hospital in Wiborg from 1904 to 1923 Only 2 of these patients were females, and in 10 only was the duodenum perforated in the remaining cases the pyloric end and the lesser curvature of the stomach were affected In 30 cases the treatment consisted of simply closing the perforation and performing Braun's omentoplasty The mortality in this class was 50 per cent, the length of the interval between perforation and operation being chiefly responsible for this poor result Since 1914 gastro-enterostomy was often performed in addition to closure of the perforation, and among 37 cases thus treated there were only 6 deaths The following figures show how important it is to operate early Of the 17 patients operated on within six hours of perforation all recovered of 14 operated on from six to twelve hours after perforation 85 7 per cent recovered of 13 operated on from twelve to eighteen hours after perforation 71 4 per cent recovered of 7 operated on from eighteen to twenty four hours after perforation 42 9 per cent. recovered and of 15 operated on more than twenty four hours after perforation only 20 per cent recovered An investigation of the subsequent fate of the patients showed that only 30 per cent of those who had been treated by simple closure of the perforation were in good health, whereas this was the case with 60 per cent of the patients on whom gastro-entero tomy had been performed as a supplementary operation.

378 Spina Bifida and Meningocele

T. S Klots (*Nederl. Tijdschr v Geneesk.*, August 16th, 1924, p 884), who records an illustrative case, states that Brickner classifies the conditions associated with a defect in the vertebral arch as follows (1) Complete closure of the vertebral defect by a more or less dense connective tissue membrane, usually associated with adhesions to the superjacent soft parts and skin (2) A band of connective tissue perforating the membrane and connecting the subcutaneous tissue with the spinal membranes so as to exercise a pressure on the cord (3) Compression of the cord or its nerves by (*a*) an excessive growth of fatty tissue within the membrane, (*b*) a myofibrolipoma penetrating the spinal canal through the defect in the bony arch, (*c*) an exostosis in the spinal canal (4) A degeneration or aplasia of the spinal nerves (5) A protrusion of the dura through the defect leading to meningocele (6) Hypertrichosis is frequently found, but its presence does not always indicate spina bifida (7) Incontinence of urine is the rule in children and is often present in adults (8) Pain, either localized or radiating into the legs, is less frequent The most favourable time for operation is between 9 months and 2 years Before the age of 9 months the mortality from the operation is very high, and after two years the prognosis is more unfavourable because the meningocele may increase in a large number of cases and the chances of perforation are greater In adults the operative mortality is particularly high because generally the tumours round the sac become infected, so that operation should not be performed on adults unless the tumour is very large and is giving rise to distressing symptoms Progressive hydrocephalus worsens the prognosis of operation for meningocele, the mortality in such cases being 50 per cent It is therefore advisable when possible to wait till the end of the second year because the hydrocephalus may often become stationary of itself within the first two years of life If an operation is undertaken during the presence of hydrocephalus puncture of the corpus callosum should be performed ten days before the operation

379 Diverticulitis of the Colon

E S Judd and L W Pollock (*Annals of Surgery*, September, 1924, p 425) point out that diverticulitis of the colon deserves consideration because of the frequency with which it is encountered and the severity of the symptoms manifested There may be a solitary diverticulum in the colon, or a great many diverticula from the caecum to the rectum In many cases the condition causes no symptoms and it is apparently not progressive It is a disease of middle life and is usually seen in the sigmoid In diverticulitis an abscess may form and later perforate into the intestine, bladder, or abdominal wall If the inflammation remains chronic a tumour composed of fibrous tissue and the products of inflammation develops The authors remark that it may be difficult to differentiate between diverticulitis of the sigmoid and a carcinoma If there is a long history and the tumour has increased and receded from time to time it is probably due to a diverticulitis In some cases a diagnosis can only be made after histological examination If an abscess forms drainage is indicated, and if perforation occurs operation is the only procedure that offers relief The mortality from radical operation has been high The plan of procedure recommended is a preliminary colostomy to relieve any obstruction in the colon, and the reduction of the inflammation by frequent irrigations of the lower colon The infected portion can then be resected with less risk

380 Extensive Skin Regeneration without Grafting

R I Hertzberg and G R R Hertzberg (*Amer Journ of Surg* September, 1924, p 236) describe a method of covering a denuded surface with a layer of epithelium, which consists essentially across the wound from the skin edges at the rate of about 1/32 inch a day The wound is first treated as though a skin graft were to be applied—that is, a healthy granulating wound is essential This is washed with commercial petrol, which is then lightly dried with gauze and the edges painted with a mixture of equal parts of Peru balsam and castor oil The wound is then lightly encircling but not with sterilized adhesive strips in such a manner that on the skin edge is the streak of balsam and complete apposition with no puckering The crossing the open area Firm pressure is important thing, and there must be no movement of the wound is dressed with the method especially centre of the wound is dressed with dichloramine T in chloreo ane The patches assert that pected daily The authors find this method valuable in the treatment of large burns for its healing is very rapid and that there is no contraction

Therapeutics.

381 Emetine in the Treatment of Amoebic Abscess

A S Ibn (*Indian Med Gazette*, October, 1924, p 483) records two cases of large amoebic abscess of the liver in which complete cure of the patients was obtained by the hypodermic administration of emetine hydrochloride In both cases the remedy was injected daily in 1 grain doses until 12 grains had been administered In one case the effect was dramatic, the temperature falling to the normal after the second injection and remaining steadily subnormal thereafter In the other case improvement in the temperature did not occur until the end of treatment In both cases coexistent helminthic infections required eradication Fry maintains that the induced spontaneous absorption of the large sterile abscess is in no way detrimental to the patient, but that, on the contrary, the general health improves concurrently He believes that aspiration is unnecessary in many of these cases, and recalls the instructive analogy drawn by Sir Leonard Rogers between tuberculous and amoebic abscesses

382 Iodine and Hyperthyroidism

S J Cowell and E Mellanby (*Quart Journ Med*, October, 1924, p 1) studied the effect of iodine on hyperthyroidism in man They kept careful records of the basal metabolic rate, pulse rate, weight, neck measurement, and general condition in eight patients, each of whom received a standard diet of about 1,800 calories, with the administration of potassium iodide in varying amounts and intervals Small doses (1/10 grain daily) produced a lowering of the basal metabolic rate and clinical improvement which reached a maximum in from ten to twenty days This was followed by a gradual return of symptoms, though not to the former extent, and withdrawal of the iodide after several months' treatment resulted in an exacerbation of symptoms, which, however, were relieved by a further administration of iodine While apparently not curative, the authors find the treatment useful as an adjunct to other medical treatment and as a preliminary to operation Those patients best withstood operative treatment in whom the iodine content of the thyroid was high The response to iodine therapy resembles that following operation, in that periods of "primary improvement" and "relapse" were noted in those cases treated by iodine to be like those seen in exophthalmic goitre treated by operation Apart from the fact that iodine is a constituent of thyroxin, the way in which it influences metabolism is not yet understood The authors think that it is not possible to predict its effect in any given case, though patients with large hard thyroids seem more likely to develop reaction symptoms than those with smaller and soft ones Within certain limits the actual amount of iodine given does not appear to influence the rate of improvement, yet with very small doses the return of symptoms tends to be longer delayed and less severe than when larger doses are given

383 Sodium Thiosulphate Treatment of Metallic Intoxication

Marion R Groebl and C N Myers (*Therap Gaz*, October 15th, 1924, p 691) report fully on some 75 cases of arsenical poisoning benefited by sodium thiosulphate The two most serious conditions arising from the continued use of salvarsan are arsenical dermatitis and jaundice A 0·4 per cent solution of sodium chloride injected intravenously was found to diminish the risk of the uneven distribution of the soluble colloidal arsphenamines in the tissues Concentrated solutions of glucose or lactose were also used as the diluting medium, 2 to 4 grams of the sugar being best tolerated Sodium thiosulphate was found to be still more useful, and was also used in mercury and lead poisoning The thiosulphate had a low toxicity, and could be given either by the mouth or intravenously, the latter method being found to be more efficacious in stimulating the excretion of the metal 30 grains by the mouth could be given per day In nearly their cases the authors determined the amounts of arsenic in the blood, urine, and in epidermal scales before and after the administration of the thiosulphate Details of three cases are given, the first being dermatitis exfoliativa following arsenical treatment for xeroderma kaposi, the second xeroderma due to skin absorption of arsenic from fur, the third poisoning by illicitly distilled spirit ("moonshine") The authors state that the salt stimulates the excretion of arsenic both through the kidneys and the skin but that freshly prepared solutions should be used A bibliography of thirteen papers is given.

384 Hyoscine Treatment in Post encephalitis

L B HOHMAN (*Johns Hopkins Hosp Bull*, October, 1924, p 335) reports eighteen cases of the Parkinsonian syndrome following epidemic encephalitis in which hyoscine hydrobromide treatment was administered with considerable success The average dose was 1/100 grain four times a day, and the maximum 1/50 grain In no case was it necessary to increase the dose as the result of tolerance being acquired No bad effects were observed except that some slight difficulty in accommodation, giddiness, and somnolence occurred whilst the dosage was being regulated As soon as the effective therapeutic dose was determined all untoward symptoms disappeared, with one exception in which it was not certain that the treatment was regularly followed Of the eighteen patients six were slightly improved, five definitely better, and in seven the improvement was very marked, the patients returning to work after several months of invalidism some having even been bedridden In the slightly improved cases some relaxation of the rigidity occurred, but was insufficient to increase the practical efficiency of the patients The mental improvement was very striking in a number of patients, and Hohman urges that mental change ought to be considered a fundamental part of the disease

Anaesthetics

385 General Anaesthesia with Acetylene Gas

T BRANDT (*Norsk Mag f Laegevidenskaben*, August 1924 p 669) is much impressed by the value, as a general anaesthetic, of pure acetylene gas, which is very different from the gas of a carbide lamp Since Wieland and Gauss published their investigations in February, 1923 in the *Klinische Wochenschrift*, several large hospitals in Germany have tested this new anaesthetic and have found it to be satisfactory from many points of view It is given with oxygen in various concentrations, and the apparatus is therefore rather complicated The patient rapidly loses consciousness without that preliminary respiratory inhibition which is often so distressing with ether and chloroform anaesthesia There is seldom any excitation, and anaesthesia is complete in one to two minutes, though it may take five minutes for the muscles to relax fully Indeed, muscular relaxation may not be complete, and for this reason it may sometimes be necessary to resort to ether or chloroform for laparotomies Brandt states that the patient can be kept under the anaesthetic for hours with impunity, and that there is no risk of overdose, because even in the highest concentrations the gas seems incapable of paralysing the respiratory centre When the operation is completed the mask is removed, and if the mixture of acetylene has been weak the patient recovers consciousness almost immediately, even when the mixture has been strong consciousness is recovered in two to five minutes The patient feels quite well, and headache and nausea are rare The disadvantages of acetylene anaesthesia are its rather high cost, the complexity of the apparatus, the inflammability of the gas, the absence of complete muscular relaxation in some cases, and the increase of blood pressure which is provoked and which contraindicates this gas for patients already suffering from this condition

386 The Dangers of Local Anaesthesia

L CHEINISSF (*Arch de med, cir y esp*, October 11th, 1924, p 49) alludes to the 43 deaths following the use of local anaesthetics which were investigated by the United States Council of Pharmacy and Chemistry A detailed study of the cases showed that in 40 of the 43 cases death was solely or mainly due to the local anaesthetic 24 of the cases were in males and 16 in females The youngest patient was aged 3 and the oldest 70 Twenty occurred in hospital, 10 in consulting rooms, 6 in dispensaries, and in the rest no details were given As regards the position of the patient at the time of administration of the anaesthetic 15 were lying down and 21 were in a sitting position about the others no statement was made Autopsies were performed in 20 cases, but did not show any lesions indicating individual susceptibility such as status lymphaticus Most of the deaths were due to cocaine employed in solutions of a strength ranging from 0 5 to 20 per cent especially after application to the throat for removal of tonsils In other cases cocaine was applied in the form of a paste in combination with adrenaline Many deaths were due to the use of strong solutions of cocaine associated with extremely large doses of adrenaline Intra urethral injections of cocaine proved particularly dangerous, especially in cases of trauma or stricture The following applications seemed to be harmless a solution of 5 per cent cocaine for conjunctival buccal and pharyngeal use, and a solution not exceeding 10 per cent for intranasal application and for the larynx and bronchi The rule should be that, whatever mode of application is employed, the dose of the local anaesthetic should be rigorously fixed, and preparations of unknown composition and concentration should be avoided Freshly prepared and sterilized solutions should always be used

387 Open Ether Administration

A OGSTON (*Brit Journ Anaesth*, October, 1924, p 76) describes a simple addition to the ordinary gauze covered mask for open ether administration which obviates the objections to prolonged induction and wastefulness The gauze retaining ring is replaced by a ring carrying wire uprights about four inches long and connected at their upper ends by another slightly wider ring After the mask has been covered with gauze and the retaining ring closed a folded towel is wound tightly round the upright frame so that it fits closely round the bottom, thus forming a cylinder having the gauze mask at the bottom and its wider opening uppermost Into this prepared mask, resting upon a pad of cotton wool with a hole in the centre large enough to uncover the nose and mouth, ether is dropped, at the rate of about one drop every two or three seconds, round the sides of the gauze avoiding the centre for the first minute, the rate of dropping being increased as rapidly as the patient can tolerate it continuous dropping to keep the gauze thoroughly wet being aimed at By this method ether otherwise wasted is utilized, and the expired ether vapour becomes available to augment the percentage of ether in the next inspiration The induction period can be reduced and made pleasanter by open nitrous oxide ether sequence if the tube from a nitrous oxide cylinder is held just inside the top of the mask until consciousness is lost, when the cautious administration of ether commences until automatic breathing is established The nitrous oxide is then cut off and the anaesthesia continued with ether alone

Obstetrics and Gynaecology

388 Primary Chorion epithelioma of the Ovary

D DOUGAL (*Brit Journ of Obstet and Gynaecol*, Autumn Number, 1924 p 387) gives details of nine cases of primary chorion epithelioma of the ovary described in the literature and adds a new case In the majority of cases the patients were young (under 31), all patients save one had been pregnant the last recognized gestation having usually preceded the operation by one to two years The symptoms were (1) abdominal pain, (2) irregular bleeding preceded in about half the cases by (3) a period of amenorrhoea Of ten cases seven were fatal the majority soon after operation, no patient survived the operation longer than two years In the author's case the second pregnancy terminated in a four months abortion nine months later there was abdominal pain accompanied by dark haemorrhagic discharge An abdominal swelling was now noted, together with amenorrhoea for the five months preceding operation The right ovary was considerably enlarged and contained numerous lutein cysts The soft enlarged uterus contained an intact decidua but was entirely free from growth The left Fallopian tube was normal save for flattening from pressure ovarian tissue was recognized both in the centre and periphery of the large chorion epitheliomatous growth on the right side The author has not found any record of other cases in which ovarian or broad ligament chorion epithelioma has been associated with the presence of a decidua in the uterus, but such a structure has been found there in cases of extra placental chorion epithelioma in the vagina in the myometrium and in the brain lung and kidney Dougal adds that the likeliest explanation of the occurrence of primary chorion epithelioma in the ovary is a preceding ovarian pregnancy

389 The Endometrium of the Menstruating Uterus

E NOVAK and F W TE LINDE (*Journ Amer Med Assoc* September 20th 1924 p 900) report twelve cases of removal of the uterus at some time during menstruation for either pelvic inflammatory disease or myoma In all these patients the menstrual rhythm had been perfectly normal and the menstrual dates were carefully checked Great care was taken to avoid injuring the endometrium during the operation As a result of their study of this material they are convinced that extensive loss of tissue is the rule during menstruation the entire superficial or compact layer as well as most of the deeper or spongy layer being thrown off On the first day the mucosal surface may be intact but more often it shows commencing loss of tissue by the second day the throwing off has become very extensive Rejuvenation changes are usually evident on the third day and may be quite marked The mucosal desquamation is preceded by

extensive infiltration with polymorphonuclear leucocytes and lymphocytes The mucosal throwing off does not usually occur as an extensive shedding in large masses, but is rather a kind of crumbling molecular process These results favour the modern conception of menstruation as consisting of a premenstrual hypertrophy of the endometrium in preparation for the impregnated ovum, together with an ensuing katabolic process to which the name "menstruation" is usually given when no fertilized ovum is present The authors add that there is much truth in the saying that "women menstruate because they do not conceive"

390 *Myomata in the Puerperium*

L W Tischmann (*Surg., Gynecol and Obstet*, September, 1924, p 227) agrees with Bland Sutton that the danger arising from gestation complicated by myomata, far from terminating with labour, extends well into the puerperium Post partum haemorrhage is fairly common, and, if due to intramural or sessile submucous growths which interfere with uniform retraction of the uterus, is usually early and often alarming Pedunculated submucous growths interfere less with retraction, but may be a cause of considerable haemorrhage at the time of their expulsion from one to five weeks after labour *Puerperal infection after gestation in the myomatous uterus* is relatively common, and is frequently due to the necessity for intervention As a rule uterine involution is retarded Inversion of the uterus is not uncommon, and usually accompanies an attempt of the organ to expel the myoma per vaginam Turning to the effect of the puerperium on the myoma, the author states that in the majority of cases the tumour diminishes considerably in size, but he casts doubt on the cases of complete disappearance of fibromyomata after delivery which have been recorded Exceptionally the tumours may increase in size after labour because of progressive fatty or myxomatous changes Abscess formation and gangrene are not very uncommon in myomata after pregnancy is over With respect to *treatment, it is advised* that when pregnancy in a myomatous uterus has continued to term, Caesarean section, with an immediate myomectomy or hystero-myomectomy, is the operation of choice, when the myoma is not discovered until during labour or in the puerperium, conservative measures should be practised as long as possible.

Pathology.

391 Phagocytosis and Cellular Reactions in Immunity

S Metalnikov (*Ann de l'Inst Pasteur*, September, 1924 p 787) reports some experiments on the processes of infection and immunity in caterpillars His general procedure was to inject a small quantity of emulsion into the body of the caterpillar, and, by making films of the blood during the subsequent hours, to determine the amount of phagocytosis which occurred Emulsions of various kinds were employed, mainly consisting of dyes or of bacteria The injection of dyes was followed rapidly by phagocytosis, so that in five to eight hours all the particles had been ingested and removed from the blood In the case of organisms the reaction which followed depended largely on the particular species injected and the dose in which it was given Generally speaking, it was found that the organisms which are pathogenic to man, such as the tubercle, plague, diphtheria, leprosy, tetanus, and anthrax bacilli, were comparatively harmless to the caterpillar, whereas the saprophytic organisms, such as *B subtilis* or *B anthracoides*, were highly pathogenic Exceptions occurred, however, as in the case of cholera vibrios and pneumococci Once ingested the bacilli were digested by the intracellular ferments of the phagocytes If a very large number of bacilli were given, the leucocytes frequently collected around them, fusing into plasmodia, in this way digestion seemed to be more easily accomplished In the case of tubercle bacilli giant cells were formed, sometimes actual capsules appeared completely enclosing the bacilli, which then gave rise to a process of caseous degeneration The phagocytes seemed to find little difficulty in dissolving these organisms, within a few hours the majority of them were taken up by leucocytes and lysed If the "cold blooded" type of tubercle bacillus was used the result depended on the temperature at which the caterpillars were kept after injection When they were maintained at 15 to 18 C phagocytosis was very active, but intracellular digestion was in abeyance, in consequence, the bacilli multiplied within the leucocytes, ruptured them, and gave rise to a fatal infection When, however they were kept at 37 C not only was phagocytosis very active, but intracellular digestion proceeded apace so that the organisms were completely destroyed It has been held by many workers that phagocytosis is inversely proportional in degree to the virulence of the organism, the author does not agree with this as he finds that many highly virulent bacteria which give rise to rapidly fatal disease are often ingested with eagerness He considers rather that virulence must be regarded, *not* as a cause affecting phagocytosis, but as proceeding from it It is the organisms which for some reason or other the leucocytes will not attack that prove virulent He comes to the reasoned conclusion that phagocytosis must be regarded as the most important defence of the individual, the part played by antibodies is merely an accessory one, confined to the higher animals He is thus a strong advocate of the present French school which is teaching the importance of cellular immunity

392 Production of Antibodies by Cutaneous Immunization

A Gratia (*C R Soc de Biologie*, October 7th, 1924, p 709) brings forward evidence which throws a considerable amount of doubt on the accuracy of Besredka's conclusions with regard to the mechanism of the production of immunity to anthrax by the cutaneous method of inoculation Besredka found that he was able to protect guinea pigs against the injection of virulent anthrax bacilli by vaccinating them previously by the cutaneous route, this was of particular interest because vaccination by other routes, such as the subcutaneous, proved ineffective Failing to find antibodies in the blood of animals which had received the cutaneous vaccination, he came to the conclusion that the skin was the only organ in the body which was susceptible to anthrax, and that by rendering it insusceptible to infection by this organism, the whole body was protected Gratia has repeated Besredka's experiments, and finds that though his facts are partly correct, his explanation is very doubtful He states that the assertion that guinea pigs can be protected by cutaneous inoculation is *perfectly true*, but the report that there is no antibody formation in response to this procedure *is unfounded* In the serums of these animals Gratia has been able to demonstrate the presence of agglutinins even in a *dilution of* 1 in 10,000 Moreover, the existence of protective bodies can be demonstrated by mixing the serum of the animal (vaccinated cutaneously) with anthrax bacilli, leaving the mixture for half an hour, and then injecting it into normal guinea pigs The animals remain perfectly well, whereas those injected with a mixture of *normal* serum and anthrax bacilli succumb It is therefore clear that antibodies are formed in response to cutaneous vaccination, and that they cannot be excluded from consideration when accounting for the immunity produced in this way The author thinks that the most likely interpretation is that, when the bacilli are injected into the skin, they are able to multiply and to give off their toxic products, to these the animal reacts by forming immune bodies, particularly anti aggressins, which confer a high degree of immunity upon it On the other hand, when the bacilli are introduced subcutaneously, they are taken up by the leucocytes before they have had time to liberate their aggressins, and the response of the animal is therefore less *strong* In a paper with Bernice Rhodes (Ibid., p 797) Gratia shows that the cutaneous vaccination of guinea pigs with cholera vibrios likewise gives rise to immune bodies, which can be demonstrated by the production of passive immunity in normal animals injected with the blood of animals vaccinated by this route Similarly, by vaccinating rabbits cutaneously against chicken red cells, they were able to demonstrate the appearance of haemolysins in the blood From all these experiments it is concluded that the hypothesis of local immunity put forward by Besredka is not in agreement with observed *fact*

393 Digestibility of Fresh and Sour Milk

Orla Jensen and B Spur (*Ugeskrift for Laeger*, September 4th, 1924, p 655) give an account of tests they have recently conducted on fresh and sour cow's milk They state that since cow's milk possesses a very considerable "buffer" action, it is obvious that the more sour it is the more easily will it be digested by pepsin The point is of considerable importance for persons whose gastric juice is deficient in hydrochloric acid The authors, being under the impression that accurate investigations have not hitherto been made in this field, have studied the rate of artificial digestion with a constant strength of pepsin (0·2 per cent.) and varying degrees of acidity The cow's milk was, [illegible] and kept at blood temperature in a thermostat in which artificial digestion was promoted by constant movement absolutely uniform parallelism could be established between the hydrogen ion concentration of the milk and the rate of dissolved to undissolved nitrogenous matter from time to time It would therefore seem possible that it is not the hydrogen ion concentration of the milk, but also the specific character of the acid radicals, which influences the rate of digestion But, as the authors anticipated, they found that acidified milk was more easily digested than milk

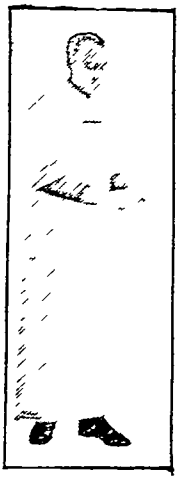
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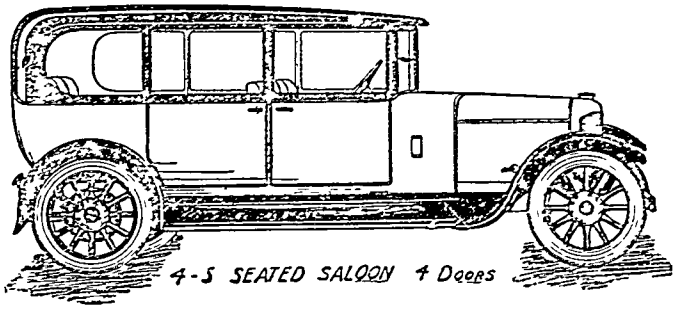
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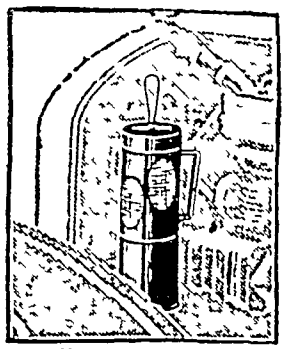
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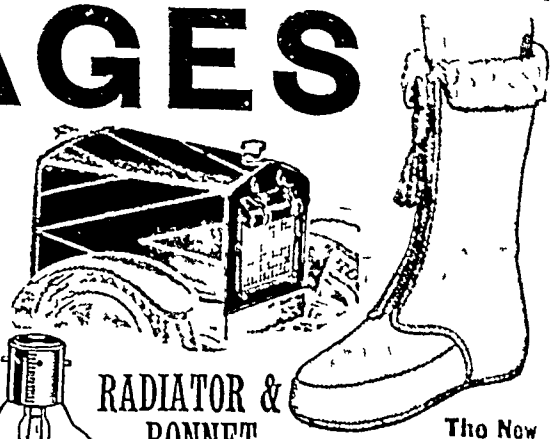
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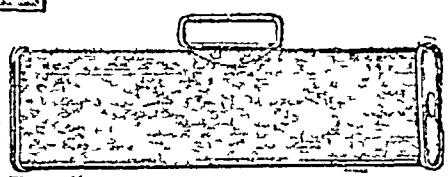
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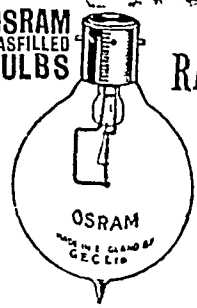
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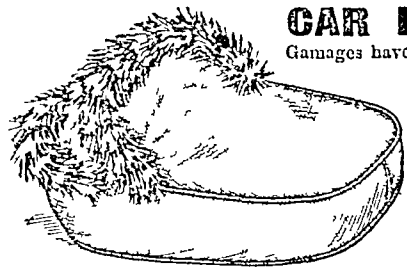
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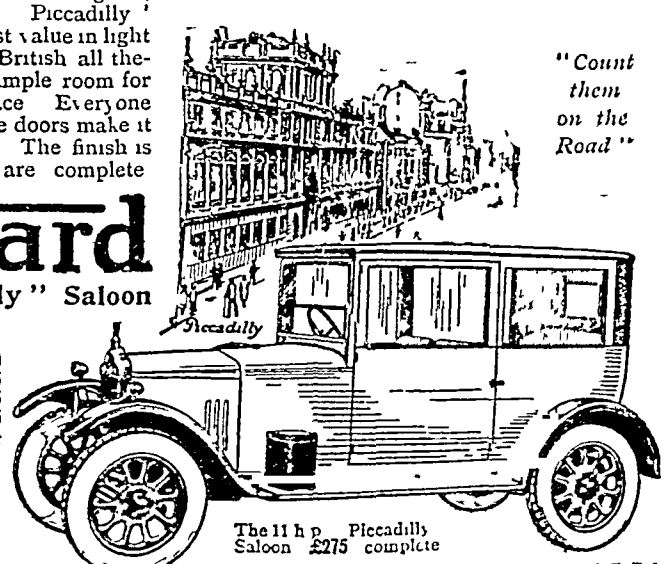
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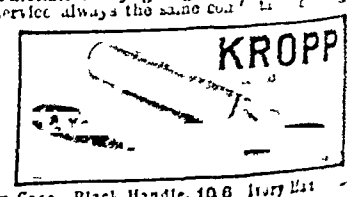
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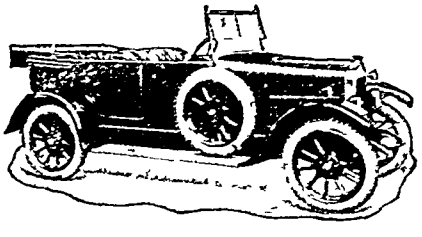
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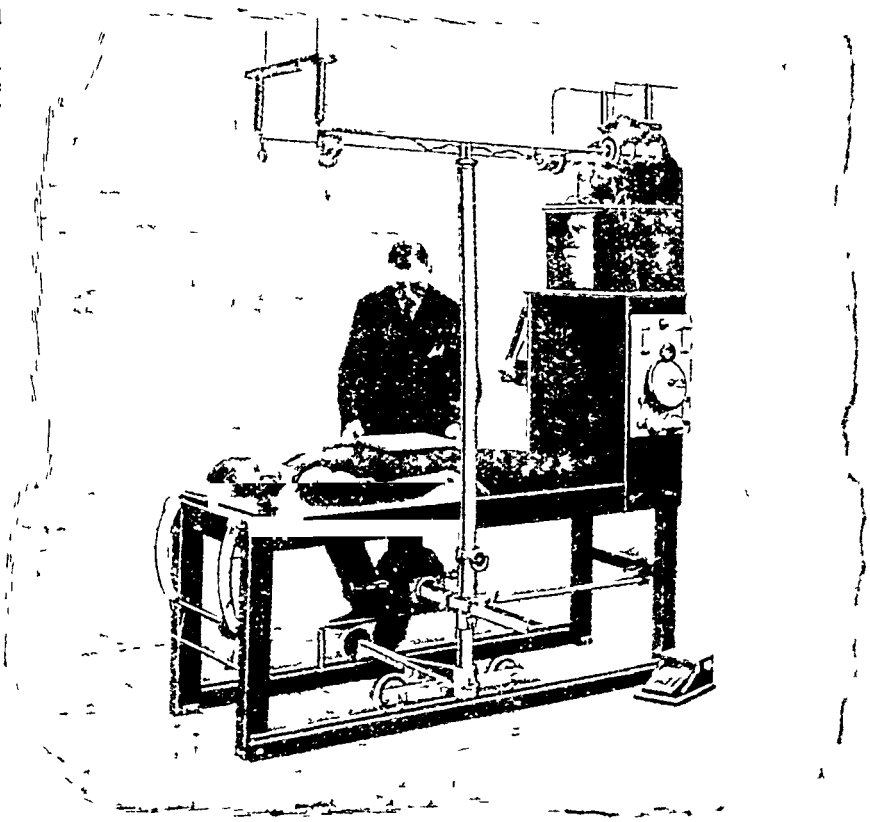
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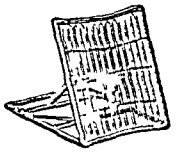
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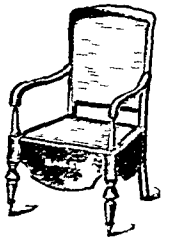
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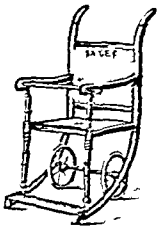
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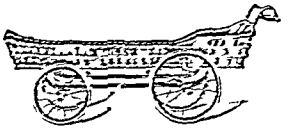
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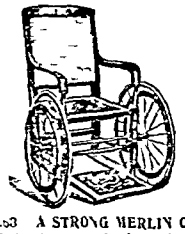
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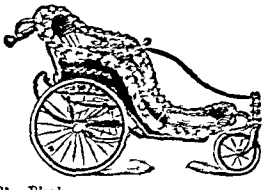
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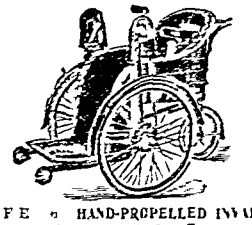


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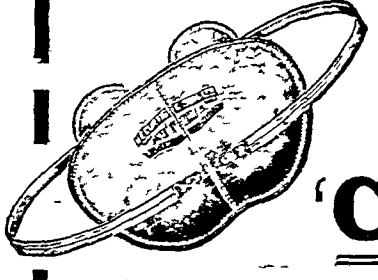
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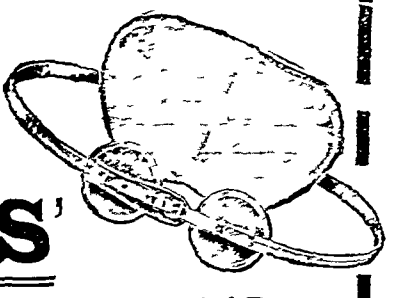


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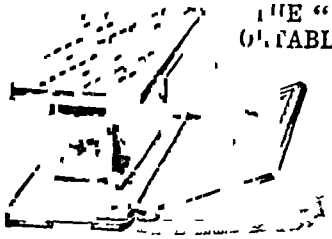
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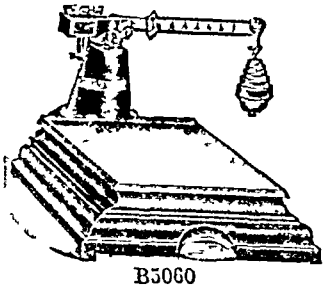


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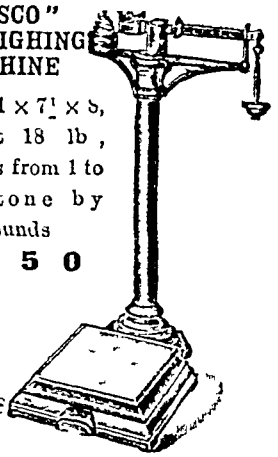


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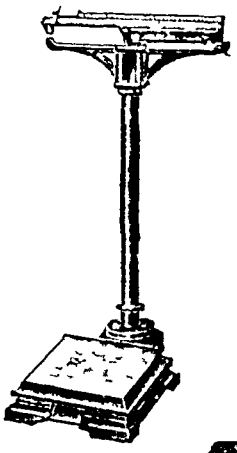
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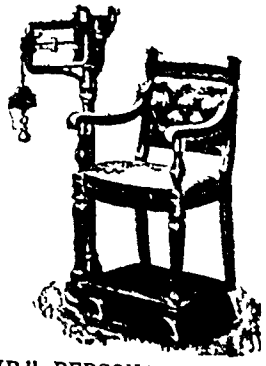
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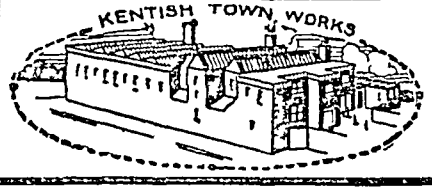
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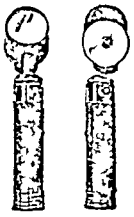
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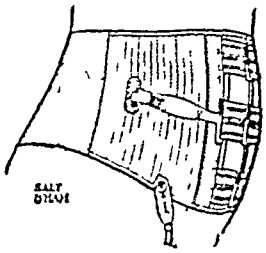
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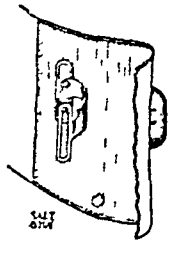
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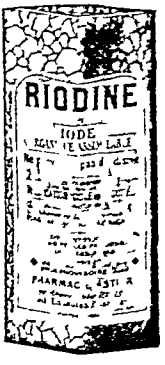
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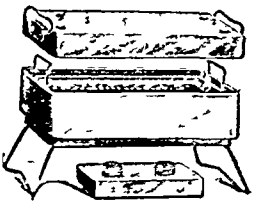
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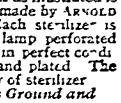
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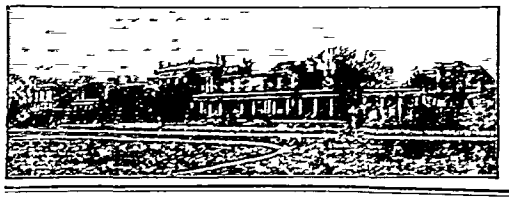
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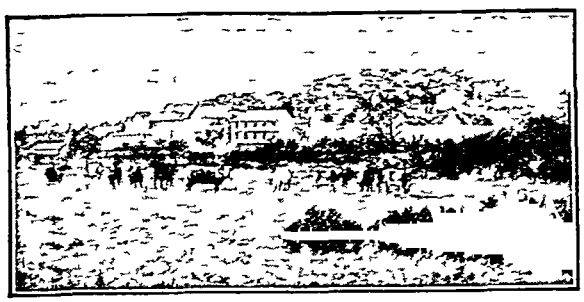
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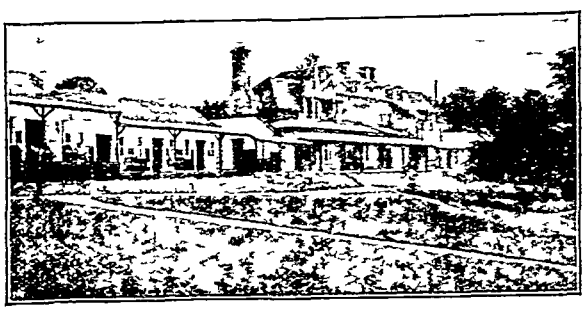
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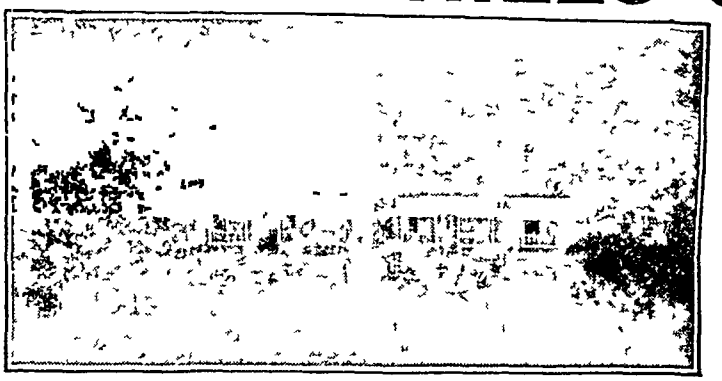
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Royal College of Surgeons of ENGLAND

ELECTION TO THE COURT OF EXAMINERS

Notice is hereby given that the Council at a meeting to be held on the 11th proximo will proceed to the election of a Fellows of the College of a Member of the Council of Examiners in the vacancy occasioned by the expiration of the period of office of Mr H LENDLEBURY, who is eligible for re-election.

Fellows of the College desirous of being Candidates for the office must make application in writing to the Secretary on or before Wednesday December 3rd

S FORRESTER COWELL Secretary

November 10th 1924

University of Durham

The EXAMINATIONS FOR DEGREES in MEDICINE SURGERY HYGIENE and DENTISTRY will be commenced at the College of Medicine Newcastle upon Tyne on December 8th 1924

Full particulars may be obtained from Prof H HOWDEN, Secretary of Examinations

THE CHARTERED SOCIETY OF MASSAGE & MEDICAL GYMNASTICS

Examinations will be held during 1924 in MASSAGE, MEDICAL GYMNASTICS, and MEDICAL ELECTRICITY, and for TEACHERS CERTIFICATES TRAINING COURSES 12-15 months, TEACHERS, 2 years

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The above Lecture will be delivered by Sir ARTHUR KEITH M.D., LL.D F.R.S. on Wednesday December 17th 1924 at 4.15 p.m. in the Anatomical Theatre of the College.

Subject The Clinical Importance of the Bulbus Cordis" (Illustrated by lantern slides.)

Members of the Profession are cordially invited to attend

PROFESSOR WILLIAM WRIGHT M.B. D.Sc. F.R.C.S., Dean.

October 22nd 1924.

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The Directors of VIROL LTD offer a scholarship of the annual value of £200 for the encouragement of British research in Haematology

Candidates must be of British birth and either be registered Medical Practitioners or hold approved scientific degrees They must have taken up the study of pathology physiology or clinical medicine at a recognized Medical School or Laboratory in Great Britain and must if elected, undertake approved research in Haematology

For this purpose the award is restricted to a study of the histology embryology or pathology of the blood corpuscles and haemopoietic organs Serological bacteriological, biochemical, or clinical investigations will be accepted only when necessary to elucidate or supplement the above

The scholarship will be tenable for one year and renewable for a second year at the discretion of the examiners

In awarding the scholarship regard will be held by the examiners to the following points —

(*a*) Original work published or intended for publication by the candidate, or

(*b*) Evidence of ability and opportunity to *pursue original research in Haematology*

(*c*) The previous record of the candidate before and after graduation Evidence submitted under (*b*) and (*c*) must be attested by not more than three testimonials given specially for this purpose

Selected candidates may be examined orally and practically on their knowledge of haematology

The examiners are —

SIR WILLIAM WILLCOX KCIE, CB, CMG, MD, FRCP
ALFRED EINEY, MD, MRCP
A KNYVETT GORDON, MB

Applications should be sent to Dr KNYVETT GORDON 10 Bedford Square London W C 1 by December 1st 1924, marked "Virol Scholarship in Haematology" and must be typewritten They should cover the points mentioned above, and evidence of the permission of the director of the institution where the candidate is at present working for his or her entry for the scholarship must be supplied Original testimonials should not be sent in the first instance

The holder of the scholarship will be required to begin research early in January 1925

The candidate will be expected to publish results of the research in a recognized scientific journal

Royal Society.

GOVERNMENT GRANT FOR SCIENTIFIC INVESTIGATIONS

Applications for the year 1925 must be received at the offices of the Royal Society not later than January 1st next and must be made on printed forms to be obtained from the Clerk, to the Government Grant Committee, Royal Society, Burlington House, London, W 1

Shropshire Orthopædic Hospital Oswestry

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Applications must be received not later than

Royal Free Hospital,

Gray's Inn Road W C 1

Applications are invited from duly qualified and registered medical men or women for the following resident posts vacant on January 1st 1925 —

SENIOR RESIDENT MEDICAL OFFICER, £150 per annum
CASUALTY OFFICER £100 per annum
ASSISTANT CASUALTY OFFICER.
OBSTETRIC ASSISTANT (District) £50 per annum
OBSTETRIC HOUSE SURGEON (Unit)
HOUSE PHYSICIAN
HOUSE SURGEON

Excepting the two Senior appointments, preference is given to former students of the Hospital Intending candidates should submit applications stating age accompanied by copies of three recent testimonials to the undersigned on or before November 29th 1924

REGINALD R GARRATT, Secretary

The Jessop Hospital for Women, Sheffield (91 Beds)

GYNÆCOLOGICAL AND MATERNITY DEPARTMENTS

The Board of Management invite applications for the following appointments —

MALE SENIOR RESIDENT OFFICER for twelve months from January 1st, 1925 Salary £250 per annum
TWO ASSISTANT HOUSE SURGEONS for *six months from January 1st 1925* Salary £100 per annum together with board, residence and laundry

Applications stating age with copies of recent testimonials, should be forwarded to

H B SHILLSWELL Secretary

West End Hospital for Nervous Diseases

In Patient Department Gloucester Gate Regent's Park, N W Out Patient Department & Secretary's Office, Welbeck Street, W

The Committee of Management invites applications for the following Vacancies on the Hon Medical Staff of the Hospital —

(1) AN ASSISTANT PHYSICIAN Candidates must be Fellows or Members of the Royal College of Physicians of England, and Graduates in Medicine of one of the Universities of the United Kingdom,
(2) A LARYNGOLOGIST
(3) AN OTOLOGIST Candidates must be Fellows of the Royal College of Surgeons of England

Further particulars are obtainable from the undersigned, to whom 12 copies of application and testimonials should be sent before December 8th

J P WETENHALL Secretary

St Bartholomew's Hospital, Rochester (120 Beds)

Rochester, Chatham, Gillingham, and District

The House Committee invite applications for the post of HOUSE PHYSICIAN vacant in December Candidates must be unmarried qualified and registered Medical men The appointment is for eight months Salary £200 per annum, with board residence, and laundry

The officer appointed will have charge of the Medical beds Some knowledge of Ophthalmic work is desirable

Applications, stating age qualifications and experience accompanied by copies of three recent testimonials to be sent to the Secretary not later than Nov mber, 1924

The Elizabeth Garrett Anderson Hospital Euston Rd, N W 1

Wanted fully qualified medical women for the following posts: HOUSE PHYSICIAN two HOUSE SURGEONS and an OBSTETRIC ASSISTANT Board residence and laundry Salary at the rate of £50 per annum These appointments from January 1st next for six months There will also be vacancies for CLINICAL ASSISTANTS in the Out Patient, Ophthalmic Throat Nose Ear, and Skin Departments in January

Applications for any of the above posts should be sent with testimonials to the Secretary before November 25th

IMOGEN H MURPHY, Secretary

The Elizabeth Garrett Anderson Hospital, Euston Rd, N W 1

Applications are invited for the staff post of ASSISTANT SURGEON Information about which can be obtained from the Secretary to whom applications with copies of testimonials should be sent before by November

IMOGEN H MURPHY Secretary

Salford Royal Hospital (750 Beds)

Applications are invited for the appointment of RESIDENT SURGICAL OFFICER (Male) which will become vacant on the 30th inst at the rate of £200 per annum

The period of appointment is from December 1924, to December 31st, 1925 with board and residence

Candidates must be registered under the Medical Acts

Applications stating age and qualifications together with copies of testimonials and certificate of registration to be addressed to the undersigned without delay

By Order of the Board
Salford Royal Hospital GEORGE RUDDLE
Manchester General Supt & Secretary
November 3rd, 1924

The General Hospital, Birmingham

The Board is about to appoint two SURGICAL REGISTRARS, and applications are invited for the posts

The Registrars will be required to attend daily from 9 a m to 1 p m, and perform duties in the Casualty Department and in connection with the patient records Salary £150 per annum

Candidates must be Fellows of one of the Royal Colleges of Surgeons of the United Kingdom

A list of duties can be obtained from the undersigned to whom applications should be sent by December 1st

A H LLANBY, Hon Secretary
November 7th, 1924

Mildmay Mission Hospital, Austin Street, Bethnal Green, E

Applications are invited for the post of JUNIOR RESIDENT MEDICAL OFFICER which is now vacant on January 1st 1925 Salary £100 per annum with board residence and laundry

Candidates must be duly registered under the Medical Acts, and the Mildmay Council is anxious that they should be fully in sympathy with the religious work of the Hospital

Applications, with copies of recent testimonials should be sent to the Medical Superintendent at the

Mildmay Mission Hospital, Austin Street, Bethnal Green, E

Applications are invited for the post of ASSISTANT CASUALTY OFFICER which becomes vacant on January 1st, 1925 The appointment is for three and non resident and for six months Salary £100 per annum

Candidates must be duly registered under the Medical Acts and the Mildmay Council is anxious that they should be fully in sympathy with the

recent testimonials should be sent to the Medical Superintendent at the

St. Mary's Hospitals, Manchester

for the Western Division
" Ophthalmic Department
" Throat and Ear Department

each for a period of seven months from January 1st next Salaries at the rate of £50 per annum with board and residence

Application with copies of three testimonials to be sent to the undersigned on or before the 19th inst

R RATCLIFFE

Western Ophthalmic Hospital Marylebone Road N W 1

Applications are invited for the post of SENIOR NON RESIDENT HOUSE SURGEON at the rate of £150 per annum and for a similar post at the rate of £150 per annum The appointment is for six months Those selected will be required to take up duty early in January

Applications accompanied by copies of three testimonials, should reach me by

H W BURLEIGH Honorary Secretary

The Metropolitan Ear, Nose and Throat Hospital (Incorporated) Fitzroy Square W

ASSISTANT SURGEON AND CLINICAL ASSISTANTS

Applications are invited for the above posts which will be vacant at the end of December three recent testimonials should be sent to whom further particulars may be obtained

L L HILL

APPOINTMENTS—Important Notice.

(a) British Islands.

Medical Practitioners are requested not to apply for any appointment referred to in the following table without having first communicated with the Medical Secretary of the British Medical Association, 429, Strand, London W C 2

Town or District	Town or District	Town or District
CONTRACT PRACTICE.		**PUBLIC HEALTH** *(continued)*
ENGLAND.	**WALES** *(continued)*	LINCOLN CITY EDUCATION AUTHORITY (Woman Assistant School Medical Officer)
CANNOCK CHASE AND DISTRICT (Clubs and Friendly Societies Appointments)	OGMORE VALLEY GLAMORGAN (Wyndham Colliery Medical Aid Society) (Workmen's Medical Scheme.)	NORTHUMBERLAND COUNTY COUNCIL (Woman Assistant Medical Officer of Health.)
MIDDLESBOROUGH (Medical Aid Associations or Workmen's Clubs)	TONDU & ABERKENFIG GLAMORGAN (Workmen's Medical Scheme.)	NUNEATON RURAL DISTRICT (Medical Officer of Health)
SOUTH BANK, & ESTON (Medical Aid Associations or Workmen's Clubs)	**PUBLIC HEALTH.**	PORTSMOUTH EDUCATION COMMITTEE (Whole-time Assistant School Medical Officer)
WALES.	ARGYLLSHIRE EDUCATION AUTHORITY (Executive School Medical Officer)	SOUTHWARK METROPOLITAN BOROUGH (Tuberculosis Officer)
ABERTRIDWR GLAMORGAN Windsor Colliery (Medical Scheme.)	CHESTER LE STREET RURAL DISTRICT COUNCIL (Medical Officer of Health)	STIRLING ROYAL BURGH (Medical Officer of Health Tuberculosis Medical and Child Welfare and School Medical Officer Port Dundas and Medical Attendant at Convalescent Infectious Diseases Hospital)
EBBW VALE MON (Workmen's Medical Society)	COLCHESTER BOROUGH (Assistant School Medical Officer)	SUTHERLANDSHIRE (Medical Officer of Health Tuberculosis Officer and School Medical Officer) (Combined)
GILFACH GOCH GLAMORGAN (Workmen's Medical Scheme)	KENT EDUCATION COMMITTEE (Woman School Medical Inspector)	WIGAN COUNTY BOROUGH (Assistant School Medical Officer)
LLWYNYPIA CLYDACH VALE PENYGRAIG, GLAMORGAN (Workmen's Medical Scheme)	LANARK COUNTY (Medical Officer of Health)	YORKSHIRE NORTH RIDING (Assistant School Medical Officer)
MARDY GLAMORGAN (Workmen's Medical Scheme)		
OAKDALE MON (Medical Officer for Medical Aid Association)		

(b) Colonial Medical Service.—WINDWARD ISLANDS MEDICAL SERVICE (Grenada with Carriacou St. Vincent and St Lucia)

(c) Overseas Appointments.

Medical Practitioners are requested not to apply for any appointment referred to in the following table without having first communicated with the Honorary Secretary of the Division or Branch named in the second column or with the Medical Secretary of the British Medical Association, 429 Strand, London, W C 2

Town or District.	Hon. Sec of Division or Branch	Town or District	Hon Sec of Division or Branch	Town or District	Hon Sec. of Division or Branch
NEW SOUTH WALES. (All Friendly Society Appointments.)	Dr R H TODD (Hon Sec New South Wales Branch) B M A Building 30 34 Elizabeth Street, Sydney N S W	QUEENSLAND (Brisbane Associated Friendly Societies Institute.)	Dr R. MARSHALL ALLAN (Hon Sec Queensland Branch) Adelaide Street Brisbane	VICTORIA (All Institute or Medical Dispensaries.)	Dr FRANK DAVIES (Hon Sec., Victorian Branch) Medical Society Hall East Melbourne Victoria.
				WESTERN AUSTRALIA. (Contract and Lodge Practices.)	Hon Sec., Western Australian Branch No 6 Bank of New South Wales Chambers, St Georges Terrace Perth

Address 429 Strand, W C 2.
November 12th 1924.

By order of the Council of the British Medical Association.
ALFRED COX, Medical Secretary

Evelina Hospital for Children,
Southwark, S E

The Committee of Management require a HOUSE SURGEON (male) for eight months from December 12th (during first four months duty in Casualty and O P Dept) Salary at £120 per annum with board, residence and washing Candidates to send applications giving age and qualifications (with dates) and copies of four testimonials, to the Secretary at the Hospital before November 21st Suitable applicants (qualified and registered) will be informed when they will be interviewed by the Medical Committee Selected candidates must attend Committee of Management Time and place of meeting will be notified by the undersigned from whom rules and other particulars relating to the post may be obtained

By Order of the Committee of Management
H C STANILAND SMITH,
November 4th 1924 Secretary

Bristol General Hospital

The Committee invite applications for the appointment of HONORARY REGISTRAR to the Throat and Nose Department.

Candidates who must be fully qualified and registered are requested to forward their applications accompanied by copies of testimonials, to the undersigned on or before Monday November 24th next from whom further particulars may be obtained

THOMAS W GREGG Secretary

London Jewish Hospital,
Stepney Green E 1

Applications are invited for the following posts —
RESIDENT MEDICAL OFFICER. Salary at the rate of £150 per annum with board and residence appointment for six months The present Junior Resident Medical Officer is a candidate for the post.
JUNIOR RESIDENT MEDICAL OFFICER. Salary at the rate of £100 per annum, with board and residence appointment for six months

Application with copies of three recent testimonials, to be sent to the Secretary on or before November 21st 1924. The successful candidates will be required to take up their duties on December 1st 1924

Addenbrooke's Hospital,
Cambridge.

Applications are invited for the Post of HOUSE SURGEON (Male) The appointment will be for six months from December 10th 1924. Salary £130 per annum with board residence and laundry Candidates who must be duly registered, are requested to forward their applications stating age qualifications etc together with copies of no more than four recent testimonials to the undersigned on or before Wednesday November 19th 1924

W H HEAD
November 3rd 1924 Secretary Surrey

Wolverhampton and Midland
COUNTIES EYE INFIRMARY

HOUSE SURGEON wanted It is essential that candidates must possess a knowledge of Refraction work. Duties to commence about December 15th There are 50 beds for In patients and Large Out patient Department. Salary £200 a year with furnished apartments board and laundry

Gentlemen applying should state age and send copies of three recent testimonials, to reach the secretary not later than November 22nd

Wolverhampton EUSTACE LEES
November 3rd, 1924 Secretary

Royal Cornwall Infirmary,
Truro. (70 Beds.)

HOUSE SURGEON required, with experience of X-ray work Salary £170 per annum, rooms board and washing Apply with copies of three recent testimonials to SECRETARY of whom further particulars may be obtained.

County Hospital, York
(150 Beds.)

HOUSE PHYSICIAN wanted. Salary £150 a year with board residence etc.

Applications stating age together with copies of not more than three recent testimonials, to be sent to the undersigned not later than the 25th inst

FREDK. NEDEN Secretary

Wanted at once, Assistant, Birmingham (industrial suburb) view to share and eventual succession Panel 2000 little night work Good bachelor's house with principal Work done mainly a surgery (near) Panel experience cheerful manner and good refs essential —Add, No 5702 B M J Office 429 Strand W C 2

Wanted — Assistantship (outdoor) or APPOINTMENT in or near London or provincial city by well qualified practitioner, aged 28 Over 3 years experience general practice Total abstainer Keen on surgery and obstetrics —Address No 5506 B M J 429 Strand

Wanted —Assistantship, with prospects by M B B Ch Oxford M R C S Eng L R C P Lond Single woman, aged 30 Ex H S, H P Exp priv and panel practice anæs, midwfy energetic well rec keen Excel testmls Disengaged —Add No 5728 B M J 429 Strand

Wanted.—Assistantship, by M B ex H S 3 years experience in general practice aged 28 Testimonials if necessary London or vicinity preferred — Address No 5701 BRITISH MEDICAL JOURNAL Office 429 Strand W C 2

Wanted —Assistantship (outdoor) or management of branch with view to Partnership later by married Medical man Lond qual Country or Country town pref'd Englishman Exp G P good obstetrician excel refs Free end Nov —Address No 5708 B M J Office 429 Strand

Wanted — Assistantship or LOCUM, London preferred, but not essential by M B B Ch B A O aged 28 varied experience in G P (private, panel and midwifery) Keen and energetic total abst Catholic cyclist and motorist Free now —Add, No 5721 B M J, 429 Strand

Wanted — An Assistant (indoor or outdoor) Please state age experience religion qualifications and other essential particulars —Address No 5735 BRITISH MEDICAL JOURNAL Office 429 Strand W C 2

Wanted by M B, B S., whole or PART TIME WORK At present reading for further exams Aged 28 married Total abstainer Sixteen years experience general practice —Address No 5716 BRITISH MEDICAL JOURNAL Office 429 Strand W C 2

Wanted, Assistant, single, in County of Durham Colliery and panel practice £300 indoors usual Lond Good prospects to suitable man —Address No 5711 BRITISH MEDICAL JOURNAL Office 429 Strand W C

Assistantship wanted by M B Ch B (Edin) woman 2½ years experience general and maternity experienced anæsthetist dispenser Cycles motor cycles, drives car Good testimonials —Address No 5707 BRIT MED JOURN Office 429 Strand W C 2

Assistantship wanted by M B Ch B (Glasgow) woman aged 31 Ex H S Children's Hospital and Maternity Hospital Experienced anæsthetist Excellent references Free now —Address No 5727 BRITISH MED JOURNAL Office 429 Strand W C 2

Assistantship —M B, Ch B, D P H (woman) at present engaged in Medical Inspection of School Children desires Assistantship in general practice Previous experience —Address No 5712 BRITISH MEDICAL JOURNAL Office 429 Strand W C 2

Assistant (man or woman) wanted indoor Church of England County town Public Health private panel State age and all other essential particulars — Address No 5531 BRITISH MEDICAL JOURNAL Office 429 Strand W C.

Assistantship or Locum wanted by Scotch graduate (lady) Ex H S Experienced general practice gynæcology anæsthetics Well recommended Excellent testimonials from London Address No 5703 BRITISH MEDICAL JOURNAL Office 429 Strand W C

Assistantship or Locum wanted by M B Ch B D P H (Edin) Experience in General Practice Public Health Well recommended Excellent testimonials Free now —Address No 5731 B M J Office 429 Strand W C

Assistantship (outdoor), required by M R C S L R C P married Ex H S H P Experienced General Country or coast practice—Address No 5714 BRITISH MEDICAL JOURNAL Office 429 Strand W C

A M O wanted for Private Mental Hospital in London on Dec 1st 1924 Previous experience not essential —For further particulars address No 5651 BRITISH MEDICAL JOURNAL Office 429 Strand W C 2

Catholic Graduate (Glasgow, October 1922) requires ASSISTANTSHIP Two years general practice Visiting surgical experience Anæsthetist and obstetrician Excellent testimonials Free now — Address No 5720 BRITISH MEDICAL JOURNAL Office 429 Strand W C

Chauffeuse, nine years' experience refined smart appearance splendid references Careful driver clean licence used to a doctor's practice long distances Willing to go to any part Please state particulars —Address, No 5615 B M J Office 429 Strand, W C 2

Laboratory Assistant (lady), also qualified Dispenser desires POST in or near London Thoroughly experienced in Pathological work Good testimonials Free any time — Address No 5703 BRITISH MEDICAL JOURNAL Office 429, Strand W C 2

London Physician, experienced Nervous Complaints going abroad would ACCOMPANY PATIENT —Address No 5715 BRITISH MEDICAL JOURNAL Office, 429, Strand W C 2

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M B, Ch B (Aberdeen), desires ASSISTANTSHIP Experienced in G P private panel midwifery at 27 single, T T Good testimonials Can motor or cycle State particulars and salary —Address No 5706, BRITISH MED JOURNAL Office 429 Strand W C 2

Manchester —Wanted by M B (married) ASSISTANTSHIP with view to Partnership Hulme Old Trafford Stretford or Sale preferred Some capital available later —Address, No 5720 BRIT MEDICAL JOURNAL Office 429 Strand W C.

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Woman, M B, B S (Lond), M R C S L R C P desires ASSISTANT SHIP Aged newly qualified —Address No 5717 BRITISH MEDICAL JOURNAL Office 429 Strand W C.

Woman M B, B Ch, requires ASSISTANTSHIP Young energetic Scotch Experience G P salary £150 per annum (live) —Address No 5713 BRITISH MEDICAL JOURNAL Office 429 Strand W C.

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Qualified Lady Dispenser desires RE-ENGAGEMENT Several years experience excellent testimonials Doctor's Institution —Address No 5637 BRITISH MEDICAL JOURNAL Office 429 Strand W C 2

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Wanted —Capable Surgical preferably F R C S assistant for private practice Salary £2 200 £2 600 £3 000 —Address BRITISH MEDICAL JOURNAL Office

N Wales —Half Partnership in good practice for man desirous of becoming sole principal in a few years Address No 5718 BRITISH MEDICAL JOURNAL Office 429 Strand W C

Partner wanted — Short Preliminary Assistantship Must be capable Surgeon preferably F R C S South Coast town Sussex —Address full details to No 5419 British Med cal Journal Office 429 Strand W C 2

Partner wanted, for a large Panel and Private PRACTICE in N W London Public Appointment held Minimum share £500 a year guaranteed Good terms to suitable man, who must be young and energetic Small house can be rented —Address No 5738 British Medical Journal Office 429 Strand W C

Partner required in good-class Practice in riverside town near London Varsity graduate preferred keen on surgery Short preliminary Assistantship — Address full details to No 5704 British Medical Journal Office 429 Strand W C 2

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Lancs' Town —Old-estab , owner retiring good convenient house garage Receipts £1 700 with excellent scope Panel £835 yearly Population 9 000 Price £3 500 to include house garage &c part de erred —Manchester Med & Scholastic Association Ltd 6 Brown S

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with considerable amount of surgery Average actual receipts over £4 000 —Record Publishing Company P O Box 643 Cape Town Cable Medical Cape Town

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JUNIOR ASSISTANT MEDICAL OFFICER

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The Infirmary, which contains about 800 beds is equipped with modern appliances including an Institution Best fitted Laboratory four Resident Assistant Medical Officers a Pathologist and three Dispensers

The present remuneration is at the rate of £350 per annum rising £25 per annum to a maximum of £425 per annum together with rations washing furnished apartments and attendance

The officer appointed will be required to render assistance at other establishments and departments within the Union to assist in the training and instruction of Nurses and to devote his whole time to the service of the Guardians

The appointment will be subject to the provisions of the Poor Law Officers Superannuation Act 1896 Further particulars may be obtained from the Medical Superintendent of the Infirmary

Applications stating age qualifications and experience together with copies of not more than three recent testimonials must reach me not later than November 22nd 1924

Clerk's Office 2, Sidney Road, Homerton E 9 FRANK R COLES Clerk to the Guardians

London (Royal Free Hospital)

SCHOOL OF MEDICINE FOR WOMEN
(University of London)
Hunter Street, Brunswick Square, W C 1

OBSTETRICAL & GYNÆCOLOGICAL UNIT

The Council of the London (Royal Free Hospital) School of Medicine for Women and the Committee of Management of the Royal Free Hospital invite applications for the Full time Resident Appointment of THIRD ASSISTANT in the Obstetrical and Gynæcological Unit Salary £270 per annum, with board and residence

Applications accompanied by copies of not more than three testimonials and the names of not more than two persons to whom reference may be made should reach one of the undersigned not later than the first post on Monday, December 1st 1924

Seven copies of all documents must be furnished

LOUIE M BROOKS,
Warden and Secretary London (Royal Free Hospital) School of Medicine for Women
REGINALD R GARRETT,
Secretary, Royal Free Hospital
Gray's Inn Road W C 1

City and County of Bristol

EDUCATION DEPARTMENT

ASSISTANT SCHOOL MEDICAL OFFICER

The Committee invite applications for a whole time Assistant School Medical Officer Age not exceeding 30 years Salary £600 per annum

The duties will consist of examination of children in the Committee's Secondary Elementary, and Special Schools treatment in School Clinics and such other duties as may be allocated

The successful candidate will work under the direction of the School Medical Officer

Application which must be on a form provided for this purpose should be accompanied by not more than three recent testimonials and must be received by Saturday morning should be endorsed Canvass Guilding IAN, Director of Education

Bristol
November 10th 1924

Miller General Hospital for

SOUTH EAST LONDON
Greenwich Road S E 10

RESIDENT CASUALTY OFFICER required unmarried (three other residents) salary £150 per annum with board lodging and laundry

Applications stating age nationality qualifications and experience accompanied by copies of not more than three recent testimonials to be sent to the Secretary

Oxford County and City

MENTAL HOSPITAL
Littlemore Near Oxford

SECOND ASSISTANT MEDICAL OFFICER required salary £350 per annum with board lodgings washing and attendance Appointment subject to Asylum Officers Superannuation Act Applications stating age qualifications etc to be sent with copies of recent testimonials to the Medical Superintendent not later than November 21st 1924

City of Birmingham

TUBERCULOSIS DEPARTMENT

Applications are invited from registered practitioners for the post of ASSISTANT MEDICAL OFFICER who will devote all his time to tuberculosis work by him a sanatorium and dispensary

Applicants should have had a wide experience in the treatment in a general hospital of cases of pulmonary tuberculosis previous experience in tuberculosis work will be an advantage

The salary will be at the rate of £100 per annum with board, residence for a single man only and laundry

Forms of application may be obtained from the undersigned, and should be returned not later than November 21st accompanied by copies only of three recent testimonials to —

G B DIXON
Chief Tuberculosis Medical Officer
11a Broad Street, Birmingham

Ochil Hills Sanatorium

MEDICAL SUPERINTENDENT

The Stirling and Clackmannan Joint Sanatorium Board invite applications for the post of RESIDENT MEDICAL SUPERINTENDENT at the Ochil Hills Sanatorium Tillicoultry Salary £700 per annum with board rooms in sanatorium and laundry Applications giving particulars of qualifications and experience and stating when candidate can take up duty to be lodged with the undersigned Subscriber along with 12 copies of testimonials not later than or before November 30th next

JAMES TARMONTH
Clerk to the Joint Sanatorium Board
County Buildings, Stirling, November 11th 1924

Hospital for Epilepsy and

PARALYSIS Maida Vale W

HONORARY OPHTHALMIC SURGEON REQUIRED

Applications are invited for the above post They should be accompanied by copies of not more than three testimonials and should reach the undersigned by December 6th

Attendance at the Hospital is required two mornings a week

H W BURLEIGH
Secretary and General Superintendent

Royal Hospital, Richmond,

Surrey

Applications are invited for the post of ASSISTANT HOUSE SURGEON (Male) to this Hospital Remuneration £100 per annum with board furnished apartments and washing Duties required to commence duties early in December Candidates must be fully qualified and registered Applications stating age and giving full particulars of three recent testimonials, should be forwarded to the undersigned as soon as possible

RICHARD ATTEN Secretary

West Norfolk and King's

LYNN HOSPITAL

Applications are invited for the post of RESIDENT SURGICAL OFFICER to commence duties early in December next Salary £100 per annum Duties will include major operations Candidates must hold a higher degree and have held a House Surgeoncy at a large Applications stating age and giving full particulars of surgical experience including all operations performed personally should be forwarded to the SECRETARY by 11 a m on Tuesday, November 25th Selected candidates will be notified by

Aberystwyth Infirmary and

CARDIGANSHIRE GENERAL HOSPITAL

HOUSE SURGEON required (male) salary £200 per annum with board residence laundry Candidates must be fully qualified registered Knowledge of X ray advantageous Applications stating age and qualifications together with three recent testimonials to be sent by November 25th to the Secretary Infirmary Aberystwyth

The successful candidate will be required to commence duties on January 1st 1925

East London Hospital for

CHILDREN & DISPENSARY FOR WOMEN
Shadwell E 1

Applications are required for the post of ASSISTANT DENTIST to attend at the Hospital on Tuesday and Thursday mornings at a salary of £50 per annum Applications in writing to be addressed to the undersigned on or before November 20th

W M WILCOX

Nottinghamshire

APPOINTMENT OF COUNTY MEDICAL OFFICER.

to the e appl cants who have already had experience of the work of a M dical Officer of Heal h

The salary will be £1,200 rising by four annual in rements of £50 to £1 400 per annum and offices staff stationery and travelling expenses will al o be provided

A print of the conditions and duties appertaining to the appointment can be obtained on appl cation to me

Applications giving particulars of experience qualification and medical degrees must be forwarded to me together with copies of not more than three recent testimonials marked County Medical Officer of Health " not later than Monday November 24th 19 4.

County House K TWEEDALE MEABY
Nottingham Clerk of the County Council
4th November 1924

Somerset County Council

RESIDENT MEDICAL SUPERINTENDENT

Applications invited for this appointment at the QUANTOCK LODGE TUBERCULOSIS SANATORIUM (60–70 beds) which will be opened early next year

Salary £360 rising by £20 per annum to £600 together with bonus on Civil Service scale This is at pre ent equal to £739 12s rising to £789 Hou e rates water and light are provided free of charge. The appointment will be made subject to the provisions of the Local Government and other Officers Superannuat on Act 1922

Considerable administrative Sanatorium experi ence essential Particu ars on application

Applications to be on special forms (obtainable on request) and the e together with copies of not more than three recent testimonials to be ent to me not later than December 1st

Canvassing a disqualification

W G SAVAGE
County Medical Officer of Health
County Health Department
Boulevard Western super Mare

Manchester Royal Infirmary

RESIDENT MEDICAL OFFICER

The Board of Management of the Manche ter Royal Infirmary invite a plications for the above appointment which will become vacant on January 1st next

Applicants must not be less than twenty-five a

or

a period of one year

Salary £200 per annum with board res dence and laun ry allowance

Full information is obtainable from the under signed to whom app icants must send twelve copies of their application and testimonials on or before Friday November 21st 1924

By Or ler
FRANK G HAZELL
Gen Supt & Secretary

The Hospital for Sick CHILDREN

Great Ormon Street London W C 1

The following appointments will become vacant on January 1st 19 5 —

Salary ard and

Candidates mu t be unmarried and pos ess a legal qualification to pr ctice

ance on Wed precisely to required

Forms of application and cop es of the rules may be obta ned from the Secretary

By order of the Board of Management
JAMES McKAY Secretary

November 19 4

York Road (General Lying-IN HOSPITAL) Lambeth S E —Established 1 00 Patrons H M THE QUEEN and H M QUEEN ALEXANDRA Medical Stu dents and Qualified Prac titioners a limitted to the Practice of this Hospital Telephone 94 Central For rules fees etc apply Jose L WHITE, Secretary

ATKINS

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Partners
W S ATKINS (Late of ARNOLD & SONS London)
J R LOWNDS (B A Cantab L R C P)

43, BEDFORD STREET, STRAND, W C 2

(A few doors from The Lancet" Office)
Telegrams Positions We tranl London.
Te ephone I egent 229

LOCUM TENENS and ASSISTANTS supplied

FOR DISPOSAL

Lincs — An unopposed General PRACTICE situated in a Country district Receipts £1,800 Panel 2 0 Good fees. Excellent house at rental Premium 1½ years purchase Folio 669

South Coast — A General PRACTICE situated in large Coast Town Pe e p s over £2 000 Panel 1 00 Fees 3 6 upwards Excellent house 4 bedrooms etc Pre mium 1½ years purcha e Folio 673

Surrey —Partner required for a general Practice situated in a market town Receipts £2 200 Fees 3 6 upwards P enty of scope. Personally known and recommended Premises in central position containing 4 bedrooms etc Rent £75 p a Premium 2 years purchase for one third share —Folio 900

Staffs —Partner required for a General Practice situated in an industrial district Receipts £2 500 Panel 1 3,0 House at rental Premium for third share 1½ years purchase. Option increa e to half share —Folio 887

S of England —A Coast PRACTICE situated in a charming district. Receipts £1 2,0 Exce lent fees Hospital appoint ment held No panel Non dispensing Nice house in good position at rental Premium £2 500 — Folio 675

Glam —A General Practice situated in a Coast Town Pe ceipts £2 200 Panel 1 400 Fees 3 6 upwards Shipping fees 21/ upward. Ample se pe Nice house with 4 b d rooms etc gar len and garage Rent £75 per annum Premium 1½ years purch e —Folio 661.

Notts —A Middle and working class PRACTICE (town and country) Receipts £1 200 Fees 3 6 upwards Small corner house containing 3 bedrooms e c Rent £60 per annum —Fol o 662

Purchasers stating their requirements can hav details of other Practices not advertised

Telephone. Langham 2728
Telegrams: Assistiamo, London

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TRAINED NURSES FOR MENTAL, MEDICAL, SURGICAL AND FEVER CASES

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(Mrs) MILLICENT HICKS *Superintendent*
W J HICKS *Secretary*

ST. LUKE'S HOSPITAL.

ESTABLISHED 1 01

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TRAINED NURSES for MENTAL and NERVOUS CASES can be had immed ely Apply to LADY SUPERINTENDENT 19 No tingham Plac Lo don W 1 Te ephone May 0 0

NORTHERN BRANCH —Apply LADY SUPERINTENDENT Cha don Rd Leed Phone Leeds

ESTABLISHED 1868

PEACOCK & HADLEY,

(Mr A HADLEY)

MEDICAL TRANSFER AGENCY,

19, Craven Street, Strand, W C 2

Telegra s He tana We rand—London
Telephone Central 111.

This d e tabli hed reliab e ag ncy neg t a es the Sale of PRACTICES an PART ERSHIPS on reasonable terms whi h can be commenced on ap ca tion No charge made unless a sale be effec ed. LOCUM TENENS and ASSISTANTS supplied

FOR SALE.

1 PARTNERSHIP wan ed mag ern Idlands age Prac ice in a pleasant ou lying subu b Ken Share fer di ional wo th £1 500 a yea Good hou e available

2 MIDLANDS —Small In ustrial T wn PRAC TICE re urning about £2 500 p a Part 1 o C nvenient residence with gar len gar age &c I ert £40 Prem £3 500 o nr o er

3 SUBURB OF MANCHESTER—Gene al PRAC TICE capa le o being greatly increa d Receip s £750 pa Good house pleasantly situated To be Let or Sold Premium £1 000

4 SOUTH WALES —Ea ily worked tran Contract and Panel PRACTICE held several years by Ven lor Receipts now about £2 000 a year Convenient residence with s rgery attached Rent £52 on Lea e Co age Hospital in town Premium £2 000

5 MIDLANDS — Pleasant Resi en ial Town Middle-class PRACTICE Rece p s £1 300 a year Panel 0 Fees good Corner house with surgery attached I en £60 long ea Premium 1 years purchase

6 OUTLYING SUBURB SUPPEY.—Junior PARTNER wanted for General and Pa el Practice Receipts £1,500 a year Third share for sale at 2 years purcha e House for sale or rooms available

7 YORKS —Large Town. General PRACTICE yielding £900 a year Nine-roomed hou e electric light an l heating Will be Le or So Premium £1 300 payable by in alments or near cash offer

8 LARGE NORTHERN TOWN General PRAC TICE yielding about £1,000 a year Pan l 1 2,0 Goo l detached house For sale. Pre mium £1,400

9 MIDLAND TOWN —Small PRACTICE for a e capable of much imp ovement Receipts £350 p a Surgery is a seven roomed house Rent £22 Premium £350

No c arge to purcha ers or for inquiries

MR. HERBERT NEEDES,

31, BEDFORD ST., STRAND W C 2.

(Gerrard 8 3) (Exmb 1350)

This
tales t
SHIPS
SUPPL
No Ch
Mr NEEDES personal attention

1 QUA I DEATH VACANCY PRACTICE r

venient resi ence, with gardens and paddock Lease granted at low rental For pr mpt a a year's purcha e accep ed with accommoda on for payment

2 £1,850 a yar Country PRACTICE returning above income situate in pre y district with in 2½ miles of Town Panel and appoi Charming res dence with garage and several acres of la d on rental Successor should be active man t experience Premium £2,800

3 COUNTRY TOWN PRACTICE within 3 hours

with garden erc on lease a £60 Premium abou 1½ year purchase

4 UNOPPOSED PRACTICE near favourite North ern Cathedral and Garrison City Averag income £715 a year wi h op Society e cel ent Charming modern house (small) a l grounds for sale Suit a retired Army ma desirous of easy occupa on amids pleas r surroun ings

5 Near LIVERPOOL — PRACTICE a ag

6 W

for early sale Venue going a good Fees Home on l ng lease and moderate rent Price for quick sale £1,400

PRACTICE of £1,400 a year in the Ty di trict or Sale with Free Hous Pa l £5,0 Fees fr m 3 6 Ven or e Price for the two y £3 300

LONDON (Cen al —General PRACTICE abou £1 250 r sale Good appt £550 Small pan l No mid ry Home on ease a £125 Price £1 500

7 REQUIRED —PRACTICE r PARTNERSHIP producing £1 000–£1,200 a year in or nea L n on, by Gra with experience and capi

Mr Needes is re eady to visit e etc

BOVRIL MEDICAL AGENCY, Ltd.

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Established by Bovril, Limited, to provide an efficient and reliable transfer service for the Profession at minimum Charges.

Under the personal direction of Dr. J. FIELD HALL, and Mr J C NEEDES.

An Accountant's certified report is required in respect of every practice or partnership the disposal of which is undertaken by the Agency

The commission chargeable in respect of any practice in Great Britain placed exclusively in the hands of the Agency for transfer has been fixed on an exceptionally favourable scale, the maximum chargeable on any transfer being £50 In the case of Foreign and Colonial practices similarly placed the maximum is £75

NO CHARGE IS MADE TO PRINCIPALS FOR THE INTRODUCTION OF LOCUM TENENS OR ASSISTANTS

Accountancy and legal services furnished by the Agency, where desired, at moderate inclusive charges.

PRACTICES AND PARTNERSHIPS FOR SALE.

1 PARTNERSHIP —LONDON (WEST END) —A well qualified Graduate between 30 and 40 years of age can acquire the half share of a high-class old established general PRACTICE worth about £2 500 per annum Held over 20 years by present Incumbent Consultation fees 2 guinea upwards but plenty to be had at 1 guinea Rent of Consulting Rooms (including rates and taxes) £180 on lease From 2 years purchase Scope only suitable for a bachelor as the upper part of the house is at present let off but vacant possession might be secured shortly Rent £65 p a on lease with option of renewal Reasonable offer accepted Locum in charge

2 LONDON N W
Established Pra
over 30 years
A panel list of
medicine 3 6 to 15 6 No Midwifery The accommodation is
only suitable for a bachelor as the upper part of the house is at
present let off but vacant possession might be secured shortly
Rent £65 p a on lease with option of renewal Reasonable
offer accepted Locum in charge

3 LONDON NORTH —Old established PRACTICE producing an income of £1 400 a year including appointments worth £320 Panel of 3 0 but this can be largely increased if desired Visits and medicine 3/6 to 7/6 Practice is easily worked with no conveyance Nice house in good decorative repair Rent £125 Garage can be let off at £26 or £54 Premium £2,000

4 GLOUCESTERSHIRE —COUNTRY TOWN —An old established PRACTICE producing an average income for the last two years of £1 760 including Union Appointment £85 and approximately £900 from panel Advice and medicine 2 6 3 6 and 5/ visits and medicine from 2 6 to 12/6 About 25 cases of Midwifery a year The house is a large one (recently redecorated throughout) situated in the main street and contains 3 reception rooms professional rooms 8 bedrooms 2 bathrooms large garden with tennis lawn etc Held on lease at £60 a year Excellent hunting country Premium £2 950

5 WESTERN AUSTRALIA —Unopposed PRACTICE situated in a small Township (population 1 500) amidst very picturesque surroundings and within 12 miles of the sea coast Cash receipts over £1 500 a year
Lodge worth £389 Visits 10 ,
5 guineas upwards Leases year
Comfortable compact Bungalow
containing 6 rooms bathroom etc and ample Land attached
Rent £86 a year Premium £1 000 half down and balance in
12 months There is a small Hospital (with 6 beds) in the
place Sport

6 DEATH VACANCY —HAMPSHIRE —A very old established mixed general country PRACTICE situated within 7 miles of a large town Steady average income of £1 039 including appointments and panel of about 100 Good scope for increase Advice and medicine from 2 6 Visits 5 to 20/ medicine extra Very little midwifery House contains lounge hall, lining and drawing rooms consulting room and dispensary 5 bedrooms 2 bathrooms Lit with petrol gas Garage Half an acre of garden Freehold price £1 000 Excellent hunting shooting fishing etc Any reasonable offer accepted Locum in charge

7 SOUTH COAST WATERING PLACE. —(Population 30 000)— Partnership with view to succession in four years to an old established PRACTICE averaging for the past three years over £1 150 per annum including panel of 650 Visits 3 6 5 and 7 6 No midwifery Very nice house available with ample accommodation garden etc Will be sold or can be rented Half share for disposal a few years purchase Good society and sport of all kinds etc Small Hospital Scope for increase

8 HOME COUNTY —Hospital Town within 30 miles of London PARTNERSHIP Vacant half share in a mixed general practice held by senior partner 25 years Average income about £2 000 Panel of 750 Advice and medicine from 2 6 Visits and medicine from 3 6 Very little midwifery Detached double-fronted house with ample accommodation and good garden Price £2,000 of which £1 000 can remain on mortgage The old established Hospital and nearly every good Girls' Boarding School is Premium 2 years purchase half by arrangement

9 [illegible] £2 000 cash and £2 000 by instalments

10 PARTNERSHIP —SOUTH OF ENGLAND —In a large flourishing Seaport Town a fourth Partner is required in a lucrative mixed class PRACTICE averaging about £3 000 per annum including appointments and panel of nearly 1 000 The sixth share (producing over £800 a year) is for disposal Visits 1 upwards Midwifery 3 guineas Comfortable rooms at the Surgery are available for the incoming partner Rent £60 p a Premium required for share 2 years purchase Golf tennis, etc and there is scope for development

11 NORTH MIDLANDS —In a pleasant Cathedral City a well established middle and working-class PRACTICE held 11 years by present Incumbent, who is relinquishing, on account of indifferent health Cash receipts average £1 100 per annum for the past three years including panel of over 1 000 Visits 5/ and 7/6 Midwifery 3 guineas 50 cases yearly The house, which is Vendor's property contains 12 rooms garden etc, and will be let on lease at £60 a year or sold for £1 100 Premium £2 100 Excellent educational facilities

12 KENT —SMALL TOWN within one hour of London Old established mixed general PRACTICE Average income about
[illegible] desirable
cars of
contain
[illegible] professional
rooms standing in its own grounds of ¾ of an acre with full sized tennis court etc Vendor's freehold price £2 300 Good Hospital in town and Vendor on the Staff Premium £2 700 Introduction as desired up to six months

13 INDIA.—ASSISTANTSHIP with view to PARTNERSHIP —A single man (about 30 years of age and not over 30 who must be an L R C S England of good appearance and a sportsman) is required on a two years engagement to commence next March, in a practice producing £7 000 a year Salary 650 Rupees a month plus board and lodging (the to al equals £800 £850 p a) At termination of the engagement a one sixth share will be sold if satisfactory, at one year's purchase, with increase ultimately up to one third Premium payable out of receipts

14 [illegible]
creasing PRACTICE worth last year £2 100 including 1 600 panel patients Visits 2 6 to 5 Midwifery 2 to 4 guineas about 100 cases yearly Good house, with garage, available Vendor's property and will be let to Successor at £100 a year or can be purchased Prem 1½ yrs purchase Efficient introduction

15 MIDLANDS —In a delightful town (population over 1 000) amidst beautiful surroundings and within 1 hour run of London an old established lucrative PRACTICE worth over £2 500 per annum including large panel Good fees The house is well situated and has ample accommodation and can be rented on lease at £100 a year Premium 1½ years purchase Satisfactory reasons for selling Educational facilities and sport of all kinds

16 EASTERN COUNTIES —Within 1 hours run of London Practically unopposed PRACTICE old established and situated in a very pretty Country Town with beautiful surroundings Cash receipts for last financial year £2 022 including panel of £50 and panel of 600 Visits up to 21/ Very little midwifery Car optional Railway station Charming residence (with ample accommodation) in own ground half of an acre Price £2 900 all of which can remain on mortgage at 5 per cent Premium for practice £2 500 Excellent [illegible] Tennis golf hunting shooting etc

17 WEST MIDLANDS —HOSPITAL TOWN within easy reach of University City Well established and lucrative PRACTICE averaging about £2 000 per annum [illegible] parcel of nearly two acres finally fitted [illegible] Small [illegible] available Premium 1½ years purchase £1 900

Profits accruing to Bovril, Limited, from the Agency will be allocated amongst recognized Medical Charities.

Full Schedule of Terms and Conditions will be forwarded on application

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Worcestershire —About £800 p.a. and scope Old established Panel 4 50 Convenient h Pent or ell f

Sussex Coast —Nearly £800 p.a. Old established. Panel 600 Visiting fees 5 to 10 Very few midwifery cases Appointments £80 Good house on lease —Apply No 7638

Gloucestershire — Over £1 750 p.a. Old established country PRACTICE Panel over 1 500 Visits to 10 6 Midwifery 2 to 10 guineas Exceptionally good house garage tennis lawn &c. to rent £60 p.a.—Apply No 7637

Surrey —Partnership About £1 360 Share worth £500 p.a. for disposal now half later and ultimate succession Panel 1 000 Visiting fees 3 6 up Few midwifery cases Ample scope —Apply No 7636

London, N —About £1,500 a year Old established PRACTICE Small panel Appointments about £400 Visiting fees 3 6 to 15/ Good house on lease with garden and garage Can be rented or lease purchased —Apply No 7634.

South Coast — Partnership About £2 700 a year Non-dispensing small panel One third share for disposal now up to one-half later Visiting fees chiefly 10/6 *Applicants should be Graduate and F.R.C.S. for* preference —Apply No 7631.

Cheshire — About £1,900 a year Panel 9-8 Fees 3 6 to 21 - Medicine extra Good detached house garage and garden Apply No 7628

West of England —Easy terms Non dispensing non panel PRACTICE situated in high-class suburb of Important Town estimated to produce about £1,500 a year Fees 5/ to £5 5s 0 f Excellent house to let on lease —Apply No 7627

London, S E —Over £1,750 a Densely anel 600 c £5 5s t £5o on

Yorkshire —£2,100 a year Panel 1,1,0 Visits 4/6 up Midwifery 2 to 3 gns Good house with garage rent £65 on lease Hospital in town Premium 1½ years purchase —Apply No 7619

South-East Coast —Over £2 000 a year Good fees Panel nearly 1 x 0 House with ample accommodation and garage *on lease a moderate rent* —Apply No 7618

South Wales —£2,000 a year and Panel 10/6 Con Hospital 00 terms could be arranged —Apply No 7616

Lancashire —About £1,200 a year Non panel Old-established Vendor retiring No midwifery or appointments Fees 2 6 to 10/6 Small house rent £36 including rates and taxes Ample scope for both midwifery and panel Easy terms —Apply No 7612

South Coast —For disposal, good- p a No p 21s Appo 12 guineas rent Great scope for increase panel etc Good schools —Apply No 7594

Lincoln —Country Town, about £1,850 p a Very old established Panel over 1 000 Visits 3 6 up Appointments about £70 Good detached house tennis garden ½ of an acre Long introduction —Apply No 7593

Yorkshire —Average £1,286 Appointments £350 Visiting fees 3 6 to 10/6 Panel nearly 1 300 Few midwifery cases Good house every convenience —Apply No 7581.

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LONDON S W —PARTNERSHIP In old established G P situated within easy access of West End Income £2,800 Panel 1 600 Premium for half share £2 500 cash

SANATORIUM —(Tuberculosis) Situated in charming surroundings with southern aspect in West Country Average Gross Income £8 428 Premium £3 000 (to include equipment)

YORKS —Old-established G P situated in small industrial town Detached house (4 beds) to let on lease Income £2 500 p a Panel 1 000 Premium £3 500

YORKS —Old-established G P Manufacturing town Detached house (4 beds) Income nearly £1 300 Panel 1,200 Two appointments Premium £3 600 to include freehold house part can remain

MANCHESTER —Old-established Income of over £3 000 p.a Panel Suitable for two in partnership Excellent house Premium £4 000

LANCS —Country town Large house (6 bed rooms) Garden Garage Panel over 600 Income £1,460 Premium to include house £4.000

LONDON W —Old-established G P situated in suburban district Panel over 1 600 Average income £1 711 House to let Premium £2,500 cash Suit two in partnership

LONDON W —Well-established NON-PANEL Income nearly £2 000 No night-work or Midwifery Premium £5 000 (cash) to include freehold house.

Purchasers stating their requirements will be sent particulars of other suitable Practices and Partnerships for sale free of charge

Please address all communications to the Manager Mr W H. GRANT Medical Transfer and Insurance Department.

THE MANCHESTER MEDICAL AND SCHOLASTIC ASSOCIATION, LTD.

6 BROWN STREET

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Telephone 5932 City

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Inland Telegrams
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LOCUMS SUPPLIED

Cheshire —Practice of £1,500 in nice country town. Panel 600 Appointments £160 Double fronted detached house can be bought or rented

London, S E —Practice of £1,100 *in nice residential suburb* Appointment £240 No panel Nice house with garage and tennis court can be bought

Suit Two Friends —Practice of £3 370 *in Northern town* No panel and few midwifery Good house can be rented Premium £3 600 including drugs etc

S W County — Practice of £800 in rapidly growing part of large town. Panel 1,000 Rent £60 on lease

Within 60 miles —Practice of £800 in favourite town. Panel 1 000 Appointments £160 Great scope for better class practice Good schools etc House can be bought freehold for £1.550

South London —Middle-class PRACTICE of £650 with scope for panel and midwifery Beautiful house with large garden on lease.

Derbyshire — Partnership Half share of £1,300 Panel 1,000 Appointments £180 School near Premium £1,000

Glos —County Town Practice of £1,750 in beautiful district Panel 1 Appointments £125 Good house with tennis court etc Low rent

North London —Practice of £950 increasing Panel 900 House in main road with small garden can be bought

Opening in growing residential district House with surgery etc NUCLEUS of about £200

Colliery Practice of £2,300 Panel 1 1 0 Rent £65 Opportunity Hospital and scope for surgery

New Zealand — Unopposed PRACTICE of £1,800 in beautiful district with good roads Rent £100 Premium £1,500 including furniture

South London — Very old-established practice of £1,000 Appointments £190 Panel 1 Abundant midwifery Nice house with small garden and garage Rent £70

F R C S, required as Partner Practice in County Town Share worth £800 with increase later Fine opportunity for surgeon

Lancashire — Practice of £650 with great scope Panel £45 Opposition slight Large population

London, S W — Partnership with Succession Third share of about £1,500 in rapidly growing district Great scope Suitable house on easy terms

Liverpool — Non-panel PRACTICE of £1,200 Detached house with garage Premium 1½ years purchase

North-West London -Vendor retiring Middle-class PRACTICE of £600 including 200 panel Great scope for active man Large house can be bought or small ones can be had Premium £750

West Riding — Practice of £1,500 Panel 1 Opposition slight Good house, rent £80 Premium £2,000

Midlands —Town and country PRACTICE of £1 200 Panel Good corner house with garage rent £60

Liverpool — Middle and working class PRACTICE of £700 with great scope for same owing to illness Panel 1 0 Very little midwifery Premium on £500 for quick sale. Convenient house can be bought early

Purchasers stating their requirements can have Particulars of other Practices to sell or

THE SCHOLASTIC, CLERICAL & MEDICAL ASSOCIATION, LIMITED.

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Practices and Partnerships for Disposal. No charge to Purchasers.

DEATH VACANCY —WEST MIDLANDS —(1) Well established good-class PRACTICE, about £3 400 p a in beautifully situated Country Town Panel about 1 ,00 Attractive house (6 bedrooms), with very good garden Cot a,e Hospital, and scope for surgery

UNDER 60 MILES (NORTH) OF LONDON —(2) PARTNERSHIP in old established Practice nearly £6 000 p a in first rate town with Hospital. Panel 3 800 One fourth share at first Premium two years purchase Scope for Surgery

YORKSHIRE (WEST RIDING) —(3) PARTNERSHIP in well e tablished increasing Practice about £2 600 in Country Town No panel Not much mi twifery Premium one third share £1 670 (up to one half later) Incoming Partner should be a,ed about 30 and keen on Surgery

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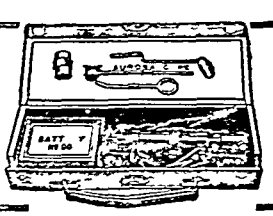
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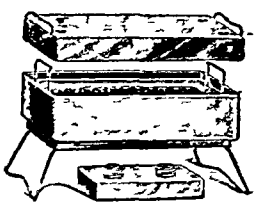
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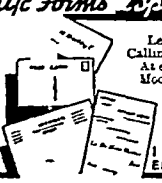
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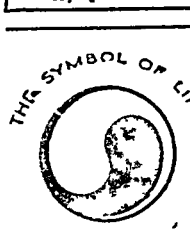
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Syr Cascara Aromat P B 6 lbs @ /10
" Glycero Phosph Co 6 lbs @ 1/11 lb

SYRUPS.

Aurant B B, 7 lbs @ 1 10 lb
Easton, B P 7 lbs @ 1/7 lb
Ferri Iodid, P B 7 lbs @ 1/10 lb
Ferri Phosp Co, 7 lbs @ 1/1 lb
Hypophosph Co B P C 7 lbs @ 1/3 lb
Pruni Virg B P, 7 lbs @ 1/1 lb
Rhamni 7 lbs @ 1/4 lb
Rhei, P B 7 lbs @ 1/2 lb
Scillæ, P B 7 lbs @ 10d lb
Senna P B 7 lbs @ 1/2 lb
Tolut P B, 7 lbs @ 1/1 lb

TABLETS COMPRESSED

Ferri
Blaud's (Sugar Coated) gr
Nitroglycerine P B gr 1 1/50th
Perchloride of Mercury (Coloured)
One Tablet in 1 pint of Water is equivalent to 1 in 500
Thyroid Gland gr
We can supply smaller quantities at a higher rate

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In 5lb Bottles

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Belladon	4/ 1/6	Hyoscyam
Lenzian Co	1/11 —	Iodine Vap
Camph Co	2/- 1/6	Opii
Card Co	2/4 1/	Quassiæ
Gentiana Co	2/11 1/4	Senegæ
Ustæ Acid B P	1 lb 2/6 lb	Valerian
Hydrarg I B P	7 lbs @ 2/6	Zingiber
	Nitrat	1 lb
Iodine's B I C	2/1 @ 1/1	
Ziberi Ox Fortiss	1 lbs @ 1/1 lb	

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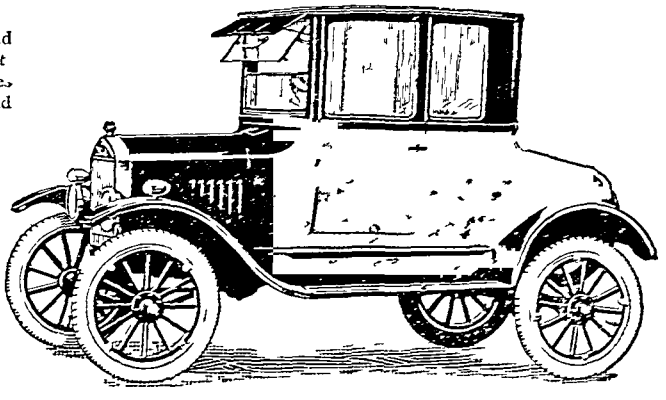
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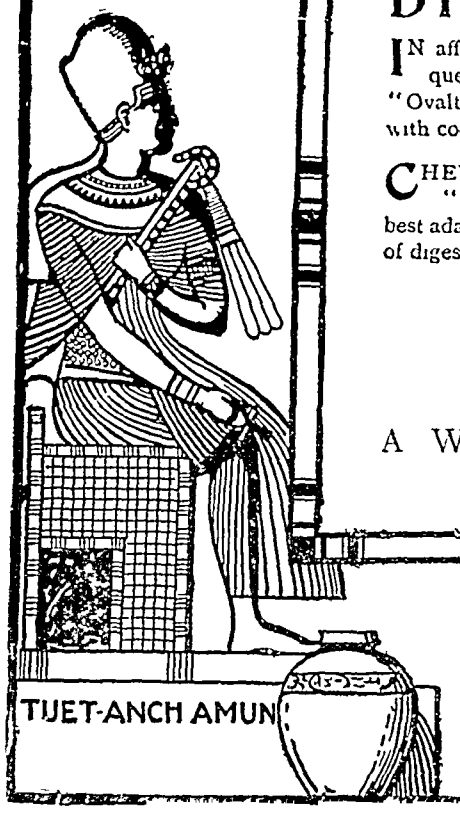
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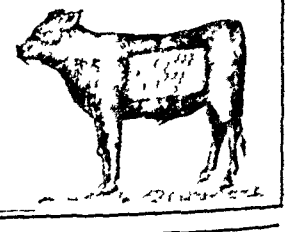
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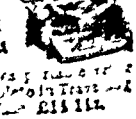
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Lactose	6 5	4.7	6 5
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Casein	0 9	3 0	0.90
Lactalbumen	0 4	0 3	0 60
Salts	0 2	0.3	0 65
Water	88 7	87 7	88 5
	100 0	100 0	100 0

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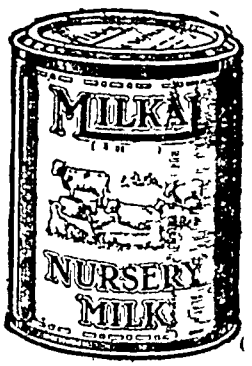
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Aloin ¼ gr Jalapin ½ gr Gamboge ½ gr Hydrarg Subchlor 1 gr **2-**

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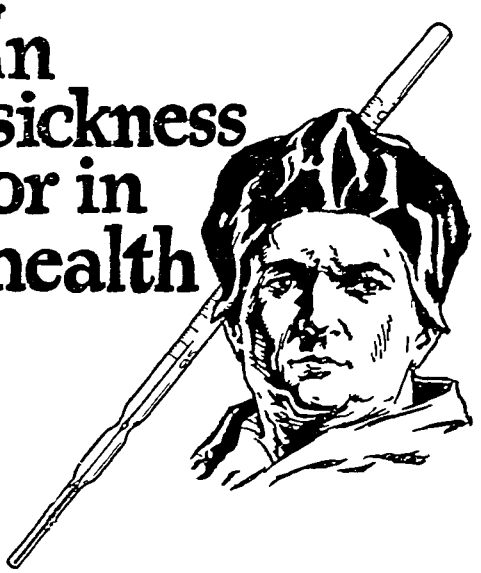
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FOR

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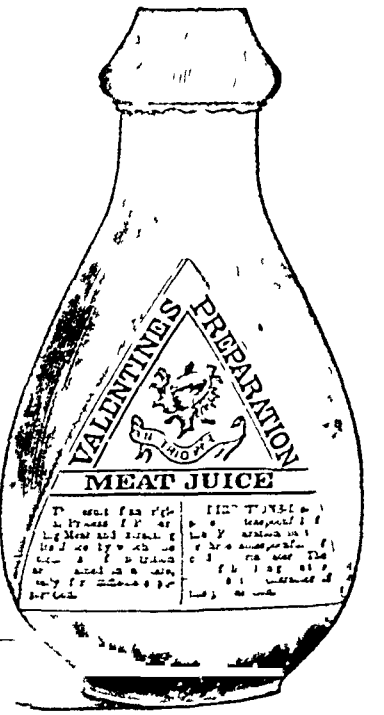
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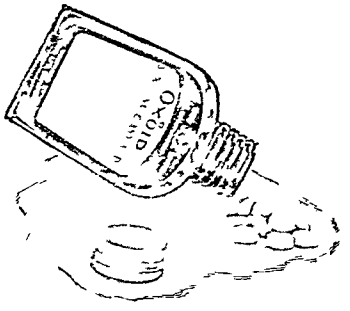
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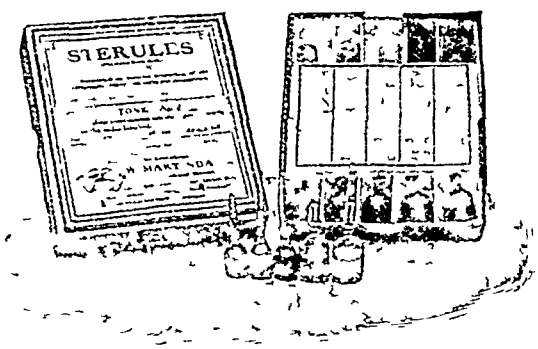
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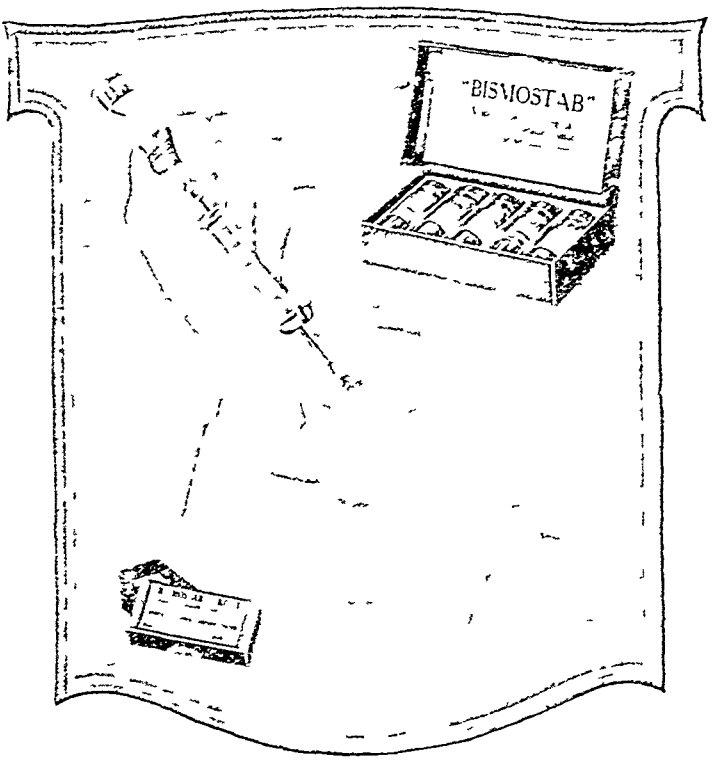
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Some Clinical References

British Medical Journal May 12th 1917
Lancet Feb 3rd 1912 p 322,
Ibid Jan 8th 1921 p 64

Lancet Feb 3rd 1912 p 322
British Medical Journal Oct 28th 1916 p 586
Lancet Sept 22nd 1923 p 618
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British Medical Journal Jan 16th 1915 p 104
Ibid Oct 28th 1916 p 586
Lancet June 12th 1920 p 1263 and several published reports from Medical Officers of Health

Lancet Feb 12th 1912 p 322
British Medical Journal May 26th 1917 p 635
Medical World Aug 8th 1919
Practitioner June 1921 p 411
British Medical Journal May 12th 1917 p 617

Collosol Argentum is supplied as Liquid Ointment, Pasta, Pessaries, Suppositories, Bougies, Soap, and Dentifrice

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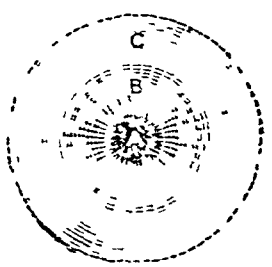
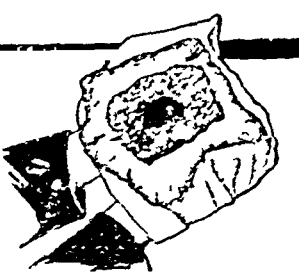


Diagram represents inflamed area. In zone C blood is flowing freely through underlying vessels This forms a current away from the Antiphlogistine whose liquid contents, therefore follow the line of least resistance and enter the circulation through the physical process of endosmosis In zone A there is stasis no current tending to overcome Antiphlogistine's hygroscopic property The line of least resistance for the liquid exudate is therefore in the direction of the Antiphlogistine In obedience to the same law exosmosis is going on in this zone, and the excess of moisture is thus accounted for



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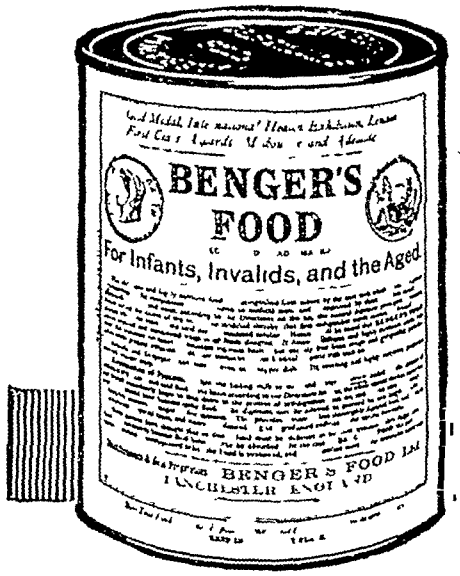
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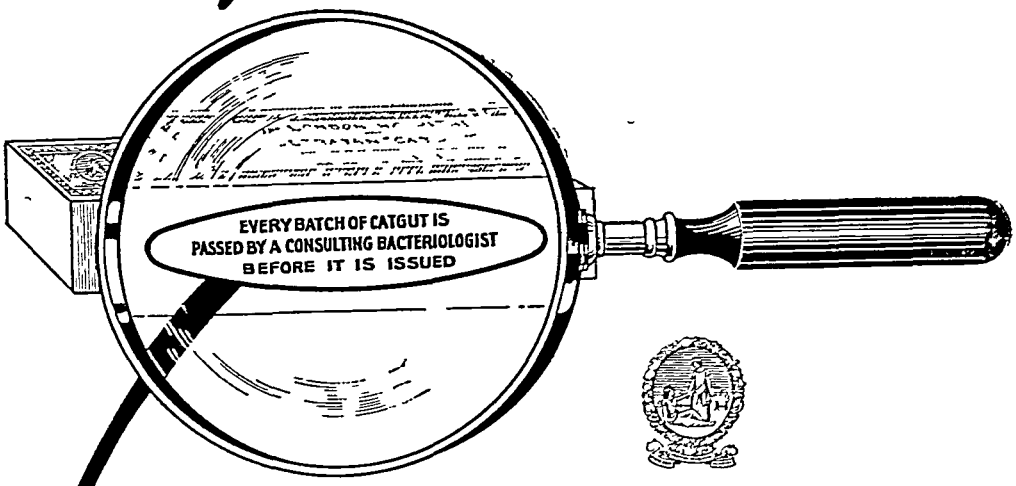
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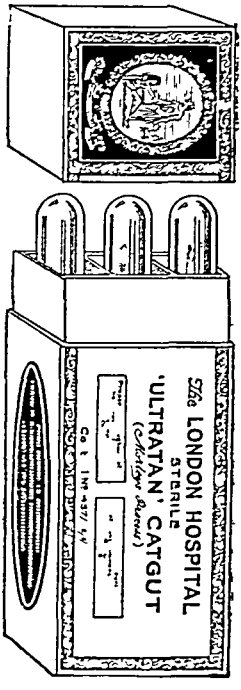
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The Ambulatory Treatment of Fractures and Diseased Joints,

By CAREL A. HOEFFTCKE

7, Harley Street, London, W 1

More than twenty years have elapsed since I first introduced the Ambulatory treatment for acute and chronic disease of joints, and for fractures of the long bones of the lower extremity

As is the case with many revolutionary changes in medical and surgical procedures, this treatment has met with a varied reception, but the numerous and favourable reviews of my book, in home and foreign medical papers, which have appeared, show that the principle involved in the Ambulatory treatment, namely, extension combined with movement, has found great favour with the medical profession

The difference between, and the advantage of, the Ambulatory treatment over the recumbent, must be apparent in cases of neck of femur fracture in elderly people as it obviates the danger of congestion of the lung, when the patients are enabled to assume an upright position and walk about within a week of the accident

When the patient is in the upright position, the circulation is not impaired, which therefore allows callous to form and union to be obtained more rapidly than if the patient has to lie in bed

In cases of tubercular and arthritic disease of the joints, the patients can be allowed to walk about and exercise the joints, which avoids slowing of the blood supply, and enables the usual blood current to combat the disease, and repair the articulating surfaces

The Ambulatory Extension treatment has upset the accepted opinion that nothing can be done to arrest the progress of the disease in cases of rheumatoid arthritis or even to prevent consequent deformity contractures, ankylosed joints, etc Hopeless cripples, who have been unable to walk for years, have not only obtained moveable joints, but also have been enabled to have the free use of their limbs without any evidence of the disease remaining

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Extract from the Medical Press and Circular, *April 9th, 1924, pages 293—296*

RHEUMATICS

By an eminent Physician

"Gentlemen—The subject you have chosen for discussion is one which, though of *the greatest* importance, happens to be, at the moment, very obscure and difficult

" Thus one finds as one blunders about in this swamp of 'Rheumatics' that each stone you try to step upon tilts you up and plays you false

" Lastly, there is one method upon which I would like to say a few words, though I must deal with it cautiously There are cases of severe arthritis in which the disease has become quiescent, but in which, either owing to the initial severity, or from lack of knowledge, or the character of the patient, severe contractures have resulted one or both knees, for example, have become fixed at a right angle and the patient has been unable to walk, possibly for years These are sometimes dealt with by forcible extension and elaborate splints—a treatment associated with the name of Mr Hoefftcke . .

" This, however, I must say, that in three out of four cases, all of the worst type, in which I followed through the results, they were eventually remarkable The fourth case, a hip joint affected with osteo-arthritis, was a failure, but I am not prepared to alter my mental attitude because this was a failure, for the cases I am dealing with are most difficult, and there must be failures I can only repeat that I have seen three remarkable successes When I am faced by a patient with contractures of long standing, unable to walk or earn his living, I ask myself What method other than this is open to use? . "

Extract from the Medical Press and Circular, *May 14th, 1924, page 406.*

RHEUMATICS

By Carel A Hoefftcke

" . . The danger of injury does no doubt exist if the wrenching is done without extension or Under such conditions the joint surfaces are pressed together by strong muscular tension, and as the surfaces are usually eroded there is serious danger of injury If, however, the joint surfaces are kept separated while the manipulation takes place this danger is avoided Such separation can only be obtained satisfactorily by an extension table or extension splint Futher, the suffering which the patient has to bear is in a large measure due to the contact of the diseased joint surfaces and is, accordingly, greatly reduced by suitable extension Cases treated by my ambulatory extension method in arthritic or tubercular disease need not be quiescent, in fact, the earlier the extension treatment is applied the sooner a good result can be expected "

"The Lancet," *January 5th, 1924* review —

" And it should be stated clearly that he works only with the medical profession and [illegible] or who offers a substitute for medical services . . . "

The Lloyd Roberts Lecture

ON

THE RENAISSANCE OF MIDWIFERY

BY

HERBERT R SPENCER, M D, B S LOND, F R C P,
OBSTETRIC PHYSICIAN TO UNIVERSITY COLLEGE HOSPITAL

[DR HERBERT SPENCER began by saying that the Medical Society was perhaps influenced in its choice of a lecturer this year by the facts that he enjoyed Lloyd Roberts's intimate friendship during the last twenty-five years of his life, that they were fellow workers in the same field of medicine and that the same subjects, especially old books, interested them both By way of commemorating the founder of these lectures, Dr Herbert Spencer then gave some particulars of David Lloyd Roberts's personality character, and habits from his own experience, and some particulars of the earliest books on midwifery in which he was especially interested and of which he bequeathed to the Royal College of Physicians such an unexampled collection Those books, published in the vernacular, were widely used for study by midwives and might be said to have started the Renaissance of Midwifery In collecting old books Dr Lloyd Roberts employed the most celebrated of the old book sellers, and, as he had more regard to the condition and rarity of the book than to the price, he was able to accumulate a very valuable library, especially of old medical books, which to the number of 1 800 (including 50 *incunabula*) he bequeathed to the Royal College of Physicians This was said by the Harveian Librarian, Dr Arnold Chaplin to be *the greatest gift of medical books to the College since the* Marquis of Dorchester's in 1680 He loved Sir Thomas Browne above all writers edited a charming edition of the *Religio Medici* learned Italian in his old age that he might read Dante (on whose scientific work he wrote a book) and his collections showed that he was a lover of the good and beautiful in men ideas and things After remarking that it was for his medical library that Lloyd Roberts would be longest remembered and especially for his unequalled collection of early medical books, including *The Byrth of Mankynde* (1540), Dr Herbert Spencer continued]

It is the purpose of this lecture to give some particulars of the first books on midwifery in Germany, France Italy, and England, which may be said to have started the renaissance of midwifery

Obstetrics is an ancient art It was outside the Garden of Eden that midwifery was born " of man's first disobedience," with the dread decree to woman " in sorrow thou shalt bring forth children " And we find the Garden of Eden incident referred to and depicted in some of the first books of midwifery

The early history of midwifery is too extensive to be treated here, but it may be stated that the most distinguished of the ancient writers on obstetrics was Soranus of Ephesus who lived in Rome at the beginning of the second century of the Christian Era under Trajan and Hadrian He wrote *περι γυναικειων παθων* which stands out as one of the most important works in the history of midwifery which had at that time reached a high state of development

Subsequently the art of midwifery made no advance at the hands of the Byzantines, and actually declined amongst the Arabians, who devoted more attention to the destructive operations on the child than to conservative treatment of the mother One factor in preventing advance in the science of obstetrics amongst the Arabians was the prohibition of anatomical research in the Koran But the chief reason why no advance was made was that the practice of midwifery was in the hands of midwives as it had been since the earliest times Up to the time of the Renaissance no midwife had written a work which developed the science or advanced the art or dignity of her calling

Until the invention of printing the wisdom of the ancients was inscribed in manuscripts comparatively few in number usually written in the classical languages and therefore readable only by the learned For the preservation of these works we are indebted in great part to the various religious bodies and especially to the monks The Church of Rome which has at times opposed the pursuit of medical knowledge, has also been one of its greatest promoters Many examples of this are given in Curatulo's *L'Arte di Juno Lucina in Roma* And there are not a few instances of ecclesiastical dignitaries who have been practitioners of medicine Pope John XXI the only member of the profession to occupy the papal chair was a doctor who taught medicine in Siena in the middle of the thirteenth century As Petrus Hispanus he published his work *The aurea Pauperum*, which was printed for the first time in 1470 In the Lloyd Roberts Collection at the Royal College of Physicians are three copies of the work including one of the 1494 edition Nicholas de Fernham an Englishman, was professor of medicine at Bologna whence he returned to England in 1241 and became Bishop of Durham

The renaissance of midwifery occurred somewhat later than that of other branches of learning The intellectual world was in labour, in the throes of delivery from the domination of the Church, from the blind acceptance of the authority of the ancient writers Aristotle and Galen and from the restrictions of the classical languages The Reformation had brought about the first stage Paracelsus did something to bring about the second stage when he cast the works of Galen into a bonfire in the streets of Berne and anathematized his opponents with the words "sic vos ardebitis in Gehenna" and Eucharius Rösslin seized the opportunity afforded by the discovery of printing to publish his *Rosengarten* in German so that it could be understood by the people and particularly by the midwives for whom it was written Although Ortolff von Baverland had published, about the year 1495, at Ulm a German work showing " how women should conduct themselves before during, and after childbirth " it did not contain much detailed account of obstetrics To Rösslin is due the honour of the first printed work specially written for midwives

RÖSSLIN'S 'ROSENGARTEN'

Eucharius Rösslin (Rösslin or Rhodion) was a physician at Worms and afterwards at Frankfort-on-the Main According to documents still existing at Freiburg in Breisgau Rösslin was an apothecary there in 1493 and 1493 In 1504 a legal action was brought against him for "mishandling" as the result of which a verdict was given against him and he was compelled to pay all costs and a fine of 3½ pounds of pfennigs In 1506 he was elected physician to the city of Frankfort for a period of six years at a yearly stipend of 60 florins In 1508 he entered the service of the Duchess of Brunswick and Lüneburg to whom he dedicated his *Rosengarten* Before the expiry of his term of office he left (in 1511) Frankfort and became city physician to the town of Worms returning again to his Frankfort post at an increased salary of 70 florins According to Baas he died in September 1526

V Siebold in his *Geschichte der Geburtshülfe* (1845) makes a curious error in giving the date of his death as 1553 or 1554 confusing this Eucharius Rösslin with his son, who bore the same name and died in 1553 or 1554 The error is the more remarkable because in the Latin translation of the *Rosengarten* entitled *De partu hominis* there is a preface dated 1532 written by Christian Egenolph and addressed to Eucharius Rhodion which refers to the death of the father " cui bene sit in Domino cuju[s] hac urbe tu et nomen refers et functionem " In this work Rösslin acknowledges his indebtedness to the ancient writers Hippocrates, Galen, Rhazes Averroes Avicenna and Albertus magnus but the most important parts are taken from Soranus probably from a manuscript by Moschion (or Mustio) which itself was copied from Soranus word for word "

It is suggested by Gustav Klein that Rösslin edited the *Codex Palatinus Latinus* which was at that time in Heidelberg not far from Freiburg Worms and Frankfort where Rösslin lived Some of these manuscripts dating from the ninth to the fifteenth century were illustrated among the most interesting being the plates of the foetus *in utero*

Abstract of the second Lloyd Roberts Lecture delivered under the conjoint scheme of the Royal College of Physicians the Medical Society of London and the Royal Society of Medicine at the Medical Society of London on November 19th 1924

which, reproduced in the English translation, *The Byrth of Mankynde* (1540), were among the earliest copperplates published in this country. The figures have been often reproduced. One plate, not met with in the earliest manuscripts, shows twins grasping each other by the heel, thus was probably drawn by a monk in reference to the birth of Jacob and Esau. Rosslin also published some admirable original plates—namely, the dedication plate depicting the author presenting his work to the Duchess of Brunswick and Luneberg, a plate showing the midwife examining a parturient woman (Fig. 1), and a figure of the birth-chair.

It is stated by G. Klein that about a hundred editions of *Rosengarten* are known, three editions being published in 1513. He gives a reproduction of the title-page of the 1513 edition, printed by Grau at Hagenau, which shows a mother with her naked boy and a midwife holding a babe wrapped in swaddling clothes. The title-page of the 1524 edition is also given by G. Klein. It is a fine representation of the lying-in chamber, showing the midwife bathing the baby. The midwife sits with her bare legs in the tub, no doubt to make sure that the water was of a proper temperature—a useful practice adopted also by the Japanese midwives.



FIG. 1.—From a copy of the 1513 edition in the Library of the Royal Society of Medicine.

Under the title *De partu hominis* Rosslin's son published a Latin translation, of which, according to Klein, eleven or twelve editions appeared, the first in 1532. The title-page of my copy of the 1554 edition gives the representation of the lying-in chamber reversed from that in the *Rosengarten* 1524 edition, and some quaint woodcuts, depicting the feeding and tending of the child.

The *Rosengarten* was translated into English by Jonas under the title *The Byrth of Mankynde*, and published for the first time in 1540. A second amended English translation was made by T. Raynalde, who used the Latin edition of E. Rhodion the younger. The late Dr. J. W. Ballantyne wrote a very full account of the English work, giving illustrations from many of the editions. He had not had an opportunity of inspecting the first edition, which is very rare, the only three copies he had been able to find in existence being in the libraries of Professor Klein of Munich and the British Museum. The Royal College of Physicians now possesses fifteen copies (eleven editions) of *The Byrth of Mankynde*, of which eleven copies, including two of the rare first edition, came from the Lloyd Roberts collection. The celebrated plates of the position of the foetus appear in this edition, and not for the first time in the 1566 edition, as once stated by Dr. Ballantyne.

The *Rosengarten* contained little that was original, but it had the merit of being written in the vernacular, in which it could be read by midwives, in whose hands the practice of midwifery almost entirely lay. It was the first work dealing with obstetrics apart from medicine and surgery, and in its illustrations it gave for the first time printed figure of the birth-chair, the lying-in chamber, the position of the foetus at term, and of the feeding and tending of the child, as well as the first printed figure of the placenta. Of high interest and importance, also, were the woodcuts, including Rueff's and Ambroise Paré's.

Ambroise Paré's Obstetric Works.

The first of the obstetric treatises by Ambroise Paré entitled "La maniere de extraire les enfans tant vivans hors le ventre de la mere, lors que nature de soy peult venir à son effect" appeared at the end of his *Briefe collection anatomique*, published in 1551. His second treatise, "De la Generation de l'Homme tant des meres et modernes," was published as in octavo volume in 1573 under the title *Deux livres de chirurgie*, and was reproduced in 1575 in the first edition of the complete works of Paré.

In his "Maniere de extraire les enfans" Paré revived the operation of podalic version, which had been entirely neglected for many centuries. The operation had been practised in the time of Celsus, Soranus, and Philumena, but had found no place in the treatises of the Arabian physicians. Paré himself does not claim originality, but acknowledges that he had copied podalic version practised by Thierry de Hery and Nicolas Lambert, "master barbers and surgeons in this town of Paris." He also advises that the abdomen should be moderately bound and pressed down, the umbilicus, and the mother should be commanded to hold her breath at intervals by closing her nose and mouth, and that she should bear down as much as possible. Sternutatories may be given to aid in the expulsion of the child. He warns against pulling on the arms in presentation of the shoulder, for which he recommended, in certain neglected cases, amputation of the limb followed by podalic version.

Paré's reintroduction of podalic version after many centuries of neglect marks him as the master writer of the obstetric renaissance. His work was plagiarised by Franco in 1561, and attempts have been made in modern times to deprive Paré of credit by quoting from certain editions of his work. His obstetrics passed through many editions, and it was his practice to make alterations when additions to his knowledge called for them.

The work on *The Generation of Man* contains the anatomical and other figures, including the birth-chair, copied from Rosslin and Rueff. Paré published a figure of the caps for ulcerated nipples, which are still employed at the present day. I have in my library a work by T. Du Laurens (1565) with an autograph inscription by the author to Conrad Gesner, which recommends the application of cups or thimbles containing a few drops of pure wine to the nipples, to be worn during the last three months of pregnancy as a certain means of preventing cracked nipples. In criticism that some women or their husbands might object to the smell of the resin, Dunus replies that any such objection suffered from the *magnum malum*, cracked nipples, could tolerate the smearing not only of the nipples but of the whole breasts with medicines however obnoxious to the are examples, or such there are many, of the modern maternity cares by the Renaissance surgeons and also by Ortolan and Bouchacourt. He gives details of measurements of the foetus at term and of the movements of the child felt on palpation of the abdomen, described by Paré. He published a number of

instruments for the delivery of the dead child, and gave an illustration of the speculum matricis, an ancient instrument known to the Romans, also of instruments for the fumigation of the uterus. Of Caesarean section on the living he had seen disastrous results at the hands of Guillemeau, which caused him to write, "Je ne conseillerai jamais de faire tel œuvre ou il y a si grand peril sans nul espoir." It was in reply to this statement that his friend Rousset wrote the first work on Caesarean section *Hysterotomotokie* (1581).

The literature of the life and works of Paré is very extensive. As was the case with the founder of this lecture, there seems to be a doubt about the actual date of Paré's birth, the years 1509, 1510, 1514, 1516, 1517, 1528, having been given by various authors. Malgaigne states on the authority of Begin that "A. Paré was actually born in 1517." He would thus be 73, and not 80, as usually stated, at the date of his death. On St. Bartholomew's Day, 1572, "it was not reasonable that he should be massacred." King Charles IX. exclaimed after taking a shot with his arquebus at his less distinguished subjects, "il pouvait servir à tout un petit monde." This service Paré, the Reformer of Surgery, the Reformer of Midwifery, continued to render up to the time of his death in 1590—and his soul is marching on."

Scipione Mercurio's 'La Comare'

The first of the Italian writers for midwives was Scipione Mercurio who published his work entitled *La Comare o Ricoglitrice* in 1596. Scipione Mercurio was born in Rome about the year 1540. He studied medicine at Bologna and Padua, but soon devoted himself to theological studies and entered the Dominican monastery at Milan, where he took the name of Hieronymus. He still continued to occupy himself with the study of medicine, and finding his monastic life did not afford him sufficient opportunities for the practice of medicine he quitted the monastery and travelled in France and Spain in the years 1571 and 1572 as physician to a German officer, Hieronymus de Ladrone. On completing this journey he returned to Italy and practised with great success in Padua and Milan. He had studied in Bologna under the celebrated Arantius, of whom he speaks in the highest terms as "the most learned anatomist of his time and my very kind preceptor." He mentions a case in which he saw Arantius in the year 1578, deliver a living child by Caesarean section from a woman who had been killed in the ninth month of pregnancy. He states that Arantius had familiarized himself with the anatomical conditions of pregnancy by performing many dissections of gravid women. He had also seen Arantius demonstrate the hymen, the existence of which, except as a rarity, had been denied by Paré.

Scipione Mercurio states that in Toulouse he had seen two women who had been safely delivered by Caesarean section, which at that time (1571) was "as well known in France as bleeding for headache in Italy." He may be said to have introduced the operation of Caesarean section on the living woman into Italy, and published the first printed illustration of the operation.

Scipione Mercurio led a stormy and adventurous life, at one time travelling with a German officer, Ladrone in France and Spain, at another pursuing his theological studies, then abandoning these for the practice of medicine and again resuming them, finally settling in Venice, where he lived for fifteen years. He died about the year 1615 or 1616 according to Ghilini in Venice, according to Penazzi in Rome in the ancient Dominican convent of Santa Maria. His other writings show his great interest in medicine and he seems to have specialized in the practice of obstetrics. He had little faith in medical writers who lacked practical experience. If they did not like his work, let them do him the great favour of not reading it. Perhaps the less it pleased his critics the more it would please others. He acknowledged that he had profited by the works of others—he gives a list of 80 authors whom he had consulted—and says he could never pardon Aristotle for adopting the statements of Hippocrates without once mentioning his name. Any errors in the work he prays the Lord will enable him to see and amend, and begs his critics not to censure that which is written for a good purpose. Mercurio's writings show that he was a man of wide erudition, which he was wont to bring to bear upon his critics in pointed shafts of wit and learning.



FIG. 2.—Title page of the second and third edition. The first of the first edition was published in the Journal of October 21st 1921.

La Comare is the first work in which contraction or the pelvis is mentioned as an indication for Caesarean section. It contains a description and illustration of the "hanging-legs" position for delivery in cases of contracted pelvis which Walcher published in 1889 as something new, and of the position in which very fat women should be placed for delivery—a position which Osiander says even practised acrobats could hardly maintain for more than a quarter of an hour. There is also a description of the operation of bimanual version which is usually associated with the name of Braxton Hicks. Mercurio advised that the diet of pregnant women should be reduced one-third during the last three month.

The work is divided into three books. The first book deals with natural labour and the care of the pregnant woman and of the newborn child by the midwife. The

second book deals with preternatural labour (that is, with the child's hands, feet, or side presenting), and shows how the midwife should deal with these "difficult and dangerous cases." The third book deals with the maladies which may occur to the lying-in woman and newborn child, and teaches the midwife how to treat these maladies in case the patients do not wish or are ashamed to call in a doctor.

Von Siebold, in his *Geschichte der Geburtshulfe* (1845), says *La Comare* was first published at the beginning of the seventeenth century—Haller gives the date of the first edition (which he had not seen) as 1604. Quetif and Echard, the biographers of Mercurio, speak of an edition which appeared before 1600, but leave the matter doubtful.

The first edition actually was published in 1596, the second and third books being dated 1595. That *La Comare* is a *cinque cento* book was first made known by Davidson of Breslau in 1864. A few years ago I was fortunate enough to obtain a copy of this edition, which is very rare, only three other copies being known to exist. Fasbender says there were seventeen editions of the work, and Curatulo gives a short account of these seventeen editions. I possess two editions (1680 and 1686) not mentioned by Curatulo, and these, with the 1713 edition in the Lloyd Roberts collection of the Royal College of Physicians, bring the number of the editions of *La Comare* up to twenty.

The first edition, *La Comare o Ricoglitrice*, Venice, G. B. Ciotti, 1596 (second and third book dated 1595), quarto, is very rare. There is a copy in the Marciana Library at Venice, another in the library of the Arcispedale in Florence, a third in the Alessandrine Library at Rome, and a fourth copy is in my possession. There are some good anatomical figures from copperplates by Franciscus Valgrisius. The other figures are rough woodcuts. I have given a reproduction of the title-page and some other figures from this edition in the Harveian Oration (1921).[1]

The second edition, *La Commare o Ricoglitrice*, Venice, 1601, G. B. Ciotti, is also rare. The second book has no separate title-page. The third book is dated 1600. There is a remarkable title-page (Fig. 2) to this edition, which is dedicated to Octavian Malipiero, the stemma of whose family is given below, and above is a portrait of Catherino Malipiero, who fell while engaged in sinking the Turkish fleet at the battle of Lepanto (1571), in which Cervantes was wounded and lost the use of his left hand. At the sides of the title-page are figures of Scipio Africanus ("bellicæ gloriæ") and Cato of Utica ("reipublicæ splendori"). The artist is not named, but a comparison with his other work shows that the plate was engraved by Valgrisius.

The third edition appeared in 1606 (title-page is in second edition, dated G. B. Ciotti 1601). In his dedication (of the first book) to Octavian Malipiero the author signs himself Girolamo Mercurio Romano, "from the convent of S. Eustorgius at Milan, 30th October, 1604," and states that this is the third edition, "ristampata la terza volta" (reprinted for the third time), which really means *printed* for the third time, for he adds that he dedicates it to Malipiero with the same affection as he did the second impression ('la seconda impressione'). The second book has Ciotti's "Minerva" printer's plate and is dated 1606. The third book has similar title-page and date (1606) to the second. This edition is sometimes called the 1604 edition (for example, by Curatulo) and was thought by Hall to be the first edition. The title-page is that of the second edition, and, although the dedication is dated 1604, the dates on the title-pages of the second and third books show that it did not appear till 1606.

William Harvey's "De Generatione Animalium"

The renaissance of midwifery occurred later in England than in Germany, France, and Italy. It had made some progress as a result of the appearance of translations of the works of Rhodion and Paré, but no original book on the subject had been published until 1651, when Harvey published his *De Generatione Animalium* with the chapter "De Partu" which justifies Aveling's designation of Harvey as the Father of British Midwifery. I have elsewhere[2] given a detailed account of Harvey's contributions to embryology and midwifery, and have pointed out the teachers at Padua who had specially written on those subjects. Spach's third edition of the *Gynaecia*—a collection of ancient and recent writers on gynæcology—had appeared in 1597, and the first edition of *La Comare* had been published in 1596, four years before Harvey went to Padua to study. Scipione Mercurio had himself practised obstetrics at Padua, and it was probably the great attention devoted there to obstetrics and the appearance of *La Comare* (the second edition was being prepared when Harvey joined the university) which stimulated Harvey to emulate the Paduan obstetrician by writing his "De Partu," the first original English work on midwifery.

The *De Generatione Animalium* consists of seventy-two "exercitations," followed by chapters on "labour," "the membranes and humours of the uterus," and "the conception." The first (Latin) edition, printed in London, 1651, contains a striking title-page representing Jove sitting on a throne and opening an egg from which various animals are escaping; on the egg is printed "ex ovo omnia," a pregnant generalization which Harvey made as a result of his researches on generation. The legend is omitted from the egg in the first Amsterdam edition (Leers, 1651).

The first English edition appeared in 1653 with a portrait by Pelham, which is often missing. It is one of the best of the engraved portraits of Harvey.[3]

Prefixed to the first English edition is a laudatory ode to "the incomparable Harvey" signed M. LL. M.D., which stands for Martin Llewellyn, M.D. The English edition is written in quaint and spirited language and was probably produced under the supervision and with the approval of Harvey, who lived for four years after its appearance.

The great and original merit of Harvey's work on generation lies in the careful and methodical observation and record of the embryo and fœtus at all stages. Harvey did for development what the illustrious Paduan professor Morgagni subsequently did for disease in his *De sedibus et causis morborum* (1761). The chapter on labour ("De Partu") deals with the subject from a scientific and practical point of view. The scientific part consists in criticism of previous opinions on the anatomy and physiology of the fœtus and on parturition based on his own observations. The practical part gives evidence of extensive personal experience in midwifery, and is in the main devoted to the recommendation of patient watchfulness and gentleness, imitating Nature, in ordinary cases and podalic version in different ones.

England was not only the last of the great countries to produce a writer on midwifery, but was equally tardy in the recognition and regulation of its practitioners. In 1616, the year in which Harvey was propounding his immortal discovery of the circulation of the blood, Peter Chamberlen II. made a petition to King James that some order might be settled by the State for the instruction and civil government of midwives, but nearly three hundred years were to elapse before the desirable result was obtained in the Midwives Act (1902), through the persistent efforts of the Obstetrical Society of London. Harvey inveighs against the meddlesome officiousness of the midwives. Another distinguished obstetrician, his friend Peter du Willughby, writes more fully of their shortcomings and misdeeds, and testifies to the value of Harvey's teaching.

The first books on obstetric renaissance in Germany, France, Italy, and England achieved their object of being widely read by midwives, as we learn from the history of Louise Bourgeois and Justine Siegemundin. The books introduced them to the wisdom of the ancient writers, and, in the cases of Paré and Mercurio, to methods of treatment which had been long neglected and forgotten. England was fortunate in having, as the Father of English Midwifery, Harvey, who introduced into that branch of medicine the wide view, the scientific spirit, and the conservative practice which have been its characteristics. It was Harvey's inculcation of patience and gentleness in imitation of Nature, adopted by Smellie and Hunter, which made such a strong impression on Boer, the founder of the great

[1] British Medical Journal, October 21st, 1921, p. 623.
[2] *Loc. cit.*

[3] The latest portrait is a "white line" wood engraving of the Canterbury portrait by Horace Gerrard, the first pull from this plate is in the library of the Medical Society of London.

Viennese school of midwifery, who, after studying in France and England, adopted the British practice 'having learnt in France what Art, in England what Nature, could do"

The purely British operation of induction of premature labour for cases of contracted pelvis can be attributed to the same conservative spirit And if we add the discovery of the foetal circulation by Harvey, of the forceps by Chamberlen of chloroform by Simpson, and of the antiseptic system by Lister, we may claim for British medicine that though it was last in producing a writer on obstetrics it has not been least in conferring benefits on parturient women

ENCEPHALITIS LETHARGICA

BY

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WHEN I had the honour of addressing this society on the subject of lethargic or epidemic encephalitis in December 1918 our interest was aroused by the recent outbreak in our midst of a disease which we regarded as a stray visitor, whose sojourn might not unreasonably be expected to be of short duration, and whose back we should not be sorry to see Events have not justified this expectation as our guest is still outstaying his welcome and shows as little inclination to take his departure as we can show of ability to expedite it

At the end of six years his role has changed from that of a casual, unwelcome visitor to that of a resident pest providing a serious menace to the health of the community It is not to be wondered at that a disease which has so insidiously and so successfully established itself should present many points of interest for discussion It is somewhat humiliating to our professional pride that we have not only so far failed to check its progress but that we are still without the knowledge necessary to achieve that object Before 1918 the term 'encephalitis' was reserved almost entirely for an acute specific inflammation of the brain to which children or young adolescents were liable and of which the cause was the virus of poliomyelitis To-day the young and old of both sexes are exposed to the danger of contracting another inflammatory disease of the brain, sometimes acute, at other times subacute or chronic prolific in its clinical manifestations, disabling if not fatal in its results difficult to diagnose and almost defiant to treatment and prognosis It is true that its microbic origin seems to be fairly determined that its morbid anatomy has been studied in great detail and that its clinical features have formed the theme of innumerable papers and monographs, but of its path of approach, of its methods of dissemination, and of any weapon with which to stay its hand our ignorance is still profound

Remembering as we must, that the secrets of medicine are rarely divulged without the laborious study from all available standpoints of every feature of a disease which presents itself there is no need to be discouraged The more profound and the more detailed our knowledge of a disease in all its aspects the more likely are we to solve the mystery of its origin and the problem of its prevention

In opening this discussion to night I shall make no attempt to deal with all the problems presented by epidemic encephalitis which are of interest and which deserve consideration both from clinical and pathological points of view I shall content myself with directing attention to one or two questions which are difficult to answer and which have important practical bearing confident that those who follow me will more than make up for my omissions

So much has already been written in regard to the clinical manifestations of encephalitis in the acute stage that it is hardly necessary to point out that the disease has no real characteristics in the way of symptoms or physical signs by which it can be recognized Since any function of the brain may be disturbed it is obvious that a whole multitude of different symptoms and physical signs may be presented The diagnosis depends on a careful consideration of the history of onset the course of events and on the exclusion of other morbid processes which are capable of producing similar disturbances of function We are not in possession of any serum or other chemical test by which the disease can be detected and although examination of the cerebro-spinal fluid is often helpful in a negative way by eliminating other diseases it cannot be said to afford us a cytological or chemical picture which is entirely pathognomonic

Although there are so many difficulties in the diagnosis of the acute disease they do not present nearly so serious a problem as that involved in the detection of what may be called the ambulatory form or encephalitis And yet the importance of this ambulatory form in regard to its subsequent developments is becoming more and more impressed on our minds as time passes by We are constantly being confronted now with serious disorders of the central nervous system in patients whose history alone offers a clue to the origin of their troubles and in this way we are gaining some insight into the clinical features which characterize the ambulatory form of the disease

I could cite a number of examples in which serious and disabling disturbances of the nervous system have followed what appeared to be a very minor illness which has been regarded as influenza or even as an ordinary catarrh

In July of this year I was consulted by a man 37 years of age who in the latter part of 1919 suffered from a short illness characterized by slight fever headache and general pain insufficient to prevent him from carrying on his duties in the army In 1920 he pursued his ordinary life but complained that he was drowsy all day and restless at night and about that time began to suffer from attacks of dyspnœa which were of frequent occurrence during the next two years In August 1922 he first noticed some tremor of the right arm and a slight generalized rigidity which he described as preventing him from ever sitting at rest in comfort These symptoms slowly increased writing and shaving became difficult and he occasionally suffered from headaches of mild severity When I saw him in 1924 he was still working but suffered from a frequent desire to lie down and sleep and found the performance of his duties involved a great effort On examination he presented all the characteristic features of the post-encephalitic Parkinsonian syndrome

A somewhat similar case is that of a man of 53 who in December 1922 suffered from what was regarded as a bad cold which kept him away from work for a fortnight During that time he noticed that he was slow and shaky in his movements and inclined to bend forward in walking He returned to work at the end of fourteen days feeling queer but able to carry on for about three months when he developed an access of great loss of confidence out of doors with a tendency to fall backwards He rapidly became slower and more clumsy in his movements was hardly able to dress himself and failed to do himself justice in his work When I saw him in October 1923 he presented the appearance of a patient suffering from paralysis agitans as well as other disorders of cerebral function including a slight degree of memory aphasia and impairment of his capacity to recognize objects placed in his right hand with his eyes closed There was considerable exaggeration of all his tendon jerks and his plantar responses were extensor in type

In considering the history of these two patients it is difficult to see on what grounds a diagnosis of a serious disease of the central nervous system could have been made at the time when they were first taken ill They may perhaps be regarded as somewhat exceptional because in the majority of cases of ambulatory encephalitis it is possible to obtain a history of some symptom pointing very definitely to organic disease of the nervous system by far the most common being a transient diplopia which not infrequently is present only during a few hours or a few days

There are other symptoms which might well arouse a suspicion of encephalitis in patients suffering apparently from some minor ailment I may refer to the occurrence of an acute pain affecting a limb or perhaps the face or neck generally labelled as a neuralgia or a rheumatism of great severity but generally lasting a few hours four hours or at the most two or three days I have frequently observed such attacks of acute pain in cases of severe encephalitis in which the diagnosis has not been in doubt but they also occur sufficiently often in the ambulatory form of the disease to be worthy of note in relation to diagnosis

A paper read in opening a discussion at the Medical Society of London on November 10th.

A lad of 20 in the early part of this summer suffered from severe pain in his left arm and leg which lasted for twenty four hours and was associated with some slight malaise sufficient to keep him away from his employment for three days On returning to work at the end of that period he found himself inclined to sleep in the train while going to his job and was very sleepy while at work This drowsiness continued, and at the end of a fortnight he was troubled by diplopia for a period of forty eight hours During this time his relatives noticed that he was completely altered in temperament, having become depressed and morose and quite unlike himself He was inclined to be restless at night and to sleep in the afternoon When I saw him, at the end of ten weeks, he presented no definite physical signs of organic disease, but he was still quite unfit for any serious mental or physical exertion, being very easily tired and still much depressed I saw him again about three months later, when he still complained of insomnia at night and inability to walk more than a mile without fatigue Examination on this occasion revealed the presence of some lack of expression on the left side of the face, which gave rise in my mind to a strong suspicion that he was developing a Parkinsonian syndrome

While on the subject of the more obscure and slight forms of encephalitis attention should be directed to the great difficulty which may sometimes present itself in making a diagnosis between encephalitis and early disseminated sclerosis I cannot indicate this difficulty better than by recording an experience which I had in March, 1921, when there was a severe epidemic of encephalitis in London

I was asked to see a lady, aged 40, who gave me a history that about a month before I saw her she had noticed diplopia followed ten days later by a feeling of numbness over the left side of the face and by a suspicion of difficulty in articulation She thought that her memory had not been quite so good as usual, and she had suffered on several occasions from nocturnal enuresis For a few days she had been feeling rather unsteady on her legs On examination there was very slight right sided ptosis with some nystagmus on deviation of the eyes to the right side only Sensibility over the skin area supplied by her left fifth nerve was impaired, and she complained that she had lost her sense of taste There was very slight unsteadiness and awkwardness of her hands when her eyes were shut but she complained of no difficulty in ordinary manipulations The right abdominal reflex was less brisk than the left The right knee jerk was somewhat more brisk than the left and the right plantar response not so frankly flexor as that obtained in the other foot

It appeared to me that the clinical features presented by this patient could be attributed equally well to encephalitis or to disseminated sclerosis but in view of the prevailing epidemic I inclined somewhat to the former diagnosis I saw her again in July, 1921, when she expressed herself as being perfectly well, and my examination then revealed no disorder of the nervous system The ptosis nystagmus, and awkwardness of the hands had completely disappeared and her reflexes were perfectly normal This patient remained quite well until the summer of 1923, when she suddenly became unsteady on her legs, developed marked dysarthria with dimness of vision in her left eye She then presented nystagmus in both directions pallor of the left optic disc, weakness of the left side of the face and tremor of the right hand Her tendon jerks were increased the abdominal reflexes had disappeared, and the left plantar response was distinctly abnormal

I have no doubt that this patient is suffering from disseminated sclerosis, and the rapid improvement which took place in regard to these later symptoms was only in conformity with what one expects in that disease

I do not propose to take up your time with a description of the sequelae which have been so often observed after acute attacks of encephalitis, as these have been the subject already of many discussions and many papers, but there are one or two points in connexion with these late developments which deserve further consideration They have a most important bearing on the question of prognosis, and any information which can help to make prognosis easier is worthy of note

In the present state of our knowledge only a very courageous or very ignorant doctor would willingly assume the rôle of a prophet when faced with a case of acute encephalitis lethargica in the first week or two of the disease In such a position one is only justified in pointing out the various possibilities which the future holds for the patient, and these possibilities, which are numerous, may be briefly summarized in the following way

1 The patient may recover within a reasonable time and suffer from no subsequent ill effects

2 The patient may die in the acute stage of the disease

3 The patient may live, but remain permanently more or less disabled as the result of the disease

4 The patient may make an apparent recovery and yet relapse after a period which may vary from a few weeks to a few months, or perhaps even longer

5 The patient may make a more or less complete recovery, and yet after a variable interval develop one of the slowly progressive sequelae which are now well recognized as legacies of lethargic encephalitis

The position of the prophet is, therefore, obviously not an enviable one, and any attempt to make his task easier can at present be based only on insufficient and unreliable data Some comments are, however, perhaps justifiable in this connexion The more acute the onset and the more fulminant the outbreak of symptoms, especially when associated with high temperatures, the more serious is the outlook in regard to a speedy fatal termination Unfortunately it cannot be said that the milder initial stages are in any way exempt from the possibility of being followed by serious and permanent disablements of a progressive character, nor from the possibility of a complete recovery being followed by a more severe and possibly fatal relapse after a few weeks or months On the other hand, there is no doubt that many mild cases make good recoveries without further developments The difficulty of prognosis depends on the fact that we are without criteria which would enable us to pick out the more hopeful cases I cannot help thinking that a much longer experience of this disease is still necessary before we can arrive at reliable statistics in regard both to mortality and to permanent disability Personally I should be very sorry to attempt to reckon the probabilities in regard to the results of the disease in any kind of figures or percentages

One of the many interesting points worthy of discussion to-night is the question as to how far late developments can be regarded as true relapses, as merely indirect consequences of a morbid process which has ceased to be active, or, in rare cases, as examples of fresh infection I have in mind patients who appear to be examples of these three occurrences For instance, I recall a man about 50 years of age who, after a few days of ill health, suddenly passed into a state of unconsciousness, rapidly followed by a delirium which lasted for about seventy-two hours, and, recovering from this, he suffered for another week or two from severe headache, diplopia, and a certain amount of mental confusion A gradual convalescence set in which was rudely broken at the end of about three months by the onset of severe headache, hemianopia, and other active cerebral symptoms, which proved fatal in the course of about three weeks On the other hand, I have in mind the case of a lady whose initial illness in the winter of 1918-19 was characterized by slight pyrexia, diplopia, lethargy, and myoclonic movements, but who made, apparently, a complete recovery and remained in her normal condition for a period of five years At the end of that time she was again seized with diplopia, pyrexia, headache, and rapidly increasing clouding of consciousness, and died after an illness which only lasted three or four days The particular interest in this case lies in the fact that a thorough *post-mortem* examination was made, and that the evidence of old as well as recent inflammation was detected in the course of the microscopical examination of the brain tissues Attempts, however, made by Dr Greenfield to inoculate animals with the virus from this patient proved entirely unsuccessful We are left, therefore, quite unable to decide whether the fatal attack should be regarded as a long-delayed flare-up of the initial inflammatory process or whether it was the result of an entirely fresh infection in a patient whose acquired immunity, if there be such a condition in relation to this disease, had faded out It may be noted incidentally that the second attack occurred at a time when cases of encephalitis were extremely prevalent

While discussing the question of prognosis it may not be out of place to refer briefly to a question which is not infrequently put to us in regard to the duration of particular symptoms, and I should like to refer especially to the prospects of a patient who, after all other symptoms of the disease have disappeared, still suffers from myoclonic contractions In this connexion it is worthy of record that a medical man who suffered from an acute attack of

encephalitis in 1916, was still suffering from frequent bouts of myoclonic contractions in his trunk muscles when I examined him in 1920 When I last saw him a year ago the movements had nearly ceased, and only reappeared from time to time when he was overtired He was then, and still is, leading a very strenuous life in general practice and is in no way disabled I was consulted in regard to his qualification for a life insurance policy and expressed the opinion, which was accepted by the office that he might be taken on at ordinary rates This opinion was expressed as the result of my experience that the persistence of myoclonic contractions should not be regarded as an unfavourable symptom from the prognostic point of view I might even go further, and say that even in acute cases the presence of severe and widespread involuntary muscular contractions is not necessarily of grave omen

The sequelae of encephalitis are worthy of close study from an academic point of view on account of the light which they may help to throw on the localization of cerebral functions I do not propose to make any comments on the striking changes in temperament and behaviour which are well known to follow in the train of this disease, but I should like to draw your attention to some interesting phenomena which not infrequently are associated with the post-encephalitic Parkinsonian syndrome Only a few weeks ago I had the opportunity of discussing with an intelligent patient suffering from that condition the alterations which had taken place in what one might call her everyday experiences She complained that in addition to her general slowness of action she was still inclined to drowsiness and to attacks of uncontrollable yawning While she could detect no impairment of memory, nor of her ability to grasp subjects in which she was interested, she was much handicapped in her daily activities by attacks of what she called 'shortness of breath" which on further analysis she described as periods during which she had to breathe consciously She remarked that the same attention was necessary for deglutition and that she could only sip her tea because each mouthful had to be swallowed by a conscious effort, the actual process causing her some annoyance because of its noisiness She presented, what is so common in these patients, considerable impairment of the power to converge and accommodate, which prevented her from reading for any length of time In regard to her rigidity she explained that she could relax her muscles voluntarily, but as soon as she stopped thinking about it the muscles became screwed up again The reason why she liked to have massage was that she got *tired of the feeling of muscular tension and that rubbing* relieved it and served to some extent to prevent attacks of cramp She also described a curious habit which beset her when she was standing in the erect position Her weight was constantly being transferred alternately from one foot to the other unless she directed her attention to it So long as her attention remained fixed on the idea of standing still she was able to do so, but the moment her mind was distracted the movement of transferring her weight from one foot to another returned

The cases presenting the Parkinsonian syndrome appear to illustrate a pathological condition in which many functions purely automatic in normal health can no longer be aroused to activity except under the influence of the higher centres, and it is not surprising that patients suffering in this way find that the burdens and duties of life have been materially increased by their illness

We are accustomed to associate this Parkinsonian syndrome with lesions of the basal ganglia, and it has possibly struck some of us as being rather curious that with few exceptions the progressive sequelae of encephalitis take this form Is it not possible that there are other progressive sequelae of the disease occurring less commonly and perhaps not yet recognized? During the last three or four years I have been faced by a number of cases of progressive hemiplegia, generally starting with a disability of one limb, which spreads first of all to the other limb and face on the same side and then appears in the limbs of the opposite side finally producing the picture of a double hemiplegia In these cases the disability is mainly a motor one, but is not infrequently accompanied by slight sensory disturbances of cortical origin This condition has appeared in patients with no arterial changes and therefore could not be ascribed to a progressive defect in cerebral circulation The process has been associated with headache vomiting or optic neuritis, but the absence of any signs of increased intracranial pressure has not deterred me in one or two instances from advising an exploratory operation of the brain When this has been done no gross changes have been visible and I am beginning to suspect that the progressive disability may be the legacy of unrecognized encephalitis and characterizes a group of patients comparable to those presenting the Parkinsonian picture In the latter case the chief incidence of the disease is on the basal ganglia, and in the former a similar process may be operative on the cerebral cortex In a few of these cases I have noted the occurrence of an illness, regarded as influenza, preceding the onset of the symptoms referable to the central nervous system but I have not sufficient evidence at the present time to do more than suggest the explanation I have indicated as a possible solution of the problem they present

It may be that the advent of encephalitis in an epidemic form—and it is difficult to believe that it is a disease entirely new to us—may in the long run throw light on the etiology and pathogenesis of some obscure disorders of the brain notable for psychological and physical disabilities At any rate there is no need to apologize for having devoted much of your time and mine this evening to a study of the dire results which are apt to follow comparatively trivial disturbances of the nervous system The practical lesson to be learnt from our experience of the last few years is that no minor ailment involving definite evidence of organic nervous lesions, however slight, should be treated with anything but the greatest consideration It cannot be stated as a proved fact that with more rest and care in the early stages of mild encephalitis late serious developments may be prevented, but on general principles such an expectation is certainly permissible Inactivity is an essential part of the treatment which we employ for inflammation in any part of the body, no exception to this rule can be justified in the case of our most highly specialized, most delicate, and yet most valuable tissues

ANEURYSM OF A BRANCH OF THE RENAL ARTERY RUPTURE NEPHRECTOMY. RECOVERY

BY

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SPONTANEOUS aneurysm of a branch of the renal artery as a source of symptomless haematuria is so exceedingly rare that the following case seems to be worth recording

A married lady aged 47 was brought to me by Dr Bower Jones of Carmarthen in December 1918 She had been suffering from very severe haematuria for three weeks and was getting rapidly worse in every way There was no history of recent injury or illness The bleeding had begun suddenly It was of a profuse and continuous that it was thought at first to come from the uterus later it became intermittent and clearly came from the bladder during micturition There was no history of renal pain or colic nor was there any palpable enlargement or tenderness of either kidney A complete x-ray examination failed to reveal any urinary calculus Cystoscopy was difficult owing to the large amount of blood clot in the bladder but ultimately it was proved that the blood came in large quantities from the left ureter and that normal urine issued from the right

As the patient was very ill and bloodless the left kidney was explored without delay through the usual oblique incision in the loin It was found to be enlarged adherent and deeply congested its pelvis was greatly distended with blood No stone could be felt in the latter nor in the kidney The pelvis was incised and bright red blood rushed out and a finger introduced failed to find any tone or other cause for the furious bleeding the nephrectomy was performed at once The patient made a good recovery but he took a long time to recover from the severe anaemia She has remained in good health and is well over six years later

Upon opening the kidney and its pelvis from end to end the streaks of altered blood and an infarct were seen in the renal substance, and a ruptured aneurysm the size of a

large pea, was found partly on the surface of one of the lower renal papillæ. It arose from one of the intrarenal branches of the renal artery. It is unfortunate that, owing to the pressure of military surgery, the specimen was not preserved.

Aneurysm of the renal artery is very rare. M. J. Conroy[1] estimated from *post-mortem* records that only about 1 per cent. of all aneurysms affect this artery. Sir Henry Morris,[2] in 1900, was able to collect the records of only 21 cases, and two-thirds of these were traumatic in origin. Conroy, in 1923, succeeded in adding 11 cases, but he overlooked 3 cases published by David Newman[3]—making 35 in all. Two of Newman's cases were very like the one recorded here, for they were spontaneous in origin, saccular, and situated within the kidney or its pelvis. One of these arose in the renal artery itself, and the other, like mine, originated in one of the large branches of this artery. It is clear that this type is not easily recognized even when the kidney has been exposed in order to find and stop a painless hæmaturia which threatens life. It is probable that small aneurysms affecting the branches of the renal artery have been overlooked even after the kidney has been removed, either during life or after death. It would have been easy to miss the small aneurysm which caused so much mischief in my patient.

Apart from hæmorrhage, these intrarenal aneurysms cause no symptoms or signs and are only found after death from some other disease.

Ætiology

We are not concerned here with traumatic aneurysms of the renal arteries, which are due to contusions, lacerations, rupture, wounds, or operations upon the kidney. The cause of *spontaneous aneurysms* is the same here as elsewhere. Atheroma, syphilis, embolism, or infection appear to have been the causes in the few recorded cases, in my case there was no evidence of any of these. The average age of the seventeen known cases of spontaneous aneurysm was over 40. A little more than half of them arose from *branches* of the renal artery.

Symptoms and Signs

Spontaneous aneurysms are usually small in size, remain intact and give no clinical signs, but when they rupture into the pelvis "symptomless hæmaturia," which is generally very profuse and either intermittent or remittent, occurs. This is in striking contrast to traumatic renal aneurysms the majority of which cause large tumours in the loin and much pain with or without hæmaturia.

Diagnosis

The diagnosis of spontaneous renal aneurysm depends chiefly on the great severity and recurrence of the painless hæmaturia, the absence of any history of injury, and the absence of the shadow of a renal calculus. It is interesting that in several cases (including my own) the bleeding was so severe that it ran continuously out of the urethra, so that its source was at first thought to be uterine. Several cases have needed a catheter because clots blocked the urethra. Cystoscopy, after washing out the bladder, proves the absence of vesical growth, and the issue of blood from one ureter indicates that the source is in the corresponding kidney. Newman, in two cases, noticed what he regards as a diagnostic sign—that is, "when interrupted pressure was made with the kidney between the hands—one behind and another in front—every time pressure was made a quantity of blood was seen to flow into the bladder, and when the pressure was withdrawn the flow ceased. This is found in no other condition." This sign, in his opinion, should distinguish renal aneurysm from all other causes of severe hæmaturia.

In my case the blood escaped continuously and with great force during the cystoscopic examination. I have not noticed such forcible and profuse bleeding even with renal neoplasm, which, by the way, often forms a palpable renal tumour—which spontaneous aneurysm rarely does.

Treatment

Without operation the prognosis of bleeding renal aneurysm, either traumatic or spontaneous, is very grave. An early operation offers the only reasonable chance of recovery. Hitherto nephrectomy has been adopted in all but one of the successful cases. Orth,[4] operating for traumatic aneurysm, turned out the clots and successfully sutured the tear in the renal artery, but as a rule the condition of the kidney in these traumatic cases is so bad that nephrectomy is necessary. Before removing the kidney it is necessary to prove the presence and activity of the opposite one.

So far the diagnosis of spontaneous aneurysms in the kidney has been so uncertain and incomplete that in the few recorded cases nephrectomy has always been adopted, and on the whole very successfully. With the aid of a pedicle clamp after delivering the kidney, incising the pelvis should enable us to make an accurate diagnosis of an aneurysm in a branch of the renal artery, and to remove the aneurysm, which is usually quite small, without any loss of blood. It would be a great advance to save the kidney in this way, but it is probable that in some cases the aneurysm may not be discovered, and possible that, in a few, another small aneurysm may be present in the kidney or subsequently develop in diseased arteries to give recurrence of bleeding.

Whatever operation is performed, these patients are usually so ill and anæmic that blood transfusion must be done in order to give them the best chance of recovery.

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A PLEA FOR THE EARLIER OPERATIVE TREATMENT OF ACUTE OTITIS MEDIA

BY

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There is, in my opinion, no branch of surgery more neglected than the treatment of acute otitis media. Almost every day one meets with cases where an acute inflammatory condition of the middle ear has been allowed to progress until a state of chronic suppuration, with all its attendant sequelæ, has resulted. Probably many factors contribute to this unfortunate result, but chief amongst them are, first, the ignorance of the general public, secondly, the lack, until quite recently, of compulsory training with examination of the medical student in the diseases of the ear, and lastly, the fact that, except in a few cases, a visiting otologist is not recognized as a necessary member of the staff of a large fever hospital.

The exanthemata are responsible for the majority of the worse types of suppurative middle-ear disease, and it is at their inception that so much can be done to prevent a progressive and chronic disease. It is to be hoped, therefore, that in the near future local authorities will see the wisdom of following the example set forth by a few of our large fever hospitals in appointing visiting otologists.

Given a case of acute otitis media, how should it be treated? All are agreed upon the value of an early incision of the tympanic membrane, and yet I wonder how often it is advised, judging from the large number of "running ears" where no such treatment was adopted. The ear is syringed, hot applications applied, and the appearance of pus in the meatus anxiously awaited. It is too frequently thought that when pus appears all is well, but Nature's perforation of the tympanic membrane is in practically every case a tension rupture—that is to say, the increased intratympanic pressure, from the accumulation of inflammatory products, is ultimately relieved by a bursting of the membrane.

The tympanic membrane is capable of withstanding a high degree of pressure, and in many cases, before the membrane ruptures, the increased intratympanic pressure has disseminated the infection into the posterior end of the middle-ear cleft—the mastoid antrum. Moreover, the perforation is small, usually on the summit of what was a bulging part of the membrane, and

therefore frequently most disadvantageously placed for the efficient drainage of the tympanum By early paracentesis efficient drainage can be established, the risk of spread of infection to the mastoid antrum materially lessened, and, in the vast majority of cases, pain immediately relieved It is an operation devoid of risks in the hands of those accustomed to aural surgery, can be performed under short anaesthesia, and gives excellent results both as regards preservation of hearing and resolution of infection

In the majority of cases so treated there is rapid cessation of the discharge which often is only serous, and the middle ear is generally dry at the end of ten to fourteen days, if not earlier In a few cases, however, this excellent result is not obtained, and in spite of timely paracentesis the ear continues to discharge profusely Two factors contribute to this result—namely the extreme virulence of the infection, particularly the type of organism and the presence of some meatal obstruction hindering drainage Infections due to the streptococcus or influenza bacillus are very prone to spread to the mastoid antrum Further, in some cases, perhaps by reason of the virulence of the infection, there is marked inflammatory swelling of the external auditory meatus This if occurring in a meatus congenitally narrow, considerably hinders efficient drainage of the middle ear

It is commonly believed that the only necessity for any operative treatment is when pain, tenderness on pressure or swelling behind the ear develops The development of such signs and symptoms may almost be regarded as a godsend, for then the case is efficiently treated and convalescence with cessation of discharge assured

The anatomical structure of the mastoid process decides whether pain, tenderness etc appear early or not They are evidences that the inflammation has spread so far as to involve the mastoid periosteum In the cellular type of mastoid process they frequently become manifest early, but in the acellular dense or sclerotic type they may be considerably delayed if they ever develop

There are, however, other earlier signs of involvement of the mastoid antrum—namely bulging and redness of the postero-superior part of the tympanic membrane and the adjacent portion of the posterior wall of the external auditory canal To appreciate this sign however requires some special training I would therefore urge that the persistence of suppuration after ten to fourteen days in spite of early paracentesis especially if associated with some inflammatory stenosis of the meatus is, even in the absence of pain, tenderness, or swelling an indication that something more than local medication is required and that the mastoid antrum should be opened, disinfected and drained

If such a procedure be not adopted the case may pursue one of two courses either the condition gradually progresses until the mastoid antrum and process is involved, demanding immediate operation, or there is gradual resolution of the discharge during several weeks until finally the patient declares that the ear is dry and he is quite well In some such cases we find that the perforation has healed and the membrane is intact, but permanent damage may have been wrought The membrane is frequently scarred opaque thickened, indrawn, and adherent to the inner wall of the tympanum, permanently impairing audition if not also producing other distressing symptoms such as tinnitus and vertigo In other cases, though the membrane may appear to be normal in texture and position, the hearing is defective, owing to adhesions around the ossicular chain or thickening with fibrosis of the muco-periosteum around the labyrinthine windows These changes are the result of long-continued inflammation causing excessive cellular exudation into the muco-periosteum, with ultimate fibrosis and sclerosis, and are permanent, no treatment being of any avail This class of case swells the out patient clinic and is distressing to see, particularly in view of the fact that so little can now be done, whereas so much was possible at an earlier date

Lastly it may be discovered that the perforation has not healed is still moist, although the patient on interrogation is quite convinced of the absence of any discharge This class of case often has remarkably good hearing, but he is the patient who frequently first seeks advice because of the sudden onset of some intracranial complication

If we wait until there are external evidences that the mastoid process is involved before resorting to operative treatment—a delay which may extend over a few weeks—then the pathological changes above described ultimately ensue, with some permanent impaired audition

Early Drainage of the Mastoid Antrum

By early drainage of the mastoid antrum I do not mean the so-called radical mastoid operation in which the tympanum, aditus, and antrum are thrown into one cavity, but the simple operation of exposing the mastoid antrum, curettage of its walls, disinfection of the interior with bipp, and primary suture of the incision

In 1921 I reported jointly with Mr Gilhespy the results of a series of cases so treated The average duration of stay in hospital after operation was twelve days At the end of this period there was no otorrhoea except in one case which was an acute exacerbation of a chronic suppuration necessitating a radical mastoid operation These cases examined one year or more after treatment showed an intact membrane with normal hearing Such results as these are shared by many and only go to prove the good results obtained by early operative treatment

I have frequently resorted to early exploration of the mastoid antrum in cases of persistent discharge with no gross lesion of the mastoid, and have had no reason to regret it It is an operation almost devoid of risk and followed by speedy healing and convalescence since the introduction of bipp it gives gratifying results both as regards cessation of discharge and preservation of hearing

There is in my opinion no greater field for the fulfilment of the principles of preventive medicine than in the treatment of acute otitis media—once deafness is established no known treatment is of any avail

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PROCEEDINGS OF SECTIONS AT THE ANNUAL MEETING, BRADFORD, 1924

SECTION OF PATHOLOGY AND BACTERIOLOGY

Professor C H Browning, M D, President

MULE SPINNERS' CANCER AND MINERAL OILS

BY

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No less than 20 per cent of the fatal cases of cancer of the scrotum in this country occur amongst cotton spinners

By courtesy of the Registrar General for England and Wales we have had access to unpublished records which disclose the fact that during the two years 1913-14 90 men died from scrotal cancer and of these, 18 (or 20 per cent) were cotton spinners in the years 1921 22 the total number was 107, of whom 26 (or 24 per cent) were spinners and in 1923 there were 15 fatal cases in this industrial class This gives an average of 11 8 per annum No other group or occupations with the exception of chimney sweeps showed more than three cases Cancer of the scrotum is now a very common disease it is much less common in the general population than cancer of the penis for example During the first two periods mentioned there were 254 and 224 cases respectively of penile cancer, but not one occurred in cotton-spinners

Here, then we have something of practical importance, industrially and medically that calls for explanation and investigation—a particular form of cancer occurring in a certain industry—and yet, strange to say no one has within the last two years seemed to have known or to have suspected this association The consideration of this important discovery will be given to Southam and W Lond I our

mortality statistics, which are probably the best in the world, had been arranged so as to show localizations of cancers in relation to occupations, the liability of cotton-spinners to develop epithelioma of the scrotum would have been appreciated many years ago.

According to the 1921 census, 57,069 persons were engaged in cotton-spinning processes, including piecers and mule-, ring-, and flyer-spinners. As the piecers are almost without exception boys or very young men, and as female labour is employed exclusively in ring and flyer spinning, there remain only the mule-spinners to consider. Of these there are at the present time 23,000, all adult males. (It is believed that a few women, perhaps not more than a score or two, act as mule-spinners.) Thus, taking a yearly average of 11·8 cases, we find that approximately 1 in 2,000 mule-spinners die each year from cancer of the scrotum. This is startling enough, but if we assume that the carcinogenic agent implicated produces its effect only after many years of exposure to it, the elderly workers must have a greater liability still. What are the factors responsible for this affection?

Southam and Wilson, in examining the records of cases of cancer of the scrotum admitted to the Manchester Royal Infirmary for a period of twenty years, noticed that, out of a total of 141, 69 were mule-spinners, and they were led to investigate the conditions under which the spinners work. At present there is a lawsuit about the matter* and there is a conflict of opinion on certain points, which will be mentioned later, but the main facts are clear. Each spinner attends to a pair of machines, called mules, a portion of which—the carriage—advances and retires bearing on it the spindles on which the spun cotton is wound. Immediately in front of these rows of revolving spindles is a long horizontal steel bar—the counter faller shaft—2 feet 9 inches from the ground, which travels with the carriage. When the yarn breaks the spinner leans over this bar and pieces the ends. The frictional parts of the mule are lubricated by a mineral oil. The atmosphere in this department is kept warm and moist for technical reasons and the men perspire freely. The workers are lightly clad in a shirt and linen trousers, or in overalls, which are washed usually once a week. Southam and Wilson stated that the men's garments showed "a well-marked oil zone six to eight inches in depth across the body at the level of the upper part of the thighs and the lower abdomen. This oil penetrates the trousers and the lower border of the shirt also becomes soaked with it." This soiling they considered, was due to contact with the counter faller shaft which was covered with oil thrown on to it from the revolving spindles. On the other hand it has been stated that in some mills at any rate the shaft is free of all oil and the workers' clothes even at the end of the week show no such oil zone. I have had an opportunity of seeing a mule-spinning machine in operation, and though I could not detect any oil on the shaft on running my hand over it, yet I could not help noticing a deep oil smear in the left groin of the attendant of which he himself was unaware. It is possible that in the latest type of machinery the lubricated portion of the spindles is better guarded than in older types. Let us note in passing that the men's arms are exposed to the lubricating oil but they do not develop epithelioma in that situation. "The continual soiling of the clothes with oil," say Southam and Wilson, "and the knowledge that in other forms of cancer tar and paraffin are recognized as direct etiological agents—a view which has received considerable support from experimental work on animals—suggests that the oil, which has a highly irritant action on the tissues of the skin, may be of considerable importance."

What evidence have we that mineral oils have carcinogenic properties? In my original communication,[2] to which Southam and Wilson presumably refer, I gave the clinical and the experimentally ascertained evidence on the subject. Actually less than 20 cases all told of what is called "paraffin cancer" had been recorded in medical literature. Some of these had occurred in the shale oil works of Scotland, some in the lignite distilleries of the Halle district in Germany, and only two were reported from paraffin refineries in the United States of America. Later search has revealed in account by H. Ehrlich[3] of five cases in Czecho-Slovakia, and one case by Ullmann[4] in Galicia, but the latter states in a footnote that on circularizing medical men practising in the neighbourhood of oil fields in Galicia, Silesia, and Hungary, he learned that 25 cases were known to have occurred. Finally, Scott mentions that during a period of twenty-two years there were 65 cases of paraffin cancer amongst the workmen in the Scottish shale refineries. In all the known instances, with the exception of some of Scott's cases, the patients had been engaged for many years in handling the very crude products containing the more solid paraffins—that is, the fractions of high boiling points—and the scrotum was the part of the body most commonly affected. Scott, however, found that several cases of cancer of the scrotum had occurred amongst workmen who were not employed at the paraffin presses but dealt with subsequent processes, and it is possible that the scrotal epithelioma which they developed was due to constant soiling of the parts with the more refined commercial oils. No case of paraffin cancer has been reported from Germany for the last thirty-eight years, a fact which Kennaway[5] has attributed to some radical change in the methods of distillation or to the adoption of effective preventive measures by the workmen. The rarity of reported cases in America is remarkable. It is probably due to the fact that the unskilled labourers there do not remain long at one occupation, though it cannot be denied that industrial medicine has lagged behind in that country. On the whole, therefore, the clinical evidence that *refined* mineral oils are capable of producing cancer is weak.

In my previous experiments I stated that I had produced tumours in 30 out of 75 mice to which various oils of the shale group had been applied, the tumours being papillomata, epitheliomata, and even sarcomata. One of the products employed was a lubricating oil, classified as "unfinished," and with it we succeeded in *producing* a true epithelioma. The fact that such a *refined oil had* carcinogenic properties led us to inquire if skin cancers were at all prevalent in occupations entailing soiling of the clothes with oil, but no information could be obtained on the point. It was considered advisable to work through the whole series of the liquid products of shale distillation to see if the noxious property was retained in the more refined oils or eliminated in the course of preparation of the commercial products. It was rumoured that, though petroleum oils were usually employed for lubrication of machinery in the mills of Lancashire, yet, owing to the uncertainty of supplies during the war they had to be diluted extensively with native shale oil. As the result of these experiments we ascertained that the more volatile oils distilled at a relatively low temperature—such as lamp oil—were devoid of tumour-producing powers, whilst the heavier oils—gas oil, cleaning oil, and lubricating oil—were carcinogenic. One interesting result (with cleaning oil) may be detailed.

> The first sign of neoplastic reaction was a very tiny wart appearing 129 days after the commencement of applications, reaching a diameter of less than 2 mm. eight days later. It was very slightly raised above the skin level but already basal subcutaneous induration was detected, the indurated disc being 5 mm. in diameter. The mouse died at the end of 147 days with an indubitable epithelioma. This is an instance of rapid development of malignancy. Allowing for the two days that elapsed between each scrutiny we can be certain that not more than a week at the most elapsed between the first sign of hyperplasia and the onset of malignancy.
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> To show how animals differ it may be mentioned that with the same oil one of the mice took thirteen months to develop the first sign of tumour, and some remained refractory for over eighteen months.
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> (With one of the crude oils active as regards mice, we failed to induce more than temporary small warts in rabbits except in one case in which a papilloma appeared after eleven and a half months increasing slowly till the present time two and a half years since the beginning of treatment, when it is over two inches in diameter and probably malignant. Rats and guinea pigs have proved totally refractory.)

We have thus clear experimental evidence that, with regard to the shale products at any rate, the carcinogenic property is present in the heavier commercial oils. It is highly improbable, however, that the occurrence of mule-spinners' cancer is due to the shale oil ingredients of

* The case has been decided in favour of the plaintiff, a mule spinner who claimed compensation on account of cancer of the scrotum, which he alleged was caused by the nature of his employment.

lubricating oils alleged to have been used during the war I or one thing, the time is too short for epithelioma to have resulted from their use, and for another, we have the information from the Registrar-General that cancer of the scrotum was prevalent amongst mule spinners many years before the war

We were then led to investigate the tumour producing properties of petroleum oils To examine the products of every oil well is out of the question I contented myself by trying the effects of crude oils, untreated in any way, from well in various parts of the world—from the United States, Mexico, Russia, Galicia, Egypt, Persia, Burma, and Borneo In all, sixteen different samples were used, the assumption being that the crude oils would probably contain more of the carcinogenic factors than any of the products refined from them This assumption we now know is not correct For the testing of each sample 100 mice were used and a spot of oil was applied between the shoulders regularly three times a week Unfortunately epidemics during the summer of 1923, combined with the toxic characters of most of the oils were responsible for the loss of large numbers of the animals, but the experiments seemed to indicate that some oils were effective in producing tumours and that others were more or less impotent Tumours resulted in the series which were treated with oils from Borneo, Assam, Egypt, Burma, and Badarpur the last two being the most active, though in no case did a tumour appear till after the lapse of eight months at the earliest In one animal (Badarpur series) we obtained a tumour composed of both epithelomatous and sarcomatous elements, the latter exhibiting a fair amount of melanotic pigment Owing to the small number of survivors I do not feel inclined to attach much importance to the negative results with the other crude oils One of these in particular, a sample from California, was heated and shown by Dr Kennaway to be very *potent in producing tumours* A specimen of fuel oil, which was probably a mixture of the higher boiling fractions of several oils, produced epitheliomata after six months it was, in fact more active than any of the crude oils At the other end of the scale are the vaporizing oils, such as petrol, and with a sample of petrol we failed to produce any tumour growth whatever, even after fifteen months of applications It seems therefore, that the more volatile fractions of mineral oils are devoid of tumour producing properties It should be mentioned that all these oils produce epilation and scurfy dermatitis whether they ultimately induce epithelioma or not

Finally two lubricating oils, of the petroleum group were taken at random With one of these—a light lubricating oil"—no tumours were produced the other—a "medium lubricating oil"—was carcinogenic Lubricating oils of the latter class are almost invariably blends of petroleum products from various sources and contain, in addition, a small percentage of vegetable oils The oil supplied by any one firm is probably not always of uniform composition, *nor does it matter so long as it fulfils the necessary* requirements as to specific gravity viscosity flash point, etc Oils of this class are distilled at about 300° C With the particular sample employed tumours were produced in all the eight mice that survived for eight months

1 Minute wart appeared in eleven month and very slowly increased A second appeared in the fourteenth month Animal died in the sixteenth month Both tumours small and benign

2 A wart accompanied by a shallow ulcer appeared in fourteen month but the mouse was killed and partly devoured by the others a few days later

3 A small papilloma was noticed towards the end of the fourteenth month Progress was slow A second wart arose in the sixteenth month At the end of seventeen months the tumours are still small and benign

4 A little papilloma appeared just a week before the death of the mouse in eleven and a half months

5 At the end of ten months a wart appeared followed by two others in a week's time In twelve and a half months there were two horny papillomata the larger being half an inch high The mouse died in a little over thirteen months The histological examination disclosed an unusual condition Above the level of the skin projected the cornified epithelium while underneath penetrating considerably below the level of the panniculus carnosus there was a flask shaped continuation composed of degenerating whorls of keratin and remnants of muscle fibres the whole being surrounded by a zone of intense inflammatory reaction The appearance suggested a degenerating epithelioma

6 In the eleventh month a shallow ulcer was observed This extended slowly In eight and a half months a subcutaneous nodule the size of a pea was found at the margin of the ulcer A week later the ulcer showed signs of healing and the nodule was smaller The mouse died a few days later and histological examination revealed an epithelioma invading the panniculus carnosus

7 A wart appeared in eleven and a half months over the right scapula In twelve and a half months it measured a quarter of an inch in height by the same in diameter In fourteen months it showed subcutaneous induration A second wart appeared then and grew fairly rapidly The mouse died at the end of sixteen months with *two* epitheliomata

8 In eleven and a half months a small papilloma appeared In twelve and a half months it formed a flesh not cornified wart less than an eighth of an inch across The mouse died in the fourteenth month with a deeply infiltrating epithelioma

Thus, all the mice which survived treatment for eight months or more developed tumours which in three cases certainly, and in another probably, were malignant One of the animals developed two separate epithelomata The lubricating oil is slow in eliciting the neoplastic response much slower than most tars, but once growth is started it is as rapid as *with most other carcinogenic* irritant

Our experiments show, therefore, that refined mineral oils such as are used for the lubrication of machinery are capable of producing skin cancer after long exposure, and they go far to prove the contention of Southam and Wilson that mule spinners' cancer is the result of several years of contact with lubricating oils But why is the scrotum exclusively affected whilst the thighs and the arms escape No satisfactory answer can be given at present To say that the scrotum is more susceptible to the action of the oil is merely to repeat the question A similar difficulty faces us if we attempt to explain the localization of chimney-sweeps' cancer There is still another difficulty Mule-spinning is not confined to cotton similar machines are in use in wool spinning and so far we have no evidence of any undue liability in wool spinners to scrotal cancer In the cotton mills the temperature is high and the air is moist but not so in the woollen mill It may be that in the former the heat relaxes the tissues of the scrotum and allows of the entry of oil into the large opened sebaceous follicles

Accepting the oil as the cause what measures can be taken to prevent the occurrence of this far too common industrial cancer Probably it is impracticable to employ vegetable or animal oils instead of petroleum oils for the lubrication of the spindle, even if we could be sure that they had no carcinogenic property, and an attempt to discover safe mineral oils seems foredoomed to failure It should not be a difficult matter to fit to the machines an effective guard which will prevent the spindle oil being thrown off Possibly a short thin apron impregnated with cellulose might prove useful in protecting the clothes from being soiled But however soon preventive measures are adopted it should be realized that cases of scrotal cancer will still occur, though with diminishing frequency for several years to come amongst the older workmen owing to the delayed action of the irritant

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NOTE ON CHIMNEY SWEEPS' CANCER

BY

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A COMPARISON may be made between the incidence of mule-spinners' cancer and the incidence of the similarly localized chimney sweeps' cancer In the years 1910-12 there were 16 fatal cases in 1913-14 there were 7 (=3 per cent of total) in 1921-22 there were 10 (=9 per cent of all cancer) and in the year there were 4 cases of cancer of the scrotum in chimney sweep This gives an average of 4·5 fatal cases per annum There were in England and Wales according to the 1921 census 5,251 sweeps so that 1 in 1,140 die from cancer of the scrotum every year The incidence, therefore, is higher amongst sweeps than amongst mule-spinners

In a previous paper[1] I discussed the peculiarities of the geographical and anatomical distribution of this form of cancer. It is improbable that the soot acts on the scrotum merely as a mechanical irritant: coal dust in miners does not produce a neoplastic reaction there. It must act in virtue of some active chemical function, and as *corpora non agunt nisi soluta* it is necessary to look for some solvent present in the skin of the scrotum. Passey[2] had succeeded in producing soot cancer experimentally in mice by frequent applications of an ethereal extract. No such powerful solvent is present in the skin, and I suggested that the active principle of the soot was dissolved in the oily secretion of the sebaceous glands of the human scrotum. Sebaceous fat was therefore obtained from human dermoid ovarian cysts, a quantity of soot was mixed with this in the incubator, and the filtrate—a dark brown oil, liquid at body temperature—was applied to the skin of mice and to the scrotum of a number of rabbits. Among the latter animals two developed warts, but the animals bit these off and they have not recurred, in a third a papilloma appeared *after two months, and is still growing*. Amongst the mice we obtained in three cases simple papillomata, the earliest appearing thirty-five days after the commencement of treatment, and in two cases epithelioma. In one of these there was no sign of tumour formation until almost the end of the ninth month, and in the other sixteen and a half months elapsed before the tumour started. In both malignancy supervened shortly thereafter.

The experiments suggest that the sebaceous secretion of the glands of the scrotum is the solvent of the soot in the human subject.

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A STUDY OF B. ACIDOPHILUS IN HUMAN FAECES

BY

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The bacterial flora of the intestinal contents shows great variation at different levels of the alimentary tract in health and in disease. The flora of the faeces is seen in stained films bears little resemblance to the organisms which are obtained by the methods of culture usually adopted for the isolation of pathogenic organisms. By the use of a variety of procedures and different media organisms of many types can be isolated, but the results are unsatisfactory regarded from the standpoint of the total flora. In the film stained by Gram's method numerous Gram-positive bacilli and cocci are seen which do not grow on the ordinary agar or broth media. If the hydrogen-ion concentration of these media is altered the growth which results varies considerably, but is generally composed of Gram-negative bacilli of the colon group and streptococci of the *faecalis* type. As a result it has frequently been stated that the majority of the organisms in the faeces are dead. The contrast between the stained film and the growth on ordinary media is most striking in regard to the absence in culture of the Gram-positive bacilli. These bacilli, however, can be obtained in culture when special methods are adopted to prevent growth of *Bacillus coli*. It has been found that this group of organisms is strongly resistant to acid, and that they survive in strongly acid mixtures which kill *B. coli* and most other faecal organisms. The term "*Bacillus acidophilus*" was given by Moro to an organism of this type, but, as Metschnikowsky and Distaso showed, it would be more descriptive to call them acid resistant rather than acidophile. The term "aciduric" has been suggested by Kendall. In the stools of infants Gram-positive bacilli are found in large numbers, and the film contrasts markedly with that of the adult.

A relationship between the occurrence of these organisms and the diet has naturally been suggested, and research workers, particularly in America, have made combined clinical and bacteriological studies which have elicited some interesting facts bearing on this subject. Diets which consist largely of animal protein are associated with faeces in which *B. coli* predominates, whereas diet which is rich in carbohydrates favours the development of *B. acidophilus* types. The terms "proteolytic" and "aciduric" have been used to describe these two types of flora. The administration of lactose and dextrin by the mouth is particularly favourable to the development of an aciduric type of flora. Cannon has used a simple method of determining the type. This consists in making suitable dilutions of the faeces and in enumerating the relative numbers of *Gram negative* bacilli and Gram-positive bacilli in stained smears. This is referred to as the "colon acidophilus ratio." In intestinal stasis and in complete obstruction the *acidolphilus* bacilli rapidly diminish and the flora becomes proteolytic in type. In starvation the same change occurs. Similarly, in most types of diarrhoea the flora is proteolytic, though certain forms of diarrhoea (fermentative diarrhoea) show a distinctly aciduric type of flora. The influence of diet on the flora in experimental intestinal stasis and obstruction has been investigated by several workers. On diets rich in lactose animals survived longer and clinical differences were apparent in the post-operative behaviour, animals on protein diet being listless and refusing food, while those on carbohydrate diet were active and eager for food. The relation of the flora to the reaction of the intestinal contents has been examined. Rettger and Cheplin found no difference in the hydrogen-ion concentration of the faeces, whether the flora was mixed or aciduric in type. Cannon and McNeal, on the other hand, found that there was a direct relationship between the type of flora and the hydrogen-ion concentration of the contents of the caecum, though this was not so apparent when the reaction of the faeces in the lower colon or rectum was considered. With a high animal protein diet the reaction of the contents of the caecum and colon was *p*H 7·0 to 7·1, whereas the addition of lactose in proper proportions led to a reaction in the caecum of *p*H 4·6 with a *p*H 6·2 in the lower colon. In the presence of fermentible carbohydrates both *B. coli* and *B. acidophilus* developed freely, but as the products of fermentation accumulated and the reaction became strongly acid the conditions of growth became inimical to the further development of *B. coli*. In the absence of carbohydrate, *B. coli* assumed a proteolytic activity, and toxic substances, resulting from protein decomposition, were formed.

In the majority of the experiments on the above and similar lines of investigation little attention has been paid to the morphological and cultural characters of the *B. acidophilus*. A review of the recent literature showed that there was much difficulty in regard to the characters by which this bacillus could be recognized. Logan (1914), for example, in an investigation of the intestinal flora of children described *B. acidophilus* and *B. bifidus* under one group although he observed differences in behaviour of different strains. McIntosh, Warwick, and Lazarus Barlow, in a study of *B. acidophilus* occurring in carious teeth, describe two strains differing in cultural and serological characters, to which they have given the name *B. acidophilus odontolyticus*, Types I and II. They are of opinion that these organisms are the cause of dental caries. Rahe (1914), in a study of numerous strains of acid-resistant bacilli from many different sources, described three varieties according to their action in milk and in maltose. In a later communication (1918) he describes four varieties, using glucose, maltose, lactose, sucrose, and raffinose as differential media. During the course of our own work two further papers have appeared which bear on this subject. McIntosh and Lazarus-Barlow, in a further communication on the subject of *B. acidophilus odontolyticus*, give the results of the examination of fifty strains of *B. acidophilus* isolated from the mouth, faeces, and stomach contents of man and animals and of certain strains from milk. These workers comment on the unreliability of fermentation tests, and suggest that differentiation is best made by means of agglutination tests. The results obtained with sixty-seven strains of *B. acidophilus* isolated from human faeces are given by Cannon. All of the strains examined by him fell in the groups described by Rahe.

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The investigations of which this paper is a short summary, were conducted almost entirely on the stools of normal subjects, adult for the most part

Technique

To tubes of ordinary broth, *p*H 7·6 glacial acetic acid was added in the proportion of 1 per cent. A thick emulsion of the stool was made in salt solution and 0·2 c.cm. added to 5 c.cm. of acetic broth. The tubes were incubated for thirty-six to forty-eight hours, shaken up, and a large loopful sown on plates of ordinary agar. These were incubated for twenty-four to forty-eight hours. With few exceptions growth of acid-resistant organisms in pure culture was obtained, frequently the growth was quite profuse. It was found convenient to allow the plates to stand a day or two at room or incubator temperature in order to bring out differences in colony formation. In none of the experiments was any Gram negative organism encountered, the acid resistant organisms being in all cases Gram positive bacilli or cocci. Single colonies were picked off to ordinary agar, replated if any doubt existed as to purity, and then sown into sugar and other media. It was also found that good results were obtainable by making a heavy inoculation of ordinary broth incubating for twenty-four hours, adding acetic acid, and incubating again for twenty-four hours. In some cases it was found necessary to use the sediment in the acetic broth cultures since if the organisms were scanty, the supernatant fluid might give negative results. There was no evidence in this work that actual growth of *acidophilus* bacilli occurred in the acid broth and we are of opinion that in most cases these organisms merely survived the exposure to the acid. Further it was found that 1 per cent. acetic acid agar plates made directly from the faeces emulsion, did not give growth of *acidophilus* bacilli, although acid-resistant cocci were sometimes got by this procedure. Once the organisms had been isolated growth was readily maintained on ordinary agar. It will be seen later that growth in ordinary broth did not occur, or was very slight, in the absence of fermentable carbohydrate. It is a matter of interest that organisms capable of growth on ordinary agar, and present in considerable numbers in almost any sample of faeces, should not grow on direct plating on ordinary agar or on MacConkey's medium. It would appear that coliform organisms exert an inhibitory effect, but we have been unable to demonstrate this in actual experiment. Only once have we seen colonies of *B. coli* and of *B. acidophilus* on the same plate. In this experiment *B. coli* was present in very small numbers on the plating from acetic broth and was presumably due to an extremely heavy sowing with faeces which had been imperfectly emulsified.

It was found that *B. coli* survived more readily when hydrochloric acid was used in place of acetic acid. Yeasts also survived exposure to hydrochloric acid, but only on one occasion was a growth of yeast recovered from 1 per cent. acetic acid broth culture. In our experience acid resisting bacilli in all cases grew on ordinary peptone agar with a reaction of *p*H 7·6. Twelve of our strains were elected and tested on 1 per cent. acetic acid peptone agar slopes. In no case was growth obtained, whereas control subcultures made at the same time on ordinary agar grew freely in twenty-four to thirty-six hours. Growth of acid resisting bacilli and cocci was tested also on agar slopes of different acidity (*p*H 4, 5, 6, and 7) prepared with hydrochloric acid. Growth took place at *p*H 5 but not at *p*H 4. Comparison was made of anaerobic and aerobic cultures, both of the acetic broth and of agar plate subcultures, but no evidence was obtained of appreciable difference. The organisms were found to be facultative anaerobes. The organisms isolated did not produce indol and did not liquefy gelatin. Early in our work it was obvious from differences in colony formation on agar plate that different strains of acidophile bacilli were present in the same sample of stool. In two experiments ten different strains were obtained from a single sample of a normal stool and in other three cases seven, seven, and six strains respectively were got. As a rule every sample of stool gave growth of acid resistant cocci in addition to bacilli but these strains of cocci are not dealt with in this communication.

The growth of the bacilli on agar was at first extremely delicate, but after a few days many of the colonies assumed a characteristic form. The long-chained bacilli commonly appeared as granular colonies with raised centres and irregular margins, but sometimes as smaller colonies regular in outline and with a ground glass appearance, those bacilli showing curled elements giving colonies in the form of a rosette. Some short-chained varieties showed the feathery colonies frequently described as typical of *L. acidophilus*, others grew as opaque striated colonies raised in the centre or as small clear colonies with smooth edges. The bacilli not forming chains usually developed as small regular or large irregular colonies, and occasionally granular ones surrounded by a ring of what looked like small flattened colonies. Yellowish slightly feathery colonies were the most typical of those bacilli showing filamentous forms, but a few almost colourless granular colonies with a raised ring around the centre of the colony or flat greyish-brown colonies with faintly striated margins were met with. The most striking feature in colony formation was the marked differences in the colonies of bacilli more or less similar morphologically and on plates spread from the primary acetic acid broth several of these types of colony were usually present.

When the purity of a strain of bacillus had been established an agar culture was emulsified in salt solution and by means of a pipette 1 per cent. glucose, lactose, maltose, saccharose, mannite, and dulcite peptone water with the Andrade indicator were inoculated, also litmus milk and broth. An attempt was made by means of the reactions with these media to separate different strains no heed being paid to morphology at this stage. Later in the work a further range of substances—inulin, arabinose, dextrin, and raffinose—were employed. These substances gave a further differentiation within each group. In no instance was any organism isolated which gave gas in any of the media. The formation of acid in fermentable media was usually marked in twenty-four hours. In some media acid production was slow and not well marked. Table I. shows the results obtained and the groups separated by the use of the glucose, lactose, maltose, mannite, saccharose, and dulcite, and the further differentiation of the groups by the use of inulin, raffinose, dextrin, and arabinose. In a recent paper published during the progress of this work, Cannon gives the results of a study of sixty-four strains of *L. acidophilus* and thirty-four strains of *B. acidophilus aerogenes*, obtained mainly from sputum and faeces of normal adults, and a few strains from milk and the intestines of animal. Unneutralized dextrose inulin broth with 0·25 per cent. of glacial acetic acid was used (*p*H 4·8 to 5) after three successive transfers at twenty-four hour interval in this medium plates of which agar dextrose yeast agar were sown. Colonies were picked and transferred to unneutralized glucose yeast broth. The strains of *B. acidophilus* isolated by Cannon all fell in to Rahe's classification (Table III). It will be seen from Table I. that of our fifty-two strains forty-four failed to ferment maltose and four failed to ferment glucose. These strains cannot therefore, be placed in Rahe's classification. Of the two types of bacilli which formed chains a long-chained and a short-chained variety were readily distinguished. Of the non-chained type diplobacilli were frequently found as well as other with no characteristic formation. The majority including the chained types were about the size and shape of the chained *B. acidophilus* described by Moro and others: 0·75 *μ* by 1 to 3 *μ*. Differences in size and shape occurred in the same chain and in some strains almost coccoid forms were present. On this account we had at first difficulty in obtaining what we could regard as pure cultures of certain strains and numerous replatings were carried out. This has also been the experience of McIntosh and Lazarus-Barlow. Howe in his work on dental caries comes to the conclusion that the pleomorphism of *B. acidophilus* has been greatly exaggerated and Cannon is in agreement. Difference in size of the bacilli, both in thickness and length,

In a previous paper[1] I discussed the peculiarities of the geographical and anatomical distribution of this form of cancer. It is improbable that the soot acts on the scrotum merely as a mechanical irritant, coal dust in miners does not produce a neoplastic reaction there. It must act in virtue of some active chemical function, and as *corpora non agunt nisi soluta* it is necessary to look for some solvent present in the skin of the scrotum. Passey[2] had succeeded in producing soot cancer experimentally in mice by frequent applications of an ethereal extract. No such powerful solvent is present in the skin, and I suggested that the active principle of the soot was dissolved in the oily secretion of the sebaceous glands of the human scrotum. Sebaceous fat was therefore obtained from human dermoid ovarian cysts, a quantity of soot was mixed with this in the incubator, and the filtrate—a dark brown oil, liquid at body temperature—was applied to the skin of mice and to the scrotum of a number of rabbits. Among the latter animals two developed warts, but the animals bit these off and they have not recurred, in a third a papilloma appeared after five months, and is still growing. Amongst the mice we obtained in three cases simple papillomata, the earliest appearing thirty-five days after the commencement of treatment, and in two cases epitheliomata. In one of these there was no sign of tumour formation until almost the end of the ninth month, and in the other sixteen and a half months elapsed before the tumour started. In both malignancy supervened shortly thereafter.

The experiments suggest that the sebaceous secretion of the glands of the scrotum is the solvent of the soot in the human subject.

References

[1] Twort. British Medical Journal, July 7th, 1923, p. 1. [2] Passey. Ibid., December 9th, 1922, p. 1112.

A STUDY OF B. ACIDOPHILUS IN HUMAN FAECES

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The bacterial flora of the intestinal contents shows great variation at different levels of the alimentary tract in health and in disease. The flora of the faeces is seen in stained films bears little resemblance to the organisms which have obtained by the methods of culture usually adopted for the isolation of pathogenic organisms. By the use of a variety of procedures and different media organisms of many types can be isolated, but the results are unsatisfactory regarded from the standpoint of the total flora. In the film stained by Gram's method numerous Gram-positive bacilli and cocci are seen which do not grow on the ordinary agar or broth media. If the hydrogen-ion concentration of these media is altered the growth which results varies considerably, but is generally composed of Gram-negative bacilli of the colon group and streptococci of the *faecalis* type. As a result it has frequently been stated that the majority of the organisms in the faeces are dead. The contrast between the stained film and the growth on ordinary media is most striking in regard to the absence in culture of the Gram-positive bacilli. These bacilli, however, can be obtained in culture when special methods are adopted to prevent growth of *Bacillus coli*. It has been found that this group of organisms is strongly resistant to acid, and that they survive in strongly acid mixtures which kill *B. coli* and most other faecal organisms. The term "*Bacillus acidophilus*" was given by Moro to an organism of this type, but, as Mereshkowsky and Distaso showed, it would be more descriptive to call them acid resistant rather than acidophile. The term "aciduric" has been suggested by Kendall. In the stools of infants Gram-positive bacilli are found in large numbers, and the film contrasts markedly with that of the adult.

A relationship between the occurrence of these organisms and the diet has naturally been suggested, and research workers, particularly in America, have made combined clinical and bacteriological studies which have elicited some interesting facts bearing on this subject. Diets which consist largely of animal protein are associated with faeces in which *B. coli* predominates, whereas diet which is rich in carbohydrates favours the development of *B. acidophilus* types. The terms "proteolytic" and "aciduric" have been used to describe these two types of flora. The administration of lactose and dextrin by the mouth is particularly favourable to the development of an aciduric type of flora. Cannon has used a simple method of determining the type. This consists in making suitable dilutions of the faeces and in enumerating the relative numbers of Gram-negative bacilli and Gram-positive bacilli in stained smears. This is referred to as the "colon-acidophilus ratio." In intestinal stasis and in complete obstruction the *acidolphilus* bacilli rapidly diminish and the flora becomes proteolytic in type. In starvation the same change occurs. Similarly, in most types of diarrhoea the flora is proteolytic, though certain forms of diarrhoea (fermentative diarrhoea) show a distinctly aciduric type of flora. The influence of diet on the flora in experimental intestinal stasis and obstruction has been investigated by several workers. On diets rich in lactose animals survived longer and clinical differences were apparent in the post-operative behaviour, animals on protein diet being listless and refusing food, while those on carbohydrate diet were active and eager for food. The relation of the flora to the reaction of the intestinal contents has been examined. Rettger and Chaplin found no difference in the hydrogen-ion concentration of the faeces, whether the flora was mixed or aciduric in type. Cannon and McNeese, on the other hand, found that there was a direct relationship between the type of flora and the hydrogen-ion concentration of the contents of the caecum, though this was not so apparent when the reaction of the faeces in the lower colon or rectum was considered. With a high animal protein diet the reaction of the contents of the caecum and colon was *p*H 7·0 to 7·1, whereas the addition of *lactose in* proper proportions led to a reaction in the *caecum of p*H 4·6 with a *p*H 6·2 in the lower colon. In the presence of fermentable carbohydrates both *B. coli* and *B. acidophilus* developed freely, but as the products of fermentation accumulated and the reaction became strongly acid the conditions of growth became inimical to the further development of *B. coli*. In the absence of carbohydrate, *B. coli* assumed a proteolytic activity, and toxic substances, resulting from protein decomposition, were formed.

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To tubes of ordinary broth, *p*H 7·6, glacial acetic acid was added in the proportion of 1 per cent. A thick emulsion of the stool was made in salt solution and 0·2 c.cm. added to 5 c.cm. of acetic broth. The tubes were incubated for thirty-six to forty-eight hours, shaken up, and a large loopful sown on plates of ordinary agar. These were incubated for twenty-four to forty-eight hours. With few exceptions growth of acid-resistant organisms in pure culture was obtained, frequently the growth was quite profuse. It was found convenient to allow the plates to stand a day or two at room or incubator temperature in order to bring out differences in colony formation. In none of the experiments was any Gram-negative organism encountered, the acid resistant organisms being in all cases Gram positive bacilli or cocci. Single colonies were picked off to ordinary agar, replated if any doubt existed as to purity, and then sown into sugar and other media. It was also found that good results were obtainable by making a heavy inoculation of ordinary broth incubating for twenty-four hours, adding acetic acid, and incubating again for twenty-four hours. In some cases it was found necessary to use the sediment in the acetic broth cultures since if the organisms were scanty, the supernatant fluid might give negative results. There was no evidence in this work that actual growth of *acidophilus* bacilli occurred in the acid broth, and we are of opinion that in most cases these organisms merely survived the exposure to the acid. Further, it was found that 1 per cent. acetic acid agar plates made directly from the faeces emulsion, did not give growth of *acidophilus* bacilli, although acid resistant cocci were sometimes got by this procedure. Once the organisms had been isolated growth was readily maintained on ordinary agar. It will be seen later that growth in ordinary broth did not occur, or was very slight, in the absence of fermentable carbohydrate. It is a matter of interest that organisms capable of growth on ordinary agar, and present in considerable numbers in almost any sample of faeces, should not grow on direct plating on ordinary agar or on MacConkey's medium. It would appear that coliform organisms exert an inhibitory effect, but we have been unable to demonstrate this in actual experiment. Only once have we seen colonies of *B. coli* and of *B. acidophilus* on the same plate. In this experiment *B. coli* was present in very small numbers on the plating from acetic broth and was presumably due to an extremely heavy sowing with faeces which had been imperfectly emulsified.

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TABLE I

Bacillus		Morphology			Glucose	Mannite	Maltose	Lactose	Saccharose	Dulcite	Raffinose	Arabinose	Dextrin	Inulin	Milk	Broth
		Size	Chains	Other Characters												
Inf C	6	Small	Few short	Few curled	sl A	—	—	—	—	—	—	A	—	A	AC	—
Inf M H	10	Short	—	Oval	A	—	—	—	—	—	sl A	A	A	—	—	—
Reid	2	Long thin	—	Angled diplo—bipolar staining	sl A	—	—	—	—	—	—	A	—	—	ACD	—
K	3	Acidoph	Few short	—	A	—	—	—	—	—	—	—	A	—	A	—
K	8	Long thin	V short	Angled diplo — filaments palisade polar staining. Palisade	A	—	—	—	—	—	—	—	A	—	ACD	—
K A	5	,,	V short	Many curled	sl A	—	—	—	—	—	A	—	—	sl A	—	ACD	D granular
*Inf C	4	Long	Long	Small and clumps	A	—	A	—	—	—	—	A	—	—	ACD	—
B	1	Short	—	—	A	—	A	A	—	—	—	—	A	A	AC	—
C	11		Medium	—	A	—	A	A	—	—	—	—	A	A	AC	—
*C	6	Acidoph	Long	—	A	—	A	A	—	—	—	—	A	A	AC	—
C	33			—	A	—	A	A	—	—	—	—	A	A	AC	—
B	9			—	A	—	—	A	—	—	—	—	A	A	AC	—
B	15		V short	—	A	—	—	A	—	—	A	—	—	—	ACD	sl D
S	2	Short	Short	Curled elements	A	—	—	A	—	—	—	—	—	—	ACD	—
G D	7	Acidoph	Long	—	A	—	—	A	—	—	—	A	—	—	AC	—
Innes	2	Short	Short	Filaments palisade	A	—	—	A	—	—	—	A	—	A	ACD	—
Innes	3		Medium	Palisade	A	—	—	A	—	—	—	—	—	—	AC	—
Inf A	3	Acidoph	Short	,,	A	—	—	A	—	—	—	A	—	A	ACD	—
Inf A	4	,,	V short	,,	A	—	—	A	—	—	—	A	—	A	ACD	—
Inf A	6	,,	Medium	,,	A	—	—	A	—	—	—	A	—	—	AC	—
*C	36		Long	,,	A	—	—	A	—	—	sl A	A	sl A	sl A	AC	—
C	29	,,		—	A	—	—	A	—	—	sl A	A	—	—	ACD	—
B	6	V short	Short	—	A	—	—	A	A	—	A	—	A	—	ACD	—
B	12	Long	—	—	A	—	—	A	A	—	—	—	—	—	—	—
B	13	Small	Short	Angled diplo—curved beaded	A	—	—	A	A	—	—	A	A	A	ACD	—
B	14	Long	Long	—	A	—	—	A	A	—	A	—	—	—	ACD	—
B	16	Small	Medium	—	A	—	—	A	A	—	—	—	—	—	ACD	—
B	18	Acidoph	V short	—	A	—	—	A	A	—	—	—	A	—	A	—
G D	6	,,	Short	Polar staining old culture	A	—	—	A	A	—	—	—	—	—	ACD	—
Inf M H	1	,,		—	A	—	—	A	A	—	A	—	—	—	ACD	—
K	7	Long thin	V short	—	A	—	—	A	A	—	—	—	A	—	ACD	—
Rattray	3	Short	Short	Filaments polar staining	A	—	—	A	sl A	—	—	—	A	—	ACDW	—
An	2	Acidoph	Long	—	A	—	—	A	A	—	A	—	—	—	A	TD
*B	5	V short	Short	—	A	—	—	A	A	—	—	—	—	A	ACD	—
Inf C	5	Short	—	—	A	—	—	A	—	—	A	—	A	—	ACD	—
K	1	,,	Short	—	A	—	—	—	—	—	—	—	—	A	ACD	—
K	2	,,	,,	Filaments	A	—	—	A	—	A	A	—	—	—	ACD	—
K	5	,,	V short	,,	A	—	—	A	—	A	—	—	—	—	A	TD
K A	8	Long		,,	A	—	—	A	—	—	—	A	—	—	A	TD
C	1	Short	—	Palisade	A	—	—	A	—	—	—	A	—	—	ACD	D
C	23		Short	Slight polar staining	A	—	A	A	—	A	—	A	—	—	AC sl D	D
*C	24	,,		Palisade	—	A	—	A	—	—	—	—	—	A	—	TD
Inf C	11		Medium	—	—	A	—	A	—	—	—	A	—	A	ACD	—
Inf A	7	Acidoph	Long	—	—	A	—	A	—	—	—	A	—	A	ACD	—
Pratt*	3	V short	—	—	A	A	—	—	—	A	A	—	—	—	AC sl D	—
Reid	3	Long	—	—	A	A	A	A	A	—	A	A	A	A	AC	—
S	3	Short	Long	Palisade	—	—	—	—	—	—	A	—	—	—	—	—
S	1		,,	Some curled	A	—	—	—	A	A	—	A	A	A	ACD	—
C	8	V short		—	A	A	—	A	A	A	—	A	A	A	ACD	—
Innes	4	Short	Short	Almost coccoid	A	—	A	A	A	—	—	—	A	—	AC	—
C	26	Long thick	—	—	A	A	—	A	A	—	—	—	A	A	AD	T
S	4	Short	Long	Palisade	A	A	A	A	—	—	—	A	—	—	—	T
				Some curled	A	A	—	—	A	A	—	A	A	A	AC	—

A = acid C = clot D in milk = decolorization D in broth = deposit I = turbidity W = whey sl = slight
Strains denoted by Inf were derived from infant faeces * Indicates strains from which agglutinating sera were prepared

frequently necessitated our replating cultures after isolation in order to ensure purity. Although some variations in morphology were found in recent subcultures pleomorphic forms appeared more frequently in older (four to six weeks) cultures, and seemed to be of the nature of involution forms. In some of the older cultures swollen and club-shaped bacilli were also present. Old cultures of some strains showed slight beading or bipolar staining, and the power of retaining Gram's stain was decreased, many definitely Gram negative elements being present. Angled and straight diplobacillary forms were numerous in many of the strains, and parallelism or palisade grouping was common. One peculiar characteristic noted in three strains and especially prominent in one (Infant C 4) was a very marked curling of the bacillary elements. Many of these curled forms were in pairs, and when much swollen simulated large diplococci. When in chain formation the curled forms gave an appearance not unlike spirilla. The filamentous forms were seen occasionally and were of two kinds—one uniform in width, corresponding to the thickness of the bacilli and the other very irregular in thickness and in outline.

Considerable differences were found also by McIntosh and Lazarus-Barlow in their later work, when they extended their range of sugars from four to ten. The fermentation reactions of a number of our strains have been tested on more than one occasion at intervals of one to three months after isolation. No change in the results was found. McIntosh and Lazarus-Barlow have drawn attention to some alteration in sugar fermentation, particularly in regard to saccharose fermentation, three to twelve months after isolation.

As the fermentation reactions of these organisms were so varied, we commenced the preparation of agglutinating sera by intravenous injection of living cultures into rabbits in order to determine the serological relationships. Agglutinating sera from five strains—C 30, Infant C 4, C 6, C 24, and B 5—corresponding to five different groups, have been prepared. The titres of these sera for the homologous organisms varied from 1 in 800 to 1 in 12,800. The results of agglutination tests carried out down to the present time may be summarized thus.

Serum C 30 agglutinated up to titre the strain An 2 which was isolated by anaerobic culture and appears in all respects identical with C 30. This serum also agglutinated *B. acidophilus odontolyticus*, Type I (kindly supplied to us by Professor McIntosh), in dilution of 1 in 800, the full titre of the serum for the homologous organism being above 1 in 1,600. Both C 30 and An 2 are very long-chained varieties, but Type I of McIntosh, Warwick and Lazarus-Barlow does not form long chains, nor do its sugar reactions tested on our media, correspond to those of C 30 and An 2. Serum C 30 did not cause agglutination of any of the other organisms in the same group, as determined by the original sugar reactions. Serum Infant C 4 agglutinated no other of four strains tested. Serum C 6 agglutinated to full titre strain C 11 which gave exactly similar fermentation reactions to those of the homologous organism. No other strain tested was agglutinated. Serum C 24 agglutinated strain Infant C 11 which is also identical with the homologous strain. Serum B 5 partly agglutinated strain G D 6, which differs in fermentation reactions from the homologous organism. The titre of the serum was 1 in 12,800, but G D 6 agglutinated only up to 1 in 800. This reaction, as well as the agglutination of *B. acidophilus odontolyticus* Type I, seemed to indicate the presence of group agglutinins, but on the whole it would appear that the many acid resistant bacilli isolated by us from the faeces differ as widely in the serological reactions as they do in fermentation properties. It is noteworthy that the agglutination reactions which have so far been carried out do not show the group reactions which McIntosh and his collaborators claim to exist within the *acidophilus* group. A number of our strains very closely resemble *B. bifidus* recently isolated by Dr Robert Cruickshank, and one of these strains (C 24) agglutinates to full titre and shows marked absorption of agglutinins when tested with *B. bifidus* antiserum. The sugar reactions of *B. bifidus* and of strain C 24, however, do not correspond.

TABLE II.—*Agglutination Reactions*

Organism		Serum.	1 in 50	1 in 100	1 in 200	1 in 400	1 in 800	1 in 1600	1 in 3200	1 in 6400	1 in 12800	1 in 25600	Control
C	30	C 30	−	−	−	+	+	−	−	+	+	−	−
C	23		−	−	−	−	−	−	−	−	−	−	−
B	6		−	−	−	−	−	−	−	−	−	−	−
B	12		−	−	−	−	−	−	−	−	−	−	−
B	15		−	−	−	−	−	−	−	−	−	−	−
B	17		−	−	−	−	−	−	−	−	−	−	−
B	16		−	−	−	−	−	−	−	−	−	−	−
B	18		−	−	−	−	−	−	−	−	−	−	−
G D	6		−	−	−	−	−	−	−	−	−	−	−
Inf M H	6		−	−	−	−	−	−	−	−	−	−	−
Bacillus	3		−	−	−	−	−	−	−	−	−	−	−
An	2		+	−	−	−	−	+	+	−	−	−	−
Acidophilus	1		−	−	+	−	−	−	+	−	−	−	−
Inf C	4	Inf C 4	+	−	+	+	−	+	−	+	+	−	−
	a		−	−	−	−	−	−	−	−	−	−	−
Reid	2		−	−	−	−	−	−	−	−	−	−	−
B	1		−	−	−	−	−	−	−	−	−	−	−
Acidophilus	1		−	−	−	−	−	−	−	−	−	−	−
C	6	C 6	+	+	−	−	+	+	−	−	−	−	−
C	11		−	+	−	−	+	−	+	−	+	−	−
G D	7		−	−	−	−	−	−	−	−	−	−	−
L	3		−	−	−	−	−	−	−	−	−	−	−
B	15		−	−	−	−	−	−	−	−	−	−	−
C	24	C 24	+	−	+	+	−	−	−	+	−	−	−
C	23		−	−	−	−	−	−	−	−	−	−	−
Inf C	11		+	−	+	+	+	+	+	−	−	−	−
B	5	B 5	+	+	−	−	+	+	+	−	−	−	−
G D	6		−	−	+	+	−	−	+	−	−	−	−

Difficulty in classification of aciduric organisms by cultural and biochemical reactions has apparently been somewhat general experience. Pahe criticized the work of Grigoroff, Cohendy, Bertrand, and Duchacek on the fermentation of sugars by *B. bulgaricus*, and regards their results as of doubtful value owing to lack of agreement. He stated that there was "little known of the action of *B. acidophilus* on the different sugars." Pahe himself must have experienced the same difficulty. In a paper published in 1914 he divided fifty four strains into three groups, one of which did not ferment maltose, while in 1918 he made four groups all of which ferment maltose.

TABLE III.—*Pahe's Classification.*

Type	Maltose	Glucose	Lactose	Sucrose	Lævulose
A	X	X	X	X	−
B	X	X	X	X	−
C	X		−	X	−
D	X	X	−	−	−

Of our forty four strains only six [illegible] maltose and four did not ferment glucose. A preliminary cultivation of these acid tolerant bacilli was found necessary, as growth did not occur in sugar media unless the carbohydrate present was fermented by the bacteria. Moreover, some of the cultures did not grow in ordinary peptone broth, but required differing from many of the other [illegible] teeth by McIntosh, Warwick and Lazarus-Barlow [illegible] which showed uniform turbidity in broth. The [illegible] strains which showed variable growth in broth and a

slight deposit at the bottom of the tube, and the medium became turbid or granular on shaking. All strains, on the other hand, grew readily on ordinary nutrient agar pH 7·6. Some of the strains, especially the long-chained varieties, were difficult to emulsify in salt solution. All strains grew profusely in glucose broth, causing turbidity or a heavy deposit, but did not grow appreciably better on glucose agar than on ordinary agar. In connexion with this lack of growth in unfermented carbohydrate media, it is interesting to note that the feeding of lactose and dextrin to experimental animals was found by Torrey and by Cannon to result in a great increase in the aciduric bacilli in the intestinal flora. In our table of results it will be seen that several of the aciduric bacilli which have been isolated by us fail to attack these two substances. Nine of our strains fermented dextrin but not lactose, seventeen fermented lactose but not dextrin, thirteen fermented both, and thirteen had no action on either of these sugars. The production of acid in some carbohydrate media was slow with some strains, and required three to five days' incubation.

TABLE IV.—*Reaction of Long-chained Bacilli*

Strain		Glucose	Mannite	Maltose	Lactose	Saccharose	Dulcite	Raffinose	Arabinose	Dextrin	Inulin	Milk
Inf C	4	+	−	+								
C	6	+			−	−	−		+	−	−	A C D
I	9	+	−	+	+	−	−	−				
G D	7	+		−	+	−		−		+	+	A C
C	30	+	−		+		−	−		−		A C D
C	29	+	−	−	+	+			+	−		—
I	11	+	−	−	+	A	−	−		−		A C D
S	4	+	−	−	+	−	−	−		−		—
S	3	+	−	−	+	−	−	−	+	−		A
K 1	1	+	−	−	+	+	−	+	+	+		A C
Inf 1	8	+	−	−	+	−	−	+	+	+		A C D
	7	+	−	−			+	+	+	+		A C D
		−					+	+	+	+		A C D
										−		A C D

TABLE V.—*Reactions of Short-chained Bacilli*

Strain		Glucose	Mannite	Maltose	Lactose	Saccharose	Dulcite	Raffinose	Arabinose	Dextrin	Inulin	Milk
Inf C	6	+										
K	3	+									+	A C
S	2	+	−	−	+				+	+		A
Innes	2	+	−		+			−	+	+	+	A C D
P	6	+			+			+		+	+	A C D
B	13	+			+	+		−	+	+	+	A C D
L	16	+			+	+		−	+	+	+	A C D
Rettger	3	+			+	+	−	−	−	−	+	A C D
J	5	+			+	+	−	−	−	−	+	A C D
K	1	+	−	−	+	−				+	+	A C D
K	2	+	−	−	+	−	+			+	+	A C D
C	23	−	+	−	+	−	−		+			A
C	24	−	+	−	+	−	−		+			A
Inf C	11	−	+	−	+	−	−	−	−	+	+	A C D
Innes	4	+	+	−	+	+	−	+	−	+	+	A C D
K 1	5	+	−	−	+	+	A	−	+	+	+	A C D
Int 1	3	+	−	−	−	−	−	+	+	+	+	A D
Inf 1	4	+	−	−	+	−	−	−	+	−	+	A C D
Inf 1	6	A	−	−	+	−	−	A	+	+	+	A C
		+	−	−	+	−	−	+	+	+	+	A C
		+	−	−	+	−	−	+	+	+	+	A C D

Practically all strains produced acid and clot in litmus milk. Decolorization of the litmus from the bottom of the tube upwards was a noteworthy feature. The clot was usually of a soft consistence, and easily spread over the sides of the tube by shaking. With some strains, however, the clot was quite firm. In one case only was considerable amount of whey expressed. Most strains clotted milk in twenty-four hours, but some required three to five days. Torrey reported attempts to shorten the clotting time of more slowly acting types by repeated transplants into milk medium, but could not hasten clotting. Similar procedure with some of our slow-clotting strains was also unsuccessful.

No relationship between morphology and sugar or milk reactions could be established. Table IV gives the fermentation reactions of all strains showing long chains. The only common characteristic is the production of acid from glucose. Similarly, in Table V there is no correspondence among the short-chained varieties. Among those not belonging to the chain-forming groups there is a like lack of uniformity. Of the sugars tested glucose was fermented by the greatest number of the strains, and dulcite, maltose, mannite, and raffinose by only a few.

Summary

The results of our work indicate that the acid-resistant bacilli in adult or infant faeces show a considerable range of morphological appearances. An attempt has been made to group these organisms by their biochemical reactions and to determine some of their serological relationships. It is suggested that the term "*B. acidophilus*" covers a considerable group of organisms and that numerous strains may exist even in one sample of stool.

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THE IMPLANTATION OR ENRICHMENT OF BACILLUS ACIDOPHILUS AND OTHER ORGANISMS IN THE INTESTINE

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The view that it was important to establish an intestinal flora consisting of bacteria which cause souring of milk was emphasized by Metchnikoff, who thought by this means many benefits could be conferred involving prolongation of life. Sour milk therapy has been investigated with great thoroughness by American workers (Rettger and Chaplin,[1] Gompertz and Vorhaus,[2] Bass,[3] Kopeloff and Chaney[4] and others).

The organism principally used is of the *B. acidophilus* type of Moro,[5] this is not the organism most prevalent in the faeces of young infants, especially those breast-fed, which harbour *B. bifidus* in almost pure culture. But the conditions of growth of the latter in culture are somewhat restricted, therefore *B. acidophilus* has been mainly used. In preparing such cultures it is important that Rettger and Chaplin's[6] directions should be followed in order that palatable products may be obtained.

Morphological Characters of B. acidophilus

In Gram-stained smears from human faeces and from milk and whey-broth cultures, *B. acidophilus* appears as a rather long, stout Gram-positive rod, characteristically

* The expenses of this investigation were defrayed by the Medical Research Council.

curled towards the ends. Great variation occurs in length—shorter forms alternate with long filamentous forms, some of which may be partially Gram-negative, especially in old cultures, but also frequently in faecal films. Some varieties of *B. acidophilus* occur as short Gram positive bacilli with a tendency to chain formation, especially on isolation from rats' or dogs' faeces. In cultures on whey-agar two types of colony of *B. acidophilus*, designated by Rettger and Horton[6] as Y and X, are seen frequently side by side. These are easily recognized under the low power of the microscope. The former have a decidedly fuzzy appearance, and are indistinguishable from the colonies of *B. bulgaricus*, while the Y type is small round or spindle-shaped and is only partly fringed, and at times appears almost perfectly smooth. The latter colonies may be designated crab like. The two appear to be interchangeable.

The Y colonies can be differentiated from those of *B. bulgaricus* by the fact that *B. acidophilus* produces acid in 1 per cent. maltose broth after incubation at 37° C. for forty-eight hours whereas *B. bulgaricus* does not.

Isolation of B. acidophilus from Faeces

Agar containing 1 per cent. peptone and 2 and 4 per cent. lactose proved efficient in the isolation of the aciduric organisms from dogs' and rats' faeces, but did not give quite so good results in the case of human faeces, for which whey-broth, whey agar (Rettger and Cheplin[1]), and liver glucose agar (Torrey) were better. On the latter medium *B. acidophilus* colonies appear as small fluffy deep colonies resembling a fleck of cotton, or as flat dingy or globular colonies with serrated edges, and are distinguishable from *B. bifidus* colonies which are raised, more or less globular and buff or reddish brown in colour. As in the case of *B. bifidus*, *B. acidophilus* is acid tolerant rather than acidophile under cultural conditions.

Generally speaking the isolation of aciduric organisms is much easier in the case of animal faeces. On numerous occasions considerable difficulty was experienced in the isolation of these organisms from human faeces even when large quantities of milk soured by *B. acidophilus* were being administered and when direct Gram stained smears from the faeces showed a considerable proportion of such bacilli.

Experimental Feeding with B. acidophilus Milk to Human Typhoid Bacillus Carriers: the Effect on the Intestinal Flora

The ingestion of recent cultures of *B. acidophilus* in milk—two and a half pints a day, a third of this amount being drunk thrice daily between meals—in addition to a mixed diet containing approximately 250 to 300 grams of carbohydrate, caused within four days such a transformation of the ordinary mixed intestinal flora of two typhoid and one paratyphoid carriers that the predominant organism was of the *B. acidophilus* type (80 to 90 per cent. of the organisms present in Gram stained films). The number of coli-form colonies on MacConkey agar plates was considerably reduced during the period of administration of the milk. On discontinuance of milk feeding the ordinary mixed flora reappeared in four or five days, while after forty-eight hours no growth of *B. acidophilus* was obtained in whey agar or whey broth. Even after feeding with *L. acidophilus* had been discontinued for five days, however, bacteria of this type were still present in small numbers in Gram stained films.

In order that, if possible, conditions favourable for the persistence of *B. acidophilus* in large numbers might be established, commercial lactose in doses of 6 ounces a day in three equal doses between meals was given along with the amounts of *B. acidophilus* above mentioned to two carriers. After feeding with *B. acidophilus* was discontinued the lactose was continued for six weeks in one case, a satisfactory persistence of *B. acidophilus* occurred (abundant *acidophilus* present six weeks after stoppage of *acidophilus* milk feeding), but with the other only slight delay in disappearance of the organisms resulted (less than 5 per cent. of the organisms in stained films were of *acidophilus* type one week after stoppage of *acidophilus* milk feeding).

Additional Factors on which Implantation Depends

Ingestion of lactose—apart from feeding with *acidophilus* milk—in large quantities (6 ounces a day) can transform the flora, but the results obtained are not so striking as with *B. acidophilus* milk and are somewhat variable, a partial failure being met with in one of the cases tested. Laxatives in conjunction with lactose feeding appeared to aid the transformation, apparently by hurrying on the contents of the small intestine so that the lactose is not absorbed and is available in the lower reaches of the bowel where the aciduric organisms apparently multiply. The transformation effected by means of a high calorie carbohydrate diet by itself is not so complete as that brought about by *B. acidophilus* feeding in man, but is quite successful in the case of rats.

Implantation of B. bulgaricus

Acclimatization of this organism in the intestine of man after oral administration has been claimed by Metchnikoff and his followers (Cohendy[8] Belonow[9] and Leva[10]) but this has not been substantiated by other investigators (Luerssen and Kuhn[11] Herter and Kendall,[1] Distaso and Schiller[12] Rahe[13] Hull and Pettger[14] and Rettger and Cheplin[1]). Half a litre of sterile milk infected with *B. bulgaricus* and prepared in the usual way was given to three different persons but in no case was it possible to isolate the organisms from the faeces in spite of calomel being given the previous evening. The failure in repeated attempts to implant *B. bulgaricus* in the intestine of man may be due to the fact that unlike *B. acidophilus*, it is not a normal inhabitant of the human intestine.

Feeding with Special Types of B. coli

For a period of a month two enteric carriers were fed with amounts up to 4 ounces thrice daily of milk inoculated with *B. coli* of the *lactis aerogenes* variety and incubated at 37° C. for twenty-four hours. The strain employed in these experiments was isolated from the faeces of a *B. paratyphosus* B carrier. As there was no marked alteration of the intestinal flora and no predominance of the characteristic colonies of *B. lactis aerogenes* a vaccine was prepared of the organism which was injected into one of these patients subcutaneously commencing with 5 millions and rising by approximately doubling doses to 1,000 millions the doses being given at two to four day intervals. At the same time feeding with the organisms was continued as before. The flora was now so transformed that *B. lactis aerogenes* was present almost in pure culture in direct MacConkey agar plates from the faeces. After stoppage of the administration by mouth of *B. lactis aerogenes* only small numbers of these were found for the next two or three weeks, showing that no permanent implantation had taken place. A similar failure was experienced on feeding milk cultures of an inosite-fermenting type of *B. coli* in the same case. Thus the experimental feeding of bacteria not normally present in the intestine failed to cause their implantation in the intestine as has been generally found. But after vaccination implantation occurred for a time. This result appears to agree with that of Raubitschek[15] who was able to implant *B. prodigiosus* and other organisms in the intestines of rats and dogs after preliminary immunization by a vaccine of the same organism.

The Effect of B. acidophilus and Lactose Feeding etc. on the Reaction and Consistency of Faeces

The reaction of the faeces was not influenced by the administration of *L. acidophilus* milk or lactose but appeared to be influenced by milk inoculated with *L. lactis aerogenes* and *B. coli* (inosite fermenting type) being rendered acid thereby. The character of the faeces was soft moist odourless and of a light yellow colour during the taking of milk soured by *L. acidophilus* or the ingestion of lactose in large quantities. This was very evident in comparison with the faeces of other typhoid carriers under observation and of the same carriers under other regimes whose stools were frequently hard formed fair in colour rendering the isolation of the enteric organisms much more difficult if not impossible.

Conclusions

1 Implantation or enrichment of aciduric organisms (*B acidophilus* type) in the intestine occurs in the human subject as a result of feeding with cultures—for example, in milk, this result is facilitated by administration of lactose and diet rich in carbohydrate, but these alone are not so effective

2 The organisms rapidly disappear when feeding with cultures is stopped But they may persist in some cases as a result of continued ingestion of lactose

3 Implantation of foreign types of *B coli* may succeed provided that vaccination with the organism is practised along with feeding with cultures (in confirmation of Rubitschek)

4 The predominance of *B acidophilus* in the intestinal flora as a result of ingestion of cultures seems to relieve constipation, but does not notably affect the reaction of the faeces

5 The excretion of typhoid and paratyphoid bacilli in the faeces by chronic carriers was not influenced, although *B coli* was to a great extent suppressed by feeding with *B acidophilus* milk

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Memoranda:

MEDICAL, SURGICAL, OBSTETRICAL.

PULMONARY EMBOLISM

In reference to Mr Lockhart-Mummery's paper on the above subject published in the British Medical Journal of November 8th (p 850), the following case of death from pulmonary embolism following reduction of a hip dislocation is of interest

A collier aged 39 early in the morning of March 22nd 1923 was injured underground by a fall of stone weighing several hundredweights on the back of the right thigh He was taken to the local hospital where under an anæsthetic an attempt was made to reduce a dislocation of the right hip This failed and on the same day he was sent to the Royal Infirmary Cardiff and admitted at 5 p m An obturator dislocation of the right hip was found and an anæsthetic given immediately First attempts at reduction resulted in the movement of the head of the femur to the back of the acetabulum a further attempt produced reduction The patient was put to bed with the legs tied together The condition and reduction were confirmed by radiographs

On March 23rd the patient had much pain in the right hip and difficulty in passing water The following day the right ankle was very swollen and blue there was general swelling of the right limb On March 27th the pain was less and the ankle swelling was going down

On April 1st at 3 p m he had sudden pain in the right side of the chest with marked cyanosis and dyspnœa and blood stained, frothy fluid expectoration the pulse was weak and rapid At 6 p m the breathing was more laboured and the pulse weaker He died at 7 30 p m

At a full necropsy carried out by Dr H A Haig on April 2nd the following conditions were found Embolus in the form of a 'riding clot' —that is astride the bifurcation and blocking both branches of the pulmonary artery, thrombosis adjacent, marked congestion and œdema of both lungs heart enlarged both ventricles dilated, subperitoneal tissue in region of sternum and right iliac fossa œdematous, *ante mortem* clot in right external iliac vein The pulmonary specimen is in the pathological museum at the Royal Infirmary

The primary injury and the two manipulations under anæsthesia bruised the adjacent femoral vein, and this and the subsequent immobility produced stasis and thrombosis there, these spreading to the external iliac vein On the tenth day after the injury a portion of the clot in the external iliac vein was detached and carried to the bifurcation of the pulmonary artery, blocking both its branches The resulting strain on the heart from obstruction to the circulation between its right and left sides caused death in four and a half hours

Sepsis is ruled out as a causative factor in this case

Royal Infirmary, Cardiff A W Sheen

DERMATITIS CAUSED BY PEDICULOIDES VENTRICOSUS

The general manager of the Docks recently reported to the Medical Officer of Health of Bristol the occurrence of a highly irritating rash among dock labourers engaged in unloading barley from Morocco, which was attributed to spicules penetrating the skin

On visiting the ss *River Lagan*, one of the ships concerned, a number of labourers were found to have a closely-set but discrete papular rash on the arms, neck, and face The back, chest, and abdomen were also affected, but to a lesser degree, and here the rash was more widely distributed In no case were the legs affected No constitutional effects had ensued among the patients examined

The barley was of excellent quality, and to the naked eye very clean Some of it was screened, and the dust was found on microscopic examination to contain the mite *Pediculoides ventricosus*,[1] which appears to be a parasite of the caterpillar of the cotton moth In some samples only one or two were discovered after a long search, while in others mites were present in practically every field For an unknown reason, only females were found, no males or gravid females being present in these specimens A long and careful search is necessary, as many negative samples may be followed by one containing large numbers of mites

The disease shows little tendency to spread from one person to another, although the labourer's family may become infected apparently if much dust is carried home on the clothes The mite does not burrow under the skin, and does not persist for long on the human body Soothing ointments and bathing with warm water containing soda were recommended, and as a prophylactic measure smearing the exposed parts with grease was advised, followed by a bath after work, a procedure which is reported to have produced good results in America

Dust blown from the barley will apparently carry the mite and so cause the disease We are informed that in another part the inhabitants of some cottages quite close to the dock where Moroccan barley was being unloaded developed the disease, although not in contact with the grain The captain and the mate of the *River Lagan* were affected, although they had not actually handled the barley This is readily intelligible when one sees the great numbers of mites present in small quantities of the dust

The name "barley itch" is to be deprecated it gives patients the impression that they are suffering from the much more serious ailment to which the name "itch" properly belongs and of which the pathology is essentially different, although it is also caused by a mite In addition the parasite is found on other vegetable substances, giving rise to a similar dermatitis—for example, cotton seed, is reported by Nixon,[2] to whose paper I would refer those who wish to see some of the best illustrations published of the mite

Although of little harm beyond the annoyance caused by the itching and the consequent loss of sleep, the disease is of considerable economic importance Dock labourers require up to 10s a day extra pay when handling this grain, and certain port authorities are even considering whether they shall refuse to allow it into their docks at all The majority of labourers who handle the grain develop the disease, but a few exceptional individuals seem to be immune The problem is also of some interest owing to the fact that recently there has been a large increase in the amount of barley imported from Morocco

We are indebted to Dr Henderson, of the Department of Zoology in Bristol University, for confirming our opinion as to the identity of the mite

R A Askins, M D, D P H,
Deputy Medical Officer of Health Bristol

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CONCEPTIONS OF CONSCIOUSNESS

Dr C S Myers devoted his presidential address in the Section of Psychiatry of the Royal Society of Medicine on November 11th, to certain views on the subject of consciousness, gathered, he said from a study of pure psychology, but which he hoped might be of service in the allied field of medical psychology

Dr Myers described the chief or one of the chief functions of consciousness as the selection by the individual of alternative stimuli If, owing to the uniformity of external conditions or—what came to the same thing—the immobility of the organism, the individual was unable to alter its relation to its environment, consciousness could hardly arise The object of consciousness was to maintain a favourable environment and avoid an unfavourable But if the consciousness was to act effectively in its selection relatively small variations in the environment must differ appreciably in the reactions they produced It was also the task of consciousness to co-ordinate all the past and present experiences of the organism so as to give direction to its future activities and choices of environment Dr Myers instituted a parallel, in the realm of mental activity, to the two forms of activity of living substance—the one, intensive and momentary, the other, moderate and prolonged The contractions of striated muscle illustrated the first of these, and of unstriated the second Was it too fanciful, he asked to try to distinguish these two forms throughout mental activity even up to the highest conscious processes—on the one hand, the momentary and so to speak, mechanical acts of expression in general, and on the other hand, the long continued and relatively persistent sets of attitudes or mental postures of a directive character? He rather deplored the exaggerated importance now attached to the affective consciousness which had led even to such things as a slip of the tongue or the process of forgetting being invariably attributed to emotional conflict and inhibition It was also held—a view which he was unable to accept in its entirety—that there was a sort of common fund of affective energy—a single *libido*—that could be drained off into one or other channel of mental activity in such a way that what one channel gained necessarily impoverished the others Dr Myers held that it was unreasonable to suppose that the 'energy" informing human acts was derived solely from affects, although it might be considered that—using the term in its widest sense—the attitudes or mental postures served as keys to unlock the energies resident in the acts It was unreasonable also, in his opinion, to suppose that acts depended on a kind of drainage from one channel to another The mind was not comparable to a vast sewerage system in which the active channels drained off energies from channels which were in so far rendered inactive The act of inhibition involved as much work as that of excitation

Finally, Dr Myers turned to consider the nature of consciousness itself There was a time he said, when mind was regarded as the product of the brain, just as bile was regarded as the product of the liver this was succeeded by an age when mind and living matter were regarded as absolutely different in kind so that it appeared absurd to compare mind with bile as a secretion or living substance From this there grew up on the one side a theory of psycho-physical parallelism and, on the other of interactionism in which the mental and physiological processes were regarded as in some respects interdependent and according to circumstances, influencing and controlling each other Times had now changed It was no longer possible to regard matter as composed of inert atoms The structure of the atom was revealed as a constellation of ions, each of which appeared to be a charge of electricity Matter was coming to be regarded as a manifestation of electrical forces—in other words, as the product of activities What, then, of mind? Was not this likewise the product of activities? Was the difference between mind and matter so fundamental as it appeared a century ago? On considering mind and living matter, the distinction was reduced almost to vanishing point Essentially the same purposive directive characteristics which distinguished living from dead matter distinguished also—raised to a higher power—mental activity from the activity of other living tissues

TREATMENT OF EMPYEMA

At a meeting of the Liverpool Medical Institution on November 6th a discussion on the treatment of pleural empyema was opened by Mr Thelwall Thomas

Mr Thomas alluded to a discussion in 1893, when he brought upon himself serious criticisms for daring to advocate excision of a portion of rib to facilitate free drainage He discussed empyema with and without pneumonia, and emphasized the necessity of repeated aspiration in severe cases of empyema, complicated with pneumonia, to relieve serious symptoms of toxæmia and a physia before resorting to incision—a line of treatment confirmed during the severe war epidemic He strongly advised local anæsthesia, both as a preliminary to exploratory puncture and as the only method of anæsthesia for the subsequent operation The site of election was below the angle of the scapula, a portion of the eighth or ninth rib being excised and the pleural opening being made sufficiently large to admit two fingers and facilitate the removal of masses of fibrin Since the routine performance of this operation chronic empyema had been much less frequent Mr Thelwall Thomas mentioned the value of x rays examination in doubtful cases Tubes for drainage should be half an inch in diameter at least he deprecated the use of safety pins as "land anchors" for the tube suggesting instead a strong hairpin pushed through the tube and the limbs bent at right angles Chronic cases necessitating Dakin treatment, or plastic operations, had become rare owing to increased efficiency in drainage antiseptic dressings should be used Exercises to expand the lungs and good feeding were essential The operation of incision drainage and immediate closure he considered severe and uncertain in its results

Mr John T Morrison confined himself to discussing how the development or chronic empyema could be prevented This might be looked at from two points of view—the early expansion of the lung, and the prevention of infection The first should be encouraged from the start The ideal method—primary closure of the wound—being still too risky for general use, valvular drainage should be employed Personally he favoured connecting up a short wide drain with a tube hanging over the bed, the tube end passing under the surface of fluid in a bottle on the floor The tissues must, of course, fit snugly round the drain This made an air-tight and water tight joint so that there was no necessity to touch the dressing for five to eight days The prevention of mixed infection was impossible if the wound remained open If possible the drainage tube should be removed at the first dressing it might be as early as the third day to the fifth if the lung had expanded and adhered to the parietes round the drain as it often did The early removal of the drainage tube appeared to him to be the safe and reasonable compromise between immediate suture and prolonged drainage of the chest

Sir James Barr dealt with the physics concerned When an operation for the evacuation of the pus was necessary the object should be to prevent, as far as possible the collapse of the lung The incision should be made posteriorly, as low as thought desirable and in a line with the lower angle of the scapula The patient should lean towards the affected side and an assistant should compress that side of the chest A short tube should be kept in for a few days so as to prevent the wound closing and the wound should be covered with a piece of sterilized oiled silk so as to act as a valve to prevent air entering but allowing pus to escape The patient should frequently blow into a Woulff's bottle or piece of rubber tubing to keep the lung expanded When a rise of temperature occurred the surgeon frequently concluded that it was due to lack of free drainage and retention of pus he then proceeded to enlarge the wound and work further and further inwards

rise of temperature was nearly always due to secondary infection of the wound When the wound was dry and glazed constant irrigation should be at once adopted, either with Dakin's tubes, or by immersion in a warm saline bath The water in the bath should contain 0 9 per cent of sodium chloride Attention to minute details was necessary for success

Mr K W Monsarrat considered that the appropriate treatment of empyema was dictated by the type of infection in each case In streptococcal cases in early thoracotomy was often indivisible In tuberculous cases the results of open operation were usually disappointing, sinuses in these cases tended to persist indefinitely In pneumococcal cases he held that there was no rival to adequate drainage, tube drainage being dispensed with at the earliest possible moment He did not use any special measures, he considered that the essentials of technique were in opening wide enough for the evacuation of coagulum masses and a tube large in diameter and short in length Examination of the discharge was the best guide in choosing the time for dispensing with the tube

Dr Hubert Armstrong recalled the danger of acute oedema of the lung and syncope in exploratory puncture, and denied that it could be averted by previous local anaesthesia There was no such danger in the exploration of an empyema, but only when the needle entered the lung in chronic pneumonia He considered it advisable to aspirate in cases where the fluid was only turbid, and to postpone open operation till it had become frankly purulent The extremely low operation was not without danger of injury to the diaphragm and consequent infection of the peritoneum

Dr J C Matthews referred to those cases, usually following pneumonia, in which aspiration produced a thin turbid fluid with a high bacterial content It was well recognized that these patients, if submitted to immediate operation, became very ill he suggested that this was due, not so much to the infective nature of the fluid, but to the fact that in the absence of adhesions between the lung and chest wall operation induced a complete pneumothorax with consequent collapse of the lung and displacement of the mediastinal contents to the opposite side

DEEP X-RAY THERAPY

At a meeting of the Brighton and Sussex Medico-Chirurgical Society on November 6th, Dr L F Maynard, the President, in the chair, Dr W Barrington Prowse read a paper on deep x-ray therapy

Dr Prowse commenced by pointing out that though x-ray treatment, like surgery, had its definite limitations, yet in many cases it might alleviate suffering or prolong life when no prospect of cure was present The main purpose of his paper was the subject of x rays in relation to malignant disease, in particular he wished to speak of the more scientific and accurate applications of x rays for therapeutic purposes, especially as employed at Erlangen The work of Professors Seitz and Wintz at that university had raised deep therapy to the rank of a scientific and accurate procedure, and had led to greatly improved results Even by the older methods relief of pain, healing of ulcerated surfaces, disappearance of a growth—at any rate for a time—had been effected, but measurements and dosage were variable Now the dose could be measured fairly accurately both on the surface of the body and at given depths, and the now established reactions of normal and diseased tissues to different quantities of rays gave them some basis for the dosage Apparatus also had been improved, rendering possible the use of the necessary heavy and accurate dosage of rays of sufficient penetrating power and homogeneity X rays had a profoundly destructive action on all tissues when administered in sufficient quantity, in smaller doses they appeared to stimulate, though this had been disputed The action of x rays on living tissues varied in degree, young and rapidly growing cells, such as those of embryonic type, were more susceptible than older cells of fixed type The cells of new growth, being largely of embryonic type, were, in varying degree, more susceptible than most of the body cells of fixed type

Seitz and Wintz, at Erlangen, had determined the quantities of x rays which produced biological changes in tissues, normal or diseased, while Krönig and Friedrich of Freiburgm, working on different lines, had similar results, giving the same reactive sensitiveness for individual tissues So was established a basis for estimating the necessary dosage in deep x-ray therapy He defined the latter as being the administration of an accurately measured quantity of rays, for curative purposes, to the whole of a diseased area within the body, such quantity being the minimum which would destroy the vitality of the diseased tissue to which it was applied In this accurate measurement lay the difference between this and the older methods Depth was variable, the tissue treated might be in the centre of the body or at the surface He did not like the word "intensive," ignoring measurement and conveying the impression of extreme intensity, though this was no greater than in the older methods The treatment was intensive in the sense that it aimed at giving the full necessary dosage within a short time, instead of in divided doses over a long period Dr Prowse thought that the immediate application of the total dose was the method of choice, as a rule, when dealing with an existing malignant growth, except where there were positive contraindications Ten years ago it had been noticed that malignant growths exposed to x rays gradually suffered diminution of their sensitiveness to the rays, and Sidney Russ had recently further established, by experiments on rat sarcoma, that this acquired resistance was handed down through many generations of cells from those originally irradiated This was a strong argument in favour of the immediate application of the total dose The single dose was more accurate, smaller in quantity in the end, and saved time, which was important in dealing with cancer Those who advocated divided dosage laid stress on the fact that recovery from these doses was more rapid in the normal tissues than in the tumour, *on the* absence of x-ray sickness, and on the *great general dis*turbance of the body frequently seen after the single dose, changes in the blood, and possible injury to healthy organs These latter dangers might also be present in the divided dose Dr Knox had suggested that the control of cancer and other diseases by radiations in divided doses should be aimed at, but was this possible? Many cases of cancer had been checked in their progress by x-ray treatment carried on at intervals, but in the end the patients had succumbed, after a time x rays had appeared to lose their power He did not suggest that the single lethal dose was applicable to every case Each case must be considered on its merit, and the arguments against the single massive dose had much weight in cases other than those of existing malignant disease The prime object of the Erlangen treatment of cancer cases was the destruction of the vitality of the cancer cells There followed breaking down of the tumour, elimination of the products of disintegration, and building up of healthy tissue Wintz attributed the first of these entirely to the "destructive momentum"—namely, x rays elimination, etc, depended on the general biological condition of the whole body

In dealing with a patient sent for x-ray treatment, the first thing was verification of the diagnosis, but there was a valid objection to test-excision or curetting if avoidable Then the general condition of the patient must be considered The size of the tumour was important, first, on account of the possible difficulty of producing a lethal effect upon all parts of it, and secondly, on account of the general reaction which might result from the destruction of a large growth, raising the question whether the body was equal to the strain of elimination and recuperation Further inquiries should include metastases, the blood, the excretory functions, previous illnesses, the skin, especially as regards former irradiations or applications capable of producing irritation or secondary irradiation The possibility of adhesions fixing coils of intestine within the area of irradiation was very important, also any inflammatory state of the intestine or bladder Close collaboration was, therefore, necessary between the medical attendant, radiologist, and surgeon The preparation of the patient for irradiation should include rest, effective emptying of the bowels, and regulation of diet Some abdominal and pelvic cases were

irradiated fasting An injection of heroin or morphine and scopolamine was sometimes necessary With regard to general considerations of irradiation, the object was to apply to the whole of the diseased area a dose of x rays suitable for the destruction of the vitality of the malignant cells without serious injury to the skin and normal tissues This was generally more easily done in the case of deeply situated tumours than in the case of those on the surface When the tumour was on the surface it was more difficult to get sufficient dosage without injury to the skin The total time required for the irradiation might be several hours, and it was often necessary to have intervals bearing in mind that the dose was to be completed within about two days all possible provision must be made for the patient's comfort, and for the protection of those parts not being intentionally irradiated

After-treatment was as important as irradiation since, after the destruction of the vitality of the malignant growth, reparation of injured healthy tissue, elimination of products of disintegration, sustaining of the body against malignant disease, and restoration of healthy tissue had all to be undertaken These depended mainly on the condition of the body, but rest diet, fresh air attention to excretion and suitable diet were all of assistance Wherever local irradiation had caused local lowering of vitality, the tissue or organ affected must have rest and be protected from all irritation X ray sickness was generally lessened by regulation of the bowels before irradiation and the administration of a hypnotic Injury to the blood depended directly upon the quantity of rays absorbed and generally righted itself in about six weeks recovery should be helped by medicinal treatment, fresh air and sunlight For elimination of the products of disintegration and the restoration of healthy tissue they had to depend upon the resistance of the body and upon general care and treatment X-ray therapy for carcinoma might seem a formidable proceeding, but carcinoma was a formidable disease, and therefore justified some risks being taken

At the commencement of the meeting Dr W B Prowse showed two cases treated by x rays (1) sarcoma of the back (2) carcinoma of the breast Dr A W Williams also showed two cases (1) a severe case of lupus vulgaris of nose and upper lip cured by carbon arc light baths (2) lupus vulgaris of nose cheek, lip buccal mucosa, and larynx treated by sunlight baths and ecrin

TREATMENT OF SPASTIC PARAPLEGIA

A clinical meeting of the Aberdeen Medico-Chirurgical Society was held on November 6th, the President Dr G M Duncan in the chair

Mr A Mitchell showed two children with spastic paraplegia treated by Stoffel's operation He pointed out that small degrees of deformity might be treated by continuous fixation followed by general rhythmic exercise, preferably to music Intermittent forcible passive movements and massage should be forbidden, since the spasticity was usually increased by these measures More severe cases must be treated by operation, with the aim of enabling the patients to walk The main types of operation were three—resection of the posterior nerve roots section and suture of a main nerve trunk such as the sciatic and resection of portions of certain motor nerves in order to restore the muscular balance Such motor nerve were the branches of the obturator nerve and the nerves to the gastrocnemius and the soleus, occasional tenotomy of the adductors in addition was required This third method had been employed in the cases shown and both patients were now able to walk and to attend school

Mr W Anderson discussing these cases referred to the recent work in Australia of Hunter and Royle who advised division of the second third, and fourth rami communicantes of the sympathetics Mr Anderson had seen four patients treated by this method, but thought them still rather spastic

Dr W Brown showed a child of 23 months with tuberculous peritonitis, dactylitis, and lupus verrucosus The abdominal condition had been treated by operation followed by mercurial inunction and was now greatly improved He also showed a child of 14 weeks with congenital heart disease

Mr F K Smith referred to the rarity of tuberculous dactylitis in adults and asked whether the patients generally died in childhood

Dr G Rose confirmed the rarity of this condition from his examination of all school children of 13 years in Aberdeen for the last fifteen years Dr Brown agreed and said that in his experience such cases were almost always subjects of a multiple tuberculous infection and did not live long

Mr Andrew Fowler showed two cases of severe bilateral Dupuytren's contracture in adult males treated by multiple subcutaneous fasciotomy under local anaesthesia The cases were discussed by Mr F K Smith who suggested that as the fingers were now extended the palmar fascia might be excised to prevent the possibility of recurrence, Mr G H Colt, Dr H R Sopper, who referred to a good result obtained by Gill's operation—excision of the palmar fascia through a transverse incision and the implantation of a fat-fascial graft, Mr W Anderson Mr A Mitchell and Dr Cruickshank, who raised the possibility of treatment by radium on the analogy of its success in cases of keloid

Mr F K Smith then showed skiagrams of two cases The first was a tumour of the upper end of the femur in a man of 51 with a fracture of the femoral neck as the result of a slight accident in June, 1923 Tissue removed by exploratory operation at that time was reported as "ossifying chondroma" Operation was not considered advisable, and the patient did not report again till recently when definite changes for the worse were seen on skiagraphy This case was discussed by several members, and the general impression was that the tumour had now taken on sarcomatous changes, and that radium was the only possible method of treatment The second case was one of a girl of 17 with pyuria and some slight tenderness and enlargement of the right kidney Full examination by clinical and bacteriological methods—ureteral catheterization and cystoscopy x rays and pyelograms—showed irregular dilatation of the right ureter a pyonephrotic right kidney, calcareous deposits in the mesentery, and an oval calculus in the lower end of the left ureter, with dilatation and septic changes of the left kidney pelvis Tuberculosis had not been found This case was discussed by Dr Innes, Mr A Mitchell who suggested lavage of the renal pelves Dr Robert Bruce and Dr Cruickshank Mr Smith, in reply, stated that his proposed treatment was to estimate the separate functional activity of each kidney by the administration of urea and ureteric catheterization, to remove the calculus, and then to treat on medical lines In his opinion if the case were tuberculous there would have been signs in the bladder or at the orifices of the ureters by the time the disease in the kidneys had reached its present stage

PELVIC PAIN

A meeting of the Section of Obstetrics of the Royal Academy of Medicine in Ireland was held on October 31st when the President Dr Louis Cassidy read an address on pelvic pain

Dr Cassidy said that pain was one of the common symptoms which brought a woman to consult a gynaecologist The most fatal diseases in gynaecology such as cancer were generally associated with pain only in the later stages when pain made its appearance the case was generally inoperable The most common cause of pain in gynaecology was of abdominal origin The pelvic and abdominal organs were insensitive but affections of the parietal peritoneum were appreciated by the patient as pain There were in the viscera no sensory nerves—a point thoroughly established by animal experiments Pain affecting these regions was referred pain the result of an affection of the parietal peritoneum The task of localizing pain in the pelvis presented many difficulties Some help might be obtained from a rough topographical outline of the abdomen a horizontal line being drawn through the umbilicus and a perpendicular one at right angles to the

Pain in the middle line, below the umbilicus, was generally associated with a lesion of the uterus or the bladder. Pain on either side of the middle line would probably be referable to the adnexa. The appendix also gave rise to many atypical symptoms. The hernial openings should always be palpated when a woman was in the erect position. Umbilical hernia might sometimes be the cause of pain. In abdominal pain in virgins it was wise to think first of the appendix, and in such cases rectal examination should never be omitted. A condition sometimes simulating acute appendix was the rupture of the Graafian follicle in the menstrual period. Pain proceeding from the kidney or ureter rendered the ureter in its vaginal course peculiarly sensitive to pain. According to some authorities left-sided pain was due to a varicose condition of the veins of the pampiniform plexus, which condition might be exceedingly difficult to diagnose. Left-sided pain was also often caused by an affection of the colon. Sacral pain, a common affection in women, had very little to do with an affection of the genital organs, and rheumatic conditions were often responsible. Therapeutic measures must be based on accurate diagnosis, the general health of the patient was related to her appreciation of the intensity of the pain.

Mr. Seton Pringle was not sure of the utility in diagnosis of the so-called areas of referred pain in visceral disease. Left-sided pelvic pain was commonly associated with stasis, it was increased by constipation and during the menstrual period. He associated this pain with the occurrence of Lane's sigmoid kink, though in his experience many cases were not relieved by correction of this congenital abnormality. He mentioned four cases of patients suffering from acute pain in the right iliac fossa associated with vomiting, slight rise of pulse rate, and some increased tension low down in the right iliac fossa, but without any rise of temperature or definite rigidity. On operation a rupture of a large Graafian follicle was found, a few drachms of blood having escaped into the pelvis. He found it difficult to reconcile the acute condition produced by this slight haemorrhage with the very slight reaction commonly caused by an accumulation of pus in the same locality.

Dr. A. R. Parsons mentioned the case of a woman complaining of pain in the right iliac fossa. He treated her for a time, and she was also seen by a surgeon, but as she was not improving she was, after examination, told that she was suffering from congestion of the ovaries, and treatment was recommended, but this also did no good, so she then consulted another gynaecologist. In the course of an exploratory laparotomy an abscess was found in the right ovary with an adherent appendix. Complete hysterectomy was performed, and the patient recovered.

Dr. Bethel Solomons said that the rules for diagnosis according to the position of the pain in the abdomen as suggested by the lecturer were not applicable to practice. In the diagnosis of gynaecological pain a careful bimanual examination with other diagnostic methods was usually more valuable than localizing the site of the pain. The amount of pathological change present did not in any way correspond to the degree of suffering. A woman with a large tumour or tuberculous tubes might have no pain, while some slight ovaritis or inflammatory band was productive of much pain. Whilst it was true that pain in the lower abdomen was not always gynaecological, it was also true that pain away from this region was often gynaecological. A striking instance of this was sciatica, and curable sciatica which had been cured in some instances by a subperitoneal Gilliam's operation, in others by removal of myomas. He added that this showed clearly that the presence of adhesions was not a necessary factor in pain. Pain on the left side was often due to a thickened ovarian cortex; this was relieved sometimes by resection of the ovary with removal of small cysts, in others by scraping the cortex. Pain on the right side, when referred to the ovary—especially when the latter was bound down to the broad ligament and was haemorrhagic—was often caused by an endometrioma. His practice was to remove the appendix if it was obviously inflammatory, if there was any pelvic peritonitis, or if the patient lived far away from a doctor.

Dr. A. K. Henry said that in appendix cases it was generally found that the first pain complained of was pain round the umbilicus. Pain was felt here before it was felt in the right iliac fossa, and if this was not so it was very likely that at operation appendicitis would not be found at all. He had seen cases in which the appendix almost formed part of the wall of either the caecum or the colon.

Sir William Smyly said that dysmenorrhoea was a form of pain which gynaecologists came across almost more than any other. Regarding the difficulty of diagnosis between appendicitis and inflammatory disease of the right tube, he had often found both present together, sometimes the origin of the disease was in one and sometimes in the other. In some cases a little blood in the peritoneum caused great pain, but in others it caused no pain at all. Matthews Duncan had said that retroversions which caused no symptoms required no treatment, and he divided retroversions into those with descent and those without. Sir William Smyly thought there was much less pain at the menstrual period nowadays than formerly, and this was probably accounted for by the fact that girls now led a more healthy life.

ENCEPHALITIS LETHARGICA.

At a meeting of the Medical Society of London on November 10th, Dr. F. M. Callander (the President) occupying the chair, a discussion on encephalitis lethargica was opened by Dr. F. Farquhar Buzzard. Dr. Buzzard's paper is printed in full at page 937.

Professor A. J. Hall gave an account of the epidemic of this disease during the present year as it was encountered in Sheffield and the surrounding district. Up to October there had been notified in the city itself 320 cases of encephalitis, and the notifications in the new *neighbourhood* would bring that figure up to about *500. During* the winter 1923-24 there had been one or two sporadic cases, and the storm burst with great fury about the second week of March. Many of the cases were very acute, and during April the fatalities were very high, the cases were chiefly of the restless, choreiform type. Taken on the whole, however, the mortality for the district had been surprisingly low—namely, about 10 per cent.—in contrast to 20 per cent. for the country generally. A great variation in type was noticeable, and many cases of abdominal myoclonus were seen, some of them so pronounced as to be admitted under a surgeon at hospital as abdominal emergencies. He discussed in some detail cases of polypnoea, and showed tracings of the breathing during attacks. He suggested that all cases showing this symptom should be notified. Hiccup was often a severe symptom.

Professor J. McIntosh discussed the etiology of the disease. Originally it was regarded as some form of cerebral poliomyelitis, while a few considered it an aberrant form of influenza. A good deal of animal inoculation had been done, but the monkey proved not to be a susceptible animal, although in one or two instances the disease has been communicated to it. Rabbits were easy subjects. It was shown that filtrates from the emulsions of infected brains were able to pass the Berkefeld filter and cause the disease in the inoculated animal. He was convinced that this disease was a distinct entity, and that it differed from all other neurotrophic diseases. He gave his reasons for separating it from herpes febrilis and from the spontaneous encephalitis of rabbits. He also urged a continuance of experimental researches to settle a number of points which were not yet very definite.

Dr. Salusbury MacNalty spoke on the epidemiological side of the subject, and referred first to the outbreak in London in the spring of 1918, when 55 persons were known to have had the disease. It was made compulsorily notifiable in this country in January, 1919, and early in that year there was a recrudescence, 41 cases being notified in one week early in February. The epidemic of this year was first localized in Lincolnshire. The total number of cases notified in England and Wales in 1924 (to October 25th) was 4,605, as against 1,025 in 1923 and 454 in 1922. The only method of spread seemed to be from case to case.

and not by the intervention of flies or any biting insects, nor by contamination of food or water

The PRESIDENT, in throwing open the meeting to general discussion, mentioned that, reflecting on the symptoms found in several patients in 1888, he was led to believe that they must have had this disease, and probably afterwards became ambulatory cases

Dr A W M ELLIS spoke of finding in the urine in cases of this disease a very largely increased quantity of ammonia and practically an absence of phosphoric acid In addition there was some albumose, showing intestinal and probably liver involvement

Dr C P SYMONDS spoke of the presence of the Argyll Robertson pupil in a number of these cases With regard to the distressing insomnia in many of the subjects of the disease, he questioned whether it was wise to attempt, by regimen and hypnotics to restore the normal rhythm in these patients His experience was that this was regained naturally in time

Sir WILLIAM WILLCOX thought that many cases of the disease escaped recognition because of the slightness of the symptoms, which were not carefully watched for In most cases there was a quick pulse, but in one case—a boy—it was only 50 per minute He inquired as to the significance of paralysis of accommodation in these patients, and whether Dr Farquhar Buzzard's experience agreed with his own that the prognosis was definitely worse in people over 55 or 60 years of age

Dr FARQUHAR BUZZARD in reply paid a tribute to the work done on the subject by Professor Hall in Sheffield In a public school where there was a small epidemic of mild cases four form masters had such severe and continuous hiccup that they had to absent themselves from school until it subsided When the pulse was abnormally slow the patient had usually reached a considerable degree of lethargy, probably on account of increased intracranial pressure Paralysis of accommodation and difficulty of convergence were very common in the disease He agreed with Sir William Willcox in regard to prognosis in older patients The gastro-intestinal symptoms present in some cases seemed to indicate that this might prove one route for the virus to the central nervous system He doubted whether treatment directed to the insomnia had much influence in altering the rhythm With greater experience the profession, he thought, would recognize cases more readily and there was thus hope for a steady decrease of the disease

"THE MEDICAL WITNESS"

At a meeting of the Hunterian Society held at the Cutlers Hall in the City of London, on November 17th a discussion, to which some eminent lawyers contributed, took place on the subject of "The medical witness" Mr H W CARSON occupied the chair

Sir THOMAS HORRIDGE, speaking as one of His Majesty's judges said that it would be difficult to exaggerate the importance of the medical witness In criminal trials from the simplest assault up to murder, the medical witness had not only to testify to the facts of the case, but frequently to give an opinion as to the criminal's responsibility In will disputes the case often turned upon the evidence of the doctor In nullity suits, again the evidence given by the doctor was of first importance In workmen's compensation cases the medical referee might himself be said to take part in adjudication and in a vast number of civil cases medical witnesses were called on one side or the other In preparing his evidence the medical witness should be careful to notice every minute fact even if it appeared at the time unimportant He emphasized the danger of approaching a case with a preconceived idea and determining whether the facts of the case fitted in with the theory the proper way was first to discover the facts and then form an opinion Even after the opinion was formed the mind of the witness should remain open so that the opinion might be remoulded in consequence of other facts elicited in the course of the hearing In the witness-box the medical witness should be on guard against the double question It was the habit of counsel to put to witnesses a double question with the object of eliciting a simple affirmative or negative as the case might be, and subsequently to use the answer as applying to that part of the question which suited counsel best If a witness could give a direct answer he should do so, any judge would allow him to qualify it afterward He would also warn witnesses against being lured into answering questions about circumstances of which they knew nothing or matters which they had not considered The witness should also use, as far as possible ordinary non-technical language It technical terms were used judge or counsel had generally to explain their meaning to the jury It was better to say that a man was badly bruised than to say that he was suffering from ecchymosis

Finally Mr Justice Horridge said a few words on the subject of professional privilege This had been granted to solicitors only because it was necessary for the administration of justice that there should be absolute confidence between parties and their legal advisers Even here the privilege was not unlimited, and in a case of criminal conspiracy professional communications had to be disclosed. Privilege was also allowed as between husbands and wives, although in recent years various Acts of Parliament had made husbands and wives eligible witnesses against one another On what ground was privilege claimed for the medical profession? He could see no ground except that of confidential relationship, and here where was the line to be drawn? If the doctor was to be privileged, why not the nurse or the chemist who made up the prescription Was the privilege to be extended to faith-healers and bone-setters and others who equally had confidential relations with their clients? Two Acts of Parliament—those dealing with the notification of diseases and the notification of births—compelled the doctor to reveal publicly matters which had come to him in his professional capacity, and he believed these Acts were passed with the support of the profession The evidence of doctors was required in order to assist the administration of justice, and he thought that doctors must know in their conscience that they had no claim to privilege, although they had a claim to protection, which was accorded them

Sir WILLIAM WILLCOX repeated some of the advice to witnesses which Mr Justice Horridge had already given In preparing his evidence the medical man should note and record everything that might have a medico-legal bearing The trial itself might prove to hinge upon a detail at first considered trifling The medical expert witness should not be *ex parte* and he should be free from bias this was of supreme importance in criminal cases He should refresh his memory by careful study of scientific literature, and if necessary should conduct scientific investigations to elucidate difficult points He should put himself in the position of cross-examining counsel and judge In a written report he should give his opinion and the reasons for it concisely, and the opinion expressed in such a report should be unalterable no doubtful expression should be put down there In the witness-box a direct answer should be given whenever possible and when not possible the reason should be clearly stated Evasions created a bad impression and lengthy explanations were apt to weaken the evidence If a compound question were asked the witness would be well advised to ask that it might be divided and put in sections If a book were cited the witness should ask to be provided with a copy and often if this were done it would be found that cross-examining counsel had taken an isolated passage to support his case whereas the main argument of the book supported the contention of the witness The expert witness unlike the common witness should remain in court during the whole of the proceedings this, indeed was legally allowed if not legally required

Sir FRANCIS NEWBOLT K.C. said that his own experiences with expert witnesses had been chiefly along another—a non-medical—line but such experience as he had had of medical witnesses had caused him to admire their fundamental honesty There was not usually among them that wide divergence frequently found in expert testimony or any testimony which indicated something beyond a mere difference of opinion He could assure medical witnesses that if they knew their book and were not carried away they could not be put down nor shaken in cross-examination I was well over

them to bear in mind that they must appeal to the common sense of the tribunal, and he thought it would be a good plan for them, in order to avoid bias, to imagine themselves as appearing for both sides in an action

Sir Bernard Spilsbury remarked that to those in court the responsibility upon a medical witness, whose word might decide the fate of an individual, must appear overwhelming, but he was not sure that the medical witness, even in a great criminal trial, felt quite the same himself Speaking in his own behalf, in his character of witness he was always impersonal He was not necessarily giving evidence against the prisoner in the dock, but against the person who committed the crime, and the identity of that person with the prisoner had to be proved by other means He went on to describe the care with which a medical witness should pursue his *post-mortem* or other investigations It was often forgotten that an expert had not merely to collect his facts, but to analyse and interpret them In almost all criminal cases it was essential that naked-eye observation of a dead body should be supplemented by the microscope, and he felt strongly that a pathologist or other skilled expert assistance should be available almost invariably for the general practitioner Before the medical witness gave his evidence in the first court—the coroner's court—he should have time and opportunity to weigh the facts he had elicited and compare them with facts in similar cases, consulting textbooks and other authorities as required The textbook, however, should only be supplementary, for many of the cases referred to in textbooks were based on evidence of somewhat doubtful value, and in any event the cases were decided at a time when medical knowledge had not made its recent advances

Dr Lewis Smith, from his experience of the coroner's court, added his testimony to the usefulness of the medical witness, and said that in some cases it became the duty of the coroner to protect the medical witness from censure by the jury One jury actually censured a medical witness because he had refused to attend another person who happened to be in the house at the time he was attending the deceased person What was more, the witness meekly accepted the censure, and the coroner failed to intervene and protect the witness

Mr Leigh Palmer added a few words from the point of view of a solicitor practising in the police courts The medical witnesses with whom he had largely to do were police surgeons, and he was inclined to complain that a good many of them did not give a long enough examination to persons accused of drunkenness, and in particular that they did not examine such persons for illness

Dr P B Spriggs as a police divisional surgeon, gave an account of the methods of examination he followed in the case of persons accused of drunkenness He also described the difficulties of the police surgeon in certain other cases, such as alleged indecent assaults, where as a rule there was no corroborative evidence He wished to make it plain that the police surgeon was returned, not on behalf of the police, but on behalf of the public The police surgeons worked with the police, but their evidence had to be, as the evidence of all medical men should be, entirely unbiased

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A meeting of the Royal Medico Chirurgical Society of Glasgow was held on November 7th, when a lecture, including a lantern demonstration, was given by Professor John H Teacher, M D, on the implantation of the human ovum and the early development of the placenta The demonstration consisted of (*a*) lantern slides of a new ovum (Teacher Bryce No 2), (*b*) new slides of the original Teacher Bryce ovum, (*c*) slides illustrating the comparative embryology of the early stages, (*d*) theoretical scheme of human implantation Pictures by Mr A K Maxwell of both ova and of sections of the ovum —Teacher Bryce No 2—were also shown The material has been published in detail in the *Journal of Obstetrics and Gynaecology of the British Empire*, vol 31, No 2 July, 1924 The principal points dealt with were (1) The closure of the decidua capsularis by union of the uterine epithelium with a structure composed of the ectoderm of the ovum To this the name 'operculum' (German *Verschluss*) has been given (2) The relations between the maternal blood vessels and the ovum in the earliest stages (3) Theoretical considerations related to the nutrition of the ovum prior to implantation and the process of implantation itself

Reviews.

PEDIATRICS

Dr G F Still's *Common Disorders and Diseases of Childhood*,[1] which first appeared in 1909, now gives fresh evidence of its vitality by the appearance of a fourth edition In successive editions new chapters have been added, but the general character and plan of the book have remained the same The title is a true description of the contents It is not a systematic and complete textbook of the diseases of early life its fifty-nine chapters deal with all the common and a few uncommon disorders of infants and young children, and deal with them largely from the individual experience of the author That personal experience is indeed supplemented by the views and observations of others, but the principal merit of the book is that it is the expression of Dr Still's mind on common or perplexing questions of daily practice His discussions are frequently illustrated by synopses of his own cases and by valuable series of statistics prepared from his hospital and private records There are many, perhaps too many, elaborate and complete treatises on diseases of children These systems or encyclopædias—vast aggregations of chemical, physiological, and clinical data—have their value as works of reference They can hardly be called books, but rather huge, well arranged scrap-books, which are consulted but seldom read and digested Dr Still's book is a genuine book, the product of his mind and experience its scope is designed to cover all the ordinary difficulties and problems of the practitioner, especially the difficulties of diagnosis and the practical details of treatment The call for a new edition shows that the book is still serving the needs of the time and, being made of the stuff of experience, it may well endure to a later age Survival in medical literature is as precarious as in any other kind of writing, but in the meanwhile we welcome the present edition as a characteristic and valuable example of British medical literature We should add that the book is furnished with a number of excellent illustrations

The little book on natural feeding of the child is the first of a series on food and hygiene by Dr Montessus of Nice The author has been a lifelong advocate of simpler and more natural habits in eating, and in this volume he deals with the diet of the infant and the child He begins with the infant, when the exclusive diet of milk is giving place to a more varied diet, making a broad division into an early period ending with the completion of the first dentition, and a second period of childhood subsequent to this The book is written in an ardent missionary spirit, and especially commends the use of bread made from 85 per cent flour, the liberal use of well boiled cereals, of ripe and cooked fruits, and of vegetables And this vigorous propaganda is accompanied by numerous recipes, so that the book is intended for the French housewife in her kitchen as well as for medical men

Examination of Children,[3] by Dr A Levinson deals largely with laboratory and to a less extent with clinical methods of examination The book is an expansion of a course of lectures given at the Northwestern University Medical School, Chicago After instruction in obtaining a case-history and in the ordinary physical examination of the child in bed, a descriptive list of instruments, utensils, and chemical agents is given, and the remainder of the book is devoted to the method and technique of their employment, with brief remarks upon their interpretation There are a number of illustrations of instruments, apparatus, and of various clinical procedures, on the whole these are disappointing The descriptions of many bacteriological methods are too curtailed to be of service With regard

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[1] *Common Disorders and Diseases of Childhood* By George Frederick Still M A M D Cantab F R C P Lond Fourth edition Oxford Medical Publications London Humphries Milford Oxford University Press 1924 (Demy 8vo pp xvi + 665 73 figures 25 net)

[2] *L'Alimentation Naturelle chez l'Enfant* Par Dr Montessus Paris J Malone et Fils Bruxelles A Dewit 1923 (Demy 8vo pp 178 Fr 8)

[3] *Examination of Children by Clinical and Laboratory Methods* By Abraham Levinson B S, M D London Henry Kimpton 1924 (Super Roy 8vo pp 140 74 figures 18s net)

to tubercle bacilli in sputum, nothing more is said than that 'only rarely does one find tubercle bacilli in children's sputum." Of the Binet-Semon intelligence test it is said that it is probably the best mentality test available," and the reader is given no account of what it is or how to apply it. The author's opinions of basal metabolism are given in six lines, and again neither a definition nor the technique is touched upon.

Professor BENDIX's book[1] on pediatrics is one that has secured a place in current German literature and has now reached its eighth edition. It deals with the subject in the ordinary systematic way. After an introduction dealing briefly with the physiology and hygiene of the healthy child, it proceeds in the usual order with the diseases of the newborn, with general diseases, digestive disorders, diseases of respiration, and so on. A complete survey of subjects is given although none are treated exhaustively, and some very briefly. It is naturally written for German readers and references to English literature are conspicuously absent. Thus in the account of rickets the venerable and famous name of Glisson is not mentioned and though infantile scurvy is repeatedly called Barlow's disease, no reference is given to Barlow's classical paper. The account of nervous diseases is fuller than is usual in German textbooks of diseases of children. The book as a whole is a reliable but not very interesting guide to the subject, it no doubt deserves the success it has obtained in Germany, and it has been translated into Italian, Russian, and Spanish.

ESSENTIALS OF ORAL SURGERY

THAT oral surgery is a recognized specialty in the United States of America, and that it merits recognition, is well shown by the volume on *Essentials of Oral Surgery*,[2] written jointly by Professor V. P. BLAIR of Washington University and Professor R. H. IVY of the University of Pennsylvania. Their object has been to embody in a book the subject matter taught to their undergraduate students. They have therefore omitted detail of all major surgical operations while paying great attention to the recognition of surgical conditions of the mouth and jaws.

> The dentist should understand the pathology and be competent in diagnosis of surgical lesions located in his field but without special training is not called upon to perform major surgical operation in this region. At the same time there are many less serious surgical procedures which come directly within the scope of the dentist and these receive more detailed attention in this book.

In the main the authors have restrained themselves within these limits, and where they appear to have transgressed as in the pages dealing with the surgical treatment of deformities of the jaws, the specialized and interesting nature of the subject makes ample excuse.

The first eight chapters are occupied by a description of the anatomy of the mouth, and of the essentials of general surgical pathology and technique. The anatomical details are excellent, but it reads rather curiously to English eyes to find a sort of synopsis of the possible surgical lesions incorporated in the description of each part. Pathology and technique are dealt with in such a way as to bring out prominently the important points in diagnosis and infection as applied to daily practice. We should have liked however more details than are given in the dozen lines devoted to subacute and chronic inflammation. The remainder of the book is devoted to surgical conditions and the wide range of subjects it includes bespeaks a clinical experience of perhaps unique character, and it is experience of which the authors have made good use. Dentists will be interested to note that the authors speak with restraint as to the value of root resection. In the clinic at the University of Pennsylvania about fifty root resections are performed each year but the authors have found it impossible to follow up the cases, and can only conclude that the procedure offers a chance of success in certain cases. Pyorrhoea, under the name "chronic suppurative pericementitis" is dealt with in a few pages. Such statements as "gingivitis caused by serumal calculus or injury is the most frequent forerunner" and "in any case there is sufficient inflammation of the gingivae to permit a pyogenic infection," seem to show that the authors take little account of "sepsis" as the *fons et origo* of pyorrhoea, and it may be noted here that there is no mention of "septic" infection as a cause of leucoplakia. Both dentists and oral specialists will probably find their greatest interest in the pages devoted to the surgical treatment of deformities of the lower jaw. The authors have treated both retracted and protruded mandibles by surgical means and judging by their illustrations, with no small success. The operation described for retracted mandible would seem necessarily to involve section of both inferior dental artery and nerve by the Gigli wire saw, but no mention is made of ill results.

The book is well written, but there are a few lapses as on page 439 where the reader is warned that certain tumours "should not be incised with impunity." The illustrations are generally good and well chosen, but we have to confess to being unable to decipher some of the skiagram figures—for example that on page 402.

This volume will be a valuable addition to all medical and dental libraries, and the authors are to be congratulated on the results of their labours.

MODERN MEDICAL MONOGRAPHS

A SERIES of books is being edited by Dr HUGH MACLEAN entitled "Modern Medical Monographs." Each book concerns itself with a different branch of medical science and is written to provide the general practitioner with a short account of the modern point of view. In his general introduction to the series Dr. MacLean explains how the change from empirical to more scientific medicine must naturally be accompanied by changes in our conception of various diseases and their treatment. To keep abreast with these changes is a strenuous exercise even for the specialist, for the general practitioner and medical man of other specialties the task is impossible and they must be content to receive information sifted and epitomized. From books such as those of this series medical practitioners requiring enlightenment on one particular subject will be able to obtain it without a long search.

The first of the series is by Lieut.-Colonel L. W. HARRISON and entitled *Modern Diagnosis and Treatment of Syphilis Chancroid, and Gonorrhoea*.[4] This is a handy volume of some 160 pages, written by an admitted authority on venereal disease. It deals with the clinical diagnosis prevention and treatment of syphilis including a useful chapter on the general management of syphilis the general principles of treatment of gonorrhoea are clearly presented and modern methods of treatment lucidly described.

The second of the series *Modern Views on the Toxaemia of Pregnancy*[5] has been written by Drs. O. L. V. DE WESSELOW and J. M. WYATT. Concerning the subject of the toxaemias of pregnancy the medical profession waits expectantly for further knowledge for there are few pathological states of which we are more ignorant. Hyperemesis gravidarum eclampsia and nephritic toxaemia are constantly recurring problems to the practitioner. A clear-cut statement of the pathology of the toxaemias of pregnancy is impossible at present but the authors have succeeded in collecting together and presenting in a readable form the more important facts gained from recent scientific research and this book will certainly afford some guidance in the management of difficult cases.

The third of the series *Modern Methods in the Diagnosis and Treatment of Pulmonary Tuberculosis*[6] by

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[1] *Lehrbuch der Kinderheilkunde*. Von Dr. Med. Bernhard Bendix. Achte umgearbeitete und verbesserte Auflage. Berlin and Vienna: Urban und Schwarzenberg. 1923. (Sup. roy. 8vo. pp. 633. 93 figures. 7 plates. Unbound 29 fr. bound 34 fr. Swiss francs.)

[2] *Essentials of Oral Surgery*. By Vilray Papin Blair, A.M., M.D., F.A.C.S., and Robert Henry Ivy, M.D., D.D.S., F.A.C.S. London: Henry Kimpton. 1923. (Med. 8vo. pp. 525. 350 figures. 32s. net.)

[3] *Modern Diagnosis and Treatment of Syphilis, Chancroid, and Gonorrhoea*. By L. W. Harrison, D.S.O., M.B., Ch.B., L.R.C.P.E., Lieut.-Colonel R.A.M.C., and R.H.P.(Retd.). (Demy 8vo. pp. viii + 160. 7 figures. 1 plate. 10s. 6d. net.)

[4] *Modern Views on the Toxaemias of Pregnancy*. By O. L. V. de Wesselow, M.B.Oxon., F.R.C.P., and J. M. Wyatt, M.B., B.Ch., L.R.C.P. (Demy 8vo. pp. viii + 92. 7s. 6d. net.)

[5] *Modern Methods in the Diagnosis and Treatment of Pulmonary Tuberculosis*. By R. C. Wingfield, M.B., M.R.C.P. Modern Medical Monographs, edited by Hugh MacLean, M.D., D.Sc. London: Constable and Co., Ltd. 1924. (Demy 8vo. pp. xi + 127. 5s. net.)

DR R C WINCKLER, is specifically dedicated to the general practitioner and senior student, tuberculosis specialists being warned that herein they will find nothing new, and the junior student that, though the book is simple, it is better that he should postpone reading it until he has completed the groundwork of his medical education The greater part of the book is devoted to the treatment of pulmonary tuberculosis—general, sanatorium, and specific One of the modern methods of treatment—namely, exposure to sunlight (as expounded by Dr Rollier)—might have received rather more notice in a book of this sort This useful little book is illustrated with some good a-ray photographs

CARBOHYDRATES AND GLUCOSIDES

A GREAT service has been done to readers of biochemistry in the series of monographs produced under the editorship of Professor Plimmer and Professor Hopkins Each monograph deals with a distinct subject of the study That entitled *The Carbohydrates and the Glucosides*, written by DR E F ARMSTRONG, is now presented as a fourth edition[9] Hardly any section of chemistry has been the subject of so much research with so little progress as the sugars Now at length the extensive work of Fischer, followed by that of Irvine and others, has led to the realization of a substantial knowledge of structural constitution among the carbohydrates In this realm of chemistry the influence of molecular structure presents an attractive subject of study There appears to be a promise of clearer information on the relation of carbohydrates to enzymes It is even suggested that the newly recognized molecular form of glucose termed the "gamma" oxide may be of critical importance in relation to diabetes Dr Armstrong's monograph affords an excellent survey of the subject The facts are brought into orderly arrangement The author shows how the members of the group termed carbohydrates are related to each other He describes the chemical transformations of which they are susceptible and the products of the reactions into which they enter He also gives a very full bibliography for the benefit of those directly interested in research on the subject What is presented in this volume would cost the reader an extravagant amount of time to gather for himself through the published researches

AMERICAN HOSPITAL POLICY

MACMILLANS of New York are publishing a series of volumes under the general title "Modern Hospital Library" Of these two volumes have come to hand One is entitled *First Steps in Organizing a Hospital*[10] which is written by MR JOSEPH J WEBER The work deals with the status of the hospital to-day, the hospital needs of the community, the best method of getting a hospital organization into being the duties and responsibilities of the trustees in the preliminary organization of the hospital, and the financing of the new hospital construction Great stress is laid upon the necessity of proper survey of the needs of the community before new hospitals are built There must be a thorough consideration of all the factors involved, including not only present necessities but also future demands, and there is the pertinent question, "Do the needs of the community warrant the establishment of an out-patient department?" The second volume, *Hospital Organization and Operation*,[11] is written by MR FRANK E CHAPMAN This is a very close review of the whole of the internal work of a hospital The principles of organization are considered, the administration, the medical staff, special diagnostic and therapeutic services, nursing, dietary social service, purchase of stores and their issue, housekeeping, repairs and maintenance, laundry, the out-patient department, and the relation of these ideals and principles to the operation of the small hospital The author in some parts of the work enters into rather too much detail, and there is a danger that such works may tend to stereotype internal administration too much, but the book is one that should be read by every medical superintendent and by those who are responsible for the administration of hospitals, for it is full of good ideas and information There are many illustrations and charts indicative of the methods of record of hospital case notes Both books are well got up, and bound in a clever imitation of leather

[9] *The Carbohydrates and the Glucosides* By E Frankland Armstrong, D Sc Ph D, I R S, F I C Fourth edition Monographs on Biochemistry London Co 1924 (Med 8vo pp xi + 287 16s net)

[10] *First* *a Hospital* By Joseph J Weber M A ew York and *London* *The* Macmillan Company pp xii + 205 13s net)

[11] *Hosp* *Operation* By Frank E Chapman Modern Hospital Library New York and London The Macmillan Company 1924 (Demy 8vo, pp xv + 270, 70 figures 18 net)

NOTES ON BOOKS

THE short guide to First Aid,[12] by G FORNI, is an excellent example of what such a work should be In his preface the author warns his readers not to expect first aid to be easy and pleasant, and urges them to read and re-read his little guide over and over again At the same time he disclaims all pretensions to popularize medical and scientific knowledge The advice which he constantly gives in cases for which first aid is a measure of temporary and urgent relief is to send for the doctor without delay The text of the book is clear and the illustrations admirable, especially those of bandaging, applications of improvised splints, and methods of carrying the injured There is a useful index

TWO American physicians have been at much pains to produce a series of graduated exercises useful for patients in different conditions of convalescence and health They point out very rightly that there have been many publications dealing with physical exercises, but that most of them have been written to exploit some cult or system, and are too often filled with incorrect or misleading statements, or they are compiled by inexperienced persons and are merely a jumble of exercises with no definite object, some, on the other hand, are carefully written textbooks by some well known authority, but too complex and technical for the ordinary reader DRS DICKSON and DIVELEY, in their little work, *Exercise for Health and Correction*,[13] have sought to produce a series of graded exercises—first for the convalescent who is still abed, and for this one there are a series of thirteen exercises, most of them quite simple and distinctly valuable, although the last of the series we are inclined to think somewhat too strenuous for a convalescent, then there follow a series of ten "setting up" exercises, and, finally, an extensive range of postural exercises which are suitable for all healthy persons The book is well planned, each exercise is set out plainly on one page, and facing the print is a reproduction of a photograph of the exercise being performed The photographs of the men are good, those of the women are ugly

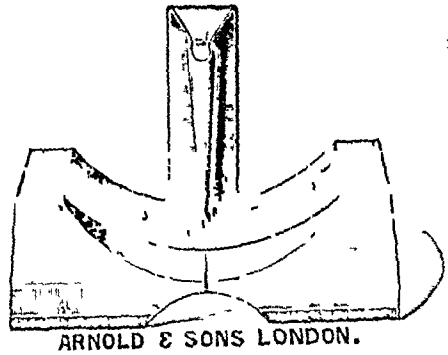
[12] *Brev* *anda ai primi soccorsi* By G Forni Bologna L Cappelli 1921 (Pott 8vo pp 95 59 figures L 3)

[13] *Exercise for Health and Correction* By Frank D Dickson M D and Rex I Diveley M D London J B Lippincott Company 1924 (Foot 8vo, pp 127 112 illustrations 8s 6d net)

MEDICAL AND SURGICAL APPLIANCES

An Apparatus for Estimating the Degree of Rotation in the Spinal Column

DR IDRIS T CARIAN writes Although many forms of apparatus have been made for estimating the degree of lateral curvature in the dorsal and lumbar regions of the spine, no satisfactory one has yet been produced for measuring the amount of rotation To meet this want I have designed a simple apparatus, as depicted in the illustration, named the 'spinal torsometer" It measures about 4 in by 2½ in, and can therefore easily be carried in the pocket It consists of an aluminium block, with a scale to record degrees above this is suspended a fine needle which immediately registers the angle at which the block is lying The subject to be examined is placed face downwards on a couch, a line is drawn with a dermograph through the tips of the spinous processes in the region desired, together with transverse lines to denote the middle of each such process The torsometer is placed transversely on the points of intersection of the line on successive vertebræ and the amount of rotation (if any) is read off (If, instead, it be placed longitudinally over each point of intersection the amount of antero-posterior curve can also be estimated) The apparatus can be obtained from Messrs Arnold and Sons (John Bell and Croyden Ltd), Wigmore Street W 1



British Medical Journal.

SATURDAY, NOVEMBER 22ND, 1924

MULE-SPINNERS CANCER.

It is difficult to realize that only two years ago the term mule spinners cancer was unknown seeing that at the present time it is almost as familiar to us as chimney sweeps cancer and yet very little has been written about it In a communication by Southam and Wilson which we published on November 18th 1922 attention was directed for the first time to the occurrence of epithelioma of the scrotum amongst the mule spinners of South Lancashire and the suggestion was put forward that this form of cancer was the result of the soiling of the clothes in the neighbourhood of the scrotum by lubricating oil from certain parts of the cotton spinning machinery The action of this oil on the scrotal skin prolonged over many years brought about epitheliomatous formation The clinical observation came at a very opportune time for mainly owing to the successful activities of the leaders of cancer research the importance of chronic irritation in the production of neoplasms was occupying the minds of the medical profession A few months previously at the Annual Meeting of the British Medical Association held at Glasgow Leitch had reported the experimental production in mice of malignant tumours—sarcoma as well as epithelioma—by the prolonged use of paraffin oils distilled from Scottish shales (the paper was printed in full in our issue of December 9th 1922) and thus had supplied a reasonable if not entirely conclusive basis for the suggestion of Southam and Wilson

It was not long before mule spinners cancer and its supposed cause were being discussed by those engaged in the cotton industry and by the technical and trades journals and investigated by the Government officials In some quarters it was denied that scrotal cancer was more prevalent amongst spinners than in the general population no comparative statistics were available and the hospital records showing that mule spinners had a preponderance of this cancer might have little significance in view of the fact that the clientele was drawn from a densely populated area where cotton manufacture was by far the chief industry Others while not denying this preponderance refused to believe that spinners were more subjected to the action of mineral oils than many other classes of workmen or that the lubricating oil had anything to do with the disease It was even suggested that injuries sustained in playing football were more likely to be the cause of the cancer Finally there were some who impressed by such clinical and experimental information as was then available attributed the cancer to the action of shale oils which were said to have been mixed with the petroleum oils Whether such an admixture was used or not is not definitely known for the composition of spindle oils is a trade secret These discussions were evidence of the interest aroused in industrial circles but the whole matter was taken out of the academic arena by the action of the principal trade union concerned and a test case was brought before the courts A workman aged 40 who had been engaged in mule spinning for many years, and had developed an epitheliomatous ulceration of the scrotum sued his employers for compensation under the section of the Workmen's Compensation Act dealing with epitheliomatous cancer or ulceration of the skin due to tar pitch, bitumen mineral oil or paraffin or any compound product or residue of any of these substances The case came on for trial in the Ashton County Court in January of this year, and expert evidence was cited on both sides Judgement was deferred

At page 941 will be found the paper on mule-spinners cancer read by Dr Archibald Leitch at the Annual Meeting of the British Medical Association held at Bradford in July last In it he discloses from unpublished figures of the Registrar General to which he had had access the surprising fact that 20 per cent or more of all the fatal cases of cancer of the scrotum occur amongst cotton spinners engaged in mule-spinning processes and he calculates that 1 in 2 000 die of the disease The liability he shows is less than amongst chimney sweeps although the total numbers are higher Continuing his previous experiments on mineral oils of the shale group he states that even refined oils of this class possess the carcinogenic property that certain crude petroleum oils are capable of inducing cancer, and that with a lubricating oil of the latter group he succeeded in producing malignant tumours The facts that he puts forward seem to leave little room for doubt that mule spinners are peculiarly liable to cancer of the scrotum and that it is caused by prolonged exposure to lubricating oil We understand that this evidence was not available in the law case to which we have referred and naturally could not have influenced the decision which was given on July 26th by Judge Mossop In his written judgement the learned judge found that the claimant had contracted cancer of the scrotum which declared itself when he was in the employment of the cotton mill, and that in the course of his work he was brought into contact with the fuller's shirt which caused constant friction in the neighbourhood of the scrotum further, his overalls especially in that region were frequently soiled with mineral oil which mineral oil was an irritant and it had been shown that cancer of the scrotum was common amongst mule spinners The conclusion is irresistible that there is a connexion between the disease and the employment The compensation claimed was awarded An appeal against this decision was entered but was subsequently withdrawn the Employers Federation accepting the ruling It was announced by the workers union the Amalgamated Association of Operative Cotton Spinners that they had a hundred cases on their books which would be affected by the decision It is a mystery why mule spinners cancer should have remained so long unrecognized It is said that the condition was apt to be concealed by the workmen as they feared that it would be diagnosed as syphilis and they would lose benefit

It is of interest to quote the following words from the quarterly report of the secretary of the trade union Mr H Boothman The resources of science and the great amount of research that is now being undertaken in various directions could we suggest find no worthier field in which to start than in the task of banishing the disease from all connexion with cotton spinning The trade itself in conjunction with the medical profession might investigate the cancer producing properties of mineral oil and direct their efforts to the production of an oil imperfect of such properties or at least in the provision or improvement of preventive measures It will be seen that Dr Leitch's independent investigations at the Cancer

Hospital Research Institute, London, have anticipated some of these suggestions There seems to be no reason why this form of cancer should not be entirely prevented, and probably a commission or committee composed of representatives of employers and workmen, together with technical experts and cancer investigators, would soon find effective means

THE PASSAGE OF FOOD THROUGH THE BOWEL

Our opinions as to the time occupied by food in passing through the bowel are based chiefly on the results of *x ray examinations of individuals who have eaten* some opaque substance such as bismuth, or on the time taken for some distinctive and easily recognizable foreign material, such as charcoal, to appear in the faeces From such studies it has been concluded that food reaches the caecum in four to five hours, in another four to five hours it has arrived at the splenic flexure, some sixteen hours are spent in the journey thence to the sigmoid flexure, through which the food is said to pass in about six hours The periods of time naturally vary under different conditions, but in general *it is assumed that food* taken by the mouth is completely evacuated through the anus in from twenty-four to forty eight hours But it may be argued against the evidence deduced from this type of experiment that it does not reveal what happens with ordinary food, since the test substance used is often bulky and always foreign, and is therefore likely to act as an irritant and to be hastened in its course through the bowel Apart from this aspect of the question, *it should not be assumed that* because the first elements of the test substance appear in the faeces in from twenty four to forty eight hours that therefore the whole mass is voided in this time

Dr W C Alvarez and Dr B L Priedlander[1] have recently found evidence, from some well planned and convincing experiments, that this is not the case They showed that patients after a barium meal continued to excrete barium in the faeces for many days, and that small glass beads, when taken with food, are often not all expelled for a week or more Their experiments *with barium* were very simple A number of healthy students were each given 60 grams of barium in milk, and the stools were collected daily for five days Weighed portions were incinerated and tested for barium It was found that from 40 to 80 per cent of the barium was expelled in twenty four to forty eight hours, and that extrusion of the remainder was slow, *lasting from four to five days* Thus we learn that even with a substance which probably passes through the bowel more rapidly than most food a considerable fraction remains within the alimentary tract for almost a week Their experiments with glass beads formed the major part of their work Fifty very small glass beads, about 2 mm in diameter, enclosed in a gelatin capsule, were given to volunteers at either *the morning or evening meal, and the stools* of these subjects were collected in large-mouthed jars and brought to the laboratory each day for examination and the search for beads *It is said of these beads* that, being chemically inert and mixing intimately with the food, they can have but *little influence on* intestinal motility, certainly no more than that of the many berry and fig seeds and bits of skin and fibre that are found so commonly in the stools By giving different coloured beads on each of three successive days it was possible to make three rate determinations on each subject of the test It may be *mentioned* that this appears to have been an extensive investigation The exact number of experiments is not recorded, but the authors speak of it as having been carried on, with some interruptions, for more than ten years, and all the four participators acknowledge complete agreement

Their conclusions, briefly, were as follows They found that ordinarily only some 15 per cent of the beads taken by the mouth could be found in the faeces on the first day, 40 per cent on the second, 15 per cent on the third, and 10 per cent on the fourth day Many days might elapse before all the beads were voided Thus, in one instance, the stools of a constipated person were sieved carefully until all the beads were accounted for, and the last one was not recovered until the fortieth day In some individuals the beads travelled more rapidly than in others, but it is instructive to note that a slow passage did not betray intestinal stasis, for no symptoms of disease were found in men and women who took a week or more to pass 70 per cent of the beads On the other hand, fast rates of passage, as indicated by *the recovery of 85 per cent of the beads* within twenty-four hours, were associated with the passage of soft, badly digested stools

We may conclude from such results as these that the colon normally retains food residues from meals taken during the preceding week or even earlier Ordinarily about 80 per cent of the residue from any one meal is extruded by *the end of the fourth day* the remainder has a more protracted sojourn Another lesson of considerable practical importance which seems to emerge from these investigations *with the* beads is that when the colon is well evacuated by a purge or through spontaneous defaecation no bowel movement should be expected or demanded the next day The conclusion, therefore, is that to give purgatives when the bowel is empty, either as the result of antecedent evacuation or because very little food has been taken, is to delay the return to habitual bowel movements

It was from a paper by T R Elliott and E Barclay Smith[2] that the authors gained the idea of studying the progress of food by means of glass beads Twenty years ago *Elliott* and Barclay Smith studied the distribution of food along the digestive tract by giving such beads to rabbits and *then killing* them at various periods The paper in which their results were published was entitled "Antiperistalsis and other muscular activities of the colon", it is a masterly survey of the physiology of movements of the colon With the help of these physiological observations, and other knowledge which has been gained during the intervening years, it is not difficult to find a plausible explanation for the fact that a considerable fraction of the food residue of a meal is retained in the colon for several days We know of three types of muscular movements in the colon—antiperistalsis, segmentation, and forward peristaltic movements Antiperistalsis, which results in a reversal of the main direction of passage, occurs chiefly in the ascending colon, its effect being to mix up the contents of the ascending colon and bring them into intimate contact with the walls of the bowel The periodic movements of segmentation result in division and redivision of the contents of the gut, and further favour mixing The slow forward peristaltic movements carry the mixed intestinal contents on towards the rectum We know that, forward from the hepatic flexure, the contents stiffen and become consolidated in the elongated

[1] *Journ of Amer Med Assoc* August 23rd 1924 p 576

[2] *Journ Physiol*, 31, 293, 1904

transverse, in the descending and iliac colon, churning movements are negligible, and the chief movement of these regions is a forward propulsive peristalsis In the ascending colon and cæcum the most intimate mixing takes place, and it is easy to understand how glass beads and other residues, become churned up with the new material arriving regularly through the ileo colic sphincter and how in this general shuffling of position particles may fail to be moved on in the sequence which their seniority deserves We venture to think that this explanation would be acceptable to Drs Alvarez and Freedlander who though they do not debate this question in detail, give an inkling of their views by remarking in picturesque language that food residues after leaving the ascending colon had gone the rest of the way to the anus like cars on a track'

These observations on the rate of progress of food residues through the bowel should provide material for reflection to exponents of the doctrines of intestinal stasis They point also to rational moderation in the use of laxatives

CELEBRATION OF THE SYDENHAM TERCENTENARY AT THE ROYAL COLLEGE OF PHYSICIANS

On Wednesday evening November 12th, a special meeting was held at the Royal College of Physicians of London to commemorate the tercentenary of the birth of Thomas Sydenham A considerable number of Fellows Members and guests was gathered in the large library of the College which had been arranged most tastefully for the accommodation of the visitors by the Treasurer, Dr Sidney Phillips Indeed, the beautiful proportions of the large library have never been seen to such advantage The guests were received by the President and at 9 o clock he delivered an address dealing with the life and work of Thomas Sydenham This address by Sir Humphry Rolleston, which has already appeared in the BRITISH MEDICAL JOURNAL (November 15th p 917), was admirable in point of style and delivery and was a model of what such addresses should be on an occasion when the work of a great medical name in the past has to be commemorated and reviewed To signalize the meeting various relics and other objects of interest connected with Sydenham were displayed for the inspection of the guests The fine portrait of Sydenham painted from life by Mary Beale was in the Censors' Room, and two other contemporary portraits—one by Closterman belonging to the College, and the other by a painter unknown, lent by the Wellcome History Museum—were placed on easels at the end of the large library On tables were displayed engraved portraits of many of Sydenham's friends and contemporaries and engravings of the College house in Sydenham s time The first editions of all his books were exhibited, and in some of them, on the title page was recorded the fact that it was given by the author In the subscription book of Fellows the signature of Sydenham was exposed and also the interesting document in the hand of Isaac Barrow, Vice-Chancellor, in which he certifies that Sydenham took his M D degree at Cambridge on May 18th, 1676 Sydenham's diploma from Cambridge as a doctor of medicine was also on view and his very valuable note book entitled 'Medical Observations" This note book of Sydenham does not form any complete medical work but is a book in which he recorded various medical observations and some of the passages in his various works can be traced to this source It is however doubtful if the whole is in his own hand though parts certainly were written by him The success of the celebration was considerable, it was a fitting tribute to the great work of one of the most distinguished men on the roll of the Royal College of Physicians

DIABETES INSULIN AND VITAMIN B

INSULIN is no more than a means for treating diabetes. If the incidence of the disease, and therefore the mortality ultimately due to it, are to be diminished, more must be learnt about the causes which bring it about The very multiplicity of suggestions is proof that we have no guiding principle Heredity, traumatic and other lesions of the nervous system, emotional shock anxiety mental strain, racial susceptibility over-consumption of starch and sugar, sedentary habits, the gouty diathesis obesity, and infection are factors any or several of which may be concerned, but we have no positive knowledge Since the discovery of insulin many investigators have concerned themselves with the problems of metabolism as well as of therapeutics which it has raised, but comparatively few with the factors which lead to the failure of the islands of Langerhans to discharge their functions efficiently The time has come to concentrate more attention on this aspect of the diabetes problem for however potent insulin may be in treatment it will not of itself suffice to arrest the increasing death rate The mortality is said to be increasing in America, and its great incidence in certain parts of India suggests the operation of some widespread influence in its causation Such an influence might well prove to be faulty diet In this connexion we are reminded of the effects upon the pancreas of a rice diet—that is to say, of a diet excessively rich in carbohydrates deficient in suitable protein in certain mineral essentials, and in vitamins A and B These faults are not peculiar to Indian diets but are to be found in others in common use in this country and America Such diets ultimately tend to atrophic changes in the pancreas, as was shown by McCarrison in our columns over five years ago[1] More recently Ogata has found that in birds fed on a rice diet the islands of Langerhans at first undergo hypertrophy showing an increased demand for the products of these cells The hypertrophy may be succeeded by atrophy if the diet be persisted in The atrophy, it is believed, is due in great part to want of vitamin B it is conspicuous we are told in the pancreas of fowls which have been given rice disease' (polyneuritis gallinarum) three times This raises the question whether chronic lack of vitamin B may not ultimately cause diabetes In Bengal McCay and his fellow workers have advanced good evidence for the opinion that the glycosuria so prevalent there among the leisured classes is due to the excessive ingestion of starch and sugar, combined with lack of exercise Since the amount of vitamin B needed is proportional to the quantity of carbohydrate eaten, it would seem likely that chronic deficiency of vitamin B is also a factor of importance in the production of the disease However this may be, further investigation of the causes which lead to failure in function of the islands of Langerhans is called for

GOLD TREATMENT OF TUBERCULOSIS

A SEMI EDITORIAL notice in *Ugeskrift for Laeger* for November 6th gives an interesting account of the meetings on October 28th and 29th of the Medical Society in Copenhagen The experimental work of Professor Moellgaard on cattle and other animals, and the clinical tests carried out in various tuberculosis institutions with sanocry in' (mentioned in our issue of November 8 h p 870) have aroused great interest during the past year in Denmark The Danish medical profession flocked to the meetings now only from Copenhagen but from all over the country in such numbers that the 'Domus Medica in which he lectures were to have been held, was found far too small, and Professor Faber's lecture room in the Pig ho pital had to be used Even so many of the audience had to remain standing for three to four hours at a time on both

[1] BRITISH JOURNAL OF EXPERIMENTAL PATHOLOGY, February 1921, vol 1 p 177
[2] *Rev de Médecine*, 1922, t 15.

days Professor Moellgaard gave an account of the special qualities of sanocrysin as a germicide *in vivo* It is said to be non-toxic for the tissues, easily diffused through the body, slowly excreted from it, and very toxic to the tubercle bacillus It is claimed that no reaction follows when it is introduced into the body by intravenous injection provided the tissues are healthy, but if they are tuberculous a violent reaction ensues, because (so it is supposed) the wholesale destruction of tubercle bacilli floods the body with their toxins By giving a serum as an antidote to this reaction Professor Moellgaard believes he has succeeded in greatly reducing its violence In support of his claims he gave an account of his treatment of animals accidentally or artificially infected with tuberculosis, and he reported two cases of tuberculous monkeys, emaciated and almost moribund, in which the lungs showed signs of extensive disease, and there was enlargement of the spleen, ascites, and ileo-caecal tuberculosis Complete clinical recovery was effected, the monkeys became lively again, and their weight increased by 50 per cent The clinicians who gave an account of their experiences with sanocrysin during the past year in hospital practice were Dr Secher of the Bispebjerg Hospital, Dr Wurtzen of the Öresunds Hospital, Professor Bie of the Blegdams Hospital, Professor Faber of the Rigshospital, Dr Gravesen of Vejlefjord Sanatorium, Dr Strandgaard of Boserup Sanatorium, and Dr Permin of the Frederiksberg Hospital It appeared from their reports that human beings as well as animals reacted to sanocrysin, after it had effected a clinical recovery, in the same manner as healthy animals which had never suffered from tuberculosis Tragedies as well as brilliant successes were recorded, and the errors of dosage responsible for the former were discussed The speakers who gave an account of their experiences with tuberculosis of the skin (Dr Tomholt), tuberculosis of the iris (Dr K K K Lundsgaard), and surgical tuberculosis (Dr Chievitz), were guarded in their attitude towards sanocrysin, but although Dr Chievitz had not obtained any outstanding results from the intravenous injection of sanocrysin in surgical tuberculosis, he had obtained complete local healing of tuberculous teno-synovitis by exposing the tuberculous structures and infiltrating them with the drug The speaker who was most reserved in his claims and most cautious in his forecasts of the efficacy of sanocrysin was Professor Moellgaard himself, and his attitude in this respect was the more appreciated since the experimental evidence he adduced was such as to tempt enthusiastic research workers to believe that *sterilisatio magna* had become something more than a mere possibility in tuberculosis It is stated that some of the papers read on this occasion may soon be published in *Ugeskrift for Laeger*

PREVENTIVE SURGERY AND THE CRIPPLE

Preventive medicine is a familiar term, preventive surgery possesses more novelty, but we may reckon as one part of it the prevention of deformity due to injury or disease There is some justification for the claim made by Dr C J Macalister in the new (second) number of the *Cripples' Journal*[1] that it may be dated from 1898, when Liverpool established its hospital for children at Heswall, on a fine site looking across the Dee to the mountains of North Wales, and Miss Hunt, with the assistance of Sir Robert Jones, started on a modest scale the home at Baschurch in Shropshire which has grown into so great an institution, and is the mother house of the large scheme now on foot for the benefit of cripples of all sorts It is true that, as Mr Muirhead Little recalls in the biography of his father, Dr W J Little, which he contributes to the same issue, the treatment of congenital deformities, club-foot in particular, had been begun more than half a century earlier, but surgeons were hampered by the fear of sepsis, and the treatment of tuberculosis of bones and joints had hardly been begun The plan of the larger scheme, to which we have referred on several previous occasions, is explained in the same issue of the *Cripples' Journal* by Mr G R Girdlestone, surgeon to the Wingfield Hospital for Cripples, which is situated near Oxford The general idea is to form areas to cover eventually the whole country each area would have a central orthopaedic hospital with a clinic in every fair-sized market town, "held on market day, so that the carriers and omnibuses may bring in the cripples with the market folk" The clinic is conveniently held in the cottage hospital where there is one, if not, in some place supplied by local initiative, or, when the interest of the local authority has been enlisted, in a room lent by it perhaps at the town welfare centre Usually the medical officer of health and the school medical officers are very ready to co-operate, and the scheme has only to be explained to them to secure the goodwill of the medical practitioners in the district Here, then, we have the regimental medical officers, the collecting stations and field hospitals, and the base hospital The place of the casualty clearing stations is taken by the general hospitals in the area These form "nodal points in the system and centres of consultation and co-operation" between the surgeons of the central orthopaedic hospital, who visit the local hospital periodically, and their medical and surgical colleagues Where such relations can be established they form "the best possible form of local orthopaedic clinic" The Wingfield Hospital has such relations with the general hospitals at Oxford, Reading, Aylesbury, and Windsor, each of which has a member of the staff of the Wingfield Orthopaedic Hospital working in its orthopaedic department The analogy with the military organization made familiar during the war is only rough, but it may serve Other things are wanted, such as seaside convalescent homes, especially for tuberculous cases, and the central orthopaedic hospital of the area had better be in the country How many areas have taken up the scheme we are not told, but we have no doubt that it will everywhere enjoy the support both of the medical profession and of the public It is being extended to Wales, and the Principality—as Sir John Lynn-Thomas points out in the same issue of the magazine from which we have quoted—starts with two advantages the Welsh National Memorial Association, founded by Major David Davies, M.P., in memory of King Edward, undertakes to treat surgical tuberculosis, and the Prince of Wales's Hospital, established during the war in Cardiff by the writer of the article for the treatment of crippled soldiers, is now being made available for the civilian population The demands upon it are so considerable that it is proposed to erect on a healthy site a subsidiary building affording another hundred cots, when provision can be made for the systematic education of the children in elementary knowledge Sir W de Courcy Wheeler, who has an article on the cripple in Ireland, sums up the general principle by which the promoters of the whole scheme are actuated in the following pithy sentences "It is futile to have special surgical skill without proper country accommodation It is more futile to have open-air homes for cripples without the special surgical and nursing skill which is essential to success"

[1] *The Cripples Journal* Published quarterly by the Shropshire Orthopaedic Hospital, Oswestry Price 1s

MEDICAL CARE AT THE WEMBLEY EXHIBITION

Statistics are now available regarding the medical supervision of the British Empire Exhibition, during the course of which 17,403 173 visitors were admitted The St John Ambulance Brigade and the British Red Cross Society shared the responsibility for dealing with the 23,388 cases of illness which occurred About 400 of these were classed as serious cases, 124 being sent to the Willesden General

Hospital, the remainder by motor ambulance to their homes or elsewhere Ambulance cars were at work day and night throughout the period of the exhibition, and the mileage covered by them amounted to 10,625 The Stadium casualties of various kinds numbered 850 A medical officer and first-aid attendants were on duty in the arena and at the special ambulance station during all ceremonies and performances A portable *x* ray apparatus was specially procured for the rodeo performances, and was found very useful In our columns of May 24th (p 927) and August 9th (p 242) we described the systematic hygienic supervision of the whole exhibition, and it is satisfactory to note that the general health was very good The difficult problem of preserving the health of natives coming from climates very different from that of the summer of 1924 was satisfactorily solved

THE FUNCTION OF STATISTICAL METHOD

THERE are plenty of statistical textbooks and plenty of people who advise medical men and students to learn statistics In fact, the plan of the School of Hygiene, drawn up some years ago, made some provision for this science, applied science, or art—the learned differ as to the correct designation Short practical expositions of the utility of statistical methods are, however, less common, and the Fatigue Research Board has done well to publish Mr Udny Yule's lecture on the function of statistical method in scientific investigation[1] The claims Mr Yule makes on behalf of the, let us say, *method* of which he is so great a master are by no means excessive Some statisticians would dissent from the suggestion that even the most perfect experimental investigation can be fully appraised without recourse to a statistical method But even if the use of the statistical method is strictly confined within the limits Mr Yule suggests, there will be more than enough work for all the statisticians America can train or hire during the next hundred years Thus, Mr Yule writes "The expert in public health for example must take the records of deaths as they occur, and endeavour as best he can to interpret, say the varying incidence of death on different districts Clearly this is a very difficult matter The proportion of deaths to population in a district is affected not only by its sanitary condition—however broadly we interpret that term—but by all kinds of other circumstances not only by such definite circumstances as the age of the population (if there are many of the old this will tend to throw up the number of deaths) and the proportion of the sexes (age for age the mortality amongst women is usually less than amongst men) but also by that medley of circumstances which differentiates any chance sample of individuals from any other The purpose of *experiment* is to replace these highly complex tangles of causation which confront the unfortunate investigator who is limited to pure observation by quite simple systems in which only one causal circumstance is permitted to vary at a time When this is done the effects of changes in the one factor stand out clearly by themselves When it cannot be done, the effect of changes in the one factor is overlaid by the effects of all kinds of other causes, disturbing causes,' as they may be called for they are causes the operation of which we wish to exclude, and they disturb the simple effect of the one factor the influence of which we wish to note Statistical methods are methods for handling and elucidating the meaning of data affected in this way by disturbing causes,' or generally by a multiplicity of causes Hence their very wide applicability" Mr Yule demonstrates the utility of the method on a series of problems chosen from different fields He points out how certain algebraical results, which at first sight might seem of purely academic interest, are found to be of tools in seemingly unrelated practical researches Thus a result in statistical algebra first obtained by Poisson was employed (in two cases independently rediscovered) in a research on the emission of radio-active particles in a study of haemocytometric counts, in an investigation of industrial accidents and in a paper on the bacteriology of water Mr Yule conveys a great deal of information in an attractive style Although primarily intended for the field investigators of the Industrial Fatigue Research Board, this report deserves a wide circulation and should appeal to medical readers

[1] Report No 28 Industrial Fatigue Research Board London H M Stationery Office 1924 Pp 14 Price 6d net

THE GENERAL MEDICAL COUNCIL ELECTION

On November 10th a London surgeon Mr D C L Fitzwilliams, sent to a number of medical practitioners (we have no idea how many) a stencilled letter, beginning "Within the next few days there will be an election of four representatives on the General Medical Council I see that the B M A are putting up four panel practitioners As the whole of the profession is not panel, there is no reason why all our representatives should be panel doctors and therefore I am asking you to vote for—' Here follow the names, with brief commendations, of Dr R Fielding-Ould and Mr F H Westmacott, who are standing as independent candidates in the election of four direct representatives for England and Wales One of the recipients of this circular letter forwarded it on November 16th to the Medical Secretary of the British Medical Association, who wrote next day to Mr Fitzwilliams informing him that two of the Association's candidates are panel practitioners and two—Dr Bolam and Sir Jenner Verrall—are not Dr Cox added I suppose it is too late for you to undo the possible mischief you have done but one can only hope that the members of the profession generally have taken more trouble than you evidently have done to know what is going on in the medical world" Mr Fitzwilliams replied on November 18th that his attention had already been drawn to his error, which he only realized when he got the voting papers He added As I am afraid I have mixed up four gentlemen proposed by some other institute with the four that were being proposed by the B M A I am extremely sorry for my error, which I am afraid it is too late at the present moment to undo" The election will be over before this issue of the JOURNAL appears but we think it right to place the facts on record

THE next Australasian Medical Congress will be held in Dunedin, New Zealand early in 1927 under the presidency of Dr I E Barnett who is retiring from the professorship of surgery in the medical school of Otago University, Dunedin The general secretary of the Congress is Dr W P Gourland the associate secretary Professor A M Drennan, and the treasurer, Professor D W Carmalt-Jones

THE Secretary of State for the Colonies has appointed Sir William Prout C M G, O B E M B late Lieut.-Colonel P A M C, to be senior medical adviser to the Colonial Office in London, in succession to Sir John Poë Bradford resigned Dr A F Horn C M G has been appointed junior medical adviser, in succession to Sir William Prout

THE GENERAL ELECTION

THE result of the election for three representatives of the combined Scottish Universities in the House of Commons was announced on Thursday November 13th The figures were as follows

Sir Henry Craik K C B (C)	7 163
D M Cowan (L)	5 010
Sir George Berry F P C S Ed (C)	3 771
The Rt J M Munro (Lab)	1 623

NURSING OF MENTAL PATIENTS.

Suggestions for Reform

The Report of the Departmental Committee appointed by the Board of Control, with the approval of the Minister of Health, and presided over by Dr C Hubert Bond, to consider the nursing service in the county and borough mental hospitals, has recently been published.[1] A number of far-reaching recommendations are made, and the visiting committees are strongly urged to put them into effect at a very early date, because it is felt that an improvement in the nursing service lies at the foundation of advancement in mental treatment generally.

In spite of improvements in general conditions and considerable increases in wages, there is great difficulty in obtaining suitable probationer nurses in mental hospitals and though, under the ægis of the Medico-Psychological Association, much activity in teaching and training is in progress, the figures as to duration of service reveal the fact that a far too high proportion of the women entering the service neither realize its vocational nature nor seriously intend to undergo training. It is regarded by many merely as a temporary means of earning a living, rather than as a career. The problem before the Committee, therefore, was to discover how the nursing service in mental hospitals could be improved so as to attract the right kind of applicant, because, as the Committee fully realizes, high qualities of heart and mind are quite as essential in the nursing of mental disorder as in the nursing of any other form of illness.

The Committee considers that if the mental nurse is to take her rightful place in the nursing profession and obtain an *equal* status with the general trained nurse, the most complete training and facilities for passing examinations must be provided. It feels that to obtain applicants with a good secondary education is not so much a question of offering high initial salary as of providing really good training with fair living conditions, and the prospect of well paid responsible posts on attaining proficiency. To secure equality of opportunity and uniformity in the standard of training it is considered essential that no mental hospital should accept nurses for training unless it is able to afford proper facilities for the purpose.

It is suggested that mental hospitals should be divided into three grades for the purposes of training—namely, hospitals possessing the necessary facilities for the full curriculum in mental nursing; hospitals possessing the necessary facilities *for the final examination only*; and hospitals *not recognized* as training schools. In order to make this scheme effective organized co-operation between two or more mental hospitals is obviously necessary. Senior probationers from the full training school would have to be sent to hospitals of the *second grade to complete* their training, and hospitals in which no training is provided would have to be supplied with staff nurses from other centres.

The Committee points out that to carry out properly its recommendations they must be adopted generally throughout the country. In a sense they contemplate a national service in which the same qualifications are recognized and required at all institutions for the same positions, and in which promotions may be freely obtained from one institution to another. In addition to reciprocity between mental hospitals, great emphasis is given to the need of co-operation between mental and general hospitals, as it is only in this way that adequate facilities for training in general as well as mental nursing can be secured. Dr Bond and his colleagues think it of extreme importance that the facilities already existing in some places for seconding mental nurses to general hospitals should *become universal* and that authorities should encourage trained mental nurses to take a general nursing certificate. The hope is expressed that this procedure may be found practicable without any contravention of the Asylum Officers' Superannuation Act as to service, aggregation of service, and contributions. Should there be any doubt as to all or any of these matters it is thought that this should be remedied by legislation. Conversely, it is believed that with the establishment of training schools there will be an added inducement for general *trained nurses* to gain experience of mental disorders, and that some understanding of elementary psychology, both normal and morbid, will be found increasingly necessary in general nursing.

We believe the insistence in this report on the necessity for mental nurses being equipped with an adequate knowledge of general nursing principles to be thoroughly justified, for not only are the subjects of mental disorder liable to physical disease, but many forms of mental disorder are the outcome of bodily disturbances—intestinal toxæmia, influenza, tuberculosis, *encephalitis lethargica*, syphilis, alcoholism, puerperal states, and biological changes occurring at critical *periods of life*. Such cases require active medical treatment and the highest nursing skill. A confusional psychosis needs attention as unremitting and assiduous as that needed in a case of pneumonia, and the modern mental nurse should be in a position to understand the great responsibility which devolves upon her in dealing with such a case. It may not immediately be possible for a great number of nurses to obtain a double qualification, but a beginning might be made if the committee, superintendent, and matron of each *mental hospital endeavoured* to get in touch with the general hospital in the area served by their institution.

One of the guiding principles of the Departmental Committee is that it is fundamentally important to regard mental nursing, not as a *separate profession*, but as a branch *of the nursing profession*. If the scheme formulated in this report were put into operation the status of the mental nurse would certainly be greatly enhanced, and an important step would have been taken towards a more complete hospitalization of the mental hospitals. We feel that the success of this scheme, which aims to effect a radical transformation of the mental nursing service, is dependent in a large measure upon the part which mental hospitals are to play in relation to mental disorder as a whole. If these institutions are to be dissociated entirely from the early treatment movement so that they will deal with even fewer recoverable psychoses than at present, *it will be increasingly* difficult to attract the best *type of nurse or* medical officer.

Every credit is due to the nurses in mental hospitals who, with marked skill and devotion, care for the chronic and infirm patients with which its wards are chiefly filled. Without minimizing the *value of this good work*, it must be said that the true nursing spirit flourishes with difficulty in an atmosphere of chronicity. It is scarcely worth while to bring these institutions, at great expense, to a condition of the highest medical and nursing efficiency if they are only to deal with unrecoverable cases. There should be a constant influx of recoverable cases to infuse a spirit of hopefulness throughout the whole institution. If local authorities are empowered by law to make provision for early and recoverable cases without certification, the mental hospital staff should take their part in the treatment of these cases, whether they are treated in villas on the estate, in separate clinics, general hospitals, or in out patient departments. The mental hospital should be the administrative centre from which the various psychiatric activities of the district radiate. If such a policy is not pursued the mental hospital will be more than ever divorced from the community as a whole, and stagnation must be expected. If the nurses in these hospitals have nothing to look forward to but the exclusive care of chronic cases, it is difficult to imagine how the vision of a mental nursing service, such as is *outlined* in this report, can ever be realized.

The Committee is evidently of the opinion that more use will have to be made of the medical and nursing staff in mental work outside the hospital. It points out that the ascertainment and study of cases of mental illness and *mental defect* cover an immense field, and include school work, delinquency, indigence, various forms of institutional care, and the activities of welfare societies. At present these questions are dealt *with*, both centrally and locally, by different bodies, and the *Committee* feels that this leads to a loss of efficiency. The *suggestion* is made that the administration of all matters relating to mental health should be vested locally in one statutory committee of the county or county borough council which committee should be *in close touch* with the

[1] Board of Control. Report of Departmental Committee on Nursing in County and Borough Mental Hospitals. 1924. *H M Stationery* Office. 1s 3d net.

public health committee It is pointed out also that in organizing arrangements to meet the requirements of each area, much wider use could, with great advantage to the services be made of the expert staff—medical and nursing—of the mental hospitals serving that area If these suggestions were carried out a much more attractive career would be possible for the mental nurse than is at present offered, and there would be every inducement for educated persons to take up this work as a vocation

THE NEED FOR EXTENDED SICKNESS INSURANCE

ADDRESS BY LORD DAWSON OF PENN

At a meeting of the Insurance Institute of London (a body consisting of the officials of insurance companies) on November 17th, Lord Dawson of Penn, G C V O, M D, gave an address on the need for extended sickness insurance Mr G W REYNOLDS President of the Institute, was in the chair, and the theatre of the London Institution, in which the meeting was held, was crowded

Lord DAWSON explained that his proposals had no reference to the rich who could provide for themselves nor to the manual workers who were provided for by national health insurance he confined himself to the middle class—to people with an income below £1 200 a year For the benefit of this important class the provision for sickness needed revision and extension The public knew and cared much more about health than formerly but with the acceptance of a higher health standard went increased cost He instanced such conditions as persistent indigestion kidney trouble and chronic cough—conditions which formerly were allowed to drag on but for the investigation and efficient and timely treatment of which the means were now available But the means were costly investigation might in certain cases involve chemical analysis or x ray examination and the treatment might be an early operation The medicine of to day offered many more resources than the medicine of yesterday but the very excellence and complexity of the methods available involved the individual in a really burdensome cost

Certain social conditions also pointed in the same direction It was notorious that the normal life of the middle class was rendered arduous by the absence of domestic help The arrival of a baby was looked upon by a domestic staff as something of a grievance and there were few middle class houses in which a long illness could be tolerated The home as a place where illness could be treated must be supplemented by institutional provision Again the health of the individual was of fundamental interest to society Prompt and efficient treatment diminished the extent of the disability of the breadwinner and shortened the time for which that disability operated It would not be difficult to bring forward examples to show that people of moderate means had been handicapped in their careers for ten years or more owing to financial stringency following one serious illness in their family

What he had in mind was not some State provision which would involve State control Of all the professions there was none which would be more cramped in its development, more damaged in its finer growth than medicine under State control (Applause) The reason was not far to seek Over and above the technicalities of knowledge, there were certain harmonies of temperament which entered very largely into the relations of doctor and patient and anything which interfered with that confidence and so to speak voluntary allegiance, would diminish one of the best things this country possessed The problem of the State was to make sure that there was adequate organization and access to the best means of investigation and treatment of disease combined with a reasonable amount of freedom in the personal relationships involved The decisive middle class vote against socialism at the last election must not be held to mean a policy of *laissez faire* and the presence of Mr Neville Chamberlain at the Ministry of Health was an assurance that these problems would be approached with knowledge courage and sympathy (Applause)

Passing to the problems of organization involved in any extension of sickness insurance Lord Dawson said that one further provision of institutional aid would certainly be needed This would mean that cases were dealt with more economically as well as more efficiently although it would not involve necessarily a patient's stay in hospital The provision would include not only hospitals but clinics to which he could go at certain times for examination and treatment Towards this provision the middle class patient must contribute although the entire cost would be beyond his means Lord Dawson thought it would be a proper function of the local community to provide such clinics and hospitals Local communities were allowed to provide for education and to buy and administer land for recreational purposes why not also for the organization of health? In this connexion he referred to the recent developments at Bath, where the Combe Park hospital was operating, would be hoped stimulate other communities to make similar far sighted provision But with the setting up of these clinics and hospitals it was necessary to beware of certain dangers Local authorities were apt to favour the whole time service of a doctor Whole time officers were necessary in many cases but he would enter a caveat against any rash multiplication of them, for this would prove to be the slippery slope leading to the nationalization of medicine Moreover in such a nationalized services the patient would be separated from the doctor of his choice and from the general practitioner would be withdrawn the stimulus to his intellectual powers which he got from contact with all the illnesses of his patients It was upon the quality of the general practice in this country that the welfare of the community depended more than upon any other single factor

Lord Dawson next discussed the question of cost acknowledging himself in this field an amateur But it seemed evident to him that the cost of a serious illness could not be met out of a moderate income The obvious recourse was to insurance which was extending its bounds in many directions though not at all, or only very tentatively in security against illness He was well aware that any insurance scheme must be economically sound and that there would be a tendency for the less healthy to insure and for the more health to stand out this might be partly met by making the insurance cover all members of families There was also the big difficulty of administration and inspection To meet this he would suggest the formation of health societies in local communities such societies to act as a buffer between the insured and the insurance company The difficulty of a company in not knowing its liabilities might be met by fixing a maximum payment for any one year He was against the limitation of insurance to named illnesses because an insured person was then sure to have illnesses which were not on the schedule Nor was he in favour of a scheme of insurance already mooted in certain quarters solely against an operation But he was convinced that only by some measure of extended insurance could the problem be met unless indeed we were to drift into socialism as applied to medicine The organization might most favourably begin locally and at the periphery in some progressive community such as a garden city where the people formed a compact organization But he thought it would not be unreasonable for an insurance company to interest itself in some well thought out scheme with all due limitation of risk and incidentally a sickness insurance would introduce life business and reduce the claims under life policies

Sir ALFRED WATSON (Government Actuary) rejoiced that Lord Dawson had not in mind a further instalment of State insurance The modern tendency was to regard all things as possible to the State, but he hoped the day was long distant when the intimate and vitally important services rendered by the family attendant would be taken over by a State official possibly with penalties attached to the non-observance of his orders! As an actuary he found difficulty in defining a plan for a policy and rate of premium for such an insurance undertaking as Lord Dawson had in mind The continual improvement in medical science made it a still more difficult proposition for an insurance body to cover the liabilities of a person who wanted all these benefits More might be done on the lines of insurance against the loss of the breadwinner's income

Sir WALTER KINNEAR (Ministry of Health) was glad also that the proposals did not involve a State scheme although Lord Dawson had referred ominously to grants in aid The speaker was continually reminded of the limitations of the national health insurance system in spite of the fact that £1 000 000 a month was distributed in sickness benefit There was a large and growing body of the community for whom no properly organized sickness benefit existed He confessed that when he probed to the causes underlying the sickness brought to his notice in national health insurance administration he was impressed by the fact that a very large proportion of it was avoidable if only earlier attention had been forthcoming The were indebted to Lord Dawson for calling attention to this clamant public need though the speaker's experience in connexion with the national system made him cautious before pronouncing an opinion as to whether a comprehensive and ubiquitous scheme on the lines suggested was a feasible proposition

Lord DAWSON said in reply that he had never thought that insurance alone would solve the problem but that insurance should go hand in hand with some new public provision Imagination was needed to imagine Possibly his own professional instincts inclined him to let his imagination run too loose, while the professional instincts of those who addressing unduly restricted the range of their imagination But he thought that much could be achieved by a round table conference

THE FUTURE OF MEDICINE IN INDIA

Sir Gerald Giffard's Address

The grave and complicated problem of the future of medicine and the medical profession in India was discussed by Major-General Sir Gerald G Giffard, K C I E (I M S, ret), in a paper, of which the following is an abstract, read before the East India Association, at Caxton Hall, on November 17th

Sir Gerald Giffard introduced the subject by referring to some noticeable differences existing between the medical profession in Great Britain and that in India In India, medicine is practically a Government department Almost all the medical practitioners are or have been Government servants, the public health service is almost entirely a Government concern, and nearly all the medical schools and hospitals are Government institutes In the second place, in India the existence of inferior and imperfectly trained practitioners (the subassistant grade) is officially recognized and tolerated, there are thousands of medical men who, although trained in Government medical colleges, have received so short and imperfect a medical education that they are not admitted to the British *Register* In the third place, the I M S is primarily military, as is also the Indian Medical Department The needs of the army have, therefore, largely dominated the civil medical service, this was clearly seen in the war, when five-sixths of the officers of the I M S and the whole of the I M D were absent from their civil duties for several years In the fourth place, financial and other support is given to the indigenous Ayurvedic and Yunani systems—those medico-religious vestiges of such knowledge as was available to the world one or two thousand years ago The Viceroy and some of the provincial governors have lent their support to these systems, Indian politicians almost unanimously encourage them, and local governments, since the reforms, have in several instances voted money for their institutions and subsidized their practitioners

In view of these peculiarities in medical organization in India it is obvious that there is room for considerable adverse comment Sir Gerald Giffard drew a dark picture of the state of medical education and of medical practice generally Some of the medical schools in India, he said, are shamefully inefficient, ill equipped, and badly staffed, and it is not fair to Indian students that an education such as is supplied should be considered good enough for the bulk of the Government and local fund work throughout the provinces And as regards treatment, although there is, at headquarter towns, a more or less satisfactory hospital, the remainder of medical relief—the greatest part—is limited to hundreds of small dispensaries without beds, or with from two to ten beds, scattered over the land These deal with many thousands of out-patients, while their medical staff consists merely of a subassistant *surgeon*, who has been imperfectly trained as a student, is left with hardly any post-graduate teaching, and often becomes little better than the village practitioner and the quacks by whom he is surrounded It is deplorable that the only exponents of Western medicine to the great bulk of the people of India should be imperfectly educated, poorly paid, and isolated men, working in imperfectly equipped institutions far away from the comradeship of their professional brethren If any improvement is to be introduced in these conditions, it would appear that it can only be by the instrumentality of European medical men The future of medicine in India will largely depend on the advent of Indian medical discoveries, but there appears to be no doubt that, up to the present, Indians have shown hardly any aptitude for medical research

For more than twenty years [Sir Gerald Giffard continued] I have urged the need for research on the students and young qualified medical men in the Madras Medical College, but so far without result The great discoveries in tropical medicine have all been made by Europeans, and it would seem that further progress is dependent on European co-operation These considerations lead to the important question whether Europeans are, in fact, to form any part of the Government civil medical services in India If political India is to decide this question, the answer is No, on the other hand, if the Secretary of State and Government of India agree with the recent recommendations of the Lee Commission the difficulty of persuading young European medical men to enter the Government service in India will be very great indeed The attractions of a medical career in India used to be (1) that no capital was required, (2) that good pay was given, (3) the old Indian Medical Service officer was an Imperial officer and held the King's commission, (4) the appointments open were clearly laid down and could not be held by any but a Medical Service officer, (5) all professorships were held by Medical Service officers, (6) private practice was considerable, and (7) there was a good pension, and there was no question that it would be paid Nowadays the pension is by no means good, and it is uninsurable in London

The Lee Commission's Report [Sir Gerald Giffard continued] recommends that the I M S should be ended and that European medical officers should be obtained by provincial governments by transfers from the R A M C, as well as by recruitment of Europeans into the proposed provincial medical services But the R A M C at present cannot find sufficient recruits for its own needs, and the chances of obtaining additional recruits to serve under provincial governments seem to be remote, if not negligible The Public Services Commission is, when established, to take the place of the Secretary of State in the recruitment and control of the superior civil services in India, except those which are under the provincial ministers—in other words, those whose position is most uncertain and whose *future is most open to doubt* The Commission *Report* states "In our view, therefore, the Public Services Commission should not forcibly be intruded in the provincial field," and "that if the Public Services Commission in India should be empowered to interfere on its own initiative in the provincial domain such action will be regarded as violating the principles of the reforms" This is a very serious blemish in the report, and it appears to ring the death-knell of any European medical service in India It is impossible to conceive that any Englishman would join the Civil Provincial Medical Service under the orders of a provincial political minister without even the safeguard of being recruited by the proposed Public Services Commission It must also be noted that the Lee Report refuses to define existing and accruing right, or, in other words, leaves it to the minister to abolish as many appointments as he may choose and to refuse promotion which was to be expected when the officer joined the service If it is admitted that European medical men are still very necessary in India, the proposals of the Lee Commission will assuredly fail to attract them, and for the following reasons (1) They would deprive the future medical officer of his commission (except the R A M C India officers, who are to be compulsorily employed by the provincial civil governments, and it may be taken as certain that the latter will not employ any R I M C officer if they can avoid it), (2) they would deprive him of the protection of the Secretary of State, (3) they would deprive him of the protection of the Public Services Commission, (4) would make him serve as an equal with Indians who have an Indian degree but who would certainly be, in most cases, not as well qualified as himself, (5) they deprive him of his existing and accruing rights, or, in other words, deprive him of a certainty of promotion and of filling certain recognized appointments, (6) they put the control of his department entirely in the hands of an Indian political minister, (7) they take from him a large number of the professional appointments which are considered to be the most lucrative appointments on the civil side of the Indian Medical Service, (8) they propose to pay the medical officer a lower scale of pay and allowances than would be paid by a commercial firm to one of their employees, and (9) they do not secure him his pension In the light of these proposals, if they are to be adopted, it difficult to be optimistic as to the future of medicine in India

With regard to his own views, Sir Gerald Giffard pointed out that just as the political outlook in India is towards self-government, ending in Dominion status, to be reached

by graduated ten-yearly advances under the guidance of Great Britain and with the help of a gradually diminishing number of Europeans, so, in medicine, he desires to hear a Government pronouncement that the future of medicine in India is to be in the direction of instituting an Indian profession of medicine, similar to that of Great Britain arrived at by a slow and orderly development involving the disappearance of all medical services (except perhaps that of public health). The Lee Report recommends the abolition of the I.M.S., Sir Gerald Giffard would favour the abolition of all the medical services in India. It is the legitimate duty of Government to start or assist in starting medical education, and to build and equip institutions destined to advance medical science, but it is not its duty nor is it desirable, that Government should maintain and pay for the whole body of the medical profession.

The present state of the medical services in India (he continued) is entirely unsatisfactory. In what country in the world is there to be found a medical profession divided horizontally into layers—the members of each layer (a service) separated, as in watertight compartments from those above and below it? We have the R.A.M.C., the I.M.S., the I.M.D., the graduates of the Indian universities, the apothecaries, and the subassistant surgeons, the members of the one service being unable to pass into another. It should be possible for a qualified man to look forward to rising to the top of his profession without finding himself hopelessly handicapped from the start. It has been objected that the people could not get on if Government did not provide the services of Government medical officers. But already the great towns and many of the smaller towns could get on without the members of the Government services. General practitioners are already complaining that with the hospitals staffed by the Government service, they are badly handicapped, and that they would willingly take them over and save *much money now spent in the salaries of Government* servants, gaining for themselves the experience and the status of hospital physicians and surgeons of Great Britain, and it is probable that if this were done Europeans would be attracted to the medical colleges and hospitals of India, while it is almost certain that they will not enter the services in the present circumstances.

In conclusion Sir Gerald Giffard mentioned that a scheme suggested by him has recently been carried out by the Rajah of Panagal, the first Minister of the Madras Government. The scheme (he said) is based on the belief that the future of medicine in India cannot be a future of Government medical services. Although the medical graduates of Madras are relatively few in number many of them are unemployed. They crowd into the towns where there are already too many doctors and they have to compete there with the Government servants who absorb the greater part of the private practice. These private practitioners have usually spent all the money they can command on their education and therefore cannot make a start in the rural districts. The scheme proposes to subsidize these men and to supply them with a house for a certain number of years and a free supply of medicines and apparatus. The subsidy will gradually diminish, leaving the doctors to succeed or fail as private practitioners. The scheme is a small beginning and I hope if the recommendations of the Lee Commission are also carried out, and the professional chairs are no longer held by the services, that the handing over of the top and bottom may eventually lead to the growth throughout India of a self-reliant, self respecting, independent Indian medical profession.

In view of the development in the work among the blind owing to the operation of the Blind Persons Act 1920 the Minister of Health has reappointed the Advisory Committee on the Welfare of the Blind for a further period of office. The Committee has been constituted so as to afford representation to the local authorities concerned with the working of the Act and to voluntary agencies for the blind as well as to organized blind workers. The medical members of the Committee are Dr. J. J. Butterworth, Dr. Robert W. Lyster and Dr. H. A. Powell. The Committee will advise the Minister on matters relating to the care and supervision of the blind including any question that may be specially referred to it by the Minister.

THE HEALTH OF THE SCHOOL CHILD

SIR GEORGE NEWMAN'S REPORT

UNDER the above title Sir George Newman presents his sixteenth annual report as chief medical officer of the Board of Education.[1] The report is packed full of information on every aspect of the Board's medical work and the reports of school medical officers throughout England are freely drawn on for illustration of the subject dealt with. The volume is divided into fifteen sections or chapters, with a series of eight appendices.

The final section is entitled "Conclusions" and is summarized here as referring succinctly to the subjects treated of throughout the report. The author legitimately congratulates himself on the fact that his series of annual reports has been of use, not only at home but in the Overseas Dominions and to the governing authorities of many foreign countries. Those who are acquainted with the volumes can have no doubt that that is and must be the case. Notwithstanding his duty of advice to and criticism of local education authorities he takes the opportunity of expressing to them his full sincere and growing appreciation of the competency and devotion of their service. The present report, as he points out, is more administrative than usual because though never before has there been so much enlightened and organized effort on behalf of child welfare yet *for the success of the mutual and joint labours* of all who are engaged in the work whether officially or voluntarily good understanding and wise patient and elastic administration are essential. There must be assent of the governed, adjustment of ways and means to ends, and due regard for the susceptibilities of the child and its parents, together with willingness to undertake new duties indicated by new occasions.

During 1923 the number of elementary school children medically examined was 1,754,919 and so far as the data available show 19·4 per cent. were found suffering from serious physical defects requiring treatment. Excluding dental defects and uncleanliness the total defects treated were upwards of 650,000. The great bulk of the treatment was carried out at the 1,075 school clinics of the education authorities or at 390 hospitals under arrangement with the authorities. Some part of the work was done by private practitioners especially in rural districts. Under the authorities' schemes 473,000 minor ailments were treated, 157,000 errors of refraction of vision were dealt with, 12,000 pairs of spectacles prescribed, 47,000 operations for adenoids or enlarged tonsils performed, 32,000 other cases of disease or nose or throat treated, and 37,000 cases of ringworm. Besides all this work arising out of medical inspection there were estimated to be about 120,000 cases of physical or mental defect and for these there were 500 special schools or sanatoriums accommodating 41,000 cases. Out of 317 local education authorities 133 provided eleven million school meals a total which is substantially less than for the previous year or even for 1913-14. It is held that the *medical service* has had the effect of increasing rather than otherwise an intelligent sense of parental responsibility in regard to the importance of the health of children.

The Chief Medical Officer proceeds to urge that there are four matters requiring the special attention of local education authorities at the present time—namely, medical inspection, medical treatment, the practice of hygiene, and organization of school medical work. Inspection must be both comprehensive and exact. Nine children in ten may be briefly examined but the tenth may call for full consideration. He italicizes the dictum that a high clinical standard of work is necessary. Also the education authority should take a wide view of its function. It could investigate absenteeism due to long standing mental defect, should ascertain the character and degree of defects, could inquire as to obscure infective diseases like encephalitis and poliomyelitis, and should make research as to physical standards and physiological variation.

Concerning medical treatment he told that though no less than half a million children were treated in 1923 in areas outside the large towns many authorities have not made satisfactory provision. Eighty-three have no available *organization* for diseases of the nose and throat, 67 have

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[1] London: To be purchased from H.M. Stationery Office, price 2s. 6d. net, or by post 2s. 8d.

no organized dental treatment, 164 have done nothing for ringworm, and 14 still neglect the treatment of defective vision. Also, especially in rural districts, there is a serious difference between the number requiring treatment and the number receiving it. More might be done in following up, in making treatment available, and in prescribing the duties of the medical staff. The essential conditions of child health are, first, good eyesight and hearing, second, physical strength and muscular development, and third, sound digestion and assimilation of food. In other words, eyes, ears, physique, and teeth are the fundamentals for medical attention, as illustrated by the main grounds for rejection in 1920-21 of 360 per 1,000 of recruits offered for the army.

Next, as to personal hygiene in the case of school children, this is a matter mainly of education rather than of sanitation, and is perhaps the most important subject of the whole curriculum. Yet Sir George Newman declares—

"The plain fact remains that training colleges afford insufficient attention to this subject, and many local education authorities devote less attention to it in the school than is given to any other prescribed subject of the official curriculum. The teaching of hygiene and the laws of health by systematic instruction and by daily practice, should be undertaken in every school throughout England and Wales."

Finally, as to the organization of school medical work, it is advised that local education authorities should have regard (1) to the soundness and integrity of their scheme, and (2) to its proper association with the local public health service. Their own services should be uniform and comprehensive, its essentials being thorough medical inspection and the ensuring that medical care and treatment is available. An adequate medical and nursing staff and an efficient school clinic, though the best method, may be of little use without following up, and 'owing to unwillingness and inattention rather than lack of knowledge or means, there are still many children deprived by the authorities of the minimum advantages of a medical service which Parliament has definitely declared they must have." Also children who are blind or deaf, or physically or mentally defective within the meaning of the Education Act, 1921, can only have proper provision made for them by means of a prolonged and serious effort on the part of the local education authorities. Only about 40,000 of 150,000 are at present in special schools. To ascertain all such children in their area is the duty of every education authority separately, to provide for them will nearly always require co-operation. Sir George Newman remarks that progress is being made in the usual English way, by spasmodic efforts to meet needs as they arise, and the piecemeal devising of a national scheme. The report concludes as follows:

"The present time seems likely to provide a landmark in the history of the school medical service. Everything is ready for further advance. We have in most matters ample knowledge as to what ought to be done, we have learned by experience how best to do it effectively and economically, we have an organization at hand simple well tried, and capable of expansion as required. It is not that there are great extensions or exceptional achievements to record for 1923, but owing to somewhat less financial stringency, and owing to consolidation and a fuller appreciation of the value of the service in regard both to the treatment and the prevention of disease among children there is high promise of wide and fruitful development."

Having devoted so much space to the conclusions of the Chief Medical Officer, not very much can be said of the many important matters dealt with in the sections which compose the report. A few points, however, noted in perusal of the volume, may be mentioned.

(1) Many of the school buildings are defective, especially in some rural areas, some having fallen below a reasonable health standard owing to money stringency in recent years. The six most frequent sanitary defects are unpaved or unsuitable playgrounds, lack of water facilities, inadequate cloakrooms, uncleanly classrooms, insufficient heating in winter, and unsuitable desks.

(2) The alleged decadence of the rural child in Devonshire is the subject of a startling report by Dr. Corkery, school medical inspector there, quoted by Sir George Newman. It is partly as follows:

"The steady and manifest decline in the general physique, appearance, and stature of the rural child prompted me to select this theme for my special report for the year. The country bred child was in former years far superior in health and vigour to its less fortunate sister and brother who were reared in a town, and the difference in appearance and health was obvious to the most casual observer, but the rural child has now lost its heritage and the town bred child is now wearing the lost mantle. One formerly pictured the country child with a chubby face, pink cheeks, bright alert eyes, and sturdy figure, the 'Devon Dumpling,' in other words. Now you find many of the children in country schools (excepting the children of farmers) are pale faced, anaemic looking, with eyes lacking lustre, undersized, underfed, and sad faced, and without the *joie de vivre* expressed in their general pose and countenance. Why this change? That there has been a steady and progressive decline in the general physique of the majority of country children is abundantly manifest, nor is the decline associated with any special area, but exists practically all over the rural areas, even in moorland children, though I believe in the latter classes different causes operate. The chief factors causing this decline of health are, in my opinion (1) Migration of the 'fit' from the country to the town and consequent breeding from the unfit (2) Bad housing (3) Lack of sufficient and suitable food (4) Intermarriage (5) Large families."

It is most important to know whether this represents the general experience of school medical inspectors in the rural districts.

(3) Action with regard to school closure for infectious disease has been revised. Such closure has hitherto been carried out in the financial rather than the medical interest, exclusion of individual children having led to loss of grant, which loss was prevented by complete closure, resulting, of course, in loss of education, the primary purpose of the school. That paradox is now to be remedied.

(4) Co-ordination of the work of the school medical officer with that of the certifying factory surgeon in respect of determining the fitness of young persons for employment in factories has been the subject of inquiry by a parliamentary committee. The committee's report was published in May, and in that month a clause was introduced into the Factory Bill then before Parliament. That bill (which, like many other departmental bills, lapsed at the dissolution) contained provisions dealing with the matter.

(5) *School Meals.*—In regard to this matter the report states:

"It is provided that there shall be charged to the parent of every child in respect of every meal furnished, such an amount as may be determined by the authority, unless they are satisfied that the parent is unable by reason of circumstances other than his own default to pay the amount."

In fact the figures show that parents from the beginning have contributed the merest fraction of the cost. In 1913-14 the total expenditure was £147,519, while the amount received from parents was only £2,997. The year 1918-19 appears to have been the best in this respect, the total expenditure having been £137,071, and the parents' contribution £21,902. The most recent year in the table is 1922-23, when the total expenditure was £281,251 and the parents' contribution £17,197. The year 1921-22 was altogether exceptional in outlay, the amount being £983,182, to which the parents contributed £15,822. The average cost of meals in pence ranged from 2·43 in 1913-14 to 6·99 in 1919-20. In 1922-23 the cost was 3·93 pence. A report quoted from Shropshire states that "the scheme should be self-supporting by means of small contributions from the parents," and in Kent, where there is a canteen system, "most of the canteens are now self-supporting," and "the number of meals supplied during the year ended March 31st, 1923, was 109,926. The number of meals supplied in return for payment by parents or funds raised locally was 161,751. At milk nutrition clinics under the London County Council 788,668 milk meals were given to necessitous children either free or for part payment, while 1,841,311 milk meals were paid for by parents in full."

(6) In the section dealing with research it is stated that special inquiries are to be made into the following subjects:

"(1) The incidence of disease among children under the age of 5 years. (2) The prevention of adenoids and enlarged tonsils. (3) The prevention of defective vision and squint. (4) The establishment of norms in regard particularly to height, weight, and nutrition generally. (5) The character, incidence, and prevention of rheumatism in children. (6) The study of encephalitis lethargica with special reference to after care and education. (7) Problems presented by the mentally defective child. (8) The incidence and significance of goitre."

ROYAL COMMISSION ON LUNACY AND MENTAL DISORDER

(Continued from page 968)

THE eleventh sitting of the Royal Commission on Lunacy and Mental Disorder was held on November 18th, Mr H P MACMILLAN, K.C., presiding.

Evidence of Medical Superintendents of Mental Hospitals

Dr J. FRANCIS DIXON, medical superintendent of the City Mental Hospital, Humberstone, Leicester, gave evidence. Asked for any suggestions for the simplification or improvement of the code under which such institutions as his were worked, witness said that if some of the legal enactments were strictly interpreted innumerable difficulties could be raised, but if one could just go behind the letter of the law many of them would be overcome. He gave as an illustration the continuation order—a form for the purpose of continuing the original reception order. Under this order the medical superintendent had to state that in his opinion a patient was still insane and a proper person to be detained, and he admitted that he felt some embarrassment in giving a certificate of continued insanity in cases of convalescence or recurrent cases which might have a lucid interval lasting a year. He had, however, no doubt as to the desirability of the continued detention of the patient for a time, and during the convalescence of patients he frequently took advantage of the power he had to allow them out on trial.

The CHAIRMAN said that suggestions had been made that in the incipient stage it might be desirable to avoid the stigma of certification by some expedient, and he asked whether this might be met by the issue of a continuing certificate in a modified form. The witness thought that the form already in existence might be modified. He did not think it was necessary to say that the patient was still of unsound mind.

Asked whether he had encountered any cases in which on examination of the patient admitted he was satisfied that they were not proper cases for detention, Dr DIXON said that he had encountered cases in which he was unable to confirm the statements made in the certificate on which the patient was admitted. That, however, was a somewhat delicate matter, because although a patient might have had all the qualities assigned to him before he came in, these might not be present on his examination in the institution. If the medical superintendent had to say in his first report that the patient was in his opinion insane, he would meet with a considerable amount of difficulty.

The witness went on to deprecate the machinery by which a patient was compelled to go before a magistrate prior to certification, in that it created in the patient's mind a feeling that he had committed some wrong and was in the hands of the law. With regard to the suggestion that patient were detained when fit to be discharged, especially because they were found useful to the institutions, witness said that there was every possible reason why patients should be discharged if only because the more cures a medical superintendent effected the higher became his reputation. As to employment in the institution, there were always a number waiting to replace those who could be discharged. In his institution patients were classified first of all not according to their disease, but according to the amount of liberty that could be given them. He attached great importance to proper classification from the outset, and to adequacy of accommodation for this purpose. In suitable cases, of course, definitely curative treatment was undertaken. There was no some improvement with regard to the conditions under which the nursing staffs of mental hospitals worked, but it seemed to him that the seniors did not receive sufficient remuneration, whilst the juniors in training were overpaid. In his opinion mental nursing called for a very much higher kind of work and greater personal qualities than did general nursing.

In reply to the Chairman, Dr DIXON said he thought it very desirable that persons with incipient insanity should be able to obtain treatment without necessarily being certified as insane. At the same time he thought that the stigma attaching to certification in the public mind was due to a misconception, probably due to past traditions with regard to the malady, and would diminish, though perhaps not entirely disappear, with general enlightenment. The Chairman asked whether it would not assist in removing that conception if people were treated in the first instance in homes or institutions which partook of a hospital rather than of an asylum character, where they might be detained for a period before being finally stamped—should this be found necessary—as insane persons. The witness said that this might even be carried further, and nobody at all be certified if the mere certification was the bugbear, it would be possible to keep on renewing the temporary order. Certification was simply a protection to those who were dealing with a patient who required or might require some restraint; it might answer the same purpose if the doctors and not the patients were the certified persons. In reply to questions from other members of the Commission the witness said that his own institution accommodated 1,600 female patients and about 330 male. The number of patients at the end of 1923 was 842. During that year there were 168 admissions, of which number 39 were readmissions. The rate of recovery was 37·12 per cent. of admissions. With regard to procedure on admission, if it was decided that the rate-aided patient should have the benefit of two medical certificates as had the private patient, one of these certificates, if possible, should be made out by the patient's medical man, and the other by a medical man specially qualified or specially appointed for the purpose. Earl PEEL suggested that it would be an improvement if a person, instead of being described on the reception order as a certified lunatic, were described as a mental case under compulsory treatment. Witness agreed that it would be well to start afresh and use some other word than lunatic.

Dr O. G. CONNELL, medical superintendent of the North Riding County Mental Hospital, Thorpe, was the next witness. He said he had paid some attention to the safeguards against undue detention of persons in mental hospitals. The principle of the reception order was sound, but he thought the same procedure should be adopted in the case of the pauper as in that of the private patient, particularly in the respect that two medical certificates should be necessary. He agreed that many cases were so clearly certifiable that the second certificate would be redundant, but occasionally a patient was presented for admission who was not a lunatic although certified as such and detained for a week, with two certificates this was less likely to happen. The Chairman said that in borderline cases or cases of any difficulty it might be very proper to call in a second opinion, but to make it an invariable procedure would be very expensive. Answering questions with regard to his own institution, the witness said that in 1923 the recovery rate was 35 per cent. of admissions, and so far during 1924 it had been 45 per cent. This of course was below the rate in some other institutions where the figure might reach 70 per cent., but it had to be remembered that these figures were not entirely governed by the rate of recoveries, they were governed by the number of patients who were suitable for discharge and for whom suitable outside care was available. The number of admissions during the present year was 197, of which only 7 were readmissions. He thought that cases likely to benefit by treatment should not be certified, they should come in as voluntary cases. At present he had no power to admit a patient who came voluntarily, and in one case in which such a patient came to his institution and insisted on remaining, the only thing he could do—he admitted it was an absurd thing, under the circumstances, but he had no alternative—was to refer her to the police. Some patients who had been in the institution were quite ready on any recurrence of the malad to return.

The Chairman pointed out that the difficulty of the Commission in recommending action with regard to voluntary cases was that although as the witness had stated mental illness was on the same basis as physical illness, the former struck at the citadel of reason, so that some means of detention or restraint had to be available, moreover there could be no dependence on mental illness upon the co-operation of the patient in measures taken for his own recovery. Dr Connell agreed that if voluntary patients were admitted to a mental hospital some measure of control and power of detention must be permitted. He thought it would be sufficient if it was laid down that such a person could not leave the institution without a certain period of notice. Possibly seventy-two hours—the period mentioned in the Mental Treatment Bill which was before Parliament last session—would be sufficient, so that in the event of a breakdown the patient could be prevented from discharging himself for a time sufficient to enable the medical superintendent to get in touch with his relatives, guardians or the relieving officer and take measures if necessary for certification. Some provisional or emergency order would be requisite if voluntary patients were to be taken. With regard to after care, the outstanding difficulty was the shyness of people to recommend for employment anyone who had been in an asylum.

The witness was questioned also with regard to complaints of ill treatment. He said that in his own institution during the three years of his superintendency only two cases had occurred, both of them really of a trivial nature, so far as any injury to the patient was concerned, but both of them followed by the dismissal of the attendant because it was essential to maintain the greatest discipline in these matters. In one case a refractory patient had received a slap and in the other a nurse, in more or less involuntary self-protection against an action of the patient, hit the patient on the head with a broom causing a slight wound. In reply to Sir David Drummond, the witness said that he thought more provision should be made for the study of insanity in the curriculum of the medical student. Doctors entering their profession had very little knowledge of insanity, although they acquired knowledge subsequently by experience.

Paris.

[From our own Correspondent]

November finds the medical profession of Paris in its normal state of activity. With the advent of October *la vie médicale* showed the first stirrings of reawakening after the lethargy of summer. Since the war the laity has won the right to a period of rest each day and each week, but the doctor is obliged to wait until his annual holiday. Strange consequences are therefore observable, particularly in the domain of surgery, and visitors to France find it difficult to understand why closed doors and silent telephones confront pilgrims seeking those of our celebrities whose fame has travelled beyond our frontiers. Emergency cases have to be content during the holiday period with theatres deserted by the stars of surgery, *hospital work* is carried on by the junior staff, and teaching comes almost to an end. Meanwhile our invalids journey instinctively to the particular watering-places chosen by *our profession* for its summer retreat.

Thermal Treatment

The ever-growing fame of thermal treatment is a curious *phenomenon* of this post-war world. Highly specialized French spas have verily now become provincial schools of medicine, and intensive propaganda has resulted in each set of "baths" being labelled like an advertisement. We find accordingly baths for the liver, for the heart, and for the kidneys, or, again, we have baths for the "algias," for hypertension, and for constipation. Such a classification, admittedly convenient, is, alas, not tuned to the subtle requirements of clinical treatment. While we *grow under this crude notoriety of press and poster*, we must needs take things as we find them.

The Age of Official Medicine

It is sometimes necessary, nevertheless, to school ourselves to view things as they will be, and to picture the future reconstruction of our professional life after the revolution heralded to-day. It is highly probable that the Parliament elected last May will enact insurance legislation on the lines approved by the previous Parliament. This legislation has a basis of electoral approval, and so the majority parties will, doubtless, unite again to present this handsome gift to their supporters, the bill being paid by the medical profession. So begins an age of State medicine, which will bring about the transformation of the doctor into a bureaucratic official. It may come clad in the outward semblance of a forward movement, but for us it disregards the essential principles of our charter of medicine—namely, professional secrecy, and free choice of doctor. Every such foreshadowed law, and every official regulation which threaten these principles, *ought then to* be met by the resolute opposition of the *profession* banded together. We have, unfortunately, *no organization comparable with the British Medical Association, and so we* can only trust that such a body may spring into being in this hour of peril. It is inherent in the French character *to set about organizing* only under the pressure of immediate circumstance.

From the point of view of those who advocate this law the *doctor* is simply a "producer": he produces treatment just as other people produce chocolates or shoes. The intangible elements in our work are not taken into consideration at all. Could the realities of medical practice be more absolutely misconstrued? They offer us a general contract, a central fund, a *book of coupons*, a system of control complete with controllers, and a remuneration so low as to compel the *doctor to compress the maximum number of visits into the minimum time*—in short, the "commercialization" of medicine. How, then, will the French doctor, jealous of his rights and *essentially a critic*, behave? Yet without his help the law cannot come into effect. Will some compromise be found? This we shall learn in the near future. Our profession stands firm on the sacred principle of professional secrecy. It is, moreover, the *right* which guards our honour—a right to *repel on the one hand* this threatening law, and, on the other, the Treasury exaction which *would compel* us to keep an account book inscribed with the names of our patients and the fees paid. We refuse to write down in black and white such an entry as this: "Madame A, three intravenous injections 300 francs," in order that the Treasury inspector may come to Madame A to inquire if perchance she has been charged excessively in the treatment of an illness admittedly of a private nature. As an illustration of the length to which equality mania can be pushed in a democracy, it has actually been suggested that professional titles should be taxed. The chief of the Paris Faculty has uttered a public protest against this absurdity.

Auguste Broca

With the passing of Auguste Broca at the moment when we were celebrating the centenary of his father, *le grand Broca*, there disappears one of the most typical Parisian surgeons of our time. His professional dignity and stern scientific uprightness will long remain as a great example to be copied. He had a most warm-hearted nature, coupled with impulsive liberality. This impulsiveness rendered him famous, especially when he was called upon to defend his opinions or his principles, for which he fought battles with tongue and with pen. During the last years of his life, to the amazement of the world, he was with difficulty stopped from rushing, sword in hand, into a fight with one of his colleagues in a personal quarrel. With Broca have passed away Talamon, Richelot, Hallopeau, and Rochard: this has been a very cruel year for the surgeons of Paris.

Scotland.

Measles and Whooping-cough in Edinburgh

A circular has been issued by Dr. Robertson, Medical Officer of Health for the City of Edinburgh, intimating that, in view of the prevalence of measles and whooping-cough in the city, the Town Council has decided to pay a fee for the notification of the first case of measles and whooping-cough occurring in any house. The object of this notification is to apprise the Public Health Department of the existence of cases of these diseases, so that home visitation by a qualified nurse attached to the Public Health Department may be carried out. It is not intended, however, that the visits paid by *the nurses should be pressed in cases* where they are not desired, and the medical practitioner who makes *the notification may indicate* on the form if he does not *consider it desirable or necessary* to have such visits paid. It is hoped by these measures to reduce the incidence and death rate from measles and whooping cough, *especially among children* under 5 years of age. Attention is drawn in a notice to the public to the fact that these two diseases of young children cause a greater number of *deaths than* diphtheria and scarlet fever. For instance, during the three years 1921, 1922, and 1923 the total number of deaths from diphtheria in Edinburgh was 140, and those from scarlet fever 103, whereas during the same period the total number of deaths from measles was 258, and from whooping-cough 273. Extra accommodation has now been set aside at the City Hospital for infectious diseases in order to deal with children whose retention at their own homes is decided by *the medical practitioner* in attendance to be unsuitable. The Medical Officer of Health appeals to parents to assist him in his effort to have children removed *to hospital* before the onset of bronchitis or pneumonia, for the treatment of which many homes are quite unsuitable. He also points out that it means a great deal to the children's future health if a thoroughly good recovery is made from measles or whooping-cough.

Aberdeen University Lord Rector

Viscount Cecil of Chelwood (Unionist) was *elected* Rector of Aberdeen *University* on November 15th, having a majority of votes in each of the four "nations" by which the election at this university is made. The four "nations,"

into which the votes are grouped, are Mr. Buchan, Moray, and Angus. The result of the voting was: Viscount Cecil (Unionist), 449 votes, Lord Meston (Liberal), 240 votes, and the Right Hon. C. P. Trevelyan (Socialist), 101 votes.

Parents and Public Health

An address was given last week by Councillor W. J. Harvey, convener of the Public Health Committee of Edinburgh Town Council, to the Friendly Societies' Council of Edinburgh and Leith on the subject of public health. He said that recent public health legislation was sometimes subjected to the criticism that it had undermined the independence of the individual and lessened the personal responsibility in health matters. The collection of the population in large centres had, however, made it impossible for man to fend for himself and had made State provision imperative in many directions. In man's social life there were four forces which threatened him communally and individually. These were insanitation, ill health, poverty, and indifference. With regard to the last, the attempt which was made by the parent to acquire fuller knowledge of child dietetics, hygiene, and similar subjects, and the encouragement to attend clinics, did not tend to lessen personal responsibility. On the contrary, these factors should be a call to a fuller sense of responsibility by realizing the needs of the moment in order to assure a healthy future for children. The most difficult obstacle which public authorities had to overcome was indifference and irresponsibility, and public health authorities, while they did not intend to undermine responsibility, rightly attacked the indifferent and irresponsible.

Letters of Mary Queen of Scots

An appeal has been issued, under the patronage of H.R.H. the Duchess of York, for subscriptions in aid of a fund to purchase, on behalf of the Scottish nation, a number of letters and documents relating to Mary Queen of Scots. An option has been secured to purchase these papers for a sum of £2,250 in order that they may be lodged in the Advocates' Library at Edinburgh, shortly to become the National Library of Scotland. That library has already become the repository of some valuable historical letters relating to the same queen, which were purchased in June, 1924. The papers consist of thirty items, including nine letters signed by the Queen, one signed by Henry Lord Darnley, two letters from Queen Mary of Guise, two from James, Earl of Arran, one from the Earl of Lennox, Darnley's father, two from the Earl of Morton, and two from King James VI. The letters came originally from the family archives of John Muir, Laird of Rowallan, a prominent supporter of Queen Mary, and they are mostly unpublished. Persons willing to subscribe to this fund should intimate their subscriptions before November 30th to Dr. C. Stewart Black (Honorary Secretary, St. Andrew Society, Glasgow), 93, High Street, Paisley.

Central Midwives Board for Scotland

The examination of the Board held simultaneously in Edinburgh, Glasgow, Dundee, and Aberdeen has just concluded with the following results. Out of 126 candidates who appeared for the examination, 102 passed. Of the successful candidates, 24 were trained at the Royal Maternity Hospital, Edinburgh, 23 at the Royal Maternity Hospital, Glasgow, 4 at the Maternity Hospital, Aberdeen, 14 at the Maternity Hospital, Dundee, 10 at the Queen Victoria Jubilee Institute, Edinburgh, 8 at the Cottage Nurses' Training Home, Govan, Glasgow, and the remainder at various recognized institutions.

Ireland.

Milk Supply of Dublin

Professor Joseph Bigger, M.D., in a lecture under the auspices of the Royal Dublin Society, delivered in the Royal College of Surgeons, Dublin, said milk was a valuable food, and contained all the necessary food materials. One pint of milk costing 3½d., supplied the same energy as 12½ oz. of beef (1s. 3d.), five eggs (1s. 3d.), four bananas (8d.), 1½ oz. of butter (3d.), or 6 oz. of bread (1d.), so that it was a fairly cheap food. Milk was often adulterated by the subtraction of fat and the addition of water, but its chief dangers were from bacteria. Dublin milks contained on an average 600,000 bacteria per cubic centimetre in winter and 4,000,000 in summer. Tubercle bacteria of the bovine type were found in 8 per cent. of milks bought in Dublin. This organism can and a considerable amount of tuberculosis in children. Other diseases spread by milk were typhoid fever, scarlet fever, and diphtheria. Dirt bacteria came from the cow's excreta, and were the cause of infantile diarrhœa. The milking methods at present in use were unsatisfactory, and were the cause of the excessive numbers of bacteria in milk. It was shown that an ordinary labourer could be taught how to produce clean milk in a few days with practically no expense. The conditions under which a pure milk supply had been procured in the United States and Great Britain were explained by the lecturer, and he made suggestions for the procuring of clean milk in Dublin. For the best quality the cows should be tested by tuberculin, the methods of milking should be satisfactory, the milk should be supplied in bottles, and should pass a bacteriological examination. Such milk would cost more, but economies could be effected in delivery, only one delivery a day being necessary, as clean milk would not sour within thirty-six hours. Pasteurized milk was considered less satisfactory, but was much better than the milk now sold in Dublin. Anyone found selling filthy milk should be imprisoned and prevented from selling milk thereafter. The chief danger to health arose from the dirty handling of milk. About 2 per cent. of cows suffered from tuberculosis of the udder, and it was a possible danger to the community. Another cause of contamination was that the flanks of cows were allowed to be covered with dry manure, indeed the chief source of bacteria in milk was cowdung. Filtration did not remove the dirt. By clean methods milk should remain sweet for 183 hours, and these methods could easily be improved. Milking pails and buckets should be sterilized by steaming. Milk should be kept in a place where there were no odours of food or paraffin oil, and at the lowest possible temperature. In Dublin the same price was paid for bad as for good milk. Forty-eight per cent. of the milk sold in Dublin ought to be condemned as unfit for human food. It was essential for the health of the community that the public should demand clean milk. Professor Bigger regarded the present price of milk as excessive. Milk dealers were able to supply hospitals at contract prices enormously below what they charged the public. Good milk did not require heating; bad milk should not be heated. The speaker pleaded on behalf of the babies of Dublin who acquired tuberculosis and became cripples through the dirty milk which they drank. Persons who sold dirty milk were really poisoning the life of the city. If public interest were aroused in the subject it would be possible to secure a satisfactory and clean milk supply.

Presentation to Dr. William Gibson, Belfast

On the evening of November 12th Dr. William Gibson, sanitary surveyor and inspector of emigrant ships, Belfast, was presented with his portrait in oils, to be hung in the hall of the Willowfield Unionist Club, and with a replica and a portrait of Mrs. Gibson for their home. Dr. Gibson has been long known for his labours on behalf of the Unionist cause in the North of Ireland, but this work has always been combined with genuine and broad philanthropic leaning. He was mainly responsible for the erection and equipment of the Willowfield club and hall, situated in a densely populated district where all could meet and enjoy social intercourse, and where friendly relations between all classes of the community were promoted; provision was made for the enjoyment of members and a high sense of citizenship fostered. Dr. Gibson has been busy all through his life with innumerable undertakings; during the war he was secretary of the medical board of the Ulster Volunteer Force Hospital, where all who wore His Majesty's uniform were admitted; he was an active member of the Belfast Ambulance Committee which supplied all the ambulances of the Ulster Division, and he was still engaged in the Hilden Hospital and in the Joint

Committee of the Red Cross and St John His civic labours also were many, varied, and always energetic and for the good of the people The Prime Minister of Northern Ireland (Sir James Craig), the Lord Mayor of Belfast (the Right Hon W G Turner), and many others were present, and spoke of Dr Gibson's indefatigable public labours, the Right Hon H M Pollock, D L, M P, Minister of Finance for Northern Ireland, proposed the toast of "Our Guest," and the Prime Minister unveiled the portraits Dr Gibson, in his reply, described the origin of the Willowfield Hall in which they now sit, it was free of debt, and they were already engaged in raising funds for the purchase and equipment of playing fields for the outdoor enjoyment of the members He desired to thank all those who had joined in the promotion of the enterprise, their memorial tablet to the sixty-four members who lay in Flanders fields was always a stimulus to such work

Correspondence.

SCIENCE OR ART?

SIR,—Not even the eloquence of a leading article will persuade the majority of us that medicine is a science It is something greater it is an art Medicine is the greatest of all the arts, and all the sciences are but its helpers

This conception of medicine is of great antiquity The Pericles in Greek, with his clear insight and his wonderful power of penetrating to the heart of a matter, accepted it "Medicine is of all the arts the most noble," wrote Hippocrates, whom Plato grouped with Pheidias and Polycletus

Science is obviously of vast importance, to medicine it is indispensable, but it is auxiliary only Science is the scaffolding without which medicine cannot be built up but it is not the building It is the machinery by which the worker works, but it is not the worker, nor his work

The conception of medicine as a science is more than a mistake that is why one takes the trouble to discuss it It is really mischievous For if medicine be a science, then, logically, our patients are primarily material for experiment That, we know, is the German idea But if medicine be an art, then the good of the patient is the end of all our effort No saveable life lost, no preventable suffering unprevented, is other than a deplorable failure, be the scientific aspect what it may" That is the English idea

I repeat, medicine is the greatest of all the arts, and all the sciences are but its helpers Its material is the most precious in the world its triumphs have been the consolations of humanity It gains nothing by being misnamed a science —I am, etc,

W GORDON

Exeter Nov 16th

THE GENERAL PRACTITIONER AND THE MATERNITY SERVICE

SIR,—Your important leading article in this week's issue of the BRITISH MEDICAL JOURNAL (p 911), the combined discussion at the Royal Society of Medicine on November 6th (p 900), and also Dr Gibbon Fitzgibbon's illuminating letter (p 927), encourage me to add one more to the quota of facts steadily accumulating as to the part played, or perhaps that should be played, by general practitioners, the "institutions," and the local health authorities in the prevention of maternal mortality

The point I would accentuate is, I think, important, especially as it seems to have been overlooked by many contributors on this subject, notably Dr Bennett (BRITISH MEDICAL JOURNAL, October 18th, p 741), and not mentioned by Dr Fitzgibbon It is that "hospital treatment" is not necessarily synonymous with the best obstetric skill It is doubtless so in London and the really large centres, but in many other parts of the country the "hospital," the "Poor Law institution," the "fever hospital," or the "cottage hospital" are not necessarily—in fact are not—staffed by obstetric surgeons, or even perhaps by any interested in the matter

I draw attention to this so that the administrative scheme shall cover this important detail, if and when it is evolved, and all of us with a desire to reduce this terrible scourge hope that reform will not be long delayed —I am, etc,

Norwich, Nov 15th ARTHUR CROOK

SIR,—Your appeal to the general practitioner in the JOURNAL of November 15th to ventilate his views on this subject induces me to give my impressions of the practice of obstetrics As I have an experience of over thirty-four years behind me, my suggestions for improving the position may possibly be helpful

In my early days the qualified midwife had not come on the scene and we were dependent on the 'handy woman" to help us With the advent of the trained and certificated midwife matters were much improved, and the harassed and often overworked practitioner was not called on to spend so many useless hours at a case, or tempted, in the alternative, to risk "getting it over" with the aid of forceps

The pendulum, however, has now swung too far, as the majority of cases are attended from first to last by midwives alone, the doctor's services not being requisitioned till something has gone wrong Some patients, when expecting confinement, only *provisionally* engage a medical attendant, saying, "Will you come, doctor, if we want you" Naturally they do not send if they can possibly do without, on account of the expense And as most doctors dislike midwifery they do not worry But this practice opens the way to serious mishaps, and is altogether wrong I will illustrate what I mean by two fairly recent experiences

In the first I was provisionally engaged to attend a lady in her second confinement I had attended when her first child was born in a perfectly normal confinement When summoned on the second occasion I found that the midwife had been in attendance four days, the membranes ruptured two days—"a hand down" and, of course, the child dead Version was very difficult and the patient very seriously exhausted Result, sepsis—which by the way, I do not think I notified, as it was of the type often seen in such cases—sudden rigors, a rapid rise of temperature to 104° F or over, falling to normal in twenty four hours or less Incidentally I was blamed for the patient's condition, although the midwife was in attendance at several other febrile cases Happily a good recovery was made

The second experience illustrates where the present practice of midwifery is at fault Here, again, the case was one of cross presentation, which, however, the young practitioner in attendance could not rectify single-handed His partner, not taking on midwifery engagements, asked me to go and help, which I did With some little difficulty delivery was safely effected, and I believe the patient, after some febrile disturbance, recovered The point here is that the first practitioner probably lacked experience and the skill which only comes with experience It called in earlier, perhaps things would have been different I cannot remember if there was a qualified midwife in attendance I rather think not, and I was not called on to see the case again

Now, Sir, I do not see how the notification of puerperal sepsis is to help us in such cases as these By itself, it certainly will not prevent sepsis, and to my mind it will always be an unsatisfactory procedure, at any rate as it present carried out What is the use of training and licensing midwives to act alone in the management of labour, and leaving the young graduate helpless in the frequent emergencies for want of experience? The factor of time is all-important in many cases, and removal to a suitable hospital is not always either desirable or possible

The remedy, to my mind, is a simple one, though probably it would require legislation It is, *that in every case of confinement a medical practitioner be called to attend at least once, preferably at the beginning of labour* This may sound a drastic step, and put forward to benefit the medical profession alone, but when examined closely I believe it would have the happiest results—to the patient, the nurse, and the doctor It certainly would re-educate the mind of the public generally, bringing them to see their own responsibility in this grave matter of maternal mortality in childbirth —I am, etc,

ALEX P AGNEW, M B, C M

Wymondham, Norfolk, Nov 16th

SIR,—In your article on the general practitioner and the maternity service you comment on the fact that only one general practitioner took part in the discussion. The fact is deplorable, but it is readily explicable.

The truth is, that the average general practitioner is a little weary of the innuendo that he alone is responsible for the high rate of maternal and infantile mortality. He is not even allowed to *divide the opprobrium* with the midwife. For example an article in the current issue of a journal of popular medicine states: "The greatest factor in stillbirths and maternal mortality is undoubtedly delivery by forceps. It is, further, the greatest cause of subsequent sepsis." Such exaggerations hamper the work of the general practitioner and seriously impair his relations with his patients. It is not surprising that he finds it more compatible with his dignity, and his self respect, to hold his tongue.

Hitherto, his practice has been the product of his teaching, and it is *unreasonable to blame him for procedure* which was universally taught until the last few years. Anyone who will take the trouble to look through the textbooks of only a few years ago will, I am sure, agree with me on the matter. Many eminent teachers of midwifery have frankly admitted that their views have profoundly changed during the last few years, and they will no doubt collaborate with general practitioners to evolve a practicable system of midwifery which cannot fail to benefit the community. No advance will be made by the persistent advocacy of methods which the conditions *of general practice render impossible*.—I am, etc.,

London, E12, Nov. 1st. A. CAMPBELL STARK.

SIR,—In a pertinent leading article this week you inquire why the general practitioner seems to take so little *interest in the maternity service dispute which*, as you very justly remark, is "now raging." May I venture to suggest in reply that this dispute has not yet shown any promise of a practical outcome—the only note likely to arouse harmonious response amongst general practitioner. Not only is there no sign of practical outcome, but the dispute has passed into the realms of broad farce—I do not think that such a term is too harsh for the discussion which you report on notification. There is also more than suspicion amongst general practitioners that they have been most unjustly condemned (for example in Dr. Janet Campbell's report) for something which is not their fault. Nor are those practitioners who have given special consideration to the subject unaware of the very slender basis of scientifically established fact which underlies the fulminations of the experts. The expert does not always seem to realize how slender it is, and I venture to elaborate the point in the hope that more attention may be given to it.

The thesis of Dr. Janet Campbell, Dr. F. G. Stevens, and others is that puerperal fever is due in the vast majority of cases to some fault of the doctor or midwife. This thesis ought to be submitted to scientific examination. It is in danger of becoming accepted by the public, to the vast *detriment of everyone outside Harley Street*.

The doctor or midwife is in attendance at the vast majority of labours so that the *post hoc ergo propter hoc* argument is inviting. No more valid argument has yet been adduced by the experts. Yet if it is to be accepted it should at least be shown that puerperal fever is more frequent in those parts of the country in which sepsis is most prevalent or doctors most careless. In fact all statistics suggest the opposite. Or it should be shown that the usual causative germ is one which is most commonly encountered on the doctor's hand (which is not the case) or that the disease is less common when the case is handled by an expert (which has yet to be proved) or that it *does not occur when labour has not been assisted* (which is not so). The '*post hoc*" argument is too slender a stick to depend on, and the experts are hereby invited to produce something more convincing, and in so doing perhaps they will also explain the remarkable prevalence of an apparently identical fever amongst cattle in which there is no midwife or doctor or self-examination or coitus during pregnancy.

It is true that certain experts suggest no more than that the doctor and midwife (however clean their hands) convey germs from the vagina into the uterus and so set up puerperal fever. No evidence is offered other than the possibility of such happening. The general practitioner would like to know from these experts exactly what steps they take to secure that the vagina shall remain aseptic *during the whole of labour* and whether they succeed in thus limiting puerperal sepsis. We shall then be able to judge whether such steps are within the range of practical politics in general practice and also whether the fees allowed by the State would permit their employment. Another way in which the anti-practitioner case is stated is that puerperal fever is due to his omission to do something which he ought to do—for example, to wear gloves or to sterilize his instruments properly. The proof offered is ludicrous—namely, that in such and such a case gloves were not worn and fever occurred, in fact the '*post hoc*" argument again. It has yet to be shown that there is any relation between the wearing of gloves and puerperal fever (even ordinary surgical) sepsis.

Other illustrations might be given but enough has been said to suggest, and to suggest very strongly, that the maternity service dispute shows more signs of ill informed prejudice than of scientific investigation. The truth is that practically nothing at all is known about puerperal fever. The available reports on its bacteriology are conflicting and few in number. Its distribution in relation to types of dwelling, etc., has scarcely yet been studied. Of factors *predisposing to it, nothing* is certainly known except that there are such factors. Its curative treatment is unsatisfactory and *often futile, nor are the details of it agreed*. Its prophylactic treatment (very successful in the hands of veterinarians) is apparently unknown to gynaecologists. And in this fog of ignorance wander those who have facilities of which the general practitioner can only dream, and they have altogether neglected those facilities in order to rail at the criminal carelessness (assumed) of midwife and doctor.

Surely, Sir, it is no wonder that the general practitioner takes little interest in the maternity service dispute.—I am, etc.,

Sevenoaks, Nov. 16th. GORDON WARD.

SIR,—The present notification is too late to reduce the septic death rate in childbirth. It in its stead every expectant mother was *notified to the county medical officer*, and it was his duty to see that the living room and its surroundings were aseptic and that proper arrangements had been made for attendance on the mother, not only professional but domestic, the number of these cases in private practice would soon fall.

It would be no use passing a law to this effect unless arrangements were made for carrying out the order of the medical officer. He would require skilled assistant free from local influence and power to move the woman into hospital if his orders were neglected. How parents could be dealt with I don't know. Herein lies the real difficulty for expectant mothers often have very strong opinion and *the incidence of sepsis is too uncertain* to easily prove them wrong.—I am, etc.,

Silverton, near Exeter, Nov. 16th. O. CLAYTO JONES.

SIR,—One of the suggestions contained in Dr. Janet Campbell's report[1] is that medical practitioners should have the opportunity in difficult cases of calling to their aid a consulting obstetrician the responsibility for the payment of whose fee should be borne by the local authority. As one of the younger members of the profession practising in a purely industrial area I have often felt the need of expert assistance and advice and while I recognize that obstetrical operations are for the most part better performed in a living in hospital yet this is not always possible or practicable.

I may say that, as a member of the Leeds City Council and deputy chairman of the Health Committee I drew

[1] Report on Public Health and Medical Subjects (No. 25). Maternal Mortality by Janet M. Campbell, M.D., M.S. Issued by the Ministry of Health.

the attention of the Maternity and Child Welfare Committee, first, to the maternal mortality rate in the country, and secondly, to the suggestion quoted above The result has been that the following recommendations were made to the council and ratified on November 10th, and a copy is to be sent to all medical practitioners in the city

(*a*) That the fee paid to the consultant for his services be £3 3s for a consultation without operation, and £5 5s for a consultation with operation

(*b*) That the medical practitioner be required to fill up a form giving details of the case, including the nature of the emergency and the name of the consultant, and to transmit the same to the medical officer of health as soon after the consultation as possible

(*c*) That the claim for payment for services rendered be made on a special form to be supplied to each of the consultants on the staff of the maternity hospital

(*d*) That the patient be expected to contribute towards the cost of the services of the consultant according to means, each case to be judged on its merits

I, personally, should be very glad to see all city councils or local health authorities taking similar steps —I am, etc,

CYRIL J G EXLEY

Leeds, Nov 17th

PUERPERAL SEPSIS

SIR,—Referring to the leading article and to the report of the discussion on puerperal sepsis in the current issue of the JOURNAL, I beg to submit that in nine cases out of ten puerperal fever is a specific streptococcal infection over the onset of which neither the patient, the nurse, the midwife, nor the doctor has at present much control

Puerperal fever may occur after a miscarriage, after childbirth when the mother has not been attended by a doctor or midwife, and also when the utmost aseptic precautions have been taken and the most skilled attention been given It is probable that the causal streptococcus is already in the neighbourhood of the uterus before labour commences It is probable that, as in diphtheria and cerebro-spinal fever, many persons harbour the germ though they themselves are immune

In puerperal fever the streptococcus can be grown profusely on blood agar inoculated with a swab from the uterus, and in severe cases from blood cultures, from pleural effusions, and from metastatic abscesses It is a streptococcus which has definite characters by which it can be identified in cultures from the uterus, and (with the solitary exception of finding it in the cerebro-spinal fluid in a case of choice of pregnancy) I have not been able to find a streptococcus with similar cultural characteristics in any other infection, though I have been on the look-out for many years In about 10 per cent of cases of puerperal infection this streptococcus is not present, one finds faecal bacteria, streptococci of various sorts, and staphylococci as in ordinary septic wounds, and this occurs especially in cases where a difficult and tedious labour has necessitated much manipulation, such cases constitute real puerperal sepsis, and they are comparatively rare

The above remarks are based on my investigations on over 150 cases, most of which were admitted into the puerperal fever ward of the Birmingham and Midland Women's Hospital when I was bacteriologist there I believe that similar results have been obtained there up to the present time, and unless I am much deceived such results must appear wherever sufficient material is available for the investigator

Now if puerperal fever is a specific streptococcal infection surely it should be possible to prepare a specific antitoxin, a serum as efficient as, say, antidiphtheritic serum, and as readily available Or perhaps, if the specificity of the disease is generally admitted, a prophylactic vaccine may become available for those who wish to use it And if it became generally understood by the public and by the medical profession that the diagnosis of puerperal fever implied no blame to the doctor, midwife, or nurse, but that its prompt recognition averted its chief dangers, many of the difficulties in regard to its notification would disappear

If this letter leads to further investigation of this particular organism, its habitat and evolution, it is probable that facts may emerge which will enable us to reduce the incidence and mortality of puerperal fever —I am, etc,

LEONARD G J MACKEY.

Birmingham, Nov 16th

XANTHOMA AND XANTHOSIS

SIR,—In Professor M J Stewart's instructive and interesting article under the above title in the BRITISH MEDICAL JOURNAL for November 15th (p 893) the term "xanthosis" is used for local changes associated with the deposition of lipoid material (cholesterin esters, cholesterin) I would like to point out that this term 'xanthosis"—which, of course, literally means the condition of having become abnormally yellow—has already been applied to a yellow coloration of the skin (cutaneous xanthosis), especially of the palms of the hands and the soles of the feet, and in many cases the face also, which is not due to jaundice and is not necessarily (probably hardly ever) associated with any form of xanthoma

Such a xanthosis of the skin was described in 1904 (International Dermatological Congress) by C von Noorden in certain young patients suffering from diabetes mellitus Since then, however, its occurrence has been noted in other diseases and in apparently healthy persons The sclerotics are not at all, or only very slightly, coloured, and the skin never assumes the dark-greenish appearance that it does in cases of chronic obstructive jaundice

The pigment in question is supposed to belong to the class of lipochrome, lutein, xanthophyll, or carotin Cutaneous xanthosis is probably the same as Castellani's "ochronodermatosis" or "yellow disease," and has doubtless been described in France under the heading "xanthochromia cutis" Cachectic subjects seem to be more liable to cutaneous xanthosis than others, young wasting diabetics more than older well nourished diabetics, and poorly nourished children more than robust children, even when their respective diets are equally rich in carrots (cf H Salomon) The work on "carotinaemia" by Hess and Myers of New York (1919) was of special value in making generally known the possible effect of diets rich in carrot and other vegetables containing carotin on the coloration of the skin

At the October meeting of the Dermatological Section of the Royal Society of Medicine I showed a case of characteristic xanthosis of the hands and feet in a girl case of diabetes mellitus —I am, etc,

F PARKES WEBER, M D, F R C P.

London, W, Nov 15th

CARBON MONOXIDE POISONING

SIR, — Dr Cunningham Affleck (BRITISH MEDICAL JOURNAL, November 1st, 1924, p 835) is wrong in saying that I agree with him "that poisons of an insidious nature are given off when certain fuel is burned," the fuel in question being coal gas There are traces of sulphuretted hydrogen in the fumes of a gas fire, and possibly traces of organic compounds similar in action to the tear gases used in the war, but these expend their energy in slightly irritating the respiratory membrane There is not the least evidence that they are absorbed and act as insidious poisons Dr Affleck says he can tell when carbon monoxide is present in small quantities, being possessed of an idiosyncrasy in regard to the action of the gas He must have a hard life of it, seeing that carbon monoxide is present in tobacco smoke! Dr Affleck had better lend himself out in place of the canary which is taken into mines in order to detect the presence of this gas, which to all men other than Dr Affleck is undetectable

The physiological facts concerning carbon monoxide are established, so are the facts concerning the harm done by breathing and living in a hot, stuffy atmosphere Scientific measurements alone can decide which of these agents is working the harm —I am, etc,

LEONARD HILL

London, N W, Nov 17th

SIR,—In your issue of November 15th (p 926) Dr Joel Lurd states that it is desirable that someone "should give us a clear explanation of what actually does occur" He also asks the question, "Is it possible that the transient combination of CO with haemoglobin damages the latter?" Whereas CO_2 and O both make feeble or loose chemical combinations with Hb, CO makes a much more stable combination It is not a *transient* combination Lurd and Stirling, in their *Textbook on Physiology*, state that

COHb has been found after many months by spectrum analysis When air containing CO is breathed by man it gradually displaces the O from the Hb volume for volume, and so prevents the oxygenation of the blood In one of the more severe cases of poisoning by CO, transfusion of blood is the only treatment —I am, etc

JAMES RITCHIE, M D, F R C P Ed

Slateford Midlothian Nov 15th

TONSILLECTOMY

SIR —I was very pleased to see Mr Steward's letter on tonsillectomy in your issue of November 8th (p 876) As an old general practitioner who had a good many cases of partial removal of the tonsils by the guillotine amongst my patients I can bear witness that the majority were quite successful Looking back, I do believe that in a small proportion of the cases enucleation would have been better There must be a good many of the *older practitioners and* operating surgeons who could give similar testimony — I am, etc,

Bath Nov 10 h J WIGMORE

SIR,—I have read with regret Mr F J Steward's letter in the BRITISH MEDICAL JOURNAL (November 8th, p 876), in which he comments upon the resolution unanimously passed by the Section of Laryngology and Otology at the Annual Meeting of the British Medical Association, which reads as follows "That tonsillectomy by enucleation is the only efficient operation in dealing with tonsillar disease"

Mr Steward considers that this resolution is "idealistic and goes too far" He recognizes that tonsillectomy by enucleation is the most efficient operation, but he considers that tonsillotomy or partial removal may be equally so in some cases, and I gather that he even advocates it as *the operation of choice under certain conditions* One cannot but feel that such a view coming from so high and respected an authority must tend to encourage in *efficient tonsil surgery and to harden the unskilled operator* in his sins To those of us who are constantly meeting with the disastrous after results of such imperfect handiwork this is lamentable Surely it cannot be too strongly emphasized that partial removal of a tonsil is an unsound surgical procedure and that if a tonsil requires to be operated on at all the aim and object of the operation should be to remove the tonsil the whole tonsil and nothing but the tonsil and further that unless the operator has at his command the skill and facilities for ensuring this he should be strongly discouraged from attempting it

I am quite convinced that in a very large number of case an incomplete operation is worse than no operation at all, and that in those cases where such a procedure appears to have been efficacious the patient has got better in spite of the operation and not because of it

Mr Steward emphasizes the paucity of skilled operators There I concur, but I regard this as a difficulty which should, and must be, overcome I know from my own experience of certain districts that it can be But we must preach perfection—not complaisance To condone inefficiency is not the way to raise the standard of tonsil surgery, and I certainly consider the resolution in question absolutely sound Idealistic it may be but I believe it to stand for an ideal which is obtainable and which must be attained —I am, etc,

London W Nov 10th T TWISTINGTON HIGGINS

TREATMENT OF GOITRE BY IODINE

SIR,—The recent literature and correspondence on the above subject published in the JOURNAL have induced me to relate my own observations and experiences regarding the treatment of goitre, and, for the sake of brevity I will use the narrative form of statement

In the year 1889, whilst casting about for a remedy for Graves's disease, of which I had the fortune—good or bad—to have under my care a small group of cases, I found that syrup of iodide of iron, whilst of no use in the object of my search, was of decided benefit in ordinary goitre I forthwith adopted this form of treatment, pursuing it all through the years to the present time with marked success and, although I have unfortunately no regular statistics to quote, it is no exaggeration for me to say that out of some 400 cases of the disease more than half were cured and a considerable number of the remainder, some of whom discontinued the treatment, were more or less benefited Improvement was greatest and most rapid in the lateral enlargement the central part or the gland responding less readily to the treatment and this was especially the case when the swelling in this situation was of a smooth globular character for after prolonged efforts to cure, the condition was practically in *statu quo*

During my endeavours to relieve fastidious patients in their task of taking a somewhat disagreeable medicine I found that capsules containing the solid constituent of the syrup of iodide of iron were a comparative failure — in fact, more so than could be accounted for by the respective degrees of digestion and absorption of the two forms of drug employed—and from this I should infer that the combination of saccharine matter with the iodide gives rise to a special therapeutic effect which does not exist when they are taken separately This is a purely empirical fact and I allude to it without the least intention of dogmatism leaving it *to your more scientific readers to form* a better explanation than that given above

The results of my observations would lead me to be strongly impressed with the belief that syrup of iodide of iron is the ideal remedy for goitre, superior even to iodine itself or any of its derivatives A milder impression formed too late in my field of observation for any degree of certainty is a probable hereditary connexion between goitre and diabetes mellitus

By way of personal explanation I would like to say that although in the ordinary sense of the term I did not publish the above results, I spoke about the matter to my medical acquaintances, and went more fully into it at a meeting of the Warrington Medico-Ethical Society in the year 1911 during a discussion on a very able and interesting paper on the pathology and causation of thyroid enlargements by Dr C W Hutt at that time assistant medical officer of health for Warrington The reception of my views on this occasion however was not such as to encourage me in the direction of further publicity, and I allowed the subject to drop

I may add that the maximum success of this form of treatment depends to some extent upon several minor details and precautions, which I would readily furnish should my communication be of sufficient interest to any of your readers —I am etc,

Penketyn North Wales Nov 14th C W JOLLEPH M D

CROWNERS LAW

SIR,—With regard to the letter on coroner's law in your issue of November 8th may I suggest that the ignorant interference and the Lord High Executioner disregard of courtesy complained of is likely to persist so long as *non medical coroners are appointed*

A county council recently elected a non medical coroner for a county area Among the applicants were three who possessed both a legal and a medical qualification but the successful candidate was fortunate enough to have acted as deputy for his father the late coroner The new coroner will no doubt put forward a friend's name as his deputy and so these posts will be virtually closed to competition for many years The chief question put to candidates was whether they were "freeholders" this property qualification being necessary under the archaic Coroners Act of 1887

It is to be hoped that when the long overdue amending of this Act is carried out the British Medical Association will bring forward the desirability of candidates having both a legal and medical qualification—or at least a medical one At the present time the London County Council is the only one enlightened enough to demand both qualifications in its candidates though by law it must still insist on the successful candidate becoming a freeholder

Might I add for your correspondent's information that complaints concerning any coroner can be addressed to the Lord Chancellor, who though he has *not powers of appointment*, has powers to reprimand or remove a coroner"— I am, etc,

Salford Nov 11th E F HOARE

Obituary.

GEORGE ERNEST HASLIP, M.D.,

Late Treasurer of the British Medical Association

We had the sad duty last week of announcing the death of Dr. G. E. Haslip, which occurred on November 12th, at his house in London, after a long and painful illness, borne with great fortitude. It had been known to his friends for many months past that he was seriously ill and had undergone two severe operations. In July last his failing health compelled him to resign the post of Treasurer of the British Medical Association, which he had held with great ability and devotion for eight years.

George Ernest Haslip was born on August 7th, 1864, at Gravesend. He was the last surviving child of James Haslip. From Gravesend Proprietary School he went to the London Hospital, and obtained the M.R.C.S. Eng. and L.R.C.P. Lond. diplomas in 1887. After holding the posts of house surgeon and clinical assistant in the medical out-patient department at the London Hospital, he obtained the M.D. Brux. degree in 1889, and the D.P.H. of the English Conjoint Board in 1891. In the following year he began general practice in Suffolk Place, Pall Mall, and continued to work there until 1913, when he moved to St. James's Square. For more than thirty years he was medical officer to the Corps of Commissionaires, and in carrying out the duties of that appointment he never spared himself. He was most regular in his attendance at the corps headquarters in the Strand, and, in fact, seemed to regard that as the first duty in his busy day, when necessary he was assiduous in visiting the men in their homes. During those years Dr. Haslip built up a large private practice. He acted as medical adviser to several large insurance companies, and was physician to a number of the largest West End hotels.

Dr. Haslip was elected Treasurer of the British Medical Association in 1916. He had been President of the Metropolitan Counties Branch in 1913 and Vice-President of the Section of Medical Sociology in the same year, but he was not at that time at all widely known to members of the Association. He had, however, been Chairman of the Medical Insurance Agency since 1909, and in that office had shown his capacity as a financier. No one knew better than he that in becoming Treasurer of the Association at the beginning of the third year of the war he was undertaking an onerous task. The general financial position of the country was, of course, far from satisfactory, and the British Medical Association was suffering like other undertakings which had a commercial side. He gave much time and thought to the questions which came before him, and was in very frequent consultation with the then Financial Secretary, Mr. Guy Elliston. The unexpected death of Mr. Elliston in April, 1918, very greatly increased Dr. Haslip's responsibilities and anxieties, he did not shrink from giving his time very freely, and visited the office practically every day for many months preceding and following the armistice. Through all this trying time he never lost his contagious courage and high spirits, and came to be regarded with the greatest admiration and affection by all with whom he worked in the Central Office. It was a very great grief to them to notice the slow failure of his health, which began about eighteen months ago. The Association was never more fortunate in the choice of an officer than in getting Dr. Haslip for its Treasurer in 1916.

Dr. Haslip was one of the original members of the Consultative Council on Medical and Allied Services appointed in October, 1919, by the first Minister of Health, Dr. Addison, to advise the Ministry on such problems as the national development and extension of medical, nursing, and midwifery work. In the following year he was President of the Section of Medical Sociology at the Cambridge Annual Meeting of the British Medical Association, and introduced, with characteristic vigour and directness, the discussion on the future of medical practice, which was reported in full in our issue of July 10th, 1920. It was at that Annual Meeting, the first held since the war, that the President, Sir Clifford Allbutt, was presented with his portrait, by Sir William Orpen, which now hangs in the Fitzwilliam Museum, the proposal to open a fund for the portrait originated with Dr. Haslip, and his was the driving force behind all the arrangements.

Dr. Haslip had travelled much on the Continent and gained considerable first-hand knowledge of foreign spas and the methods of treatment carried out at each. He was a regular attendant at the Section of Balneology and Climatology of the Royal Society of Medicine, and for some years served on the council of the Section.

The first part of the funeral service was held at St. Martin's-in-the-Fields, Trafalgar Square, on Friday, November 14th. A very large gathering of friends nearly filled the church. The coffin was guarded by an escort from the Corps of Commissionaires. The British Medical Association was represented by the Chairman of the Representative Body, Dr. H. B. Brackenbury, the Chairman of Council, Dr. R. A. Bolam, the Treasurer, Mr. N. Bishop Harman, and the Deputy Chairman of the Representative Body, Dr. C. O. Hawthorne. Past and present members of Council included Lord Dawson, Sir Jenner Verrall, Dr. Charles Buttar (President of the Metropolitan Counties Branch), Dr. S. Morton Mackenzie, Mr. H. S. Souttar, Dr. F. W. Goodbody, Dr. Christine Murrell, and Dr. W. Johnson Smyth. Among the officers of Branches and members of the Representative Body were Dr. Comyns Berkeley (Treasurer, Metropolitan Counties Branch) and the Rev. S. D. Bhabha, M.D. (Greenwich and Deptford Division). The head office of the Association was represented by Dr. Alfred Cox (Medical Secretary), Mr. L. Ferris Scott (Financial Secretary and Business Manager), Dr. N. G. Horner (Assistant Editor of the *British Medical Journal*), Dr. G. C. Anderson (Deputy Medical Secretary), Dr. C. Courtenay Lord (Assistant Medical Secretary), together with many members of the headquarters' clerical staff. Wreaths were sent by the Council, members and staff, and by the Finance Department. The second part of the service was at Walton-on-the-Hill Church, Surrey, not far from "Amberdene," the country house where some of our friend's happiest days were spent.

Dr. Haslip married Anna, daughter of Maurice de Lemkauf, of Vienna, a privy councillor to the late Imperial Austrian Government, and President of the Agricultural and Shipping Exchange. She, with two daughters, survives him.

Sir Clifford Allbutt, who was President of the Association during the first five years of Dr. Haslip's tenure of the office of Treasurer, writes:

It was with something of a shock that I heard of the death of my dear friend Dr. Haslip. Of his long and painful illness we were only too well aware, but in its very fluctuations lingered some hopes of his amendment. It is hard to lose old friends whose days have been many, and whose course is run, but it is far harder to lose one so dear and so helpful to us all at an age which should have been the prime of life, in him of a most valuable life.

Before my acquaintance with Dr. Haslip I had often noticed that handsome alert man passing out of his house, then in Suffolk Place, and going swiftly on his way. Then came acquaintance, chiefly by the happy chance of two or three consultations in private practice, an association which soon ripened into affectionate regard. Then in time of war we were brought nearer and nearer to each other as we worked together on committees of public service. Again, as Dr. Macdonald of Taunton will remember, Haslip was a welcome guest indeed to us for the Annual Meeting of the British Medical Association in Cambridge. Our last meeting, for since then unfortunately I had failed to find him at home, was in the Association week at Portsmouth, when we stayed at the same hotel at Southsea. His stay was short, as his health was then far from good, but we had at least one long conversation which we did not due to think might be the last.

In every society Haslip's handling of affairs, and in every debate his influence, made themselves felt at once. His fine presence and keen, mobile, intellectual features had their effect in every word he said, words always of force and persuasiveness, words of a man of acute observation, large practical experience, and outstanding ability. His grip of finance was but one side of an all-round

mastery of affairs, and of a sound judgement and foresight in times of change and development. Yet sound and capable as he was, Haslip was not merely a man of cool and calculating mind, but also of an ardent temperament eager to see and to aim at the best possible purpose both in the present and the future. Business affairs and professional ideals were indeed but a part of Haslip's manysided life. He had a lively and cultivated interest in the fine arts, and enjoyed the intimate friendship of many of the foremost artists of his day.

Haslip's earnest diligence, his able management of the finances, and his other services to the British Medical Association, and not only these but also his good work for our profession at large, will no doubt be set forth in full in our JOURNAL. I must be content to celebrate our happy fortune in having enlisted, even for a comparatively short term of years, a Treasurer and Councillor of endowments so rare, of sympathies so wide and cultured, and of a personal ascendancy so beneficent. Our hearts are moved with deep sympathy with his widow and children in their untimely bereavement.

Lord DAWSON OF PENN writes:

Running through Haslip's work was an intense love of justice and right. His judgements were never cold, but always aglow with feeling. His outspoken opinions, with their occasional impetuous expression, were inspired by an abiding desire to see the helpful hand extended to the less fortunate in life's race.

The tale of his public service so little did he speak of it, was only known to the few. In the practice of our profession his success, in the best sense of the word, was great.

In this last illness the quality of the man stood forth—courage, first in struggle and then in dignified acceptance, gratitude, tender thought of others to the end. His memory will live and help us.



Photograph by] [Lafayette, Ltd.

G. E. HASLIP, M.D.

LATE TREASURER OF THE BRITISH MEDICAL ASSOCIATION.

Sir HUMPHRY ROLLESTON, Bt., K.C.B., President of the Royal College of Physicians, writes:

G. E. Haslip's death, not unexpected by those who knew the nature of his long illness, removes a striking personality who did much for his fellows in our profession. Much occupied in a busy general practice it is indeed remarkable how he found time for all the work outside the daily round that he accomplished. A good man of business with wide views and imagination, his service as Honorary Treasurer of the British Medical Association during a period of great activity and importance will receive the high appreciation they deserve from others more closely connected with this side of his activities. In addition he took a keen interest in charitable schemes for the poor and needy in the medical world, and with this end in view advocated changes in the Royal Medical Benevolent Fund and Lyon's Clothing Fund. Having known him for more than twenty years, I had learnt to value his enthusiastic, high-minded, and attractive character, and to admire his grip of affairs and public spirited devotion to work outside the scope of medical practice but concerning the well being of those in and connected with his profession.

Dr. P. V. BOLAM, Chairman of Council, writes:

George Ernest Haslip's work for the British Medical Association was in many ways remarkable. It is given to few medical men to obtain that mastery of business detail which commands success in organization, to reveal still to exhibit great aptitude in matters of finance. Of this select number was Haslip. He came to be Treasurer in a time of financial anxiety and stringency for the Association, and in spite of ever-expanding activities and responsibilities its affairs were guided on sound and prosperous lines. Throughout the years of his office he did invaluable and enduring work for the interests of the Association in hours snatched from the brief leisure of a busy professional life. One of his last official acts was the signing, or perhaps the largest cheque so far drawn on our account—for the purchase of our new house, in the negotiations for which his personal influence and acumen were conspicuous.

In medico-political affairs it would happen on occasion that Haslip took a view at variance with that of the majority. Yet he earned general respect for his fearless advocacy of a minority cause, and admiration for his loyal adherence to a general decision once taken. Whilst quick and keen in business matters, shrewd in judgement of men and skilled in affairs, Haslip radiated sympathy and inspired affection. Those to whom the privilege of his friendship was given recall the many deeds of kindness, the ready appreciation of another's viewpoint, the impartial tact—all of a generous and warm and generous nature. Through the last long months of suffering and uncertainty he showed that Heraclean cheerfulness and courage which led us to cherish till the end a hope heartfelt but unfulfilled.

Dr. J. A. MACDONALD, late Chairman of Council, writes:

It was with deep grief that I heard of the death of Dr. Haslip, yet I could not regret that the long-continued suffering which he had endured with such courage was at last at an end. Among the many friends I have made during my connexion with the administration of the British Medical Association there were few dearer or who interested me so much as Dr. Haslip. In him a mind with keen business instincts, the impulses of an artistic nature, and dominated by an invincible honesty constituted a personality which was very attractive and constantly interesting. In his invaluable work for the Association we were not infrequently at variance, and he never failed to support his opinion and explain his criticism in forceful terms. Yet his opposition and criticism were never cavilling, and roused in me nothing but respect and admiration, as his actions and speech so patently had their origin in honest conviction. But it was at home or with friends at dinner that the lovable nature of Dr. Haslip had its full expression. His cheery optimism, his genial humour, and his charity of outlook for others were a constant joy to those who were with him. In this respect I can never forget one week I spent with him as guests of Sir Clifford Allbutt at Cambridge. The intercourse with two such men will ever

remain a gem in my memory Among the many—far too many—friends who have passed away there are very few whose loss I shall regret so much as that of Dr Haslip

JOHN BENJAMIN HELLIER, M D,

Consulting Obstetrical Physician to Leeds General Infirmary

It is with great regret that we have to record the death, in his 72nd year, of Dr J B Hellier of Leeds, which took place on November 8th Until a short time ago Dr Hellier was in active consulting practice Of late his health had been manifestly failing and his gait getting weaker, but in spite of this he maintained a spirit of great cheerfulness to the end, which came rather rapidly

The connexion of Dr Hellier with the Leeds School has been a long and remarkably creditable one He was a student of Leeds and University College Hospital, London, receiving the diploma M R C S in 1875 When in 1876 he graduated M B at the University of London with first class honours in medicine he brought credit to his school by being awarded the University scholarship and the Gold Medal in Obstetrics He proceeded M D in 1878 He acted as demonstrator in anatomy and subsequently as lecturer in materia medica, in which department he was instrumental in founding the museum. He was for some time in general practice, but obstetrics and gynæcology were his chief interest in life, and his successive elections to the lectureship in gynæcology and to the professorship in obstetrics, associated with his appointment as gynæcologist to the General Infirmary, gave him full scope for his energies In the year 1918, in accordance with the rules of these two institutions, he became a member of the consulting staff of the infirmary and resigned the chair of obstetrics, the University marking its appreciation of his long services by conferring upon him the title of emeritus professor He was a vice-president of the Section of Gynæcology and Obstetrics of the Annual Meeting of the British Medical Association at Liverpool in 1912



Photograph by [*Rosemont (Leeds)*

J B Hellier, M D

During the whole of Dr Hellier's connexion with the Leeds University and Infirmary he manifested in a remarkable degree an unswerving and conscientious regard for the welfare of the school and of the students Himself an admirable and impressive lecturer, he set a high value upon those lectures which were the result of careful thought and which consisted of something more than the mere vocalization of facts, and those who were privileged to listen to him soon came to understand that there were many things which could be learned from lectures which could not be learned from books alone The members of the Leeds and West Riding Medico-Chirurgical Society will call to mind his many valuable contributions to its proceedings Especially does the writer of this notice remember his admirable presidential address on the medical curriculum, its deliberate and thoughtful presentation illuminated with flashes of real humour Indeed, anyone who should try to form an appreciation of Hellier's character without regard to his keen sense of humour would very properly fail His nature was genial and kindly, and his humour was equally so, he never said an unkind word to anyone The welfare of a medical school depends not only upon those features of its teaching and opportunities for research which lie upon the surface and can be seen by all, but upon the conscientious discharge by some members of the staff of those routine duties—sometimes almost regarded as drudgeries—which carry with them no recognition and no immediate reward He was the author of *Infancy and Infant Rearing*, an article on "Fistulæ in the female genital tract" in Eden and Lockyer's *System of Gynæcology*, and various publications in medical periodicals

At the annual dinner of the past and present students of the Leeds School of Medicine, held on November 14th, Mr J A Coupland, in responding to the toast of the staff, made a most touching reference to the loss which the school and the profession had sustained, and his words found a ready response in the hearts of all who were present Dr Hellier will be greatly missed, for he stood high in the respect of his colleagues and of his students, but he leaves behind him a record of work and an example which will live

JOHN F W TATHAM,

M.A M D F.R.C P

Formerly Superintendent of Vital Statistics

We regret to record the death of Dr John Tatham, which occurred at the age of 81, at his house in Oxted, Surrey, where he was living in retirement after a long period of important public service

His first qualification, obtained in 1867, was the L R F P S Glasg In 1881 he graduated in medicine and arts at Trinity College, Dublin, and proceeded M D two years later He was elected F R C P Lond in 1893 and F R C P I in 1906

He obtained the diploma in public health of the University of Cambridge so long ago as 1876, and his life's work centred round that subject His principal appointments up to 1893 were the medical officership of health for Salford, and then for Manchester, and his work there, in relation especially to vital statistics, was so good that when Dr Ogle retired from the position of superintendent of vital statistics at the General Register Office, Somerset House, Dr Tatham was appointed in his place in 1893 He held that post with credit and distinction for sixteen years, and in that way was responsible for two of the decennial supplements which, begun by Dr Farr, have ever since been looked on as the most important sources of information as to the causes and course of mortality, available to all who wish to study the subject As medical officer of health, Dr Tatham had issued life tables for Manchester, and during his tenure of office at Somerset House he devoted special attention to occupational mortality Such statistics, though only records of deaths which have already taken place, constitute the basis of subsequent preventive and ameliorative work

Dr Tatham by no means confined himself to his strictly

official duties When in Manchester he was lecturer on hygiene at Owens College, and later on he was chairman of the Statistical Committee of the Imperial Research Fund, and was a member of the Privy Council Committee on Physical Degeneration Even after his retirement he could not be idle, and the writer of this notice had the pleasure of meeting him in clerical garb a few years ago, he having taken up such service, for which he was excellently qualified, in connexion with the war Dr Tatham was a man of fine presence and address and a good speaker He was a university examiner in public health and a past-president of the Society of Epidemiology He was entertained to a public dinner both on the occasion of his leaving Manchester and on retiring from his appointment at Somerset House At Manchester his distinguished successor was Dr James Niven, who now also has retired So generation succeeds generation and Dr Tatham, after a long and full life, has gone to his rest respected and loved by all who knew him

M G HANNAY, M D,

Dean of the London School of Dermatology

British dermatology has suffered a severe loss in the death, which took place on October 24th, of Dr Maurice Gilbert Hannay Dr Hannay received his medical education at Charing Cross Hospital and at Edinburgh Obtaining the London Conjoint qualification in 1900, he took up the study of skin diseases, being clinical assistant in the skin departments at Charing Cross Hospital and the Victoria Hospital for Children and later at the Royal Infirmary, Edinburgh He also studied at the St Louis Hospital, Paris Before the war he was in general practice in the South of England, but gave this up to take a temporary commission in the R A M C After seeing active service in France he settled in London as a consulting dermatologist, and was appointed assistant physician to St John's Hospital for Diseases of the Skin, Leicester Square He had, in 1907, taken the degree of M D Brux, and in 1919 was elected to the Fellowship of the Royal College of Physicians of Edinburgh of which College he had previously been a member In 1921 he obtained the M R C P Lond diploma

Dr Hannay took a large share in the formation of the London School of Dermatology in 1922 The arrangement by which the staff of St John's Hospital combined with the teachers in dermatology at the twelve London teaching hospitals to give a systematic course in dermatology at St John's Hospital seemed at first difficult of achievement *It was, however, finally brought to a satisfactory conclusion,* largely by Dr Hannay's enthusiasm and by his willingness to allow two appointments to the staff of the hospital to be made over his head He was appointed first dean of the school, and carried out the difficult functions of the post with great diligence and tact

Dr Hannay was the author of several papers on dermatological subjects, the most recent being a very careful study of urticaria pigmentosa in adults, which he read before the British Association of Dermatology and Syphilology in July last

JOHN GORDON BLACK, M D,

Harrogate

We regret to announce the death of Dr John Gordon Black at his residence in Harrogate on November 11th Dr Black was the doyen of the Harrogate medical profession He was born in January 1843 at Consett co Durham, where his father, Lancelot Black, was the first manager of the Consett Ironworks His schooldays at Newcastle-on-Tyne Academy were passed under the head mastership of Dr Bruce—*a man of sterling character and erudition* He did not start the study of medicine until the age of 21, when he entered the Newcastle Medical School He obtained the M D Lond degree in 1871. After four years of strenuous work in general practice at Newcastle on Tyne, he had *a serious breakdown in health,* but a voyage to Australia restored him On his return to England Dr Black settled at Rothbury, Northumberland, in which place he spent some of the happiest years of his life In 1881 he moved to Harrogate and made a special study of the practice of balneology He wrote monographs on Harrogate and on the subject of rheumatism gout and allied affections, he was much interested also in gynaecology

Dr Black was at one time vice president of the Yorkshire Branch of the British Medical Association He founded and became president of the Harrogate Medical Society, and was a vice president of the Leeds and West Riding Medico-Chirurgical Society A keen chess player he started the Harrogate Chess Club, and played a good game up to the last He was also enthusiastic about golf, and gave a handsome challenge cup to stimulate interest in the game amongst the members of the Harrogate Medical Society He was a good friend to the town of his adoption and was held in great respect by his fellow practitioner, who recognized in him a large hearted, generous and kind colleague He was twice married, and is survived by a widow and one son and one daughter, children of the first marriage

THE LATE DR H C MACTIER

Dr T Connell Craig writes Throughout a quarter of a century Dr H C Mactier (of whom an obituary notice appeared in the *Journal* of November 8th) was in close touch at many points with the professional life of Wolverhampton, as consultant, general practitioner, and anaesthetist He took a very active interest in the introduction of the National Health Insurance Act, and when the Panel Committee was first formed he became its secretary, holding this position until his death He was always willing, and generally able, to give valuable advice and help in all matters connected with the South Stafford hire Division and he will be very greatly missed The Panel Committee also owes him a great debt of gratitude for the zeal he displayed as its secretary and for the wide and intimate knowledge he possessed of the National Health Insurance Acts and the medical regulations she embody It will be very difficult to fill his place adequately in either of these respects Although he came in personal contact with almost every practitioner in the neighbourhood and there were many occasions on which friction might easily have occurred yet he remained to the end the friend and trusted adviser of them all The esteem and affection in which he was held was shown very plainly by the large and representative gathering which met to do honour to his memory

Dr Frederick John Paley of Hove died on November 12th at the Royal Sussex County Hospital following an operation aged 65 He was the son of the late Professor F A Paley of Cambridge, and was educated at The Oratory, Edgbaston, and at St Bartholomew's Hospital He graduated M B Lond in 1883 and M D four years later, he also took the diplomas of L R C P and M R C S. in 1883 After serving as resident medical officer at St George's Retreat Burgess Hill and house-surgeon to the Women's Hospital Brighton and the Royal Sussex County Hospital, he began practice in Brighton in 1890 He had served as secretary member of council, and president of the Brighton, Hove, and Sussex Medico-Chirurgical Society, and was senior surgeon to the Royal Sussex County Hospital During the war he served with the rank of lieutenant-colonel R A M C, as commandant of the 2nd Eastern General Hospital For his services to Catholic institutions he was created a Knight of the Papal Order of St Gregory, one of the highest distinctions bestowed by the Pope Dr Paley was a member of the Brighton Division of the British Medical Association and his death is keenly felt by many medical colleagues

Dr Charles Turner Standring of Broadway Worcestershire died on November 8th aged 59 He was born in Kent the sixth son of the late Mr John Standring and was educated at Blackheath School and King's College London He took the diploma of L S A in 1891 After serving as house-surgeon to the Shrewsbury Hospital and as assistant in various parts of the country he settled in Broadway, where he continued to practise until his death

He was at one time a member of the parish council, he also acted as instructor to ambulance classes During the war he was on the staff of the Farncombe and Abbey Manor Hospitals, and was also medical officer for the Belgian refugees Dr Standring was a great sportsman and took an active part in most games, he was founder of the Broadway Golf Club started in 1896, of which he was first secretary, and continued to hold that post till 1921 He was a member of the Worcestershire Division of the British Medical Association In the words of a colleague "He was a cheery soul and made an extraordinary number of friends" He is survived by a daughter There was a large gathering of friends and patients at the memorial service

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Dr Robert Russell Harper, who died at the beginning of October, in his 71st year, was educated at St Thomas's Hospital, where he obtained the diplomas of M R C S, L R C P, and L S A in 1875 He practised first at Holbeach, in Lincolnshire, and later at Hampstead During the war he was attached to No 1 Birmingham War Hospital, and later became medical superintendent of the Pensioners Hospital in that city Whilst a student he helped to organize the first inter-hospital Rugby competition

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We regret to record the death, on October 30th, of Dr Henry Christopher Lamport Dr Lamport obtained the degrees of M B and C M at Edinburgh, and was in private practice for many years subsequently, until ill health caused his retirement He was for twenty years one of the honorary medical staff of the Royal Lancaster Infirmary He had been a member of the 5th Lancaster Volunteer Artillery from 1890, and during the war served with the R A M C (T F), having charge of several hospitals and attaining to the rank of lieutenant-colonel Since the war he had acted as honorary surgeon to the St John Ambulance movement, becoming an honorary associate of the Order of the Hospital of St John of Jerusalem in England The funeral was attended by many friends and by representatives of the public bodies with which Dr Lamport was associated He was held in high esteem by all who came in contact with him, and those who knew him best will remember his unfailing cheerfulness and patience through a long and trying illness

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Dr Peter Thomson, medical superintendent of the Ochil Hills Sanatorium, Kinross-shire died on October 30th He was a native of Dumbarton, and received his medical education at the University of Glasgow, where he graduated M A in 1887, B Sc in 1900, and M B C M in 1893, he took the D P H Edin in 1918 After practising for a time on the south side of Glasgow he became assistant to the professor of anatomy at the Anderson College of Medicine, Professor A M Buchanan, who in the third edition of his *Manual of Anatomy* acknowledges with gratitude the valuable assistance rendered by his demonstrator, Dr Peter Thomson, in preparing the edition for the press He was formerly assistant tuberculosis officer for Glasgow, and was appointed to be superintendent of the Ochil Hills Sanatorium three years ago

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Dr Percy Slack died at his residence in Rotherham on November 6th He was the son of a Wesleyan Methodist minister, and received his education at Sheffield and St Mary's Hospital He took the diploma of L S A in 1893 and the Scottish triple qualification in 1894 He was honorary radiologist to the Rotherham Hospital, honorary secretary of the Local Medical and Panel Committee, and a member of the Rotherham Division of the British Medical Association

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We much regret to announce the death of Dr W B Crawford Treasure of Cardiff, until recently a member of the Council of the British Medical Association formerly President of the South Wales and Monmouthshire Branch, and Representative and Chairman of the Cardiff Division We hope to publish an obituary notice in an early issue

Medico-Legal.

THE DISPENSING OF A PRESCRIPTION

The jury failed to agree in a case before Lord Darling in the King's Bench Division on November 17th, when negligence in compounding a medical prescription was alleged by Mr Russell Boyd and his son, Geoffrey Russell Boyd, of Roehampton, against Messrs Savory and Moore, Ltd, chemists, of New Bond Street

The plaintiffs said that Mr Geoffrey Boyd, who was now 22 years of age, was subject to epileptic fits, and Dr Henry Head on May 30th, 1922, prescribed for him a medicine to contain one grain and a half of luminal sodium The defendants made up the medicine from the prescription on various dates between May 30th, 1922, and March, 1923, but instead of putting in one grain and a half of the luminal sodium they used only half a grain

Dr Head, asked by counsel Can you say that the absence of one grain of luminal sodium each night for ten months has had any material effect on the course and progress of epilepsy?—replied, No certainly not

Dr C M Hinds Howell agreed, adding that half a grain was quite a common dose to prescribe

Sir William Willcox answered two questions put by the jury Is there any cure for epilepsy recognized by the medical profession?—No cure

Would continued use of drugs produce cerebral softening?—The continued use of a drug like luminal sodium in large doses certainly does cause mental degeneration

Defendants denied negligence and said they acted reasonably in reading the prescription They also said that the younger plaintiff suffered no damage

Lord Darling held that there was no evidence which would justify the jury in returning a verdict for the plaintiffs, for the reason that the evidence called for the plaintiffs themselves was that it was impossible to say that the absence of the one grain of luminal sodium had produced any ill effects whatever Therefore he considered it his duty to enter judgement for the defendants with costs

Universities and Colleges

UNIVERSITY OF GLASGOW

The following degrees were conferred on November 15th

M D—*Katherine O Robertson A Anderson Alice Cox (in absentia)*
M B C M B—Isdale R Taylor
B Sc (*in Public Health*)—J Wylie (*in absentia*)

* With commendation

ROYAL COLLEGE OF SURGEONS OF ENGLAND

An ordinary Council was held on November 13th, with the President Sir John Bland Sutton, in the chair The death of Mr J Hammond Morgan, C V O past member of the Council was reported and a vote of condolence was passed Diplomas of Membership were granted to 245 candidates (The list was printed with report of the comitia of the Royal College of Physicians, November 8th, p 879) Mr W G Spencer was re-elected a member of the Committee of Management

A report transmitted from the Royal College of Physicians, of the Committee of Management regarding institutions recognized for courses of instruction for the several special diplomas was received and adopted

The Services.

COMMISSIONS IN THE R A M C

The War Office announces that not fewer than twenty commissions in the Royal Army Medical Corps will be granted to successful candidates in an examination to be held in London on January 28th next Applications to compete must be made not later than January 18th and in the meantime a full statement of the duties and emoluments of the service can be had on written application to the Under Secretary of State (A M D 1), the War Office, Whitehall, London S W 1

DEATHS IN THE SERVICES

Colonel William Lewis Gray, C M G Army Medical Service (ret), died of pneumonia at North Holt Hythe on November 3rd aged 60 He was born in London on July 17th, 1864, the second son of the late Alexander Gray, M D, of Selby, and was educated at Glasgow, where he graduated as M B and C M, with commendation, in 1885 and at Edinburgh, where he took the B Sc in Public Health in 1888 Entering the army as surgeon on February 5th, 1887, he attained the rank of lieutenant-colonel on August 2nd, 1911, and colonel in the long promotion list of March 1st, 1915, retiring on August 10th, 1919 He served on the Anglo-Siamese Boundary Commission of 1889-90, on the Kienglung Chienghun mission of 1890-91, in the Chitral campaign on the North-West Frontier of India in 1895, when he took part in the relief of Chitral (medal and clasp), in South Africa in 1900-01 in operations in the Transvaal, Orange River Colony, and Cape Colony (mentioned in dispatches, *London Gazette*, April 16th 1901, Queen's medal with four clasps) and in the war of 1914-18 (mentioned in dispatches, *London Gazette* June 15th, 1916 and January 4th, 1917), and received the C M G in 1917 In 1897 he married Janet, daughter of Thomas Orr, accountant, London, but leaves no children

Medical News.

THE half yearly dinner of the Australian and New Zealand Medical Association in England will be held at the *Trocadero* Restaurant, Piccadilly, on Friday, December 12th, at 7 30 for 8 p m All Australians and New Zealanders are invited to attend The honorary secretaries are Mr E T C Milligan and Mr H Bedford Russell, 85, Harley Street, W 1

THE Glasgow University Club, London, will dine at the Trocadero Restaurant, Piccadilly, on Thursday, December 11th, at 7 30 p m , with Mr D M Cowan, M A , M P , in the chair Any Glasgow University men who, though not members of the club, desire to attend, are requested to communicate with the honorary secretaries, 1, Harley Place, N W 1

THE autumn gathering and dinner of the Irish Medical Schools' and *Graduates* Association will be held at Pagani s Restaurant, *Great* Portland Street W , on Tuesday, Novem ber 25th, at 7 30 p m Tickets (10s) may be obtained from Dr Holmes Meyrick, 48, Ennismore Gardens, S W 7 The chair will be occupied by the President, Dr William J Corbett

THE annual dinner of the *University College* Hospital Medical Society will be held on Thursday, December 11th at Gatti s Restaurant, at 7 15 for 7 45 o clock Tickets (price 10s) may be obtained from Mr I H. k Stevens at the hospital

THE winter livery dinner of the Society of Apothecaries of London will be held at Apothecaries Hall, Blackfriars, on Tuesday December 9th, at 7 o clock

A MEDICAL missions meetin_, organized by the Society for the Propagation of the Gospel in Foreign Parts was held in the Central Hall Westminster, on November 12th Speeches were delivered by the chairman Sir Leonard Rogers, C I E , the Bishop in North China Bishop Montgomery acting secretary of the society, and the Rev W J Simmons chaplain of Westminster Hospi al, who had organized the meeting Sir Leonard Pogers in his address gave his personal experience of the great value of the medical missionary work in India With reference to leprosy treatment he added that though there were over 500 000 lepers in the British Empire 210 000 in India alone, yet the new treatment was removing from early cases their symptoms and infectivity Within twenty years the disease should become a negligible matter in those places where the treatment could be given on a large scale The urgent need now was for more accommodation for treatment and for more medical missionaries An organ recital was given before the meetin_ by Mr E Stanley Roper, F R C O

THE eighth course of lectures on psychological medicine will commence early in January at the *Maudsley Hospital* Eight lectures will be delivered on Tuesday afternoons, com mencin_ on January 6th, by Sir Frederick Mott on the anatomy of the nervous system Practical instruction will be given in microscopical examination and the preparation of permanent specimens On Friday afternoons, commencing January 9th, eight lectures will be delivered by Dr F Golla on the physiology of the nervous system including practical instruction in physiological chemistry Dr H Devine will give a course of eight lectures on psychology on Thursday afternoons, commencing January 8th with practical instruc tion and demonstrations Part II of this course will follow in April, 1925 and include lectures and demonstrations on the diagnosis and treatment of mental diseases mental defect and crime pathology, and the practical aspect of mental deficiency

AT a meeting of the Harveian Society of London held on November 13th, with the President Dr Reginald Dudfield, in the chair a resolution was adopted thanking Mr G Buckston Browne for his generous gift of £1,000 for a prize in memory of his only son Lieut Colonel Buckston Browne, D S O , lost in the great war The council has invested the capital sum and the interest will be used biennially, after deductions for expenses, for the prize The full draft of the re_lations governing the Buckston Browne Prize will be submitted to members at the annual general meeting on January 15th, 1925

ON November 24th at 5 30 p m , at 1 Wimpole Street, Mr Victor Bonney will lecture on cancer of the uterus This lecture is the tenth of the series of twelve on cancer arranged by the Fellowship of Medicine for medical practitioners On November 21st and 24th respectively two special courses start, one in _ynaecology at the Chelsea Hospital for Women, and the other in medicine, surgery and gynaecology, at the Royal Waterloo Hospital for Children and Women The Royal Northern Hospital and the Royal Chest Hospital have arranged an intensive course in medicine surgery, and the special departments from December 1st to 13th The pro gramme will include work in the out patient department and wards from 10.30 a.m to 5 30 p m each day and special lectures and demonstrations at 4 30 p m are open to medical practitioners generally On December 1st, at the In anr Hospital, a special two weeks' course will commence includ ing clinical demonstrations, round table consulta ions and lectures A short course in dermato_y and venereal diseases will be held at the Hospital for Diseases of the Skin Blackfriars, during the first fortnight in December Details of these courses and also the programme for the early part of 1925 can be obtained from the Secretary to the Fellowship of Medicine, 1, Wimpole Street W 1

A MEETING of the Medical Prayer Union will be held by kind invitation of Dr Mary Scharlieb, at 149 Harley Street, W 1, on Wednesday, December 3rd, at 8 p m An addre s will be given by the Rev R Calder Gillie M A D C L on "Personality God s chosen channel of self revelat on An intimation of intention to be present will be welcomed by the honorary secretary Dr Tom Jays Livingstone Colle_e, Leyton, E 10

THE next Congress of the Royal Institute of Public Health on the joint invitation of the Corporations of Brighton and Hove will be held in those boroughs from Wednesday, May 27th, to Monday, June 1st 1925 (Whitsuntide)

THE late Dr W Harrap Mason who practised at Leeds has bequeathed £1,000 each to the Leeds General Infirmary and Dr Barnardo s Home and £500 each to the Leeds Public Dispensary and the Hospital for Women and Children Leeds Subject to a few le_acies the residue of the estate is left for such Leeds charities as the executors should select and the West Riding Medical Charity, the British Medical Benevolent Fund and four other institutions mentioned in such pro portions as the executors might think fit The value of the estate is £19 115 with net personalty £13 163

IN some new regulations for its staff the London County Council directs that if a case of infectious disease other than small pox occurs in a house in which a school attendance officer is living discontinuance of his work is unnecessary unless he himself shows the slightest indication of indisposi tion when work must be discontinued at once and medical advice be sought without delay In the case of diphtheria, however a special rule is laid down that any officer who has been in intimate contact with a case must cease work and not resume until a medical certificate has been furnished that he is free from infection and this certificate is not valid unless based upon a bacteriological examination

THE next Congress of Thalassotherapy will be held at Arcachon on April 15th 1925, under the presidency of Professor Gilbert of Paris

MR ARTHUR F MACCALLAN C B E , formerly Director of Ophthalmic Hospitals, Egyptian Department of Public Health has received the King s permission to wear the insignia of the Second Class of the Order of the Nile con ferred upon him in recognition of valuable services rendered

DR LAURENCE O FULLER of Gray s Inn medical super intendent of the Three Counties Mental Hospital, Arlesey, has been called to the Bar

THE Hospital for Epilepsy and Paralysis Maida Vale has published a scale of fees chargeable in the pathological laboratory and the x ray and Swedish remedial exercises departments It is stated that in accordance with the principles of the hospital these payments will be voluntary, and may be reduced on the recommendation of a practitioner to meet the needs of individual patients

THE P L M Railway Company has issued a new edition of its attractively illustrated pamphlet *Winter on the French Riviera* The various places are de cribed and useful in formation with regard to the journey the programme of winter events, and suggested excursions are included

THE Chelsea Hospital for Women has received from the executors of the late W B Hextall £1 000 towards the £20 000 needed for completion of the nurses home and opening of additional wards

DR H L HOCHEP has been elected successor to the late Professor Denuce in the chair of the surgery of children and orthopaedics in the medical faculty of Bordeaux

THE centenary of the birth of Joseph Pellet of Lyons well known for his work on syphilis and sol chancre will be celebrated at the Lyons Faculty of Medicine on Novem ber 30th The ceremony will be attended by representat ve from the Institut de France Academie de Medecine Socie e franc_aise de Dermatolo_ie et de Syphilo_raphie French and foreign hospitals and universities An address on Pel et work will be delivered by Dr Thib ergeau honorary phy sician to the St Louis Hospital Paris

Letters, Notes, and Answers.

Communications intended for the current issue should be posted so as to arrive by the first post on Monday or at latest be received not later than Tuesday morning

The telephone number of the British Medical Association and British Medical Journal is Gerrard 2630 (Internal Exchange) The telegraphic addresses are

EDITOR of the British Medical Journal, *Aitiology Westrand, London*

FINANCIAL SECRETARY AND (Advertisements, etc), *Articulate We*

MEDICAL SECRETARY, *Mediscera Westrand, London*

The address of the Irish Office of the British Medical Association is 16, South Frederick Street, Dublin (telegrams *Bacillus, Dublin*, telephone 4731, Dublin), and of the Scottish Office, 6, Rutland Square, Edinburgh (telegrams *Associate, Edinburgh*, telephone 4361, Central)

QUERIES AND ANSWERS.

Income Tax

Motor Car Replacement

"B A S" has claimed to deduct the difference between the cost price of his car and the amount for which it has been sold The Inspector of taxes proposes to restrict the allowance to the excess of the cost of a similar car *at the date of sale* over the amount realized

*** Neither method is correct The Income Tax Acts do not permit the deduction of sums representing loss of capital, with the exception of the depreciation allowance, which does not apply to professional earnings The deduction to which "B A S" is entitled is the excess of the cost of a new car bought to replace the old one over the amount received by the sale of the latter, subject to the stipulation that the allowance shall not include any amount in respect of further capital outlay When prices are falling the system works against the practitioner, but that result necessarily follows from the existing statutory regulations

Glebe Rent and Ground Rent

"Glebe' owns a house the income tax on which is deducted from the rent paid to him, out of that rent he pays £5 a year glebe rent and £5 a year ground rent

*** The position is as follows His tenant is not entitled to deduct a greater amount of tax than that applicable to the rent —that is, he should deduct the tax on £50 only and not the full tax on £52 10s, the amount of the assessment "Glebe" is entitled to deduct tax in his turn from both the glebe rent and the ground rent provided that they are not separately assessed, and this is not alleged The statutory authority for that deduction is in the Income Tax Act, 1918, Schedule A, No 8, Rule 4, which states that "where any hereditaments are subject to the payment of any annual sum a landlord from whom tax is deductible shall be entitled on making such payment to deduct and retain thereout so much of the said tax as represents the rate or rates of income tax in force during the period through which the said payment was accruing due" It will be noticed that the right is to deduct "on payment" it does not extend to cover a claim to recoupment for past periods for which payment has been made

Dominion Income Tax Relief

"J S" writes My total gross income is as follows Professional income assessed at £200, taxed dividends £86, dividends from South Africa £324, total £610 Colonial income tax was paid on the £324 dividends, but has not been deducted in arriving at that amount

*** His liability is as follows.

	£	£ s d
Total income	610	
Deduct earned income relief ...	20	
	590	
Deduct personal allowance	135	
Taxable income	455	
Of which £275 is chargeable at 2s 3d	=	25 6 3
And the balance £230 is chargeable at 4s 6d	=	51 15 0
		77 1 3
Of which there has been accounted for by deduction £85 at 4s 6d		19 7 0
Leaving a balance of		57 14 3

"J S" is, however, entitled to a further allowance in respect of Dominion income tax equal to £324 at the Colonial rate, or at half his appropriate rate, whichever be the less, the appropriate rate is approximately 3s 5d.

Epileptiform Fits

Dr D S C Reid (Blackburn) writes in reply to "H C B" (November 8th, p 883) For his case of epileptiform fits I should recommend him to try small doses of chloretone

Pernicious Vomiting

Dr A Blaiston (Brixham, Devon) writes with reference to Dr Crawford Lundie's letter, November 15th (p 929) I have had great success in cases of pernicious vomiting in pregnancy by putting patients on rectal feeding and small doses of morphine hypodermically

LETTERS, NOTES ETC

Puerperal Pyrexia

Dr Claude Wilson (Tunbridge Wells) writes As you invite discussion, and as there seems to be a general agreement that a temperature of 102° F —or even 100° F (Dr Dudfield, British Medical Journal, November 15th, p 900)—lasting for over twenty four hours should be regarded as indicating a septic cause, I venture to ask the views of those with large experience on a case which occurred in my practice many years ago, which caused me much concern at the time, and which has never since been out of my mental vision when considering the question of puerperal pyrexia The temperature rose a day or two after childbirth and lasted for three or four days, reaching a maximum of nearly 105° F The patient, though restless and sleepless, and with a rapid pulse, was at no time desperately ill, and I could find no indication of local sepsis The late Dr Braxton Hicks was called in, confirmed the absence of local infection, pronounced the case one of incipient puerperal mania, and prescribed 40 grains of antipyrin with 20 grains of bromide The patient slept for about twelve hours, woke up with a normal temperature, and made an uninterrupted recovery

Future of Tropical Medicine and Hygiene

Dr Andrew Balfour, C M G (London School of Hygiene and Tropical Medicine) writes In the abstract of my address to Anderson College on the above subject which you were good enough to publish in the British Medical Journal for November 15th, I notice that I am reported as saying that the Libyan race is in danger of extinction owing to the influence of civilization As this statement is almost certain to be called in question, I think it well to explain that what I said has not been quite correctly transcribed I spoke about Libya solely from the point of view of the absence of syphilis, and my reference to the influence of civilization was confined to those islands of Melanesia, notably the Solomons, where as noted by Dr Rivers in his interesting *Essays on the Depopulation of Melanesia*, decay has overtaken the inhabitants

Modified Whitehead Operation

Sir John O'Conor, K B E (Buenos Aires), writes The recent correspondence anent the treatment of haemorrhoids by injection prompted my asking the hospital registrar to make an extract of the time occupied in the last 100 cases operated upon by me by above method Result 3 in four minutes, 6 in five, 32 in six 16 in seven, 17 in eight 11 in nine, 6 in ten, 2 in eleven, in association with fistula, 5 in twelve, 1 in sixteen, and 1 in seventeen To date there has not been an instance of any post operative complication reported This series have been operated on since my article on radical cure was published in the British Medical Journal, May 13th, 1922 (p 759)

United Hospitals Winter Sports Club

Dr J Duncan Lall (Maidenhead) asks to be allowed once again to bring the United Hospitals Winter Sports Club (of which he is hon secretary) to the notice of our readers The club was founded to obtain advantageous terms at winter sports resorts and to encourage these sports amongst past and present students of all recognized medical schools in the United Kingdom The season the Lord Dawson Cup for skiing will be competed for early in January at Grindelwald, Bernese Oberland, but for those members who prefer the Engadine a second hotel (Hotel Waldhaus, Sils Maria) has undertaken to assist members in many ways Full particulars can be obtained from the managers of these two hotels

Neutralization of Insulin before Injection

Colonel G F Rowcroft (Coonoor, South India) writes with reference to the article by Dr Stilwell in our issue of September 13th (p 465), in which it is stated that a 6 per cent solution of sodium bicarbonate with 3 per cent tricresol, sterilized by filtration through a Berkefeld filter was used Colonel Rowcroft asks, Is this filtration necessary? Is not the tricresol sufficient? or would it not suffice to boil the sodium bicarbonate solution? The filtration process (he adds) seems to add unnecessary difficulties and expense to the administration of insulin

Vacancies

Notifications of offices vacant in universities, medical colleges and of vacant resident and other appointments at hospitals will be found at pages 34, 35, 38 and 39 of our advertisement columns, and advertisements as to partnerships, assistantships and locumtenencies at pages 36 and 37

A short summary of vacant posts notified in the advertisement columns appears in the *Supplement* at page 195

EPITOME OF CURRENT MEDICAL LITERATURE.

Medicine.

394 Vagotonia.

H L HEIMANN (*Med Journ of South Africa*, September, 1924, p 28) records two cases of vagotonia occurring in big, energetic men The first patient, aged 67, retired had complained for eighteen months of attacks of giddiness preceded by sweating and followed by nausea headache, and at times unconsciousness suggestive of heart block Epilepsy and the Stokes Adams syndrome were negatived by the absence of nervous manifestations during the attacks Electrocardiographic examination disclosed no abnormality, but during the coughing and deep inspiration there was slowing of the pulse Under graduated gentle exercise, avoidance of tobacco, removal of septic teeth, and dieting to prevent gastric distension, together with tinct belladonnae mv t d s, the attacks ceased The second patient, aged 52, complained of breathlessness and inability to lie down His lips were blue but there was no distension of the jugulars and no sign of cardiac, pulmonary, or hepatic abnormality either on physical or x ray examination It was concluded that the vagus was hypertonic, thus causing bronchial spasm and breathlessness, and accounting for the low blood pressure, 120/65 As this patient had spent most of an energetic life in the blazing sun near Nairobi it was suggested that the condition was secondary to suprarenal exhaustion due to a combination of hard work and excessive exposure to sunlight Improvement followed residence at a lower altitude, dental treatment dieting, and medicine as in the first case, with the administration of suprarenal gland cryst gr j, and ext thyroid sicc gr ½

395 Pseudo malarial Attacks in Typhoid Fever

G CAUSSADE and H LE PASLE (*Presse méd*, September 13th 1924, p 749) record six cases of the pseudo malarial type of fever, first described by Jaccoud in 1884, which occurs during defervescence or at the beginning of convalescence from typhoid In most cases the attacks are quotidian, but in rare instances are bi quotidian or tertian The attacks may be of short moderate, or long duration The end of an attack is marked by sweating, and a fall of temperature which is sometimes very sudden and as low as 95 4° F, but occasionally the temperature may remain above normal at the end of an attack and oscillate for some days about the level of 100 4° Polyuria is frequent at the end of the attack and may be as much as 5 pints in the twenty four hours for several days Recovery is the rule In the diagnosis cholecystitis pyelonephritis, and a relapse of malaria must be excluded If malaria is present quinine will have a successful effect upon the attack, and all doubt will be removed by finding the malarial parasite in the blood

396 Clinical Manifestations of Vitamin Deficiency

C E BLOCH (*Ugeskrift for Laeger*, October 16th, 1924, p 783) has treated 70 cases of xerophthalmia, some having been under observation for a considerable time before the xerophthalmia developed. In most of these cases the diet had long been deficient in vitamin A, but it had not been completely free from this vitamin except in a few cases, for even centrifugalized and butter milk may contain some vitamin A A close study of all these cases led to the conclusion that the xerophthalmia depended not only on an inadequate supply and faulty assimilation of vitamin A, but also on two other factors—namely growth of the child and infectious diseases It would seem that both these factors entail an abnormally great consumption of vitamin A and that xerophthalmia and other signs of vitamin A deficiency are not merely the outcome of an inadequate supply of this vitamin, but also of a temporarily exaggerated need on the part of the organism for such vitamin While xerophthalmia is pathognomonic of vitamin A deficiency arrest of development, loss of weight, reduced mental and bodily vitality, and impaired immunity to infections are sequels not peculiar to a shortage of vitamin A The author records in detail two cases in which deficiency of vitamin A in children seemed to depend not so much on an inadequate supply of vitamin A as on its inadequate absorption This was due to disease of the liver, as indicated by jaundice In the second case the tendency to develop xerophthalmia was further aggravated by the development of pneumonia This observation, that vitamin A deficiency may depend on inadequate absorption of an adequate supply of vitamin A, led the author to give cod liver oil by subcutaneous injection in five cases of xerophthalmia The oil was sterilized in boiling water, and first 0 5 c cm and later 1 c cm were injected every day All these patients recovered but as they were also given a plentiful supply of vitamin A by the mouth the author cannot give irrefutable evidence in support of his definite impression that these subcutaneous injections were very beneficial At all events they were painless for the first few days, but after four to eight days they provoked redness and tenderness with general malaise and an evening temperature between 99 and 102° F In no case did abscesses form, and the benefits obtained more than compensated for the discomforts inflicted

397 Post scarlatinal Eruptions

J KLEEBERG (*Zeit f Kinderheilk* August 30th 1924 p 577) states that hitherto post scarlatinal eruptions have been regarded as very rare His own experience however has been very different, as he has observed them in 42 out of 115 cases under treatment in the department for infectious diseases of the Rudolf Virchow Hospital in Berlin between September 1923 and May, 1924 Age and sex were of no etiological significance as the rashes were seen alike among infants and persons of 60 They were commonest in obese persons The eruption usually appeared at the end or middle of the second week, and usually lasted five to eight days The buttocks and patellae showed the first lesions and the legs and trunk were next affected but there was no regularity in the order of their involvement The distribution of the lesions was symmetrical If the eruption first appeared on only one arm or leg it became bilateral the next day The favourite sites were the buttocks patellae femoral triangle and calves The arms were rarely affected and the face neck and chest always remained free No mucous membrane rash occurred nor sore throat The initial lesions consisted of discrete punctate red papules, which, after six to eight hours, increased in size and number The peripheral parts of the lesions desquamated freely even when desquamation on the trunk had not begun or had not finished The general condition did not appear to be affected There was no rise of temperature or digestive disturbance Examination of the blood showed a normal or slightly increased eosinophil count and a slight lymphocytosis Post scarlatinal eruptions bear no relation to the primary rash of scarlet fever as regards their duration, extent, or intensity

Surgery.

398 A New Treatment for Surgical Tuberculosis

A. VAUDREMER (*Presse méd*, October 8th 1924, p 801) refers to his discovery (with Louis Martin) in 1900 of a tuberculous poison other than tuberculin, rapidly fatal to guinea pigs when injected into the arachnoid or the peritoneum Its toxicity varies with different strains among fourteen strains they found one which was very virulent The toxin is not eliminated by the bacilli unless they are from old cultures granular still acid resistant but surrounded by bodies which stain with methylene blue Bezançon and Philibert published an important study of these bodies (*Revue de la Tuberculose* July, 1914) Vaudremer describes the experiments which have led him to conclude that tuberculin has a sensitizing action in men and animals He holds that tuberculin should not be present in bacilli used for therapeutic purposes, and that the bacilli should be deprived of their acid resistance Both may be removed by the proteolytic and lipolytic action of certain moulds, one of the most active being *Aspergillus fumigatus* A filtered culture of this mould to which tubercle bacilli had been added was incubated at 38 C for one month it was then found that one fourth of the bacilli had disappeared and that the remainder had lost their tuberculin acid resistance, and their virulence was attenuated Rabbits and guinea pigs injected intrameningeally with massive doses of the "macerated bacilli resisted subsequent intrameningeal injections of virulent tubercle bacilli Moreover guinea pigs injected subcutaneously with five drops of bacillary emulsion (in four doses at monthly intervals) survived for five to twelve months even when treatment was only commenced a month after infection The filtered fluid in weekly doses of 1 c c m was also active in guinea pigs Infected animals with cutaneous ulcers recovered and lived sometimes for more than a year Vaudremer has treated 15 cases of advanced surgical tuberculosis at La Salpetriere with a bacillary emulsion

prepared from four strains of virulent human tubercle bacilli and one strain of bovine bacilli grown for one month on glycerin broth, then macerated for another month in sealed flasks with a filtered culture of *Aspergillus fumigatus* The bacilli were then decanted, pounded in a sterile mortar, shaken up in distilled water, replaced in an ampoule, and boiled for five minutes These dead bacilli, contrary to the usual experience, were tolerated remarkably well by animals and man The emulsions are weak—scarcely opalescent, the dose is 0 5 to 1 c cm subcutaneously The cases were watched by the surgical staff of the hospital, most patients had pulmonary lesions in addition to their surgical tuberculosis, and yet rapid and complete cures are reported in every case Vaudremer concludes that it is possible to control the progress of surgical tuberculosis by subcutaneous injections of tubercle bacilli almost deprived of acid resistance, tuberculin free, and killed by boiling He did not detect any deviation of complement

399 Retrosplenic Abscess in Typhoid Fever

J SABRAZÈS, R DE GRAILLY, and DUCASSE (*Gaz hebd des Sci med de Bordeaux*, August 10th, 1924, p 498) state that collections of pus in the abdominal cellulo adipose tissue are rarely found nowadays in autopsies in cases of typhoid fever, but are probably more frequent than is supposed, as several cases were recorded by the earlier writers Three cases of perisplenic suppuration which was not discovered until the autopsy were reported in the pre bacteriological era by Griesinger The present authors record the case of a girl, aged 20, who had an attack of fever in which the pulmonary sym[illegible] After death, in addition to the intestinal lesions characteristic of typhoid fever and splenopneumonia of the left lung, an abscess was found in the retrosplenic region independent of the spleen, of the size of a pigeon's egg, without any perforation of the splenic capsule, inflammation of the mesenteric glands, or focus of osteitis or myositis The pus contained a pure culture of typhoid bacilli

400 Thrombosis of the Lateral Sinus

BINET of Besançon (*Rev de Laryngol, Otol et Rhinol*, August 31st, 1924, p 533) describes four cases of lateral sinus thrombosis following old standing middle ear suppuration All the patients were young, and three of the four were males The first patient had undergone several previous operations in the hope of eradicating the suppuration, and, permission for a further operation being withheld, ob eration continued until death For three and a half months the patient was under treatment for widely fluctuating temperature, frequent rigors, and attacks of hyperpyrexia There was a very profuse discharge from the ear, and an abscess formed around the jugular vein and had to be opened Finally, after a violent attack of headache, the patient passed into a state of coma and died Of the remaining cases, which were all operated upon, two recovered rapidly and the third died of pneumonia Binet points out that in very many cases the development of the thrombosis is very insidious, especially in the case of a mural clot and where the infection is very slight In some of these cases the first symptoms may be due to emboli The author points out the danger of curetting the sinus, and restricts himself to wide incision He believes in ligature of the jugular vein in addition to opening the sinus in all cases where the signs are well marked, and especially when there are rigors To stop the haemorrhage from the upper end of the sinus he adopts the plan of packing the interior of the sinus He remarks on the extreme rarity of gangrene of the inner wall of the dural coat of the sinus The only possibly successful method of treating the condition is that of immediate and most thorough operation

Therapeutics.

401 Intracardial Injection of Adrenaline

E A KOCH (*Zentralbl f Gynak*, October 11th, 1924, p 2234) reports the case of a child apparently dead from asphyxia neonatorum who was revived by an intracardial injection of adrenaline At birth the child made a slight movement, passed urine, and then lay still, deeply asphyxiated The cord was pulseless, so it was immediately cut, and mucus was aspirated from the trachea No heart beats could be heard, and heart massage and artificial respiration were resorted to without success After five or six minutes 6 minims of suprarenin were injected into the heart through an intercostal space, half an inch to the left of the sternum Almost immediately the heart started to beat, at first irregularly with numerous extra systoles—an occurrence previously noted by Frenzel All methods were tried to start respiration, but it was not until half an hour had elapsed that the child was made to breathe and the skin took on a more healthy colour No further trouble was experienced, and the child was well enough to suck from the breast on the second day Koch states that the injection must be made within fifteen minutes at latest after the heart has ceased beating, and that not more than 8 minims should be injected into an infant, as 12 minims has been known to cause convulsions in a six months old child He then examines recent statistics relating to the intracardial injection of adrenaline in other contingencies He maintains that it is of very great value in surgical operations when the heart failure is due to the anaesthesia, or in cardiac failure caused by internal bleeding, or in shock and collapse following spinal anaesthesia In such cases in adults a dose of 16 minims is injected, the number of reported successes is very striking, the statistics being taken from a number of writers Adrenaline is apparently of little use when the heart failure is due to internal derangements such as heart disease, and very few successes in such cases have been recorded

402 Fluid in Medical Treatment

S ISAAC (*Klin Woch*, October 21st, 1924, p 1962) discusses the restriction and increase of fluids in the treatment of various diseases The average amount of water required daily by an adult is, roughly, 3½ pints, one half to two thirds of this being taken as beverages, the rest as water in the food In cardiac diseases with dropsy, and in cases of high blood pressure, especially those associated with nocturnal dyspnoea, restriction of the fluids taken is of service In acute nephritis, and in some kinds of chronic nephritis, fluid restriction is also useful In granular kidney, when the renal functions are only slightly affected, circulatory disturbances and dyspnoea may be prominent symptoms, and in such cases fluid restriction relieves the circulatory disturbances and high blood pressure On the other hand, when uraemia threatens, abundance of fluid is necessary. In chronic nephritis, when dropsy is due to cardiac failure, as is frequently the case in granular [illegible] is occasionally of service, but otherwi[illegible] nephritis) restriction of sodium chloride in the diet is of more importance Restriction of fluid is useful in primary polydipsia, and in diabetes insipidus, combined with a suitable diet Increase in the fluids taken prevents retention of metabolic products in certain cases of granular kidney, and the large quantities of fluid drunk in various spa treatments aid the excretion of uric acid in gout Of greater importance is the abundant [illegible] haemorrhage, when fluids cannot be tak[illegible] elimination of toxins is necessary Fluids may be introduced by the rectum, subcutaneously, or intravenously The simplest form of administration is the drop enema—especially suitable when a continuous supply is desired For rapid introduction of fluid intravenous injections are mostly used, normal saline and other fluids being employed, but the author prefers a 5 4 per cent isotonic solution of grape sugar

403 Vaccine Treatment of Rheumatism

R LAUTIER (*Bull Soc de Ther*, October 8th, 1924, p 249) states that vaccine therapy in rheumatism was first carried out by Rosenthal (1909–10) with a vaccine obtained from strains of Achalme's bacillus isolated from patients with rheumatism and containing 5 million bacilli per cubic centimetre Rosenthal employed the vaccine in addition to treatment by a serum obtained from immunization of horses by injection of cultures of Achalme's bacillus Serum treatment was reserved for the acute attack, and the vaccine was injected in the intervals between the attacks, with the object of preventing relapses or cardiac complications Bertrand of Antwerp next tried a Wright's vaccine, also isolated from strains of Achalme's bacillus but his method differed from Rosenthal's in the number of bacilli in each cubic centimetre of the vaccine and its mode of application The vaccine was used during the attacks as well as in chronic rheumatism The first dose consisted of 25 million bacilli and each subsequent dose was increased by 25 million, the second being given twenty four hours after the first in acute cases and forty eight hours after the first in chronic cases Lautier, who has employed Bertrand's method for the last two years, has found that it is superior to the ordinary treatment for rheumatism, and has never had any bad results from its use An acute attack was usually cut short before more than 150 million bacilli had been given, while in chronic forms it was sometimes necessary to give larger doses, such as 250,375 million bacilli or more The treatment should be continued even after clinical recovery, so as to prevent relapses After the treatment has been completed one to four injections a year of a dose of 25 million bacilli are sufficient, especially in chronic rheumatism.

Diseases of Children.

404 Prognosis of Tuberculosis in the First Year of Life

C VAN DAM STOKKINK (*Nederl Tydschr v Geneesk*, September 13th, 1924, p 1348), after a review of the literature, according to which the mortality from tuberculosis in the first year of life ranges from 67 to 85 per cent, states that he has collected 144 cases of tuberculosis in children of this age treated at the Emma Children's Hospital in Amsterdam In most of the cases the diagnosis was established by bacteriological and clinical examination but in some instances it was not made until the autopsy The youngest child was only 18 days old No evidence of tuberculosis was found in this case on clinical examination, but *post mortem* a tuberculous focus was found in the lung The mortality among the 144 cases was 76 per cent The youngest of the 35 survivors was 2 years, and the oldest 15½ years The prognosis during the first six months was very unfavourable as out of 40 children 35 died—a mortality of 90 per cent, while in the second half year the mortality was 66 per cent Of the 144 patients 95, or 87 per cent, died in the first year, 9 per cent in the second, and 3 per cent in the third year No fatalities occurred after that period Sex had no influence on the mortality, as among 133 children, of whom the sex was stated, the mortality was the same (73 per cent) among 68 males and 65 females The mortality was decidedly higher among the artificially fed than among breast fed children, as is shown by the following figures Among 43 children breast fed longer than three months the mortality was 77 per cent, and among 29 children breast fed only a short time 76 per cent, while among 24 children artificially fed it was 92 per cent The source of infection was discovered in 81 cases in 27 it was the father, in 28 the mother, in 3 both parents, in 12 a brother or sister, in 4 the grandfather or grandmother, and in 7 neighbouring families According to Ehasberg, tuberculosis in the children of tuberculous families does not run such an unfavourable course as in children with a non tuberculous environment In the former the mortality is less, and in the fatal cases the disease has a longer course Dam Stol kink's experience was similar, as he found that the mortality of children of tuberculous families was 74 cent, as compared with a mortality of 81 per cent among children of non tuberculous families

405 Vulvo vaginitis in Children

E APERT (*Journ de Med et de Chir Prat*, September 10th, 1924 p 609) states that simple vulvo vaginitis complicating measles, whooping cough, febrile catarrh, or other acute febrile disorders of children yields readily to copious irrigation with warm normal saline solution which has been made slightly alkaline When there is no such concomitant disease the presence in a child of a thick yellowish green discharge which leaves a thick stain on the linen points to gonococcal vulvo vaginitis, and the diagnosis is easily made by microscopical examination In treatment local measures are of paramount importance, although exhibition of arsenic, lime, and iodine is useful The child is placed flat on a couch with the hips flexed and abducted, and the external genitals are sponged with a 1 in 4 000 solution of potassium permanganate, the vagina being gently irrigated with the same solution through a soft india rubber catheter (number 8 or 10) The container should not be placed more than 4½ inches above the vaginal orifice, since injections at higher pressure are liable to convey infection to the supravaginal regions of the genital tract Urethral infection is rare in children, but if pus can be squeezed from the urethra a few drops of 2 per cent protargol should be injected into it During the first few days of treatment the patient should be kept in bed Gonococcal peritonitis is a rare complication it occurs with great acuteness but clears up without necessitating surgical intervention Gonorrhoeal arthritis is much less common than in the adult, sensitized vaccines have a place in treatment and antigonococcic serum, if used, should be injected into the affected joint

406 Causes and Treatment of Otitis Media.

OUT of 613 children admitted to an American hospital from February to August, 1923 no fewer than 33 4 per cent had otitis media or developed it subsequently The children came from poor homes and had been artificially fed The incidence of the otitis varied with the season of the year (as in acute respiratory diseases) with the type of associated disease (pneumonia, dysentery, nasal diphtheria pertussis and pyelitis) and with the age the susceptible period being 3 to 15 months D T SMITH (*Amer Journ Dis of Children*, July, 1924, p 1) considers therefore, that there is probably an associated vitamin deficiency since the age period and the seasonal variation correspond with those of rickets and scurvy and the children had been artificially fed Eighteen of the thirty cases of rickets had otitis media rats deprived of fat soluble vitamin A developed otitis media (Daniels, Armstrong and Hulton, 1913) The causal organism was a haemolytic streptococcus in 50 per cent of cases, other streptococci and staphylococci were frequent, while the pneumococcus even in otitis associated with pneumonia, was surprisingly infrequent Otitis may be contagious and epidemics have been recorded Smith then gives details of a new and satisfactory method of treatment He points out the vital importance of clearing the pus from the external auditory meatus and introducing the antiseptic into the middle ear A long clean incision is made into the posterior inferior quadrant of the tympanic membrane The ear is then irrigated with half strength peroxide solution by means of a medicine dropper with a rubber bulb Peroxide solution is chosen because it liquefies the pus and indicates the presence of more pus by frothing The external ear is swabbed dry and an antiseptic dropped in from a clean dropper and washed to and fro Ten to fifteen drops of a 0 5 per cent solution of sodium hydroxy mercury benzo phenone sulphonate, freshly made from tablets and repeated three or more times in the twenty four hours according to the severity of the case, cleared up infections of the colon bacillus rapidly and improved streptococcal infections The addition of 2 per cent of acetic acid to the solution was found to make it effective for *B pyocyaneus* Gram positive organisms were treated by giving alternate irrigations with gentian violet solution (up to 5 per cent) By this method 80 cases of acute and chronic otitis media were cured in less than a fortnight from the onset No case of mastoiditis followed the treatment

Obstetrics and Gynaecology.

407 Medical Treatment of Salpingitis

ACCORDING to A SIREDAY and P BROCQ (*Journ de Med et de Chir Prat*, September 10th, 1924, p 621), it is almost universally agreed that in cases uncomplicated by tubal rupture or torsion of an ovarian cyst, acute salpingitis—with severe pain, peritoneal reaction, and vomiting or nausea—yields to medical treatment Complete rest in bed in a horizontal position is essential The application to the hypogastrium of ice bags may with advantage be associated with very gentle abdominal massage with a paste of collargol 77 grains lanoline 3 drachms and vaseline 4½ drachms each morning and evening The ice bags should be renewed every three hours The authors find that morphine is usually required, but administration of antipyretics is without value and may be harmful The copious and hot vaginal douches which were formerly given in many cases are injurious for they interfere with the patient's repose, but gentle irrigations of 4 ounces of boiled water, at a temperature of 102 to 104 F, to which 25 drops of tincture of iodine have been added, may be made At this stage cathartics are contraindicated The treatment of subacute salpingitis—whether subacute from the beginning or the sequel of an acute stage—is similar save that hypodermic administration of morphine may be replaced by rectal injections of 4 ounces of water containing 15 grains of antipyrin and 20 to 30 drops of laudanum Helio therapy is a valuable adjunct to treatment in the subacute stage the first exposures should not last longer than ten minutes In chronic salpingitis vaccine therapy and thermal cures play a useful part In certain cases also benefit is gained from packing the vagina with a long band of gauze of which the upper end is impregnated with one part of ichthyol in ten of glycerin

408 Hydatidiform Mole.

J A VAN DONGEN (*Nederl Tydschr v Geneesk*, October 11th, 1924, p 1824) in the course of seven years has seen 16 cases of hydatidiform mole among 4 000 cases of pregnancy so that hydatidiform mole occurred once in every 250 pregnancies This figure agrees with that given by Kroemer who found 15 moles among 3 856 pregnancies A Mayer reported one case among 310 deliveries, Seitz estimated that one case of mole occurred in every 500 pregnancies while Treub's estimate was 1 in 1,000 and van der Hoeven's 1 in 2 000 According to most writers hydatidiform mole is more frequent in older women than at an earlier period of life Frey, Walther and Stoppel have recorded cases at 51 53 and 54 respectively Gies, who reported 30 cases found that hydatidiform mole was seven times as common in pregnant women over 40 as below that age Seitz maintains that about 25 per cent of the cases occurred between 40 and 50 and Walther declares that 16 5 per cent of his cases were between 40 and 50 and 2 8 per cent were still older On the other hand, none of van Dongen's patients were elderly women Only one, aged 42, was over 40 and only four

between 30 and 40 The youngest was aged 16, and there were six aged 18, 19, 20, 20, 21, and 22 respectively Several writers have stated that hydatidiform mole is more frequent among multiparae than among primiparae In van Dongen's series there were three primiparae and thirteen multiparae The mole is usually expelled between the second and seventh month of pregnancy Among van Dongen's patients pregnancy had lasted two months in one, two and a half months in two, three months in three, five months in three, four months in one, four and a half months in one, five months in three, five and a half months in one, and six months in one when the mole was expelled In all the cases expulsion of the mole was preceded by more or less severe haemorrhage, in most cases for a long period, so that most of the patients were rather anaemic In six cases, or 37 5 per cent, hyperemesis occurred Albuminuria was present in seven cases, or 43 75 per cent, in two there was only a trace of albumin, in four it was somewhat greater, and in one it was 8 per 1,000 In six cases ovarian cysts were present, the size of the cysts ranging from that of a small hen's egg to that of a large orange Only one patient died, and she was moribund from haemorrhage when admitted to hospital In none of van Dongen's cases was the mole spontaneously expelled, but the uterus had to be emptied with a polypus forceps and curette, with or without previous dilatation of the cervix

409 Childbirth and Venereal Disease

ACCORDING to E A SCHUMANN (*Amer Journ Obstet and Gynecol*, September, 1924, p 257) the frequency of gonorrhoea as a complication of pregnancy has been exaggerated in a series of 150 private patients in whom routine bacteriological examination of a cervical smear was done the gonococcus was detected once only For this reason, and also because it has been shown that the Fallopian tube is rarely a focus of chronic gonorrhoeal infection, he thinks it is probable that the gonococcus has little importance as an active agent in the production of puerperal sepsis Extension of a gonorrhoeal cervicitis or urethritis to the endometrium and tubes during pregnancy is a common event that the extension has occurred in pregnancy is proved by the finding that the tubes are occluded, and probably many cases of one child sterility may find their explanation thus Schumann recommends that if vulvalor cervical gonorrhoeal infection is manifested during gestation, treatment should be directed to localizing the disease, while avoiding any traumatism which might lead to its extension The entire vagina and cervix should be gently coated with 20 per cent argyrol solution at weekly intervals, while the patient should instil 2 to 4 oz of a 10 per cent solution into the vagina each day The profuse irritating leucorrhoea which sometimes occurs responds to the free use of a powder containing equal parts of sodium bicarbonate and fuller's earth retained for forty eight hours on a cotton tampon With regard to syphilis the author infers from his own records that pregnancy in an untreated patient may be expected to lead to the birth of a living healthy infant in about one half of the cases This proportion is probably increased to over 70 per cent if the patient is subjected to intensive treatment during gestation If adequate treatment is given, the chances in subsequent pregnancies of the birth of a healthy infant are but little less than in non syphilitic subjects.

Pathology.

410. The Wassermann Reaction in Leprosy.

R B LLOYD, E MUIR, and R G C MITRA (*Indian Journ. Med Research*, July, 1924, p 213) have examined the effects on the Wassermann reaction of treating leprosy cases with antisyphilitic remedies, with a view to determining the part played by coexisting syphilis in producing positive reactions The percentage of positive reactions was lowest in the anaesthetic type of leprosy (27 per cent), and in twelve out of sixteen positive cases the reaction was favourably influenced by treatment The authors believe that the explanation of the lower incidence of the positive Wassermann reaction in nerve cases is to be found in the fact that the leprosy bacilli in the nerves are few in number, and but little production of antibodies is to be expected They advise, therefore, that in all cases of nerve leprosy the Wassermann test should be performed before treatment is commenced, since if the reaction is negative, as it will be in 75 per cent of the cases, no antisyphilitic treatment will be required If the reaction is positive, however, and particularly if there are indications that the case has been of the primary nerve type from the first, they recommend a course of antisyphilitic treatment, even in the absence of a specific history, antileprotic treatment being commenced subsequently In skin cases the authors find that a positive reaction was favourably influenced by antisyphilitic treatment in more than half the cases, and in about one third of them it became negative They conclude that coincident syphilitic infection, though possibly not the only cause of the Wassermann reaction, is a potent factor in both types of leprosy In a former paper (*Indian Journ Med Research*, July, 1923) the authors had described their study of two series of children of leper parents, living under similar conditions in the same place, totalling 104 individuals, of these, 58 became infected with leprosy, 62 per cent presenting positive Wassermann reactions The remaining 46 children did not develop leprosy and their Wassermann positive rate was only 17 per cent The authors express the opinion that the high proportion of positive reactions in these leper children cannot be attributed to syphilis.

411. The Diagnostic Value of Lumbar Puncture in Late Syphilis

J LOFTHUS (*Norsk Mag f Laegevidenskaben*, September, 1924, p 705) has compared the Wassermann examination of the serum and cerebro spinal fluid with the numerous other tests, including cell counting, of the cerebro spinal fluid in several cases of late syphilitic lesions, such as general paralysis and tabes Among the tests of the cerebro-spinal fluid were those associated with the names of Nonne, Apelt, Pandy, Weichbrodt, and others In some cases the cerebro spinal fluid gave a negative Wassermann reaction, although the other reactions were positive Thus, of 90 patients suffering from general paralysis, only 73 gave a positive Wassermann reaction in the cerebro spinal fluid The serums of 70 patients suffering from general paralysis gave a definitely positive Wassermann reaction in 49 cases only, yet there could be no doubt as to the correctness of the diagnosis founded on the clinical evidence and the examination of the cerebro spinal fluid by cell counting and other tests The author concludes from his observations that it is unjustifiable to discard the diagnosis of general paralysis simply because the Wassermann reaction is negative both in the cerebro spinal fluid and in the serum A diagnosis of general paralysis founded on a careful clinical examination and the demonstration of morbid reactions in the cerebro spinal fluid, other than the Wassermann reaction, is perfectly justifiable whatever the nature of the Wassermann reaction

412 Basal Metabolism of Fat

E O FOLKMAR (*Ugeskr f for Laeger*, October 9th, 1924, p 762) has investigated the basal metabolism of 21 women, 10 of whom were suffering from adiposity alone, while the remainder were suffering also from well defined adiposalgia In no case was there evidence of advanced cardiac insufficiency or of catarrh of the respiratory tract In every case the basal metabolism was found to be reduced, the reduction varying from 3 to 20 per cent These findings doubtless represented an underestimate of the reduction of the basal metabolism, for the conditions under which the investigations were carried out were not ideal, the patients' pulses often being faster than usual at the time of the examination No relationship was established between the degree of reduction of the basal metabolism and the age and weight of the patients With regard to treatment in these cases, the author has controlled the influence of various thyroid preparations by means of concurrent basal metabolism examinations, and, with the exception of only one preparation, which was Danish, he found that the various thyroid preparations on the market were either inert or very variable in their action Only on one occasion did he have to discontinue thyroid medication for a short time on account of the palpitation of the heart provoked Generally speaking, he regards the processes leading to adiposity as representing a vicious circle requiring intervention by such means as reducing the dietary and carefully training the patient's muscles to enable her to take more exercise

413 The Spleen in Diseases of the Blood

W J MAYO (*Journ Amer Med Assoc*, September 13th, 1924, p 815) discusses certain blood conditions depending on pathological processes in the spleen, and concludes that in the light of clinical experience a chronically enlarged spleen must be regarded as a menace to the well being of its human carrier, and that it rests with the physician to show why it should not be removed He refers to 255 cases of splenectomy performed in the Mayo clinic for splenic anaemia, haemolytic icterus, pernicious anaemia, splenomedullary leukaemia, polycythaemia, and purpura In all these diseases Mayo discusses the relationship of the spleen to the blood condition, and lays emphasis on its connexion with pathological changes in the white cells

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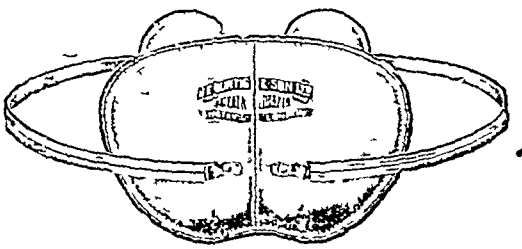
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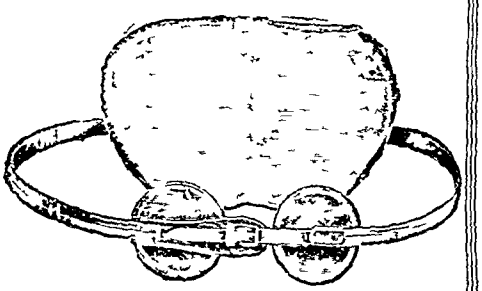
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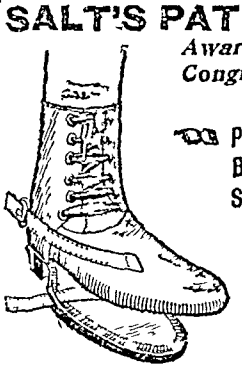
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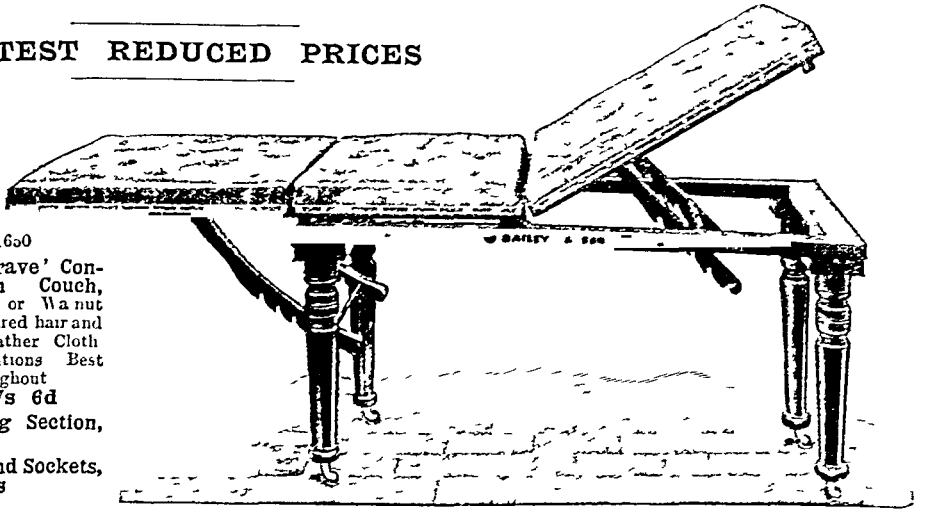


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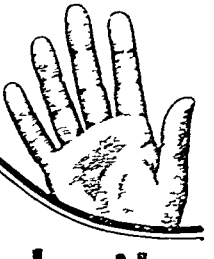
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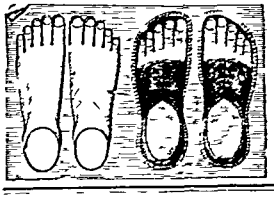


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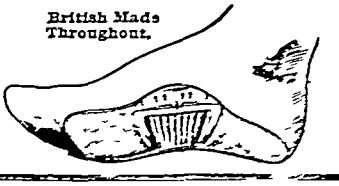
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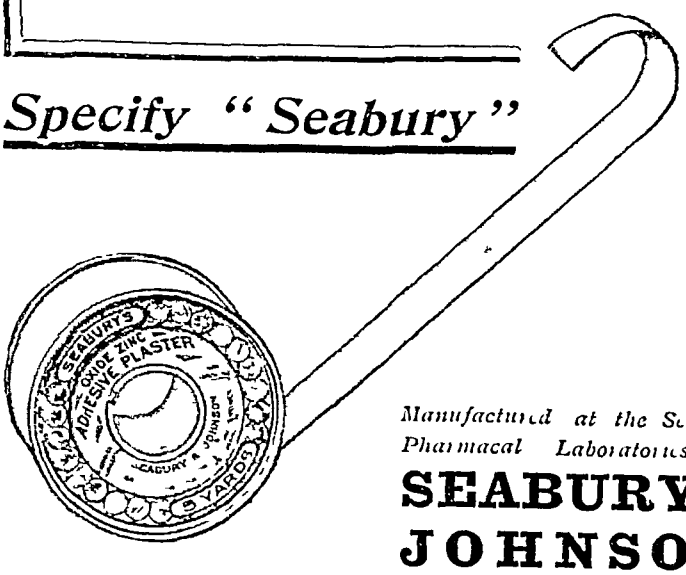
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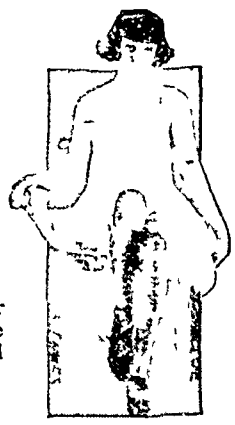


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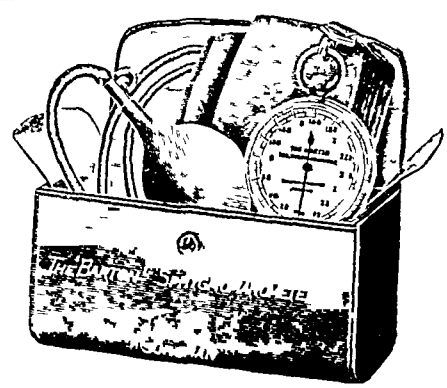
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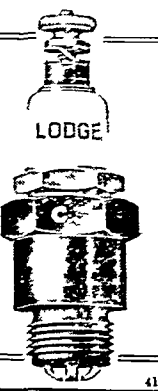
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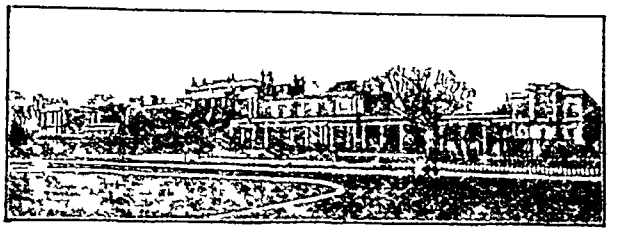
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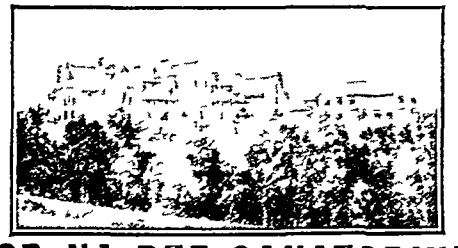
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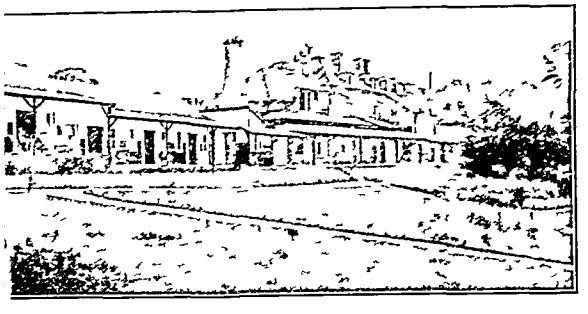
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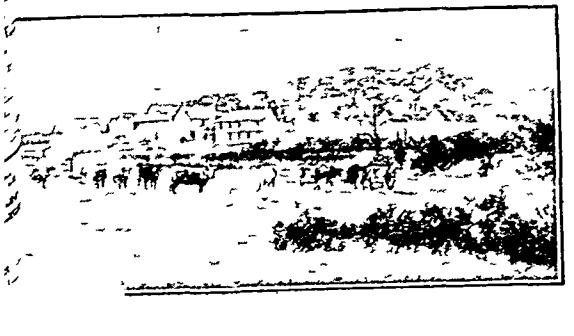
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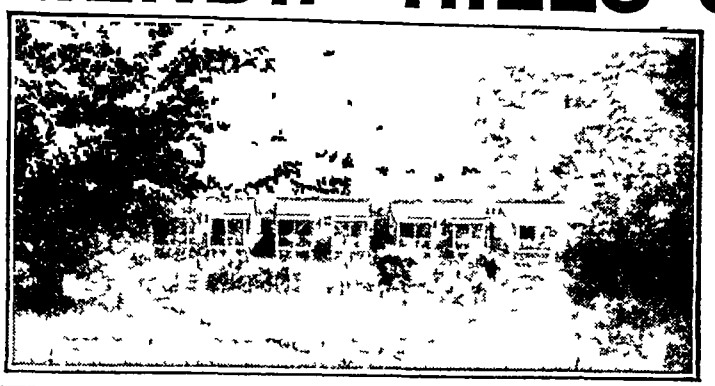
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ALFRED PINEY, M D, M R C P
A KNYVETT GORDON, M B

Applications should be sent to Dr KNYVETT GORDON 10 Bedford Square, London W C 1 by December 1st 1924, marked Virol Scholarship in Haematology" and must be typewritten They should cover the points mentioned above, and evidence of the permission of the director of the institution where the candidate is at present working for his or her entry for the scholarship must be supplied Original testimonials should not be sent in the first instance

The holder of the scholarship will be required to begin research early in January 1925

The candidate will be expected to publish results of the research in a recognized scientific journal

Shropshire Orthopædic HOSPITAL Gobowen near Oswestry

COUNTRY OPEN AIR WARDS 300 BEDS

GIRLSTUDENTS WANTED to learn Orthopædic Work and prepare for the Conjoint Examination of the C S M M G Three years training Salary first year £16 second year £20 all found uniform —Apply Miss HUNT, R R C

The Milroy Lectures on State MEDICINE AND PUBLIC HEALTH

The Council of the Royal College of Physicians are prepared to receive applications for the office of MILROY LECTURER for 1926

Applications must be addressed to the Registrar Royal College of Physicians Pall Mall East on or before January 1st and should contain a statement of the division of the subject selected by the candidate

The course must comprise not less than "three nor more than "six Lectures

The Lectures are to be given on Tuesdays and Thursdays in February or March 1926

A copy of Dr MILROY'S "Suggestions on the subject of his bequest and information as to the emolument may be obtained from

J A ORMEROD, M D,
November, 1924 Registrar

The University of Sheffield FACULTY OF MEDICINE

The Council of the University and the Board of Management of the Royal Infirmary Sheffield acting conjointly are about to appoint an ASSISTANT PATHOLOGIST to the Royal Infirmary and DEMONSTRATOR OF PATHOLOGY in the University

The appointment is for whole-time service and the work consisting largely of Morbid Anatomy Morbid Histology and Clinical Pathology and Bacteriology under the direction of the Professor of Pathology will be principally in the Royal Infirmary

The salary offered is £500 per annum

Applications accompanied by recent testimonials and references should be sent on or before Friday December 5th 1924 to the PROFESSOR OF PATHOLOGY The University Sheffield from whom further details may be obtained

W M GIBBONS Registrar

COMMISSIONS in the ROYAL ARMY MEDICAL CORPS.

An Examination for not less than 20 Commissions in the Royal Army Medical Corps will be held on January 28th, 1925

Applications to compete should be made to THE UNDER SECRETARY OF STATE, the War Office not later than January 18th, 1925 The presence of Candidates will be required in London from January 26th

Intending Candidates can obtain a full statement of the duties and emoluments of the Service on making a written application to THE UNDER SECRETARY OF STATE (A M D I) the War Office Whitehall London, S W 1

The London Lock Hospital, 91, Dean Street, W 1

Applications are invited for the following paid CLINICAL ASSISTANTSHIPS in the Out patient Department for the period January 1st to June 30th, 1925 —

Two vacancies at each Evening Clinic and one vacancy at each Mid day Clinic The Clinics are held as follows: Mondays at 1 o clock mid day and 6 p m (men), under Mr CHARLES GIBBS F R C S Tuesdays, at 1 o clock mid day (men) under Mr J E R MCDONAGH, F R C S, and 6 p m (men), under Mr J JOHNSTON ABRAHAM I R C S Wednesdays at 6 p m (men) under Mr J E R MCDONAGH F R C S Thursdays at 1 o clock mid day (men), Thursdays, at 5 p m (Women and Children) under Mr LAWRENCE ABEL F R C S Fridays at 5 p m (men), under Mr J JOHNSTON ABRAHAM I R C S Saturdays at 1 o clock mid day (men) under Mr A LAWRENCE ABEL, F R C S

All applications must be made on the official form which can be obtained from the Secretary and should be filled in and returned to the undersigned on or before 10 a m, Monday, November 24th, 1924

By Order of the Board
November 12th H J EASON

The Hospital for Sick CHILDREN, Great Ormond Street London, W C 1

The following appointments will become vacant on January 1st 1925 —
HOUSE SURGEON
HOUSE PHYSICIAN

Gentlemen are invited to send in their applications addressed to the Secretary, before 12 o'clock, on Monday, December 1st 1924, with copies of not more than three testimonials given especially for the purpose, and also evidence of their having held a responsible hospital appointment

Each appointment is made for six months Salary £50, laundry allowance £2 10s, and board and residence in the Hospital

Candidates must be unmarried, and possess a legal qualification to practice

All candidates must be in attendance on Wednesday December 3rd, 1924 at 5 p m precisely, to appear before the Joint Committee if required

Forms of application and copies of the rules may be obtained from the Secretary

By order of the Board of Management
JAMES MCKAY Secretary

November, 1924

Aberystwyth Infirmary and CARDIGANSHIRE GENERAL HOSPITAL

HOUSE SURGEON required (male) Salary £200 per annum, with board residence and laundry Candidates must be fully qualified and registered Knowledge of X ray a consideration

Applications stating age and qualifications, together with three recent testimonials, to be sent by November 28th, to the Secretary, The Infirmary, Aberystwyth

The successful candidate will be required to commence duties on January 1st, 1925

Bristol Royal Hospital for SICK CHILDREN AND WOMEN

APPOINTMENT OF OUT PATIENT PHYSICIAN

The Election Committee of this Institution are

medicine of a University in Great Britain or Ireland

Applications stating age, qualifications and experience accompanied by testimonials must be sent to the undersigned on or before November 29th

J E SMITH, Secretary

November 22nd, 1924

Manchester Royal Infirmary HONORARY ASSISTANT RADIOLOGIST AND ELECTROTHERAPEUTIST

The Board of Management invite applications for the above appointment

Candidates must be graduates in medicine of a British or Irish University or Fellows Members or Licentiates of one of the Royal College of Surgeons of the United Kingdom

Candidates are required to forward Diplomas original testimonial and a certificate of age with their applications addressed to the Secretary not before 9 a m on Thursday December 11th 1924 from whom also a copy of the rules can be obtained

Candidates are required to furnish 45 copies of their applications and dated testimonials addressed to the Secretary for distribution prior to the meeting of the Committee

Canvassing, directly or indirectly is forbidden and the Committee reserve to themselves the right on proceeding to election, to take into consideration any complaint that canvassing on behalf of any candidate has taken place

By Order
FRANK G HAZELL,
Gen Supt & Secretary

The Jessop Hospital for WOMEN Sheffield (91 Beds)

GYNÆCOLOGICAL AND MATERNITY DEPARTMENTS

The Board of Management invite applications for the following appointments —

MALL SENIOR RESIDENT OFFICER for twelve months from January 1st 19
Salary £250 per annum

TWO ASSISTANT HOUSE SURGEONS for six months from January 1st 1925 Salary £100 per annum together with board residence and laundry

Applications stating age with copies of recent testimonials, should be forwarded to

H B SHELSWELL Secretary

Hampstead General & North WEST LONDON HOSPITAL Haverstock Hill, N W

APPOINTMENT OF CASUALTY MEDICAL OFFICER AND CASUALTY SURGICAL OFFICER

Vacancies
Casualty
Officers
the rate of £100 a year together with board residence etc, and the term will be for a period of six months

Candidates, who must be registered medical practitioners should send applications stating age qualifications experience etc together with copies of not more than three testimonials, to the Secretary not later than December 6th

Hampstead General & North WEST LONDON HOSPITAL, Haverstock Hill, N W

APPOINTMENT OF HOUSE PHYSICIAN AND HOUSE SURGEON

Vacancies next for a
House The salary
for each appointment is £100 a year, together with board residence etc, and the term will be for a period of six months

Candidates who must be registered medical practitioners, should send applications stating age qualifications experience etc, together with copies of not more than three testimonials to the Secretary not later than December 6th

Devon Mental Hospital

Required JUNIOR ASSISTANT MEDICAL OFFICER (Male) Candidates must be registered Medical Practitioners, and unmarried Preference will be given to candidates who either have or are anxious to obtain a Diploma in Psychological Medicine Salary £300 per annum rising by £25 per year to £350 and attendance provisions of the Asylums Officers Superannuation Act 1909

Form of application to be obtained from the Clerk to the Devon Mental Hospital, Exminster near Exeter must be returned completed on or before December 20th 1924

Croydon General Hospital

Wanted, SISTER in charge of X Ray and Electrical Department Must hold recognized certificates for X ray and electrical work Preference will be given to candidates holding massage certificates as well General training not necessary

Apply the MATRON
November 17th, 1924.

APPOINTMENTS—Important Notice.

(a) British Islands.

Medical Practitioners are requested not to apply for any appointment referred to in the following table without having first communicated with the Medical Secretary of the British Medical Association, 429, Strand, London, W.C.2.

CONTRACT PRACTICE.

ENGLAND.

CANNOCK CHASE AND DISTRICT
(Clubs and Friendly Societies Appointment.)

MIDDLESBOROUGH
(Medical Aid Associations or Workmen's Clubs.)

SOUTH BANK & ESTON
(Medical Aid Associations or Workmen's Clubs.)

WALES.

ABERTRIDWR GLAMORGAN
Windsor Colliery (Medical Scheme.)

EBBW VALE MON
(Workmen's Medical Society.)

GILFACH GOCH GLAMORGAN
(Workmen's Medical Scheme.)

LLWYNYPIA CLYDACH VALE
PENYGRAIG GLAMORGAN
(Workmen's Medical Scheme.)

MARDY GLAMORGAN
(Workmen's Medical Scheme.)

OAKDALE, MON
(Medical Officer for Medical Aid Association.)

WALES (continued)

OGMORE VALLEY GLAMORGAN
(Wyndham Colliery Medical Aid Society.)
(Workmen's Medical Scheme.)

TONDU & ABERKENFIG GLAMORGAN
(Workmen's Medical Scheme.)

PUBLIC HEALTH.

ARGYLLSHIRE EDUCATION AUTHORITY
(Executive School Medical Officer.)

COLCHESTER BOROUGH
(Assistant School Medical Officer.)

KENT EDUCATION COMMITTEE
(Woman School Medical Inspector.)

LANARK COUNTY
(Medical Officer of Health.)

LINCOLN CITY EDUCATION AUTHORITY
(Woman Assistant School Medical Officer.)

PUBLIC HEALTH (continued)

NORTHAMPTONSHIRE COUNTY COUNCIL
(Medical Officer of Health.)

NORTHUMBERLAND COUNTY COUNCIL
(Woman Assistant Medical Officer of Health.)

NUNEATON RURAL DISTRICT
(Medical Officer of Health.)

PORTSMOUTH EDUCATION COMMITTEE
(Whole-time Assistant School Medical Officer.)

SOUTHWARK METROPOLITAN BOROUGH
(Tuberculosis Officer.)

STIRLING ROYAL BURGH
(Medical Officer of Health, Tuberculosis, Maternity and Child Welfare and V.D. Officer, Part-time and Medical Attendant at Convalescent Infectious Diseases Hospital.)

SUTHERLANDSHIRE
(Medical Officer of Health, Tuberculosis Officer and School Medical Officer.) (Combined post.)

WIGAN COUNTY BOROUGH
(Assistant School Medical Officer.)

YORKSHIRE NORTH RIDING
(Assistant School Medical Officer.)

(b) Colonial Medical Service.

WINDWARD ISLANDS MEDICAL SERVICE
(Grenada with Carriacou & Union and St. Lucia)

(c) Overseas Appointments.

Medical Practitioners are requested not to apply for any appointment referred to in the following table without having first communicated with the Honorary Secretary of the Division or Branch named in the second column or with the Medical Secretary of the British Medical Association, 429, Strand, London, W.C.2.

Town or District.	Hon. Sec. of Division or Branch	Town or District	Hon. Sec. of Division or Branch.	Town or District.	Hon. Sec. of Division or Branch
NEW SOUTH WALES (*All Friendly Society Appointments.*)	Dr. R. H. TODD (Hon. Sec. New South Wales Branch), B.M.A. Building, 30-34 Elizabeth Street, Sydney, N.S.W.	QUEENSLAND (*Brisbane Associated Friendly Societies' Practice.*)	Dr. R. MARSHALL ALLAN (Hon. Sec. Queensland Branch), Adelaide Street, Brisbane.	VICTORIA (*All Institute or Medical Dispensaries.*)	Dr. FRANK DAVIES (Hon. Sec. Victorian Branch), Medical Society Hall, East Melbourne, Victoria.
				WESTERN AUSTRALIA (*Contract and Lodge Practices.*)	Hon. Sec., Western Australian Branch, National Bank of New South Wales Chambers, St. George's Terrace, Perth.

Address 429, Strand, W.C.2.
November 19th, 1924.

By order of the Council of the British Medical Association.
ALFRED COX, Medical Secretary.

Royal Berkshire Hospital

The Board of Management invites applications for the appointment of HONORARY ASSISTANT SURGEON. Candidates must be Fellows or Members of one of the Royal Colleges of Surgeons of Great Britain or Ireland or Graduates in Surgery of one of the Universities of Great Britain or Ireland, and must be registered.

The elected candidate will be appointed for the period ending on the third Tuesday in January 1929, and will be eligible for re-election. Canvassing, directly or on behalf of a candidate will disqualify him. Candidates are required to provide sixty-five copies of their applications and of not more than three testimonials which must be addressed to the Secretary, and reach him not later than December 8th, 1924.

The election will be held on December 16th, 1924.

By order,
HERMAN BURNEY,
Reading, Secretary.
November 22nd, 1924.

East London Hospital for Children & Dispensary for Women, Shadwell, E.1.

Applications are required for the post of ANÆSTHETIST to attend at the Hospital on Tuesday and Thursday mornings. An honorarium of £50 per annum is granted.

Applications with testimonials should reach the undersigned not later than Saturday, Nov. 29th.

W. M. WILCOX, Secretary.

City and County of Bristol

EDUCATION DEPARTMENT

ASSISTANT SCHOOL MEDICAL OFFICER

The Committee invite applications for a whole-time Assistant School Medical Officer, age not exceeding 40 years. Salary £600 per annum.

The duties will consist of examination of children in the Committee's Secondary, Elementary and Special Schools, treatment in School Clinics and such other duties as may be allocated.

The successful candidate will work under the direction of the School Medical Officer.

Applications which must be on a form provided for this purpose should be accompanied by not more than three recent testimonials and must be received by the undersigned not later than Saturday morning, November 29th, 1924. Envelopes should be endorsed "Assistant School Medical Officer."

Canvassing will disqualify.

Guildhall, Bristol. W. LUDFORD FREEMAN, Director of Education.

November 10th, 1924.

Royal Cornwall Infirmary, Truro. (70 Beds.)

HOUSE SURGEON required with experience of X-ray work. Salary £170 per annum, room, board and washing. Apply with copies of three recent testimonials to SECRETARY of whom further particulars may be obtained.

West End Hospital for Nervous Diseases

In Patient Department, Gloucester Gate, Regent's Park, N.W. Out Patient Department, 8 Beaconsfield Office, Welbeck Street, W.

The Committee of Management invites applications for the following Vacancies on the Honorary Medical Staff of the Hospital:—

(1) AN ASSISTANT PHYSICIAN. Candidates must be Fellows or Members of the Royal College of Physicians of London.

(2) A LARYNGOLOGIST.

(3) AN OTOLOGIST.

Candidates must be Fellows of the Royal College of Surgeons of England.

Further particulars are obtainable from the undersigned to whom 12 copies of applications and testimonials should be sent before December 10th.

J. P. WETENHALL, Secretary.

The Elizabeth Garrett Anderson Hospital, Euston Road, N.W.1.

Applications are invited for the appointment of ASSISTANT SURGEON. Forms of application can be obtained from the Secretary to whom applications, with copies of testimonials, should be sent before Friday, November 28th.

IMOGEN H. MUIRHEAD, Secretary.

Wanted—(Male) Assistant for Manchester Please give particulars of qualifications and hospital experience etc Manchester Industrial District Private and panel Good prospects—Address, No 5814 BRITISH MEDICAL JOURNAL Office 429, Strand W C 2

Wanted.—Outdoor Assistant, single and with capital preferred earnest energetic, partnership to good man cyclist usual bond Manchester district, State all particulars—Address No 5804 BRITISH MEDICAL JOURNAL Office 429 Strand W C 2

Wanted—Assistantship or LOCUM by M B and Ch B (Glas) Aged 29 North of Scotland man single Excellent testimonials—Address No 5807 BRITISH MEDICAL JOURNAL Office, 429 Strand W C 2

Wanted—Assistantship (outdoor), or management of branch, with view to Partnership later, by married Medical man Londqual Country or Country town prefd. Englishman Exp G P good obstetrician excel refs Free end Nov—Address No 5708 B M J Office 429 Strand

Wanted—Assistant, outdoor, married preferible Work light little night work or midwifery View to partnership Good opportunity to suitable man (Lancs) —Address No 5812 BRITISH MEDICAL JOURNAL Office 429, Strand W C 2

Wanted, in Liverpool, a well qualified ASSISTANT in a good middle class Practice Prospects of Partnership—Address No 5831 BRITISH MEDICAL JOURNAL Office 429 Strand W C 2

Wanted by M.B, B Ch, B A O (N U I) TEMPORARY WORK (while looking for a suitable practice to buy) Ex H S R M O and Anæsthetist Exper Minor Surgery and G P (private panel, mid) Excel ref Free now—Address No 5833 B M J, 429 Strand

Wanted, a Post, by M B, Ch B aged 25, woman experienced in midwifery gynæcology and general practice—Address No 5821 BRITISH MEDICAL JOURNAL Office 429 Strand W C 2

Wanted—Part-time Work—evening surgery preferred—by recently qualified man with experience of general practice London district—Address, No 5822 BRITISH MEDICAL JOURNAL Office, 429 Strand W C 2

Assistantship wanted (outdoor or indoor) by recent graduate, M B Ch B (Glas) Aged 26 years Abstainer, keen worker, good cyclist motorist. Excellent testimonials Free now—Address No 5808 BRITISH MEDICAL JOURNAL Office 429 Strand W C 2

Assistantship wanted by M B Ch B (Edin) July 1924 Scotsman aged 26 Keen energetic Some experience Excellent testimonials Now free in London—Address No 5815 BRITISH MEDICAL JOURNAL Office 429 Strand W C 2

Assistantship wanted, outdoor by L R C S, L R C P aged 26 Good experience panel and private practice keen on midwifery Free January—Address No 5802, BRITISH MEDICAL JOURNAL Office 429 Strand, W C

Assistantship.—M B, Ch B, D P H (woman) at present engaged in Medical Inspection of School Children desires Assistantship in general practice Previous experience—Address No 5712 BRITISH MEDICAL JOURNAL Office 429 Strand, W C 2

Chauffeuse, nine years' experience, refined, smart appearance splendid references Careful driver clean licence used to a doctor's practice long distances Willing to go to any part Please state particulars—Address, No 5615 B M J Office 429 Strand W C 2

Edinburgh M.B, Ch B, desires ASSISTANTSHIP Aged 27 height 6 feet Experienced in G P midwifery, diseases of children, etc Free now Good references—Address No 5824 BRITISH MEDICAL JOURNAL Office, 429 Strand W C 2

Ex-Regular Major (40) retired through loss of a leg fully qualified Shorthand typist desires any SECRETARIAL or CLERICAL WORK Any wage accepted—Write Major GRAY 59, Abingdon Villas, W 8

M.B, Ch.B (Glasg), æt 28, desires ASSISTANTSHIP or LOCUM Experience in G P midwifery, anæsthetics Capable well received energetic cycles Free now—Address No 5813 BRITISH MEDICAL JOURNAL Office, 429 Strand, W C 2

M.B, Ch B (Edinburgh 1921) woman æt 8 desires ASSISTANTSHIP Preferably London—Address No 5820 BRITISH MEDICAL JOURNAL Office 429 Strand W C

Medical Man, engaged morning and afternoon would be glad to RUN OR HELP WITH PANEL AT NIGHT in London Young, strong active thoroughly experienced—Address No 5805 BRITISH MEDICAL JOURNAL Office 429 Strand W C 2

Part-Time Work wanted by M R C S, L R C P Free mornings and evenings Aged 27 Abstainer Working for further degrees Experience G P and Panel Highest testimonials—Address No 5818 BRITISH MEDICAL JOURNAL Office 429 Strand W C 2

Part time (or whole) work, indoor or out desired by experienced man, well received Moderate terms—Address, No 5832 BRITISH MEDICAL JOURNAL Office 429 Strand W C

Part-time Book-keeper, male (30) good experience of accountancy requires EVENING WORK Moderate remuneration card system prepared West End preferred—Address, No 5803, BRITISH MEDICAL JOURNAL Office, 429, Strand W C 2

Pupils—Evening Instruction in Blood (Sugar etc) Analysis and Clinical Bacteriology in West End Laboratory—Address "RESEARCH" c/o Deacons, Advt Agency Leadenhall Street London E C 3

SCALE OF CHARGES FOR ADVERTISEMENTS

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Advertisements should be delivered addressed to the Manager 429 Strand London W C 2 not later than first post on Tuesday preceding publication

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Registered Practitioner, conjoint Steady well received, good prescriber could relieve or assist in panel and private practice for a few weeks Preferably London S W district References Phone Western 3586 or write, No 5804 BRIT MED JOURN Office 429 Strand

Required, Tutors in Ophthalmology and Radiology for D O M S and D R L Examinations—Apply Secretary MEDICAL CORRESPONDENCE COLLEGE 19 Welbeck St W 1

Wanted.—Lady Dispenser (outdoor) for Doctor's Practice in Country Town in South Experienced used to surgical dressings and care of instruments Nurse preferred—Address *No 5816 BRIT MED JOUR Office* 429 Strand W C 2 stating salary required

Doctors requiring Lady DISPENSERS should write to Mr J L WALDEN Westminster College 112 St George's Road S E 1 (only address) No fees to Doctors 25 years experience Daughters and other relatives of medical men always in training

Lady Dispensers supplied, qualified experienced and also trained in Bacteriological Laboratories of the LONDON COLLEGE OF PHARMACY FOR LADIES Preparation for [illegible] Before and out by the [illegible] College—[illegible]

15/- per diem—An experienced and now does some DISPENSING or otherwise Lond preferred Well recommended—Address MEDICUS 98 Talbot Rd, Bayswater W

FOR LOCUM TENENS APPLY TO MR PERCIVAL TURNER The oldest and only Agent who for 40 years has supplied substitutes at short notice without fee to principals 4, ADAM ST, STRAND, LONDON, W C 2 Telegs "Epsomian, London" Phone Gerrard 3

Wanted—Locum or ASSISTANTSHIP by M B young energetic experience hospital practice Excellent references Free now—Address No 5826 BRITISH MEDICAL JOURNAL Office 429 Strand, W C 2

FOR A RELIABLE LOCUM TENENS OR ASSISTANT APPLY TO

ARNOLD & SONS, (JOHN BELL & CROYDEN LTD)

50/2, WIGMORE STREET, W 1

Mr W H GRANT, Manager

Telephone LANGHAM 3000 *Telegrams* INSTRUMENTS WESDO LONDON

Wanted—Partnership by Scottish graduate aged 29 height 6ft 1in Protestant 1½ years experience G P Well received Really good references House to rent essential Capital—Address, No 5817 BRITISH MEDICAL JOURNAL Office 429 Strand W C 2

Wanted—Capable Surgeon, preferably F R C S as PARTNER in private practice half share Receipts last 3 years £2 200 £2 600 £3 000—Address No 5654, BRITISH MEDICAL JOURNAL Office 429 Strand W C

Wanted—Midlands PARTNERSHIP or PRACTICE by young M D Town preferred House to rent Income about £1 000 or more Capital available—Address No 5819 BRITISH MEDICAL JOURNAL Office 429 Strand W C 2

Doctor, young, with capital, desires PARTNERSHIP or PRACTICE Ex H S and H P, and recently on hospital staff—Address *particulars in confidence to No 5827* BRITISH MEDICAL JOURNAL Office 429 Strand W C

Medical Partnership in old established first class Practice North of Eng and Capital required about £2 000—Full particulars ROBERT FLEMING, S S C, 21, Hill Street Edinburgh

Partner wanted—Short Preliminary Assistantship Must be capable Surgeon preferably F R C S South Coast town Sussex—Address full details to No 5419 BRITISH MEDICAL JOURNAL Office 429 Strand W C 2

Partner urgently required.—Well qualified keen on surgery growing general practice within 20 miles London £900 p a one third incr ed to one half share two years purchase Good schools sports residential [illegible] agents—Address No 5829 B M J 429 Strand

To Physicians—An exceptional opportunity presents itself to a [illegible] Physician to secure a PARTNERSHIP in [illegible] Practice [illegible] year could be [illegible] distant date—[illegible] c/o PERCIVAL TURNER 4 Adam Street Strand W C

Wanted.—Good Panel PRACTICE in near London Per[illegible] from £2 000 a year upwards Ample capital available—Apply PEACOCK & HADLEY 19 Cecil Street Strand W C 2 (No charge unless effected)

Wanted—Small Practice or PARTNERSHIP by M B Ch B 6 years experience G P House to rent Preferably Lancs or Cheshire Can put £900 down Assistants with view considered—Address No 5806 BRITISH MEDICAL JOURNAL Office 429 Strand W C 2

Wanted a small Practice or *NUCLEUS in Bucks Berks Surrey Sussex* or nice place within 0 miles London—Address Doctor A c/o Messrs COURT & SON, 181 Piccadilly, W

Wanted by M R C S, a midclass PRACTICE of £800 up in residential district within 20 miles No objection buying house—Apply 'D' c/o BLUNDELL & Co Craven Street Strand W C 2

Wanted in Country district a General PRACTICE of £1,000 to 000 a year House with garden in good farm district South or Cheshire Applicant has ple means and can buy at once Details received confidence by 5513 c o Mr PERCIVAL TURNER, Adam Street Strand W C 2

Wanted—Country or Country Town PRACTICE returning from £1,000 £2 000 a year Good house with garden rchaser can buy both house and practice —Apply ACOCK & HADLEY 19 Craven Street Strand C 2 (No charge unless sale effected)

A really sound Practice for Sale in Lancashire industrial town with ope for two ambitious men Well known to us specially recommended — P Q R HOUGH SEASON & Co Ltd Manchester

Bournemouth —High-class and well established NURSING HOME for e Recommended by several prominent local ysicians Excellent central situation Well pointed and equipped Full particulars of Rent d Price for Goodwill and Equipment.—Apply INKIN ON Estate Agents The Square urnemouth (P 169)

Birmingham District — Wanted a PRACTICE with panel Income ound £1,000-£1,500 —Address details in full nfidence to No 5825 BRITISH MEDICAL JOURNAL fice, 429 Strand W C 2

Chemical, Pathological, and BACTERIOLOGICAL LABORATORIES ondon —Well equipped and particularly suitable r research and producing medicinal preparations eadily increasing connection Will sell whole or rt interest Capital necessary £1,000 to £3,000 ddress No 5830 B M J 429 Strand W C 2

Cheshire —Small residential town General PRACTICE returning £1,500 year Good residence (6 bedrooms) garden and arage Rent £84 Premium 1½ year purchase fficient introduction.—Apply PEACOCK & HADLEY 9 Craven Street Strand W C 2

Death Vacancy — County PRACTICE in North Wales slate quarry district about 600 panel patients and parish appointment best less private practice —Apply to O P c o FERRIS & Co Ltd Bristol

For Sale — Practice in flourishing town on the borders of England and Wales Established 21 years Present owner retiring through ill health Convenient semi detached house in good position rent £50 Very good opening for energetic man especially for good Obstetrician Present owner holds Poor Law appointments Go direct to auction given —Address No 5501, BRIT MED JOUR. Office 429 Strand W C

For Sale —Old-established lucrative PRACTICE in attractive town pulation about 20,000 all classes private and ncl. Income £2,500 per annum Good opportunity for major surgery Terms 1½ years purchase nt by instalments to anyone of undoubted rity) No agents —Address No 5629 BRITISH EDICAL JOURNAL Office 429 Strand W C 2

For Disposal —A good Prac- TICE is not always to be had directly but r PERCIVAL TURNER can generally offer applicants mething suitable Nearly all the best Practices e sold by him without being advertised —Full ormation free on application to 4 Adam St. W C 2

Manchester —Old-established PRACTICE for Sale in Industrial District ceipts about £1,000 Panel £700 Good double-nted house rent £30 on lease Great scope ce £1,500 part deferred —MANCHESTER MED D SCHOLASTIC ASSOCIATION 6 Brown Street

Midlands —Death Vacancy £250 Industrial and Colliery District ACTICE over 50 years Established over 100 lly furnished Surgery and Consulting Room at derate rent Splendid opportunity for energetic —All No 5733 B M J 429 Strand W C

Medical —Old-established and lucrative PRACTICE in summer resort rth of Scotland for immediate disposal Owner iring —For particulars apply to SAMUEL POPE licitor 231 Union Street Aberdeen

Manchester —Death Vacancy Receipts about £1,800 Nice house garden age etc. purchase or lease No panel but excellent scope for same Price £2,000 or near offer MANCHESTER MEDICAL AND SCHOLASTIC ASSOCIATION 6 Brown Street

North of England —Old- established Country Town PRACTICE Average receipts £1,460 Good panel. Expenses small. Good house, garden, tennis lawn and orchard —LEE & MARTIN Ltd 41 Temple Row Birmingham

Large industrial and middle- class PRACTICE Panel over 2,200 Average receipts £2,700 Well established and easy to manage Very suitable house easy to run Separate professional accommodation Ill health reason for selling Partnership introduction for about 3 months or possibly longer Reasonable price for quick sale —LEE & MARTIN Ltd.

West Midlands —Old-estab Town and Country PRACTICE in a County Town Receipts £1,574 Appts Panel nearly 400 Good fees Expenses small Hospital (20 beds) Purchaser would be appointed Physician or Surgeon. Good house and garden —LEE & MARTIN Ltd

Doctor, aged 28, M A Oxon Experience in practice on land and sea also in tropical countries and as M O to a Whaling Expedition in Antarctic desires POST preferably but not necessarily abroad Speaks French Spanish Norwegian and Hindustani —LEE & MARTIN Ltd

Immediate Opening for

South Africa —For disposal, old established PRACTICE surgical and best [illegible] in large town Average actual

with considerable amount of surgery Average actual receipts over £4,000 —RECORD PUBLISHING COMPANY P O Box 643 Cape Town. Cable Medical Cape Town

Scotland —Old-established and lucrative town and country PRACTICE for sale Average receipts over £2,000 p.a. Panel 1,200 Appointments Good house and garden Easy terms can be arranged —Address No 5734 BRITISH MEDICAL JOURNAL Office 429 Strand

To Purchasers —Do not Buy without expert assistance With 40 years experience Mr PERCIVAL TURNER can advise in all cases. Terms free on application to 4 Adam Street Strand W C 2 Telephone Gerrard 339 Telegrams Epomian London

Urgent —Introduction to appointment £100 a year as NUCLEUS good scope private practice Particulars in confidence.—Address No 5801 BRITISH MEDICAL JOURNAL Office 429 Strand W C 2

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London Temperance Hospital,
Hampstead Road, N W 1

Applications are invited for the post of R M O (Male), which will become vacant on December 15th next The appointment is for a period of six months at a salary of £175 per annum
Candidates must send applications stating qualifications age etc, with copies of not more than three testimonials not later than Friday, December 5th, addressed to the Secretary

New Sussex Hospital for
WOMEN AND CHILDREN, Brighton

Applications are invited from fully qualified Medical Women for the post of HONORARY RADIOLOGIST The appointment to be held for one year subject to re appointment
Applications with copies of testimonials to be forwarded to the Secretary of the Hospital on or before the first post Wednesday, November 26th

Western Ophthalmic
HOSPITAL Marylebone Road N W 1

Applications are invited for the post of SENIOR NON RESIDENT HOUSE SURGEON The salary is at the rate of £150 per annum and the appointment is for six months The selected candidate will be required to take up duty early in January 1925
Applications, accompanied by copies of three testimonials should reach me by November 29th, 1924
H W BURLEIGH Honorary Secretary

City of London Maternity
HOSPITAL City Road, E C 1

Applications are invited from fully qualified and registered male candidates for the post of RESIDENT MEDICAL OFFICER vacant January 1st next
with b
(with l
reach the undersigned by December 6th
RALPH B CANNINGS, Secretary

North Lonsdale Hospital,
Barrow in Furness

Applications for two HOUSE SURGEONS are invited from fully qualified male practitioners, experienced in the administration of Anæsthetics Salary £175 per annum each, with board residence, and laundry
Applications stating age qualifications and experience, and accompanied by copies of three recent testimonials to be sent to the Secretary so as to reach him not later than November 29th

Wanted — Temporary
ASSISTANT MEDICAL OFFICER male, single under 30 Salary at the rate of £300 per annum with board apartments washing, and attendance —Apply Medical Superintendent CARDERSTONE INSTITUTION FOR MENTAL DEFECTIVES Whalley near Blackburn

Ministry of Health

The Minister invites applications from registered Medical Practitioners (Women) for appointment as a MEDICAL OFFICER on the staff of the Ministry Candidates must have had special experience of Maternity and Child Welfare work under a Local Authority
The salary commences at £600 per annum and rises by yearly increments of £25 to £900 and then by yearly increments of £50 to £1 100 per annum In addition to the salary, a bonus, which varies with the cost of living, is payable
The appointment will be subject to the usual Civil Service conditions as to pension, marriage, holidays etc
A Medical Officer is required to devote her whole time to the Public Service and must be prepared to work in any part of England or Wales if required to do so
Canvassing Members of Parliament or Officers of the Ministry will render a candidate liable to disqualification
Forms of application, with further particulars, may be obtained from the
Director of Establishments
Ministry of Health
Whitehall S W
No application can be considered unless received *on the prescribed form* not later than December 15th 1924

Royal Free Hospital,
Gray's Inn Road W C 1

Applications are invited from duly qualified and registered medical men or women for the following resident posts vacant on January 1st 1925 —
SENIOR RESIDENT MEDICAL OFFICER £150 per annum
CASUALTY OFFICER £100 per annum
ASSISTANT CASUALTY OFFICER
OBSTETRIC ASSISTANT (District) £50 per annum
OBSTETRIC HOUSE SURGEON (Unit)
HOUSE PHYSICIAN
HOUSE SURGEON
Excepting the two Senior appointments preference is given to former students of the Hospital Intending candidates should submit applications stating age accompanied by copies of three recent testimonials to the undersigned on or before November 29th 1924
REGINALD R GARRATT Secretary

Royal Free Hospital,
Gray's Inn Road W C

Applications are invited from male or female registered medical candidates for the posts of SURGICAL and GYNÆCOLOGICAL REGISTRAR Tenable for 12 months Salary £250 per annum Intending candidates should submit applications accompanied by copies of three recent testimonials stating age and qualifications, to the undersigned on or before December 6th 1924
REGINALD R GARRATT Secretary

Bristol General Hospital
HONORARY CLINICAL ASSISTANTS

The Committee invite applications for these appointments in the various Out-patient Departments at the Hospital The appointments are for six months from January 1st next, and the holders will be eligible for re election
Candidates must be fully qualified and registered Medical Practitioners, and are requested to forward their applications to the undersigned on or before Monday, December 8th, from whom further particulars may be obtained
THOMAS W GREGG, Secretary

Royal London Ophthalmic
HOSPITAL (Moorfields Eye Hospital), City Road, E C 1

PATHOLOGIST and CURATOR

Applications are invited for the office of Pathologist and Curator Candidates must be registered medical practitioners and must be prepared to begin the duties about the middle of December
Salary £200 a year, with lunch in the hospital
The Pathologist and Curator will be appointed for one year and will be eligible for re appointment
Applications stating age and qualifications must be received by the Secretary not later than November 27th 1924

The Gordon Hospital,
Vauxhall Bridge Road S W

Applications are invited for the appointment of a RESIDENT HOUSE SURGEON (male or female) from January 1st 1925 Salary at the rate of £75 per annum with board residence, and washing
Applications stating age nationality, and qualifications together with three copies of recent testimonials, should be made in writing to the Secretary by mid-day Saturday December 6th

Manchester Hospital for
CONSUMPTION AND DISEASES OF THE THROAT AND CHEST

Wanted a RESIDENT MEDICAL OFFICER for the in patient department Bowdon Clinic Must be registered Salary £200 per annum with board apartments laundry, and fees contract Duties include attendance on three mornings a week at the out patient department, Manchester
Applications with copies of testimonials to be sent not later than December 6th to
C W HUNT, Secretary
Hardman Street Manchester

Manchester Northern
HOSPITAL FOR WOMEN & CHILDREN
Park Place, Cheetham Hill Road, Manchester

The Committee of Management require the services of a SENIOR HOUSE SURGEON and a JUNIOR HOUSE SURGEON, both duly qualified who are to commence duties on January 1st next Senior House Surgeon salary £130 per annum with board and residence Junior House Surgeon salary £100 with board only
Applications stating age and experience with copies of recent testimonials to be sent to the Secretary Mr CHARLES B MARSHALL, 38 Barton Arcade Manchester not later than November 26th

Hospital for Epilepsy and
PARALYSIS Maida Vale W

HONORARY OPHTHALMIC SURGEON REQUIRED

Applications are invited for the above post They should be accompanied by copies of not more than three testimonials and should reach the undersigned by December 6th
Attendance at the Hospital is required on one morning a week
H W BURLEIGH
Secretary and General Superintendent

Rotherham Hospital.
HONORARY RADIOLOGIST

An Honorary Radiologist is required at the above Hospital Candidates must be duly qualified medical practitioners
The successful candidate will have full control of and be fully responsible for his department
Applications should be sent to the Secretary, on or before Tuesday December 2nd
8, Moorgate Street, G W ROBERTS
Rotherham Secretary

Poplar Hospital for Accidents,
East India Dock Road, E 14

VACANCY FOR HONORARY DENTAL SURGEON

Applications are invited for the above post They should be accompanied by copies of not more than three testimonials and should reach the undersigned by December 2nd
Attendance at the Hospital is required on one morning a week
D H LINDSAY, Sec & House Governor

South Devon and East
CORNWALL HOSPITAL Plymouth
(180 Beds)

Applications are invited for the post of SURGICAL REGISTRAR
Applicants must be registered, and hold a Medical and Surgical qualification
Applications, accompanied by diplomas certificates of registration and testimonials must be sent on or before December 1st to the undersigned
H KINGSLEY PEARCE Secretary

The Prince of Wales
GENERAL HOSPITAL London, N 1

There are vacancies for CLINICAL ASSISTANTS in the various Departments of the Hospital Gynæcological Medical Gynæcological Ear Nose and Throat Eye, Skin and X ray and Electrical
Applications should be addressed to me not later before Monday December 1st next
FREDK W DREWETT, Director
November 17th 1924

Eccles & Patricroft Hospital
Manchester

Wanted, MALE HOUSE SURGEON January 1st next Qualified and registered beds salary £200 with board etc Applications giving age qualifications, and testimonials, sent to Mr J HALL TENNENT Surgeon, Wellington Road Eccles Manchester not later than December 10th

Parish of Willesden

SIDENT ASSISTANT MEDICAL OFFICER

The Guardians of the above named Parish invite plications for the appointment of R sident sistant Me ical Officer (male) at PARK ROYAL OSPITAL Acton Lane Willesden
alary £350 per annum, with ra ions furnished artments and laundry plus bonus (at pre ent iounting to £80 6s 6d per annum)
Candidates must be registered medical prac loners and not over the age of 40 years
The officer appointed will be required to devote e whole of his time to the duties of the office administer anæsthetics give lectures to the arsing Staff and generally to act under the pervision and direction of the Me ical Supe in ndent He will also be required to pay into the

t below and must be returned to me not later than e first post on Monday the 8th day f December

The appointment will be subject to the provisions the Poor Law Officer Superannuation Acts
By Order J HUTTON HAYLOR
Clerk to the Guardians
Guardians Offices 402 High l d
November 19?4 Brondesbury N W 6

Somerset County Council

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Considerable administrative Sanatorium experi nce essential Particulars on application
Applications to be on special forms (obtainable on equest) and these together with copies of not more than three recent testimonials to be en to ne not later than December 1st
Canvassing a disqualification.
W G SAVAGE
County Medical Officer of Health
County Health Department
Boulevard Western super Mare

City of Birmingham

TUBERCULOSIS DEPARTMENT

Applications are invited from regist red male edic l practitioners for the p st of ASSISTANT EDICAL OFFICER who will devote all his time berculosis work both in a anatorium and a nary
plicants should have held a resident appoint in a general hospital since qual fying and ous exp rience in tuberculosis work will be an ntage
e salary will be at the rate of £450 per annum board residence for a single man only and lry

it testimonials to —
G B DIXON
Chief Tuberculosis Medical Officer
Broad Street Birmingham

Royal Waterloo Hospital for

CHILDREN & WOMEN
Waterloo Road S E 1

HOUSE SURGEON

ere will be a vacancy on December 1 th 19 4 House Surgeon (Male) at the above Ho pital ppointment is in the first instance for a p riod x months Salary at the rate of £100 per m with board and residence Appl cation

e obtained —

Radcliffe Infirmary and

COUNTY HOSPITAL Oxford
plications are invited for the following posts h t is o —

[illegible]AN
pointments for six months with alances at the of £120 per annum with board etc
n idates must be male and qualified
plications with four copies of three testi als to be sent to the undersigned on or before mber 15th 19 4
A G E SANCTUARY Administrator

The Metropolitan Ear, Nose AND THROAT HOSPITAL

(Incorporated) Fitzroy Square, W 1

ASSISTANT SURGEON AND CLINICAL ASSISTANTS

[illegible] and than (from before November 4 h [illegible]
L L PHILLIPS Secretary

G. M. A.

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Surrey—Partnership About £1 360 Share worth £500 p a , for disposal now half later and ultimate succession Panel 1 600 Visiting fees 3/6 up Few midwifery cases Ample scope —Apply, No 7636

London, N—About £1,500 a year Old established PRACTICE Small panel Appointments about £400 Visiting fees 3 6 to 15/ Good house on lease with garden and garage Can be rented or lease purchased —Apply No 7634

South Coast — Partnership About £2,700 a year Non dispensing small panel One third share for disposal now up to one half later Visiting fees chiefly 10/6 Applicants should be Graduate and F R C S for preference —Apply No 7631

Cheshire — About £1,900 a year Panel 908 Fees 3/6 to 21/- Medicine extra Good detached house, garage, and garden Apply No 7628

West of England.—Easy terms Non dispensing non panel PRACTICE situated in high class suburb of Important Town estimated to produce about £1 500 a year Fees 5/ to £5 5s Od Excellent house to let on lease —Apply No 7627

London, S.E—Over £1,750 a year Old established PRACTICE Densely populated district Appointments Panel 750 Visiting fees 5/ to 21/ Midwifery average £5 5s Corner house ample accommodation, rent £55 on lease —Apply, No 7625

South-East Coast—Over £2 000 a year Good fees Panel nearly 1 500 House, with ample accommodation and garage, on lease at moderate rent —Apply No 7618

South Wales—£2,000 a Appointments and ing fees 3/6 to 10/6 £52 on lease Hospital, 50 beds Premium for quick sale £2 000 terms could be arranged —Apply, No 7616

Lancashire—About £1,200 a year Non panel Old established Vendor retiring No midwifery or appointments Fees 2 6 to 10/6 Small house rent £36 including rates and taxes Ample scope for both midwifery and panel Easy terms —Apply No 7612

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Lincoln—Country Town, about £1 850 p a Very old established Panel over 1 000 Visits 3/6 up Appointments about £70 Good detached house tennis garden ½ of an acre Long introduction —Apply No 7593

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Cornwall — Unopposed PRACTICE of £850 Appointments £100, Panel £200 Rent £75 *Premium £1,000*

Derbyshire — Practice of £900 in small town Panel 900 Good house with surgery at side Premium £1,100.

Cheshire—Practice of £1,500 in nice country town Panel 1 000 Appointments £160 Double fronted detached house can be bought or rented.

London, S E.—Practice of £1 100 in nice residential suburb Appointment £240 No panel Nice house with garage and tennis court can be bought.

S.W. County — Practice of £800 in rapidly growing part of large town Panel 450 Rent £60 on lease

Within 60 miles—Practice of £800, in favourite town Panel 1 000 Appointments £160 Great scope for better class practice Good schools etc House can be bought freehold for £1 550

Derbyshire—Partnership. Half share of £1 300 Panel 1 000 Appointments £180 Schools near Premium £750

Glos—County Town Practice of £1 750 in beautiful district Panel 1 500 Appointments £125 Good house with tennis court, etc. Low rent

North London—Practice of £950 Increasing Panel 700 House in main road with small garden can be bought.

Opening in growing residential district House with surgery, etc NUCLEUS of about £200

Colliery Practice of £2,300 Panel 1,140 Rent £65 Opposition slight Hospital and scope for surgery

New Zealand — Unopposed PRAC with go £1 500

South London — Very old established practice of £1 000 Appointments £190 Panel 890 About 9 midwifery Nice house with small garden and garage Rent £70

F R C S, required as Partner Practice in Country Town Share £800 with increase later Fine opportunity for Surgeon

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Midlands —Town and country PRACTICE of £1 200 Panel corner house with garage rent £60

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PRACTICES AND PARTNERSHIPS FOR SALE

1 very old town in a ulation over three years average £2 2s 0 including appointments worth £150 and panel of 800 Held 8 years Nearest opposition 3 mile Railway station miles Visits 2/6 to 21/ Midwifery 2 to 10 guineas about 50 cases yearly Pleasant house containing waiting and consulting rooms 2 reception and 5 bedrooms bath

2 [illegible] age income for the last two years of £1 760 including Union Appointment £85 and approximately £900 from panel. Advice and medicine 2/6 3/6 and 5 visits and medicine from 2/6 to 12/6 About 25 cases of Midwifery a year The house is a large one (recently redecorated throughout) situated in the main street and contains 3 reception rooms profe sional rooms 8 bedrooms 2 bathrooms large garden Held on lease at £60 a year Excellent hunting country Premium £2 950

3 WESTERN AUSTRALIA.—Unopposed PRACTICE situated in a small Township (*population 1 500*) *amidst very picturesque* surroundings and within 12 miles of the sea coast Cash cluding appointments and (mileage 7/6) Midwifery Nearest opposition 42 miles sidence (recently built con taining 6 rooms bathroom etc and ample land attached. Rent £86 a year Premium £1.000 half down and balance in 12 months Small Hospital (with 6 beds Sport

4 PARTNERSHIP —LONDON (WEST END) —A well-qualified Graduate between 30 and 40 years of age can acquire the half share of a high-class old-establ hed general PRACTICE worth about £2 500 per annum. Held over 20 years by present Incumbent Consultation fees 2 guineas upwards but plenty to be had at 1 guinea. Rent of Consulting Rooms (including rates and taxes) £180 on lease Prem 2 years purchase Scope

5 LONDON N W —Urgent sale owing to illness of Vendor Old established Private and Panel PRACTICE held by the Vendor over 30 years Steady average income of about £750 including a panel list of over 00 Advice and medicine 2/6 visits and medicine 3/6 to 15/6 No Midwifery The accommodation is only suitable for a bachelor as the upper part of the house is at present let off but vacant possession might be secured shortly Rent £65 p a on lease with option o renewal Reasonable

6 I

7 R

8 [illegible] ulation over 15 000) thin 4 hour run of London an old establ shed lucrative PRACTICE worth over £2 500 per annum including large panel Good fees The house is well situated and has ample accommodation and can be rented on lease at £100 a year Premium 1½ years purchase ties and

9 urge flour lucrative r annum including appointments and panel of nearly 3 000 The sixth share (producing over £800 a year) is for disposal Visits

4 upwards Midwifery 3 guineas Commodious rooms a the surgery are available for the incoming partner Ten £60 pa Premium required 1 for share 2 years purchase Golf tenni etc and there is scope for development

10 SOUTH COAST WATERING PLACE.—(Population 30 000— to an old years over £6 5 a l 7/6 No midwifery Very nice house available with ample accommodation garden etc will be sold or can be rented Half share for disposal a year purchase. Good society and sport y all kind etc Small Hospital scope or increase

11 HOME COUNTY —Hospital town within 30 miles of London PARTNERSHIP A one half share in a rapidly increasing general practice

12 NORTH MIDLANDS —In a pleasant Cathedral City a well established middle and working-class PRACTICE held by present Incumbent who is retiring on account of indifferen health Cash receipts average £1 400 per annum for the past three years including panel of over 1 000 Visits 5/ and 7/6 Midwifery 3 guineas 30 cases yearly The house which is Vendor's property contains 12 rooms garden etc and will be let on lease at £60 a year or sold for £1.100 Premium £2.100 Excellent educational facilities

13 KENT —SMALL TOWN within one hour of London. Old established mixed general PRACTICE Average income about £1.800 including valuable appointments practically transferable and panel of nearly 1 500 Fees 3/- to 10/- Twenty cases midwifery yearly at 2 to 5 guineas. Excellent house containing 2 reception and 5 bedrooms separate entrance to professional rooms standing in its own grounds of ½ of an acre with full sized tennis court etc Vendor freehold price £2 300 Good Hospital in town and Vendor on the staff Premium £2 700 Introduction as desired up to six months

14 INDIA.—*ASSISTANTSHIP* with view to *PARTNERSHIP* —A single man (about 30 years of age and not over 35 who must be an F R C S England of good appearance and a good man is required on a two years engagement to commence next March in a practice producing £7 000 a year Salary 650 rupees a

15 [illegible] creasing PRACTICE worth last year £2.100 including 1 panel patients Visits 2/6 to 5 Midwifery 2 to 4 guineas

16 Practically unopposed PRACTICE of long stand in a quite in a very pretty Country Town with beautiful surroundings Cash receipts for last financial year £2.022 including appointment of £50 and a panel of 600 Visits up to 21/ Very little midwifery Car optional. Railway station Charming residence (with ample accommodation) in its own grounds of ½ of an acre Price £2.900 all of which can remain on mortgage at 5 per cent Premium for practice £2.500 Excellent prospects Tennis golf hunting shooting etc.

17 SOUTH WEST OF ENGLAND —ASSISTANTSHIP with view to Partnership in a good mixed general Practice worth £2.500 a year Scope for increase with the right man Applicants should be about 30 to 35 single and experienced in Surgery

18 WEST RIDING —HOSPITAL TOWN within easy reach of University City Well established middle and working-class PRACTICE, averaging about £2.000 per annum including panel of nearly 1 600 (rapidly increasing) Suitable house available Premium 1½ years purchase payable £1 800 down

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SCOTLAND, NORTHERN HIGHLANDS —(1) PRACTICE averaging over £1 600 p a in a Town No panel House (5 bedrooms etc) in best residential part. Ample scope for midwifery and panel Premium £1 200

DEATH VACANCY WORCESTERSHIRE —(2) PRACTICE about £700 in picturesque and beautiful village Excellent detached house (6 bedroom) with charming garden Rent £55 Scope for increase

SOUTH OF ENGLAND —(3) PARTNERSHIP in well-established better class Practice about £3 000, in first rate residential Town No panel appointments or dispensing Very little midwifery Premium one third share £2 000 Partner should be aged 28 to 35 Graduate English University, and have held Resident Hospital Appts Good Hospital

EASTERN COUNTIES — (4) Very old-established unopposed Country PRACTICE averaging over £2 200 in prosperous Agricultural District Panel 1 000 Very nice detached house (5 bedrooms) with beautiful garden, over an acre Premium one and a half years purchase

HOME COUNTY — (5) PARTNERSHIP in good-class Practice over £4 700 p a, in most attractive Country Town Panel 1 700 Fees 3/6 to £1 5s medicine extra Good society Premium one third share two years purchase

EASTERN COUNTIES —(6) Very old established and increasing Country Town PRACTICE about £3 000 Panel 1 584 House (8 bed and dressing rooms) with good garden, &c Rent £65 Premium £4 000 Suit two friends

MIDLANDS —(7) Well-established Country PRACTICE over £1 200 p a Including panel Good house

EASTERN COUNTIES —(8) Unopposed PRACTICE, with beautiful house and garden, near Coast Splendid wild fowling Income £2 000 per annum Panel 650 Premium one and a half years purchase

LONDON, N W —(9) PRACTICE worth about £450 p a, in working-class district Panel 500 increasing No midwifery Double fronted corner house Premium, Practice and freehold house £1,400 Great scope for young man

DEATH VACANCY —YORK —(10) Well-established PRACTICE averaging £2 414 p a Panel 2 027 Good house (4 bed rooms) Rent £80

DEATH VACANCY — WEST MIDLANDS —(11) Well established good class PRACTICE, about £3 400 p a in beautifully situated Country Town Panel about 1 200 Attractive house (5 bedrooms), with very good garden Cottage Hospital and scope for surgery

YORKSHIRE (WEST RIDING) —(12) PARTNERSHIP in well established increasing Practice about £2 600 in Country Town No panel Not much midwifery Premium one-third share £1,670 (up to one half later) Incoming Partner should be aged about 30 and keen on Surgery

SOUTH OF ENGLAND —(13) ASSISTANT required with view to Partnership in very old established Practice £2 400 p a, in beautiful Country District Panel 1 050 Share up to one half to suitable man, who must be good Surgeon preferably a F R C S Cottage Hospital

MIDLANDS —(14) Unopposed Country PRACTICE over £1,150 in beautiful part Panel about 720 Detached house (4 bed rooms) with half an acre garden Mild climate

SOUTH OF ENGLAND —(15) PARTNER required in very sound old established Practice in Seaport Town Panel under 3 000 Share worth £700 to £800 at two years purchase Partner must be keen and energetic and not much over 30

YORK (near) —(16) Unopposed Country PRACTICE, between £700 and £800 p a (£240 of which is panel), in picturesque growing Village Model detached house with garden garage electric light bath (h & c) etc for sale Premium one and a half years purchase

INLAND HEALTH RESORT SOUTH —(17) Well-established PRACTICE £1 800 including panel 2,000 House (7 or 8 bedrooms) price £700 Premium for practice £2 400

LONDON —(18) Exceptional opportunity for gentleman, with experience to acquire SHARE (with succession) in high class Heart Practice Capital required about £2 000 now, and £3 000 later

LONDON, S E —(19) PARTNERSHIP in old established middle and working class Practice over £2 000 in pleasant outlying Suburban Dist Panel about 2 000 Small house Rent £30 Prem one third share £1 100

LONDON, S W — (20) Well-established PRACTICE of £600 to £700 p a in favourite Residential Suburb Panel 290 Not much midwifery Excellent detached house (6 bedrooms) with good garden, for Sale Ample scope Premium one and a half years purchase

EAST ANGLIA —(21) Old-established unopposed Country PRACTICE averaging £3 845 p a in picturesque part easy distance of important Town Panel about 2 200 Good house (6 bedrooms) in grounds about 3 acres to be sold Considerable scope for increase Premium one and a half years purchase

YORKSHIRE (NORTH RIDING) —(22) PARTNERSHIP in old established Country Town Practice about £3 200 in first-class district Panel 1 100 Rent of house with large walled in garden £56 p a Three eighths share at first at two years purchase Cottage Hospital

WEST OF ENGLAND —(23) Well-established PRACTICE averaging £1 240 p a in important City Panel 1 100 Midwifery discouraged Specially built house (5 bed and dressing rooms) Practice part on mortgage Premium for Practice £1,800 to include Fittings

FAVOURITE HOME COUNTY —(24) PARTNERSHIP in well established Practice £2 300 p a, in charming and select Town Panel 1 000 Premium one half share two years purchase Cottage H

NORTH OF ENGLAND —(25) PRACTICE about £ with panel of nearly 1 000 in Health Resort. Very good situate house Rent £60

EAST ANGLIA —(26) PARTNERSHIP in middle working class Practice averaging about £2 200 p a in district near popular Seaside Resort Panel nearly 1 200 One third share at first at two years purchase

NORTH OF ENGLAND — (27) Old established PRACTICE of £1 460 p a in Industrial District Panel good house (5 bedrooms) in charming grounds two acres Practice house and grounds £4 000 Mortgage could be had on

SOUTH WALES —(28) Well established PRACTICE £1 250 p a in Country Town. Panel over 500 Fees 5s to £2 2s situated double fronted house (5 bedrooms) with large garden Rent Educational facilities Premium £1 500

EASTERN COUNTIES —(29) Old established PRACTICE £1 855 p a in pleasant Market Town Panel 1 100 No midwifery lent detached house (7 8 bedrooms) Very good garden Cottage H Premium one and a half years purchase

YORKSHIRE (WEST RIDING) —(30) PRACTICE over £1 500 p a, in thriving Industrial Town. Panel 1 000 Good house (5 bedrooms) Rent £80 Premium £2 250

SOMERSET —(31) Country PRACTICE £1,100 Panel 800 Good well appointed 12 roomed house with bathroom Garage Educational facilities Premium £1 100

SOUTH WALES —(32) Very old-established PRACTICE over £1 550, in beautifully situated Country Town Panel nearly Fine old mansion house with half acre garden, to be sold Good and sport Premium £2 250

WEST OF ENGLAND —(33) ASSISTANTSHIP with view to partnership in mixed practice of over £2 800 p a in Country Town Panel 800 One fourth or one third share at two years purchase Applicant should be keen on surgery Hospital in town

SOUTH OF ENGLAND [illegible] PARTNERSHIP in good class non panel practice of about country town Applicants should be [illegible] 30 and preferably F R C S Eng

FIRST-RATE RESIDENTIAL DISTRICT up the THAMES —(34) PARTNERSHIP in good-class Practice averaging £1 550 p a Not much Midwifery Good house, with garage to be Premium one half share £1,200 Scope for Surgery

WITHIN 50 miles of LONDON —(36) PRACTICE £1,000 in first rate Residential District Modern detached house (6 bedrooms) in grounds to be sold Excellent educational facilities Premium £2

SOUTH AFRICA (CAPE PROVINCE) —(37) PRACTICE about £1 000, in one of the wealthiest Pastoral Districts on Railway Ideal equable dry climate Very comfortable house to rent very cheap Premium £750 Vendor known to the Association

HOME COUNTY —(38) Well established and increasing mixed class PRACTICE over £1 000 in Residential D Panel about 400 Not much Midwifery Old fashioned detached bedroom) in good position Premium £1 500

MANCHESTER —(39) PARTNERSHIP in old established good class Practice over £4 500 in Residential District One fourth share would be sold for £2 115 with option to increase one half Partner should be about 35, and preferably M D or F R C S

SPECIAL OPHTHALMIC PRACTICE —(40) £1 400 in high class inland Health Resort. Operative and refused of late years Considerable scope for increase Premium £20

YORKSHIRE, WEST RIDING —(41) Well established middle and working class PRACTICE over £1 300 (£920 from and appts) in large clean town Good detached corner house Premium £1 300

EAST COAST —(42) Increasing PRACTICE over £ rapidly developing District Panel about 100 Nearest 4 miles Bungalow residence (5 rooms) Premium £750

EGYPT —(43) Well-established PRACTICE £700 to £ mainly among English Residents and Visitors Excellent residence (5 bedrooms) Premium to include Furniture £1,100

MIDLAND TOWN —(44) Old-established PRACTICE about £1 100 per annum in Residential Suburb Panel house and large garden Premium £1 500

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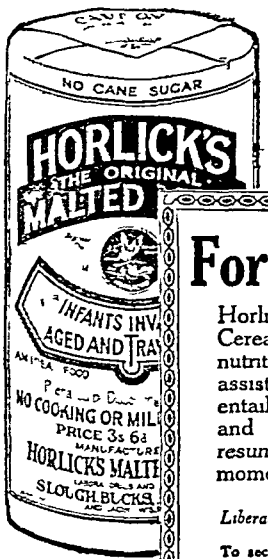
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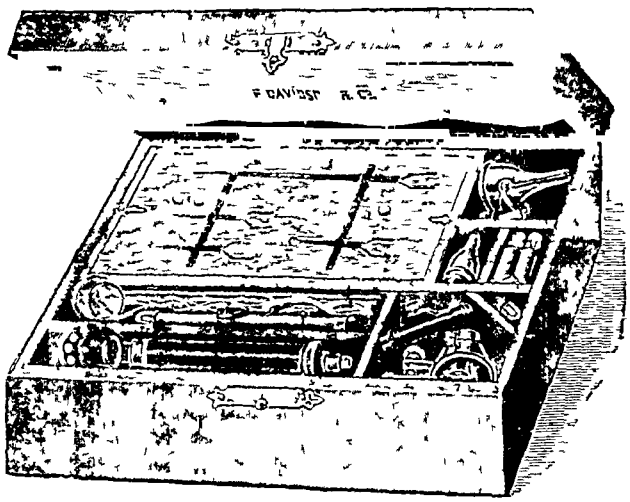
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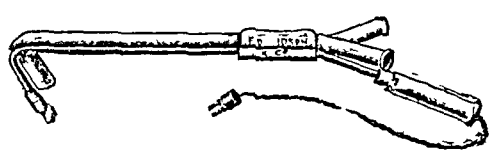
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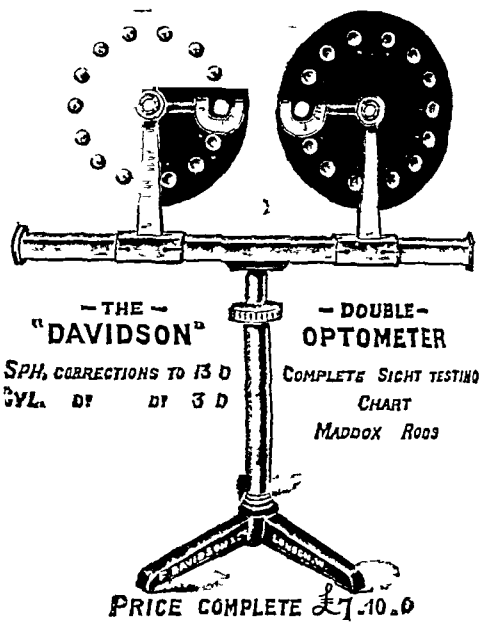
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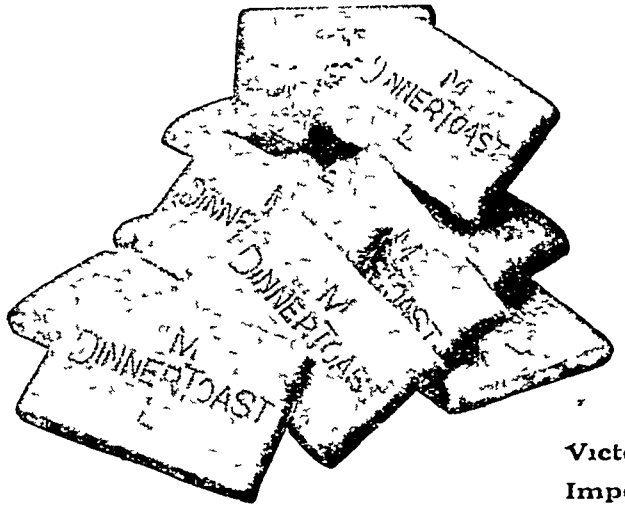
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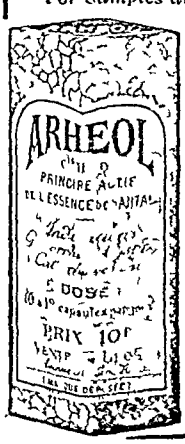
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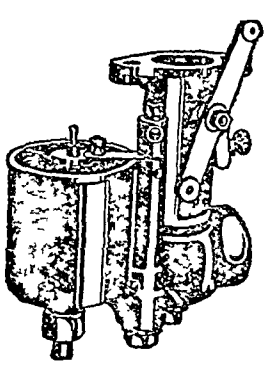
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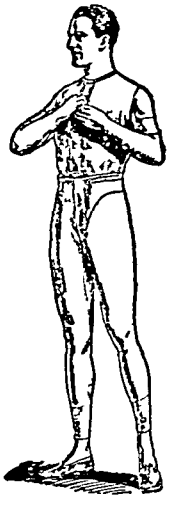
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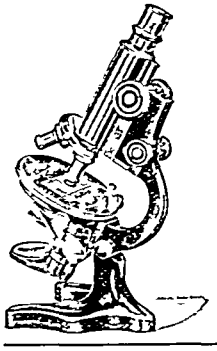
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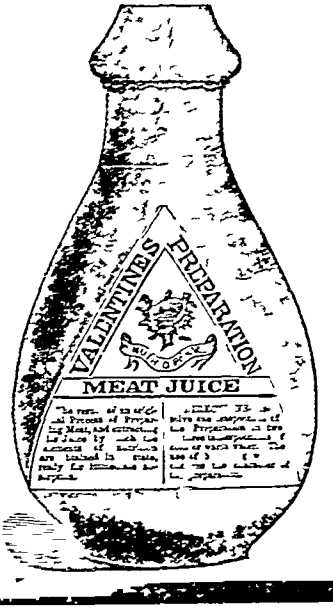
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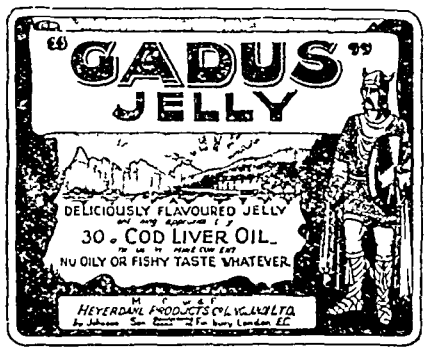
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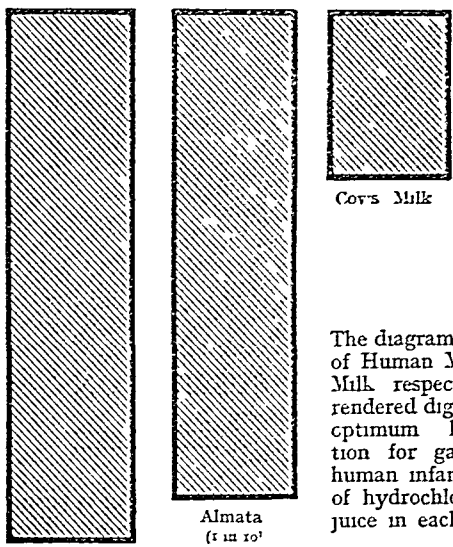
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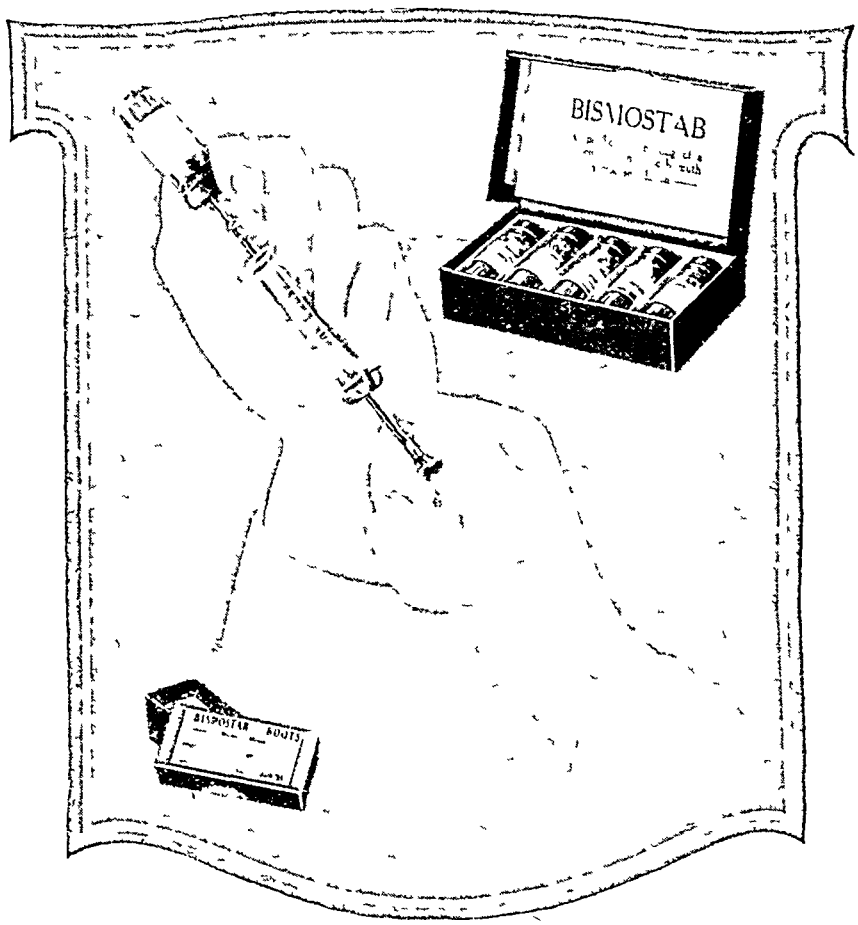
The diagram represents the amounts of Human Milk, Almata and Cows' Milk respectively which can be rendered digestible (brought to the optimum hydrogen-ion-concentration for gastric digestion in the human infant) by the same amount of hydrochloric acid of the gastric juice in each case

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Delicate in flavour *Efficient in use*

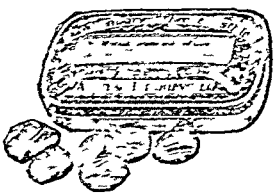
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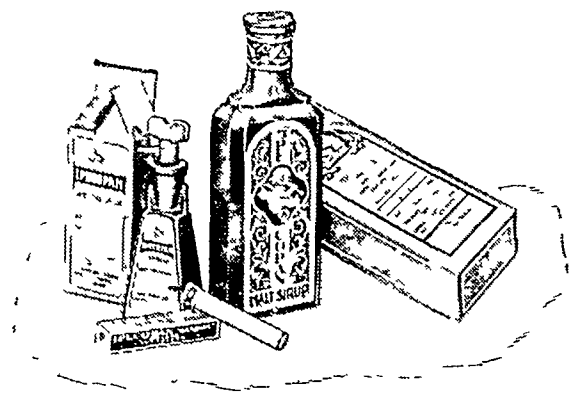
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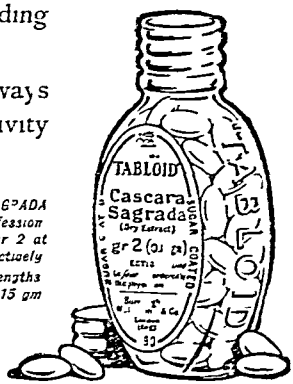
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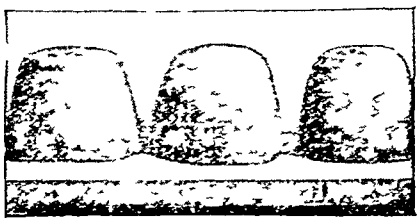
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An Address
ON
WET WINDS AND EARLY PHTHISIS

DELIVERED TO THE SOUTH-WESTERN BRANCH OF THE BRITISH MEDICAL ASSOCIATION
BY
WILLIAM GORDON, M.D., F.R.C.P.,
PHYSICIAN TO THE ROYAL DEVON AND EXETER HOSPITAL
PRESIDENT OF THE BRANCH

THE subject which I have chosen for my address is one which I hope will be considered appropriate. It has been closely associated with the south west, for its initial observation was made in Devonshire, and its subsequent development owes much to the able and generous help of Devon colleagues. At the present moment fresh figures compel fresh insistence upon it. Its importance now spreads far beyond the limits of its native county. I have tried in every way in this investigation to avoid mistake, and, above all, to escape the pitfall of bias in my own mind. What is more difficult to eliminate is bias in the minds of others.

To convey to you the full significance of the tables I am going to place before you, illustrating the influence of rain-bearing winds on the fate of early cases of phthisis, it is necessary very briefly to review the work which has led up to them.

The Initial Observation

Twenty-five years ago, in the autumn of 1899, I compared the phthisis death-rates of the rural sanitary districts of Devon in the hope of discovering the best site for a phthisis sanatorium, and found, to my great astonishment, that the localities then accounted ideal, sheltered from north and east winds but open to the south and west, were precisely those in which the mortality from phthisis was highest. I tried to explain this distribution of the death-rate by reference to general sanitation to geology and to rainfall and failed. Nothing except exposure to west and south-west winds seemed to offer a satisfactory explanation. But this explanation was so contrary to the time-honoured teaching of the day that nothing but a searching test could have convinced me of its validity.

The First Test

This test was as follows. I chose four separate rural sanitary districts in different parts of the county, with an aggregate population of over 85,000 persons, and examined the phthisis death-rates in their parishes (the small areas of parishes allowing of fair comparison of relative shelter and exposure), and in every one of these districts the correspondence between relative exposure to west and south-west winds and relatively high phthisis mortality was found strikingly apparent. These figures were read to a meeting of the Royal Medical and Chirurgical Society in 1900.

The Second Test

After it had been urged (rightly) that *female* death-rates would furnish safer conclusions than mixed death-rates, and (wrongly) that wind from any quarter might be equally hurtful, I took for investigation Okehampton Rural District in the centre of Devon, presenting specially marked contrasts of exposure and shelter in respect of all winds except the south (which practically does not reach it), and constructed from it not merely tables but, to make the test severer, maps both of the female parish phthisis death-rates and of the relative parish exposures *in respect of south-west, west, north-west, north, north-east, east, and south-east winds*. In this undertaking I had the invaluable help of my friend Dr. J. H. Young, the medical officer of health for the district. The maps display even more strikingly the relation between these winds and the phthisis death-rates; the correspondence is remarkable. In this investigation there came out a definite though slighter effect of north-west wind upon the death-rates. Therefore in all subsequent work, this third clear rain-bearing wind of Devon, has also been taken into account.

The Third Test

It was now objected (unreasonably in view of other accepted work) that ten years was too short a period on which to found conclusions. So another specially suitable area, as regards contrasts of shelter and exposure, consisting of twenty-three parishes of the Exmoor part of Barnstaple Rural District, was examined over a period of forty-five years. In this work I have to thank my friend Dr. J. R. Harper, the district medical officer of health, for his invaluable help. Here once more the same law came plainly into view. Not only was the effect of exposure to north-west, west, and south-west winds upon female phthisis mortality evident for the whole period of forty-five years, but it was evident for every one of the nine successive five-yearly periods except the first. Further, during the twenty years 1885 to 1904, in which Koch's discovery of the tubercle bacillus must be held to have made the diagnosis more certain, the contrast in the death-rates between exposure and shelter became more marked, and in the decade 1890 to 1899 the death-rates presented a still more remarkable contrast. Finally, again to test even more severely the correspondence, maps were made showing the female phthisis death-rates between 1890 and 1899, and the relative parish exposures to south-west, west, and north-west winds. Again the correspondence was very striking.

These two last series of comparisons—namely, those in the rural districts of Barnstaple and Okehampton—have been the subject of the first independent inquiry into the correctness of my figures. Dr. John Brownlee in his able report to the Medical Research Council on the epidemiology of phthisis in Great Britain and Ireland (Part 3, 1920), re-examined the death-rates in the parishes of these two districts over a different series of years from mine, using a different method, and concluded that "it therefore appears probable that in these districts exposure to the south-west winds is associated quite definitely with an increased susceptibility to phthisis", adding "I think it must be admitted that Dr. Gordon has made out a very good case for further extensive detailed inquiry, and that he must be congratulated on the work which he has done". I need scarcely say that I only quote these remarks in full in order to make clear the extent of Dr. Brownlee's agreement. The subject is far too grave for egotistical triviality. It is noteworthy that, till a few weeks ago, this has been the only serious attempt made to verify my work.

The Fourth Test

One of the objections raised to my conclusions (if indeed erroneous explanation can be counted a objection) was that these winds only acted indirectly by compelling the closure of all doors and windows against them. Was it all doors and windows were only on the western sides of the house? So another investigation was devised. It it could be shown in a town, that the streets whose roadways were swept by these winds suffered most from phthisis, that would be some evidence that the effect is a *direct one on the people living* in those streets, since they must be regarded as the chief users of them and windows and doors need not be generally closed against wind which only blows past them. A report issued by the sanitary authority of Exeter afforded the opportunity of investigating this point.

It was then found that not only had the street of Exeter whose roadways were swept by the westerly winds about twice the female phthisis death-rate of the one which roadways were sheltered but that when the streets on different soils were separately considered the same contrast came out, the ratio being rather less than 2 to 1 on clay, rather more than 2 to 1 on sandstone, and more than 3 to 1 on gravel. Further, when the streets were divided into four classes according to their differing rateable values, in every class a ratio of about 2 to 1 was maintained. Lastly, when specially exposed roadways were compared with specially sheltered roadways (differences of soil being eliminated by only considering streets on clay, containing the most populous), the ratio for a second was 3 to 1

A World-wide Investigation

These four tests convinced me that, in Devonshire, populations exposed to prevalent strong rain-bearing winds suffer more from phthisis than populations sheltered from them. The next step was to see if the same law could be traced elsewhere. Now here it is necessary to say that the vast bulk of the available material abroad was not sufficiently reliable to support positive conclusions. But my search through many parts of the world was rather for *contradiction* than for confirmation of my other results. Such contradiction might have been very useful, I thought, in indicating fallacies undiscovered in Devonshire. *But there were actually no contradictions.* From every available part of the world confirmation came. As an interesting item I may mention that from the Sandwich Islands, which Hann says afford the finest example of a contrast between a wet and windy side and a dry and wind-sheltered side, Dr. Grace wrote to me that, in respect of phthisis, "the fact that the windward side is the bad side is well recognized here."

Bovine Tuberculosis

But the effect of these winds on tubercle is not confined to human phthisis. In 1910 Professor Delepine of Manchester read a valuable paper on the distribution of bovine tuberculosis amongst the farms supplying Manchester with milk. 1,524 farms, scattered over 5,000 square miles, were investigated and mapped, and these maps made possible an inquiry into the effect of westerly winds on bovine tubercle. Exactly the same relation became obvious, and when only evidently fully exposed farms were compared with evidently fully sheltered farms, the exposed were found to have about four times as much tuberculosis amongst the cattle as the sheltered.

So much for the influence of these winds on the incidence of phthisis. Now for their effect upon the fate of those who have contracted the disease.

Effect on Phthisis Patients

It might be reasonably surmised that the effect of these winds on phthisis patients would not be favourable. All the great phthisis health resorts which have been conspicuously successful have been situated in pronounced shelter from prevalent strong rain-bearing winds, and the comparative failure of English sanatoriums may be explained by the blind placing of them, on German advice, in all sorts of unsuitable conditions, too commonly in westerly wind exposed localities. But surmise is not enough. The matter is too serious.

Duration of Cases

Dr. Harper's figures afforded me in 1912 the opportunity of investigating the stated "durations" of female cases in shelter and exposure. He was good enough to have the recorded durations attached to his cases, and I divided these into three categories—namely, "long cases," lasting fifteen months or more, 'medium cases," lasting between ten and fourteen months, and "short cases," lasting nine months or less. The result was so suggestive that I proceeded at once to treat two other quite different areas similarly. Dr. Young kindly obtained the durations of the cases in the parishes of Okehampton district. Here I classified the durations somewhat differently. Then I examined the durations in the parishes about Budleigh Salterton, and obtained similar results.

All these three areas showed the same effect of the winds. In all three the exposed parishes had a higher proportion of "short cases" and a lower proportion of "long cases" than the sheltered parishes. It might have been objected that recorded durations of cases cannot be fully relied on. But to this it may be replied that it is very unlikely that the errors supposed would by mere chance tell in the same direction in the records from all three areas, also that there is, after all, no real ground for assuming the presence of such errors as would invalidate the results. Now, however, we can proceed to a much more incontrovertible mode of inquiry.

Effects on Early Cases

Thanks to the recent tuberculosis regulations, it is now easy to mark on the map the exact location of the dwellings of phthisis patients, and to follow their fortunes through a sufficient number of years. For the application of the new method which I am about to describe I am indebted to the great kindness of my friends, Dr. Adkins, medical officer of health for the County of Devon, and the tuberculosis officers for the county.

Method of the Following Inquiries

Let me explain precisely the plan on which we have proceeded. Lists were first drawn up of *early (Grade 1) cases of phthisis which had passed through a sanatorium* (in practically all cases Hawkmoor Sanatorium) *and had been observed individually for four years afterwards.* These cases have been classified as "male" and "female," "with tubercle bacilli found," and "without tubercle bacilli found", and at the end of four years as "dead," "arrested," and "living"—that is, not arrested. The exact position of the dwelling in each case during the four years has been marked by a dot on a Bartholomew's reduced survey coloured contour map (the well known touring map), and to each dot has been attached signs showing the class to which the case belongs, as well as its exposure to or shelter from all winds between N N W and S S W. The signs used have been M = male, F = female, + = tubercle bacilli present, − = tubercle bacilli not found, *D* = dead, A = arrested, L = living but not arrested, S = sheltered from all westerly winds, X = exposed to any or all of these winds.

As regards "shelter" and "exposure," I have found in long practice that 100 ft. of altitude shelters half a mile to the leeward of it well, and a further half mile faintly. Beyond a mile from the 100 ft. its shelter must be regarded as ceasing, and dwellings situated further off will be exposed. I am sure that the only satisfactory method of assessing "shelter" and "exposure" is by measurement on the map. No other method can be checked by outsiders. No other method is so free from fallacy. It is, moreover, the method which I have hitherto used in my work. Lastly, it makes an inquiry possible which would be utterly impossible to undertake by local investigation of sites.

In dealing with these new figures I think it may be prudent to lay most stress on the female cases, which have formed the basis of all my former work in Devon. For we know that the occupations of the women are more uniform than those of the men, and (what is even more important in this inquiry) these occupations keep the women mostly in the immediate vicinity of their dwellings, whereas those of the men not uncommonly take them into quite different localities.

Grade 1 Sanatorium Cases in Devon

The first figures which I shall show you are those from East Devon and from North Devon. The assessment of cases in South Devon has presented exceptional difficulty as regards shelter and exposure, and Dr. Ward has preferred to withdraw them for the present. The figures for East Devon were assessed jointly by Dr. Galbraith and myself. Those for North Devon were mostly assessed by Dr. Swan, my only notable interference being to insert two arrests in exposure, which we had overlooked—an interference by no means in the interests of what might be supposed to be my expectations.

TABLE I.—*East Devon*

Sanatorium Cases. First Stage. Four Years Observation.

	Exposed	Sheltered		Exposed	Sheltered
Dead			*Mortalities*		
Males	9 (7)	0	Males	56%	0
Females	3 (1)	2 (2)	Females	33%	7%
			All cases	48%	4%
Arrested			All T B cases	72%	13%
Males	0	7			
Females	3	22 (1)	*Arrests*		
			Males	0	29%
Living			Females	33%	81%
Males	7 (2)	17 (2)	All cases	12%	57%
Females	3 (1)	3 (1)	All T B cases	0	15%

TABLE II.—*North Devon*

Sanatorium Cases: First Stage. Four Years' Observation.

	Exposed.	Sheltered.		Exposed.	Sheltered.
Dead.			*Mortalities.*		
Males	11 (9)	0	Males	50%	0
Females	4 (2)	0	Females	30%	0
			All cases	44%	0
Arrested.			All T B cases	52%	0
Males	3 (2)	7 (2)			
Females	3 (2)	3 (1)	*Arrests.*		
			Males	14%	70%
Living.			Females	43%	60%
Males	7 (4)	3 (1)	All cases	17%	66%
Females	6 (2)	2	All T B cases	19%	50%

INDEPENDENT INQUIRIES

Grade 1 Sanatorium Cases in Other Counties

1 *West Shropshire.*—From Shropshire I have just received the results of the first independent inquiry made on these lines. Dr Watkin, one of the county of Shropshire tuberculosis officers, has most kindly investigated the West Shropshire area, as being the area affording the greatest contrasts in that county between shelter and exposure. It will be seen that his figures (Table III) fully confirm those which we have obtained in this county. Although, as he points out, the numbers of cases are small, I would emphasize the importance of this entirely independent confirmation.

TABLE III.—*West Shropshire*

Sanatorium Cases. First Stage. Four Years' Observation.

	Exposed.	Sheltered.		Exposed.	Sheltered.
Dead.			*Mortalities.*		
Males	9 (7)	1 (1)	Males	31%	8%
Females	7 (5)	1 (1)	Females	29%	14%
			All cases	30%	10.5%
Arrested.			All T B cases	54%	25%
Males	9 (1)	5 (1)			
Females	8 (1)	4	*Arrests.*		
			Males	31%	41%
Living.			Females	33%	57%
Males	11 (6)	6 (4)	All cases	32%	47%
Females	9 (2)	2 (1)	All T B cases	9%	12%

2 *Derbyshire.*—In Derbyshire it has been impossible to carry out the method in its entirety, but the medical superintendent of the county sanatorium has most kindly sent me the results of two years' observation of Grade 1 patients, dividing the county into three districts, distinguished by differences in their rainfall. Now rainfall *per se* has practically no effect on phthisis mortality. And a glance at the maps, which Dr Barwise, the medical officer of health for Derbyshire, has very kindly sent me, shows that the north-west area is pre-eminently the most exposed to wet winds. The table of mortalities is here again most instructive.

TABLE IV.—*County of Derby*

Sanatorium Cases. Male and Female. First Stage. Two Years' Observation. Discharged 1920. Condition 1922.

District.	Dead.	Arrested.	Living.	(Untraced.)
A *North-west District* (40-50 in. rain)				
Tubercle bacilli +	1	11	6	(9)
Tubercle bacilli −	1	10	3	(7)
B *Middle District* (30-40 in. rain)				
Tubercle bacilli +	0	3	0	(2)
Tubercle bacilli −	0	16	4	(7)
C *South-east District* (under 30 in. rain)				
Tubercle bacilli +	0	12	2	(10)
Tubercle bacilli −	0	40	13	(22)

Mortality of (all) Traced Cases (taking T B + and T B − together).—District A 6 per cent. District B 0. District C 0. Mortality of T B + cases in District A = 5 per cent.

I hope to receive later on the results from other counties which have also been good enough to undertake similar investigations.

PRINCIPLE OF "APPROXIMATE ISOLATION OF INFLUENCES"

In all further investigation of this subject I am sure it is essential to bear in mind the principle I have ventured to lay down, of the "approximate isolation of influences." Until Koch devised a means for the isolation of micro-organisms no precise work on bacteriology was possible. That was a complete isolation. The isolation of influences in climatology can only be approximate. But the additional precision given to results by such approximate isolation will be instantly realized by anyone who carries it out. By such approximate isolation I mean not merely the happy-go-lucky elimination of this or that influence in the investigation of a third, but the systematic enumeration of all the known influences which seem to affect the field of inquiry, besides the influence in question, and their successive elimination from the problem in one way or another, so far as that is possible. The process naturally is neither easy nor short. For illustrations of its use I must refer you to my former publications.

SOME MISAPPREHENSIONS

There are some misapprehensions still needing notice, because still causing confusion.

First, there are some people who imagine that my work in England concerns only the south-west wind. It concerns all westerly winds, which in England are the prevalent, strong, rain-bearing winds. In other parts of the world other winds are concerned. In Mid-Europe the predominant wet wind is the north-west. In South Europe the south-east has also to be taken into account. In all Europe, however, west and south-west winds must be always considered. In Japan the north-west is the main wet wind. In the tropics there are the Trades, which are easterly. *Everywhere the formula to remember is "prevalent, strong, rain-bearing wind."*

Again, Dr Haviland's work is still confused with mine. To Haviland is unquestionably due the credit of first perceiving that "wind" affects phthisis. But, so far from being a "follower of Haviland," I was fortunately quite unaware of his work until I found the fact on which I lay such stress. Haviland's statements were quite different from mine, and had I been familiar with them, it is not unlikely that I should have missed my point, as he did. Naturally when my own work brought me to hear of his I acquainted myself with it. The point I here insist on is not the always slightly absurd point of personal priority, but the vitally essential point of *difference*.

CONCLUSION

We have thus before us, ladies and gentlemen, a mass of diverse evidence, all clearly pointing to one and the same thing—a profound influence exerted upon phthisis by prevalent, strong, rain-bearing winds, affecting both its incidence and its course.

In respect of incidence no mere climatic factor has so powerful an effect (a fact whose further proofs would take too long to relate this afternoon) and amongst social factors only occupation equals it in importance. We may safely say that the chance of becoming phthisical is *at least twice as great in exposure to these winds as it is in shelter from them.*

As regards course, it may be fairly said that the chance of recovery is *at least twice as great in shelter from these winds as it is in exposure to them*, and that therefore *there is no detail of treatment more vitally important to the patient than the placing of him in effective shelter.*

In closing I would thank most cordially the Devonshire friends already named who have done so much with their encouragement and co-operation to make this story possible, also outside Devon Dr F. J. H. Coutts, senior medical officer to the Ministry of Health; Dr J. Wheatley, medical officer of health for Shropshire; and Dr S. Barwise, medical officer of health for Derbyshire, for the valued interest and assistance also Dr A. C. Watkin of the great trouble he has taken in West Shropshire to procure us his independent results and the medical superintendent of the Derbyshire Sanatorium for the figures he has sent me in spite of much pressure of work. To Dr John Brownlee, Director of Studies to the National Medical Research Committee, I would also express my deep indebtedness the subject owes much of his initiative and staff

The Bradshaw Lecture
ON THE
PREVENTION OF ACUTE RHEUMATISM.

DELIVERED AT THE ROYAL COLLEGE OF PHYSICIANS, LONDON, NOVEMBER 4TH, 1924,
BY
F JOHN POYNTON, M D, F R C P LOND,
PHYSICIAN TO UNIVERSITY COLLEGE HOSPITAL AND THE HOSPITAL FOR SICK CHILDREN, GREAT ORMOND STREET

THE prevention of acute rheumatism is faced with many difficulties, and I think the more closely it is studied the more apparent these become

1 The first of these difficulties is nomenclature, for acute rheumatism may be the most insidious of maladies Yet if we leave out "acute" and use the term "rheumatism" we are at once overwhelmed by the various disorders with which we are confronted, and if we abandon the term "rheumatism" altogether we shall have great difficulty in finding a substitute It is when the prevention of acute rheumatism is entertained upon a great scale that this weakness in the nomenclature becomes of practical importance

2 The next difficulty is concerned with the etiology of acute rheumatism considered as an infective disease This view of the causation has a most important bearing upon the possibilities of prevention, but is at present in a state of uncertainty When, in 1898, I first became associated with my faithful and valuable colleague Dr Alexander Paine, Dr Cheadle had already enunciated the clinical reasons for suspecting that acute rheumatism was due to some infective process At the moment the whole question is being reinvestigated, and I believe I shall not be wrong if I put the present position somewhat thus that many of those who have given the most attention to the subject recognize the importance of the strepto-diplococcus, but do not think that it affords a complete explanation of the etiology, and would look elsewhere for this—to some filter-passer, for example Neither do I look upon this micrococcus as a complete explanation, but I do not anticipate the discovery of another infective agent I look for help from the unravelling of the tangled skein of the secondary factors which combine with the micrococcus to produce this specific disease Until the solution is revealed I feel, with the utmost respect for my able opponents, that I have caught something of the spirit which inspired Giordano Bruno to reply to the sentence of his inquisitors "Majori forsitan cum timore in me sententiam dicitis quam ego accipiam"

3 In any case, even if we admit that acute rheumatism is due to a specific infection, we find ourselves confronted by further problems, among which are the many factors predisposing to the infection—such as heredity, environment, and nerve strain

4 Again, our conception of the disease is still deficient in two particular directions we have very little accurate knowledge either of the life-history of such an infection when once it has gained access to the human frame, or of the influence of the tissue characteristics and habits of the patient upon its course On this account I have always connected with any scheme for the prevention of acute rheumatism the provision in such for opportunities for research

5 The varied symptoms of the disease dependent upon the various important organs attacked constitute yet another difficulty, though one which must steadily diminish with increasing knowledge, and which will be met by careful medical instruction and by the gradual education of the public

6 Then there is the difficulty of treating this disease with success, and upon this point, so far as children are concerned, I unfortunately find myself at variance with many able physicians Except for the relief of pain, my experience as to sodium salicylate and other members of that group has been so unsatisfactory that I have no hesitation in stating that in the most formidable cases of carditis in the young my best results have been obtained without their use Until, then, some new remedy is discovered or some additional assistance to these drugs I feel that we have little direct control over the course of acute rheumatism

Reasons for Attempting Prevention

It may be asked whether it is not premature, in the face of so many difficulties, to enter upon elaborate attempts at prevention, but to this I believe we may safely answer "No," and for these reasons It is generally admitted that acute rheumatism is a cause of three disorders of national importance first and foremost, organic heart disease, secondly, chorea, and thirdly, arthritis and fibrositis It is not a rare disease but a frequent one, and the heart lesions, chorea, and arthritis are common manifestations It is much more rife in the poorer classes, and this can only mean that hidden in the complex problem of poverty are some of the important factors in the determination of the incidence of the disease, and the study of poverty with a view to its amelioration is undoubtedly a function of a civilized country Again, it is a disease which certainly responds to careful supervision and treatment, and there are at the present time flaws in our supervision capable of at least considerable mending Lastly, it is not a disease of the old and failing, which would be, I admit, a sufficient evil, but it is one that kills and maims children and young adults, damages useful citizenship, and wastes much money spent on education This is well illustrated in an inquiry by Dr H A Chadwick into the nature of 140 fatal cases of acquired heart disease in children all under 12 years of age In 89 the heart disease was rheumatic, whereas the next in order of frequency, the pneumococcic, numbered only 27

A recent Blue Book on the subject of the "Incidence of rheumatic diseases" in its quiet pages supports all the statements I have just made This Blue Book I have heard criticized in a way which I can perhaps best express by likening it to one of those strange dishes which appear at intervals in schools, and which is supposed to contain the odd fragments left from many and various meals covered in, not by blue paper, but by a pie crust For my part I have no criticism to make, but look upon it as a document of first importance, for it brings home two essential truths The first, the great national importance of rheumatism The second, the formidable difficulties that confront us in dealing with the problem, for I am convinced that when efforts for the prevention of acute rheumatism are made upon a large scale, those concerned more closely with the aspect of investigation will certainly find themselves perplexed as to where the lines are to be clearly drawn between the various forms of "rheumatism" This Blue Book does great service in pointing out the morass of "rheumatism," and it remains for investigators to make paths through this sufficiently broad and safe to enable the medical profession and public to see how far attempts at prevention can be made sane and practical Any scheme to be successful must appeal to the public as well as the medical profession as a reasonable proposition

The Medical Practitioner

In the prevention of acute rheumatism it is clear that the doctor in general practice must, as in all the great problems of preventive medicine, take a prominent and essential part—not only in early diagnosis and treatment, but in the supervision of those who have suffered from the results of the disease To these further activities I will allude later on in this lecture, but it is not too much to say that if this branch of our profession failed us—which is not thinkable—the whole fabric of prevention would be unsound at its foundations The responsibility for adequate training in the clinical and pathological aspects of the disease rests with the great teaching centres To them we must look for rousing in the minds of future practitioners an enthusiasm for the great opportunities they would have for helping to make a success of a scheme which holds out such great possibilities

The Hospitals

Our hospitals, and in particular the children's hospitals and the children's departments in the general ones, would in any scheme hold, I presume, the same position they do now, in that they would receive the acute cases and any which required particular observation or investigation They would also carry out the training of the undergraduate students in the recognition of the disease and its manifestations, and the methods of prevention and immediate treatment The notes of the cases, which will often be concerned with first attacks, should clearly become of great value for future reference and of increasing importance in any large undertaking for prevention The out patient departments of hospitals would be mainly consultative They would in the poorer cases take the place of the general practitioner as supervisor, but their most essential functions would lie in deciding a difficult diagnosis, in admitting to the hospital, and advising doctors and patients as to the best procedures at the moment Experience shows me that it is not satisfactory to bring many of these delicate children by train, tram, and tube, to wait about in hospitals during the winter and early spring months The parents, too are placed in a difficult position, for they naturally cannot exactly judge whether such a child is fit to travel and yet fear to lose their appointment at the hospital A system, too, which converts a hospital physician into a human turnstile to aid hospital grants is intrinsically unsound

We are now met by a weak point in our management It is common knowledge that recovery from acute rheumatism is often slow, and that neither cardiac inflammation nor chorea is a condition suited to ordinary convalescent homes These children are notoriously unstable the rheumatic infection admittedly treacherous, and to group them with strong children recovering from surgical injuries a passing debility, or a rapid pneumonia, so unsatisfactory that physicians are well aware of the dangers The alternatives are to keep them in a sick ward in the middle of a great town, or to send them home

When hospitals fulfil the intentions of their philanthropic benefactors, in treating the children of the necessitous poor, many must be sent back to entirely wrong surroundings The weakness, then, in the present position is twofold we are not doing the best for our rheumatic patients and we are using beds in expensive institutions which are required for urgent or obscure cases

Recovery Hospitals

Each year it is becoming more evident that the great cities and London in particular require *recovery hospitals* in the adjacent country in vital touch with the mother hospitals Should public opinion in the future favour a step in this direction you will appreciate that two alternatives arise either such hospitals will be *special* and in this case devoted to the rheumatic, or be *general* with a special section for the rheumatic I favour the latter but would naturally accept the former as a step in advance of the present position

In an ideal hospital of this type the cases would have the necessary time for convalescence would, in the surrounding grounds be trained for physical exertion and eventually classified according to their ultimate degree of recovery and they would also—a point of great importance—continue their education The history of acute rheumatism would be continued as a sequel to the first hospital notes, and eventually the children returned to their parents with a short practical statement as to their capabilities

There would be one link in this chain which must require the most careful consideration for it is essential There must be an *intimate and vital connexion between the* parent and recovery hospital If the latter once drift into a second rate soulless abode for 'uninteresting cases" its value is lost and it becomes a monument of inefficiency This danger when once realized can certainly be prevented by organization if our profession so determine

Pioneer attempts have already been made in this country —as, for example, at the Edgar Lee Home (Stonebridge Park), Broadstairs at the Chiene Hospital, in Birmingham and at Bristol, and doubtless elsewhere The Invalid Children's Aid Association in particular has taken a prominent part in this movement and has recently started a home of fifty beds for females up to 14 years and males to 7 years of age at Hartfield in Sussex I have the honour to be one of the honorary visiting officers and though it is too soon to make a report on progress for we have not been through a winter I may remark that at present the results are encouraging The gains in weight, the absence of attacks of rheumatism, the improved physique, and happiness of the children who are continuing their education and living and sleeping practically in the open air, make me hopeful that we are entering upon a real advance in the treatment of rheumatic heart disease To those who have given their time and skill in these pioneer *efforts I feel deeply grateful*

Official Medical Supervision

Leaving now the part played by hospitals I come to the far reaching activities of the Ministry of Health Board of Education, and medical officers in the London County Council schools Hidden away in their not superficially attractive reports there are some of the most fascinating chapters in modern medicine, which leads me to confess that I have hardly done justice to my colleagues in these great departments—a lapse which I take this opportunity to correct

Infant Welfare

There is already, as you are well aware considerable medical supervision in this country During the first year of life we have the infant welfare centre from 5 to 14 years the school medical officers and from 16 years onwards the national insurance There are two breaks in complete continuity—one between the second and fifth years and the other between the fourteenth and sixteenth years The break between the second and fifth years—which in theory does not exist but in practice does—will doubtless eventually be bridged and already encroached upon on the one side by the infant welfare organization and on the other by the school authorities

I have given considerable time and attention to the subject of acute rheumatism under 5 years of age, and, though I am not implying that the disease is frequent then, I am sure that it occur more often than is generally suspected, and that it is liable in these early years to cause great damage to the heart Supervision between 2 and 5 years should eventually throw light on the earliest phases of the disease

School Medical Service

The period of school life is by far the most important in the history of acute rheumatism in this country The incidence of the disease rises rapidly after the fifth year to about the tenth, and chorea which I have seen as early as 9 months, and occasionally in the second year comes now to the front It follows that the school medical service must take an ever-increasing share in the problem of prevention This becomes apparent if we study a report of the chief medical officer devoted to heart disease and rheumatism in 1912 In this we are at once impressed by the vast number of children dealt with the importance or organic heart disease as a factor of ill health and by the frequency of acute rheumatism as its cause Already there the importance of prevention is realized as also the following two or cases the need for precaution on return to school and the possibilities of residential school

The appearance of chorea during the school age demand I think special attention I shall not delay with statistics showing that it is a rheumatic manifestation I have myself made four analyses each from a different source which convince me of the essential truth This manifestation is most interesting one for on account of the peculiar movements it becomes the most sensitive clinical index we have of active rheumatism it is also the manifestation which most frequently occur alone and has a most striking evidence Accordingly we find of the course of chorea gives as a very fair indication of the

general behaviour of acute rheumatism, thus we see acute attacks which terminate rapidly, and we see cases which linger on for some months and are continually recurring As many as six attacks may be recorded in a few years, and some children between attacks are never quite free from the effects and may be thought mentally deficient We recognize two elements—the infective and the nervous There is no doubt that nervous tissue is slow in recovering from its injury even after an active infection has been destroyed, but when we recall that repeated chorea is a frequent indication of an early mitral stenosis, we suspect that both these lesions are pre-eminently the result of the *smouldering activity* of infection

I see in chorea the danger of a great national system of education framed by adults for delicate, sensitive rheumatic children Do not suppose that I am hinting at harshness or cruelty on the part of the teachers—that I dismiss at once, but the process of education begins very young, and the routine is a strain upon constitutions of which we may truly say "the spirit indeed is willing, but the flesh is weak" The rheumatic child is bright and eager, but cannot last the course, for she is lacking in stamina Routine on the one hand and a constitution that requires frequent rests on the other must clash, and not infrequently does—for example, over scholarships I believe there is a gradual lowering in general vitality, and then the infection attacks first the nervous system, which is the most strained, and often also the heart and other organs

For my part, seeing the frequency of chorea in London children (9 per cent of the out-of-school children in 1923), I would not leave one stone unturned until either, on the one hand, I proved that the view I held was a bogy, and that other causes to account for its frequency must be discovered, or that, if it was mainly correct, steps were taken to analyse the exact nature of the educational strain

There is a passage in the report of the chief medical officer of the Board of Education which deserves particular attention It comes from a report in 1923 of the consultative committee on the differentiation of the curricula for boys and girls respectively in secondary schools This committee draws attention to the present danger to health connected with the strain of examinations and of accomplishments added to the boys' curricula, and they note the relatively heavy household duties devolving at this age on many girls I see in this passage light for the future and a sense of the reality of things, which cheers me almost as much as the sight of a flowering shrub upon the walls of one of those gaunt buildings with which we are so familiar

Early Adolescence

Still keeping our attention to the official side of the medical problems, we come now to the age of early adolescence—14 to 16 years—and to the time when the child leaves the supervision of the school medical officer and has the choice of occupation immediately ahead Everyone recognizes that this is a critical period in life, and it is unfortunate that just at this time there is a break in the continuity of official supervision The school medical officer is left and the national insurance has not begun I am not in a position, nor have I the time, to enter into details of the difficulties surrounding this gap, but will try to indicate the present position

The inspections of the school medical officer are concerned with three groups of children the "entrants" to the school, those between 7 and 8 years, and lastly, the "leavers" The leavers' examination may take place one or two years before leaving, and there is often available medical information extending over nine years of school life These histories are strictly confidential, but they are available for the use of juvenile employment bureaux, who are concerned with placing in employment children who leave at 14 years Again, in the case of children continuing their scholastic career in schools for higher education and children suffering from severe physical defects up to 16 years, the school medical service is available, but as you are aware the number of such children is very limited

Factory Surgeons

We come now to the factory surgeons, some of whom are school medical officers and all of whom are encouraged by Sir George Newman to co-operate closely with those officers These examine adolescents of 16 years entering factory life, and those under that age who enter employment, including certain specified workshops, which requires an earlier training When, however, we consider the problem of the London children we find many enter occupations which do not require a certificate of fitness This is a weak link in the chain, and perhaps the more apparent because some three years ago the gap between 14 and 16 years was practically closed by the day continuation schools The axe, however, fell, cutting through this slender neck, and the young head of the school medical period tumbled into the basket of economy

The report of the Departmental Committee issued this year shows, moreover, that the Factory Act has not proved satisfactory In 1920 it was found that nearly 8,000 individuals were rejected in the United Kingdom by the factory surgeons on medical grounds, and 576 of these for diseases of the heart and lungs This clearly points to some leakage in the period between leaving school and applying for factory employment We must bear in mind that this Act does not require co-operation between the school medical service and their reports and the local authorities and their reports on the one hand, and the factory surgeons on the other Valuable suggestions for strengthening this weak link have been made by the Committee, which from my point of view are also links in the prevention of acute rheumatism The phase of that problem which is mostly affected by such improvements will concern individuals who have already had attacks of rheumatism and have probably some damage to their heart, for, though first attacks occur between 14 and 16 years of age, it is the recurrences that are more frequent I should, perhaps, at this point say that I include in the prevention of acute rheumatism the sequelae, because I believe at present no *practical line* can be drawn between active infection *and improper strain* thrown upon a damaged organ In children, certainly, some active infection is usually the secret of most cardiac breakdowns

We see from this short outline of the official side of the medical problem that one of its most important duties is akin to that of the signalmen on our railway lines—at certain stages along the line of life these officials indicate danger and pull up the train The medical practitioners and hospitals clear the track and endeavour to prevent further breakdowns

Works' Doctors

There is another link, and one of increasing value, in the chain of prevention This is the appointment by many large industrial concerns of special medical officers, matrons, and nurses, to supervise the health of their staffs There cannot be any doubt that this link, forged though it may be on the anvil of strict business by the hammer of self-defence, must do great good, particularly when that service is fair seeing and kindly If we are to prevent acute rheumatism and minimize its dangers it is essential, especially for the young, that we should be able to come to their assistance quickly and not allow them to drift on until they are brought by grave illness to a standstill The very existence of such a medical service, in touch with capital on the one side and labour on the other, must eventually help greatly in the development of any scheme for prevention

The General Practitioners

As I have already stated, throughout early life the doctor in general practice is taking an unobtrusive yet important part in attending rheumatic children, but, as Dr Carey Coombs has suggested, they could offer more special assistance by the formation of voluntary groups in various districts around some great city In this way some point under investigation in the city hospital, such as the incidence of the disease in certain areas or the appearance of a local epidemic, would enable them to use their special knowledge and experience We must remember that limitations of time necessarily make the great store of clinical experience in this branch of our profession difficult to call upon, but this

suggestion by Dr Coombs would, I am sure, give them this opportunity and be most helpful in extending our accurate knowledge When the insurance age is reached, and indeed in every stage of life, the general practitioners who give time, opportunity, and interest to this particular subject can continue to furnish valuable data not to be otherwise obtained The British Medical Association, alive to the importance of the problem, which was brought before it in 1923 in a valuable discussion opened by Dr R Miller, has already taken steps to lend assistance in advancing our general knowledge

Increased Co operation

I must here make a short digression to touch upon a somewhat delicate subject, on account of which my remarks must be looked upon as an expression of a purely personal view

Taking a broad outlook there are three great medical forces in this country the hospitals, with a magnificent history of past and present work, but financially unstable, the Ministry of Health, young and powerful, with immense resources and advantages, and the general practitioners, with the all-important assets of experience of the dawn of disease and intimate acquaintance with their patients Each can take a most valuable part in the prevention of acute rheumatism, but greater results are to be expected if these forces can be drawn closer together Greater organization between them would, in my opinion, enhance the value of the school medical service, which appears to me often to be in the position of a doctor whose patient has been under a consultant's care and returned to him without a note of guidance Looking to the future for one of these forces I can only see one fate, and this is that the hospitals become the strong right arm of the Ministry of Health I use the word "strong" advisedly, for to be strong there must be wide liberty of thought and action, and not the suffocating growth of "officialism"

This digression is not intended to be controversial, but has, I think, a distinct bearing on the subject of this lecture For my part, I should like to see skilled officers, somewhat on the lines of our hospital medical registrars, but representatives of the Ministry of Health, linking up the cases and notes of the rheumatic patients in our hospitals with those of the school medical officers, and bringing to us hospital physicians the particular lines of thought and investigation under the consideration of the Ministry, and in turn keeping the latter in intimate touch with hospital activities In another direction also there are great possibilities and that is in the co-operation of hospitals and almoners with the Board of Education and their army of voluntary workers and the Child Care Committees The importance of this co-operation is, I believe, appreciated at some of our hospitals and should be of particular value, and these organizers, by bringing the activities of the hospitals into touch with the outer world of medical service, could widen the horizon of the student and indeed of all of us From the standpoint of the rheumatic children they would give great assistance in following up these cases when they leave the hospitals and keeping in closer touch with them At the Hospital for Sick Children already I have had valuable continuation histories and home details of my rheumatic cases supplied by this agency In the common aim at the prevention of acute rheumatism I see a good opportunity to bring the three great medical forces in this country closer together, and in this direction further possibilities for prevention

Environment

The influence of environment upon the incidence of acute rheumatism is one of the problems in prevention which appears to me particularly to need more extensive investigation This aspect is one which I always associate with the honoured name of Sir A Newsholme, who showed us the importance of urban life as a factor in causation My personal experience of this side of the problem is not an effectual one, because my activities have been confined to technical research and clinical study in hospitals but I have noticed these points Damp and cold houses and districts tend to make acute rheumatism drift into a chronic course, and it is my belief that a child returning from hospital after an attack, to such surroundings is certainly in great danger of chronic invalidism and likely to die in a few years Whether or not this is the entire explanation I am convinced that there are houses which are most injurious to such children, this is based on my knowledge of healthy families coming to such houses and several members developing acute rheumatism, which also recurred when they returned after convalescence I am also most suspicious of cold winds when there has been a spell of hot weather and much dust in the towns, this combination producing tonsillitis and increasing the incidence of acute rheumatism. The medical officers of health would have a prominent part in this investigation, and already to my knowledge they are taking the problem in hand, and the Care Committees should prove invaluable

Notification

Here the question arises as to notification, and it seems to me that a suggestion I have heard is worthy of consideration It is that a partial and temporary notification might be helpful General notification in the present state of our knowledge would probably lead only to great expense and confusion It might, however, be advisable to notify acute heart disease in childhood, or chorea, or obvious cases of acute rheumatism up to a certain age and for a limited time, and I understand that the medical officers of health would thereby be put in a stronger position Personally, I am not sure that notification is needful or for the best, and leave it as an open question

Contagion is an aspect which at present I should not care to be brought into prominence, believing that it does not take an important part in the history of acute rheumatism An epidemic of sore throat in a household predisposed to the disease might result in several members developing active symptoms, and I have met with cases in these circumstances sleeping in the same bed, one of whom developed cardiac rheumatism, the other chorea, but these are very exceptional events There are occasionally outbreaks in strictly limited areas, and in 1919-20 around and in London there was a distinct wave of increase of incidence This feature is one which certainly requires more study, but I think it would be premature to bring contagion to the fore in any public movement

Education of the Public

Two directions suggest themselves by which we can better instruct the public the first, by educational leaflets and lectures to bring home to parents, patients, teachers and labour employers the dangers of the disease, and the second, to assist them in choosing industrial occupations and in recognizing the limitations of employees who have been partially maimed by acute rheumatism

The Ministry of Health could, I believe, render a great service if it would publish a leaflet for the guidance of the public, setting out in simple terms the dangers of acute rheumatism, together with some simple instructions These could be sent to hospitals to medical services to great factories, and wherever from its special experience it would think helpful I have ventured myself to outline such a leaflet and I know it has been of some value, but this would be better done by those more experienced in the practical needs of the public In the other direction—the assistance of the public in the problem of employment—we require the best possible organization for providing information for the guidance of those who have rheumatic children to place in life Schedules of suitable employments should be easily obtainable, and there is no doubt that in the future the deeper study of employment in relation to acute rheumatism and cardiac disabilities will give us much useful information At present the school medical officers do valuable advisory work on these lines, but more can probably be done to gain the assistance and sympathy of employers It certainly should become increasingly difficult for such a case to occur as recently came under my care This was an undersized girl of 20 years with obvious mitral stenosis who was working as a bottle labeller, underground, often in wet clothes and lifting heavy cases As a result she was admitted with a complete cardiac breakdown from which she has never recovered

The Local Focus

The next point is the removal of local focal infection as a factor in prevention On June 7th, 1900, a man, age 28, came to St Mary's Hospital suffering from a sore throat The condition was one of acute tonsillitis and he had mitral and aortic disease, arthritis, and muscular pains There was a previous attack of rheumatic fever four years before Dr Paine, by plate culture, isolated a streptococcus morphologically and culturally indistinguishable from that we had isolated from the lesions of acute rheumatism Intravenous injections into a rabbit produced acute aortic and mitral endocarditis Fitz-Meyer, two years later, by extensive experiments supported these results, and later with Mr George Waugh we repeatedly verified the ability of this micrococcus obtained from unhealthy tonsils to produce cardiac and arthritic lesions without any previous injury to the valves This was the birth of the local focus in rheumatism

No one can be *more* convinced than I am that the rheumatic infection has one important site of entry into the system through diseased tonsils, and particularly those which resemble, in their deep recesses, culture tubes No one probably is *less* convinced than I that wholesale removal is indicated in the rheumatic child, or that the removal of the local focus shuts the door Nature is not so easily managed, and I have seen severe carditis in a first attack occurring some years after a complete enucleation Recent American statistics bear out this experience, for Ingerman and Wilson report that, of a series of cases in which tonsillectomy had been undertaken for rheumatic manifestations there occurred, in a period between one and eleven years after the operation, rheumatic relapses in 76 per cent I look upon the tonsils as an important barrier, but as no man is more dangerous than a clever man who has lost his capacity, so are badly damaged tonsils a constant source of danger Careful treatment of the throat, nasopharynx, and teeth in the prevention of acute rheumatism will be, in my opinion, a permanent factor More investigation is required to determine other local foci as equally definite

Research

That further research is essential to advance the prevention of acute rheumatism is generally admitted, and this must mean the assistance of expert investigators trained in the modern methods of bacteriology, serology, and biochemistry Opinions as to the best method for obtaining results will naturally differ, and I can but express my own views I think there should be some institution in which the study of "rheumatism" should be continued uninterruptedly, and in a centre such as London I would have this institution concerned with the entire problem of rheumatic affections, for it is my experience that in research one is liable, if following a particular line, to reach a dead end, some fact or some technical detail is lacking or the brain becomes wearied Then one needs to leave that line for a time and to work in other directions, returning later refreshed with new ideas or with new equipment The problem of "rheumatism" would always have open spaces, now there might be fresh light thrown on malignant endocarditis, now a discovery in the bacteriology of rheumatoid arthritis, or some chemical advance bearing upon fibrositis Thus the vitality of the research would be kept active

I am no believer in an easy path A keen intelligence even working on wrong lines will learn useful lessons and be the stronger, but one value in the establishment of a continuous research lies in the diminution of the likelihood that a young investigator would wander off the track for a long time If I may give one personal illustration—Dr Paine and I spent two years searching for a suspected bacillus and discarded the very micrococcus we eventually believed to be the causal agent of acute rheumatism Two years is a long time, and wiser heads might have given us a hint that would have put us right earlier in this vain search Such an institution could be organized for training investigators and putting them in touch with our great hospitals and infirmaries, and would have at hand an ample literature I admit the scheme is ambitious, but I am looking ahead and outlining what appears to me the rational steps to bring about a steady progress in our knowledge, remembering always the great wastage of money that present results from the ravages of rheumatism

Conclusion

I think that I have shown that we have in this country at least the skeleton of a valuable organization for the prevention of acute rheumatism Given the *will* to clothe this skeleton with living flesh, there seems to me to be great possibilities Dr Carey Coombs very wisely points out that any scheme must be evolved slowly, and I am in entire agreement with him It is my belief that the best results in most great endeavours are obtained by testing the strength and weakness of the materials already at hand rather than by wholesale revolution I have attempted to disclose weak points, and these can be cautiously strengthened No one would suppose that I should advocate filling the land with country hospitals, but *one* such connected with the children's hospitals in London would be an experiment justified by our knowledge of disease, and in this hospital acute rheumatism could form one section, and the results be carefully tested

Of this I am convinced, that Sir George Newman and his powerful staffs will continue on their side to develop our resources for prevention, and the hospital staffs and practitioners are prepared to take their parts It is for an enlightened public to consider whether they will help also, for it is for them and for their children that we are working If we are met by the answer that there is no money *for such* endeavours, then we can but improve to the *best of our* ability, and by mutual organization, our present resources, but the public should realize how many children and adults in this country are maimed by this disease, and should know our difficulties, our need for research, and the present limitations of our resources

In conclusion I would venture to repeat a prophecy I dared to give in 1913 in an address to the Invalid Children's Aid Association "That as surely as *I stood on* the platform the time would come when the care of *the* rheumatic child would attract much more attention in this country", and I would add now "in all civilized countries" I wish also in this lecture room, where the great name of Harvey has been so often glorified, to express my belief that the experimental production of organic heart affections by micrococci obtained from rheumatic carditis has opened up the road for a great advance in the treatment of cardiac disease and for the relief of much suffering, by leading our thoughts to the problem of the *prevention* of acute rheumatism

SPIROCHAETOSIS ICTEROHAEMORRHAGICA.

The Presence of the Causal Organism in Slime as a Source of an Outbreak in East Lothian

BY

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A preliminary note[1] recording the occurrence of this disease in Scotland was published in February, 1924 Since that time an extensive investigation has been in progress, and is still being continued

At present it is desired to give an account of one aspect of the inquiry which led to the discovery of leptospiral organisms in a natural habitat hitherto unrecorded This observation will no doubt be confirmed in other circumstances which are being investigated, but the existing conditions associated with the present finding alone may help to throw further light on the epidemiology of the disease, particularly in relation to its occurrence in certain coal mines

In 1914 Inada and Ido discovered the causal organism of Weil's disease They reported their discovery in a Japanese journal in 1915 An English communication by Inada *et al.*, Hoki, Kaneko, and Ito,[2] which summarized the publications

in the Japanese literature on this subject, appeared in 1916 The disease was found to prevail in epidemic and endemic form in certain parts of Japan In addition to the liability of butchers, cooks, and field workers to the disease in that country, they noted its frequency among coal miners working in that part of a mine inundated with water They also stated that 'the spirochaetae seem to live in water and mud, and to invade the human body from there" A later communication by Ido and his associates announced the finding of the specific organism in a certain proportion of rats caught on the surface and in infected pits

Since the discovery of the causal organism the disease has been more widely recognized, and infected rats have invariably been considered one of the chief sources of infection in man Toyama' later observed that the prevalence of Weil's disease was closely associated with conditions of the soil in Japan, and found that all infected districts were paddy fields and localities with swamps ground Other observers have reported the presence of leptospiral organisms in water and mud, but the direct relationship of such water leptospiras to Weil's disease was not definitely established by animal experiment

Nature and Result of the Investigation

In the infected area in Scotland a considerable percentage of rats and field mice was found to be infected with the pathogenic spirochaete, or leptospira (Noguchi) This fact having been established, the examination of surface and pit waters was indicated This has been done on an extensive scale

A personal visit to one of the infected coal mines was arranged by the county medical officer of health for East Lothian, Dr G A Richardson, who, by the kindness of the pit owner, received permission for an inspection in February of this year It so happened that the mine visited was inundated with water in certain parts and was known as a "wet" pit A large number of water samples was collected, by means of sterile glassware, from different sections of the mine These samples included specimens from new cuttings where the miners were working practically under water from recent workings which were very wet and from old sections which may be termed damp in comparison with the other parts It was in one of the old sections that the following observations were made which resulted in a finding of much significance

Compared with other branches of the mine there was little ground water no water was seen to drop from the roof but the whole tunnel was very damp Small stagnant muddy pools were present from which samples were collected Roof water was looked for in vain, but on holding a lamp close to the tunnel roof I noticed a slimy viscid substance, which formed a small thin layer only in certain areas At parts it was seen to form hanging drops, which as they increased in size would no doubt fall into water or on to the ground Other portions of the roof in the same section were merely damp with no slime, while in certain areas red sandstone drippings were present The viscid substance was certainly not plentiful, and even the small amount collected was found only after careful search

Wet films of the slime were first examined by dark-ground illumination, which revealed remarkable and varied forms of motile organisms, in addition to primitive forms of the vegetable kingdom Different types of spirochaetes were distinguished by their morphology and motility Only after prolonged examination were definite lepto spiral organisms found but they were few in number The difficulty in recognizing this delicate organism in such a viscid substance may be emphasized

To control the observation if possible, two guinea pigs were inoculated intraperitoneally with 2 c.cm of the glutinous material thinned by the addition of a little saline to permit of its passage through a syringe needle The result of these experiments was negative in both cases, no spirochetosis developed during one month' observation

A fresh sample of the roof slime from the same section of the mine was obtained at a later date Dark ground examination again showed the undoubted presence of typical leptospiras Two guinea pigs were again inoculated but on this occasion with 4 c.cm of the substance, as the failure to infect the first two was attributed to the scarcity of the lepto pira in the smaller amount injected Both animals died one on the eleventh the other on the third month day after inoculation They showed equally pronounced evidence of spirochetal jaundice Abundant leptospiral organisms were present in all the organs examined, and an appreciable number were also found in the blood and urine Notable features were the intensity of the jaundice the prominence of the widespread subcutaneous muscular, and internal haemorrhages the enlargement of the spleen, and the haemorrhage in the stomach in both animals In fact, the lesions appeared more pronounced than in guinea animal infected with the human or rat strains

It would appear, as far as can be ascertained from the relevant literature consulted that this is the first occasion on which the direct inoculation of a water lepto pira has proved pathogenic to guinea pigs This infected roof slime was found growing on slaty stone and wooden roof bar in absolute darkness It was greyish brown in colour, and translucent when free from carbon particles It formed a mass of considerable coherence and was not very readily detached from the stone roof The consistency approached that of a thick gum solution and resembled the semi solid culture medium of Noguchi used in growing lepto pira The temperature of the slime in the mine was 11 7° C in February It was slightly alkaline when tested with litmus paper and had a reaction of $pH=7.5$ approximately

As mentioned above, the lepto pira was recognized with difficulty in this substance teeming with other active life A few of them were much longer than those found in man the rat or in culture Other types of spirochaete were much more numerous particularly one species The characteristic motility of the lepto pira in contrast to that of the other spirochaetes present was striking and formed a feature which distinguished them from forms closely resembling the genus Most of the other spirochaetes on escaping from the slime were actively translatory and moved rapidly in a horizontal plane whereas the true leptospira remained in the field actively rotating for a second or two, then finally burrowed vertically into the viscid medium out of sight The lepto pira was found to exist in this semi solid medium symbiotically with algae, fungi, cocci, bacilli pirochaetes, flagellates, nematodes, and their ova This slimy substance was formed by organisms with a glutinous envelope which yielded a jelly like or zoogloea mass

The continued existence of the lepto pira and the other motile organisms was noted at different temperatures Some tubes of slime were kept at room temperature, and others in the ice chest for over five months Dark ground examination at the end of that time showed all the motile organisms, including lepto piras quite recognizable and unimpaired in their activities Animal inoculation were recently done to determine if the slime after keeping had maintained its infectivity The results are not yet ready for publication

It was previously noted that the slime was observed only in a very damp and old section of the mine its situation on the roof appeared inaccessible to rats I was informed by the pit manager that at the time of the outbreak of jaundice in May 1923 practically all the miners affected were working in a particular section This section was stated to have been the wettest part of the mine Of much significance becomes the fact that this particular section happened to be that branch of the mine in which the infected roof slime was found Eight miners developed symptoms of spirochaetal jaundice when employed in the mine in question Five of these were said to have fallen ill within a period of two weeks while working in this very wet cutting Rats were never considered numerous in the pit, and an expert rat-catcher failed to trap any underground for examination but caught one on the surface This rat was found to be infected with pathogenic leptospira

Discussion

It is highly probable that such lepto pira as were present in the mine may enter by various routes A fall of cutting into a new wet section exposing lime in the soil

above may be dislodged by the force of movement of the ground water escaping into the pit. Miners locally, therefore, may be more exposed to infection at that time. After the flow of inrushing ground water has diminished, the soil above is less likely to be disturbed. At a later period elements of slime in water, oozing from the soil, may settle and grow on the roof to form a nidus for the growth of the leptospira and other organisms. This slime may possibly drop on to the ground, into stagnant pools, and running pit water, from which sources man and rat alike, locally and at a distance, may conceivably become infected. It may be, however, that the pathogenic leptospira escaping from this rich natural organic medium into running water, or water with little organic matter, becomes attenuated after residence in the less favourable environment, as do the human and rat strains in culture medium. There will be a wider distribution of the organism in infected water than in the slime; therefore dosage may be an important factor in infection. Conditions in the mine which may possibly influence the pathogenicity of the leptospira are darkness, temperature, and depth. The temperature of the slime in the mine was 3° C. higher than that of pumped water in a cement surface pond. No cases of jaundice appeared to be associated with either the pond or in adjacent stream into which the pond water flowed. These waters both showed the presence of certain spirochaetes, but no leptospiras were found in the centrifugalized deposits. Animal experiments with these and other surface waters have so far given negative results.

The opinion stated above, that the absence of favourable and adequate organic matter in the water may be a factor in the attenuation of a pathogenic leptospira, receives support at the time of writing. In an English version of Toyama's work[5] just published it is recorded that a pathogenic strain actually became attenuated in experimental ponds with no soil, but preserved its virulence for a longer period in ponds with soil. Moreover, it is stated that "the spirochaete could preserve its poisonous nature two months in an imitation paddy field, which had entirely no self-cleaning function." The organic properties of the soil and water in which the leptospira may exist as a pathogen would therefore seem to be a factor in the preservation of its virulence. That the presence of the associated organisms in the slime and soil may lower the resistance of man and experimental animals, and so act as aggressins, requires consideration, as advised by Dr. P. P. Ludlow. A French writer inoculated large doses of impure cultures of a water leptospira into guinea-pigs with negative results.

Spirochaetes, now considered similar to the genus Leptospira by Noguchi, were observed in water by Wolbach and Binger[6] in 1914. They reported the isolation of a filtrable spirochaete from the shore of a fresh-water pond near Boston. Its pathogenicity for experimental animals was not tested. Several observers since then have recorded the occurrence of the same genus in water. Zuelzer,[7] in 1922, discovered in tap water spirochaetes which morphologically resembled those of Weil's disease. Direct inoculation of the naturally infected water into animals, however, did not give rise to any symptoms. One strain of a water leptospira proved pathogenic to guinea-pigs after cultivation in serum medium for one and a quarter years—that is, mutation from saprophyte to pathogen had apparently occurred. Stevenson (unpublished observation) found a leptospiral organism in London tap water, but no guinea-pig inoculations were carried out. Rats injected with the water gave negative results. Both fresh and salt water have been found by Noguchi[8] to contain leptospiras indistinguishable from those producing disease in man. The organisms did not prove to be pathogenic to guinea-pigs.

Small epidemics of spirochaetal jaundice occurred last autumn in Northern France, one of which was associated with the river Vesle, at Reims. A number of young people who bathed in the river contracted the disease. Etchegoin[9] examined the water and mud of the Vesle, and found a leptospiral organism which he considered had slightly wider elementary spirals than *Leptospira icterohaemorrhagiae*. The river water and mud, and massive doses of impure cultures of leptospira, were tested by animal inoculation, but did not produce spirochaetal jaundice.

It would thus seem that leptospiral organisms exist as saprophytes in certain waters and mud. The saprophyte and pathogenic forms are stated by most observers to be morphologically indistinguishable. Their close relationship in other directions has been demonstrated by Uhlenhuth and Zuelzer.[10] Mention of mutation from saprophyte to pathogen has already been made. Biological and immunological tests carried out by them support the view of the water origin of Weil's disease. On the other hand, Akira Shiga[11] recently recorded serological differences between certain water strains and *Leptospira icterohaemorrhagiae*. The latter is stated to thrive in the immune serums of the former, but not in its own immune serum. The two different races of water leptospira tested were likewise only affected by their homologous immune serum, both being uninfluenced by the immune serum of the pathogenic strain. They also proved the greater power of resistance of the water organisms to ultra-violet rays and other influences, but found no great difference in the behaviour of the saprophytic and pathogenic strains towards certain parasiticides.

It has not been possible so far to carry out comparative serological and certain other tests with the slime, rat, and human strains in the present investigation. The most important property of pathogenicity, however, has been proved by animal experiment to be common to the three strains. Natural habitats of the genus have been found in wet soil and in water. It remains to determine if varying natural environments alone can influence mutation from a pathogenic to a saprophytic type and vice versa, or if immutable species exist. The change from a virulent to an avirulent organism in altered natural conditions was suspected, and the view held finds confirmation in Toyama's work already quoted. No mention is made of a return of virulence on introducing the water attenuated leptospira into wet soil again. In the outbreak investigated by the writer it was observed that no cases were associated with the surface pond or stream, both of which received pumped water, presumably containing some leptospiras, from the infected pit. The pond was lined with cement, contained little soil, and the temperature was 8° C.—factors possibly favouring attenuation. The stream was said to receive boiling water from mines near its banks. On the other hand, the change from saprophyte to pathogen in natural conditions has not been determined. A water saprophyte, however, was reported by Uhlenhuth and Zuelzer to have acquired pathogenic properties in culture medium.

The localization of the disease has been generally recognized, in spite of the presence of leptospiral organisms in many waters and rats in districts where the disease has not occurred. Epidemics have invariably been associated with wet and badly drained broken ground, as in stanced by outbreaks among workers in rice fields and wet mines. During the war epidemics among soldiers were localized more or less to wet, ill drained trench. The disease has also occurred among workers in sewers. In such environments conditions no doubt exist for the development of slime similar to that found in the mine. This slime medium apparently affords an ideal nidus for the growth and aggregation of pathogenic leptospira. Apart from environment such as favourable wet soil and slime, the organism may become attenuated as mentioned above, which suggests a possible reason for the localization of the disease.

Swimming baths in the poorer quarters of Paris have been held responsible for recent outbreaks, and certain bathing pools in Germany have been incriminated. It may be that leptospiras, attenuated by sojourn in water, borne from soil, gain entrance to the ponds along with primitive vegetable elements capable of forming a zoogloea mass as a nidus. In this organic medium exaltation of virulence may possibly occur. One instance has been referred to in which a saprophytic water leptospira became pathogenic.

It is highly probable that rats inhabiting wet mines originally become infected from broken soil. They may acquire infection by feeding on slime in old disused tunnels blocked up with loose stones, as seen in the mine visited. One rat was actually observed to scamper into this ideal

hiding place These old damp inaccessible branches no doubt afford favourable situations for the collection of much slime the development of which will probably depend on the nature of the soil above One means of combating the rat source of infection may perhaps be accomplished by completely walling off such conceivable breeding grounds from the main roadway

Rats far distant from infected mines in East Lothian were also found to be infected with the leptospira but no cases of jaundice have been reported in the particular areas Fouleiton,[1] Balfour,[13] and Stevenson[14] recorded the presence of pathogenic leptospiras in rats from different counties in England where the disease was unknown Coles,[15] at Bournemouth, noted the existence of infected rats there but pathogenicity tests were not done The findings suggest that the leptospira is more ubiquitous in soil than at present suspected and that rats may harbour a food deficiency in infected slime in soil It may be also that they can acquire infection from water attenuated leptospiras which, by passage, become pathogenic to man in certain circumstances

Reasonable evidence for the assumption that rats become infected from slime soil, or water, and so act as secondary disseminators of the disease was found on examination of their urine In addition to the presence of leptospiras, similar spirochaetes to those found in the slime and certain waters were found in the urine of many rats by dark-ground illumination

Summary

The discovery of an unrecorded natural habitat of the causal organism of spirochaetal jaundice has been reported

The natural habitat was found in an infected coal mine, and consisted of root slime formed by organisms with a glutinous envelope which yielded a jelly like or zoogloea mass

Inoculation of the slime in guinea pigs produced pronounced and fatal spirochaetal jaundice

The viscid slime proved to be a favourable medium for the growth and continued life of the leptospira which lived symbiotically with many other species of organisms

The observation has established a possible source of infection underground, where the leptospira existed in a situation inaccessible to rats

I desire to thank the Committee of the Royal College of Physicians Laboratory for the facilities afforded me to carry out this research

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British Medical Association

PROCEEDINGS OF SECTIONS AT THE ANNUAL MEETING, BRADFORD, 1924

SECTION OF LARYNGOLOGY AND OTOLOGY

W Jobson Horne, M D, President

CEREBELLAR ABSCESS

BY

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During the period 1907 to 1923 (inclusive) 2 000 cases of acute purulent otitis media were seen at the Ear and Throat Department of the Royal Infirmary, Edinburgh, under the charge of Dr Logan Turner (1907 to 1921) or under my own charge (1921 to 1923) Among these cases 609 came to mastoid operation One patient had cerebellar abscess and three had abscess of the temporal lobe During the same period 6 492 cases of chronic middle ear suppuration were seen by Dr Logan Turner or myself, 1,205 radical or modified radical mastoid operations were performed, and among these 26 had cerebellar abscess and 27 abscess of the temporal lobe I am deeply indebted to Dr Logan Turner for his kindness in providing me with these statistics

During the years 1907 to 1923 I have performed 140 Schwartze operations and 725 radical or modified radical mastoid operations and have dealt with eight cerebellar and with ten temporal lobe abscesses Of the eight cerebellar cases, only one followed acute middle ear suppuration while the remaining seven resulted from chronic purulent otitis media (Neumann states that 85 per cent of cases are due to chronic suppurative otitis media) Four of these eight cases recovered and four died, six were males and two females (It is stated that males are affected twice as frequently as females) With one exception all cases were under 30 years of age The cerebellar abscess was on the right side in five cases and on the left in three (Or Milligan's twenty seven cases, twenty were on the left side Neumann gives the following figures left 304 right 284) Of the seven chronic cases two were due to scarlet fever and two to measles, in the other three the cause was not known

Route of Infection

1 *Labyrinthitis* —Of the seven chronic cases only two had labyrinth suppuration, and in these there was an extradural abscess deep in the posterior fossa in the region of the saccus endolymphaticus in both of these cases the sinus was healthy (Neumann, Milligan and others state that the majority of cases of cerebellar abscess are secondary to labyrinthitis, though Neumann's actual figure is 43 75 per cent)

2 *Perisinus Abscess, but no Sinus Thrombosis and no Labyrinthitis* —Two cases, one of these was the acute case

3 *Extradural Abscess in Posterior Fossa in Triangular Area, but no Sinus Thrombosis or Labyrinthitis* —One case

4 *Perisinus Abscess and Sinus Thrombosis but no Labyrinthitis* —Three cases

My experience is, therefore that cerebellar abscess is usually associated with extradural abscess in the posterior fossa, with or without sinus thrombosis Labyrinth suppuration was present in only two out of eight cases

Symptoms

We must remember the condition in which these patients are admitted to hospital As a rule they are extremely ill and in a drowsy or semi comatose condition so that it is practically impossible to put them through a complete third degree" examination in the way of functional tests of the cochlear and vestibular apparatus and of the nervous system In the majority of cases question were answered slowly but it was only noted in one instance on admission that the speech had a slurring character

(*a*) *General Symptoms*

In at least three of the seven chronic cases symptoms of an intracranial complication had been present for two or three weeks before the patient was sent into hospital Headache was present in all cases and in two was only occipital but also frontal one patient held his head with his hands (Okada considers fixed occipital pain the chief diagnostic symptom) In six of the seven cases headache noted apart from the headache in all vomiting was a prominent symptom. Drowsiness was marked in five of the seven chronic cases in the other two it was noted In three of the seven chronic cases slight rigors were present these symptoms may be probably due to the presence of an extradural pyrexia abscess or sinus thrombosis In three of the seven cases constipation was noted and the tongue was dry and furred Emaciation was marked in four of the seven chronic cases

Changes in the Optic Disc—Blurring of the margins of the disc was noted in three cases, and well marked optic neuritis in two. In these latter cases, however, the optic neuritis was not present on admission, but was *only found* after the abscess had been evacuated. Neumann has noted this and thinks it due to toxic influences.

Temperature—Here again we must remember that the *majority* of the cases were associated with abscess in the posterior fossa or even with a blood infection. Two of the chronic cases had purulent meningitis present on admission, in addition to extradural abscess and sinus thrombosis. In only two cases when the patient was first seen was the temperature of the typical subnormal type, with slow pulse. In the others both pulse rate and temperature were above normal.

(b) *Localizing Symptoms*

In only two of the seven chronic cases did the patient complain of giddiness or loss of balancing on admission.

Spontaneous nystagmus could not be tested in one case on account of the comatose condition of the patient, in another there was no spontaneous nystagmus before the first operation. Two patients had nystagmus to both sides, including the acute case. In the fifth case nystagmus was directed to the side of the lesion. In two other cases nystagmus was present to the sound side, and in one of them it was also noted on looking upwards. In the remaining case the nystagmus was at times directed to the diseased and at others to the sound side. From these facts we may say that spontaneous nystagmus is not necessarily present in cerebellar abscess, at least if the operation be performed within a short time of the patient's admission. If, however, a considerable period elapses *before operation*, nystagmus is almost sure to be found if repeated examinations are made. The nystagmus may be directed to the side of the lesion, or to the sound side, or to both. It is characteristic, however, that the direction of the nystagmus changes, and, further, that this sign may be *absent at one* time and present at another. According to Barany, there is no connexion between the direction of the nystagmus and the direction in which the patient tends to fall. Further, the direction of the fall is not influenced by *the position of* the patient's head or by the caloric test.

Tenderness on tapping over the cerebellar fossa on the affected side was noted in two cases (Davidson and Sharp). This sign was present in one-third of Neumann's cases. In four of the early cases the *pointing test was not carried out*; in two of the chronic cases there was no pointing error, but in the remaining two this sign was present on testing the movement of the shoulder-joint on the side of the cerebellar abscess. In both the upper extremity *deviated outwards on* the side of the abscess. Dysdiadokokinesis—lagging of the upper extremity on the side of the disease in the pronation and supination test—was noted in two of the cases, but it is not claimed that this test was invariably carried out, as some of the patients were operated upon before the introduction of this method of examination. The knee-jerks on the side of the cerebellar abscess were increased in at least three cases.

A difference in the strength of the grasp on the two sides does not appear to be of great importance, in two of the cases the grasp was stronger on the side opposite to the abscess, and in two it was weaker on this side. Neumann states that paresis on the affected side may be due to (1) pressure on the pyramidal tracts below the decussation, (2) a focal cerebellar symptom. The condition of the pupils does not appear to throw much light on the diagnosis of the cerebellar abscess and I will therefore omit it. Wilfred Trotter mentions skew deviation of the eyes as a transitory phenomenon, upwards and outwards on the side of the lesion and downwards and outwards on the other. Facial paresis on the ipsolateral side was noted in one case before operation. Two of the patients, when first seen in bed, were lying on their backs in a semi-comatose condition, in two others it was noted that the patient was lying curled up on the sound side. Neumann states that in cases with nystagmus to the affected side the patient lies on this side since this diminishes the vertigo. Further, Neumann states that the patient inclines his head to the affected side and may hold his head between his hands, this was observed in one of my cases.

Otoscopy—Sagging of the meatal wall was noted in three *of the seven chronic cases*, preventing a view of the drum-head. A polypus surrounded by pus was *present* in one instance, while in the remaining cases pus and cholesteatoma were noted. In the acute case pus was present. In six of the seven chronic cases there was mastoid tenderness, and in two of these there was also a subperiosteal abscess.

Operation

In only four of the eight cases was the diagnosis of cerebellar abscess sufficiently certain at the time of the first operation to enable me to proceed to the opening of the abscess. *In the remaining four cases* the collection of pus in the cerebellum was only evacuated at a second, or even at a third operation. This raises the question as to whether it is in the best interests of the patient to operate within a short period after admission. If the case is not a very urgent one it is probably better to delay for a day or two in order that a thorough otological, neurological, and ophthalmoscopic examination may be carried out. It is obvious that the chance of recovery of a patient suffering from cerebellar abscess is prejudiced by the performance of a mastoid operation associated with the use of the hammer and gouge, unless at the same time the collection of pus in the brain is evacuated. In this connexion we must remember that the *majority of the cases had other* intracranial complications apart from the question of labyrinthitis. If meningitis is present the symptoms are so marked that the presence of a cerebellar abscess is very likely to be overlooked. Further, sinus thrombosis, with *its rigors and hectic temperature, urgently calls for opera*tive interference, indeed, in two cases all three of these complications were present. When the symptoms of meningitis subsided, after the mastoid operation *had been* performed and the extradural *abscess had been opened, those of sinus thrombosis became prominent*, and it was only some days after the sinus had been dealt with that the cerebellar abscess was operated upon. I can claim, however, that no case of cerebellar abscess under my charge *came to* necropsy *with the abscess unopened*, though in one case there was a second cerebellar abscess separated from the first by a quarter of an inch of apparently healthy tissue.

In each of the seven chronic cases cholesteatoma was present. In four of them the *mastoid was dense*, in the *remaining three the mastoid cortex* was softened by disease, though probably the process had originally been of the dense type. In one of these latter cases a Bezold's mastoiditis was present. In five of the seven *chronic cases* an extradural *perisinus abscess was present*, and was probably the route of infection to the cerebellar abscess. In all five cases the pus was foul-smelling and, as a rule, had a greenish tinge, in only two cases was the sinus *normal*. Purulent meningitis was already present on *admission* in three of the chronic cases (pus and organisms in the cerebro-spinal fluid), one of these subsequently recovered. Two patients developed meningitis after the first operation (pus and organisms in the cerebro-spinal *fluid*), both of them recovered. In the acute case the pus in the cerebellar abscess was not foul-smelling, and gave a pure growth of pneumococci. Unfortunately, bacteriological examination of the pus was only carried out in five of the seven chronic cases, with *the following* results: (1) a Gram-negative bacillus and staphylococci, (2) a streptococcus, coliform bacilli, and *B. proteus vulgaris*, (3) a diplo-streptococcus, and an anaerobic bacillus, (4) a Gram-negative bacillus, (5) Gram-negative and also Gram-positive bacilli, with Gram-positive and also Gram-negative diplococci. Neumann calls attention to the soft necrotic walls of cerebellar abscess due to Gram-negative anaerobic bacilli, such abscesses have a feeble tendency to heal.

Methods of Opening the Cerebellar Abscess

1. Through the triangular area, with exposure of the sinus and opening of the posterior and lateral semicircular canals —that is, Neumann's operation (two cases).
2. Through the triangular area, with a counter opening behind and below the sinus (one case).

3 Through the posterior wall of the sinus and triangular area (one case)
4 Through the sinus wall (two cases)
5 Behind the sinus (two cases) This was the method employed in the acute case as the labyrinth and sinus were healthy

According to von Bergmann there is sufficient space between the sinus groove and the posterior canal to allow of the opening of a cerebellar abscess, my own observation does not confirm this

Method of Drainage

In five cases strips of iodoform gauze only were used A rubber drainage tube was employed in two cases but had to be supplemented by gauze packing In the acute case a cigarette drain was successfully employed—that is several strands of iodoform worsted with rubber dam tissue wrapped round them Neumann uses a rubber tube wrapped in gauze Milligan has employed a double metal tube—one inside the other Moure uses an instrument like a Thudichum nasal speculum the blades in the abscess cavity and the spring on the surface

Respiratory Trouble during Anaesthesia—In two cases the respiration stopped during the operation necessitating artificial respiration and rapid completion of the operative procedure

PROGRESS

The acute case made a practically uninterrupted recovery vomiting stopped, and the pulse rate and mental condition became normal Nystagmus was noted to the side of the operation

Of the seven chronic cases, three recovered and four died Taking the recoveries first—one of the patients (M S) suffered from meningitis septic sinus thrombosis and gangrene of the lung due to septic infarction and cerebellar abscess As might be expected, the recovery was slow Drainage of the cerebellar abscess was carried on several occasions, but had to be replaced owing to reaccumulation of pus Optic neuritis which was just beginning on admission, became marked during convalescence The patient was unable to stand or walk for about six months after evacuation of the cerebellar abscess She tended to fall to the diseased side and there was marked nystagmus to this side Subsequently she got very fat and has now no difficulty in balancing There is still a considerable cerebellar hernia in this case

The second successful chronic case (J W) had a mastoid operation first A second operation was performed on account of elevated evening temperature and the sinus was found to be clotted the internal jugular was ligatured The temperature became normal but the patient was drowsy and spontaneous nystagmus developed with vomiting The pulse was slow there was pointing error and dysdiadokokinesis the patient was very emaciated At the third operation the cerebellar abscess was incised through the sinus wall and a hernia cerebelli rapidly formed, this was treated by pressure and by painting with 10 per cent iodine solution Later the hernia was ligatured and repeated lumbar puncture performed (Neumann recommends excision of the hernia at the level of the dural opening) Four months after operation the patient walked with a rolling gait and there was still nystagmus to the side of the lesion A wire cage was made to shield the cerebellar hernia but proved too small, and the pressure so produced resulted in a recurrence of meningitis, from which however the patient recovered A considerable cerebellar hernia is still present

The third of the three successful cases (M D) developed a metastatic abscess over the sterno-clavicular joint After the cerebellar abscess had been successfully opened and drained on account of a temperature however the temperature became subnormal and the pulse slow the patient was drowsy and optic neuritis developed The abscess had to be reopened by Dr Logan Turner during an absence on this occasion a drainage tube was inserted Two months after the first operation I closed the wound behind the ear and the patient went on well for three years when she suddenly had an attack of giddiness and vomiting followed by loss of consciousness The temperature was subnormal and the pulse 50, the patient lay curled up on the diseased side The cerebrospinal fluid was clear and under tension, it contained streptococci During the absence Dr Gardiner opened up the original mastoid and found that cholesteatoma had reformed and that the extradural abscess in the posterior fossa had recurred He incised the dura and explored but there was no recurrence of the cerebellar abscess The patient has made a satisfactory recovery

Passing next to the four fatal cases we find that in the first (A T) a male, aged 64, the patient was not so well as expected on the morning after the abscess had been evacuated He was still drowsy and there was nystagmus to the sound side with facial paresis the last symptom was associated with the labyrinth operation Incontinence was present Lumbar puncture was performed and the fluid was found to be clear but under pressure The coma deepened, with cyanosis and Cheyne-Stokes respiration At the necropsy there was only a slight exudate over the cerebellum, but a second abscess cavity was found in the posterior and lateral part of the cerebellum The cavities were separated by a quarter of an inch or apparently healthy brain tissue from the abscess which had been opened through the triangular area There was no labyrinth suppuration as proved by microscopic examination

In the second fatal case (J B) a man aged 27 the patient died on the evening after operation from respiratory failure, and at the necropsy it was found that the abscess had been successfully drained but that the brain tissue around was markedly oedematous There was no meningitis Microscopic examination in this case also showed that no labyrinthitis had apparently been present though blood and pus were found in the vestibule as a result of the Neumann operation

In the third fatal case (G D) meningitis and sinus thrombosis were present on admission The sinus condition was dealt with, and two days later the cerebellar abscess was opened and drained The symptoms of meningitis however became more marked and the patient died from coma twelve days after the evacuation of the cerebellar abscess The necropsy showed general meningitis and a large cerebellar abscess Here again the labyrinth was normal except for a circumscribed patch in the posterior canal associated with the extradural abscess in the posterior fossa

The fourth fatal case (H S) had undergone two operations in the first place though an intracranial complication was suspected on account of the presence of a double otorrhoea sinus abscess The wound was drained There was no swelling or tenderness and accordingly the wound was closed up On the next day the patient complained of headache and became drowsy with slight nystagmus and double vision there was pointing error and dysdiadokokinesis The pulse was 60 and of good volume The wound was accordingly opened and the sinus was found to be thrombosed A backward direction of the incision was made behind and below the mastoid process and a hernia cerebelli formed Lumbar puncture was performed and the fluid found to be under pressure and purulent Death occurred rapidly and the necropsy revealed a large cerebellar abscess The necropsy revealed no disease of the labyrinth and no meningitis, but the lateral part of the right hemisphere of the cerebellum was occupied by an abscess cavity It would certainly appear that drainage of the cerebellar abscess through the triangular area is preferable to opening behind and removing the bone

DISCUSSION

Dr W H KELLOCK (London) said that [illegible] considered cerebral or cerebellar abscess [illegible] The late Mr Hunter Tod had once told him that he never had a case of recovery from cerebellar abscess Drainage was of course the [illegible]

Dr RITCHIE POGSON (Hull) said [illegible] referred to the difficulty of making [illegible] symptoms before operation [illegible] He had had two cases of cerebellar abscess [illegible] during [illegible] and diagnosed [illegible]

operation being arranged for early the following morning The first case died after convulsive seizures, and the second from respiratory failure a few hours before operation was due He now operated on either cerebral or cerebellar abscess as soon as he had made up his mind as to the condition

Mr C A Scott Ridout (Portsmouth) said that he had had one death out of three cases of cerebellar abscess seen during recent years He believed in operating at once when the diagnosis had been made

Mr H Bell Tawse (Nottingham) said that four cases within the last few years had caused him much thought (1) An adult male a right temporo-sphenoidal abscess was opened and drained, next morning he was able to read newspapers, but the same afternoon sudden death took place On *post-mortem* examination a right cerebellar abscess had been found ruptured (2) A girl, aged 12 at Christmas she had an acute left mastoid with lateral sinus thrombosis The sinus was opened and the internal jugular ligatured, she was cured The following June an acute right mastoid was opened and drained in the same patient She gradually became drowsy, then semi-comatose, with symptoms of temporo-sphenoidal abscess, which was opened and drained She was no better, and died in twenty-four hours On *post-mortem* examination there was a right cerebellar abscess In neither of these two cases was there any sign of cerebellar abscess—probably the symptoms were masked by the temporo-sphenoidal one (3) An adult female, semi-comatose when seen a left temporo-sphenoidal abscess was opened and drained, she was no better, and forty-eight hours later there were signs of cerebellar abscess on the same side The cerebellum was explored, with negative results She gradually recovered consciousness, and was still alive and well (4) An adult female, semi-comatose when seen, she had a history of old left ear trouble, but no evidence A physician and neurologist diagnosed left cerebellar abscess and advised operation within forty-eight hours In the interval the patient regained consciousness and was now quite well, the condition was probably epidemic encephalitis The diagnosis of cerebellar abscess was very difficult at times, and when associated with a temporo-sphenoidal abscess diagnosis might be impossible, but the possibility of the presence of both ought to be kept in the back of one's mind He would be glad to know if lumbar puncture was advised before opening the brain abscess

Dr J S Fraser, in reply to Mr Kelson, stated that in his experience temporal lobe abscess was more fatal than cerebellar, at any rate his own results in the former were not as good as the 50 per cent recovery obtained in the latter In several of his temporal lobe cases the abscess was on the point of rupture, or had ruptured into the lateral ventricle, when the patient was admitted Dr Fraser was interested in what Dr Ritchie Rodger had said as to the dangers of delaying operation in cases of cerebellar abscess, but pointed out that the difficulty of diagnosis arose especially in those cases in which not only an extradural abscess but also purulent meningitis and sinus thrombosis were present in addition to the cerebellar abscess It was well known that meningitis might imitate the symptoms of sinus thrombosis and of cerebellar abscess, and, further, that the symptoms of these two latter complications were more prominent than those of abscess in the cerebellum In reply to Mr Scott Ridout, he stated that in opening the cerebellar abscess he advocated the route through the triangular area In passing round a specimen which showed the small size of the space between the sinus groove and the posterior canal he had only wished to demonstrate the fact that in many cases drainage of the cerebellar abscess through this area necessitated opening up of the posterior canal He congratulated Mr Scott Ridout on his percentage of cures (75 per cent) In reply to Mr Tawse, Dr Fraser stated that he had not had a case of both temporal lobe and cerebellar abscess He was always rather unwilling to perform lumbar puncture before opening a cerebellar abscess, granted that the latter could be diagnosed at the time of operation

NASAL NEUROSES.

BY

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In this communication I hope to advance a hypothesis which is based for the most part upon practical experience The observations, which have extended over a good number of years, and which have led me to formulate certain opinions, suggest the probability that a considerable proportion of the common nasal signs and symptoms is merely the local expression of a general systemic condition, and, as such, may play an important role even when occurring in conjunction with anatomical defects or pyogenic infection in the nose

It is unnecessary to remind you that structural intranasal defects may exist without giving rise to symptoms, and it must be equally well known that efforts to cure symptoms by evacuating and draining septic foci sometimes fail to yield the expected result For an explanation of this apparently anomalous situation we must look further afield, and it is in this quest that we are confronted with the group of clinical entities somewhat unfortunately described as nasal neuroses

When I received an invitation to write a short paper upon this subject I took occasion to ask a number of men, including the physician, neurologist, and rhinologist, what meaning the name "neurosis" conveyed to their minds, the replies were neither descriptive nor helpful, and in point of fact rather convinced me that the term is apt to be misleading, and might with advantage be replaced by a better word

The best conception of the meaning of this curious word is to be found in a definition given by Purves Stewart, who says

> "A neurosis may be defined as a *molecular abnormality* of the nervous system (whether cerebro-spinal or vegetative, or both together) characterized clinically by abnormal reaction to ordinary stimuli These stimuli may be physical or emotional, they may arise outside or from within the patient's body The abnormality of reaction may consist in excessive response, in diminished or absent response, or in some unusual or strange response We must recognize that the neuroses are real diseases with positive clinical phenomena, as real as small pox or cancer"

In the limited time at my disposal I do not mean to attempt a survey of the whole field of nasal neuroses, but rather to confine my observations to some of the conditions which are associated with disturbance of the somatic sensory and the autonomic nerve supply The consideration of this perplexing subject would be incomplete without some reference, however brief, to the physiology of the nose in so far as it is related to the involuntary nerve supply

The autonomic, or involuntary, nerve supply to the nose has been established beyond reasonable doubt, and, though some confusion prevails in connexion with the nomenclature, the physiologists seem to be in agreement regarding two distinct paths in this system with different anatomical connexions and physiological actions In this paper the involuntary nerve system will be referred to as the autonomic system and its subdivisions as sympathetic and parasympathetic

The sympathetic nerve path takes origin in the upper thoracic portion of the spinal cord, traverses the cervical sympathetic cord, and relays after interruption in the superior cervical ganglion From thence the post ganglion fibres proceed by way of the upper four cervical nerves to the carotid plexus

The parasympathetic fibres are connected with the grey matter in the floor of the fourth ventricle, and proceed via the facial nerve, from which they continue as the great superficial petrosal nerve

The sympathetic rami from the carotid plexus become the deep petrosal nerve, which unites with the great superior petrosal to form the vidian nerve, and thus terminate in the spheno-palatine ganglion

This relay station of the involuntary nerve system is situated in the spheno-maxillary space, slightly above and behind the posterior end of the middle turbinate, and close to the pharyngeal mucosa Though minute in size its

branches of distribution are numerous, and may be divided into four groups (1) the ascending which supply the mucous membrane of the posterior ethmoidal cells and the sphenoidal sinus (2) the descending which are distributed to the palate tauces, and nose (3) the internal branch supplies the septum and outer nasal wall, (4) the posterior branch innervates the upper region of the post nasal space Whether the spheno-palatine ganglion is purely parasympathetic or of a mixed variety cannot definitely be stated It can, however, be assumed with some certainty that the post ganglionic fibres, in common with those of the autonomic nervous system in general, are of two varieties and possess distinctive functions Those fibres which are described as sympathetic convey efferent impulses or a vasoconstrictor and secretory nature, while the e named parasympathetic deal with impulses which produce vaso dilatation as well as secretion

It should be remembered that the ganglion cells cannot originate an impulse without stimulation from the central nervous system The excitation of impulses in the autonomic nervous system in general may be the outcome of psychic action, of which there are many well known examples On the other hand, the involuntary impulse may be due to the action of drugs and proteolytic products which may act locally or through the blood stream and there is experimental evidence to show that the sympathetic and parasympathetic sections respond in different ways to various pharmacological products thus one drug may cause constriction of the blood vessels and dry up secretion while another will produce the opposite result If drugs and proteolytic products can so affect the involuntary nervous system I think we may reasonably assume that toxins may play an equally important part

The consideration of the disease known as tetany affords further evidence of disturbance of the autonomic nerve system by a blood borne agency, and may be regarded as a link in the argument in favour of such systemic action upon the involuntary nerve supply to the nose Falta and Rudinger call attention to their observations showing that all tetany patients in the acute stage exhibit outspoken vasomotor disturbance Falta and Kahn observed lacrymation in the tetany attacks, with slight hyperæmia of the conjunctiva and these symptoms were associated with an increased flow of saliva In this connexion Lilliot pointed out that the vaso dilators respond earlier to minimal sympathicotropic stimuli than do the vasoconstrictors hence vaso-dilatation is an especially delicate test for testing the excitability of vasomotor nerves

Ablation of the parathyroids leads to the production of a certain group of phenomena which can also be produced experimentally by the introduction into the blood stream of guanidine in either case the symptoms can be abolished by the intravenous injection of a salt of calcium Guanidine is a proteolytic product found normally in the large intestine, and to a small extent in the blood, it is known to be subject to increase in amount in certain intestinal conditions The influence of calcium, when administered internally upon nasal phenomena has impressed me on many occasions and has reinforced interest in the striking results obtained from the use of this substance in the treatment of tetany, experimentally produced or as a clinical entity

In a recent publication by Graham and Anderson upon the treatment of infantile tetany the following statement is made

During the past year we have had the opportunity of treating many cases of tetany varying in severity from the latent form in which few distressing symptoms were present to the severe type in which frequent convulsions or severe laryngismus were endangering the life of the patient We have invariably been successful by the oral administration of calcium chloride in doses of from 15 to 40 grains at intervals of four hours in causing not only a rapid cessation of the convulsions but a complete disappearance of all signs of tetany

These recorded observations, viewed in conjunction with one's experience of the influence of calcium upon certain nasal phenomena, together with the apparent antagonism of calcium to guanidine when the latter has been used for physiological purposes, suggested to me the following experiments, which were carried out by Dr G A Clark in the physiological laboratory of the Durham College of Medicine

A rabbit weighing 1 9 kilos, after an examination of its nasal mucosa, was given 0 1 gram of guanidine hydrochloride into a vein In a few minutes the animal became less active and showed signs of salivation manipulating with both forepaws Within ten minutes saliva poured from the mouth and it assumed a dull and listless attitude Examination of the nose revealed turgidity of the mucous membrane and a definitely increased amount of clear watery mucus The animal was now given 2 c.cm of a 2 per cent solution of calcium chloride into a vein Almost immediately signs of returning activity were noted and diminution of the salivation In five minutes the flow of saliva had ceased and the animal became active and shuffled about its cage Ten minutes after the injection of calcium the nasal mucosa had apparently returned to its normal state, and there was no sign or excess of mucus in the nose

Three other rabbits were subjected to similar experiments with varying doses of guanidine In each case increased vascularity in the nose was noted as well as an increase of mucus, and each animal performed active chewing movements and no rubbing Only two of the four animals developed profuse salivation, and in the other instance there was also pronounced dyspnœa which physical examination suggested might be due to obstruction to the passage of air through the bronchial tubes

These experimental data seem to me to indicate the fact that the nose can be influenced by blood borne agents and that intranasal conditions be established which in all respects resemble what is commonly known as catarrh Moreover I think it may be assumed that a variety of blood borne agents may bring about the e phenomena as well as animal emanations and the pollens of flowers and grasses

With a view to elimination some of the difficulty connected with the classification and nomenclature of the nasal neuroses, the following division of the subject into three main classes is suggested (1) olfactory, (2) somatic sensory (3) autonomic sensory

As already indicated the first class does not come within the scope of this paper The second and third represent what Sluder calls the neuralgic and sympathetic classes of the neuroses, the former I have called somatic sensory as it seems likely that the pain is due to impulses passing through the ordinary sensory nerves rather than the involuntary The somatic sensory class is represented clinically by the so-called lower hair headache and the other neuralgic symptoms Pain at the root of the nose or in the eye in the pharynx, behind the ear and even in the neck and shoulder comprise the syndrome of this neuralgic type though any one or those sites of pain may alone be concerned Pain in the mastoid tip from this source has led to operation upon the mastoid bone Such an error may be avoided by an application of cocaine to the mucous membrane covering the site of the sphenopalatine ganglion, such an application immediately dissipates the pain of nasal origin

When a patient displays this clinical picture careful search should be made for any source of irritation in the nose, mouth or tauces and particularly for evidence of sphenoidal or post ethmoidal disease When as sometimes happens no local pathological condition can be found the possibility of the irritant being in the nature of a blood borne agent should always be kept in mind and no attempt made to treat the ganglion with injections of alcohol until all else has failed to give relief In the same way I do not think any operative exposure of the sphenoidal sinus or ethmoidal cell area should be carried out unless there is some pretty definite evidence of an infective process therein

In the third or autonomic sensory class include all those cases in which there is increased mucus secretion together with more or less alteration of a temporary or permanent nature in the appearance and character of the nasal mucous membrane In the manic variety the mucosa is in a state of constant tumefaction and is pale and watery looking it has an appearance which suggests œdema, and nasal obstruction is a prominent factor It is in this variety that one may encounter the simple mucous polypus and the polypoid middle turbinate, and

there is some reason for supposing that the neuroses may afford the explanation of their origin There are, of course, greatly modified types in which the mucosa is merely turgid or the inferior turbinates are full and show a kind of stippled appearance In such examples the obstruction is usually intermittent, and the excessive secretion of mucus is spasmodic and associated with sneezing, particularly in the morning Sneezing need not necessarily occur, and in such cases the only complaint may be some stuffiness and watery discharge, very often regarded as a susceptibility to cold

Such clinical manifestations may be called vasomotor rhinitis or nasal hydrorrhoea, it does not matter much so long as we regard them as the local expressions of a general state, and do not expect to bring about relief by the employment of local remedies Indeed, in such cases local treatment, whether operative or therapeutic, not infrequently seems to aggravate rather than ameliorate the symptoms, and this is true even in the case of the mildest intranasal medicament

What may be regarded as the exciting causes of this autonomic sensory disturbance in the nose?

It is now generally accepted that the pollen of grasses and flowers may produce in certain people intranasal symptoms and signs which belong to the category just described, and which we rather loosely call hay fever In like manner there is reason to believe that animal, vegetable, and bacterial proteins may induce disturbance in the nose owing to some subtle and as yet unexplained biochemical action I have clinical records of many cases in which the nose has been disturbed by animal emanations and by a variety of common food proteins, and the results obtained from exclusion of the irritants have invariably been most striking

The following illustrative cases are of some interest

1 A sea captain upon whom I did a submucous resection for the relief of some gross obstruction admitted improvement only when he lived ashore As soon as he went to sea some of his old symptoms cropped up—namely, stuffiness, sneezing, and watery discharge Inspection of the nose and upper respiratory tract generally revealed no local cause, and a systemic origin was suspected He was eventually found to be sensitive to eggs and oats, and he readily admitted that those were the two articles of diet which he never had at home and which he always ate on board ship When those things were excluded from the diet the nasal discomfort vanished

2 A young man of 30, of strong physique and good personal history, complained of a feeling of cold in the head which had persisted more or less for six months During this time a great deal of intranasal treatment had been carried out, with no relief of the symptoms The signs in the nose suggested to me vasomotor instability, and a pronounced skin reaction to feathers was obtained This patient was spending the greater part of his leisure in a pigeon loft, looking after some prize birds, when he gave up the pigeons his nasal symptoms disappeared

3 A boy, aged 12, with persistent catarrhal signs and symptoms, including at times a good deal of nasal obstruction, was seen by me, after many operations had been performed upon his naso pharynx without apparent benefit The history and general features suggested a vasomotor basis, and after careful investigation, including skin protein tests, it was decided that he was sensitive to the domestic dog, which was a personal pet When the dog was disposed of the boy recovered

It is generally conceded that gastro-intestinal disturbance, and notably the torpid colon, may lead to the development of nose symptoms of a catarrhal nature My observations suggest that there is a definite connexion between auto-infection from the bowel and those nasal symptoms which may be classified as autonomic sensory, and the results obtained by the experimental use of guanidine lend some support to this view It seems reasonable to suppose that such systemic blood contamination may be an important causative factor in the catarrhal condition of the nasopharynx in early life It would even seem possible that this disturbance of the mucous membrane might lead to the hypertrophy of the lymphoid tissue which composes Waldeyer's lymphatic ring, and which in its wet and bulky state becomes infected with bacteria, the action of which is likely to aggravate or perpetuate the catarrhal state

The effects produced by guanidine experimentally employed can be successfully neutralized, as already mentioned, by the administration of calcium In like manner many cases belonging to the autonomic sensory group respond sometimes in a striking manner to some salt of calcium given by the mouth In such cases the improvement is likely to be lasting if at the same time the diet is regulated, the colon stimulated, and some form of intestinal disinfection carried out

Some difference of opinion exists as to the absorption of calcium when administered orally It has been suggested that it does not enter the blood at all as calcium, while others hold the view that it is absorbed from a very small area of the duodenum Clinical experience seems to indicate that calcium is absorbed when given by the mouth, and that when so used it should be given in large doses Time does not permit of a recital of clinical evidence in connexion with this matter, though the examples in my experience are numerous and no less noteworthy than those which have already been detailed The psychic element plays some part, and I am inclined to think it is a minor part, in the production of vasomotor disturbance in the nose Fear will no doubt cause turbinal shrinkage of a very temporary nature, and excessive sexual stimulation may lead to intranasal turgescence and increased mucus secretion, also of an evanescent character Though attempts have been made to introduce certain internal secretions and their interrelationship in order to explain physiologically those psychic manifestations, nothing has so far been done to remove the subject from the realm of speculative thought

Conclusions

1 The nasal neuroses are real clinical entities

2 They are to some considerable extent excited by blood borne agents, animal emanations, and the pollens of flowers and grasses, in predisposed subjects

3 Comparatively few noses fail to show some evidence of this involuntary nerve sensitiveness

4 The neuroses may explain the pathology of the mucous polypus

5 The neuralgic syndrome may lead to confusion in diagnosis, particularly in regard to pain in the ear and the mastoid process

6 The manifestations may occur alone or in conjunction with pathological or anatomical defects

7 If a neurosis is present, together with a structural defect or pyogenic infection, it must be included in the treatment in order to ensure success

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DISCUSSION

Dr A Brown Kelly (Glasgow) said that he did not understand why more attention was not paid to the vasomotor factor in rhinology, he estimated that it had played a part in about 10 per cent of his nose and throat cases He did not mean that he got that percentage of patients coming with typical attacks, but with one or more of the cardinal symptoms, such as sneezing, rhinorrhoea, or obstruction In the textbooks there was no information how these symptoms, when due to a vasomotor disturbance, differed from those due to rhinitis He agreed with Dr Macky that polypi in many cases were due to vasomotor disturbance On questioning patients it was found that obstruction was preceded by long periods of sneezing and "colds" There was also a variety of polypus which might be termed a "vanishing" polypus, which came and went with vasomotor attacks Dr Macky had limited himself mainly to the neuroses arising from toxic or irritant substances His experiments with guanidine were of importance, and marked a distinct advance in the knowledge of the subject The variety to which Dr Brown Kelly had given most attention was that due to nervous exhaustion It might occur in school children working for examination

in a daughter nursing a dying relative, or in a wife with a husband addicted to secret drinking Nervous exhaustion produced hyperæsthesia in a considerable proportion of individuals Heredity might increase the predisposition, a history was often obtained of father and grandfather having also been a "great sneezer" The hypersensitiveness besides causing general instability, might affect the nasal nerves If, on testing, he found these points unduly sensitive, he injected a few drops of diluted alcohol into the neighbourhood of the nerve It should be remembered, in regard to vasomotor affections, that these were functional and that they varied from time to time Dr Brown Kelly did not find that food proteins were a cause as often as one might expect from the American literature on the subject

Mr John F O'Malley (London) remarked that Dr Maclay had drawn an interesting deduction from the use of calcium in tetany, and put forward the suggestive hypothesis that nasal neuroses were connected with some calcium inefficiency The work of Grove and Vines on the question of calcium deficiency in the blood had interested him for years, but without the help of a trained physiologist the estimation of blood calcium was very difficult to carry out They found that the administration of calcium by the mouth had very little influence in raising its blood content, but the use of 1/10 gram of parathyroid was very effective, and with this raising of the calcium blood threshold the diseases under treatment showed improvement

Dr W H Kelson (London) was convinced that there was often a psychical or reflex cause for many nasal neuroses

Mr Dunlop pointed out the frequent association of hyperchlorhydria with nasal neuroses which he had observed from practical experience

Dr Neil Maclay, in reply, said he had no doubt that calcium—or something with an influence similar to that of calcium—did get into the blood after administration by the mouth, in spite of what the physiologists said But small doses were of no avail, he gave 20 to 30 grains of calcium chloride, made up as an elixir according to Martindale's formula, three times a day

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DEFINITE DIAGNOSIS IN AFFECTIONS OF THE EAR, NOSE, AND THROAT

BY

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In case I should be accused of presumption and should be held lacking in that virtue modesty, which we all so much admire in others and practise ourselves, stopping short only where it might endanger our advancement, let me state at once that my reason for making this communication is not that I would teach those who by training experience, and ability are more fitted to perform that office for me though it is conceivable that it may not be altogether barren of this result but that the Annual Meeting of the British Medical Association provides an opportunity for bringing more directly before the general members of the profession the views and work of those who confine themselves to special branches Indeed, it is, I believe, expressly stated that in the discussions that take place this aim should be as far as possible recognized At the same time I have no doubt I shall draw upon myself some criticism

The ear is never thoroughly examined until we have examined the nose and throat we are all agreed on that In allocating the blame and assessing the degree of culpability of the nose and throat in aural affections battles have been fought and we should discover in ourselves disagreement While even the laity nowadays understand the baneful influence which adenoids have upon the ears, it is not recognized by members of our profession unconnected with our specialty that aural condition may have been—has been, indeed, in a large proportion of cases—caused by some abnormal or pathological affection of the nose or throat There is some difference of opinion amongst ourselves on this point—not so much is there was I think Whether we look to suppuration in the posterior sinuses of the nose for a possible cause of oto-sclerosis or whether we accept the opinion that adhesive changes in the tympanum may arise as a result of a nasal septal deflection and though we shall differ as to the probable effect or the correction of these conditions on the aural affection present, we do know, and we shall emphasize it in degrees varying with our temperament and experience, that the recognition of a nasal or naso-pharyngeal abnormality is, in many instances, the first step in the amelioration or cure of an aural affection I am in the habit of telling my students that of all methods of examination posterior rhinoscopy is the most important No doubt it is difficult too, but the amount of information obtained by posterior rhinoscopy is worth all the difficulty In regard to this question of the relationship of nasal or naso-pharyngeal and aural affections it is all important I need only mention adenoids, and not only in children, their recognition at any age is a great gain For the rest it may be said that the nearer to the nasopharynx a nasal affection is situated the stronger is the probability that it has a relationship to changes in the ears

The nature and degree of the aural affection will naturally receive first consideration The nasal affection need not be obstructive it may be infective though it is not always possible to separate the one from the other Both are commonly present together Hypertrophy of the posterior ends of the turbinals, thickenings of the nose septum (bony or oedematous) and polypi may end of the have their obstructive influence increased and an infective influence added by thick discharge caused by these conditions themselves or resulting from accessory sinus disease This does not indicate even in the majority of cases posterior sinusitis for not unusually it is towards the posterior orifice of the nasal cavity that the discharge from maxillary antral disease passes There is no need I think to stress further the urgency of the examination of the nose and throat in middle ear affections In affections of the external ear there would not appear to be at first glance, any reason to look for an associated pathological condition of the nose or throat and yet it seems to me to be more than a coincidence that so many cases of recurring furunculosis of otitis externa and of eczema of the meatus suffer also from nasal suppuration or from septic tonsils or dental disease It would not be difficult to suggest a relationship Of the subjective phenomena associated usually with the ear, otalgia vertigo tinnitus—any of these may have a nasal or naso-pharyngeal origin direct or indirect Though, apart from the ear itself a curious molar is the most common cause of otalgia I have seen very severe pain in the ear due to great enlargement of the posterior end of the inferior turbinal unaccompanied by it understood, by acute aural catarrh and completely relieved by removal of the hypertrophy several times also I have traced the origin of otalgia to phenoidal inus disease—an association generally recognized by otologists sore throat is commonly accompanied by pain in the ear, and it is a common place with us to insist on it significance as a sign of malignan ulceration of the pharynx

Tinnitus can hardly be caused by a nasal affection alone but it is our common experience that the most hopeful cases of this distressing symptom are those in which the aural affection is dependent on a nasal or naso-pharyngeal cause which can be remedied The ear may be stated of vertigo in most instances though there are cases where this phenomenon appears to be due also to nasal or nasal sinus disease In the case there is possibly a coil nasal obstruction as a factor in the causation of vertigo but there is also, and probably especially special owing to due to absorption of the product of suppuration

Before I have this part of the subject — the careful examination of the nose and throat in aural affections — I would press for the more frequent use of the direct

in the examination of the nasopharynx, such as the use of Yankauer's speculum, both for diagnostic purposes and for purposes of treatment? What, too, is the significance of the adhesions one so frequently finds in the post-Eustachian recesses?

I come now to another aspect of this question of exact diagnosis When a student in my clinic has reached the stage when by palpation, or better still by posterior rhinoscopy, he can diagnose the presence of adenoids he is nearly as content, though not so excited, as when he first obtains for himself a view of the vocal cords When he finds that a child has diseased tonsils and adenoids he brings him to me with the diagnosis and with an air of having discovered the secret of the whole box of mysteries of the specialty, but when I ask him if he has examined the nose there is anticlimax This failure to take a comprehensive view is not limited to students Much, perhaps most, of the ineffectiveness of the adenoid operation in some cases is due to the neglect to examine the nose, and as a result to deal with an associated nasal affection In my hospital practice I find that in something like 10 per cent of children the nasal obstruction has a cause not only in the nasopharynx, but also in the nose itself—namely, turbinal hypertrophy of a degree requiring treatment, septal deflection, oedema of the middle turbinal, polypi Antral disease, too, is much more common in children than is generally supposed For obvious reasons it is more difficult to recognize, but that is no reason why the possibility of its presence should not be borne in mind I wonder, too, how frequently choanal polypus in children is overlooked even by those who are most competent in rhinoscopy, especially posterior rhinoscopy

I come now to a stage of my subject where I find myself seriously handicapped by my natural timidity! At one time, and at the present time in the uninitiated, nasal affections were summed up in nasal catarrh and nasal polypi The former is, with us, more than suspect, the latter is incomplete It would be a gain to accurate diagnosis if the term "nasal catarrh" were omitted from the textbooks, and if nasal polypi were treated not as an affection but as a symptom or sign Of course, there is a condition of hyperactivity of the glands of the nasal mucosa, both acute and chronic, but in the great majority of cases there is some abnormality of the nose leading to obstruction or some infection which has determined the nasal discharge, or which, though it has resulted from it, has now become the chief factor in its continuance Moreover, as Dr Mackay has impressed on us, we must not lose sight of the possibility of some of these cases having a nervous origin, or rather being manifestations of an idiosyncrasy to certain articles of diet, or of the nature of hay asthma, using the term in a wide sense It is too often taken for granted that a nasal discharge has a nasal origin, and though we are not likely to fall into this error if the discharge, on rhinological examination, is found in places which suggest the presence of accessory sinus disease, yet it is not even now sufficiently recognized that it is quite common to have sinus suppuration, and especially antral suppuration, without there being at the time of examination distinct evidence in the nasal fossa of its presence It is in these cases that post-nasal rhinoscopy so often furnishes signs which are not obtained by anterior

Now I come to the question of nasal polypi, many battles have been fought, and much ink has been spilt, over their origin With the great extension in our knowledge and recognition of nasal affections, less attention has been given to the question, they are taking what I conceive to be their proper place To paraphrase a quotation which will be recognized by those who have had the advantage of being brought up on the strong meat of the shorter catechism, "they are the outward and visible sign of inward invisible disgrace" *anglice*—they are the result of suppuration in, and are associated with, changes in the lining membrane of the nasal accessory cavities, and especially of the ethmoidal cells Even where there is a single polypus growing from the middle turbinal this probably holds, since this body is merely an altered ethmoidal cell I am not now discussing their mode of growth but their causation Moreover, experience has taught me that in practically all cases of multiple nasal polypi the same degenerative changes are present in the antral cavity and in the sphenoidal sinus, though perhaps not so frequent, and depending, of course, on the extent to which the posterior ethmoidal region is involved Almost without exception, acting on this assumption, we have found the antral lining membrane degenerated in all its extent, occasionally even where proof-puncture has been negative. Whether the antral disease precedes the ethmoidal disease and polypi, or whether the sequence is the other way about, I do not suppose it is always possible to decide I am convinced, however, that if this association were more generally recognized, and treatment adopted accordingly, we should hear less of the unsatisfactory results of the treatment of nasal polypi I daresay I shall not have the full agreement of members of the specialty in this opinion, but I make it as the result of prolonged observation which has led me to advise the logical routine in every case of multiple nasal polypi—namely, the thorough curettage of the ethmoidal cells and the radical treatment of the antral cavity by way of the canine fossa The opening up of the sphenoidal sinus is conditioned by the result of posterior rhinoscopy and by the findings on curettage of the posterior ethmoidal cells

Throat surgeons are a maligned class, and it shows how deep are their convictions and how strong their moral courage that they still follow the lead of their convictions It is the tonsil which acts as the red rag to the bull, the maligners Will my life be safe if I declare that the tonsil even yet too frequently escapes the fate it deserves? Not so much am I thinking now of the tonsil in children as in adults While endless ingenuity has been expended on devising methods for the radical removal of the tonsil, or, on the other hand, for evading this course in deference to the wishes of patients who are conscientious objectors in matters operative, the examination of the tonsil is still in many cases a purely cursory affair It amounts as a rule to the placing of a tongue depressor in position, the illumination of the mouth, and the inspection which this permits A little reflection will show that this is not the way to examine the tonsils thoroughly These look towards the middle line Much—it may be most, in some it will be all—of the gland is hidden behind the anterior pillar, and at the most only the anterior part of it is properly seen The right way to examine the tonsil is to draw back the anterior pillar and so to turn the tonsil to face the observer This can be done with the tip of the tongue depressor, and at the same time that we view the appearance of the surface and see the condition of the openings of the crypts pressure can be made on the gland, and if there is purulent material in its depths it can be made evident Many diseased tonsils, especially in adults, are overlooked because this little procedure is not employed, and when we are considering the effect of tonsillar disease on the general health, as well as on neighbouring structures, it is very necessary that our diagnosis should be as definite as possible It is not only on the immediate structures that tonsillar sepsis shows its effect in the form of thickening of the pillars and palate, but congestion of the lower pharynx and of the larynx may be caused in this way, in part at any rate

This, of course, is axiomatic to us We complain often enough that teachers of singing and elocution neglect to have their pupils' noses and throats examined beforehand, and yet we are, I fear, not so insistent as we ought to be on the bad effects on the voice of nasal obstruction and infection, and of tonsillar disease There is, of course, much more in the causation of inflammatory affections of the pharynx and larynx than this, but it is a rule worth emphasizing that in all inflammatory conditions of these parts we should look up—that is, for obstruction or infection in the nose and fauces While in our climate and with our habits one may escape a chronic laryngitis if only nasal obstruction is present, hardly anyone will do so if to the obstruction is added the baneful influence of a septic nasal discharge, or of septic tonsils, or other septic affection of the mouth Indeed, of all forms of chronic laryngitis probably none is so intractable as that caused by the inhalation of septic material from atrophic rhinitis

Memoranda:

MEDICAL, SURGICAL, OBSTETRICAL

EXPECTANT TREATMENT OF UTERINE SEPSIS

In view of the current correspondence on puerperal sepsis the history and treatment of the following case will prove interesting to the advocates of immediate uterine interference in all cases of puerperal pyrexia of uterine origin

A woman aged 37 6-gravida all previous labours having been normal was admitted to hospital on August 25th as an urgency case She had been subjected to several vaginal examinations outside the hospital On admission the pulse was 84 respirations 20 and temperature 98° The uterus was the size of a thirty eight to forty weeks pregnancy A face presentation was diagnosed the os uteri admitting four fingers As the woman was having good pains and the pelvic measurements were large it was decided to do nothing until the cervix was fully dilated The foetus was born practically to the perineum low forceps were then applied and a living child was extracted without any complication Fourteen hours after delivery the patient had a rigor lasting thirty minutes the temperature went up to 103 6° and the pulse to 140 A swab was immediately taken from the uterus and a blood culture made

The temperature continued to swing daily from 100° to 105° the pulse was 120 to 140 On the third day the pathologist's report was received the uterine swab had yielded prolific colonies of pure streptococci of a virulent nature the blood culture was negative On the sixth day the temperature became normal and for the remainder of the puerperium remained so apart from four occasions when it rose above 100° From the fifteenth to the twenty third day it remained normal and the patient was discharged to her home

The treatment of this case was entirely expectant and consisted of fluids in large quantities Fowler's position ergot and polyvalent antistreptococcus serum 60 c.c.m. per diem I cannot help thinking that disaster would have followed the introduction even of a finger much more of a curette (blunt or sharp), into the uterus Dissemination into the blood stream of these myriads of streptococci would inevitably have followed any breach of Nature's barrier or protective leucocytes

May I suggest, in conclusion that a careful microscopic examination of the urine in many cases thought to be puerperal sepsis would frequently reveal the presence of pus cells and the necessity of curettage thus obviated by large doses of potassium citrate?

I am indebted to Mr Bourne for permission to publish details of this case

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London, N.W.1

ACUTE INTESTINAL OBSTRUCTION CAUSED BY DENSE ACCUMULATION OF ROUND WORMS

THE following case of acute intestinal obstruction due to a massed collection of round worms is of interest

Mrs S., aged 24, was admitted into the General Hospital Colombo, under my care at 5 p.m. on April 14th She gave a history of acute abdominal pain, vomiting and nausea, and constipation of three days' duration She also said that she had vomited four round worms The abdomen was distended but moving well with respiration On palpation there was slight rigidity of the abdominal wall and a doughy mass was felt in the left half of the abdomen, and the lump was movable from side to side Her pulse was 104 and feeble the temperature 97° and extremities cold A high glycerin enema was given but with poor result In operation was decided upon and at 7 p.m.—that is two hours after admission—the operation was done The abdomen was opened by a median incision and distended coils of intestines presented themselves Pus and two worms were found in the peritoneal cavity The intestines from the jejunum up to the iliac colon were packed with round worms and in three places of the intestines each for a length of 18 inches the worms were very tightly packed together and the intestines here were solid and looked like a well filled sausage, the girth of the intestines in this region about that of one's arm The lumen of the intestines in these three places was entirely obliterated by this massed collection of worms It was evident that a vermifuge would not reach the worms so a longitudinal incision was made in each of these three places and I began the unpleasant performance together with my house surgeon of pulling out the worms with forceps and each forceps full would pull out ten to twenty worms This took half an hour The worms were of varying size in length and thickness It was impossible to remove all the worms 547 worms were taken away and I think quite another 500 must have been left behind in parts of the intestines where the worms were densely massed together The three wounds were closed in the usual way and the abdominal wound closed after providing for drainage for the peritonitis which was present and which was due to the passage of worms through the intestinal wall The patient was nursed in the Fowler position and saline ordered by the rectum Next day her pulse was 110 and temperature 98° and she vomited three more worms In the evening her abdomen became distended and rigid due probably to the increasing peritonitis The following day she grew worse and died death being due to peritonitis

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DIFFICULTIES IN DISTINGUISHING BETWEEN FREE AND ENCYSTED FLUID IN THE ABDOMINAL CAVITY

In most cases it is a comparatively easy matter to distinguish between free and encysted fluid in the abdomen The following case illustrates the great difficulty experienced sometimes when the signs are misleading

Mrs X., aged 71, had been suffering from diabetes for two years but had kept in fairly good health by careful dieting She noticed that her abdomen, legs and feet had become much swollen so that she was unable to walk and she suffered from breathlessness even when at rest This swelling and oedema came on in about a week The abdomen was much enlarged and projecting more on the right side Great oedema of the abdominal wall was present also more marked on the right side but there was no bulging of the flanks The buttocks, legs and ankles were also oedematous The abdomen was dull to percussion the fluctuation test was negative and the liver could not be felt Vaginal examination revealed nothing abnormal The urine except for a trace of albumin was normal She was seen by two of us who diagnosed ovarian cyst with a certain amount of torsion of the pedicle The diagnosis was made on account of the rapid appearance of the enlargement and it prominence on the right side and the greater oedema of the abdominal wall on that side and the absence of bulging of the flanks A third confirmatory opinion was obtained Operation was decided on as the only means of relieving the patient who was now suffering from the effects of compression of lungs and heart

Operation.—The abdomen was opened and about two gallons of serous fluid escaped The uterus and ovaries were normal the liver was enlarged and studded with nodules evidently malignant no other growth was sought for as the patient was not doing very well She made a good recovery however and the abdomen has not filled up again

If an accurate diagnosis had been possible it would have saved the patient from the dangers entailed by a major operation since relief could have been given easily and safely by a trocar and cannula

S. J. STEWART, M.B., D.P.H.

Montgomery, Wales

PARATHYROID EXTRACT IN SPRUE

SOME notes have been received from Dr. D. HENNESSY, the General Hospital, Penang, Straits Settlements, relative to the treatment of a case of sprue by parathyroid extract He was led to make a trial of this by the reading of articles by Dr. H. H. Scott, published in the BRITISH MEDICAL JOURNAL of December 15th 1923 (p. 1135), and in that of August 23rd 1924 (p. 305) The case affords a good example of the rapidity with which the condition clears up when treatment is undertaken in the early stages of the disease

The patient was an American, a school teacher, aged 28 who had been in Malaya four and a half years The disease started in June, 1924, with diarrhoea which was checked, but not cured by intestinal antiseptics There were sometimes as many as 15 motions daily, but usually two or three, they were light in colour frothy large and bubbly She had lost 16 lb. in weight in ten weeks before coming to hospital and the tongue was sore and red at the edges and tip On September 3rd she passed an enormous almost white stool" The following day he was put to bed and given milk 6 oz. with lime water 2 oz. every six hours and parathyroid extract gr. 1/10 twice daily On September 9th all diarrhoea and discomfort had ceased the stool was formed and regaining colour Six days later (September 15th) the tongue was no longer sore or red there was only one (normal) motion daily and the patient was taking chicken, eggs, milk, milk pudding, bread and butter and tea On the 23rd (nineteen days after commencing the treatment) he left hospital at her own request to resume work she was taking a fair amount of exercise without fatigue, stools were normal and she had gained weight" She was told to continue taking the parathyroid once daily for another ten days

Reports of Societies.

INTRACAPSULAR EXTRACTION OF SENILE CATARACT

AT a meeting of the Medico-Chirurgical Society of Edinburgh on November 5th, the President, SIR DAVID WALLACE, in the chair, DR A H H SINCLAIR read a paper on the intracapsular extraction of senile cataract

DR Sinclair began with a full summary of the various stages in the development of extraction operations for cataract, and pointed out that the special type of operation under consideration was the complete removal of the cataract This might be effected by capsulotomy (or capsulectomy) or intracapsular extraction He first referred to Pagenstecher's method, then to Colonel Smith's well known work, and thirdly to the vacuum pump method of Vaird Hulen and Barraquer The fourth method discussed was the use of blunt forceps for intracapsular extraction Kalt of Paris and Stanculeanu of Bucarest both introduced types of blunt forceps, and the results obtained by the latter operator were described, and also his method of case selection Reference was also made to Knapp's results in New York DR Sinclair then described his own experiences with intracapsular extraction with forceps Careful preliminary investigations were carried out, and the region of the eye was made as aseptic as possible A detailed description of DR Sinclair's modification of Kalt's forceps was given and illustrated by lantern slides The technique of the operation was described in detail, up to the present time an iridectomy was performed just before using the extraction forceps The various points in the operation were illustrated by lantern slides, and the operation details were made most realistic by a cinematograph demonstration

Finally, a short note was given as to his results up to date The operation had been performed on 52 patients, and in sixteen the vision obtained was 6/6, in eighteen 6/9, in six 6/12, in seven 6/18, in two 6/24 (one improved to 6/9), in two 6/36 One of the patients with 6/36 had retinal haemorrhages at the macula, and one patient lost the sight of the eye from severe infection Vitreous loss occurred in 7 cases, in two of these cases the vision was 6/9, in two 6/18, in two 6/24, and in one 6/36 when taken shortly after operation In 18 cases the capsule ruptured prior to complete delivery In 3 cases the toothless forceps failed to grasp the capsule, owing to the swollen lens rendering the capsule too tense, and capsulotomy was performed In conclusion DR Sinclair said

> 'In intracapsular extraction by this method the procedure is, to begin with, the same as that in the capsulectomy operation, excepting that the incision is slightly larger Iridectomy, when performed, is the same The introduction of the forceps into the anterior chamber of the eye is the same, but after this stage the technique is distinct from that of the capsulectomy operation This is the least traumatic of the intracapsular methods, and the apparatus is of the simplest'

DR W G SYM had been in the habit of performing cataract operations by removing a considerable portion of the anterior capsule, and had found the operation very satisfactory He considered iridectomy would be necessary in DR Sinclair's operation, and he had a great objection to this procedure

DR J V PATERSON considered the chief danger of the operation would be the risk of loss of vitreous, which had been largely avoided by DR Sinclair's dexterity He referred to the excellent results obtained by DR G Mackay with capsulotomy, and later capsulectomy

Vaccine Treatment of Ringworm and Favus

DR R CRANSTON LOW read a paper on immunity and sensitization in ringworm and favus, and the treatment of lupus diseases with vaccines

He first drew attention to the fact that these diseases, while not induced a local skin lesion, but also that changes [illegible] in the body as a result of these infections He considered [illegible] Pirquet's work in 1902, when they prepared an extract of ringworm fungus called "trichophytin," and by inoculating sufferers from deep seated ringworm produced a local reaction, although no such reaction was produced in the healthy individual No reaction occurred in the superficial type of the disease Following this work animal experiments were started by several Continental workers It was found that guinea pigs and rabbits could be infected with ringworm and favus, the diseases running a fairly definite course and leaving behind sensitiveness of the skin Reinfection usually resulted in the disease running a modified course *Trichophyton gypseum* and *Achorion quinckeanum* were found to infect animals more readily than the other fungi of these groups Sensitization and immunity were not strongly specific to each fungus, this showed that the favus and ringworm were closely allied biologically Skin inoculation—deep-seated—was the only way of producing immunity intraperitoneal and subcutaneous injections were useless Only living fungus injections could produce immunity, and therefore they were analogous to tuberculosis He referred to the observations of Sieves, who showed that inoculations of *Trichophyton gypseum* would produce a clinical lesion at almost every attempt, while *Microsporon audouini* gave no clinical lesion, although the organism could be recovered from the inoculated skin fifteen days later This latter fungus had a poor power of sensitization Efforts to produce active immunity with injections of trichophytin and dead fungus extracts rubbed into the skin gave unsatisfactory results, since many failed to produce immunity Attempts to induce passive immunity, using the serums of animals so infected, had failed Reference was made to complement fixation tests DR Low then described some personal experiences with the cuti-reaction which might occur in favus and ringworm Preparations were made from small spored fungus = "microsporin," large spored fungus = "trichophytin," and favus fungus="favin" The method of preparation was given in detail These extracts were used for diagnostic purposes in cases of ringworm and favus The extracts were classed A (extracellular toxins), B (intracellular toxins), and C (crushed masses of fungus) Von Pirquet skin tests were made on the left arm The results were as follows 11 cases of tinea capitis, due to *Microsporon audouini*, gave 4 absolutely negative reactions, 6 doubtful and probably negative, and 1 positive with microsporin B and C Three cases of ordinary tinea capitis (large-spore fungus) gave negative results with trichophytin A, B, and C One case of inflamed large spore tinea capitis gave a doubtful reaction One case of large spore tinea corporis gave a negative result, 7 cases of favus due to *Achorion schonleinii* were tested with favin A, B, and C, 4 being negative, 2 doubtful, and 1 positive These results, although disappointing, agreed to some extent with those of Sutter, who obtained 5 positives out of 150 tested No great difference was found between A, B, and C, although the extracellular extracts gave less obvious results than the other two These skin tests could therefore not be used for diagnostic purposes in doubtful cases

DR Low next referred to the treatment of ringworm and favus with fungus vaccines In 1915 he treated a few cases of small-spored ringworm of the scalp with "microsporin" prepared as for the cuti-reactions, subcutaneous injections were given in increasing doses The results were so disappointing that the method was discontinued after only five cases had been treated Marked local reactions were produced, and subsequent inoculations caused the previously injected areas to show focal changes In no case was a focal reaction produced in a scalp lesion, and in two cases the general health suffered DR Low considered that it was not likely that fungus vaccines would be of use in the treatment of ringworm of the scalp In conclusion, he said that all the work on fungus infections of the skin went to show that a deep infection with a living fungus could produce changes in the blood and skin which were not true anaphylaxis, but a form of sensitization These changes were exactly analogous to those produced in diseases such as tubercle and syphilis In superficial fungus infections no sensitization of the skin occurred, and that was the reason why ordinary ringworm of the scalp showed no tendency to cure

RADIOGRAPHY OF THE THORAX

At a meeting of the Section of Electro-Therapeutics of the Royal Society of Medicine on November 21st, the President, Dr Stanley Melville, in the chair, Dr E Rist of Paris read a paper on the respiratory displacements of the mediastinum and some allied phenomena

Dr Rist stated that although permanent displacements of the mediastinum, to the right or to the left, as a result of some pathological condition in the thorax had been recognized for many years, it was not until the introduction of fluoroscopic methods of examination that rhythmical respiratory excursions of the organs of the mediastinum were discovered The first mention of this appeared in a paper by Jacobsen in 1899, and subsequent writers had studied the matter in great detail The three main pathological conditions under which this movement of the mediastinal contents could be observed were stenosis of a main bronchus, fibrosis of one or other lung, and pneumothorax The lecturer proceeded to describe the variations from the normal radiographic appearances which occurred in these conditions All the mediastinal contents could be seen to move towards one or other side of the chest, and since the parts near the diaphragm moved most a pendulum like movement was produced This movement was often very conspicuous, the heart frequently showing a difference of an inch in the positions of its borders at the end of inspiration and of expiration In stenosis of a main bronchus both sides of the thorax expanded and produced an equal negative pressure on both sides, on the diseased side this pressure was not quickly reduced owing to the deficient air entry, and the mediastinum consequently moved towards the diseased side on inspiration, returning to the mid line on expiration If the patient took a deep breath and held it the mediastinum at first moved to the diseased side and gradually moved back as air slowly entered the diseased lung, and the pressure on both sides became equal Stenosis of a main bronchus was, however, comparatively rare, and the two other causes of respiratory displacement of the mediastinum were more frequently met with

In unilateral fibrosis, tuberculous or otherwise, the affected lung was shrunken, collapsed and less easily distended during inspiration Hence the inspiratory expansion of the thorax was not used on the diseased side in expanding the lung but was transmitted to the mediastinum, which moved towards the diseased side this inspiratory movement of the mediastinum was the most reliable sign of unilateral fibrosis It occurred quite independently of the presence of adhesions between the lung and the chest wall Respiratory displacement of the mediastinum was often seen in spontaneous, and always in artificial, pneumothorax The pressure of gas in a closed chamber on the diseased side tended to push the mediastinum towards the sound side, where the gas was in an open chamber as represented by the sound lung Another interesting phenomenon occurring in pneumothorax was the "paradoxical movement of the diaphragm" first described in 1898 In cases of pneumothorax with a slight effusion the upper level of the fluid remained horizontal it moved up and down with respiration, but in an opposite direction to the excursion of the diaphragm on the sound side Dr Rist dealt with some erroneous views put forward to explain this, such as the theory that the weight of the fluid turned the convexity of the diaphragm downwards, which he said could not occur on the right side because of the upward pressure of the liver The sharp line of the diaphragm, so easily seen by radiographic examination on the left side never altered its curve in cases of left sided hydropneumothorax The theory of paralysis of the diaphragm was also an unlikely explanation for normal movements of the diaphragm were seen in these cases In certain cases of artificial pneumothorax with adhesions at the base of the lung no fluid was in contact with the diaphragm, and yet this paradoxical movement occurred The term 'paradoxical" was a misnomer the alteration in the level of the fluid was brought about by the respiratory movements of the mediastinum altering the dimensions of the closed chamber in which gas and fluid were present, the alteration in the level of the fluid was therefore no paradox, but a physical phenomenon In cases of collapsed lung following pneumothorax a complicated series of movements could be observed on fluoroscopic examination

The lung took part in the mediastinal excursion, it showed a respiratory distension, a systolic distension, and also a curious regular vibratory movement about two or three times the rate of the heart All these movements had been seen separately and conjointly and well deserved further attention The movements of the heart were curiously affected in pneumothorax displacement of the heart in *toto* towards the sound side took place on inspiration If, for example a left-sided pneumothorax was present, a greatly increased amplitude in the movements of the left edge of the heart could be observed, this was probably due to the removal of the "brake" action of the lung by the presence of a layer of air between the lung and the pericardium There was no functional disturbance of the heart in these cases and the electrocardiogram was normal In cases of bilateral fibrosis of the lungs heart failure was a common cause of death this was not due in Dr Rist's opinion to the increased pressure in the lung capillaries, since the right heart was often not hypertrophied, but was caused by the traction on both sides of the mediastinum exerted by the expansion of the thorax through the contracted lungs, and the heart gave way under this strain on both sides A respiratory distension of the heart could be observed This was probably an exaggeration of the slight normal respiratory distension of the heart which was compensated by the vertical elongation of the heart brought about by the moving down of the diaphragm Finally Dr Rist pleaded for closer co-operation between the clinician and the radiologist, and suggested that they might well be one and the same person

Many of those present asked questions to which Dr Rist replied Some radiographs of the thorax obtained after the injection of lipiodol were shown at the end of the meeting

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OBSERVATIONS ON CANCER CELLS IN VITRO

At a meeting of the Section of Pathology of the Royal Society of Medicine on November 18th Dr T Lumsden read a paper embodying his observations of the activities of cancer cells under laboratory conditions

Dr Lumsden said that normal tissue cells (*p*H 7·4 to 7·7) grew freely in pure serum and divided by typical mitosis Cancer cells, on the other hand, migrated very actively and enlarged individually, but they only rarely divided, and then chiefly by amitotic nuclear fission The addition of embryonic autolysed tissue or tumour extract neither increased nor diminished the growth of normal or tumour cells so long as the original fragment was present, except in so far as they acted as buffers should such be required No medium was at present available in which cancer cells could be cultivated indefinitely, but for the study of surviving tumour tissue serum was convenient and satisfactory The serum must not be kept for more than three weeks since after that period, even if preserved in sealed capillary tubes, the serum deposited "asteroids"—namely stellate crystals of calcium salts of the fatty acids—and was then useless or harmful Cancer cells surviving in serum were all actively amoeboid Some degenerated rapidly, setting free many naked nuclei others progressively enlarged, and became highly resistant to infections and other adverse conditions Thus, cells which had been severely bombarded with gamma radium rays for an hour and a half were uninjured thereby and continued to move about actively for over a week These large cancer cells still survived even if not refed for eight days which indicated that they were not easily killed by their own waste products, and that they needed but little food or oxygen for bare subsistence Neither the presence of normal tissues nor of red blood corpuscles altered appreciably the behaviour of these cells in serum In such symbiotic cultures normal tissues did not grow more actively than usual which fact did not favour the view that cancer cells contained a specific growth factor for normal tissue

Resistance to the Induction of Cancer

Dr J A Murray, in a paper on increased and diminished resistance to the induction of cancer, remarked that animals in which cancer had developed spontaneously or as the result of tarring the skin were more refractory to the carcinogenic action of tar than normal animals If the second tarring was begun before cancer had developed from the first tarring, a second primary carcinoma could be produced in nearly every case, and the time necessary was less than in the first instance About the time the first primary appeared the whole animal was in a state of greater susceptibility to the carcinogenic action of tar Certain puzzling features of cancer in man (rarity of multiple primary cancer, late regional recurrence after operation, and some statistical difficulties) fell into a rational sequence if a phase of diminished refractoriness was assumed, followed by a phase of increased refractoriness in the development of cancer in the human subject

TREATMENT OF SENILE GANGRENE

At a meeting of the Medical Society of London on November 24th, with the President, Dr Eustace M Callender, in the chair, a discussion on the treatment of senile gangrene was opened by Sir Anthony Bowlby The disease had, he said, been long recognized, and an excellent description of it was given by Percival Pott, who had pointed out many salient features of the disease Pott described it as being unlike mortification from other causes It began commonly as a small black or blue spot upon one of the small toes, followed by a separation of the cuticle, the disease affected males twenty times more commonly than females, and the rich rather than the poor Pott observed also that senile gangrene was not confined to old age, and that the gouty were peculiarly liable to it There was little to add to Pott's description, and nothing to subtract from it, but it was necessary to consider two other forms of gangrene or threatened gangrene, which were sometimes confused with true senile gangrene The first was gangrene due to diffuse arterial thickening, which afflicted chiefly Russian and Polish Jews, and often occurred at an early age, indeed, most of the victims died young This form of gangrene differed from true senile gangrene in not being limited to the toes, for the fingers and the tip of the nose and ears were often similarly affected The second was the disease known as intermittent claudication, in which gangrene was apparently threatened but only very rarely supervened The speaker knew of one case where attacks of this kind had occurred frequently during the last twenty years, yet the patient had not yet developed gangrene

There were three types of senile gangrene

1 That affecting elderly men with poor circulation who suffered habitually from cold feet and suddenly got a swollen foot

2 Pott's type, which began symmetrically or affected simultaneously two or more toes of one foot and slowly spread to other toes, but remained limited to the toes

3 A type which began in the toes and spread rapidly to the dorsum of the foot

In every case Sir Anthony Bowlby held that one or both of the tibial arteries was calcareous, as a rule would demonstrate, and had become occluded The treatment he adopted depended upon the type Type I was due to sudden occlusion of the artery by a thrombus, in such cases it was wise to wait So long as sensation remained in the foot there was a hope of recovery by the establishment of a collateral circulation, but amputation was called for when sensation was definitely lost In Type 2 he waited so long as the gangrene remained dry, but Type 3 called for amputation without delay Whilst waiting he administered opium, which promoted the establishment of the collateral circulation by causing dilatation of the capillaries as well as relieving the pain Beyond this there was little to be done except to keep the part warm and dry and elevated As regards the site of amputation, he expressed a preference for amputation above the knee, where the single vessel which supplied the leg, the superficial femoral, was less likely to be affected by calcareous degeneration He was aware that cases had done well with amputation below the knee, but he had two objections to this site—first, that the flaps might slough, and, secondly, that it was difficult, if not impossible, to tie the vessels, which simply broke away in the grasp of the clamps

Mr Sampson Handley agreed with the opener in believing that senile gangrene was due to fixed organic changes in the arteries, but considered that there was an added element of vaso constriction of nervous origin Leriche had shown that by removing the outer coat from 1 cm of the main artery a vaso-dilator effect was produced in the limb below the site of operation which lasted for some considerable time It had occurred to the speaker that alcohol injection of the outer coat would have a similar effect and he came to perform He had an opportunity of trying the effect of this in an old lady admitted to the Middlesex Hospital exhibiting gangrene of all the toes and a portion of the dorsum of the right foot No pulse could be felt in the femoral or popliteal vessels of the affected side, although a pulse was readily felt in those of the other side The gangrene remained dry for three weeks, but finally became moist He then exposed the femoral artery in Hunter's canal and injected a few minims of alcohol into the outer coat On the following day the patient experienced considerable relief from pain, and the blue coloration gradually disappeared from the dorsum of the foot, the temperature of which was raised by 2° C The toes finally dropped off and the foot healed up, and had remained healed for twelve months Coloured drawings of these changes were exhibited on the epidiascope The speaker had tried this method in Raynaud's disease, but had found it less successful In another case of senile gangrene in which half the foot was affected he employed the alcohol injection, and then performed a Syme's amputation successfully, relying upon the injection to prevent sloughing of the flap It was interesting to note that Lister, in the third Huxley Lecture, had shown that the nerves controlling vaso-dilatation and vaso constriction ran along the main artery, so that the temperature of the limb was maintained even when all structures except the artery were divided He had pointed this out to the late Sir William Bayliss, who said that the nerves joined the artery at different levels The speaker was inclined to think that individual variations in the level at which the nerves joined the vessel might account for the variation in the effect of alcohol injection in different subjects He claimed only for alcohol injection that it limited the gangrene

The President described a case in which senile gangrene followed upon the confinement to bed with influenza pneumonia of an elderly man He could not help feeling that the gangrene was due to keeping still The toes dropped off, and the patient lived a further three years He would be glad to hear suggestions for preventing such occurrences, by nitrating the blood or otherwise

Dr Parkes Weber thought that senile gangrene was often preceded by intermittent claudication In such cases sympathectomy was indicated The difficulty was to distinguish the cases of intermittent claudication which did not go on to gangrene He was inclined to think in intermittent claudication did not progress to gangrene when bilateral or when the foot did not get red and painful it allowed to hang In these cases the causative lesion was an atheroma of the aorta and common iliac arteries

Mr J E H Roberts agreed with the opener in defining senile gangrene as that following calcareous degeneration of the arteries, and inquired whether such calcification was demonstrated in Mr Sampson Handley's cases When performing amputation for this condition he followed the artery up until it was safe to tie it, and did not use a tourniquet He had tried sympathectomy in three cases of thrombo angeitis, but without success, and recently he had read of some work in America which showed that the essential feature of this disease was an increase in the viscosity of the blood When premonitory symptoms of senile gangrene were exhibited the circulation should be stimulated by gentle massage, avoiding injury to the vessels, and mild physical exercises

Mr Sampson Handley, in reply, said that the exposed vessels were cord-like and did not pulsate, and, he thought, genuinely calcified It was for this reason that he had employed alcohol injection, for it would have been

impossible to perform Leriche's operation The ages of his two patients were 69 and 76 years respectively

Sir Anthony Bowlby congratulated Mr Handley on his results, and considered that sympathectomy or alcohol injections acted similarly to opium He added that the glycosuria so frequently associated with senile gangrene was an effect and not the cause of the gangrene, and differed from true diabetes in that none of the other symptoms, such as thirst, polyuria and the dry red tongue, were absent In true diabetic gangrene the outlook was, of course very bad

PREVENTIVE HYGIENE IN PUBLIC SCHOOLS

At a meeting of the Medical Officers of Schools' Association on November 21st, Dr L R Lempriere, who was re elected president of the association, gave an address on preventive hygiene in public schools, based on twenty years' experience as resident medical officer at Haileybury

Dr Lempriere said that his impression was that there was a greater amount of sickness and minor ailments and that the general physique was lower than was the case twenty years ago Public schools now admitted boys of poorer constitution than formerly, but although a boy might be in and out of the sick house for the first year or two of his school life he gradually developed resistance and strength The speaker had gone through the records of his college for the last three decades, and these he presented in a tabular form to the meeting The incidence of measles, rubella and varicella was very much the same during the period 1914-23 as during the two previous decades Rubella was peculiar in its varied infectivity sometimes flooding the school, and at other times, even with a peculiarly susceptible population, failing to spread Measles always spread, he did not believe in the occurrence of single outbreaks of measles Varicella was very common, and was very frequently single and mumps was almost equally common, and apparently more often single than varicella Among non infectious complaints he had found an enormous fall in the incidence of tonsillitis, which formerly was a very real scourge The improvement followed a reorganization of the drainage at the school in 1906 with the substitution of water for earth closets these latter had actually been within the building Impetigo, in so severe a form as to demand in patient treatment, had almost gone, although in a mild form it was fairly persistent He attributed the diminution to the installation of new drying rooms and to the more thorough cleaning of blankets Conjunctivitis also had gone, largely, he thought, owing to great improvements in the swimming bath more frequent renewals of water, and the use of copper sulphate Colonic and gastric irritation had largely disappeared with better ordering of dietary Dental conditions had improved, and much more common than formerly Appendicitis was very multiple caries was now very rare He had also seen in recent years a considerable number of cases of constipation requiring repeated enemata A troublesome condition which had perplexed him lately was tinea cruris, in which the tendency to reinfection was very great

The high incidence of influenza and of pyrexia of unknown origin was next discussed True epidemic influenza was beyond the control of the school medical officer, but this ought not to apply to that most persistent of endemic conditions, the group of cases comprehended in the term "P U O" This was the cause of more loss of work and play and more interference with the boy's life than all the other ailments put together Broadly speaking, the types were naso pharyngeal and gastro intestinal and the complications of the former type were very numerous, the chief of them bronchitis, and the next otitis Of sixteen mastoid operations which had been done during his experience of the school, eight were due to P U O and eight to measles The essential predisposing cause was uncleanliness first of the individual with regard to his naso-pharyngeal or his gastro-intestinal tract and then of the surroundings To combat this condition he first of all instituted nasal drill The boys were instructed to take in a deep breath through the mouth and then blow out on to their handkerchiefs without letting the handkerchief touch the nose This was done by all the lower and middle school every morning It was looked upon at first with some amusement, and tolerated as a fad of the school medical officer Much less popular was another ordinance of his—a run of 300 yards before early school and chapel Other features of the campaign against these disabling conditions were the banishment of dust and dirt, the systematic enforcement of open windows in classrooms and dormitories, and, where possible, the use of prophylactic vaccines

With regard to school games, Dr Lempriere was of opinion that there should be one day in the week on which games were not compulsory, although the boy should be allowed to play if he wished There was a tendency for school captains to work their teams too hard As to bathing, half an hour a day in fresh water should be the absolute maximum Short of this time, the bath might refresh, longer than this, it was likely to exhaust Up to the age of 16 at least ten hours should be spent in bed, though there would be many possible exceptions to this rule in consequence of evening concerts, society meetings, and private tuition With regard to loss of weight during term, the bigger boys of 16 and over lost weight, often with advantage, among the smaller boys it was a different matter, here loss of weight meant, as a rule, some form of overstrain, generally physical As to food, besides the principal meat meal some other hot meal was now provided The food values now were 3 563 calories, as against 2,748 in 1893 There was, however, a good deal of waste and food faddism in a public school The refusal of good food was more noticeable among the small boys, who turned up their noses at college fare, but were ready to eat sweets and cakes at any time of day He advocated the general use of stone ground flour Some food and drink before the first lesson in school should be compulsory From November to April there should be no early morning school A certain number of one and a half hour lesson periods were retained, he thought this was too long for the smaller boys A public school with a resident medical officer should be the ideal place for reform and improvement, but the medical officer often found himself up against the conservatism of institutions In his own case, however, his council had always been most sympathetic to his suggestions so far as they were practicable and no medical officer could have served under better headmaster

In the course of a brief discussion, Dr G E Friend of Christ's Hospital said that he had worked out some figures for his own school as to the incidence of the various complaints, and they tallied to a great extent with the figures for Haileybury During the last ten years he had had fewer cases of measles, and no case at all during the last four years He had had no trouble from tinea cruris, possibly owing to the fact that no carpets or rugs were used on the college floors, which all had a sanitary polish Dr James Kelly remarked on the absence of rheumatism from Dr Lempriere's list, and suggested that a considerable number of the "P U O" cases might be definitely rheumatic Dr Llwyn Nash pointed out that, in addition to wholesomeness of food, good cooking was very important in a school, and the change from a rather monotonous to a more varied diet might have quite a remarkable effect upon school hygiene

PSYCHOLOGICAL CAUSES OF DISEASE

At a meeting of the Liverpool Medical Institution on November 20th Dr W Johnson read a paper on mental border line cases in their relation to general medicine and surgery, referring to the light which recent psychological progress had thrown on the psychoneuroses He reviewed the physical manifestations which were the result of emotional states, and pointed out that many patients with these symptoms were treated for medical or surgical conditions, without any attention being directed to the disordered emotional condition which was the real cause Cases could be grouped into four types—abdominal, cardiac, cephalic, and (in women) pelvic—according to the physical symptoms which predominated Surgical treatment should be avoided, and had in some instances proved disastrous The essential basis of treatment was the application of the principles of mental hygiene

Dr A Mainwaring White remarked on the great importance of this subject, particularly to the general practitioner He believed that hereditary tendencies existed,

and that shock, emotion, and fatigue were exciting causes, but he was surprised that there had been no mention of organic disease as the underlying causative factor, and gave as illustrations *B coli* infection of the urine, infected teeth, and other septic conditions. As regards treatment, he appreciated the value of suggestion, but he had derived very little success from the administration of suprarenal extract. In those patients with a subnormal temperature and a slow pulse he had frequently found benefit result from using thyroid extract.

Dr. A. E. Davis believed that the great majority of neuroses and psychoneuroses had their origin in the emotion of fear. He was opposed to the Freudian theory of a universal sexual basis in these cases, and thought that dogmatic and unproven dicta such as Freud's statement, 'In a normal *vita sexualis* no neurosis is possible," were positively detrimental to the proper study and advancement of psychological knowledge. Of the two primitive instincts, that of self-preservation was of greater potency than the sexual. Fear was the essence of the instinct of self-preservation, and was a biological necessity for the preservation of the race or species. By mental analysis of the child mind—the emotional and primitive mind in development as contrasted with the later developed and acquired powers of the conscious or reasoning mind—one was enabled to trace fear, together with some exciting factor, as being the cause of psychoneuroses. This other factor might be external, such as a mental trauma, or internal and toxic in character. It was true that the sexual instinct obtruded frequently in the form of masturbation, but if this conflict was submitted to further analysis the symptoms would be found to be due to the sense of shame and the fear of harmful consequences, fear being predominant. Phobias and neurotic symptoms could be traced either to fear or to the irritability and hyperacuity of the senses due to exhaustion of nervous centres by long-continued stress and drain of nervous energy. They were not symptoms of disease, but manifestations of tiredness and exhaustion, and they could be remedied by rest—mental rest—by removing the doubt. The psychoneuroses were purely the expressions of emotional disturbances, and origins must be sought in, and treatment directed to, the emotional level, or the so-called subconscious mind.

Retinal Arterio-sclerosis

Mr. Bernard Chavasse, in a note on arterio-sclerosis and the fundus oculi, said that the sphygmomanometer required to be supplemented by the ophthalmoscope, which, since its electrification, was making a strong bid for more frequent use in general practice. He exhibited a series of autochrome lantern slides of paintings illustrating the main features of arterio-sclerosis as seen under magnification in the living retinal vessels. He demonstrated the well known "copper wire" and "silver wire" arteries, "beading" of the streak of reflected light on the arteries, 'corkscrew" arteries and capillaries, opacification of the arterial wall, "pipe-stem" sheathing of arteries, irregularity of the arterial lumen, as well as the later and final changes both in the vessels and the fundus as a whole. Dealing with the appearances at arterio-venous crossings, he said that the interpretation of the S-shaped bend produced in a vein by an overlying arterio-sclerotic artery—a sign which had been described as the most important of all the signs of retinal arterio sclerosis—needed qualification. He had observed it not infrequently in healthy children. The necessary qualifications were the veiling of the vein by the ghostly arterial wall, the failure of the vein to shine darkly through the overlying arterial column, and a diminution in the calibre of the vein at the actual point of crossing. With these qualifications, or at least in the presence of other signs of arterio-sclerosis in other parts of the fundus, he agreed with Foster Moore that the sign was of great significance. He discussed its mechanical causation and suggested that the earliest sign by which one could hope to recognize it was the absence of that optical illusion which causes the two halves of the more remote limb of an X-shaped figure to appear out of proper alignment. This feature, however, he felt bound to admit was not one on which much reliance could be placed without such special aids as the use of red-free light and spectral methods giving high magnifications. The appearance of "banking" of blood in a vein, owing to obstruction by an overlying sclerosed artery, was one that he thought he had sometimes seen, but he had been unable to satisfy himself that the appearance was not in fact due to the porpoise-like course of a vein in and out of retinal nerve fibres which were assuming the cloud, which was also a feature of arterio-sclerosis.

RECTAL CARCINOMA IN PREGNANCY

A meeting of the Section of Surgery of the Royal Academy of Medicine in Ireland was held on November 14th, when the President, Mr. R. C. B. Maunsell, read a paper describing two cases of carcinoma of the rectum, *complicated by pregnancy* and treated by excision.

In the first patient, a woman aged 27, who was three *months pregnant*, the growth was removed by the perineal route after a preliminary colostomy, and the patient was *subsequently delivered* of a full-time healthy child. In the second case the woman was 38 years old and three *months pregnant* of her eleventh child. In this case the combined perineal and abdominal route was used for the removal of the growth, and this pregnancy also ended normally in the birth of a living child.

Mr. Seton Pringle had once removed the rectum during pregnancy. In this case the patient had been pregnant over four months, and it would have been almost impossible to deal with the growth without first removing the uterus, and this he did. He was interested to hear that the President opened the colon before proceeding with the pelvic operation. Mr. Pringle thought that this would mean the danger of infection, and that it was better to leave the opening of the upper segment till the conclusion of the abdominal part of the operation. He considered the only radical operation was the combined abdominal and perineal. If the patient was young, and in *good condition*, he used the combined method, but in *elderly people* he performed the two stage perineal operation as described by the President. In cases of rectal cancer, or of cancer low down in the colon, the sphincters should never be preserved.

Mr. Henry Stokes some months ago had performed the two-stage operation on a fairly young woman for cancer of the rectum. She had previously had one child, and thirteen months after the operation she had another child. He believed that in such cases, if further pregnancies occurred after the operation, there was no risk of sepsis.

Dr. Bethel Solomons regretted that the profession in Dublin had not been informed that two such rare operations were to be performed. It was strange that in obstetrical textbooks so little space was devoted to the subject of cancer of the rectum as a complication of pregnancy. Usually there were a few lines stating that Caesarean section was the treatment. The excellence of the results in the cases reported was a conclusive proof that extirpation should be practised when possible. In the second case, had radical operation been refused, Caesarean section at term would have been the only method of treatment. The literature on the subject was very scanty. The only series of cases he could trace was in a paper in *Acta Gynaecologica Scandinavica*, 1922, i, pp. 445-458.

Mr. C. J. Macafee agreed with the President in preferring rectus colostomy to iliac colostomy, which would have approached too near the anterior superior spine. He thought that the abdomino-perineal operation might be performed in people over 60, very often in young people there was more tendency to widespread growth, and provided that old people were in good condition he saw no reason why they should not stand the operation. A year and a half ago he had performed in abdomino perineal operation on a man of 65, he had stood the operation well, and was now doing very satisfactorily. Much depended on the patient's physique, and the circumstances in every case were different. He, personally, never attempted to preserve the sphincters.

Mr. Arthur Chance had recently seen ten cases of carcinoma of the rectum operated on at the Mayo Clinic. Fourteen days after a preliminary colostomy a perineal incision was made. The first incision was oblique and

high up in the lateral wall of the abdomen The muscles there were very deep, and therefore good adhesion was obtained This opening was very conveniently situated for a colostomy bolt The incision was made large enough to admit the hand, and the liver and the pelvis were explored The subsequent operation was performed with the patient lying on the face, and under trans-sacral anaesthesia The patients never complained of pain, unless it was necessary to pull down the peritoneum

Mr W Pearson thought every case of excision of the rectum should be dealt with by preliminary colostomy In cases of rectal cancer he believed in permeal removal, unless there was some special indication for the double operation In males the urethra was a danger It was very difficult to keep these cases aseptic The combined operation could be performed all in one stage, or in two stages, although it took a little longer he thought it was better to do it in one stage In thin patients the operation was much easier than in very fat patients

COMPLICATIONS OF GONORRHOEA IN WOMEN

A meeting of the London Association of the Medical Women's Federation was held at the Elizabeth Garrett Anderson Hospital on November 11th Miss M Chidlers the President, being in the chair, when Dr Mona Pawlins read a paper on complications of gonorrhoea and their treatment

Dr Rawlins said that the gonorrhoeal infections of the uterine adnexa and gonococcal rheumatism were the most dreaded complications She believed that the tubes and ovaries were affected slightly in more women infected with gonorrhoea than was generally realized Before proper treatment developed the patient should be kept in bed and on a light diet She recommended salt douches, 2 ounces to a pint which should be given slowly and as hot as could comfortably be borne The douches should be followed by the insertion of glycerin of ichthyol and glycerin pessaries (10 per cent) hot fomentations to the abdomen might relieve pain She had lately tried injections of sulfarsenol with excellent results The injections were given intramuscularly into the hip, beginning with a dose of 0·9 cg and increasing to 0·18 cg or more daily for four or five days Colonel Harrison had found marked alleviation of pain after diathermy, the temperature being 115° in the vagina and the cervix If both tubes had to be excised she advised that the uterus and the cervix should also be removed It a gonorrhoeal case was treated early and effectively metastatic gonorrhoea should not occur Joint or muscular conditions and also synovitis were usually accompanied by cardiac disturbance which might become the most disturbing element in the case In all forms of metastatic gonorrhoea the treatment of the primary focus was of the utmost importance Dr Rawlins did not approve of splinting in gonococcal arthritis but applied lint soaked in ichthyol and glycerin over the painful part, kept in place by a pad of cotton wool and a light bandage If the patient slept better with a splint she allowed one for the night only Immobilization of the part, even in the acute stage favoured ankylosis pain deterred the patient from harmful movements Dr Rawlins put these patients on a daily course of collosol manganese 1 c.cm intramuscularly, great relief was obtained from this and from heat applied locally When the pyrexia and pain ceased the injections were stopped and massage and passive movements were started Vaccines should only be used with the greatest caution in joint cases and after the acute stage Salicylates were useless in gonorrhoeal rheumatism but collosol sulphur was usefully given by the mouth with meals

Dr Tindal-Robertson had seen few cases of established gonorrhoeal arthritis, but many patients complained of pain in the ankles and other joints, centred in the tendons and fibrous sheaths Vaccines were useless sulphur by the mouth seemed to help, but of the whole local treatment alone alleviated these conditions Retroflexion was often found in chronic cases after vaginal discharge sometimes the uterus was fixed but more often it was slightly tethered She had found that this discharge did not cease until the uterus was placed in a position where free drainage was possible

Dr Frances Huxley said that in many chronic cases of adnexal infection the original infection had been insidious and the symptoms hardly noticed, though the tubes might nevertheless be blocked She recommended medical treatment, unless there was displacement, when there was any chance of saving the tubes otherwise she practised removal of the whole tract Salpingostomy was performed in certain cases, rather to encourage the patient than in the conviction that pregnancy was likely to ensue She treated acute cases on medical lines when the differential diagnosis from appendicitis had been established

Dr Eva White distinguished medical diathermy, which aimed at producing heat without damage to tissues, from surgical diathermy, which aimed at coagulation The former was used with success in chronic gonorrhoea The gonococcus was very susceptible to even moderate heat probably would kill it, and the tissues could be safely heated to 105° F by diathermy One electrode should be placed in the cervix and the other in the urethra, the rectum, or on the abdomen The urethral site was useful as a sensitive indicator of heat Another use of diathermy was in general treatment, to stimulate circulation and elimination, facilitating penetration of drugs given by the mouth The leucodescent lamp had proved very useful in her hands and appeared to be sedative

Dr Agnes Savill said that in intractable cases local ionization of urethra and cervix had proved of great value At St Bartholomew's Hospital she understood that good results in tube cases and even in arthritic conditions had been obtained by diathermy

Dr Violet Russell had recently treated four or five patients with tubal inflammation with sulfarsenol, 12 cg intramuscularly, with most encouraging results, though the condition had proved refractory to injections of collosol manganese

Dr Gladys Sandes had found that solid silver nitrate fused into a rod was very useful in cases of infection of Skene's tubules Patients with a Bartholin abscess who could not lie up were conveniently treated by packing the cavity with narrow ribbon gauze impregnated with collosol silver, this seemed to prevent pockets forming

Dr Louisa Martindale had found surgical diathermy very successful in a case of gonorrhoeal warts Dr Dorothea Tilton asked what was the relative value of films and cultures in the diagnosis of chronic cases Miss Esther Ricketts reported success with mercury succinate in these cases Miss Bloomfield said that in not more than one in twenty patients could the gonococcus be detected It was her custom to treat for gonorrhoea if pus was present in the urethra or cervix

The President commented on the fact that many cases of acute gonorrhoea were acute abdominal cases and exploration was necessary for diagnosis She generally confined her treatment in these cases to washing out the tubes and draining Douglas's pouch by the vagina It would be interesting to ascertain the number of cases in which when the tubes were saved, pregnancy eventuated, of the many she had saved only two pregnancies were known to have resulted

Dr Pawlins, replying, said that diathermy should have a great future in these cases She believed had found the complement fixation test very satisfactory but the reaction was not manifest until six weeks at least after infection and did not become negative until about two months after vaccine treatment She agreed that a silver lress ing was the most useful for a Bartholin abscess She treated gonorrhoeal warts with the cautery keeping the leads until if the warts were very numerous she cut off the stumps and films were more likely to be positive in the just after a menstrual period If the pus stained very slightly and no other organisms were present the case was suggestive of gonorrhoea Examination of the husband might help the decision In establishing the fact of cure negative films and absence of pus for six months was the usual criterion if only a little degenerated pus was present and brightly staining, the patient was probably cured

Reviews.

RHEUMATIC HEART DISEASE

When the subject of the prevention of heart disease is at last receiving some serious attention from the medical profession, the appearance of Dr Carey Coombs's monograph *on Rheumatic Heart Disease*[1] is particularly welcome It is a laudable and successful attempt to deal with all the heart lesions produced by one etiological factor, and not as is the usual method, to describe the various anatomical defects and to ascribe apparently similar lesions to their numerous causes There seems no doubt that the latter method has hampered the accurate appreciation of the various agents which produce disease of the heart in its many forms Attention is apt to be directed more to the effects which they produce than to the agents themselves Further, this work is the result of personal inquiry and study continued over two decades, and is in no sense a compilation of the results of others That it deals with the commonest of the causes of cardiac crippling, and that one the effects of which are most manifest in early life, should ensure for it careful study by all practitioners and physicians, as well as by those who are more particularly interested in the preventive aspects of the subject

The author frankly accepts the *Diplococcus rheumaticus* as the cause of rheumatic fever in human beings, though he considers that there still remains much work to be done to determine "its relation to other human streptococci and the conditions under which it acquires its peculiar pathogenic properties and the means by which it enters on its morbific career" The characteristic rheumatic lesion, the submiliary nodule, which occurs in subcutaneous tissue, synovial membrane, pia mater, and kidney, is described in detail as it occurs in pericardium, myocardium, and endocardium Its effect on these parts is followed, and a lucid explanation is offered for the different results produced in acute fulminating cases of pancarditis and the more chronic cases which survive for very many years

Considerable attention is devoted to the interpretation of symptoms, physical signs, and alterations of the pulse found at various stages of rheumatic carditis, but the amount of detail which is incorporated in these pages does not obscure the breadth of view exhibited in assessing their significance The chapters on diagnosis and prognosis receive the same masterly treatment which is characteristic of the book as a whole In dealing with prognosis the conclusions are based mainly on the results of the "follow up" of between 600 and 700 cases seen by the author in Bristol and labelled "cardiac rheumatism" Conclusions based on the disease as seen by one individual, in one district, and over a limited period of time may be open to criticism if the results are to be applied to the country as a whole This the author recognizes, and he considers that the severer grades of infection are seen less frequently in Bristol than in London With this reservation we feel that his observations will materially assist the reader to assess the course of the disease in any patient

Treatment is discussed *along two main lines—aid to the* heart by rest or suitable occupation to overcome the mechanical disadvantage arising from damaged muscle and valves, and aid to the body to overcome the assault by the organism on the tissues For the active stage of the disease a prolonged course of salicylates is considered to be of paramount value Tonsillectomy is discussed and the need for obtaining more information on this subject is urged, the same remarks apply to the author's attitude to the question of prolonged open air treatment during convalescence

The concluding chapter deals with prevention and in it Dr Carey Coombs puts in a strong plea for an attempt to discover the really causal conditions of the disease, the predisposing as well as the active

For a first edition we find a remarkable absence of errors in the text There is a useful introduction by Dr F J Poynton, and also a very complete index We consider this book a most important and valuable contribution to the subject of rheumatic heart disease It is eminently practical and adapted equally for the general practitioner and for the specialist in this branch of medicine

[1] *Rheumatic Heart Disease* By Carey F Coombs, M D Lond, F R C P Lond With an introduction by F J Poynton, M D, F R C P Lond Pp xviii + 376, 51 figures, 19 plate 12s 6d net) Bristol John Wright and Sons, Ltd London Simpkin Marshall, Hamilton, Kent and Co, Ltd 1924 (Cr 8vo,

BLOOD CHEMISTRY IN CLINICAL MEDICINE

The Chemistry of the Blood in Clinical Medicine by Dr O L V de Wesselow, chemical pathologist to St Thomas's Hospital, London, is no mere handbook of methods of technique, nor is it a treatise on the general physiological chemistry of the blood—the author, for instance, makes no reference to any of the methods for the quantitative estimation of haemoglobin Nevertheless, the first chapter contains one of the best and most condensed accounts of the chemical constitution of normal blood we have yet seen

The results of the latest researches regarding both the organic and inorganic substances of healthy blood are adequately dealt with The book is intended to instruct the biochemist who is working in a fully equipped laboratory how to solve problems of the utmost consequence for the clinician In the preface we are told that the "chemical analysis of the blood as an integral part of the routine clinical examination in certain diseases only became possible with the development of the so-called micro method, that is, methods by which very minute amounts of material could be accurately and quickly estimated" The author believes that glycosuria and diabetes, renal disease, and those conditions in which there is a deviation from the normal reaction of the blood, comprise the three chief occasions on which blood analysis is required The chapter on acidosis and alkalosis is a *model of clear presentation* of a chemical point of view which was non existent when the majority of those now engaged in practice were at college We have admirable discussions of the variations of the blood sugar in health and disease, and of nephritis, these chapters being of the highest utility The discussion on gout is an example of the difficulty of being dogmatic even on so well recognized a clinical entity The treatment of uric acid—the villain of the piece—is broad and judicial Other subjects dealt with are tetany, rickets, the lipoids of the blood, and hydraemia Chapter XII is virtually an appendix containing practical directions for carrying out the various estimations referred to throughout the book We miss an adequate *treatment of* lactic acid in blood and all that an excess of this acid means in clinical medicine, and the absence of reference to abnormal pigments in blood seems to need explanation Dr de Wesselow has a habit of omitting the initials before the names of research workers and authors, this may be excusable in the text but it is annoying in the formal lists constituting the bibliography The index is of subjects only

[1] *The Chemistry of the Blood in Clinical Medicine* By O L V de Wesselow London Ernest Benn, Ltd 1924 (Demy 8vo, pp 22 table 12 figure 15 net)

THE NATURE OF DISEASE

Mr J E R McDonagh's researches into the causation of syphilis have led him to conclude that there is an essential similarity in the way in which an infection or a poison attacks the host and the way in which the host resists the attack He has chosen, therefore, the comprehensive title of *The Nature of Disease*[2] for the book he has recently written to expound his views on syphilis and problems of immunity He appears to have laid down for himself an elaborate programme, for this volume of 320 pages is described as Part I, and he says that instead of spending time in bringing out fresh editions as new knowledge is gained by further research, he intends to publish all future investigations in other volumes which will bear the same title and be a continuation of the same study

The book is expensive and *does not prove* easy reading, and therefore it would seem to be our first duty to say what it is about This is not an easy task, for the book

[2] *The Nature of Disease* Part I By J E R McDonagh, F R C S London W Heinemann (Medical Books), Ltd 1924 (Cr 4to, pp 327, 53 plate £3 3 net)

covers a very wide field The general introduction sets out to give an account of the evolution of the author's views on the nature of disease in order to justify the statement that if you 'study one disease in its entirety e pecially syphilis you study medicine" We are forced to study other things in these pages also, particularly a troublesome new nomenclature in the realm of physical chem stry, and to make the acquaintance of 'conductors" and lytic condensers" To quote the author's own words

Every infection at the beginning causes particles to lo e some of their negative electricity In consequence of this some of the particles send a portion of their adsorbed constituents into true solution and may pass themselves from the colloid tate into the molecular dispersoid state Other particles increase in size and agglutinate These changes may be covered by the one word condensation The condensation the protein particles in the plasma undergo becomes divisible into two types as the infection proceeds The one type is characterized by conversion into solution—the lytic type The other type is characterized by a withdrawal of the surface electricity to the centre and by a firmer binding of the sugar alt etc which go to make up the complex protein molecule—the stable type

On the basis of this hypothesis the author goes on to explain the *modus operandi* of the Wassermann reaction and many questions of immunity and specific treatment of disease

The first chapter deals with the life-cycle of the microorganism of leishmaniasis (*Leucocytozoon leishmania*) the object of this is to show the connecting link between the microbe of Vincent's angina, on the one hand with *Leucocyto-oon leishmania*, and on the other hand with the *Leucocyto-oon syphilidis* The more distinctive feature of Mr McDonagh's work comes to light in the second chapter on the life-cycle of the micro-organism of syphilis (*Leucocyto oon syphilidis*) Those who have followed the author's publications will recollect that he has come to the conclusion that the *Spirochaeta pallida* is the adult male phase of a coccidial protozoon, and that the spore which results from the conjugation of the two sexual phases is the actual cause of syphilis Mr McDonagh gives an account of his views on this subject when discussing the life-cycle of the syphilis parasite The spores develop like Leishman Donovan bodies inside an endothelial cell He considers that the female cells resulting from this development lead an extracellular life while the male cells enter and develop in other endothelial cells The adult male cell fertilizes the female cell as a spermatozoon does an ovum The combined nuclei undergo division and subdivision to form a spore-cyst Finally the mature spore cyst ruptures its 'envelop" and frees the spores, which are the infective agents

The theme of the book is unexpectedly interrupted by Chapter III, on the rationale of staining, which the author explains on an electrical basis The fourth, fifth, and sixth chapters describe the part played by epithelial cells leucocytes, and endothelial cells in the development of naevi, and reflect the views expressed by Mr McDonagh in various contributions to dermatological magazines These chapters are generously illustrated We leave the fields of pathology, as commonly understood, for a dissertation in Chapter VII on the nature of conductors and condensers and their effect upon the general protection of the body Since the understanding of Mr McDonagh's views implies an acquaintance with the rudiments of physical chemistry this chapter might have been better placed earlier in the book Chapter VIII deals with the tests employed to measure dispersion and condensation of the protective substance Chapter IX with the effect produced upon the blood of normal rabbits by the intravenous administration of special conductors and condensers, Chapter X on the effects upon the organs of rabbits of injecting special conductors and condensers, Chapter XI on the effects upon the organs of rabbits of injecting special conductors and conden ers Space forbids us from commenting on these excursions into the realms of immunology

The subject of the succeeding chapter, the effect of microbic invasion upon the host's general protective substance, is of more general interest to medical readers Mr McDonagh holds that all micro-organisms cause the protein particles in the plasma to undergo condensation A difference exists in that Gram positive bacteria occasion the lytic type and protozoa the stable type Gram negative bacteria on the other hand, produce a type of condensation which corresponds between the two 'Continued condensation of the lytic type," he says 'leads to the formation of the stable type Continued condensation of the stable type leads to the formation of lipoid-globulin The latter is particularly characteristic of the cancer parasite" He finds little difference between the condensation brought about by micro organisms and that by chemical condenser and suggests that chemical substances reaching the maternal circulation from the chorionic villi may produce changes in the organs identical with those met with in coccogenic infections, also changes in the blood identical with those encountered in early syphilis This is put forward to explain why a certain percentage of non syphilitic pregnant women give a positive Wassermann reaction at some time or another during the parturient period

Chapter XII discusses the relationship between intoxication and disease the significance of minor maladies, and the pathology of the chronic stage of disease In Chapter XIII, on chemotherapy, Mr McDonagh rejects Ehrlich's theories on immunity, and discusses the question in his own language and from his own point of view We pass to an essay on the coagulation of the blood, and from this to the rationale of the Wassermann reaction The last two chapters are headed Shock" and 'The cerebro-spinal fluid"

It will be realized from this general account of its contents that a variety of different subjects come under review in this book but the connecting thread of a general theme runs through all the chapters This is the physico-chemical interpretation of pathology, a conception of the author's which gives a similarity to every subject he touches, however varied its origin It would be foolish to speak slightingly of a book because it is heterodox and it is not to this feature of the volume that we wish to point the critical finger The greater number of Mr McDonagh's readers will have their discriminating faculties wide enough awake without any circumspect warning from us But it is our duty to say that it is often not at all easy to understand what the author means to get a clear conception of his idea, even when he is speaking of relatively simple things Many sentences must be read over several times before their substance is grasped and even then there remains an element of doubt For the rest, the book is well bound, clearly printed, handsomely illustrated, and efficiently indexed

PSYCHO-ANALYSIS

The flow of small volumes of a semi-popular character dealing with psycho analysis and elementary psychotherapy does not seem to diminish, and must be assumed to correspond to some public demand, though it is difficult to avoid the suspicion that the supply is excessive The equipment of some of the authors whether judged from the theoretical or practical standpoint is not always complete enough to make them safe guides The guidance needed by those, whether lay or medical who have not previously studied the subject should be given by persons trained in psychology and psychiatry and capable of forming an impartial judgement on the validity of the very wide claims made on behalf of psycho-analysis and the dangers by which the method may in some circumstances be attended

Evidence of the sort of danger we have in mind may be found in a passage we shall quote from a book, *Psycho-analysis and Feminism*,[1] by Mr D W Barbour, whose object, he says, is to present to the educated public the most important features of Freud's teaching P sychoanalysis he considers, is much more than a therapeutic method it affects by implication our whole conception of life, our ideas of right and wrong our morals our religion and the education of our children Whatever may be the value of this new teaching both the medical man and the educated layman will alike be critical of psycho-analytic procedures described by the author Thus in regard to the process of transference, he writes Mean while, a man may be supposed, the personal relations of the analyst and patient have been, to say the least of it, peculiar If the analyst is a young man and the patient a girl, all the signs of

[1] *Psycho-analysis and Feminism*. By D W Barbour. London: Allen & Unwin. [illegible]

violent love may be manifested—from an idealized Platonic affection to a downright pleading for physical intercourse, alternating with an unreasonable and violent hate" Any form of treatment which aims to create a situation such as is described is obviously fraught with danger, it would also seem to be indefensible from the ethical standpoint But then, as the author points out, psycho-analysis affects our ideas of right and wrong

Mr R C Waters, who is an ardent disciple of M Emile Coue, has written a small book on *Auto-Suggestion for Mothers*.[1] He describes in detail the two methods of applying the Coue teaching to the treatment of children The first, which is known as suggestion during sleep, is that recommended for children from 5 to 7 years and upwards The second is called the direct method of caressing, and is that employed by Mlle Kaufmann in her clinic for children of all ages At the conclusion of the book the author suggests that it should be theoretically possible to determine the sex of a child by auto-suggestion practised by the prospective parents before and after conception He admits that because auto-suggestion for sex determination and conception may be possible in theory it does not necessarily mean that it will ever work in practice, and we must confess to feeling that the whole notion is somewhat fantastic

Dr Charles F Harford has written a book on *Mind as a Force*,[2] in which he aims to put forward a view of mental activity which may serve as a basis for study and as a means of testing and explaining the methods which are adopted by different workers The book contains twenty-eight short chapters dealing with various aspects of psychology, it is simple in style and definitely elementary in scope The author acknowledges the influence of M Coue's teaching, and emphasizes the value of auto-suggestion throughout his book

In a small volume, entitled *The Dream on the Anxiety Hypothesis*,[3] Miss Julia Turner, president of the Psychological Aid Society, develops a mystical theory of dreams She holds the view that the dream is the expression of a conflict between "the beautiful and the ugly", that it recalls us to the fact that the Life-Principle, God, is within the "self", that it purges the thoughts and illumines the outlook, and that it recognizes the God-principle in human nature Miss Turner's views are evidently personal ones, and she would appear to find in dreams evidence in support of the theological doctrine of Divine immanence

FRACTURES AND DISLOCATIONS

The appearance of a second edition of *Dislocations and Joint-Fractures*,[4] by Dr F J Cotton, surgeon to the Boston City Hospital, is welcome, as it shows that this excellent work of reference has been appreciated Despite the occurrence of hostilities since the first edition was published, Dr Cotton has not made any important alterations, and beyond the addition of one chapter and a number of illustrations the book remains much as before The chapter on "Generalities" has been enlarged and is now illustrated, as it was not in 1910 Most of the new figures are from radiograms of injuries, but a large number of small diagrams of injuries of the hip and its neighbourhood are from drawings by the author In our review of the first edition we remarked on the scanty illustration of splints needed in treating joint-fractures The chapter on the technique of splints and plaster in the new edition to some extent remedies the defect, but this branch of the subject is still treated in a rather meagre manner His military experiences have not convinced the author of the value of Thomas's splints except as a means of facilitating transport There can be few types of injuries about the joints which have not come under Dr Cotton's notice and been recorded in this work

CANINE AND FELINE SURGERY

Veterinary surgeons are compelled, by economic factors as well as by questions of control and after-treatment, to place a severe restraint on their surgical enthusiasm in dealing with the larger animals under their care In the case of the dog and cat, however, where financial considerations are less important, and the animals are more easily controlled before, during, and after treatment, how much can really be done to these animals is shown in the third edition of Mr F T G Hobday's *Surgical Diseases of the Dog and Cat*.[5] Even to those who have some acquaintance with the skill shown by canine and feline surgeons, the rapid advance of this branch of surgery will come as a surprise Modern developments in antiseptic technique and in the use of anæsthetics have resulted in an astonishing degree of efficiency, especially when it is remembered that the patient is not only incapable of helping itself, but is apt to do its hardest to undo the visible results of the operation

After a general introduction on the preparation and restraint of the patient, the use and abuse of anæsthetics is carefully considered It is of interest to note that the author favours chloroform for the average adult dog and either ether or A C E mixture for cats and small or young dogs

The remainder of the book consists of a classified description of the various operations on these animals, the details of the methods employed for each, and discussions of typical cases Many of the operations described are of extreme interest For example, the use of glass eyes, false teeth, and artificial limbs are somewhat unexpected adjurants in canine practice, but all have been used with success. The operations are related in considerable detail, and minute instructions are given for the treatment of the patient before and after, and various points are illustrated by reports of actual cases which have come under the author's care There is a chapter on the surgical aspects of dystocia, and another on the use of x rays in veterinary practice

The illustrations are plentiful and appropriate, and the printing, quality of paper, and binding reflect credit on the publishers The volume is sufficiently detailed to be of use to the final-year student, but it is not too didactic to be valuable to all who have in their care the surgical handling of dogs and cats Mr Hobday is to be congratulated on the appearance of the new edition of a textbook which has been out of print for many years It will serve still further to enhance the reputation previous editions won for the author

NOTES ON BOOKS

Under the title of *A Pioneer of Public Health*,[6] Professor E O Jordan, G C Whipple, and C E A Winslow have written a series of essays to commemorate the late Professor William Thompson Sedgwick, who died in 1921 at the age of 66 after a career of almost forty five years devoted to public health, although he never took a medical degree The book, which contains an introduction by his widow and several excellent portraits, deals with the public health movement in the seventies, and gives an account of Sedgwick's work in the department of biology and public health at the Massachusetts Institute of Technology and his other multifarious activities. The writers state that his investigations of a series of typhoid epidemics in 1894 constituted his most important contribution to knowledge in the field of public health and gained him the title of the Father of Epidemiology in the United States His next most notable achievement was the development of laboratory methods for the study of the microbiology of air, water, ice, and milk He also devoted much attention to the subject of food sanitation and conservation, and emphasized the importance of statistics in epidemiology and of sanitary engineering, chemistry, and biology in the prevention of the chief communicable diseases. Sedgwick was well known to public health workers in this country, where he acted in 1920 as exchange professor at the Universities of Cambridge and Leeds A bibliography of Sedgwick's publications and a list of his pupils are appended

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[1] *Auto-Suggestion for Mothers* By R C Waters London G Allen and Unwin Ltd 1924 (Cr 8vo pp 94 3s 6d net)

[2] *Mind as a Force* By Charles F Harford M A M D London George Allen and Unwin Ltd 1924 (Cr 8vo pp 128 3s 6d net)

[3] *The Dream on the Anxiety Hypothesis* By Julia Turner B A Lond London Kegan Paul Trench, Trübner and Co, Ltd 1925 (Cr 8vo, pp 77 2s net)

[4] *Dislocations and Joint-Fractures* By Frederick J Cotton A M M D F A C S Second edition revised Philadelphia and London W B Saunders Company 1924 (Med 8vo, pp 745, 1,393 figures 50s net)

[5] *Surgical Diseases of the Dog and Cat* By F T G Hobday C.B.E. F R C V S Third enlarged and revised edition London Bailliere Tindall and Cox 1924 (Demy 8vo pp xi + 435 263 figures 15s net)

[6] *A Pioneer of Public Health—William Thompson Sedgwick* By E O Jordan G C Whipple C E A Winslow With an introduction by Ellen H Sedgwick New Haven Yale University Press London Humphrey Milford Oxford University Press 1924 (Med 8vo, pp xvi + 193, 5s 6d net)

Dr PAUL LE GENDRE'S work on *Charles Bouchard*[11] is a valuable contribution to the history of the Paris Faculty of Medicine in the last quarter of the nineteenth century and first decade of the twentieth. Bouchard's medical activities were many and various. In addition to a large consulting practice he was physician in turn to the Bicêtre, Laribosière, and Charité hospitals in the latterization of which he took a prominent part. He devoted considerable attention to laboratory work in which he had as his assistants Chantemesse, Netter, Widal, Roger, Charrin, Balthazard, and Claude. In 1876 he succeeded Lorain in the chair of the history of medicine, where he devoted a series of lectures to the prophylaxis of venereal disease in antiquity and modern times and a few years later succeeded Emile Chauffard as professor of general pathology and therapeutics. His literary work covered a large field. To English readers Bouchard is probably best known by his work on auto-intoxication, a translation of which was published by Sir Thomas Oliver in 1906. He took an active part in congresses in France and abroad, notably in the tenth International Congress of Medicine held at Berlin in 1890 and in that held the following year in Rome. He was president of the Société de Biologie in 1906 and of the Académie des Sciences in 1908, the highest scientific distinction which can be bestowed on a medical man in France. Not only does Dr Le Gendre give a fascinating account of a well filled life, but he also draws a vivid picture of many of Bouchard's contemporaries and most illustrious pupils. It is for this reason that the absence of an index—a defect so often to be deplored in French publications—*is particularly regrettable, though it is to some extent* made up for by a detailed table of contents.

In his little work on *Aromatics and the Soul*[12] Dr DAN MCKENZIE deals with the olfactory sensation in a similar manner to that in which he discussed another special sense in his *City of Din* some years ago (JOURNAL, 1916, i, p. 417). His new book, which he wishes his readers to regard as a "light omelette of scientific literature," is divided into nine chapters dealing successively with olfaction and public health, the sense of smell in the lower animals, smell and speech, smell in folklore, religion, and history, smell and the personality, and theories of olfaction. The final chapter, entitled 'Dust of the Rose Petal,' contains a description of *various olfactory memories from the writer's life*. Possibly because the book is intended as much for the layman as for the medical reader, the author seems inclined to minimize the association between the olfactory organs and the sexual apparatus. The work is enlivened by numerous allusions to *belles lettres*.

Dr G. PISTOCCHI'S little book on the preparation and technique of serum reactions in the diagnosis of syphilis[13] contains a clear statement of the principles on which the reactions depend, the methods of preparation of the various reagents, the interpretation of results, and the indications of fallacies. Most of the pages are concerned with the Wassermann reaction, but a short account is given of the simpler flocculation tests of Sachs-Georgi and Meinicke, and of the turbidity tests of Dold and Meinicke. The author recognizes the fact that full details of these have already been published in other volumes, and his aim is merely to indicate in simple language how the various reagents are prepared, and the principles and methods of their application to the serum under examination. His book is essentially practical, and intended to enable the physician to carry out Wassermann and other tests with the aid of *commercially prepared* amboceptor and antigen.

In the *Medical Art Calendar* for 1925, as in previous issues, except that for last year the pictures reproduced are all by Dutch artists, and the committee of selection (of which Mr C. J. S. Thompson, curator of the Wellcome Historical Museum, is a member) has decided to maintain this limitation, at any rate for the present: this is wise, for the store of Dutch pictures dealing with medical subjects must be wellnigh inexhaustible. Intimate scenes showing the visit of the doctor abound: there is reproduced here one by F. van Mieris (1635–1681) showing a lady fainting gracefully in a chair attended by an old woman, the physician is spying at a glass no doubt of urine, and in the background is a weeping child, it is a very delightful composition: the original, which does not seem to have been published before, is in the collection of Dr. C. Hofstede de Groot, an eminent art critic, who advises the committee. Two of the pictures show a piece of furniture with which we are unfamiliar: the "bakermat," a long low basket in which the mother sat in front of the fire to attend to her infant, it may appear again in a sketch by Rembrandt of his wife lying in chamber: but the drawing is now very distinct. There are several reproductions of pictures or sketches showing operations on the eye, mouth, or head: and three of dentists: one of them an extraordinarily clever travesty in which both operator and patient are monkeys, the monkey dentist has extracted a molar with forceps, but one at least of the human operators seems to be using a key. The committee claims, with good reason, that the old Dutch school of painters has proved of great value to the medical historian by depicting minutely *the practice of the healing art in the sixteenth and seventeenth centuries*. The calendar is well worth possessing and preserving. It is published by Mr J. Philip Kruseman, The Hague, Holland, who will send it post free on receipt of 6s.

[11] *Un Médecin philosophe: Charles Bouchard: son œuvre et ses travaux (1837–1915).* Par Paul Le Gendre. Paris: Masson et Cie. 1924. (Post 8vo, pp. viii + 536, portrait. Fr. 30.)

[12] *Aromatics and the Soul: A Study of Smells.* By Dan McKenzie, M.D. Glasg. London: William Heinemann, Ltd. 1923. (Demy 8vo, pp. ix + 164. 7s. 6d. net.)

[13] *Preparazione e Tecnica delle Siero reazioni per la Sifilide.* By Dott. G. Pistocchi. Bologna: L. Cappelli. 1924. (Cr. 8vo, pp. 79. L. 5.)

Correction

The publishers of the small work on income tax by Ronald Staples reviewed in our issue of November 15th (p. 903) were incorrectly given as Messrs. Bailhache Tindall and Cox. The book is published by E. J. Larby, Ltd., London.

ROYAL COMMISSION ON LUNACY AND MENTAL DISORDER

(*Continued from page 903*)

THE eighth meeting of the Royal Commission on Lunacy and Mental Disorder was held at Whitehall Gardens on November 19th. Mr. H. P. MACMILLAN, K.C., presided.

Evidence of Medical Superintendents

The first witness was Dr. HENRY DEVINE, medical superintendent of the Corporation Mental Hospital, Portsmouth. He said that in his opinion the Lunacy Act as an instrument of detention was almost perfect, and he had no reason to suppose that it did not fully protect a patient. Its defect from the psychiatrist's point of view lay in its too great insistence that every mental patient at all certifiable should be certified under it. In reply to a question as to his experience of the adequacy or otherwise of the medical certificate given before admission, he said that he had found only one case which could be described at the end of a week as not in order, and this was the case of a malingerer. He discharged the man, and within a week he was in another asylum where a medical superintendent came to the same conclusion with regard to him. The certifying doctor in that case of course was not to be blamed. The witness was of opinion that as the liberty of the subject was concerned Poor Law cases as well as private should be certified by two doctors. In many cases the second certificate would be redundant, as it was in the case of the private patient very often but two certificates would avert possible public criticism on the ground of discrimination against the pauper patient. He thought it desirable that when pauper patients passed through the Poor Law institution on their way to the public asylum they should be accommodated in a separate ward in the infirmary. Many of these patients were in the acute stage of confusional insanity, which required careful nursing was required. The reluctance of Poor Law authorities to proceed to certification—a reluctance partly due to consideration for the patient's interests—and the consequent prolonged period in the Poor Law infirmary might be disadvantageous to the prospects of ultimate recovery. He was in favour of such patients coming direct to the mental hospital and being lodged, without certification, in a detached part of it. It would be difficult to build a *quite separate clinic* for such cases, involving duplication of equipment and staff. The Chairman said that he thought some members of the Commission had been impressed already by the undesirability of the transitional stage through the Poor Law infirmary.

Dr. Devine then described the procedure followed on admission of patients. The ideal would be to have many small wards to accommodate the different classes although of course the expense would be very great. The ward for recent cases was not at all the kind of place which figured in the popular imagination. Noise and excitement were extreme although the quietest was more pronounced on the male than on the female side. A maniacal case of course would be segregated. He had no approval of large barrack asylums at all, the proper asylum structure was a number of villas. In reply to questions he said that it would never do to put the acute patients among the chronic cases: the former were extremely sensitive to their environment and they were of course the most hopeful cases. Nevertheless the objection to other patient to a noisy neighbour was not so pronounced as might be expected: indeed they were very often sympathetic.

The witness went on to urge that the asylum where, moreover, a particular form should be located in the town itself, and

should be recognized as the centre for the treatment of all mental illness in that community He looked with some dis favour upon large county asylums isolated in the country The fresh air and country occupations might be an advantage, but an even greater advantage was the maintenance of social relationships with the outside community possible in a town asylum Many of his patients went out of the asylum into the town without any hindrance, and incidentally this procedure, together with the open doors on visiting days, helped to dispel any idea that patients had grievances which were hushed up The more social contacts a mental case could have the better The Chairman asked whether the larger institution possible to a county might not have the advantage in respect to laboratory and other equipment, to which the witness replied that he did not think every mental hospital should be expected to be a centre of research The smaller institutions could have the benefit of the laboratories and research equipment of the more elaborate He himself had a pathological laboratory at his asylum, but it was very little used, and all the blood tests and so forth were done at the local general hospital

Asked whether certification was regarded as a slur upon a person's reputation, Dr Devine said it was illogical that it should be, but it was The person was subject to an unpleasant social censorship afterwards, and his children also He had known the children of a mother who had had puerperal insanity brought up with the idea that they were abnormal Many people became confirmed neurotics owing to the fact that a member of their family had been certified and society had taken up a certain attitude towards them There were a large number of temporary psychoses, some of them quite severe, which could be adequately treated in a clinic with a minimum of formality He thought the Scottish system of simple notification, without publicity or stigma, worked well He was averse to having powers for control and detention in these cases, *though he thought that if the patient objected to and* resented treatment he should be certified fully The Chairman asked whether in the course of treatment a certain restraint might not be necessary Witness replied that it would be the same restraint as was used in an ordinary delirious fever Only if the patient insisted on going out and refusing treatment should he be certified If a voluntary boarder became hostile he would not like to have the case under his care without *certification*

In the course of further examination Dr Devine said that he favoured the idea of dealing with mental cases in general hospitals, especially those hospitals to which a teaching school was attached This would be a good thing for the profession, as at present the average medical student had some grotesque ideas *on insanity* The Chairman pointed out that the long duration of mental illness made it necessary to provide for a long residence The witness still thought that if this method could be employed many cases would not reach the asylum stage The method had been successfully carried out at the Royal Infirmary in Edinburgh, where alcoholic psychoses, operation psychoses, and many forms of depression were treated in the general wards He agreed that any institution associated with the detention of persons of unsound mind would be likely, in the long run, to have the same unpleasant associations in the public mind as asylums now had But there was hope that the gradual enlightenment would largely mitigate this feeling With regard to the possibility of admitting cases without certification, he said that of his own last 50 female admissions, 9 were willing cases, 33 indifferent or confused and 8 unwilling, regarding themselves as the subjects of persecution He wished to see the function of the relieving officer in regard to Poor Law cases done away with On the recommendation of an insurance practitioner a poor person should be admitted to the public mental hospital In the case of notification there might well be a kind of extended urgency order, thereby avoiding the formality associated with the attendance of a magistrate These patients could be transferred to a nursing home, where they would be under the supervision of some authority In a general hospital a separate block could be set aside for them, or in a small town one or two villas might be used

The witness stated emphatically in reply to other questions, that there was no tendency to keep patients in an institution after they had recovered their mental health The idea that some patients *who had made themselves useful to the institution* were detained unnecessarily could be absolutely dismissed In reply to Sir Humphry Rolleston who asked whether he thought the Act should be modified in any way so as to protect the doctor *from* vexatious and unjustifiable actions, Dr Devine thought that this might be effected though he was not prepared to recommend a form of amendment There was great reluctance on the part of doctors to certify and in fact some would not certify

Dr H Wolseley Lewis (medical superintendent, Kent Mental Hospital, Maidstone) advocated the setting up of voluntary clinics for early mental cases the clinics to be near to the homes of the people and to be free from any possibility of being regarded as vestibules to the asylum Here cases should be encouraged to come as early as possible, and expert treatment should be available It would be a deterrent to patients if they thought that the ultimate result of their visit to the clinic might be certification At his own institution about 60 per cent of the patients admitted during the last twenty years had been known to be ill for a month or more previous to admission, and it seemed to him a serious indictment of the present system that such cases were unable to get any expert treatment until they were bad enough to drive the general practitioner to certify them A considerable number of cases probably might be prevented from getting worse if treatment in an out patient department were provided Many patients who were liable to recurrent attacks were fully aware that they were not well, and these would seek treatment earlier if they did not feel that such treatment was a preliminary to certification As it was, they had no recourse save the attendance of *the general practitioner* He would like the benefits which his institution could give to be available at the incipient stage, when they might be most useful He would not desire these clinics to be directly associated with the public asylum, but it would be wise if the whole of *the provision* for the mental health of the community were under the control of one *central authority* He would have it dissociated entirely from the Poor Law

The Chairman pointed out that such a clinic would have to be either a separate institution altogether or an institution run alongside the mental or the general hospital An independent institution would cost a large amount of money, and possibly might not have sufficient work to do to justify the expenditure The witness said that what he had in mind was the gradual setting up of separate institutions, but they would not need to be large institutions—a country house on the outskirts of a large town might be all that was necessary for that particular town A single voluntary clinic of, perhaps, twenty beds might serve for such a centre as Chatham, Rochester, and Gillingham, with a population of about 130,000 The Chairman asked whether, if all the hopeful cases were dealt with in a separate clinic, the atmosphere of a public asylum would not be depressed The witness replied that he did not think so, the clinic would deal with purely voluntary cases, but there were large numbers of hopeful cases which *would still go to asylums* either because they were unwilling to go to the clinic or because they were unsuitable—for example noisy—for mixing *with* clinic patients He hoped that, as time went on, it would be possible for a large county asylum to take in a number of voluntary boarders In reply to the Chairman, who remarked that the drawback to such clinics would be that the patient might *at any time discharge* himself from treatment, the witness said that in that event the patient would be no worse off than at present Of course, the same power would be available to prevent a delirious patient, perhaps intent on suicide, from going out to do some mischief as already existed in the case of a general hospital in dealing with patients mentally unbalanced *in consequence of physical illness* Whatever the disadvantages, he wished to keep the clinics free from any suspicion that powers of legal detention might be invoked

Dr Wolseley Lewis next went on to speak of the detention *of certified patients in asylums* He thought that the onus of continued detention *should not* rest upon the medical superintendent, because it seriously militated against his success in treating the patient if the patient was aware that the *doctor treating* him was in fact the person detaining him The relations of the medical superintendent *with his patients* would be very much better if the question of detention was made entirely one for an outside authority It was his view that some judicial authority should attend the asylum at stated intervals to deal with the certified cases, and should call to his aid, if he pleased, independent medical testimony He agreed that there would be many cases in which this apparatus of inquiry would take a merely formal character owing to the hopelessness of the patient's *condition*, and he agreed also that the judicial authority would have to proceed largely upon the case records for which the medical superintendent or his staff was responsible But he was visualizing a time when a large proportion *of the* chronic cases in asylums would be there in the character of voluntary boarders At the present time, out of 1,800 patients in his own institution 200 men and between 300 and 400 women were in open doorwards with nothing to prevent them from going away A considerable number had parole Many of these—chronic delusional cases—recognized that they were better off in the hospital than they would be outside

The last witness of the day was Mr H T Kerne, chief officer of the London Mental Hospitals Department of the London County Council who set out in detail the regulations and provisions under which the Council came into relation with lunacy administration, and also the duties of visiting committees

British Medical Journal.

SATURDAY, NOVEMBER 29TH, 1924

THE PREVENTION OF RHEUMATIC HEART DISEASE

On two previous occasions (June 2nd and October 20th, 1923) we have taken the opportunity of directing attention to the subject of the prevention of heart disease, the consideration of which, we believe, has been too long delayed. The magnitude and importance of the problem have been overshadowed—partly, no doubt, by the consideration given to other scourges of the public health. The campaign against cancer has attracted public interest, because of the mystery surrounding the causation of this incurable malady, and with the hope that discovery of the cause would lead to efficient treatment. The ravages of tuberculosis, more particularly among the young adult population, have captured public imagination and sympathy. The dire effects of venereal disease are discussed on public platforms, and the educational effects are seen in demands for early treatment. Possibly because the primary damage has been done long before the cardiac cripple comes under direct observation, or at least before his condition is fully recognized, it has been accepted as fate that the heart, being the seat of disease, death is the inevitable outcome, and that nothing in the way of preventive measures is likely to be of any avail. Be that as it may, it has also been too often overlooked that organic heart disease now occupies the unenviable position at the head of the list of causes of death in this country.

The placing of rheumatic heart disease in a group as possibly preventable is long overdue, though by this we do not mean that it should be placed under the control of the public health authorities. In recent years there have been signs of an awakening conscience in this connexion. A lecture delivered by Dr. F. J. Poynton on the prevention of heart disease, published in the JOURNAL on June 2nd, 1923, aroused not a little interest and correspondence. The Section of Medicine at the Annual Meeting of the British Medical Association, held at Portsmouth in the same year, addressed itself to the consideration of the etiology and treatment of heart disease in early life, and as a result a special subcommittee has been appointed by the Council of the Association to inquire into what has been and is being done in relation to the prevention, detection, and treatment of cardiac disease in childhood. This committee is at present making investigations, and its report should be of great value in concentrating attention on certain avenues of approach. The Medical Research Council is also engaged on inquiries in certain localities along more clearly specified lines. In the spring of this year the Ministry of Health published a report on the incidence of rheumatic diseases among the insured population;[1] and while conditions are included which have no special bearing on the production of heart disease, the report contains much information which is germane to the present subject. Only last week we noted, in reviewing Sir George Newman's report on the health of the school child, that special inquiries are to be made into the incidence of disease among children under 5 years of age, the prevention of adenoids and enlarged tonsils, and the character, incidence, and prevention of rheumatism in children—all of these subjects have a direct bearing on rheumatic heart disease.

We welcome the further contributions to the subject made by Dr. F. J. Poynton in the Bradshaw Lecture, a full report of which is published in this issue (p. 986), and by Dr. Carey Coombs in his monograph on *Rheumatic Heart Disease*, to which we refer in our review column. It is now generally agreed that so far as the child is concerned the invasion of the body by acute rheumatism is, for all practical purposes, synonymous with invasion of the heart. Many persons now suffering from advanced rheumatic heart disease owe their present state, in part at least, to the erroneous idea that acute rheumatism is a joint affection. In the child the joints may escape entirely, and until it is appreciated that heart involvement is not a complication but an essential (in some cases the only) manifestation of acute rheumatism in the young so long will cases be neglected at the stage which gives most hope for beneficial results from treatment. Much may be done to mitigate the effects of cardiac rheumatism by efficient care during primary attacks, and by prolonged after-care under suitable conditions during convalescence. For the poorer members of the community this implies the provision of convalescent or recovery hospitals within reach of the larger urban centres. Only a few systematic attempts have been made on these lines in this country, and some have been too recently instituted to be of value in argument. But at Bisterne Hill, near Birmingham, and at Broadstairs, Thomson and Raven have obtained results which justify expansion in this direction in other parts of the country. Relapses are less frequent, the tendency to recrudescence more readily controlled, training is supervised, and at the same time education is not neglected.

Dr. Poynton in the Bradshaw Lecture, focuses attention on the prevention of acute rheumatism as the ideal. It appears to be the only logical attitude. While some good may doubtless be done by attacking the morbid superstructure, more good is likely to accrue if attempts to undermine the foundation are successful. The prevention and control of the primary infection are the only true safeguards against ultimate crippling of the heart. As the lecturer says, there are still many gaps in our knowledge, but it should be the duty of correlated research to fill these as speedily as possible. It is not only a matter of defining clearly the relation of the causal organism to the disease or the place that infection of the tonsils plays, but the broader aspects of the predisposing causes have to be considered, and some part of the inquiry may take many years. More information is required regarding the relation of the disease with poverty, density of population, damp, darkness, and sunless dwellings, proximity to watercourses, nature of soil, climatic conditions, heredity, and more especially in regard to chorea, with nervous strain.

For this it is apparent workers of many kinds will be required, and Dr. Poynton indicates how information may be obtained and guidance offered at various age periods. Much information may be in the records of the Board of Education with regard to local incidence of heart disease among the school population. Unfortunately rheumatism has not previously been a scheduled disease in the reports of the school medical officers. If we read Sir George Newman's report aright, this is to be included, and the character, incidence, and prevention of rheumatism are going to be the subject of special inquiry.

[1] LEITH H. MEDICAL JOURNAL, vol. 1924, p. 56.

THE GROWTH OF POPULATION

A LITTLE more than a century ago most people were discussing and a few had read Malthus's *Essay on the Principle of Population* For many of the reasons which made the subject of such interest one hundred years ago, and for new reasons, the principle of population is again a burning question, it is fitting that the president of a society Malthus helped to found should choose the growth of population as the subject of his inaugural address The value of Mr Udny Yule's statistical work is recognized by all who are competent to judge There have been a few statisticians as highly skilled in the mathematical technique of the subject, some as familiar with its data and their inherent vices or virtues, a very few with similar powers of lucid exposition, none, we believe, with the same combination of gifts and acquirements The address he delivered before the Royal Statistical Society on November 18th is a good example of Mr Yule's work, and will be studied with both pleasure and profit even by those who dissent from the conclusions he reaches

Mr Yule pokes some gentle fun at the horrors—which, as he says, curdle our blood more when printed "horrors"—which the Malthusian arithmetic conjured up "At the conclusion of the first century," says Malthus in a particularly blood-curdling passage, "the population [of Great Britain] would be a hundred and seventy six millions, and the means of subsistence only equal to the support of fifty-five millions, leaving a population of a hundred and twenty one millions totally unprovided for" "On horror's head horrors accumulate", but as, on the way to this catastrophe, persons totally unprovided for have been able to breed—otherwise the sum is wrong—perhaps there is hope even for the hundred and twenty one millions Indeed, as Mr Yule points out, what Malthus really proved was that in settled countries population does not increase in geometrical progression How does it increase? Obviously at a diminishing rate, tending towards some limit In geometrical language, the curve of population has an asymptote parallel to the axis of time More than eighty years ago a Belgian mathematician, Verhulst, suggested a "law" of population growth which fulfils this condition This law was independently discovered recently by Professor Raymond Pearl, who, with his colleague Professor L J Reed has applied it to a very large number of populations and found it an effective instrument of graduation Mr Yule accepts this law, not as *the* law, but as an adequate description of the facts and asks himself what determines its form He concludes that the main factor is not a changing death rate but a changing birth rate "Increasing density might have been expected to produce increased mortality, but in point of fact it has not done so, the progress of medicine has in its effects by far outweighed the growth of density When the noble science of medicine has done its best, it is possible that we shall see increasing mortality accompanying increasing density but that is not likely to be the case for a long time yet, nor is the increased mortality so produced likely to be anything but what we should now regard as a low mortality It is true that, as a population stabilizes towards the limit, the death rate tends to rise and may rise to a considerable extent, but this is in effect due to the stabilization itself, and produced solely by the increasing proportion of the aged to the total population"

Mr Yule, in fact, sees in growth of population "a biologically self-regulating process, indeed a process of which the regulation is extraordinarily sensitive" The inferences from Mr Yule's theory of population growth, or perhaps we ought to say the consequences which seem to us to follow from his theory, are so satisfactory that it is greatly to be hoped he is right Upon some of those whose duty it is to read articles and letters on the subject of "birth control" a conviction has steadily grown that the advocates of conception control and their opponents are for the most part tedious writers, only to be tolerated if the views they uphold or denounce with so much vehemence are really of first rate importance If, on the other hand, as seems to follow from Mr Yule's hypothesis of biological self regulation, they are mere vocal flies upon a wheel whose turning they can neither hasten nor retard, they may safely be left to talk to one another

It is upon this point that Mr Yule will be challenged, and we shall await with interest the discussion of the subject of population which, we are informed, is to be held at the next meeting of the Royal Statistical Society Has the birth rate in different countries changed discontinuously in the last generation? If it has, what is the reason? Supposing that anticonceptual methods are a mere means, a mere instrument, of the biologically self-regulating process is the case of Frankenstein at all in point? These are questions which must be answered, and, *pendente lite*, expressions of joy over the promised extinction of the birth control controversy must be reserved Of one thing we may be sure no opponent of Mr Yule is in the least likely to write so good a paper

THE METHODS OF MEDICAL EDUCATION

IMPRESSED with the urgent need on the one hand, and the increasing difficulty on the other hand, of distributing in a convenient manner and form information about medical education, which is so often published only on special occasions, such as the inauguration or the expansion of existing facilities, the Division of Medical Education of the Rockefeller Foundation has stepped into the breach with a most excellent plan This is the collection of descriptions of clinics, laboratories, and methods of medical teaching in different parts of the world, which will be published from time to time in the hope that they may be of use to those engaged in planning improvements in the teaching and in the arrangements of medical schools To his brief introduction to the first series of *Methods and Problems of Medical Education*[1] Dr Richard M Pearce, the director of the Division of Medical Education of the Rockefeller Foundation, appends the generous and rather unusual statement that the articles are not copyrighted, and that permission to reprint or utilize them in other ways is unnecessary The articles are profusely and successfully illustrated by the 120 photographs and plans contained in this brochure of 151 pages The twelve articles are contributed by the professors in charge, three being in German, one in French, and the remainder in English, and all but two, dated respectively October and December of last year, were received for publication as recently as this year, so that the information is thoroughly up to date The first seven deal with anatomy in centres in widely distant parts of the world—namely, the University of Wisconsin (C R Bardeen), University College, London (G Elliot Smith), Peking Union Medical College (David or Black), Brussels (A Brachet), Wurzburg (H Braus), Bir

[1] *Methods and Problems of Medical Education* (First Series). Division of Medical Education, Rockefeller Foundation New York 1924

(Ludwig), and Yale (H B Ferris) At the University of Wisconsin the dissecting rooms are designed for twelve students, and are open every day in the week from 7 30 a m till 10 p m , lectures are voluntary , students are encouraged to consult original articles on points specially attracting them, and are directed to study their own and others' bodies in order to acquire knowledge of the human body as a working mechanism and to cultivate the power of observation At the Peking Union Medical College research into problems peculiar to the Far East or based largely on Oriental material is in active progress, and by the courtesy of the Chinese Geological Survey a unique and extensive collection of Neolithic human bones from Fengtien and Honan have become available for investigation At Yale few lectures are given, and, owing to the excellent supply of bodies, two students only work on each cadaver, each dissecting half the body, and all are engaged on the same part at the same time The report of Yale University Department of Pharmacology and Toxicology is the only one devoted to this subject, and the only report on an institute of pathological anatomy is that of the University of Graz, contributed by Professor H Beitzke The two reports dealing with obstetrics are from the Lying-in Hospital, Boston, Massachusetts, provided by Professor Franklin G Newell of the Harvard Medical School, and from the Peking Union Medical College contributed by Professor J Preston Maxwell To the Boston City Hospital there has recently been attached the Thorndike Memorial Laboratory, built at a cost of half a million dollars with four floors and designed purely for clinical research and not concerned with routine work as it was opened in the autumn of 1923 no comprehensive statement with regard to the proposed lines of research can be made, but investigations into pernicious anæmia, nephritis, and some cardiac problems have already been undertaken In conclusion we believe that all interested in medical education will welcome this scheme of the Rockefeller Foundation, and feel most grateful for the promise of help that it holds out

HARMSWORTH MEMORIAL RESEARCH FUND

The Right Hon St J Harmsworth Memorial Research Fund has been recently founded, with an endowment of £25 000, to promote investigation into the problem of infective or ulcerative endocarditis It is proposed to collect and co-ordinate knowledge of the disease, including clinical records and publications dealing with its pathology Clinicians and laboratory workers throughout the world will be invited by public advertisement and private approach to contribute details of the close study of all cases that come under their observation Special researches contemplated include the study of the reactions of the blood serum to the infecting agents and bacteria associated with the disease and of experimental methods of treatment, both chemical and bacterio-therapeutic The members of the scientific committee of the fund are Sir Thomas Lewis Sir E Cooper Perry Sir Thomas Horder Dr Mervyn Gordon, and Dr Seymour Price This committee is empowered to make recommendations to the trustees for grants for individual workers in this country or abroad in connexion with clinical and laboratory research It is hoped that the research fund will come to be considered an appropriate centre for the collection of information relative to infective endocarditis from all quarters To the current issue of *Guy's Hospital Gazette* Sir Thomas Horder contributes a description of malignant endocarditis from the clinical standpoint, and makes some proposals for its investigation Dr Mervyn Gordon in the same issue deals with the problem from the pathological side, both articles constitute part of a report to the trustees of the research fund Scientific workers and clinicians in a position to suggest or undertake lines of valuable research are invited to communicate with the secretary of the fund, Dr P Seymour Price, 41, Sloan Gardens, S W 1

POLLUTION OF THE ATMOSPHERE BY SMOKE.

In the Section of Public Medicine and Industrial Diseases at the Annual Meeting of the British Medical Association in July last Dr Peter Macdonald said that the only reason why smoke pollution of the atmosphere continues is because public opinion does not call for its prevention, and he suggested that the general practitioner might take a prominent place in creating public opinion The medical officer of health for Salford, Dr H Osborne in his annual report for 1923, has drawn attention to the high death rate from non-tuberculous respiratory diseases and he brings forward evidence to show that this high mortality may be due to the impure atmosphere of Salford This evidence includes the records of observations made at three stations in Salford itself and one in the open country in Marple, Cheshire where the amount of atmospheric pollution is scientifically measured It also includes a consideration of the relation between periods of fogs and deaths from respiratory disease The highest mortality in Salford was during the prevalence of fogs In the Chadwick public lecture delivered on November 19th Professor Julius Cohen, F R S pointed out that soot from factory chimneys is very different from that from domestic fireplaces where raw coal is burned In a factory chimney owing to the high temperature and strong draught the volatile portions of the coal are mainly consumed, whilst the draught carries off mechanically fine mineral dust and grit mixed with carbon containing little tar Domestic soot on the other hand, may contain as much as a quarter of its weight of tar and it is this tar which causes the soot to cling Dr Osborne has taken great pains to ascertain the relative pollution of the air by the factory furnace and the domestic fire He found from information obtained from the Salford coal merchants that the factories consumed all the year round 5 877 tons of coal weekly, while the domestic coal consumption in about 50 000 houses was 7,000 tons a week in the summer and 11,000 tons in the winter It would appear, therefore, as Dr Osborne observes, that the domestic fire plays a considerably greater part in atmospheric pollution than does the factory fire Professor Cohen's solution of the problem lies in cheaper gas, cheaper coke, and cheaper electricity, with an energetic local authority encouraging their sale while holding a firm hand on the offending boiler chimney Dr Osborne, on the other hand, is not enamoured of the gas fire nor of central heating The sense of comfort, he says which is attributable to the glowing fire is not merely a psychological effect but proceeds from a physiological basis The open fire, he adds, is an ideal ventilator for it ensures continual replacement of the air of a room owing to the large volume which is carried up the chimney by convection he points out that Professor Leonard Hill has shown that it is the visible rays of the spectrum which penetrate the skin to the small blood vessels warming the blood and increasing the amount of antitoxic substances present At the conference of the Smoke Abatement League recently held in Manchester a very profitable discussion took place on the production of smokeless fuels resulting from the low-temperature carbonization of coal such coke used in which is not a coke, is said to light as easily as coal, to burn without smell and to produce a cheerful fire If this fuel can be produced economically enough to be available to the public at a price at least as low as that for coal Dr Osborne considers it is much to be preferred on the grounds of health to the use of the gas fire

FACTS ABOUT SMALL POX AND VACCINATION

A new edition of the British Medical Association's *Facts about Small-pox and Vaccination*[1] is now published, after an interval of nineteen years since the previous issue. The new pamphlet, as re-edited by Dr. J. C. McVail, is on the same general lines as the old, but is much fuller. In a brief introduction attention is called to the change in the type of small-pox from severe to mild, and to the coincident diminution of systematic vaccination of infants, especially since the Act of 1907, with, on the other hand, increase of adult vaccination owing largely to the war. As regards "compulsion," Dr. McVail urges, as he has done in the past, that the duty of the medical profession is to instruct the public and Parliament in the value of vaccination, and to leave the question of the law to the Legislature. For the rest the pamphlet is devoted to a detailed statement of the case for vaccination. Following the line taken in an address given by him last year to a meeting of members of the House of Commons under the chairmanship of Mr. Neville Chamberlain, Dr. McVail advances, and supports much more fully than in that address, four propositions—namely, (1) small-pox is worth preventing, (2) small-pox can be prevented by vaccination, (3) small-pox cannot be prevented without vaccination, and (4) properly conducted vaccination is very safe. Incidentally, contentions of opponents of vaccination receive notice. In discussing the propositions numerous references are made to the sources of the facts on which the case is based, and the pamphlet closes with a bibliography of works and authorities bearing on the various aspects of the subject.

ST. DUNSTAN'S

The ninth annual report of St. Dunstan's,[2] the organization on behalf of the empire's war-blinded men, shows a steady continuance in well-doing. Cases of delayed loss of sight still come in, and there were at the date of the issue of the report nearly eighty men undergoing training or awaiting vacancies. The training of blinded men in handicraft or other work for which a sightless man is competent demands much patience and skill, it is far harder than the corresponding effort for a blind child. In the latter there are no habits to be undone, no constant references or translations of thought from former methods. But where training can be adapted to new work closely akin to that formerly done there is a readier advance in skill. After-care of the trained men shows that the task of instruction is not complete with discharge from the training school. Great changes have come about in supply and demand since the abnormal conditions succeeding the war. Markets, both of material and labour, are settling down, and there is much greater keenness of competition to contend with everywhere. These facts make it essential for blind workers to be fully versed in the latest developments of their crafts or occupations, and therefrom arises the necessity for an occasional term of retuition at the headquarters. It is further noted that, however high the point of skill in manual work of a blind person on leaving school, there is, as time goes on, a tendency to fall off in skill. The workers themselves seem to recognize the handicap due to uncriticized repetition. To meet this need the St. Dunstan's system of after-care arranges for periodic visits by skilled instructors to the men at their own homes, and on occasions for "post-graduate" courses of instruction at the headquarters. The handicrafts taught are of the usual type—mat making, basket work, boot making and repairing, carpentry, and the like. In the mat-making department the men achieved a distinct success in the production of the huge coco-fibre mats exhibited in the Australian Pavilion at the British Empire Exhibition, one of the largest measured 69 ft. by 8 ft. 9 in., all were hand made, and the contract was secured in open competition. Many of the men have done well in poultry farming, no fewer than two hundred are doing this work, excluding the many who have small poultry outfits. St. Dunstan's maintains a special farm at King's Langley, where stock birds are reared for breeding, and where the men are able to buy or exchange birds with advantage. The success of this branch of work is manifold. A good livelihood is secured, under conditions which favour general physical health and happiness. Many have done well as masseurs, and the names of well trained and certificated men sometimes appear in our advertisement pages. At one of the final examinations for the certificate of the Chartered Society of Massage and Medical Gymnastics, a St. Dunstan's man passed second of 320 entrants, nearly all of whom could see.

[1] London: The British Medical Association, 429 Strand, W.C. (Pp. 35. Price 6d., post free 7d.)

[2] *The Debt of Empire.* The Training and After-care of Men Totally Blinded in War. Issued by St. Dunstan's Headquarters, 1 Inner Circle, Regent's Park, N.W.1.

BEER AND BARLEY

The current issue of the *Biochemical Journal* contains a paper by Dr. Herbert William Southgate on the dietetic value of barley, malt, and malted liquors as determined by their vitamin content. The results indicate that while barley and malt contain water-soluble vitamin B *in considerable quantity* and in equal amount, there is no evidence that barley or its derivatives contain either vitamin A or vitamin C to any appreciable extent. Beer also contains vitamin B, independently of its yeast content, but to a much less extent than the corresponding amount of barley used in its manufacture. Thus, using the usual basal rations employed in such test experiments, it was found that it required the addition to it of 17 grams of barley (*about 30 per cent. of the total ration*) to secure good growth and fertility in rats. The beer produced from double the amount of barley (17 c.cm.) failed, however, to ensure normal growth. The experiments lasted twenty-five days. It would have been interesting to know what would have happened to the animals had their consumption of 17 c.cm. of beer daily (a considerable amount for animals weighing 50 grams) been continued for much longer periods. The author's weight curves excite curiosity, but we would have wished, so to say, to have followed their tortuous path to its end, and to have slaked our thirst for knowledge by an examination of the effects of this volume of beer on the internal organs. However, the results of this investigation indicate that he who is wise will eschew ingest instead an equivalent amount of *aqua* barley or whole meal if he desires to sec nutritive return for money expended. Appr ounces of barley is the equivalent of a pin we now know that the nutritive value of t surpasses that of several pints of beer. Bu who use beer with no such utilitarian pro them the results of this investigation v little interest. They will use beer becaus undeterred by the thought that they product for their pleasure whose manuf the thriftless expenditure of a vastly su

THE FROSCH DAHMEN BACILLUS OF DISEASE

At the meeting of the Berlin Micro November 17th Professor H. A. Gin German commission appointed to inves the Frosch-Dahmen bacillus and its r mouth disease, made a statement on commission. It found that both co cultures gave identical results, and th periments into animals were quite in the commission was un

[illegible]

As it has been unable to obtain any more virulent material the investigations of the commission have now been discontinued In their reply Frosch and Dahmen added little that was new to the discussion They pointed out that the negative results of the commission could not be accepted as annulling their own positive results, that their own control cultures always remained sterile and unaltered, and that they had had nine successful series of inoculations into animals, two having been made in the presence of the commission As they were of the opinion that the situation could not be altered by mere discussion, they were placing their material, photographs, and full details of their technique at the disposal of the members of the commission and any other persons interested in the research They themselves remained entirely unconvinced by the report of the commission The high standing both of the members of the commission and of the investigators render "not proven" the only possible verdict for the present We hope that the situation will in the near future be relieved by the work of the British committee which, under Sir William Leishman, is investigating the disease.

TREATMENT OF MENTAL DISEASE IN THE EIGHTEENTH CENTURY

IN a recent study,[1] mainly based on hitherto unpublished documents, Dr Paul Serieux, the well known Paris alienist, maintains that Esquirol's statement, made in 1835, that the insane in the eighteenth century were regarded as incurable and never received any rational treatment, was not only erroneous but also served to lead subsequent writers astray In point of fact, as Dr Serieux proceeds to show by quotations from Baglivi, Boerhaave Dionis, Morgagni, Tissot, and other contemporary writers, numerous works in the eighteenth century were devoted to the treatment of the insane, the remedies proposed including methods still employed at the present day, such as baths, douches, purgatives, hypnotics, electrotherapy, etc The necessity for the treatment of mental disease was also realized by administrators and other members of the educated lay public, as we learn from the reports made by D'Argenson, head of the Paris police, and Voltaire's *Dictionnaire Philosophique* A great many places for the reception of the insane were in existence in France during the eighteenth century, and, although their exact number cannot be given, they were certainly more numerous than at present In the majority, however, the number of inmates barely exceeded thirty, and in some were not more than ten In a few establishments, such as those at Senlis, Saint-Lazare, Avignon, and the Hotel-Dieu and Petites Maisons in Paris, their number ranged from forty to one hundred, while in a few places the insane population exceeded one hundred The places for the reception of the insane in France during the eighteenth century are classified by Dr Serieux in the following categories—namely (1) special hospitals for mental diseases, (2) general hospitals with special quarters for the insane, (3) workhouses with special departments, as at Soissons and Beaulieu (4) religious establishments and houses of detention, such as those at Senlis, Saint-Lazare, and Mont St-Michel, (5) fortresses and State prisons, such as Vincennes and the Bastille Philanthropy, Dr Serieux remarks, was never more highly honoured, or, indeed, more fashionable, than at the end of the eighteenth century Between 1772 and 1785 numerous plans were made for the reconstruction and reorganization of the Hotel-Dieu in Paris, including a department for the curable insane, and the Government appointed physicians of repute to report on the organization of asylums and the treatment of the insane in foreign countries

[1] *Archives de Neurologie* October 1924

THE JUNIOR RED CROSS

THE junior branch of the Red Cross movement is said to have had its origin in the schools of Canada in 1916, and so popular has it proved that it now boasts a membership of over six million children scattered in thirty six countries where a Junior Red Cross Society has been organized The British Red Cross has established a junior section, which this year launched out among schools as a movement to promote health, to furnish help to sick and suffering children, and to establish a chain of service linking the children of all lands" In his annual report for 1922 the chief medical officer of the Board of Education, Sir George Newman, said that "the proper way of teaching the subject [hygiene] to children is by the encouragement of healthy practices and habits," and this is one of the main objects of the Junior Red Cross Schools are enrolling all over the country, and educational and medical authorities already testify to the value of the movement Seven simple health laws have been devised, which members promise to observe in some schools—as, for example, in Birmingham—classes elect 'health officers," and courses of lectures are arranged on first aid, health, and home nursing, followed by examinations, with Red Cross "junior certificates" for successful candidates In connexion with the latter scheme three manuals have been prepared, following the plan of the well known Red Cross manuals for senior students No 1 is on First Aid by C Max Page, No 2 on Nursing," and No 3 on Health," both by Beatrice Agar Mr Max Page's book[1] contains a preface by Sir George Makins, and it forms a successful introduction to the subject of first aid for the school child of between 14 and 16 years of age The theoretical aspect is treated as simply as possible to enable the student to have a sound understanding of the principles on which practical work is based The manual is divided into two sections the first gives the rudiments of anatomy and physiology, and the second describes the usual methods of dealing with emergencies These manuals will be useful not only to Junior Red Cross members, but also as guides to those who have to instruct children in hygiene

[1] British Red Cross Manuals No 1 *Junior First Aid Manual* By C Max Page DSO MB MS FRCS London and New York Cassell and Co Ltd 1924 (Post 8vo pp xii—202 figures 1s 6d net)

GENERAL MEDICAL COUNCIL

ELECTION OF DIRECT REPRESENTATIVES

ASSOCIATION'S CANDIDATES RETURNED

THE result of the voting in the election of four direct representatives for England and Wales to be members of the General Medical Council was announced on November 25th as follows

Dr HENRY BRITTEN BRACKENBURY (Hornsey)	11 486
Dr ROBERT ALFRED BOLAM (Newcastle-on-Tyne)	10 637
Sir THOMAS JENNER VERRALL (Leatherhead)	9 620
Dr JAMES ALEXANDER MACDONALD (Taunton)	9,143
Mr Frederic Hibbert Westmacott (Manchester)	3 310
Dr Henry Jasper Cardale (London)	2 933
Dr Robert Fielding Ould (London)	2 833
Dr Gordon Reginald Ward (Sevenoaks)	2 605
Dr Harry François Davis (Bristol)	2 560
Dr Edward Andrew Gregg (London)	2 125
Dr John Brown (Blackpool)	1 089

The first four—the candidates supported by the British Medical Association—will be direct representatives for five years from January 1st, 1925 On behalf of their fellow members of the Association we congratulate Dr Brackenbury Dr Bolam, Sir Jenner Verrall, and Dr Macdonald on their success

The direct representatives for Scotland (Sir Norman Walker) and for Ireland (Dr Leonard Kidd) have been re-elected unopposed, as recorded in our issue of November 15th

Scotland.

ROYAL FACULTY OF PHYSICIANS AND SURGEONS

At the annual dinner of the Royal Faculty of Physicians and Surgeons, Glasgow, which was held on November 21st in the Faculty Hall, there was an attendance of about eighty Fellows and guests. The chair was occupied by the President, Professor T. K. Monro. Sheriff Fyfe proposed "The Imperial Forces" and Colonel C. H. Edington suitably responded. The toast of "The Sister Corporations" was given by Dr. A. Freeland Fergus, and replies were made by the Presidents of the Royal Colleges of Physicians and Surgeons, Edinburgh (Professor G. Lovell Gulland and Professor Sir Harold J. Stiles). "The City of Glasgow" was proposed by Professor J. M. Munro Kerr and acknowledged by the Convener of the Public Health Committee of Glasgow Corporation, ex-Bailie W. B. Smith. Sir Leonard Rogers, F.R.S., submitted the toast of "The Glasgow Medical School" in laudatory terms, and to this a reply was made by Professor Archibald Young. In the course of the evening an enjoyable musical programme was rendered by the Kay Family Orchestra, and songs were contributed by Mr. Robert Watson. Dr. John F. Fergus added to the entertainment by humorous recitations. On the call of Professor Gulland the toast of "The Chairman" met with a hearty response.

MINISTRY OF PENSIONS HOSPITAL AT EDINBURGH

For some time it has been under consideration whether the Poor Law building at Craigleith should continue to be retained as a hospital for the treatment of ex-service men under the Ministry of Pensions. An agreement has now been concluded between the Edinburgh Parish Council, to whom the hospital belongs, and the Ministry of Pensions that the hospital shall be leased to the latter for a further period of five years.

EDINBURGH ROYAL INFIRMARY

At the fortnightly meeting of the board of managers of the Edinburgh Royal Infirmary, held on November 17th, a special donation of £250 was announced from the London and North-Eastern Railway Company in recognition of the treatment received at the infirmary by persons injured in the collision at Haymarket Station on July 28th. It was reported that the receipts during the past fortnight had amounted to £5,586, including industrial contributions and legacies. Besides this the sums received under the League of Subscribers' scheme amounted to over £1,541. The return of patients showed that 1,511 patients had been treated in the wards during the past two weeks, and 1,910 new cases had appeared at the out-patient departments.

PROPOSED NEW INFIRMARY FOR STIRLING

At the annual general meeting of the subscribers to Stirling Royal Infirmary, held last week, it was pointed out that the institution had now passed the fiftieth year of its existence. The infirmary was built originally for 30 patients, and from time to time additions had been made so that its work and importance had increased until the buildings had now outgrown their present site. Twelve years ago an extension had been made which had increased the accommodation to 58 beds, and at the present time there was accommodation for over 70 patients. The accommodation for nurses was not satisfactory, and several of the nurses had to be boarded out, there was also invariably a long waiting list for admission to the wards. It had therefore been proposed either to extend the infirmary or to face the question of an entirely new building. A report by Mr. James Miller, architect, was considered, to extending the present buildings by taking in a portion of the ... industrial school and grounds, but the estimated cost of this and re... scheme was from £40,000 to £45,000, and it was further estimated that this extension would only suffice for the needs of the district for fifteen or twenty years to come. On the other hand, an entirely new infirmary would cost from £65,000 to £70,000, apart from the cost of a site, after full consideration of the various proposals, the directors had recommended that this latter scheme should be adopted. The subscribers unanimously approved this proposal. It was reported that the endowment funds now amounted to £55,984, the sum added during the past year being ...

ADDITION TO ARBROATH INFIRMARY

At a special meeting of the directors of the Infirmary last week it was intimated by Mr. J. ..., convener of the Management Committee of the ..., that in response to an appeal recently made for ... children's ward, five well-wishers of the ... desired to remain anonymous had come forward with ... of £2,750 for the erection of such a ward. A committee was appointed to consider the question of a site, the ward itself, and to prepare an estimate of the yearly cost of management of such a ward.

GLASGOW MEDICAL APPOINTMENT

The Glasgow University Court has appointed D. ... B. Fleming to the lectureship in medical diseases of ... and childhood at the Royal Hospital for Sick ... Yorkhill, Glasgow, rendered vacant by the promotion of Dr. Leonard Findlay to the chair of medical pathology. The managers of the Glasgow Royal Infirmary have appointed Mr. Milne McIntyre, M.B., C.B., F.R.C.S.I.din., to be visiting surgeon.

MOBILIZATION AND MASSAGE FOR FRACTURES

At the congress of the Chartered Society of Massage and Medical Gymnastics held in Glasgow University last week a lecture and two demonstrations on the treatment of fractures by mobilization and massage were given by Mr. James B. Mennell of St. Thomas's Hospital, London, Professor Peter Peter on of Glasgow Royal Infirmary presided the chair at the lecture. The lecturer explained that when a bone was broken it was not sufficient to attend to the problem of treatment at the bone only, but that, if recovery was to be complete, the tissues which had been injured at the same time required attention. If nothing was done for these tissues until the bone was healed, much valuable time was lost, and in many conditions immediate to the proper functioning of the limb was established, which thereafter required patient treatment, and led to prolonged incapacity and often also to pain and suffering. He showed how the evils could be avoided, how patients treated only by fixation of the fracture, or their disability to the treatment and not to the ... Mobilization treatment had not yet become more ... because special training and technique were required. He, however, considered that it was safer to adhere to stereotyped methods of fixation treatment rather than place the treatment which he advocated in untrained hands. At the subsequent demonstrations Mr. Mennell showed that in the treatment he proposed the splints were ... but they were reduced to a minimum and made as ... as possible.

Ireland.

ROBERT CAMPBELL MEMORIAL ORATION

The Robert Campbell Memorial Oration was ... by Dr. Thomas Houston, Director of Clinical Laboratories of the Royal Victoria Hospital, Belfast, on November ... in the Medical Institute, Belfast, before a large ... Dr. Singleton Darling of Lurgan, president of the ... Medical Society, in the chair. Dr. Houston ... that after the death, in 1920, of Robert Campbell, ... F.R.C.S., many of his friends thought that some ... should be founded to place on permanent record the ... esteem in which he was held. A sum of money was ... and placed in the hands of trustees, and the Robert Campbell Memorial Oration was founded, to be delivered ... third year on some advance in medical science. ... Houston recalled the work of Mr. Robert Campbell ... great affection in which he was held by his ... friends and patients, and the advances he made in ...

He then delivered his address on Addison's anaemia Hearty votes of thanks were accorded to Dr Houston, and to the Ulster Medical Society for its hospitality

COMMISSION OF INQUIRY INTO POOR LAW RELIEF IN THE IRISH FREE STATE

The terms of reference for the Commission which the Minister for Local Government and Public Health proposes to set up to inquire into the question of relief of the destitute sick and poor, including the insane poor, are now available The aim is to devise permanent legislation for effective and economical relief, and to inquire into the laws and administration relating thereto, and particularly as regards the following matters

1 The adequacy and suitability of schemes formulated under the Local Government (Temporary Provision) Act

2 To advise whether the existing law and regulations as regards home assistance require alteration towards securing that due provision is made for the sick and destitute poor in their own homes, without avoidable wasteful expenditure on healthy persons who are incorrigibly idle

3 To examine the law and administration affecting the relief of the following destitute classes (*a*) widows and their children (*b*) children without parents (*c*) unmarried mothers and their children (*d*) deserted children

4 To inquire into the existing provision in public institutions for the care and treatment of mentally defective persons especially as regards the care and training of mentally defective children.

TUBERCULOSIS IN CORK

The annual medical report of the Cork County and City Sanatorium, submitted by Dr Richard Alherne, resident medical superintendent, for the year ending March 31st, 1924, contains a valuable summary of the vital statistics concerning tuberculosis in the Free State, as well as in Cork city and county The figures reveal a marked reduction in the mortality from this disease in recent years To combat the ravages of the disease the report recommends the adoption of an improved antituberculosis scheme The putting into force of compulsory notification in addition to the establishment of tuberculosis dispensaries in city and county, is strongly advocated Scant attention, the medical officer states, has hitherto been devoted to the detection and prevention of the disease, which, in the majority of cases, is acquired in childhood Child welfare and the provision of a pure milk supply would constitute measures of supreme importance in the prevention of tuberculosis Other suggestions in the same direction are housing improvements and town planning schemes, open air schools for tuberculous children, medical inspection of school children, and a training colony for selected cases The number of patients admitted to the Cork County and City Sanatorium during the year under review was 359

VITAL STATISTICS FOR NORTHERN IRELAND

During the quarter ending September 30th, 7 264 births were registered in the twenty-seven superintendent registrars' districts in Northern Ireland, this number being equivalent to an annual birth rate of 22 6 per 1 000 as compared with the corresponding figure of 20 7 in the Irish Free State, 21 4 in Scotland, and 19 3 in England and Wales The deaths registered during the quarter numbered 3 975, representing an annual rate of 12 4 per 1 000, as compared with 11 3 in the Irish Free State, 11 2 in Scotland, and 9 3 in England and Wales The birth rate was 1 3 below the rate for the corresponding quarter in 1923, but equalled the average rate for the third quarter of the ten years 1914 to 1923 The death rate was 0 5 above the rate for the corresponding quarter in 1923 and 1 3 below the ten years' average rate During the quarter 121 coroners' inquests were held representing 1 in every 33 of the total deaths registered Uncertified deaths (those occurring when there had been no medical attendant during the last illness but an inquest was not held) numbered 401, or 10 1 per cent of the total deaths

England and Wales.

SIR JAMES BARR AND THE LIVERPOOL MEDICAL INSTITUTION

A large number of members and ladies attended a special meeting of the Liverpool Medical Institution on November 19th to celebrate Sir James Barr's fiftieth year of membership The President Mr R C Dun proposed that the sincere congratulations of the members be tendered to Sir James Barr Professor Richard Caton, a former president of the Institution, who reached his jubilee year of membership in 1919, gave an account of the many honours and degrees that had been bestowed upon Sir James Barr, and alluded to the valuable help that Lady Barr had given her husband throughout his career Dr Thomas H Bickerton, consulting ophthalmic surgeon to the Royal Infirmary, and a past president of the Institution described the indefatigable efforts of Sir James Barr in connection with the secretarial work and reconstruction of the building of the Institution as editor of the *Liverpool Medico-Chirurgical Journal* he had converted a debit into a credit balance, and he had held every important post in the Institution, and was a trustee The success of the Annual Meeting of the British Medical Association in Liverpool in 1912 under the presidency of Sir James Barr, had illustrated again the high esteem in which he was held by the medical profession Dr T R Bradshaw, an ex-president, described the work performed by Sir James when secretary of the Lancashire and Cheshire Branch, and his pertinacity in dealing with important business details Tributes were also paid by Dr Henry Harvey, a jubilee member" in 1922, Mr F C Larkin, and many others The resolution was carried unanimously with prolonged acclamation Sir James Barr, in responding paid a warm tribute of respect to the late Sir William Gairdner of Glasgow, whose house-physician he had been, he attributed much of his success to the influence and inspiration of that master of medicine He alluded to his start in Liverpool as a house surgeon in the Northern Hospital, and gave accounts of incidents connected with his work as prison surgeon to Kirkdale Gaol He then referred to the splendid work of the British Red Cross in Liverpool, both in the past and in the present He voiced the hope that preventive medicine in contrast with curative medicine, would be practised with increasing zeal He acknowledged the tribute to Lady Barr, and assured the audience that that occasion would ever be considered one of the most memorable events in his career

LEEDS MEMORIAL TO MR T R JESSOP

A bust of the late Mr Thomas Richard Jessop, presented by his widow Mrs Jessop was unveiled at the Leeds General Infirmary by her daughter Lady Moynihan, on November 21st The bust which is the work of Mr Quirk (Phyllis M Blundell) was accepted by Mr T L Taylor honorary treasurer and chairman of the weekly board of the Infirmary Mr Jessop who died in 1903 was for many years a member of the surgical staff of the Leeds General Infirmary and was appointed consulting surgeon in 1890 On the amalgamation of the Leeds Medical School with the Yorkshire College he was appointed the first professor of surgery Mr Jessop served for several years on the Council of the British Medical Association was a member of the Council of the Royal College of Surgeons of England for eleven years and was appointed senior vice president and Bradshaw lecturer in 1901

MEDICAL WOMEN'S FEDERATION AT PLYMOUTH

The autumn meeting of the council of the Medical Women's Federation was held in the Plymouth Guildhall on October 31st and November 1st, with the president of the Federation, Miss Frances Ivens, M S in the chair A resolution was sent to the Minister of Health expressing the opinion that he doctors to be appointed as assistant medical officers of health (school medical officer tuberculosis or venereal diseases maternity medical officer, tuberculosis or venereal diseases and pre-natal officer) should have had at least three years' post-graduate experience—to include more especially work bearing upon the appointments for which application is made,

such as diseases in children, obstetrics and gynecology, and the study of venereal diseases The possibility of securing the appointment of a medical woman on the Board of Control was discussed, and a committee was appointed to prepare evidence regarding the need for a medical woman commissioner on the Board of Control, and to take steps to submit such evidence to the Royal Commission on Lunacy, now sitting, together with a list of suitable candidates Reports from subcommittees, from representatives on committees of the British Medical Association, and from other organizations were considered The recent regulation of the London County Council that all its women medical officers must resign their posts on marriage without possibility of reappointment was deplored It was felt to be a severe blow dealt at the freedom of medical women to exercise their profession The matter was referred to the Standing Committee for the Defence of Married Medical Women for consideration as to future action An interesting discussion arose on an inquiry made several months ago as to (1) what hospitals had medical women on their staff and in what capacity, (2) in which hospitals medical women were eligible for staff appointments, and (3) what hospitals had women on their board of management In response to 581 circulars sent out 423 replies had been received, and Dr Ida Fox had drawn up a summary of the information obtained, which it is proposed shall be published in the Federation's News Letter On the night of their arrival the members of the council were entertained to dinner by the Plymouth Division of the British Medical Association This act of good fellowship was greatly appreciated and a most enjoyable evening was spent On the following day the members were entertained at a luncheon between the meetings by Dr Rosa Bale, president of the South-Western Branch of the Federation

Royal Dental Hospital

The annual dinner of past and present students of the Royal Dental Hospital of London was held at the Trocadero Restaurant on November 22nd Mr Warwick James, who presided, proposed the health of the past and present students, reminding them that the hospital was founded in 1858 and the school in 1860, and that both institutions were closely associated with the history of dentistry in this country during the last sixty years He thought it not too much to say that all the other dental schools, including their great and friendly rival, Guy's took their rise, directly or indirectly, from the institution now in Leicester Square He alluded to various recent improvements in the hospital and the school, and to the advantages which the present-day student enjoyed as compared with the student of his own time, but it had also to be said that if more was offered to the present student, more also was expected of him, and many more demands were made upon the dentist than in those early days of dental education when the mechanics of dentistry was regarded as the main concern Mr James also put forward his ideal of a post graduate school in London, associated with all the general hospitals, where members of the various staffs could co-operate and material could be collected from a wide field both for teaching and treatment The toast was acknowledged by Mr T A Covsh, one of the former students, Mr M Cohn, a present student and Sanders scholar, and the Dean (Mr H Stobie), who mentioned that the number of students at present in attendance at the hospital is 202 In response to the health of the visitors, proposed by Mr N Grellier, Sir John Bland-Sutton, P R C S , now consulting surgeon to the Royal Dental Hospital, made one of his charming speeches He recalled that in 1880, when he was beginning to teach anatomy, a fair proportion of the students at Middlesex Hospital were dental students, and in conversation with them he soon learned that the descriptions of the anatomy of the teeth in the anatomical text-books of that period were deficient To remedy this disadvantage in his own case, he obtained permission to attend the lectures on dental anatomy given by Sir Charles Tomes at the Royal Dental Hospital, that was his introduction to odontology The primary function of the hospital, of course, was to help persons suffering from the pain, discomfort, and dangers attending the eruption, decay, and shedding of teeth Some brilliant minds connected with the hospital foresaw that the time must come when dental surgery would be regarded as a branch of general surgery, and rightly, because it stood on the same tripod of anatomy, physiology, and pathology A feeling soon grew up, which had been intensified by the war, that the dental surgeon should not be content with looking after the teeth, but should take charge of malformations, septic infections, and injuries of the jaws, exactly as the orthopaedic surgeons, by peaceful penetration, were obtaining control of injuries of bone The time was coming when general hospitals, especially those associated with teaching schools, would have to provide wards for the treatment of diseases of the teeth, and odontologists must be placed on the same footing as ophthalmologists, laryngologists, and orthopaedic surgeons Although in the dead man the teeth were the most indestructible part, in the living they were the most easily destroyed by the action of pathogenic bacteria, just as the hardest bones of the skeleton were found during the war to be reduced to the consistency of over ripe cheese in a few weeks as the result of infected gunshot wounds There was much yet to learn about the development of bone, and the wise man still asked, with the ancient writer, how the bones did grow in the womb of her that was with child In all humility he had to say that the forces underlying the development and shedding of teeth were not understood But he was proud to see odontology in its present splendid position as a science and exercising such attraction for so many gifted minds

Central Midwives Board

The Central Midwives Board for England and Wales met on November 13th, with Sir Francis Champneys, Bt, in the chair A Penal Board was held first, followed by the ordinary monthly meeting The Board considered letters from the Ministry of Health with reference to the question of lengthening the period of midwifery training, and asking whether any further alterations (beyond the lately amended note at the back of the form for sending for medical help) were contemplated in the rules, the approval of the present rules being due to expire on December 31st next It was agreed to reply that no further alterations were proposed A letter was read from the British Medical Association, stating that the Association had again had under consideration the Board's reply on the question of the use of opium by midwives and that it maintained its objection to the practice complained of Lastly, it was agreed that the report on the work of the Board for the year ending March 31st, 1924, be signed by the chairman and secretary and forwarded to the Ministry of Health

Correspondence.

THE GANGRENOUS GALL BLADDER

Sir,—The opinion expressed by Sir John Bland Sutton at the conclusion of his Lloyd Roberts lecture (British Medical Journal, November 1st, p 795) should not, it seems to me, pass without challenge Some years ago at a meeting in Hanover Square he made exactly the same statement, and repeated this more or less at the Annual Meeting of the British Medical Association at Exeter On both these occasions I submitted that such a view was not based on correct pathology and was inconsistent with clinical experience

As knowledge has accumulated I am more than ever convinced that it is most unwise to lay down the rule that a gangrenous gall bladder should always be removed, and to base such an opinion on a comparison with the appendix The infectivity of a gangrenous appendix is well known, the dangers of general peritonitis equally well established, and the necessity of early removal recognized by everyone Has an inflamed gall bladder ever given rise to general peritonitis? The infectivity of the inflamed gall bladder is well known to be of a mild variety, the gummous contents in the quieter stage being sterile Acute cholecystitis recovers as a rule quickly, and carries a minimum of risk, so that urgent operation is never called for Sharp

as the onset may be—resembling in this acute appendicitis—there is an absence of the general septic absorption, pallor, rapid pulse, apathy, etc., moreover, the condition settles down even in the most severe cases in four or five days. The subacute varieties such as those recorded by Neuhuys may last several weeks and may be unattended with pain for two or three weeks, giving rise to pyrexia only, and presenting at times an interesting problem for solution. If removal of a gangrenous gall bladder be considered as essential as that of an appendix in the same condition, then, considering the difficulties sometimes encountered, I fear disaster will not infrequently follow. From a not inconsiderable experience I feel in a position to say without hesitation that *the most acutely inflamed gall bladder may be left without anxiety provided suitable drainage be employed*. Two examples will serve to illustrate the position.

Some years ago I was called to a lady who had suffered from acute symptoms for several days. The gall bladder was far advanced in a gangrenous process, was quite black, and tore on the slightest handling. After removal of the calculi a gauze covered rubber drainage tube was inserted and the wound closed. It was impossible, as will be gathered, to suture the viscus to the abdominal wall. Recovery was complete though slow. Such a drain—that is, a good sized rubber tube surrounded by a covering of ribbon gauze—enables us to drain with safety across the peritoneal cavity. In a few hours the gauze is adherent to the peritoneum, is permeated with lymph, and affords a protection not provided by the uncovered tube.

The second example was a lady of about 40 who, not having had any previous attacks, was taken ill on a Tuesday with pain, vomiting and sharp pyrexia. These symptoms continued throughout Wednesday and well into Thursday, and then abated to such an extent that she was out of immediate danger. When seen by me on Friday the urgent symptoms had subsided, and though the abdomen was still tender it was possible to palpate a large swelling reaching as low as the iliac spine. We concluded that the tumour was a gall bladder, and that operation might be postponed to the following day. On Friday night the patient slept well without any sedative, and was free from all distress. On Saturday morning the tumour could be freely handled, all symptoms had subsided, and she was asking for food. Saturday was comfortable, and the night passed without any sedative. On opening the abdomen on Sunday morning an enormous and acutely inflamed gall bladder, reaching below the iliac spine and attached to neighbouring parts by recent adhesions, was exposed. It was removed without difficulty and without being opened, the wall being unusually thick. A considerable part of the wall, especially the hepatic aspect was green in colour from the severity of the inflammation—was, in fact, in a stage of gangrene. The specimen is in the museum of the Royal College of Surgeons together with some thirty gall stones—some of considerable size. It is over eight inches in length, and still shows the green colour.

From the progress of the case I doubt not it will be agreed that this gall bladder would have recovered. The extreme condition found in the first case is not likely to be encountered in the present day.

I would beg to emphasize—

1. That, unlike inflammation of the appendix, that of the gall bladder gives time, carries very little risk, and that operation may safely be delayed and often deferred.
2. That a gall bladder in the most advanced condition of gangrene may be left without anxiety provided suitable drainage be employed.—I am, etc.,

CHARTERS J. SYMONDS.

London, W.1, Nov. 19th.

THE GENERAL PRACTITIONER AND THE MATERNITY SERVICE

SIR,—I venture to suggest that the reason why the general practitioner remains so apparently oblivious of the storm that is raging round his head over the shortcomings of the maternity service in this country is because he feels his voice is of no account where the opinions of our obstetrical experts come in. He hears little good of himself at their hands—he gets no credit for what he may have done, and all the blame for everything that happens to the lying-in woman. Expressions such as "dirty doctors," "careless," and "ignorant," are so commonly used to his discredit, that, personally, I am much disgusted with what I read in some of the discussions and articles in the JOURNAL. With all our [illegible] can the lying-in woman do without us? What have our experts to offer to take our place?

Is it a fact that puerperal sepsis only happens in a woman who has been examined and interfered with by a general practitioner or a midwife? I will not believe it. The worst case of sepsis following a confinement I can think of in my practice occurred in a woman who's child was born before I saw her, the placenta and membranes had already come away intact. Other cases followed incomplete abortions. I have been in active general practice some thirty-three years. Of these I spent two years in town and colliery practice, and the remainder in a sparsely populated rural area. I have I think personally attended some 1,400 women in connexion—I exclude all premature births and abortions. I have never seen a woman die of puerperal sepsis, and, excluding abortions, I have not seen more than half a dozen cases that I could honestly regard as sepsis. The only deaths following confinement I have seen were one from ante-partum haemorrhage, one, in an anaemic frail woman who was dying when I reached her, from post-partum haemorrhage, and two deaths from pulmonary embolism. Except in the first case, I do not think any of our experts could have helped me at all.

I do not know that other country districts are in any way different from mine, nor have I reason to think my experience is otherwise than that of other practitioners similarly situated—miles from railway stations and still more miles from a hospital. It is almost unheard of, such a thing as a death during or after childbirth anywhere amongst my medical neighbours in their midwifery practice, so really I cannot understand this present-day outcry and alarm at the risks and dangers the poor women run by being left to the mercies of common doctors and nurses.

When I first began practice it was the custom in the country villages to allow a woman to lie for some days in the clothes and bedding she was confined in, and I well remember the foul stench of some of these cases. I remember, too, the uphill fight I had in those days with the "Sairey Gamps" against so horrible a practice. Many a time when I refused to leave the house till a woman had been washed and had put on clean clothes and bedding, have I been told that I would "give the woman her death" if I did. I have been told "her blood is she died, would be upon my head." Fortunately for me none of them died, nor as I have said, have I ever seen a death from puerperal sepsis.

Notification is quite useless. The local medical officer of health on every side is only another general practitioner and has no place in which to put a case of this disease, and what more can he do than a man who is not a medical officer of health?

I notice that all this talk about improvements in our maternity service has relation to London and big towns. I see no mention of the troubles and trials of country doctors. many of us thirty and forty miles from specialist expert help if we need it, and in the middle of a stormy winter's night out on the moors face to face with a bad midwifery case, where can we get help? We have to do what best we can—and it must sound extraordinarily strange to the hospital expert that we do manage all right in the end—and still we are held up to every form of abuse, if not as a public danger. I object to such destructive criticism of a system unless the critic has something better to offer. I have heard or nothing yet—nothing but ideals which are all very fine if they could be attained. Of what use is notification to the medical officer of health so far as the patient is concerned? He does nothing. We practitioners notify all kinds of things, and it is seldom we ever hear of the medical officer of health doing anything. he may never even visit the case or its surroundings. If we are to notify puerperal sepsis or any other thing, surely let the notification be to an official who is expert in that particular line and who can come and give us the advice and help we really need.

If the lying-in woman is so badly in need of specialist assistance why cannot there be an expert obstetrician made available in certain accessible centres whose advice we men in isolated districts (where there are no hospitals) can get either for help in a [illegible]natal treatment, such as diagnosing

pelvic contractions, or during a difficult case in labour where serious trouble has arisen, or afterwards in case of sepsis? A service such as this would be of real practical help to us We certainly do not want an official in the form of a Grand Inquisitor, who may know nothing more of the work than we do, but who is simply to inquire into our treatment and general obstetrical knowledge and make a report to a higher tribunal, to our possible degradation No, Sir, what we want is real assistance, sound expert advice, and practical kindly help in our hour of need Even amongst the experts there seems doubt as to what is and what is not puerperal sepsis Who, then, is to decide?

I entirely agree with your concluding remarks in the excellent leader in the JOURNAL of November 15th when you say, "The reasoned opinion of those who have hitherto borne the burden of the maternity service is the most essential element in bringing about wise amendment" The *general practitioner knows* quite as well what he needs as those experts do, but he has neither the time nor the opportunity to attend conferences and discussions, or even to enter into controversial correspondence, hence he does not appear much in the arena, and the other side has it all its own way

I cannot conclude this letter without mentioning a case I can never forget A lady on a visit to one of our large cities had the misfortune to have an abortion at about the third month She was never seen by a general practitioner at all She was attended in a home by experts and died of sepsis in their hands Discussing the case with a colleague, he remarked, "If this had happened with you or with me it would have ruined us, as it is, it looks like a 'shot upon high hit'"—I am, etc,

Felton, Northumberland, Nov 18th R A WELSH

SIR,—This century-old controversy emerges to-day under a new aspect The problem is this Of all births one-fourth need help—skilled help How best to provide that is now being discussed in a manner very akin to present-day tendencies Professor Louise McIlroy, whose letter on obstetrics and public health authorities appeared in your issue of October 4th (p 642), would eliminate the family doctor entirely, and would have a staff of skilled specialists to do his work Have we not had enough of that already? There are school medical officers, tuberculosis officers, regional officers, and now there is to be the obstetrical officer Another battalion added to the vast army of the inspectorate! State aid as against private enterprise again just as we see it everywhere threatening to be if not already in being And this suggestion comes at a time when, with the development of ante-natal endeavour, from which we all hope so much, the prospect is rising of a much larger proportion of natural labours being experienced

This is not the only novelty exhibited in Professor McIlroy's letter She assumes that a medical practitioner cannot be found equal to the work for which he has been trained For what purpose, then, are the activities of the General Medical Council, of extern examiners, and the whole body of statutes regulating medical education? Are they not to ensure that registered medical practitioners shall give satisfactory proofs of competence before being allowed to practise? And that, as a body, they are competent for the work it is only fair to assume No doubt there are exceptions, and cases are seen in hospital to show this, but can one wonder at this when we know the state of teaching in obstetrics? It is common knowledge in the schools that all the work is reserved for pupil midwives, and that the medical student has to struggle hard to get anything like a bare modicum of what he should have in the way of experience In view of that faulty system it is not surprising that the rising generation of medical men should be less familiar with obstetric work than perhaps are their seniors

I have recently read a paper on country midwifery practice,[1] in which I showed that quite a low standard of mortality or morbidity was attainable even in rather difficult circumstances I do not think, Sir, that the time has come for socialist invasion of this territory To the patient herself it would be most unwelcome Her family doctor is the one she would prefer, and it is up to him to show that he is fit for the duty when he undertakes it That will not be difficult It is an instinct of all specialists to magnify their specialty and to enlarge upon its difficulties Operative midwifery is a much easier thing than many will allow, far easier than much of the surgery which we in the country, at any rate, have to do On that one cannot enlarge here But the solution of the problem lies here and not in State interference Give the medical student more thorough training impress upon him the fact that this is to be one of the most important and valuable of all his medical duties, and that upon him lies not only the comfort of his present patient, but the well being of the next generation, and of a surety he will respond—I am, etc,

C E DOUGLAS, M D, F R C S E

Cupar, Fife, Nov 25rd

SIR,—The discussion on obstetrics and local health authorities, which Dr Louise McIlroy started in the JOURNAL of October 4th (p 642), is of the greatest importance and must be examined from various points of view

May I preface my remarks with a statement the accuracy of which few will contest? The best type of family medical adviser of the last generation was almost invariably a skilled obstetrician His reputation largely depended on his successful conduct of midwifery cases As there were no trained midwives he attended a large number of confinements This ensured great experience and dexterity begotten of constant practice Parenthetically, he had previously been an unqualified pupil to a reputable general practitioner—a most valuable asset to him later

The "panel doctor" now reigns in his stead It is through this channel that the solution of the difficulty may be found To attract the best amongst them to take up midwifery practice seriously the inadequate fees must be raised May not the wealthy friendly societies be brought to see that they could not better use a proportion of their huge surplus funds than in augmenting in special cases the existing maternity benefits? In a few years the insured married woman would be found on the panels of those specializing in midwifery Midwives and the public would soon know on whom they might safely depend in matters connected with pregnancy and delivery

At the risk of offending consulting gynaecologists, amongst whom I can number some of my best friends, I should like to say they know very little of the excellent midwifery conducted in outlying country places and many manufacturing centres It may surprise them to know that some general practitioners have never sent a case to a institution, and have dealt with practically every complication with a mortality that compares favourably with the Rotunda statistics I listened to a friend who is a well known gynaecologist talking to a colleague to whose address at a British Medical Association meeting we had been paying appreciative attention The gist of his remarks was "Before long all lying-in cases amongst the well to-do classes would be delivered in nursing homes, every case being as carefully prepared as for an abdominal section Those amongst the working classes beyond the skill of the qualified midwife should go into public institutions" I ventured to ask, Why include midwifery in the curriculum of the ordinary medical student?

I know they see the damage done by unskilled midwifery, which might have been prevented, but I would remind them they also see the inevitable proportion of damage due to exceptionally difficult and urgent forceps cases which fall, unhappily, to the lot of all of us I would, above all, plead that no suggestion of further official supervision be mentioned, or I fear it will not be long before married women will have to approach humbly some tribunal of austere, learned matrons for permission to procreate the much desired offspring—I am, etc,

J B GARMAN, M R C S, L R C P

Birmingham, Nov 20th

[1] *Edin Med Journ*, June, 1924

SIR,—In the recent correspondence in your columns on this subject I have not seen any mention of the importance of educating the lay public to look upon any surgical intervention during labour in the same light as a surgical operation

Surgeons have rightly insisted, and the general public have realized, that a surgeon requires the assistance of at least an anæsthetist and a trained nurse during an operation, yet a general practitioner in the performance of any obstetric operation is expected to combine these roles with, or in some cases without, the assistance of a midwife, with the inevitable result—that technique, asepsis, and anæsthetic must suffer Of necessity, cases must arise when it is impossible in the time available to obtain assistance, but with the improvement in ante natal work and the early recognition of abnormal cases in labour these should be reduced to a minimum

I cannot help feeling that the medical profession is largely responsible for this attitude of the public —I am, etc,

Crediton Devon Nov 22nd HAROLD I L HUGO, M B

SIR,—Every year that passes many columns of the medical journals are filled with what amounts to little less than argument between the general practitioner and the specialist upon the proper conduct of maternity cases Such a state of affairs could scarcely exist did not the general practitioner, surely with some justification, regard this subject more than any other as his own specialty Now, it is a postulate of argument as great as any of Euclid's, that two persons are viewing the same thing from different angles It this be granted, the remedy is obvious either the two sides must try to exchange angles, or, even better, they should take observations together at each other's angles and at various intermediate points

Let us grant for the moment that "bad midwifery" does exist in general practice Can we say that "meddlesome midwifery" does not also exist in specialist circles? Do we discredit the figures of the Johns Hopkins Maternity Clinic, where in several hundred cases observed, the puerperal morbidity or halt the cases, treated with strict hospital antisepsis, was much greater than in the other half, treated with a minimum of soap-and water toilet? Is it true that the total infant mortality (not in any one clinic) of twilight sleep' does not exceed the normal? Particularly would it be worth while investigating the infant mortality and the maternal morbidity of several hundred cases of occipito-posterior presentations in hospital clinics and in general practice

Apart, however, from statistics, which, as Moynihan has said 'can prove anything, even the truth," there is only obvious remedy for these differing opinions—namely, each side must see and study the other side's work A certain number of general practitioners do now, in their small amount of spare time, indulge in post-graduate study, but can it be said that the specialist has made any serious effort to study the conditions of general practice?

Referring to personal records—which have involved the conduct or superintendence of, or at least the responsibility for, about 2,000 cases—several outstanding points assert themselves The first is the relative rarity of serious maternal morbidity The second is the frequency of cases which by textbook standards, would be relegated to the chapters on difficult or complicated labour Very many of such cases would attain no such dignity in the eyes of the general practitioner, particularly with regard to persistent occipito-posterior and transverse presentations Such cases are regarded with a feeling more akin to annoyance than anything else Not that he underestimates their true import—his experience of many such cases is a sound corrective—but, realizing the overwhelming proportion of similar cases which have emerged successfully his prognosis will not err on the gloomy side Only a year ago practitioners throughout the country received with a shudder of horror the verdict of an obstetric specialist on the treatment of persistent occipito-posterior presentations 'If, in a case of persistent occipito-posterior presentation, rotation cannot be secured, and gentle traction with the forceps is unsuccessful, the child should be perforated and extracted" Shades of Herod! Is this really true? Is there a practitioner of experience throughout the length and breadth of England who cannot recall a dozen cases under this heading, the children wherein flourish exceedingly, and the mothers whereof have not yet required hysterectomy or even a Fothergill operation?

Our facts and figures may side-slip from the rays of absolute truth Our impressions may have the elasticity of incurable optimism, but our aims are deadly honest At a very vulgar fraction of a specialist fee we flog our brains for better results, and we implore 'younger Harley Street" to come off its perch "Come down among us, and see for yourselves that, great as is the gap between the surgery of war and that of civil life, far greater is the gulf that separates 'midwifery in the cottage' from the practice of the great maternity clinics"—I am, etc,

Midsomer Norton Somerset Nov 22nd D A MITCHELL, F P C S Edin

SIR —One of the speakers at the discussion of the Royal Society of Medicine on November 6th is reported to have stated that 'the chief and almost sole cause [of puerperal fever] was bad midwifery practice" This view still seems to be somewhat prevalent, and it is this attitude—which seems to be commonest among medical officers of health—which is one of the chief causes of the whole difficulty or notification Is this view, however, the correct one? I think not In time it may come to be realized that a rise of temperature following labour is not necessarily, or indeed often, anyone's fault This, curiously enough, seems to occur quite as often in the perfectly straightforward case when there is no interference and there are no internal examinations by anyone, and when also the conditions are excellent, whereas the difficult case with much interference will often run a normal course throughout after delivery Also it does not seem to be produced by squalid surroundings indeed, it is reported to be more common in the mansion than in the cottage

Again, the antiseptic and aseptic era has not been shown to have had any beneficial effect on the death rate rather the reverse Surely the advent of antiseptic and aseptic principles—however incompletely applied—should have shown some slight benefit if the infection were usually introduced from without In my opinion, in the majority of cases especially the bad ones, the cause is endogenous, some condition of heightened susceptibility or some undiscovered local focus, and I think that research directed towards this end might bear fruit

With regard to notification, definite benefit must result to the patient, or it must be necessary from the point of view of safeguarding others before it will be a success Notifying cases with a temperature of 102° for a certain number of hours, or 100° as I see one speaker advocates will never appeal to the general practitioner I frequently see cases with a slight rise or temperature when everything in the genital tract is normal—such cases as 'milk fever" coming on as the breasts become tense (not mentioned by a single speaker), or other febrile conditions—for example, common colds influenza, etc

I think the better way would be to use the term "puerperal fever" rather than puerperal sepsis"—as it is certainly not in every case a sepsis comparable to wound sepsis —and not to attempt to define it further for notification purposes at present The general practitioner must be trusted to notify when his patient's welfare or the safety of others calls for it

The slightest suspicion of a slur on the practitioner who notifies must become a thing of the past first because it is unjust and, secondly because the fear of it may in certain cases cause a doctor to delay notification which will also cause a delay in the provision of the special treatment which that notification should bring —I am etc

Acock's Green Birmingham Nov 17th L LEIGH HADLEY M C, M B CH B D P H

SIR —The present controversy on this subject need not be taken too seriously by the general practitioner During the last thirty-five years we have seen so many varied fashions in midwifery advocated by experts that the present habit of blaming the practitioner may be regarded

as the latest fad We have had ante-partum and post-partum douching with various antiseptics, advice to finish every first case with forceps, condemnation of forceps in nearly every case, and so on We have been advised to conduct every confinement as if it were a major operation Major operations in hospital never become septic, but of two Cæsarean sections which were done for me in hospital, one returned home with a suppurating abdominal wound! The infection in this case was not introduced by the examining finger, for no examination was made by me for two months previously

The only two things we know about puerperal fever are, first, that we—experts included—know nothing about it, and secondly, that whenever it occurs the practitioner will be blamed for it First he was blamed for carrying the infection on his clothes or on his hands, and probably in some cases he was rightly blamed But when cases occur sporadically he is still blamed, but in a different way he now introduces the infection from one part of the patient to another The idea that the patient might introduce it in the same way by scratching the vulva, or that it might have been introduced by coitus previously, or conveyed on an insanitary sanitary towel, is, of course, preposterous

What about the cases, sometimes fatal, which we all have, when no examination has been made by midwife or doctor? When these have been explained it will be time to put the blame on the general practitioner

I have attended about five thousand confinements with one fatal case of puerperal fever In this case I found that the woman's attendant was desquamating from scarlet fever I mentioned the case to an expert, and can still remember the shrug of his shoulders which meant, "A very nice excuse" Until the experts get rid of the obsession that the practitioner is the person responsible for the continued prevalence of puerperal fever they will not go far towards finding the true cause—I am, etc,

Birmingham Nov 23rd ROBERT ANDERSON, M D

SIR,—In Professor McIlroy's letter she refers to the midwife as a highly trained specialist May I suggest that some at least of this training is obtained at the expense of the medical student?

The C M B regulation insisting on personal conduct of twenty cases is carried out scrupulously by hospital staffs, and it is common for candidates to have done thirty to forty cases before coming to examination

In the case of medical students there is no such regulation binding on all medical schools and universities, the result is the prevailing idea, in hospitals where both students and nurses are trained, that the training of the student is secondary to that of the midwife

I have ventured to draw attention to this point as I think the extent to which it operates is probably not realized by the seniors of the profession, among students it is much discussed and somewhat resented—I am, etc,

DOROTHY DOUGLAS, M B, Ch B

Cupar Fife, Nov 23rd

PUERPERAL SEPSIS

SIR,—In the course of the correspondence upon puerperal sepsis I observe that Dr Leonard Mackey (November 22nd, p 974) suggests that a vaccine might be of some use May I say that I have so used a vaccine for over two years?

The method of preparation and the dosage were described in this JOURNAL in 1922 The vaccine is a stock one, and the dosage differs fundamentally from that of the ordinary vaccine as a result there is no risk of undesirable "reaction" effects on the patient

The results have been as good as one has any right to expect The vaccine is suitable for the gravest of cases So far between forty and fifty cases have been treated, and as far as my information goes only one case has been unsuccessful There may be others, but if so I have not heard of them

I agree with Dr Mackey on the importance of early recognition of the condition, and would add that, as in every other form of treatment, the sooner the vaccine is administered the more certain are the results—I am, etc,

Manchester, Nov 22nd C E JENKINS, Pathologist to Salford Royal Hospital

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SIR,—Dr Mackey expresses the opinion that in the vast majority of cases of puerperal sepsis we have to deal with a specific streptococcal infection I beg to lend strong support to this view, since during the past twenty four months as bacteriologist to the Birmingham and Midland Women's Hospital I have, in the course of examination of 120 swabs taken from the septic puerperal uterus, found a streptococcus with the same definite cultural character, in 63 instances In a smaller number of cases of puerperal infection I have been able to isolate the same organism from the blood stream

That I have found this streptococcus in a smaller per centage of cases than Dr Mackey found may be explained very largely by the fact that in many instances the swabs in my series were taken in the wards by various resident officers, who at first failed to realize the importance of avoiding vaginal contamination in taking swabs from the uterus

Dr Mackey's description of the streptococcus appeared in Mr J Furneaux Jordan's Ingleby Lecture on puerperal sepsis, published in the BRITISH MEDICAL JOURNAL, July 6th, 1912, so I will only remark that it differs from the *S faecalis* group in being haemolytic and in failing to ferment mannite, and from the *S pyogenes* group in the appearance of its growth in broth, and especially in the large size and opacity of its colonies on agar This appears to discredit two current views as to its causation (1) that the uterus is infected from the rectum or faeces by common faecal streptococci, (2) that it is a diffuse *like* wound infection in general

It is true that the bacteriologist has as yet *failed to* construct a thoroughly satisfactory classification embracing all known varieties of streptococci, but I beg to claim, in virtue of the accumulating evidence, that a case has been made out for searching for a streptococcus of this particular type in pregnant women—I am, etc,

Birmingham, Nov 24th REGINALD G ABRAHAMS

SIR,—Dr Gordon Ward writes that "of factors predisposing to it [that is, puerperal fever], nothing is certainly known except that there are such factors" In *Iowa Gynaecologica*, vol iv, Fasc 1, p 29, 1909, there is given a detailed report of an investigation by Dr G L Basso into the bacteriological findings resulting from observation made on the vaginal bacteria present in 150 pregnant (not parturient) women in hospital The number of cases in which streptococci were present in this investigation should receive full consideration before the doctor or midwife in attendance be blamed If Dr Mackey's suggestions could be carried out more would be done to reduce maternal mortality than any amount of municipal expenditure in providing consultants for cases of so-called puerperal fever, and far less expenditure would be needed—I am, etc,

Colwall, Malvern, Nov 23rd MARY WILLIAMS

ENCEPHALITIS LETHARGICA

SIR,—I note that Dr Farquhar Buzzard, in his interesting paper published in your current issue (p 937), speaks of the importance of detecting the early stages (otherwise called "ambulatory forms") of this disease He has observed that conditions indistinguishable from influenza or even ordinary catarrh are sometimes followed by pronounced encephalitis Does this, however, necessarily mean that they have been "early stages" of that affection?

May it not well be that any condition of an influenzal nature may eventually (in certain circumstances) *become* the serious condition which we call encephalitis lethargica, and that at the present day (owing largely, no doubt, to the general devitalization produced by the war) there is a greater tendency in that direction than there used to be? In other words, is not Dr Farquhar Buzzard assuming too

readily that the apparently "influenzal" cases quoted by him, and which eventually became encephalitis, had been specifically encephalitis from the beginning.

If I am right in my surmise there has been some question-begging here, for might we not quite logically on Dr Buzzard's assumption, notify any case of influenza presenting nervous symptoms as encephalitis in the early stage"—I am, etc,

Edinburgh Nov 22nd A J BROCK

TONSILLECTOMY

SIR,—I fear that Mr I J Steward's letter (November 8th, p 876) can only serve to retard progress in the evolution of a sound surgical technique in tonsillectomy.

I have taken many opportunities to watch the work of some of the skilled protagonists of the various guillotine methods and have given them a protracted trial before adopting the method of dissection, which I find superior to all others for its accuracy, its avoidance of trauma to surrounding parts, and its relative freedom from reactionary and secondary haemorrhage. Mr Twistington Higgins rightly says that the necessary skill can be acquired fairly quickly, but the main difficulty which exists in the general adoption of this method is the dearth of sufficiently skilled anaesthetists.

I find it a very great help indeed for the anaesthetist to act also as the assistant controlling the anaesthetic with one hand, while he packs the tonsillar fossa with the other. When we have a sufficient number of such trained anaesthetists the dissection method will, I believe, oust all others.—I am, etc,

London W 1 Nov 22nd CECIL A JOLL

MARRIED WOMEN IN PROFESSIONS

SIR,—The London County Council has recently decreed that in future its women medical officers must resign their appointments on marriage. They will be ineligible for reappointment and married medical women will not be eligible for service under the London County Council. The London County Council is not the first public authority to adopt this policy, it is part of a widespread movement which has existed for some years and which seeks to exclude married women in general from professional or other paid work.

Regulations such as that referred to above strike at the very foundations of the position women have won through the long struggle of recent years for emancipation and citizenship. The Bishop of Lichfield, preaching at St Paul's at the jubilee of the London School of Medicine for Women said: "The true meaning of the movement for the emancipation of women is a claim for liberty to exercise duties." As a corollary to this it also means that the community has the right to benefit by the use of these powers which under this new liberty women have acquired.

Municipal authorities are responsible to the ratepayers for the employment of their funds to the best advantage, and for obtaining the maximum efficiency from those whom they employ. It may be admitted that as a general rule marriage is likely to involve difficulties for a woman in her professional career such as do not affect a man; but this is not so in all cases, and there are also undoubtedly many instances where the special value of the individual outweighs the risk of temporary drawbacks. The policy advocated by the Medical Women's Federation has always been that municipal and other authorities should not make marriage *per se* a ground for dismissal but should wait until there is evidence of diminution of efficiency, and that every case should be considered on its own merits. If resignation is demanded on marriage it should not exclude the possibility of reappointment. It is not to the true interests of the public that the hands of appointing bodies should be tied and their choice limited as they are by sweeping regulations of this kind. The authority adopting such measures entrenches itself, and its successors in a stronghold whose walls effectually keep out of view possible married candidates among whom it is conceivable that some of exceptional calibre might be found. The mere fact that a woman wishes to continue to practise after marriage often indicates special devotion to her profession and hope of her work. The degree to which marriage is likely to be a hindrance to a woman in professional or other work varies considerably with the nature and conditions of the work. It is unreasonable and unfair to put all married women, from doctors to charwomen, into the same category, and the fact that this has been done is evidence that other reasons have come into play besides considerations of efficiency. The regulations of the London County Council are contained in a Standing Order passed in 1905 which applies to all classes of married employees. Temporary exemption of certain classes of workers was permitted but these exemptions have been successively withdrawn, that affecting medical officers being rescinded on October 21st of this year.

The support of the movement to keep married women out of employment seems to proceed largely from two quarters. First, from a large group of well meaning people who think that the activities of married women should be confined to their homes on the grounds that "a woman cannot have two professions," and who look with fear at anything that seems to threaten the old conception of marriage. Secondly, from those who seek to exclude married women from the labour market on the grounds that it is unfair that they should compete with single women and with men who have to support a family, especially in times of much unemployment.

With regard to the first group, it should be pointed out that whatever may be the opinion of individuals on the desirability or the non employment of married women, their right to employment has been established by Parliament in the Sex Disqualification (Removal) Act of 1919 and restrictions which apply to all married women are clearly against both the spirit and letter of this Act. In connexion with the objection to married women's labour on economic grounds, the Medical Women's Federation, supported I believe by the medical profession in general, holds strongly that the private affairs of candidates should not be considered except in so far as they may affect the efficiency of their work. If the economic position of women is to be recognized as a factor in their fitness for appointments the principle ought in common fairness to be applied to both sexes and men with rich wives or private means should be turned down equally.

If this movement against married women as workers is progressing it may well be asked: Does the public desire all professional women to be celibate? Must a girl who takes up a profession be faced with the prospect that she can only marry at the price of that profession and the loss to herself and the public of the time and money spent on her training? It has been well said: What women really want is equal opportunities and to be left alone"—I am, etc,

F MAY DICKINSON BERRY
Hon Secretary Secretary Medical Women's Federation

London W 1 2nd

Obituary

W B CRAWFORD TREASURE M D
Cardiff

THE death of Dr Crawford Treasure which occurred at his residence on November 15th removes a prominent physician and citizen from Cardiff and deprives the British Medical Association of a loyal and devoted worker.

Born sixty-five years ago in Somerset William Beeson Crawford Treasure was educated at Crewkerne Grammar School and at Charing Cross Hospital Medical School, where he had a distinguished career qualifying M R C S and L R C P in 1883. Later he obtained the degree of M D Durh. Before taking up practice he was house-physician and resident assistant medical officer at Charing Cross Hospital and after that was resident clinical assistant at Leicester Royal Infirmary. He settled in practice in Cardiff about thirty-five years ago and soon established himself as one of the most popular medical men in the city. He continued in practice until about nine months before his death, when failing health compelled him to retire. He filled various offices in Cardiff, including that of medical officer to the Post Office and medical referee of several

insurance companies. Although actively engaged in practice he still found time and energy to expend in numerous other directions. He was president of the Cardiff Medical Society, and until recent years took a great interest in this body, he was a justice of the peace for the city of Cardiff for almost twenty years. He was very appreciative of good music, and was at one time organist to St. Stephen's Church, where he was also a churchwarden. A keen sportsman, in his younger days he played cricket, but his principal game was bowls, at which he excelled, being formerly captain of the Cardiff Bowling Club. His association with Freemasonry extended over a number of years, and he reached high office, being a past master of the Prince Llewellyn Lodge, and also first principal of the St. John's Chapter. His political views were Liberal, but he was not actively associated with politics.

In many ways Dr. Crawford Treasure's public medical work was that by which he will be longest remembered. He was the first secretary of the Cardiff Panel Committee, and served in this office with distinction for several years. His work in connexion with the British Medical Association extended over most of his professional life. He was secretary and later chairman of the Cardiff Division, and president of the South Wales and Monmouthshire Branch. He was also a member of the Divisional Executive, the Branch Council, and the Contract Practice Committee of the Branch. For the last ten years he was a Divisional Representative, and was also a member of Council and of the Medico-Political Committee of the Association. He always gave of his best to the Association, and was a regular attendant at meetings, where his opinions—the result of his long experience in Association work—were often sought and were invariably helpful. His interest in Association work continued until the end, and he used to attend meetings when his physical condition rendered it almost unwise for him to do so.

Dr. Gilbert Strachan, honorary secretary of the Cardiff Division, writes:

He was a man of charming personality, who was always courteous and genial to his colleagues and who was welcome wherever he went. In particular to his juniors his attitude was one of friendliness and helpfulness, and the writer can recollect many occasions when advice was sought from Dr. Treasure on Association matters, it was freely given, and was always practical and helpful. Four years ago he underwent a serious surgical operation, and, although he made a successful recovery, it was evident since then that his powers had been undermined. His last illness was lingering, and the end was not unexpected to those who knew his condition. He leaves a widow, one son, and two daughters, to whom is extended the deep sympathy of a large circle of friends. His funeral on November 19th was attended by many members of the profession in Cardiff, also by a great number of personal friends and representatives of Freemasonry.

The Medical Secretary (Dr. Alfred Cox) writes:

In Crawford Treasure the Association has lost as devoted and loyal a member as it has ever possessed. He was a man of many and varied interests and accomplishments. In addition to his love of music he was a very accomplished linguist and a charming conversationalist. He was a sincere and devoted Churchman, and loved to entertain visiting clergymen and Church workers in his home, which he often did. But to see him at his best one had to be with him in the bosom of his family. Few men can have had a happier family life or inspired greater love in those immediately around him. I often had occasion to ask him to do services for the Association, and he never failed me. The writer of the obituary notice truly says that Crawford Treasure's work for the British Medical Association was often done bitterly when he was unfit physically to do it. But his love of the Association work and his sense of duty towards it were very conscious, as letters I received from Mrs. Treasure during the last few weeks of his life abundantly show. Everybody who knew our old friend, and particularly those who knew his family, will desire to join me in this brief token of affection.

SIDNEY JOHNSON TAYLOR, M.D.,
Norwich.

We announce with regret the death, on November 14th, of Dr. Sidney Johnson Taylor, the well known Norwich ophthalmic surgeon. Dr. Taylor was educated at St. Thomas's Hospital and Edinburgh University, and obtained *the diploma M.R.C.S. in 1878, graduating M.B., C.M.Edin.* in 1882. In 1922 he proceeded M.D. He was the first to win the Musgrove scholarship at St. Thomas's Hospital, and he also obtained the Mead medal and the Treasurer's gold medal. At the University of Edinburgh final examinations he tied for the first place with first-class honours, and for the Ettles prize.

Mr. E. Treacher Collins contributes the following appreciation:

By the death of Dr. S. Johnson Taylor many lose a warm, sincere friend, and the medical profession an experienced and skilful practitioner. He played for a long time a prominent part as ophthalmic surgeon, not only in Norwich and the surrounding district, but also in the various societies and congresses connected with ophthalmology, at the meetings of which he was a very regular attendant. At St. Thomas's Hospital he came under the influence of the earnest and forcible teaching of Dr. Charles Murchison, who was at that time physician to the hospital and lecturer on medicine. Taylor, admittedly something of a hero-worshipper, in later years manifested his admiration and devotion to his old master by having his son christened Charles Murchison. For a time Dr. Taylor engaged in general practice at St. Servan, near Dinard, in Brittany, but later decided to take up ophthalmology. At Edinburgh he had worked under Argyll Robertson, and he returned to London to work under Nettleship at St. Thomas's and Moorfields. In this latter hospital he served as clinical assistant at a time when Nettleship was at his prime as a teacher, and when all those who had to work for him had to do so most assiduously, both in note taking and clinical investigation. In 1889 Taylor became a member of the Ophthalmological Society of the United Kingdom, having by that time started practice as an ophthalmologist in Norwich, where he remained actively engaged up to the time of his death.

The remarkable circumstance about Taylor's work in Norwich is that whilst he carried on a most extensive practice he never held a hospital appointment. Having, therefore, no beds to which he could transfer cases requiring operative treatment, he was led to perform many major operations on the eye in his consulting room or in the patient's own home, in circumstances which, in the case of one less skilful or who knew less well what he was about, would be considered decidedly risky.

Johnson Taylor's contributions to the literature of ophthalmology consist mostly of the record of interesting cases well worked out, and of remarks in discussions on papers read by others. He was a frequent speaker both at the meetings of the Ophthalmological Society and at the Oxford Ophthalmological Congress. The racy character of his remarks to some seemed rather out of place in the sedate proceedings of scientific societies, but they were usually very much to the point, containing much practical common sense, and often helped to lighten the solemnity of the meetings. All his life he retained a great affection for Moorfields Hospital. For years it was a common practice of his to spend a day in town by visiting the hospital in the morning, going to a cricket match at Lord's, or some other form of entertainment in the afternoon, and attending a meeting of the Ophthalmological Society in the evening. His was a very familiar figure in the operating theatre, where by watching the procedures of his colleagues he kept himself well up to date in ophthalmic technique, a matter in which he took the greatest interest. Taylor's admiration for Moorfields was manifested in a very material way, apart from his attendances at its clinics. At the time of its centenary appeal, when a dinner was held to raise funds, Johnson Taylor sent a munificent contribution, and wrote a letter which so fully expressed the warm feelings which so many hold for the institution, that Charles Wyndham, who was in the chair,

read it to the assembled company with great effect The death of Johnson Taylor's son was his great grief in his later years, and to the memory of his old teacher, Charles Murchison, I R S M D, and of his late son Charles Murchison Johnson he last year pre ented the hospital with the sum of £1,000 for the endowment of a bed

Sir William Collins writes Mr Sidney Johnson Taylor was for a time resident medical officer at the Severn Tunnel Hospital, but, deciding to take up ophthalmic surgery as his specialty he became clinical assistant to the Royal London Ophthalmic Hospital at Moorfields Later on, settling in Norwich his knowledge and skill in dealing with diseases, defects and injuries of the eye secured him a wide reputation in that department of surgery which he had made his choice He became a member of the Ophthalmological Society of the United Kingdom in 1889, and for thirty years was a regular attendant at its meetings and the contributor of many valuable articles to its transactions He was thorough in his diagnostic investigation, well read in the literature of his specialty, and a skilful operator His genial and considerate nature not only inspired the confidence of his patients but secured their lasting friendship

THE LATE DR G E HASLIP

Dr H H Mills (Kensington) writes I hope you will allow me space to express my sympathy with the Association at the death of Dr Haslip His efforts for peace in 1912 and 1913 are known to few but I can say unreservedly that he almost succeeded in avoiding the disaster of January 1913 Happily the days of ill will have gone, but it should be recorded that Haslip as a generous minded man used every endeavour to avoid a split in the ranks of the profession and he almost succeeded The failure to find a *modus* was due to the recalcitrant few who would suffer no compromise I know how deeply Lauriston Shaw was affected by the failure of Haslip's efforts Haslip's genial presence and his kind, generous heart were always devoted to the advancement of the profession

On October 24th Dr George de Bourboulon Watson passed away, very suddenly in his sleep at the age of 72 He was born at Macao in 1852 and was the third son of Dr Thomas Boswall Watson of Macao, and later Hongkong China He graduated M B and C M at Edinburgh University in 1884 and held the L R C P and S Edin and the L R F P S Glasg diplomas While acting as a resident house surgeon to the Northern Hospital Liverpool his health gave way and he took the post of ship surgeon Having quite regained his health he settled down to general practice in Finsbury Park North London where he remained for several years He had long an inclination to go abroad so in 1910 he relinquished his London practice and sailed for Canada He proceeded to the Far West of the Dominion, and eventually decided on Edmond, New Westminster, and there he had been in practice ever since He held several appointments—medical officer of health for Burnaby police surgeon, and school doctor—and was very highly esteemed by all with whom he came officially in contact To his patients he was much endeared by his kind and genial manner and by his careful attention, for he was always a most painstaking and conscientious doctor He was a very keen musician with a sweet and strong tenor voice For many years he discharged the duties of choir master at St Alban's Anglican Church At a meeting of the Burnaby Municipal Council when the clerk officially notified the council of the death of Dr Watson all present stood with bowed heads as a mark of esteem The Police Commission also passed a resolution of sympathy with the family At the funeral service the church was quite full many having to stand The rector the Rev H Underhill referred to the sterling character of the late physician Several beautiful wreaths were sent by friends and associations among them the Burnaby Medical Association the Fraser Valley Association the church committee and choir, the High School, Westminster and his brothers and sisters in England Dr Watson leaves a widow, two sons and three daughters to mourn his loss Both the sons volunteered early in the war, the elder in the army and the younger in the navy

The death is announced of Robert James Lee, M D, at the age of 83 He was the son of Dr Robert Lee, a well known gynaecologist of his day He was a student of St George's Hospital and graduated M D Cambridge in 1869 He was physician to the Great Ormond Street Hospital for Sick Children he gave attention also to gynaecology, and the subject of the Goulstonian lectures, which he delivered before the Royal College of Physicians in 1874, was puerperal fever Dr P J Lee retired many years ago and was residing at West Drayton at the time of his death

We regret to have to report the death, on November 11th, in his 79th year, of Dr James Angus Cameron, a well known and highly esteemed medical man Dr Cameron studied medicine in Edinburgh University taking his M B and C M in 1867, proceeding to the M D degree in 1870 and his B Sc in 1880 He started practice in Nairn Some years afterwards he left Nairn having acquired an extensive practice in Yorkshire About thirty years ago he returned to the North where he was elected the first M O H for the combined counties of Banff, Moray and Nairn Owing to increasing duties and failing health he had to relinquish his public health work He was long a member of the British Medical Association and acted as president of the Northern Counties of Scotland Branch He was one of the oldest Freemasons in Nairn He was a deputy lieutenant and a justice of the peace for the county of Nairn He leaves a son, Colonel Cameron of the Cameron Highlanders

Dr Ramo Gomez Feppep, dean of the medical faculty of Valencia and Dr Paul Hallopeau a well known French surgeon attached to the Hopital Trousseau, have recently died

Prof Dr Jan Derbaix of Ghent whose death is reported, was general secretary of the Belgian Society of Ophthalmology and was well known for his work on embryology, pathological anatomy and ophthalmology

The Services

DEATHS IN THE SERVICES

Brigadier Surgeon Griffith Griffith Pengal Medical Service (ret) died at Hendreforw Chwilog North Wales on October 25th aged 80 He was born on January 13th 1844 the son of Mr Griffith Griffith landowner of Edern Pwllheli and was educated at Liverpool and University College London taking the L S A in 1865 and the M P C S in 1866 He entered the I M S on March 31st 1866 passing third into and first out of Netley became brigade surgeon on July 6th 1870 and retired on May 1st 1893 He was for some time in civil employment in Bengal, but spent most of his service on military duty He served in the Abyssinian war of 1867-68 (medal) in Afghanistan in 1878-80 (medal and clasp) and the Naga Hills expedition of 1879-80 (clasp) and on the North West Frontier of India in the Mahsud Waziri campaign of 1881 His remains were cremated at Llandudno Junction Hardy Manchester and the ashes buried at Llanddwyn South Carnarvon Air

Deputy Surgeon General Charles Hamilton Harper Army Medical Staff retired died suddenly at Breakwater Down Tunbridge Wells on November 23rd 1836 and took the L S A in 1861 Islington on September 23rd 1858 and took the M P C S in 1861 the M D at St Andrews in 1862 and the F R C S in 1863 He entered the army as assistant surgeon on June 15th 1865 became attained the rank of brigade surgeon on January 24th 1885 specialty promoted for long service in the 3rd Class and retired with honorary rank on the 23rd December 1891 As a regimental medical officer he served in the Bhutan campaign of 1865 Afghan war of 1878-80 was mentioned in despatches in the Afghanistan war of 1879-80 and received the medal with clasp He served in the Egyptian war of 1882 and received the bronze star and was mentioned in despatches in the London Gazette of December 1st 1882 and received the Khedive's star and in the Sudan campaign of 1885 when he was principal medical officer to the Frontier Field Force at the action of Tofrik was mentioned in despatches in the London Gazette of March 24th 1885 received the Egyptian medal with clasp and the Khedive's star and was granted a good service pension

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THE BRITISH MEDICAL JOURNAL

Medico-Legal.

BIRTH CONTROL LIBEL ACTION

STOPES v SUTHERLAND

THE appeal of Halliday Gibson Sutherland, M D , against the judgement of the Court of Appeal setting aside the judgement entered in his favour at the trial before the Lord Chief Justice of England and a special jury of a libel action brought by Mrs Marie Carmichael Stopes, D Sc , against Dr Sutherland, was allowed by a majority in the House of Lords on November 21st

The proceedings before the Lord Chief Justice were reported in the BRITISH MEDICAL JOURNAL of March 10th, 1923 (pp 445 8), and the alleged libel contained in a book entitled *Birth Control A Statement of Christian Doctrine against the Neo Malthusians* (printed and published by Messrs Harding and More, Ltd , also appellants) was set forth in the statement of claim as follows

Exposing the Poor to Experiment

"Secondly, the ordinary decent instincts of the poor are against these practices [meaning the plaintiff's system of birth control], and indeed they have used them less than any other class But owing to their poverty lack of learning and helplessness the poor are the natural victims of those [meaning the plaintiff] who seek to make experiments on their fellows In the midst of a London slum a woman [meaning the plaintiff] who is a doctor of German Philosophy (Munich), has opened a Birth Control Clinic [meaning the said clinic] where working women are instructed in a method of contraception described by Professor McIlroy as the most harmful method of which I have had experience (*Proceedings of the Medico Legal Society* July 7 1921) It is truly amazing that this monstrous campaign of birth control should be tolerated by the Home Secretary Charles Bradlaugh was condemned to jail for a less serious crime

The appellants pleaded justification and fair comment, and the jury's answers to the questions left them were

1 Were the words complained of defamatory of the plaintiff?—Yes
2 Were they true in substance and in fact?—Yes
3 Were they fair comment?—No
4 Damages, if any?—£100

The Lord Chief Justice interpreted the jury's answer to Question 2 as a verdict for the defendants (appellants), but the Court of Appeal, by a majority, held that the jury's findings amounted to a verdict for the plaintiff (the respondent) for £100 There was a cross appeal, the respondent claiming that should the judgement in her favour not be upheld she was entitled to a new trial on the ground of misdirection

Judgement of the House of Lords

The Lord Chancellor (with whom Lord Finlay Lord Shaw of Dunfermline, and Lord Carson agreed) in his judgement said that the House was not concerned with any question as to the desirability of the use of contraceptives, or as to the propriety of encouraging such use by the circulation of printed matter The real questions to be determined were (1) What was the meaning and effect of the verdict of the jury? (2) Whether there should be a new trial? The answers of the jury to the second and third questions put to them by the Lord Chief Justice appeared at first sight to be inconsistent with one another The plea that the words complained of were true in substance and in fact meant not only that all those words were true, but, also, "any imputation which the words in their context may be taken to convey" From this it had been held to follow that if on such a plea a verdict was found in the defendant's favour there was no room for any discussion of the question of fair comment "The plea of fair comment does not arise if the plea of justification is made good" The Lord Chancellor however, agreed with the Court of Appeal in holding that there was difficulty in applying the ordinary rule to the verdict in the present case, for the Lord Chief Justice, in his summing up, did undoubtedly draw a marked distinction between fact and opinion, and therefore he (the Lord Chancellor) would deal with the verdict upon the assumption that the jury acted upon that principle The charges of fact might be divided into three parts

1 By the first two sentences which must be read together, the defendants in effect stated that (according to the plaintiff's interpretation) the plaintiff was taking advantage of the ignorance of the poor to subject them to experiments Dr Sutherland told the jury he meant by this not that at the plaintiff's clinic surgical experiments were made upon poor persons, but that they were there subjected to a social experiment which was contrary to the laws of Nature The jury found this charge plainly a statement of fact to be true

2 By the third sentence the defendants alleged that at the plaintiff's clinic working class women were instructed in a mode of contraception which had been described by Professor Louise McIlroy as the most harmful method of which she had had experience The Lord Chief Justice had told the jury that to justify this allegation the defendants must prove not only that Professor McIlroy had used the words with reference to a method of contraception (the use of the check pessary) recommended by the plaintiff at the clinic but also that the method referred to was, in fact of a harmful and dangerous nature This charge also a statement of fact was found to be true and there was undoubtedly evidence upon which the jury could find that such methods might not improbably be the cause of injury to the persons by whom they were used This was particularly the case with regard to an apparatus called the "gold pin" which was said by several of the witnesses to be calculated to produce abortion

3 By the last two sentences the defendants, in effect, charged the plaintiff with carrying on her campaign by means of literature not less obscene than that for which Charles Bradlaugh was prosecuted, and of such a nature as to infringe the most serious criminal law which forbade such publications This charge, the most serious of all, was also found by the jury to be true in substance and in fact The passages in the plaintiff's books upon which the defendants had relied as supporting this charge had been read by their lordships, and appeared to him to be of such a nature as fully to justify the finding of the jury

That all the above charges were treated at the trial as matters of fact to be considered under the plea of justification was clear from the circumstance that plaintiff's counsel handed to the Lord Chief Justice a note defining the statements of fact "(*a*) expert ment, (*b*) victims, (*c*) most harmful method, (*d*) crime, (*e*) most serious," and the Lord Chief Justice proceeded on these lines in his summing up

Then, if all the above charges were true, as the jury had found- that the plaintiff took advantage of the helplessness of the poor to subject them to experimental processes of a harmful and dangerous character, and carried on her campaign by means of obscene publications which constituted a breach of the criminal law—what remained in the alleged libel to which the description of "unfair comment" could have been intended by the jury to apply? Lord Justice Scrutton, in the Court of Appeal, had pointed to two statements as being statements of opinion upon which a question of fair comment might arise—(1) "the decent instincts of the poor," and (2) "monstrous campaign," and to these he (the Lord Chancellor) added a third that the offence of which Charles Bradlaugh was convicted was "less serious" than that of the plaintiff Was there any evidence on which a reasonable jury could find, assuming as they must, the charges enumerated were true in substance and in fact, that these expressions of opinion constituted unfair comment? This was plainly a question for the court which had to determine whether the document was capable in law of being a libel, and he did not think there was any such evidence The statement that the ordinary instincts of the poor were against the practice of using contraceptives expressed the opinion of the writer not as to the mode in which the plaintiff recommended the practice of birth control for adoption, but as to the practice itself, but even assuming the statement contained a reflection upon the plaintiff he was unable to understand how, having regard to the facts found to be true, the reflection could be said to be unfair The word "monstrous" was undoubtedly a comment and, if unfair, might give cause for complaint, but if, as the jury had found, the campaign in question had been carried out by means of the circulation of obscene and criminal matter, and if the defendants were justified in so stating then the addition of the epithet "monstrous" could add nothing to the libel The same might be said as to the writer's opinion that the plaintiff's offence was "more serious" than Bradlaugh's If the substantive charge that the campaign was obscene and criminal might justly be made, a description of the same campaign as "monstrous," or "serious" was not a new and separate charge but a mere shadow of the substantive charge for which a separate justification was not required Therefore there was no evidence whatever on which a rational verdict could be found to the effect that the comment was unfair, and the judgment of the Court of Appeal in favour of the plaintiff could not stand and further, there was no good ground for ordering a new trial on the ground of misdirection

The Lord Chancellor therefore moved that the Lord Chief Justice's judgement should be restored with costs above and below

Dissenting Judgement

Lord Wrenbury, dissenting, made reference to the increasing attention which the public had been giving to the question of birth control in recent years He expressed no opinion at all as to which were right and which were wrong, but so strong were the feelings on one side and on the other that hard language might perhaps scarcely create surprise, and whether the language overstepped the bounds and fell into the territory of libel was for a jury to decide The subject matter was not obscene, the method of dealing with the subject-matter might be obscene Whether it was obscene or not was a matter of opinion, or, at any rate, the jury might hold it to be a matter of opinion In any case, it was a matter for them to decide, and by their answer to the third question they had he thought, answered the question in the negative The jury, in this case, had the plaintiff's books before them and they were in a position to judge whether they were written too little from a medical and too much from a sexual or emotional standpoint In his judgement it was impossible to say that twelve reasonable jurors could not accept and, if they thought fit act upon that evidence and find that the imputation conveyed by the language of the libel as to exposing to experiment the poor, who, owing to their poverty, lack of learning, and helplessness, were the natural victims of experiments and as to a monstrous campaign amounting to a crime more serious than that for which Charles Bradlaugh was condemned to gaol, was not justifiable Imputations of victimization of the helpless poor, and of criminality deserving imprisonment were not matters to be lightly regarded They might well cut deep, and the more so in the case of a lady who was giving her time and her money to afford, as she thought (and, as her opponents admitted bona fide thought) assistance to her poorer sisters In his opinion the majority of the Court of Appeal were right in upholding the verdict in the third answer and giving judgement for the plaintiff in accordance with the finding of the jury upon the third question left to them It he (Lord Wrenbury) was wrong in the view which he had expressed as to the summing up of the Lord Chief Justice, and if the finding to the third question was not to have effect then the plaintiff was, he thought, entitled to a new trial, for in such case there would have been by reason of misdirection no proper trial of the issue of fair comment

Universities and Colleges

ROYAL COLLEGE OF SURGEONS OF ENGLAND

ANNUAL MEETING OF FELLOWS AND MEMBERS

THE annual meeting of Fellows and Members of the Royal College of Surgeons of England was held on November 20th under the presidency of SIR JOHN BLAND SUTTON The attendance was larger than on any occasion in recent years

The first half hour of the meeting was devoted to questions The first question asked how many Fellows had attended the annual meeting in recent years The PRESIDENT replied that only three or four Fellows, other than members of Council, had attended on the last two occasions, it was evident that the Fellows were so well satisfied with the management of the College that they did not think it necessary to attend Dr H M STRATFORD asked whether women Fellows had the same rights and privileges as men The PRESIDENT said that women Fellows had not the right to vote, nor were they eligible for seats on the Council Mr C E WALLIS asked whether any bona fide general practitioner holding the Fellowship of the College had ever been a member of the Council The PRESIDENT said that Mr S W Sibley a general practitioner was a member of the Council from 1886 to 1891 There was, however, another side to the question Until some twenty five years ago surgeons in provincial practice were general practitioners as well, and some so engaged had seats on the Council The distinction between the pure surgeon and the general practitioner practising surgery was not then so sharp as now Mr WALLIS asked further whether the Council had received any complaint of advertising direct or oblique, on the part of Fellows or Members and, if so, whether it had taken action under Rule 16 of the College The PRESIDENT said that no complaint of this nature had been received during his presidency, nor, he thought, during his membership of Council The General Medical Council, however, was the more competent body to take up any such cases and the Council preferred to follow the lead of the General Medical Council which had the power to call witnesses The College had a discipline committee which had dealt with cases of professional misconduct, though not with cases of advertising Mr WALLIS pointed out that the General Medical Council could not proceed without a complaint from an outside body, and it seemed that the Council of the College was an appropriate body to make such a complaint

Dr W E A WORLEY then moved the usual resolution affirming the desirability of admitting Members to direct representation upon the Council of the College, and requesting the President to state whether the Council had considered any means whereby the collective views of Members of the College might be ascertained on matters affecting their interests He urged that the Council need have no fear of what would follow an enlargement of the franchise He could not believe that a Council which represented over 17,000 Members would have less dignity than the present Council, which represented one tenth of that number of Fellows On the previous occasion the President had pointed to the smallness of the number of Members attending the annual meeting as indicating the absence of any wide popular demand But that was a wrong deduction Members came to the meeting from long distances and at considerable sacrifice of professional time moreover, they had been discouraged by a long succession of official rebuffs

Dr M I FINUCANE seconded the resolution He declared that the College was not keeping up with the times Even the curriculum and the standard of examination were not all that might be desired He also referred to the recent election of four such representatives to the General Medical Council Only direct representatives to the General Medical Council Only the Council of the College without any consultation of the Members, nor probably of the Fellows either, selected its own representative on the General Medical Council He maintained that the Members should have a voice in that election especially as it was a function of the General Medical Council to take disciplinary action against any practitioner

Dr REDMOND ROCHE complained that the Council had taken a mistaken view of the function of the College That function, according to the President was to protect the public from inefficient practitioners The speaker submitted that any function which it had in this respect in earlier years had been superseded by the General Medical Council Many things had happened since the Charter of 1848 was granted to the College The Council shielded itself behind the difficulty of altering the charter when it was faced with this demand of the Members But the charter could easily be altered if the Council wished it indeed not many years ago, the Council did alter the charter in order to allow one very distinguished person to receive the Fellowship In the speaker's view the autocracy of the Council still persisted as in Thomas Wakley's day and although the expressions of protest now used might be less violent, the feeling was just as deep seated

Dr F W COLLINGWOOD Dr C W HAYWARD and Dr T G LLOYD also spoke in support of the resolution which was then carried with one dissentient

The PRESIDENT said that he had no intention of trying the patience of the meeting that day He had listened most attentively to the statements made that day He had listened most attentively and carefully to everything that had been urged in favour of the resolution, and he still remained unconvinced His views on the question were set out last year and were in harmony with those of his predecessor He did however wish to reiterate that he was one of the difficulties of the Council that the Society of Members did not disclose particulars of its membership and therefore the Council was unable to judge as to the feeling of the Members apart from their presence at the annual meeting The Council did not know how far the forty or fifty who were present at the annual meeting could speak in the name of a collective body of 18 000 Those present had no mandate, apparently from the general body of members, and the Society of Members furnished no statistics

Dr ROCHE said that he was not aware that the President of Council had ever asked for information of that kind The PRESIDENT said that it had been asked for repeatedly Dr ROCHE said that attention had already been drawn to the fact that there was a disposition in official quarters to use statistics unfairly It would be idle to suppose that the Society or Members included all the Members of the College In the main of every movement there were energetic men who gave time and trouble to its furtherance, and his Society claimed to embrace those

The PRESIDENT What we really want to know is the number of your members

Dr ROCHE It once is the number of Fellows who voted in the Council election—it runs into four figures

The PRESIDENT We do not get it even now

The President added that he could assure those present that the Royal College of Surgeons was never in a better position numerically or financially than to day and therefore the Society of Members need be under no misgivings as to its welfare

Some of those present desired to put further questions and one made a protest, but the President declared the meeting closed

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We have received the following letters with reference to the meeting reported above

SIR,—The annual general meeting of the Fellows and Members of the Royal College of Surgeons was attended by about [illegible] Members and *two* Fellows (not counting the President and four members of Council) There were also about half a dozen ladies who were relegated to a lofty gallery and not allowed to speak or vote

The case for the Members who claim the right to vote on the Council was forcibly and unanswerably put by several of them On what use was it The President stood firm, or the *status quo* and twitted Members on the small attendance *last* year What wonder Why waste time and money on such a farce What unlimited control by the Fellows who only provide about one-fifth of the income was gained about eight years ago by fraud according to the *Lancet* of that date Cannot the British Medical Association do something to help the agitation for common sense and just one which can alone make change in the charter would bring about?—I am, etc

London W Nov 20th S T HOLLOWAY

SIR,—May I put before you a few reasons why it would be advisable both in the interest of the public and of the medical profession for the 17 000 Members of the Royal College of Surgeons of England to have some representation on the Council of their College

1 Members of the College in large numbers are doing both major and minor surgery in the provincial and cottage hospitals of Great Britain and also a considerable amount of the surgery in our Overseas Dominion They know the difficulties that confront them in their different spheres and it would be a distinct advantage both to the public and to the science and art of medicine that they should be given a voice on the Council of the College

2 The National Health Insurance Acts came into being some ten years ago but no word of guidance or advice came from the College but it is highly probable that within a short time we shall have the surgical staff or teaching hospitals being offered positions under these Acts The workings of these Acts are well known to many members of the College and it would be of great assistance to the College and to the health of the Council special knowledge was at the service of the Council

3 The Fellowship Examination has been opened to women but having obtained the diploma or Fellowship they are not permitted to vote or allowed a seat on the Council This is both unfair and unsportmanlike either exclude them from the diploma altogether or in admitting them grant them the same advantages that are allowed to men

4 The Council does not appear to take any action against the various classes of unqualified persons who support or encourage them—no trading upon the orthodox registered medical practitioner who comes under the direct supervision of the General Medical Council Indeed ally this is becoming increasingly more difficult to

the public to distinguish between the qualified practitioner and the unqualified

Surely, Sir, it is high time that a few level headed, commonsensed general practitioners had seats on the Council, and an opportunity of exercising some control over the affairs of their College—I am, etc,

HOWARD M STRATFORD, L R C S Edin, M R C S Eng

London, W, Nov 20th

SIR,—Year after year I had received intimations from the 'Society of Fellows and Members," notifying the annual meeting, and year after year (I say it to my shame) these notices, as they came, had been dropped into my waste paper basket "What need was there," said a pliable conscience, to make any change in the Council of the College?" "Was it not composed of Fellows who knew their business well and could be depended on to carry out their duties in the most efficient manner?" "Most certainly," was the reply "It is quite true that some of the Members (not being graduates of any university) might suffer disabilities in comparison with graduates of provincial Welsh, and Scottish universities, but, after all, this doesn't affect me, as I happen to be a graduate of one of our oldest universities" Such is the selfish way we argue If we happen to be top dog let the under dog take his chance Is this twentieth century morality?

I attended the meeting for the first time this year Speeches were delivered, many of them distinguished more by their earnestness than their eloquence, but they all had one thing in common—namely the elemental principle of justice Was it right that some 16,000 Members, whose fees mainly supported the College, should have no voice whatsoever in its governance? Should the rights of government be solely vested in some 1,700 Fellows? What would democratic Britain think of this if she knew?

The President of the College did not, in my hearing, answer that part of the resolution—as to whether his Council had seriously considered any means whatever whereby the collective views of Members of the College might be ascertained on matters affecting their interests as Members He simply stated in a few words that the College was well managed and flourished in a way it had never done before and he could see no need for any alteration There was nothing more to be said The guillotine had descended Autocracy was supreme—I am, etc,

T WILSON PARRY

London, W 8, Nov 21st

SIR,—The very inadequate reply of the President of the College at the recent annual meeting of Fellows and Members was apparently based upon the assumption that the meeting was composed of members of the "Society of Members,' whereas but a fraction of that society was present, and in spite of that fact the resolution was carried *nem con* in the largest meeting since the war This shows clearly that the opinion of those Members of the College who were present at this meeting is absolutely in favour of the representation of Members' interests on the Council of the College The President made much of the so called small number present, approximately seventy, but said nothing of the thirty six years of discouragement that undoubtedly keeps down the attendance and leads the less persistent to think that the Council of the College will never consent even to consider their just claims

It should be noted that on the postcard sent out by the "Society of Members" it is stated that the said society is not out for itself in any way whatever, and that it does not seek representation for itself, but does claim that Members of the College as such, should have reasonable representation upon the Council of the College in order that their interests may be safeguarded and advanced—I am, etc,

C E WALLIS

London Nov 25th

UNIVERSITY OF LONDON

AT a meeting of the Senate, held on November 19th, with the Vice Chancellor (Professor L A Gardner, Litt D) in the chair, Dr I L Hopwood was appointed as from October 1st, 1924, to the University Chair of Physics tenable at St Bartholomew's Hospital Medical College The title of Reader in Human Embryology in the University was conferred on Dr R J Gladstone in respect of the post held by him at King's College Dr G V Anrep, D Sc, was awarded the William Julius Mickle Fellowship, of the value of £200, for 1925 in respect of the work which he has carried out during the past five years in experimental physiology Mr H L Eason C B C M G M D, M S, was appointed to represent the University on the General Medical Council

A public lecture by Sir Gregory Foster on "The University of London what it is and what it may be" has been arranged by the XXth Century Society of London Graduates By permission of the director, Sir William Beveridge the lecture will be delivered at the London School of Economics and Political Science, Kingsway on Thursday December 4th, at 8 15 p m Admission is free and no tickets are required

The following candidates have been approved at the examination indicated

DIPLOMA IN PSYCHOLOGICAL MEDICINE (*with special knowledge of Psychiatry*)—W McWilliam T P Rees (*with special knowledge of Mental Deficiency*) G F Cobb Anne Fanweather

UNIVERSITY COLLEGE

Fifteen entrance scholarships and exhibitions are available for award to students entering University College, London in October, 1925 Three are tenable in any of the five College Faculties—Arts, Laws Science Engineering Medical Sciences—or in the School of Architecture Two are tenable in the Faculty of Arts only one in the Faculty of Science, one in the Faculty of Engineering, one in the Faculty of Laws, three in the Faculty of Medical Sciences, t- in the School of Architecture, and one in the School of Librarianship Most of the scholarships and exhibitions are of the value £40 a year for three years, but the value of any scholarship exhibition may be increased by the grant of a supplementar bursary if the circumstances of the scholar or exhibitioner m such a grant necessary The Bucknill Scholarship (Medical) h the value of 160 guineas, the two medical exhibitions are of t value of 55 guineas each

LONDON INTER COLLEGIATE SCHOLARSHIPS BOARD

THIRTEEN medical entrance scholarships and exhibitions of an aggregate total value of £1,473, tenable in the Faculty of Medical Sciences of University College and King's College, and in the medical schools of King's College Hospital, University College Hospital, the London Hospital, and the London (Royal Free Hospital) School of Medicine for Women, will be offered The examinations for medical scholarships will commence on April 21st and June 30th, 1925 Full particulars and entry forms may be obtained from the secretary of the Board, Mr B C Ranner, M A, the Medical School, King's College Hospital, Denmark Hill, London, S E 5

SOCIETY OF APOTHECARIES OF LONDON

THE following candidates have passed in the subjects indicated

SURGERY—A J Fraser L Freeman C H Mason, K Samaan Y S Wan H Winstanley

MEDICINE—A J M Davies M Murad Y S Wan

FORENSIC MEDICINE—S W Cuff L Freeman Y S Wan D Winstanley

MIDWIFERY—C L Copeland B Davis J Dywien L Freeman A Kaplan, C H Mason C C Taffs Y S Wan

The diploma of the Society has been granted to Messrs A J Fraser and Y S Wan

Medical News.

THE annual Sheffield medical dinner will be held at the Royal Victoria Hotel on Thursday, December 11th, at 7 15 for 7 45 p m It is open to members of the profession to bring medical guests Dr H B Brackenbury, Chairman of the Representative Body of the British Medical Association, has accepted an invitation to respond to the toast of the medical profession It is hoped that all medical practitioners in the district will be able to be present *Application for tickets* (price 12s 6d) should be made *immediately to the honorary* secretary, Dr J Eric Stacey, 2, Durham Road, Sheffield

THE Scottish Women's Hospitals' Association of the Royal Free Hospital, Gray's Inn Road, will hold its annual meeting at the hospital to day (Saturday, November 29th), at 3 p m The speakers will include Sir John Lynn Thomas and Sir James Purves Stewart

A FESTIVAL dinner in aid of St Thomas's Hospital will be held under the patronage of the Lord Mayor at the Mansion House, London, on Wednesday, December 10th, at 7 30 p m

THE annual dinner of the Medico Legal Society will be held at the Holborn Restaurant, London, on Friday, December 12th, at 7 15 p m

SIR STCLAIR THOMSON has been appointed Emeritus Professor of Laryngology at King's College, London, and consulting surgeon for diseases of the throat and nose at King's College Hospital

THE Finlayson Memorial Lectures of the Royal Faculty of Physicians and Surgeons of Glasgow were delivered on November 20th and 24th by Sir Leonard Rogers, F R S His general subject was "Pathological evidence bearing on disease incidence in Calcutta," the first lecture dealing with disease in general and the second with simple and malignant tumours

THE Royal Commission on Lunacy and Mental Disorder will meet at 5, Old Palace Yard, Westminster, S W, on Tuesday, December 2nd, and Wednesday, December 3rd, at 10 30 a m

THE consulting and active staff of St John's Hospital Leicester Square, together with the staff of lecturers at the London School of Dermatology attached, have subscribed for a lecture desk, with a suitable inscription plate, which has been placed in the theatre in memory of their friend and colleague Sir Malcolm Morris, who was a member of the consulting staff at the time of his death in February last

A COURSE of five lectures on modern bacteriological technique will be given by Mr F W Twort, Superintendent of the Brown Institution, in the theatre of the Royal College of Surgeons of England Lincoln's Inn Fields, W C, on December 11th, 12th, 15th, 16th, and 17th, at 4 p m Admission to the lectures is free without ticket

AT the meeting of the Institution of Sanitary Engineers on December 3rd, at 7 30 p m, at Caxton Hall, Westminster, a discussion on house drainage with special reference to the intercepting trap, will be opened by Mr H A Roechling

THE Hunterian Society of London will hold a dinner meeting at Simpson's Restaurant, Cheapside, on December 15th at 7.30 p.m., when a discussion on headache will be opened from different aspects by Dr C. O. Hawthorne, Mr Wilfred Trotter, and Dr Bernard Hart. The programme for 1925 includes Hunterian lectures by Mr G. Grey Turner on "Perforation of gastric and duodenal ulcers and after" and by Dr H. Letheby Tidy on "Angio-haemic anaemia", and a discussion on the use and abuse of drugs to be opened by Professor W. E. Dixon and Dr H. H. Dale.

THE eleventh lecture on cancer, open to members of the profession, and arranged by the Fellowship of Medicine, will be given at 5.30 p.m., at 1 Wimpole Street, on December 1st, by Mr H. J. Paterson on cancer of the stomach. The Royal Northern Hospital, jointly with the Royal Chest Hospital, has arranged a two weeks' intensive course in medicine, surgery, and the special departments which commences on December 1st. On the same date, at the Infants Hospital, a two weeks' course in diseases of infants begins, and also at the Hospital for Diseases of the Skin, Blackfriars, a fortnight's course in dermatology, including venereal clinics. The courses arranged for January relate to cardiology, neurology, ophthalmology, psychological medicine, and urology, there will be also another two weeks' intensive course in medicine, surgery and the special departments. Copies of the syllabuses of these courses and the programme of intensive and special courses from January to June 1925 may be obtained from the Secretary to the Fellowship of Medicine, 1, Wimpole Street, W.1.

PROFESSOR BERGONIÉ has presented to the Bordeaux Faculty of Medicine the sum of 100,000 francs for the construction and installation of an institute in connexion with the cancer campaign. It is reported that Professor Bergonié is gravely ill as the result of cancerous lesions resulting from *x* rays. Two years ago amputation of the right arm was performed, and subsequently three fingers of the left hand were removed. The disease has, however, steadily advanced.

MP LEWIS MACKENZIE, F.R.C.S., has been made a freeman of the borough of Tiverton and presented with a substantial cheque in recognition of his long public service to the town, where he has practised as a medical man and to the county of Devon, of which he is a councillor. The vellums embodying the freedom were beautifully illuminated.

DR JOHN B. DUFF, on his retirement after more than thirty years' practice at Helensburgh, has been presented by his friends and patients with a silver casket containing an illuminated address together with a cheque for £150.

THE council of the Röntgen Society has decided to present the Röntgen Award for the session 1923–24 to Mr L. H. Clarke, M.Sc., Physics Department, Middlesex Hospital, who contributed to the society during the session papers on a clinical *x* ray balance radiometer and on the measurement of *x* ray intensity.

THE second Pan-Russian Congress for Combating Venereal Disease will be held at Kharkhoff in December.

A NEW bi-monthly journal, the *Radiological Review*, has been published in Quincy, Illinois, and is devoted to the progress of radiology, with special reference to the requirements of the general practitioner. The first number includes original articles on the *x* ray diagnosis of endocrine diseases and the *x* ray treatment of whooping-cough. A considerable amount of space is given to abstracts from various medical journals.

THE first number of the *Indian Veterinary Journal*, the new quarterly publication of the All India Veterinary Association, contains a review of the presidential address delivered at the second All India Veterinary Conference in March and an account of the subsequent proceedings. Among the articles in this number are papers on rat-bite fever in dogs, spirochaetosis in owls, and dropsy in elephants.

THE Japanese Government has decided to allot £200,000 for the establishment of an Institute for Natural Science in Shanghai. The research work in the institute will include several branches of pathology, anatomy, bacteriology, parasitology, serology, and Chinese pharmacology. A yearly grant of £50,000 is to be made. It is hoped that the institute will be completed within three years.

THE part of the Annual Report of the Ministry of Health for 1923–24 which deals with town planning has been published separately. Copies may be purchased, price 6d., directly from the Stationery Office at Adastral House, Kingsway, London, W.C.2; 28 Abingdon Street, London, S.W.1; York Street, Manchester; 1 St Andrew's Crescent, Cardiff; or 120, George Street, Edinburgh, or through any bookseller.

MALARIA shows an increasing tendency to spread in the Caucasus. According to recent returns, out of two and a half million inhabitants in the Republic of Azerbaijan, one and a half million are suffering from the disease.

Letters, Notes, and Answers

ORIGINAL ARTICLES and LETTERS [illegible] are received on the understanding that they are offered to the BRITISH MEDICAL JOURNAL alone unless the contrary be stated. Authors receiving reprints of their articles published in the Post Office Edition are requested to communicate with the Financial Secretary and Business Manager, 429 Strand, W.C.2, on receipt of proof.

CORRESPONDENTS who wish notice to be taken of their communications should authenticate them with their names—not necessarily for publication.

Communications intended for the current issue should be delivered as early as possible by the first post on Monday, and in any case cannot be received later than Tuesday morning.

THE telephone number of the BRITISH MEDICAL ASSOCIATION and BRITISH MEDICAL JOURNAL is Gerrard 2030 (Internal Exchange). The telegraphic addresses are:

EDITOR of the BRITISH MEDICAL JOURNAL: *Articulate, Westrand, London.*

FINANCIAL SECRETARY AND BUSINESS MANAGER (Advertisements, etc.): *Articulate, Westrand, London.*

MEDICAL SECRETARY: *Mediocre, Westrand, London.*

The address of the Irish Office of the British Medical Association is 16 South Frederick Street, Dublin (telegrams: *Bacillus, Dublin*; telephone 4737 Dublin); and of the Scottish Office, 6 Putland Square, Edinburgh (telegrams: *Associate, Edinburgh*; telephone 4361 Central).

QUERIES AND ANSWERS.

INCOME TAX.

"J. H. A." is a salaried officer and inquires what allowances are due (*a*) for use of his car, (*b*) for purchase of instruments, and (*c*) for subscription to the Medical Defence Union.

* * (*a*) The sum allowable is the amount actually expended on the running and upkeep of the car and attributable to the necessary and exclusive use of the car in the performance of the duties of the office. The best way to deal with the matter is to keep a record of expenditure and also of mileage distinguishing in the latter case between private and professional use of the car. Where such figures cannot be produced the matter is one for such estimates as can be reasonably substantiated. A mileage rate is we believe rarely allowed—so much depends on local circumstances etc.—but J. H. A. might come to some arrangement at, from say 4d. to 6d. a mile on giving an undertaking that future claims shall be based on carefully kept records. (*b*) The original cost of instruments is capital outlay and cannot be allowed, if he is required by the terms of his engagement to provide his own instruments, the cost of *renewals* is allowable. (*c*) The subscription is allowable if the above-mentioned terms require him to be a member, but not otherwise.

Change in Nature of Work—Instruments.

"G. W." was in general practice but doing also a fair amount of general surgery but has now restricted his professional work to that of a consulting surgeon. He did no self any portion of his general practice. He inquires also as to the treatment of expenditure on surgical instruments.

* * The question is whether now that G. W." has ceased to do general practice work he can eliminate from his receipts those relating to such work and return his surgical fees only. The matter is not entirely free from doubt but in our opinion that would not be correct and a claim on those lines would not be likely to succeed. It is not as if he had changed his profession, on the facts stated he has only changed from one branch of another of the same profession and that without apparently, changing his professional address. With regard to the instruments the position is that a surgeon is entitled to charge as a professional expense the cost of *replacing* worn out or obsolete instruments but not of improving or enlarging his equipment, as for instance an instrument costing £5 is scrapped and replaced by a *better* one at a net cost of £7 10s. then only £5 can be charged.

MEDICAL SUBSCRIPTIONS AND INCOME TAX RETURNS.

DR JAMES NEAL, General Secretary of the Medical Defence Union, 49 Bedford Square, W.C.1, writes: It was stated in your issue of August 30th last (p. 391) that deductions were allowed in the case of subscriptions to various medical societies but that the position of the Medical Defence Union in this respect had not been actually determined. I am directed to inform you that at the last meeting of the council of the Medical Defence Union a letter was received from the Board of Inland Revenue stating that the Board will offer no objection to the allowance of the annual subscriptions to the Union as an expense in the computation of the professional profits for income tax purposes of members who are assessable under Schedule D of the Income Tax Act, 1918.

well to operate early, even though there has been no previous attack, the best course to adopt being that usually taken in cases of severe acute appendicitis When there have been several attacks, and particularly when there have been signs of inflammation associated with these attacks, it is well to operate in a free interval if the patient is young and strong The same advice applies to distension of the gall bladder, and signs of obstructive jaundice are an indication for early operation *Great care and discrimination should be exercised* in balancing the indications for operation on the biliary tract against such factors as old age and debility, which militate against recovery from an operation

420 Carcinoma of the Colon

D F JONES and E P HAYDEN (*Boston Med and Surg Journ*, September 11th, 1924, p 471) state that during 1918 there were 90,000 deaths from cancer in the United States, and that more than 10 per cent of these were due to carcinoma of the intestines, they urge, therefore, that greater efforts should be made to obtain an early diagnosis Symptoms of obstruction are those most often recognized, but obstruction occurs late in the course of the disease The early symptoms are simply those of slight irritation, thus the action of the bowels is slightly irregular, there is some excess of flatus, and occasional traces of blood may be found in the stools Pain is an uncertain sign, since many patients admit only discomfort, this, when present, is always below the umbilicus, often in the right lower quadrant, and due to the presence of flatus in the caecum This may lead to a diagnosis of chronic appendicitis In differential diagnosis a number of conditions must be considered, but whenever symptoms suggestive of *carcinoma of the colon are present every possible diagnostic* method should be employed, even then positive diagnosis is sometimes impossible A ray diagnosis of carcinoma of the colon is often misleading, according to the authors, who prefer the barium enema to the barium meal in these cases, since the latter may render a partial obstruction complete They agree that x ray examination of the intestinal tract is of great value, but think that this evidence alone should not be allowed *to weigh too heavily in the final diagnosis* No single symptom nor single examination is of any particular value, it is only by taking every symptom and the result of every possible examination, that sufficient evidence is obtained for diagnosis, or to warrant exploratory operation The authors *consider that earlier diagnosis* is possible in many more cases, and that in those cases in which marked improvement follows the colostomy this should be followed more often by removal of the growth

421 Tannin Solution for Disinfection of the Hands

W L POKOTILO (*Zentralbl f Chir* September 6th, 1924, p 1969) of Odessa states that as long ago as 1910 he had used a 5 per cent tincture of tannin for disinfection of the hands, but when spirit became expensive and scanty he had to abandon the method *He then investigated the action of a* 5 per cent watery solution of tannin, and found that the results were as good as with the tincture The hands were first washed in tap water with a brush and soap and then rubbed over with a swab soaked in the tannin solution Bacteriological examination showed that cultures from hands so treated were sterile, whereas numerous colonies were grown from hands that had been washed with soap and water only for ten to fifteen minutes The tannin solution, which is rubbed on the hands, acts as a fine coating, and prevents the bacteria penetrating the skin In other words, the tannin solution plays the part of a glove, but is superior to it in that the sensation of touch is not impaired and the hands do not slip so readily, whilst, what is most important, the process is much cheaper The only drawback of the tannin solution is that if care be not taken it leaves grey stains on linen, but these can be removed by oxalic acid

422 Multiple Lesions in Surgical Tuberculosis

N PAUS (*Norsk Mag f Laegevidenskaben*, September, 1924, p 764) has conducted investigations which show that in most cases of surgical tuberculosis, kept under observation for a considerable time, more than one tuberculous lesion appears He re examined 353 patients who had been previously treated in his hospital for tuberculosis of the bones and joints In as many as 213, or 60 3 per cent, of these cases he succeeded in demonstrating other tuberculous foci than those for which treatment had been given In 50 cases of surgical tuberculosis he kept the patients under constant supervision for five years, examining them from month to month During this period he found that in more than two thirds of these cases multiple tuberculous foci appeared He regards this finding as an underestimate, as there were probably many cases in which tuberculous foci existed without being clinically demonstrable As many as 129, or 36 5 per cent of the 353 patients suffering from surgical tuberculosis, died within a few years of discharge from hospital The lesson of these figures is, in his opinion, that surgical tuberculosis should be regarded as a general infection and not as a morbid condition confined to a joint or bone

Therapeutics.

423 Bismuth Treatment of Syphilis

R STREMPEL (*Dermat Woch*, October 11th, 1924, p 1235) reviews the literature, and records his observations on 56 cases treated by bismuth alone or in combination with salvarsan at the Bonn University Skin Clinic His conclusions are as follows The results of the bismuth treatment of syphilis are the more successful the earlier the patient comes under observation The older the disease the less likely is it to respond to treatment While in early primary syphilis with a negative Wassermann reaction, one series of combined injections is sufficient, two series with an interval of five to six weeks between each are required in primary syphilis in which the Wassermann reaction is positive In recent secondary syphilis a third cure is needed after two or three months Large single doses at short intervals and a sufficiently large total dose in each series of treatment are of importance As a rule relapses can be avoided in this way, and the spread of syphilis can be checked by prevention of contagious manifestations Strempel's *cases are too few in* number to allow him to judge as to the value of pure bismuth treatment in early syphilis How far salvarsan can be replaced by bismuth must be decided by *consideration of* each individual case Strempel is unable to confirm the extraordinarily favourable results obtained by Citron as regards the changes in the Wassermann reaction and the cerebro spinal fluid in advanced syphilis

424 X-ray Treatment of Whooping-cough

H I BOWDITCH, R D LEONARD, and L W SMITH (*Amer Journ Dis of Children*, September, 1924, p 323) *claim that* Roentgen rays in the treatment of *whooping cough give* better results than any *other method of treatment* Twenty uncomplicated cases of whooping cough, 18 of which were in children under 3, were treated A rapid reduction in the number and severity of the paroxysms followed, and, parallel with this, a fall in the lymphocytosis occurred, replacing the usual maximum in the third week *B pertussis* was recovered from 30 per cent of the cases which were in or under the third week of disease, cultures from older cases were sterile Three cases complicated by pneumonia were similarly treated by Roentgen rays, and the same relief from paroxysms followed, thus conserving the babies' strength In these cases the rays were successfully combined with treatment by diathermy, as advocated by Kleinsmidt in Germany

425 Treatment of Malignant Pustule

B PEPICIC (*Lyec Viesnik*, No 46, 1924) deprecates the treatment of external malignant pustule (anthrax) by excision, cautery, or serum As the result of his experience of 91 cases during eighteen years he advocates fomentations several times a day with liquor Burowii (a 10 per cent solution of alum and lead acetate) and the internal administration every two hours of 1 minim of tincture of iodine in water until the oedema disappears, with quinine during the febrile period *Such treatment* is painless, and it is claimed that it is as successful as treatment by excision, cautery, or serum In 16 cases examination of the haemorrhagic vesicles for *B anthracis* was positive Prophylaxis consists in burning or deep burial of infected carcasses, in forbidding the sale of infected meat, and boiling all suspected meat and milk, in disinfection of skin, wool, etc, used industrially, and of all infected places with 10 per cent chlorinated lime or 5 per cent carbolic acid, and in vaccination of cattle exposed to infection with a specific serum

426 Theobromin Sodium Salicylate (Diuretin) in Hydrocephalus

OBSERVING the effect of diuretin on oedema, W MCKIM MARRIOTT (*Amer Journ Dis of Children*, October, 1924, p 479) deduced that an analogous absorption of cerebro spinal fluid from the subarachnoid spaces in to the blood would take place He therefore treated six hydrocephalic infants with diuretin (up to 0 2 gram t d s) and obtained excellent results in the communicating type of hydrocephalus No benefit was obtained in two cases with complete obstruction of the ventricle No ill effects were observed other than a temporary condition resembling scleroma in one case Marriott urges that this treatment be given a trial before recourse to the more dangerous surgical procedures

Laryngology and Otology.

427 Nystagmus provoked by Movements of the Head

L Baldenweck (*Arch Internat de Laryngol, Otol et Rhinol*, September–October, 1924, p 833) points out that nystagmus and vertigo are not inseparable, and that the former can occur without the latter Barany showed that quick movements of the head produce a moderate degree of nystagmus which only lasts for a few seconds, when the experiment was repeated three or four times no further response was obtained owing to adaptation of the nervous centres If, however, the head is moved slowly to one or other side in the frontal plane—that is inclined to one or other shoulder—a nystagmus may be set up which is either rotatory to the same side or horizontal to the opposite side One type of this nystagmus is quickly transitory but another type persists so long as the head is kept in the inclined position Researches show that the quick movements excite the semicircular canal system, whilst the slow movements excite the otolith apparatus The otolith apparatus consists of two otoliths on either side—one in the saccule (the "sagitta") and one in the utricle (the "lapilla") The sagittae are disposed in a plane almost perpendicular to the axis of the petrous bone, and the lapilli lie in a plane perpendicular to the sagittae These otoliths exert considerable influence on the muscular tone of the body In the decerebrate animal they dispose the limbs in a particular position for any given position of the head The sagittae control the movements in the frontal plane and the lapilli those in the sagittal plane When the head is inclined to one side the pressure of the otolith on the hair processes of one macula acustica is temporarily reduced and on the other side is increased for a short time Thus the equilibrium is interrupted and, if the compensation of the higher centres is not acting certain phenomena are caused one of which is ocular nystagmus In estimating the results of such movements of the head it must be remembered that the semicircular canal system is also excited and that certain movements of the eyes may be produced by stimuli from the cervical muscles, as when the head is immobilized and the trunk moved on the head The latter stimuli may be eliminated by immobilizing the head on the trunk and inclining the whole body In slow movements the action of the semicircular canals is extremely small Thus in a case of vertigo inclination over to the right shoulder produced no signs, but after twenty degrees of inclination to the left there was a powerful contraction of the neck muscles preventing further inclination a bilateral nystagmus which persisted until the head was returned to the erect position and a marked vertigo

428 The Centrifugal Pressure Test in the Differentiation of Chronic Deafness

Viquier of Toulouse (*Rev de Laryngol, Otol et Rhinol*, September 15th 1924, p 571) discusses the diagnosis between a hypoacousis due to catarrhal processes and the deafness due to oto sclerosis in which there is respectively a fibrous or a bony ankylosis of the footpiece of the stapes For a very long time the test of Gelle has been recognized as the classical diagnostic procedure, and in its performance a centripetal force is used to demonstrate the mobility or otherwise of the stapes M Escat has evolved another test on similar lines in which a centrifugal pressure of air is employed In Gelle's test the drum is forced inwards by compression of the air in the external meatus and the stapes is pressed inwards if still mobile In Escat's test a vibrating tuning fork is held close to the ear and Valsalva's experiment is quickly performed Air under pressure enters the tympanic cleft, and the tympanic membrane is forced outwards, carrying with it the chain of ossicles In the normal state of the stapes this bone is also drawn outwards, with a consequent breaking of the inertia of the endolymph and a diminution of the perception of sound In such a case the result is said to be positive When however the footpiece of the stapes is fixed there will be no movement on inflation and consequently no weakening of sound perception This result is said to be negative, and is a valuable sign of oto sclerosis The test is easy to perform and only requires a tuning fork Positive results were obtained in 100 cases of normal hearing in 28 cases of nerve deafness and 30 cases of catarrhal deafness In 78 out of 81 cases of proved oto sclerosis a negative result was obtained This test is only practicable if the Eustachian tube is known to be quite free

429 The Sphenoidal Sinus and the Optic Nerve

W S Syme (*Journ of Laryngol and Otol*, July 1924 p 375) describes the relations of the sphenoidal sinuses to the optic nerves He states that though the sinuses are rarely of equal size it is only in 3 per cent of cases that the sinus of one side is so large as to stretch across and to come into relation with the optic foramen of the other side In about 10 per cent of cases, however, one sinus is in relation with both erect of sinus and the nerve but in some it is very thin, and cases have been described where it is absent Sometimes it is a sphenoethmoidal or a posterior ethmoidal cell that is in relation most closely with the optic nerve In the walls and roof of the sphenoidal sinus are very small foramina, which contain a small strand of fibrous tissue, and frequently a small vein which connects with the extradural space and the endocranial periosteum In a few cases there are definite fissures leading from the sinus to the optic foramen The author discusses the various modes of transference of infection or inflammation from the sinus to the nerve Foramina he agrees, sometimes gives rise to optic neuritis and does so also in the case of suppuration in the other sinuses and in cases of throat suppuration The easiest way for propagation of the infection is directly through the thin bone or by the strands of fibrous tissue or the small veins described Contra lateral optic neuritis is only very rarely brought about by the actual contact of the sinus and nerve of opposite side; but by the apposition of the carotid tract and the sinus of the two sides infection is carried along the carotid vessels, and In the same way the abducens nerve has been affected cases where the optic or abducens nerve may be affected, and following middle ear suppuration are probably due to the same mode of transmission Another possible route of infection is directly into the arachnoid space, through the bone or small foramina, and thus to the nerves There is still another theory—that retrobulbar neuritis is in quite a number of cases associated with disseminated sclerosis where no other cause of neuritis can be found and the author suggests that the organism of disseminated sclerosis when found will probably prove to have a special affinity for the sphenoidal sinus Finally the diagnosis is not easy and the examination of the sphenoidal sinus is a matter of some difficulty X rays are of great value but in many cases are not definitely diagnostic The clinical signs — aching at the back of the head, pus appearing in the region of the ostium, etc —are frequently absent and optic neuritis is often the only sign of sphenoidal suppuration

Obstetrics and Gynaecology.

430 Biological Tests for Pregnancy

V Zolli (*Physiatria e Ginecologia Pratica* September, 1924 p 445) describes the various biological tests which have been proposed for the detection of pregnancy Abderhalden's test he remarks has been proved to be unreliable Accelerated sedimentation of erythrocytes as described by Fahreus and Linzenmeier although constantly present at certain stages of pregnancy cannot be detected until after the third month It occurs also in inflammatory conditions, especially those located in the pelvis The phloridzin test gives positive results in the earliest months but is of diminishing significance from the fifth month to term a negative result is of greater diagnostic importance than a positive Cosa has recently described a test as follows Three drops of blood serum are mixed with 1 5 c cm of 2 per cent solution of novocain in physiological salt solution and three drops of 5 per cent sodium citrate solution The globulin having been precipitated, a drop of pure formaldehyde is added A positive result is indicated by the appearance within three to fifteen minutes, of a milky ring at the bottom of the test tube Zoppi finds this reaction to be negative up to and positive after the end of the second month of pregnancy in healthy subjects He adds that it persists until the twentieth day post partum—a fact which he thinks may prove to be of medico legal utility In inflammatory conditions of the uterus and adnexa—ante and post partum—Costa's reaction is said to be negative

431 Menstruation

C E Kaper (*South African Med Record*, October 11th 1924 p 440) develops his evolutionary view of the etiology and significance of menstruation He remarks that parental reproduction, being the most recent modification in the general process of evolution may be expected to display imperfections and instability since functions or organs undergoing evolutionary changes are characterized by variability The parallelism between labour and menstruation both being controlled by the same mechanism, and the similarity of the regenerative processes and changes which the whole female organism undergoes in both conditions point, he thinks to both processes being homologous, and physiologically and functionally equivalent The complete menstrual cycle epitomizes thus a former complete reproductive cycle occupying from three to four weeks In tracing the successive evolutionary changes in sexual life

duction through external and internal fertilization, and aplacental, early, and complete placental gestation, each advance in function is seen to be accompanied by corresponding structural and morphological changes These changes explain the mechanism of periodicity, the ovary being responsible in the first stage, the external genitals in the second, and the placenta in the final stage With the aid of this evolutionary hypothesis Kaik claims that the origin, periodicity, and the various manifestations of menstruation can be explained

432 Etiology of Membranous Dysmenorrhoea

R D SPENCER (*Journ Amer Med Assoc*, November 1st, 1924, p 1428) calls attention to the obscurity surrounding the etiology of membranous dysmenorrhoea, which disease has been found as a complication of certain pelvic conditions, and also as a sequel to some of the exanthemata He remarks that marked nutritive changes seem to be closely concerned in its production, and he describes a case in which it was definitely associated with a metabolic disease His patient, a woman aged 40 came for treatment on account of the passage of endometrial casts at menstrual periods There was no other menstrual irregularity, but she complained of considerable loss of weight and of frequent urgent micturition The sugar content of the blood was found to be 0 25 mg per cent, and the urine also contained sugar Dietary treatment resulted in the disappearance of the sugar, and since then she has had no menstrual trouble In this case Spencer remarks that diabetes mellitus was obviously an important factor in the production of membranous dysmenorrhoea

433 Recurrent Toxaemia of Pregnancy

F S KELLOGG (*Amer Journ Obstet and Gynecol*, September, 1924, p 312) discusses the prognosis in cases of pregnancy with nephropathy and toxaemia, and alludes to the great difficulties that exist in distinguishing between chronic nephritis complicating pregnancy and a pregnancy toxaemia He states that it is more usual than is commonly believed for patients with chronic nephritis to develop convulsions during pregnancy, and points specially to a numerous class of cases in which the patients, though showing no obvious clinical manifestations of chronic nephritis when not pregnant, suffer nevertheless in all, or the majority, of their pregnancies from kidney insufficiency, with or without toxaemic manifestations To this group he gives the name "recurrent toxaemia of pregnancy" forty cases have been studied with the aid of ophthalmoscopic and renal sufficiency tests In the treatment of these cases importance is laid on (1) careful and restricted dieting, (2) absolute freedom from fatigue, every form of exercise, save moderate walking, being prohibited, (3) freedom from worry and care, (4) the most careful avoidance of exposure to wet and cold—this being the most important With the aid of such measures a certain number of patients whose former pregnancies have been accompanied by grave toxaemic conditions are able to keep well and have a healthy child In most cases of chronic nephritis accompanying pregnancy the author thinks that the prognosis for the child is bad and that each successive pregnancy induces further and lasting damage to the kidney

Pathology.

434 Tetania Parathyreopriva and Idiopathic Tetany

NOLL PATON (*Edin Med Journ*, October, 1924, p 541) gives an extensive review of the recent investigations into the etiology of tetania parathyreopriva and idiopathic tetany He brought forward in 1916 very strong evidence that these conditions are of the nature of toxaemias due to excess of guanidine, or more probably of methyl guanidines, in the blood, but though this hypothesis has been generally accepted a considerable number of points still remain obscure The old idea that the symptoms of parathyroid tetany are due to a deficiency of calcium—a deficiency which has been amply confirmed—has been disproved by the demonstration that they can be made to disappear by bleeding and transfusing an amount of saline equivalent to the blood removed—a procedure which necessarily dilutes still further the calcium in the blood On the other hand, it has been shown that the injection of methyl guanidine stimulates the efferent neurons of the spinal cord, and in a moderate dose increases the excitability of the neuromyons This increase in muscular tone is similar to that which generally follows the removal of the parathyroids It is therefore conceivable that the methyl compounds of guanidine may play a part in the maintenance of muscular tone Since these substances are increased in the blood and urine after parathyroidectomy, and in the urine in idiopathic tetany, the suggestion is valid that their metabolism is controlled by the parathyroids, and that it is through them that muscular tone is regulated How the parathyroids act is unknown, but it seems probable to Paton that they control the metabolism of the methyl guanidines The source of the increased guanidine in te
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435 Parathyroid and Calcium Treatment of Tuberculous Guinea pigs.

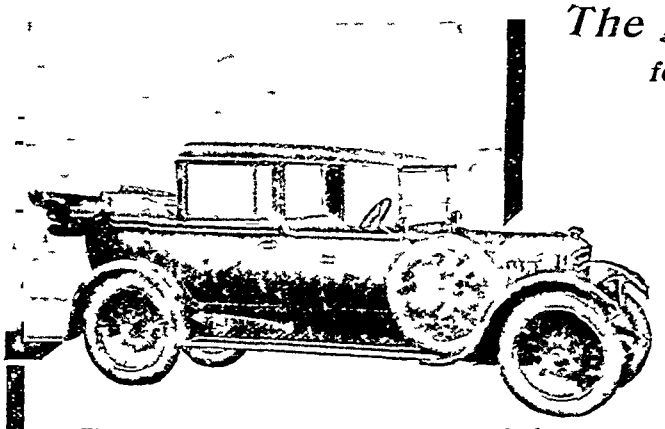
P S PELOUZE and R C ROSENBERGER (*Amer Journ Med Sc*, October, 1924, p 546), after considering the work of other investigators of the calcium metabolism in tuberculous persons, formulated a provisional hypothesis, according to which the alleged inability of the system to utilize calcium was due to a condition of hypoparathyroidism *It is known* that the parathyroid glands are concerned in the metabolism of calcium in the body, and it was thought that diminished activity of these glands might in some way prevent its proper absorption To ascertain whether there was any truth in this view seven guinea pigs were placed in separate cages, they were allowed as much food as they wished, and not until they showed a steady gain in weight did experiments start Four were then injected intraperitoneally with a comparatively avirulent culture of tubercle bacilli Of these the first was kept as a tuberculosis control, the second was given 1 gram of calcium lactate daily, the third 1/80 gram of parathyroid substance and the fourth 1 gram of calcium lactate and 1/80 gram of parathyroid The remaining three (non tuberculous) animals were fed—one on calcium, another on parathyroid, and the third on both The animals were carefully weighed and the increases charted at the close of the experiment, three and a half months later With the exception of the tuberculosis control it was noticed that the tuberculous animals ate more food than the normals, and that the tuberculous animal fed on both preparations ate more than any of the others Correspondingly each of the medicated tuberculous guinea pigs gained more in weight than its control non tuberculous fellow The four tuberculous animals were killed at the close of the experiment, and while severe lesions were found in the non medicated control, in the other three the lesions were comparatively slight The experiment was repeated with much the same results Two further experiments failed, one owing to the appearance of epidemic diarrhoea amongst the animals, the other owing to the inoculation of too large a dose of tubercle bacilli Though not drawing any definite conclusions from this work the authors consider that the results are suggestive, and express the hope that the work may be repeated with human patients.

436 Splenomegaly with Hyperleucocytosis

M D ALEXANDER (*Journ of Lab and Clin Med*, September, 1924, p 803) reports an unusual case of splenomegaly followed by marked and persistent alterations in the composition of the blood The patient a shoemaker, aged 45, suffered from splenomegaly associated with definite anaemia, the blood count being recorded as normal Splenectomy was performed in 1914 He returned to work after a few months and did not appear at hospital again till 1919, when he was admitted in a state of extreme weakness He was then found to have an enlarged liver, but no enlargement of the lymph glands A blood count showed 1,240,000 red cells per cubic millimetre haemoglobin 18 per cent, white corpuscles 150,200, with a differential count of 59 5 per cent polymorphs, 11 per cent lymphocytes, 24 5 per cent eosinophils, 3 per cent transitionals, and 2 per cent myelocytes nucleated red cells 56,325 per cubic millimetre The patient remained under observation for twenty three months, being treated by various drugs, his condition varied from time to time, and both red and white cell counts exhibited noticeable fluctuations In 1921 he was readmitted suffering from bronchopneumonia and died in four days At the necropsy the liver was found to be large and firm, the glands not enlarged, and the bone marrow yellowish, an accessory spleen was present On histological examination cellular infiltration, mostly with neutrophils and eosinophils, was found in the lymph glands, the liver, the bone marrow, the accessory spleen and to a less extent in the lungs The spleen, which had been removed in 1914, and which had fortunately been preserved, was found to be firm and homogeneous in appearance, areas of perisplenitis were visible, and microscopic examination showed cellular infiltration with neutrophils and eosinophils, and proliferation of the fibrous connective tissue The case is reviewed critically together with similar ones reported in the literature, and the author reaches the conclusion that it must be regarded as an atypical form of myelogenous leukaemia.

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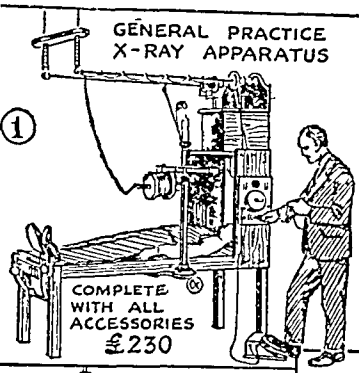
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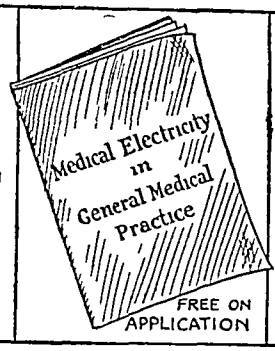
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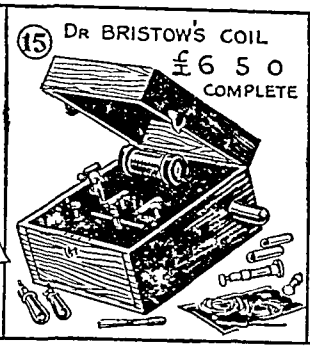
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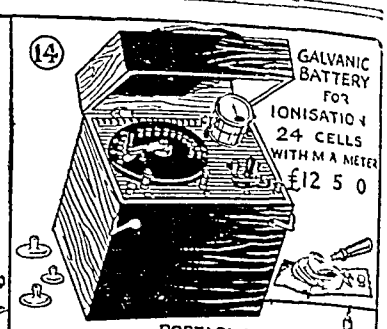


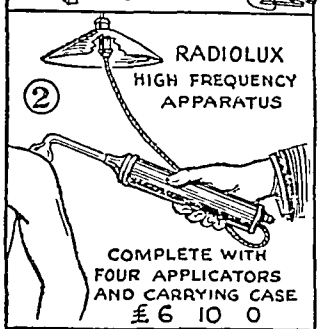
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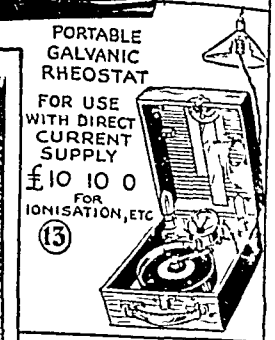












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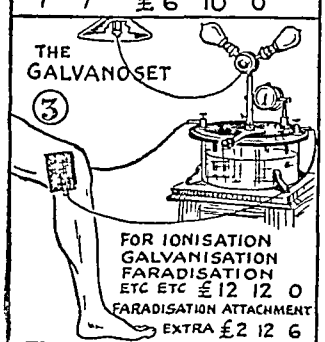
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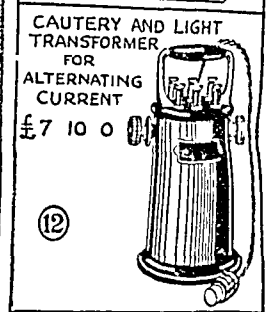
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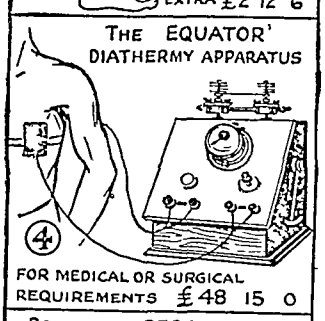
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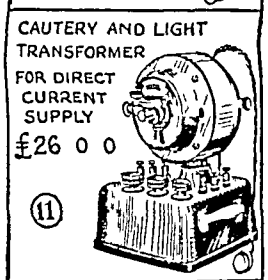
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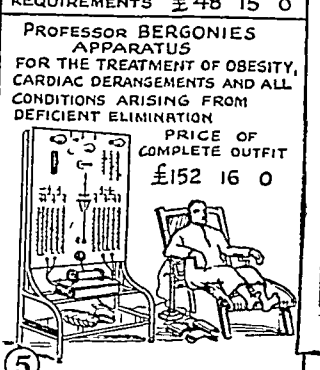
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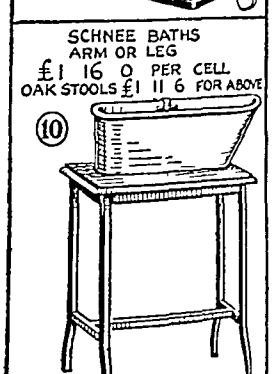


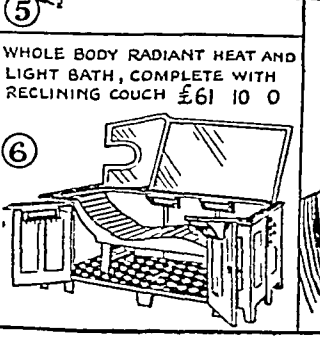


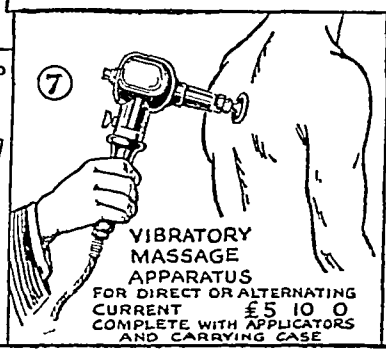


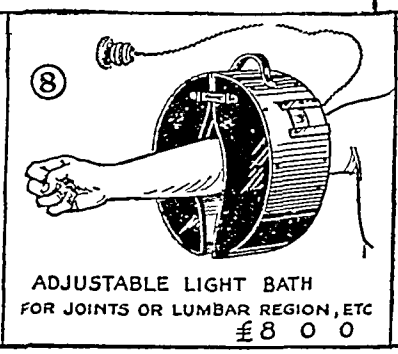


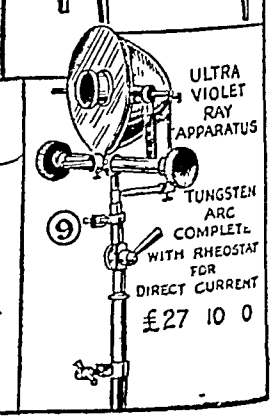










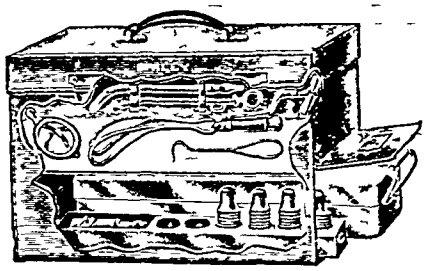


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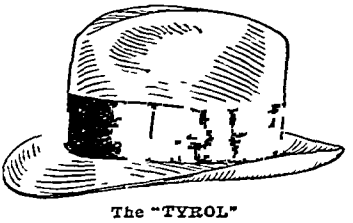
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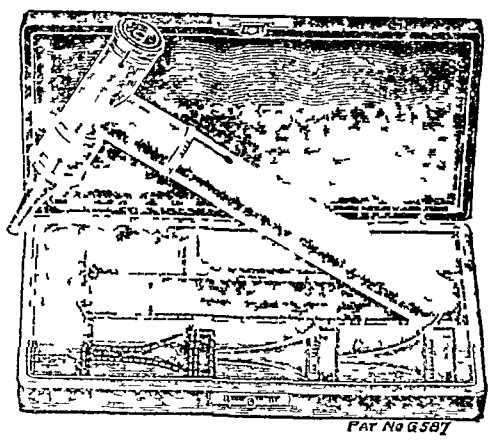
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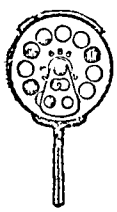
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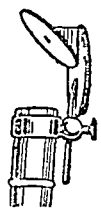
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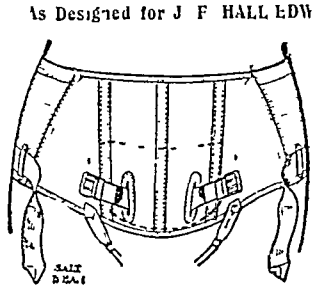
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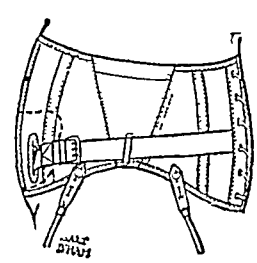
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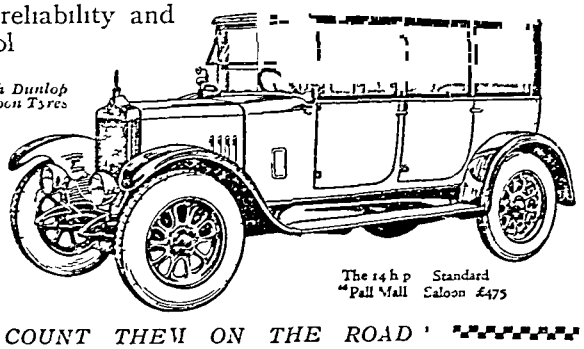
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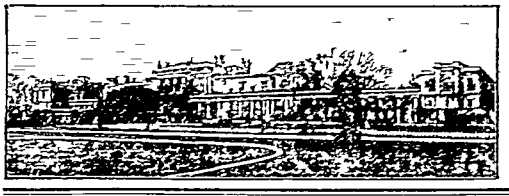
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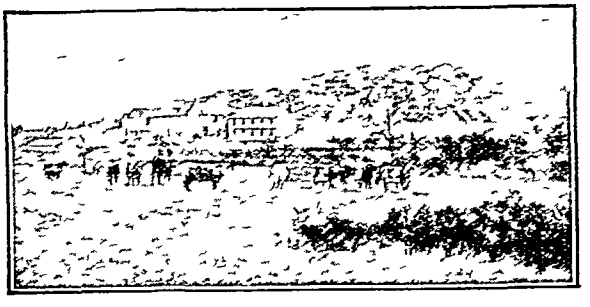
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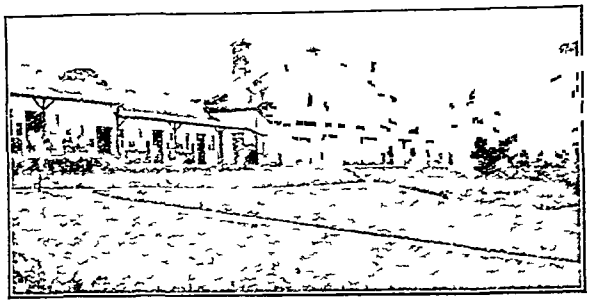
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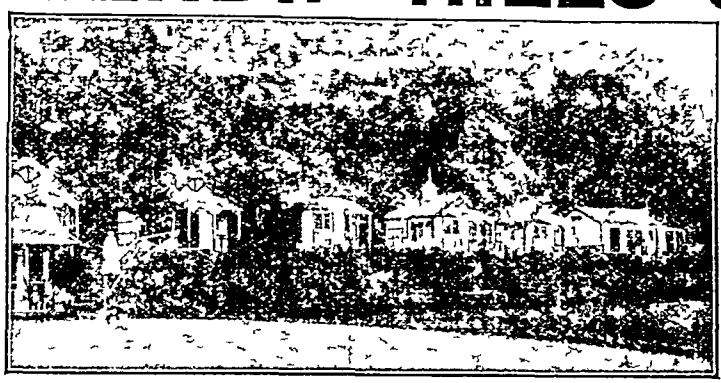
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M.B., B.S. (Lond) *Final* 1906-24 (Completed Exam.) **163**
Primary F.R.C.S. (Eng.), 1906-24 - **115**
Final F.R.C.S. (Eng), 1906-24 **83**
M.R.C.P. (Lond.), 1914-24 - **85**
D.P.H. (Various) 1906-24 - (Complete Exam.) **228**
F.R.C.S. (Edin.), 1913-24 - - **22**
M.R.C.S., L.R.C.P. *Final* 1910-24 (Completed Exam.) **245**
M.D. (Dur.) (Practitioners) 1906-24 **33**
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R.A.M.C. Entrance Exam., Jan. 28th.

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LONDON HOSPITAL MEDICAL COLLEGE.

(UNIVERSITY OF LONDON)

SCHORSTEIN MEMORIAL LECTURE

The above Lecture will be delivered by Sir ARTHUR KEITH, M.D., LL.D., F.R.S. on Wednesday, December 17th, 1924, at 4.15 p.m. in the Anatomical Theatre of the College.

Subject: "The Clinical Importance of the Ductus Cordis." (Illustrated by lantern slides.)

Members of the Profession are cordially invited to attend.

PROFESSOR WILLIAM WRIGHT, M.B., D.Sc., F.R.C.S., Dean.

October 23rd, 1924.

NORTH EAST LONDON POST GRADUATE COLLEGE,

PRINCE OF WALES'S GENERAL HOSPITAL, N. 15

The Practice of the Hospital is limited to Medical Practitioners. For particulars apply to A. J. WHITING, M.D., Dean.

University of London

A COURSE OF FIVE *Practical Physiological Lectures* WILL BE GIVEN BY TWORT, M.R.C.S., in the Brown Institution, in the Theatre of the Royal College of Surgeons (Lincoln's Inn Fields, W.C.), on December 11th, 12th, 15th, 16th, and 17th, 1924, at 4 p.m. Admission free, without ticket.

EDWIN DELLER, Academic Registrar.

COMMISSIONS in the ROYAL ARMY MEDICAL CORPS

An Examination for not less than 20 Commissions in the Royal Army Medical Corps will be held on January 14th, 15th, 16th, 17th, 19th, 20th, 21st, 22nd, 23rd, 24th, 26th, 27th, 28th, 29th, 30th, 31st, February 2nd, 3rd, 4th, 5th, 6th, 7th, 9th, 10th, 11th, 12th, 13th, 14th, 16th, 17th, 18th, 19th, 20th, 21st, 23rd, 24th, 25th, 26th, 27th, 28th, March 2nd, 3rd, 4th, 5th, 6th, 7th, 9th, 10th, 11th, 12th, 13th, 14th, 16th, 17th, 18th, 19th, 20th, 21st, 23rd, 24th, 25th, 26th, 27th, 28th, March 30th, 31st, April 1st, 2nd, 3rd, 4th, 6th, 7th, 8th, 9th, 10th, 11th, 13th, 14th, 15th, 16th, 17th, 18th, 20th, 21st, 22nd, 23rd, 24th, 25th, 27th, 28th, 29th, 30th, May 1st, 2nd, 4th, 5th, 6th, 7th, 8th, 9th, 11th, 12th, 13th, 14th, 15th, 16th, 18th, 19th, 20th, 21st, 22nd, 23rd, 25th, 26th, 27th, 28th, 29th, 30th, June 1st, 2nd, 3rd, 4th, 5th, 6th, 8th, 9th, 10th, 11th, 12th, 13th, 15th, 16th, 17th, 18th, 19th, 20th, 22nd, 23rd, 24th, 25th, 26th, 27th, 29th, 30th, July 1st, 2nd, 3rd, 4th, 6th, 7th, 8th, 9th, 10th, 11th, 13th, 14th, 15th, 16th, 17th, 18th, 20th, 21st, 22nd, 23rd, 24th, 25th, 27th, 28th, 29th, 30th, 31st, August 1st, 3rd, 4th, 5th, 6th, 7th, 8th, 10th, 11th, 12th, 13th, 14th, 15th, 17th, 18th, 19th, 20th, 21st, 22nd, 24th, 25th, 26th, 27th, 28th, 29th, 31st, September 1st, 2nd, 3rd, 4th, 5th, 7th, 8th, 9th, 10th, 11th, 12th, 14th, 15th, 16th, 17th, 18th, 19th, 21st, 22nd, 23rd, 24th, 25th, 26th, 28th, 29th, 30th, October 1st, 2nd, 3rd, 4th, 5th, 7th, 8th, 9th, 10th, 11th, 12th, 14th, 15th, 16th, 17th, 18th, 19th, 21st, 22nd, 23rd, 24th, 25th, 26th, 28th, 29th, 30th, 31st, November 1st, 2nd, 4th, 5th, 6th, 7th, 8th, 9th, 11th, 12th, 13th, 14th, 15th, 16th, 18th, 19th, 20th, 21st, 22nd, 23rd, 25th, 26th, 27th, 28th, 29th, 30th, December 1st, 2nd, 3rd, 4th, 5th, 6th, 8th, 9th, 10th, 11th, 12th, 13th, 15th, 16th, 17th, 18th, 19th, 20th, 22nd, 23rd, 24th, 25th, 26th, 27th, 29th, 30th, 31st, January 1st, 2nd, 3rd, 4th, 5th, 6th, 8th, 9th, 10th, 11th, 12th, 13th, 15th, 16th, 17th, 18th, 19th, 20th, 22nd, 23rd, 24th, 25th, 26th, 27th, 29th, 30th, 31st, February 1st, 2nd, 3rd, 4th, 5th, 6th, 8th, 9th, 10th, 11th, 12th, 13th, 15th, 16th, 17th, 18th, 19th, 20th, 22nd, 23rd, 24th, 25th, 26th, 27th, 28th, March 1st, 2nd, 3rd, 4th, 5th, 6th, 8th, 9th, 10th, 11th, 12th, 13th, 15th, 16th, 17th, 18th, 19th, 20th, 22nd, 23rd, 24th, 25th, 26th, 27th, 29th, 30th, 31st, April 1st, 2nd, 3rd, 4th, 5th, 6th, 8th, 9th, 10th, 11th, 12th, 13th, 15th, 16th, 17th, 18th, 19th, 20th, 22nd, 23rd, 24th, 25th, 26th, 27th, 29th, 30th, May 1st, 2nd, 3rd, 4th, 5th, 6th, 8th, 9th, 10th, 11th, 12th, 13th, 15th, 16th, 17th, 18th, 19th, 20th, 22nd, 23rd, 24th

[AMENDED ADVT.]

The London Lock Hospital,

91, Dean Street, W 1

APPLICATIONS are invited for the following paid CLINICAL ASSISTANTSHIPS in the Out patient Department for the period January 1st to June 30th 1925 —

TWO VACANCIES at each Evening Clinic, and ONE VACANCY at each Mid day Clinic The Clinics are held as follows: Mondays at 1 o'clock mid day and 6 p m (men), under Mr CHARLES GIBBS, F R C S; Tuesdays, at 1 o clock mid-day (men), under Mr J E R McDONAGH F R C S and 6 p m (men) under Mr J JOHNSTON ABRAHAM F R C S; Wednesdays at 6 p m (men) under Mr J E R McDONAGH F R C S Thursdays at 1 o clock mid day (men) Thursdays, at 5 p m (Women and Children), under Mr A LAWRENCE ABEL F R C S; Fridays, at 5 p m (men), under Mr J JOHNSTON ABRAHAM F R C S Saturdays at 1 o clock mid day (men), under Mr A LAWRENCE ABEL F R C S

All applications must be made on the official form which can be obtained from the Secretary and should be filled in and returned to the undersigned on or before 10 a m, Monday, December 8th, 1924

By Order of the Board
November 21st 1924 HY J EASON

London Lock Hospital,

283, Harrow Road, W

The Board of Management invite applications for the appointment of SECOND HOUSE SURGEON (male or female) at the Female Lock Hospital, Harrow Road, W 9 Salary at the rate of £150 per annum with furnished rooms full board, and washing

Candidates who must be doubly qualified and duly registered should send in their applications by 10 a m on December 8th accompanied by copies of three recent testimonials to the Secretary from whom further particulars can be obtained if desired The appointment is for six months, commencing January 8th, 1925

By order of the Board
No 20 1924 H J EASON Secretary

Manchester Royal Infirmary

HONORARY ASSISTANT RADIOLOGIST AND ELECTROTHERAPEUTIST

The Board of Management invite applications for the above appointment

Candidates must be graduates in medicine of a British or Irish University or Fellows Members or Licentiates of one of the Royal College of Surgeons of the United Kingdom

Candidates are required to forward Diplomas original testimonials, and a certificate of age with their applications addressed to the Secretary, on or before 9 a m on Thursday December 11th 1924, from whom also a copy of the rules can be obtained

Candidates are required to furnish 45 copies of their applications and dated testimonials addressed to the Secretary, for distribution prior to the

rectly is forbidden and hemselves the right on proceeding to election to take into consideration any complaint that canvassing on behalf of any candidate has taken place

By Order
FRANK G HAZELL
Gen Supt & Secretary

Manchester Royal Infirmary

RESIDENT MEDICAL OFFICER

The Board of Management of the Manchester Royal Infirmary invite applications for the above appointment, which will become vacant on January 1st next

Applicants must not be less than twenty five ered, and hold a

is, renewable for a period of one year,

Salary £200 per annum, with board residence and laundry allowance

Full information is obtainable from the undersigned to whom applicants must send twelve copies of their application and testimonials on or before Friday December 12th 1924

By Order,
FRANK G HAZELL
Gen Supt & Secretary

Kent County Mental

HOSPITAL Maidstone

ASSISTANT MEDICAL OFFICER (Male) required Commencing salary £300 per annum with furnished apartments board and laundry Candidates must more than 3 particulars and endorsed A M O on envelope should be sent to the Medical Superintendent of the Hospital at an early date

Parish of Willesden

RESIDENT ASSISTANT MEDICAL OFFICER

The Guardians of the above named Parish invite applications for the appointment of Resident Assistant Medical Officer (male) at PARK ROYAL HOSPITAL Acton Lane Willesden

Salary £350 per annum with rations, furnished apartments and laundry plus bonus (at present amounting to £80 6s 6d per annum)

Candidates must be registered medical practitioners and not over the age of 40 years

The officer appointed will be required to devote the whole of his time to the duties of the office, to administer anæsthetics give lectures to the Nursing Staff, and generally to act under the supervision and direction of the Medical Superintendent He will also be required to pay into the account of the Guardians all fees received by him including fees for certifying lunatics &c

Forms of application may be obtained by sending a stamped addressed foolscap envelope to my office as below and must be returned to me not later than the first post on Monday, the 8th day of December, 1924

The appointment will be subject to the provisions of the Poor Law Officers Superannuation Acts

By Order, J HUTTON HAYLOR,
Clerk to the Guardians
Guardians Offices 409, High Rd, Brondesbury N W 6
November 1924

The Hospital for Sick

CHILDREN,
Great Ormond Street London W C 1

The following appointments will become vacant on January 1st 1925 —

HOUSE SURGEON
HOUSE PHYSICIAN

Gentlemen are invited to send in their applications addressed to the Secretary before 12 o clock on Monday, December 1st, 1924, with copies of not more than three testimonials given specially for the purpose, and also evidence of their having held a responsible hospital appointment

Each appointment is made for six months Salary £50, laundry allowance £2 10s, and board and residence in the Hospital

Candidates must be unmarried, and possess a legal qualification to practice

All candidates must be in attendance on Wednesday December 3rd, 1924 at 5 p m precisely, to appear before the Joint Committee, if required

Forms of application and copies of the rules may be obtained from the Secretary

By order of the Board of Management
JAMES McKAY, Secretary
November 1924

Queen Mary's Hospital for

THE EAST END Stratford E 15
Telephone Maryland 2616

Applications are invited from fully qualified and Registered Medical men for the following posts —

1 RESIDENT MEDICAL OFFICER
1 HOUSE PHYSICIAN
2 HOUSE SURGEONS
1 OBSTETRIC HOUSE SURGEON
1 HOUSE PHYSICIAN & CASUALTY OFFICER

The Hospital contains 160 Beds including 14 Maternity and other special departments

Candidates who should have previously held a Hospital appointment must send copies of testimonials to the undersigned from whom all particulars can be obtained not later than Wednesday December 10th 1924

RAPHAEL JACKSON (Major) Secretary

Radcliffe Infirmary and

COUNTY HOSPITAL Oxford

Applications are invited for the following posts, which will become vacant on January 1st, 1925 —

HOUSE SURGEON
OBSTETRIC HOUSE PHYSICIAN

Appointments for six months with salaries at the rate of £120 per annum, with board etc

Candidates must be male and qualified

Applications, with four copies of three testimonials to be sent to the undersigned on or before December 15th, 1924

A G E SANCTUARY, Administrator

The Gordon Hospital,

Vauxhall Bridge Road, S W

Applications are invited for the appointment of a RESIDENT HOUSE SURGEON (male or female) from January 1st 1925 Salary at the rate of £75 per annum with board residence, and washing

Applications stating age nationality and qualifications, together with three copies of recent testimonials, should be made in writing to the Secretary by mid-day Saturday December 6th

The Hermitage Sanatorium,

Whitwell I W (Near Ventnor)

Wanted a RESIDENT MEDICAL OFFICER (Ladies ineligible) with Sanatorium experience Salary commencing at £350 all found Apply to the Medical Supt

Ministry of Health

ions from m[illegible] for appointm[illegible] Candidates must have had special experi[illegible] Maternity and Child Welfare work under a L[illegible] Authority

The salary commences at £600 per annum [illegible] rises by yearly increments of £25 to £900 [illegible] then by yearly increments of £50 to £1 100 [illegible] annum In addition to the salary, a bonus [illegible] varies with the cost of living is payable

The appointment will be subject to the [illegible] Civil Service conditions as to pension, marria[illegible] holidays etc

A Medical Officer is required to devote [illegible] time to the Public Service, and must be prepared to work in any part of England or Wales if required to do so

Canvassing Members of Parliament or Officers of the Ministry will render a candidate liable to disqualification

Forms of application, with further particulars, may be obtained from the

Director of Establishments
Ministry of Health
Whitehall S W

No application can be considered unless received *on the prescribed form* not later than December 15th 1924

The Staffordshire General

INFIRMARY, Stafford

Applications are invited for the post of HOUSE SURGEON (male) Salary at the rate of £150 per annum with board lodging etc Candidates must be duly qualified and registered under the Medical Acts

The appointment to be held for at least six month commencing December 9th The duties include work in the out patients department as well as in the wards and the administration of anæsthetics

Applications stating age accompanied by copies of three recent testimonials should reach me by Thursday, December 4th 1924

A D COLLINS Secretary
Stafford November 24th 1924

Derbyshire Royal Infirmary

APPOINTMENT OF HONORARY ASSISTANT SURGEON

The Board of Management invite applications for the office of Honorary Assistant Surgeon to the Infirmary Candidates must be qualified in accordance with the Rules of the Institution Any further information may be obtained on application at the Infirmary

Candidates must send eighty copies of their application and testimonials (not more than five) [illegible] later than 10 a m on

[illegible] but may send [illegible] testimonials to [illegible] mittee

By order
WALTER BANKS,
Superintendent and Secretary
November 20th 1924

Derbyshire Royal Infirmary,

Derby (General Hospital, 300 Beds)

with a possibility of extension for a further period of twelve months

Salary £200 per annum, with apartments

[illegible] es of not more than five to the undersigned not [illegible]

[illegible] WALTER BANKS,
November 24th, 1924 Supt & Secretary

King Edward VII Hospital

Windsor

Applications are invited for the post of JUNIOR HOUSE SURGEON for six months, from January 1st

Candidates must be fully qualified women preferably have held a resident appointment at a General Hospital

Salary at the rate of £100 per annum board residence

Applications with copies of testimonials [illegible] be sent not later than December 3rd, to the Secretary

November 19th 1924

Glosvenor Sanatorium,

Ashford Kent

SECOND ASSISTANT M O (Male single not 40 years of age) required for above Institution Salary £250 with board lodging and laundry Applications together with copies of recent testimonials to Dr J ABERDEIN MILNE Medical Superintendent

APPOINTMENTS—Important Notice.

(a) British Islands.

Medical Practitioners are requested not to apply for any appointment referred to in the following table without having first communicated with the Medical Secretary of the British Medical Association, 429, Strand, London, W.C.2.

CONTRACT PRACTICE.

Town or District	Town or District	Town or District
ENGLAND.	**WALES** (continued)	**PUBLIC HEALTH** (continued)
CANNOCK CHASE AND DISTRICT (Clubs and Friendly Societies Appointments.)	OGMORE VALLEY GLAMORGAN (Workmen's Colliery Medical Aid Society.) (Workmen's Medical Scheme.)	NORTHAMPTONSHIRE COUNTY COUNCIL (Medical Officer of Health.)
MIDDLESBOROUGH (Medical Aid Associations or Workmen's Clubs.)	TONDU & ABERKENFIG GLAMORGAN (Workmen's Medical Scheme.)	NORTHUMBERLAND COUNTY COUNCIL (Woman Assistant Medical Officer of Health.)
SOUTH BANK & ESTON (Medical Aid Associations or Workmen's Clubs.)	**PUBLIC HEALTH.**	NUNEATON RURAL DISTRICT (Medical Officer of Health.)
WALES	ARGYLLSHIRE EDUCATION AUTHORITY (Executive School Medical Officer.)	PORTSMOUTH EDUCATION COMMITTEE (Whole-time Assistant School Medical Officer.)
ABERTRIDWR GLAMORGAN (Tumour Colliery (Medical Scheme.)	DULVERTON UNION (Medical Officer of Workhouse and No. 1 District.)	SOUTHWARK METROPOLITAN BOROUGH (Tuberculosis Officer.)
EBBW VALE MON (Workmen's Medical Society.)	KENT EDUCATION COMMITTEE. (Woman School Medical Inspector.)	STIRLING ROYAL BURGH (Medical Officer of Health, Tuberculosis Officer and Child Welfare and V.D. Officer, Police Doctor and Medical Attendant at Combination Infectious Diseases Hospital.)
GILFACH GOCH GLAMORGAN (Workmen's Medical Scheme.)	LANARK COUNTY (Medical Officer of Health.)	SUTHERLANDSHIRE (Medical Officer of Health, Tuberculosis Officer and Chief Medical Officer.) (Combined post.)
LLWYNYPIA CLYDACH VALE PENYGRAIG GLAMORGAN (Workmen's Medical Scheme.)	LINCOLN CITY EDUCATION AUTHORITY (Woman Assistant School Medical Officer.)	WIGAN COUNTY BOROUGH (Assistant School Medical Officer.)
MARDY GLAMORGAN (Workmen's Medical Scheme.)		YORKSHIRE NORTH RIDING (Assistant School Medical Officer.)
OAKDALE MON (Medical Officer for Medical Aid Association.)		

(b) Colonial Medical Service.

WINDWARD ISLANDS MEDICAL SERVICE (Grenada with Carriacou & Vincent and St. Lucia)

(c) Overseas Appointments.

Medical Practitioners are requested not to apply for any appointment referred to in the following table without having first communicated with the Honorary Secretary of the Division or Branch named in the second column or with the Medical Secretary of the British Medical Association 429 Strand London, W.C.2.

Town or District.	Hon. Sec. of Division or Branch	Town or District.	Hon. Sec. of Division or Branch	Town or District.	Hon. Sec. of Division or Branch
NEW SOUTH WALES (All Friendly Society Appointments.)	Dr. R. H. TODD (Hon. Sec. New South Wales Branch) B.M.A. Building 20-34 Elizabeth Street, Sydney N.S.W.	QUEENSLAND (Brisbane Associated Friendly Societies' Institute.)	Dr. R. MARSHALL ALLAN (Hon. Sec. Queensland Branch) Adelaide Street Brisbane	VICTORIA All Insurance or Medical Dispensaries.)	D. FRANK DAVIES (Hon. Sec. Victorian Branch) Medical Society Hall E. Melbourne Victoria.
				WESTERN AUSTRALIA (Contract and Lodge Practices.)	Hon. Sec., Western Australian Branch, No. 9 Bank of New South Wales Chambers St. Georges Terrace Perth

Address 429 Strand, W.C.2
November 26th 1924

By order of the Council of the British Medical Association,
ALFRED COX, Medical Secretary.

West End Hospital for Nervous Diseases

In Patient Department Gloucester Gate Regent's Park N.W. Out Patient Department & Secretary's Office Welbeck Street W.

The Committee of Management invite applications for the following Vacancies on the Hon. Medical Staff of the Hospital:—

(1) ANAESTHETIST. Candidates must be Fellows or Members of the Royal College of Physicians of London and Graduates in Medicine of one of the

(2)
(3) to be

of England.

Further particulars are obtainable from the undersigned to whom 2 copies of application and testimonials should be sent before December 4th.

J. J. WETENHALL, Secretary.

Eccles & Patricroft Hospital, Manchester

Wanted MALE HOUSE SURGEON for d. 40 ation to be ington Road, Eccles, Manchester, not later than December 10th.

Hampstead General & North WEST LONDON HOSPITAL Haverstock Hill N.W.

APPOINTMENT OF HOUSE PHYSICIAN AND HOUSE SURGEON

Vacancies will occur on January 1st next for a House Physician and a House Surgeon. The salary for each appointment will be at the rate of £100 a year together with board residence etc. and the term will be for a period of six months.

( )

In three more than three testimonials to the Secretary not later than December 6th.

Devon Mental Hospital

Required JUNIOR ASSISTANT MEDICAL OFFICER (Male). Candidates must be registered Medical Practitioners and unmarried. Preference will be given to candidates who either have or are anxious to obtain a Diploma in Psychological Medicine. Salary £300 per annum rising by £25 per year to £350 with board, apartments, laundry and attendance. The appointment is subject to the provisions of the Asylums Officers Superannuation Act, 1909.

Form of application to be obtained from the Clerk to the Devon Mental Hospital, Exminster, which must be returned completed on or before December 9th 1924.

Hampstead General & North- WEST LONDON HOSPITAL Haverstock Hill N.W.

APPOINTMENT OF CASUALTY MEDICAL OFFICER AND CASUALTY SURGICAL OFFICER

Vacancies will occur on January 1st next for a Casualty Medical Officer and a Casualty Surgical Officer. The salary for each appointment will be at the rate of £100 a year together with board residence etc. and the term will be for a period of six months.

Candidates who must be registered medical practitioners should send applications stating age, qualifications, experience etc. together with copies of not more than three testimonials to the Secretary not later than December 6th.

Rotherham Hospital

HONORARY RADIOLOGIST

An Honorary Radiologist is required at the above Hospital. Candidates must be duly qualified medical practitioners.

The successful candidate will have full control and be fully responsible for his department.

Applications should be sent to the Secretary on or before Tuesday December 2nd.

8 Moorgate Street, Rotherham. G. W. POBEPTS, Secretary.

University of Leeds
(LEEDS MATERNITY HOSPITAL)

UNIVERSITY TUTOR IN OBSTETRICS AND RESIDENT MEDICAL OFFICER

Applications are invited for the above Post The officer will perform the usual duties of a Resident Officer in the Maternity Hospital (40 beds and districts and also assist the teaching staff in the supervision and training of the University students in Obstetric

Candidates must be registered and preferably have had some experience in an Obstetric Clinic

Salary at the rate of £300 per annum with board and residence in the hospital

Applications accompanied by copies of testimonials should be sent on or before December 15th to the SECRETARY Clinical Obstetric Committee the Maternity Hospital 42 Hyde Terrace Leeds

West London Hospital,
Hammersmith Road, W 6

Required one HOUSE PHYSICIAN one HOUSE SURGEON and one AURAL HOUSE SURGEON and RESIDENT CASUALTY OFFICER (males) The three appointments are tenable for six months from January 1st next, subject to one months notice on either side Salary £100 per annum with board lodgings, and washing allowance

Candidates are required to be registered under the Medical Act to send four copies of their letters of application and four copies of each testimonial submitted so as to reach me by first post on Monday December 15th Selected candidates will be required to call upon such members of the Medical Staff as directed to be in attendance at a meeting of the Medical Council on Monday December 22nd at 1 p m and the House Committee Meeting at 1 45 p m the same day, when the appointments will be made

NOTE—Candidates applying alternatively for more than one of these appointments should send an additional four copies of application and testimonials for each post so applied for

H A MADGE Secretary

Paddington Board of
GUARDIANS

RESIDENT ASSISTANT MEDICAL OFFICER (Male)

The Guardians invite applications for the above appointment in connection with their outdoor medical relief work under the control of the Medical Superintendent

Remuneration at the rate of £330 per annum, together with resident allowances

Forms of application and further details of the appointment may be obtained from the Medical Superintendent 285 Harrow Road Paddington W 9 to whom such forms must be returned duly completed not later than Wednesday December 10th 1924

By Order
P BIDDULPH HANCOCK
Clerk to the Guardians

Guardians Offices 311 319 Harrow Road
November 26th 1924 Paddington W 9

The Royal Infirmary,
Sheffield
(There will shortly be 401 beds 66 of which are Ophthalmic)

The Weekly Board of Management invite applications from fully qualified male graduates for the following posts —

HOUSE SURGEON
ASSISTANT CASUALTY OFFICER
ASSISTANT OPHTHALMIC HOUSE SURGEON

The salary attached to each appointment is £60 per annum with board and residence

Applications with copies of testimonials to be addressed to the undersigned

Board Room JNO W BARNES FCIS,
November 26th 1924 Secretary

The Prince of Wales's
GENERAL HOSPITAL London N 15

There are vacancies for (Honorary) CLINICAL ASSISTANTS in the various Departments of the Hospital (Surgical Medical Gynæcological Larynx and Throat, Eye Skin and X ray and Electrical

Applications should be addressed to me on or before Monday December 1st next

FREDK W DREWETT
November 24th 1924 Director

The Wanetoid General
HOSPITAL Leamington Spa

Required a RESIDENT HOUSE PHYSICIAN early in December next Salary £120 per annum with board residence and laundry Applications accompanied by not less than three testimonials should be sent at once to

W RUSSELL RUDALL
Nov 24th 1924 House Governor & Secretary

Administrative County of
ESSEX

APPOINTMENT OF TWO ASSISTANT COUNTY MEDICAL OFFICERS OF HEALTH

The County Council of the Administrative County of Essex invite applications for the above post from registered Medical Practitioners specially qualified in the treatment of Tuberculosis School Medical Inspection, and Maternity and Child Welfare not over forty five years of age

Preference will be given to candidates who have had at least three years experience in Public Health work subsequent to their medical qualification The salary attached to the appointment will be £600 per annum and travelling expenses The person appointed will be required to devote his whole time to the service of the Council to perform such duties and to furnish such advice and assistance appertaining to his office as may be required and to reside in such district of the County as the Council may decide The appointment will be subject to three months notice on either side

Applications on the prescribed form obtainable from the undersigned, and accompanied by copies of not more that three testimonials which will not be returned should be addressed to me and delivered at the Shire Hall Chelmsford, not later than Wednesday the 10th of December 1924

JOHN H GOOLD,
Clerk of the County Council
November 25th 1924 Shire Hall Chelmsford

Borough of Colchester.
ASSISTANT MEDICAL OFFICER

Applications are invited for the position of whole time ASSISTANT SCHOOL MEDICAL OFFICER AND ASSISTANT MEDICAL OFFICER OF HEALTH Salary £600 per annum

The duties will consist of the Medical Inspection of School Children Maternity and Infant Welfare work and general Public Health work Previous experience and a Diploma in Public Health are desirable, but a good knowledge of Eye work is essential Particulars and terms of appointment may be obtained from the undersigned

Applications stating age, qualifications, and experience should be accompanied by not more than three recent testimonials, and must reach this office not later than Thursday morning Dec 4th 1924 Envelopes should be endorsed Assistant Medical Officer

Personal canvassing will disqualify

Health Offices, W F CORFIELD
Trinity Street, Medical Officer of Health
Colchester

Kingston Union
ASSISTANT RESIDENT MEDICAL OFFICER (Male)

The Guardians of the Poor of the Kingston Union invite applications for the post of Assistant Resident Hill the successful candidate will also be required to carry out such additional duties as the Medical Superintendent shall direct

Candidates must have had considerable experience of surgical work

The apartments provided are only suitable and applications will or married men h apartments or six months in the first instance and may be extended subject to satisfactory service

The salary will be at the rate of £350 per annum, rising to £400 per annum, after one years satisfactory service with apartments rations laundry and attendance (valued at £100 per annum for Superannuation purposes but will be subject to a small deduction under the provisions of the Poor Law Officers Superannuation Act 1896

Applications stating age experience and nationality together with three recent testimonials should be sent so as to be received by me not later than 10 a m on the 4th proximo

W TAYLOR Solicitor
Union Offices Clerk
Kingston on Thames November 25th 1924

London Hospital, E1
Applications are invited for the post of FIRST ASSISTANT to one of the four Medical "Firms

The salary will be £400 per annum which will be paid by the Hospital and Medical College jointly

Applications will be received up to first post on Saturday December 13th

Particulars of the appointment may be obtained from the House Governor London Hospital E 1

Cambridgeshire Tuberculosis
COLONY

Applications are invited for the post of HOUSE PHYSICIAN Salary £100 per annum with board lodging and laundry Applicants must be unmarried Apply to the Medical Director, Papworth Hall Cambridge

Belgrave Hospital
CHILDREN (Incorporated)
1, Clapham Road S W 9

The Committee of Management will appoint an ADDITIONAL RESIDENT MEDICAL OFFICER who will be required to assist the House Physician and House Surgeon Applications for the post are invited from men who are qualified and registered The appointment is for four months commencing the 1st January and will be at the rate of £100 per annum with residence and washing provided Applications with copies of testimonials to be forwarded before Monday December 8th 1924 to the undersigned from whom further particulars may be obtained

By order
THOMAS CLAPHAM Secretary

Manchester Hospital for
CONSUMPTION AND DISEASES OF THE THROAT AND CHEST

Wanted a RESIDENT MEDICAL OFFICER for the in patient department, Bowdon Chest Must be registered Salary £200 per annum with board apartments laundry, and rations, contract Duties include attendance on three mornings a week at the out patient department Manchester

Applications with copies of testimonial, to be sent

Ha Secretary

East London Hospital for
CHILDREN & DISPENSARY FOR WOMEN
Shadwell E 1

Applications are invited for the post of HOUSE SURGEON (male) The appointment is for six months from January 1st 192 Board residence and laundry are provided Salary at the rate of £125 per annum

Applications with testimonials to be sent to the undersigned not later than Saturday Dec 13th, 1924

W M WILCOX Secretary

Wigan Infirmary
Wanted for six months commencing January 1st 192 a THIRD HOUSE SURGEON (male) Salary £150 per annum with board apartment and wash other tunities statistics age applicants three testimonials should reach the undersigned as soon as possible

A STANLEY BRUNT
General Supt and Secretary

Charing Cross Hospital.
Applications are invited for the post of RESIDENT REGISTRAR from candidates who must be registered medical practitioners Salary £400 per annum The room (the office may be obtained from the undersigned whom applications accompanied by copies of three recent testimonials must be delivered not later than Monday December 8th 1924

PHILIP INMAN House Governor
Charing Cross Hospital London W C 2

London Temperance Hospital,
Hampstead Road N W 1

Applications are invited for the post of Resident (Male), which will become vacant on December 15th next The appointment is for a period of months at a salary of £175 per annum

Candidates must send applications stating qualifications age etc with copies of not more than three testimonials not later than Friday, December 5th addressed to the Secretary

Poplar Hospital for Accidents
East India Dock Road, E 14

VACANCY FOR HONORARY DENTAL SURGEON

Applications are invited for the above post They should be accompanied by copies of not more than three testimonials and should reach the undersigned by December 2nd

Attendance at the Hospital is required on morning a week

D H LINDSAY Sec & House Governor

The Miller General Hospital
FOR SOUTH EAST LONDON
Greenwich Road S E 10

PART TIME ASSISTANT to the Out patient Department required to attend each day except Sundays from 9—1 Salary £150 per annum with lunch

Applications stating age nationality qualifications and experience accompanied by testimonials not more than three recent testimonials to be sent to the secretary

St Giles' Hospital,
Camberwell S E 5

The Board of Guardians of the Parish of [illegible] a CONSULTANT Hospital [illegible] o pital twice a ee at hours mutually arranged between the ental Surgeon and the Medical Superintendent he Dental Surgeon appointed must be prepared to ay three hours or until the work is finished In ddition to attending the In patient he will be re uired to do dental work for the children of the cattered Homes

Further particulars may be obtained on appli ation to the Medical Superintendent

Forms of application may be had of the under igned and must be returned no later than Wednesday December 10th 1924

H ERNEST MOTT
Clerk to the Guardians.

Nov mber 1 t, 1924 -9 Peckham Road S E 5

Seamen's Hospital Society,
Greenwich S E

The Committee invite candidates for the appointments of HOUSE PHYSICIAN and HOUSE SURGEON at the Dreadnought Hospital Greenwich. Candidates must be made doubly qualified and registered

The elected candidates will be required to take up duty in January 1st 1925 Salary at the rate of £150 per annum and a proportion of fees with board residence and washing The appointment will be for six months

Applications stating age together with copies of not more than three recent testimonials to be sent in on or before December 11th to the undersigned, from whom further particulars can be obtained

By order
P J MICHELLI Secretary

Greenwich November 2nd 1924

St John's Hospital for
DISEASES OF THE SKIN
Leicester Square W C 2

Applications are invited for the post of HONORARY ASSISTANT PHYSICIAN to the Hospital Candidates must be Fellows or Members of the Royal College of Physicians Applications with copies of testimonials to be sent to the undersigned on or before the morning of Wednesday December 3rd 1924

There is also a vacancy for an HONORARY MEDICAL REGISTRAR particulars of whose duties can be obtained on application to the undersigned

GEORGE A ARNALDIN
Secretary Superintendent

Telephone Langham 2728
Telegrams. Assistance London

NURSES
MALE OR FEMALE

TRAINED NURSES FOR MENTAL, MEDICAL SURGICAL AND FEVER CASES

Nurses reside on the premises and are available for urgent calls. Day or Night.

THE NURSES' ASSOCIATION
(In connection with the MALE NURSES ASSOCIATION)

29, York Street, Baker Street, London, W 1
(Mrs) MILLICENT HICKS *Superintendent*
W J HICKS *Secretary*

ST. LUKE'S HOSPITAL.
ESTABLISHED 1751

PRIVATE NURSING STAFF DEPARTMENT

TRAINED NURSES for MENTAL and NERVOUS CASES can be had immediately Apply to LADY SUPERINTENDENT 19 Nottingham Place London W 1 Telephone Mayfair 3160

NORTHERN BRANCH —Apply LADY SUPERINTENDENT 71 Clarendon Rd Leeds Phone Leeds 3160

York Road (General Lying-in Hospital)
LAMBETH
ALEXANDRA

Patients admitted to the Practice of this Hospital Telephone 964 Central For rules fees etc apply ROSE E WHITE Secretary

MR. HERBERT NEEDES,
31 BEDFORD ST STRAND W C 2
(Gerrard 3031) (Leads 1511)

This [illegible] takes the
SHIPS [illegible]
SUPPLY of LOCUMS and ASSISTANTS

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1 UNOPPOSED PRACTICE returning over £1 800 a year in a flourishing pretty rural district within 3 miles of Town Panel and appts held Chairman's residence with several acres of ground on rental Success or must be active and of experience Price £2 800

2 URGENT —For Sale PRACTICE of about £1 800 a year including panel of £900 in good Cathedral City in the S of England Vendor going abroad will accept £3 000 for good will and freehold of convenient house

3 COUNTRY TOWN PRACTICE within 3 hours of London and flourishing £840 p.a. including Panel and appointments (transferable) Chance of Hospital appointment Convenient premises with garden etc on lease at £60 Premium about 1½ year purchase

4 UNOPPOSED PRACTICE near favourite Northern Cathedral and Garrison City Average Income £775 a year with scope Society excellent Charming modern house (small) and grounds for sale Suit a retired Army man desirous of easy occupation amids pleasant surroundings

5 Near LIVERPOOL —PRACTICE averaging over £1 500 a year with panel 1 100 and appts *Convenient residence garage etc rent £100* Price for prompt sale £2 000

6 WITHIN EASY REACH of the Marble Arch, non panel PRACTICE of about £1 200 a year for early sale Vendor going abroad Fees good House on long lease and moderate rent Price for quick sale £1 400

7 PRACTICE of £1 400 a year in the Tyne district for Sale with Freehold House Panel £550 Fees from 3 6 Vendor retiring Price for the two only £3 300

8 LONDON (Central) —General PRACTICE of about £1 250 for Sale Good appts £550 Small panel No midwifery House on long lease at £125 Price £1 500

9 REQUIRED —PRACTICE or PARTNERSHIP producing £1 000–£1 200 a year in or near London by Grad with experience and capital

Mr Needes will receive details of this article confidence

ESTABLISHED 1868

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(Mr A. HADLEY)
MEDICAL TRANSFER AGENCY,
19, Craven Street, Strand, W C 2

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Telephone Central 1111.

This old established reliable Agency negotiates the Sale of PRACTICES and PARTNERSHIPS on reasonable terms which can be obtained on application. No charge made unless a sale be effected.

LOCUM TENENS and ASSISTANTS supplied

FOR SALE

1 NORTH MIDLANDS —Country town PRACTICE returning from £1 000 to £2 000 a year in pleasant district Good detached house large garden etc Freehold and Practice for sale together

2 CHESHIRE —Small Residential Town General PRACTICE returning £1 500 a year Good residence (6 bedrooms) garden and garage Rent £84 Premium 1½ years purchase Efficient introduction

3 PARTNER wanted for a good middle-class private Practice in a pleasant outlying suburb (Kent) Share for 1/3 or 1/2 worth £1 500 a year Good

4 [illegible] of an old [illegible] ng £3 000 a year *Middle and working-class Good* [illegible] ae ommodation available Premium £2 600

5 MIDLANDS —Small Industrial Town PRACTICE returning about £2 500 p.a Panel 1 500 Convenient residence with garden garage &c Rent £40 Prem £3 500 or nr offer

6 SUBURB OF MANCHESTER —General PRACTICE capable of being greatly increased Receipts £750 p.a. Good house pleasantly situated To be Let or Sold Premium £1 000

7 SOUTH WALES —Easily worked transferable Contract and Panel PRACTICE held several years by Vendor Receipts now about £2 000 a year Convenient residence with surgery attached Rent £52 on lease Cottage Hospital in town Premium £2 000

8 MIDLANDS —Pleasant Residential Town Middle-class PRACTICE Receipts £1 300 a year Panel 60 Fees good Corner house with surgery attached Rent £60 long lease Premium 1½ years purchase

9 OILLYING SUBLIB SULPEY —Junior PARTNER wanted for General and Panel Practice Receipts £1 500 a year Third share for sale at 3 years purchase House or sale or rooms available.

No charge to purchasers or principles

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LOCUM TENENS provided at short notice

FOR SALE

CHESHIRE —Old established Country GP Panel over 400 Income £600 Excellent sport hunting etc Scope for young practitioner Premium 1½ year purchase

LONDON W —PARTNERSHIP in old established Sub rtan GP Panel nearly 400 Income about £2 000 Nice house to rent Midwifery not encouraged (scope) Old etablishes are two years purchase Suit Irishman or Scotsman

SOUTH COAST —Well established NUCLEUS GP in well known coast resort Income £500 (increasing) Panel 400 Good site Small house to rent or for sale Prem £1 000

LONDON S W —PARTNERSHIP in old established GP situated within easy access of West End Income £2 800 Panel 1 100 Premium for half share £2 250 (£2 000 down)

EAST COAST —Old established GP situated in busy export Medium sized house to be let or sold on lease Income £1 750 Panel 1 100 Premium £2 500 cash.

YORKS —Old established GP situated in small industrial town Detached house (6 bed) to let or sold on lease Income £2 500 p.a. Panel 1 100 Premium £3 500

YORKS —Old-established GP Manufacturing town Detached house (4 beds) Income nearly £1 300 Panel 1 150 Two appointments Premium £3 600 to include freehold house part can remain

LANCS —Country town Large house (6 bed room) Garden Garage Panel (over 1 000) Income £1 460 Premium to include house £4 000

Purchasers stating their requirements will be sent particulars of other suitable Practices and Partnerships for sale free of charge

Please address all communications to the Manager Mr W H. GRANT Medical Transfer and Insurance Department.

THE MANCHESTER MEDICAL AND SCHOLASTIC ASSOCIATION, LTD
6 BROWN STREET

Telegraphic Address STUDENT MANCHESTER

[illegible]

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Established by Bovril, Limited, to provide an efficient and reliable transfer service for the Profession at minimum Charges.

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An Accountant's certified report is required in respect of every practice or partnership the disposal of which is undertaken by the Agency

The commission chargeable in respect of any practice in Great Britain placed exclusively in the hands of the Agency for transfer has been fixed on an exceptionally favourable scale, the maximum chargeable on any transfer being fifty pounds (£50). In the case of Foreign and Colonial practices similarly placed the maximum is seventy-five pounds (£75).

NO CHARGE IS MADE TO PRINCIPALS FOR THE INTRODUCTION OF LOCUM TENENS OR ASSISTANTS

Accountancy and legal services furnished by the Agency, where desired, at moderate inclusive charges.

PRACTICES AND PARTNERSHIPS FOR SALE

1 LONDON S W (Riverside Suburb) —Old established better and middle class PRACTICE, non panel and mainly non dispensing Average income for the last three years £1 656 Visits 3/6 to 10 6, about 10 cases of Midwifery yearly at from 3 to 10 guineas Commodious house with good garden garage Will be let on rental of £160, or the Leasehold sold for £2 500 Premium £3 000 payable £1 500 down

2 LONDON, N W —Urgent sale owing to illness of Vendor Small non panel PRACTICE at present producing about £300 per annum Good scope for increase especially if panel work be undertaken Very small expenses The Practice is worked as a Lock up but living accommodation can be secured and if desired the whole premises can be bought for £550 Premium £350

3 LONDON NORTH —Old established PRACTICE, producing an income of £1 400 a year, including appointments worth £320 Panel of 3 0 but this can be largely increased if desired Visits and medicine 3/6 to 7/6 Practice is easily worked with no conveyance Nice house in good decorative repair Rent £125 Garage can be let off at £26 or £54 Premium £2 000

4 PARTNERSHIP —LONDON (WEST END) —A well qualified Graduate between 30 and 40 years of age can acquire the half share of a high-class old established general PRACTICE worth about £2 500 per annum Held over 20 years by present Incumbent Co[illegible] fee 2 guineas upwards but plenty to be had at 1 gu[illegible] (including rates and taxes) also Scope

5 LANCASHIRE [illegible] very old established PRACTICE situated in a small market town in a delightful agricultural and residential district (population over 5 000) close to the sea Cash receipts for the last three years average £2,250 including appointments worth £150 and panel of 800 Held 8 years Nearest opposition 3 miles Railway station 2 miles Visits 2/6 to 21/ Midwifery 2 to 10 guineas about 50 cases yearly Pleasant house containing waiting and consulting rooms dispensary and 6 bedrooms bath room (h & c) good garden garage Rent £45, on lease Premium £3 375—£2 000 down Satisfactory reasons for selling

6 INDIA ASSISTANTSHIP with view to PARTNERSHIP —A single man (about 30 years of age and not over 35 who must be an M R C S England of good appearance and a sportsman) is required on a two years engagement to commence next March, in a practice producing £7 000 a year Salary 650 Rupees a month plus board and lodging (the total equals £800 £850 p a) At termination of the engagement a one sixth share will be sold if satisfactory at one year's purchase with increase ultimately up to one third Premium payable out of receipts Interview in London essential

7 WESTERN AUSTRALIA —Unopposed PRACTICE, situated in a small Township (population 1 500), amidst very picturesque surroundings and within 12 miles of the sea coast Cash receipts over £1 5[illegible]
Lodge worth £389
5 guineas upwards
Comfortable compact [illegible] containing 6 rooms bathroom etc and ample land attached. Rent £86 a year Premium £1 000 half down and balance in 12 months Small Hospital (with 6 beds) Sport

8 GLOUCESTERSHIRE —COUNTRY TOWN —An old-established PRACTICE producing an average income for the last two years of £1 760 including Union Appointment £85 and approximately £900 from Panel Advice and medicine 2 6 3 6 and 5/ visits and medicine from 2 6 to 12/6 About 25 cases of Midwifery a year The house is a large one (recently redecorated throughout) situated in the main street and contains 3 reception rooms professional rooms 8 bedrooms 2 bathrooms large garden Held on lease at £60 a year Excellent hunting country Premium £2 950

9 RESIDENTIAL TOWN within 100 miles of London Non dispensing entirely better class PRACTICE producing an income of about £2 000 a year including small panel of about 600 Fees from 2/6 to 21/, mainly 7/6 upwards Only a few cases of midwifery yearly at 2 to 25 guineas Attractive and commodious house (3 reception 7 bedrooms etc, garden) on rental at £100 p a Good society and sport of all kinds Premium £4,000 payable £2 000 cash and £2 000 by instalments

10 SOUTH COAST WATERING PLACE —(Population 30 000)— Partnership with view to succession in four years, to an old established PRACTICE, averaging for the past three years over £1 150 per annum, including panel of 930 Visits 3 6 5 and 7/6 No midwifery Very nice house available with ample accommodation garden, etc will be sold, or can be rented Half share for disposal at 2 years purchase Good society, and sport of all kinds etc Small Hospital Scope for increase

11 NORTHERN CATHEDRAL CITY —Old established middle and Average income for the last three ding panel of 1 000 Visits from 5/ s upwards about 50 cases yearly Twelve roomed house with garden will be let on lease at £60 p a, or sold for £1 100 Premium £2 100

12 PARTNERSHIP —A one half share is offered in an old established PRACTICE situated in a Hospital Town within 50 miles of London (North) The average income is about £2 000 and there is a panel of nearly 800 Advice and medicine from 2/6 Very little midwifery Double fronted house detached and with ample accommodation Price £2 000 of which half can remain on mortgage There is an up to-date Hospital and an early vacancy on the staff is probable Premium 3 years purchase

13 SOUTH OF ENGLAND—COAST TOWN —A fourth PARTNER is required in an increasing [illegible] PRACTICE Average income about £5,000 per [illegible] of nearly [illegible] disposal [illegible] per annum [illegible] rooms at [illegible] of the ingoing partner Rent £60 [illegible] purchase

14 NEAR [illegible] TOWN [illegible] lar etown (population nearly 100 000) close to seaside resort, an old established flourishing, and increasing PRACTICE worth last year £2 100 including 1 600 panel patients Visits 2 6 to 5/ Midwifery 2 to 4 guineas about 100 cases yearly Good house with garage, available Vendor's property and will be let to Successor at £100 a year or can be purchased [illegible] purchase Efficient Introducer

15 KENT —[illegible] established £1 800 [illegible] rooms standing in its own grounds of [illegible] of an acre sized tennis court etc Vendor's freehold price £2 300 Good Hospital in town and Vendor on the Staff Premium £2 700 Introduction desired up to six months

16 EASTERN COUNTIES [illegible] London [illegible] in a Practically unopposed Cash very pretty Country To[illegible] timent receipts for last financial year £2 000 of £50 and panel of 900 Visits up to 21/ Very little midwifery Car optional Railway station Charming residence (with ample accommodation) in its own grounds of 2 of an acre Price £2 900 all of which can remain on mortgage at 5 per cent Premium for practice £2 500 Excellent prospects Tennis golf hunting shooting etc

17 FAVOURITE INLAND SPA —PARTNERSHIP A well-qualified and experienced man with a good personality is desired by a Consultant with ultimate succession [illegible] 1 500 a year but there is very present and the newcomer would be considerable practice without accounting to encouraged [illegible] the partnership for the fees so obtained There is a choice of houses both on rental and to buy in the residential part of the town At present the fees are mainly 1 and 2 guineas but there are a few at 10 6 Premium for the half share £1 500

Profits accruing to Bovril, Limited, from the Agency will be allocated amongst recognized Medical Charities.

Full Schedule of Terms and Conditions will be forwarded on application

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London, West—Partnership About £2 000 a year One third or one-half share for disposal Very old established Panel about 1 850 Other appointments £100 Few midwifery cases Ample scope Fees 3 6 to 21- Excellent corner house to rent—Apply No 7647

Worcestershire—About £800 pa and scope Old established Panel 4 000 Good fees Appointments over £100 Convenient house 1½ acres of garden and orchard Client to sell Premium £1 000—Apply No 7640

Sussex Coast—Nearly £800 pa Old established Panel 900 Visiting fees 5 to 10 Very few midwifery cases Appointments £80 Good house on lease—Apply No 7638

Gloucestershire—Over £1 750 pa Old established country PRACTICE Panel over 1 500 Visits to 10 6 Midwifery 2 to 10 guineas Exceptionally good house garage tennis lawn &c. to rent £60 p.a.—Apply No 7637

Surrey—Partnership About £1,360 Share worth £1 000 pa, for disposal now half later and ultimate succession Panel 1 600 Visiting fees 3 6 up Few midwifery cases Ample scope—Apply No 7636

London, N—About £1,500 a small panel fees 3 6 to 1. and garage Can be rented or lease purchased—Apply No 7634.

South Coast—Partnership About £2 700 a year Non dispensing small panel One third share for disposal on walk up to one half later Visiting fees chiefly 10/6 Applicants should be Graduate and F R C S for preference—Apply No 7631.

Cheshire—About £1,900 a year Old established Very little midwifery Panel 9 3 Fees 3 6 to 21/- Medicine extra Good detached house garage and garden Mortgage can be arranged—Apply No 7628

West of England—Easy terms Non dispensing on panel PRACTICE situated in high-class suburb of Important Town estimated to produce about £1,500 a year Fees 5/ to £5 5s 0 Excellent house to let on lease—Apply No 7627

London, S E—About £2 000 a year Old established PRACTICE Densely populated district Appointments Panel 0 Visiting fees 5 to 21/ Midwifery average £5 5s Corner house ample accommodation, rent £55 on lease—Apply No 7625

South-East Coast—Over £2 000 a year Good fees Panel nearly 1 500 House with ample accommodation and garage on lease a moderate rent—Apply No 7618

South Wales—£2,000 a year Very safe PRACTICE Appointments and Panel about £1 700 Visiting fees 3 6 to 10/6 Convenient house rent £52 on lease Hospital 3 beds Premium for quick sale £2 000 terms could be arranged—Apply No 7616

Lancashire—About £1 200 a year Non panel Old-established Vendor retiring No midwifery or appointments Fees 2 6 to 10/6 Small house rent £36 including rates and taxes Ample scope for both midwifery and panel Easy terms—Apply No 7612

Lincoln—Country Town, about £1,850 pa Very old established Panel over 1 000 Visits 3 6 up Appointments about £70 Good detached house tennis garden ¾ of an acre Long introduction—Apply No 7593

Yorkshire—Average £1,286 Appointments £350 Visiting fees 3 6 to 10/6 Panel nearly 1 300 Few midwifery cases Good house every convenience—Apply No 7581

Eastern County—PARTNERSHIP with view to Succession Large Hospital Town Over £2 000 a year One-third share for disposal Panel 2 000 Other appointments £40 Visiting fees 3/6 up Midwifery 2 to 3 guineas Good house on succession—Apply No 7564.

MEDICAL PRACTITIONERS' UNION AGENCY, LIMITED,

56, Russell Square,
LONDON, W C 1

TRANSFER DEPT.

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MUSEUM 6161
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UFFABPINI WESTCENT LONDON

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Cable Address (via Eastern) "LEGALLABLE, LONDON"

LOCUMS SUPPLIED

Within 70 Miles—Increasing PRACTICE of £750 in prosperous town with good schools Opposition slight in proportion to population Panel 7 House in lease Rent £35 Cottage hospital Premium 1½ years purchase.

London, S E—Practice of £1,330 with house in residential part and private surgery Panel 900 House has consulting room waiting room telephone kitchen garden and garage. Can be bought at a reasonable price.

North London—Practice of £1 600 Panel 1 100 Appointments £420 Good introduction. Rent £65

South Coast—Old-established PRACTICE of £2,000 Panel 1 000 Few midwifery Long lease Rent £60 Premium 1½ years purchase

London, S W—Partnership Half-share of £2 500 Panel 1,200 Few midwifery 3 gns. up Choice of suitable flat

East Coast—Practice in beautiful seaside place Receipts £1 500 Schools golf etc Panel 800 Appointments £80 Good detached house with large garden on lease

Cornwall—Unopposed PRACTICE of £850 Appointments £100 Panel £200 Rent £75 Premium £1,000

Derbyshire—Practice of £900 in small town Panel 800 Good house with surgery at side Premium £1,100

Cheshire—Practice of £1,500 in nice country town. Panel 1 200 Appointments £160 Double fronted detached house can be bought or rented.

London, S E—Practice of £1,100 in nice residential suburb Appointment £240 No panel Nice house with garage and tennis court can be bought.

Glos—Country Town Practice of £1,750 in beautiful district Panel 1 200 Appointments £125 Good house with tennis court etc. Low rent.

North London—Practice of £950 increasing Panel 700 House in main road with small garden can be bought.

Opening in growing residential district House with surgery etc NUCLEUS of about £200

Colliery Practice of £2,300 Panel 1 100 Rent £65 Opposition slight Hospital and scope for surgery

New Zealand—Unopposed PRACTICE of £1 800 in beautiful district with good roads. Rent £100 Premium £1,500 including furniture

South London—Very old-established practice of £1,000 Appointments £180 Panel 800 About 30 midwifery Nice house with small garden and garage Rent £70

F R C S, required as Partner Practice in Country Town Share worth £800 with increase later Fine opportunity for Surgeon

Lancashire—Practice of £650 with great scope Rent £45 Opposition slight Large population.

London, S W—Partnership with Succession Third share of about £1,500 in rapidly growing district Great scope. Suitable house on easy terms

Liverpool—Non-panel PRACTICE of £1,200 Detached house with garage Premium 1½ years purchase

North-West London—Vendor retiring Middle-class PRACTICE of £600 including 200 panel Great scope for active man. Large house can be bought or smaller ones can be had. Prem um £750

Purchasers visiting the City are cordially invited to call. Particulars of other Practices on application.

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(Formerly at 22 Craven Street Trafalgar Square, W C)

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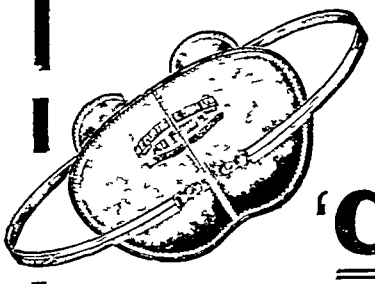
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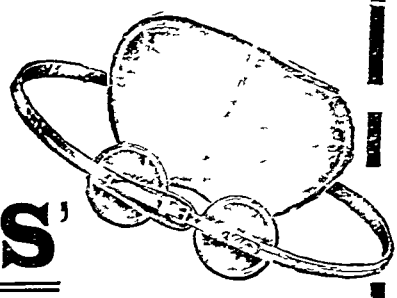
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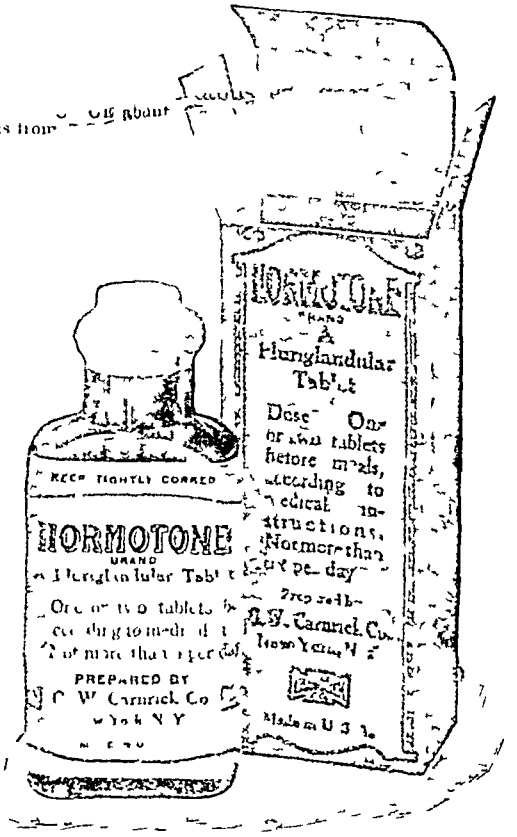
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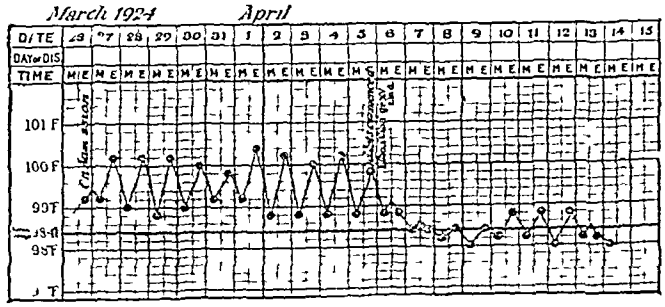
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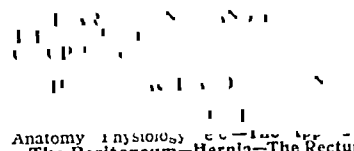
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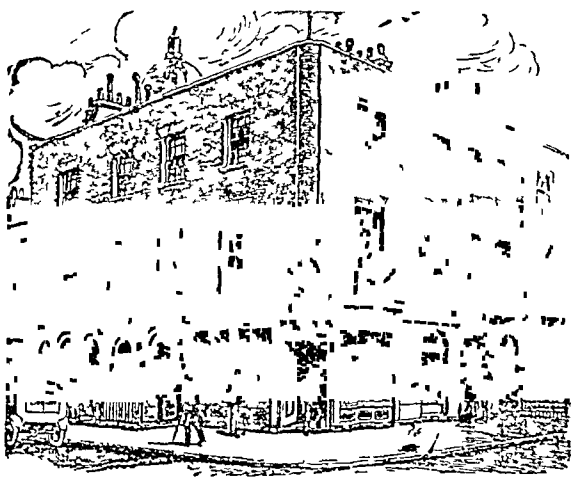
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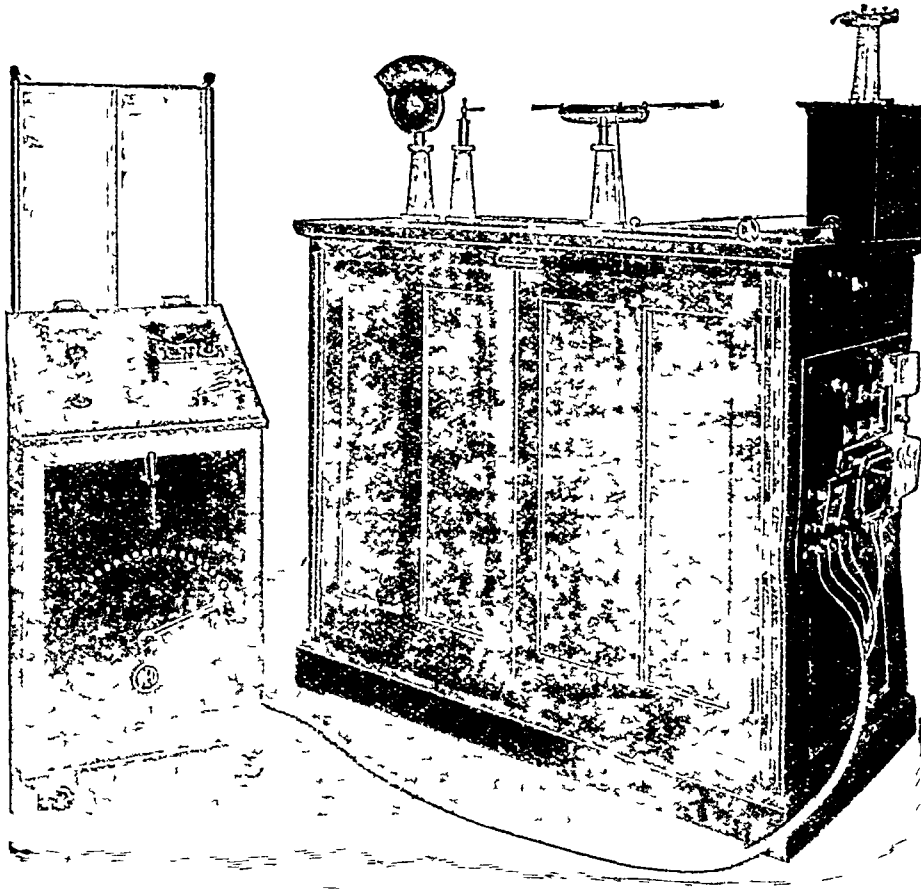
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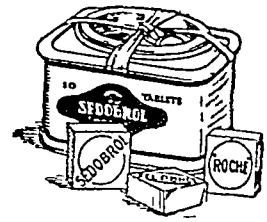
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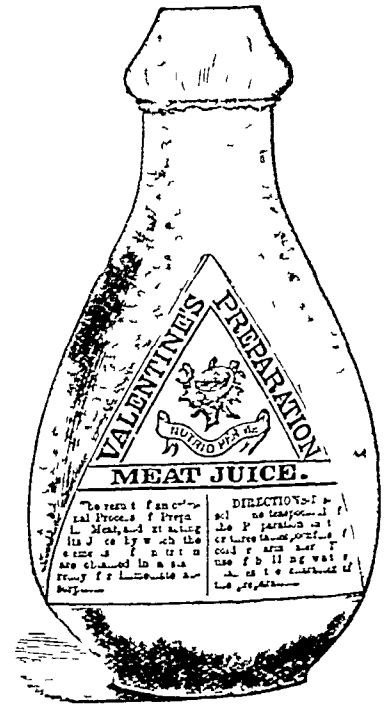
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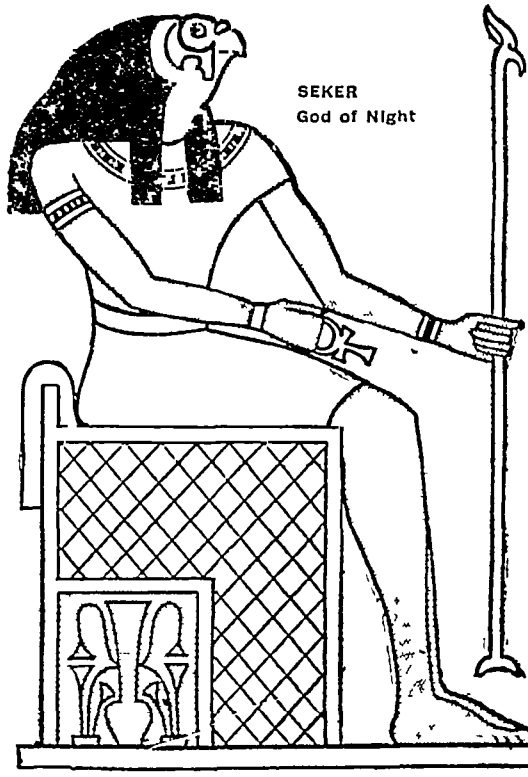
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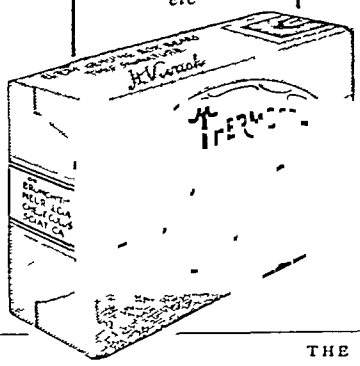
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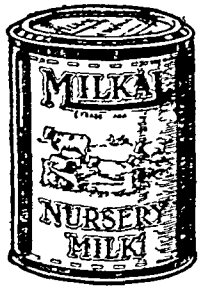
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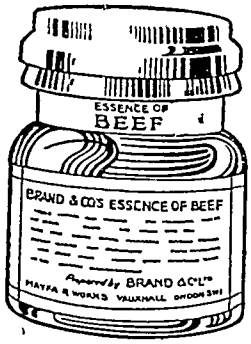
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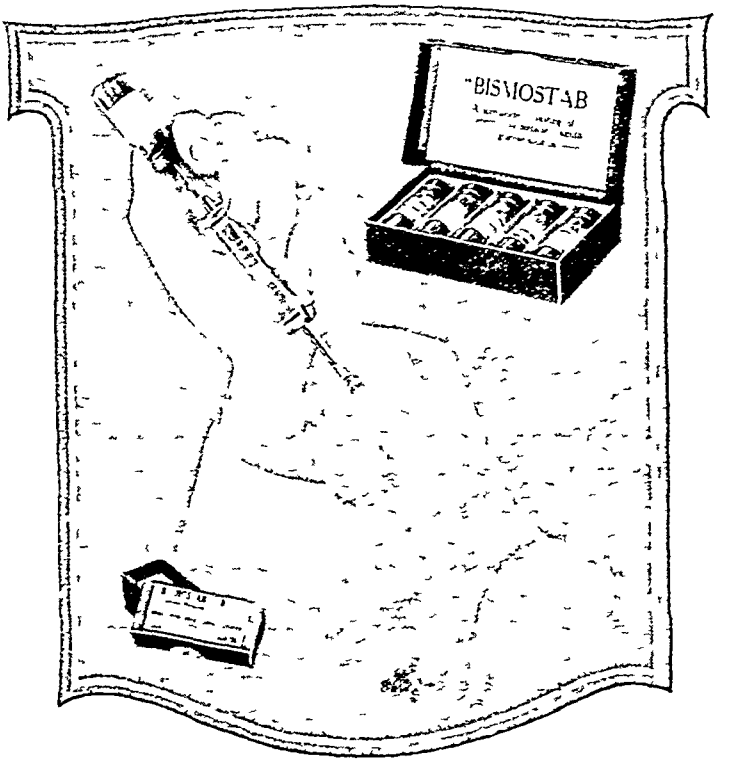
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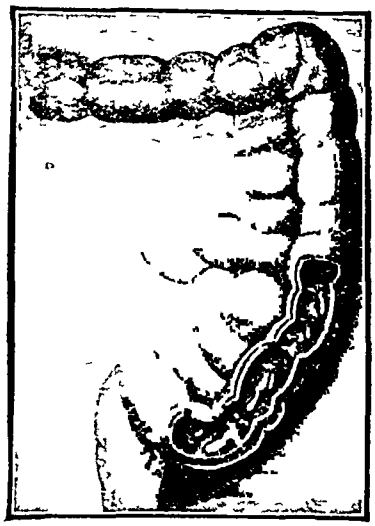
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ANALYSIS

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Fat	3 3	3 5	3 45
Casein	0 9	3 0	0 80
Lactalbumen	0 4	0 3	0 60
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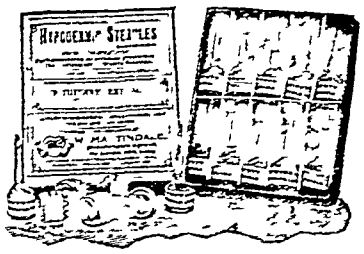
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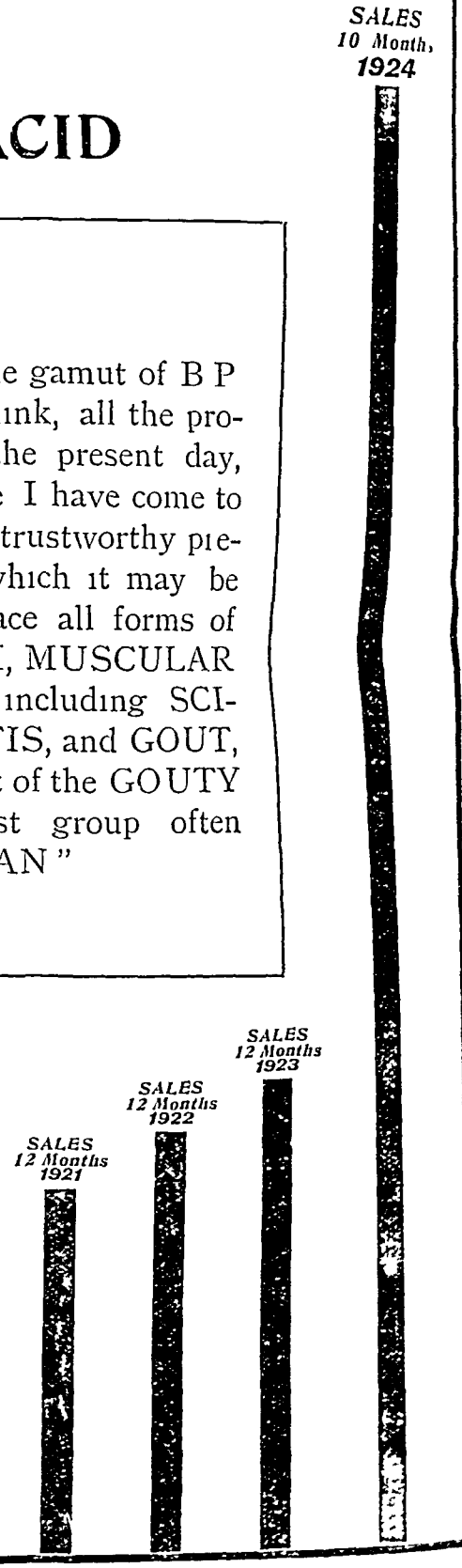
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OF
PSYCHIATRY AND MEDICINE

DELIVERED BEFORE
THE SOUTHERN BRANCH OF THE BRITISH MEDICAL ASSOCIATION
BY
HENRY DEVINE, O.B.E. M.D. LOND., F.R.C.P.,
MEDICAL SUPERINTENDENT BOROUGH MENTAL HOSPITAL PORTSMOUTH
CONSULTING PSYCHIATRIST ROYAL VICTORIA HOSPITAL NETLEY
LECTURER ON PSYCHOLOGY MAUDSLEY NEUROLOGICAL HOSPITAL

IT IS the purpose of this address to draw attention to the isolation of psychiatry from general medicine, to point out its causes, and to make some suggestions as to how it may be remedied. Psychiatry might be described as occupying a position in relation to medicine as a whole analogous to that of a certified patient to the life of the community. It is on the outskirts of medicine and points of contact are few and far between, and it is this regrettable isolation which is no doubt responsible for the fact that psychiatry has failed to keep pace with progress to the same extent as other branches of medicine. The chief cause of this state of affairs is not far to seek, it is the result of the lunacy law, which, however useful it may be as an instrument of detention, is entirely out of harmony with modern psychiatric thought. In the first place, then, we must devote some attention to a consideration of the law and point out in what respects it requires amendment.

SOCIAL ASPECTS OF THE LUNACY LAWS

Speaking generally, mental disorders are the only diseases in regard to which the English law lays down formalities which have to be complied with before a patient can obtain admission to a hospital or nursing home for treatment. There is no legal objection to treating a patient at home even if he be certifiable, but such a patient cannot, without infringement of the law, be received for payment into a public mental hospital, nursing home, general hospital, or private house until he has been certified and with the exception of urgency orders which are only valid for seven days until a justice's order has been obtained for his reception and detention. In the case of a poorer person either removal to a Poor Law institution is necessary, or certification on the application of the relieving officer as a "pauper" patient.

There are, of course, no legal restrictions to the treatment of mental cases which are not certifiable, though the existing facilities for so doing are far from adequate; but where such cases are certifiable the formalities of the law have to be complied with before they can be treated away from home. Now as a result of these restrictions there is naturally great reluctance to admit any case, whether certifiable or not, to which the term "mental" can be applied, to a nursing home, and it must be admitted that the apprehension which is felt is thoroughly justified, as an apparently uncertifiable patient may at any time assume severe psychotic symptoms which render his continued detention illegal. Confronted with the difficulty of removing a patient to a nursing home, the practitioner has to consider the possibilities of treatment at home. In some cases this is impossible, and in the majority it is undesirable for both the patient and his relatives. It is a difficult matter to adjust to the whims, oddities, fancies and unpredictable behaviour of the mentally disordered patient, and one invariably finds that the presence of such a person produces a state of tension, fatigue and anxious expectation amongst the other members of the family. In any case, the nursing of a mental patient in a private house is a matter of considerable difficulty, and unless a nurse has had experience in mental work she is scarcely fitted to undertake this type of sick nursing. In view of the large number of mental patients in need of nursing and treatment it is much to be hoped that more nurses will endeavour to obtain a double qualification.

In a number of cases, therefore, the question of certification and removal to a mental hospital has to be considered. Such a proposal usually causes the greatest consternation and distress, and often meets with the opposition of the whole family. In many cases the practitioner hesitates even to use the term "mental" and employs the more palatable but incorrect one "nerves," because he knows that any suggestion that the mind is disordered is liable to provoke an attitude of resentment and disbelief, due, of course, to the excessive dread of insanity, asylums, and certification. The extreme degree of psychic blindness exhibited by the relatives of a person suffering from mental illness is almost unbelievable, and there is probably greater resistance to facing the realities of the situation in mental disease than that manifested in any other malady. Irrational as such an attitude may be, it is one with which we can fully sympathize. Though we, as psychiatrists who live our lives in an atmosphere of psychic abnormality, regard our patients as naturally as if they were the subjects of physical disorder, society as a whole does not so regard them, but submits not only them, but their families as well, to an insidious social censorship. One cannot deny that it is a definite social disadvantage to have or have had a parent who has been certified, and I have frequently observed disastrous effects resulting from the feeling of biological inferiority—often unjustified—which this situation creates. For this reason the incidence of insanity in the family is concealed more closely than any other "skeleton in the cupboard," and it is quite understandable that families should be anxious to avoid certification since it imposes the official stamp of lunacy upon one of its members, and indirectly upon the whole family group. We are thus faced with the curious fact that the hospitals provided by the community for the treatment of mental disorders are the very last places to which it is considered desirable to send patients suffering from these illnesses. The asylum is regarded as a last resort, and treatment therein is delayed as long as possible.

Now it does not follow that, because there are sentimental objections to certification on the part of the public, this procedure is not beneficial and necessary both for the protection of the community and for ensuring the adequate care of those who are unable to care for themselves. There will, of course, always be a number of persons who, from unsoundness of mind need care, control, and treatment, and it is obvious that no person should be deprived of his liberty against his will other than by a legal process. The lunacy laws were designed to prevent illegal detention, to ensure humane treatment, and to obviate the possibility of misusage of the person and estate of the mentally unsound, and since their inception I think we may say that these aims have been in a large measure realized. While, then, we recognize the past and present value of the lunacy laws there is no doubt that they have become a barrier to the effective treatment of mental disorder in its most curable stages, and I have not yet met a practitioner who did not consider that provision should be made for the observation and treatment of mental patients without certification and that the law should be amended to make this possible.

It must be remembered that the lunacy laws were formulated at a time when not only the insane but delinquents and paupers as well, were treated with great harshness, and when, so far as the insane were concerned, treatment as now understood was practically unknown. The conditions which made such stringent laws necessary no longer of course exist. The existing law portrays almost entirely the legal attitude of mind to the insane, and the certified person is not regarded in the eyes of the law as a patient in the true sense of the word. The mental patient is "put away" not primarily for the purposes of treatment, but because he cannot be "managed" in any other way. In effect, the attitude taken by the law to the subject of a psychosis is that he shall not be treated in a mental hospital unless circumstances force it, nor shall he remain if it is possible for him to be outside. What we obviously need is a change in the law which will encourage mental patients to obtain treatment when it is *medically* rather than *legally* necessary, and to remain under care as long as they need a hospital regime.

It is unnecessary to discuss in detail the changes in the law which are generally deemed to be so urgently needed. The subject is full of technical difficulties, but experience shows that the principle that all certifiable patients must

necessarily be certified to obtain hospital treatment is capable of considerable modification Many cases at present certified could be treated on a voluntary basis, and those who are delirious and confused, and are thus incapable of volition, could often be safely dealt with by a simple procedure of notification similar to that which obtains in Scotland The Board of Control, psychiatrists, and, I think I may say, the medical profession generally, are of the opinion that the care and treatment of the insane are hampered by unnecessary legal restrictions and that an amendment of the law is long overdue I have no doubt the Royal Commission on Lunacy Administration will formulate proposals which will pave the way to reform in the existing methods of dealing with early and recoverable cases of mental disorder At present we lack experience of the extent to which it is possible to treat the psychoses in open wards without certification, and for this reason legal innovations will naturally have to be based on a policy, not only progressive, but prudent as well

Effects of Lunacy Laws on Psychiatry

So far we have considered more particularly the social aspects of the lunacy laws, and we have aimed to show how early treatment is handicapped by legislation because families are reluctant to allow their relatives to be certified It now remains to consider the effects of these laws on psychiatry as a branch of medicine, and I would first point out that if mental medicine is to progress it must cease to be the exclusive domain of the psychiatrist What is most needed at the present time is full co-operation between psychiatrists and the medical profession as a whole The former cannot be expected to solve unaided the manifold and complex problems of mental disease which are now recognized to include all those presented to the observer in general medicine The factors entering into the causation of abnormal behaviour—the subject-matter of psychiatry—are extremely complex, and their elucidation requires the services of, not only the clinical psychiatrist, but the physician, the pathologist, specialists in all branches of medicine, biologists, educationists, and psychologists—a truly formidable list

It is necessary to grasp the notion that a person's behaviour—that is to say, his reaction to his environment—cannot be directly correlated with any cause Our actions at any given moment are determined by a myriad of past happenings, both individual and racial, the external situation at the time of its performance, and the present physical state of the organism Any attempt to explain our actions by isolated causes is deceiving, and the failure to recognize this in the sphere of psycho-pathology creates much misunderstanding and hampers progress Thus disputes as to whether insanity is due to inherent or acquired causes leads nowhere, as the influence of these factors cannot be estimated quantitatively We cannot say how much of a person's behaviour is "due" to heredity and how much to environment, and the extent to which emphasis is laid on one or the other of these influences is largely dependent upon the observer's own psychology, that is to say, he will bring into the foreground the causal factors in which he is personally most interested It is obvious that neither factor can be eliminated, and both have to be considered in any attempt to prevent the incidence of mental disorder

It would be wrong to ignore the fact that predisposition plays a part in the production of abnormal mental states There has been a tendency, however, to overemphasize this factor It is now generally recognized that the causes of disease included under the term "predisposition" are represented by negative factors rather than active causative agents Predisposition is indicated by the fact that one individual, having either inherited or acquired a greater deficit in a given potential, will require less of an exciting factor to interfere with normal function or give rise to a condition of abnormal function (A C Buckley) It must be recognized, however, that whether or not a child possess an inborn "sensitivity" the association from birth with psychopathic parents is often responsible for the development of an abnormal reaction to life As Kempf points out, an unhappy parent, conventional and miserable because of his affective repressions, tends insidiously to make those about him cause repressions of all affective interests that tend to arouse the intolerable, repressed within himself In this manner such adults incessantly influence the defenceless child to make repressions of the very affective functions whose freedom of expression is absolutely essential to the development of a healthy personality Kempf presents a series of families to show how the abnormal affective adjustments in a parent influence a son with excellent functional capacities, and the son in turn influences the grandson These relations are cultivated through innumerable experiences, day by day, extending throughout the growth of the child Janet also has called attention to the fact that the presence of a neuropathic individual in a family almost invariably results in nervous reactions on the part of the whole household He shows, moreover, that the explanation of these cases on the lines of heredity is often inadmissible, in so far as there is often no blood relationship between the affected individuals It is thus clearly impossible to state with assurance the extent to which inherent predisposition and subtle and intangible environmental influences are respectively responsible for abnormal mental reactions, even when there is a definite family history of insanity or neurosis The question has important practical bearings, for when the practitioner meets with a young patient in whom some inherent "sensitivity" is to be suspected, he may often do much good by recommending removal to school if there is reason to suppose that a psychopathic parent is exerting an unfavourable influence

I have devoted some attention to hereditary influences because of the popular belief that insanity is necessarily the expression of degeneracy in the family It must be pointed out that many psychoses occur, however, in persons in whom no family history of insanity or other forms of psychic inferiority is discoverable, these are the *accidental* psychoses—that is to say, those which are cured without leaving any morbid traces, and which *constitute only* an episode, more or less brief, in the life of man In actually treating a given case I need hardly say that the existence or otherwise of a morbid predisposition is a matter of purely academic interest, as it obviously will tend to operate after recovery as a causal factor in further attacks The exciting causes of a psychosis are numerous, and may be classified under the headings of psychic, toxic, exhaustive, organic, and traumatic It is these physical factors which afford indications for treatment of the recent and acute psychoses I wish to emphasize particularly the fact that the effective methods of treatment in these conditions are those which originate from general pathology—namely, those which aim to combat the processes of infection, autointoxication, and inanition I am fully alive to the interest and importance of psychological studies of the insane, but developed psychoses are seldom amenable to direct psychotherapeutic approach, and successful treatment must be based on the principle that the symptoms observed are the expression of a morbid state of the physical organism A knowledge of general pathology, of pathological anatomy and of internal medicine are to-day indispensable for the efficient treatment of mental disorder In spite of my personal interest in psychological problems I am of the opinion that the problems of psychiatry will only be solved by approaching them from the standpoints of biology and pathology, and I have no doubt that this branch of medicine will tend to develop more and more in these directions

How Progress will Come About

In the light of these observations it is clear that psychiatry can only advance by complete co-operation with general medicine In order that this may be effected the existing mental hospitals obviously need, besides the full-time medical officers, a consulting staff drawn from the local hospital whose advice can be obtained when necessary It is essential, for instance, that a psychiatrist, whose experience of obstetrics and gynaecology must necessarily be slight, should have the opportunity of consulting with a specialist in this subject in, at the very least, every case of puerperal insanity admitted to the institution During the war I was in charge of a section for mental cases in a hospital admitting every type of illness occurring among

the soldiers The staff naturally consisted of specialists in every branch of medicine, and I then discovered how advantageous it was to my mental patients to refer them to other members of the medical unit for advice in regard to any physical disabilities from which they suffered My own knowledge was enriched, and the patient benefited by the consultations Such a privilege should be made available in every mental hospital, and already is in many of them

The complete union of psychiatry and general medicine can only be effected when the existing lunacy laws are so amended as to make it possible to treat the psychoses without legal formalities apart from institutions devoted exclusively to these disorders The exclusion of mental cases from the great teaching hospitals which have special wards for every other type of illness is largely responsible for the divorce between psychiatry and medicine That it is quite possible to treat many forms of psychosis in a hospital ward was demonstrated in an article in the BRITISH MEDICAL JOURNAL by Dr Comrie[1] Under present conditions of treatment the term "insanity" has come to carry with it the suggestion of chronicity, detention, legal pitfalls, huge institutions filled with incurable patients, degeneracy, and forms of illness for which "nothing can be done" At the out set of a student's career an impression of this kind must inevitably be created in his mind from the fact that he learns nothing of the psychoses, apart from his few visits to the asylum, where the majority of cases produced for demonstration are of the chronic and incurable type, and in his subsequent career whether as specialist or general practitioner he takes no part in the treatment of the psychoses which reach any degree of intensity An entirely fresh point of view would be gained if in his daily work he came into contact with cases of mental disorder He would learn, above all things that many morbid mental states are due to the same pathological conditions as are the symptoms of the various systemic diseases, and amenable to the same methods of treatment In the out-patient department, moreover, he would see a type of case which he will be called upon to deal with daily in his consulting room and gain some knowledge of the treatment of the psychoneuroses—conditions which will bulk largely in his practice

Similarly in every urban area provision should be made for the treatment of the psychoses in their acute and early stages and it is much to be hoped that this will be divorced entirely from the Poor Law There is no possible reason why mental disorder should be taintedwith pauperism as it is at present The municipal health authorities which now deal with fevers and tuberculosis should obviously be entirely responsible for the care of the mentally sick who require in patient treatment With a suitable alteration of the law it should be possible also to treat certain certifiable cases by a simple system of notification in nursing homes These more enlightened methods would naturally fit in with the doctor's experience as a student, and make it much easier to deal with mental cases to the satisfaction of the relatives

I have aimed to show that if psychiatry is to progress it can no longer remain an isolated specialty the solution of its problems requires the full co-operation of workers in every speciee of medicine, and this must naturally include those who are concerned in the prevention rather than the cure of disease Mental hygiene cannot be dissociated from physical or general hygiene A French psychiatrist has expressed the view that the causation of mental affections is dominated by three great social scourges tuberculosis alcoholism, and syphilis These he feels are the chief infections whose influence is felt in the production of mental disorder not only in its subjects but in the descendants Certainly it is to-day firmly established that we profit, both mentally and physically, from the good health of our ancestors, and it is also equally true that we are the victims of their maladies and more especially their chronic infections The endeavours of our medical officers of health to stamp out syphilis would, if successful considerably diminish the incidence of admissions to our asylums and would probably diminish the occurrence of mental weakness in the coming generations Here, also, educationists and religious teachers have a serious responsibility, and there should be no hesitation in teaching young people the elementary facts of sexual hygiene The subject of prevention is, of course, inexhaustible, and I can do no more than mention the fact that the present and future mental health of the community is closely connected with everything concerning the general standard of physical health and the conditions under which the people live

It will be a long time before the prejudices which surround the subject of mental disorder are dissipated We look forward to the time, however, when the public learn to regard this disease as naturally as any other, and when they learn that it is produced by causes similar to those which are responsible for physical maladies If medical practitioners were consulted by their patients when the first symptoms of mental disorder appeared I am sure that ordinary physical remedies, rest and psycho-therapeutic conversations which would enable patients to unburden their minds would arrest many cases which now drift into serious states before advice is taken It is much to be hoped moreover that when hospital care is considered necessary mental patients will be as willing as the subjects of physical illness to undergo in patient treatment without apprehension and a sense of social disgrace, whether it be in the wards of a general hospital, special clinic for the treatment of uncertified cases, or separate pavilions connected with urban mental hospitals The future of the nation is ultimately dependent upon a healthy and vigorous mental reaction on the part of its citizens, and for this reason no effort should be spared to raise the general standard of mental health

[1] BRITISH MEDICAL JOURNAL September 27th, 1924 p 551

THROMBO-ANGIITIS OBLITERANS

BY

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(*With Special Plate*)

First recognized in 1879 by v Winiwarter and described by him as endarteritis obliterans this disease has during recent years been more fully described by Buerger of New York, who has given it the name of thrombo-angiitis obliterans This name is the more accurate, because the disease is prone to involve veins as well as arteries

The condition appears to have received little attention in this country It can, however, hardly be rare, since no fewer than four cases have occurred in the practice of one of us within the last twelve months It is with the object of drawing more wide-spread attention to this very grave disease that the following four cases are reported in considerable detail, together with the histological findings in the three cases which came to amputation on account of gangrene

A study of Buerger's cases shows that the broad clinical features of the disease are as follows It is a disease of the larger blood vessels which, although of unknown origin, shows the histological features of an inflammatory lesion The vessels mainly affected are the larger arteries of the limb but the disease is seen also to some extent in the veins Thrombosis occurs and is followed by organization of the clot This produces grave embarrassment of the circulation, alleviated to a variable extent by the usual canalization of the fibrous tissue

The disease occurs almost exclusively in males 99 per cent in Buerger's cases) and the onset is commonly in the third decade The lower limbs are affected much more commonly than the upper it is the rule for the disease to begin in one lower extremity and to appear in the opposite limb at a date which may be from one to four years later than the first onset

The disease produces symptoms such as would be expected in a limb in which the arterial circulation is being carried on only with the utmost difficulty The first symptom to attract attention is pain, produced and increased by

exertion, and situated usually in the foot or calf At this stage the absence of pulse in the dorsalis pedis, posterior tibial, popliteal, or even femoral artery will be noted Later in the case a peculiar rubor, oedema, and trophic lesions are likely to develop, and in the more severe forms gross gangrene calling for amputation

The duration of the disease is very variable—gangrene may occur early or may be warded off for as long as twelve years No less than 52 per cent of Buerger's cases came to amputation on account of gangrene

The cause of the disease is unknown, there is no evidence that syphilis has anything to do with it Buerger's patients were almost without exception Jews, and the disease has in fact been called "Die Hebraische Krankheit" This, however, can be no more than a topographical accident, each of our four cases was British born

Symptoms and Histological Appearances

Our first case was B , a male aged 40 years, clerk, British, seen December 17th, 1923, he gave the following history When 30 years of age he noticed pain in the right calf, this pain came on after walking a short distance and passed off quickly with rest Within four months he noticed similar pain in the left calf, and in a further six months the pain in both legs was severe and crippling In this state he continued, with but slight aggravation, for a further two years At the end of this time he could walk only short distances with the help of crutches He next found that the right leg was slightly swollen and there was 'purple discoloration of the toes" He began with massage and carried it on for five years, during this time he had a trophic sore on the front of the ankle, which took eighteen months to heal The left leg continued to give pain, but got no worse Two years ago, however, the left leg began rapidly to get worse and the pain was continuous in the calf, foot, and ankle The foot was "always stone cold," and a small septic focus appeared on the inner side of the great toe

Except for digestive trouble suggestive of duodenal ulcer, his previous medical history was good and the Wassermann reaction was negative He had in his earlier days been a most enthusiastic fisherman, and had spent much time in wading, a habit to which he firmly attributes his present troubles

Present Condition.—Right lower extremity The whole limb is much wasted from disuse, its muscular power is good and sensation everywhere normal The femoral pulse is normal, but the popliteal is barely to be felt, and there is no pulse below this level Left lower extremity Slightly wasted, but muscular power good and sensation normal The whole foot is dull red in colour, there is solid oedema about the dorsum of the foot and a small onychia of the great toe There is no pulsation in the common femoral artery or at any point below this He insists that it is most comfortable when cool and dependent, and says that he gets a little sleep by hanging this leg naked over the side of the bed

In January, 1924, this patient was seen during the night with severe abdominal pain, and was found to be suffering from a perforative lesion, presumably of the duodenum, as he had for some time past shown symptoms suggestive of duodenal ulcer Laparotomy was done and a large perforation of the anterior wall of the first stage of the duodenum was sutured, the operation was completed by posterior gastro-enterostomy As far as his condition allowed, an exploration was made to ascertain the condition of the intra-abdominal vessels It was then evident that no pulsation could be felt in the common, internal, or external iliac arteries of the left side, these vessels were plainly to be felt as immobile cords

He made an excellent recovery from the operation, but in April, 1924, ten and a half years from the onset of the disease, the whole of the left foot became rapidly gangrenous, the condition having spread from the old onychia of the great toe A supracondylar amputation was done through the left thigh on the following day, the femoral artery at the level of the section was open and normal The wound healed without incident

Histological Examination

On dissecting the amputated limb isolation of the large blood vessels was found to be difficult on account of dense perivascular adhesions, which were particularly st the popliteal space Although the femoral artery patent, almost the whole length of the popliteal artery occluded Sections of this vessel showed the lumen t filled with loosely arranged fibrous tissue (Fig 1) containing a number of minute channels, all of which pos an endothelial lining and some a thin muscular t (Fig 2) The intima was a little thickened and s fragmentation and fibrillation of the internal elastic la was seen The amount of muscular tissue in the media much reduced and the fibres separated by fibrous t (Fig 3) The adventitia was markedly increased in th ness, and contraction of this had caused considerable red tion in the diameter of the vessel The popliteal ve exhibited some irregular thickening of the intima (Fig and part of the lumen was occupied by a recent thrombus Fibrous tissue was present in considerable amount betwe the muscle fibres of the media and the outer coat was greatly thickened The changes found in the posterior tibial arter were almost identical with those described in the case the popliteal, but less thickening of the intima was di covered in the anterior tibial vessels and the dorsalis pedis artery was normal A section of the lower part of the internal saphenous vein manifested changes similar to those found in the popliteal artery

This case is very typical, running a course of eleven years so far with very slowly progressive deterioration It is noteworthy that it was possible during life to verify the total thrombosis of the common, internal, and external iliac arteries, and the history illustrates a point which has been evident in other recorded cases—that is, the limb which is to be affected later tends ultimately to become the worse

Case II

S , male, aged 52 years, electrician, British, seen February 17th 1924 This man had never had a day's illness in his life until the beginning of the present trouble He had latterly complained for one year of pain in the right calf This pain came on after the slightest exertion and was immediately cured by rest The patient had thought it to be rheumatism and had not sought any advice One week before he was seen by us a small black *patch had* appeared on the inner side of the great toe and a second similar patch developed over the heel Within a few days the whole foot and ankle were in a state of gangrene

His general condition was very grave owing to toxaemia and exhaustion from pain, but examination disclosed no evidence of the more usual causes of gangrene His heart, though rapid was otherwise normal, he showed no sign of arterial sclerosis and his urine contained neither albumin nor sugar The Wassermann reaction was negative

A supracondylar amputation of the right thigh was done at once and he made an excellent recovery

In this case complete occlusion of the lower part of the popliteal artery for a distance of about three quarters of an inch was found, and sections at this level revealed changes similar to those recorded in the first case, except for the greater density of the tissue occupying the lumen Strong adhesions fixed the popliteal vessels, which were excised with difficulty, to the surrounding tissues Only early manifestations of the disease were found in the anterior and posterior tibial arteries, there being a cellular infiltration of the walls and a little fibrosis without any thrombosis The internal saphenous vein showed advanced fibrosis of the media and adventitia, but only early evidence of organization of the thrombus in the lumen

This case, although occurring in an older man, appears also to be an example of thrombo angiitis obliterans On the results of the clinical examination of the patient and on the histology of the vessels, no other cause appears at all possible

Case III

V S , male, aged 37 years, clerk British, seen September 1 gave the following history He had always been a very strong and robust man until three years ago, when he noticed a pain in the left calf on walking He was able to walk about a hundred yards and was then obliged to rest This condition was the only feature during one year, at the end of that time exactly similar pain came in the right calf This pain spread to the foot and produced burning of the toes, gradually became very severe It came also when he was at rest and began to destroy his sleep It has continued to be present in a week intolerable severity and its progress has been in no way alter the most varied and extraordinary treatments before and

Examination of the left lower extremity shows that there is pulse in the common femoral artery and no pulse at all below this The superficial femoral artery is felt in the lower a



FIG 1—Section of popliteal artery in Case I The character of the occluding tissue the thickening of intima and the fibrosis of the media are well seen



FIG 2—High power view of the occluding tissue in popliteal artery in Case I A number of clefts is lined by endothelium and a few forming a scanty muscular tunic are seen

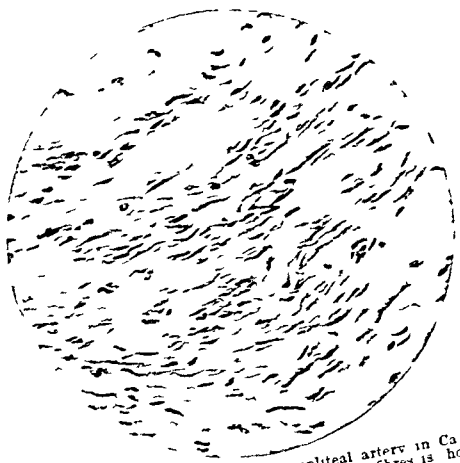


FIG 3—Section of tunica media of popliteal artery in Case I The marked fibrosis with separation of muscle fibres is shown

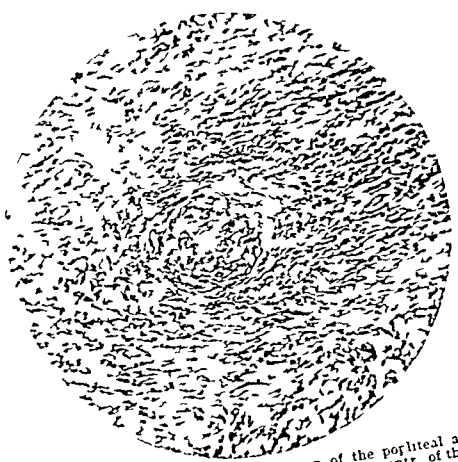


FIG 4—Section of tissue occluding lumen of the popliteal artery in Case IV A collection of lymphocytes occupies the centre of the field



FIG 5—Section of the wall of the proximal portion of the popliteal artery in Case I showing cellular infiltration of the tunica media

FIG 4

FIG 8

FIG 3

FIG 7

FIG 2

FIG 6

FIG 1

of Scarpa's triangle as a stiff cord The whole circulation of this limb is at a low ebb the cutaneous return is slow and the limb blanches much on elevation There are no trophic changes muscular power and sensation are normal but it is noted that the deep reflexes are somewhat increased

The right lower extremity which is the chief site of pain shows a pulse in the common and superficial arteries but no popliteal pulse is to be felt neither is there any pulsation in the leg or foot The condition is in other respects exactly as on the left side It is again interesting to note that the left leg in which the disease first began is at present much the better from the patient's point of view although the loss of the pulse is the more extensive The Wassermann reaction was negative

This case is a very typical example of thrombo-angiitis obliterans It has shown during three years a slow and steady aggravation There are at present only pain and loss of pulse, but it is greatly to be feared that it may run a course to final gangrene

CASE II

H male aged 45 clerk British seen September 28th 1924 The disease began twelve months ago with pain in the great toe of the left foot followed very shortly by sudden acute pains in the shin and knee joint After walking a short distance there was cramp in the left calf together with a feeling as if there was a tight band round the leg below the knee These symptoms always passed off after a few moments rest He noted next that his foot was stone cold and could never be revived by any of the measures which he took to keep it warm

Three months before he was seen a small blood blister appeared on the third toe by the side of the nail and from this point there progressed an ever increasing dry gangrene The whole front half of the foot was black and mummified but there was at the attempted line of demarcation a feeble inflammatory reaction with a little very foul discharge

Examination of the leg showed that the femoral pulse was present and that a slight pulse could be felt at the apex of Scarpa's triangle No pulse could be felt at any point in the leg below this Sensation throughout the limb was normal but muscular power was poor from disuse and there was flexion-contracture of the knee joint The right leg was quite normal

The patient's general condition was poor owing to pain and toxaemia but beyond very foul teeth he showed no other sign of disease The urine was normal his heart showed no lesion and he had a blood pressure of 120 systolic and 80 diastolic His previous medical history was excellent and the Wassermann reaction was negative

I upracondylar amputation was performed and it was noted that the main artery on the face of the stump was blocked by a brown partially organized clot There was an entire absence of haemorrhage and no ligature was employed The stump healed without incident

In this case there was complete occlusion of the whole popliteal artery and microscopic sections revealed a similar picture to that seen in the first case, but in addition to the other features a group of lymphocytes was found in the tissue occupying the lumen (Fig 4) This collection of lymphocytes had an appearance not unlike a tubercle and such structures have been observed by Buerger, but he describes the cells as polynuclear leucocytes Fibrous tissue had replaced much of the muscular tunic of the popliteal vein, but only a small thrombus, which was becoming organized was found in the lumen The posterior tibial artery and vein were also completely occluded except for the usual small channels in the organized thrombus There was considerable fibrosis of the media and adventitia this was found also in the anterior tibial artery but the latter vessel was still patent The changes seen in the anterior tibial vein consisted of cellular invasion of the media and adventitia only The muscular tissue of the wall of the internal saphenous vein was largely replaced by fibrous tissue and a recent clot was to be seen in the lumen

There can be little doubt that this case is an example of thrombo-angiitis obliterans The disease began in a man 44 years of age, of good physique and with an excellent medical history It ran a typical but somewhat rapid and disastrous course It will be a matter of great interest to observe whether any similar changes occur in the right lower extremity which is fortunately so far unaffected

SUMMARY OF PATHOLOGICAL OBSERVATIONS

The changes found in the three limbs examined after amputation correspond closely to those described by Buerger, and manifest the various stages of the disease At the outset there appears to be a lymphocytic, not a polynuclear leucocytic, invasion of the coats of the arteries and veins The cells are replaced by fibrous tissue and new vessels may be seen extending through the adventitia to the media Whilst these changes are proceeding parts of the lumen become occupied by a clot which is gradually organized In the obliterating connective tissue a number of small channels are to be found which have a lining of endothelium, and, surrounding this some possess a thin coat of smooth muscle After the thrombosis has occurred and whilst organization is proceeding, collections of lymphocytes not unlike tubercles often make their appearance and persist until they are replaced by fibrous tissue There is commonly some irregular thickening of the intima but as a rule only very slight proliferation or fibrillation of the internal elastic lamina At a later stage the fibrous tissue in the lumen has a denser appearance, but this may be due, at any rate partly, to the contraction of the newformed fibrous tissue in the media and adventitia which not infrequently shows hyaline or other degenerative changes This contraction may be an important factor in the production of gangrene, since it leads to compression and occlusion of many of the newly formed smaller channels in the connective tissue in the lumen

The histological examination indicates that the disease is much more widespread than the clinical picture would suggest, both superficial and deep veins and arteries being involved, but all the vessels in one region are not equally affected Case II illustrates this best since late stages of the disease were seen in the popliteal artery and only early manifestations in the anterior and posterior tibial vessels The constancy of advanced changes in the popliteal artery is significant and may be due to the strain to which it is constantly subjected by movements of the knee-joint On the other hand, the constancy of changes in the popliteal artery in amputated limbs may be misleading, since obstruction of this artery is most likely to result in gangrene There is no evidence to suggest that the disease is secondary to any affection of peripheral nerves The microscopic findings are those of a chronic inflammatory lesion, and suggest a microbic origin of the disease Rabinowitz claims to have isolated a Gram negative rod-shaped and beaded organism, and to have produced by the bacillus the same lesion in the ears and feet of rabbits as that which was present in the leg of a human being These experiments require repetition, and further investigation is urgently required before the origin of the disease can be decided

It is impossible to resist the conclusion that in this rare and very grave disease we have a definite clinical entity Of its cause we know nothing Cold malnutrition racial peculiarity, and even cigarette smoking have been indicted, and there is the inevitable 'toxic' theory It is much to be regretted that no abortive or curative treatment is as yet available, and it is hardly to be expected where structures such as main arteries are already plugged and destroyed by scar tissue

TREATMENT

Treatment can at present be only such as is dictated by the perilous vitality of the limb—rest massage and above all, protection from any form of injury It is for this reason very essential that a correct diagnosis be made early in the history of these cases Otherwise it is possible that harmful and even disastrous treatment may be applied One of our cases sustained a trivial electrical burn which took no less than eighteen months to heal and a second case was in danger of losing his limb in consequence of the advice given by his medical man to apply hot turpentine stupes Where gangrene eventually ensues we think it important that nothing less than a supracondylar amputation of the thigh be done The popliteal bifurcation is well within certain to be blocked, and to amputate at a lower level is to court disaster

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REFRACTION WORK IN GENERAL PRACTICE.

BY

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CORBRIDGE ON TYNE

REFRACTION work in general practice is, or ought to be, just the same as refraction work in specialist practice—the same principles are involved and the work should be done in the same way. I do not propose, therefore, to trouble you with the principles of refraction or the details of treatment of the various forms of refractive error. These can be found in any handbook of refraction, of which there are many, one of the best being Mr. Percival's little book entitled *The Prescribing of Spectacles*.

What I do propose to give you are some hints on equipment and procedure which I hope may be of some use to those who, like myself, are interested in the subject and have to do their refraction work in the time they can spare from the work of a general practitioner.

It will, I think, be easiest to give you the points I wish to make if I follow the patient from the moment he comes into the consulting room till the final moment when he is allowed to wear the glasses that you have tested and found to be in accordance with your prescription.

The first thing to do on his arrival is to note his name and address, age, and the symptoms that have brought him to you. For this purpose nothing is more convenient than the card index system. My own cards are the ordinary 5 in. by 3 in., but if I were starting over again I should use a larger size. The next step, if the patient has worn glasses, is to examine them and note what they are, and also who prescribed them. You can estimate their strength by neutralizing them with lenses from your trial case, finding the axis of astigmatism, if any be present, by holding the glass between you and the window frame and turning it round till you can see through it both the middle sash and the vertical mid-bar undistorted. But a much quicker method is to use the Geneva lens measure. As an instance of its use I had a patient lately for whom I had prescribed a pair of +0·5 spheres for constant wear. I was surprised *to find that they were causing trouble. The glasses were* neutralized by −0·5 spheres and then optical centres were the correct distance apart. I found, however, by using the lens measure that while one was an ordinary biconvex or plano-convex lens, the other was concavo-convex or peri-scopic. *The optician was requested to give the patient two* lenses of the same kind, and the trouble disappeared.

One point is worth mentioning with regard to the lens measure, and that is that the revolving hand is apt to work round a little with constant use to one or other side. It is desirable, therefore, before testing a lens with it, to place on a plane surface—for example, *on one of the sides of* a prism from your trial case. If the pointer stands at zero all is well. If not, you must make the necessary correction from your subsequent readings when you are testing the lens. Having found by the lens measure the strength of the glass it is as well to neutralize it by lenses of opposite sign and see if vertical and horizontal lines can then be seen through it without distortion. If not, the probability is that a prism has been combined with the other lenses, and its strength can be found in the same way by neutralizing.

Before returning the glasses to the patient you should see whether the optical and geometrical centres coincide—again by the use of the window frame, or any convenient horizontal and vertical lines—and in any case should measure and note the distance between the optical centres. A straight steel millimetre rule is convenient for this purpose.

The next thing to note is any abnormality in the general appearance of the patient's eyes—epiphora, conjunctivitis, slight reddening of the corneo-scleral margin, etc., and also whether there is any nystagmus or obvious squint. The room is then darkened and the eyes examined by focal illumination. For this purpose, and also for the indirect method of using the ophthalmoscope, the unmounted lens that is sold with the ordinary Morton ophthalmoscope is very convenient. It is better to have one a shade larger, of approximately the same strength (mine is + 13), mounted in a ring frame with a ring handle. This lens is easier to hold for all purposes, and in the indirect method when examining the patient's left disc you can hold the lens with your hand on his forehead in such a way that your forearm does not prevent his right eye from looking towards your left ear. With the small unmounted hand lens this is almost impossible, unless you hold it below, and if you do you have not the command over it that you have over the ringed lens.

Focal illumination will show, among other things, corneal opacities, abnormalities of the pupil such as the Argyll Robertson pupil of tabes, or general paralysis of the insane, the tremulous iris that indicates a dislocated or extracted lens, the dilated and feebly reacting or immobile pupil of glaucoma, the contracted pupil of iritis, irregularities in the shape and size of the pupils, and so on. The size of the cornea and the depth of the anterior chamber are also worth noting. We are apt to imagine that the size of the cornea is much the same in all eyes, but anyone who has done a few cataract extractions or has made any use of Schiotz's tonometer knows that there is considerable variation in the corneal diameter. The foot-piece of the Schiotz tonometer, which is placed on the anæsthetized cornea, measures 10½ mm. across. In some eyes there is very little corneal margin to be seen when the instrument is in position, while in others quite a wide band remains uncovered. The importance of this point in refraction work is that an eye with a small cornea has presumably less adequate provision for the escape of aqueous into Schlemm's canal than the eye with a large cornea, and when you are examining such an eye and note that the anterior chamber is also shallow you should resist all temptation to dilate the pupil. Even a mild mydriatic like cocaine might be sufficient to produce an attack of acute glaucoma in such an eye.

The final point to notice in this part of the examination is the condition of the lens, and here a word of warning may not be out of place. The concentration of light on the eye in focal illumination is apt to produce a white appearance in the depth of the lens, and the inexperienced observer may mistake this for an opacity. Twice within the last few months I have seen patients in whom cataract has been diagnosed as the result of this examination—a mistaken opinion that a moment's inspection with the ophthalmoscope was sufficient to refute.

The next step in the dark-room examination is the inspection of the eye with the plane mirror of the ophthalmoscope. In this way faint corneal nebulæ that have escaped notice in the previous examination are easily detected. They are important to note, for their presence if central will make a great difference in the patient's visual acuity and will readily explain his failure to read 6/6 when he comes to the subjective tests. Cataract, if present and central, is at once spotted, while the failure of the red reaction in one position of the eye would lead one to suspect a detached retina, a dislocated lens, or an intraocular tumour.

Then comes the examination of the fundus of the eye with the concave mirror and the hand lens—the indirect method. The disc, periphery, and macula are examined rapidly in turn, the clearness or otherwise with which the fundus is seen giving one an idea of the condition of the vitreous. This finishes the preliminary examination. It takes a long time to describe, but in a normal eye takes only a couple of minutes or less to carry out. If any abnormality is detected it can be further investigated by the direct method. If *none* is seen it is at least worth while knowing that the eye is apparently normal.

The next step, if you have an astigmometer, is to use it. They are unfortunately expensive instruments, running from £20 to £40 or more, but they are undoubtedly most valuable, *giving* you in one or two minutes information that may take you ten or fifteen to acquire by retinoscopy—namely, (1) the amount of corneal astigmatism present, and (2) its axis. Retinoscopy is then proceeded with in the usual way, the patient being seated with his eyes as nearly as possible one metre distant

Address delivered to the North of England Branch of the British Medical Association.

from your ophthalmoscope The light may be either electric or incandescent gas, or even an oil lamp if nothing better is obtainable, but it must have a ground glass globe, and it must be placed on a bracket which you can move both vertically and horizontally It is adjusted to a position just behind the patient's head, either just above or close to one side, in either case it must be so obscured by his head that the light does not shine on the back of the lenses in the trial frames The trial frame is then fitted and lenses inserted till the shadows are reversed You can assure yourself that your correction is good by leaning slightly forward and then somewhat back from your position of one metre distance and noting how the shadows move in each position If in one direction when you lean forward and the opposite when you lean back you may be satisfied that your lens is approximately correct

One very important point is the direction in which the patient fixes his eyes Theoretically he should look directly into the mirror as it is the refraction in his visual axis that you want to find and when his accommodation is paralysed by a cycloplegic he should do so towards the end of your examination when you have found his approximate correction If his accommodation is not paralysed the pupil will contract too vigorously if he looks straight at the mirror for any satisfactory retino copy but he should be told to look as close as possible to the top or side of your head If you allow him to look a foot or two away you may get a beautifully illuminated pupil and much easier shadows to watch but you may find when you come to the distance test that you are as much as two diopters out in your estimate

The next step is to try the effect of the lenses you have found with the Snellen's types at 6 metres distance It is convenient to have more than one set of types as some patients especially children of school age very soon learn the letters off by heart and when you come to their second eye may repeat them without really seeing them The best form of type to get is printed on some material which is washable Besides the test types you should have on your consulting room wall some form of astigmatic fan and also Maddox's tangent scale

In most consulting rooms there is a difficulty in getting the patient sufficiently far away from the types 6 metres is approximately 20 feet and few of us have consulting rooms of that length The difficulty can sometimes be got over if the room is fairly large by placing the types in one corner and the patient in the opposite

Another useful method in a small room is to place a mirror on the wall opposite the patient, while a special card of types, on which not the letters but their mirror images are printed, is hung above his head in such a position that the distance from his eye to the mirror added to that from the mirror to the types equals 6 metres Another method is to make use of a passage leading into the room to give one the extra distance—the patient being seated in the passage and looking through the open door of the consulting room at the charts on its wall Failing all these possibilities one can have a set of types in which the size of the letters is altered to correspond to the distance at which they are to be read

The illumination of the test cards is an important point If you use daylight your results from day to day in this climate are not comparable A patient will read sometimes two or three more lines when bright sunlight is falling on the types than he will when the sun goes behind a cloud The ideal thing is to use a dark room with a vertical series of lights shaded from the patient shining on the card in such a way that all the letters are equally illuminated In any case it is advisable to use artificial light, as you can ensure your tests being always done under the same conditions

The patient is now seated at 6 metres distance from the Snellen's types with a blank disc in the trial frame opposite his better eye You test the worse eye first to prevent the patient getting too familiar with the letters in the lower lows Opposite this eye you then insert any cylinder you know to be too strong and in myopia one which is too weak The patient then reads as far as he can You then proceed to add *minus* spheres until you reach a point where a further sphere though he may say he sees better with it does not enable him to read any further You then see if alteration in the angle of the cylinder improves his vision If not, the next step is to use a crossed cylinder You can do this by taking the 0 25 *plus* and *minus* cylinders from your trial case, holding them together with their axes at right angles to one another, and placing them in front of the patient's eye with one of the axes in the same plane as the axis of the cylinder he is wearing It this is no improvement you try it the other way round If he is wearing a *plus* cylinder in your combination is parallel to its axis the *plus* cylinder and you find that when the axis of he sees better then his cylinder is probably too weak if he see better with the *minus* cylinder parallel to the axis of his cylinder then his cylinder is too strong You make the necessary alteration in the cylinder test again with the weak *plus* and *minus* spheres and then again with the crossed cylinders, till you have found the combination that gives him the best vision

The crossed cylinders are a little difficult to hold in position exactly at right angles to one another and also with the axis of one of them exactly parallel to the axis of the cylinder in the trial frame—especially if the latter is not vertical or horizontal, the glasses are also apt to get dimmed by the heat of your fingers as you hold them It is much quicker and easier to use Jackson's crossed cylinders—single lenses with cylinders of opposite sign ground on either side at right angles to one another You can get them in any strengths—0 25 and 0 50 are the most generally useful When you buy them you will usually find the axes of the cylinders marked on the glass either by scratches or by coloured dots and neither of the axes as a rule coincide with the handle It is worth while slackening the screw in the ring mounting with a small screwdriver (which, by the way, is a most useful implement to have in your trial case), and twisting the lens round till, say the axis of the *minus* cylinder coincides with your handle If you know that this is so it is easy and quick to hold the crossed cylinders in the correct position in front of the other lenses The other eye is then similarly tested and then the vision with both eye wearing the correcting lenses is taken and you see whether the patient will accept any additional *plus* spheres when both eyes are open

The next step is to test the patient's near point with each eye separately while wearing the correcting glasses If you find the amplitude of accommodation markedly less than it should be at his age you may suspect a spasm of the ciliary muscle—not such a very uncommon condition, and one which it is important to diagnose and treat, as it is responsible for a good deal of suffering I had a patient recently sent by Dr Fairclough of Hexham a woman of 35 who had lost one eye in infancy She had been fitted with a *minus* sphere and cylinder by someone who had not suspected this condition, and for years she had been in misery with symptoms of eye strain I tested her under homatropine but not being satisfied with the result, made her use atropine drops for several days and then retested her I then found as I had suspected, that there had been a spasm of the ciliary muscle and she had compound hypermetropic, not myopic astigmatism Her new glasses gave her complete relief from eye strain and great comfort in near work, and she is finding as her ciliary muscle gradually relaxes that the dimness which she at first felt when wearing the glasses for distance is disappearing

Having tested the patient's near point it is advisable to put a Maddox rod in front of the correcting lenses in the right eye and test for any latent defect of muscular balance Of these the most important is hyperphoria, the test of its presence being that when the rods are vertical the patient sees the red horizontal line either above or below the light in the centre of the tangent scale When this is found the prism necessary to correct it should be found and noted The rods are then placed horizontally in the trial frame and the patient tested for esophoria and exophoria—the vertical red line in this case being either to the right or left of the centre light Practice varies as to whether

these defects should be corrected or not As some of them disappear when the patient has worn the glasses which correct his refractive errors for some time, I personally do not correct them to start with But if a patient who has given his glasses a good trial—say six weeks or more—still complains of eye-strain, and especially if he is troubled with diplopia, I retest with the Maddox rods and consider the question of prescribing prisms

If the patient is over 40 he should now be tested with the near types to see what addition, if any, is necessary for near work It is very important to find out exactly at what distance the patient wants to see—a short man with short arms will probably hold his book about 10 inches from his eyes, patients of another build will prefer it 13 inches away or even more, while a pianist requires vision at about 20 inches, and a laundress ironing at a table may want even more The near vision addition would, of course, be different in each of these cases

The chief mistake to avoid is giving the patient too strong an addition for close work If you test the patient with a strong light behind him shining on the near types he is very likely to take a stronger lens than he requires, and he will probably complain when he comes to try the glasses afterwards that he feels they are "tearing the eyes out of his head" As a rough working rule for the patient who reads at 13 inches, the usual distance, we add +0 5 at 45, +1 75 at 50, +2 at 55, and +2 25 at 60—he should never require any stronger addition than this to his distance glasses

At the same time it should not be forgotten that a patient after 50 gradually develops an acquired hypermetropia, so that his distance glasses require gradual strengthening A man who is emmetropic at 50 may require as much as +2 25 spheres for distance when he reaches the age of 80, and, of course, his near glasses will have to be correspondingly strengthened The point I wish to emphasize is that the *addition* to his distance correction for reading at 13 inches should probably never be greater than 2 25 at any age, with the possible exception of myopic eyes, as in them the range of accommodation is usually defective

The next step, and a very important one, is to measure the distance between the patient's eyes both for distance and for near vision The patient should wear his correcting lenses during this test and should, of course, fix a distant object when he is wearing his distance glasses, and a near when he is wearing his near glasses

The patient is now ready for his prescription One of the snags in writing this is, that there is so much confusion in the way the angles of cylinders are marked The standard method is to make the left side of each of the patient's eyes as you look at him zero, and measure the degrees from that counter-clockwise But you will find trial frames and prescription forms marked in all sorts of ways—zero sometimes at the temporal, sometimes at the nasal side of each eye, sometimes at the temporal side of one and the nasal of the other If you have not a prescription form with a diagram on which you can mark the angle it is always advisable, after writing the strength of your cylinders and the degrees of the angle, to draw a horizontal line and then draw a line from one end of this to show roughly in what direction the angle is to be measured

Before the patient goes you should give instructions as to whether the glasses are to be worn constantly or not, you should warn the patient (unless you have prescribed periscopic lenses) that he must learn to turn his head when he wants to see anything to the side, so that he always looks through the centre of his glasses, hypermetropes and unsometropes should be warned that they may require some weeks of constant wear before the glasses become comfortable, patients who are given cylinders at an angle for the first time should be warned that at first they will be troubled by straight lines not in the direct line of vision appearing distorted, while all patients, but especially children, should be advised to take their spectacles to the optician from time to time to make sure that the frames have not got twisted

The final point is to insist that the glasses should be sent to you to be checked before the patient wears them I have learnt the necessity of this by repeated painful experience I have had patients complaining that the glasses did not suit them in whom I have found the axes of the cylinders the opposite way to my prescription I had a patient once for whom I took the trouble to work out a formula for periscopic lenses for use while playing tennis It was only two years afterwards, when he came to see me about something else, that I found the glasses had been useless, and on examining them found the opticians had disregarded my formula and sent him ordinary spheres, I have had patients with unisometropia in whom the strong lens had been put opposite the eye that required the weaker But the thing in which I find the greatest *difficulty* is in getting the lenses centred correctly The oculist finds a frame that fits nicely on the patient's nose and looks neat, and he will often fit the lenses into this without any regard to the interpupillary distance Glasses undoubtedly look neater when the lenses are not very wide apart, and there is no objection to the optician using such frames so long as he decentres the lenses outwards so that the distance between the optical centres is correct, but so far I have never seen this done Almost always, unless specially ordered otherwise, the optician fits lenses of which the optical and geometrical centres coincide, though I have actually had a case in which the lenses were the correct distance apart, but for some obscure reason or other decentred lenses were fitted bringing the optical centres much nearer than they should have been!

I lay stress upon this point because I believe a mistake in the centring of the lenses is often an unsuspected cause of eye-strain This is not to be wondered at when you remember that a spherical lens whose optical centre is not opposite the centre of the pupil has the action of a prism An error of only 4 mm (1/6 inch) in the distance between the optical centres of a pair of +5 spectacles will have the same effect as putting a No 1 prism before each eye When weak lenses are concerned the prismatic effect of wrong centring, if only a few millimetres out, does not matter much, but when you have to prescribe strong lenses in either hypermetropia or myopia it is very *important* to satisfy yourself that the optical centres are exactly the right distance apart

THE TREATMENT OF SEA-SICKNESS

BY

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RECENTLY, in a brief but fairly exhaustive review of the various theories of the causation of sea sickness, Riboli[1] points out that overstimulation of the vestibular nerve, with consequent irritation of the vagus, best meets the case As he shows, sea-sickness presents the syndrome that may be observed in sensitive subjects on excitation of the vestibular nerve by the simple injection of warm or cold water into the external auditory meatus, or by means of a mild voltaic current Perhaps the most exhaustive account of the part played by the semicircular canals in motion sickness is that of J Byrne,[2] which is extremely valuable for reference Sea-sickness is not an affection *sui generis*, but a particular form of motion sickness, other variations of *which are* the nauseas associated with aeroplanes, trains, swings, roundabouts, waltzing, etc

The part played by the internal ear has been recognized for many years[3 4] and may now be regarded as fully accepted Portier[5] recently gave a very good description, with diagrams, of the nervous mechanism involved Pozerski at the Pasteur Institute, studying what Wells[6] calls "ce petit accident des traverses," induced it experimentally in animals by means of an apparatus capable of producing rolling and pitching motions Several interesting points emerged Fasting animals were found less susceptible than recently fed ones, many kinds were quite immune, and others soon acquired immunity As showing the psychological factor, a dog, after the first experiment, on being brought into the room was sick at the mere sight of the machine

In addition to anticipation and dread, other factors such as optic vertigo—as pointed out by Erasmus Darwin,

Hewitt, and Wilson Fox—agitation of the abdominal viscera, etc, play subsidiary parts Quite young infants and very old people are generally immune, as might be expected in a functional nervous condition, such as sea-sickness is To explain the relative immunity of babies the state of the thymus and endocrine glands has been suggested[7] This seems unnecessary Further, Bedart and others affirm that deaf-mutes are not susceptible to motion-sickness Sir T Lauder Brunton[8] held the view that the origin was a mixed one He also gave the most practical detailed and helpful advice as to treatment that I have yet met with

As a working hypothesis, then let us take it that the vomiting centre is overstimulated by centripetal impulses, preponderatingly vestibular, but not exclusively so Rational treatment at once becomes obvious Diminish the activity of the vomiting centre by means of chloral and bromides, or else lessen the conductivity of the vagus by the administration of atropine

The atropine method is at present that most in favour but it has not been satisfactory in my experience, and is certainly not free from danger and unpleasantness Incidentally the use as a routine method of this potent drug either hypodermically or by mouth, in a crowded ship, is not easy Portier states that hyoscyamine the left isomer of atropine is not more toxic and has an activity twice as great Morphine is not much in favour On one voyage however, before I adopted routine rectal treatment as described later, it seemed to me to have saved the life of a young woman, who vomited from Suez to Calcutta save when under its influence

Many years ago crossing the Western Ocean to Canada in bad weather it became clear to me—from painful personal experience—that chloral in the form of syrup was of the greatest value But even so slightly unpleasant a preparation as this is impossible to a sea sick person—just when most needed It is speedily rejected Brunton was right in teaching that chloral and bromide, properly used would practically at all events prevent all suffering The only difficulty is the administration and retention of the drugs This is easily met by giving them per rectum Last year on the North Atlantic the opportunity for trying this on a large scale occurred the results were most gratifying A solution however of this kind cannot be left to the unskilled steward or attendant so I had to make a suitable suppository

The incorporation of the drugs in the form of a suppository presented considerable difficulty as the usual bases were quite unsuitable Messrs Allen and Hanburys Ltd have now prepared suppositories which stand the tropics perfectly I possess some that have crossed the equator four times, and never left the cabin for the ice-chest In the rectum they melt readily, absorption is rapid, and no irritation locally appears to follow their use Two suppositories contain 15 grains of chloral and 30 grains of bromide These are not large doses 30 grains of chloral at a dose in a milk enema two or three times daily is spoken of as being used by Mir[9] in the vomiting of pregnancy—in many ways related to sea sickness and as a sedative in other nerve conditions 2 or even 3 grams[10] or 11 Such large doses are not within my experience It is clear, however that there is no risk in a frequent repetition of small doses Subsidiary measures should not be neglected These are recumbency (in bunk in cabin is the best) warmth keeping the eyes shut, and the use of an abdominal belt The ideal position for a bunk, where it is possible, would be amidships on the main deck level—lying fore and aft in the centre of the ship with the feet pointing to the bow This is seldom attainable, but the opposite can be avoided Still, with suitable dosage on the lines mentioned above, such points become of minor import

This treatment, which I have found so valuable possesses important advantages over oral methods of administration (1) The therapeutic action of the drugs is certain, because no gastric disturbance can interfere with it (2) Absorption of the drug is more certain and the effect is prolonged (3) It causes no gastric disturbance such as occasionally results from the use of other remedies for sea-sickness

The best results are obtained by using the suppositories in the following manner As a preventive, one should be inserted morning and evening for the first three days at sea If the patient is sick when first seen a suppository should be administered at once, and repeated every two or three hours, as required, for four doses If the sea passage is short, a suppository should be used three hours before going on board, and again before the ship starts There is no danger whatever provided the administration is stopped when somnolence supervenes

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CURE OF UTERINE PROLAPSE BY RE EDUCATION OF THE MUSCLES CONSTRICTING THE VAGINA

BY

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THE muscles which close the vagina (in common with other muscles who e physical relationships are greatly changed during pregnancy and parturition) are liable to lose their normal habit of tonic contraction after the cessation of the distension to which they have been temporarily subjected When the "vaginal" muscles are subject to this loss of tone, prolapse of the uterus is liable to follow and if the support normally given by the vaginal sphincter and the fibrous tissues associated with it be lost (owing to the parts being torn during parturition) the liability to uterine prolapse is greatly increased

If the tone of these muscles which tend to occlude the vagina be tested in a case of uterine prolapse it is usually found to be decidedly poor and in extreme cases the laxity of the vagina may be so considerable that no form of pessary can be retained Fortunately however although the habit of tonic contraction of these muscles be lost, the power of voluntary contraction is not as a rule also lost and when during a vaginal examination the patient is told to contract, so far as she is able, the muscles of the pelvic floor, it is found that some muscular compression is exerted upon the fingers in the vagina either by the sphincter proper or by the other muscles which have the power of constricting it Voluntary contraction of these muscle can be as a rule brought about by asking the patient to contract the sphincter and the levator ani by tightening or relt up" as if she were endeavouring to control a sudden attack of diarrhoea

When any voluntary control of these muscles is present the re establishment of full tonic contraction is only a matter of time for (as is the case with most muscles of this type) the frequent repetition of voluntary contraction soon restores a lost habit of tonic contraction The patient's attention is therefore drawn to the fact that the vagina is tightening upon the examining fingers when she makes the special type of effort and she is asked to make and then to cease making, the effort several times in succession until she has a further knowledge of what is required or her She is then told to contract the muscles of the pelvic floor many times during every hour of the day and to maintain the contraction as long as she conveniently can If these rules are carried out—as they easily can be—the muscles which diminish the lumen of the vagina will in a very few weeks greatly increase in tonicity and will be able within two or three weeks they will be able to support much more than they could—and for long—to

the first examination In such a case the continuance of the voluntary efforts will in a very few weeks so re-establish the habit of tonic contraction that a prolapsed uterus can be retained in place without any mechanical support, provided that the patient remembers to make a special voluntary contraction of the muscles of the pelvic floor whenever an effort is made which is specially liable to cause a descent of the uterus

In some cases the contraction of the muscles which close the vagina is so feeble that when the patient is first seen she herself is not conscious of any activity in them, although they do perceptibly tighten upon the two fingers in the vagina If after a fortnight's exercises this same condition persists, it is advisable, when doing the exercises, that the patient should insert her own fingers into the vagina so that she may the more readily learn the type of effort she has to make

The effectiveness of this treatment is shown by the fact that, even when there has been an amount of tearing sufficient to prevent the sphincter vaginæ from taking any part in the support of the uterus, the patient may nevertheless be able to maintain her uterus in its normal position without the need for a pessary, as in the second case here referred to

As a consulting physician I naturally do not meet with many cases of uterine prolapse, and cannot therefore give a large number of cases to illustrate this method of treatment I will, however, report two cases which are sufficient to prove the truth of the proposition here stated

The first was a married woman, aged between 30 and 40, the mother of several children, who came to see me as an out patient at the Birmingham General Hospital, nearly twenty five years ago She was suffering from neurasthenic symptoms due largely to the fact that she had a very severe uterine prolapse, and the cervix would protrude from the vulva whenever she made a slight effort Moreover, the vagina and its sphincter were so relaxed that she was unable to retain any form of pessary, and she told me that she was advised to have complete hysterectomy After some difficulty I was able to re establish voluntary control of her vaginal muscles, with the result that in a few months' time she was completely cured Although able to retain a pessary she did not need one, and had not any further trouble from her uterus, and, *pari passu*, her general health also greatly improved

The other patient was seen by me in April, 1924 She was suffering from colon trouble, and also from uterine prolapse due to being badly torn at her last confinement and had to wear a ring pessary to prevent uterine prolapse She had been advised operation, and wished for my opinion as to its desirability On examination I found that the perineal tear prevented any effective action on the part of the sphincter vaginæ, but that when the patient contracted her levator and sphincter ani there was a noticeable but slight contraction of the vagina upon the two examining fingers When seen ten days later she was able to grasp a single finger when inserted into the vagina, closing up its lumen sufficiently to prevent any descent of the uterus She was advised to continue the exercises for another week, and then have the ring removed This was done, with satisfactory results She was seen after having been a fortnight without a pessary, and was able to report that the cervix had not once been outside the vulva since the removal of the support The position of the uterus was found on examination to be normal By the exercise of care she prevented any return of the prolapse, and when seen two months after her first visit was practically cured of her prolapse

THREE CASES OF MEDICO-LEGAL INTEREST

BY

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THE three cases here recorded are all of a remarkable character The first is that of a man who committed suicide by cutting his throat It is well known that in such cases injuries may be inflicted of such severity and extent that a *medical man is apt to put suicide out of the* question and to attribute them to murder It is advisable, therefore that cases of self-inflicted injuries in which such doubt may arise should be put on record The second case is that of a young woman in labour who threw herself from a window 80 feet above the ground It is of interest on account of the peculiar injuries to mother and child, and of the fact that she was able to carry a child to term without anyone suspecting her of being pregnant The third case, that of an infant who fell from a height of 45 feet without injury, seems almost incredible when one recalls the injuries produced by falls of comparatively short distances, and also the terrible results of precipitation from windows of high buildings

CASE I.—*Suicidal Cut Throat in which the Transverse Process of a Cervical Vertebra was Cut Through*

A labourer was found dead one morning by his landlady with his throat cut He had been a fairly healthy man and had had no serious illness up to ten weeks before his death, when he had apoplexy, his speech being affected and his right arm and leg partially paralysed He was admitted to hospital, where he remained for ten weeks, being discharged, at his own request two days before his death His landlady states that she noticed that his speech was still affected Two days after his return home he went to the parish offices to obtain relief, in this, however, he was not successful, and appeared to be worried in consequence He retired to bed about 9.30 p.m. The next morning he was found dead in bed, lying on his back, his arms lying across his chest, a razor under his right arm, and his throat cut

On examination the thyroid cartilage was found to have been practically hacked to pieces, there being seven distinct cuts through the cartilage The oesophagus had been opened into on the right side, both jugular veins had been severed, the carotid artery on the left side had been opened, and the left transverse process of the fifth cervical vertebra had been cut through the severed part lying free in the tissues of the neck The surface of the bone was cleanly cut through and had no appearance of having been broken

CASE II.—*Precipitation of a Woman in Labour from a Window 80ft from the Ground Peculiar Injuries of Mother and Child*

A female clerk, aged 17½ years, was found unconscious and in a dying condition at 5.45 a.m., having apparently jumped from the sixth story of a tenement house—a distance of 80 ft A neighbour, hearing a thud and morning, looked out and seeing the body lying in the back yard called the police On their arrival it was found that she had given birth to a child which was lying dead between her legs No one seemed to have suspected that she was pregnant and she had played in a hockey match five days before About mid day, on the day before her death, she had complained of a pain in her back and had been allowed to go home, she had severe pains during the afternoon but about 6 o'clock a friend called to see her and they arranged to go to the theatre together that evening She did not go, however, but retired to bed About midnight her mother saw her and gave her something to drink, when she said that she felt better A chair was found at the window of her bedroom, upon which she had evidently stood before throwing herself out

A *post mortem* examination was made the next day There were no external marks of injury except just above the popliteal space on both legs, and slightly to the outer sides there was a linear transverse wound, in each case about four and a half inches in length, passing completely through the skin and subcutaneous tissues No other structures were involved These wounds were apparently due to a splitting of the skin There was no projection that could have produced them during the fall On internal examination the uterus was found to be ruptured, the rupture was five inches in length and passed completely through the uterine wall at the fundus and down to the right side The os was fully dilated but was not torn, the vagina was extensively rent from the right fornix to within an inch and a half of the vaginal orifice The perineum was ruptured There was a fracture dislocation of the sacrum from the innominate bones, the free edge of the sacrum on the right side projecting into the pelvis There were no other fractures and the abdominal organs were uninjured The body of the child showed that it had reached full maturity, the placenta was still attached to it by the umbilical cord, but piece of placenta were found in the cavity of the uterus The calp had been torn from half an inch above the right eye round the head above the left ear to the mid line at the occiput being practically detached over the whole of the left hemisphere The injury to the scalp showed sharply divided edges as though cut with a sharp instrument The frontal, parietal, temporal and occipital bones were extensively fractured and the bone lacerated

It is interesting that a young girl of 17 was able to carry a child to full time without anyone, not even her mother and sister, suspecting that she was pregnant, and at the same time was leading a very active life even playing in a hockey match five days before Labour evidently commenced at mid-day when she went home from her office, and continued into the early hours of the next morning, when, in a frenzy, she precipitated herself from the window Apparently she landed on her heels with legs extended and trunk inclined forward, the sudden hyperextension of the legs splitting the skin and causing the two curious symmetrical wounds referred to above The ablation of the scalp and fractures of the skull of the infant were caused by the shock of the fall, the head being thereby forced through the pelvic canal and the scalp torn by the projecting edge of the dislocated sacrum, while the rupture of the uterus was produced by the feet, at the same time, being driven through the fundus

CASE III.—*Fall of an Infant from a Height of 5 ft without Injury*

A baby 11 months old was taken to the Royal Infirmary having it was stated fallen from a fifth story window The infant suffered from shock but the only injury that could be found was a slightly bruised buttock She was detained for observation all that was noticed was that instead of being a lively child she was very quiet After three days she was discharged as no serious injury could be found The absence of injury was so striking that it seemed probable that the history and the distance fallen had been much exaggerated In view of this I visited the scene of the accident and interviewed the eye witness The mother stated that whilst she was working about the house the baby had crawled on to a low stool beside an open window The lower edge of which was only about 2½ feet from the floor The window was on the fifth story of a tenement house and was about 45 feet from the ground The child fell to the pavement of the street consisting of large stone flags almost hitting a neighbour who was leaning out of the window below and who stated that had she known the child was falling she could have caught it

The accident occurred over a year ago and since then the child has been visited on several occasions with a view to ascertaining if any after symptoms developed The last visit was a few weeks ago, when the child was found to be in good health and in all respects normal The absence of injury might be more easily understood if the child had been wrapped in thick woollen shawls, but at the time she was wearing a flannel vest and two cotton petticoats That the petticoats acted as a parachute, and to some extent broke the fall, seems out of the question when their nature and size are considered

OVARIAN CYST COMPLICATING LABOUR

BY

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THE following case presents certain interesting features which make it worth putting on record

On August 3rd 1924 Mrs T aged 25 years a 2 para and living in a somewhat remote country district was attended in her third confinement by two medical men Her two previous confinements had been quite uneventful and of such recent date that no difficulty with the third child was anticipated Labour at first proceeded normally then it was found that the head was not advancing as rapidly as it should have done and examination demonstrated an occipito posterior position Under an anaesthetic the occiput was rotated forward and forceps applied As the head was being drawn down a lump was felt coming down in advance of it and this lump was delivered somewhat precipitately immediately before the head was born the child a healthy living male was then extracted without any difficulty and the placenta was expressed shortly afterwards The lump appeared to be a cyst and as the woman showed obvious signs of shock it was deemed advisable to bring her into the Lloyd Hospital Bridlington The baby had been delivered at 2 p.m. and the patient arrived in hospital shortly after 6 p.m. As the above detail had been given to me before her arrival I decided to defer any examination until she had been anaesthetized and placed on the operating table

As soon as possible after her arrival an anaesthetic was administered by Dr C R Taylor and the patient put up in the lithotomy position Investigation then revealed a rounded cystic tumour four inches in diameter protruding through a rent in the perineum The posterior vaginal wall was quite undamaged except for a tear of about half an inch at the junction of the mucous membrane with the skin On drawing the cyst gently downwards the fimbriae of a Fallopian tube could be seen spread out over the upper portion of its circumference The cyst was attached by a broad pedicle covered by peritoneum which could be traced up into the abdominal cavity through a hole in the floor of Douglas's pouch An effort was made to sterilize the parts by a liberal application of cusol and then the pedicle was ligatured a high up a possible by a series of interlocking catgut sutures which included the accessible portion of the presenting tube the cyst and attached portion of tube were then removed and the pedicle returned within the abdominal cavity The tear in Douglas's pouch was closed by means of a purse string suture and repair of the perineum carried out in layers as in an ordinary perinæorraphy No drainage was provided The cyst on examination proved to be an ovarian dermoid containing sebaceous matter and a large mass of hair

Subsequent progress was satisfactory for the first four days then abdominal distension set in accompanied at first by diarrhœa symptoms of obstruction developed and on August 9th I opened the abdomen in the middle line The peritoneal cavity contained a large quantity of clear dark brown fluid the small intestine was greatly distended The obstruction which was located in the left iliac fossa involved the small gut about three feet from the ileo-cæcal junction and was caused by a fibrino-plastic band of adhesions The band was divided and the obstruction relieved The opportunity was taken to examine the ovariotomy stump its condition was quite satisfactory it was found that it had been the right ovary and tube which had been involved The patient never rallied from this operation eight hours afterwards

One of the chief points of interest in this case is the path followed by the cyst in its escape from the abdomen The posterior vaginal wall was pushed forward and stood the strain without giving way except for the small tear at the vulvar orifice It is noteworthy that the cyst was delivered intact in spite of the enormous stresses to which it was subjected and bleeding from the damaged parts was practically negligible

It is unfortunate that sepsis brought about a fatal termination of the case, but the danger of this from the first was realized as being very serious The risk run in draining through the perineal wound was considered to be greater than that incurred in closing the wound completely as events turned out this view was possibly mistaken

There is a lesson to be learned from the history of this case the first two labours were entirely uneventful, and the second child was born less than two years before this catastrophe Yet it is hardly possible that the cyst was not present at the time of the second labour the chances are it was present in the first labour as well The case certainly supports the contention of those who urge that vaginal examination should be an integral part of the routine ante natal examination A well timed Cæsarean section would have avoided the tragedy of a living child and a dead mother

British Medical Association

PROCEEDINGS OF SECTIONS AT THE ANNUAL MEETING, BRADFORD, 1924

SECTION OF SURGERY

SIR CUTHBERT WALLACE, K.C.M.G., C.B., F.R.C.S.,

President

THE CLINICAL FEATURES AND DIAGNOSIS OF HYDRONEPHROSIS

BY

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(*With Special Plate*)

ONLY the shortest outline of this subject is possible in the brief time that is allowed for this communication I am dealing with the pelvic type of hydronephrosis, commonly called intermittent and sometimes described as congenital My remarks are based on personal observation A study of the age incidence shows the disease to be much more common in the third than in any other decade made upon 23 cases and a review of 27 other cases It may however, commence very early or very late in life It involves either kidney in about equal frequence It is twice as common in the female as in the male From my investigations it appears that in hospitals where a predominant proportion of beds is not given over to male patients and where all suspicious cases are investigated by the proper methods, it is one of the commonest renal conditions requiring surgical interference The so-called cardinal symptoms—intermittent attacks of colic associated with a palpable renal enlargement both of which signs disappear as a result of an abundant discharge of urine—are seldom in evidence Pain in attacks is the most constant symptom and is most severe in the earliest cases In exceptional instances pain may be quite absent A palpable enlargement of the kidney is as often absent as present and the passage of an abundant quantity of urine terminating the attack is a rare manifestation Frequency in attacks or a chronic form occurs in a considerable proportion of cases It is due to pyelitis evidence of which was to be seen in all of the kidney specimens that I had an opportunity of examining

The following case which I investigated is a good example of the absence of physical signs

Fig 6 is a pyelogram of a very definite hydronephrosis which occurred in one case The patient, a female aged 23, had had attacks of pain in the right side for three years The patient had been palpated many times by experienced clinicians and no renal enlargement detected

Hæmaturia is a not uncommon complication it results either from superimposed infection or from obstruction to a vein by pressure between an artery and the distended pelvis (Fig B)

Infection may complicate the hydronephrosis at any stage, but in many there is an extreme degree of dilatation before pyonephrosis results Some effect on the general health, although not striking in some cases, was a constant sign in some degree with all cases of hydronephrosis that came under my notice

Laparotomy and Lumbar Exploration of the Kidney

Palpation of the kidneys during a laparotomy cannot detect the disease in its early stage Even a fairly advanced condition may be missed if the kidney is not distended at the time The importance of establishing the diagnosis is not only that the kidney may be dealt with, but that useless

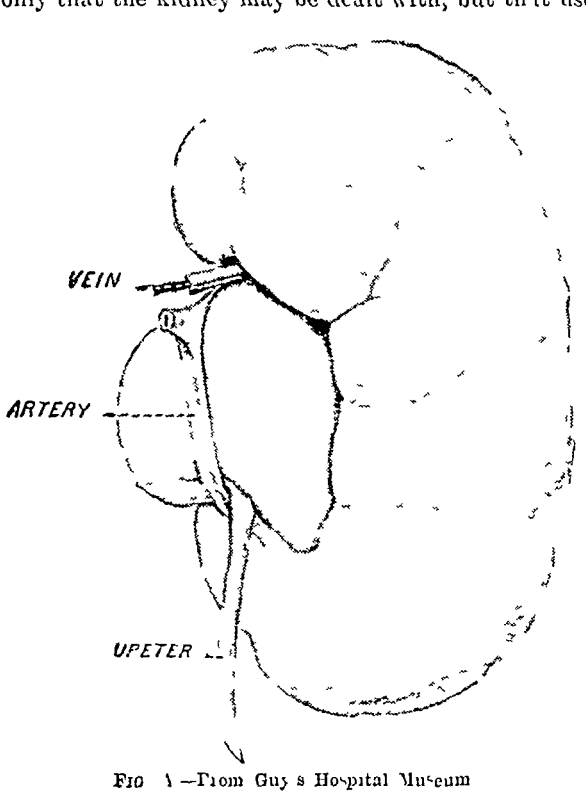


FIG 1.—From Guy's Hospital Museum

operations on other organs may be prevented Considering the certainty with which the question of hydronephrosis can be settled by an expert cystoscopist, any operative exploration for diagnostic purposes is quite unjustifiable The following is a good example of the necessity for a special investigation in an early case

A male aged 29, was sent to me on account of recurring attacks of right-sided pain of increasing frequency over a period of three years Latterly the symptoms had occurred so often and with such severity that he had to give up his work A pyelogram revealed an early but definite hydronephrosis (Fig 3) Neither his medical attendant nor I had been able to detect any swelling in the side From an inspection of the kidney at operation it was almost impossible to be certain from its appearance that it had been the seat of pain so little was its contour altered In the knowledge of the pyelographic appearance however, I had no hesitation in removing the kidney after deciding that a conservative operation was out of the question The patient had no subsequent attacks

Pyelography

As a routine measure in the examination of the urinary tract this procedure is seldom required With regard to hydronephrosis, in the hands of one who understands its contraindications, is familiar with its technique, and can interpret its results, pyelography is free from danger, and settles the diagnosis finally Fig 1 is a pyelogram showing normal pelves and calyces Note the rounded concavity formed by the outlines of the lower calyx and border of the pelvis, and the upper end of the ureter also note the absence of broadening of the calyces Figs 2 to 8 represent a fairly uniform gradation of distension from a very slight to a marked degree Fig 2 shows the earliest stage of dilatation It is not a hydronephrosis The appearance is not due to *overdistension* by pressure, as the fluid was run in by gravity Fig 3 shows a further stage which is definitely hydronephrotic, while Fig 4 still further indicates to what extent the disease can first involve the pelvis without bringing about any obvious change in the calyces In Fig 5 the changes in the calyces are apparent In Fig 6 a more advanced stage is demonstrated Here the distension is well marked in all of the calyces as well as in the pelvis The outline of the pelvis and of the calyces in Fig 7 is not shown uniformly, while in Fig 8 the calyces are not indicated at all This lack of clearness is due in each case to an uneven distribution and to dilution of the opaque medium by residual urine in the kidney

The Investigation of a Case suspected of Suffering from Hydronephrosis

Cystoscopy is carried out as a part of the routine examination of the urinary tract, and the intravenous injection of

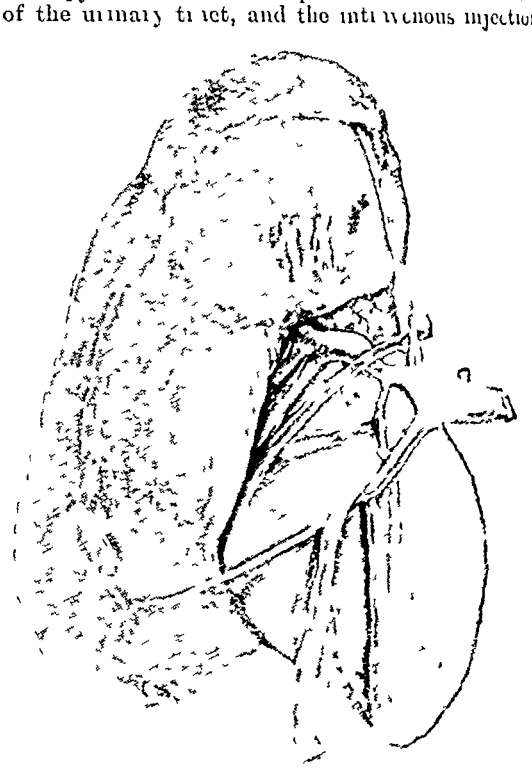


FIG B

0·4 per cent indigo carmine at this stage gives a rough indication as to whether a hydronephrosis is likely Even the earliest cases cause a few minutes' delay in the excretion of the dye, while in the more advanced ones the delay considerable

An abnormal quantity of urine may sometimes be aspirated from the kidney through the ureteric catheter by a syringe In a recent case I withdrew 200 c.cm of urine in this way from the left kidney Pyelography was therefore considered superfluous and was not carried out The hydronephrosis was subsequently removed Failure to withdraw residual urine from a kidney does not, however, exclude hydronephrosis In carrying out the pyelogram shown in Fig 8, I was unable to aspirate any fluid from the kidney either before or after the injection, although there was clearly a large quantity of residual urine present

Pyelography should follow when hydronephrosis is suspected The cystoscope is introduced on the *x* ray couch After the ureteric catheter is passed the bladder is emptied and the cystoscope withdrawn The elevated position of the pelvis necessary for the cystoscopy is maintained for the pyelography Any residual urine that can be obtained from the kidney is withdrawn, and the opaque medium*

*Sodium bromide 20 to 25 per cent is the most popular and satis-

injected through the catheter by gravity or by the gentlest possible pressure with a syringe A feeling of discomfort in the loin indicates that distension is complete, and that no further force should be used The radiographic apparatus should all be previously arranged ready for the exposure, so that this may be made the moment full distension is reached The injected fluid is withdrawn from the kidney as soon as the exposure is finished The ureteric catheter is left in position until the radiogram is developed and inspected It the result is unsatisfactory the injection and the exposure must be repeated

In children anaesthesia is necessary The injection must always then be performed by gravity entirely It is perfectly safe and satisfactory by this method, but it may be necessary to expose several plates to note the progress of the injection Fig 1 is a pyelogram which I carried out in this way on a child of 12

In some cases of hydronephrosis, owing to different forms of obstruction of the ureter, it may be impossible to withdraw residual urine from the kidney or to cause the entrance of the injected material into the pelvis Failure to withdraw the injection may result from similar causes When this occurs pyelitis may supervene Therefore a careful watch on the patient for several days is necessary, with a view to hurrying on the operation on the hydronephrosis if signs of severe infection become established I was unable to withdraw the injection after carrying out the pyelogram shown in Fig 8, fortunately without any unpleasant consequences Figs A and B are illustrations of varieties of ureteric obstruction

In attempting pyelography on the kidney represented in Fig B I had found it impossible to demonstrate any opaque fluid in the renal organ It has previously been noted that no dye was discharged from the corresponding ureter I concluded that a hydronephrosis was present with an obstructed ureter The tumour had never been identified by palpation, although the abdomen had been opened two years previously

It is unnecessary and dangerous to carry out pyelography on large palpable hydronephroses Intravenous indigo-carmine in conjunction with cystoscopy is thoroughly reliable for diagnostic purposes There is considerable delay in the excretion of the dye from markedly dilated kidneys The blue is usually not detected at all The following case is a good illustration of the value of the colour test

The patient was a man aged 53 in whom I investigated the nature of a cystic swelling occupying the whole of the left side of the abdomen The swelling appeared to be a hydronephrosis Cystoscopy and intravenous indigo-carmine showed the dye from the right ureter in eight minutes and from the left in nine minutes Such a quick excretion I knew to be impossible from a hydronephrosis of such a size I therefore felt confident that the swelling was due to another cause

At an operation subsequently performed by Mr Joseph Cunning a unilocular serous cyst holding about two quarts of clear fluid was evacuated and resected from a small origin on the anterior surface of the left kidney The patient made a good recovery

The Investigation of the Opposite Kidney in a Case of Hydronephrosis

There is always the possibility that the other kidney has a tendency to hydronephrosis with one side only causing discomfort It is important to settle the question by pyelography, as nephrectomy must be avoided if both kidneys are affected When practicable it is wise to postpone the second pyelography until fourteen days after the first examination If one kidney only is investigated in this way at least the functioning capacity of the opposite organ should be ascertained

Investigation of Infected Hydronephrosis

A kidney which is discharging turbid urine should not be investigated by pyelography The effect of the pyelographic fluid will be to increase the existing infection A persisting purulent efflux from the ureter in question is generally sufficient cause for exposing the kidney by operation

In conclusion I wish to express my indebtedness to the staff of the Royal Free Hospital for the unrestricted opportunities they have always afforded me for making use of the abundance of clinical material which is constantly available in the hospital

SECTION OF NEUROLOGY AND PSYCHOLOGICAL MEDICINE

T GRAINGER STEWART, M.D., F.R.C.P., President

DISCUSSION ON THE NATURE AND TREATMENT OF EPILEPSY

OPENING PAPER

BY

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In opening this discussion upon the subject of epilepsy, I will in the first place submit to you that investigations of recent years have brought no great discoveries to alter fundamentally our conceptions of causes, nature, and treatment of this important class of diseases, nor, indeed, to help very much in the manifold difficulties which beset us in its investigation and treatment

But progress has been made towards a much wider conception of epilepsy and the possibilities of its nature, and also towards bringing into line, both pathologically and clinically, all those conditions in which the manifestations resemble or are identical with those of the malady which we are accustomed to term "idiopathic epilepsy" There has also been some useful work done in the separation of certain clinical types of epilepsy, both with regard to clinical manifestations, prognosis and treatment—such as "pyknolepsy," "myoclonus epilepsy," and "affect epilepsy" Much that was dogmatic and at that time universally accepted in the older writings upon epilepsy is tending to disappear from the more recent descriptions of the disease, and there has been one valuable addition to our therapeutic measures for its treatment

The clinical manifestations of epilepsy described in ancient times and added to by every writer upon the subject are definite, and, like all honestly compiled clinical records, will stand for all time and are incontrovertible, and all that is left for us is in the way of addition The causation, the pathology and the best methods of treating the disease are on the other hand, unsettled, largely unproved, difficult, and highly controversial, and admit of fruitful discussion So that any one of us may legitimately hold any opinion upon these matters which his experience may have led him to, and may justifiably express such ideas with the certainty that no one can entirely contradict him, and with the likelihood of adding something useful to our knowledge of this subject

I shall in the first place invite your discussion upon certain facts bearing upon the pathology of epilepsy The descriptions of former times generally began with

Epilepsy is a disease of the brain I submit to you that in the majority of its instances epilepsy is certainly not a disease of the brain Possibly in all cases it is never truly a disease of the brain Oppenheim has recently described epilepsy as "a toxicopathic condition with cerebral manifestations"

Experimental work has shown that if you wish to produce epilepsy in a susceptible lower animal such as the cat or dog you cannot do so by any mechanical interference or injury to its central nervous system You can only succeed by introducing a convulsant poison into its anatomy—as for example pero oxine lead and many other poisons or you must produce a metabolic derangement in the animal by depriving it of some of its important metabolic organs—for example the thyroid and parathyroid glands It has been said even that the animal is epilepticized by absinthe may have epileptic poisons and those developed within the body as in the intoxications fevers and metabolic diseases such as occur in renal disease, in hepatic disease, in puerperal eclampsia,

and in thyroid and pituitary diseases—are capable of producing manifestations in every way indistinguishable from those of epilepsy And there is further the immensely important fact that it is on record that there is not one of these toxic or metabolic causes of epileptic manifestations that has not been followed by an established recurring epilepsy although the original exciting cause has ceased to exist It is astonishing to find in almost every description of the disease which we are discussing the statement that infantile convulsions are quite distinct from epilepsy, and one is given the reasons for this statement, which never seem to me to be clinically sound One turns over a page or two to find the very proper fact that a great many cases of established epilepsy have their origin in the convulsions of early infancy There can be no stronger argument than this, that infantile convulsions are epileptic in nature and that they should be so regarded and treated I submit to you that the argument may be correctly applied to all the symptomatic convulsions that we meet with, whether these be the result of lead poisoning, uraemia, eclampsia, or infections, since, as I have already stated, *all these several conditions may be the starting* points of established epilepsy From this it follows that epilepsy may have its cause in many different conditions of metabolic dyscrasia

It seems to me that there are so many clinical features of epilepsy which argue strongly in favour of a metabolic disturbance as the cause rather than any condition of cerebral instability, irritability, or habit

1 In the first place there is the periodicity of epilepsy, with its often amazing regularity, the attacks occurring always at night or at regular intervals, or only at the menstrual epochs And, more strikingly, those cases in which batches of fits at long intervals occur, sometimes many in one day—and during the long intervals nothing can induce the patient to have a fit Surely such periodicity is more reasonably explained on the grounds of a metabolic dyscrasia—now present, now absent—than on any hypothesis of cerebral irritability, instability, or functional derangement

2 It is usual for the epileptic woman to have complete immunity from the attacks during pregnancy, and I think that this can only be explained on the grounds of the correction of a faulty metabolism in the mother by that of her foetus On the other hand, epilepsy may occur only during pregnancy, and with repeated pregnancies, and thus form surely belongs to the category of eclampsia and should be attributed to the same anaphylactic cause

3 Status epilepticus is, in my opinion, only explicable on the grounds of an acute toxic process It closely resembles experimental convulsions from the exhibition of poisons, and in some measure also is akin to eclamptic and uraemic convulsions, and is the commonest event by which epilepsy in itself causes death It arises often in a patient who has had no fits for a very long time, and whose cerebral condition may therefore be deemed to be more stable than in the epileptic who has frequent fits Sometimes overexertion is the immediate exciting cause, sometimes the discontinuance of medicinal treatment by the bromides or other remedies Sometimes no exciting cause can be attributed The attacks begin and recur with increasing frequency and severity in spite of the complete abrogation of cerebral function, and death is the common result, notwithstanding any treatment that may be adopted Now I have in several cases of status epilepticus arrested the convulsions, restored the patient to consciousness, and secured adequate nutrition, and yet death has occurred after a few days from cardiac failure with a rising temperature What is most important to remember is that in these cases the autopsy showed the most acute and intense fatty degeneration of the heart muscle, which, so far as I am aware, is the invariable finding in fatal status epilepticus, and which was first pointed out many years ago by Sir Frederick Mott Such fatty degeneration must surely be the result of an acute toxaemia which is at the same time the cause of the external manifestations in status epilepticus

4 It is a remarkable fact that the habitual epileptic person shows immunity from so many of the common diseases which are the plagues of the world—such as the specific fevers of childhood, tuberculosis, pneumonia, and carcinoma And the epileptic shows this immunity common with the subjects of infantilism, or of idiocy, or cerebral diplegia, in all of which diseases we have given for believing that a perversion of the body metabolism is the essential cause And this fact favours the belief that in the epileptic subject metabolic perversion is a fundamentally important matter I suggest that the peculiar bodily and mental make-up which is common to so many habitual epileptic persons is an expression of this same metabolic error, and that the mental deterioration, mental aberration, and terminal dementia are the results upon the brain of this same process, either by way of deprivation of activators or long-continued poisoning The premonitory symptoms of the epileptic seizure, or of a series of epileptic seizures—sometimes in the way of exhilaration, excitement, and restlessness, sometimes expressed in headache, lethargy, and feelings of bodily illness—are such clear indications of some bodily change which culminates in the paroxysm

I have been speaking somewhat easily upon the presence of a metabolic dyscrasia as the cause of epilepsy What actually do we know that is definite fact and not hypothesis upon the nature of the dyscrasia, if such exists? We know that convulsant poisons will produce the usual manifestations of epilepsy, and that some of them—lead and absinthe, for example—are capable of permanently epilepticizing both animals and the human subject We have the observations of the constant leucocytosis, increased at the time of the paroxysm, we have the work of Pugh on the diminished alkalinity of the blood both before and after the fit There is the discovery of choline in the cerebro-spinal fluid of epileptics by Donath, and Mott's experiments showing the potency of choline in producing both convulsant and paralytic phenomena when applied to the surface of the brain There are the parallel phenomena of uraemia, with trimethylamine as the probable convulsing agent, and of eclampsia with an unknown convulsing agent There has been Haig's uric acid theory, with its consequence in purine-free diets and no particular benefit to the patient Kramsky's ammonium carbamate and Ceni's cytotoxins are also largely hypothetical There have been the attempts to desensitize the epileptic patient between his attacks by the injection of his own serum, collected at the time of an attack, for which good results have been claimed Certain followers of Abderhalden in the New World would have us believe that the cause of epilepsy in a fault of one particular endocrine organ has been definitely settled, but I think there is very little evidence in fact or in probability for this view at present

I refer very briefly to the theory of "anaphylactic shock" as the immediate cause of the epileptic attack, which has been raised by Bossard, based upon the leucopenia and the fall in blood pressure which immediately precede the attack, and to the researches of Tinel and Santenoise, who have shown the existence in them patients of alternating periods of sensitiveness and immunity The well known tendency for epileptic fits to disappear for the time being, during acute infections and after the injection of foreign serums and proteins, has suggested that protein therapy might be useful in epilepsy But though it has been tried in many hands the results so far have not been convincing

The toxic effect of the serum of epileptic patients at the time of the attack has been investigated by Pagniez, Mouzon, and Turpin, who found that when such serum was injected either into the heart or into the carotid artery of animals a series of convulsions occurred which lasted some half an hour and which often ended fatally No such convulsions occurred with blood serum from healthy persons nor from persons suffering from uraemia or general paralysis

There have quite recently been some very interesting observations upon calcium metabolism in epilepsy It has been long known that in rare cases of tetany—a disease provedly due to disorder of calcium metabolism—general epileptic seizures with mental symptoms do occur, and doubtless it was some such phenomena as these which I

B stin to the conviction that epilepsy could be a manifestation of thyroid disease

However plausible and however probable the contention that epilepsy is fundamentally a metabolic dyscrasia may be yet it is largely deductive and hypothetical rather than proved by facts It is a good working hypothesis—indeed it is far the best so far as treatment is concerned, and it would be satisfactory were it not for the fact that local disease of the brain may give rise to every phenomenon which has been described in the symptomatology of epilepsy, with the single exception of status epilepticus, and even this exception may be disputed From the simplest attacks of petit mal, all through the local seizures to the most general seizures, all occur commonly enough from gross lesions of the brain

Yet I would draw your especial attention to the remarkable fact that only a small percentage of gross injuries to the cerebral hemispheres are followed by epilepsy—something under 8 per cent of the cases In the great war the statistics showed that some 5 per cent of such cases became epileptic In gross lesions of the cerebrum other than injuries the percentage is higher, but it is still quite low And in cerebral tumours the incidence of epilepsy is by no means commensurate with a cortical location In disseminate sclerosis, where multiple lesions of the hemispheres often involving the cortex are present, how rare epilepsy is Yet in rare cases it is a conspicuous feature of this disease Again, in cerebral vascular lesions the incidence of recurring epilepsy in those who survive is small Even with such lesions as those of general paralysis, meningitis, and encephalitis the incidence of epilepsy is not invariable, and in some forms of encephalitis it is very small The vascular and inflammatory lesions seem more often to lead to epilepsy when occurring in childhood From this irregularity of the incidence of epilepsy in lesions of the brain it would seem that it is not the lesion itself which causes the epilepsy, for in that case every lesion should cause epilepsy But the epilepsy is due to some associated condition not necessarily present with every lesion The ancient attempt at explanation was that certain lesions were "irritative" and others were not Mr Sargent, in his presidential address to the Neurological Section of the Royal Society of Medicine in 1921 supported this conception and sought to explain the occurrence of epilepsy after injury to the brain by local adhesions and other conditions causing tissue unrest, which in his opinion and experience were sometimes benefited by surgical interference This has not been the experience of some of us I myself have never seen any case of traumatic epilepsy benefited by operation, and I submit that Pierce Clark is justified in the rule which he has laid down that all operative measures upon the brain in epilepsy are allowable only when they are indicated by definite physical signs other than the epilepsy" Further, it is most necessary to bear in mind that the so-called organic epilepsy is highly amenable to medicinal treatment Yet medicinal treatment is too often sadly neglected in such cases

The origin of epilepsy in injuries to the head introduces a very real difficulty in the acceptance of metabolic dyscrasia as the fundamental cause of this group of diseases But in some of the traumatic cases it is not only possible but highly probable that the epilepsy has its origin not in the injury to the brain but in the fright and emotional disturbance which accompany the accident In others it is possible that the fits are caused by the local liberation of histogenic convulsant poisons in the damaged region of the brain The commencement of the fits not immediately but some time after the injury fits in with this idea, which seems to me also best to explain the occurrence of fits late in the course of arachnoid haemorrhage and meningitis and those occurring in disseminate sclerosis general paralysis and in the progressive degenerative diseases of the brain generally

Haltenberg in 1919, opposed the theory which has long been held that the phenomena of epilepsy result from abnormal excitation of, and release of energy from, the cortex of the brain, and he brought forward what he termed a new conception of epilepsy," to the effect that cerebral inhibition, and not cerebral excitation, is the initial event in the epileptic attack He instances the very numerous negative phenomena which occur in epileptic seizures and which often constitute the whole of the epileptic attack—such as the sudden loss of consciousness, the coma, the paralysis, the incontinence, and the extensor plantar responses—as signs of arrest of cerebral function, and he explains the convulsion and the other positive events as release phenomena due to the action of lower centres in the absence of cerebral control In support of his contention he brings forward the well known fact that in animals in which the cerebral cortex has been ablated convulsant poisons produce epileptic attacks just as readily as when the cortex is intact In the human subject too one sees convulsion occur when disease has reduced the cerebral cortex to a presumably inexcitable condition Hartenberg affirms that when the cerebral inhibition is slight and brief there is simple loss of consciousness for a moment, as in the common types of petit mal When it is more severe the patient falls in his attack When still more severe the lower centres are released from control and convulsion appears He explains all the phenomena of epilepsy—the auras hallucinations automatism, and local events—on the hypothesis of inhibition He defines epilepsy as a paroxysmal abolition of the higher functions of the brain by arrest and not by excitation" There is much more to be said in favour of this view of inhibition than of the ancient hypothesis of excitation, and it fits in well with the ideas of arterial spasm as the initial anatomic event in epilepsy But, with all respect to Hartenberg, I venture to affirm that his theory is not exactly new, for most of his ideas have been well known to the pupils of Hughlings Jackson for many years past

In the realm of differentiation of varieties of epilepsy Friedmann Heilbronner, Stier, and Adie have during recent years established a type of this malady to which the term 'pyknolepsy" is applied This malady begins suddenly and without cause in healthy children after the age of 4 years The attacks are of the nature of petit mal, and are characterized by the monotony of their course their uniform mildness and their extreme frequency of occurrence (six to one hundred daily) and by their being uninfluenced by any form of treatment impairment and no physical ill health After occurring for a variable number of years the attacks cease and show no tendency to return

I am quite sure that all here present must have seen cases of pyknolepsy In my thirty years' experience of the treatment of epilepsy I have seen many It behoves us, therefore to hold the hope of a good ultimate result in every case of petit mal in childhood where there is no mental impairment and when an ordinary education can be carried on When there is mental impairment in the petit mal of childhood how different is the prognosis' Pyknolepsy is open to criticism The separation of this type of epilepsy is valuable It is a definite type but is it a definite disease? I submit to you that it merges by every gradation into the more common forms of epilepsy Shall we in a case which conforms to the type of pyknolepsy but in which a few major attacks have occurred in the course of years, say that this is not pyknolepsy and alter our prognosis for the worse? I think not

The term myoclonus epilepsy" has come into use for those cases in which simple muscular twitching occurs from time to time quite apart from the attacks and without any other mental or bodily disturbance One of my patients for example will often sit in my consulting chair engaged in animated conversation and exhibit incessant twitchings of all the muscles of his body—now here now there and generally sufficient to cause some visible movement of head or limb, just as if he were the subject of uraemia At other times he will show no such twitchings This condition is interesting as connecting epilepsy with uraemia from a symptomatic point of view I believe that there are but few major epileptics who do not show this symptom at some time or other Myoclonus epilepsy must of course be clearly separated from those cases of Unverricht's myoclonus in which epileptic fits occur for in these the myoclonus is a constant and severe feature and it dominates the clinical picture, while the epileptic fits are occasional only

"Cardiac epilepsy" is a not convenient term for those

epilepsies which are constant in Stokes-Adams's disease and may be seen in congenital heart disease, and I think also in rare instances in any form of heart disease attended with chronic cyanosis, and indeed with cyanosis alone This condition is often dismissed in descriptions of epilepsy as being merely a matter of asphyxial convulsions, but this explanation does not hold good for the majority of the cases, for in Stokes-Adams's disease the epileptic attacks are not, so far as I have observed, associated with any detectable asphyxia Nor are the severe degrees of chronic asphyxia which may be observed in erythræmia and certain other conditions ever associated with epilepsy so far as I am aware The association of epilepsy with cardiac disease and cyanosis is worthy of careful study

The term "affect epilepsy" has been introduced by Bratz and others for a class of cases in which typical epileptic paroxysms are perhaps rare but in which periodic or paroxysmal events of other natures dominate the clinical picture — such as criminality, degenerate tendencies, depression, moroseness, or psychasthenic or hysterical crises These patients are said to be peculiar in that they never develop status epilepticus, nor the mental or physical degeneration often seen with epilepsy They never benefit at all, either from hygienic or medicinal treatment, and they are said always to show a characteristic bodily pallor

I have little to say upon the diagnosis of epilepsy, which is often so easy, but sometimes so difficult as to require much experience, much observation, and the lapse of a considerable time, and always demanding a scrutinous examination of the patient I will refer to one point only, and that is the circumstances of the attack, which so often give an indication in cases of difficulty For example, an hysterical attack never occurs during sleep, nor in surroundings which entail danger or serious discomfort During the war an officer came under my care suffering from attacks which had been repeatedly observed and certified as hysterical attacks He was invited to dine with the parents of his betrothed, but did not arrive, and was found lying upon the drive leading to the house in the pouring rain, soaked to the skin, and with his new dress clothes ruined It is to me inconceivable that an hysterical attack could occur in such circumstances, and in this case which I have cited the subsequent history proved that the attacks were epileptic

The treatment of epilepsy has in the past provided, and still provides, a field for much controversy The value of general hygienic measures in the treatment of epilepsy admits of no dispute, but a thirty years' experience has convinced me that the less one departs from the routine of a normal healthy life and the fewer restrictions one makes the better it is for the patient In the epilepsy of childhood or of adolescent life, for example, I would whenever possible and at any cost continue with a normal course of education, discipline, games, and pleasures, and only make restrictions to safeguard the patient and ensure the peace of mind of the parents To remove a child from school, to forbid education, discipline, and pleasures, and so to produce the spoiledness and boredom and inanition which lack of occupation entails, has, I am sure, a derogatory effect upon the course of epilepsy Occupation is good for every epileptic It is the only thing which does some of them any good How rarely does a fit occur in any epileptic when either mind or body is at a high physiological level of activity!

Apart from general hygienic principles, it does not appear that dietetic treatment has any effect whatever upon the course of epilepsy The exclusion of meat, the purine-free diet, and the salt-free diet have been extensively exploited without bringing any conviction as to their utility That alcohol should be forbidden to the epileptic as an excitant of fits will, I think, be universally admitted but even to this rule I have seen a few notable exceptions in patients beyond middle age

The correction of bodily abnormalities such as dyspepsia and constipation, intestinal stasis, uterine disorders, etc, has been often considered of high importance, and the treatment of such local conditions has been given the first place, while the essential treatment of the epilepsy has been relegated to the background or neglected altogether I do not believe that local bodily troubles are important either as causal factors or as excitants of the attacks, nor have I seen them remedy followed by real improvement, with the single exception of conditions of chronic suppuration within the temporal bone

Thyroid extract has, in the opinion of most authorities been tried and found wanting, and certainly it may cause an increase of the attacks But I am quite sure, notwithstanding, that in children who show microcephaly, or degrees of infantilism and backwardness, or cerebral diplegia associated with epilepsy, and also in those subjects who have a low basic metabolic index, regular and careful thyroid medication sometimes proves a valuable adjunct in the treatment of this disease

The introduction of the malonyl-urea compounds in the form of luminal, gardenal, etc, in the treatment of epilepsy, marks, I think, the most important advance in the medicinal treatment of the disease since the introduction of bromides in 1857 by Sir Charles Locock These remedies are very potent in the prevention of attacks, they are well borne, and they can be advantageously combined with or alternated with the bromides They do not seem to affect the general health adversely, or to lose effect with prolonged administration Though they are powerful drugs they do not require to be used in such doses as to produce unpleasant results I prefer the insoluble compounds as having a slower and more prolonged action I am a follower of my former chief, Sir William Gowers, in the conviction that "apart from general regimen for the maintenance of good health the treatment of epilepsy is purely medicinal" I regret very much that one should find such words as these conspicuous in an authoritative and modern textbook upon this subject "It is a safe rule never to begin the steady use of medicinal remedies until all other hygienic-dietetic plans have been tried" How long is it going to take to try all other hygienic dietetic measures, which, by the way, of themselves have had no epoch making results in the treatment of epilepsy? If I may paraphrase the words which I have quoted, they mean this and nothing else In every incipient case of epilepsy—a correct diagnosis being assumed—never shut the stable door until the horse is stolen Allow every early case of epilepsy to become well established, and never give your patient the benefit of your knowledge that a malady in its early stages is easier cured than when it is advanced I do not believe that the habitual use of medicinal remedies for the relief of epilepsy, in such doses as are used nowadays, has any deleterious effect upon mind or body, though I know well that untreated epilepsy often has that effect

I hold strongly that the remedies which we use to prevent the occurrence of epileptic fits do not act by lowering the excitability of the nervous system Hartenberg's modern theory that the phenomena of epilepsy are not those of cerebral excitation, but are one and all those of cerebral inhibition, depression, and paralysis, supports my position I believe that these drugs act by influencing the metabolic dyscrasia, the toxic process, or whatever it may be which is the fundamental cause of epilepsy This condition of metabolic dyscrasia, this anaphylactic condition, is not constantly present in the epileptic, sometimes it is absent for long periods In the nocturnal epileptic, for example, I deem that it is not present in the day From which it follows that wherever one can anticipate the attack with medicinal remedies one has a better result from their administration I have obtained the best results from giving the remedies in a single dose at night only in nocturnal epilepsy, in the morning only in diurnal epilepsy, and night and morning in epilepsy which occurs both by day and by night I have a preference for luminal as the morning remedy and for bromide at night I never give larger doses than 25 grains of bromide and 1½ grains of luminal, and not often such large doses as these In childhood I use relatively large doses—as, for example, 15 grains of bromide or 1 grain of luminal for a child of 10 years

I wish to say a few words, in conclusion, in relation to the treatment of status epilepticus, which is said to prove fatal in more than half the cases Such a high mortality calls for a scrutiny of the time-honoured treatment for this condition, which may be described as consisting in large doses of bromide and chloral by the rectum, the hypodermic

administration of hyoscine, and the inhalation of chloroform, with little attention to the feeding and watering of the patient

In view of what we know of the pathology of status epilepticus, as an acute toxic process exactly parallel with acute uraemia and eclampsia and causing acute fatty changes in the heart muscle and death from cardiac failure and often associated with hyperpyrexia, the classic treatment does not seem to me adapted to lower the heavy mortality In an experience of a large number of cases I have come to rely upon morphine as by far the best and most rapid means of checking the convulsion I avoid bromide, chloral, and all depressing remedies, and consider that early and careful feeding by nasal tube with easily absorbable and stimulant food, and in severe cases also alcohol, is far the most likely method of treatment to keep the patient alive and to prevent that exhaustion with cardiac failure which ushers in the end The hyperpyrexia when it occurs should be controlled by immersion, which often requires to be prolonged

GENERAL DISCUSSION

Dr ALDREN TURNER (London) said that the Section had listened to an interesting dissertation in support of the view that epilepsy was a metabolic dyscrasia, although it was admitted that the evidence of the altered condition of the blood and fluids of the body in epilepsy was not strong and that this view of the disease was largely hypothetical Some types of epilepsy, however, would appear to come under this definition Reference had been made to what was known as "serial" epilepsy and the status epilepticus as being in all probability attributable to a toxic agency, although it did not wholly explain the well known fact that a common cause of the status was the sudden stoppage of a long continued course of bromide medication Other likely types of epilepsy of metabolic origin were those which developed during or within a brief interval of the exanthemata or other infective disorders Here they had the basis of a true dyscrasia, and to these might be added the epilepsies arising during pregnancy and lactation and also those developing out of a puerperal eclampsia There had been an attempt made to associate the origin of epilepsy with disordered endocrine function but Dr Aldren Turner was sceptical about this relationship It was not unusual to find enlargement of the thyroid gland in young women with epilepsy during early adolescence, but such enlargement was often an entirely normal and physiological condition, while thyroid deficiency had its own "symptomatology," in which epilepsy was rare The relation between epilepsy and tumour of the pituitary body was not uncommon, but it was not clear whether the epilepsy was related directly to the pituitary lesion as such In a case recently observed, the x ray photograph of the skull showed an elongated and rather shallow pituitary fossa, but there was evidence that this alteration was secondary to an old internal hydrocephalus, which appeared to be the more likely contributory cause of the later epilepsy Attempts had been made also to associate the parathyroids with epilepsy, but the whole subject of the influence of endocrine function—normal and abnormal—required fuller investigation in its relation to the disease

Dr Collier had referred to the theory of anaphylactic shock as a cause of epilepsy in some cases There was evidence that a small group of epilepsies might be of this nature and he submitted that the undoubted value of the purine-free diet occasionally in epilepsy might be explained on this hypothesis This variety of epilepsy might be some relation to migraine (a not uncommon association) to the asthmatic type of person and to an idiosyncrasy to certain food substances exhibited by some epileptics Dr Aldren Turner's attitude towards the disease was that epilepsy was a morbid state, characterized by periodic reactions of a very striking kind termed "epileptic fits," and tending in the vast majority of cases as the years passed, towards chronicity and the development of some degree of mental failure and enfeeblement It they accepted the view that the reaction, of which the essential clinical feature was a sudden and temporary loss of consciousness, was the criterion of epilepsy, they had next to ascertain what was the underlying predisposition or constitution which made these reactions possible, and here they were up against the whole problem of epilepsy All recent work on this disease had tended to reduce the number of cases which had been classified heretofore as "idiopathic epilepsy," and had placed them in either the organic, the toxi infective, the psychogenic, or the temperamental group

There was little difference of opinion as to the organic basis of many epilepsies, indeed, some writers went so far as to say that it was impossible to classify epilepsy as a neurosis in view of its chronicity, its severity, the variety of its symptoms in both the somatic and psychical spheres and the evidence of anatomical changes found in the brains of many epileptics It was scarcely necessary to do more than mention there the not infrequent occurrence of epileptic reactions in cases of cerebral tumour cerebral vascular disease, cerebral trauma and the hemiplegias of infancy and early childhood The toxi infective group was quite well known, and would, he suspected, be included in what was a metabolic dyscrasia

To his mind there could be no doubt about the existence of a group having a psychogenic origin It was well known that emotional shock might lead to attacks in no respect differing from those of the so-called genuine epilepsy, and it had been contended that the psychogenic origin of a seizure should not be ignored because in the fit the patient had bitten his tongue or had been incontinent In a young woman recently under treatment in the hospital at Queen Square, the relation between emotional upset and recurring seizures, having the features which they associated with genuine epilepsy, was most marked, for on two separate occasions, in consequence of a severe fright, she developed epileptic attacks of considerable frequency, which gradually passed away The patient, who was of poor mental development, presented a temporary functional paraplegia during the course of treatment in the hospital at Queen Square, the relation between emotional upset and recurring a young Jewess of nervous and excitable temperament, was admitted for a motor disability having the clinical characters of hysterical astasia abasia She gave a history of having had a fit shortly before admission When under treatment in the hospital she had two seizures during sleep, the clinical features being those of a minor form of epilepsy, and in one of these she wetted the bed It was difficult, therefore, to get away from the belief that there was a group of emotional epilepsies in which the reactions conformed to those of epilepsies in which the features were associated with epilepsy, but which were of psychogenic origin It was also well recognized that individual seizures might arise from emotional stress, mental conflict, worry, and anxiety in patients with established epilepsy

It was impossible to read the elaborate thesis of Pierce Clark "On clinical studies in epilepsy" without concluding that there was a temperamental basis of the disease in many epileptics in whom the reactions were an expression of an inherent defect of the personality In consequence of this constitutional defect the epileptic was incapable of social adaptation in a normal way When the adaptations of puberty and adolescence had to be met the temperamental deficiencies were such that failure occurred and the fits were the direct outcome of the inability to subordinate individualistic tendencies to social demands But it should be remembered that the fit itself might be the stumbling block to satisfactory adaptation and a contributory cause of the mental and emotional failure Dr Aldren Turner had known quite a number of young people who before the development or their epilepsy had been regarded as entirely normal, but who owing to the occasional occurrence of a fit and probably also to some extent to the advice given them about restricting their occupation pleasures and recreations, had developed the belief that they were abnormal had become sensitive to criticism and as time passed had tended towards asocial habits One could not help feeling that the fit reactions played a larger part in the development of the epileptic outlook than was sometimes recognized On the other hand, they knew that the prevention or postponement of a fit was not always desirable In some instances it was so definitely a reaction to a difficult situation, which the patient was unable to meet

normally, that its occurrence cleared the air, so to speak, and a feeling of relief was experienced But even if they accepted all this teaching there still remained the mystery of the epileptic fit What was it that could bring about a seizure, which in its most striking features had appealed to popular imagination throughout the ages by the startling picture of its clinical manifestations? They might recall the numerous theories which had been advanced from time to time—inhibition, vaso-constriction, cerebral anaemia, and so on A most interesting observation in this connexion to his mind was the sudden extreme drop in the systolic arterial pressure which had been noticed at the onset of the major epileptic fit, but even here there was uncertainty as to whether the fall in blood pressure was the cause or the effect of the oncoming fit Whatever might be the immediate and direct cause of the fit, the loss of consciousness and the tonic phase of the major seizure were regarded as comparable to a sudden temporary decerebration with liberation of a lower motor mechanism from cortical control, while the clonic stage was due to the return of cortical activity But here again the evidence was speculative and the view expressed largely hypothetical Whatever might be the cause or the mechanism of the epileptic reaction as such, two observations upon the disease were well established The first was that the fit, of whatever type it might be, tended to the expression of some transient mental confusion and interference with memory, or gave rise to a psychical state characterized by automatic action, and the second was that the recurrence of such reactions over long periods of time eventually brought about some blunting of the mental faculties and permanent mental enfeeblement

There could be no doubt, therefore, that established epilepsy was a disease having its roots deep down in the nervous and mental make-up The temperamental and constitutional basis of the disease was mainly inherited, while chronicity and a tendency to mental enfeeblement were essential attributes

Dr TYLOR FOX (Lingfield Colony) spoke about the use of luminal in epilepsy In his experience the drug was not without its drawbacks, even in small doses, and it was very rarely that he gave more than two grains a day He had seen, even with these doses, rather frightening scarlatiniform and morbilliform rashes, and had received complaints of depression and dazed feelings from patients He wished he could confirm the experience of the opener of this discussion that luminal did not lose its effect with prolonged administration He had a great many "fit charts" which showed only too clearly that it was during the first two or three months of giving luminal that the most favourable results were obtained Unless the dose was increased the drug subsequently became less effective and its action erratic, in some cases it was useless, but in a larger number it caused a marked decrease of fits In a minority of cases, and those, curiously enough, often old-standing confirmed epileptics, the results were brilliant He had not been able to satisfy himself that these groups had any features in common that would enable one to pick out the cases most likely to be improved with luminal It was necessary to experiment with each individual case, and to compare the results with those of bromide treatment There were three warnings worth mentioning about luminal

1 The dosage should be kept small, or the drug would share the disrepute that bromide had in certain quarters This was especially important in view of his second warning, which was—

2 To be careful of stopping luminal treatment suddenly A marked increase of fits would almost certainly result

3 To remember that, although in small doses luminal was a safe and almost innocuous drug, it was dangerous in large amounts Consequently, patients should have only a week's supply at a time Within the last week a patient had come to Lingfield Colony with two or three hundred 1½ grain luminal tablets in an unlabelled bottle in his pocket his accumulated reserve from a few months' treatment at a clinic

Dr Collier had interested all very much by his theory of a metabolic dyscrasia as the basis of epilepsy Time did not allow the discussion of this theory in any detail, but Dr Fox had a very clear impression that in the theory allowance had not been made for the enormous importance of mental and emotional factors In the actual cause of the disease, in the first instance, Dr Collier had himself suggested in his paper that many of the traumatic epilepsies were due to fright at the time of trauma, rather than to the physical effects of the trauma itself It seemed doubtful if psychic trauma as a cause of fits harmonized with the theory of a metabolic dyscrasia better than physical trauma But it was in the determination of fits in those who were already epileptics that the emotional factor became so clearly apparent to those who lived in close contact with them When things were going well, on days of pleasurable excitement and new experience, the fits were few, when the environment was distasteful or the patients were bored, or, still more, if they were worried or anxious, the fits were numerous In many cases there was a very simple and obvious correlation between pleasant and unpleasant environmental factors, and the absence or presence of attacks This fact might perhaps be fitted into the metabolic theory by claiming that they now knew that emotions may give rise to marked and sometimes measurable metabolic effects This might be true, but it appeared that the emotion factor was of primary importance in treatment

Dr Fox was not clear that, with their present knowledge, the adoption of the metabolic theory had had any effect upon treatment Medicinal treatment by luminal and bromide still held the field, with general hygiene and occupation as adjuvants But considerations of environment should, he thought, take a prominent place All were familiar, probably, with the picture of the epileptic temperament that Pierce Clark and others had drawn The egocentricity, the hypersensitiveness, the resulting inability to adapt himself to the changing situations of life, were often pretty obvious in the epileptic patient, but by no means always present Pierce Clark claimed that they were in evidence before the fits commenced, and indeed actually led directly up to the attacks, which were reactions away from an intolerable environment This theory seemed to many of them fantastic, and was certainly not applicable to epileptics generally Dr Fox ventured to suggest that the origin of the epileptic temperament might be looked for elsewhere Such a temperament might be the direct result of the patient being forced to live in ordinary society One could picture the life and surroundings of a child liable to epileptic fits He was excluded from much that his fellows shared—from Sunday school, from entertainments, perhaps from school They had ample evidence that he was almost always unpopular, being viewed by his companions with suspicion, fear, and often dislike If his parents were careful people he would find that he was constantly being watched to avoid accidents, and might not be allowed out alone Misjudged sympathy on account of his complaint and on account of these limitations to his activities too often led to the patient getting his own way at home He discovered that violent tempers did not bring punishment in his case, and the discovery was disastrous for him Thus, he was continually being reminded that he was not as other boys, that he could not do as others did, but that many of the ordinary penalties of life did not apply to him, and that for him and for him alone bad temper, obstinacy, and crying were short cuts to the attainment of desire Could there be a more effective way of producing those very characteristics—egocentricity, hypersensitiveness, and consequent unusual and asocial conduct—that they associated with epilepsy? Could there be a more effective way of making his life unhappy and therefore of encouraging fits and thus creating a vicious circle? Herein lay, Dr Fox believed, the case for colony treatment, for in a colony the epileptic child saw himself as a normal member of the community in which he lived There were no activities open to the others that were not open to him, he received no special consideration, and was subjected to no special limitations He was happier, and therefore he was better, and for this reason over 20 per cent of children at Lingfield had their fits Hygiene, dietary, and medicine might help but the mental effect of an environment in which the patient was not regarded as abnormal was the most important

factor It this was true it followed naturally that institutional treatment was most likely to be of value if started early, and Dr Fox therefore concluded by pleading for more residential schools for epileptic children, especially in the early stages of the disease Adequate treatment, at any rate for the great majority of epileptics meant treatment away from home, and usually with other epileptics Moreover—and this point would appeal to all those who were parents—he thought that it was very rarely fair to the other children for the epileptic brother or sister to live at home

Dr ALAN MCDOUGALL (David Lewis Colony, Cheshire) said that in setting out to treat a patient who had developed epilepsy the foremost consideration should be that in most cases the fits would persist throughout life The physician should endeavour to prevent the patient from acquiring those unpleasant characteristics usually found in the chronic epileptic Such characteristics were less the result of the epilepsy than of the treatment of epilepsy, colony patients lost them Every child developing epilepsy should be removed immediately to a residential epileptic school The sight of another patient in the colony having a fit did not render an epileptic any more likely to have a seizure himself Familiarity with the sight of fits rather encouraged the epileptic—who is unconscious during fits—to consider himself much less afflicted than his neighbours

Dr STANFORD READ (London) in dealing with psychogenic aspects of epilepsy, said that their conception of epilepsy had been narrowed for three reasons First, because they had mainly looked upon it as a disease entity instead of a symptom and end result of some morbid process Secondly because the phenomena of the convulsion itself had been mainly the centre of interest, with consequent neglect of the study of the individual in the interparoxysmal period Thirdly because until lately the possibility of a psychic factor had not been adequately taken into account It seemed to him that if they modified and extended their line of research, they might form their conception of epilepsy on lines which would be more fruitful Though they distinguished symptomatic epilepsy from so-called idiopathic epilepsy they knew that this latter term was purely a cloak for their ignorance, and that the condition must be symptomatic only in so far as the pathological basis was obscure or unknown They knew that a multiplicity of causes might originate a similar convulsive attack, so that they should speak of 'the epilepsies,' rather than of "epilepsy" Whatever morbid process might be present it was evident that the resulting symptom evinced itself through the central nervous system If they looked upon the nervous system in a simple way as a mass of interrelated reflexes with any number of incoming stimuli and correspondingly manifold outward activities they could see, as White and Jelliffe had pointed out that a 'healthy' organism is able by reason of its nervous mechanism, so to distribute the energy received as to bring about a series of harmoniously adjusted activities' If hand in hand with such a conception they viewed their nervous system as having certain evolutionary levels—physico-chemical, physiological, and psychological—they might well surmise that at any of them there might be through disease some block in energy distribution and discharge with resulting pent-up tension, which finally, like an avalanche, found its outlet in a convulsive attack It was true that in the psychological sphere they could give no adequate explanation why the organism should adopt this particular form of discharge, for other methods of sudden outlet were recognized as a result of accumulation of affective tension They had here to adopt the unsatisfactory device of hypothecating some special predisposition It helped them to some extent out of their difficulty if they adopted Carver's view that in the epileptic syndrome there were always many factors—physiological, anatomical, and psychological—and so, supposing the last named to be the level at which the main lesion existed, there would be coexisting abnormalities elsewhere, however slight, which would supposedly determine this particular reaction Many psychopathologists would therefore base the pathology of some epileptic attacks upon the theory of mental conflict with consequent repression, dissociation, and later periodic energic explosions Apart from Jacksonian epilepsy, the study of the fit itself, notwithstanding the simple rules still laid down in textbooks, could not with any certainty distinguish for them the fit due to organic disease and that due to psychogenic causes During the late war this had been certainly clinically demonstrated Hurst concluded from his experience "that the vast majority, if not all, cases of war epilepsy which have arisen during the war with men who never had fits before, are functional"

Thus led them, then, to the importance of investigating the patient himself apart from the seizure, and they had ample evidence that in the majority of cases if not in all, there was a psychic imbalance of a special nature, and the tendency of an epileptic to fugues, automatisms, and psychotic symptoms confirmed this That this abnormal psychic element was secondary and something apart from the disease itself could not be accepted for a moment Every neurologist was conversant with the painstaking work of Pierce Clark, who looked upon the epileptic fit as a psycho biological reaction which acted as a refuge from an intolerable adjustment demand, and also constituted a regression to a pleasurable primitive state It was often not realized sufficiently that the epochs of special physiological stress which might be provocative of epilepsy were also commonly periods of psychic stress, and that this latter might be of greater import Those who were untrained in psychological methods would, in taking a case history, probably elicit no such element and therefore deny its existence, or, if it was noted, the relation of cause and effect was not given its correct value Though it was recognized that many of their war epileptics became so mainly from psychogenic causes, there had been little intensive study of the mechanisms at play Some analytic investigations had been published by Sadger and Stekel, the latter stating that he had had excellent therapeutic results Stekel saw in the epileptic a strong criminality which his consciousness rejected as unbearable Many of the war cases he would trace to the development of all the wild instincts which active service naturally tended to bring about The relation of violence and criminality to epilepsy was interesting, and Sullivan of Broadmoor pointed out that epileptic crimes were essentially those of violence and homicide These facts were brought forward as further evidence of a psychic instability which had in all probability an intimate relationship with the factors productive of much epilepsy In this connexion they should bear in mind certain anomalous conditions, such as the psychasthenic convulsions of Oppenheim, narcolepsy, and certain types of petit mal, where an undoubted psychic element often entered In a case of petit mal recently treated, Dr Stanford Read found that the unconscious attacks were always stimulated by some idea unpleasant to the conscious personality They, indeed, seemed to constitute a refuge from reality There was no time to give much illustrative case material, but he spoke of one recently under his care A lady, aged 34 years was sent to him for examination and report, having had epileptic fits regularly every month for four years Her history was as follows She had served as a nurse doing strenuous work overseas during the war, returning to England in November, 1918 She was then quite well, and remained so until October, 1919, when, during the night, she had a nightmare, and was subsequently told that she had been making choking noises as if suffocating She felt herself tired as if bruised and found that she had wetted her bed and bitten her tongue in subsequent attacks she sometimes defaecated In hospital she felt quite well, but fits recurred which were pronounced to be true epilepsy by two medical officers who had witnessed them Ever since then she had had attacks once a month, but except for some delayed sleep in the intervals she felt quite well On inquiry further points were elicited The fits always occurred when in bed at night They appeared either just before or just after the menstrual period and were accompanied by special dreams which were sometimes of the anxiety type The nightmare which she had the same night as the initial fit was of being raped by

a German, in fact, it was a partial replica of an actual experience she had gone through about fifteen months previously On the evening before this dream she had been discussing German atrocities with friends Still further investigation revealed another source of mental stress and conflict She had always been specially attached to her father—the more so since her mother died when the patient was 13 years old—but in later years his affection for her seemed to wane, and, on hearing that he was going to remarry, she left home secretly, feeling great resentment against her father and against the woman who was going to supplant her She had not seen or heard from her father since With such a history one was justified in thinking that emotional conflict might have much if not everything to do with her convulsive attacks, though they were pronounced to be of a true epileptic character Psychotherapy had so far confirmed the supposition, the fits soon became less and altered somewhat in character, and none had now appeared for over seven months Specially interesting dreams, however, have more than once seemed to have been equivalents It was not Dr Stanford Read's intention to make wide-sweeping and dogmatic conclusions from such a case, but he considered that he was well within his rights scientifically when he suggested that if more cases of epilepsy to which no patent organic cause could be assigned were investigated psychologically, there would be more often found emotional conflicts which might be the main pathological factor, or at any rate so full of stress that their removal would materially relieve tension and so tend to lessen the necessity for sudden neural discharge They must look upon the individual as an integrated organism, and where pathology was obscure no avenue of approach should be neglected

Dr D N HARDCASTLE (London) said that if they adopted the theory of cause and effect, then the manifestations of epilepsy must be regarded as a response to either an intrinsic or an extrinsic stimulus, the incidence being inversely proportional to the stability of the individual This led to the consideration of (1) the reaction, (2) the individual predisposing factor, (3) the stimulus

(1) The essential reaction lay in a complete break in the continuity of consciousness This might represent the entire reaction, as in petit mal It might be followed by a generalized tonic muscular contraction of short duration giving place to clonic contractions (grand mal), or there might be psychic manifestations (epileptic equivalents, autonomic states, etc) The late Dr Rivers, in his book *Instinct and Unconscious*, had endeavoured to show that consciousness was a late phylogenetic development superimposed on the primitive unconscious, blending with some aspects and repressing others, tending towards an integral whole In the same manner Dr Head and his colleagues had demonstrated the more recently developed epicritic sensation, with cortical differentiation, superimposed upon the older protopathic sensation with thalamic affective value In the same way also the motor response, capable of infinite variation, dependent on cortical development, was superimposed upon the older thalamic and spinal reflexes of mass reaction type Further, they knew that there was a definite link between epicritic sensation and the cortex, likewise consciousness was dependent upon the integrity of the greater part of the cortex From this they gathered that there must be a close intimacy between sensation and consciousness and he maintained that consciousness was as much dependent on the existence and integrity of intrinsic and extrinsic receptors as was any motor activity Tredgold gave sense deprivation as one of the causes of mental deficiency This essential break in the continuity of consciousness might be looked upon as a regression to this pre-psychological instinctive level (*a*) Petit mal, a condition in which that was the entire reaction and a return was made to consciousness at the same level at which it was broken (*b*) Grand mal, where the break was of sufficient duration to allow of a motor response which was an undifferentiated protopathic reaction at the thalamic or spinal levels (A similar condition could be artificially produced by continued nociceptive stimulus to the decerebrate frog) (*c*) Epileptic automatism and other psychic manifestations, in which the break in the continuity of consciousness again occurred a return was made at a lower dissociated level, which really a return to a more primitive form of conreaction in accordance with the ontogenetic recapitula of the phylogenetic development The "aura" might regarded as a projection or extension of sensation in endeavour not to lose consciousness From this sketch of the epileptic reaction it would appear that cleavage occurred at the junction of the physiological psychological levels, and that the reaction might be expected in individuals where the superstructure, which might designated by the term "epicritic," had not been established and integrated with lower instinctive levels compare epilepsy with hysteria, one saw that in epilep the loss of consciousness was absolute, while in hysteria might be recalled under hypnosis The motor activ were "purposeless" in epilepsy, while in hysteria meaning might be read into them by one who was intimate conversant with the psychological make-up of the individual In the autonomic states, except for the initial regression the pre-psychological level, there was little difference, epileptic returned again to the early fixation point, whil the hysteric only regressed to this point In the epileptic however, the fixation points tended to be of the narcissistic type, while the hysterics were of a later variety

(2) As much had been written on the epileptic personality, he would give only a very rough outline of the principal points (*a*) Family history This might not show epileptic traits in more than about 30 per cent, but it would always reveal some neurotic or frankly mentally defective ones Tredgold had advanced the theory that epilepsy and the psychoneuroses were the manifestations of a functional mental defect before there were any signs of gross cerebral deficiency From his data Burt concluded that the effect of heredity was rarely direct, it was usually indirect—general not specific A predisposition to nervous or mental disease was inherited, the resulting specific disease depending on external causes—it was environmental in the broadest sense of the word (*b*) Conduct The essential characteristics of the epileptic were marked from the earliest age The baby or child had attacks of meaningless uncontrollable screaming, was asocial and refused to co-operate in childish play, responded badly to discipline, and resorted to "tantrums" as a solution of many early difficulties Adolescence was a difficult period for the potential epileptic, and he often failed to meet the demand for new adaptations which it entailed, and they found the epileptic characteristics appearing perhaps for the first time at this important juncture in the individual's history They noticed—restriction of ideas and narrowing of the field of interest concentric to the patient, stereotyped vocabulary and mode of expression, periodic alteration of behaviour and mood, taciturnity and withdrawal into self, alternating with over-friendliness and desire for company, and a gradual reduction of intellectual capacity progressing towards dementia The sex characteristics of the epileptic were worthy of note Sex desires tended to be stronger and more imperious and to overflow the normal outlet—perverse activities, masturbation, and other auto-erotic activities, these bore a close relation to the fit and might occur in crises as equivalents for the attack When intellectual impairment had advanced to a degree which in other conditions still allowed of normal life, the epileptic was auto erotic Jung, in his association reaction tests on epileptics, found that they approximated in many ways to imbeciles, there was a considerable delay in response, frequent repetition of the stimulus word, perseveration of ideas, and the reactions were more often intrinsic than extrinsic Scripture had remarked on the emotionless monotony of the epileptic voice

(3) Stimulus If a nociceptive stimulus was applied to a limb of a decerebrate frog it would produce a spinal reflex movement designed to remove the limb from the irritator if the stimulus was continually repeated it would be found that the reflex tended to become more diffuse and to spread to the stimulated limb, until finally there was a differentiated mass reaction involving all the levels of the cord It might be concluded that this reaction was the final response to free the organism from this persistent stimulus which threatened its integrity With this

example of an organic stimulus in the decerebrate organism they might then turn to the psychological stimulus in the epileptic and look for a parallel If they investigated the psychic life of the epileptic, many examples would be found Dr Hardcastle quoted a case cited by Pierce Clark of a boy who stole some fruit on being reprimanded and ordered to make reparation he became completely introverted and took refuge in a fit from the difficulties he could not bring himself to face—a simple situation in itself to the normal individual, but to the egocentric narcissist who had not succeeded in integrating himself with his environment a very difficult problem, and one which could not be solved except by shattering his "complete narcissistic entity", this could not be done and so a fit was the solution With these two examples of the pure organic and the pure psychic causes he considered the other causes of chemical toxic and organic changes could be looked upon as intermediate in their action A diminution of cortical activity and power to accommodate to an environment or increasing difficulty would be sufficient to bring about an epileptic response in certain predisposed persons who otherwise would pass as normal It was necessary to try to bring into line the traumatic group head wounds in particular In a recent issue of the *Journal of Neurology and Psychopathology* Aldren Turner in making an analysis of gunshot wounds of the head found two types of fit resulting—focal epilepsy coming on within a short time of the initial injury and generalized epilepsy coming on at a later period In the second group he found operative treatment of little avail and that a large percentage had a neurotic family history These must have been potential epileptics whose stability had been broken down by injury and Dr Hardcastle thought the same condition would undoubtedly apply to the other organic conditions of the cortex which produced fits, as it certainly was his experience that not every case of general paralysis or the insane arteriosclerosis etc, developed fit but only a small percentage As regards the treatment of epilepsy Pierce Clark (*Brain* vol 43) had insisted upon a line of treatment which was based upon as full a knowledge of the patient's life and environment as possible Colony treatment if contemplated should be started as early as possible and be left to be a last resort when mental deficiency had developed Treatment must be based upon the earlier it could be under taken the greater the hope of recovery He felt that it should begin before the fits appeared or were firmly established The child whose family showed neuropathic tendencies who was difficult from the first having bouts of unprovoked screaming and perhaps infantile convulsion and later was not sociable, refusing to take his part in childish games, etc should most certainly be looked upon as a potential epileptic The problem that lay before them was to promote sublimation, leading the child's interest away from itself on to its surroundings, endeavouring to get its consciousness integrated with its environment changing its attitude of aloofness to one of intimacy If this could not be accomplished the environment must be modified until this had been done and then by gradual hardening of the environmental conditions the child should return to the conditions of everyday life If fits had occurred then difficulties would tend to be met with fits rather than with an attempt at adaptation this would necessitate an environment devoid of difficulties and from this point a very gradual stepping up of the environmental tress until some form of adaptation had materialized Wiersma maintained much the same idea when he advocated the giving of bromide which he said increased the power of impercep tion thus keeping the patient in touch with reality More recently some psychologists had approached the problem of epilepsy from the Freudian aspect and had obtained some most useful information by means of psycho analytic technique, for dealing with these patients Pierce Clark in his writings on the epileptic had shown by the use of this technique modified at times to suit the occasion and the patient that difficulties could be revealed and overcome whereby environmental adaptation was facilitated Pank at the last International Psycho Analytic Congress stressed the importance of the birth trauma as a causative factor in the psychoneuroses and also alluded to an abbreviated psycho analytic technique in dealing with this early fixation It was at this ontogenetic epoch that their interest was specially centred, for it was at birth that the great change in sensation took place which was responsible for the development of consciousness He felt very strongly that should the claims of Rank materialize another therapeutic measure of great value would be added to their armaments

Dr Worster Drought (London) stated that so far as "idiopathic" epilepsy was concerned he agreed with Dr Collier that the probable basis of the condition was some form of constitutional metabolic disturbance Other factors not previously mentioned that also suggested this view were the frequent presence of a positive Widal haemoclasic test for hepatic insufficiency and the "desregulatio ammoniaci" of Danish observers, demonstrated by means of daily determinations of the ammonia nitrogen and hydrogen-ion content of the urine It was to be remembered, however, that Bratz had described clefts of the cornu Ammonis in 50 per cent of epileptics thus confirming Meynert's original observation although if accepted it was quite possible that such sclerosis was an effect or metabolic disturbance

With regard to the theory that the epileptic state was a form or idiosyncrasy to some or other protein substance normally present in food and that the seizure was consequently an anaphylactic manifestation, Dr Worster-Drought had little belief in such a conception In conjunction with Dr Hardcastle he had carried out a series of cutaneous reactions with extracts of the common foodstuffs—various meats fish poultry, cereals vegetables, and beverages Forty cases of epilepsy were each tested with the entire series of food extracts In not a single case could a definitely positive result be claimed, quite often, indeed the control fluid yielded the largest wheal Two patients only gave a doubtful positive reaction—one to white fish and another to mutton The exclusion of these substances from their respective diets made no difference in the average frequency of the epileptic attacks It had been thought that epileptics suffering from some digestive disturbance were more likely to show a food substance idiosyncrasy than others among the forty cases tested, at least eight complained of dyspeptic symptoms and these showed equally negative reactions It was true that the actual intensity of the cutaneous reaction varied in different patients but this was entirely due to the fact that those individuals with some degree of vasomotor instability exhibited a more pronounced reaction—even to the extent of dermatographism in some—to slight cutaneous traumata

Dr Collier's experience—that he had never seen a case of traumatic epilepsy benefited by operation—surprised him (Dr Worster Drought) since he had met with several patients not only benefited but apparently cured by operation He cited as examples two cases which he had been able to keep under observation

Case 1—W aged 25 while a prisoner of war in the hands of the German was struck on the head with the butt-end of a rifle in February 1917 and rendered unconscious for four or five hours About a week later he had a fit there being no previous history of epilepsy He was repatriated in December 1918 and came under Dr Worster Drought's care The fits recurred at intervals varying from one to eight weeks The attacks were then both nocturnal and diurnal there was no aura and the patient had often his tongue and delacerated during the attack A typical epileptic seizure accompanied by tertor cyanosis and frothing, was personally observed Physical examination revealed no abnormality beyond a small car and a subjacent slight depression in the bone of the right posterior parietal region 1 inch to the right of the mid line and 2 inches posterior to the sagittal suture examination showed a slight prominence of the inner table in the region mentioned In March 1919 Mr Cecil Pownall trephined and removed the piece of bone which appeared to be thickened The dura was seen to pulsate although slight pulsation could be felt Immediately on incising the dura there escaped about two drachms of yellow serous fluid and a saucer like depression in the cortical surface apparently contained the fluid was seen in the cortex under Dr Worster Drought had had this case under observation—over five years—and no further fit had occurred

Case 2—A H aged 28 received a blow during a quarrel and fell striking his head on the junction of two tram lines Following

this he was more or less unconscious for about eight days, and made an apparent though slow recovery In February, 1922—three years after the accident—his first attack occurred, there being no previous history of epilepsy At first the fits were entirely nocturnal, and recurred in groups of from two to six Before January, 1922, however, they had also occurred during the day time, had become more frequent and severe, and at times were followed by "furor" There was usually no warning of the attack but occasionally a visual aura in the form of coloured revolving lights had occurred During the attack the patient had frequently bitten his tongue (scars visible), urinated and bruised himself in falling Physical examination showed a scar in the occipital region, 1 inch to the right of the mid line and 1½ inches above the inion Beyond nystagmoid jerkings on lateral deviation of the eyes to the right, and some nerve deafness of the right ear, there were no further physical signs X rays revealed nothing of a definite nature

In February, 1922, Sir Charles Ballance trephined the region of the scar When the piece of bone was removed, the dura was seen *to be under tension and at once bulged into the* opening, on incision the aura was found to be adherent to the underlying cortex The trephine opening was enlarged transversely and the piece of dura was removed Following the operation the patient was subacutely maniacal for eight days, but afterwards made a good recovery Dr Worster-Drought had had him under observation since that time—two and a half years—and no fit whatever had occurred He had returned to work and was in excellent health

With regard to the treatment of "idiopathic" epilepsy, Dr Worster-Drought, in conjunction with Dr H C Beedle, had analysed the results of different forms of treatment in eighty cases attending the West End Hospital for Nervous Diseases

1 Simple bromide (sodium or potassium bromide 10 to 15 grams thrice daily) of 10 cases treated, 1 showed great improvement, 5 moderate improvement, 3 were unaffected, and 1 became worse

2 Sodium bromide (15 grains) with borax (7 grains) and liquor arsenicalis (3 to 4 minims) of 17 cases treated, all showed improvement in diminished frequency and severity of the attacks In 6 cases *the benefit was remarkable one case in which attacks had* occurred with an average frequency of four a month experienced only five attacks over a period of two and a half years

3 Colloidal palladium (pallamine) 1 c.cm injected intravenously twice weekly, twelve to twenty four injections constituting a course of 13 cases treated, 5 showed definite improvement, 2 slight improvement, while 6 were unaffected during the course of treatment

4 Luminal, 1½ grains at night in nocturnal cases, morning in diurnal, and both night and morning when the fits occurred both day and night of 20 cases treated, 17 showed definite improvement, while 3 deteriorated of the cases that improved, in 4 the result was most striking while in 1 case minor attacks replaced major

5 Luminal (1½ grains) combined with sodium bromide (10 to 15 grains) and borax (5 to 7 grains) of 10 cases treated in all excepting one the improvement was most pronounced In 3 cases attacks had been entirely absent for over a year and in another only occasional minor attacks have replaced frequent major attacks

6 Diallocetin (1½ grains twice daily) of 9 cases treated only one —a case of nocturnal epilepsy—had shown any *improvement*

Dr Worster-Drought considered the best medicinal treatment on which to start a given case of epilepsy was a mixture containing sodium bromide (15 grains), borax (7 grains), and liquor arsenicalis (3 minims) given morning and evening, and increasing to three times daily if necessary If a satisfactory result *was not then obtained, one of the* diurnal doses of the mixture should be replaced by luminal (1½ grains) He agreed with Dr Tylor Fox that the dosage of luminal should be small—not more than 1½ grains per dose nor more than 4½ grains per day If luminal failed at this dosage, no better result could be expected from larger doses

The President (Dr GRAINGER STEWART) considered that the cause of epilepsy might eventually be found to concern the vegetative nervous system He described a case of epilepsy in a patient of the vagotonic type, with greasy, blotchy *skin and offensive* sweating, in whom the administration of tincture of belladonna (20 minims thrice daily) led to a cessation of the fits and remarkable improvement in the general health The available evidence rather tended to show that the vegetative nervous system might operate from either the sympathetic or the parasympathetic side

Dr W A POTTS (Birmingham) commented upon the fact that there seemed to be considerable unanimity of opinion that either psychological or institutional treatment at an early stage of the disease was very valuable It was important, therefore, that one or other of these treatments should be arranged at the beginning, according to the circumstances of the case As a rule in physical disorder, even where there was a large psychological element, it was generally better to carry out all the physical treatment first, psychological treatment, if then still necessary, might be given later In epilepsy, however, psychological treatment should be instituted at once Dr Potts had seen several cases of epilepsy in which there was an important psychological basis, psychological treatment, however, failed, partly because the patient was not willing to submit to treatment sufficiently long, but still more because such a long period had elapsed since the onset of the disorder

Dr HILDRED CARLILL (London) drew attention to the danger rules which should be given to the relatives of an epileptic patient There must be no locked lavatory or bathroom doors, no delay in crossing crowded streets, no swimming without careful precautions, no walking on the edge of platforms, etc Epilepsy might not kill, but an attack in a place of danger might be fatal Great care, he considered, was needed to make an accurate diagnosis It was the family, not the doctor, who usually witnessed the attacks In the crowded out-patient departments of London some patients at least spent a considerable portion of their lives labelled as epilepsy and saturated with "repeat" doses of bromide

Dr D E CORE (Manchester) raised the question of the frequency of death occurring in nocturnal epilepsy from the patient in the post-epileptic state turning over on to his face and being suffocated against the pillow

Dr SCHARFF (Singapore) expressed the view that institutional treatment caused a stigma to be applied to the patient, and that a better final result might be achieved at home With 30 grains of bromide a day, he considered, the patient's health tended to deteriorate

Memoranda:

MEDICAL, SURGICAL, OBSTETRICAL.

A CONGENITAL SACRO COCCYGEAL TUMOUR

THE photograph reproduced herewith shows a child with a congenital cystic tumour of the sacro coccygeal region The child was born at full time of a multiparous woman, and was the second of twins There were no obstetric complications, the presentation in this case was a breech, and a vertex in the case of the first child The child was otherwise of normal development and weighed 5½ lb at birth The tumour had well defined edges, was fluctuant, and translucent to light Rectal examination was negative An x-ray photograph failed to reveal any abnormality in the vertebral column



The tumour was readily removed by an elliptical incision around the base, a small degree of undercutting of the skin sufficed to oppose the skin edges The tumour had no deep connexions, and arose in the post-anal gut region There were no complications and the child progressed satisfactorily

A *section of the* cyst wall showed the presence in it of both striped and unstriped muscle tissue and also fibrous tissue There was a mass of cartilage the size of a pea in one part of the wall The lining was indefinite—probably obliterated by the pressure of the fluid content, which were of a clear serous nature The tumour was an unusually large sacral hygroma, most probably a meningocele which had been cut off *in utero* by the continued growth of the vertebral arch

I am indebted to Mr C P G Wakeley for permission to publish this record

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LARGE FIBROMYOMA OF UTERUS

THE size of this tumour, its difficulty in diagnosis, and the complications met with at operation are sufficient to justify recording it

The patient a Yoruba woman aged about 30 had had a miscarriage when three months pregnant eight years before admission to hospital She had had no pregnancy before or since that mishap but had menstruated regularly for five days every month since that time She dates the beginning of her tumour to the miscarriage but the growth was not very noticeable until three or four years later when there was some vaginal obstruction This was treated by a native medicine man who introduced so strong an irritant into the vagina that it was almost occluded a probe passing only with difficulty During the last four years growth had been regular and rapid until the condition shown in the first photograph (Fig 1) was attained The mass was freely movable above but attached below it was dull to percussion rather soft and boggy to the touch and without fluctuation No vaginal examination could be made I diagnosed it as a large ovarian dermoid with semi-solid contents



FIG 1.

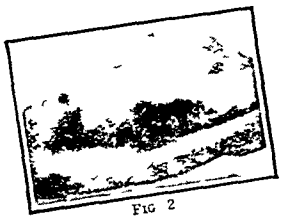


FIG 2

On August 19th she was given chloroform and with the assistance of Dr Clive Sharp and Dr A Faderin I removed a mass weighing 33 lb To deliver this mass from the abdomen which it appeared to fill completely an incision was made from an inch below the costal margin to the pubes just to the left of the middle line It was difficult to determine exactly what relations the tumour had even when the abdomen was open it appeared to arise in the right broad ligament Having drawn the tumour forward it was found to have raised the peritoneum off the posterior wall of the abdomen and the appendix and caecum were stretched out on its surface In separating these there was considerable haemorrhage and the right ureter also stretched over the tumour was caught in artery forceps and half divided before it was recognized The artery forceps was retained until the ureter had been sutured

After completing the removal of the tumour it was found that the uterus remained almost intact the tumour having been attached to its right side and having pushed it into the pelvis The tumour was a large fibromyoma but much softer than usual and almost semi-fluid there was no infection or necrobiotic change A drain through a stab wound in the flank was left in down to the ureter this was removed in forty-eight hours and both wounds healed well The stitches were taken out on the eighth day The second photograph (Fig 2) shows the condition three weeks after operation

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RUPTURE OF VENTRICLE

THE following case is of interest in connexion with others of the same nature that have recently been published in the BRITISH MEDICAL JOURNAL

A man aged 62 was walking along the street when he was suddenly seized by acute pain in the chest which doubled him up He fell down and when he was reached by the bystanders he was already dead The only history of illness that could be obtained was an account of prostatectomy two years previously and also of inflamed varicose vein

The *post mortem* examination showed a strong and well nourished body with numerous moles On opening the pericardium about 1/4 pint of fluid blood flowed out and a large clot surrounded the heart The myocardium was pale and degenerate and there was a large tear (about one third of an inch) in the wall of the left ventricle The mouth of the right coronary artery was blocked by a deposit of calcium about a quarter of an inch back and confined to the upper half of the lumen There were calcium deposits along the course of both coronary arteries and at the root of the aorta which latter also showed atheromatous plaques along its whole length There was excessive lymphoid tissue at the base of the tongue and in the tonsil and the surfaces of the kidneys were rather granular but this did not affect the parenchyma Otherwise the findings were not abnormal for a man of this age

Is it possible that a minute clot from the thrombosed varicose veins had lodged as an infarct in the already degenerated heart muscle and caused the fatality?

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THREE SIMPLE DIET TABLES

IN the JOURNAL of April 21st 1923 (p 679) was published a diet table which I had used in both hospital and private practice for nearly twelve months Since then it has been revised and recast in the form printed below and two other diets have been added So many inquiries have been made for this dietary that I venture to regard the matter as one of general interest The diets are weighed out with a Chatillon scale as before the quantities of protein fat and carbohydrate have been brought to the nearest convenient fraction

1 DIET SCALE *(for finding up any diet)*

One ounce (or 30 grams) carbohydrate or protein yields 120 calories
One ounce (or 30 grams) fat yields 270 calories
Proteins contain 15.5 per cent nitrogen

One ounce of carbohydrate is contained in—

1 oz sugar
1 oz wheat flour or grape nuts (contain 1/7 oz protein)
1½ oz dry oat meal (contain 1 oz protein 1 10 oz fat)
1 pint of milk (contain 2 3 oz protein 2 3 oz fat)
1 pints cream (contain 1 oz protein 6 oz fat rich cream contains 12 oz fat)
5 oz potatoes (contain 1 oz protein)
5 oz butter beans (contain 1 3 oz protein)
2 oz boiled rice or macaroni
1 oz bread or toast (contain 1 oz protein)
1 oz marmalade
10 oz strawberries onions oranges pineapple gooseberries and raspberries
6 oz apples currants pears cherries parsnips grapes green peas
2 oz plums bananas prunes French beans and marrow
3 oz grape fruit
3 oz ripe olives (contain 1 2 oz protein 7 oz fat)
3 oz mixed nuts (contain 1 oz protein 7 oz fat)
10 oz filbert nuts (contain 1 oz protein 7 oz fat)
10 oz tomatoes or radishes
20 oz lettuce (contain 1 2 oz protein)
1 pint beer
1 pint stout

Three cooked spinach celery and cabbage contain no carbohydrates the carbohydrate in soya bean or mushrooms is not assimilated.

One ounce of protein is contained in—

10 oz mussels uncooked bacon contains 6 oz fat)
6 oz ordinary uncooked bacon contains 3 oz fat)
5 oz lean smoked ham (contains 1/2 oz fat)
5 oz lean uncooked beef mutton or lamb (contains 1 oz fat)
5 oz roasted lean beef or leg of mutton (contains 1 oz fat)
4 oz roasted beef contains 2 oz fat)
6½ oz corned beef contains 3 oz fat)
5 oz fresh fowl (contains 1 oz fat)
5 oz chicken fresh grouse partridge or pheasant (contains 1/10 oz fat)
5 oz chicken fresh hare rabbit or whiting
5 oz boiled cod haddock sole or salmon (contains 3 oz fat)
5 oz herring (contains 1 3 oz fat)
6 oz lobsters or crabs
16 oz oysters contain 1 oz carbohydrate)
7 average sardines (contain 1 oz fat)
2 large or 3 small hen eggs (contain 1 oz fat)
4 oz American Cheddar or Cheshire cheese contains 1 oz fat)
12 Malari biscuits (Callard) (contain 1/7 oz fat)

One ounce of fat is contained in—

1 oz fresh butter
1 oz oleo margarine
1 oz lard cod liver oil or olive oil
One ounce of whisky brandy rum or gin yields 60 calories

2 TEST DIET A *(limited 1 5 calories)*

BREAKFAST—2 thick slices of white bread 1 2 oz margarine tea or coffee (without sugar) 1 oz milk
DINNER—3 oz roast beef or white meat 2 medium-sized boiled potatoes 3 oz cabbage 1 oz cheese 1 2 oz white bread 1 2 oz margarine tea (without sugar)
TEA—1 thick slice white bread 1 2 oz margarine tea or coffee
SUPPER—1 thick slice white bread 1 2 oz margarine tea or coffee (without sugar) 1 large egg
Value = 10 grams

3 CARBOHYDRATE FREE DIET *(limited 1 50 calories)*

BREAKFAST—2 oz lean uncooked meat 1 bacon 2 oz margarine 2 Malari biscuits 1 2 oz cream tea or coffee without sugar
DINNER—3 oz roast beef or white meat 3 oz cabbage 1 2 oz margarine 1 2 oz margarine 1 oz cheese
TEA—3 average sardines or 1 egg 1 2 oz margarine tea or coffee without sugar
Value = 110 grams

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Reviews.

BAYLISS'S "PRINCIPLES OF PHYSIOLOGY"

A TRAGIC interest attaches to the fourth edition of SIR WILLIAM BAYLISS's great textbook *Principles of General Physiology*,[1] which has just appeared. Sir William Bayliss during his last illness expressed anxiety at his inability to bring out a fresh edition of his textbook, and accordingly a group of friends undertook the revision of the work as a token of their affection and respect for the author. In the preface the hope was expressed that the next edition would be once again the work of the master, but Sir William Bayliss died whilst the present volume was still in the printer's hands, and his friends had not the satisfaction of presenting him with the completed work.

The task of revision was one of peculiar responsibility and difficulty, for the book occupies a unique position amongst textbooks of physiology. It expresses the personality of a great experimental philosopher, and gives a clear and comprehensive account of the fundamental problems of physiology. In particular these problems are treated as far as is possible from the standpoint of physical chemistry, and *the appearance of this treatise ten years ago lent great* assistance to the modern tendency to try and reduce physiology to a more or less exact science. Bayliss's textbook is in consequence one of that *select number of works which can* be said to have influenced definitely the development of a science.

The aim of the members of the committee of revision has been to do nothing to destroy the personal character of the work, but to limit their task to the incorporation of recent work of outstanding importance. As Professor A. V. HILL says in his preface, which was written before the author's death:

> "We have avoided in general any considerable interference with the text of the third edition; we have attempted rather to make only a few corrections of fact, necessary as the result of recent work, to refer shortly and with little comment, to recent important papers, to bring the bibliography up to date, and to make it possible to assure Sir William Bayliss that the new edition contains nothing of fact, or theory, which he need hesitate to publish at the present time. We have not desired to modify the expression, which this book offers, of the personal opinions and outlook of the author—opinions and outlook which have been a considerable factor in determining the present state and the existing tendencies of physiology."

The volume was prepared under the general editorship of Professor A. V. Hill, who has himself revised the chapters on energetics, osmotic pressure, and contractile tissues. The last chapter called for considerable revision owing to the important recent discoveries regarding the thermodynamics of muscular contraction—discoveries in which A. V. Hill has taken the leading part.

The chapter on respiration has been revised by Mr. J. Barcroft, and much new information regarding the properties of haemoglobin has been incorporated. This work has come largely from the Cambridge school of physiology.

The chapter on oxidation and reduction has been revised by Professor J. C. Drummond, and a full account is given of Professor Gowland Hopkins's fundamental work on the properties and functions of glutathione. The rapid advance in our knowledge of vitamins has also necessitated important additions to the chapter on nutrition, which has also been revised by Professor Drummond.

Sir Thomas Lewis and Professor H. S. Gasser have revised the chapter on electrical changes in tissues, and a very clear account is given of the interpretation of the electro-cardiogram. Sir Thomas Lewis and Professor E. H. Starling are responsible for the revision of the section on the circulation of the blood, in which an account is given of the important new work on the function of capillaries.

Altogether twenty-three co-workers have been engaged on the work of revision, and the names mentioned above are sufficient to indicate that most of the chapters have been dealt with by persons who have themselves made important contributions to our knowledge of the subject. The book covers a vast range of knowledge, and it has been impossible to do more than indicate a few of the more outstanding contributions.

A survey of the volume as a whole shows that the contributors have fully succeeded in their task, in that they have brought the book completely up to date, but yet have not interfered with its general quality.

The death of Sir William Bayliss has been an irreplaceable loss to physiology, but we welcome this work of his friends in ensuring the preservation and survival of his great textbook. The fact that more than twenty distinguished scientists were required to revise the work written by a single author is perhaps the most striking testimony possible to the extraordinary breadth and depth of Sir William Bayliss's knowledge. The highest praise we can give to the present edition is to say that the work has not suffered by its revision, and with that praise we believe the contributors will be very well content.

DISEASES OF THE BREAST

MR. DUNCAN FITZWILLIAMS has produced a very readable and clearly expressed book on diseases of the breast and their treatment.[2] A very great deal of literary research has gone to its making. How much work this entails only those know who have had experience of that laborious but illuminating task. Mr. Fitzwilliams has illustrated the clinical and pathological sides of the work by reference to his own experience and the St. Mary's Hospital material in general. He has also used the literature freely, so that his book becomes what is usually referred to as "a mine of information." There is a certain drawback to the printing of a great number of case histories—namely, that the ordinary reader does not always share *fully the author's* enthusiasm, cases which seem fascinating to the writer may only bore the reader. Nor is the latter commonly in a position to appreciate perfectly *the small shades of difference* which have won a place in pathological history for the particular cases reprinted. He is apt to begin to "skip" passages, *and very likely* will miss some portion which he should have read. These criticisms are levelled particularly against the portions dealing with malignant disease of the breast, and it is quite possible that other readers will react differently.

When Mr. Fitzwilliams does speak, and fortunately he "speaks quite a piece," he does it in no uncertain voice. He has an admirable style, perfectly clear and unmixed, and brings to the matter a directness and simplicity of writing for which *the reader must* and will be grateful.

The first portion—and it is very considerable—is devoted to the anatomy and physiology of the breast, its abnormalities and so *forth*. These are made clear by a number of excellent illustrations borrowed from various writers. The subsequent chapters are arranged on the usual pathological basis, working through the various forms of inflammation on to cysts and to tumours.

Every writer on the diseases of the breast has his own classification of cysts and the various forms of adenoma. Mr. Fitzwilliams's accounts of these conditions are clearly expressed and logical. When we come to *carcinoma* we find those qualities on which we have complimented the author standing him in good stead. He states his dogma clearly and well. For the author an early case of carcinoma is one in which there is not a single sign of malignancy, not even a definite (and by this we take him to mean a defined, circumscribed) lump. He points *out that in* persons in the cancer age, 70 per cent. of all breast tumours are malignant and only 30 per cent. benign. Cancer may appear in the breast at any age, it is rare *but not* unknown under 30. Taking the St. Mary's Hospital figures, we find that of 173 cases of mammary cancer, 5 were under 30, and 2 were under 25 years of age. It has *been seen* in children 11 years of age. Of Rodman's 5,000 collected cases, 9 per cent. occurred between the ages of 20 and 30. The following

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[1] *Principles of General Physiology.* By Sir William Maddock Bayliss, M.A., D.Sc., F.R.S., etc. Fourth edition. London and New York: Longmans, Green and Co. 1924. (Roy. 8vo, pp. xxviii + 882; 250 figures. 28s. net.)

[2] *On the Breast.* By Duncan C. L. Fitzwilliams, C.M.G., M.D., Ch.M., F.R.C.S. London: William Heinemann. 1924. (Roy. 8vo, pp. viii + 165; figure, 2 plates. 30s. net.)

supposititious account of a patient with a lump in the breast is so good that we take leave to reproduce it

The patient is aged 50 What are you going to do? This is the difficulty this is your responsibility There is one thing the practitioner can do which is the easiest way out of the difficulty and one which will be pleasing and acceptable to the patient, that is to say There is really nothing—nothing at all events to be alarmed at Come and see me again in a month Another month and there is no perceptible change in a month passes and perhaps the mass is a little larger it is deepthird pass and perhaps the mass is a little larger it is deepseated and very difficult to be sure certainly there is no sign of malignancy therefore it can be left quite safely Six eight months pass and now there certainly is a mass which is beginning to be defined and the skin over it is beginning to be suspicious perhaps it does not slide from side to side or pinch up as freely as it used to The practitioner halt heartedly suggests a consultation The patient demurs she is sure it is smaller and she feels much better and begs him to change the liniment In this way perhaps another two months are passed and at last ten months after this mass has been suspected a consultation is held An operation is advised and the growth is found to be cancer

It is very admirable that students to-day should be taught that the signs of breast cancer which their fathers and even their elder brothers were brought up on are signs of declared and even advanced cancer We must do much better than this if our results are to be improved Needless to say, Mr Fitzwilliams is in favour of the removal and microscopic examination of all suspicious lumps in the breast On the pathological side the author breaks a lance with Sampson Handley's theory of lymphatic permeation, and it is interesting to hear the voice of criticism raised definitely against it On the other hand, Mr Fitzwilliams has no other weapons than a very sound common sense and a logical mind This is not sufficient to upset a theory for which a very considerable mass of histological evidence has been adduced Most surgeons must have felt that permeation is not so wide and enveloping an explanation as its author has claimed for it It is their duty, however if they disagree to produce positive and documented proofs of the grounds for disagreement

This book is admirably illustrated by clever and very clear drawings from photographs and blocks Mr Fitzwilliams has done a service in publishing it It should have considerable educational uses, and forms an excellent book of reference in spite of its deficiencies in detailed pathology especially of an original kind We can cordially recommend it to practitioners and advanced students

GONORRHOEA IN THE FEMALE

In *Common Infections of the Female Urethra and Cervix*[1] Mr Frank Kidd and Dr A M Simpson have provided a clear and simple account of gonorrhoea in these organs, based largely upon experience gained in the Venereal Department of the London Hospital The general diagnosis and general treatment are first discussed fully and then follow chapters dealing more in detail with gonorrhoea of the vulva, vagina, and Bartholin's glands, of the urethra of the cervix and of the uterus tubes and ovaries and peritoneum Special chapters are allotted to the difficult question of gonorrhoea in female children and of gonococcal arthritis in women Dr Western contributes a section on bacteriology in which he discusses the methods of staining and cultivating the gonococcus and the bacteriological examination of suspected cases Mr Mayou has written a very adequate chapter on ophthalmia neonatorum The subject of "prophylaxis" is then fully discussed, and the use of "prophylactic outfits" is strongly advocated In an appendix are given in some detail records and statistics of 650 consecutive cases examined in the female gonorrhoea section of the venereal clinic in the London Hospital during the years 1917 20 The volume closes with a two page advertisement of all the books, papers, and contributions to medical literature by Mr Frank Kidd, and an index Practitioners, for whom in particular the book is written will find it a useful and helpful little volume It is unquestionable that a great deal of good might be done if practitioners would undertake the recognition and treatment of gonorrhoeal cases *early* as the condition is then quite curable both in the male and in the female But in the larger centres of population the necessity for venereal clinics will remain, so that most practitioners would prefer not to undertake the treatment is rather special and somewhat prolonged, it The use of vaccines has been avoided by the authors, both in regard to treatment and to diagnosis of cure for reasons which seemed good to them, and which are duly set forth

The least attractive feature of the book is the undisguised disparagement of the work of gynaecologists in connexion with gonorrhoea From what is said it can only be concluded that the authors' knowledge of modern gynaecology is not very extensive, it would have been wiser and in better taste to have made themselves acquainted with the work of a modern gynaecological clinic before making some of their sweeping statements and comparisons

[1] *Common Infections of the Female Urethra and Cervix* By Frank Kidd M A M Ch Cantab F R C S Eng and A Malcolm Simpson B A M B D P H Cantab with additional chapters by George T Western M D and M S Mayou F R C S Oxford London Medical Publications 7 Wimpole Street W 1 Humphrey Milford Oxford University Press 1924 (Demy 8vo pp xii +191 9 figures 7s 6d net)

ETIOLOGY OF NYSTAGMUS

In the early part of last year Dr Frederick Pobson suggested the possibility of there being some connexion between the volatile content of coal and the production of the industrial disease known as coal miners' nystagmus A report of a paper on the subject read by him at a meeting of the South Wales Institute of Engineers appeared in our columns on March 31st, 1923 (p 570) He has now published his investigations on this subject in a volume entitled *Coal Miners' Nystagmus*,[1] and he sets out to prove that the cause of this condition is a poisoning of the central nervous system Dr Pobson finds that coal miners' nystagmus is an ailment from which workmen suffer in varying degrees of intensity and disability, that the special occupation is mostly to blame for the condition, but that heredity may also play a definite part in the etiology The disease is associated with extrinsic and intrinsic causes the former include poisoning by mine gases and the latter certain metabolic disorders due to defects in the endocrine glands He finds further that there are two main factors (1) a toxaemia (2) a neurosis The former is evidenced by oscillation of the eyeballs and blepharospasm, the latter by a special syndrome both may remain as permanent conditions or in a suitable labour and hygienic environment may disappear It is suggested that the syndromes poisoned may be (1) in the mid brain or (2) in the cerebellum The evidence shows that carbon monoxide can produce anoxaemia in workmen and it is argued that carbon monoxide, or some combination of gases is the chief cause of the genesis of nystagmus in underground workmen in mines

Six useful appendices are included dealing with matters relevant to miners' nystagmus as viewed from Dr Robson's standpoint such as the physical and chemical properties of coal and the formation or carbon monoxide Moreover, at the end of the book there is a report of a discussion on coal miners' nystagmus in which many experts gave their views It is certainly a matter of interest that while nystagmus and blepharospasm entitle the worker to compensation the neurosis does not do so, and the grouping together of these three conditions should materially assist towards clearing up the very complex medico-legal problem to which we referred on August 18th, 1923 (p 288) when considering the second Report of the Miners' Nystagmus Committee

Dr Robson is to be congratulated on his exhaustive investigations into a most difficult subject His present contribution to its elucidation is suggestive and should stimulate further research

[1] *Coal Miners' Nystagmus* By Frederick Robson M D Reprinted from the *Proceedings of the South Wales Institute of Engineers* Vol xxxix Nos 2 and 3 Cardiff Published by the Institute (Roy 8vo pp viii + 66 with Wales 1924 of Engineers 12s 6d)

LORD LISTER

IT IS A little difficult to know whether to praise DR CUTHBERT DUKES'S life of *Lord Lister*,[5] in the Roadmaker Series, more highly as a clearly stated exposition of the pathology of infection, or as a vividly human picture of a man and his message, so simply depicted that the grandeur of both stands out like an unclouded promontory. The details of Lister's life and achievements are so skilfully interwoven with a lucid account of the problems he solved that the reader is almost beguiled into the belief that the facts related are part of his own personal experience. The story of Lister's happiness in his work, his good fortune in his friendships with Pasteur, Syme, and others, his success as a teacher in Edinburgh and Glasgow, his controversies with his opponents, and the honours that came to him finally, constitutes an inspiring record which can be cordially recommended to the attention of any modern surgeon who remembers and venerates the source from which his successes spring. The book, however, is primarily addressed to non-medical readers, who will find in it a most instructive and fascinating account of the nature of infectious processes in the body, as well as the story of how the great achievements of modern surgery have been rendered possible.

In these days, when public credulity seems to be so strong and honest research is spurned in favour of fantastic imagination, such a book will serve as a valuable corrective, and it is to be hoped, in the interests of sanity of thought, that it will gain a wide circulation. The first of a series of books designed to relate the story of the Roadmakers of human progress, this book has set a very high standard which it will be difficult to emulate.

MISTAKEN IDENTITY

THE publication of an account of the case of *Adolf Beck*, edited by MR ERIC WATSON, among the Notable British Trials series,[6] will remind many of our readers of the excitement which was caused by this remarkable case, in which a very grave miscarriage of justice occurred. Put shortly, the following were the circumstances.

In 1877 one John Smith, or Wyatt, who was afterwards found to be really an Austrian Jew named Meyers or Captain Weis, was charged and convicted of a number of frauds and larcenies closely resembling one another in their details and committed upon loose women. He was sentenced to five years' penal servitude and was imprisoned for four years. Soon after his release he disappeared for thirteen years, during part of which he carried on a lucrative medical practice in Adelaide, South Australia. He was in London (as afterwards appeared) again in 1894-95, when a number of frauds similar to those of 1877 were reported to the police. One of the victims saw Beck in the doorway of his own flat in Victoria Street, recognized him, and unhesitatingly accused him of being the man who had swindled her. He was arrested and identified by ten women, but not by all those who had been robbed. Some half a dozen failed to identify him, and one said she was quite sure that he was not the man. Those complainants who failed to identify Beck were, of course, not called as witnesses. The handwriting of the swindler of 1894-95 was identical with that of the convict John Smith, but the handwriting of Beck was different, although the expert who was called declared it was the same, but disguised. Beck was tried for misdemeanour and convicted and sentenced to seven years' penal servitude. He protested his innocence. The charges of larceny were unfortunately abandoned, had they been gone into, it would have been admissible for the defence to show that he was not John Smith, and to show that he was absent from England when the first series of frauds was committed. In prison he was given a number which showed that he had been previously convicted. He served more than five years of this heavy sentence. After his release he remained in London trying to procure evidence of his innocence. His reputation was not a very good one, but not such as would make it likely that he would systematically carry out small thefts from prostitutes. About this time, as was afterwards known, John Smith, *alias* Dr Wyatt, was practising medicine in Denver, Colorado.

In 1904 four more cases of fraud similar to those of 1877 and 1895 were reported to the police. Beck was again arrested, identified by all four women, tried, and convicted, but Mr Justice Grantham, having some doubts, postponed sentence. Ten days later William Thomas, *alias* John Smith or Wyatt or Meyers, was arrested in the act of pawning rings, which he had obtained from a woman by pretences exactly similar to those by which all the other frauds and larcenies had been perpetrated. He pleaded guilty in September and was sentenced to five years' penal servitude. There can be no shadow of doubt that he was guilty of all the frauds and larcenies in 1877, 1894-95, and 1904, and that Beck was completely innocent. The latter was pardoned and awarded £5,000 as compensation. He died penniless in the Middlesex Hospital in 1909.

The evidence upon which Beck was convicted, besides the unfortunate blunder of the handwriting expert, consisted entirely of the positive identifications by the women and by one police pensioner, who most emphatically swore that he was Smith, whom, however, he had not seen for nineteen years. No stolen property was traced to him. These things being so, it might be supposed that there was an altogether exceptional likeness between Smith and Beck. But it appears that it was not so. Beck was a blue or grey-eyed Norwegian. Smith was a brown eyed Austrian Jew. Their ears were strikingly unlike. Beck's ear had a large, free lobule, while the lobule of Smith's was very ill developed and adherent to the neck. Beck was uncircumcised, while Smith was circumcised. The police methods of taking and recording personal characteristics and marks before the introduction of the finger-print system seem to have been very loose and inaccurate. When Smith was in prison, in 1879, as a Christian, he claimed to be a Jew, and was accordingly examined by the surgeon, who reported him as circumcised, yet this fact was not entered on his record. Beck was not in England when the first series of frauds was perpetrated, and therefore he could not be guilty of them, but the Common Serjeant refused to allow his counsel to go into this question. The Committee of Inquiry which investigated the case reported that in its opinion this ruling could not be supported, and that "He was convicted on evidence from which everything that told, or might tell, in his favour, was excluded. His case was never tried."

It is to be hoped that the adoption of more accurate methods of identification, and the establishment of a Court of Criminal Appeal, together with certain changes in procedure, make the recurrence of such an appalling [illegible]ice very unlikely. In his book on *Circum*[illegible] Mr Justice Wills remarks "that what are supposed to be the clearest intimations of the senses are sometimes fallacious and deceptive." In *Celebrated Trials to the Year 1825* there are records of some strange cases of mistaken identity. In 1749 one Coleman was convicted of murder. He was identified by the victim before her death. Two years afterwards the three men who had committed the crime were convicted and confessed their guilt and Coleman's innocence. Nearly half a century later two men, named Clinch and Mackly, were hanged for murder. Years afterwards two others confessed to having committed this murder. This case is an instructive one, for it affords a striking instance of what we may call progressive certainty of identification. An eye-witness of the murder stated before the coroner that she could not describe the murderers, except that they were "lusty," and one had a dark-coloured coat on. Yet at the police office her identification was "direct and positive." There appears to be a tendency in witnesses as an inquiry goes on to think that they recollect details which they had not mentioned at first, and thus to progress from a vague and general description to a positive and emphatic identification. At the police station the prisoner is picked out, perhaps with some hesitation, from a number of others, among whom there may, or may not, be some who resemble him in dress or person. In the next stage, before the

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[5] *Lord Lister (1827-1912)*. By Cuthbert Dukes, M.D., M.Sc., D.P.H. The Roadmaker Series. London: L. Parsons; Boston, U.S.A.: Small, Maynard and Co. 1924. (Cr. 8vo, pp. 185, 1 portrait. 4s. 6d.)

[6] *Adolf Beck (1877-1901)*. By Eric R. Watson, LL.B. Notable British Trials. Edinburgh and London: W. Hodge and Co., Ltd. 1924. (Demy 8vo, pp. xi + 296, 7 plates. 10s. 6d. net.)

police magistrate, the witness is more certain, and in the final scenes of the trial, by which time he has become quite familiar with the prisoner's appearance, the vague memory of the original criminal is confused with that of the prisoner at the bar, and evidence is given accordingly In such a case as that of Beck the wish to identify is father to the thought These women were smarting under a sense of injury and, as one of them said, wanted revenge At the police station the complainant feels that the police hope for an identification, and that if she cannot pick out the prisoner she is a failure Having picked him out, she has taken a side, and a natural pugnacity persuades her at each step that she is more sure of the fact

Personal identification of this sort, unless supported by weighty evidence of another kind, ought not to be enough to secure a conviction In the case of Steenie Morrison there was grave evidence of the prisoner's guilt, but an important link in the chain consisted of the evidence of a cabman, who professed to identify him after only seeing him get in and out of the cab on a winter's night The jury found him guilty, but the judge and the Home Secretary evidently had very serious doubts, and he was reprieved There are indeed on record cases in which two persons were almost indistinguishable one from another Such a case is related by Mr Justice Wills in the book above mentioned In a more recent case the accused was identified from his general appearance and by the loss of one finger Luckily for him the real culprit was arrested and proved to have an exactly similar mutilation and a strong personal resemblance

NOTES ON BOOKS

THE *Medical Directory*[1] for 1925 has been issued by Messrs Churchill It is arranged on the familiar lines which have rendered it so convenient a work of reference to the medical profession The number of names contained in this edition is 49 351, which exceeds that in the previous issue by 1 743 It is greater than that in the issue for 1916 by 6,781 There is an increase in all areas, but the ratio of increase appears to have been greater in Scotland and Ireland than in England and Wales this may be, in part, accounted for on the supposition that graduates and diplomates in Scotland and Ireland register with the national branch of the General Medical Council shortly after qualification, though they may afterwards settle in practice in England or abroad The increase in the list of practitioners abroad, which includes the Dominions, is nearly 300 The only section in which there is a decline is that of the Services where the total has dropped from 3,452 to 3,318 The directory of dentists is this year omitted, which we fear will be rather inconvenient to the medical profession, though the publishers are about to issue separately a *Dental Surgeons Directory* A beginning is made with the publication of a list of members of the British Association of Certified Masseurs, all the members are pledged to work under the direction of registered medical practitioners the editors intend to make this list more complete in future editions As a directory of the British medical profession we believe that this volume is more complete and informing than any corresponding directory published in any other country The American Medical Association publishes an *American Medical Directory* containing the names of all legally qualified physicians in the U S A, according to States, but though the volume is very large, the particulars given of each person are very condensed The American directory also contains the names of practitioners in the Dominion of Canada We congratulate Messrs Churchill on the success of their enterprise which of course, can only be carried through with the co operation of the medical profession The new volume is the eighty first annual issue

After perusing Dr VARLEY'S small book, *Radium Its Therapeutic Uses in General Practice*[2] the question why he wrote it arises The preface tells us that his object was to "bring before the general practitioner and medical student the conditions in which this valuable therapeutic agent may be of use", but to write such a book the author ought not only to be fully conversant with his subject, but should have had sufficient practical experience The latter Dr Varley frankly admits he has not had The clinical material at his disposal has been all too little For example, he devotes three pages to commenting on the use of radium for the treatment of carcinoma of the rectum We then turn to his series of cases, when we find only one of this disease It is fully reported, but is of little or no clinical value as far as radium is concerned, as he only treated it once, and then, apparently, by placing a tube of radium on the outside of the body and not in the rectum in apposition to the growth, two months later the patient underwent a course of *x*-ray treatment, but was not examined with the sigmoidoscope until six months later One case of carcinoma of the stomach is reported, the largest series consists of seven cases of carcinoma of the cervix, mostly inoperable, and some recurrent after hysterectomy, in none of them were needles of radium embedded Of Hodgkin's disease there are three cases, of spring catarrh only one Concerning keloids Dr Varley says "the treatment must be continued over a long period at from four to six weekly intervals" This statement will, we fear be of little use to the general practitioner who has some radium and who requires exact instructions as to the strength, screenage, and length of exposure The author states that he has another book in preparation which will, he hopes "lead to a more intelligent understanding and recognition of the uses to which this valuable therapeutic agent may be applied" May we be allowed to express the hope that if and when Dr Varley publishes this new book he will be in a position to quote from his own experience over a long, or at least sufficient series of cases of such common conditions as carcinoma of the uterus, rectum, and breast?

So many medical men flock annually to Switzerland to join in winter sports and especially in the absorbing sport of ski running that it may not be unprofitable in a medical journal to call attention to a new work on the subject by Dame KATHARINE FURZE, G B E[3] In her little book which is written particularly for the beginner, she deals with such subjects as the cost of a skiing holiday, equipment where to go and how to deal with all the emergencies and difficulties that are incidental to the sport

A report entitled *Opium in India*[4] has been prepared by the National Christian Council of India Burma and Ceylon This report embodies the results of an inquiry into the consumption of opium in India, and the evidence is summarized under six heads (1) how opium is used in India including its free and unauthorized administration to children (2) the effects of the use of opium (3) an inquiry as to the possibility of separating its legitimate and illegitimate uses The conclusion is reached that hardship would probably no be caused by restricting consumption to medical and scientific needs though there is a division of opinion on this point (4) the rarity of opium smoking, (5) the distinction between smoking and eating opium (6) public opinion on the subject The evidence printed in the report was supplied by members of the Indian Medical Service, missionary doctors, Indian private practitioners, educationists, and social reformers

[1] *Ski Running* By Katharine Furze G B E London Longmans Green and Co 1924 (Cr 8vo pp ix+134 illustrated 3s net)
[2] *Opium in India* Calcutta The National Christian Council of India Burma and Ceylon London The International Missionary Council (Extra post 8vo pp 81. Great Britain 1s post free)

PREPARATIONS AND APPLIANCES

Thromboplastin and Thyroxin

THROMBOPLASTIN (Squibb) is an extract of the brain substance of the ox and contains the lipoid substances of brain described by Hirschfelder It is prepared according to the method devised by Dr A H Hess Comparative experiments by Hanzlik and Weidenthal showed that it was more efficient as a blood coagulant than any other haemostatic tested Dr Cronin of the New York City Department of Public Health reported on its use in 2 036 throat operations and concluded that it was of great value in arresting haemorrhage The preparation can be applied locally direct to the bleeding surface and has been found of special value in operations on the throat nose and rectum It can be given by the mouth in cases of gastric haemorrhage A special sterilized preparation is available for hypodermic or intramuscular injection which it is believed will be useful in shortening the coagulation time in bleeders

Thyroxin (Squibb) contain the active principle of the thyroid and is prepared in two forms Pure crystalline thyroxin for intravenous use and the sodium salt of thyroxin in tablets for administration by the mouth The chemical name of thyroxin is trihydro triiodo-oxybeta indol propionic acid and it contains 65 1 per cent of iodine The pure salt is costly to prepare but the partially purified salt which can be used in tablet form is less expensive than an equivalent amount of desiccated thyroid and is three hundred times as active Desiccated thyroid contains about 0 2 per cent of iodine, not more than

[1] *The Medical Directory* 1925 London Messrs J and A Churchill 30s net
[2] *Radium Its Therapeutic Uses in General Practice* By G H Varley M D Oxon Oxford Medical Publications London Humphrey Milford Oxford University Press 1924 (Cr 8vo pp viii+103 6s.)

one half of which is in the form of thyroxin, consequently the official method of standardizing it by its iodine content is faulty, since it gives no certain indication of the therapeutical activity of the preparation *Biological standardization of* thyroid is a difficult process Thyroxin in tablet form is free from all other iodine compounds, and therefore its activity can be estimated from its iodine content Hence the tablets provide a thyroid preparation of standard and uniform activity

The potency of thyroxin must be emphasized, a normal individual cannot take 2 mg of thyroxin a day without developing symptoms of hyperthyroidism The dose is 1½ to 2 mg a day (1/42 to 1/32 grain) for cases of high grade myxoedema, and 0 2 to 0 4 mg (1/320 to 1/160 grain) a day for a small goitre Too large doses will produce very undesirable symptoms, particularly when administered over prolonged periods

Thyroxin, if used intravenously, must be administered with great care, 1 mg thyroxin given intravenously will raise the metabolic rate 2 per cent in an adult weighing 150 lb , the maximal effect is produced ten days after the administration of a single dose, and the action lasts for no less than fifteen days Obviously, the action of thyroxin administered intravenously is so potent and so prolonged that it can only be used in this way with safety if the patient is under very careful observation

The English agents for the preparations are Messrs Quelch and Gambles, Ltd , 211 215, Blackfriars Road, London, S E 1

British Ichthyol

Ichthyol is a substance obtained from a bituminous schist which contains fossil organic matters of marine origin, chiefly those of fishes It was first prepared in Germany from a material occurring in the mountains which separate Bavaria from the Tyrol Distillation of the schist produces an oil rich in sulphur From the oil, by chemical treatment, a substance is obtained having the constitution of a sulphonic acid The ammonium salt of the sulphonic acid forms medicinal ichthyol Schists containing marine deposits of like nature are found in this country One of these, occurring in Norfolk, furnishes material for the manufacture of ichthyol in the Crookes laboratories We have made an analytical examination of the product, and have found, by comparison with the German article, that the latter exhibits no chemical property which is not equally well represented in the English drug We are satisfied that it is genuine ichthyol and that it is prepared with no less refinement of manufacture than the German substance The British Colloids, Ltd (22, Chenies Street, London, W C 1), by whom this ichthyol is marketed, offer a series of preparations of ichthyol, which includes capsules, ointment, and soap

Forceps for *thial Caruncle*

Dr T H HAYDON



This simple operation is sometimes more difficult to perform completely and without unnecessary damage to the urethra than is usually supposed, and I have devised a pair of forceps which seem to make this both simple and quick Taking a pair of Jordan Lloyd's forceps I ground off one side This rough improvisation seemed just what was needed and so I asked Messrs Down Bros to make up the forceps perfectly This they have done, and I find the new instrument most useful After grasping the necessary amount of tumour, the part in the hollow of the forceps can be easily cut off with the cautery without touching any other part of the urethra The annexed illustration needs no explanation

ROYAL SOCIETY OF MEDICINE

ANNUAL DINNER

THE annual dinner of the Royal Society of Medicine was held on November 26th, the President, SIR STCLAIR THOMSON, was in the chair, and there was a large attendance

The toast of the Society was given by SIR AUCKLAND GEDDES, who said that, though he had strayed from the ranks of the medical profession, he believed that the medical training he had received had been as good a training as could be devised for one whose life had been cast as his had been Recollections of anxiety nobly borne, and courage displayed in domestic tragedies had proved to be in his case the only really valuable part of the wastefully expensive education he had had The whole of the work of the medical profession bore the glamour of romance, but one of the great difficulties of the man engaged in the practice of medicine was to keep abreast with the growing thought and knowledge of the subject The Society existed to help him to overcome this difficulty SIR Auckland Geddes referred to the wonderful growth of the library of the Society and appealed for the help of generous benefactors

The PRESIDENT, in reply, said that the gathering was held in fulfilment of the motto of the Society, *Non est vivere sed valere vita* This had been translated by a schoolboy as "What's the use of being alive if you don't have a good time?", but SIR Humphry Rolleston, a former president of the Society, had suggested as more correct, "Life to be worth living must be lived well" The President then went back to the origin of the Society, and recalled how SIR Andrew Clark, when president, in 1892, of the Royal Medical and Chirurgical Society, had sought to bring about the amalgamation of the medical societies in London to form a Royal Academy of Medicine The title did not matter very much, but the change, which had been suggested again by MR James Berry when president of the Medical Society of London in 1922, might yet be brought about The amalgamation shadowed forth by SIR Andrew Clark had been realized largely through the efforts of one man—SIR John MacAlister—who had worked at it for more than five years before SIR Andrew Clark died, and who toiled on it for fifteen more years before it was accomplished He had continued another seventeen years to better what he had already bettered, and altogether had served the Society for thirty-seven years It was a great grief to all present that SIR John MacAlister had been forbidden by his doctor to be present, but all who realized what he had done for the Society would wish to unite in sending him a message conveying their gratitude and affectionate greetings The care of the library was in the enthusiastic hands of the honorary librarians, MR Walter Spencer and SIR Humphry Rolleston, and he was glad to announce that DR Arnold Chaplin had completed the cataloguing, mounting, and indexing of the Society's very fine collection of over 4,000 medical prints The Society was greatly indebted to the care and foresight of its honorary treasurers, MR C H Fagge and DR Farquhar Buzzard, to the unselfish work of the Council, and to the devotion of the honorary secretaries DR A M H Gray had retired from that office after five years' service, and had handed on his work to MR Girling Ball and DR Letheby Tidy Turning to SIR Auckland Geddes, he said that the country was to be congratulated on his acceptance of the chairmanship of the Food Inquiry All were proud of his record It would not be forgotten that he went through the South African war as a lieutenant in the Highland Light Infantry, that he had taken his degree with the gold medal at Edinburgh in 1908, and that little more than ten years ago he was making models in the dissecting room of McGill University, Montreal Then came ten years of glorious devotion to his country, as Director of Recruiting, as a member of Parliament, as Minister of National Service, as Minister of Reconstruction, as President of the Local Government Board and of the Board of Trade, as brigadier general, when he was gassed, in France, as Principal of McGill University, and British Ambassador to the United States This was a great record of service for a man who was only 46 Paul Rubens, the great painter, was also a man of affairs, a courteous Ambassador to Paris, Madrid, and London One day a Government official, calling upon him, found him painting at his easel "I see," said the official, 'His Excellency the Ambassador distracts himself with painting" "No," said Rubens, "His Excellency the painter distracts himself with diplomacy' The Royal Society of Medicine offered its warmest thanks to His Excellency the Doctor

SIR GEORGE BLACKER proposed the health of the guests, to which the Attorney-General, SIR Douglas Hogg, replied The two professions of lawyers and doctors, he said, had a great deal in common, and were proud to have kept their calling non-political Both lawyers and doctors were very loyal to their own profession, but in one respect doctors set lawyers a great example that was in the immense amount of voluntary work the medical profession rendered in hospitals and elsewhere During his tenure of office he had seen many cases in which the poorer people of this country needed free legal assistance almost as badly as they needed medical assistance, and he would have been proud had his profession been able to claim the same record of voluntary and ungrudging service as that which the medical profession rendered to that class day by day

British Medical Journal.

SATURDAY, DECEMBER 6TH, 1924

THE GENERAL MEDICAL COUNCIL

On November 28th the General Medical Council completed, with its winter session, another year's work for the profession and for the public. Our report of the proceedings, begun last week, is continued in the SUPPLEMENT at page 207. As is usual in November, the session was largely devoted to consideration of cases of discipline—a branch of the Council's activities peculiarly open to misconception on the part of the general public, in whose interest and for whose protection it is undertaken. The predominance of disciplinary business did not however exclude from the agenda certain items of a different kind which illustrate at once the extent of the Council's responsibilities and the complexity of some of the issues with which it has to deal. An example is the position with regard to medical registration in the Irish Free State—a question postponed in August at the express request of the Free State Government and now complicated by the failure of the Senate to carry the emergency measure designed to legalize the existing position pending full discussion and settlement. Another example is the failure of Calcutta University to fulfil the conditions essential to the continued recognition of its degrees as qualifications admissible to the British *Medical Register*, and the consequent withdrawal of recognition. In Canada legislation effected in Saskatchewan and projected in New Brunswick has imposed a temporary check on progress towards the establishment of complete reciprocity between the United Kingdom and the Dominions as a whole. On the other hand some definite steps seem to have been made towards the relief of British practitioners in Italy from the disabilities imposed on them by recent legislation, and it may be hoped that the difficulty will soon be satisfactorily settled. These are all matters which have been under consideration for some time, and, since it is neither practicable nor desirable to isolate the work of a single session, we may recall the additional fact that the Pharmacopoeia Committee has before it proposals from the Belgian Government for a second International Pharmacopoeial Conference to be held at Brussels in 1925, the subject for special consideration at that conference is a project to establish a permanent international bureau for general business relating to the unification of national pharmacopoeias and kindred subjects.

The moment indeed, seems opportune for a longer retrospect than that of a single year, for we stand at the close of the five years of service in the Council of the six direct representatives of the members of the profession in practice in Great Britain and Ireland, and the period in medical as in national development, is one of more than ordinary interest. It has been essentially a period of adjustment and transition in which the profession has entered more or less consciously upon new relationships—at home by the establishment just before its opening of the Ministry of Health and abroad by the creation of the Health Organization of the League of Nations and the birth of a new international health consciousness. It has seen also the development of a public demand for reconsideration and revision of the National Health Insurance system and of lunacy law, and it has been for the medical profession as for the community, a time of testing and of seeking for some safe path of ordered progress after the distraction of the war and demobilization. It is therefore well to inquire how the Council has responded to the call made by such general conditions.

The most salient feature of the five years' work is the general review of the medical curriculum and the issue in 1922 of revised rules for admission to the *Medical Register* of Diplomas in Public Health. The emphasis throughout has lain unmistakably upon the preventive aspect of medicine. Beyond this, the issue of the amended Warning Notice in respect of advertising and canvassing and the increasing prominence among disciplinary cases of matters connected with certification and with oblique methods of advertising may be noted as evidence of sensitiveness to changing conditions and standards. Finally in interprofessional relationships the General Medical Council has entered on a new phase with the passing of the Dentists Act in 1921, the creation of the Dental Board and the consequent modification of its own functions and personnel. A fitting episode this for a period in which the progress of preventive medicine is a dominant feature. The Dental Board seems to have modelled its procedure in the main on that evolved by the Council—a high compliment to the efficiency of the senior body. But the constitutions of the two are in strong contrast, for whereas only six out of the forty one members of the General Medical Council are elected by the profession of which it is the statutory governing body, provision is made for election to the Dental Board by practising dentists of six out of a total of thirteen members. The provision for an appeal from the Board to the High Court in cases of removal from the *Dental Register* or of refusal to register is another innovation. The contrast serves as a reminder that the Medical Act of 1886 by which the existing measure of direct representation on the Council was secured has never been accepted by the profession as more than a milestone on the road of medical reform comparable to that passed when the earlier Act of 1858 came into force. The ultimate goal is as yet barely in sight. The Royal Commission of 1881 actually favoured a far more generous measure of reform than that secured both as regards the constitution of the Council and in other respects and the British Medical Association which is most of us fail to remember was a chief instrument in securing the initial legislation has never allowed its original objective to be entirely forgotten. Thus in 1906 the Representative Body reiterated the opinion that at least half the members of the Council ought to be elected by the general body of practitioners, and the meeting at Bradford which put forward the four practitioners who will represent England and Wales in the Council for the next five years stated emphatically that the time is ripe for a reconsideration of the question and instructed the Council of the Association accordingly. That is one aspect of the matter and if it were the only one it might well be asked why progress has been so long delayed. The other is illustrated by the figures of the voting at the last seven elections of direct representatives for England and Wales. These show a poll rising from 39·4 per cent. to 55 per cent. of the total electorate. This apathy may explain delay but it is hardly self-explanatory. Nor can it be argued that the average member of the profession is not touched by the activities of the

General Medical Council, and has no interest in its deliberations The present very cursory review is sufficient to demonstrate the contrary To an increasing degree these activities affect him closely in every field of practice Rather, the key to the position must be looked for in the proverbial relationship between the good and the best in matters constitutional The fact that the constitution of the Council remains so nearly unmodified after thirty-eight years must be taken as a tribute, not to its intrinsic excellence, but rather to the soundness of the work which the Council has actually performed

THE ENCOURAGEMENT OF BASIC RESEARCH

THE National Union of Scientific Workers has issued a report on the encouragement of basic research,[1] in which it discusses the value of research to the community, the motives of research workers, the financial encouragement they should receive, and the obligations of their work The views expressed in this report are of peculiar interest because they represent the opinions of people actually engaged in scientific investigations, who are themselves familiar, therefore, with the difficulties which attend this mode of life, with the misconceptions entertained about it, and with the defects that follow from lack of organization The National Union of Scientific Workers is not a trade union designed to protect a particular section of the community It exists to further a cause which all scientists have at heart, and to voice the opinions of a valuable band of citizens who have been too long inarticulate

The motives of research workers are, speaking generally, as mixed and as commonplace as those of their neighbours It is well to recognize this fact, and to discard the illusion that the research worker necessarily pursues a lofty course inspired by an ideal superior to that which moves the remainder of mankind One of the most powerful motives of the research worker is undoubtedly a desire for knowledge for its own sake, but mere love of knowledge, unaccompanied by any other motive, is seldom sufficient to lead to the laborious investigation imposed by research The desire for reputation, not to be confused with base ambitions towards notoriety, is a worthy motive in research workers, many of them have enjoyed the companionship of older scientists, whose approval they look for as a gratifying reward The expectation of being able to publish an important piece of research, and thereby earning a position in the ranks of some learned society, determines the choice of a way of life for many younger scientists In medical science the pecuniary rewards of research work are not, and are never likely to be, as substantial as those of the practising physician or surgeon, but the atmosphere of the laboratory offers attractions unknown in the busy consulting room or operating theatre, such attractions are leisure to think, freedom from interruption, and free play for the imagination Among motives we have to reckon also with a desire for some more responsible post, such as a professorship, with its attendant intellectual status and greater security

It is interesting to notice that when discussing the financial encouragement which should be given to research the National Union of Scientific Workers unsparingly condemns the system of patents, prizes, and special grants for successful work Payment by results is an impossible method for research work, because, as experience has shown, the most fruitful work has often been some fundamental inquiry into a scientific problem which seemed to offer very little prospect of practical gain To dictate a practical objective would hamper much useful investigation Moreover, it is extremely difficult justly to apportion credit for a discovery The individual to whom the coveted distinction is ascribed has sometimes done little more than add the final stone to a building whose foundations have been laid and whose walls have been built by a host of workers of whom the world never hears On the other hand, indirect encouragement by means of special grants for apparatus and assistance in publication of results is approved as a satisfactory method of financial encouragement

It is recognized that some scientists can only do the best kind of research work when completely free from all other duties, such as teaching or routine work Provision must be made for workers of this temperament, and they must be guaranteed a salary sufficient to enable them to be secure from financial anxieties Other research workers prefer to combine some routine work with their experimental studies, and these are most happily employed in some university or hospital appointment, which enables them to spend part of their day in teaching and the other part in research

The National Union of Scientific Workers is wise in insisting on the value of research to the community, for this is an aspect of the research question often unnoticed Apart from the store which research workers add to the knowledge of the country, the inclusion of men and women with the research type of mind *should* be sought after in every community Open mindedness and breadth of view are developed by the search for truth, and the whole community benefits directly by the presence within it of such intellectually active citizens, who contribute qualities that cannot be conferred in the same measure by any other intellectual occupation

RABIES

IT IS curious that until comparatively recent times little interest was taken in the prophylactic work against hydrophobia in man by the eradication of rabies in the dog There is no doubt that the disease is almost exclusively carried to man by dogs, and that wild canidae and cats and other domestic animals play a relatively small part It is obvious that if this question were tackled seriously the human problem would cease to exist

We were able some time ago[1] to draw attention to the employment of prophylactic vaccination in Japan and America Dr Kondo, of the Japanese Ministry of Agriculture and Commerce,[2] has recently given some further details of the work in the Far East The vaccine is prepared from the spinal cord and brain of dogs—these being more suitable for this particular purpose than rabbits—which are inoculated with fixed virus five to six days before killing The central nervous system is emulsified, five parts of phenolized glycerin solution being added to one part of tissue The filtered emulsion is incubated for three days at 37° C Dogs are inoculated subcutaneously with 3 5 c cm of this vaccine, sheep and pigs with four to five times this amount, and horses and cattle with ten times This gives a definite

[1] Report of National Union of Scientific Workers, 25, Victoria Street S W 1 Price 6d

[1] BRITISH MEDICAL JOURNAL, 1924, i, p 106
[2] *Veterinary Record* 1924, p 592

immunity lasting at least one year The method has been in use since 1919 with signal success, and, although exact figures are not available Kondo estimates that about a quarter of a million dogs have been treated It seems, however, that it is successful only if used before infection

At the present day dogs suffering from rabies are almost invariably killed Vallée and Ringard in 1922 [3] in an attempt to provide an alternative to destruction, give the results of their experiments with Marie's method This however did not prove very successful and presented many practical difficulties More recently Ferri [4] has applied his curative sero vaccine method to domestic animals This consists in the subcutaneous injection of a mixture (in 1 per cent carbolic acid) of a fixed virus of high virulence and a special serum of equine origin The serum provides a passive immunity which permits the incubation period to be extended, and so assures the production of an ultimate active immunity It is claimed for this sero vaccine that not only is its immunizing power very high but that it is absolutely harmless is sterile, and has high keeping properties The treatment in man consists of forty injections given subcutaneously twice daily The material is sent out from the Sero therapeutic Institute of Milan in ampoules ready for use in the patient's own home Under the name of antilyssin a similar preparation is now available for animals Dogs receive thirty doses of 5 c cm in fifteen days, horses fifty half daily doses of 20 c cm

It is clear that some attempt at the eradication of canine rabies might now be seriously considered That the position is realized in Britain is shown by the fact that the Ministry of Agriculture imposes a period of quarantine on all dogs entering the country yet the Ministry of Health seems to take no hand in controlling a contagious disease of animals which endangers the health of man The Ministry of Agriculture is concerned primarily with the health of animals from the point of view of the stock owner and farmer A certain amount of overlapping between the two Ministries is inevitable but in this case the danger is mainly to man and it is therefore a subject of importance to the Ministry of Health The quarantine at present imposed is six months—a period usually sufficient although dogs may become rabid more than six months after infection One case has recently been reported in considerable detail by Schoening [5] from America a dog kept under experimental conditions developed the disease sixteen months after inoculation although animals inoculated at the same time and with the same material developed typical rabies in a short time Since the introduction of only one infected dog into the country is sufficient to cause an outbreak it will be realized that six months is an inefficient quarantine It is possible that the recent epizootic was caused by a dog which developed rabies after passing through the quarantine and not by a smuggled animal as has been suggested However a longer period than at present imposed would make the already irksome detention intolerable and there remains an obvious case for the introduction of more effective and scientific methods The detention paddock and the pole are have too long been methods of eradication among our animals and modern work here and abroad indicates that science can provide more efficient substitutes

[3] *Rec Gén Méd Vét* p 165
[4] *Clin Vét* 1923 xlvii p 161
[5] *Journ Amer Med Vet Assoc* 1923 p 153

AN ATTACK ON FREUDIAN DOCTRINE

THE imposing psychological edifice associated with the name of Sigmund Freud has been fiercely assailed by critics who have surveyed it from many points of view Some dislike its architectural scheme, others doubt the solidity of its foundation and the stability of its superstructure In the course of last March six conference sessions on psychology were held in the Institut des Hautes Études de Belgique, and Professor Paul Sollier has contributed to two issues of *Le Scalpel* (October 4th, p 1069, and October 11th p 1089) a summary of the proceedings, which indicates some of the chief lines of attack Sollier begins by distinguishing sharply between psycho-analysis, a method of investigating the unconscious and of treating certain neuroses and psychoses, and the teaching of Freud This teaching he characterizes as an interpretation of data which has now grown into a vast psycho-medico philosophic system, a kind of metaphysics of the unconscious, a universal elucidator of normal and pathological psychology, sociology, ethics, religion, and art Freud he says, has been greeted on the one hand with enthusiastic praise, some disciples having declared that henceforth psychology will be chronologically divisible into two periods—namely, before and after Freud while, on the other hand, his teaching has been unkindly described by some opponents as the scholastics of pornographical metaphysics Sollier sums up the Freudian doctrine as a process of analysing the patient's mind and investigating his dreams, lapses, associations of ideas, and his neuropathic or psychopathic symptoms in the course of which the explorer discovers—or imagines—the existence of a latent 'unconscious' which originates complexes, a libido, and a pan-sexualism particularly disturbing in infancy When these imperfect infantile instincts come into conflict with conscience and social morality, the development of the normal adult sexuality is delayed by a kind of arrest of psychic development Sollier declares that Freud has borrowed largely and without acknowledgement from Charcot who traced the origins of hysteria to youth and adolescence, from Janet, the discoverer of the facts on which is formulated the idea of the "complex", and from himself With this material Freud has constructed a pyramid resting on its apex Sollier finds in it two main principles the first hypothecates a psychological determinism, nothing ever happens by chance—free associations do not exist This principle, Sollier maintains, has been by no means established, and he asks if a single event does not give rise to numerous chains of associations or again, if different events may not end in the production of one and the same idea having travelled along diverse roads of associations Sollier insists that no reason has yet been given why there must be this return to the primitive form of thought Passing to the Freudian technique, he declares that this is so indefinite that two psychologists may interpret differently the same dream, or again the same complex may give rise to different dreams He asks where in all this is the sound scientific method so necessary if the unknown depths of our minds are to be accurately plumbed As for Freud's conception of the 'censor,' Sollier remarks that this hardly harmonizes with the rigid psychological determinism on which the whole doctrine rests Why is the censor only a product of fear and shame why may not kindliness, health and a love of right living take part in forming our moral conscience? Coming to dreams—the corner-stone of the Freudian edifice—Sollier insists that the postulate that there is a manifest content of the dream conforming to the psychology of the patient is by no means established, yet Freud's whole argument rests upon it A second postulate, that the strongest complexes are those evoked by sexual emotions rests on no firmer foundation Yet on these two postulates the psycho-analyst bases his discovery of the latent content of dreams

A dream, according to Freud, is always the realization of a desire of the infantile sexuality, which desire, confronted by the censor, tries to disguise itself so as to escape like a truant from a schoolmaster This, says Sollier, is no longer metaphysics, but mythology He cannot accept the assumption that adult sexual perversions are merely survivals of the infantile sexual instinct, and that in the neuroses are found the same elements as in perversion—namely, unsatisfied sexual desire He remarks that if this were really the all-powerful cause, neurosis ought to be the normal condition of all young people who are continent He then tilts indignantly at the idea that if the patient cannot satisfy his cravings he takes refuge in a disease, and asks why the possession of a paralysis, a hysterical contracture, spasms, phobias, or obsessions is more gratifying to him than yielding to his normal sexual impulses Finally, he discusses the dangers of therapeusis on these lines, and concludes with a warning to medical practitioners to be on their guard against such appeals to credulity and dogmatism, he asks them to believe that it is no more than a vast psychological and metaphysical romance built up from data most of which have been distorted

TOXIN ANTITOXIN AND ANATOXIN

A CERTAIN amount of anxiety has arisen with regard to the use of a mixture of toxin-antitoxin in antidiphtheritic inoculation In the JOURNAL of March 8th (p 454) we reported the occurrence in America of some severe reactions following the use of a frozen toxin-antitoxin mixture The suggestion had been made that dissociation of the toxin from the antitoxin was caused by prolonged freezing Jules Renault and Pierre-Paul Levy, who have studied this problem intensively, publish some interesting results in the *Annales de Medecine*, October, 1924 (p 261) They have been using the Park-Zingher toxin-antitoxin mixture, and they first emphasize the difficulty of its preparation and some dangers that attend its administration This mixture is so prepared that the toxin and antitoxin units neutralize each other as nearly as possible Very little latitude for error is possible, and controls and repeated titrations are therefore necessary The two authors confirm the view that toxin and antitoxin do not form a stable compound, though they are physiologically antagonistic to each other, each preserves its individuality in a mixture, and the antitoxin appears to deteriorate more rapidly than the toxin Hence within a few months of preparing a neutral mixture it is found necessary to add a proportion of antitoxin to correct the deterioration In administration three injections, each of 1 c cm of the mixture, are given subcutaneously, and immunity, as judged by a negative Schick reaction, takes from two to six months to establish The two authors have produced a modification of the toxin-antitoxin mixture, which they claim is more easily prepared, obviates the need of control, and is absolutely safe Their mixture contains a large excess of antitoxin over the toxin, the two being mixed just before inoculation They found that the optimum mixture for prophylaxis contained in each dose 300 units of toxin and 100 units of antitoxin, using Ehrlich's notation (1 unit of antitoxin neutralizes 100 units of toxin) The method of preparation is simple, the titre of 1 c cm of standard toxin is 300 units, and of a standard antitoxin 250 to 300 units Each dose will, therefore, consist of 1 c cm of toxin and of 0 4 to 0 33 c cm of antitoxin Three injections are given subcutaneously at intervals of eight days The reaction is said to be slight, there may be some pyrexia and a little local redness and pain, but vomiting rarely occurs Immunity, shown by a negative Schick reaction, is established in three to six months According to Renault and Levy, three injections confer immunity in 80 to 90 per cent of the cases, two injections in 66 per cent, and one injection in 40 per cent They found that the immunity persists as long as that obtained with the Park-Zingher mixture—namely, for two years at least, and considerably longer in the great majority of cases They also report good results from the therapeutic use of their mixture In mild cases they employ the prophylactic dose of 300 units of toxin and 100 units of antitoxin In severe cases the amount of antitoxin in the dose is increased to 2,500 to 5,000 units, the amount of toxin remaining at 300 units At the end of their paper a note regarding the investigations of Ramon is supplied on the authority of Professor Roux, director of the Pasteur Institute Ramon found that by incubating diphtheria toxin to which 3 to 4 per cent of formol had been added, for at least a month at 37° C, he could so attenuate it that a guinea-pig for which the minimum lethal dose of the original toxin was 0 001 c cm would survive 5 c cm of this new product, which he has termed "anatoxin" Though its toxic property is thus attenuated, its value as an antigen appears to remain high Ramon found that with a first dose of 0 5 c cm, and a second, fourteen to twenty-one days later, of 1 c cm, a third dose was rarely necessary In 80 per cent of his cases no local reaction was observed, in 18 per cent there was slight redness at the site of injection, and in 2 per cent a slight general reaction occurred No fewer than 40 per cent of the cases inoculated gave a negative Schick reaction eight days after one injection, in five to six weeks 89 per cent were negative, and in eight weeks 99 to 100 per cent had become negative The duration of this immunity has not yet been determined, but there appears to be no reason why it should not equal the duration obtained from the use of the toxin-antitoxin mixture Renault and Levy now employ for therapeutic purposes a dose of 2 c cm of anatoxin in place of 1 c cm of a toxin of 300 units titre, combined with 100 units of antitoxin

CLINICAL MICROSCOPY OF THE EYE

MR BASIL GRAVES has presented two reports[1] to the Lang Clinical Research Committee of the Royal London Ophthalmic Hospital, Moorfields The first is a summary, without details, of the various clinical results of the investigation of the microscopy of the living eye, which he began in 1920 when senior house-surgeon at Moorfields Hospital, and continued later as Lang Clinical Research Scholar there He has sought to ascertain the principles underlying various effects, so that, by properly defining them, it should be possible to place the technique on a scientific basis so as to enable observers to detect and interpret fine clinical conditions The investigations were concerned, among other things, with intraepithelial vacuolation of the cornea, exactly limited, in certain cases, to regions overlying conglomerate precipitates on the corneal endothelium In opening a discussion in the Section of Ophthalmology of the Annual Meeting of the British Medical Association at Bradford,[2] Mr Graves spoke of seeing the cylindrical beam in the normal aqueous fluid, he now mentions conditions where the visibility of this beam was pathologically increased—cases of simple retinal detachment in their later stages, and certain cases of apparent conjunctivitis in which this sign displayed the presence of intraocular disturbance Other results include the taking up of minute particles by the corneal endothelial cells on which inflammatory precipitates lie, and the vascularization of the cornea, in certain cases of interstitial keratitis, along the path of the entering nerves, the course taken by the new vessels being so precisely related to the nerves that, where the nerve divides dichotomously, the vascular loop may extend along one or other, but not both, of the two branches before it reaches the sharp turning point in the course of

[1] *British Journal of Ophthalmology*, October and November 1924
[2] BRITISH MEDICAL JOURNAL, October 25th p 756

the tiny blood stream Dealing with chronic primary glaucoma Mr Graves suggests the possibility of atrophy of the iris sphincter muscle, with subsequent persistence of function of a normally active or overactive dilator muscle He has some remarks, based on the supposition that patients suffering from acute, following on chronic, primary glaucoma may often be found to have been subject to long-standing symptoms, many of which can be justifiably referred to a heightened activity or increased sensitiveness of the sympathetic nervous system He tried to ascertain whether patients who are doubtfully the subjects of primary glaucoma exhibit a greater tendency towards dilatation of the pupil by the sympathetico-mimetic drug *p*-hydroxy-phenylethylamine (tyramine) than do normal persons Instillation of a solution into the conjunctiva did not lead to conclusive or useful results Among the results of microscopy of the lens in the living eye were the finding of an accessory zone in certain eyes which in the past have received concussion injury the migration of pathological changes with growth of the lens cortex, a change of the lens in cases of simple retinal detachment, and the manner or relaxation of the lens capsules in the process of accommodation, with the influence on their state of tension produced by local reflexes or by drugs The second report is on a bilateral chronic affection of the endothelial face of the cornea of elderly persons The report deals first with the very precise technique which is necessary to detect and identify this disease, which is described as presenting four classes or stages It starts probably in the centre of the cornea and takes years to spread peripherally, early it does not impair vision, but later vision is reduced The condition is mainly one of elevations of the endothelium towards the anterior chamber, possibly caused, it is suggested, by some local product of the metabolism or its own cells—a structureless hyaline product having properties analogous to those of the material composing Descemet's membrane In a commoner type of the disease the endothelium shows fine granular or grained multiple refracting irregularities causing a pattern like certain forms of beaten silver work, or a thin transparent membrane which has become crinkled In a rarer type of the same disease the endothelial face of the cornea is likened to the greyness the unevenness, and the lueless lustre of the surface of pewter which has become partly corroded or to pitted asphalt sparsely bespattered with coarse sand The appearances depend on the chosen methods of observation and illumination In the fourth class or stage the overlying epithelium shows vacuolation which is subject to variations and remissions under some influence of uncertain nature, changes have been in progress in the epithelium whilst under observation, but the endothelial condition always remains stationary or insidiously becomes worse In conclusion, Mr Graves says that from the point of view of prognosis the disease, when widespread over the cornea is serious, but that he has no knowledge of the ultimate fate of patients so affected He knows no treatment which will arrest the disease

THE PRINCIPLES OF SPA TREATMENT IN GREAT BRITAIN

In his presidential address to the Section of Balneology and Climatology of the Royal Society of Medicine on November 27th, Dr W Edgecombe of Harrogate exhibited for each of the nine principal British spas a list of the disorders in which its waters were said to be efficacious The remarkable feature of the lists was their similarity All the spas from Bath in the west to Woodhall in the east from Strathpeffer in Scotland to Leamington in the Midlands proclaimed their virtues in the treatment of the same large groups of conditions The whole nine reputed their waters as efficacious in metabolic diseases gout, and chronic rheumatic diseases Every spa except one (Cheltenham) included arthritis among the conditions in the treatment of which it excelled, and every spa except one (Strathpeffer) made the same claim in respect to circulatory disorders Dr Edgecombe pointed out that either the claims were extravagant or were in the main true, in which case it must follow that there was nothing specific in spa treatment in this country The information on which he had drawn for his lists was contained in the *Handbook of British Spas*, and although this was issued under the auspices of laymen it was based upon reports by the medical profession in each of the places It was absurd to suppose that Bath and Harrogate, Cheltenham and Woodhall, were equally specific in the average case of gout, but they all claimed to treat gout with good results He had been in communication with medical men in all the spas with the object of discovering how much experimental work had been done, and it was rather remarkable that—save in a few instances, notably Harrogate—very little such work had been done, and the results which had been obtained could not be said to point to a specific action in any one disease The beneficial action attributed to spa treatment in this country must therefore, Dr Edgecombe inferred, be due to certain general principles The importance of spa treatment was in regulating tissue interchange which had been rendered abnormal by excessive or deficient intake or output, by lack of exercise or fresh air, or by the action of poisons, chemical or bacterial Broadly speaking, there were three forms or treatment applicable in these cases (1) the anabolic type where the aim was to build up the deficient metabolism, as in convalescence after acute diseases anaemia and general debility, (2) the metabolic type where the metabolic process was faulty (without being necessarily excessive or deficient), as in functional disorders of the liver, and (3) the katabolic type in which the treatment was directed to promoting overstimulation of the metabolic processes, as in the obese, the overfed and the underexercised These principles could be carried out equally well at most spas which had the necessary equipment Certain differences in the waters as well as in the climate and geographical situation must be considered but the principles remained the same It was true that these principles were capable of application at home by drugs and other measures but the home treatment lacked the concentration which was possible at the spa, there was not the same wide choice of physical procedures, nor did the patient have the advantage of change of scene and climate removal from business and opportunity of rest and exercise Dr Edgecombe concluded by saying that in the present state of knowledge no claim could be made to the successful treatment of chronic diseases as the result of the specific action of the mineral waters and baths of Great Britain but rather, stress should be laid upon the fact that these diseases were treated at the various spas on such broad general principles as he had sketched The physicians at spas also should regard themselves as general physicians, making use largely of physical methods, but having all the resources of the general physician at their command rather than as spa physicians, putting their faith in a specific action of certain waters, which action was as yet unproved In the course of some remarks following the address Dr Pierret of La Bourboule urged that whatever might be the case with British spa certain French spas had a specific value, although he admitted that there were many others especially in the east of France as to which no such claim could be made In France however, it was felt that the great progress made at many spas was due to their specialization He instanced Porat (where the waters were rich in CO_2), which specialized in cases of high tension, although other heart cases must not be sent there Again, in the thermal sulphur waters of the French Pyrenees a special action was indicated

THE PRACTITIONER AND THE STATE

IT is interesting to note that newly qualified practitioners and senior students are now alive to the fact that the universities and medical schools do not equip them very satisfactorily, if at all, with a knowledge of the conditions in which actual practice is carried on, and of the relations of the practitioner with administrative systems such as that of National Health Insurance In the last number of the *Queen's Medical Magazine* of Birmingham University a short article voices this criticism with some emphasis It is true that a mere admonition to exercise care in the issue of certificates and in the attention paid to the reading of regulations is not enough, for, as the article points out these are so numerous that unless a man has the counsel of some experienced person well versed in their working he is bound to make mistakes Such mistakes may entail serious consequences both upon the practitioner who makes them and upon the practitioner for whom he may be acting as deputy or assistant It is not only in connexion with National Health Insurance that instruction is needed The statutory obligations of a registered medical practitioner are increasing year by year in other directions also, and although experience alone can bring full knowledge of these obligations and their effects on practice, it has become highly desirable that some acquaintance with them should form part of the equipment of every newly qualified practitioner

HISTORY OF WESTMINSTER HOSPITAL

IT is appropriate that the renovation of the Westminster Hospital, which was commemorated by a service in Westminster Abbey on July 15th last, should be marked by Mr W G Spencer's compact and admirable book *Westminster Hospital An Outline of its History*[1] The basis of this history is the collection of more than sixty volumes of the minutes of the house committees and general boards of governors, and thus the subject-matter has been dealt with under the four headings of the changes in the neighbourhood of the hospital, an account of the hospital since its establishment in 1721, when there were only two general hospitals — St Bartholomew's and Guy's — in London, the nursing under the old system and since the time of Florence Nightingale's reforms, and an account of the visiting staff As Westminster was originally a marsh round the delta of the opening of the Tyburne into the Thames, there is an interesting account of this now hidden stream, it is in keeping with the fascinating story of the antiquities and historical connexions of this part of old London The transformation of the once ill drained and malarious district into a healthy centre of active business is also traced The first home of the Westminster "Infirmary for the Sick and Needy," as it was originally termed, was in Petty France, but in 1724 it moved into a larger house, and again in 1734, after a dispute which led to a split-off and the establishment of St George's Hospital in Lanesborough House at Hyde Park Corner The third home of the Westminster Hospital contained *seventy patients, and lasted until 1834, when the present* building was opened Just before the war there were discussions and various proposals for the sale and removal of the hospital and its amalgamation with St George's, but these fell through The account of the visiting staff is a mine of curious information, including much about the manners and customs of the time In the early days of the hospital two classes of surgical cases were of outstanding prominence stone in the bladder was very common in boys until the middle of the last century, and bone disease, septic or tuberculous, was a prolific source of amyloid disease John Douglas, appointed lithotomist in 1721, and Cheselden in 1724, were rivals, and a description of their relations and of Douglas's imitation of the suprapubic operation is a useful footnote to history Of the latter it is remarked that "no surgeon or anatomist of the first rank can ever have surpassed Cheselden in confused and inexact statement" The record for attachment to the hospital belongs to William Lynn, who entering as the apothecary's pupil in 1775, was surgeon from 1787 to 1834, when, at the age of 81, he was finally induced to retire on condition that his son should be appointed extra fourth surgeon, of the younger Lynn it is recorded that in 1838 he "successfully removed a loose cartilage *from the knee-joint*," the specimen being preserved in the museum The final chapter deals with the renovated hospital, and forms a fitting conclusion to a story full of incident and pleasantly told

[1] *Westminster Hospital An Outline of its History* By W G Spencer London H J Glaisher 1924 (Demy 8vo, pp 120, 3 plates)

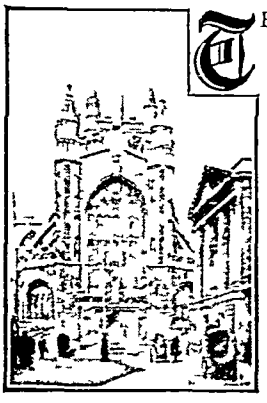
INTERNATIONAL SURGICAL CONGRESS, 1926

THE seventh congress of the Societe Internationale de Chirurgie will be held in Rome from April 7th to 10th, 1926 The subjects for discussion include the following radium treatment of cancer of the uterus, treatment of cerebral tumours, surgery of the spleen, abscess of the liver, and the later sequels of the treatment of Jacksonian epilepsy In connexion with the congress excursions will be arranged from April 1st to 15th to Milan, Padua, Venice, Bologna, Florence, Genoa, Pavia, and Turin Inquiries should be addressed to the secretary-general of the society, Dr L Mayer, 72, rue de la Loi, Brussels In view of the great attraction of Italy and the world wide reputation of Italian surgeons, many visitors are expected from various countries The last congress was held in London in July, 1923, under the presidency of the late Sir William Macewen, at that time President also of the British Medical Association The congress was opened by the Prince of Wales, and Sir William Macewen's presidential address, on the study of nature as shedding light on the structure and functions of man, was published in full in our issue of July 21st, 1923 (p 91)

VISIT TO ENGLAND OF THE INTER STATE POST GRADUATE ASSEMBLY OF AMERICA

A DINNER was held at Claridge's Hotel last week, at the invitation of Mr Philip Franklin, F R C S, in connexion with the proposed visit to England next June of the Inter-State Post-Graduate Assembly of America, which is directed by the Tri-State District Medical Association The guests at the dinner included the American Ambassador, Lord Desborough, the President of the Pilgrims Society, the Presidents of the Royal Colleges of Physicians and Surgeons, of the Royal Society of Medicine, and of the Fellowship of Medicine, and Dr Bolam, Chairman of the Council of the British Medical Association On July 19th (p 135) we gave such information about this coming visit as was then available, and it is now possible to add some further details The itinerary arranged is as follows June 1st to 7th, London, 8th to 10th, Manchester, Liverpool, and Leeds, 11th to 12th, Dublin, 13th to 14th, Belfast, 15th to 16th, Glasgow, 18th to 19th, Edinburgh, 20th, Newcastle The opening ceremony of the tour will be held in London on June 2nd at 10 a m, in the Barnes Hall of the Royal Society of Medicine, when the Duke of York will be present A series of short lectures will be given at the Royal Society of Medicine on the mornings of June 2nd, 3rd, and 4th, and the President of the Royal College of Surgeons will hold a reception at the College on June 5th, from 4 to 6 p m Thirty six London hospitals and medical institutions are co operating, and a programme committee has been formed with the following secretaries Dr Arthur Ellis (medical), Mr Girling Ball and Mr H W Carson (surgical), and Dr Eric Pritchard, secretary for special departments

NINETY-THIRD ANNUAL MEETING
of the
British Medical Association,
BATH, 1925



BATH ABBEY

THE ninety third Annual Meeting of the British Medical Association will be held at Bath next summer under the presidency of Dr F G Thomson, physician to the Royal United Hospital, Bath, and consulting physician to the Royal Mineral Water Hospital, who will deliver his address to the Association on the evening of Tuesday, July 21st The sectional meetings for scientific and clinical work will be held, as usual, on the three following days, the twelve Scientific Sections will meet for discussions and the reading of papers in the mornings, and some of the afternoons will be devoted to clinical, laboratory, and balneological demonstrations The names of the Presidents of Sections were given in a Current Note published in the SUPPLEMENT of November 22nd, and the full list of officers, together with other details of the arrangements for the Annual Meeting, will appear in subsequent issues The Annual Representative Meeting, for transaction of medico political business and discussion of the internal affairs of the Association, will open at Bath on Friday, July 17th On the last day of the meeting—Saturday, July 25th—there will be excursions to places of interest in the neighbouring West Country We publish below the first of a series of descriptive and historical articles on Bath The British Medical Association last met in that city in 1878

SOME NOTES ABOUT BATH

BY
JOHN HATTON,
DIRECTOR OF THE HOT MINERAL BATHS

So much has been written about Bath, more perhaps than of any other city except the world's great capitals, that it is difficult to say anything new But some old tales will bear re-telling and the story of the city chosen for the Annual Meeting next July is full of human interest

Why at this particular spot alone in all England half a million gallons of hot water well up every day from unknown depths no one seems quite able to explain But for this Bath would, there can be little doubt, have been only another small cloth weaving town like so many in the West Country The beauty of its situation alone would never have attracted the Romans and if the waters were not the only attraction for the fashionable crowd of the eighteenth century they provided, at any rate, a decent excuse for going to 'the Bath"

We may perhaps picture the man of the Stone Age finding his way from the caves of the Mendips through thick forest to the swamp of the Avon valley and bathing his diseased or injured body in the hot springs We may be fairly certain that the Neolithic dwellers on the downs around Bath used the mysterious waters indeed, Sir Norman Lockyer has suggested that a temple dedicated to sun worship stood on the site of the present Abbey

Bath in Roman Times

But with the coming of the Romans we are on surer ground Even from the altars and other inscribed stones and the well preserved fragments of the temples it is not difficult to deduce that Aquae Sulis was a place of importance in those early days But it is in the remains of the magnificent Thermae—the best preserved monument of Roman civilization this country possesses—that the real character of Roman Bath can be traced

In one of the stories in *Puck of Pook's Hill* Rudyard Kipling has vividly re-created the life and spirit of this Roman health resort 'The best baths in Britain—just as good I'm told as Rome" says Parnesius centurion of the Thirtieth Legion—for Aquae Sulis was no common camp, no mere military outpost, but a famous and fashionable spa even in the First Century— and the generals come through the streets with their guards behind them, and the magistrates come in their chairs with their stiff guards behind them and you meet fortune tellers and goldsmiths, and merchants and philosophers, and feather-sellers, and ultra-Roman Britons, and ultra-British Romans, and tame tribesmen pretending to be civilized, and Jew lecturers and oh everybody interesting" And by the way, how very little things have changed—but that is another story

In other places defensive wall and military camp show the sterner side of the Roman occupation, but it is at Bath alone that one can see something of the luxurious life of a Roman health resort

The Baths of Bath To-day

And still getting on for two thousand years after the Romans built their great baths, the hot springs of Bath are being used—and used with ever-increasing success—in the treatment of disease A greater, as well as a more scientific Bathing Establishment has succeeded the Thermae of the first century Those Roman officers who recorded their gratitude in votive altars to the goddess of the springs would have been lost in amazement at the equipment of the bathing establishment of the present day at the many varied douches, at the throat and nasal sprays of atomized mineral water the inhalation of the radio-active gases of the springs, and at the many forms of electrotherapy employed in conjunction with the baths

The deep bath would seem familiar for they differ only in detail from the individual immersion baths of Roman times and the preliminary use of some kind of heat treatment, now so often prescribed, is only a more elaborate

form of the Roman sudatorium, and large and well equipped as the modern swimming-baths are, they can hardly claim the architectural magnificence of the Great Roman Bath

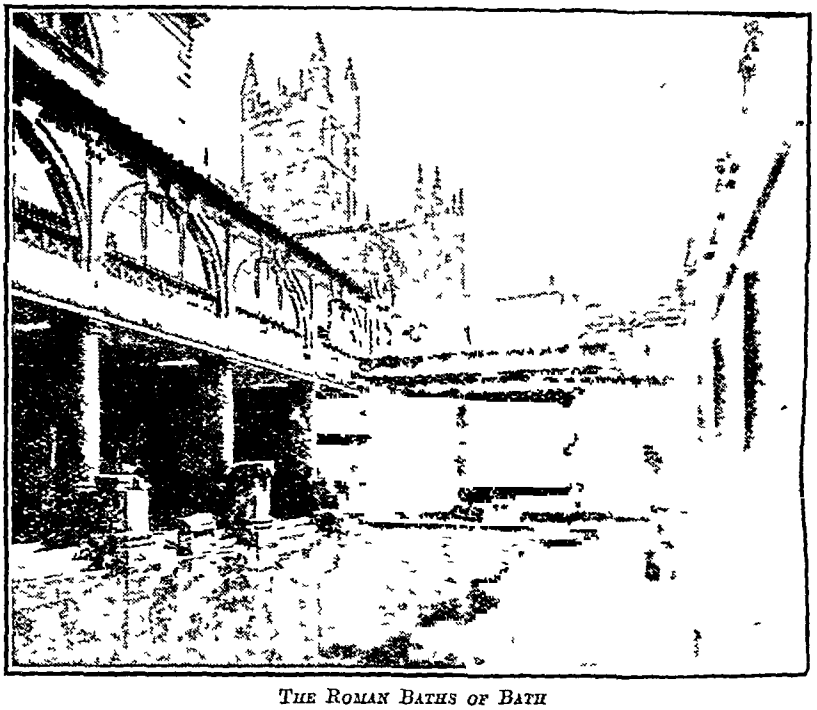
Just as the life of Roman Bath centred round the springs, so the Pump Room is the rendezvous of those who come to Bath to-day From a recess at one end of this handsome Georgian room there looks down on the water-drinking crowd a statue of Beau Nash, that remarkable man to whose peculiar genius Bath owes, in a great measure, its wonderful renaissance in the eighteenth century

Bath Abbey

Of the long period between the destruction of Bath by the Saxons in 577 and the building of "that beautiful city which charms even eyes familiar with the works of Bramante and Palladio" there is little visible evidence, except, of course, the Abbey and some fragments of the mediaeval city wall

The Saxon Abbey in which Edgar was crowned King of England has disappeared, and only a few fragments remain of the Norman cathedral which took its place The King's Bath is probably the direct successor of the bath built by John de Villula, that great bishop and physician who rebuilt the Abbey, "restored the citizens' houses, and became the refounder of Bath, raising a new city out of the ashes of the old" after its destruction in the unsuccessful insurrection when William Rufus became king

The present Abbey, begun in 1499, was "the last complete ecclesiastical building erected before the Dissolution," and although the late Perpendicular style may be criticized, there is a dignity and quiet beauty about this noble church which impress one with a sense of fitness not always felt when a great piece of Gothic architecture is surrounded by buildings of classical design



THE ROMAN BATHS OF BATH

Georgian Architecture

Architecturally Bath is a Georgian city, rather it may be called *the* Georgian city, for nowhere can eighteenth century architecture and town planning be seen in such perfection Its handsome streets and such magnificent buildings as the Royal Crescent, the Circus, Queen Square, Pulteney Street, and the Parades are a monument to the genius of the architects of the eighteenth century and the delight of every visitor of taste The skilful architects who designed these stately edifices realized equally the natural beauties of the situation and the possibilities of Bath stone as a building material, and their work gives Bath today a unique charm comparable only to some of the cities of Italy

Bath has touched English history, and especially English literature, at so many places that everyone seems to find, somewhere in the city's story, some point of personal appeal On many of the houses once occupied by notable men and women of the past the Corporation has placed mural tablets, and the pleasure of strolling through the old-world streets is immeasurably enhanced by these bronze records of the many people famous in literature, art, and science who have made Bath their home

Great Names of the Past

Turn where one may the city is eloquent of the past In a house in the Circus, which has been justly described as "the finest piece of architecture of its kind in Europe," the Earl of Chatham resided during some of the most eventful years of his life, in another Gainsborough painted some of his most famous pictures, there Lord Clive lived, and there Sir William Parry, the Arctic explorer, whose father was one of the great physicians of his day, there Thackeray sojourned, and there David Livingstone In the Royal Crescent, "the finest crescent in the world," and the masterpiece of its architect, John Wood the younger, lived Christopher Anstey, the author of that amusing satirical work, *The New Bath Guide*, Sir Isaac Pitman, the inventor of phonography, and that great writer and publicist Frederic Harrison

Fanny Burney, the authoress, who is buried in a Bath churchyard, lived in Gay Street, as did John Wood, jun, the architect to whom Bath owes many of its finest buildings In this street, too, lived William Hoare, the artist, and Mrs Thrale, for many years the friend of Samuel Johnson, who often visited Bath

Bath was the early home of Rajah Brooke of Sarawak, and here Admiral Phillip, the first Governor of New South Wales, spent the closing years of his life Wolfe was dwelling here when he received the dispatch which sent him forth to be the hero of Quebec

Jane Austen is indissolubly associated with Bath Dickens has not only laid here some of the most amusing scenes of *Pickwick Papers*, but it was when staying in Bath that the character of Little Nell in the *Old Curiosity Shop* first dawned upon the genius of the great novelist Macaulay stayed in Bath, and here Lytton wrote a portion of *The Parisians* Here Wordsworth at one time dwelt, and Southey, Oliver Goldsmith, and Walter Savage Landor From Bath Lord Chesterfield wrote some of his famous letters to his son, and here James Quin, the actor, spent the evening of his life, knowing "no better city for an old cock to roost in"

Herschel was an organist in Bath when he discovered the planet Uranus In Bath Byron's parents met and married, and "in Turkish costume at a masquerade" we find the poet himself in his earlier years It was at the old Bath theatre (now an unusually interesting Masonic hall) that Mrs Siddons laid the foundation of her fame, and a mural tablet marks her house in the Paragon Sheridan has perpetuated the Bath in which he wooed the beautiful Elizabeth Linley, and where he gathered the material for the finest among English comedies, and here Henry Fielding wrote his famous novel and found in Ralph Allen "the Man of Bath," the personage destined to immortality as "Squire Allworthy" in *Tom Jones*

Parks and Gardens

Among the city's greatest charms are its many parks and gardens The Royal Victoria Park, a noble domain of nearly fifty acres, with a fine avenue and a carriage drive a mile and a quarter in length, contains one of the finest collections of trees in the kingdom, and in the

Botanical Gardens is a beautiful and varied collection of rock plants The Sydney Gardens, at the end of Pulteney Street — the most dignified and perfect town street I know," says Professor Reilly—were the Vauxhall of Bath in the eighteenth century, and still form the venue of open air concerts and entertainments, while during the summer season visitors now "take the waters" in the North Parade Gardens, famous as a social rendezvous when Harrison's Rooms, which stood where the Literary Institution and Museum is now, were the centre of that outwardly decorous gay world of which Beau Nash was king

During recent years there has been a great development in the use of these parks and gardens Tennis courts, bowling greens and miniature golf courses with concerts and dances and facilities for obtaining refreshments have all helped to bring people more into the open air

Another feature of Bath is the ease with which one can even from the centre *of this city of 70,000 inhabitants*, pass into pure unspoilt country



ABBEY CHURCH BATH

'It is," to quote Frederic Harrison, a great lover of the city, in which he spent the last years of his life, "this rural element of Bath which makes the city a true *urbs in rure* He who leaves his house on foot passes in a few yards to a true country walk, and as he strolls along the avenues and up and down its hillside, on East or West, on South or North, he has before his eyes at every turn, a vision of that Wessex country side above him—villages, farms, pastures, and woods It is such a city as a few centuries ago was common enough in Europe Within a mile or two he may find avenues of noble forest trees, or paths beside a winding river, a picturesque hill village quaint remnants of Tudor Plantagenet, or Norman work, an ideal Tudor manor the site of a Cromwellian battle a fragment of Roman road, a Saxon relic, a prehistoric earthwork, and on every side a down with a panoramic view There is more than one such haunt within an hour's walk of the Abbey where at a height between 700 and 800 feet, there may be found a prospect covering some forty or fifty miles of the West Country which *in rural* beauty extent of outlook, and historic associations, will hold its own with *any other famous* view point' in all the south of England"

But it must be left for a future article to give some account of other places of interest in Bath and of the countryside around

Nova et Vetera.

THE GREAT PLAGUE IN LONDON

THE Great Plague of 1665 in London is the most tragic event in the history of England's metropolis In literature Defoe's *Journal of the Plague Year* is a story so lifelike that it has often been read as a real chronicle though it is only a great work of fiction based on fact, just as was his *Robinson Crusoe* Pepys, as we know from his Diary, lived on throughout the whole terrible year in the stricken city, from which great proportion of the better-off population had fled, and even reference he makes to the Plague has been conned with inquiring interest Contemporary medical writings on the subject are very scanty partly because many doctors—including even Sydenham—went into the country to which most of the better class patient had also departed and partly because even if they had remained ignorance of the nature and causation of the *pestilence* was so *profound* and conceptions of its control and prevention so mistaken that their writings though no doubt of antiquarian interest would have had little value

Now however Mr Walter George Bell the well known author of various valuable works on London—the Great Fire the Tower etc—has written a full history of the Plague[1] Such research has never been devoted to the subject before Indeed, every fact and detail in his enthralling story is so carefully authenticated that he feels it necessary to apologize for the number of his footnotes, lest any reader should think they savour of pedantry

The deaths from plague recorded in the Bills of Mortality begin with May 1665, and quickly climb up to a maximum in September when they reached 7,000 in each of two weeks The Duke of Albemarle, however, told the French Ambassador that in one of these weeks they were really 14 000 without including Quakers buried in their gardens" According to the Bills the deaths diminished as quickly as they had increased and the epidemic chart ends with March 1666 The total recorded deaths were 97 306 but Mr Bell rightly contends that there were many thousands more Statement of the cause of death lay with the 'searcher' old women illiterate ignorant and habitually drunken, usually paupers whose small income from their office helped to relieve the parishes of the burden of their upkeep Such some would be willing for a trivial bribe to report some other cause of death than plague The evidence of understatement is to be found abundantly in the great excess of deaths set down to other causes in the plague period as compared with normal times

London's population was estimated by Graunt at not above 460 000 in 1665 and even that number was greatly diminished by the flight of a large part of the better-off inhabitants including the Court or Charles II and that Mr Bell concludes that all who were left can have but little exceeded 350 000 He holds indeed that of those who remained not the poor prosperous had fled, alone one out of every three or

[1] *The Great Plague in London in 1665* By Walter George Bell FRHS London John Lane the Bodley Head Ltd 1924 (Demy 8vo pp 370 with illustrations and maps)

London's populace perished" "The Poore's Plague" is the name by which it came to be generally known, the poor being the class who were unable to escape from its ravages With obvious restraint, and none the less strongly on account of his restraint, the author animadverts on the flight from the stricken town of many whose duty it specially should have been to remain to help or comfort those for whom there was no escape "The divines and doctors from whom a good example might have been expected were not the last to leave," and the author of *London's Dreadful Visitation* expressed the hope that in a like emergency "neither the physicians of our souls or bodies may here-after in such great numbers forsake us" Yet many remained, and not a few of these, both ministers and doctors, lost their lives in tending the victims of the epidemic (especially many dissenting ministers who had been subject to persecution under Charles II) and became "martyrs to the duty they accepted without flinching when the courage of others failed", while on the other hand the fugitive vicar of Cripplegate "lived to take the Bishopric of Gloucester" The King and Court, however, did not fly precipitately first to Hampton Court and later to Oxford, but as regards the tradition that Charles subscribed a £1,000 weekly during the Plague in addition to £600 by the City, Mr Bell writes that the cold fact is that the sums distributed over the whole year fell very short of this, and that charity was the mainstay But the splendid work done by the Duke of Albemarle on behalf of the King, by Lord Mayor Lawrence, and by aldermen, is freely testified to in the course of the book

The volume demonstrates anew the utter want of knowledge of the nature of plague infection, and the hopelessly mistaken policy which was adopted for its control The shutting up in their own dwellings of all the inmates of every infected house, with the barring of egress except in response to the daily call 'Bring out your dead," was responsible for mortality to a degree which cannot be estimated It was only towards the end that pest-houses were being proposed and, of course, only a hopelessly inadequate provision could be made The futile burning of fires in the streets was the other main feature of preventive efforts The epidemic had been heralded by marvellous appearances in the heavens—blazing stars, comets, flames of fire, a coffin in the clouds, the conjunction of Mars and Saturn Quackery abounded in remedies which did not prevent the quacks themselves from falling victims

In discussing the causation of the Great Plague, after telling his readers about the *Bacillus pestis* and fleas and black rats and grey rats the author says it is not necessary to look abroad for the origin of the epidemic For generations and centuries plague had existed in London Without dogmatizing, he calls attention to the phenomenal climatic conditions of 1665 in respect of unprecedented drought from December, 1664, to August, 1665 As regards the cause of the subsidence of plague before it had attacked the whole population of the amazingly insanitary city, the same question might be asked with respect to every epidemic disease But in referring to plague prevalence in England generally about the time of London's visitation, Mr Bell makes a remark of epidemiological interest respecting Nottingham, which was the last place attacked by the epidemic The disease appeared there in 1667, and the notable point is that it must have been then of an unusually mild type, as the year's burials in Nottingham were only 55 above the average, so that the identification of the outbreak with bubonic plague is, he thinks, not quite convincing The same doubts, it need hardly be noted, are at the present time occasionally being expressed with regard to the nature of the mild prevalent small-pox, though there is practical unanimity of skilled opinion that the disease is genuine variola

Space forbids further account of Mr Bell's volume To much of its contents we have made no reference, but from beginning to end it is equally interesting and important Indeed, it is a book of the greatest value both to the profession of medicine and to the reading public An ample index facilitates reference to every part of its contents, and its illustrations are appropriate throughout

THE ROYAL SOCIETY

ANNIVERSARY MEETING

THE 262nd anniversary meeting of the Royal Society was held on December 1st, when SIR CHARLES SHERRINGTON was in the chair and delivered the usual retrospective address He began by referring to the Fellows who had died during the year, they included Professor Symington of Belfast, Sir William Macewen of Glasgow, described as a brilliant surgeon who advanced scientific surgery, Professor S G Shattock, of whom it was said that he was "a great and ordered storehouse of knowledge on pathology", Sir William Bayliss, "a lovable and ideal colleague one of the key figures maintaining the physiological endeavour of our time", and Dr Sidney Martin After a brief reference to the share the Society had taken in organizing an exhibition of pure science in the Government buildings at Wembley—an exhibition designed to bring before a wide public the meaning and importance of scientific research— Sir Charles Sherrington said that the third research professorship provided from the munificent gift of Sir Alfred Yarrow had been filled by the appointment of Professor O W Richardson, whose original contributions to science had been remarkable for their variety, their amount, and their value, the most important, perhaps, was that connected with the emission of electrons from hot bodies Like other Yarrow professors, he will continue to work in the laboratory from which he has published a large part of his best work, and will supervise a certain amount of graduate research work

Medals

The President announced that the Copley medal had been awarded to Sir Edward Sharpey-Schafer Of him the President said

"Sir Edward Sharpey Schafer's work, extending from 1874 to the present time, has illuminated many parts of physiology, and the field of microscopical anatomy no less His earlier experimental researches dealt with the functions of the different parts of the brain, and with the anatomy of the paths of conduction in the central nervous system In 1894 he discovered, in conjunction with Dr George Oliver, the remarkable effects of intravenous injection of extract of the adrenal gland, tracing their source to the small medullary portion of the gland, and furnishing in regard to the mode of production of the effects an outline analysis which has since then undergone extension rather than revision This research proved the starting point for a great volume of work, still fraught with consequences of extreme importance to physiology and medicine This work on the adrenal was followed by somewhat similar work on another ductless gland, the pituitary, which opened a modern chapter of physiological knowledge of that organ, again with important consequences to medicine In 1909 he gave the Croonian Lecture, on 'Functions of the Pituitary Body' Reverting to his researches in microscopical anatomy, they have been wide and numerous, ranging from demonstration of the nerve net in the swimming bell of Medusae to the development of the cells of the blood, the intimate structure of muscle fibres, and the mode of absorption of fat by the intestinal epithelium All this large volume of original work, produced unremittingly through many years, and containing outstanding discoveries in regard to what, following his own term, is now known as endocrinology has constituted "a great and singularly fertile advance in natural knowledge"

A Royal medal has been awarded to Dr Henry Hallett Dale, Director of the Department of Biochemistry and Pharmacology under the Medical Research Council Of him it was said

'The high value and importance of Dr Dale's researches is illustrated by that series of them whose starting point was an inquiry into the action of ergot Working with successive collaborators, he showed that histamine, an amine derived from ergot by decarboxylation of amino acids, produces a condition resembling wound shock and toxaemic collapse By analytic experiments he succeeded in establishing that histamine, while causing spasm of arterial and visceral muscle, conversely paralyses the active contraction of the capillary blood vessels, and this analysis was reached at a time when the property of contractility of those vessels had not been generally recognized He showed that their paralysis is the dominant feature in the shock and is responsible for a virtual breakdown of the whole blood circulation The control of the tractility of the capillary wall was thus revealed as a prime factor in the local regulation of blood supply, and as essential to the very mechanics of the circulation He has shown further that in histamine 'shock' we have a paradigm for the shock effect of a large class of protein poisons, and also for the grave condition known in medicine as secondary surgical shock, toxaemic collapse, and anaphylactic shock The work has thus furnished a fresh key both for study of the normal circulation and also for the problem of a baffling pathological condition In regard to anaphylaxis and

immunity he has further been able to give final proof that the anaphylactic response is due to a fixation of antigen not as had been supposed in the blood or other tissue fluids but within the cells themselves

Right side-upness

In the course of his address the President adverted to the work of Professor Magnus and his collaborators at Utrecht Their admirable research in nerve physiology carried on during the past fifteen years had recently been brought to an approximate completion Its field, the President continued, has lain in nervous mechanisms which, though the highest part of the brain can have touch with them, can yet of themselves work wholly reflexly and separably from mind

A number of simpler acts, studied for the most part in lowlier animal forms, have, of course, long been known to stand in that relation to the higher brain But the Utrecht researches prove a like relation, and, in the superior mammals, for acts surprisingly complex—the assumption and maintenance of the erect posture of walking, running, and so forth in all their ordinary completeness Not only have Magnus and his colleagues observed this, but they have analysed the reflex processes by which these acts are thus accomplished They have traced the seat and nature of the stimuli at work, the principles of the co-ordination of the nervous arcs and muscles involved and indeed all the mutual interaction which grade and secure the nicety of adjustment exhibited in such complexity

Plant growth orientates itself in regard to the line of gravity, geotropism, and so in the rabbit cat, and monkey, standing, walking running with their element in common the erect attitude, are shown by Magnus and de Kleyn to be shortly said, refined geotropic reflexes Any position other than the erect one excites in the reflex animal restoration of its erectness The head, for instance, is righted by an act having its unconscious source in the pull and pressure of two microscopic stones in the special pair of tiny gravity organs bedded in the skull With righting of the head goes rotation of the eyeballs in the opposite sense keeping the vertical meridian of each retina in correspondence with the actual vertical Appropriate reflexes bring the whole animal from any other position into the symmetrical right side up one The well known manœuvre which enables the cat, when inverted and falling from a short height to right itself in the air during its fall, alighting squarely on its feet is shown by Magnus and his colleagues to be executed perfectly by reflex action after removal of the entire higher brain Detailed analysis proves this whole reaction to be a chain of reflexes again essentially geotropic

Following these researches, the President said, we see that it is less true to say that the higher animal under direction of its mind keeps itself right side up, than to say that the animal body by automatic mechanism is kept right side up From the animal's point of view, as a sentient being, for it to be right side up to the world is, of course for the world to be right side up to it In other words, the body's automatism ensures that the mind looking, so to say, out from the body, finds the world right side up By the Utrecht researches that relation is shown to be maintained by processes as non mental as is digestive secretion of the bile Hence, this right-side-upness being settled without mind, and indeed prior to mind, and naive mind being, whatever else it is, utilitarian, the situation has not invited consideration from naive mind Mind has not needed, so to say, to think about a relation already existent and given it from the outset Professor Magnus's researches enable us therefore, to trace how, in the make up of mind, right-side-upness of the world comes as an innate unargued datum, an immediate intuition, and therefore largely elude mental analysis there being no direct sense experience or its origin or elemental processes although confusion in mental space when its elements conflict William James with characteristic picture queness wrote that our pre historic ancestors discovered the common sense concepts among them what he termed one-space" With that we may set "world right-side upness', but as for dating its "discovery" to our prehistoric ancestors, it, as an immediate intuition, must date back, not to the merely prehistoric, but to the entirely prehuman

ANNIVERSARY DINNER

The anniversary dinner was held in the evening, when the PRESIDENT was in the chair The Colonial Secretary, Mr L S AMERY, proposed the toast of the Royal Society It was, he said, on scientific development, more than on any constitutional scheming, that the future unity of the Empire in large measure depended, and quoted some illustrations, among others, the great field of research into health, especially in tropical countries, in which the Colonial Office, Society had done wonderful work The Colonial Office, which, among its other responsibilities, was also, in some measure, a Ministry of Health over millions of square miles, was bound to be intimately interested in all the research work the Society carried on The PRESIDENT in reply, said that as science improved more fields opened up, so that the hands of the Society were always full Among the encouragements of the past year had been the gift of £10,000 by an anonymous donor in India, to assist the Society in furthering medical research The toast of "The Medallists" was proposed by the PRESIDENT and acknowledged by Sir E SHARPEY-SCHAFER and that of "The Guests," given by Sir WILLIAM BRAGG, by Lord SUMNER

THE OPIUM QUESTION AND THE LEAGUE OF NATIONS

THE two conferences in regard to the traffic in opium and dangerous drugs referred to in the JOURNAL of September 13th and October 11th last have been in session at Geneva during the past month At the sixth session of the Advisory Committee on opium last August a report of a Preparatory Committee," dealing with the programmes to be laid before the two November conferences, was under consideration While no definite agenda were approved for the earlier conference, concerned with restrictions on prepared opium" or opium for smoking an elaborate scheme was drawn up by the Advisory Committee as a basis for the deliberations of the second conference, dealing with the traffic in dangerous drugs including some possible amendments in the International Opium Convention signed at the Hague in 1912 On August 29th the Fifth Assembly of the League adopted the report from the sixth session of the Opium Advisory Committee It took note of ratification of the Convention by Switzerland, deplored the increased cultivation of opium in China, invited further consideration of the inclusion of Indian hemp in the Convention, and appointed Mrs Zahle of Denmark to preside at the second and more important of the November conferences

While fairly full reports of the proceedings of these two November conferences have appeared in the *Journal de Genève*, only brief summaries of the somewhat heated discussions have appeared in the English press Two publications are now available to those interested in the details of this question (and can be obtained of Messrs Constable and Co.)—namely (1) a summary of information received from Governments with regard to the production and manufacture of raw opium and coca leaves opium derivatives, and cocaine (1920-23) and (2) minutes of the sixth session of the Advisory Committee on traffic in opium and other dangerous drugs

It is not quite clear what are the powers and purposes of the two Geneva conferences They are summoned by the League of Nations, but include representatives of countries which are not members or that League, notably the United States They do not appear to be full diplomatic conferences all of whose delegates are entrusted with *pleins pouvoirs* to act in the name of their sovereign powers and it may be questioned how far they are competent to amend the Hague Convention of 1912 The co-operation of the United States lends special significance to the second conference, in view of the attitude hostile to the League of Nations hitherto adopted by the dominant party in the States We share the regret of the *Times* that the representation of Great Britain and India should be confined to minor officials and we may add our own regret that no medical member is included

The results of the first conference, so far as they have been divulged, were apparently compromised by the diver-

gence exhibited between the British and Indian representatives on the one hand, and the Japanese on the other, regarding the right to discriminate against import certificates of dangerous drugs when these were not above suspicion Eventually, it is reported, some agreement "in principle" was reached, and the conference adjourned The second, larger, and much more important conference has been in session since November 17th, and marked divergence was soon disclosed between the representatives of the United States and of India The American position is neatly formulated in the two principles

"1 That if the purpose of the Hague Opium Convention is to be achieved according to its spirit and true intent it must be recognized that the use of opium products for other than medicinal and scientific purposes is an abuse not legitimate, and,

"2 That in order to prevent the abuse of these drugs, it is necessary to exercise the control of the production of raw opium in such a manner that there will be no surplus available for non medicinal and non scientific purposes"

The American delegates, led by Bishop Brent, who was president of the first of the Hague Opium Conferences, came armed with full plenipotentiary powers to strengthen the Convention of 1912 in parts where it had been somewhat weakened, largely to meet objections raised by Germany, they also desired to forbid altogether the use of heroin, which has been more abused and used by criminals in the States than is the case in Great Britain

The American principles were regarded by the Indian delegates as infringing sovereign rights in regard to the internal or domestic production and commerce in raw opium, to threaten the custom of Government supplies of raw opium for eating by the natives of India, and presumably the revenue derivable therefrom Matters came to a crisis on Monday last, when, by a vote of 26 to 1 (nine abstaining), the American view as to the competence of the Conference freely to examine the whole question of the production of and traffic in the dangerous drugs included in the Convention of 1912 was accepted

Canada.

[FROM OUR OWN CORRESPONDENT]

THE ANTITUBERCULOSIS CAMPAIGN

TOWARDS the end of the war a determined effort was made by the Dominion Government to attack the problem of tuberculosis amongst returned soldiers A group of consultants was appointed and use was made of the sanatoriums throughout the country already in existence The work of caring for these patients has come under the Department of Soldiers' Civil Re-establishment Up to the present time 10,000 ex-soldiers have received treatment, 8,654 are still living, and their care still remains a Federal responsibility A total of 407 cases of tuberculosis were first diagnosed in the year 1923, and as their infection was considered to be due to active service these patients have been accepted by the Department for treatment

Joint Conference

At a joint conference in Ottawa of medical men engaged in this work, of the Ontario Laennec Society and the Canadian Tuberculosis Association, special attention was directed to the difficult subject of the diagnosis of different forms of pulmonary disease Amongst 500 cases of "D.A.H." (heart effort syndrome) Dr Bond found only ten of undoubted tuberculosis Several papers dealt with the x-ray findings in tuberculosis and other forms of disease of the lungs Professor E W Archibald of Montreal discussed thoracoplasty in the treatment of cases of tuberculosis where collapse of the lung by means of artificial pneumothorax cannot be effected

Canadian Tuberculosis Association

This was the twenty-fourth annual meeting of the Canadian Tuberculosis Association, and Dr C D Parfitt of Calydor Sanatorium, Gravenhurst, Muskoka, president of the association, has outlined the progress which has been made in the fight against the disease At the beginning of the century there were only three sanatoriums, comprising less than 200 beds, in the whole of Canada To-day there are 1,343 beds in eight provinces, one for each 2,000 of population, and fifty-six for each 100 deaths Manitoba and Ontario have as many beds as there are deaths annually from this disease in these provinces In 1901 the death rate from all forms of tuberculosis was 180 per 100,000 inhabitants, or 9,600 deaths for a population of 5,400,000, while twenty years later the death rate was 87, or 7,700 deaths for a population of 6,600,000 Thus in two decades the death rate has been reduced 52 per cent, the deaths have decreased 20 per cent in actual numbers, while the population has increased 63 per cent The general death rate from disease has declined for many reasons, but the antituberculous campaign can surely claim for itself a fair share of the credit

Unfortunately all the provinces of Canada cannot be said to be putting forth a sufficiently strong effort in combating tuberculosis Whilst in Saskatchewan the death rate is 43 per 100,000 (and this province is the most active), in Prince Edward Island it is 143—the province which is doing the least In the province of Quebec the death rate is about 120, and, owing to the vacillating policy of the Provincial Government, one of the largest sanatoriums, that at Ste Agathe, is lying idle and there are not nearly sufficient hospital beds to care for either the hopeless cases or for the more or less incipient ones A hopeful sign has shown itself in Montreal in the recently formed Antituberculosis and Health League, which has a strong directorate representative of all classes of the community, with Sir Arthur Currie, Principal of McGill University, as its chairman, and Dr Grant Fleming, who has had sixteen years' experience of public health work in Toronto, as permanent secretary Lord Atholstan has given $100,000 for promotion of the work It is understood that a pure milk supply and rigid inspection of meat are to be the first objects aimed at Tuberculosis is rife amongst the French Canadian population, even in the healthiest country districts A wide campaign of education must be carried out, and this can most easily be done through the efforts of the Roman Catholic Church When stimulated, the French Canadian is not slow to adopt vaccination or to see the advantages of the antitoxin treatment of diphtheria The Church has already done much in the fight being waged against venereal disease

New South Wales.

[FROM OUR OWN CORRESPONDENT]

CANCER RESEARCH

THE Cancer Research Committee of the University of Sydney has been authorized by the Senate to appeal for £10,000 in order that work may be begun at once It is proposed to spend this first £10,000 in the following ways

(*a*) *Publicity and Educational Work*—To instruct the public concerning malignant disease its causes and prevention and as to the results of research and treatment This object will be attained by articles in the press, by public lectures and demonstrations, and by such other means as may appear desirable

(*b*) *Provision of equipment* for the carrying on of cancer research at the University

(*c*) *Establishment of special cancer departments* in conjunction with the Royal Prince Alfred the Sydney and the St Vincent's Hospitals These being the teaching hospitals will be dealt with first, but as opportunity and funds permit other hospitals in the metropolitan area and the country will be included

(*d*) *Purchase of a special cancer library*, in order that all works dealing with the subject of malignant disease may be available for reference A complete library will be a costly matter, but the formation of a nucleus is a paramount necessity

(*e*) *Formation of a cancer bureau* at the University to conduct administrative work done in the research laboratories and hospital to develop research work for the more effective prevention and treatment of cancer and to give information to the medical profession and the public

(*f*) *To extend the work generally* as seems best in the interests of the community at the discretion of the committee

THE CHILDREN'S HOSPITAL, SYDNEY

A new pavilion has been added to the Royal Alexandra Hospital for Children, Sydney, providing accommodation for 102 more children, the hospital now contains 340 cots, and is the largest and probably the best equipped hospital for children in the British Empire The cost has fallen from £221 97 in 1922 to £181 4 per bed per annum It

hospital had cost altogether (Dr Clubbe stated) £200,000, towards this large amount the State had contributed only £20,000, the public had given £110,000, but the hospital was in debt to the extent of £70,000 In consequence of this large debt it has to pay every year £4,500 (£3,500 in interest and £1,000 to reduce the debt to the I M P Society) It was estimated that the cost of the upkeep for the current year would be £65,000 The amounts received in 1923 totalled £61,286 If the work was to be carried on without curtailment it was clear that another £10,000 must be raised each year From the public the institution received about four times as much as any other hospital in Sydney but the Government subsidy was very much less than that of any other large hospital It the public had given as much as it could, then the hospital must look to the State to make up the deficiency The number of in patients treated in the general hospital was 5 818, and of casualty and out patients 12,664 In the out-patient department 21,478 were treated The number of patients treated in the Convalescent Home was 148 Improvements could again be reported on the average duration of stay of patients in the hospital—fifteen days in 1923, as compared with twenty days in 1922 The mortality percentage, including all deaths occurring within twenty-four hours of admission, was 8 26 as compared with 9 67 in 1922 The following decennial figures show perhaps more forcibly than any other manner, the remarkable expansion of the hospital

	1913	1913	1923
In patients treated	59	651	2 3 8 5 818
Out patients treated	918	5 292	16 992 41 142
Attendances	2 652	21 925	52 069 82,573

At the close of the year a dental department was established at a cost of £425, and a part time dental surgeon appointed at an annual salary of £200 This department has proved a great success, no fewer than 1,038 children receiving complete dental treatment during the year

Paris.

[FROM OUR OWN CORRESPONDENT]

THE leaves fall and the congresses assemble In this, our over-centralized land Paris opens her maternal yet jealous arms to the rank and file of medicine

Congresses

The thirty third French Congress of Surgery was presided over by Professor Tuffier Of all our leaders he is perhaps the most popular with the English speaking world not only for his masterly work but also because he is an excellent linguist and has done much to spread knowledge of the French school of urgery in Great Britain and in the United States At the opening of the congress Marshal Joffre sat beside the President and expressed his gratitude for the medical work of our generation in the war Though the Congress was primarily national an important delegation of Polish surgeons attended The keynote of Professor Tuffier's address was the advocacy of the right and duty of the surgeon to dare to adopt new methods even on man and to assume the responsibility of breaking away from traditional lines when necessity arose He also claimed that surgery should be taught practically and that technical aptitude should be acquired from animal operations without doubt his wishes will be fulfilled in the near future The subjects discussed included the surgery of fractures of the upper end of the femur the treatment of fibroma pre- and post-operative management and the choice of anaesthetics in intestinal operations On October 11th Mr Archibald Young Regius Professor of Surgery in the University of Glasgow, presented to the French Association of Surgery an address of cordial greeting On the same date was held the usual Congress of Urology, when a discussion took place on the treatment of the bladder, after the operation of nephrectomy for tuberculosis of the kidney

In Bordeaux, that ancient city where still breathes the spirit of Montaigne, the Royal Institute of Public Health met in June The Presidents of the Royal Colleges of Physicians and Surgeons were present, and our other distinguished English guests included Sir Thomas Oliver, Sir Ronald Ross and Surgeon Vice-Admiral Chambers, D G R N The French representatives present included Professors Achard, Bezançon, Leon Bernard, and Courmont It is not my intention to review the programme let me rather draw attention to the warm atmosphere of cordiality instinctively breathed in such a gathering Once again in the domain of science we plead for the noble cause of Franco-British collaboration Mutual understanding grow out of mutual acquaintance, let this lesson be well conned by the younger generation May Paris our Alma Mater with her new spirit, develop more and more her scheme for the furtherance of medical relations

The Medical Curriculum

Again has the medical curriculum undergone a change the principal modification being that students will be required to pass an examination annually at the end of the summer term, and spend nine months in hospital each year in a foreign hospital during the fifth year of study if they so desire Theoretical and clinical work is to be grouped together and therapeutics now include an obligatory course of hydrology This new scheme is certainly more simple and more thorough than the one it succeeds Simultaneously a profound change has been introduced into the arrangement of the first competitive examination, which starts our students along the road towards hospital appointments The antiquated *concours de l'externat*, which was a *viva voce* affair of ten minutes a terrible loss of time for the unfortunate candidates has been converted into a paper examination mercifully anonymous with fifteen short questions to be answered in an hour and a half Fifteen questions on anatomy medicine and surgery allow a mere six minutes for each answer surely this new programme is more likely to develop the talents of a telegraph operator than of an essayist

Sanatorium for Students

The National Anti Tuberculosis Committee has just placed in position the first stone of the students' sanatorium, at a height of 3 500 feet near Grenoble Sixty beds will be provided and the institution will be financed by the State and by voluntary gifts A special feature is that facilities will be given for the patients to carry on their studies together with their cure

England and Wales.

MEDICAL TRAINING OF WOMEN IN WALES

THE annual meeting of the General Committee for the Promotion of Medical Training of Women in connexion with the National School of Medicine for Wales was held at University College Cardiff on November 24th Mr D Llwfer Thomas who was in the chair presented the annual report and pointed out that the Welsh National School of Medicine was essentially a co-educational institution The committee had been in existence eight year during which time approximately £2 000 had been distributed in grants and loans to students who received special help during the last three years of their course Dame Janet Campbell M D senior medical officer of the maternity and child welfare branch of the Ministry of Health, gave an address on the status and progress of women in medicine She expressed the opinion that women were peculiarly fitted for certain branches of medicine and also referred to the early diagnosis of cancer in women and to

service abroad, particularly in China and India. She hoped that more women would enter into general practice in this country, and said that their work was highly valued in connexion with the Board of Education and the Ministry of Health.

PRESENTATION TO DR E. W. HOPE

Dr. E. W. Hope, who recently retired from the post of medical officer of health for the city and port of Liverpool after forty-one years' service, was entertained by the members of the Liverpool City Council on November 25th at a complimentary luncheon. Sir Archibald Salvidge, as leader of the council, presided, he was supported by the Lord Mayor and Lady Mayoress and a large number of representatives of the city of Liverpool. Lord Derby, in a message expressing regret at his inability to attend, said that he knew no public official more worthy of recognition from his colleagues than Dr. Hope. The chairman having proposed the health of their guest, the Lord Mayor eulogized Dr. Hope's work in connexion with tuberculosis, and added that his charming personality had made him a host of friends. Sir John Utting said that one secret of their guest's success was his magnificent organizing ability. Alderman Burgess referred to Dr. Hope's great work among the school children. The chairman presented Dr. Hope, on behalf of the members of the city council, with a handsome antique silver tray and tankard, both bearing suitable inscriptions, together with an illuminated framed copy of the resolution of appreciation recently adopted by the council. Dr. Hope, in his reply, expressed his deep appreciation of the honour conferred upon him by so representative a gathering, and thanked the chairman and the members of the city council for their splendid gifts. Later in the afternoon Dr. Hope received from the staffs of the various branches of the Liverpool Health Department an antique writing desk appropriately inscribed, a mahogany side table, and a mirror.

UNIVERSITY OF LEEDS: CELEBRATION WEEK

The jubilee of the Yorkshire College of Science and the coming of age of the University of Leeds will be celebrated during the week beginning December 15th. On the previous Sunday a special evening service will be held in Leeds Parish Church, with a sermon by the Archbishop of York. The opening ceremony will be held on December 15th at 11 a.m. in the Great Hall of the University, at an afternoon reception at the Medical School an address will be given by Sir Berkeley Moynihan on "Medicine in Leeds", in the evening a University Dinner will be held in the Town Hall. On December 16th there will be an official reception of delegates and presentation of congratulatory addresses from universities and learned societies, a luncheon given by the Lord Mayor of Leeds, a congregation for the conferment of honorary degrees, a reception by the Leeds Philosophical and Literary Society, and a public lecture by Sir Michael Sadler, Vice-Chancellor of the University from 1911 to 1923, whose portrait will be presented to him. On December 17th the Halls of Residence will be visited, and an evening conversazione will be held at the University. On the evenings of December 18th and 20th *The Student's Opera*, by Professor Gaistang, will be performed in the Great Hall, and on December 19th the annual dinner of the Old Students' Association will be followed by a students' ball.

GIFT TO UNIVERSITY COLLEGE HOSPITAL

Mr. Geoffrey L. Duveen has presented £50,000 for the construction and equipment of a new ear, nose, and throat hospital to replace the present Royal Ear Hospital in Dean Street, which, in 1920, was incorporated as the ear, nose, and throat department of University College Hospital. This gift is intended as a memorial to the donor's late father, Mr. H. J. Duveen, as was his gift of £15,000 last year to University College Hospital, which was reported in our columns of April 5th, 1924 (p. 651). In 1923 (November 17th, p. 947) we announced the acceptance of Mr. Geoffrey Duveen's generous offer to the University of London of £10,000 for the establishment of a lectureship in otology. These three gifts are designed to secure the provision of better facilities for treatment, teaching, and research in connexion with diseases of the ear, nose, and throat. Mr. Duveen states that he selected University College Hospital for this benefaction because it has already been chosen by the Rockefeller Foundation Trustees as the agency for their imperial scheme of medical education.

TREATMENT OF SEQUELAE OF POLIOMYELITIS IN CHILDREN

The Minister of Health has directed attention in a circular[1] to the inadequacy of accommodation in London for the treatment of the after-effects of poliomyelitis in children *and to the permanent crippling and deformity* resulting from the lack of skilled and prolonged remedial measures during the later stages of this disease. It is pointed out that the relative rarity of poliomyelitis in London may cause the significance of early symptoms to be overlooked, the disease escaping diagnosis until paralysis of one or more limbs appears. A memorandum[2] has therefore been issued, which includes the following information. An account is given of the features of the disease, including its pathology, symptoms, and diagnostic points, and it is announced that the London County Council is organizing arrangements to provide hospital accommodation for children in the later and chronic stages of this disease. The services of Dr. J. A. H. Brincker and Dr. J. Graham Forbes are understood to be available in a consultative capacity in suspected cases on application to the Public Health Department of the County Hall. It is suggested in this circular that in view of the high proportion of cases which occur below the age of 5 orthopædic treatment for these young children might be arranged as part of the metropolitan borough schemes for maternity and child welfare. The number of cases in any borough is generally small, and it is suggested, therefore, that the borough council should consider what can be done to promote early diagnosis, and also what arrangements can be made in co-operation with other authorities to provide institutional treatment with a view to preventing avoidable muscular weakness or permanent deformity. It is added that the attention of medical officers and health visitors engaged in maternity and child welfare should be directed to this matter, and that they should be asked to make such inquiries as are practicable in the course of their ordinary duties. The metropolitan borough councils are advised to co-operate with the London County Council in its present endeavour to provide prolonged treatment for children in the later stages of this disease. The County Council in its capacity as local education authority is also responsible for securing appropriate treatment for any cases of *infantile* paralysis in children of school age.

[1] Circular 538.
[2] Memo. 97/M. & W. London: H.M. Stationery Office. Price 1d.

Ireland.

TERCENTENARY OF THE FOUNDER OF THE ROYAL COLLEGE OF PHYSICIANS, DUBLIN

THE 300th anniversary of the birth of Dr. John Stearne, the founder of the Royal College of Physicians of Ireland, was celebrated on November 26th at the College, when an oration was delivered by Dr. T. C. P. Kirkpatrick, the registrar. In his address Dr. Kirkpatrick gave an account of the life of service of Dr. John Stearne, who was born on November 26th, 1624, in the house of his grandfather, James Ussher, then Bishop of Meath, but who in the following year was translated to the see of Armagh. Stearne entered Trinity College, Dublin, on May 23rd, 1639, at the age of 14½, and was awarded a scholarship in 1641. In the following year he *matriculated* as a pensioner of Sidney Sussex College, Cambridge, and almost immediately after wards obtained the B.A. degree of the University of Cambridge. In 1646 he received the M.A. degree, and studied medicine at Cambridge until 1649, when he joined Wadham

College, Oxford, being appointed Savilian professor of astronomy in that University In 1652 he was elected a Senior Fellow of Trinity College, Dublin, at the age of 28, and began medical practice in that city In 1657 he was appointed professor of medicine The College of Physicians, with Dr John Stearne as its President, was started in a building intended for a bridewell, or place of imprisonment, but never used for that purpose the Royal Charter of the College was obtained from Charles II in 1667 Two years later Stearne died, and was buried under the old chapel in Trinity College The large assembly at the anniversary celebrations included the Governor General of the Free State, the President and Council of the Royal College of Surgeons, and the Provost of Trinity College The ceremony was presided over by the President of the Royal College of Physicians, Sir William J Thompson

MEDICAL REGISTRATION IN THE IRISH FREE STATE

The statements at the General Medical Council in connexion with medical registration in the Irish Free State have been erroneously interpreted by a section of the Dublin daily press to the effect that every doctor who held a Free State degree would not, as heretofore be entitled to practise in Great Britain Mr P Milligan, T D for the National University and Minister for Industry and Commerce who had charge of the bill which was passed some time ago by the Dail, has made the following statement in connexion with the subject

The Medical Bill was carried through the Dail and passed its second reading in the Senate At that point it was held up as it was clear that the corresponding British bill was not likely to be introduced before the autumn Recent political changes on the other side have still further postponed certain conversations which were proceeding regarding both measures The bill will undoubtedly be carried through but the exact date of its passage it is difficult to forecast

LOCAL GOVERNMENT BILL, 1924

The superannuation sections of the Free State Local Government Bill now going through its committee stages in the Dail affect medical officials in some important respects As the result of representations made by the representatives of the medical profession in the Free State to the Minister of Local Government and Public Health, substantial concessions have been made, especially with regard to the rights of existing officers Under the amended Section 36, if existing officers have ten years' service, and if they signify in writing to the local authority under which they are serving that for the purposes of superannuation they do not intend to avail themselves of the Local Government Act 1924 they shall remain for pension purposes under Section 8 of the Local Government Act, 1919 The expression 'case of dispute" in that section is to include a dispute as to the right to or amount of an allowance raised by an auditor of the Minister appointed to audit the accounts of the local authority granting the pension

Sir James Craig, M D (T D for the University of Dublin), moved to substitute the word shall' for may" in Section 37, thus making it obligatory on local authorities to grant pensions, and compensation for loss of office to (*a*) officers who had attained the age of 65 and had at least twenty years' service (*b*) officers who became incapable of discharging the duties of their offices efficiently by reason of permanent infirmity or of old age and had not less than ten years' service upon resigning or otherwise ceasing to hold office The amendment was defeated, the result is that existing officers with less than ten years' service and future officers in the event of their being refused pensions by the local authorities, will have to depend on the right of appeal to the Minister provided under Section 37 The Minister accepted the motion to delete Section 41, which provided that in the event of the incapacity of any pensioned officer ceasing before such officer had attained the age of 65 years, the local body may cancel such allowance and require him to resume his office or any like office at a rate of salary and emoluments not less than the rate which he received before he ceased to hold such office.

Scotland.

EDINBURGH ROYAL INFIRMARY IMPROVEMENTS AND EXTENSIONS

At the sixth annual meeting of the League of Subscribers to the Royal Infirmary of Edinburgh, held on November 27th, Mr Russell Paton, the organizing secretary, submitted a report on the results attending the collections from public works and business establishments in the city for the year to October 1st last The fortnightly revenue from this source towards the support of the Royal Infirmary appeared to be now on a fairly stabilized basis The returns for the year showed that £20,904 (an increase of £577 over the previous year) had been collected by the systematic periodical contributions of small sums from employees engaged in public works and business establishments, the staffs of public schools, Government offices, and similar institutions The membership of subscribers to the league now stood at 73,300 persons for Greater Edinburgh and 23 200 for county districts, making a total membership of 96,500, an increase of 2,500 over the previous year In account of the year's work of the Infirmary was given by Sheriff Crole, K C , one of the managers, who said that workers' contributions altogether amounted to certainly not less than £40,000 per annum During the past year the Infirmary had done an immense amount of work, 15 687 patients had been treated in the wards and nearly 50,000 in the out-patient department The income from subscriptions had amounted, approximately, to £70,400, and the dividends from invested funds to £23,427 These figures showed an increase of £1,694 and £1,563 respectively In all, the income for the year totalled nearly £108,000, which was actually a great increase for the present year The total expenditure, however, had amounted to £127,500, that being an increase of deficiency of £19,600 Fortunately, this had been more than covered by £78,900 received this year in legacies Of £7,700, as compared with the previous year, and leaving a the balance, £34,000 had been earmarked for permanent capital, and after deducting a fairly large sum for certain capital expenditure there remained a net free balance of £15,000 He was afraid that there were not many voluntary hospitals in the kingdom that could show the same result, and in his opinion this was a great triumph for the voluntary system The list of patients awaiting admission of the ear, nose, and throat department that department averaged 1,811 last year To do away with the congestion was being extended The managers had resolved that the time had come to have a new x-ray department, and they had now prepared plans and had engaged an expert who would give his whole time as director of the department This department would cost £32,000, and he believed it would be when completed the finest medical electrical department in Great Britain It had been resolved in connexion with this department that in the afternoons, after the infirmary patients had received attention any person recommended by a doctor could go there for examination or treatment, and, of course, those who were able would give a donation to the institution Continuing the speaker referred to the fact that the Rockefeller Trust had given to the University a sum of over £30 000 for a clinical laboratory on condition that it should be erected in the Infirmary grounds The Infirmary managers had agreed to allow the laboratory to be erected in the Infirmary grounds on condition that it became the property of the Infirmary, for, naturally, they could not allow any other body to own property in their grounds Speaking also of the Ainslie institution, he stated that the governors of this institution had bought two adjoining properties and a piece of ground, formerly a golf course and on this they were now going to erect their main institution When the work was completed he hoped they would be able to admit between 150 and 170 convalescent patients from the Infirmary

At the Edinburgh Merchant Company's 243rd anniversary dinner in the Merchants' Hall, Edinburgh, on November 28th the Master Mr Michael A T Thomson announced that the Educational Board of the Company had

resolved to give the managers of the Royal Infirmary an opportunity of acquiring the buildings and site of George Watson's College. There had been numerous conferences between the Board and the managers with a view to the Infirmary becoming owners of George Watson's College, which stands in immediate proximity to the Royal Infirmary grounds on the west. There had been many things to consider before arriving at this decision. On the one hand, the managers of the Infirmary had been anxious to acquire this College and had been supported by the whole community. On the other hand, the Merchant Company, who were the owners of the College and custodians of the historical and traditional associations of those who had been educated there, had to consider whether they could obtain a convenient site and where they were to get the money to provide for a new school building on this site. They did not intend to press the Infirmary in the matter of payment, and they intended to be guided by what they thought the Infirmary managers could contribute towards the total cost of building a new school and the acquisition of a fresh site, which would entail an expenditure far in excess of what could be expected from such an institution as the Infirmary. The balance required for the purpose would be extracted by fair means by the Company from its own exchequer or from the exchequers of others.

Glasgow Hospital Sunday Fund

The report of the Glasgow Hospital Sunday Fund for 1923 has been issued, and the annual appeal on behalf of the three Glasgow infirmaries was made in the churches of the city on Sunday, November 30th. The number of churches contributing to this fund during the past year numbered 493 as against 466 in the previous year, and the average amount contributed per church was £18 11s. 6d. compared with £21 13s. 5d. in 1922. The total amount received for the year from churches and sabbath schools was over £10,117, showing a decrease of £1,036 as compared with 1922. Of the sum collected, £4,522 was allocated to the Royal Infirmary with 723 beds, £3,465 to the Western Infirmary with 554 beds, and £1,801 to the Town Infirmary with 288 beds. An appeal was made by the committee for greater support.

Central Midwives Board

At a special meeting of the Central Midwives Board for Scotland, held for the hearing of penal cases, Dr. James Hug Ferguson in the chair, a certified midwife appeared in answer to charges of being guilty of negligence, breaches of the rules, and for failing to send for medical assistance in a case of abortion. The Board found the charges to be proved, and as the offences could not be adequately dealt with by censure or caution, it was resolved, before proceeding to remove the name from the Midwives' Roll and to cancel her certificate, to postpone sentence in order to give her an opportunity of proving amendment, and to ask for a report from the local supervising authority at the end of three months, and also at the end of six months from this date, on her conduct and methods of practice with special regard to the offences of which she had been convicted. If at the end of either of these periods an unfavourable report is received, her name will forthwith be removed from the roll and her certificate cancelled. At the same meeting the case of another midwife charged with various breaches of the rules was duly considered. The Board resolved that the midwife should be admonished, and that sentence should be postponed pending the receipt of a report from the local supervising authority on the conduct and methods of her practice during the next three months.

Correspondence.

THE GENERAL PRACTITIONER AND THE MATERNITY SERVICE

SIR,—In the last correspondence on an obstetric subject I intervened to protest against its degenerating into recriminations against the specialist. The final paragraph of that letter (December 15th, 1923) would appear to apply now, so I venture to quote it:

"If this correspondence can pass from girding at teachers and specialists to some constructive proposals as to what can be done to forward this overdue betterment of our maternity statistic, it would be the best possible augury for the future."

To the best of my recollection that intervention was followed by the immediate cessation of the correspondence of a year ago. I naturally thought *post hoc ergo propter hoc*, and that my remarks had taken all the zest out of the discussion. I trust this letter will not have a like effect, for it is intended to stimulate discussion and keep it more on the lines of the leading article (November 15th, p. 911) from which it originated.

On this occasion it is a useless waste of ink to make a whipping boy of the specialists, for they have had nothing to do with the raising of the present storm, though many of your correspondents seem to see their hand in it. The storm (which has been gathering for some time) burst when the two reports from Government departments were published, and, to my mind, the chief question that this correspondence should endeavour to answer is: What move ought to be made by the general body of the profession in view of the publication of these reports and the administrative measures recommended in them?

I would first urge all those practising midwifery to study the original reports and not merely abstracts, only in that way can they discover where are weak spots and gaps in our defence against maternal mortality, and how it is proposed to strengthen and close them. I would also suggest that both reports be read, for each has a value of its own.

The English Report (No. 25 of the Ministry of Health) gives the statistics of maternal mortality in England and Wales, and their variations in the last twenty-five years, and compares them with those in other countries, it gives the relative maternal rate in different parts of the country, in big centres, rural and industrial areas, and finally discusses the causes of mortality and methods of prevention. The problem is surveyed with great ability by one with full access to all the available figures and information. Where the report fails to carry conviction is that it represents the work and views of a single individual, and is thus suspect of making out a case and selecting the most suitable material for the purpose. Your correspondent who says "there is more than a suspicion among general practitioners that they have been unjustly condemned for something which is not their fault" expresses the inherent weakness of a case presented in this way, however well intentioned and ably it may be done.

The Scottish Report, being that of a Departmental Committee that has heard the evidence of many witnesses, representing different sides, and examined the figures and other official records, carries more weight as being the verdict of a special jury. On the other hand, little or nothing of the evidence is given on which its conclusions are based, and therefore it is not so generally informative. Circular 517 is from the Ministry of Health to the clerks of local health authorities, calling attention to Report No. 25 and to measures to be adopted in accordance with its recommendations. It is useful as giving an idea of the directions in which the local authorities are being encouraged to proceed.

The reading of the official papers will, I think, convince those correspondents who "cannot understand the present outcry," or think "the present controversy should not be taken too seriously," that they are merely putting their heads in the sand, and the procrastinator who would wait because "the dispute has not yet shown any promise of a practical outcome" that no time should be lost in co-

[1] All the official papers can be obtained from H.M. Stationery Office, Imperial House, Kingsway, W.C.2, or from any bookseller. The Report costs 1s. each, and Circular 517 1d.

DR. H. FELIZE STEPHENS has written a pamphlet for the Central Association for Mental Welfare on the subject of the introduction of Girl Guide training into certified institutions for mental defectives to which he is senior assistant medical officer. A full account is given of the principles and practice involved, and the advantages of this training are clearly indicated, with special reference to the inculcation of personal responsibility and interest in the welfare of others—valuable points in the medico-sociological treatment of the mentally deficient.

sidering fully all aspects of the problem It would be a feeble policy to remain unheeding till new measures become operative, and complain only after the deed is done The present agitation means that a diminution of the maternal mortality and disability in childbed is urgently called for This diminution can only be secured by the combined effort of the general public, the medical profession (general practitioners specialists, and administrative officers), and midwives and other workers in the maternity service

This correspondence will be of value so far as it may help in arousing the main body of the profession to make its effort, and particularly in indicating how the wide experience of midwifery and the conditions under which it is practised that is distributed amongst the general practitioners throughout the country can be mobilized to assist in formulating a reasoned and constructive policy for the betterment of the maternity service The matter is one of extreme difficulty and calls for much deliberation Why not begin at once by making it a subject for discussion at all professional meetings where practitioners foregather Is there any other way in which the combined and considered opinion of the general practitioner can be obtained —

I am, etc ,

JOHN S FAIRBAIRN

London W 1 Dec 1st

SIR,—The inquiry is launched Before we get lost in prejudice and in partisanship, may I submit the following for consideration—

(1) The task to be undertaken Prophylaxis and treatment
(2) Prophylaxis demands investigation into etiology and pathogeny
(3) Investigation demands co operation
(4) Co operation demands a suitable mental attitude in those co-operating

Where, then, shall we begin? The letter of Dr Gordon Ward (November 22nd, p 973) gives a clue First, a preliminary investigation to secure (4) above then an investigation, either by a Royal Commission (as suggested by Dr Herbert Williamson), or a committee (as suggested by Dr T Watts Eden November 15th p 901), to take evidence from the co-operators These latter co-operators should include representatives of consulting obstetricians, general practitioners, bacteriologists pathologists midwives, public health medical officers—and mothers

The preliminary investigation should be conducted by a medical committee with a chairman well versed in the principles of logic and sufficient of a mathematician to deal with the interpretation of statistics and their errors, an expert statistician being co opted if need be The preliminary investigation should be primarily concerned with the collection and marshalling of facts and the logical deductions to be made from them Until this is done it cannot be expected that Dr Gordon Ward (and many others who feel as he does) will be available as co-operators, and without them the evidence will be incomplete and the carrying out of the final recommendations will lack support

The four headings of the problem, then become unravelled thus

(a) The preliminary investigation (3) will deal with etiology and pathogeny (2) it will have for its object—first the removal of obstacles to co operation (4) and secondly the drawing up of evidence to be presented to the Royal Commission or committee (3)

(b) Prophylaxis (1) will be undertaken on the lines recommended by the Royal Commission after hearing the evidence It is inevitable that this must be delayed and that the question of notification (an administrative detail of the subject) must wait

(c) Treatment (1) cannot wait Happily this is far less controversial and a committee should be appointed with the least possible delay to deal with interim measures for providing additional treatment, both domiciliary and institutional for patients suffering from any illness or accident connected with pregnancy or labour (this obviously covers miscarriage and fever) without reference to the attachment of blame to anyone concerned (See also the letter of Dr Cyril J G Exley November 22nd, p 973)

Let us rather say that the maternity service inquiry has been launched than that the maternity service dispute is raging, it is more useful It is the latter who matters Obstetrics is an art, not a science, as Dr William Gordon puts it so well in his letter —I am, etc ,

J R P TEIS-

Henlease Brit Med Journ 24th

SIR —I would suggest that this subject be discussed at a special meeting or each Division of the British Medical Association, the meetings to be arranged for January next, and that a shorthand report or each meeting be taken and a typewritten copy be sent to a committee to be chosen and convened by the Association in London If such a small committee went through the reports and tabulated experience and suggestions I believe that something of permanent value might result Such a committee might in the first place suggest the points for discussion It must be realized that while there is an increasing number of very able and experienced accoucheurs due to faulty medical education yet there is in the country a very large number of indifferent and inexperienced obstetricians due to faulty or indifferent and inexperienced obstetricians due to faulty the opinions of the latter which will be of valuable

During my thirty five years of general practice I must have attended about 3 000 cases—chiefly in a Lancashire industrial area but with about five years of country practice I will tell how things strike me

First I believe that puerperal fever is wound infection by a special kind of streptococcus The wound may be the smallest scratch or a deep laceration The last case I came in contact with was in Cornwall in 1923

The case (attended by my partner) was a simple natural case in a multipara the child being born immediately on his arrival before an vaginal examination could be made What annoyed him was that there was a good deal of faecal mess owing to an enema having been administered too late in labour On the fourth or fifth day symptoms began lochia and milk stopped and febrile symptoms abdominal distension etc appeared Later on about the fourteenth day she had some thrombosis in the left femoral vein and a slight pulmonary embolism causing pleurisy and pneumonia She made a slow but complete recovery I carefully examined the case per vaginam when the fever started and I could find no signs of laceration nor anything abnormal save subinvolution What did come out on careful examination was that the nurse had come straight from another bad case

I remember about twenty five years ago having a succession of six cases of puerperal fever, and although I took the most careful antiseptic precautions nothing would stop the epidemic but going away for a month's holiday None of the six cases died but I had an awful time of it with blunt curetting and intrauterine douching—the practice at that particular time I remember once having a case in a primipara, and not being able to discover the cause of the infection until I found out that the handywoman was in this case a rupture of the cervix The traumatic cases are different so long as the infective agent can be excluded Then I believe I have seen cases where septic peritonitis has been set up by the bursting of a chronic abscess outside but in the neighbourhood or the uterus Again I believe more attention should be paid to keeping clean the nails and fingers of the patient and to her position after labour for drainage I believe that generally the general practitioner is responsible for the lacerations, and the nurse for the infection Still I think that if the C M B nurse has to be so careful to maintain asepsis a doctor who does not do the right thing as regard his hands and instruments ought to be reported

Why I dislike the maternity service idea is that it means the lowering of the status of the general practitioner and his exclusion from another branch of medical practice I the present tendency goes on what on earth will be left for him to do One thing ought to be effected at once in fairness to the C M B nurse and that is midwifery passing as a simple midwifery nurse and covered by a registered medical practitioner should be eliminated There ought to be maternity homes to which the general practitioner could send suitable cases and where he could attend them himself with the help or proper nursing of the co-operation of his fellow practitioners as anaesthetist etc Then what is the good or an ante-natal clinic unless the examiner communicates with the general practitioner who is engaged to attend the case Personally I now make a point or an ante natal clinicking every patient who engages my services —I am, etc ,

FERDINAND PEEL M D

Southend on Sea Dec 1st

SIR,—Much attention is now paid to ante-natal care, and to attendance at labour, in the hope of improving our mortality and morbidity results, both as regards mother and infant But even those of us who pay a good deal of attention to ante-natal work, and are patient during attendance at labour, have a proportion of forceps deliveries and of stillbirths—for no apparent reason we could not forecast such a probability, and had even forecast otherwise

When we look for the source of trouble in these normal cases, needing forceps deliveries with or without stillbirths, we can, I think, as a rule, blame the inefficiency of the pains And we none of us know the cause of efficiency or inefficiency of labour pains—the greater the inefficiency very often the severer and the more exhausting the pain

We have yet to learn the factors affecting the work-producing character of labour pains Possibly it depends on some vitamin, some zymine, or some endocrine, or on the chemical balance of the constitution of the blood, perhaps all these are related We know, for example, the effect of Ringer's fluid on heart contractions, and we know the effect of pituitary extract on uterine contractions —both suggestive indeed

McCollum in his dietetic work has proved the effect of vitamins on fertility, viability of young, power of suckling, and vitality and duration of life in rats and cattle He does not mention the character of labour Is it not possible that research devoted specifically to the efficiency of the uterine contraction in labour would teach us a great deal?

My own belief is that just as a normal menstruation is painless and easy, so should a labour be painless if we knew enough of all the factors concerned to be able to supply or prevent the deficiency or toxicity concerned Most doctors see some very easy labours, and I have seen two patients, one of whom said she had no pain, and one of whom had one pain—both had babies born before arrival in hospital Such instances are enough to prove the possibility of painless, or at all events easy, labour, and it is up to us to try and make labour universally so easy as to remove the dread of motherhood, and to reduce the need for examination and manipulation during labour to a minimum

Money and care spent on such research would probably repay itself a hundredfold—nay, a thousandfold—and benefit more than half the race I believe that a perfect civilization will produce a comfortable pregnancy and a short and easy labour, with healthy mother and child, and that a physiological research into the factors affecting the characters and efficiency of uterine contractions in labour is of greatest moment to-day, if only as a guide to our ante-natal and labour work —I am, etc,

MARY C DEGARIS, M D, B S Melb

Geelong Victoria, Australia Sept 24th

SIR,—May I be permitted, on behalf of the oldest maternity hospital (training nearly one hundred pupil midwives and affording midwifery facilities to fifty-two medical students annually), to reply to Dr Dorothy Douglas's letter in your issue of November 29th (p 1024)?

It is *not* the prevailing idea at the City of London Maternity Hospital that the training of the medical student is secondary to that of the midwife On the contrary, it has for a long time been recognized that considerable improvement in the training of students is needed, but under present conditions we are helpless to alter matters The difficulty in the way is "finance" Remove this difficulty and we will undertake to provide adequate training for medical students

To enable more students to be taken we should have to increase our accommodation (which is at present sufficient for two students only) It would not help matters to reduce the number of pupil midwives, because (as ward work is an important part of their practical training) their places would have to be filled by staff nurses

So far as the City of London Maternity Hospital is concerned, the practical method of dealing with the problem would be to rebuild our Nurses' Home, for which anything from £20,000 to £40,000 would be required If someone will cover the cost we will "deliver the goods"—I am, etc,

RALPH B CANNING, Secretary

City of London Maternity Hospital, City Road, E C 1, Nov 29th

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PUERPERAL SEPSIS

SIR,—That the question of puerperal sepsis is an important one no one will deny, nor will many be found who are satisfied with the position as it stands, and who do not hope and believe that the incidence of this disaster can be lessened Yet there is a danger of a great deal of time and energy being expended in an acrimonious correspondence between the specialists and the general practitioners Personally, I do not think that all the specialists attribute all puerperal sepsis to malpraxis on the part of general practitioners and midwives, nor that the terrible instances related in Dr Janet Campbell's report fix the average level of skill of the general practitioners of this country The two matters should be capable of amicable settlement Meanwhile it behoves us to think what immediate steps can be taken to ensure better results

In the first place it seems to me that investigation is required into the condition of the genital canal in pregnant women Is this, even in the absence of gross discharges, invariably sterile at the time of labour, and if not, in what proportion of cases is it not so? Is the parturient woman's resistance to organisms less than normal? Why are cases in which ante-partum haemorrhage has occurred so liable to sepsis? Further, if the resistance of a woman about to be confined is suspected to be lowered, in what way can it be raised? It seems to me that a research along these lines could not fail to yield important and instructive results Obviously, the less manual or instrumental interference there is during labour the less likely is septic trouble to follow it With strict ante-natal attention and a careful consideration of previous history this should be reduced to a minimum, so that it is reasonable to hope that, for instance, the high forceps operation will in course of time become a rarity

Given that all appropriate ante-natal steps have been taken and that a patient is in labour, what steps can be taken to ensure a happy conclusion with no after trouble? Here a reference to "impatient midwifery" is necessary The practitioner attending a woman in her own home is in a trying position in which it is difficult to adopt an attitude of masterly inactivity He is assailed by anxious relatives who demand that he shall step in and terminate the labour, and he knows that if anything goes wrong it will be ascribed to his neglect to do something It is too much to expect the average lay mind to be open to the argument that even if he had terminated the labour either he might have inflicted grievous harm on mother or child, or both, and things would in that case have been worse I repeat that he is in a difficult position, but no man who has not the moral courage to uphold his convictions should undertake these cases, or, alternatively, if in doubt he should call in a second opinion

It is perhaps unfortunate that the coal tar group of antiseptics, so useful as lubricants, are so popular among midwives I have noticed time and again that these are not used in the correct strength—usually far too weak It would seem that the pungent odour of the disinfectant gives a false sense of security With the mercurial antiseptics, on the other hand, which are in tablet form, a much more accurate dosage can be obtained Next, as one in the active practice of major surgery, I have always had a rooted objection to the unshaven perineum That a surgeon should operate through a hair-covered area is indefensible In these days of cheap safety razors it would be a small matter for the health authorities to issue them to midwives with instructions to shave at least the labia in all cases before making an examination

The question of swabs, towels, and dressings is one of great importance The use of old linen, hastily torn off and dabbed through a too weak antiseptic by the midwife, should be forbidden It is too much to demand that the general practitioner shall provide a sterile outfit in all cases for if reduced to its essentials his payment for the

actual confinement in such a case in a working class house is somewhere in the neighbourhood of 7s 6d Nor can the patient herself afford to provide what is necessary It would again be a small matter for the health authorities to issue to midwives and practitioners sterile packages It these contained only a pound of sterile wool, some large squares of lint to serve as towels umbilical pads and some perineal dressing for after use it would be a great gain, and the cost would not be considerable

Finally, if puerperal sepsis does occur surely the day is over for its inactive treatment by quinine, etc in isolation hospital, where modern methods of treatment can be efficiently carried out —I am, etc ,

JOHN C JEFFERSON LRCS
Honorary Surgeon Rochdale Infirmar

Rochdale Nov 2 th

SIR,—I have been much interested in the correspondence on this subject in your columns during the past few weeks and especially in the suggestion by Leonard G J Mackey (November 22nd, p 974) regarding the use of a prophylactic vaccine About a year and a half ago I began, in collaboration with Dr W R Logan, an intensive investigation into the bacteriology of the normal vaginal tract during pregnancy and that investigation is still being carried on

Up till now the results seem to lend support to the view voiced by some of your correspondents in general practice that the medical attendant or midwife may not be always solely to blame for the occurrence of puerperal sepsis further, and largely on account of the bacteriological findings, we have introduced a vaccine which with the cordial approval of my colleagues on the staff of the Edinburgh Royal Maternity Hospital, is administered to every patient who attends the ante-natal department and who is to be confined in the hospital, provided she comes under observation at least a month before the expected date of delivery This prophylactic vaccine has been in use during the last nine months and so far the results seem to justify the hope that when a more nearly perfect vaccine is obtained we shall be in possession of a method which in conjunction with adequate ante-natal supervision and strict surgical asepsis, will do much to remove from the practice of obstetrics, even by experts the reproach of a stationary morbidity and mortality rate from sepsis in the puerperium

In order to assist us in the preparation of a universal vaccine, would any who have the opportunity of obtaining cultures from cases of puerperal sepsis be so good as to forward them to us in order that they may be used in our new batch of vaccine now in course of preparation We are considerably handicapped by the present complete absence (due, we believe, in part to the use of our vaccine) of even mild cases of sepsis from the wards of the Edinburgh Royal Maternity Hospital Any cultures sent to Dr W R Logan, clinical pathologist, Pathological Department Royal Infirmary, Edinburgh, will be gratefully received and duly acknowledged —I am, etc ,

J J BOLAND

Edinburgh Nov 29th

SIR,—As my past experience includes personal attendance on almost a thousand maternity cases in private practice and also special opportunities for dealing with some of the scientific questions involved I venture to state my views as briefly as may be

In 1910 I pointed out the association of slight fever and *B coli* infection of the bladder during the puerperium The liability to this infection during pregnancy is now well known and does not require further emphasis What is no so well known, perhaps is that a *B coli* infection during the puerperium may cause alarming symptoms indistinguishable clinically from streptococcal septicaemia, for one days at any rate

The problem which faces the medical attendant in the first few days of the puerperium is this Does the high fever from which the patient is suffering mean that she is almost certain to die, or is it almost certain that she will recover My experience is that this question can be answered correctly inside twenty four hours in the vast majority of cases What is required is (1) a catheter specimen of the urine, (2) a swab from the uterus, (3) 10 c cm of blood from a vein in the patient's arm If the urine shows *B coli* and no streptococci or diplococci if the swab shows no streptococci or other Gram-positive cocci, if the blood on culture is sterile the patient will recover If the blood on culture shows streptococci or diplococci the patient will die On the other hand if the uterine swab shows streptococci and the blood culture is negative a high leucocyte count is in favour of recovery if the leucocyte count is subnormal, normal, or only very slightly increased, the temperature and pulse rate continuing high, a septicaemia will be demonstrated by subsequent blood culture and the patient will die An investigation of this kind, when its results are carefully correlated with the clinical evidence, dispenses at once with a "guarded" prognosis in nine cases out of ten, and is very helpful Of course, I do not lay down these rules as absolute they are based, however on personal experience

But recent work has rendered an exact diagnosis important also for treatment I may say at once that none of my patients whose blood on culture yielded a growth of streptococci or diplococci recovered Vaccines (stock and autogenous) were employed without appreciable benefit in any case My conclusions that vaccines employed in the usual way for direct inoculation are of little or no value in the really serious type of case But the new method of "immunizing a suitable donor and subsequently treating the patient by immuno-transfusion" seems to me of quite extraordinary interest in this connection Judging by the results already achieved in other septicaemic conditions by this method it may be possible for us not to do something of decisive value in some of these almost uniformly fatal puerperal cases It so, month's scientific triumph of the first order will be registered in the brilliant record of St Mary's

With regard to the cause immediate and predisposing of puerperal fever the suggestion that pregnant women may be carriers of and liable to infection by a streptococcus *viridans* is new to me It certainly interesting and might repay more thorough investigation I may mention however the fact that I have on two occasions isolated a diplococcus which appeared to be Fraenkel's pneumococcus from the blood of rapidly fatal puerperal cases The first was seen in consultation with the late Dr Arthur Helme and Dr Crunch Bank the other with Dr F T Kerr In one of these cases there were no pulmonary symptoms in the other these developed only a short time before the patient died

All the fact taken together seem to discredit the tendency manifest in some quarters to saddle the medical attendant with responsibility for these infections in all cases I think this is not merely unjust—it is unscientific The war, however, emphasized afresh the fact that devitalized or partially devitalized tissue provides a favourable medium for microbic development and my impression is that premature and improper instrumental delivery and premature expulsion of the placenta are rightly regarded as important predisposing causes of these septic infections —I am etc

J STAVELY DICK

Manchester Nov 28th

EXPERIMENTAL CANCER IN THE GALL BLADDER OF GUINEA PIGS

SIR —I have been late in seeing Dr Leitch's important paper on this subject (September 13th p 451) but I hope as I am I beg leave to make some comments on it

1 The freedom of the guinea pig from spontaneous epithelial new growth, though remarkable is not absolute In the Proceedings of the German Pathological Society at Kassel in 1903 (Jena 1904) there is a paper by Sternberg on two such cases in chronically inflamed lungs In the discussion Hanemann adduced a similar pulmonary case which he had chanced to examine with the microscope and which he had chanced to find in the rabbit—the one gastric that Schmorl gave two cases in the rabbit—the one gastric the other pulmonary From which it may be concluded that the condition would be found more often if looked for

2 In these cases, as in Leitch's, masses of epithelial

tubes were found in the midst of fibrous callosities Steinberg took them to be extensions of the bronchial tubes detached as white nodules, the size of peas, with thick convoluted walls, "adenoma destruens" was v Hansemann's term The epithelial cells were mostly long cylinders with presumably small nuclei, as in Leitch's gall-bladder cases

3 Without questioning their invasive property, it is clear that tracts of fibrous callosity preceded the epithelial formations, which comes under Cornil's principle, that new-formed vascular tissue is always the antecedent of invasive malignancy, and is practically the same as Virchow's original contention that the subepithelial vascular stratum is the proper seat of cancer In my view the epithelated spaces are in the place of the new-formed blood channels themselves, of which I have given a proof in Fig 86 of my book *Some Conclusions on Cancer* (London, 1920), drawn from the callous wall of a small hepatic abscess connecting with a cancer of the hepatic flexure of the colon

4 The conclusion, I think, from Dr Leitch's experiments on the gall bladder should be that the guinea-pig is peculiarly apt to develop these epithelated tubes in the interstices of its chronic inflammatory reactions To judge from the few details and the low power figures, they wanted the large nuclei and the deep chromatization of true cancer, and, until further advised, I should hold the result in the same ambiguity as Dr Leitch holds the Japanese guinea-pig experiments—I am, etc,

Upper Boddington Nov 22nd C CREIGHTON, M D

TONSILLECTOMY

SIR,—As a pupil of Mr F J Steward, and as one of his successors in the department to which he refers, I write to say how glad I am to see him again bring his shrewd common sense into a discussion on a throat problem

Some misunderstanding seems to have arisen over the wording "tonsillectomy by enucleation" in the first resolution carried at the Bradford meeting Mr Steward would appear to have read this as meaning "tonsillectomy by dissection," a meaning which I, personally, first read into it and which many persons, both general practitioners and surgeons, would believe that it meant If the added words "by enucleation" do not refer to the method whereby the tonsillectomy is done, they are redundant and therefore unnecessary That this meaning was not intended when the resolutions were passed is shown by the letter from Mr F B Jobson (November 15th, p 926) On further consideration one realizes that this must be so A meeting which passed a resolution saying that tonsillectomy by dissection is the only efficient operation, etc, would not be one that in any way represented all laryngological thought in this country

Mr Jobson says that the matter is the old question of tonsillectomy *versus* tonsillotomy I would say that the matter for discussion nowadays is not this, but is the question of the guillotine against dissection, or, as Mr Steward puts it, the question of a major operation against a minor operation Granted that there is a small number of tonsils which cannot be enucleated by the modern method of using the guillotine, yet this number is increasingly smaller the more this instrument is used, and in children is almost infinitesimal When operating under best conditions with skilled assistants I have only had *one* case in the last two years, in a child, where dissection was necessary

I venture to put forward the following principles in favour of the guillotine against dissection in these cases

1 The guillotine will enucleate the tonsil as completely and far more cleanly than can be done by any method of dissection

2 The risk to the patient, both from the anæsthetic and from haemorrhage, as well as from the possibility of septic after complications through infection of the wound surface, is incomparably smaller

3 The chances of scarring leading to deformity of the pharynx and the soft palate are considerably less

Mr Twistington Higgins (November 22nd, p 975) says that "the aim of the operation should be to remove the tonsil, the whole tonsil, and nothing but the tonsil" With this I heartily agree, but I will not admit his inference that *operation* with the guillotine means that the whole tonsil is not removed, and I maintain that the removal of something more than the tonsil occurs far more frequently by dissection, even in the hands of skilled operators, than it does by enucleation with the guillotine in the hands of those equally skilled in this method

In reference to Mr Gerald Sichel's letter (November 15th, p 926), I fear that the problem cannot be solved "by the invention of a properly designed guillotine" The number of guillotines which have been designed within the last twelve years is almost infinite Arguments put forward by various users of the guillotine, each urging the advantages of his own favourite instrument, are as strenuous as they used to be in the discussion of tonsillectomy *versus* tonsillotomy and as they now should be in the mouths of those who wish to exterminate the false doctrine of those who say that every tonsil must be removed by dissection Personally, I believe that the original guillotine of Morell Mackenzie is still the best Modifications of the handle may be of use, but the modifications either in size or shape that have subsequently been put on the market have never approached in efficiency the ring and the knife in the original guillotine It is a matter of personal comfort as to whether a grip handle is used or one which is pushed home with the thumb, but if the capsular surface of a tonsil which has been enucleated with a Mackenzie guillotine be compared with the corresponding surface of a tonsil which has been enucleated by means of one of those guillotines in which the blade is received on to a surface instead of a slit, it will always be found that the former has been more cleanly enucleated than the latter, which always tears away a slight excess of mucous membrane and usually also a small amount of muscle The *principle of enucleation by the* guillotine is, however, one of method, whereby the tonsil is received into the ring, and is not one of detail of manufacture of the instrument

I am willing to admit that there is a small number of cases in which I do not remove every little bit of tonsil, and I may then be said to fail in my ideal of performing a tonsillectomy, but I maintain *that it is better for my* patients that one should here and there retain a small mass of lymphoid tissue than that every patient should be subjected to an operation greater in degree, and more dangerous in nature, in order that I may boast of a hundred per cent successes Are those who write in the strain that Mr Twistington Higgins and Mr Cecil Joll have recently done in your columns prepared to say that not one of their seniors between the years 1880 and 1910 ever did any good by their operations on the tonsils? Yet it always seems to me *that this is the logical conclusion* to which one must come if one follows the arguments put forward by them and others of their way of thinking In the great majority of cases the small piece left behind does not do any harm, at any rate in children The reason why I set out to enucleate every tonsil is that I am unable to say, until long after the operation, which is the case in which a minute piece left behind does become harmful While this warrants the enucleation of every tonsil by the simple method of the guillotine, it does not warrant the putting of every patient to the danger of dissection of his or her tonsils—I am, etc,

London, W 1, Nov 29th T B LAYTON

SIR,—A great deal has been written in the columns of the JOURNAL recently about tonsillectomy and tonsillotomy, but so far as I am aware little has been said as to the functions of the tonsils What these functions are does not appear to be fully decided, but theories are advanced as follows

(1) That they are residual remains of the embryon and are useless

(2) That they have a useful and particular secretion

(3) That they exercise an action physically

(4) That they secrete such mucus as will lubricate the pharyngeal mucous membrane, and so help deglutition

(5) That they act as blood forming glands

If there is anything in these suggested functions—and who can deny that there may not be something in them?—then tonsillectomy as a routine practice must be wrong

Custom may possibly explain why some surgeons advocate tonsillectomy as against tonsillotomy, just in the same way

as some thirty years ago turbinectomy became customary for nasal obstruction, and is not often practised to-day as a routine because as an outcome so many cases of dry rhinitis were produced some months afterwards on account of the removal of the warming and secreting properties of the turbinates It is just possible the same effect may be produced by universal tonsillectomy, which appears now to be the custom as against tonsillotomy, and so dry pharyngitis and even (it may be) laryngitis may be produced It would be interesting and instructive if statistics as to this, from those surgeons who advocate tonsillectomy so strongly, could be produced In due course the suggested lubricating properties of the tonsils would be proved to be or not to be, and it would not be surprising in time to find the same objection raised as in the case of turbinectomy —I am, etc ,

ARTHUR M BARFORD

Chichester Nov 26th

EPITHELIOMA OF THE SCROTUM IN COTTON-SPINNERS

SIR —With reference to Dr Andrew Cochrane's letter on epithelioma of the scrotum in cotton spinners, in your issue of November 1st (p 835), the condition apart from industrial workers and chimney sweeps must be rare I have only seen one case—namely, in a business man of 45 duration fifteen months clinically it was an irregular figure-of-eight shaped raised horny growth about 5/8 in by 1/2 in , on the right side of the scrotum I felt like a thick coin through a cloth on pinching up between thumb and index The lesion had been fomented and ointments applied, but the growth had slowly increased in size There was no enlargement of inguinal glands My clinical diagnosis was kerato epithelioma Micro-copically it showed cancer cells of the squamous type arranged in masses penetrating the derm Numerous horny cell nests were present On looking up available literature down to 1920 no case of the kind was found —I am, etc ,

GEORGE PERNET, M D

London W I Nov 24th

THE TREATMENT OF PLAGUE

I Suggestion

SIR,—In a recent address on the future of tropical medicine and hygiene which you were good enough to publish in an abridged form in the BRITISH MEDICAL JOURNAL of November 15th, I pointed out the urgent necessity at the present time of finding a remedy for plague Antiplague serum, commonly employed is none too reliable Occasionally it answers well, especially if given early in the disease, but not infrequently it fails The various drugs which have been used often prove inert The best of them would appear to be tincture of iodine and appears to have given the most satisfactory results but here again early administration is necessary if any tangible effect is to be obtained

Accordingly I wish to recommend a trial of mercurochrome 220 soluble," in view of the fact that it has been given with very considerable success in such diseases as enteric fever and puerperal fever In both a bacteriaemia is present, as in plague Again its intravenous administration has been followed by gratifying results in one case of Rocky Mountain spotted fever, as recorded by Greeley Rocky Mountain spotted fever, whatever its cause, is a disease resembling typhus fever in its clinical symptoms and typhus and plague possess many features in common Indeed typhus fever is one of the diseases with which plague is often confused

Hence there would appear to be some grounds for advocating the employment of mercurochrome in plague especially at the present time, when the malady is present in Nigeria and the Gold Coast Colony, is causing grave anxiety in parts of the Union of South Africa and is to a large extent defying the physician

It is true that occasionally mercurochrome when given intravenously, causes rather a severe reaction but as a rule the reaction is moderate and the drug can be administered with safety Any risk of ptyalism can be combated by a mouth wash of turpentine used alternately with hydrogen peroxide, as pointed out by Bond and Barrier

As regards dosage, Young and Hill state that, for intravenous use in puerperal sepsis and acute gonorrhoea, a 1 per cent solution in water may be employed and from 2 to 5 mg per kilo of body weight administered In Rocky Mountain spotted fever Greeley gave doses of 20 c cm of a 1 per cent solution, while in typhoid fever Bond and Barrier found 15 c cm per 100 lb of body weight to be an average effective dose In plague it would probably be advisable to begin with 20 c cm , and to push the dosage, especially in severe cases

For those resident abroad who may not have ready access to the literature I may say that mercurochrome 220 soluble is dibromo-oxy mercury fluorescein or its sodium salt The latter has the formula $C_{20}H_8O_7Br_2HgONa_2$ It is a powder in the form of iridescent green scales, and is readily soluble in water —I am, etc ,

ANDREW BALFOUR

London School of Hygiene and Tropical Medicine Dec 1st

EARLIER OPERATIVE TREATMENT OF ACUTE OTITIS MEDIA

SIR —The plea put forward by Mr F Holt Diggle as described in your issue of November 22nd (p 940) merits, in my opinion the serious consideration of all otologists as well as general practitioners Earlier operative treatment of acute otitis media has indeed proved essential Too often in the clinics of hospitals one has seen the distressing results of neglect of such treatment On the other hand a timely incision of the drumhead or—when drainage via the meatus is inadequate owing to thickness of pus adhesions or oedema—opening of the mastoid antrum without interference with the soft tissues of the external auditory canal, will in the vast majority of cases, bring about a rapid and complete cure without impairment of hearing The time for the mastoid operation must be carefully chosen—as soon in fact, as it is judged that free drainage has not and cannot be established via the meatus and this is evidenced by the amount of oedema of the drumhead itself and the adjacent walls of the meatus

I cannot, however say that I am altogether in agreement with the method advocated of suturing completely the mastoid wound after "pipping" the cavity A small gauze wick or tube drainage for a few days is I think, safer and more advisable and does not prolong the healing process to any appreciable degree —I am, etc ,

L G BROWN, M D , F P C S

London W I Nov 2 th.

SIR —Perhaps Mr Diggle will forgive me for saying that I can find no reference in his useful paper to the manifest duty of the aural surgeon to make a post-nasal examination and remove adenoids followed by the deep drying out treatment of the ear, resort to opening the mastoid in young persons in the absence of indications other than discharge possibly will not be required In cases with persistence of acute symptoms the two operations should be combined —I am, etc ,

WILFRID GLEGG

Birmingham Nov 26th

ACCLIMATIZATION TO HIGH ALTITUDES

SIR,—With reference to Dr J S Haldane's lecture on acclimatization to high altitudes (BRITISH MEDICAL JOURNAL, November 15th, p 885), my experience may be of interest I ascended Mont Blanc last August accompanied by a friend When leaving Chamonix at 7 a m we counted our pulses, they were 70 and 74 per minute respectively The rapidity of the pulse rate gradually increased as we ascended to 122 and 126 per minute respectively at the height of 12,000 feet (Aiguille du Goutter) At this altitude we rested in a recumbent position in a hut for six hours Sleep was out of the question the very rapid pulsation and breathing made sleep impossible either for ourselves or the guides On resuming the climb at 2 a m the pulse rate was still between 120 and 125, and the

and Flint Division For a quarter of a century he was a magistrate for the county of Denbigh and for many years an alderman of the county council, his services on the Public Health Committee being of great value He was elected Mayor of Ruthin in 1892, and held this office also from 1897 to 1901 His sympathetic personality and humorous outlook won numerous friends, while his energy, enthusiasm, and strong sense of public duty were an inspiration and incentive to many A large assembly attended his funeral on November 19th, at the church of Llanrhydd, to pay a last tribute to one whose whole life was characterized by integrity of purpose and unfailing kindliness

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DR ROBERT H HALL, who died at Leeds on November 6th, was the son of the late Dr William Hall, the well known philanthropist, who took great interest in the welfare of poor children He was educated at Cambridge University, Leeds, and St Thomas's Hospital, and graduated M A , M B , B Ch Camb in 1891 He succeeded his father in practice on the latter's retirement many years ago, and at the time of his death was the senior factory surgeon in Leeds, he was a member of the Leeds Division of the British Medical Association

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DR LEO STUCKEY, senior surgeon to the Alessandro Hospital, Leningrad, and author of several surgical works, has been assassinated by the brother of one of his patients, who died of uraemia four days after an operation

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PROFESSOR AUGUST RITTER VON REUSS, a well known ophthalmologist of Vienna, has died at the age of 83

Universities and Colleges.

UNIVERSITY OF OXFORD

AT a congregation held on November 27th the following medical degrees were conferred

[illegible] evidently Nature, though providing it freely for [illegible] ded that it should be used

M D —W H Oakley
M B —C L Elgood

[illegible] **the** fully grown and the [illegible] **ut** we in our *wisdom* con- [illegible] tion to her scheme of life,

UNIVERSITY O[illegible]

THE title of Professor of Anatom[illegible] **nalty** conferred on Mrs Mary Frances [illegible] relatively an enormous in respect of her post as head of the [illegible] without doubt, specially the London School of Medicine [illegible] Keene was appointed Lecturer in [illegible] ffected When the charge of the department at [illegible] Women in 1919 and the title of Reader [illegible] complete University was conferred on her in respect of this post in 1[illegible] The chair of anatomy at this school is at present unendowed but the Jubilee Endowment Fund will it is hoped, eventually provide the money required for endowment The fund at present amounts to £28 000, and the total sum required to endow the three chairs of natomy, physiology and pathology is estimated at £60,000

The following candidates have been approved at the examination indicated

THIRD M B B S —*†F B Bylom * L Dulake (University Medal) *†J A James *†R J Joleman †Mary M Turnbull Katharine M Andrew Ruth M Arkwright N Asherson A Jones Phyllis E Bond R T Brain Violet W A B Cooper F R Cullman W A Date D Morwyn G Davies A I Doyle I F D[illegible] D G M Edwards J I Good Phyllis A L L A I Fair Margery Freeborough H P Goldsmith J A E M Hadley R Hart J K Hasler Sybil M Hawkes K W Heritage J Hrida L G Hill Frances A Hogben Barbara M Hope Margaret Hos ell Audrey M Hughes C Ive F J Jauch A E Jenkins Eva M Johnson A T Jones D J Jones I W Joule Nancy R Lewis Kate Madders H J Malkin Doris I Mant Violet E M Mizen P McG Moffatt H A Morlock A D Morris H Mould A L te W Naude F G Nicholas Doris E O Doherty P H O Donovan C M Pearce J P Peel A T W Powell C S C Prance Violet A Quilez W A Robb Nina L D Robertson M Rockfelt Winifred M Samp on Margaret B Savory G D Shaw N W Snell Dorothy M Stewart Grace M L Summerhayes D B Sutton Mary A StC Swann H C C Taylor Portia K Taylor R C Taylor Beatrice Teverson D J Valentine A H C Visick H G Wyatt

* With honours — Distinction in pathology
† Distinction in medicine — ‖ Distinction in surgery

UNIVERSITY COLLEGE

A course of three lectures on the anatomy and physiology of the sympathetic innervation of the striated muscle will be given by Professor John Irvine Hunter (University of Sydney) at University College, Gower Street, W C 1, on December 8th, 10th, and 12th at 5 p m Professor G Elliot Smith, F R S , will preside at the first lecture Admission to the lectures is free

Medical News.

THE first session of the new Parliament opened on Tuesday, December 2nd, when Mr J H Whitley was again elected Speaker The King's Speech will be delivered on the 9th, and after the Christmas adjournment the session will be resumed about February 10th Before Christmas only the debate on the Address and urgent business will be taken The new Minister of Health, Mr Neville Chamberlain, is understood to be investigating the possibility of better co ordination between public health services and health authorities In view of the fact that the Royal Commission on National Health Insurance is not expected to complete its work for another year, there is no likelihood of the Government proposing during the session of 1925 any measure of "all in national insurance"

THE annual dinner of the Old Epsomian Club will be held at the Trocadero Restaurant, Piccadilly Circus, on Thursday, December 11th, at 7 15 p m Mr George E Waugh, F R C S, will be in the chair The annual meeting will precede the dinner at the same place at 6 30 Members of the club intending to be present at the dinner are asked to notify Mr R M Handfield Jones, F R C S , 53, Hamilton Terrace, St John's Wood, N W 8, as soon as possible, mentioning the names of those near whom they would like to sit The price of the dinner is 8s 6d (exclusive of wine), and will be collected at the table

THE annual general meeting of the British Dentists' Hospital will be held to day (Saturday, December 6th), at 3 30 p m , in the rooms of the British Dental Association, 23, Russell Square, W C , with the President, Sir Harry Baldwin, C V O , in the chair

IN the advertisement columns of this issue full details are published of the Hamsworth Memorial Research Fund for the investigation of malignant endocarditis, to which reference was made in our last issue (p 1015)

THE Honorary Secretary of the Sir Malcolm Morris Memorial Fund informs us that the total now subscribed is £479 6s 2d , and the committee earnestly hopes that this sum will be made up to £500 at an early date, as it has been decided to close the appeal at the end of December Further subscriptions will be gratefully acknowledged if forwarded to the Honorary Treasurers, "Sir Malcolm Morris Memorial [illegible] carbonate renders the [illegible] Place, London, W 1

[illegible] formed in the bath is not a[illegible] regulations, dated Novem[illegible] the bath, and the presence of [illegible] under licence, the diversion [illegible] effect in creating hardness, which [illegible] passing in transit through [illegible] the mere fact of the lime being [illegible] destination other than [illegible] although present in a finely divided [illegible] be consigned from the [illegible] The sodium carbonate can be added to [illegible] the case of prescrip[illegible] without injury, and the slightest touch [illegible] even on the official [illegible] a profuse lather But even without soap [illegible] requirements to be dispensed [illegible] alkaline water upon the skin is very clean[illegible] F R S , has left [illegible] the products of the [illegible] bequeathed £1,000 to Charing Cross Hos[illegible] £1,053 with net personalty [illegible] Hospital for Sick Children, Great Ormond Street £200 to the Royal Medical Benevolent Fund, and £10 to the Lord Mayor Treloar's Hospital at Alton

DR S W F UNDERHILL, senior demonstrator of physiology at St Bartholomew s Hospital, has accepted an appointment as research physiologist to the British Drug Houses, Ltd , and Messrs Allen and Hanburys, Ltd , in connexion with the production of "A B" brand insulin

THE next Congress of the Royal Sanitary Institute and Health Exhibition will be held in Edinburgh from July 20th to 25th, 1925, by invitation of the magistrates and city council

AN exhibition of hygiene will be held at Vienna in April and May, 1925

THE thirty fourth French Congress of Surgery will be held in Paris on October 5th, 1925, when the following subjects will be discussed (1) Remote results of different methods of treatment of cancer of the rectum, introduced by MM Schwartz and Gaudier (2) Treatment of tuberculosis of the knee after adolescence, introduced by MM Fredet and Vignard (3) Indications for splenectomy and its results, introduced by MM Cadenat and Guyot

WILLIAM HEINEMANN (Medical Books), Ltd , announce for early publication *Acute Infectious Diseases*, a handbook for practitioners and students, by Dr J D Rolleston, senior assistant medical officer, Grove Fever Hospital, London

THE sixty second annual meeting of the Royal Surgical Aid Society will be held at the Mansion House, London, on Tuesday, December 9th, at 4 p m The chair will be taken by the Lord Mayor, who will be supported by, among others, Sir George R Turner, K B E , F.R C S , and Dr. Frederick W Willway.

Letters, Notes, and Answers.

ORIGINAL ARTICLES and LETTERS *forwarded for publication are understood to be offered to the* BRITISH MEDICAL JOURNAL *alone unless the contrary be stated* Authors desiring reprints of their articles published in the BRITISH MEDICAL JOURNAL are requested to communicate with the Financial Secretary and Business Manager 429 Strand W C 2 on receipt of proof

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Communications intended for the current issue should be posted so as to arrive by the first post on Monday or at latest be received not later than Tuesday morning

THE telephone number of the BRITISH MEDICAL ASSOCIATION and BRITISH MEDICAL JOURNAL is Gerrard 2630 (Internal Exchange)

The telegraphic addresses are

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The address of the Irish Office of the British Medical Association is 16 South Frederick Street Dublin (telegrams *Batillus Dublin* telephone 1737 Dublin) and of the Scottish Office 6 Putland Square Edinburgh (telegrams *Associate Edinburgh* telephone 4361 Central)

QUERIES AND ANSWERS

An Explosion

DR SIDNEY CLARKE Honorary Secretary of the Hertfordshire (Local) Medical and Panel Committees tells us that the Hertford *Formulary* contains the following recipe for a mixture

Oxymel scillae	m xxx
Pot nit	gr v
Vin ipecac	m xv
Tr opii	m iij
Aquam	ad 3

A bottle containing this mixture exploded causing a small injury to an insured person Dr Clarke asks how the explosion is to be explained Was there any interaction between the drugs Or could the cause have been fermentation of the honey in the oxymel scillae? He adds that he is told that oxymel scillae when in bulk sometimes ferments

*** The incident described by Dr Clarke does not seem to admit of any very ready explanation No chemical reaction is possible which could attain explosive violence If the mixture be a possible and likely cause of the event since the mixture is evaporated to dryness the residue would deflagrate on ignition but the residue is somewhat hygroscopic Even if the bottle leaked it does not seem possible that any portion could have become dried up and ignited with the result described The only remaining hypothesis is that the bottle was burst by carbon dioxide generated through a fermentation of the honey in the oxymel of squill But that suggestion must be dismissed as potassium nitrate effectively prevents fermentation when present in the proportion stated If potassium citrate had been present instead of potassium nitrate fermentation would be a possible and likely cause of the event since the mixture contains no other substance inhibitive to yeast action They are mentative yeasts are abundant in atmospheric dust Fermentation collected on saccharine materials and remain dormant in the absence of sufficient water for their development They are not propagated in concentrated honey but germinate when water is added to a favourable degree of dilution Saccharine ferments tion is comparatively rare in medicines It frequently happens that one of the ingredients exerts an inhibitory action The antiseptic property of sodium salicylate the saline quality of potassium bromide the acid character of tincture of ferric chloride and the alcohol of other tinctures counteract fermentation The medicated waters of the *Pharmacopoeia* are notably efficient in preventing fermentation

Peppered Sensation in Amputation Stump

F W L writes A man who had an amputation through the lower third of the thigh in 1918 complains that since the operation he gets pins and needles whenever the weather turns cold and damp the sensation being referred to the plantar surface of the foot He is quite relieved from discomfort in warm weather He feels the cold very much in the stump but warmth applied to it does not bring entire relief Suggestions for alleviating his distress will be welcomed

Income Tax

General Expenses

M H (Kent) has hitherto been allowed to deduct two-thirds of his rent rates lighting and heating the whole of his house ing expenses and £60 for wages and board of one maid The inspector of taxes now proposes to restrict these allowances in the case of the first two items to proportions of one third and nine tenths respectively and in the case of the third to £0 L this justified?

It is difficult to give definite advice on this question since the answer to the question really depends on whether or no the reduced allowance is reasonable In the normal case of a practice in a provincial town one half is the proportion usually taken for rent and rates with a somewhat smaller proportion for lighting and heating On the one hand it has to be borne in mind that the professional portion of the premises is on the ground floor—that is the most valuable floor on the other hand the amount allowed should not be so large as to leave the balance insufficient to represent properly the cost of the private portion For instance suppose the total cost for rent and rates is £1.0 then on the basis that our correspondent has hitherto enjoyed £0 only was the amount which may well be clearly inadequate private accommodation which may fairly be suggested that If he can obtain half rent and rates *plus* one third lighting and heating he will probably be near enough and we suggest that he might inform the inspector that he is prepared to leave the matter to appeal on this basis As regards the other two items M H (Kent) can apply the reasonable tests in his own mind Whether he would succeed on appeal we cannot of course say as so many small details are necessarily involved

Replacement of Car

H W F replaced his car in July 1924 Does that affect his income tax liability for the financial year ending April 5th 1925?

No His liability is determined by the average profits of the three previous years—that is the three years ended December 31st 1923 for instance The expense of replacing his car is deductible in arriving at the amount of the professional profits for 1924 and will affect the average for 1925–26 and the two following years

Purchase of House

K D P purchased a house for £600 and expended £150 on decorations and lighting He uses two rooms for professional purposes and has bought furniture etc and had some alterations carried out to put them in a proper condition for professional use What allowances can he claim?

He should ascertain—for example from the local collector—the amount at which the premises are assessed to income tax Schedule A In calculating the professional profits he can deduct a proportion—say one half—of this sum but not the amount of the mortgage interest £17 10s (He will have to pay tax on this latter sum but can deduct the tax when paying interest to the mortgagee) From the particulars given it would seem that the expenditure represents capital outlay and as such is not deductible with the exception of the expenditure on decoration of which amount K D P can deduct the portion which would have been necessary to restore but not to improve upon the former standard of decoration

Cash Basis

F J W took over a practice in January 1921 but did not take over book debts His returns have been based on cash receipts calculated to December 31st in each year The inspector of taxes claims to add to the cash profits of each of these three years one third of the excess of the value of outstanding debts due to F J W at April 5th 1924 over the corresponding amount as at April 5th 1921

The inspector is not justified in selecting April 5th as the date for the calculation of the increase in book debts If F J W's statements are made up as at December 31st that is the date which should be taken and quite unnecessary trouble is caused by the selection of any other date Business men from this the inspector's contention is theoretically correct Strictly the proper basis of income tax returns is the amount of the debts booked—or rather their value—and adjustments must be made to the cash receipts figures is necessary to bring them to a correct level If this were not done the returns made would fairly reflect the value of the year's earnings Of course if F J W had taken over his predecessor's book debts and had brought the receipts therefrom into his accounts no such adjustment would have been necessary and the same would be the case reached as soon as the amount of outstanding debts reached a normal standard for the practice The expenditure incurred in collecting and adopting the coach house as a garage is not allowable for income tax purposes

KELOID VACCINATION SCARS

DR J CRISP (Market Harborough) writes A healthy girl aged 10 was vaccinated in three places on the upper arm in the usual manner The vaccinia followed the usual course, except that the vesicles broke and needed dressing with boric powder and lint several times before they dried up Some months later all the scars had become raised, thickened, smooth, and dusky red—in fact, "keloid"—a very unsightly condition for a girl's arm, and one which I have never seen previously in many years of experience of vaccinating I should be very glad to have suggestions for treatment Has carbon dioxide snow been used in a similar condition, and if so with what effect?

LETTERS, NOTES, ETC.

OWING to pressure of other matter we are compelled this week to hold over Reports of Medical Societies which have been prepared for publication

A WARNING

THE Chief Constable of Leeds has informed the Registrar of the General Medical Council that a man who gave the name of Mr Ferguson, aged about 70, called on a doctor in that city and asked for financial assistance He stated that he was a doctor and obtained his M B , Ch B Edin in 1894, and had practised in Harley Street and Henrietta Street, and also in Edinburgh, and at present he was residing at Bradford He produced a letter purporting to be written by another doctor, who had apparently assisted him to the extent of 10s The Registrar is unable to identify the name of this man Ferguson as ever having appeared upon the *Register*

BELLOTT'S HOSPITAL, BATH

MR CHARLES CURD, M R C S (Bath), writes May I make known to the medical practitioners of the United Kingdom the benefits to be obtained through Bellott's Hospital, which was founded in 1611 for the accommodation of ten poor persons seeking the benefits of the Bath waters, who receive the required baths and treatment with medical attendance gratuitously, a separate room, with an allowance of 2s 4d weekly with coals? It is suitable for those cases which do not need hospital treatment, but are able to get about and help themselves, and who are able to provide their own food, but cannot afford to pay even a moderate amount for a course of treatment The hospital is in the care of a very capable matron, and the medical officer is appointed by the Municipal Charity Trustees, who control the establishment Application for admission should be made to the town clerk, Bath

PUERPERAL PYREXIA

DR N WALMISLEY (Westminster) writes with reference to Dr Claude Wilson's letter (November 22nd, p 982) I have seen at least six cases like the one Dr Wilson describes (temperature 105° F) The first case I saw over thirty years ago when assisting a doctor who had a large midwifery practice That doctor did not consider it exceptional, judging by his remarks to me at the time Since then I have seen several cases as a locumtenent in different parts of the country All the patients had good appetites, and I remember well a confinement where I allowed the patient to eat what she liked, causing trouble between me and another doctor who had never seen a similar case No drugs were given and the patients made uneventful recoveries

HERPES AND VARICELLA

DR W JAMES SUSMAN (Henley on Thames) writes As there has has been a good deal of correspondence on this subject the following notes may be of interest I have to day seen a small boy aged 4, with well marked herpes over his right cheek and numerous typical varicella spots all over his body—back and front Some time ago I saw a mother who was nursing her infant, 4 months old The mother had a severe attack of herpes frontalis, twelve days later the infant developed varicella

ASSISTANTS IN GENERAL PRACTICE

"G G" writes There is certainly a difference between the value of a newly qualified man and one of one or two years' experience in general practice but I am convinced that the minimum value of an assistant is £350 per annum indoor My opinion regarding the time taken by a newly qualified man to learn the routine work of a practice agrees with that expressed by "T N" (November 29th, p 1032) A new man gets into the swing of the work very quickly, and in a few weeks' time not only is he doing about half the work but he is discussing the diagnosis and treatment of many of the cases from a more advanced standpoint, and although he may be a young man the very presence of a "second opinion" in the practice goes a long way in the management of the doubting and "difficile" type of patient who means so much to the practitioner But when we come to the assistant who has had two or more years in general practice the situation is quite different, and a salary of £350 indoor is not adequate payment for the services he renders in the general work, and more especially in midwifery in which branch he is far ahead of the newly qualified man He soon gathers a small clientele of his own It is well known that a good locumtenent makes one and a half to two times more than a moderate one A good assistant will quickly make and exceed the extra £50 of his salary by the tactful handling of patients, and it is the doctor who pays the little extra who gets the best man

"BARKING OF THE SKIN"

DR R C MCGUIRE (Bishopton, Renfrewshire) writes Having obtained uniformly good results from treating skin abrasions with silver nitrate I cordially recommend its adoption by others The injured area is cleansed with a 1 in 20 carbolic lotion, and, with the surrounding skin, is thoroughly dried with sterile gauze The abraded area is then painted with a 3 per cent solution of silver nitrate applied by cotton wool mounted on a probe While the parts are still wet powdered starch is dusted thickly over them This results in the formation of an aseptic film that acts as a protective for the injured surfaces and favours aseptic healing The process can be repeated daily for three days if necessary, but as a rule one thorough application is sufficient In about four days a well marked ring of hyperaemia surrounds the film on the wound, in about ten days the film detaches itself, its edges curling up, and leaving, when completely detached, a soundly healed pink scar The treatment is simple, safe, almost painless, and very economical It does away with the frequent dressing of a septic wound surface by moist antiseptic dressings This latter treatment converts the wounds into open ulcers, which heal slowly by granulation Barking of the skin is a very troublesome form of injury which frequently gives rise to severe septic inflammation, owing to the extensive damage to skin and blood vessels and the liability to infection The treatment is based on the fact that the application of a 2 per cent solution of silver nitrate will prevent gonococcal suppuration on such delicate epithelial surfaces as the conjunctiva I believed that a slightly stronger solution—namely 3 per cent—would prevent suppuration in exposed epidermal tissues The main point is to begin the treatment early, and to keep the parts dry after the first application of starch and silver

PICRIC ACID FOR CATGUT

MR FREDERICK EDGE, F R C S (Birmingham), writes In his letter about 'Picric acid its use and abuse," Dr Ian Macdonald (November 15th, p 926) refers to the method of preparing catgut with picric acid and oil of cloves For years I used it with satisfaction and found the catgut strong and pliable, but this spring I had two cases of tetanus, one of whom died I have therefore given up this method, as it is evident that tetanus bacilli or spores are not destroyed when present inside the gut

CANCER IN AFRICAN NATIVES

DR J G MCNAUGHTON (Senior Medical Officer, Tabora Hospital, Tanganyika Territory) writes In connexion with the correspondence in the JOURNAL recently about cancer in the natives of Africa, the following note may be of interest During the past four weeks I have admitted to hospital one case of sarcoma in a woman of 18 on the left scapular region, and one case of epithelioma of the lip in a man of 40 Both tumours were examined microscopically after removal and the diagnosis confirmed

PROPOSED MODIFICATION OF THE RECORD SYRINGE

DR JOHN WALKER (Paisley) writes May I suggest the following useful addition to the Record syringe? In filling the syringe from an ampoule I have always found it advantageous to have both hands free for the syringe When one has to hold both the syringe and the ampoule in the left hand accidental pressure against the bottom of the ampoule may blunt the point of the needle I have obviated this by the attachment of a small clasp mechanism to the side of the steel bottom plate in the syringe case The clasp consists of a tiny strip of metal soldered at right angles to the plate, with a clip fastened to its upper end This clasp so attached, does not interfere with the use of the other clips for the various parts of the syringe, nor with the closing of the case the height of the strip being less than the depth of the case. Perhaps some instrument maker will adopt this suggestion The metal strip might be cut out of the plate and turned up at right angles to form the attachment for the clip

FIRST AID FOR THE MOTOR CAR

MESSRS STERNS, LTD , of Royal London House, Finsbury Square, E C 2, makers of the motor lubricants *sternol and ambroleum*, have issued a waistcoat pocket volume entitled *First Aid for the Car*, a copy of which they will supply free on application to their office Information on various ailments of motor cars is given under three headings symptoms, causes, and remedies In addition, there are hints on driving, on the motor's little troubles and on the motorist's own troubles The last named consist of a very brief summary of first-aid treatment for sundry injuries and accidents Some of the remedies suggested are not perhaps, very suitable for application by the inexperienced The booklet is of course frankly an advertisement for Messrs Sterns's wares, but it should prove quite useful to those in difficulty with their cars, especially as the arrangement under the three headings makes reference to it very easy

VACANCIES

NOTIFICATIONS of offices vacant in universities, medical colleges, and of vacant resident and other appointments at hospitals will be found at pages 61, 62, 63, 66, and 67 of our advertisement columns, and advertisements as to partnerships, assistantships, and locumtenencies at pages 64 and 65

A short summary of vacant posts notified in the advertisement columns appears in the *Supplement* at page 211

EPITOME OF CURRENT MEDICAL LITERATURE.

Medicine.

437 Chronic Arthritis

D W CARMALT JONES (*New Zealand Med Journ*, October, 1924, p 397) discusses the classification and treatment of chronic arthritis from the etiological standpoint—namely (1) Arthritis of determined etiology, (*a*) metabolic toxaemia, gout, (*b*) infection, tuberculous, gonococcal, and streptococcal, and (*c*) traumatic (2) Arthritis of doubtful etiology considered anatomically and embryologically, (*d*) fibrositis, chiefly involving capsules, ligaments, and muscles (*e*) osteo arthritis, originating in the cartilaginous residue of the articular disc, and (*f*) rheumatoid arthritis starting in the capsular or synovial residue, but extending much beyond the joints The author suggests that rheumatoid arthritis is to be considered an infective toxaemia associated with metabolic disturbance In arthritis resulting from metabolic disturbances treatment includes suitable diet, colchicum in gout, and fasting and high colonic irrigation in rheumatoid arthritis, whereas in chronic arthritis following infections of mucous surfaces, as in gonorrhoea, efficient local treatment is the first essential combined with vaccine therapy Alimentary stasis and hidden septic foci require attention, and the author recommends guaiacol carbonate and potassium iodide in rheumatoid arthritis He adds that when the joints are affected orthopaedic treatment by splinting, movements extension, or operation should be adopted and encouragement with suggestion treatment will strengthen the patient s own efforts

438. *Active Immunization against Diphtheria.*

H ALDERSHOFF (*Nederl Tijdschr v Geneesk*, October 4th, 1924, p 1693) states that in Holland the number of children with a positive Schick reaction is much higher than is generally found in other countries In children under 15 Aldershoff found 64 per cent positive, Ten Bokkel Huininck 72 1 per cent, and De Lange and Schippers 56 per cent whereas Schick found positive reactions in only 50 per cent, Zingher in 49 per cent, and Park and Zingher in 32 per cent The methods of immunization hitherto in use in Holland present the following disadvantages (1) Intracutaneous injection is not suitable for inoculation of a large number of persons at once (2) Repeated inoculations as well as Schick testing are a heavy demand on the parents and children, as well as on the doctor (3) Owing to the instability of the solutions they must be prepared fresh on each occasion (4) The exact composition of Behring s toxin antitoxin is not known Aldershoff s investigations with different mixtures of toxin antitoxin, as well as the good results obtained in America, England, and Germany are in favour of the subcutaneous method being employed for immunization in preference to the intracutaneous route Three subcutaneous injections should be given, each consisting of 1 c cm, with an interval of a week between each injection

439 Hypoglycaemia and Recurrent Vomiting

S G ROSS and H W JOSEPHS (*Amer Journ Dis of Children*, October, 1924, p 447) record observations on a child who had repeated attacks of vomiting, drowsiness, acetonuria acidosis, and occasional convulsions These attacks were usually accompanied by fever when he took scarcely any food and an attack occurred once when he had been deprived of food During an attack when experimentally starved or when suddenly deprived of carbohydrate on an otherwise sufficient diet it was found that the blood sugar and carbon dioxide combining power of the serum were reduced and the symptoms reappeared Gradual deprivation of carbohydrate had no effect The hypoglycaemia etc, was much more rapid in onset in this patient than in five other patients used as controls, he seemed unable to deal immediately with a sudden demand for carbohydrate produced by its withdrawal from the diet The authors suggest that the frequent occurrence of fever in cases of recurrent vomiting may be due to the accompanying anorexia causing a withdrawal of carbohydrate whilst the increased metabolism demands more carbohydrate, in a child unable to meet such an emergency The attacks were all ended with striking rapidity by giving glucose either intraperitoneally or orally The authors add that the blood sugar must be estimated at the height of an attack for hypoglycaemia to be detected, since recovery is rapid

440 Tuberculous Polyserositis

B R WHITCHER (*Boston Med and Surg Journ*, October 30th, 1924, p 817) reports a case of tuberculous polyserositis in a man aged 71, in whom the onset was insidious with gradually increasing cardiac discomfort sensations of fullness in the chest, and marked ascites later There were no pulmonary symptoms except a very slight dry cough and a slowly developing pressure dyspnoea due to cardiac enlargement and increase of pericardial fluid. At the autopsy the abdomen was found to contain 4½ pints of fluid, and the intestines were bound together by firm adhesions The right pleural cavity contained 14 ounces and the left 3½ ounces of fluid, both lungs were adherent to the pericardium There were 21 ounces of fluid in the pericardial sac, and the parietal pericardium was thickened, necrotic, and contained many small tuberculous foci with giant cells Throughout the lung substance many tubercles in various stages of development were found, and the peritoneum showed extensive tuberculous involvement The striking features of the case were (1) the age, 71 years, tuberculous peritonitis and polyserositis being rare in old age (2) the marked exudative type of tuberculosis with extensive caseation and necrosis and (3) the large amount of fluid in the abdominal cavity and pericardial sac, and the smaller quantity in the pleural sacs

441 The Use of Fine Cannulae for Lumbar Puncture

K H KRABBE (*Ugeskrift for Laeger*, October 30th 1924 p 831) discusses various explanations of the unpleasant and even alarming symptoms which not infrequently follow lumbar puncture and inclines to the view that it is not so much the withdrawal of cerebro-spinal fluid at the time of puncture, as the protracted oozing after it, which is responsible He suggests that this oozing may be reduced if a smaller cannula than usual is employed Since the beginning of 1924 he has dispensed with the use of a cannula with a diameter of 1 5 mm, using in its place a cannula with a diameter of only 0 7 mm Both instruments were of steel, but the new fine cannula was made of the less brittle steel which Danish instrument makers employ for the long needles required for local anaesthesia Between January and July, 1924, the author has used this fine cannula for 175 lumbar punctures, and he has found it definitely better than the larger cannula, both with regard to the degree of discomfort at the time of the operation and the frequency of serious sequels In as many as 124 cases there were no ill effects whatever—no headache, giddiness, or vomiting In 41 cases there was a slight and transitory attack of headache, and in 4 cases the headache lasted a few days In 6 cases only was there severe headache with repeated attacks of vomiting On no occasion did the fine cannula break during the operation—an accident which occurred once with the older, thick cannula

Surgery.

442 Sciatica and Pain in the Back.

G I BAUMAN (*Journ of Bone and Joint Surgery*, October, 1924, p 909), in discussing the causes of backache or sciatica, points out that absorption from some septic focus must first be excluded In the cases he is considering the onset of pain is mostly sudden and traumatic in origin, though in some the onset is insidious and associated with a maldevelopment of the vertebrae Many of the nerve trunks have been found to come into intimate contact with certain of the lumbar transverse processes and Bauman thinks it fair to conclude that any lesion of a transverse process is likely to be followed by some lesion of a nerve trunk in contact with it Lumbo-sacral disease appears to be a very rare cause of pain in these cases The onset is usually sudden and occurs mostly in men doing hard labour The lesion consists in pressure upon a nerve cord and results in a condition of lumbo-sacral neuritis due to a lesion of one or other of the lumbar transverse processes, commonly the fifth In women the third process is often elongated, and is therefore easily injured it may be the cause of obscure pain in the lower abdomen groin or hip The diagnosis is made by the discovery of definite points of tenderness over the transverse processes The trouble may be relieved by removing the appropriate transverse processes In 18 cases so treated by the author 14 were cured, 3 improved, and 1 was unrelieved

443 Spontaneous Necrosis of Testicles

H KUTTNER (*Deut med Woch*, September 19th, 1924, p 1291) records two cases in which, for no apparent reason such as torsion of the cord, one testicle slowly underwent necrosis The first patient was a boy, aged 14, who, three years earlier, had developed, without any apparent provocation, transitory swelling of the right testicle Three weeks before admission to hospital the same testicle became painful and gradually increased in size A hydrocele was found under which a hard, but scarcely tender, testicle could be felt Tuberculosis was suspected, but when an operation was performed and a microscopic examination made of the testicle, no evidence of tuberculosis was found The second patient was a man, aged 27, whose left testicle had become painful and swollen three years previously Both pain and swelling soon disappeared after rest in bed, but after this attack the testicle gradually shrank till only a small nodule was left The microscopic examination of this nodule revealed non specific changes similar to those observed in the first case In both cases the total necrosis of the testicle was presumably due to an infarct following interference with the circulation of the blood From three points of view these cases were extraordinary (1) There was not the slightest evidence of torsion of the cord, which is supposed to be the chief cause of such infarcts of the testicle (2) The onset of this condition was slow and insidious (3) The infarct was anaemic and not haemorrhagic The author has collected from the literature twenty cases in which necrosis of a testicle could not be traced to torsion of the cord, but in hardly one of these cases could it be said, as in the author's two cases, that a perfectly healthy testicle had undergone spontaneous necrosis From whatever aspect he investigated them, the author could not find in the history of his cases, or in the anatomical or microscopic examination of the testicles, any explanation of the necrosis The most searching examination failed to reveal evidence of embolism or of injury to the inner lining of the blood vessels.

444 Fracture of the Carpal Navicular

K SPEED (*Annals of Surgery*, October, 1924, p 532) suggests that the position of the navicular bone in the carpus is probably one cause of its injury in falls, back fires, and other accidents Navicular fracture, with or without dislocation of one or both fragments, is a fairly frequent occurrence The blood supply of the carpal bones is rather scanty, and the vessels to the navicular enter it near its middle, where fracture usually occurs, so that they are seriously affected Many of these fractures may be overlooked, advice being given to use the wrist, the diagnosis of fracture is only made later, when the functional interference is very marked After proper treatment of a fracture by early and prolonged immobilization the bone may heal satisfactorily If the fracture is unrecognized, pain increases for some years with loss of function and diminution of grip Speed points out that after complete fracture the blood supply may be cut off and the main mass of the bone cells undergo slow death specimens removed six months after fracture show that the main mass of the cancellous bone tissue is dead After several years the bone is soft and resembles fat If the fracture is recognized and sufficient rest given, revascularization with preservation of the bone may result, in neglected cases osteoporosis begins, ending in absorption of the bone In the case of a fractured and undislocated navicular immediate and prolonged splinting is necessary, if dislocation has occurred operative removal is indicated Delay in these cases effects nothing

445 Perigastritis

J DOBERER (*Zentralbl f Chir*, August 9th, 1924, p 1720) states that the symptoms of perigastritis, which may also be described as adhesive gastritis, closely resemble those of callous ulcer of the stomach or duodenum It is probable that congenital predisposition is the cause of the condition The adhesions only affect the pyloric portion of the stomach, especially the posterior wall, which is closely adherent to the capsule of the pancreas There are also adhesions between the pyloric end of the stomach and gastro colic ligament, and although "second opinion" in most cases the upper part of the management of the doubting and "after usually be broken down means so much to the practitioner But wi is only occasionally assistant who has had two or more years in gestes the application situation is quite different, and a salary of £3 symptomatic inadequate payment for the services he renders liable drugs, but work, and more especially in midwifery, in which logically The far ahead of the newly qualified man He soon gathers much is to be clientele of his own It is well known that a good loc loric resec makes one and a half to two times more than a mode nowadays A good assistant will quickly make and exceed the extra his salary by the tactful handling of patients, and it is the able diet who pays the little extra who gets the best man months, at the

Therapeutics.

446 Treatment of Post-encephalitic Parkinsonism

L B HOHMAN (*Bull Johns Hopkins Hosp*, October, 1924, p 335) has treated 18 cases showing the post encephalitic Parkinsonian syndrome with hyoscine hydrobromide The average time elapsing between the original acute attack and the onset of the Parkinsonian syndrome was sixteen months, in one patient the interval was as long as five years The maximum dose was 1/100 grain four times a day In no case was it necessary to increase the dosage because of any acquired tolerance for the drug No bad effects were observed, and the patients experienced no uncomfortable symptoms except some difficulty in accommodation, vertigo, and somnolence As soon as the effective dose was determined the difficulty in accommodation and other untoward symptoms disappeared In every one of the cases objective improvement was noted In 6 the improvement was slight, in 5 definite, and in 7 marked The signs of marked improvement were return to work after months of invalidism and ability to attend to personal wants after being bedridden and helpless Definite improvement indicated return to full activity after partial invalidism, and the term "slight improvement" was applied to some relaxation of the rigidity, but not enough to increase the practical efficiency of the individual The improvement in the mental attitude was very striking in a number of patients Hyoscine was tried in other residues of epidemic encephalitis, such as psychoneurotic states and the behaviour disturbances of children and adults, but in none of these cases was there any improvement

447 Bulbocapnin in the Treatment of Tremors

H DE JONG and G SCHALTENBRAND (*Klin Woch*, November 4th, 1924, p 2045) record observations made on the action of bulbocapnin, an alkaloid allied to apomorphine, in checking tremor The action of this drug was tried in four cases of paralysis agitans (two being severe forms), in one case of tremor due to cerebellar disease (tumour), and in one case of "essential tremor" Tracings were taken from the trembling arm, indicating the extent of the tremor before and after the injection of the drug in maximal doses, these curves are shown in the article Control observations were made by injecting physiological sodium chloride solution In all six cases the curves indicated marked influence of the drug in diminishing the extent of the tremor, and in one case the bulbocapnin diminished the tremor to one fourth The effect of this drug appeared to be independent of the locality of the lesion causing the tremor These observations, in the opinion of the authors, may form the basis of further research on the practical application of bulbocapnin in the treatment of tremor.

448 The Effect of Alcohol and Nicotine on Salvarsan Treatment

HUBNER (*Dermat Woch*, October 22nd, 1924, p 1292) remarks that no one can have failed to be struck by the increasing number of cases within recent years which have proved refractory to salvarsan Silberstein's experience at the Konigsberg University Skin Clinic has been particularly instructive Whereas in the period 1911 to 1916 the Wassermann reaction became negative in 100 per cent of the cases treated, during the years 1921 and 1922 it remained positive in 23 per cent Hubner's experience at the skin clinic of the municipal hospital at Elberfeld has been similar, where there had been a distinct diminution in the efficacy of salvarsan during the period 1919 to the middle of 1922, though since then the results had been decidedly better This improvement may have been partly due to the introduction of silver salvarsan, but was mainly brought about by a restricted consumption of alcohol and nicotine A considerable increase in drinking and smoking took place after the end of the war, as is shown by the fact that the consumption of brandy in Germany per head rose from a little over a quart in 1918-19 to nearly a gallon in 1921-22, and that of beer from 22 quarts in 1918-19 to 48 quarts in 1921-22 These figures do not give an adequate idea of the circumstances, as large quantities of alcohol, and still more of tobacco, including whole shiploads of cigarettes from England, were brought into Germany immediately after the war Hubner maintains that alcohol and nicotine paralyse the natural defences of the body, without which salvarsan cannot produce its effects His conviction is based on the much better results which he obtained in patients in the prison at Elberfeld, among whom the action of alcohol and nicotine could be eliminated both before and during treatment At the end of the course of treatment only 9 out of 100 cases still gave a positive Wassermann reaction

449 **Non specific Protein Therapy in Syphilis**

S S GREENBAUM and C S WRIGHT (*Arch Derm and Syph*, November, 1924, p 551) consider the effects of non specific protein therapy in syphilis especially in its cutaneous manifestations After a preliminary course of six intramuscular gluteal injections of a 4 per cent sterile suspension of milk protein at intervals of two or three days, a series of weekly injections of neo arsphenamin was given and the Wassermann test performed In 35 cases of acute secondary cutaneous lesions some were found to improve rapidly, whereas in other types the eruption became profuse following the milk protein stimulation, while tertiary gummatous lesions showed involution, and tertiary ulcerative lesions healed rapidly The authors remark that in chronic syphilis non specific protein therapy appears to influence favourably the conquest of the disease and by stimulating the natural protective forces of the body should prove of distinct value as an adjunct to specific treatment

450 **Tetanus cured by Large Doses of Serum.**

TRABAUD and BAUR (*Bull Soc Med des Hop de Paris*, October 16th 1924, p 1348) report the following cases (1) A girl, aged 6½, was admitted into hospital complaining of stiffness of the jaw of five days duration There was nothing in the mouth to account for the trismus, but for the last three days there had been general tetanus The pulse varied from 120 to 130 and the temperature was 100 F The cause of the tetanus was a small wound in the sole of the foot, due to treading on a nail about ten days previously In the first three days 430 c cm of antitetanic serum were given, some chloral was also given at night The child quickly recovered, and beyond some erythema and enlargement of the glands suffered no inconvenience from the serotherapy (2) A woman fractured her astragalus, a fragment projecting through the skin The fragment was removed and 10 c cm of antitetanic serum given, the wound dressed and put in plaster, 30 c cm of antigangrene serum being then given The temperature was 100 5 F and the pulse 98 to 110 Six days later some sloughing of the skin occurred and 50 c cm of antigangrenous serum were given A few days later a localized tetanus set in and 100 c cm of antitetanic serum were given daily, followed later by doses of 50 to 20 c cm, 740 c cm being given in all in the course of the disease Eventually the woman made a good recovery

Neurology and Psychology

451 **Korsakoff's Psychosis and Typhoid Fever**

P GERBEAU (*These de Paris*, 1924, No 203), who records an illustrative case states that typhoid fever may be complicated during the acute stage by a number of mental disturbances, of which the commonest are mental confusion, delirium, and Korsakoff's psychosis The essential features of Korsakoff's psychosis are amnesia of the hallucinatory type, and in other infections and intoxications are amnesia of fever, as in typhoid fever is not The essential feature is not fixation fabulation false recognition, and euphoria As a general rule Korsakoff's psychosis in typhoid fever is not accompanied by polyneuritis, which is not an essential feature of the syndrome and may be absent in other infections or intoxications The prognosis is usually grave The treatment should not be carried out in an asylum, but in a psychiatric clinic, so as to spare the patient the taint of internment in an asylum Gerbeau's patient was a soldier, aged 36 who developed Korsakoff's psychosis at the height of a typhoid uncomplicated attack of typhoid fever The syndrome rapidly developed with all its essential features Anterograde amnesia of fixation was particularly marked, and the other symptoms were present, though less pronounced The mental disturbance slowly subsided as the primary disease cleared up, and did not leave any sequelae

452 **Nervous and Mental Complications of Antityphoid Vaccination**

G ROUSSELOT (*These de Paris* 1924 No 123) states that nervous and mental complications in typhoid fever are rare Among more than 3 000 patients admitted to the Nantes psychiatric centre from 1914 to 1919 Benon found only four or five cases in which the origin of the affection could be attributed to this cause Laignel Lavastine at the centre for psychoneuroses of the military government of Paris in 1916, had only five cases in which neuropsychic symptoms developed after antityphoid inoculation—namely (1) hemiparesis of the right lower facial with dysarthria due to cerebral syphilis which developed a few hours after the injection of vaccine (2) functional scoliosis, which occurred after the third injection and disappeared in the dorsal decubitus (3) mental confusion, which occurred after the first injection in a subject with an extremely emotional constitution (4) hysterical paralysis following the second injection in a man who had a similar paralysis nine years previously, (5) simulation in a subject with profound mental debility After the fourth injection the patient was unable to stand although there were no physical signs to account for the sudden paraplegia Mairet and Pierou observed eleven cases at the neuropsychiatric centre of the sixteenth region where typhoid or paratyphoid inoculation was followed by epilepsy, hysterical attacks, chorea, circular insanity and melancholia Poussaloue reports three personal cases The first was that of a man with an hereditary history of insanity who during a period of five years following antityphoid inoculation, presented alternate periods of maniacal excitement and asthenic depression In the second case the injections were followed by general weakness and disturbance of gait necessitating admission to hospital Complete recovery ultimately took place In the third case the injections were followed by attacks of hysteria major

453 **Dermatophobia.**

K. GROV (*Tidsskrift f d Norske Laegeforening*, November 1st, 1924, p 969) has observed recently three characteristic cases of dermatophobia The patients were women and their ages were between 48 and 65 Apart from dermatophobia there was little evidence that they were mentally unbalanced On the other hand, their attitude towards their supposed complaints was remarkably fixed, and, in spite of varied and protracted treatment, the results were unsatisfactory One patient complained of intolerable itching, she associated this with a cutaneous eruption, the existence of which could not be verified She insisted also that four of her children, her husband, her sister and her brother in law suffered from the same complaint She was treated in hospital in the hope that a complete change of residence and surroundings would eradicate her false impressions Injections of her own serum were also given but no permanent benefit resulted In another case the complaint of itching was attributed by the patient to the unverifiable presence of lice She described their size and movements, and insisted that her husband and son suffered in the same way A physical examination was negative, and her general condition was good In her case also hospital treatment had a palliative rather than curative effect Grön finds that, apart from the dermatophobia of the definitely insane this condition has received scant attention in the medical press, but it is well defined, and the clinical picture in his three cases was remarkably uniform In no case had there been any previous attack of skin disease or parasitic invasion to support the suspicion that there might be a persistence or recurrence of some previous complaint In every case also the only lesion of the skin was that inflicted by the patient herself in her attempts to relieve irritation A further feature common to each of these cases was the patient's passion for collecting portions of skin and scales for examination by her doctor The author is pessimistic about the prognosis, and adds that this complaint may ultimately give rise to very troublesome hallucinations

Obstetrics and Gynaecology.

454 **Caesarean Operation in Infected Cases.**

L POPTES (*Gynecol et Obst* 1924 x 4 p 225) describes a modification of Caesarean operation which, as suggested by Couvelaire has been performed in four cases by Portes and in six cases by other French surgeons It is performed in two stages of which the first consists in drawing the uterus out of the opened abdominal cavity, suturing the abdominal wall, incising the uterus, and extracting the foetus The operation is continued about thirty days later, in the absence of uterine infection the cicatrized and partially involved uterus is restored to its pelvic situation This two stage operation is chiefly indicated in cases of dystocia in which labour has been in progress for some time and infection of the uterus is demonstrable or clinically probable Its object is to preserve a the time of hysterectomy This Caesarean operation will in all probability be followed by embolism or infection of cavity and the subperitoneal connective tissue from being infected from the uterus This Caesarean operation described by Portes has a limited application but will in all probability prevent in certain instances the necessity for embolism or hysterectomy The immediate results of both Caesarean hysterectomy and Caesarean operation have been satisfactory The mortality although many of the patients were in a grave condition at the time of the first operation does not appear to have been materially increased nor lactation adversely affected Apart from pelvic contraction, the cases included one of impacted shoulder presentation and one of fibroma pregnancy In his four cases

Portes has always sutured the uterine wound after hystero tomy, but in two severely infected cases the scar subse quently gave way In cases which are obviously badly infected he is not opposed to leaving the uterine incision open at the end of the first stage operation He admits that it is too early to speak of the later gynaecological history or the future obstetrical history of patients submitted to the operation described

455 Maternal Albuminuria and Foetal Death

A J POWILEWICZ and MORACE (*Gynécol et Obstet*, 1924, x, 4 p 281) have analysed the records of the Baudelocque Clinic with reference to the effect of the death of the foetus on albuminuria in 94 cases of pregnancy toxaemia In 71 instances they found, in contrast with the classic opinion, that albuminuria persisted until labour They add that in the albuminuric patient whose foetus dies in the uterus (1) the albuminuria may undergo no change—this group consists of women with chronic renal lesions usually first revealed by systematic urine testing during pregnancy, (2) in about one fourth of cases the albuminuria disappears but may recur at the time of labour, (3) in the majority of cases the albuminuria becomes considerably diminished but persists until labour, at which time in about 10 per cent of cases it increases, though only slightly They conclude that the toxaemic pregnant subject requires supervision and prophylactic treatment even after death of the foetus.

456 Treatment of Uterine Flooding

G HALTER (*Zentralbl f Gynak*, September 13th, 1924, p 2000) describes the treatment by radium of uterine flooding at the climacteric and before He considers, however, that radium therapy is contraindicated (1) in young women where fertility is important, (2) when myomata are present, (3) where there is chronic inflammation of the appendages A preliminary curettage should always be performed, and the scrapings examined histologically About four days after the curettage the os is dilated and the tube of radium is pushed into the uterine cavity Radium barium chloride, in varying dosage, contained in silver tubes 0 6 mm thick, is used The length of exposure depends on the degree of flooding and on the age of the patient Halter considers that in a young woman the dose should be less than 800 mg h, but in a menopausal case as much as 990 mg h may be given, and the treatment be repeated in six weeks He has had more success in meno pausal cases, but attributes this to the lower dosage necessary in treating younger women He also finds that menorrhagia is more easily cured than metrorrhagia, and suggests that this is due to the fact that in the former the uterine mucous membrane goes through the normal menstrual cycle and remains unaltered, whereas in the latter there is pathological thickening which prevents penetration of the rays

Pathology.

457 Calcium Content of Blood Serum in Gout

V COATES and P C RAIMENT (*Biochem Journ*, vol xviii, No 5, p 921) have undertaken an investigation of the calcium content of the blood serum in cases of gout The patients selected, six in number, were suffering from unmistakable gout, four of them were in the quiescent stage and two in the process of recovering from an acute attack within the preceding thirty six hours The blood was collected from the median basilic vein into sterile tubes, where it was allowed to clot The resulting serum was centrifuged, and the calcium content estimated as soon as possible by Kramer and Tisdall's method The results showed that the figures varied from 16 to 24 mg of calcium per 100 c cm of serum, the average being 18 87 mg As the normal calcium content of the serum is about 10 mg per cent, it was clear that the amount was *definitely increased in the gouty patients* This increase might conceivably be due to the age of the patients (the youngest of whom was 46), to hypertension or atheroma, or to some technical defect, such as the decolorization of the permanganate by bodies other than calcium That it was not dependent on the age of the patients seems to be shown by the fact that two non gouty controls, aged 52 and 57 respectively, had a calcium content lower than the lowest *figure obtained in the gouty patients* The second suggestion is negatived by the work of Weil, who found that in atheroma and hypertension the calcium was not markedly increased Finally, the possibility of a technical error was not supported by experimental work designed to elucidate this The authors therefore conclude that in gout there is a rise in the calcium content of the serum, and that this rise is specifically due to the gout and not to any extraneous factor.

458 The Physiological Antagonism between Caffeine and Insulin

H LABBE and B THEODORESCO (*Ann de Med*, September, 1924, p 211) record their experiments on the rabbit and the dog They found the *toxic action of caffeine* so marked in the rabbit that every animal died But their observations on the dog are of interest The experiments may be divided into three groups (1) those in which insulin alone was injected, (2) those in which caffeine alone was injected, (3) those in which the two were combined In group (1) the insulin was injected hypodermically in doses ranging from 2½ to 4 units, and there was a fall in the amount of blood sugar, which reached its maximum two to two and a half hours after the injection, rising slowly later In group (2) the caffeine was injected subcutaneously or intravenously in doses ranging from 1 to 2 *grams 7 out of the 10 animals* in this group died in thirty minutes to thirteen hours In every case the blood sugar rose to its maximum one and a half to one and three quarter hours after the injection In the last group, with simultaneous injection of caffeine and insulin, there was always a hypo glycaemia, the amount and the rate of fall varying The doses ranged from 1 to 2 5 grams of caffeine with 3 units of insulin to 2 25 to 3 grams of caffeine with 5 units of insulin *Four out of the eight animals* in this group died in four to seven hours The authors hold that the hyperglycaemic action of caffeine is due to its stimulation of the suprarenals and the excessive production of adrenaline They see in their experiments proof of the antagonism between the suprarenals and the pancreas in the regulation of the amount of blood sugar

459 Endocrine Insufficiency

D MARINE, O T MANLEY, and E J BAUMANN (*Journ Exper Med*, October, 1924, p 423) report on the influence of thyroid ectomy, gonadectomy, suprarenalectomy, and splenectomy on the thymus gland in 373 rabbits, the observations having extended over a period of ten years Four principal facts emerge (1) *Thyroidectomy hastens involution of the thymus* and other lymphoid tissues (2) Gonadectomy delays thymus involution (3) Sublethal but sufficient injury *to the supra renal function* with an intact thyroid delays *involution of the* thymus and lymphoid tissue, and may cause their regener ation (4) Thyroidectomy prevents thymus regeneration following suprarenalectomy It was observed that supra renalectomy combined with gonadectomy is a more powerful stimulus for thymus and lymphoid regeneration than either of these influences alone The combination of these two factors results in rabbits in certain thymus and lymphoid hyperplasia, which persists until regeneration of accessory "inter renal" tissue corrects the *physiological defect* The syndrome thus experimentally produced—abnormal over growth of the thymus and lymphoid tissues, lowered resistance, and relative lymphocytosis—resembles status lymphaticus, and is believed to depend mainly on a partial loss of certain functions of "inter renal" and sex glands rather than of the chromaffin tissue The conclusion is drawn that underdevelopment of certain functions of the "inter renal" and sex glands is the cause of the normal and abnormal lymphoid and thymic hyperplasias of childhood, and that a partial suppression of these functions underlies exophthalmic goitre, Addison's disease, and acromegaly

460 B proteus obtained from Rickettsia prowazeki.

B FEJGIN (*C R Soc de Biologie*, October 31st, 1924, p 976) has been studying the virus of typhus fever, with particular reference to its development in the intestine of the louse One strain of *Rickettsia prowazeki*, which had reached its seventy first passage through the louse, was planted out in Besredka's egg medium and in a serum medium, these media were later streaked on to agar slopes Colonies were obtained, each surrounded by a halo tending to become diffuse When subcultured *on to fresh agar* these colonies gave rise to a spreading growth, highly suggestive of *B proteus* Further examination of the strain showed that it fermented glucose and sucrose, liquefied gelatin, and gave a dirty brown growth on potato Morphologically it was a motile rod, with a con siderable amount of polymorphism its reaction to Gram's stain was variable It was not agglutinated by normal rabbit serum, nor by the serum of a rabbit immunized against an ordinary *B proteus, but it* was agglutinated by the serum of a rabbit immunized against *B proteus* X 19—the organism which is used for the diagnostic agglutination test in cases of typhus fever Cultures of the intestines of normal lice made under similar conditions *failed to give* rise to this organism The author refrains from drawing conclusions as to the relationship existing between the *Rickettsia prowazeki* and the *B proteus* which he obtained from it

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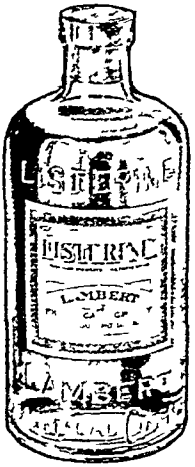
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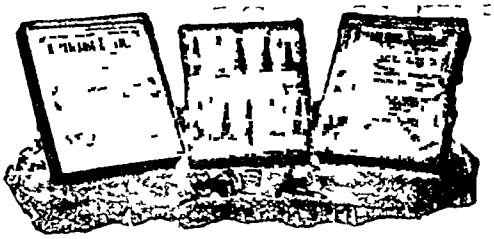
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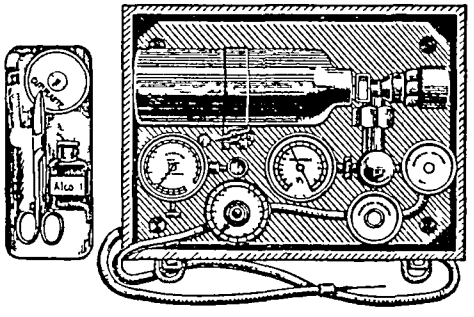
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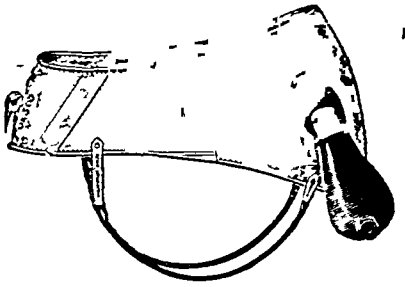
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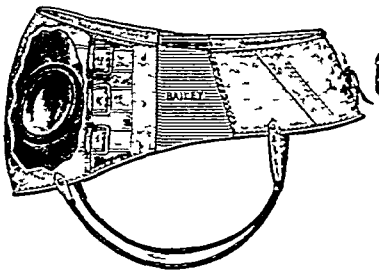
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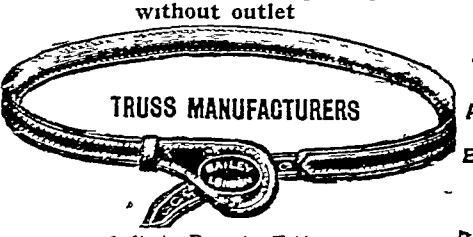
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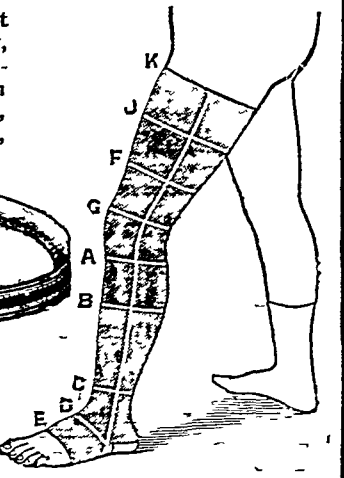
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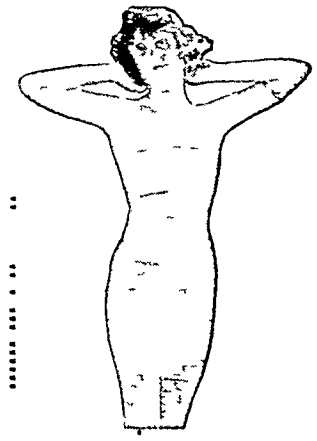
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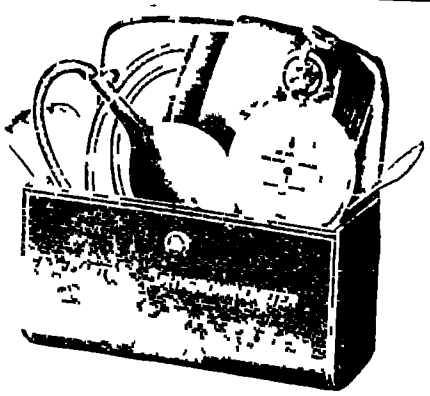
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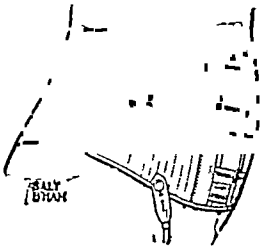
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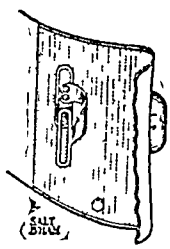
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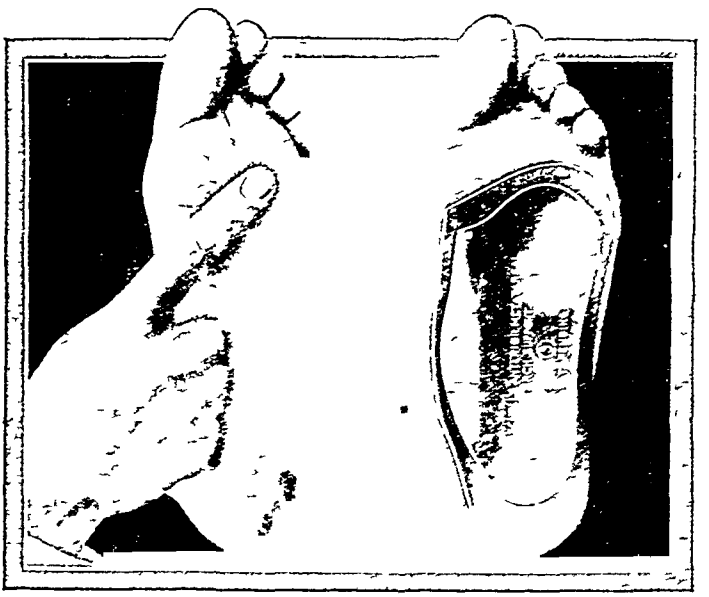
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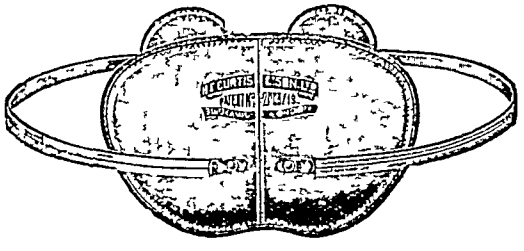
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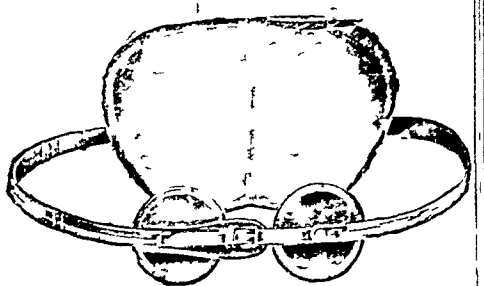
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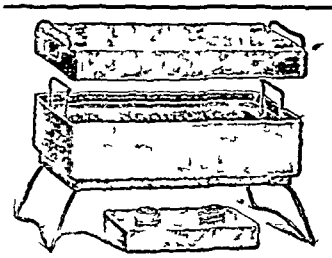
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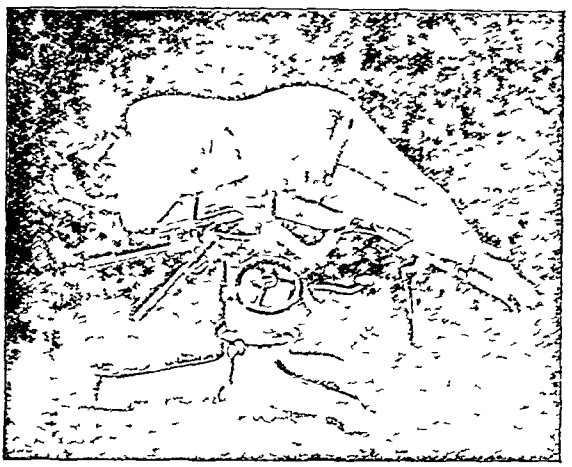
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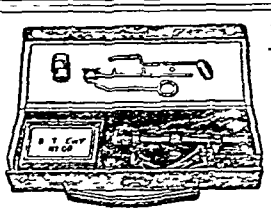
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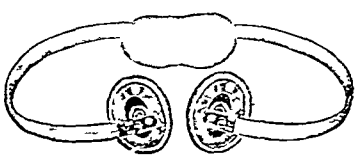
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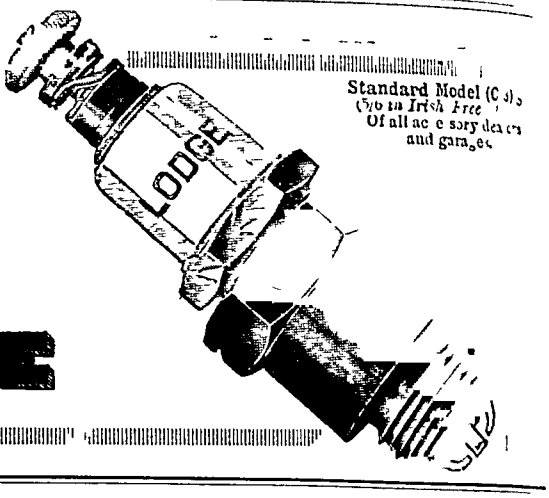


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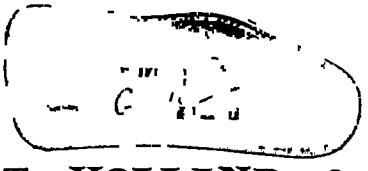
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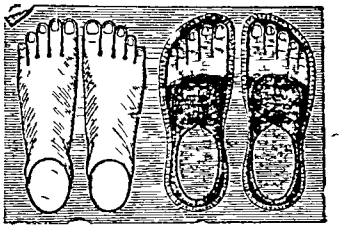


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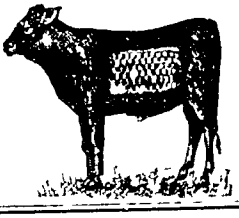
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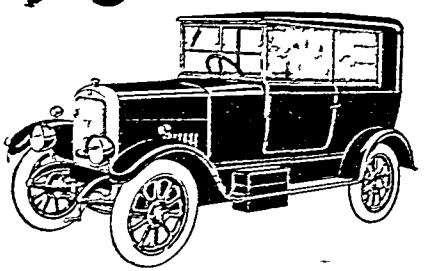
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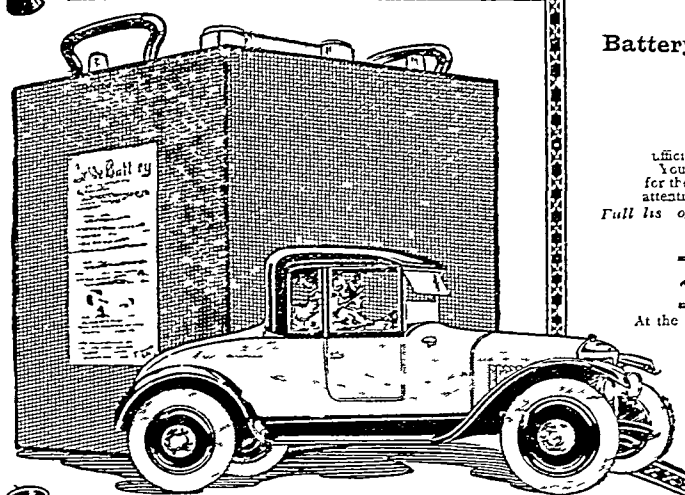
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TERMS from 3½ guineas a week according to requirements Voluntary Boarders received
Mansion on outskirts of Bath with 9 acres of grounds (see MEDICAL DIRECTORY page 2176)

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This Registered Hospital for MENTAL DISEASES with its seaside branch Glan y Don Colwyn Bay is for the treatment of PRIVATE PATIENTS of the UPPER and MIDDLE CLASSES. Voluntary Boarders received
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Both Ladies and Gentlemen received

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ARNWOOD near GLOUCESTER
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This Institution is devoted to the care and treatment of persons of both sexes at moderate rates of yment
Voluntary boarders no under certificates are mitted
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FOR MENTAL DISEASES,
NORTHAMPTON
President—
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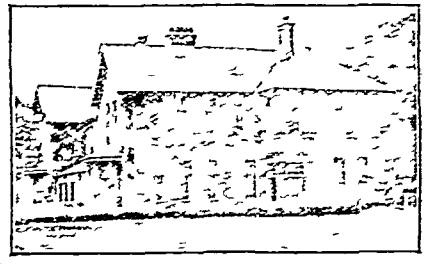
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A Detached Block for
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The Villa is distinct from the main building and has separate recreation grounds
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FOR THOSE REQUIRING CONTROL with EXPERT SUPERVISION and needing SPECIAL TRAINING in useful Occupations SCHOOLS, FARMING, and various TRADE WORKSHOPS
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Private Nursing Home for Cases of Neurasthenia and allied Functional Nervous Disorders, for General Convalescent Cases, and those requiring Electrical Treatment.
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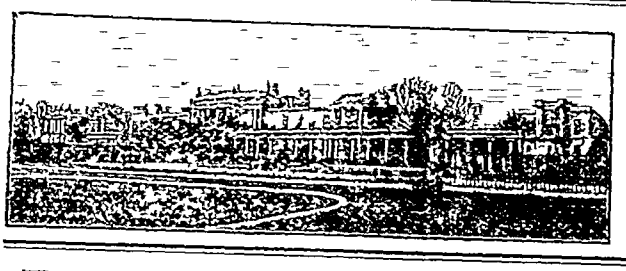
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Situated in a large park in a healthy and picturesque locality, e- accessible by rail via Bristol, Winterbourne Patchway, or Yate- a- Uncertified Boarders received —For further information see Med- Directory, page 2177, Terms moderate —Dr J D THOMAS — Dr J R P PHILLIPS, O B E, Resident Physicians and Licens-

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Ordinary Terms Five Guineas p r week

Including Separate Bedrooms for all suitable Cases without extra charge)

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Large grounds 100ft above sea HOME for LADIES Mentally Afflicted Voluntary Boarders received, Stations Brentwood 1 mile Shenfield, 1 mile Liverpool Street, 2o minutes —Apply, Dr HAYNES

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Diseas-
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Terms from 4 guineas weekly Patients sent for

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SPECIAL ACCOMMODATION FOR CONTRIBUTING PATIENTS £3 3s Od per w-

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This Institution has now opened in an ad- house a

PRIVATE NURSING HOME FOR CHILDREN

with the full equipment proper to a leading L- Hospital including THEATRE ELECTRI- SUN BATHS X-RAY TREATMENT, PA- LOGY &c Terms £5 5s a week

For further particulars apply to the Secretary

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For terms apply to the LICENSEES or the- ATTENDANT Telephone: 103 Tam-

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A Registered Mental Hospital for the care and treatment of Ladies and Gentlemen suffering from Nervous and Mental Diseases

The Hospital stands in its own grounds within view of the Minster The grounds are tastefully laid out and contain croquet and tennis courts cricket ground rock garden etc

The interior accommodation is comfortable and spacious comprising well furnished sitting rooms billiard room, library recreation room etc and private suites of rooms are available for patients paying the higher rates of board

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Phone 3100 *Station* YORK 1 mile

The work hitherto carried on at

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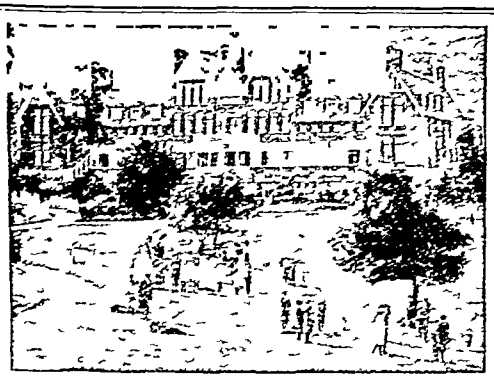
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Special arrangements are made for carrying out the preliminary tests needed for the proper administration of INSULIN in Diabetes

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For CHILDREN of WELL-EDUCATED PEOPLE OF VERY LIMITED MEANS

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This fee is subject to addition or deduction according to Parents' means.

100 Beds Boys, ages 4 to 12. Girls ages 4 to 14

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Extensive Grounds Detached Villas Chapel Garden and Dairy Produce from own Farm.

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Specially built, facing south 300 acres of Sanatorium grounds—meadow and woodland, sheltered pine avenues Altitude 850ft Magnificent view for miles south, hot water radiators and electric light in each room and châlet

All forms of treatment, including X ray, Vaccines, and Pneumothorax in suitable cases Trained Nurses Individual attention

For particulars, apply SECRETARY, Hillgrove, Wells, Somerset Telegrams Hillgrove Wells Somerset

Resident Physicians { Dr C MUTHU / Dr T C BRENTNALL

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This Sanatorium provides for the treatment of patients suffering from PULMONARY and other forms of TUBERCULOSIS The Medical Staff consists of a consulting Physician and two visiting Physicians Terms from seven guineas a week There are no extras One hour by road or rail from London

For full particulars, apply to the Lady Superintendent, Farmwood, Ascot

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FOR THE TREATMENT OF TUBERCULOSIS

OPENED IN JANUARY 1899

This SANATORIUM was the first to be established in England for carrying out treatment on Nordrach lines Patients are received for open air inoculation or operative treatment, the latter under X ray control Full Nursing Staff The Sanatorium stands in gardens and private grounds of 65 acres at an elevation of 862 feet above sea level, surrounded by woods and moorland, the rooms are heated by hot water pipes and lighted by electricity ROWLAND THURNAM, M D, DANIEL KENNEDY, L R C S, L R C P

For full particulars apply to THE SECRETARY, Nordrach upon Mendip Sanatorium, Blagdon, near Bristol Telegrams "Nordrach, Blagdon"

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Artificial Pneumothorax and all Modern Methods of Treating Tuberculosis available under Ideal Conditions
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Matron MISS L HANSON, late King Edward VII Sanatorium, MIDHURST, assisted by a full Day and Night Nursing Staff.

For full particulars apply to S GUTHRIE, Esq, Assistant Secretary, PENDYFFRYN HALL, PENMAENMAWR N WALES.

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Accommodation for 100 Patients.

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Well situated on high ground and surrounded by pines and heather

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FOR THE OPEN-AIR TREATMENT OF

PULMONARY TUBERCULOSIS and ALLIED DISEASES

At BANCHORY and MURTLE

Medical Director - - DAVID LAWSON, M A , M D , F R S E

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Both Institutions are well equipped with **Research Laboratory, Throat Room, Dental Facilities,** and powerful **X-Ray Plant** **Full Day and Night Nursing Staffs** are employed

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Assistant Physician Dr J C LORRAINE

For particulars apply SECRETARY



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AT MURTLE, ABERDEENSHIRE

Senior Physician Dr J M JOHNSTON

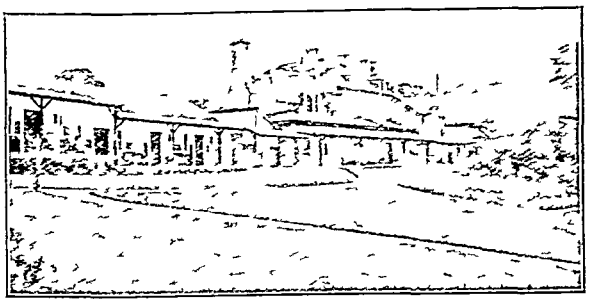
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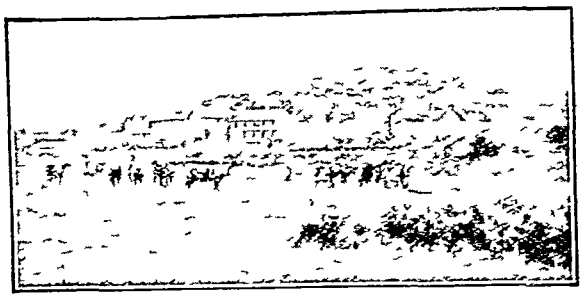
Full day and night Nursing Staff

Resident Physicians ARTHUR H HOFFMAN, M D and G A HOFFMAN, M B

Apply The Secretary, The Cotswold Sanatorium, Cranham, Gloucester

Telephone Painswick Telegrams "Hoffman Birdlip

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Specially built for the treatment of Pulmonary and other forms of Tuberculosis Aspect S S W on a carefully chosen site Pure, bracing air High sunshine record Heliotherapy Arc light treatment One mile from the coast Electric light throughout. X ray installation Full day and night Nursing Staff

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BRITISH MEDICAL MEN AND THE BRITISH SPAS

BRITISH MEDICAL MEN, in ever increasing numbers are realizing the superiority of and sending their patients to British Spas The reason is not far to seek The climate of Leamington Spa for example is in favour of the great majority of an English Practitioner s average cases being generally mild equable and dry all the year round whilst the lay out ' of the town has been so arranged that every natural advantage of dryness and purity of air is artificially accentuated

The various treatments are up to date and efficient and are under medical supervision Baths Douches Packs Massage etc may be roughly classified as follows Thermal Thermal Chemical Thermo Mechanical Thermo Electrical Electric Ionic Medication and Vibratory Massage etc A fine Plombiere Suite is the latest addition

The Saline Waters an analysis of which is given in the next column by Mr S Henry Smith Ph C are in general character of the Thermal and Muriated Sulphate variety Complaints which have been treated with marked success are numerous and varied but the most varied have been roughly classified as shown in column 3

ANALYSIS OF SALINE WATERS

PUMP ROOM SUPPLY (parts per 100,000)

Sulphate of Barium	1376
Sulphate of Strontium	1 2088
Sulphate of Calcium	248 2
Sulphate of Magnesium	125 604
Iodide of Magnesium	0032
Bromide of Magnesium	3354
Chloride of Calcium	58 36
Chloride of Magnesium	47 37
Chloride of Sodium	1345 127
Chloride of Potassium	9 9264
Chloride of Lithium	0665
Chloride of Ammonium	0742
Bicarbonate of Iron	236
Carbonate of Calcium	4 4
Silicic Acid	8
	1741 8991
Dried residue at 110° C	1739 0000

Free Carbonic Acid Gas in some quantity and traces of Manganese and Titanium The water is very much more valuable than has generally been supposed and is from a chemical point of view by far the most interesting of any of the English Mineral Springs The presence of minute traces of Titanium is interesting I have found it before only in the Mud Springs of New Zealand says the above-named Analyst

THE FOLLOWING DISEASES ARE TREATED WITH MARKED SUCCESS AT LEAMINGTON

(1) Disease due to faulty metabolism e g gout obesity etc
(2) Diseases of the alimentary system e g dyspepsia due to over indulgence in food and alcohol portal congestion and enlarged liver mucous colitis etc
(3) Diseases of circulatory system e g arterio sclerosis and hypertension and some cases of valvular disease of the heart
(4) Diseases of joints and their envelopes e g rheumatoid arthritis sprains etc
(5) Diseases of muscles and connective tissues e g lumbago strains and fibrositis
(6) Diseases of the nervous system I Organic neuritis and neuralgia tabes dorsalis the results of hemiplegia anterior poliomyelitis the myopathies II Functional neurasthenia hysteria
(7) Pelvic congestion in females
(8) Skin diseases Gouty eczema psoriasis seborrhœic eczema chronic urticaria pruritus etc

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Thurs	29th	—Dr J M H MACLEOD Pemphigus and Allied Eruptions
Tues., Feb	3rd	—Dr GRAHAM LITTLE Lichen Planus
Thurs	5th	—Dr J L. BUNCH Pruritus Prurigo Lichenification
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HOSPITAL, Gobowen near Oswestry

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GIRL STUDENTS WANTED to learn Orthopædic Work and prepare for the Conjoint Examination of the C S M G Three years' training Salary first year £16 second year £20 all found, uniform —Apply Miss HUNT R R C

Preliminary Examinations

The COLLEGE OF PRECEPTORS holds Preliminary Examinations for Medical and Dental Students in London and at Provincial Centres in March, June, September and December For Regulations, apply to the Secretary College of Preceptors, Bloomsbury Square, London W C 1

Liverpool School of Tropical Medicine

COURSES OF INSTRUCTION (lasting three months) for the Diploma, and also in Veterinary Parasitology commence about SEPTEMBER 15th and JANUARY 7th.—Prospectus from the Hon DEAN School of Tropical Medicine University of Liverpool

Home School for Backward

and DELICATE CHILDREN (estab 1901) Specialists Patients received Modern educational methods and handicraft training Horticulture, garden games and occupations Entire charge if desired Elder girls admitted Terms moderate —Apply Principal Hatherley Brake, Cheltenham

DANCING

Miss EVADNE NEWSHOLME

Marble Arch, W 1 Phone Mayfair 4 91

Personal tuition in a Modern Ballroom Dancing Three private lessons £1 1s 0d Seven £2 2s 0d Classes weekly Dances fortnightly 4 -

University of London

The Senate invite applications for the UNIVERSITY CHAIR OF PATHOLOGY tenable at the London (Royal Free Hospital) School of Medicine for Women Salary £800 a year Applications (12 copies) must be received not later than first post on January 29th 1925, by the Academic Registrar University of London South Kensington S W 7 from whom further particulars may be obtained

COMMISSIONS in the ROYAL ARMY MEDICAL CORPS.

An Examination for not less than 20 Commissions in the Royal Army Medical Corps will be held on January 27th 1925

Applications to compete should be made to THE UNDER SECRETARY OF STATE the War Office not later than January 13th 1925 The presence of Candidates in London from January 27th dates will be required

Intending Candidates can obtain a full statement of the duties and emoluments of the Service on making a written application to THE UNDER SECRETARY OF STATE (A M D I) the War Office Whitehall London S W 1

The Milroy Lectures on State

MEDICINE AND PUBLIC HEALTH

The Council of the Royal College of Physicians are prepared to receive applications for the office of MILROY LECTURER for 1925

Applications must be addressed to the Registrar Royal College of Physicians Pall Mall East on or before January 1st, and should contain a statement of the division of the subject selected by the candidate

The course must comprise not less than three nor more than six Lectures

The Lectures are to be given on Tuesdays and Thursdays in February or March next

A copy of Dr MILROY'S "Suggestions" on the subject of his bequest and information as to the emolument may be obtained from

J A ORMEROD M D Registrar

November 1924

South African Institute for

MEDICAL RESEARCH Johannesburg

PLAGUE

BACTERIOLOGIST (preferably medical man with special experience in Plague) is required immediately for research work in South Africa Must be willing to engage in field work and be fully competent to prosecute original investigations Appointment primarily for one year renewable thereafter by mutual consent First class passage allowance when absent on duty and £1,500 per annum Applications giving reference to two scientific men to BACTERIA c/o the Director Lister Institute Chelsea Gardens S W 1

University of Leeds

(LEEDS MATERNITY HOSPITAL.)

UNIVERSITY TUTOR IN OBSTETRICS AND RESIDENT MEDICAL OFFICER

Applications are invited for the above Post The officer will perform the usual duties of a Resident Officer in the Maternity Hospital (60 beds) and districts and also assist the teaching staff in the supervision and training of the University students in Obstetrics

Candidates must be registered and preferably have had some experience in an Obstetric Clinic Salary at the rate of £300 per annum with board and residence in the hospital

Applications accompanied by copies of testimonials should be sent on or before December 15th to the SECRETARY Clinical Obstetric Committee the Maternity Hospital 49 Hyde Terrace, Leeds

Belgrave Hospital for

CHILDREN (Incorporated)

1 C Apham Road, S W 9

The Committee of Management will shortly appoint an ADDITIONAL RESIDENT MEDICAL OFFICER who will be required to assist the present House Physician and House Surgeon. Applications for the post are invited from men who are fully qualified and registered The appointment is for four months commencing the 1st January Salary will be at the rate of £100 per annum with board residence and washing provided Applications with copies of testimonials to be forwarded on or before Monday December 8th 1924 to the undersigned from whom further particulars may be obtained.

By order

THOMAS CLAPHAM, Secretary

Bristol Royal Infirmary

Applications are invited for the post of HONORARY REGISTRAR to the Ear Nose and Throat Department. Candidates who must be Doctors of Medicine or Graduates of one of the Universities of Great Britain or Ireland or Members or Licentiates of the Royal College of Physicians of London, Edinburgh or Ireland to send in their application together with copies of testimonials to the undersigned on or before December 20th 1924

ELLIS C SMITH F C I S Secretary

Malayan Medical Service

(STRAITS SETTLEMENTS FEDERATED MALAY STATES AND UNFEDERATED MALAY STATES)

THERE are vacancies for Medical and Health Officers in the Malayan Medical Service on the time-scale below the senior posts Candidates who should not be over 25 years of age should apply to the Private Secretary (Appointments) the Colonial Office Downing Street London S W 1

2 Below the senior posts are appointments on a time-scale salary which (over 15 years in all) rises from an initial salary of $2,040 (£616) a year by annual increments to $3,600 (£1,120) a year for the first four years and of $4,200 (£1,308) a year for the next four years and thereafter of $4,800 (£1,500) a year Selected candidates will be appointed at the initial salary of the scale viz $3,480 a year

3 On all salaries a temporary allowance is at present paid of 10% to unmarried and 20% to married officers. Salaries are paid monthly

4 Senior posts and salaries are at present as follows —

Principal Civil Medical Officer Straits Settlements and Principal Medical Officer Federated Malay States $14,400 (£4,500) per annum.

Director Government Laboratories Federated Malay States $13,200—$13,600 (£4,000—£4,250) per annum

Principal of the College of Medicine Straits Settlements (Class 1) $13,200 (£4,250) per annum

Chief Health Officer Singapore (Class 1) Senior Surgeon Singapore (Class 1) Senior Health Officer Federated Malay States Chief Medical Officer Singapore (Class 1) Senior Medical Officer Perak Senior Medical Officer Selangor Senior Surgeon Kedah Chief Medical Officer Penang (Class A) Principal Medical Officer Johore $12,600 (£1,470) per annum Ophthalmologist Federated Malay States Chief Surgeon Federated Malay States $12,600 (£1,400) per annum

Pathologist Singapore Superintendent Central Mental Hospital Federated Malay States Bacteriologist Federated Malay States Professor of Surgery College of Medicine Senior Medical Officer Negri Sembilan Senior Medical Officer Pahang $10,200—$12,000 (£1,150—£1,400) per annum Professor of Physiology College of Medicine Professor of Midwifery College of Medicine Professor of Anatomy College of Medicine Chief Medical Officer Malacca $10,200—$12,600 (£1,150—£1,400) per annum Pathologist Penang $8,400—9,600 (£1,050—£1,140) per annum Malaria Research Officer Federated Malay States 6,600—9,600 (£770—£1,140) per annum

5 The currency of the Straits Settlements and the Malay States is based on the Straits Settlements dollar All salaries are fixed in dollars and are so paid while officers are on service in the Colony For purposes of pay salary which is drawn in dollars is converted into sterling at the Government rate of exchange which is at present 2s 4d to the dollar No change has taken place in this rate for the last 18 years and no alteration is contemplated so far as can be foreseen at present

6 After three years satisfactory service an officer is usually placed on the permanent establishment

7 In the Federated Malay States quarters are provided by the Government and on the furnished scale provided a rent ranging between $240 and $1,200 (£47 11s 8d) a month and furniture provided a rent ranging between $360 and $1,200 (£71 10d) and $65 (£7

[AMENDED ADVT]

The London Lock Hospital,

91, Dean Street, W 1

APPLICATIONS are invited for the following paid CLINICAL ASSISTANTSHIPS in the Out-patient Department for the period January 1st to June 30th 1925 —

TWO VACANCIES at each Evening Clinic, and ONE VACANCY at each Mid day Clinic The Clinics are held as follows Mondays at 1 o clock mid day, and 6 p m (men), under Mr CHARLES GIBBS, F R C S , Tuesdays, at 1 o clock mid day (men), under Mr J D R MCDONAGH F R C S and 6 p m (men) under Mr J JOHNSTON ABRAHAM F R C S Wednesdays at 6 p m (men) under Mr J D R MCDONAGH F R C S Thursdays at 1 o clock mid-day (men) Thursdays, at 5 p m (Women and Children), under Mr A LAWRENCE ABEL, F R C S Fridays, at 5 p m (men), under Mr J JOHNSTON ABRAHAM F R C S , Saturdays at 1 o clock mid day (men), under Mr A LAWRENCE ABEL, F R C S

All applications must be made on the official form which can be obtained from the Secretary and should be filled in and returned to the undersigned on or before 10 a m , Monday, December 8th, 1924

By Order of the Board,
November 21st 1924 HY J EASON

London Lock Hospital,

283, Harrow Road W

The Board of Management invite applications for the appointment of SECOND HOUSE SURGEON (male or female) at the Female Lock Hospital, Harrow Road, W 9 Salary at the rate of £150 per annum with furnished rooms full board, and washing

Candidates who must be doubly qualified and duly registered should send in their applications by 10 a m on December 8th accompanied by copies of three recent testimonials to the Secretary from whom further particulars can be obtained if desired The appointment is for six months, commencing January 8th, 1925

By order of the Board,
No 20 1924 H J EASON, Secretary

West London Hospital,

Hammersmith Road, W 6

Required one HOUSE PHYSICIAN one HOUSE SURGEON and one AURAL HOUSE SURGEON and RESIDENT CASUALTY OFFICER (males) These three appointments are tenable for six months from January 1st next subject to one months notice on either side Salary £100 per annum with board lodgings and washing allowance

Candidates are required to be registered under the Medical Act to send four copies of their letters of application and four copies of each testimonial submitted so as to reach me by first post on Monday, December 15th Selected candidates will be required to call upon such members of the Medical staff as directed to be in attendance at a meeting of the Medical Council on Monday, December 22nd at 4 p m , and the House Committee Meeting at 4 15 p m the same day, when the appointments will be made

NOTE —Candidates applying alternatively for more than one of these appointments should send an additional four copies of application and testimonials for each post so applied for

H A MADGE Secretary

Hampshire County Council

ASSISTANT MEDICAL OFFICER OF HEALTH

The Hampshire County Council propose to appoint an Assistant Medical Officer of Health and invite applications from fully qualified medical men or women Possession of a Diploma or Degree in Public Health and previous experience in public health work bacteriology and pathology, tuberculosis medical inspection of school children, maternity and infant welfare or venereal diseases, will be considered an advantage Salary £600 a year rising by increments to £750 subject to deductions under the Local Government Officers Superannuation Act In addition to travelling expenses and subsistence allowances

Applications with copies of not more than three testimonials upon a form which with the conditions of appointment may be obtained from the County Medical Officer The Castle Winchester should be sent to him as soon as possible

The Castle Winchester
November 1924

R A LYSTER,
County Medical Officer

DENTAL DEPARTMENT OF UNIVERSITY COLLEGE HOSPITAL

National Dental Hospital,

Great Portland Street W 1

Vacancy for HONORARY AN ESTHETIST on Wednesday mornings

Applications with testimonials should be sent on or before Monday, December 1 th to

M P COLLINGS
Clerk to the Dental Department

Administrative County of Essex

APPOINTMENT OF TWO ASSISTANT COUNTY MEDICAL OFFICERS OF HEALTH

The County Council of the Administrative County of Essex invite applications for the above post from registered Medical Practitioners specially qualified in the treatment of Tuberculosis School Medical Inspection, and Maternity and Child Welfare not over forty five years of age

Preference will be given to candidates who have had at least three years experience in Public Health work subsequent to their medical qualification The salary attached to the appointment will be £600 per annum and travelling expenses The person appointed will be required to devote his whole time to the service of the Council to perform such duties and to furnish such advice and assistance appertaining to his office as may be required, and to reside in such district of the County as the Council may decide The appointment will be subject to three months notice on either side

Applications on the prescribed form obtainable from the undersigned, and accompanied by copies of not more that three testimonials, which will not be returned, should be addressed to me and delivered at the Shire Hall, Chelmsford, not later than Wednesday the 10th of December 1924

JOHN H GOOLD,
Clerk of the County Council
November 25th, 1924 Shire Hall Chelmsford

County Borough of West Bromwich

ASSISTANT MEDICAL OFFICER OF HEALTH AND ASSISTANT SCHOOL MEDICAL OFFICER.

The Council invite applications from qualified men or women for the above appointment The person appointed will be required—

(a) To give half time to Medical Examination and Treatment of School Children and half time to Maternity and Child Welfare work, including the Inspection of Midwives
(b) Every third week end for duty at Fever Hospital and Bacteriological Laboratory
(c) To devote whole time to the duties of the office, and will not be allowed to engage in private practice

Salary £600 without bonus

The D P H Diploma is preferable, but not essential

All candidates must have been qualified for at least three years and preference will be given to applicants who have had—

(a) Special opportunities for the study of Children
(b) Experience in ante natal Maternity and Child Welfare work, and
(c) General Practice

Applications endorsed "Assistant Medical Officer together with not more than three testimonials must be sent in on form to be obtained from the undersigned, by not later than Dec 15th, 1924

Town Hall ALFRED WICKHAM
West Bromwich Town Clerk
December 1st 1924

The Middlesex Hospital,

W 1

Applications are invited for the following annual appointments which will be vacant on January 1st 1925 —

SENIOR ASSISTANT RADIOLOGIST (whole time) hours 9—5 Applicants should be registered medical practitioners with special experience in X ray Diagnostic and Treatment work Salary £500 per annum

TWO ASSISTANT RADIOLOGISTS (Three Mornings a week) Applicants should be registered medical practitioners, with special experience in X ray Diagnostic work Salary £100 per annum

RADIUM OFFICER (whole time), hours 9—5 Applicants should be registered medical practitioners Salary £300 per annum

DENTAL HOUSE SURGEON (non resident) Applicants must be registered medical practitioners, holding Dental qualifications Honorarium £50

Applications and testimonials should be forwarded before 12 noon on Friday, December 12th to the undersigned, from whom further particulars may be obtained

WALTER REWLEY, Secretary Supt

Royal Berkshire Hospital

(213 Beds)

Wanted on December 18th 1924
THIRD HOUSE SURGEON
and on January 9th 1925
HOUSE PHYSICIAN
FIRST HOUSE SURGEON

They must be fully qualified and registered Salaries £150 per annum The appointments are for six months Applications accompanied by copies of recent testimonials should be addressed to the undersigned

Reading
December 6th, 1924

HERMAN BURNEY
Secretary

St. Mary's Hospital,

London, W 2

OPEN APPOINTMENT

Applications are invited for the post of MEDICAL SUPERINTENDENT

The Medical Superintendent is the Senior Resident Medical Officer of the Hospital His duties are administrative and professional and include the charge of certain beds

Candidates must be qualified both in Medicine and Surgery, and must have held a post of Resident Medical Officer at a General Hospital The appointment is for one year, the holder being eligible for re-election for a second and third year

Inclusive salary £400 per annum, with board and residence provided

The successful candidate will be expected to commence duty as soon as possible in January

Applications to reach the undersigned not later than Wednesday, December 31st 1924

W PARKES Secretary

St. Mary's Hospital, W 2.

MEDICAL REGISTRAR.

The Board of Management invite applications for *the above post, which will fall* vacant on January 14th 1925

British Empire

The salary is £200 per annum, with luncheon and tea

Copies of the regulations for the Medical Registrar may be obtained on application at the Secretary's Office

Applications with copies of testimonials should reach the undersigned before noon on Monday, December 22nd, 1924

W PARKES Secretary

Salford Royal Hospital,

(260 Beds)

Applications are invited for the following vacancies which will occur in the Resident Medical Staff (male) on the 31st instant —

RESIDENT MEDICAL OFFICER Salary at the rate of £175 per annum

HOUSE PHYSICIAN Salary at the rate of £125 per annum

The appointments are for a period of six months, with board and residence

Candidates must be registered under the Medical Acts

Applications, stating age and qualifications, together with copies of testimonials and certificate of registration to be addressed to the undersigned without delay

By Order of the Board
GEORGE RUDDLL Gen Supt & Sec
Salford Royal Hospital
Manchester December 1st 1924

Addenbrooke's Hospital,

Cambridge

Applications are invited for the post of CASUALTY OFFICER AND RESIDENT ANÆSTHETIST to be for a period of 1924 but is subject to month's written notice on either side per annum with board, residence and laundry

Candidates, who must be unmarried and duly registered, are requested to forward their applications, stating age qualifications etc together with copies of not more than four recent testimonials, to the undersigned at the Hospital on or before Tuesday December 16th 1924

W H HEAD Secretary Supt

East Sussex County Mental Hospital Hellingly, Sussex

Required PATHOLOGIST Salary £100 a year, with board apartments laundry and attendance or, if living out £500 a year with luncheon and tea daily Appointment subject to the Asylums Officers Superannuation Act 1909 Well equipped laboratory Assistant provided Applications to Physician and Medical Superintendent 4th inst

Hospital for Epilepsy and Paralysis Maida Vale, W

HONORARY OPHTHALMIC SURGEON REQUIRED

Applications are invited for the above post They should be accompanied by copies of not more than three testimonials and should reach the undersigned by December 10th

Attendance at the Hospital is required on one morning a week

H W BURLEIGH
Secretary and General Superintendent

APPOINTMENTS—Important Notice.

(a) British Islands.

Medical Practitioners are requested not to apply for any appointment referred to in the following table without having first communicated with the Medical Secretary of the British Medical Association, 429, Strand, London, W.C.2

CONTRACT PRACTICE.

ENGLAND.

CANNOCK CHASE AND DISTRICT
(Clubs and Friendly Societies Appointments)

MIDDLESBOROUGH
Medical Aid Associations or Workmen's Clubs)

SOUTH BANK & ESTON
Medical Aid Associations or Workmen's Clubs)

WALES

ABERTRIDWR GLAMORGAN
Windsor Colliery (Medical Scheme.)

EBBW VALE MON
(Workmen's Medical Society)

GILFACH GOCH GLAMORGAN
(Workmen's Medical Scheme.)

LLWYNYPIA CLYDACH VALE PENYGRAIG GLAMORGAN
(Workmen's Medical Scheme)

MARDY GLAMORGAN
(Workmen's Medical Scheme)

OAKDALE MON
(Medical Officer for Medical Aid Association)

WALES *(continued)*

OGMORE VALLEY GLAMORGAN
(Wyndham Colliery Medical Aid Society)
(Workmen's Medical Scheme.)

TONDU & ABERKENFIG GLAMORGAN
(Workmen's Medical Scheme.)

PUBLIC HEALTH.

DULVERTON UNION
(Medical Officer of Workhouse and No. 1 District)

EAST SUFFOLK COUNTY EDUCATION COMMITTEE
(Male Assistant School Medical Officer)

KENT EDUCATION COMMITTEE
(Woman School Medical Inspector)

LANARK COUNTY
(Medical Officer of Health)

LINCOLN CITY EDUCATION AUTHORITY
(Woman Assistant School Medical Officer)

PUBLIC HEALTH *(continued)*

NORTHAMPTONSHIRE COUNTY COUNCIL
(Medical Officer of Health.)

NORTHUMBERLAND COUNTY COUNCIL
(Woman Assistant Medical Officer of Health.)

NUNEATON RURAL DISTRICT
(Medical Officer of Health)

SOUTHWARK METROPOLITAN BOROUGH
(Tuberculosis Officer)

STIRLING ROYAL BURGH
(Medical Officer of Health Tuberculosis Maternity and Child Welfare and V.D. Officer Police Doctor and Medical Attendant at Combination Infectious Diseases Hospital)

SUTHERLANDSHIRE
(Medical Officer of Health Tuberculosis Officer and School Medical Officer) (Joint-ined post)

WEST HAM COUNTY BOROUGH
(Assistant School Medical Officer)

WIGAN COUNTY BOROUGH
(Assistant School Medical Officer)

YORKSHIRE NORTH RIDING
(Assistant School Medical Officer)

(b) Colonial Medical Service.—WINDWARD ISLANDS MEDICAL SERVICE (Grenada with Carriacou & St. Vincent and St. Lucia)

(c) Overseas Appointments.

Medical Practitioners are requested not to apply for any appointment referred to in the following table without having first communicated with the Honorary Secretary of the Division or Branch named in the second column or with the Medical Secretary of the British Medical Association, 429 Strand London, W.C.2

Town or District.	Hon. Sec. of Division or Branch	Town or District.	Hon. Sec. of Division or Branch.	Town or District	Hon. Sec. of Division or Branch
NEW SOUTH WALES *(All Friendly Societies Appointments.)*	Dr. R. H. TODD (Hon. Sec. New South Wales Branch) B.M.A. Building, 30 31 Elizabeth Street, Sydney, N.S.W.	QUEENSLAND *(Brisbane Associated Friendly Societies' Institute.)*	Dr. R. MAPSHALL ALLAN (Hon. Sec. Queensland Branch) Adelaide Street, Brisbane	VICTORIA *(All Institute or Medical Dispensaries)*	Dr. FRANK DAVIES (Hon. Sec. Victorian Branch) Medical Society Hall, E. Melbourne, Victoria.
				WESTERN AUSTRALIA. *(Contract and Lodge Practices)*	Hon. Sec., Western Australian Branch, No. 6 Bank of New South Wales Chambers, St. Georges Terrace, Perth.

Address 429, Strand, W.C.2
December 3rd, 1924

By order of the Council of the British Medical Association.
ALFRED COX, Medical Secretary.

St. Peter's Hospital

(For Stone and other Urinary Diseases)
Covent Garden, W.C.2

Applications are invited for the post of CLINICAL ASSISTANT to the following on the days indicated —

Mr. Swift Joly, Monday 2—3
Mr. Clifford Morson, Saturday 2—4
Mr. Barrington, Tuesday 2—3 and Thursday 3—4
Mr. Ogier Ward, Wednesday 3.30—4 and Friday 2—3 (Women and Children only)
Mr. Alban Andrews, Monday 5— and Friday 5—

Successful candidates will be required to pay a fee of five guineas on taking up their appointment which will be for six months as from January 1st next.

Applications should be lodged with the undersigned not later than 10 a.m. Thursday, December 11th 1924.

BEECHEY ROGERS, Secretary.

London Hospital, E.1

Applications are invited for the post of FIRST ASSISTANT to one of the four Medical Firms

[illegible] Tuesday, December 13th.
Particulars of the appointment may be obtained from the House Governor, London Hospital, E.1.

Seamen's Hospital Society,

Greenwich, S.E.

The Committee invite candidates for the appointments of HOUSE PHYSICIAN and HOUSE SURGEON at the Dreadnought Hospital, Greenwich. Candidates must be male, doubly qualified and registered.

The elected candidates will be required to take up duty on January 1st 1925. Salary at the rate of £150 per annum and a proportion of fees with board, residence and washing. The appointments will be for six months.

Applications stating age, together with copies of not more than three recent testimonials to be sent in on or before December 11th to the undersigned from whom further particulars can be obtained.

By order
P. J. MICHELLI, Secretary.

Greenwich, November 2nd 1924.

East London Hospital for

CHILDREN & DISPENSARY FOR WOMEN
Shadwell, E.1

Applications are invited for the post of HOUSE SURGEON (male). The appointment is for six months from January 1st. Board, residence and laundry are provided. Salary at the rate of £125 per annum.

Applications, with testimonials, to be sent to the undersigned not later than Saturday, Dec. 13th 1924.

W. M. WILCOX, Secretary.

Manchester Royal Infirmary

RESIDENT MEDICAL OFFICER

The Board of Management of the Manchester Royal Infirmary invite applications for the above appointment which will become vacant on January 1st, next.

Applicants must not be less than twenty-five years of age. They must be registered and hold a Medical and Surgical qualification.

The appointment is for 12 months, renewable for a period of one year.

Salary £200 per annum, with board, residence and laundry allowance.

Full information is obtainable from the undersigned to whom applicants must send their applications and testimonials on or before Friday, December 12th 1924.

By Order
FRANK G. HAZELL,
General Superintendent.

Charing Cross Hospital

Applications are invited for the post of RESIDENT MEDICAL OFFICER. [illegible] must be registered medical practitioners, and will be required to reside in the Hospital. Salary £200 per annum. Terms of appointment, duties, etc., may be obtained from the undersigned to whom applications must be addressed. The election will take place as soon as possible after the receipt of applications.

PHILIP INMAN, House Governor.
Charing Cross Hospital, W.C.2.

Wanted immediately a MEDICAL MAN for a Government post together with private (non dispensing) practice in Far East House appointments and capability of performing the more c mmon operations Un v grad would have pref Only small capital neces ary A most excellent Post for a capable single man —Add , No 6036 B M J Office, 429 Strand W C

Wanted — Assistantship, LOCUM or ANY MEDICAL POST, by M B , B Ch , B A O (Belfast), wom n now in London Recently qualifie l, æt 2 3 energetic, reliable cyclist Free now Excell te tls —Add , DOCTOR 8, St John s Park Mans Pemberton Gardens N 19

Wanted —Assistantship, by male L R C P & S (Ed) Energetic reliable abstainer Some exper ence in G P Good testimonials Cycle motor cycle Free now — Address, No 6021 BRITISH MEDICAL JOURNAL Office 429 Strand W C 2

Wanted — Assistantship by M B B Ch (Belf) Keen Experi nce in midwifery Cyclist motorist Now free In Lon lon Good testimonia's —Addre s No 6008, BRITISH MEDICAL JOURNAL Office 429 Strand

Wanted — Assistantship by M R C S , L R C P , aged 2 5 Some experience private and pane practice Excellent tes imonials —Address No 6011 BRITISH MEDICAL JOURNAL Office 429 Strand W C 2

Wanted —Male Assistant. Small Town Panel and Industrial Usual Bond Start after Christmas State parti cu ars —Address, No 6019 BRITISH MEDICAL JOURNAL Office 429 Strand W C 2

Wanted now, in Univeisity City, ASSISTANT (single), to relieve Principal and Assi tant for Winter and Spring months Bond —Address with photo stati g essential particulars No 6012 BRITISH MEDICAL JOURNAL Office 429 Strand W C 2

Wanted, January 1st, 1925 ASSISTANT with view to Partner ship in good panel and ge eral practice on the Thames A knowledge of Eye work desirable — Address No 6038 BRITISH MEDICAL JOURNAL Office 429 Strand W C 2

Assistant, with or without view to Partnership wanted for large panel and priva e Practice North We t London Public appointment held Good terms to suitable appli cant Must be young and energetic Small house available if required —Address No 6032 BRITISH MEDICAL JOURNAL Office 429 Strand W C 2

Assistant (woman) required in London Cash Prac tice Salary £3 per week and board residence —Apply ' Medicus, 51, Douglas Street Deptford S E 8

Assistantship wanted by M R C S , L R C P (Lond) D P H (Camb) woman in either town or country Aged 32 Ex perience in Diseases of Children Tuberculosis Refraction Can drive car —Address No 6027 BRITISH MEDICAL JOURNAL Office 429 Strand W C

Assistantship, outdoor, required by M R C S L R C P male aged 27 Ex H S H P Experienced G P Country or sea preferred —Address No 6025 BRITISH MEDICAL JOURNAL Office 429, Strand W C 2

Assistantship or Locum with view to Partnership required by man 27 years of age Highest re erences over 5 years Busy country practice preferred in South —Address No 6030 BRITISH MEDICAL JOURNAL Office 429, Strand W C 2

Cambridge Graduate, 32, abstainer doing pos graduate work desires PART TIME (or till Jan , WHOLE TIME) WORK London preferre l use own car if ne essary — Ad lre s No 6003 BRITISH MEDICAL JOURNAL Office 429 Strand W C

Doctor, aged 30, British, married total abstainer, 5 years experience in G P desires post home or abroad Speaks English Spanish Italian and French B st re er ences ASSISTANTSHIP or LOCUM accepted — Address No 6006 B M J Office 4 9 Strand W C

Gentleman, æt 25¾, M B, Ch B (Glas) ex Service ex H S , H P & H S Maternity Hospital little G P experienced anæsthetist and obstet ician requires ASSISTANT SHIP London or South of England preferred — Address, No 6037, B M J Office, 429, Strand W C

M R C S , L R C P., æt 35, single ex service recently qualified SEEKS POST resi lent or otherwise offering good clinical experience, salary immaterial satisfactory testimonials ke n and energetic —Address No 6023 BRIT MED JOUR Office, 429 Strand W C 2

M A , M.B., Ch B (Glas), L R C P E L R C S E wishes PART or WHOLE TIME ASSISTANTSHIP in or nr Glasgow or London. Partnership prospects pref Reading for higher deg ee Excel refs T T Thoroughly exp and re iable Æt 31 Free now —No 6033 B M J

M R C S , L R C P , working for M B , B S London, SEEKS PART TIME Work or LOCUM in London Tall good appearance Excellent testimonials Drive Car Would take short assistantship (3 months)—Add No 6035, B M J Office, 429 Strand W C 2

M B , B.Ch (Cantab), 32, married at present holding responsible Sur gical po t desires ASSISTANTSHIP view to Part neship, scope for Surgery Ex H S H P and C S O Exp in G P Some capital not afraid of hard work Good testimonials —Add ,No 6050 B M J Strand

Sole Charge (or Temporary ASSISTANTSHIP) required by an experience l and reliable man (Englishman) Excellent refer ences Terms moderate Free now —Address, No 6016, BRITISH MEDICAL JOURNAL Office 429 Strand W C 2

Dispenser (Lady), Hall Qualification experienced—books care of instruments and general routine of surgery Free now —Apply, E ADAMS, 11, Cromwell Road, South Kensington

Doctors requiring Lady DISPENSERS should wri e to Mr J L WALDEN Westminster College 112, St George s Road, S E 1 (only address) No fees to Doctors 25 years experience Daughters and other relatives of medical men always in training

Lady Dispensers supplied, qualified experienced and also trained in Bacteriolog [illegible] COI LEGE [illegible] paration fo before and out by thos [illegible] College —Secretary 7 Westbourne Park Road W 2

Lady, Dispenser - Book- keeper Secretary (Hall qualification) know ledge of dressings instruments—requires POST with doctor Disengaged —Apply 'B Elgin Lodge Larkfield Road Richmond Surrey

Wanted, well-qualified X-ray NURSE with at least two years experience to a sist Private Doctor in Harley Street neighbour hood and to do some Secretarial work Good salary — Address No 6002 BRITISH MEDICAL JOURNAL Office, 429 Strand W C 2

Educated woman desires Post as RECEPTIONIST to doctor or dentist or as HOUSEKEEPER RECEPTIONIST nursing experience excellent references —Address No 6004 BRITISH MEDICAL JOURNAL Office 429, Strand W C 2

Experienced, Trained Nurse wishes PERMANENT PATIENT or POSITION OF TRUST Good housekeeper — Apply Miss DAWSON, 5, Clarkehouse Rd Sheffield

Doctor's Widow, aged 28, requires post as SECRETARY Thorough knowledge shorthand typewriting and secr tarial duties Excellent references —Address No 5927 BRITISH MED JOURNAL Office 429 Strand W C 2

Trained Nurse, Masseuse, successful Hypnotist well educated desires EMPLOYMENT —Ad lress, No 6029 BRITISH MEDICAL JOURNAL Office 429 Strand W C 2

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Wanted —Partner in country district near the South Coast Rapidly growing place with exc llent prospects oppor tunities for surgery at local Cottage Hospital Good house to let rent £75 At pre ent one third share wor h £350 for sale at 1½ years purchase Further share up to one half could be bought by suitable partner if desired —Addre s No 6020, BRITISH MEDICAL JOURNAL Office 429 Strand

Wanted —Partner in Home County one third share (over £800) at 1½ years purchase Good hous and garden rent £70 Panel 1,800 —Address No 6007 BRITISH MEDICAL JOURNAL Office 429 Strand W C 2

Wanted —Partnership in or [illegible] age [illegible] capi [illegible] No [illegible] Jou [illegible]

Wanted. — Partnership by Scottish gra uate aged 29 height 5ft 9in Protestant 1½ years exp rience G P Well received Really good re erences House to rent essential Capital —Addre s, No 6013 BRITISH MEDICAL JOURNAL Office 429 Strand W C 2

Partnership offered in high class Radiolog cal and Electro Therapeutical Practice, in Holiday Resort and Residential South Coast Town About £700 at two years purchase would be sold to a gentleman who is experience l in the above branch of his profe sion, and must also have practise l for some years in medicine and surgery —Addre s No 6009 B M J 429 Strand

Partnership wanted in Country Town with good hospital prospects £1 000 to £1 500 share Advertiser keen ener getic ambitious now house surgeon London Hospital and public school man —Addres No 5901 BRITISH MEDICAL JOURNAL 429 Strand

Partnership — Country Practice in favourite Home County Income hands over 2 years Gross income over £2 000 panel 1 000 Two fifths share would be sold to a su itable man for two years purchase —Addres No 6001, BRIT MED JOURN Office 429 Strand

Partnership, near Hammersmith HALF SHARE in Prac tice re urning average £1 450, including panel 1 00 Excellent house on lease —' BETA 29 Rostrevor Road Wimble lon S W 19

Partner wanted —Short Preliminary Assistantship Must be capable Surgeon preferably F R C S South Coast town Sussex —Address full details to No 5419 BRITISH MEDICAL JOURNAL Office 429 Strand W C 2

Partner wanted —Good growing general practice residential heal £2 000 p a One third share increasing to half, at two years purchase Capable surgeon graduate and F R C S preferred No agents —Address No 6039, BRIT MED JOUR Office 429 Strand W C

Camb Graduate, of British nationality, wanted as JUNIOR PARTNER (after pre iminary Assistantship) in mi lle-class practice with panel in good London suburb Share for sale nearly £1 000 at two years purchase Should have experience in Eye work and be able to Hou e appointments —Address with details No 6024 BRIT MED JOUR Office 429 Strand W C 2

Lancashire —Partner wanted to take half share, value £1 300 panel [illegible] private practice Much scope for increase [illegible] about 30 and Scot preferred Premium 1½ years purchase £600 down and rest by instalments Address No 6013 B M J Office 429 Strand W C

Wanted —General Practice of £1,200 to £2,000 with panel capable of increase by experienced practitioner with Junior Partner (Graduate Country town pleasant suburb or seaside. Send full details in confidence.—Add No 6018 BRIT MED JOURN Office 429 Strand

Wanted. —Provincial or Country Town—about 20,000 inhabitants—PRACTICE non panel preferred about £2,000 p.a. Good house ample accommodation Applicant can complete immediately Details in confidence to No 5432, c/o Mr PERCIVAL TURNER, 4 Adam Street Adelphi W C

Wanted in South or Midlands a General PRACTICE, with scope for clinical pathology by practitioner holding appointment as Pathologist to a general hospital —Address No 6042 BRITISH MEDICAL JOURNAL Office, 429 Strand W C 2

Wanted — Mixed-class PRACTICE or SUCCESSION yielding £1,000—£1,200 with good panel in London or good town elsewhere. House at rental essential Strictly confidential —Address No. 6014 BRITISH MEDICAL JOURNAL Office, 429 Strand W C 2

Wanted —Practice, London W district to 10 miles out. Small suitable for single man Cash Details in confidence to No. 6005 BRITISH MEDICAL JOURNAL Office, 429 Strand, W C.2

Wanted—Good Panel PRACTICE Receipts from £2,000 a year upwards. Ample capital available —Apply PEACOCK & HADLEY 19 Craven Street Strand, W C 2. (No charge unless sale effected.)

Wanted by M R C S, a nice class PRACTICE of £800 up in residential district within 20 miles No objection to buying house —Apply D" c o BLUNDELL & Co 22 Craven Street Strand W C.2

Wanted by experienced practitioner general PRACTICE in good Country Town. Good detached house and garden essential Ample capital No Agents —Address No 5928 BRITISH MEDICAL JOURNAL Office 429 Strand W C 2

Wanted —Good General PRACTICE in or near London or large Provincial Town Receipts over £1,000 a year — Apply PEACOCK & HADLEY 19 Craven Street Strand W C 2 (No charge unless sale effected)

Wanted, Electro-therapeutic PRACTICE PARTNERSHIP or NUCLEUS in West End by experienced provincial Specialist who is prepared to dispose of whole or part of his practice (Northern) practice —Address No 5902, BRITISH MEDICAL JOURNAL Office 429 Strand W C

Wanted —London Liverpool, or West Riding City PRACTICE with good panel yielding £1,000—£2,000 Partnership succession entertained Capital available — Address No 6022 BRITISH MEDICAL JOURNAL Office, 429 Strand W C 2

Birmingham —Old-established X RAY AND ELECTRO THERAPEUTIC PRACTICE for immediate disposal owing to illness. Advantageous tenancy of excellent rooms Terms most moderate —Apply CROCKFORD & SONS Solicitors Temple Row Birmingham

Birmingham District — Wanted a PRACTICE with panel income £1,000—£1,500 particulars in confidence.—MEDICO " 318 Moseley Road Birmingham

Cheshire —Small Residential Town General PRACTICE returning £1,500 a year Good residence (6 bedrooms) garden and garage Rent £84. Premium 1½ years purchase Efficient introduction.—Apply PEACOCK & HADLEY 19 Craven Street Strand W C 2

Cheshire —Private and Panel PRACTICE 3 minutes from station excellent Doctor's residence Lease with option of purchase receipts over £1,700.—Full particulars on application to No 2168, Medical Agency Dept. REYNOLDS & BRANSON Ltd Leeds.

Derbyshire —Old-established, nice house £75 on lease Receipts £1,100; much scope Panel over 600 and increasing Population 23,000 Opposition weak Price £1,200 including drugs etc Present Country — MANCHESTER MED & SCHOL. Ass. Ltd 6 Brown Street.

For Sale —Old-established lucrative PRACTICE, in attractive town population about 6,000 all classes private and panel. Income £2,500 per annum. Good opportunity for major surgery Terms 1½ years purchase (part by instalments to anyone of undoubted integrity) No agents —Address No 5629 BRITISH MEDICAL JOURNAL Office 429 Strand W C 2

For Sale, London —Old-estab PRACTICE with branch Surgery Chiefly private small panel (increasing) £800–£900 p.a. 1½ years purchase —Address No 6010 BRITISH MEDICAL JOURNAL Office 429 Strand W C.2

For Disposal —A good Practice is not always to be had directly but Mr PERCIVAL TURNER can generally offer applicants something suitable. Nearly all the best Practices are sold by him without being advertised —Full information free on application to 4 Adam St. W C.2

Lanc's —Old-established, nice house (separate surgery entrance) which must be bought for £1,000 or near offer Receipts £1,300 with great scope panel 154 appts. £200 Price £1,300 part deferred.—MANCHESTER MED and SCHOLASTIC ASSOCIATION Ltd. 6 Brown Street.

Lancashire —Panel and Private PRACTICE for sale. Number on panel 900 Income about £1,700 Well appointed house with surgery complete. Five bedrooms 2 sitting rooms, etc. also garage for two cars.—Apply U V W HOUGH HOSELSON & Co Ltd Manchester

Lanc's Town — Old estab, owner retiring good convenient house garage Receipts £1,700 with excellent scope. Panel £835 yearly Population 20,000 Price £3,500 to include house garage &c part deferred — MANCHESTER MED & SCHOLASTIC ASSOCIATION Ltd 6 Brown St

North Wales, Seaside Resort —Newly established PRACTICE worth about £700 for Sale with short but efficient introduction House on lease. Premium 1 years purchase—based on first year's receipts—£500 down —Address No 6015 B MJ 429 Strand

Splendid Practice for Sale in Industrial Lancashire Town having panel of 1,600 with total income of £2,300 Good house with separate surgery can be rented Well known to us — G H I HOUGH, HOSELSON & Co Ltd Manchester

To Purchasers —Do not Buy without expert assistance With 40 years experience Mr PERCIVAL TURNER can advise in all cases. Terms free on application to 4 Adam Street, Strand W C.2 Telephone Gerrard 3,9 Telegrams Epsomian London "

West Riding of Yorkshire — For immediate disposal HALF SHARE in easily worked panel and private Practice carried on by Drs SLACK and LING for past 20 years. Average gross returns £3,025 per annum. Excellent house and well fitted surgery with garage. Late vendor on hospital staff — Apply Dr LODGE, J.P Rookwood, Rotherham

North of England —Old-established Country Town PRACTICE Average receipts £1,460 Good panel. Expenses small. Good house garden tennis lawn and orchard —LEE & MARTIN Ltd 71 Temple Row Birmingham

West Midlands —Old-estab Town and Country PPACTICE in a County Town Receipts £1,574 Appts Panel nearly 400 Good fees Expenses small Hospital (20 beds) Purchaser would be appointed Physician or Surgeon. Good house and garden.—LEE & MARTIN Ltd.

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Model C" linable to the meter circular revolving and centring stage well constructed stand diagonal rack and pin on focussing side micrometer screw focussing draw tube graduated in millimetres dust proof triple nose-piece Abbe swing out condenser in focussing sub-stage mount iris diaphragm plain and concave mirrors two Koristka dry objectives 2/3rds and 16th oil immersion N A 1.0 three eye-pieces in lock up case. Magnifications 60 to 1000

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Fine Corner House, tennis lawn matured garden 6 rooms (2 floors) well built and attractive superior part BLACKHEATH 4 minutes off main line over 60 years lease ground rent £8. Suit Doctor Dentist or Lawyer Price £1,600 vacant possession shortly —Apply by letter, Mr WILLIAM J. Queens Road S E 15

Consulting and waiting room to let Part or whole time, from £100 per Year Greater Smaller —Write F G " c o WILLINGS, 30 Knightsbridge

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Situated within a few minutes of Clapham Common Tube Station and only 18 minutes from the City
FREEHOLD PREMISES
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Bournemouth —Eminently suited for Professional Man or Conva escent Home-COMMODIOUS HOUSE 6 rooms, bathroom and offices on ground floor 8 rooms, bathroom and offices on two floors above South aspect Good decorative repair Elec light phone etc Good garden Price £4 500 New 99 years lease G R £20 p a At present arranged in two flats 4 rooms on ground floor let off at £135 rising to £175 p a First floor flat might be let at £250 p a Full particulars, apply, HANKINSONS Estate Agents, The Square Bournemouth (A 308)

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Queen's Hospital, Birmingham

The post of PATHOLOGIST is vacant Candidates must be Registered Medical Practitioners The appointment is tenable for three years, and the holder is eligible for re election Honorarium £100 per annum Applications stating age experience and qualifications, with certificate of registration and copies of testimonials to reach the undersigned (from whom further information is obtainable) by December 15th
HILDLY LUCAS House Governor

Swansea General and Eye HOSPITAL (Beds 262)

HOUSE SURGEON wanted (male) Salary £175 with board residence and laundry Good experience Appointment for not less than twelve months Applications stating age and nationality with three testimonials (copies preferred) to be sent to the undersigned not later than the 13th inst
W D HUGHES Secretary

West Bromwich and District HOSPITAL (105 Beds)

Wanted a RESIDENT ASSISTANT HOUSE SURGEON (Male) He must be doubly qualified and unmarried Salary £180 per annum, with board residence and washing
Applications stating age and if possessing a knowledge of Ophthalmic Surgery and accompanied by copies of testimonials should be sent to me on or before December 18th 1924
By Order
FRANK I HANCOCK
Secretary & Superintendent

Southwark Hospital

The Guardians of the Southwark Union invite applications before noon on Monday, December 15th 1924, from duly qualified candidates for the appointments of TWO MALE ASSISTANT MEDICAL OFFICERS at their Hospital, East Dulwich Grove S E
Candidates must be single
Salary at the rate of £300 per annum with board, lodging, washing and attendance
The emoluments of these offices are assessed for superannuation purposes at £80 per annum, and the appointments are subject to the provisions of the Poor Law Officers Superannuation Act, 1896
Forms of application will be forwarded on receipt of a stamped directed foolscap envelope
Canvassing prohibited
By Order
Union Offices, A P STANWELL SMITH,
50/51, Ufford Street, Clerk to the Guardians
Blackfriars Road S E November 28th 1924

Queen Mary's Hospital for THE EAST END, Stratford E 15
Telephone Maryland 2616

Applications are invited from fully qualified and Registered Medical men for the following posts —
1 RESIDENT MEDICAL OFFICER
1 HOUSE PHYSICIAN
2 HOUSE SURGEONS
1 OBSTETRIC HOUSE SURGEON
1 HOUSE PHYSICIAN & CASUALTY OFFICER
The Hospital contains 160 Beds, including 14 Maternity, and other special departments
Candidates, who should have previously held a Hospital appointment must send copies of testimonials to the undersigned, from whom all particulars can be obtained not later than Wednesday December 10th 1924
RAPHAEL JACKSON (Major), Secretary

Queen Mary's Hospital FOR THE EAST END Stratford E 15
Telephone Maryland 2616 & 2617
Beds 160 Out patient Attendances, 129 543

HONORARY ASSISTANT PHYSICIAN

There is a vacancy on the staff of this Hospital for an Honorary Assistant Physician
The Assistant Physician will have some beds allocated to him in the Hospital and will be required to see out patients
Applications, accompanied by copies of testimonials from candidates who must be duly registered practitioners, either Graduates of a University or Fellows or Members of a Royal College of Physicians, should be lodged with the undersigned not later than December 19th 1924
RAPHAEL JACKSON, Major Secretary

Queen Mary's Hospital for THE EAST END E 15

Applications are invited for the post of CLINICAL ASSISTANT to the Throat, Nose and Ear Department
Candidates must be registered Medical Practitioners and prepared to attend on Tuesdays and Fridays from 9 0 a m till 1 0 p m
Applications accompanied by testimonials, should be sent to the undersigned not later than Friday, December 19th 1924
RAPHAEL JACKSON (Major), Secretary

The Royal Masonic Institution FOR GIRLS, Clapham Junction

The House Committee invite applications for the post of NON RESIDENT MEDICAL OFFICER to the above Institution Salary £350 per annum
Applications stating age, qualifications, etc with not more than three recent testimonials, should be addressed to the Secretary at the Offices of the Institution 21 Great Queen Street, London W C 2 , not later than January 2nd 1925

House Surgeon (Male) wanted for ILFORD EMERGENCY HOSPITAL 94 Beds fully qualified and registered Salary at the rate of £150 a year with board and residence at the Hospital Duties begin Jan 11th Applications stating age, qualifications experience accompanied by two copies of three recent testimonials to the Secretary of the Medical Committee Ilford Emergency Hospital, to be sent before December 20th 1924

Doncaster Royal Infirmary (100 Beds)

HOUSE PHYSICIAN (male) required Dec 29th next Duties will include those of Casualty Officer and administration of Anæsthetics Prospect of promotion to suitable candidate who must be duly qualified and registered Salary £150 per annum
Applications with copies only of not more than three testimonials to reach the undersigned by Wednesday December 10th 1924
R WILFRID A LLLISTON Secretary

Noble's Hospital, Douglas, Isle of Man (55 Beds Opened 1912)

The Committee invite applications for the post of male RESIDENT HOUSE SURGEON Candidates must be single, have double qualification and be registered under the Medical Act The duties, in addition to ward and dispensary work will comprise visiting patients in the town homes
Salary £175 per year, with board and washing free
Applications stating age and experience with copies of testimonials as to professional ability etc , to be sent to me on or before Tuesday, Dec 16th 1924
The candidate appointed will be required to commence his duties on January 1st 1925
16 Athol Street, D H ROTHWELL,
Douglas Isle of Man Secretary

The Royal Infirmary, Sheffield
(There will shortly be 451 beds 66 of which are Ophthalmic)

The Weekly Board of Management invite applications from fully qualified male graduates for the following posts —
HOUSE SURGEON
ASSISTANT CASUALTY OFFICER
ASSISTANT OPHTHALMIC HOUSE SURGEON
The salary attached to each appointment is £60 per annum with board and residence
Applications, with copies of testimonials to be addressed to the undersigned
Board Room JNO W BARNES F C I S,
November 25th 1924 Secretary

The Staffordshire General INFIRMARY, Stafford

Acts
The appointment to be held for at least six months, commencing December 29th The duties include work in the Out patients Department as well as in the wards, and the administration of Anæsthetics
Applications stating age accompanied by copies of three recent testimonials, should reach me by Wednesday, December 10th
A L COLLINS,
December 1st 1924 Secretary

Oldham Royal Infirmary

Applications are invited for the following posts which will become vacant on January 1st 1925 —
1 HOUSE SURGEON TO THE OUT PATIENT CASUALTY AND SPECIAL DEPARTMENTS
2 HOUSE SURGEON TO THE WOMEN'S AND CHILDREN'S WARDS
3 HOUSE SURGEON TO THE MEN'S WARDS
Salary £200 per annum with board, residence and laundry in each case
[illegible]
to
General Superintendent

Royal South Hants and SOUTHAMPTON HOSPITAL, Southampton

Required
Candidates [illegible] to engage for Twelve Months Salary £100 per annum with rooms board and laundry When Venereal Clinic is established, the emolument for which is £75 per annum
Duties to be taken up on January 19th 1925
Applications stating age, with printed copies of testimonials (limited to five) to be sent to the undersigned by December 19th 1924
T A FISHER HALL
December 4th 1924 Secretary

The Hermitage Sanatorium, Whitwell I W (Near Ventnor)

Wanted, a RESIDENT MEDICAL OFFICER (Ladies ineligible) with Sanatorium experience Salary commencing at £350 all found Apply The Medical Supt

Borough Hospital, Birkenhead

Wanted fully qualified SENIOR HOUSE SURGEON male Salary £200 Applications with testimonials to be sent to the Secretary not later than December 11th

Temporary Assistant Medical OFFICER required for the County Mental Hospital Rainhill Lancashire age must not exceed 30 7 guineas per week although resident and laundry Apply the Medical Superintendent

Devon Mental Hospital

Required JUNIOR ASSISTANT MEDICAL OFFICER (Male) Candidates must be registered Medical Practitioners and unmarried Preference will be given to candidates who either have or are anxious to obtain a Diploma in Psychological

provisions of the Asylums Officers Superannuation Act 1 09
Form of application to be obtained from the Clerk to the Devon Mental Hospital Exminster which must be returned comp eted on or before December 20th 1 24

County Borough of West HAM

APPOINTMENT OF TUBERCULOSIS OFFICER

Applications are invited for the appointment of TUBERCULOSIS OFFICER (Male) who will be attached to the Public Health Department and be required to work under the administrative control of the Medical Officer of Health and to supervise the work of the Assistant Tuberculosis Officer
The salary will be at the rate of £900 per annum inclusive
The gentleman appointed must be a Registered Medical Practitioner have held Resident Hospital appoin ments and have had special experience in the diagnosis and treatment of Tuberculosis and in administration He will be required to devote the

annuation Act 19 2 and to a Medical Examination as required by the Council for the purposes of that Act and the statutory contributions to the Superannuat on Fund under the Act will be deducted from the salary
Applications on the form provided (which will be forwarded by the undersigned on receipt of a stamped addressed foolscap envelope) must reach me not later than Saturday December 20 h 1924
Applicants must be Members of a recognized Medical Organi ation
Canvassing M mbers of the Council is prohib ted and will disqualify
By Order
GEORGE E. HILLEARY
T wn Clerk
Nov 29th 1924 Town Hall West Ham E 15

Derbyshire Royal Infirmary

APPOINTMENT OF HONORARY ASSISTANT SURGEON

at the Infirmary
Candidates must send eighty copies of their appl cat on and testimonials (not more than five) which mu t be received not later than 10 a m on Saturday January 3rd 1 25
Can id tates are prohibited from personal canvass but may send copies of their applications and testimonials to the Members of the Elective Committee By order
WALTER BANKS
Superintendent and Secretary
November 20th 1924

Derbyshire Royal Infirmary, Derby (General Hospital 3 0 Beds.)

...e post of The appoint January 1st ... arther period of twelve months
Salary £200 per annum with apartments board etc
Applications with copies of not more than five testimonials to be sent to the undersigned not later than December 11th
WALTER BANKS
Novemi er 24th 1924 Supt & Secretary

The Infants Hospital, Vincent Square Westmin ter

The C mmittee of Management invite applications f r the post of JUNIOR ANESTHETIST
Applications with cop es of not more than three testimonials must be sent not later than December 15th to the undersigned from whom further information may be obtained
ALFRED J SMALL Secretary

Western Dispensary, 63 Roches er Row Westminste. S W 1

Required as RESIDENT a duly qualified registered Medical Practitioner of either sex Salary £100 per annum with apartments attendance firing and l ght ng
Applicat ons to the Secretary with testimonials by December 1 th

MR. HERBERT NEEDES, 31, BEDFORD ST., STRAND W C 2.

No Charge to Purchasers All Business receives Mr NEEDES personal attention

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4 ... with garden etc on lease at £60 Premium about 1½ year purchase

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6 Near LIVERPOOL — PRACTICE averaging

7 W ... House on long lease and moderate rent. Price for quick sale £1 400

8 UNOPPOSED PRACTICE returning over £1,800 a year and situate in pretty rural di trict with n ... miles of Town Panel and appts held Ch arming resi ence with several acres of groun l on rental Successor must be active and of ea

9 REQUIRED with TITLE of £1 50 des rable Qu

Mr Needes will rece ve details in strict confidence

ESTABLISHED 1868

PEACOCK & HADLEY, (MR A HADLEY)

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SOMERSET — Old-establishe l Country G P Panel over ... Income £600 Excellent sport Hunting etc Scope for young practitioner Premium 1½ years purchase

LONDON W—PARTNERSHIP in le ab s old Suburban G P Panel nearly 2 0 Income about £2 000 Nice house to rent Mid dle-aged or elderly (scope) O e third are two years purchase Suit Irishman or Scot man

SOUTH COAST — Well establi hed NUCLEUS G P, in well known seaside resort Income £500 (increasing) Panel Good fees Small house to rent or for sale Prem. £1 000

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Country Practice, Notts — About £1 000 p a unopposed Panel of 1 0 Appointments £150. Not much midwifery Visiting fees to 21/ Good detached house, with 6 bed bath, outhou es and one a re of garden Rent £36 All sports —Apply No 7650

London Suburb, South —Cash and Panel PRACTICL Nearly £700 p a Panel 1o0 Very few midwifery cases Lock up premises with rooms over Very moderate rent — Apply, No 7649

London, N — About £1,550 p a Old established Small panel No appointments Visiting fees usually 5/ to 7/6 Good house ample living accommodation consult ing rooms and surgery To rent —Apply, No 7648

London, West —Partnership About £2 000 a year One third or one half share for dispo al Very old established 1anel about 1 880 Other appointments £100 1ew midwifery cases, ample scope Fees 3/6 to 21/ Excellent corner house to rent —Apply No 7647

Worcestershire — About £800 p a and scope Old established Panel 4/o00 Good fees Appointments over £100 Convenient house 1½ a res of garden and orchard Rent or sell Premium £1 000 —Apply, No 7640

Sussex Coast —Nearly £800 p a Old established Panel 900 Visiting fees 5/ to 10/ Very few midwifery cases Appointments £80 Good house on lease —Apply, No 7638

London, S W —Partnership About £1 360 Share worth £500 p a, for disposal now half later and ultimate succession Panel 1 600 Visiting fees 3/6 up Few midwifery cases Ample scope —Apply No 7636

London, N — About £1,500 a year Old established PRACTICE Small panel Appointments about £400 Vis ting fees 3 6 to 15/ Good house on lease with garden and garage Can be rented or lease purchased — Apply No 7634

South Coast — Partnership About £2,700 a year Non dispensing small panel One third share for disposal now up to one half later Visiting fees chiefly 10/6 Applicants should be Graduate and F R C S for preference —Apply No 7631

Cheshire — About £1,900 a year Old estab ished Very little mid wifery Panel 9o8 Fees 3 6 to 21/- Medicine extra Good detached house garage and garden Mortgage can be arranged —Apply No 7628

London, S.E —About £2,000 a year Old established PRACTICE Densely populated district Appointments Panel 7o0 Visiting fees 5/ to 21/ Midwifery average £5 5s Corner house ample accommodation, rent £55 on lease —Apply No 7625

South-East Coast —Over £2 000 a year Good fees Panel nearly 1 o00 House with ample accommodation and garage on lease a moderate rent —Apply No 7618

Lancashire —About £1,200 a year Non panel Old established Vendor retiring No midwifery or appointments Fees 2 6 to 10/6 Small house rent £36 including rates and taxes Ample scope for both midwifery and panel Easy terms —Apply No 7612

Lincoln —Country Town, about £1 850 p a Very old e tablished Panel over 1 000 Visits 3/6 up Appointments about £70 Good detached house tennis garden ½ of an acre Long introduction —Apply No 7593

Yorkshire —Average £1,286 Appointments £350 Visiting fees 3 6 to 10/6 Panel nearly 1 300 Few midwifery cases Good house every convenience.—Apply No 7581

Eastern County — Partner- SHIP with view to Su cession Large Hospital Town Over £2 000 a year One third share for di posal Panel 2 000 Other appointments £40 Visiting fees 3 6 up Midwifery 2 to 3 guineas Good house on succession —Apply No 7561

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South London —Cash Practice of £2,300 Pa el £900 Good house w th nice garden Price £3 100

Lancs —Nice middle and work- ing class PRACTICL of £3 280 on Borders of Moorland country Panel 1,8o0 Choice of houses Scope for surgery

West Riding — Practice of £1 460 in fine town Panel 8.0 Clubs £160 Fees 3 6 to 1 gn No midwifery Good house can be rented Premium 1½ years purcha e or near offer for quick sale

Within 70 Miles —Increasing PRACTICL of £750 in prosperous town with good schools Opposition slight in proportion to population Panel 367 House on lease Rent £55 Cottage Hospital Premium 1½ years purchase

London, S E —Practice of £1 330 with house in residential part and separate surgery Panel 910 House has consulting room, 2 sitting rooms, 5 bedrooms bathroom garden and garage Can be bought at a reasonable price

North London —Practice of £1 600 Panel 1 10o Appointments £120 Good introduction Rent £65

South Coast —Old-established PRACTICL of £2 000 Panel 1 500 Few midwifery Long lease Rent £60 Premium 1½ years purcha e

London, S W —Partnership. Half share of £2 500 Panel 1 00. Few midwifery 3 gns up Choice of suitable flat

East Coast — Practice in beautiful seaside place Receipts £1 500 Schools golf, etc Panel 650 Appointments £80 Good detached house with large garden on lease

Cornwall. — Unopposed PRACTICL of £850 Appointments £100 Panel £200 Rent £75 Premium £1 000

Cheshire —Practice of £1,500 in nice country town Panel 1 200 Appointments £160 Double fronted detached House can be bought or rented

London, S E — Practice of £1 100 in nice residential suburb Appointment £210 No panel Nice house with garage and tennis court can be bought

North London —Practice of £950 Increasing Panel 2.0 House in main road, with small garden can be bought

Opening in growing resi- dential district House with surgery NUCLLUS of about £200

Colliery Practice of £2,300 Panel 1 1.0 Rent £65 Opposition Hospital and scope for surgery

New Zealand — Unoppo- PRACTICL of £1 800 in beautiful with good roads Rent £100 £1 500 including furniture

South London — Very established practice of £1 000 ments £100 Panel 850 About 2 miles Nice house with small garden and Rent £70

F R C S, required as Part- Practice in Country Town £800 with increase later for Surgeon

Lancashire — Practice £650 with great scope Opposition slight Large population

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Accountancy and legal services furnished by the Agency, where desired, at moderate inclusive charges.

PRACTICES AND PARTNERSHIPS FOR SALE

1 LONDON N W —Non panel middle-class PRACTICE to which is attached a Nursing Home Total average income for the last three years £1 500 Advice and medicine 3/6 to 5 – Visits and medicine 5 – to 10 6 About 40 cases of midwifery a year from 3 to 5 guineas Large well-situated non basement house held on lease with 10 years to run with a ground rent of £10 Price £1 500 Item £2 250 or near offer

2 WARWICKSHIRE —Unopposed old-established PRACTICE situated in the centre of hunting district within 10 miles of a large town Average r
Panel of 1 100 Visits
5 cases Very good
tenn s lawn Water l
tire y redecorated Price £2 500 Premium £2 000 cash or £2 200 by instalments Plenty of social life Ill health reason for disposal

3 LONDON S W (Riverside Suburb) —Old-established better and middle-class PRACTICE non panel and mainly non-dispensing Average income for the last three years £1 656 Visits 3/6 to 10 6 about 10 cases of midwifery yearly at from 3 to 10 guineas Commodious house with good garden garage Will old for £2,500

4 Vendor Small
about £300 per
annum. Good scope for increase especially if panel work be undertaken The Practice is worked as a Lock up but living accommodation can be secured and if desired the whole premises can be bought for £550 Premium £350

5 LONDON NORTH —Old-established PRACTICE producing an
£320
Visits
with no
£125
Garage can be let off at £26 or £54 Premium £2 000

6 LANCASHIRE (LAKE DISTRICT) —Unopposed very old established PRACTICE situated in a small market town in a delightful agricultural and residential district (population over 5 000) close to the sea Cash receipts for the last three years average £2 250 including appointments worth £150 and panel of 8x Held 3 years Nearest opposition 3 miles Railway station 2 miles Visits 2 6 to 21/ Midwifery 2 to 10
ining
bath
Prem

7 NORTHERN CATHEDRAL CITY —Old established middle and working-class PRACTICE Average income for the last three years about £1 400 including panel of 1 000 Visits from 5 to 7/6 Midwifery 3 gns upwards about 50 cases yearly Twelve roomed house with garden will be let on lease at £60 p a or sold for £1,100 Premium £2 100

£2 000 cash and £2 000 by instalments

9 KENT —SMALL TOWN within one hour of London Old established mixed general PRACTICE Average income about £1,800 including valuable appointments probably transferable and panel of nearly 1 500 Fees 3 – to 10 – Twenty cases of midwifery yearly at 2 to 5 guineas Excellent house containing 2 reception and 8 bedrooms separate entrance to professional th ful
Good
£2,700
Introduction as desired up to six months

9 NEAR LIVERPOOL.—In a large town (population nearly 1 0 000) close to seaside resort an old-established flourishing and increasing PRACTICE worth last year £2 100 including 1 000 panel patients Visits 2 6 to 5 Midwifery 2 to 4 guineas about 100 cases ye
Vendor's property
can be purchased I

11

Very little midwifery Double fronted house detached, and with ample accommodation Price £2,000 of which half can remain on mortgage There is an up-to-date Hospital and an early vacancy on the staff is probable Premium 2 years purchase.

12 SOUTH OF ENGLAND—COAST TOWN —A fourth PARTNER is required in an increasing mixed-class PRACTICE Average income about £5 000 per annum, including panel of nearly 3 000 and various appointments The share offered for disposal will produce about £800 per annum Comfortable rooms at the Surgery are available for the ingoing partner Rent £60 p a. Premium 2 years purchase

13 SOUTH COAST WATERING PLACE. —(Population 30 0 0)—
to an old
years over
6 5 and
7 6 No midwifery Very nice house available with ample accommodation garden etc will be sold or can be rented. Half share for disposal at 3 years purchase Good society and sport of all kinds etc Small Hospital. Scope for increase

14 EASTER. COUNTIES —Within 4 hours run of London Practically unopposed PRACTICE old-established and situated in a very pretty Country Town with beautiful surroundings Cash receipts for last financial year £2,022, including appointment of £20 and panel of 600 Visits up to 21/ Very little midwifery Car optional Railway station Charming residence (with ample accommodation) in its own grounds of 1 or an acre Price £2,900 all of which can remain on mortgage at 5 per cent Premium for practice £2,500 Excellent prospects Tennis golf hunting shooting etc

15 WEST OF ENGLAND —RESIDENTIAL TOWN —A well qualified and experienced man can secure a PARTNERSHIP with ultimate succession in a good Consulting Practice The present income is only about £1,500 a year but there is large scope for increase particularly if general practice is also undertaken Fees mainly 1 and 2 guineas and a few at 10 6 Close of houses on rental and to purchase Premium for the half share £1 500

15 INDIA.—ASSISTANTSHIP with view to PARTNERSHIP —A single man (about 30 years of age and not over 35 who must be an F R C S England of good appearance and a sportsman) is required on a two years engagement to commence next March in a practice producing £7 000 a year Salary 650 Rupees a month plus board and lodging (these total equals £800-£850 p a) At termination of the engagement a one-sixth share will be sold if satisfactory at one years purchase with increase ultimately up to one-third Premium payable out of receipts Interview in London essential

17 WESTERN AUSTRALIA.—Unopposed PRACTICE situated in a small Township (population 1 000) amidst very picturesque surroundings and within 12 miles of the sea coast. Cash
cluding appointments and
(mileage 7/6) Midwifery
Yearly opportunity for 42 miles
residence (recently built con-
taining 6 rooms bathroom, etc and ample land a tactical
Rent £86 a year Premium £1,000 half which may be left on
Mortgage for 3 years Small Hospital (with 6 bed. Sur-

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SOUTH COAST —(1) Well-established steadily increasing mixed class PRACTICE about £1 650 in progress in Residential Town and Health Resort Very good house (7 bedrooms) in excellent position to rent Premium £2 500

SOUTH EAST COAST —(2) PARTNERSHIP in good middle-class Practice £4 200 per annum, in popular and developing Residential Resort No panel Two fifths share at first at one and a half years purchase Partner should be aged between 30 and 40, and have a leaning towards medicine

MIDLANDS —(3) Unopposed Country PRACTICE over £1 150 in beautiful part Panel about 720 Detached house (4 bedrooms) with half an acre garden Mild climate

LONDON, N W —(4) Old-established good middle-class PRACTICE averaging £1 127 in Residential District No panel Fees 5/ to 10/6 Good corner house (7 bedrooms) in one of the best roads to be sold Premium for Practice one and a half years purchase

HOME COUNTY —(5) PARTNERSHIP in old-established good class Country Practice, about £3 300 p a , in delightful Residential District Excellent modern detached residence (7 bed and dressing rooms) with beautiful grounds to be sold Premium one third or two fifths share two years purchase, and up to one half later Cottage Hospital

MIDLANDS —(6) Sound, well-established and very compact unopposed Country PRACTICE within easy distance of several good Towns Cash receipts average £1 230 p a including panel 530 Good house (6 bedrooms) with nearly an acre of garden and two acres of land for sale Station in place Premium one and a half years purchase

HOME COUNTY —(7) PARTNERSHIP in well-established and increasing Practice over £2 200 in delightful Residential Country Town, within 30 miles of London Panel 800 Cottage Hospital Premium one third share £1,425 Great scope

MIDLANDS —(8) Old-established good class non-dispensing PRACTICE about £1,300, in large Town About 50 per cent of income is from special Ear Nose and Throat work Good house (8 bedrooms) to be Sold Premium for practice £1 800

NORTH WALES —(9) Well-established working-class PRACTICE over £2 400 in Country Town Panel 1,065 House with 4 bedrooms &c to let on lease Beautiful surrounding Country Premium one year s purchase, cash

WEST OF ENGLAND — (10) Small good-class non-dispensing PRACTICE about £400, in first-rate Residential Town and Health Resort No panel Choice of houses Premium £300

SOUTH MIDLANDS — (11) PARTNERSHIP in well-established Practice averaging over £2 100 p a , in good Residential District Panel 1 100 One third share at one and a half years purchase, after preliminary Assistantship

SOUTH OF ENGLAND —(12) PARTNERSHIP in well-established better class Practice about £3 000, in first rate residential Town No panel appointments or dispensing Very little midwifery Premium one third share £2 000 Partner should be aged 28 to 35 Graduate English University and have held Resident Hospital Appts Good Hospital

HOME COUNTY —(13) PARTNERSHIP in good-class Practice over £4,700 p a in most attractive Country Town Panel 1 700 Fees 3/6 to £1 5s medicine extra Good society Premium one third share two years purchase

EASTERN COUNTIES —(14) Very old-established and increasing Country Town PRACTICE about £3 000 Panel 1 584 House (8 bed and dressing rooms), with good garden, &c Rent £65 Premium *£4 000 Suit two friends*

EASTERN COUNTIES —(15) Unopposed PRACTICE, with beautiful house and garden near Coast Splendid wild fowling Income £2 000 per annum Panel 610 Premium one and a half years purchase

LONDON, N W —(16) PRACTICE worth about £450 p a , in working class district Panel 500 increasing *No midwifery Double* fronted corner house Premium, Practice and freehold house £1,400 Great scope for young man

YORKSHIRE (WEST RIDING) —(17) PARTNERSHIP in well established Country Town Panel 1,684 No panel Not share £1,670 (up to one half later) and keen on Surgery

SOUTH OF ENGLAND —(18) PARTNER required in very sound old established Practice in Seaport Town Panel under 1 000 Share worth £700 to £800 at two years purchase Partner must be keen and energetic and not much over 30

YORK (near) —(19) Unopposed Country PRACTICE, between £700 and £800 p a (£240 of which is panel), in picturesque growing Village Model detached house with garden garage electric light bath (h & c) etc for sale Premium one and a half years purchase

INLAND HEALTH RESORT —(20) Well-established PRACTICE £1 800 including panel 1 200 House (7 or 8 bedrooms) price £700 Premium for practice £2 400

LONDON, S W —(21) Well established PRACTICE of £600 to £700 p a in favourite Residential Suburb Panel 1 000 much midwifery Excellent detached house (6 bedrooms) with good garden for sale Ample scope Premium one and a half years purchase

EAST ANGLIA —(22) Country Important Country town about 7 miles distant Good house (6 bedrooms) in grounds a half years purchase scope for increase Premium one and

YORKSHIRE (NORTH RIDING) —(23) PARTNERSHIP in old established Country Town Practice about £3 200 in first class district Panel 1,000 Rent of house with large walled in garden £50 p a Three eighths share at first at two years purchase Cottage Hospital

WEST OF ENGLAND —(24) Well established PRACTICE averaging £1 240 p 300 Midwifery discouraged Specially built Price £2,000, part on mortgage Premium fittings

FAVOURITE HOME COUNTY —(25) PARTNERSHIP in well established Practice £2 300 p a , in charming and select Country Town Panel 1,000 Prem one half share two years purchase Cottage Hospital

NORTH OF ENGLAND. — (26) Old-established PRACTICE of £1 460 p a in Industrial District Panel 810 Very good house (5 bedrooms), in charming grounds two acres Premium, practice, house and grounds £4 000 Mortgage could be had on house

SOUTH WALES —(27) Well-established PRACTICE nearly £1 250 p a. in Country Town Panel over 500 Fees 5s to £2 2s Well situated double fronted house (6 bedrooms) with large garden Rent £60 Educational facilities Premium £1,500

EASTERN COUNTIES —(28) Old-established PRACTICE £1 855 p a in pleasant Market Town Panel 1 100 No midwifery Excellent detached house (7 8 bedrooms) Very good garden Cottage Hospital Premium one and a half years purchase

YORKSHIRE (WEST RIDING) —(29) PRACTICE over £1 500 p a , in thriving Industrial Town Panel 1,000 Good house (5 bedrooms) Rent £80 Premium £2 250

SOUTH WALES —(30) Very old-established PRACTICE, over £1 550, in beautifully situated Country Town Panel nearly 900 Fine old mansion house with half acre garden, to be sold Good schools and sport Premium £2,250

WEST OF ENGLAND —(31) ASSISTANTSHIP with view to partnership in mixed practice of over £2 800 p a in Country Town Panel 800 One fourth or one third share at two years purchase Applicant should be keen on surgery Hospital in town

SOUTH OF ENGLAND —(32) PARTNERSHIP in good class non panel practice of about £2 500 p a in beautifully situated country town Applicants should be Oxford or Cambridge Graduates not over 30 and preferably F R C S Eng

FIRST-RATE RESIDENTIAL DISTRICT up the THAMES —(33) Practice averaging about £1 550 p a *Not much* with garage to be sold 1 remium one half share

SOUTH AFRICA (CAPE PROVINCE) —(34) PRACTICE about £1 000, in one of the wealthiest Pastoral Districts on line of Railway Ideal equable dry climate Very comfortable house to rent Living very cheap Premium £750 Vendor known to the Association

HOME COUNTY —(35) Well-established and increasing mixed class PRACTICE over £1 000 in Residential District Panel about 400 Not much Midwifery Old fashioned detached house (6 bedrooms) in good position Premium £1 500

SPECIAL OPHTHALMIC PRACTICE —(36) About £1 400 in high class Inland Health Resort Operative and acute cases refused of late years Considerable scope for increase Premium £2 000

YORKSHIRE, WEST RIDING —(37) Well established middle and working class PRACTICE over £1 300 (£920 from panel and appts) in large clean town Good detached corner house Premium £1 300

EAST COAST —(38) Increasing PRACTICE over £500 rapidly developing District Panel about 100 Nearest other 4 miles Bungalow residence (5 rooms) Premium £750

EGYPT —(39) Well-established PRACTICE £700 to £ mainly among English Residents and Visitors Excellent semi residence (6 bedrooms) Premium to include furniture £1 100

MIDLAND TOWN —(40) Old-established PRACTICE about £1 100 per annum in Residential Suburb Panel house and large garden Premium £1 500

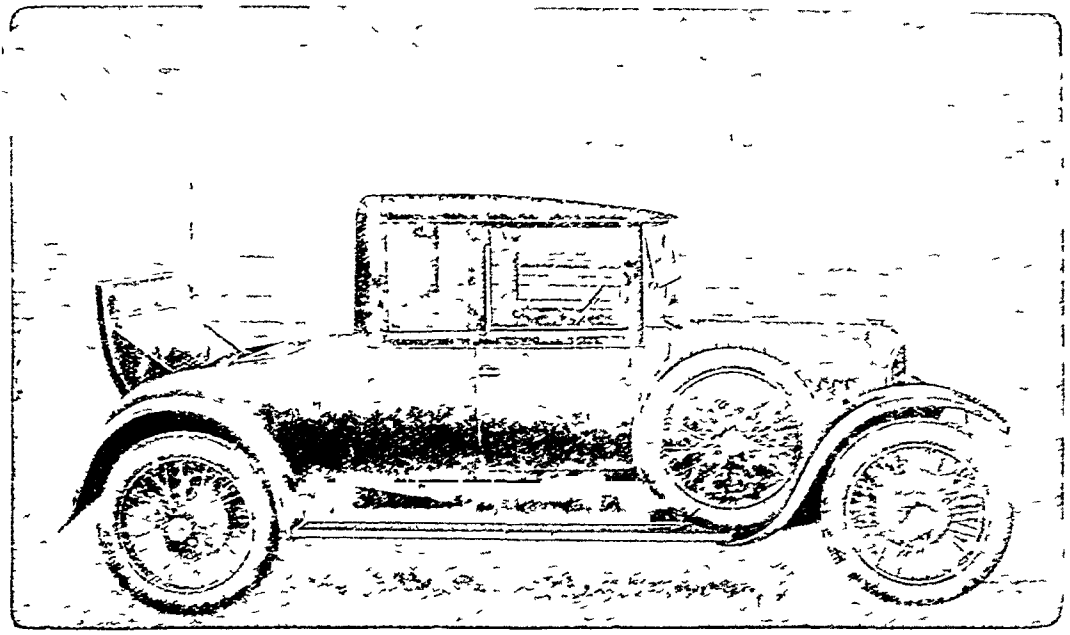
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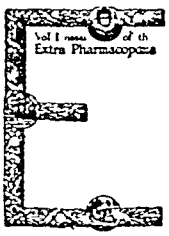
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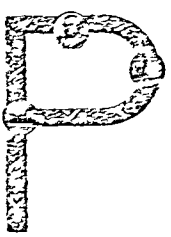


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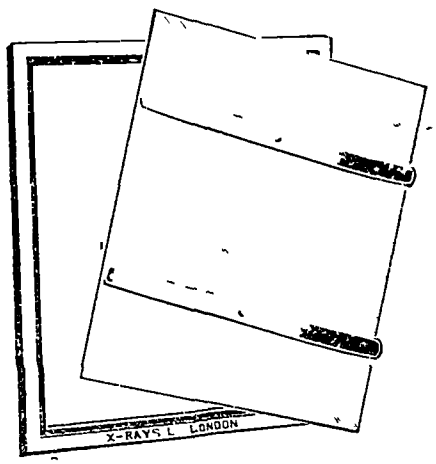
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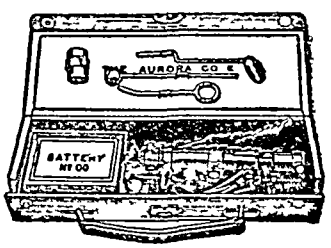
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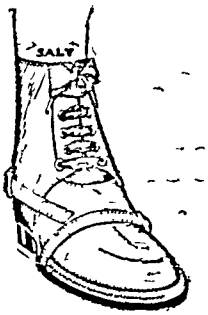
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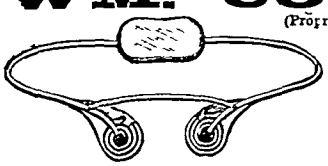
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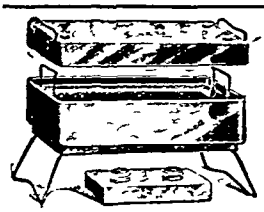
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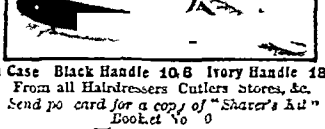
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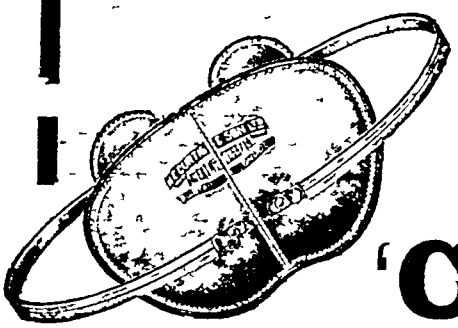
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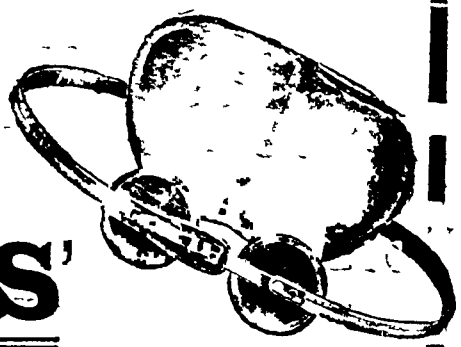
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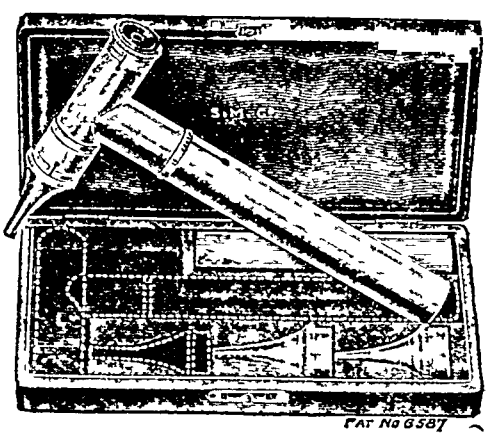
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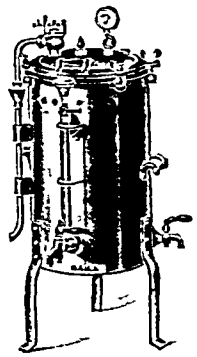
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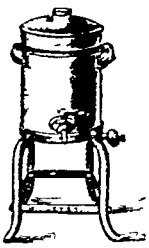


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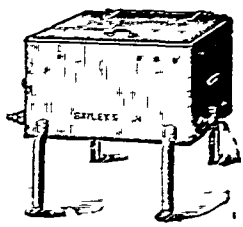
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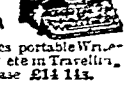
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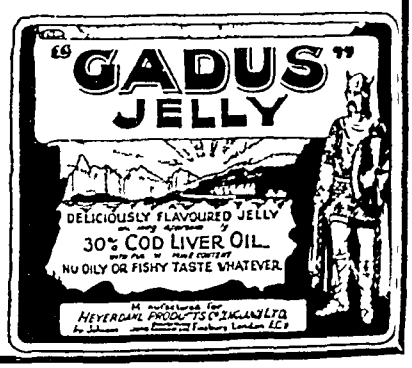
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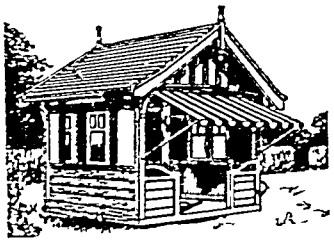
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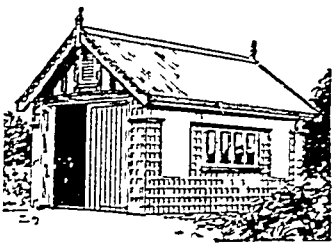
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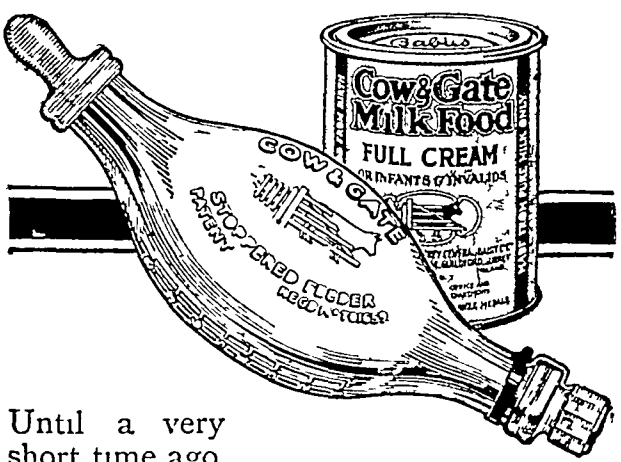
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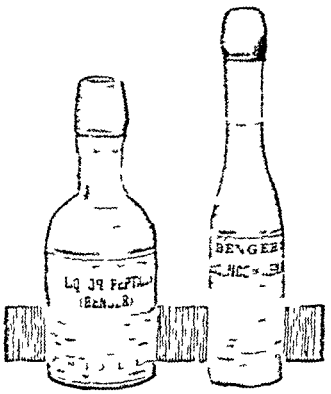
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Some Clinical References

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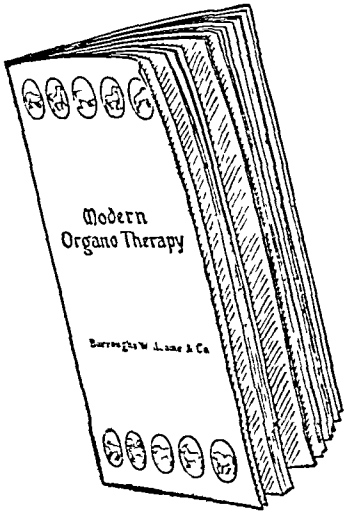
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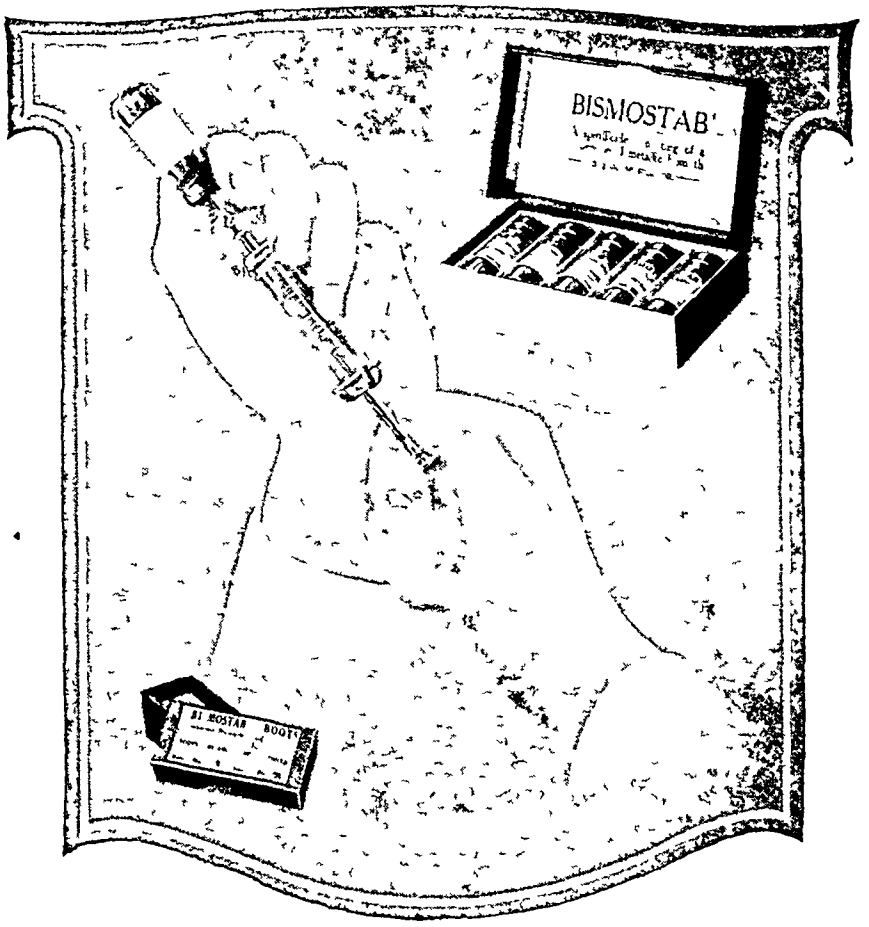
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An Address
ON THE
TREATMENT OF MOBILE BACKWARD DISPLACEMENT OF THE UTERUS

DELIVERED TO THE NORTH OF ENGLAND OBSTETRICAL AND GYNAECOLOGICAL SOCIETY
BY
ARCHIBALD DONALD, M.D., F.R.C.P.,
PROFESSOR OF CLINICAL OBSTETRICS AND GYNAECOLOGY UNIVERSITY OF MANCHESTER PRESIDENT OF THE SOCIETY

THE chief aim of a society such as ours is the encouragement of research and the enlargement of knowledge in our special department. But I think it is advisable from time to time to review opinions which seem to have become more or less established and to subject them to criticism inspired by a healthy scepticism. It is for this reason that I am asking the members of the society to give me their individual opinions on the treatment of retroversion in general, and in particular on fixation and suspension operations in cases of mobile retroversion.

I need not conceal from you at the outset that it is a subject on which I hold very strong views, and that these are *not* the views of the majority of gynaecologists all over the world. But I believe that the general opinion is based on a false pathology, and that, apart from a few exceptional cases, these operations are unnecessary and in many cases distinctly harmful. A good deal of what I have to say is not new, but was contained in a paper communicated by Dr. Fletcher Shaw and myself to the Royal Society of Medicine in 1910.

The Significance of Backward Displacement

Before we can profitably discuss the question of treatment we are bound to give some attention to the problem that lies at the back of all treatment—namely, the problem of what is the real significance of backward displacement. There is no subject in gynaecology in which there is more confusion. We have only to refer to the accounts of the symptoms as described in the modern textbooks to find much divergence of view. It is many years since Matthews Duncan wrote in this connexion, "The subject is surrounded in a mist and I do not myself know the straight and scientific road to the clean and sweet drops of truth." But he had one clear conviction which he lays down as a definite proposition: "a retroverted, a retroflected, or anteverted or anteflected, or a laterally displaced womb does not cause any pain or disorder or disability. Thousands of blooming, happy, fertile women have displacements." He admits that sometimes a retroversion is accompanied by symptoms, and under these he mentions 'sacrache, lower lumbar ache aching in the hips or in the groins or in the thighs, feelings of bearing-down, bladder trouble, and rectal trouble. All of these and more, or none at all, may be present." He makes no mention of menorrhagia or leucorrhoea, or dysmenorrhoea.

The Beginning of the Theory of Passive Congestion

Some years before Duncan wrote these lines, John Williams had been puzzled by the association of dysmenorrhoea and retroflexion. He seemed to have come to the conclusion that dysmenorrhoea was more commonly found when the uterus was retroflexed than when it was anteflexed, and he formed a theory to explain this. He decided that the pain was due to congestion and that the cause of congestion in retroflexion was the constriction of the body of the uterus and of the veins in the broad ligaments by the sacro-uterine ligaments. He had no "ocular" proof until "Dr. Squarey brought him a uterus which was slightly retroflexed. Posteriorly along the sides of the body of the uterus were distinctly seen the marks of these ligaments. The flexion was but slight and no parts of the broad ligaments had been drawn within the grasp of the constricting bands. Yet the marks of the bands on the body of the uterus unmistakably pointed out their constricting action." From this solitary *post-mortem* specimen sprang the congestion theory, to widen out in its application in the course of years. At first it was only used in connexion with dysmenorrhoea associated with retroflexion, but now it is also brought forward as an explanation of menorrhagia and leucorrhoea. In other words, congestion is the cause of disordered uterine function.

Herman adopted this theory with enthusiasm and embodied it in his textbook (1907). He wrote: "If the body of the uterus sinks between the sharp and firm utero-sacral ligaments the veins in the broad ligaments are pressed against the sharp lateral boundaries of Douglas's pouch and the return of blood through them is hindered and congestion of the body of the uterus is the result. He thinks this occurs in about one case in ten, and one gathers that the other nine have no symptoms.

Present-day Views

Now let me refer to some of the modern textbooks—those that are in common use by students and which are written by men of high standing, and whose opinions therefore carry great weight.

Jellett says that 'the symptoms caused by backward displacement are in the main due to the endometritis by which the condition is almost invariably accompanied."

Bland-Sutton and Giles distinguish between the symptoms of simple and complicated retroversion. In the simple variety the patient complains of a feeling of ill defined weight and fullness in the pelvis. 'When complicated by pelvic inflammation the symptoms are pain, severe dysmenorrhoea, irregular metrorrhagia, and abundant leucorrhoea."

Blair Bell avoids a description of the symptoms of retroversion, but states that "if the retroflexion and version are of long standing a state of affairs may occur which leads to interference with the venous circulation, with oedema of the endometrium and giving rise to menorrhagia."

Fothergill discusses the question more fully than most and is definitely of opinion that 'the twisting of the parametrium is in some cases a prime cause of uterine congestion." But he states that 'there is nothing more difficult than to diagnose the exact relation of the retroversion to the symptoms and the other physical signs present in any particular case." In favour of operations performed with the view of keeping the uterus in anteversion he states that 'in some cases the uterus becomes retroverted when left to itself and when retroverted becomes congested sufficiently to cause symptoms."

Eden and Lockyer are more sceptical. They remark that "it is open to doubt whether backward displacement has any influence upon the uterine circulation." They mention the possibility of the utero-sacral ligaments exercising pressure and causing a broad ligament varix but think this is "probably very rare." 'Menorrhagia and leucorrhoea are the result of accompanying endometritis."

In the manual written by ten London teachers a good deal of space is devoted to the effects of backward displacements on the endometrium and muscle coats:

> There is no doubt they say that the symptoms commonly complained of in acquired cases are the same as those of endometritis and uterine congestion generally, and therefore it is necessary to demonstrate if possible how a retroverted uterus can develop endometritis or become congested.

There is interference with the venous return from the uterus. The fundus carries the broad ligaments with it and folds them over backwards. This involves some slight twisting of the vessels in the mesometrium which tells on the veins only. The other view—'a very old one not so certain—is that the uterus is held down and incarcerated by the utero-sacral ligaments.

> There can be no doubt that long-continued congestion will lead to thickening of the endometrium and degeneration of the muscle coat with increase of the nervous stroma consequently. Endometritis and the so-called metritis may develop with the usual symptoms. The symptoms are backache bearing-down menorrhagia dysmenorrhoea sterility leucorrhoea and sometimes left-sided pain. Menorrhagia and dysmenorrhoea are the direct result of congestion of the endometrium. Leucorrhoea is the result of cervical catarrh.

Chipman states that 'complications of retroversion in the first instance assume the form of a passive congestion

the result of the impeded return of the venous blood" He seems to think that "rotation and pressure against the utero-ischial ligaments combine to cause this result" The results of this passive congestion are the production of chronic oedema, with hypertrophy and hyperplasia, both in the mucosa and fibro-muscular wall of the uterus Webster states both views that endometritis, so called, is antecedent to the displacement, and that it is caused by venous congestion, but gives no positive opinion He remarks that the venous network is so rich that it is difficult to understand how a marked obstruction can be caused

It will be seen that there is a wide difference amongst these authorities as to the symptoms of retroversion Duncan believes that retroversion causes nothing more than discomfort or aching in the pelvis and abdomen Bland-Sutton and Jellett think that the symptoms of disordered uterine function only occur when retroversion is complicated by pelvic inflammation Webster mentions them, but gives no positive opinion as to their relation to retroversion These authors, with Eden and Lockyer, may all be classified as sceptical of the theory that retroversion can act as a cause of menorrhagia, dysmenorrhoea, and leucorrhoea Herman, Fothergill, Chipman, and the ten London teachers are out-and-out supporters of the theory that retroversion may be the cause of disordered function, and explain at some length the method in which it acts It is all a question of congestion Herman believed that it was all due to a nipping of the uterine veins by the sharp edges of the utero-sacral ligaments, Fothergill puts it down to the rotation of the uterine veins, Chipman thinks it is produced by a combination of these two conditions, while the ten London teachers are evidently disposed to reject the explanation of Williams and Herman and to regard the troubles as due to rotation It may be noted that none of these authors give any proof of the congestion theory There are many difficulties in the way of its acceptance

Objections to the Passive Congestion Theory

1 If the uterine veins are sufficiently compressed to cause venous congestion, one would expect the whole of the uterus, including the cervix, to be of a blue colour Has anyone ever seen this in a case of retroversion? If so, he has remained strangely silent I have for years tried to find it in every case of retroversion—by inspection of the cervix in all cases, and of the uterus whenever an abdominal operation has given the opportunity—and have failed

2 The arrangement of the circulation in the broad ligaments is such as to make it very difficult to compress the venous return from the uterus

3 There is no evidence of congestion in cases of bad prolapse, except when a greatly hypertrophied cervix has been nipped at the vaginal orifice In procidentia it is not found, and yet this is the case of all others in which the veins are stretched to an extreme limit, and in which we would expect the blood return to be greatly hampered

4 In cases in which a retroverted uterus has been removed no dilatation of the veins can be shown on microscopic examination If the congestion theory be correct, we ought to be able to distinguish by the microscope a case of chronic metritis (or something like it) produced by retroversion and one associated with anteversion If long-continued congestion leads to degeneracy of the muscle coat with increase of the fibrous stroma, it will show quite a different picture from the ordinary chronic metritis, in which both muscle and fibrous tissue are increased

5 If the haemorrhage is due to venous obstruction we should expect to have a venous type of oozing, but the menorrhagia from a retroverted uterus differs in no respect from that of an anteverted one

6 Even if we have haemorrhage caused in this way, how do we account for the leucorrhoea? Leucorrhoea must mean increased activity of the glands Does passive congestion lead to hypertrophy or hyperplasia of the glandular element of the endometrium? If so, how? There is a link missing in the chain of the congestion argument There is mostly silence on this point with some general allusion to oedema But Chipman says that chronic oedema produces hypertrophy and hyperplasia of the mucosa—in other words, that passive congestion causes overgrowth of normal tissue The ten teachers are more cautious, and state that congestion leads to "thickening" or the endometrium In another sentence they say that leucorrhoea is the result of cervical catarrh, but whether the cervical catarrh is due to venous congestion or is simply an incidental accompaniment of the retroversion they do not state

7 The results of treatment form another objection to this theory, but these will be dealt with later

The Relation of Disordered Uterine Function to Backward Displacement

The symptoms of disordered function—namely, menorrhagia, leucorrhoea, and dysmenorrhoea—are the most common symptoms of chronic uterine disease They are the symptoms—all or some of them—of what is called endometritis and chronic metritis, and occur more frequently in cases of anteversion than in cases of retroversion How are we to give a different account of their origin according to the position of the uterus? Is it not more likely that they are produced in the same way, and that the position of the uterus has no say in their production? Further, is it not probable that the enlargement of the uterus, which is generally associated with endometritis and especially with chronic metritis, may be a principal predisposing cause of retroversion if the uterus is somewhat unstable in its equilibrium? In that case the sequence of events would be

1 Endometritis or chronic metritis,* with disorders of function
2 Enlargement of the uterus
3 Backward displacement

The congestion theory puts the sequence as

1 Displacement of normal uterus
2 Passive congestion
3 Enlargement of uterus and disorders of function

I have dealt at length with the question of the significance of retroversion, and to some it may seem to be of little practical importance But the treatment adopted must follow the view taken of the pathology *If one believes that* the *fons et origo* of all the symptoms mentioned is the backward displacement, then the logical result is to try and restore and keep the uterus in what is generally called a normal position But a careful study of the evidence will, I think, force the conclusion that endometritis and metritis are not the results but rather the cause of—or at least merely complications of—retroversion

There are other symptoms which have a better claim than those of disordered function to be regarded as produced by retroversion. I refer to the feeling of ill defined weight and fullness in the pelvis and of aching in the lower abdomen, especially in the iliac regions These may be intensified (1) by the association of some degree of prolapse with the backward displacement, or (2) by increased weight of the uterus

1 *Prolapse*—It is not difficult to distinguish between simple retroversion and the retroversion which is found in the less severe cases of prolapse In the former the cervix points more directly forwards and there is no descent of the upper part of the vagina, in the latter the cervix comes down in the axis of the pelvis and the body of the uterus is only moderately thrown back The condition is primarily one of prolapse, and as such does not concern us in this discussion

2 *Increased weight* may be due to hypertrophy of uterine tissues (endometrium or mesometrium) or to pregnancy or fibroid tumours The two latter conditions are generally easily recognized The enlargement which is found in chronic metritis may be considerable it may be sufficient to cause incarceration of the uterus below the sacral promontory and so cause pressure on the pelvic veins (but not the uterine veins) or nerves, and even interfere with the functions of the bladder and rectum It is in these cases that any rise in the intra-abdominal pressure, such as is caused by muscular effort or straining, may produce sudden acute symptoms or pelvic discomfort Aching in the back is not a common feature except in cases of fixed retro-

*The terms are used simply as a matter of convenience In the majority of cases it is probable that the changes are due to chronic inflammation and have nothing to do with inflammation Where no empha[sis] is [used] simply as to avoid [repe]tition that is occurring only with [chronic]

version, and then it is the result of old pelvic inflammation This fixation of the uterus is another complication of retroversion which is outside of our discussion

We may summarize the conclusions on the significance of retroversion we have so far arrived at as follows

1 That complications are generally the only things that matter in retroversion, and not the displacement itself

2 The complications are (*a*) endometritis and metritis, (*b*) prolapse, (*c*) increased weight (*d*) adhesions

3 None of these complications are produced by retroversion

4 That in a certain number of cases a backward displacement seems to cause local pelvic discomfort and aching in the lower abdomen

Variety

Some authors seem to lay great stress on the division of backward displacements into congenital and acquired—a division which seems to me of little practical importance The so-called congenital forms are sometimes cases of malformation, and many of them are cases of maldevelopment The most common form of maldevelopment is associated with an acute retroflexion, as the result of an area of weakness at the level of the internal os This is more generally found in the acutely anteflexed or cochleate uterus, but occasionally it gives rise to acute retroflexion The cervix is generally of an infantile type The symptoms are practically the same in both classes and their consideration is omitted from this paper

It is quite likely that some retroversions in unmarried women are due to some defect in the pelvic floor, but the retroversion in this case is merely an early stage of prolapse

Treatment

There is complete agreement amongst all gynaecologists that backward displacement may exist without any symptoms at all It is often discovered quite by accident It is generally agreed that these cases require no treatment It has never been suggested that treatment should be undertaken in order to prevent the displacement from producing changes in the uterus

Whenever treatment is required it is on account of complications, and by far the most common complication is what I have called "disordered function In my experience fully 90 per cent of the patients with retroversion who consult a doctor do so because they suffer from menorrhagia, metrorrhagia, leucorrhoea, or dysmenorrhoea They may have only one of these symptoms, but not uncommonly they have them all I regard these cases as cases of endometritis or chronic metritis The retroversion is a matter of no importance except in a very small minority of cases The treatment, therefore, is that of chronic metritis, and this resolves itself into curetting in the great majority A few may be treated on palliative lines, and a few may seem to justify hysterectomy

Curetting

The results of this operation in cases of endometritis associated with retroversion are very good In the paper which Dr Shaw and I communicated to the Obstetric Section of the Royal Society of Medicine in 1910 our statistics showed that the results were even better than in cases in which the uterus was anteverted In 75 cases of retroversion improvement followed in 88 per cent while in 267 cases of all kinds 86 per cent were improved

I have recently investigated a fresh series of cases of retroversion complicated by disordered function which were treated by curetting only The numbers are smaller than in the former series, but the details are more fully recorded On the patient's first visit the reasons why she sought advice, as well as her symptoms were all recorded No leading questions were put These notes together with the records of the operations and the answers to written inquiries, furnish the facts upon which my conclusions are based Many cases had to be omitted in which something more than curetting had been done—such as excision of a glandular cervix, or a plastic operation on the posterior vaginal wall

The results are as follows Thirty eight cases were investigated, but of these 5 are incomplete, as no replies were received in answer to the written inquiries Of the 33 completed cases 28 reported themselves as improved, while 5 stated that there was no improvement

When the 5 failures were investigated the results were as follows The first had another operation—nature no better six months after curetting The second was operated then, became pregnant and had a miscarriage and has had two children since The third became pregnant eight months after operation and had a living child—her previous child having been born four and a half years before the operation The fourth became pregnant five months after operation, having been sterile before the operation The fifth became pregnant nineteen months after the operation having been sterile up to that time and having suffered from dyspareunia

Thus, in the 5 cases reported as failures 4 have had pregnancies after curetting (one after the introduction of a pessary) and one has had another operation If we eliminate the 3 cases in which pregnancy occurred without other treatment it brings out the figures as 30 patients with 28 cases in which improvement is notified—a percentage of over 93 Of the 28 who were improved 11 say that they are very much better and are satisfied with the result, 14 merely state that their condition is better, and 3 say they are slightly better These cases are dealt with more fully in an appendix I might point out that the mere report of the patient as to her improvement was not taken as sufficient, particulars were obtained as to each individual symptom before and after the treatment

The treatment by curetting of a uterus which has the physical characteristics and the attendant symptoms of chronic endometritis seems such an obvious proceeding that one is at a loss to account for the fact that this treatment is not even mentioned in connexion with retroversion by some of the authors from whose textbooks I have already quoted, and by others it is given quite a subordinate place as a means of cure Possibly the authors may take this treatment for granted but the only inference one can draw from their silence is that they do not make use of it in cases of retroversion that, after all, the displacement is the thing that matters to them and not the complications Their rule seems to be to treat a case of chronic endometritis by curetting if the uterus is anteverted, but by pessaries or suspension if it is retroverted In the light of my personal experience—and I think I may say of the experience of my colleagues—curetting is at least of as much value in one set of cases as in the other There is this to be said for curetting it is a safe operation in the class of cases under discussion, with reasonable precautions The only trouble is that when it is done inefficiently, as I fear is not uncommonly the case it may prove to be useless

Mechanical Treatment

1 *By Pessaries*

In older textbooks the treatment by pessaries is the only treatment described and many pages are still devoted to the methods by which displacements are corrected and pessaries are introduced It was the main resource of the gynaecologist forty years ago, and is still very popular amongst practitioners of to-day There is no doubt that in some few cases benefit follows the insertion of a pessary but I am convinced that in most it is merely a faith cure or cure by suggestion otherwise the relief obtained would often seem inexplicable It is sometimes found that a patient is going about quite happily with a small pessary which is much too short to exercise any pressure on the posterior fornix or any tension on the cervix Sometimes one finds that the instrument has been inserted so that the upper bar lies in front of the cervix Even more commonly one finds that an instrument of suitable size has been chosen and is in correct position but the uterus is still retroverted and hangs backwards over the top of the pessary One even finds cases in which the patient is quite happy in

the thought that a pessary is doing good after it has been removed for some time To quote Matthews Duncan

"It is not a simple matter to judge of the part played by a pessary in relieving or removing painful symptoms You will find many patients, alarmed at the idea of having a displacement and believing the pessary undoes it or cures it, wear an instrument with satisfaction and even pleasure, although it gives them new pains or increases what they had before Such patients live in the pleasing and sustaining delusion that the pessary is curing them and object to its removal, even when removal gives relief, although told that the pessary, when in, does not alter the condition of displacement"

But allowing for all this, there are undoubted cases in which the patient feels a real relief Many of these are cases of prolapse with accompanying retroversion, and in these we can understand that the bearing-down sensation is relieved There is, however, a residuum of cases in which there is no sign of prolapse, but the bimanual replacement of the uterus and its retention in a forward position do produce quite a remarkable improvement What is the explanation? Why is it that the pressure of the body of the uterus in the pouch of Douglas should cause discomfort in some cases? It is not a question of increased weight or bulk, because we sometimes find it absent in cases of heavy retroversion and present in retroversion of an otherwise normal uterus In a small proportion of cases the relief caused by pushing the uterus forward is undoubted It seems to me to be due to some effect on the sympathetic nervous system In exceptional cases a retroversion seems to be related to a neurasthenic condition In these cases the patient complains not only of local discomfort, but of aching in the lumbar and dorsal spine, and even of occipital headache, all of which are removed or relieved by pessary treatment This improvement is entirely a question of comfort I have never heard or known of a case in which the insertion of a pessary has banished menorrhagia, leucorrhoea, or dysmenorrhoea, when these have been present before the instrument was employed

This seems to be a suitable place for a few notes on the subject of retroversion and pregnancy I think most of us hold the view that retroversion acts sometimes as a bar to pregnancy We have all been consulted by young women who have been married for some months or years and have come to ascertain why there has been no pregnancy An examination has revealed a retroversion The introduction of a Hodge pessary after bimanual reposition seems in many of these cases to produce the desired effect I think that we are also agreed as to retroversion being a predisposing cause of abortion How it acts we do not know, but we are justified, in cases of early pregnancy in a retroverted uterus, in making use of a pessary for a time

There is no doubt in my mind that pessaries are not nearly so commonly used as they were thirty years ago The objections to their use are obvious They must be objectionable to most patients with a properly developed sense of cleanliness, and frequent cleansing of a Hodge pessary means frequent visits to the doctor

The cases in which pessary treatment, except as a temporary measure, is of real use form a very small minority, and in these it is better that the patient should have recourse to surgical methods, except in the rare cases in which operation is contraindicated by the general condition of the patient

2 *By Suspension*

It is not my intention to review all the various operations that have been devised with the object of retaining the uterus in a position of anteversion, their name is legion, and the amount of thought expended in devising satisfactory methods has been enormous The literature must consist of many thousands of printed pages, and the number of these operations performed daily in all countries must be very large Alexander's operation, ventro-fixation, ventro-suspension, Gilliam's operation and its modifications, and Webster's sling operation, all have their advocates, and each attaches much importance to some particular detail of technique From the large number of cases reported, I am driven to the conclusion that to many operators the sole requirement for the operation is that there should be a backward displacement Many, no doubt, believe that when the uterus is elevated by pessary or stitches the symptoms of disordered function will disappear There is not a vestige of proof for this statement If it were true, the same treatment should be employed for heavy anteversion

At a meeting of the British Medical Association some years ago one speaker said he was tired of arguments on this subject, and felt inclined to exclaim, "A plague on both your houses" In cases of retroversion he curetted first and then suspended the uterus He evidently did not share in the sentiment of the Latin poet and philosopher who wrote "*Felix qui potuit rerum cognoscere causas*," and it did not occur to him that in many cases he might be subjecting his patient to unnecessary pain at the time, and to possible danger in the future For, after all, an abdominal section should not be lightly undertaken There is always a risk of intestinal obstruction after these operations, although the risk is no doubt small in the hands of experienced operators But if every case were published in which there had been trouble or disaster as a result of these operations, I believe the result would astonish most of us It is a pity that many of the operators cannot see the results of their handiwork some years later—the long thin bands that are the only evidence of a previous ventral suspension, the intestinal adhesions, and the weak abdominal walls Within the last few years I have operated on at least ten cases with the object of freeing adhesions, dividing bands, and attempting to cure ventral hernia—all as the result of previous suspension operations

But, after all, it may be asked, Why, if these operations are not satisfactory in every way, are they performed with such frequency? Surely, it may be argued, the results must be good The explanation seems to me to be threefold

(1) The operations are done in such large numbers—many operators counting their cases by the hundred—that the only indication for the operation in many of the cases must be the displacement alone It follows, therefore, that in these circumstances the patients are naturally none the worse for the operation unless *things go wrong*

(2) Once any operation becomes the fashion, the critical faculty of the individual surgeon is apt to be suspended The history of medicine gives many striking examples of this In gynæcology we can remember the extraordinary vogue of pessaries and of tampons and swabbing with lotions in the treatment of out-patients, and of the removal of ovaries which we now know must have been more or less healthy In general surgery we have heard of the extraordinary and far-reaching benefits which have been claimed for fixing the kidneys or for dividing intestinal kinks

(3) The power of suggestion is great I think the cure by faith and by suggestion is just as common after suspension operations as it is, or was, in pessary treatment All women are upset when they are told they have a displacement, and naturally relieved when they are assured that the uterus is now in the right position It may be objected that the element of suggestion may account for much of the success of curetting, but here it cannot come so powerfully into play The displacement is still there after the operation, and no attempt has been made to reduce it

I would ask those who are firm believers in suspension operations to tabulate the several indications for each operation We ought to know in every case why it was done—what were the symptoms that seemed to call for it Was it on account of backache or bearing down sensations, or fullness in the pelvis, or interference with the functions of the bladder, or was it because the patient suffered from dysmenorrhoea or menorrhagia or leucorrhoea or dyspareunia or sterility or frequent abortions? In the subsequent history we should be informed as to the effect of the operation on each individual symptom

I have now to admit that there are some few cases in which a suspension operation has to be done The reasons are obscure, but the cases which are suitable are just those to which I referred in connexion with the use of pessaries There are some cases in which all complications are got rid of and yet the patient finds that the retroversion is intolerable I believe these cases are very few. In my own practice I have performed four ventro-fixations

in the last four years, and in all of these cases curetting had been tried in the first place

I have little to say in regard to the different kinds of operation My own preference is for ventrio suspension or suture of the anterior uterine wall—at a point just above the os externum—to the anterior abdominal wall without removal of its peritoneum Actual fixation or fixing of the uterus to fascia seems to have quite gone out of fashion except, perhaps, for prolapse But the other varieties of operation all have their advocates There is one that seems to me a striking example of misplaced ingenuity, and that is the operation known as "Webster's sling" It seems difficult to understand why men who hold the belief that the uterus may become the victim of congestion through a comparatively slight change of position should advocate an operation the result of which is to tie up the uterus in its own round ligaments I think it the object were to try and produce a condition of passive uterine congestion by means of an operation that this method might be favourably considered

My remarks have been concerned with the treatment of mobile retroversion The application of suspension operations to prolapse, with or without retroversion, and to cases in which the uterus is adherent, do not come under discussion

Summary

My views on the treatment of mobile backward displacement of the uterus may be summed up as follows

1 The great majority of cases of retroversion in which treatment is required are cases in which the symptoms are mainly those of disturbed function The treatment there for is the same as for cases of chronic endometritis—namely curetting In a few cases where there is advanced chronic metritis hysterectomy is justifiable

2 Pessary treatment is indicated as a temporary measure in some cases of sterility and of early pregnancy associated with retroversion It may also be indicated in a small proportion of cases in which the backward displacement gives rise to discomfort, provided that for some reason the case is not suitable for operation or the patient refuse

3 Suspension operations are no cure for symptoms of chronic endometritis, when these are present curetting is indicated

4 In a small proportion of cases—probably not 10 per cent—when the patient complains of pelvic discomfort or pain a suspension operation may be necessary but only after curetting has been given a good trial

Brief Notes of Cases

The following is a list of questions which was sent to each patient

1 Are your periods regular?
2 Do you lose less at the period than before the operation
3 Have you any pain at the period?
4 Have you any aching in the lower part of the abdomen between the periods?
5 Have you any discharge (white or coloured) between the periods?
6 What in your opinion is the result of your operation Is your condition better? Is your condition unchanged Is your condition worse? If worse please give particulars of your symptoms

Case 1.—Nullipara aged 31 married two years Admitted to St Mary's Hospital Manchester on account of dysmenorrhoea leucorrhoea and sterility Operation February 1920 *Result* Distinctly better Still some dysmenorrhoea No leucorrhoea Has had three children since operation

Case 2.—Single woman aged 23 Suffered from menorrhagia leucorrhoea and dysmenorrhoea Operation at St Mary's Hospital April 1920 *Result* Better No menorrhagia still some leucorrhoea and dysmenorrhoea Married since operation

Case 3.—Married woman aged 29 two children last confinement two years previously Suffered from menorrhagia leucorrhoea and chronic abdominal pain Operation September 1923 at nursing home *Result* Better No menorrhagia or leucorrhoea still slight abdominal pain

Case 4.—Nullipara aged 26 married two years Operation December 1921 at St Mary's Hospital on account of menorrhagia leucorrhoea chronic abdominal pain and dyspareunia *Result* Still menorrhagia and some leucorrhoea no abdominal pain no mention of dyspareunia Improvement probably refers to dyspareunia and abdominal pain

Case 5.—Married woman aged 34 three children youngest aged 5 Admitted to nursing home with protuse and irregular haemorrhage and operated on in May 1923 *Result* Great decrease No menorrhagia

Case 6.—Single woman aged 21 Suffered from dysmenorrhagia and leucorrhoea for which he underwent operation at a nursing home in February 1922 *Result* Better Less dysmenorrhoea no menorrhagia light leucorrhoea

Case 7.—Married woman aged 31 one child aged 3 Admitted to St Mary's Hospital on account of menorrhagia dysmenorrhoea leucorrhoea and chronic abdominal pain Operation November 1921 *Result* Better No menorrhagia very light dysmenorrhoea still leucorrhoea and some abdominal pain

Case 8.—Married woman aged 33 two children youngest aged 6 Operated on in July 1923 at St Mary's Hospital on account of menorrhagia and chronic abdominal pain *Result* Better No menorrhagia or abdominal pain

Case 9.—Nullipara aged 24 married nine months Had acute dysmenorrhoea and chronic abdominal pain for which she underwent operation at St Mary's Hospital in August 1921 *Result* Successful Less dysmenorrhoea no abdominal pain

Case 10.—Nullipara aged 34 married three years Admitted to St Mary's Hospital with menorrhagia and leucorrhoea Operation March 1923 *Result* Slightly better No menorrhagia slight leucorrhoea Small masses in pouch of Douglas (? adenomyomata)

Case 11.—Single woman aged 26 Admitted to St Mary's Hospital with dysmenorrhoea and leucorrhoea Operation April 1921 *Result* Better Less dysmenorrhoea no leucorrhoea

Case 12.—Nullipara aged 36 married eight years Admitted to St Mary's Hospital with menorrhagia and operated on in October 1922 *Result* Much better No menorrhagia The patient was marked before operation as possibly suitable for ventrosuspension

Case 13.—Single woman aged 31 Suffered from dysmenorrhoea leucorrhoea and chronic abdominal pain Operation at nursing home July 1922 *Result* Better Less dysmenorrhoea till leucorrhoea some abdominal pain for five or six days Cavity of uterus irregular (? small fibroids + ½ inch)

Case 14.—Married woman aged 30 two children youngest aged 2 Operation at nursing home in June 1922 on account of leucorrhoea and menorrhagia *Result* Much better Very little leucorrhoea no menorrhagia

Case 15.—Married woman aged 31 nullipara Admitted to St Mary's Hospital with leucorrhoea and dysmenorrhoea and operated on in April 1922 *Result* Better No leucorrhoea till dysmenorrhoea Before operation she was marked a possible suitable for ventro-suspension

Case 16.—Married woman aged 28 one child aged 2½ years Operation at St Mary's Hospital in July 1922 on account of leucorrhoea and dysmenorrhoea *Result* Better Only occasional leucorrhoea less dysmenorrhoea

Case 17.—Single woman aged 23 Suffered from acute dysmenorrhoea leucorrhoea and chronic abdominal pain Operation at St Mary's Hospital May 1923 *Result* Very beneficial Very little pain at periods no leucorrhoea no abdominal pain Patient had well marked cervical catarrh before operation

Case 18.—Nullipara aged 32 married two and a half years Operation at St Mary's Hospital in February 1921 on account of menorrhagia leucorrhoea and chronic abdominal pain *Result* Slightly better Symptoms still persist but Dr unable to say There has been no pregnancy

Case 19.—Nullipara aged 32 married five years Operation at St Mary's Hospital in March 1923 on account of menorrhagia dysmenorrhoea and leucorrhoea *Result* Better No menorrhagia still some dysmenorrhoea very occasional leucorrhoea Patient disappointed that there has been no pregnancy

Case 20.—Nullipara aged 26 married fifteen months Suffering from menorrhagia and leucorrhoea Operation at nursing home in January 1921 *Result* Altogether satisfactory No menorrhagia or leucorrhoea Two children since operation

Case 21.—Single woman aged 24 Operation in nursing home January 1923 on account of dysmenorrhoea leucorrhoea and menorrhagia *Result* Very much better Very little pain no menorrhagia or leucorrhoea Patient had well marked cervical catarrh before operation

Case 22.—Single woman aged 22 Suffered from menorrhagia and chronic abdominal pain Operation at St Mary's Hospital in June 1923 *Result* Considerably better No menorrhagia or abdominal pain Patient at last accounts was married and probably having an adherent uterus

Case 23.—Single woman aged 19 Operation in nursing home July 1923 because of dysmenorrhoea and leucorrhoea *Result* Slightly better Still dysmenorrhoea and leucorrhoea

Case 24—Single woman, aged 31 Had pain in right groin and hip, menorrhagia, and dysmenorrhoea Operation at St Mary's Hospital, March, 1922 *Result* "Better" Now very seldom has abdominal pain, periods less, still dysmenorrhoea

Case 25—Married woman, aged 36, two children, youngest aged 3 Suffered from menorrhagia, leucorrhoea, dysmenorrhoea, and chronic abdominal pain Operation at St Mary's Hospital, February, 1924 *Result* 'Better" No menorrhagia very slight leucorrhoea, slight dysmenorrhoea, still some aching in abdomen Marked before operation as possibly suitable for ventro suspension

Case 26—Married woman, aged 23, one child aged 5 years Suffered from chronic abdominal pain Operation in July 1923, at St Mary's Hospital *Result* 'Conditions perfect' No abdominal pain or menorrhagia

Case 27—Married woman, aged 40, two children youngest aged 2 months Operation in nursing home, March, 1921, on account of menorrhagia and chronic abdominal pain *Result* "Very much better for two years' No menorrhagia, abdominal pain less Now has symptoms of climacteric

Case 28—Nullipara, aged 32, married nine years Operation in nursing home, February 1922, on account of dysmenorrhoea and leucorrhoea *Result* 'Much better" Only occasional pain, no leucorrhoea Pedunculate adenoma removed from uterine cavity by curette

Case 29—Married woman, aged 30, four children, youngest aged 18 months Operation in nursing home, March, 1921, on account of menorrhagia and leucorrhoea The result was not stated Patient had to undergo another operation (details not given) in June, 1922 The only pain now is at the bottom of the back

Case 30—Woman, aged 24, married six months Suffered from dysmenorrhoea and leucorrhoea, for which she underwent operation in a nursing home in December, 1920 *Result* "No change' The reply refers to six *months after operation* A pessary was then introduced, and pregnancy began six weeks later Since then she has had one miscarriage and two confinements

Case 31—Married woman, aged 30, one child aged 4½ years Operation at St Mary's Hospital in April, 1920, on account of menorrhagia, dysmenorrhoea, and leucorrhoea *Result* "No better" Still menorrhagia and leucorrhoea, not much dysmenorrhoea Patient had another confinement two years after operation, and has been in bed for two months with "nervous prostration'

Case 32—Nullipara, aged 19, married nine months Was operated on for dysmenorrhoea, at St Mary's Hospital in March, 1923 *Result* 'Unchanged" Still dysmenorrhoea and leucorrhoea Patient was confined six months ago (March, 1924), she was pregnant three months after operation

Case 33—Woman, aged 30, married four months Suffered from dysmenorrhoea, dyspareunia, and leucorrhoea, for which she underwent operation at St Mary's Hospital in January, 1921 *Result* Unchanged" Still dysmenorrhoea and leucorrhoea She was confined four months ago

THE OPERATIVE TREATMENT OF KNEE FLEXION IN POLIOMYELITIS

BY

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I MUST apologize for bringing up a subject on which, to all intents and purposes, the last word has been spoken, but it so happens that within the last three years I have had fourteen cases under my care, in which the usual methods of continuous traction and wedge casts would appear to be insufficient, unless very protracted periods of time had been expended in such treatment

With the limited number of hospital beds at my disposal and my very long waiting list, I felt that a quick method of deformity reduction was justifiable, and my experience has shown that such risks are negligible and that the deformity even in extreme cases is readily reduced within two or three days without circulatory interference I may here add that, whatever vasomotor disturbances existed before operation, these were in no instance intensified On looking up the standard works on orthopaedics I cannot find any definite instructions as to operative procedure by one author we are advised to divide the hamstrings and by another the tight structures, but as far as I can judge a standardized operation has been formulated

At the Shropshire Orthopaedic Hospital I am told that at least an average of three months is required to straighten bad cases, and even then subsequent operation may be required It is obvious that all preventable deformities which follow poliomyelitis will become fewer and of less severity as orthopaedic after-care schemes become more general, but for the present I am afraid we shall meet with them from time to time

In the cases under discussion three were bilateral and eleven unilateral, all displayed an extreme degree of paralysis, muscular power, if present, being represented solely by the ilio-psoas or the tensor fasciæ femoris None of the bilateral cases had attempted to walk since the onset of the disease, and two of the three cases had never walked All the unilateral cases were "dangle legs," and walked either with two crutches or with one crutch on the affected side round which the withered and useless limb was crooked Where the triple deformity of hip flexion, knee flexion, and talipes equino-varus existed, as in most of the cases, the knee condition was dealt with first, this was followed by a Soutter's operation where required, and finally reduction of the foot deformity with stabilization finished the operative sequence The youngest case was 10 years old, with onset at a few months, and the oldest 41 years, with onset at the age of 7 Two other adults were over 35—one paralysed at 12 months, and another at 6 years Twelve cases were of pure flexion, it is interesting to note that the degree of posterior tibial luxation is slight or absent in all paralytic cases unless one of the hamstrings escapes Two cases had marked posterior luxation and external rotation of the tibia in consequence of the biceps alone retaining function

The degree of flexion varied from 30 to 100 degrees, all measured during passive extension of the joint The average deformity lay between 45 and 60 degrees The longest paralytic history was thirty-six years, he had 100 degrees of flexion with marked luxation and external tibial rotation In this case by open operation the deformity was very markedly reduced and I was able to perform an arthrodesis of the knee simultaneously without any undue removal of bone This procedure, combined with foot stabilization, enabled him to walk very well with nothing but a surgical boot with 4 in elevation The shortest paralytic history was six years In this case I am prepared to admit that with prolonged stretching an open operation might have been avoided, but where paralysis is so extensive that future tendon transplantation is out of the question, one is guided solely by the principle of surgical democracy As is well known, forcible extension of a flexed knee by manipulation may be productive of a tibial luxation where this has not previously existed

Operation

The patient is turned on his face and a sandbag is placed beneath the lower third of the femur, an assistant holds the foot and steadies the limb, and produces extension of the knee when called upon to do so, no tourniquet is used A vertical incision in the middle line of the posterior aspect of thigh and leg is carried from the mid-point of the thigh to the junction of the upper and middle thirds of the leg The deep fascia is incised and is found to have undergone adaptive shortening, the skin is widely undercut, and a transverse incision is made through the fascia about the joint level The muscles bounding the popliteal space are dissected from the large mass of fat which surrounds the popliteal vessels and nerves and which is found to extend down to the popliteal fascia and the popliteal surface of the femur This mass of fat is very much more pronounced in these cases than in normal limbs Where hamstring tendons are tight (11 cases) all should be divided, care being taken that the external popliteal nerve is freed from the inner surface of the biceps muscle at the point of section of the latter The vessels and nerves are freed in the fat mass from the inner hamstrings and the inner head of the gastrocnemius, this can be done by sharp or blunt dissection but I have found that the easiest method of separation is by means of gauze on the glove finger Muscular branches to the inner head of the gastrocnemius and the superior and

* Read before the British Orthopaedic Association May 16th 1924

inferior internal articular arteries will require ligature The inner head of the gastrocnemius is isolated, divided at its origin, and the muscle turned down The fatty mass is then pushed to the outer side until the azygos vessels are seen perforating the joint capsule, these are divided between forceps and ligatured, and it is then found that by retraction and further dissection the entire mass, which includes vessels and nerves, is freed from the posterior aspect of the joint which is now in full view In two cases there was no shortening of the hamstrings at all, in fact it was difficult to differentiate the muscles on account of the fatty degeneration, and section of the muscles was solely undertaken to get a better view of the ligament of Winslow Transverse section of the capsule is accompanied by forcible extension of the leg by the assistant, it is found that no very definite extension is gained until the posterior ligament is fully divided from side to side, thus section includes the short external lateral ligament and the tendon of the popliteus I have not yet satisfied myself as to whether the popliteus is ever a deforming factor, as I have never seen the flexion deformity combined with internal rotation of the leg The posterior articular surfaces of the femoral condyles now appear in the capsular wound, which becomes elliptical in shape as the result of extension of the leg The posterior crucial ligament is now seen as a tight band which prevents full extension of the joint, on section of this ligament the limb easily extends, *often by its own weight It is some* times necessary to dissect out the popliteal nerves from the fat mass to enable them to take a more superficial and direct course The popliteal artery rarely appears tense, circulation in the foot generally returning within a few minutes In only one case have we had to delay full extension for a day or two here the last 20 degrees was obtained in this space of time by the use of gradual extension on a bed splint The case is nursed for a fortnight in a bed splint and when the sutures are removed the limb is encased in plaster the hip and foot deformities are subsequently treated as has been stated The shortening varies from 1 in to 4 in, and the patient is taught to walk with a high boot and calliper Passive movements of the knee are encouraged in all cases, so that in adults a jointed calliper can be substituted later In one case manipulation under an anaesthetic was required to produce knee flexion beyond *60 degrees*

The operation is one of simplicity, and the only points that I wish to emphasize are

(*a*) Section of the inner head of the gastrocnemius and the mobilization of the vessels and nerves to the outer side of the joint The weakening of the gastrocnemius does not appear to have any detrimental effect later and no calcaneus deformity has arisen in connexion with *foot* stabilization

(*b*) The division of the whole of the posterior ligament from side to side, and more particularly the importance of section of the posterior crucial ligament, which I regard as a prime deforming factor

Table of Cases

Case	Initials	Sex	Age	Limbs Affected and Duration.
1	G H	M	10	Both legs useless from birth
2	L. H	F	10	Both legs useless from birth
3	J	F	35	Left fifteen months
4	P	F	24	Right on set at age of 4 years
5	H	F	36	Right six years
6	A H	M	41	Right onset a age of 7 years
7	C W	M	14	Right two years
8	E J M.	M.	12	Right onset at age of 7 years.
9	H W	M	12	Left one year
10	H M	M	15	Right onset at age o 3 years.
11	G M	F	14	Right on set at age of 3 years (In hospital)
12	H M	F	14	Both never walked right (In hospital)
13	B W	F	19	Right onset at age of 2½ years (In ho pital)
14	M D	F	22	Left onset at age of 15 months

THE THEORETICAL FOOD REQUIREMENT OF INFANTS

BY

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THERE seems to be a great diversity of opinion regarding the food requirements of infants during the first year of life This is probably due to the fact that during this period *the infant can only* give expression to its needs in a very inadequate manner There can be no doubt that many infants are underfed, while others are greatly overfed Overfeeding is however, probably less common than underfeeding because usually unmistakable signs of gastro-intestinal disturbance are displayed before overfeeding has been persisted in for any length of time With underfeeding on the other hand, the signs are less striking and appear more gradually

Most of the textbooks on pediatrics give instructions regarding the nature and composition of the food that *should be given* but there is a very striking variation in the quantity recommended by different authors For example Still[1] advises that at 3 months of age an infant should be fed six times a day with a milk mixture containing milk 1½ oz cream (48 per cent) 1 drachm and sugar 1 drachm such a diet being equal to about 400 calories a day Hutchison[4] would give a child of the same age

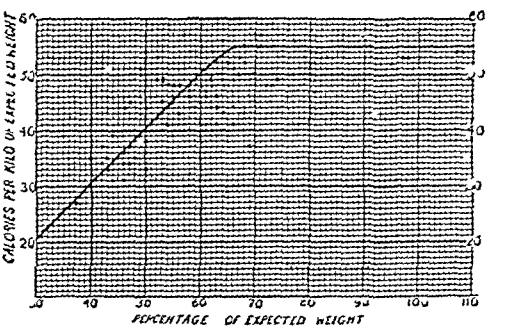


FIG 1.—The basal metabolism of infants under 1 year per kilo of expected weight and degree of emaciation.

seven feeds consisting of milk 1½ oz and sugar 1 drachm equal to 300 calories a day while Thomson[12] recommends milk 4½ oz seven times a day equal to about 600 calories a day and the figure suggested by Holt[7] is 560 calories a day Thus Hutchison would give a diet with only half *the number of calories* that Thomson suggests, while Still takes an intermediate position Lusk[3] justly says The so-called 'scientific feeding' of infants is unworthy of the name unless the caloric requirement is carefully considered From lack of this knowledge babies are frequently systematically starved" For this reason and from the fact that there seem to be such divergent views on the subject, an attempt has been made, by utilizing the results of metabolic experiments to indicate the ideal requirements of infants in various stages of malnutrition Similar figures have been suggested by both Talbot[11] and Holt[6] but both these have confined themselves to the requirements of the normal infant and although the total requirements suggested by Talbot agree fairly closely with those suggested in this paper there are considerable differences in the amounts allocated to the various processes the sum of which makes up the total requirements

It has long been recognized that infants should be given quantities of food suitable for their age rather than for their actual weight[10] in other words, they should be fed according to the weight they should be for their age (the expected weight) rather than according to their actual weight Studies of the basal metabolism have confirmed this view up to a certain point, for it has been shown that the basal metabolism of infants who are within 35 per cent of the expected weight is as high as that of infants

of normal weight When, however, more than 35 per cent of the expected weight has been lost the basal metabolism rate is found to decrease *pari passu* with the degree of emaciation It seems probable, therefore, that in the given stages of emaciation a smaller amount of nourishment should be given than the amount necessary for a well nourished child of the same age (Fig 1) In estimating the food requirements other factors beside the basal have to be taken into consideration These are the amount lost in the excreta, the amount added to the body in growth, and the amount used in muscular exertion

Basal Food Requirements

The basal requirements of normal children under 1 year of age are 55 calories per kilo of expected weight After one-third of the expected weight has been lost the basal requirements grow less, and, as shown in Fig 1, when an infant is only half the weight it should be the basal requirements are only about 40 calories per kilo of expected weight This curve has been compiled from a large number of observations made by Benedict and Talbot[1] and the author,[2] on children in all stages of nutrition ranging from 20 per cent above normal weight to 70 per cent below normal weight

Amount of Food Lost in the Excreta

This is usually computed at 10 per cent of the basal requirements, but is dependent to some extent on the quantity of food taken Consequently in emaciated infants who are receiving a diet adjusted according to the expected weight but who have a relatively low basal metabolism on account of emaciation, this will possibly be considerably more than 10 per cent of the basal, and 20 per cent of the basal requirements is the figure suggested for infants who are 70 per cent below the expected weight This is shown in Fig 2

Amount of Food Required for Growth

Only the actual amount of food stored in the body is included under this heading If there is any expenditure of energy in manufacturing new tissue this must be included in the basal figures, for it is extremely improbable that a child ceases to grow while it is in a calorimeter having its basal metabolism examined With normal growth it can be calculated that during the first year of life tissue of an average value of about 5 calories per kilo of weight is added daily to the body of the growing infant[3] Emaciated infants who are gaining weight rapidly may add larger amounts, so the requirements under this heading for emaciated infants have been increased slightly, and at 70 per cent below expected weight 10 calories are allowed for this (Fig 2)

Amount of Food Required for Muscular Exertion

It is impossible to give any hard and fast figure for this, but it is probable that for the healthy child about 35 calories per kilo of expected weight are sufficient Talbot[12] examined the metabolism of two children, each for about twenty-two hours out of twenty-four, and he found that the heat output for twenty-four hours in the younger was 68 calories per kilo of expected weight, and in the older 55 calories per kilo of expected weight If the probable amounts lost in the excreta and added to the body in growth be also taken into account the heat output of the younger is found to have been 78 calories and the older 62 calories per kilo of expected weight These figures are surprisingly low, but it is probable that, confined as the infants were in the respiratory chamber, a considerably smaller amount of energy was expended than if they had been living their normal life By muscular exertion, crying, etc, a normal infant raises its metabolism greatly, and an increase of 65 per cent above the basal has been allowed for this This entails an addition of 35 calories per kilo of expected weight, and brings the total requirements to 100 calories per kilo of expected weight (Fig 2) It must be remembered, however, that the atrophic infant does not show the same vigour as the healthy, and in view of this a smaller allowance has been given for muscular exertion as emaciation increases, so that at 70 per cent below expected weight only 20 calories have been allocated under this heading The sum of these four allowances gives us the total calorie requirements for twenty-four hours for children under 1 year with varying degrees of malnutrition (Fig 2)

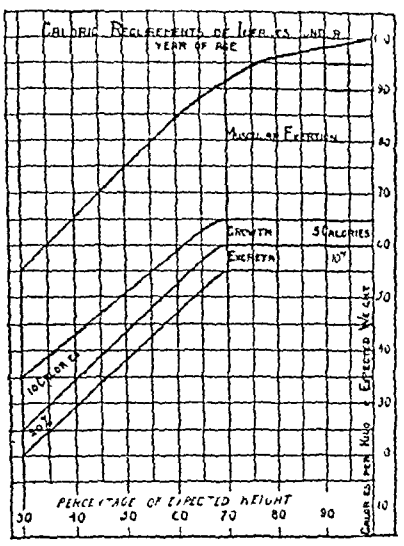


FIG 2—Caloric requirements of infants under 1 year of age

Heubner[4] considered that at birth 100 calories per kilo should be given, and at 9 months of age only 70 calories per kilo In view of the fact that it has been shown that the basal requirements are practically the same per kilo from 1 month of age till the end of the first year,[1] that the loss by excreta is practically the same, and that though there is a decrease in rapidity of growth (a small item) there is an enormous increase in muscular activity, it does not seem justifiable to give relatively less nourishment to infants of 1 year old than to infants of 1 month old It must be borne in mind, however, that there are great individual variations, and, moreover, that the calculations presented are not exact, especially regarding muscular exertion, for there must be a variation of at least 25 per cent in the muscular energy expended by infants For this reason some infants may require less nourishment than others, few, however, should require more than the amounts suggested

The nature of the food and the balancing of the diet have not been considered in this paper Only the caloric requirements based on metabolic findings are dealt with, for until these are established there can be little use in discussing whether more or less carbohydrate or fat or protein or vitamin should be given Let us first decide how much to give the infant, and then consider in what form it should be given

Conclusion

It is suggested that during the first year of life infants who are within 30 per cent of the expected weight for the age should receive a diet of a value of 100 calories per kilo of expected weight per diem, and that below this a diet of gradually decreasing caloric value should be given

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British Medical Association

PROCEEDINGS OF SECTIONS AT THE ANNUAL MEETING, BRADFORD, 1924

SECTION OF PATHOLOGY AND BACTERIOLOGY

Professor C H BROWNING, M D, President

DISCUSSION ON IMMUNITY, WITH SPECIAL REFERENCE TO SPECIFICITY AND THE INFLUENCE OF NON-SPECIFIC FACTORS

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If I can contribute anything of interest to the discussion to-day it will be based upon work which has been carried out during the past twenty five years in a large laboratory where, in addition to a considerable amount of research work, probably 100,000 closely controlled experiments have been done in connexion with the production and testing of serums, vaccines tuberculins, and laboratory reagents For the purpose of this paper my colleagues have generously placed at my disposal the whole of their work both published and unpublished

When carrying out the large number of tests mentioned the various laboratory workers have been constantly on the watch for the appearance of any factors that might affect the accuracy of the test or produce unexpected results Apart from one exception, referred to later we have never had any evidence that any 'non specific' factor—in the sense in which this word is ordinarily used—has affected our results My apology for emphasizing the laboratory experiences is that they must influence my point of view in this discussion I can represent mainly and almost solely the point of view of the laboratory worker

When faced with a new method which appears to promise prevention or cure the strong tendency of the laboratory worker is to say in effect, By a certain injection or treatment I can produce in every animal certain accurately measurable symptoms or lesions, or, it may be death Will this new method prevent these lesions or cure the animal in an experiment repeated one hundred times" This point of view has been present throughout my consideration of the whole problem

It is expedient to try to define the subject we are considering It seems to be impossible to define specificity" concisely, because the word has been used in therapeutics in several senses In the immunological field the word 'specificity" indicates adjustment of the remedy to the infecting agent, even to the particular strain of organism 'Specificity" has also been used as between the infecting organism and the host We all agree that diphtheria antitoxin is a "specific" remedy for diphtheria in the original immunological sense, and that quinine is a 'specific" for malaria in the second sense in which the word is used We are also all agreed in considering the use of *coli* vaccine for the treatment of typhoid fever or the injection of milk or peptone into sufferers from asthma or arthritis, as instances of "non specific" treatment

Now the whole of the tests to which I referred above have been based upon the original rigid doctrine of specificity We know that diphtheria antitoxin will save the life of a guinea-pig injected with an otherwise fatal dose of diphtheria toxin We believe this protection occurs through a definite chemical or physico-chemical reaction between the toxin and the antitoxin We know of no other substance which is neutralized by diphtheria antitoxin We know of no other substance which will neutralize the action of diphtheria toxin and that alone We believe also that antitoxin cannot be produced except as a result of the action on the living animal of a small dose of toxin We believe that we can detect 0 00000025 c cm of a "high potency" diphtheria antitoxin by the intradermal method If a minute quantity of diphtheria toxin is injected into a guinea pig's skin it will produce within twenty-four hours a red flush with slight thickening of the skin, but if a minute amount of antitoxic serum be added to the toxin before injection the toxin will be neutralized and the flush will not appear Similarly we believe that "tuberculin" injected into a tuberculous guinea-pig will produce a striking fall of temperature and death, the autopsy showing characteristic engorgement of the tuberculous tissue nearest the injection, engorgement of spleen and liver and of all tuberculous foci in the body I know of nothing that will produce this picture but "tuberculin"—that is, some product of the tubercle bacillus

It may be of interest to recall the problem set the laboratory early in the war, when tetanus and gas gangrene appeared in wounded men It was easy to produce antitetanus serum which would protect an animal against the attack of tetanus otherwise inevitable after the injection of ordinary soil containing tetanus spores It was soon discovered that *B welchii* was the cause of much gas gangrene, and a serum was produced, but it was found in the laboratory that if one obtained material from cases of gas gangrene and injected it into animals protected with antitetanus serum and anti-*welchii* serum an occasional sample produced gas gangrene in the protected animals Further research showed that the organism responsible was the *Vibrion septique* The problem of making anti-*Vibrion septique* serum was attacked and solved But still it happened from time to time that an animal injected with material from some case of gas gangrene died of gas gangrene, even though protected with antitetanus, anti-*welchii*, and anti-*Vibrion septique* serum, from these animals another organism *B oedematiens*, was obtained and an antiserum prepared *In 1918* it was possible to provide in the laboratory a serum a few cubic centimetres of which would protect an animal injected with mixed cultures of *B tetani*, *B welchii* *Vibrion septique*, and *B oedematiens* The whole of this work in several allied laboratories was based on the rigid laws of specificity

I may recall another interesting instance of specificity We repeatedly make a serum 1 c cm of which will protect a mouse against 50 million fatal doses of living pneumococcus Type I, yet we find that this serum will not protect a mouse injected with a small quantity of Type II pneumococcus which is indistinguishable by morphological or biochemical reactions from Type I pneumococcus There are at least two, probably three, groups of *B botulinus* indistinguishable except by agglutination test and by the capacity to produce serum protective only against the homologous bacillus or toxin Apparently there are two types of the virus of foot-and mouth disease, for immunization with one will apparently protect against the first strain only and not the second The foregoing are instances of rigid specificity in connexion with infectious or bacterial disease

Up to the present we have been considering only phenomena based on rigid specificity It was long before the laboratory worker found any phenomena reproducible with certainty and accurately measurable in which these rigid laws of specificity appeared to need some relaxation or redrafting There are a series of such phenomena One of the most familiar is the Wassermann reaction the serum of the syphilitic patient reacts with an antigen made from the heart muscle of a healthy human being or an animal that has not been in contact with syphilis It is of interest that in the earliest application of this test to the diagnosis of syphilis it was considered necessary to use a specific extract of the liver of a syphilitic foetus When a patient suffers from typhus fever, agglutinins of the X 19 bacillus appear though there is no certain causal relationship between this bacillus and the disease In the Forssman phenomenon we find that an injection of guinea pig kidney tissue into a rabbit causes the appearance of antibodies which will lyse sheep red blood cells We may explain this by assuming that an essential antigen to sheep red cells happens also to be present in kidney of guinea pig, horse, etc, but not in guinea pig red cells etc

While no substance other than specific antibody may neutralize a toxin, or any other substance than toxin cause

production of antitoxin, the *availability* for neutralizing action, of antibody already formed, may be influenced in several ways It was long ago shown that an animal whose blood over a long period contained a certain stable concentration of tetanus antitoxin may lose in repeated bleedings as much antitoxin as was contained in the total blood at the commencement of the experiment, and yet, without further injection of tetanus toxin, it may, after the bleeding, *replace in the circulation* as much antibody as was abstracted Glenny and Sudmersen[1] showed that a guinea-pig immunized with diphtheria toxin maintained the same concentration of antitoxin in its blood for a period of from one to two years, during this time it almost doubled its weight and gave birth to eight young, the blood of which contained at birth the same concentration of antitoxin as that of the mother throughout the observation It is fairly certain that this guinea-pig had produced during the experiment and without any further stimulus by toxin injection at least as much antitoxin as its blood contained at the beginning of the experiment I have shown that from a horse whose serum is lytic for sheep red cells one can withdraw in repeated bleedings as much haemolysin as was present initially, and yet the animal without the injection of further sheep red cells will replace in the circulation—conceivably from stores in the tissue, but almost certainly by fresh production—the whole of the haemolysin abstracted It is conceivable that other stimuli than the abstraction of blood might raise the titre of antibodies in the circulating blood, and attempts have been made to increase the production of antitoxin such as diphtheria antitoxin by the injection of agents other than diphtheria toxin It was thought some years ago that the injection of pilocarpine would increase the yield of antitoxin from a stud of horses, but this method has not justified the original claims made Recently Copenhagen workers have stated that the use of injections of manganous chloride has increased the yield of diphtheria antitoxin from horses In our hands and in those of some other investigators this method has not increased the yield of antitoxin The statement has also been made that injections of other non-specific agents—peptone, etc —will raise the titre of antitoxin in the blood

My colleague, Mr Glenny, injected peptone into a series of rabbits some of which had been immunized a year or more previously and still had a small amount of antitoxin in the body or circulation In none of these rabbits was the antitoxin concentration of the blood affected by the injection of peptone Half of a further series of rabbits which had a basal immunity received a second injection of diphtheria toxoid—that is, a secondary stimulus—and half received the injection of diphtheria toxoid twenty-four hours after an injection of peptone The injection of the peptone does not seem in any way to have affected the result

TABLE I — *Actively Immune Rabbits injected with Peptone*

Rabbit	Previous Injection	Weight in Grams	Peptone Injected	Antitoxic Value	
				Before	24 hours after Peptone
G 11	12 months	3875	9 8 c c 10% Witte	1/20	1/25
G 12	16	2725	0 68 c c 10% Witte	1/40	1/40
G 13	15	2950	9 8 c c 10% Armour	1/2000	1/2000
C 17	15	3425	1 15 c c 10% Armour	1/5	1/5

TABLE II —*Effect of Peptone on Secondary Stimulus Response*
(Actively immune rabbits injected with 5 c c B 1092 (toxoid) 24 hours after peptone)

Rabbit	Previous Injection	Weight in Grams	Peptone Injected	Antitoxic Value	
				Before	7 days after Secondary Stimulus
					units per c c
G 22	16 months	2700	0 9 c c 10% Armour	1/250	4
C 23	16	2750	—	1/50	12
C 211	3 weeks	1900	0 45 c c 10% Witte	1/250	4/5
C 213	3	2100	—	1/100	1/5
C 212	3	2100	—	1/5	12
C 214	3	3175	0 13 c c 10% Witte	1/5	3

TABLE III —*Effect of Intravenous Injections of Peptone on the Immunity Produced by the Injection of Diphtheria "Toxoid"*

			Number of Guinea pigs showing an Immunity Index of—		
			12 days	14 days	Over 14 days
Controls 5 c c B 1092 (toxoid)			0	1	3
			0	2	4
			0	2	4
			0	1	1
			0	6	11
Peptone Injected	Dose in mg per gram of body weight				
Witte	1/2 or less	Before toxoid	0	2	6
	1/4	11 and 13 days after	0	2	4
	1/8	11 and 13 days after	0	2	1
	1/8	11 and 13 days after	1	3	2
	less	11 and 13 days after	—	2	4
			1	11	17
Armour	1/6	Before toxoid	0	2	1
	less	Before toxoid	0	3	3
	1/6	3 and 5 days after	0	1	2
			0	6	6
	1/3	3 and 5 days after	0	2	1
	1/3	3 and 7 days after	2	0	0
	1/6	6 days after	1	3	2
	1/6	8 days after	2	1	1
	1/6	11 and 13 days after	1	2	0
	1/6	11 and 13 days after	0	4	2
	less	11 and 13 days after	1	3	2
			7	15	8

Yet Dale and Kellaway with Cowell found that "non specific" substances such as peptone or normal horse serum had an interesting effect on sensitized animals These workers showed that if one injected serum protein or crystalline egg albumen into a series of guinea-pigs the animals became sensitized by the albumen, so that the well known phenomena of fatal anaphylaxis immediately followed the intravenous injection of small doses of protein, but if to a sensitized guinea-pig an injection of normal horse serum or peptone was given prior to the injection of the sensitizing protein the animal was able to tolerate the dose of albumen that killed his fellow

Kellaway and Cowell examined and rejected the suggestion that the antibody to the egg albumen, present in the sensitized guinea-pig, is released by the action of the injected peptone from its home in the body cells and appears free in the circulation, ready there to meet and neutralize the incoming albumen They concluded that the "desensitization" of the sensitive animal was due to some temporary alteration of the molecular constitution and reactivity of the muscle cells of the body *It may be* that this experiment is one of a series of phenomena that have some general resemblance to each other We can distract the attention of the apparatus of the body so that it does not function as it would were its attention not otherwise engaged, one may, so to speak, "crowd out" a certain function of the apparatus My colleague, Mr Glenny, finds a suggestion of this phenomenon in several series of experiments on immunity in connexion with diphtheria toxin If one injects a mixture of diphtheria toxin and antitoxin into a rabbit the animal will quickly become immune If, however, one gives an injection of cow serum to a rabbit and after an interval of four weeks gives another injection of cow serum, followed four days later, when the formation of precipitin in response to the second injection of cow serum is in full flood, by an injection of a mixture of diphtheria toxin and horse diphtheria antitoxin, the prophylactic mixture now entirely fails to immunize the animal Apparently the serum factory in the rabbit's body is so fully engaged that

it has no energy to spare to make diphtheria antitoxin in response to the injection of prophylactic

We now arrive at the more definite consideration of measures commonly considered as "non specific" We may here put a series of questions

1 Do non specific agents release protective antibodies into the circulation? I can find no clear proof based on animal experiment that they do But one series of experiments bearing on this point may be of interest Mr Glenny has very kindly allowed me to quote from an unpublished paper a curious result he has obtained If one injects diphtheria prophylactic—either a mixture of toxin and antitoxin similar to the prophylactic used in immunizing human patients against diphtheria, or a diphtheria toxoid—into a guinea pig, the animal does not show any immunity for some little time, the length of time depends on the efficiency of the prophylactic After a period of a few weeks the injected animal is "Schick tested" each week At first the result of the test is positive but after a varying number of weeks the weekly test gives a negative result The number of weeks elapsing before this negative result is obtained is called the immunity index A low index obviously denotes a good antigen a high index a poor antigen From Table III we see that diphtheria toxoid in an untreated animal gives on the average an index of 14 or higher, and animals treated with Witte peptone or small doses of Armour peptone give an index of 14 or higher but the interesting result is that guinea pigs receiving fairly large doses of Armour peptone gave in twenty-two instances out of thirty an index of 14 or less It would take a great deal of work and a long series of control experiments to make certain that this result is "significant" in the statistical sense, but one cannot resist the conclusion that the lowering of the index—that is, the increase in the efficiency of the immunization—is a direct result of the injection of the peptone

2 Do these measures act favourably on specific infection? Through the kindness of Dr Auld and Dr Gow we have had the opportunity of testing on animals the effect of injections of stocks of Witte and Armour peptone which had given favourable results in the treatment of human beings These peptones were used in the laboratory in various experiments I am indebted to three of my colleagues for some attempts to discover whether injections of these peptones could produce any effect in animals injected, together with adequate controls, with a known minimal lethal dose of various agents I chose a typical toxin—diphtheria the pneumococcus—cause of a typical bacterial infection and a bacillus that acts probably partly by intoxication and partly as a bacterial infection—*B dysenteriae* Shiga These three agents were chosen because we are constantly experimenting with them and the exact doses of the various agents and the reactions of the animals thereto were well known to us, we could thus feel fairly confident that no obvious fallacy in the experiments would be overlooked

Diphtheria Toxin—A matured toxin was taken the minimum lethal dose of which was known Four guinea pigs were given one certain fatal dose all were dead by the fifth day Four others were given Armour peptone (1/6 mg per gram of body weight intravenously) twenty four hour pre iously all four were dead by the fifth day The peptone had no influence on the time of death

Culture of Pneumococcus—Two series of experiments were carried out in which 98 mice were used A dose of culture (0 0000001 c cm) was given to the whole of the first series of mice The peptones (Armour and Witte) were given intravenously twenty four hours after the pneumococcus culture Of the 10 mice receiving the culture alone 7 died of 32 receiving the peptones after the culture 18 died In a second series a more virulent culture was used Of 12 mice injected with culture 11 died of 35 mice receiving culture followed by peptones 30 died No significant difference between the death rate of those receiving culture alone and those receiving also Armour and Witte peptone is discernible Three doses were cho en The smallest corresponds fairly closely per gram of body weight with that ordinarily injected by clinicians into human beings the largest or shock dose is near that which produces a definite temperature disturbance and obviously affects the behaviour of an animal and is not far below the lethal dose a dose halfway between these was also used The figures of the two experiments do not show any influence either favourable or unfavourable exercised by the peptone

Dysentery (Shiga) Toxin—Two doses of toxin were chosen In the first series 0 1 mg of toxin in the second 0 15 mg was mixed with a standard quantity of antitoxin—that is 0 025 c cm It was known that the lower dose of toxin in the toxin antitoxin mixture would kill about 50 per cent of mice it killed in the experiment 3 out of 6 injected The larger dose or toxin killed all of 6 mice injected The toxin antitoxin mixture were given to two mice groups of which received by three cheese doses of two mice six hours later In the first series of 18 mice in excess of 9 died in the second of 23 mice injected 21 died The peptone appears to have had no influence on the result

The net result of the experiments is that when we used animals receiving these particular doses at the times indicated, no protective or curative effect could be traced in any of these intoxications or infections It is of course possible that with other doses and other time relationships different effects might have been obtained It is also true that the infections and intoxications constituted a severe test and are not those in the treatment of which the clinician has obtained his most favourable results We cannot easily produce in animals either chronic arthritis or conditions such as asthma, hay fever etc and it is in diseases of this kind that careful clinicians have convinced themselves that favourable results follow the use of these peptones State ments are also made that the administration of non specific agents may protect animals against various alkaloid We have examined only one of these statements Starkenstein stated that milk would protect rabbits against a fatal dose of strychnine given about an hour later My colleague Dr Trevan, took two series of rabbits, six in each The rabbits were divided into pairs of approximately equal weights, to one rabbit of each pair was given 0 2 mg of strychnine intravenously per kilo or body weight to the other, 5 c cm of milk per kilo were given intravenously between half and one hour before the dose of strychnine Of the six receiving strychnine and no milk, four died of the six rabbits receiving milk and strychnine three died The administration of the milk has apparently not influenced the result of the injection of strychnine

3 Are non specific measures activating agents? If we knew more exactly how the various infections and intoxications produced their results it would help us in our consideration of the clinical records of "successful" cases of protein therapy To take a crude illustration if we knew that a given toxin—for example that causing asthma —produced its symptoms by stimulation of the vagus nerve and that a certain alkaloid could correspondingly depress the activity of that nerve we could conceive that the alkaloid or a peptone containing it might cure asthma Dale and Miss Robertson have shown that the toxin of *Vibrion septique* has a digitalis-like action and produces a great fall of blood pressure and that antitoxin whether given previously to the animal or mixed with the toxin before injection, prevents this fall of blood pressure

But, unfortunately we have very little accurate knowledge on which to base hypothesis If we knew that the occurrence of a leucocytosis would favour cure in pneumonia we could readily see that the injection or substances of the nucleins and the tallianine class which can cause a leucocytosis as well as an increase in opsonin might act advantageously in the treatment of pneumonia Unfortunately we have no certain evidence that the injection of such substances will protect or cure either experimental animal or human beings suffering from pneumonia

We know that the injection of various non specific agents may produce great changes in the blood and changes in coagulability in the proteins cellular element and platelets It is easily conceivable that these changes are associated with changes in some natural mechanism of defence differing from those ordinarily recognized by immunologists

It is tempting to entertain the suggestion that an injury to body cells however caused calls into play the appropriate defensive mechanism and that whether this injury to cells be caused by the injection of calcium vaccine or peptone or as in the recent deeply successful results of Wright and his colleagues by the reinjection of treated blood or by exposure to light stimuli, the effect is a stimulation of natural defence in which presumably the leucocytes play an important part Defensive processes other than those ordinarily recognized by immunologists have been outlined by Dale in his suggestive discourse at the Royal Institution in May 1922 (see also *Physiological Reviews*, III, 3, 1923) In considering the conception or

chemotherapy brought forward by Ehrlich, and his own researches with derivatives of emetine, Dale draws attention to the evidence indicating that Ehrlich's original hypothesis of the direct parasitotropism of the "chemotherapeutical" group of drugs does not fully explain the phenomena observed He points out that the action of emetine compounds in the treatment of dysentery, of salts of antimony in kala-azar and bilharziasis, and of "205" and salvarsan in spirochætal and trypanosome infections, cannot be fully explained by the effects of these drugs on the various infecting agents in the test tube The body cells must presumably play an intermediate and all-important part in producing the favourable therapeutic effect of these drugs, possibly a new therapeutic agent is formed by the union of the drug and the patient's cells, or a specific product formed by the body cells in response to the injection of the chemotherapeutic agent

This mode of action we are considering is presumably essentially different from the direct physical or physiochemical union between a toxin and its antitoxin It is possible that the injection of non-specific protein "activates" groups of defensive body cells in a manner similar to that hypothecated for the chemotherapeutic agents above mentioned

4 Is the evidence that the non-specific agents have any favourable remedial effect clear and indisputable? Before reviewing the difficulties the clinician must face in endeavouring to prove any hypothesis it may be of advantage to pause for a moment and consider the nature of the proof demanded in an immunological laboratory The determining of a minimum lethal dose or the test dose of a toxin or antitoxin will serve

TABLE IV —*Minimum Lethal Dose, Shiga Toxin A A*
(Intravenous Injection Mice)

Amount of Toxin in mg.	No Dying	No Living	Percentage Deaths	Amount of Toxin in mg	No Dying	No Living	Percentage Deaths
0 1	1	0	100	0 015	8	6	57
0 05	1	0	100	0 01	9	9	50
0 04	6	0	100	0 0075	5	7	42
0 03	5	1	83	0 005	4	12	25
0 025	13	3	81	0 0025	0	8	0
0 02	13	3	81				

TABLE V —*Determination of "Test Dose" of Toxin AA*
(Intravenous Injection Mice Antitoxin C 950 0 025 c c constant)

Amount of Toxin in mg.	No Dying		No Living		Percentage Deaths Seventh Day		Percentage Deaths Fourth Day
	R	S	R	S	R	S	R
0 25	22	—	0	—	100	—	100
0 2	35	14	0	0	100	100	88
0 15	32	21	3	1	93	95	68
0 125	15	16	5	2	75	84	55
0 1	11	8	9	11	54	44	20
0 05	3	3	5	10	37	23	37

R and S were two observers working independently in separate laboratories

Tables IV and V show the results obtained in endeavouring to determine the lethal dose and test dose of dysentery (Shiga) toxin Whereas we must use 0 04 mg of toxin for 20 gram mice in order to cause 100 per cent of deaths, it is not until we drop the dose to 0 005 mg that we find that 75 per cent of the mice survive When titrating the toxin against a fixed dose of antitoxin we find that it is necessary to take 0 2 mg of toxin before we get 100 per cent mortality, whereas 0 05 mg kills from 25 to 30 per cent of animals

Dr Trevan has kindly allowed me to quote, from a paper he is preparing, some results of injecting insulin into mice whereas a dose of 0 0006 mg per 20 gram mouse may produce hypoglycæmic convulsions or death in an occasional animal (4 5 per cent), a dose one and a half times as large will cause convulsions or death in 45 per cent, and it is not until we give a dose four times as great that we obtain convulsions or death in almost every mouse injected If the range be thus wide when we use inanimate toxic agents, it will be much wider when using living culture for our test, in properly controlled experiments, in order to kill 100 per cent of animals we may, then, require ten or more times as much as will kill an occasional animal Therefore if the statement that a certain "non-specific" medicament will protect against a lethal dose of culture were made we should demand a very large number of control animals before we should be ready to accept the statement

We realize from these figures that even where we have complete control of the animals under treatment we must proceed statistically, and, in order to prove indubitable protection or cure, must use a considerable number of experimental and control animals In transferring his attention from laboratory experiments to results obtained at the bedside, the laboratory worker becomes vividly alive to the fact that the difficulty of proof where human beings are concerned is incomparably greater than in laboratory experiments, and that the clinician has a more difficult task than his colleague who works with animals and test tubes The laboratory worker must pay a profound tribute of respect to the achievements of the clinician in the face of immense difficulties But this sympathy and admiration must not allow us to lower the standard of evidence that we ask before we are convinced We remember that the guinea-pig is insusceptible to suggestion, and that it does not know whether it is to expect amelioration or not from the material given Some of the evidence brought forward in support of non-specific therapy will not bear any reasonable critical examination, and is presumably born of the courageous optimism of the clinician in his deep wish to benefit the sick It is particularly in the treatment of the infections that the evidence appears to me to fail under criticism It may be that the administration of *coli* vaccine does materially influence the course of typhoid fever and of arthritis, but we feel that we must have more evidence before accepting the claim Remembering the effect of non-specific proteins in anaphylaxis shown by Dale and his co-workers, one is more prepared to believe that non-specific agents may have some effect in the group of diseases consisting of asthma, hay fever, the specific urticarias, and migraine After seeing the results of cases which Dr Auld very kindly showed me, it is difficult not to believe that the peptone injections have been the cause of the huge measure of relief following on courses of injections given to patients who had suffered from persistent asthma for many years

In reviewing the whole question we may ask ourselves, What will the future history of protein therapy be? Are current views of the real usefulness of protein therapy so firmly based that the treatment will become a permanent addition of value to our therapeutic armoury? We remember that non-specific therapy has been advocated for about two decades, and that its use is still limited to a comparatively small number of medical practitioners, one does not find in the records of the past few years any clear evidence that the mortality of typhoid fever or the severity of the attack is always favourably influenced by the use of non-specific vaccines, or that non-specific agents have been so successful in the treatment of chronic arthritis and similar diseases that we can hold out great hope of cure or material alleviation to every sufferer from this disease

The laboratory worker must pause in self-examination and wonder whether such thoughts arise from deep rooted orthodox conservatism and a repugnance to the acceptance of anything new, but he will feel justified in clearing himself, at least to some extent, when he remembers how avid the whole medical world is for new things of proved value in the fight against disease, the eagerness with which it has seized pituitary extract, adrenaline, salvarsan, "205," and insulin A doubt must perforce make itself felt in our minds when we compare the slowness of the acceptance of the claims made for non-specific therapy

In conclusion, the laboratory worker must always

remember that, while his object is to seek truth, the physician has the harder task—he must also cure his patient When we attempt to form an opinion as to the exact degree of permanence and truth there is in the present clinical estimate of the utility or non specific agents, we must retain an open mind and be prepared to believe in convincing evidence when it is produced, however little it may accord with the immunological explanations hitherto current in the laboratory After all, it is difficult to conceive of a more rigid specific requirement than that the ovum of a given species will not develop unless fertilized by the specific sperm of that species, and yet Loeb's "fatherless frog" must again warn us that nothing is incredible except that which has not yet been proved

1 Journal of Hygiene 1921 xx 191 REFERENCE Wrench Med Rec 1919 vol 66 1

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CHEMICAL STRUCTURE AND SPECIFICITY

THE subject of this discussion directs special attention to the most striking characteristic of immunity reactions—namely, their specificity By means of immunity reactions a distinction can be made between substances which by all known methods of chemical analysis appear to be identical Dean,[1] in his address to this Section last year, remarked that a discussion of specificity would involve a review of the whole field of immunity, and he pointed out that the specific nature of the immunity reaction and the nature of the presumably chemical reactions underlying it remain as great a mystery as ever It may be of interest to review very briefly some of the attempts which have been made in recent years to produce chemical evidence which would explain or throw some light upon the specificity of immunity reactions

A good deal of work has been done in recent years on the composition and structure of the proteins of serum and egg albumen Pure preparations of these substances have been made and examined by different chemical procedures, and they have also been studied extensively by immunological methods Analyses of the different protein of ox and horse serum by the method of Van Slyke reveal many interesting features The analytical figures obtained for the total protein of ox and horse serum as well as the albumin and globulins from each type of serum reveal no points of difference between corresponding proteins immunity reactions, on the other hand, demonstrate that these substances are essentially different The analysis, however, shows that albumin is different from globulin the difference is particularly marked in the basic nitrogen fraction, especially in the lysine, and this difference in composition is also accompanied by antigenic dissimilarity It has been shown by the anaphylaxis reaction that animals injected with albumin become sensitized to albumin alone and not at all to globulin, and vice versa It was also found that sensitiveness to albumin develops much later than that to globulin, and this, together with the fact that impure preparations were probably used by earlier workers, accounts for the diversity in results which they obtained The analyses also show that pseudo globulin and euglobulin, at least as regards their nitrogen distribution are identical Miss Chick[2] has suggested that euglobulin is merely pseudo-globulin united in some way with lipoids, and there is a good deal of evidence, in addition to the analyses of these substances, that this is so When the antigenic properties of the globulins were investigated it was found that a rigidly specific sensitiveness to euglobulin occurred comparatively frequently, pseudo globulin, however sensitized to either pseudo-globulin or euglobulin, although considerable to the former was always definitely superior There was a certain amount of overlap of antigenic properties, whether this is due to incomplete separation of the globulins, or to a difference in the state of dispersion due to the occurrence of lipoid in euglobulin, or to a real difference in structure small in extent yet sufficient to account for disparity in antigenic properties, has not yet been determined

The information yielded by an analysis of protein by Van Slyke's method is necessarily limited, by its means the relative amounts of the different amino-acids are determined, but no knowledge of the manner in which the amino-acids are combined within the molecule is obtained It is obvious that even in the case of two proteins composed of the same amino-acids in identical proportions these units may be joined together in an almost infinite number of different ways If the specific antigenic properties of a protein are dependent at all on chemical composition, then the arrangement of the amino-acids within the molecule is probably as important as the proportions in which they occur Any method which would enable us to ascertain the manner, or order, of linkage of amino acids would ferrer out the subject of specificity being carried a stage further, and Hoagland and Wells's[3] method of protein fractionation may be regarded as a stage in the study of the stereochemistry of proteins Dakin has shown that when a protein is incubated at 37° C for three weeks in a feebly alkaline solution a number of interesting changes occur is no longer capable of digestion by proteolytic enzymes and is excreted unchanged in the faeces When injected into animals it is excreted unchanged in the urine, and Tennant Brooks showed that such proteins are incapable of eliciting an immunity response Moreover, when such a protein is hydrolysed it is found that certain of the amino-acids have been racemized, while others retain their optical activity Dakin has given reasons for believing that the amino-acids which escape racemization are those occurring at the ends or the long peptide chains of which proteins are composed

Dudley and Woodman[4] racemized the caseinogens from sheep by the same method which Dakin and Dudley[5] used for cow's caseinogen Most of the amino-acids from the two proteins displayed the same optical properties, indicating a close similarity of structure But well defined differences were observed as well The tyrosine and leucine from cow's caseinogen were inactive, while these amino-acids from sheep's caseinogen were respectively laevo- and dextro-rotatory Later, Dudley and Woodman[6] investigated euglobulin and pseudo-globulin from colostrum, and, in this case, no difference in the optical properties of the amino-acids could be detected Now caseinogen shows considerable overlapping in their antigenic properties, while chemical examination shows that they are structurally different On the other hand, the globulins, as far as examination has gone up to the present show no structural dissimilarity, but do exhibit some degree of antigenic independence The results in these two cases, therefore, seem to discredit the view that specificity depends upon molecular arrangement It must be remembered, however, that the racemization method reveals only one kind of structural arrangement affecting only the edge of the pattern of the molecule, as it were It may well be that other structural differences of greater magnitude occur which are not revealed by this method and there may be discovered other methods which will throw light on the stereochemistry of other parts of the protein molecule

Dakin and Dale racemized the albumins from hen's and duck's eggs, particularly pure recrystallized preparations being used To ordinary chemical analysis these substances, like the caseinogens and serum globulins are indistinguishable The racemization method showed that the optical properties of eight amino-acids were identical, but in the case of three others—histidine leucine, and aspartic acid—definite differences in optical activity were observed The also showed that the two albumins behave as distinct antigens in the anaphylaxis reaction—an instance of structural difference accompanied by antigenic independence

Chemical investigations pursued on quite different lines by Avery and Heidelberger[7] have also yielded results which may explain type specificity of micro-organisms They have isolated from autolysed cultures of pneumococci the substance which precipitates specifically antipneumococcal serum or the homologous type and they have also demonstrated the presence of this substance in the blood and urine or experimental animals and lobar pneumonia patients The purest of their preparations contained 12 per cent of nitrogen Type II pneumococcus, contained 1 2 per cent or nitrogen a trace or phosphorus, and sulphur was absent This substance is essentially a polysaccharide, although not absolutely pure and yields 79 per cent or glucose on

hydrolysis A precipitate was formed with Type II antipneumococcus serum only, the substance is incapable of stimulating antibody production, though serologically it is sharply type-specific They have also prepared the bacterial protein of the same type of organism, and have found that this is group-specific but not type specific, since it precipitates equally well antipneumococcus serum of all three types

The chemical evidence as yet available to explain specificity is not large The few instances given show, however, that a beginning has been made, that methods of attack have been devised, and that the possibilities of future developments and increase in our knowledge of this subject, so full of fascinating interest to the chemist and the biologist, are not inconsiderable

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THE SPECIFICITY OF ACQUIRED IMMUNITY AND NON-SPECIFIC FACTORS IN IMMUNIZATION

THE specificity of acquired immunity has been one of the basic principles in immunization, and, while this principle has dominated the study of immunity and its applications, non-specific factors have long been recognized in the resistance of the tissues to microbic infection—for example, the reaction of inflammation, phagocytosis, the normal opsonin and alexin of blood serum Resistance, both natural and acquired, may represent, not one reaction between host and parasite, but the summation of various factors, certain of which we still imperfectly understand

The specific nature of acquired immunity and the high degree of specificity of antibodies are unassailable facts in any consideration of the subject under discussion On the other hand, granted that immunity even partly depends on a non-specific mechanism, it is only reasonable to suppose that non-specific stimuli may influence resistance At the same time, the possibility of developing a specific immunity by heterologous effects must also be considered in view of the recognized occurrence of the so-called heterogenetic antibodies *

The clinical evidence that has been accumulated in support of "non-specific immunization" can hardly be dismissed simply because the data do not always supply the most convincing scientific proof, though undoubtedly the results of such procedure may easily lead to fallacious interpretation It must be noted that non-specific immunization has been applied almost entirely for therapeutic purposes—that is, as an additional influence where the primary stimulus to immunization (the infecting organism or its products) is insufficient immediately to control the infection Moreover, the effects on metabolism produced by the parenteral introduction of substances used for the purpose may profoundly alter the chemical reactive processes of the tissues to the invading organism, on which the specific immunization depends The whole question merits practical analysis by laboratory and experimental tests In this contribution to the discussion I shall confine myself to those aspects of the subject with which I am familiar from personal observation

In laboratory work proof of specificity on the one hand or of non-specific immunization on the other might be based on *in vitro* immunity reactions or animal protection experiments It might be shown that specific serum antibodies are produced or increased in amount in response to some heterologous antigen or other non-specific stimulus The question, of course, arises in this connexion as to whether antibody production is equivalent to immunity Antibodies may not invariably represent the actual mechanism of specific resistance, but they undoubtedly indicate the reaction of the tissues to the particular antigen which is the essence of acquired immunity By animal experiment increased resistance to an infection, resulting from some heterologous stimulus, might possibly be demonstrated, but data indicating such effects must be sufficiently uniform, the experiments and controls sufficiently numerous, and the test dose of virus of such potency as to exclude fortuitous results that could be fallaciously interpreted as non specific effects due to the variation in the action of the virus on different individual animals, especially when inoculated in small doses On the other hand, if the test dose is excessive, even an increased resistance may be overcome and negative results under these conditions would be of no significance (see Harvey and Ivengar)

Antibody reactions illustrate in the most striking fashion the specific nature of immunity, and the specificity of antibodies constitutes one of the most outstanding of biological phenomena Specificity has been extensively studied in terms of these reactions, and on this basis antibodies were originally regarded as specific for the biological species, as exemplified in the typhoid paratyphoid group On the other hand, antibody specificity may be more restricted, and, as is well known, may be limited to "serological types" within a recognized species, which do not differ when tested by other criteria Extreme limitation of specificity is seen where antibodies are specific for the individual strain, as in the case of the "typical" coliform bacilli (Mackie) Thus antisera agglutinating the strain used for immunization in high titres may have relatively little effect on strains found to be identical by other methods as well as on allied strains exhibiting different biochemical characters The same individual specificity is true also for agglutinin-absorption tests Among other subgroups of coliform bacilli, however, specificity is not restricted to individual strains Specificity of agglutinating antibodies for individual strains has also been recorded in other groups—for example, the haemophilic bacteria (Maitland and Cameron)

An interesting illustration of restricted specificity has been observed among the so-called paracholera vibrios, though not so limited as in the case of the typical coliform bacilli While a number of serological types could be recognized (represented by multiple strains even from widely different sources), a considerable proportion of individual strains in the series studied could not be classified in this way—that is, their antisera agglutinated only the strain used for immunization, as in the *B coli* group (Mackie)

These facts regarding restricted specificity all tend to emphasize the specific factor in immunity Specificity, however, may only be represented quantitatively "group action" exemplifies this In the *B coli* group the specificity of the complement deviating antibody for the individual strain can only be elicited by carefully adjusted quantitative tests A marked group reaction with strains differing considerably from the homologous organism is characteristic of this antibody effect, though it is slight in the case of the agglutinating antibody (Mackie) Thus the demonstration of specificity may depend to some extent on the type of immunity reaction investigated

While the specificity of agglutinins for the individual strain is the general rule among the typical coliform bacilli, an antiserum may exhibit agglutinins which react even more powerfully with a heterologous strain than with the strain used for immunization Such "paragglutination" is apparently a function of the particular antigen

The serological reactions of the dysentery group have thrown some light on the question of antigenic specificity Thus various antigenic components may be represented by each biological type and the strains can be classified according to the preponderance of particular components Multiplicity of antigenic components in any one species, the preponderance of certain of these over others in individual strains, and the existence of components common to widely different biological types, would explain to some extent the occurrence of serological types, individual specificity, paragglutination, etc

* Antibodies specific for an antigen which has no obvious biological relationship to that acting as the immunizing influence

An apparently non specific reaction demonstrable by anti body effects is well exemplified in the case of paratyphoid infections occurring in persons vaccinated with *B typhosus* at a time when the post-vaccine typhoid agglutinins have almost disappeared from the blood The paratyphoid infection leads apparently to a renewed production of the typhoid agglutinins (Mackie and Wiltshire) Other in fections may also produce the same effect Thus hetero logous antigens may increase the output of antibodies after the tissues have already been sensitized as it were by a specific stimulus Thus, of course, does not imply that these specific antibodies can be initially produced in response to a heterologous antigen The reappearance of latent agglutinins has also been demonstrated experimentally (Jaggi) On the other hand, a particular antigen may more readily incite the development of specific antibodies after the tissues have been sensitized by a heterologous antigen (Kilmolkar)

As is well known, specific antibodies may occur in the blood serum of man and animals apart from any obvious immunization with antigen and the so called heterogenetic antibodies may represent an increased output of antibodies (as the result of some non-specific influence) which the tissues are normally capable of producing in minimal amount Thus Forssman's heterophil antibody* represents an increase of an antibody naturally present in the blood It has been shown, however, that certain antigenic substances act as powerful incitants of this antibody and it is possible that the homologous and heterologous antigens may possess some common chemical structure on which the immunizing property depends

The undoubted fact that specific antibodies occur naturally apart from any stimulus with the homologous antigen and that these antibodies may be increased in the blood by heterologous stimuli is of some significance in any considera tion of non specific immunity

The increase of antibody output by non-specific effects is of great practical importance and has been studied by various workers It is of particular interest that apart from protein antigens, simple chemical substances injected parenterally have been stated to act in this way Thus Walbum has claimed that metallic salts, possessing a cataltic action when injected intravenously exert a marked influence on antibody production This has been disputed by McIntosh and Kingsbury and by the opener of this discussion

With a view to investigating the influence of non specific effects on antibody production a number of experiments have been carried out in which the influence of various substances on the natural haemolytic antibody of rabbits for sheep's corpuscles (*vide supra*) was tested This antibody has been found to be remarkably constant in normal animals over considerable periods – as evidenced by tests in a considerable number of control The active production of this antibody in the normal animal so that it is maintained at a fixed concentration in the blood is evidenced by the fact that even after successive daily bleedings representing a total withdrawal of 124 c.c.m of blood (in a 2 kilogram rabbit) the content in the serum remained at its original value This in itself must be taken to represent an increased output of antibody into the blood due to a non specific stimulus I shall only refer here at present to certain of these experiments particularly those with the metallic salts, manganese and beryllium chloride

The results have been variable Manganese chloride in repeated intravenous injections has been found to produce progressive increase of the antibody up to ten times the original content In certain of the experiments however the increase has been comparatively slight in others the antibody content remained unchanged while in some instances very marked and progressive reduction of the antibody has been noted when repeated doses were given especially at short intervals The same has been found to be the case with beryllium chloride though in certain experiments marked increase of the antibody has been noted The increase is apparently temporary and several days after a single dose the antibody content falls to the original value Sodium nucleinate (intravenous) an albumose preparation (intravenous) oil of turpentine (subcutaneous) turpentine injections (subcutaneous) have been found to produce inconstant exaltation of this antibody The inconstancy and variation in these results contrast with Walbum's claims and may explain the extreme divergence between his results and those where completely negative effects have been recorded

Granted that such effects may occur in certain individual animals, they represent, not the production of a new immune substance, but merely the increased output from the tissues of a natural product

Apart from non specific effects studied in terms of antibody reactions, the experimental production or increased resistance to an infection or bacterial toxaemia by non-specific stimuli would be of obvious significance

In view of the fact that normal serum has been so extensively employed in non specific therapy the following experimental observations are of some interest

In 1917, while carrying out test inoculations in guinea-pigs with *B diphtheriae* where control animal were injected with the particular strain *plus* a certain amount of diphtheria antitoxin, I noted that these animals were almost invariably protected against lethal doses of *B diphtheriae* by normal horse serum as well as by the specific serum Subsequently this effect was studied in more detail in a large number of experiments and observations on the same subject have been recorded by others (Kolle and Schlossberger Kraus and Sordelli, Cowie and Greenthal) While some have regarded this as a non specific effect it has been difficult to interpret it as such in view of the fact that normal horse serum may exert a weak neutralizing effect on diphtheria antitoxin The possibility of the protection conferred being partly independent of the natural antitoxin has to be considered.

It was found that this protective property was not limited to horse serum, but occurred with specimens of serum from other animals The active substance in the serum was stable at 57° C but labile at 70° C The effect was a comparatively weak one as compared with the protective action of a prepared diphtheria antitoxin and no protection occurred if the serum injection was delayed for even two hours after the inoculation Occasional specimens of horse serum were apparently inactive Another interesting feature of the experiments was the occurrence of the characteristic local ulcerative lesion in animals surviving after protection Thus normal serum though protective against the lethal result of the infection had little influence on the local toxic action produced by the culture injected Diphtheria antitoxin however prevented the occurrence also of the local lesion It seemed possible that the effect might be partly independent of the specific factor and, in a series of experiments in which the serum of one guinea-pig was injected into another simultaneously inoculated with several multiples of a lethal dose of *B diphtheriae* the results compared with those in an equal number of control animals which received the same dose of culture alone and died within two days showed a 50 per cent survival and even when the test animals did not survive there was in the majority of cases a distinct delaying effect in the course of the infection (Mackie) Here the serum of the same species was injected not an alien serum from an animal of perhaps greater natural resistance to the infection or containing natural specific antibodies to the particular virus or its products

While it would be unwise to draw general conclusions from such limited observations they are still of some interest in relation to the question of non specific factors in immunization If they should be interpreted as non specific effects they at least show that such influences are in no way comparable with specific immunization

The extraordinary claim has been made that normal horse serum has proved as effective in the treatment of diphtheria as diphtheria antitoxin in a large series of comparat

* A haemolytic antibody for sheep's red corpuscles produced by immunizing rabbits with the tissues of certain animal species—for example guinea-pig

† Specimens of blood were withdrawn at intervals the serum was separated after twenty four hours and heated for one hour at 57° C kept in the [illegible] and ultimately tested with the same specimen of corpuscles

cases (Bingel) The experimental results I have observed only tend to show the striking difference in the effect of the specific and the normal serum

To sum up, while specific immunization must be regarded as the most effective method by which tissue resistance is increased, the development of an acquired specific immunity or the output of specific antibodies may be influenced secondarily by non-specific or heterologous effects

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So much has already been said by the previous speakers that I feel I have but little to add to this discussion A review of the subject from a slightly different angle, a summary of what has already been dealt with, and a correlation of different aspects of specificity in immunity may not, however, be out of place

Using the term "specific" in the limited sense implied in immunology, specificity is made use of in two ways in the study of disease (1) The diagnostic—to assist in the accurate diagnosis of communicable disease, to establish the relationship between a given disease and the micro-organism held to be responsible for its causation, to differentiate one micro-organism from another, and to differentiate between proteins derived from different species, especially different animal species (2) The second application of the specific reactions of immunity in practical medicine is the direct outcome of these diagnostic applications, and makes use of them in the preparation of vaccines and serums for the prophylaxis and therapeutics of infectious disease

In the correlation of these two applications of the science of immunology there exists a debatable ground which is of especial interest in practical medicine Before we attempt, however, to correlate these two applications of immunity it is necessary to realize that specificity in yet another sense altogether has been forced upon us because of the way in which the science of immunology has evolved I refer to the assumed specificity of structure of antibodies called forth by the inoculation of true antigens into living animals This assumption was the central feature of the side-chain hypothesis, and according to this view the structure—in a chemical sense—of the active principle of an agglutinating serum is different from that of the active principle of a lytic serum, and in turn different from those of antitoxic and opsonic serums There is no ground for believing that such structural differences exist, and indeed it would seem that all true antibodies are in this chemical sense the same, while the demonstration of their presence in a given immune serum depends upon the physical qualities of the colloidal system employed in making such demonstration In fact, antibodies appear to be not tangible entities but merely qualities, for Dr Hartley, at the recent meeting of the Pathological Society, brought forward evidence that the parenteral introduction of a foreign protein into a living animal does not result in the production of any new specific substance, at least in the blood serum of that animal, although it does result in the acquisition of new qualities by the substances normally present in the serum of that animal, it is the acquired qualities which are specific

Put simply, when a true antigen unites with its corresponding antibody, a 'complex" consisting of both antigen and serum results, and the complex so formed exhibits new qualities which cannot be expressed as the sum of the qualities of its constituents Using *in vitro* methods the formation of such complexes can be demonstrated (1) By their flocculation in presence of electrolytes—agglutination (2) By their susceptibility to solution by, or avidity for, complement—lysis and complement deviation (3) By their susceptibility to phagocytosis—opsonization Theoretically all three methods should be available in any given experiment, but practically one would be employed for one purpose and another for another

The salient fact is that in diagnostic work we make use of the reaction of the body to foreign proteins in order to determine when a particular protein is present in any substance under investigation, while the technique chosen is determined by the qualities of the protein to be investigated The tissue reactions to the parenteral introduction of foreign proteins are specific, although certain exceptions appear to exist These have already been dealt with—the examples I have in mind are the Wassermann reaction and the Weil-Felix test—so I shall say no more of these beyond calling attention to the fact that such reactions may be empirically specific in a strictly limited diagnostic sense Their use for purposes of diagnosis and their further study is to be encouraged, but as such reactions bear no relationship to true immunity we should be warned by them not to translate too hastily our *in vitro* findings to in vivo experiments

The plea advanced in my further remarks is, then, for a closer correlation between the diagnostic application of immunology, using *in vitro* methods, and its application to the prophylaxis and therapeutics of disease To plead for this I propose to cite certain specific examples that are familiar to all, but I would first emphasize that micro-organisms produce disease in many ways—a truism that is liable to be overlooked because of that great superstructure of technique and philosophy which encumbers the science of immunology

Consider, for example, diphtheria We are all too prone to consider that this condition is solely an intoxication with the products of growth of *B diphtheriae* This, however, is too narrow an attitude from which to view diphtheria, for a mechanism of infection must necessarily play some part in its causation, and this mechanism of infection must precede that of intoxication While in the instance under consideration the factor of intoxication is of greater importance than that of infection, do not let us forget altogether the latter, for in other instances it may well be of paramount import It is because of this that the differentiation of *B diphtheriae* into serological subgroups is of very minor importance, for, with the experimental methods at our disposal, we cannot demonstrate that the exotoxin elaborated by one agglutinogenic type of *B diphtheriae* differs from that elaborated by another

Please note the proviso that I have been careful to make—namely, "That with the methods at present at our disposal we cannot show that the toxins of the various types of *B diphtheriae* differ from one another" We are compelled, when investigating such problems, to employ, as the critical reagents of our tests, small laboratory animals, and it is possible that these are more delicate or less delicate indicators of toxicity than are human tissues In such tests our animals are only indicators of an end point in a biological titration, and at the best they are but poor indelicate indicators but we know that in some tests they exhibit a sufficient degree of delicacy for our needs, while in others they are not delicate enough The point which I wish to make is that diphtheria toxin is from one point of view a complete antigen but from another point of view it is only a partial antigen The whole antigen would consist of both the micro-organisms themselves and all their growth products—not merely those products that can pass through the pores of a filter and which are sufficiently stable to allow of storage in one form or another

It is merely good fortune that in the case of diphtheria we are dealing with a malady in which the partial antigen exotoxin is useful in that from a practical standpoint it gives specific results in (*a*) the diagnostic application of immunity in the Schick test (*b*) the prophylactic application of immunity in active immunization, (*c*) the therapeutic application of immunity in passive immunization In other diseases such a moiety of the antigens elaborated by the causal germ may be valueless for these purposes, and each disease-producing micro-organism should be studied to determine (*a*) its mechanism of infection, (*b*) its mechanism

of disease causation, and (c) its mechanism of causation of death Any one of these may be of outstanding significance and may be related to a particular moiety of antigen—using antigen in the wide sense implied in what I have just said—or to special combinations of antigens, and the problems of specificity which arise at every turn

Let us take another example *B. tetani* can be differentiated into serological subgroups by means of agglutination—that is, the protoplasm of one strain of *B tetani* may be different from that of another, it would appear none the less that all strains elaborate the same exotoxin, so that one antitoxin can be prepared to combat all Clearly, then one whole antigen would consist of two moieties (1) product of growth—a neurotoxin which is of major significance, and (2) bacillary protoplasm—of very doubtful significance I was able to demonstrate, however, that a third factor exists in whole cultures of *B tetani* This is a labile growth product which has slight aggressive—or, if you prefer the term, leucotoxic—qualities, and this factor is specific to the serological types as determined by agglutination Here again, then, we are fortunate in that the main factor of disease causation, neurotoxin, is common to all types of the bacillus, while a very minor factor—minor at least in the case of tetanus—leucotoxin is specific to the types

A third example is furnished by *B botulinus*, in which specificity of organismal protoplasm, as demonstrated by agglutination and other *in vitro* methods, is mirrored in a specificity of neurotoxin elaborated during growth The neurotoxin of *B botulinus*, Type A gives rise to the same lesions as that of toxin from Type B when injected into experimental animals Yet antitoxin to the product of Type A will not, so readily at least, neutralize the toxin of Type B as it does the toxin of its homologue

It now we consider tubercle in the same way a rather striking fact emerges One can show by using the agglutination and absorption of agglutinins tests that the protein constituents of both human and bovine tubercle bacilli appear to be the same, yet notwithstanding this similarity—one might almost say identity—the two types of *B tuberculosis* exhibit disease-producing properties of very different order Tubercle, then illustrates the converse of what obtains in diphtheria and tetanus In diphtheria and tetanus agglutination gives results which from the practical viewpoint are too specific, while in tubercle it gives results which are not sufficiently specific, we must look then, for the specific difference between human and bovine tubercle bacilli in some factor other than the bacterial protoplasm

Many similar examples can be quoted, some—for example, the pneumococci and streptococci—illustrating cases in which *in vitro* methods bring to light differences which are of practical significance in that such differences have a definite bearing upon the production of vaccines for prophylaxis and serum for therapeutics, others—for example, the meningococci and gonococci—in which serological differences are probably, though not certainly, of the same significance and so on down the scale until we come to conditions such as have already been exemplified by *B diphtheriae* where *in vitro* serological tests applied to bacillary suspensions appear to be ultra-specific from a practical though not from a theoretical viewpoint We cannot at least in the present state of our knowledge, adopt an attitude of purely philosophic doubt such as is exemplified in a suggestion I have heard made by more than one of us— that agglutination is really of no importance, being only an accidental phenomenon " If it is of no importance, then I submit that so is toxin production, and indeed so may be any of the manifold activities or qualities exerted or possessed by micro-organisms

The present position can be explained in a sentence the *in vitro* methods—notably agglutination and absorption of agglutinins—sometimes give ultra specific results, but that is because the major factor in disease causation by some micro-organismal species is not resident in the micro-organismal protoplasm, but in certain products of growth, and the former may be more specific than the latter This appears to be the case in diphtheria and tetanus, but there is more than a suggestion that the reverse obtains in the case of tubercle, in which the *in vitro* methods do not give sufficiently specific results The failure to realize this has retarded progress in the science of immunology, and, heavily notized by the purely pharmacological concep on of certain infections like diphtheria and tetanus, our outlook is in danger of becoming narrowed rather than broadened It is very striking to observe how great a per entage of the recent work of immunologists is concerned in the investigation of what might well be termed side-shows of the toxin-antitoxin combinations But I repeat that in the sense implied in this communication exotoxin are only part of antigens and antitoxins are only partial antibodies, and while admittedly diphtheria antitoxins and antitetanic serum have given excellent results in the field of practical medicine, there is no indication that the employment of similar products for immunization against other infections will meet with a like success until at least we know what particular antigens must be used, this depends upon an adequate investigation of the mechanism of infection as well as of the mechanism of disease causation of any given micro-organism

We should either attempt, then, to clear up the problem of specificity in relation to these mechanisms (Dr Hartley's paper stresses this better than I can) or return to the Pastorian method of immunization—the use of whole culture and preferably of living cultures to stimulate the production of immunity

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THE EFFECTS OF PHYSICAL AND CHEMICAL AGENCIES ON BACTERIAL VACCINES

For some considerable time it has been my opinion that physical and chemical agencies when applied to a vaccine would result in a great part of its antigenic value being lost This assumption appears to be justified in view of the fact that generally the most efficient and lasting immunity is developed when a person or animal suffers and recovers from a disease of bacterial origin It would appear therefore that an organism in its natural state is the best antigen This has become an important practical question since the introduction of certain newer methods of vaccine preparation—for example, detoxication and deratting

Some time ago, with a view to investigating this question, the following preliminary tests were carried out Three rabbits were immunized with a typhoid vaccine made by emulsifying in saline a twenty-four hours' growth on an agar slope Three rabbits were also inoculated with a 'detoxicated' typhoid vaccine made from the same strain by Dr Thomson the originator of this method of vaccine preparation After three graded inoculations the serums of these six animals were tested by the agglutination and complement fixation tests As evidenced by antibody response to the different antigens, very marked diminution in antigenic value was noted in the case of the detoxicated vaccine The small number of animals used in this experiment was insufficient to eliminate the fallacies which arise in such comparisons due to varying response of different individual animals to a particular immunizing stimulus The whole question was therefore reinvestigated on a much larger scale

About this time Professor Drever of Oxford published his work on deratted" vaccines, and in consequence new experiments were planned to compare the antigenic values of the following three types of vaccines (1) the ordinary heat-killed bacterial emulsion in saline (2) the detoxicated vaccine, and (3) the so-called deratted vaccine The experiment was to include an example of the three main types of organisms—namely acid fast Gram-negative and Gram positive The tubercle bacillus *Bacillus lipasiformis*, strain XII of the Lister Institute, and the pneumococcus were accordingly selected In the short time at my disposal it is impossible to give the details and the results of the whole of this experimental work, and I propose to confine my remarks to the effects of physical and chemical agencies on the antigenic value of *Bacillus lipasiformis* This organism was selected in virtue of its natural virulence for the rabbit, which was the animal employed in the

experiments Thus, in addition to the serological index of immunity, the demonstration of increased resistance, by means of infection experiments, was aimed at It was necessary, therefore, to use an organism of fixed virulence to the test animal

It is unnecessary here to deal with the theoretical aspects of antibody production, and I will confine myself merely to stating what was done and the results found I must, however, digress slightly from the practical to the theoretical on one point as it has an important bearing on these experiments The question arises, What significance is to be attached to the finding of antibodies, such as agglutinins and complement-fixing bodies, in the serum of immunized animals? Should these substances be considered criteria of immunity? In some cases antibodies undoubtedly constitute the mechanism of specific resistance —for example, antitoxins, on the other hand, it is well known that an animal with a high content of specific agglutinins in its blood serum may show no actual immunity to the homologous infection This may be explained on the grounds that the immunity, though increased, has not yet reached a point at which it can successfully cope with the particular infection Again, immunity to infection may occur in the apparent absence of demonstrable antibody reactions Our present knowledge of the mechanism of immunity is insufficient to give definite answers to all these questions There can be no doubt, however, that the production of antibodies in the serum of an animal depends on the reaction or interaction between the antigen injected and the actual living tissue cells This is the essential phenomenon underlying all immunity processes For this reason antibodies may be considered as being indicators of the antigenic values of vaccines

Objectives of the Experiment

The objectives of the experiment were fourfold First and foremost, to ascertain whether the physical and chemical agencies used in production of detoxicated and defatted vaccines reduced their antigenic value, secondly, to determine whether subcutaneous or intravenous injection is the more effective, thirdly, to compare the effects of varying doses, and fourthly, to find out if there was any relation between the body weight, the dosage, and the antibody production

The actual experiment consisted in weighing and numbering thirty-six rabbits, which were divided into three groups (*A*, *B*, *C*) of twelve each *Group A consisted of* twelve rabbits injected with the ordinary killed bacillary emulsion, Group B of twelve rabbits inoculated with the detoxicated vaccine, and Group C of twelve rabbits injected with the defatted vaccine Each group was divided into three subgroups of four rabbits Each subgroup contained one heavy rabbit weighing 2,000 grams or more, one small rabbit of less than 1,400 grams, and two intermediate ones of approximately 1,800 grams weight One rabbit of intermediate weight in each subgroup was injected subcutaneously, the other three intravenously Rabbits in subgroup A 1 received what was considered to be a small dose of the vaccine This was approximately a total of 50 million of the organisms administered in four weekly injections of 5, 10, 15, and 20 million Those in subgroup A 2 received medium-sized doses totalling 500 million in four weekly injections of 50, 100, 150, and 200 million, while those in subgroup A 3 received *doses totalling 5,000 million in four injections* The object of this was to show that there is an optimum dosage below which smaller amounts of antibody are produced, and above which, owing to the toxicity of the foreign protein injected, there will be not only a decreased antibody production, but, in addition, illness and even death of the animals An analogy might be drawn from a very severe case of pneumonia, in which the overwhelming amount of toxin paralyses the haemoblastic tissues in the bone marrow and thus produces a leucopenia instead of the usual leucocytosis It is necessary to emphasize this point, because the whole foundation of the theory of detoxicated vaccine depends on the following supposition as published by Dr David Thomson[2] in his recent book on gonorrhoea He states that when an amount of sheep's red blood corpuscles equivalent in weight to the dose of a bacterial vaccine is injected into a rabbit, no haemolytic antibody can be subsequently demonstrated It is only when large amounts, such as 2 or 3 c.cm., of red cells are introduced that a high titre haemolytic serum is produced From this he draws the conclusion that if large quantities of bacterial protein were inoculated into a human being a high degree of immunity would result In order to obviate the toxic effects which result when large quantities of bacterial protein are injected, he originated the process now known as "detoxication" It can be proved experimentally, however, that when an amount of bacterial protein is introduced into an animal beyond the optimum the antibody production falls instead of rising

Experiments with the Ordinary Heat-killed Bacillary Emulsion

The vaccine used in the injection of the twelve rabbits in Group A was made by growing the organism on 6 in Petri dishes containing nutrient agar The twenty four hours' growth was removed by a special suction apparatus from the surface of the plate, dried, and weighed An even emulsion in 0·5 per cent carbol saline containing 1 mg. of dried organisms per cubic centimetre was made This was then standardized by Brown's[3] opacity method The approximate number of bacilli per cubic centimetre was *found to be 1,000 million* This vaccine will in future be referred to as the bacillary emulsion The remainder of the bacterial mass was used for making the defatted vaccine Four injections of the bacillary emulsion were given at seven days intervals, and before each injection blood was removed *from the ear vein of the animal* and tested

Practically all the antibody tests were tried, and it was decided that the agglutination and complement fixation tests were *the most satisfactory for a comparative estimation* of antibody production

1 The *agglutination test* was performed with a marked capillary pipette, each transference from tube to tube resulting in a doubling of *the serum dilution* Dilutions of serum were made from 1 in 10 to 1 in 20,000

2 The *complement fixation* test was carried out according to Harrison's method as published in *the Medical* Research Council's pamphlet on the Wassermann reaction This technique is *used in the Royal Infirmary*, Edinburgh, and has always been found to be absolutely reliable The quantities used were Antigen, 0·2 c.cm. of an emulsion of the organisms in saline equivalent to about 500,000 per c.cm., *this quantity gives good* fixation without being anticomplementary Serum, 0·1 c.cm. of undiluted serum, *plus* 0·1 c.cm. of saline, making a total quantity of 0·2 c.cm. Complement, 0·2 c.cm. of guinea-pig serum *in various dilutions* as found by previous titration to represent 2, 3, 5, 7, 9, 10, and 12 *units of complement* Red blood corpuscles, 0·2 c.cm. of a 2 per cent suspension of washed sheep's cells sensitized with five haemolytic doses of Burroughs *and* Wellcome's immune body, the total quantity in each tube was therefore 0·8 c.cm. The tubes were incubated at 37° C. for one hour to allow of fixation, sensitized sheep's cells were then added and the tubes returned to the incubator Readings were taken half an hour and one hour later In addition, serum and antigen controls were always included The results of these tests are shown graphically

Results of Agglutination Tests —On examining the curves in Chart 1 representing the rabbits in subgroup A 1, it is noticed that the agglutination titres are low, reaching on the twenty-eighth day to approximately 1 in 1,500 *in the* case of rabbit 4 The lowest titre was found in rabbit 1, which was inoculated subcutaneously, and which received a total of 355 million organisms, as compared with 50 million injected intravenously in the other three *It is noticed* also that the graph shows a steady rise in the titres up to the twenty-eighth day Turning to subgroup A 2, which received *medium-sized* doses, it is seen that on the twenty-first day—that is, *after three injections*, and before the fourth was given—rabbits 5 and 6 had an end titre of more than 1 *in* 3,000 Rabbit 8 had died previously from a staphylococcal septicaemia due to infected scratches received from fighting, and in consequence is omitted from the

experiment Rabbit 7, which was injected subcutaneously with a total of 750 million organisms, as compared with 500 million which the other animals in this subgroup received, had only reached a titre of 1 in 400 With the exception of rabbit 6, which had remained stationary, all the agglutination titres had fallen by the twenty-eighth day to one half, showing that three injections were sufficient, and the fourth had merely lowered the animals' immunity In subgroup A 3 it is observed that on the twenty-first day rabbit 9 showed an agglutination titre of 1 in 12 000, but on the twenty-eighth day it had fallen to half Rabbit 12, which was injected subcutaneously had reached a titre of 1 in 16 000 on the twenty first day which also had fallen to less than half by the twenty-eighth day Rabbit 10 died after the third injection and rabbit 11 after the second One of these was replaced by another rabbit and it also died after two injections These animals were obviously suffering from toxæmia, and survived only two or three days

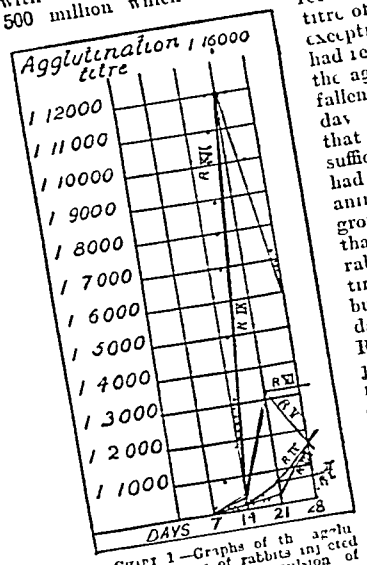


CHART 1.—Graphs of the agglutination titres of rabbits injected with a heat killed emulsion of *L. suiscstifer*

The conclusions to be drawn from this graph are, I think, as follows

1 Rabbits in subgroup A 1, which received the smallest dose were given less than the optimum amount

2 The rabbits in subgroup A 2 had received the optimum dose, whereas in subgroup A 3 three out of four rabbits injected intravenously died, showing that they had received more than the optimum dose The fourth rabbit, which withstood the injections however produced the best result of all with the exception of rabbit 12, which received large doses subcutaneously

3 It is clear that with the exception of subgroup A 1 in which insufficient quantities had been given and in which the titre was still rising on the twenty-eighth day, all the other rabbits would have had a higher degree of immunity with three injections instead of four, and this is shown by the marked drop in the agglutination titre of the twenty-eighth day

4 It is evident that subcutaneous injections of small or moderate amounts do not produce as high a titre as do the injections of similar quantities intravenously It would appear, however, that the best results are obtained when large quantities are inoculated subcutaneously, as it will subsequently be seen that rabbit 12 was the only animal to survive a dose of the living organisms It is necessary, however, to confirm this observation as it is of importance to know definitely whether large subcutaneous doses produce the best true immunity

Results of Complement Fixation Test —The results of the complement fixation test were as follows In subgroup A 1 four units of complement were fixed on the twenty-first day, and this had fallen to three by the twenty-eighth day Subgroup A 2 fixed eight units on the twenty-first day The same fixation was found on the twenty-eighth day Subgroup A 3 fixed only five units and this had fallen to three on the twenty-eighth day Rabbits 10 and 11 were charted until their death Rabbit 12, which had been inoculated subcutaneously with large doses, and which had produced the highest agglutination titre, showed a complement fixation of six units on the twenty first day and over ten on the twenty eighth day This confirms to a striking degree the efficacy of the injection of large subcutaneous doses

Experiments with Detoxicated Vaccine

The second part of the experiment, in which twelve rabbits were injected with the detoxicated vaccine, will now be considered A culture of the organism was sent to the Pickett-Thomson Research Laboratory, and a detoxicated vaccine was prepared by Dr David Thomson I should like to thank Dr Thomson for his kindness in providing me with the large quantities of detoxicated vaccine used in the investigations, and for the continued interest which he has shown throughout the course of the investigation After the original experiment with the *L. typhosus* vaccines referred to at the beginning of this paper, I informed Dr Thomson of the effects of his process on the antigenic value of his vaccine, and suggested that the chemicals employed were the cause of the deterioration He himself had evidently come to this conclusion because he had introduced a smashing and breaking machine which enables him to use much weaker chemicals At one time detoxicated vaccines consisted of alkali alcohol and chloroform soluble fractions of the bacterial protein The chloroform soluble fraction was first discarded, and later, as a result of investigations into the effects of alcohol on red blood corpuscles used in the production of haemolutinin, he decided to dispense with the alcohol-soluble fraction as well

In order to demonstrate the effect of alcohol on bacterial antigens I obtained from Dr Thomson two vaccines, one which contained the alkali soluble fraction only and the other which was a mixture of the alcohol and the alkali-soluble fraction Since detoxicated vaccines are given in ordinary vaccines the animals in group B received a similar multiple compared to those in group A In subgroup B 1, rabbits 13 and 14 received a total of 35 500 million organisms of the alkali – alcohol soluble detoxicated vaccine, rabbits 15 and 16 received the same quantity of the alkali-soluble portion This was given in four weekly injection of 500, 5,000, 10,000 and 20 000 million respectively Subgroup B 2 consisting of rabbits 17 to 20 received 355 000 million organisms, rabbits 17 and 18 received the alkali-soluble fraction while rabbits 19 and 20 received the alkali-soluble fraction alone Subgroups B 1 and B 2 were all injected intravenously whereas the four rabbits in subgroup B 3 were inoculated subcutaneously all four receiving a total of 215 500 million in four injections at weekly intervals, as follows 500 million 5 000 million and 10,000 million and as no antibodies could be detected in the serum of the animals a fourth injection of 200 000 million was given to each Rabbits 21 and 22 received the alkali-soluble vaccine and rabbits 23 and 24 the alcohol – alkali-soluble vaccine

Results of Agglutination Tests —In Chart 2 it is seen that the base line is the same as in the previous graph, each division representing a seven days' interval Whereas in Chart 1 each division in the vertical line represents an agglutination titre of 1 in 1 000 in Chart 2 it represents a titre of 1 in 50 only It is observed that of the twelve animals injected only four produced appreciable agglutinins—namely, rabbits 15 and 16 in subgroup B 1 which showed titres of 1 in 340 and 1 in 150 respectively on the twenty first day and rabbits 19 and 20 in subgroup B 2 which gave titres of 1 in 80 and 1 in 40 respectively These four rabbits were injected intravenously with the vaccine made from the alkali soluble portion alone

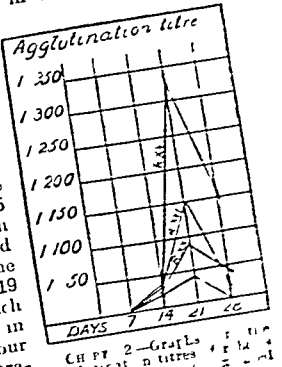


CHART 2.—Graphs of the agglutination titres of rabbits injected with a [illegible]

Results of Complement Fixation Test —With regard to the complement fixation test it is only necessary to say that the number of units fixed was always so small as to be practically negative the average being somewhere under one unit The detoxicated vaccine it will be seen

antigen in the complement fixation test with the serum of rabbits in groups A, B, and C was found to have practically no fixing power

The conclusions to be drawn from these results are, I think, quite clear

1 That, in spite of the fact that these animals received the products of more than a thousand times the number of the organisms in the vaccine used in group A, the agglutination end titre was extremely low

2 The effect of the alcohol is distinctly injurious to the antigen, as the rabbits injected with the alcohol + alkali-soluble vaccine produced no agglutinins at all

3 Three injections were sufficient and by giving the fourth the end titres were reduced to half

4 The subcutaneous injections of the detoxicated vaccines yielded completely negative results

5 Though large quantities of vaccine in almost semi-solid condition were injected, no ill effects whatsoever were produced on the animals—that is to say, it certainly was detoxicated

Experiments with Defatted Vaccines

The third part of the experiment consists of the injection of nine rabbits with the so-called "defatted" vaccine The mass of dried organisms, already referred to in part 1, was treated for four hours at 100° C with formalin and subsequently extracted for twenty-four hours with acetone in a Soxhlet apparatus, as described by Dreyer The defatted material was dried and weighed, and an even emulsion in 0 5 per cent carbol saline containing 1 mg per c cm was made When examined under the microscope, after staining with carbol-fuchsin, the organisms were quite distinctly seen, and, with the exception that they seemed slightly smaller than the untreated organisms, no appreciable difference was visible It is thus possible to compare the effects of similar doses of defatted and untreated organisms on animals

The nine rabbits in group C were divided into three subgroups as before Animals in subgroups C 1, C 2, and C 3 received in four weekly injections totals of 0 05 mg , 0 5 mg , and 5 mg respectively One of the rabbits in this last group died from the toxic effects of the injection

Results of Agglutination Tests —Chart 3 shows the graphs of the agglutination titres of the animals in group C Each division on the base line represents an interval of seven days, while in the vertical line it represents a titre of 1 in 10 On the twenty-first day rabbits 25 and 27 had agglutination titres of 1 in 40 and 1 in 20 respectively, the remainder producing no appreciable agglutinins The conclusion to be drawn from this graph is, I think, that the physical and chemical processes employed in defatting the vaccine have practically destroyed its antigenic value

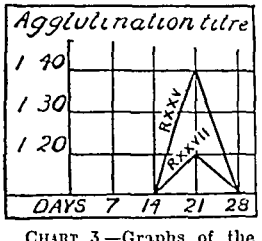


CHART 3—Graphs of the agglutination titres of rabbits injected with a defatted *B suipestifer* vaccine

Results of Complement Fixation Test —The serums of the rabbits in group C gave a negative result, except for slight fixation in rabbit 34 and very good fixation in rabbit 30 The serum of this animal fixed 3½ units after the second injection, 6½ units after the third injection, and 7½ units a week after the fourth injection The serum was repeatedly tested and was always found to give a markedly positive result Why the serum of this animal contained such a large amount of complement fixing antibody I am unable to explain

Chart 4 shows the combined agglutination curves of the animals in groups A, B, and C The agglutination titres in each group are added together and divided by the total number of rabbits By the twenty-first day the rabbits in group A had an average agglutination titre of 1 in 4,600, dropping on the twenty-eighth day to just under 1 in 3,000, while the maximum titre of the rabbits in group B averaged 1 in 50 and in group C 1 in 5 This, I think, is a very striking picture

Chart 5 shows the combined complement fixation curves of groups A, B, and C The graphs are made by adding the number of units fixed and dividing by the number of animals tested On the twenty-first day the average fixation of complement by animals in group A was 5 units, while group B fixed under 1, and group C was practically negative The interesting point about this graph is the remarkable way in which Charts 4 and 5 agree While it is not

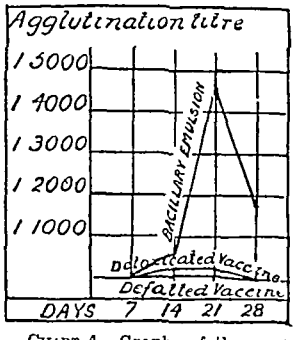


CHART 4—Graphs of the average agglutination titre of rabbits in Groups A, B, and C

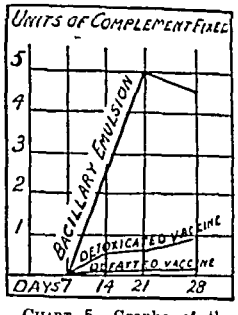


CHART 5—Graphs of the average complement fixation of rabbits in Groups A, B, and C

suggested that in any individual rabbit the graphs of agglutination and complement fixation will run exactly side by side, yet, if the average of a large number of animals is taken, the resulting curves will be very similar An agglutination titre of 1 in 5,000 in group A is equivalent to fixation of 5 units of complement In groups B and C the very low agglutination titres are comparable to the practically negative results of fixation of complement

Protection Experiments

The experiment about to be described was undertaken to ascertain whether any active immunity to a lethal dose had been produced It was necessary first to establish the minimum lethal dose Altogether twenty rabbits were used for this purpose Doses of organisms from 50,000 to 1,000, the latter representing 0 0000001 mg of dried organisms, were injected intravenously 1,000 organisms invariably produced death from septicaemia within a week

In dealing with experiments in which rabbits are inoculated with an organism of such high virulence as *Bacillus suipestifer*, the remarks made by Dr Theobald Smith in a lecture on animal pathology in Edinburgh last year may be recalled He said that some animals were so susceptible to microbic diseases that we could hope for no benefit from vaccine treatment Again, other animals were so resistant that there was no need for vaccine treatment, while there remained an intermediary class from which good results might be expected The action of *B suipestifer* on rabbits comes under the first category Pratt-Johnson,[1] when working with this organism in the Lister Institute was quite unable to produce any actual immunity Even so minute a number as 200 living bacilli, when introduced intravenously into previously immunized animals, proved fatal As a result of this extremely high virulence, it has been necessary to rely mainly on the serological phenomena of agglutination, complement fixation, etc , and not on the resistance of immunized animals to *lethal doses*

Six immunized rabbits from each of the groups A, B, and C were injected with living organisms two in each group received 1,000, two 5,000, and the other two 10,000 Of these eighteen rabbits all except one died within a week and the organism was recovered from the heart blood in pure culture The exception was rabbit 12 This animal was in subgroup A 3 and was injected subcutaneously with large doses of the bacillary emulsion It had produced the highest agglutination titre—namely, 1 in 16,000, and also the highest complement fixation—namely, 10 units (see charts) It was a striking fact that this was the only animal that survived the test lethal dose Moreover, it resisted an injection of 10,000 living organisms, which was 10 to 20 times the minimum lethal dose

The conclusion to be drawn from this protection experiment is that the virulence of the test culture was of such high grade that the increased resistance produced by vaccine immunization was still insufficient to protect the o

animals from lethal doses The result obtained in the case of rabbit 12 is of some interest, but no conclusions can be drawn until the experiments at present being undertaken to repeat and confirm the facts described are completed

Conclusions

1 As shown by *in vitro* immunity reactions, the antigenic values of detoxicated and defatted vaccines are in no way comparable with those of the ordinary heat-killed bacillary emulsions in saline

2 It would therefore appear that the physical and chemical processes involved in the preparation of the detoxicated and defatted vaccines are responsible for the marked loss of antigenic value

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THE MECHANISM OF THE NON-SPECIFIC REACTION

THE idea that an animal protects itself against organismal invasion solely in a highly specific fashion has dominated medical thought for so many years, that the suggestion that non-specific factors can play any part in the defensive mechanism of the body seems to be akin to heresy It is true that the known facts of acquired immunity appear to warrant the conclusion that the defensive agents of the body are to be considered only in terms of specific antibodies, and that the sole basis of immunity is specificity Nevertheless I propose as my contribution to this discussion to draw attention to certain clinical observations which appear to be subversive of the doctrine of strict specificity, for they suggest that the natural defensive mechanism of the body is not entirely specific in its action

In the first place, it is not easy to see how natural immunity can be explained on a specific basis for it is well known that many individuals are immune to certain diseases, and yet their blood contains no demonstrable specific antibodies Nor does the clinician find in the conception of strict specificity a satisfactory explanation of the phenomenon of recovery from infection He observes, in local infections a series of reactions which are grouped under the general term "inflammation" It is easy to see in that process the attempts on the part of the body to neutralize the effects of the harmful agent by increasing local metabolism, by diluting the toxin by digesting the causative organisms either within the phagocyte or outside the cells, or, if these efforts fail, by surrounding the irritant with a wall of fibrous tissue so that it is shut off from the rest of the body Whether the inflammation be acute or chronic, whether it be produced by pathogenic organisms, toxins, or mechanical irritants, its basis is essentially the same There is little or no specificity here It is no doubt an alluring theory that, as soon as an individual is infected with the causative agent of a disease, his body cells begin to react and produce antibodies which gradually increase in amount until finally they overwhelm the infecting organisms, and thus lead to recovery But the clinician finds that the specific antibody titre of the serum of a patient is no guide to the possibility of recovery, and he observes that many patients overcome infections long before specific antibodies have developed in the blood in sufficient quantity to be a dominating factor in the production of this result

In view of these observations, it seems justifiable to inquire as to the efficacy of specific biological methods in the treatment of disease The success which followed the introduction of antitoxic serum in the treatment of diphtheria gave promise that we were at the dawn of an era of specific biological therapy Have the hopes which were raised at that time been realized? In the light of experience, it is fair to suggest that, in the treatment of disease by antiserums, there are only two which can be said to be of any great value Nor has the success which has followed specific therapy been any more marked

It is a curious commentary on the specificity of treatment by vaccines, that in some diseases such as enteric fever or pneumonia, where the causative organism is definitely known, they are generally admitted not to be in the least efficacious, while in others, such as gonorrhœa, their value is, at the best, doubtful whereas they have their greatest vogue in the treatment of catarrhal conditions of the respiratory passages, intestinal canal and genito-urinary tract, where the task of the bacteriologist in sifting out the true causative organism of the disease from the multitude of organisms which constitute the flora of these parts demands a truly remarkable power of discrimination and patience

Arising from, and because of the failure of specific biological therapy in enteric fever, there has developed a form of treatment known as non-specific therapy or "protein shock" therapy The essential fact of this therapeutical measure is the intravenous or intramuscular injection of a foreign protein or some non-specific colloidal substance This results in a general reaction on the part of the body, in the shape of a temporary elevation of temperature, increase of polymorphonuclear leucocytes in the blood stream, and, according to Petersen and his co-workers, increased production of tissue enzymes At the same time, if there is a local lesion there is often a local reaction, in the form of a temporary increased activity of the inflammatory process followed by a period of quiescence The question has been raised as to whether the evidence that this non-specific reaction has any remedial effect is clear and indisputable It is a difficult task, even in the most accurate of sciences to assess the value of observations made and to draw accurate conclusions from them, and the history of therapeutics shows quite clearly that this difficulty is enormously increased in dealing with the results following any remedial measure Nevertheless in spite of the human failing which is usually ascribed to the clinician of allowing his zeal and enthusiasm to outrun his judgement, his evidence cannot be completely ignored During the past three and a half years I have had personal experience of treating over a hundred cases of rheumatoid arthritis by this method, and, while recognizing the impossibility of offering such proof as would be demanded in an immunological experiment I have come to the conclusion that non-specific protein therapy is to be regarded as a valuable addition to our therapeutical armamentarium in dealing with joint diseases of this nature It can hardly be expected to remove the adhesions from a joint tretch a contracted muscle or soften organized fibrous tissue but there is no doubt that in many cases it brings the infective process to an end, and this is obviously of considerable value

What, then, is the mechanism of this apparently illogical therapeutical measure? How can it be of benefit in disease? In an attempt to answer that question, I would draw attention to what takes place when an individual is attacked by disease Just as in local infections there appears a series of reactions to which the term "inflammation" is applied so when the infecting agent or its toxin escapes into the general circulation the body reacts in other and more general ways There may or may not be a rigor, but the temperature in general rises above normal There is often a decided increase in the number of white cells in the blood stream the metabolism of the whole body is increased and the tissue enzymes become mobilized All these manifestations to be regarded as purely incidental to the infection, and therefore of no special significance or do they constitute an integral part of the body's mechanism of defence? It is admittedly difficult to answer that question But it may be inferred from the work of Metchnikoff on the process of phagocytosis that the increase in the number of leucocytes which occurs in disease is in some way, one of the natural methods of defence against organismal invasion So it is with the increase in the serum enzymes Furthermore there is a certain amount of evidence to suggest that elevation of temperature alone may be harmful to infecting organisms The physician is inclined to see in fever, which so frequently accompanies the invasion of the body by pathogenic organisms something more than a mere accidental derangement of the mechanism by which the temperature of warm blood d

animals is regulated For he may have observed that an intercurrent acute infection, accompanied by high temperature, sometimes has the effect of clearing up a more chronic associated disease He knows that it does more harm than good to treat pyrexia with the ordinary antipyretics On the experimental side also, the experiments of Loewy and Richter[2] seem to show that fever is a protective mechanism, though the proof is admittedly not complete

In this way we may begin to see something of the mechanism of the non-specific reaction What is this form of treatment other than a method of producing artificially, but in a controlled fashion, the phenomena occurring naturally in disease, which, I suggest, are defensive in nature? At the same time, in the focal reaction, there is a temporary increased activity of any local inflammatory process, indicating an increased reaction on the part of the body locally against the disease This was undoubtedly of benefit to the patient, for in many cases after the aggravation of signs and symptoms had passed off, there was a period when the activity of the inflammatory process was markedly diminished, and the joints became more supple and less tender It may even be that the non-specific reaction exalts the specific mechanism of the body It is true that the evidence on this point is conflicting, though the work of Conradi and Bieling[3] and of Hektoen[4] seems to show definitely that non-specific agents can release specific antibodies into the circulation In any case, it is known that there may be a considerable increase in the agglutinin title of the serum of a patient who has already specific typhoid agglutinins in his blood, if he suffers from some other acute infection, such as malaria or pneumonia It is difficult to see how this can be explained except on a non-specific basis

It seems likely, therefore, that the mechanism of the non-specific reaction is the general stimulation of the whole defensive forces of the body against an irritant introduced into the circulation In a disease such as rheumatoid arthritis, the body does not, as a rule, react to any great extent against the causative organisms There is constantly going on a warfare of low activity between the defences of the body and the invading forces of disease When, however, a foreign protein is injected intravenously, the body reacts vigorously, and it is reasonable to suppose that, in certain cases, this reaction of the body to a non-specific irritant will result in the inhibition, or even destruction, of the microbes of the disease

If this conception of the mechanism of the non-specific reaction is correct, it will be clear that it has certain limitations If it is to be of benefit, a reaction must be produced, and, within limits, the improvement will vary directly with the extent of the reaction That has actually been my experience in the use of this remedial measure If the nature of the protein injected was such as to produce little or no reaction, no improvement followed Yet the same patients showed marked improvement if a protein was used which caused definite reaction Furthermore, it would be foolish to expect that a general biological reaction of this nature could cure every case of rheumatoid arthritis Even though the whole defensive mechanism is stimulated to the full, there is always the possibility that the infective agent of the disease may resist the attack, or may be inhibited only for a short period In any case, whether the explanation given be correct or not, the fact remains that in my experience in the treatment of this disease, the only measure which offers any great hope of quelling the infecting agent is non-specific protein therapy

In conclusion, therefore, while it would be foolish to deny that specific factors play an important part in the mechanism of the defence of the body against disease, it seems to me that it would be equally unwise to ignore the influence of non-specific factors The essential fact of evolution is adaptability to environment But is it not too much to expect that an animal requires to develop a specific method of defending itself against each and every one of the infections which may attack it? Surely it is reasonable to believe that it has general methods of defence as well as specific, and that in low and chronic infections where the reaction of the body is not great this general mechanism may be stimulated and exalted by agents which have nothing in common with the causative organisms of the disease Such at any rate is my belief, and it is the exploitation of this general defensive mechanism that, in my view, constitutes the rationale of therapy on a non-specific basis

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THE EFFECT OF DETOXICATION ON THE SPECIFIC ANTIGENIC PROPERTIES OF *B. TYPHOSUS*.*

Protein Shock Therapy

In connexion with the work on protein shock therapy in rheumatoid arthritis which has been carried out by Dr. David Campbell during the past few years, the protein has usually been administered in the form of a typhoid vaccine, and it was arranged that the patients' serums should be examined from time to time in order to determine how far, if at all, the relatively small doses which were being given might lead to the production of agglutinins for *B. typhosus*. As a result of the observations made in this way there are two findings which would appear to be of interest—the one indicating the damaging effect on the antigenic value of an organism produced by treatment with alkali, etc., in the process of detoxication, the other suggesting that non-specific therapy (protein shock) may evoke a specific antibody response

In every case the test has been carried out both before and after the commencement of treatment, and, in several instances, periodic examinations have been made during its course and up to six weeks after its completion. For the estimation of the agglutinin content of the serum, the technique of Dreyer,[1] using standard agglutinable cultures and expressing the results in standard agglutinin units per cubic centimetre, has been employed exclusively.

Use of Typhoid Vaccine

To begin with, the vaccine used was the ordinary commercial "T.V.," and the dosage consisted of one or more intravenous injections of from 100 to 200 million organisms. With only two exceptions, in a series of twelve patients treated in this way, a definite rise in the agglutinin content of the serum for *B. typhosus* was found to follow its administration, and, in the cases in which several tests were made, this rise was found to be maintained. It is to be noted that the patients who failed to show an increase in agglutinins had each received only two doses of the vaccine and that the serum test was made within seven days of the second injection.

Use of "Residual" and "Detoxicated" Typhoid Vaccines

The work of Thomson,[2] on the lessening of the toxicity of organisms by treating suspensions with weak alkali and subsequently recovering the bacterial protein by precipitation with an acid, encouraged the hope that some of the unpleasant concomitants of protein shock might be minimized by using a vaccine which had been subjected to such a process of detoxication, and that, by injecting this relatively non-toxic bacterial protein, a simple temperature reaction might be provoked, unassociated with headache, sickness, and general malaise. With this aim in view, a "residual" typhoid vaccine was prepared, following the method detailed by Jenkins,[3] and for a time this product was utilized for the intravenous injections. The results were disappointing both serologically and clinically. No demonstrable agglutinins appeared, even after repeated doses of from 100 to 400 million organisms, and protein shock only occurred erratically. On the assumption that the temperature of sterilization might be partly responsible for these failures, several ampoules of the routine "T.V." were autoclaved at 120° C. prior to use, but such treatment was not found to impair their efficacy as agents for inducing protein shock, and, further, a second batch of "residual" vaccine, sterilized in the water bath at 65° C.,

* This work was carried out in the Pathological Department of the University, and Western Infirmary of Glasgow.

was as void of agglutinogenic power, when tested on animals, as the original autoclaved preparation. It was apparent, therefore, that the lack of agglutinin response to the injections of "residual" vaccine was attributable to some factor other than the temperature of sterilization.

More recently, two specimens of the "detoxicated" vaccine manufactured by Messrs. Genatosan, Ltd., have been given a trial. This preparation is of the mixed type, containing both typhoid and paratyphoid bacilli (T A B), but with it also there has been a complete absence of anti-body response, both in experimental animals and in man. No increase in agglutinins has been demonstrable in the human subject even after a total intravenous dosage of 40,000 million organisms (individual doses ranging from 100 to 20,000 million), or subcutaneous dosage of 30,000 million, while, in the case of rabbits from 20,000 to 30,000 million organisms have been injected intravenously, in graded doses of 5,000, 5,000, 10,000, 20,000 million given at weekly intervals, without apparent harmful effect on the animals and without any development of agglutinins for any of the three organisms administered. Complement fixation tests with the serums of these patients and experimental animals have yielded consistently negative results and no evidence has been obtained that the injection of this "detoxicated" vaccine leads to the production of any demonstrable antibodies of the type usually associated with the typhoid bacillus, certainly not with do ages which are to be considered practicable from an economic standpoint. It may be noted also in passing that, in the case of the two patients who received the Genatosan vaccine intravenously doses of 20,000 million organisms failed to produce protein shock or any rise in temperature.

The results previously obtained with "residual" vaccine have since been confirmed, both in the human subject and in animals and in all but two cases, to which reference will be made later, there has been a complete absence of agglutinin response following its injection. Rabbits have been given weekly intravenous doses of from 5,000 to 20,000 million organisms, but their serums have failed to yield agglutinins for *B. typhosus* or to fix complement when a suspension of typhoid bacilli is employed as the antigen, and these experiments have been carefully controlled both as regards the animals used and the strain of *B. typhosus* employed in the preparation of the vaccine. Used as in ordinary vaccine, this strain, when injected into rabbits of the same age and breed as those treated with the "residual" product leads to the development of abundant agglutinins—for example, three doses of 250, 500, and 500 million yielded a serum containing over 1,500 standard agglutinin units per cubic centimetre, and giving a strongly positive complement fixation test. The "residual" vaccine was made from a portion of the same suspension of bacilli which after sterilization, constituted the ordinary vaccine evoking this response. In addition, in order to try and obviate any fallacy arising from possible damage to the bacterial protein by exposure to the temperature of the autoclave, the "residual" vaccine for the experimental work on animals was sterilized by heating in the water bath at 65° C. for half an hour.

It would appear, therefore, that the production of immune bodies normally associated with the administration of *B. typhosus* vaccine, or with an infection by this organism, is a highly specific reaction which depends on the presence of the unaltered bacillus, and that the process of detoxication damages the antigenic power of the organism to the extent of abolishing entirely its ability to evoke the usual demonstrable antibody response when injected into an animal. Thus, such products are not specific immunizing agents, and any antigenic value which they may possess is of quite a different order from that of the native typhoid bacillus from which they are prepared.

Specific Antibody Response following Non-specific Therapy

Two cases in the series treated with these detoxicated vaccines are of special interest, as the serological findings are at variance with those just recorded. A rise in the agglutinin content following protein shock, taken in conjunction with the evidence that has been submitted and which points to the absence of agglutinogenic power on the part of the "residual" vaccine injected, would suggest that non-specific therapy may possibly be followed by the appearance of highly specific antibodies in the blood of a patient so treated. From the history of one of the cases there are grounds for suspecting that at one time may have been a previous typhoid infection, but in the other such evidence is lacking.

CASE I.

J. McK., female, aged 17, was admitted to the Western Infirmary, Glasgow, on September 20th, 1921. She had suffered from rheumatic arthritis in December, 1919, with pyrexia which lasted for several weeks. The Widal reaction at this time was reported to be positive, although clinically the patient's doctor did not think that the case was one of enteric fever. Improvement took place, but between March and June, 1920, there was a recurrence of the acute arthritis and the pyrexia. Similar recurrence took place in October, 1920, and in February and April, 1921.

On admission physical examination was negative, apart from the local condition of the affected joint, which showed periarticular thickening and limitation of movement. The temperature was normal but became slightly irregular towards the end of the first week in hospital.

Details of the course of intravenous doses of "residual" vaccine administered, and of the rise in the agglutinin titre of the serum, are as follows:

Date	Agglutinins	Intravenous Dose
	Typhosus	150 million
September 29th, 1921	3·6	500
October 6th	3·6	250
11th	355·0	250
19th	714·0	250
25th	405·0	125
November 3rd	—	Nil
23rd	35·0	

The agglutinin titres are expressed in standard agglutinin units, and they were confirmed by repeat tests. On each occasion the blood for the Widal reaction was withdrawn immediately before the administration of the dose of vaccine.

Each of the first three injections was followed by protein shock, but the resulting temperature, instead of returning to normal within twenty-four hours, remained of remittent or irregularly intermittent type until the administration of the next dose of vaccine. The spleen became palpable and the affected joints were tender. After the fourth dose the temperature curve returned to normal at the end of forty-eight hours, while those following the last two doses were of the usual protein shock types. The vaccine was being given to other patients in the ward at the same time and none of them showed any departure from normal in the resulting reaction, nor did any of them develop a rise in agglutinins. Moreover, each ampoule of vaccine contained sufficient for two doses, and the first injection administered to this patient was taken from one the remainder of which was used for a second patient whose subsequent reaction was of the usual type. Bacteriological examination of specimens of stool from the case was carried out on three occasions, but no colonies of *P. typhosus* were obtained either by direct plating on MacConkey's medium or by the brilliant green enrichment method.

CASE II.

J. G., female, aged 27, was admitted to the Western Infirmary, Glasgow, on February 22nd, 1923. Her illness began in June, 1920, with generalized pains, involvement of various joints, and pyrexia. The patient was confined to bed for ten months, after which gradual improvement set in. Prior to admission stiffness and pain in the joints had been occasioning considerable disability. There was no history suggestive of enteric fever. Physical examination on admission was negative except for the local condition of the affected joint.

Details of the agglutinin content of serum and of treatment with residual vaccine are as follows:

Date	Agglutinins	Intravenous Dose
	Typhosus	150 million
March 1st, 1923	Nil	250
5th	—	400
13th	—	400
23rd	58·8	Nil
April 3rd	58·8	100
17th	—	Nil
24th	29·4	

The agglutinins are expressed in standard units, and the titre were confirmed by repeat tests. On each occasion the sample of blood for the Widal reaction was withdrawn immediately before the administration of the dose of vaccine.

The findings in this case are very similar to those detailed in the preceding one, except that (a) the result in the

did not reach such a high level, (*b*) the irregular pyrexia did not set in until after the third dose of vaccine (the first to evoke a satisfactory protein shock in this patient), but it persisted for practically two months, and (*c*) splenic enlargement was not found. As with the previous case, the vaccine given to this patient was being administered to others, and, with them, the temperatures associated with the resulting reactions returned to normal in the usual short time. Cultures from the patient's urine were made on several occasions, and regular examinations of the faeces (once, and frequently twice each week) were carried out for three months, both by direct plating and by the brilliant-green enrichment method, but no typhoid bacilli were found.

The striking feature of the two cases is the appearance in their serums of agglutinins for *B. typhosus*, following on protein shock induced by a product whose specificity is at best very doubtful. Admittedly it would have been much more satisfactory if the vaccine used had been prepared from an organism other than a member of the colon-typhoid group, but it is difficult to overlook the evidence afforded by the complete failure of this same vaccine as a normal typhoid antigen in the case of eleven other patients and five experimental animals, together with the similar failure of a closely allied preparation in a further series of seven patients and three animals. There would seem, therefore, to be considerable justification for assuming that some explanation, other than a specific antigenic effect on the part of the protein injected, must be sought in order to account for the presence of these antibodies. Bacteriological confirmation of an actual pre-existing infection with *B. typhosus* is lacking in each of the cases, although in one the reported finding of a positive Widal reaction nearly two years prior to the period under review is distinctly suggestive. Did the protein shock in this case merely liberate agglutinins previously linked up with tissue cells, or did it light up a nidus of typhoid bacilli hidden somewhere in the body and thus enable them to exercise their customary antigenic effect? The continued fever, the palpable spleen, and the tender joints were certainly indicative of an active process, and, serologically, no rise in agglutinin titre was found on the seventh day of the pyrexia, although it had amounted to a high level by the twelfth. The picture is not like that of a sudden release of stored-up antibodies, and, in the few cases which have come under notice in which the patients already possessed agglutinins for *B. typhosus*, as a result of prophylactic or therapeutic inoculations, no evidence has been obtained that protein shock can exert such an action. On the other hand, it may well be that the patient in this case suffered from a recurrence of her infective arthritis, a febrile condition not necessarily induced by the protein shock, and that the rise in the agglutinin titre of her serum represented a fluctuation of the type reported by Vincent.[1]

In the other case, however, such considerations are still more speculative in view of the absence of any clinical, serological, or bacteriological evidence to support the hypothesis of a previous typhoid infection. One appears, therefore, to be confronted with a simple alternative—either that "residual" vaccine can, in exceptional cases, act as a specific antigen, or that protein shock may be followed by the appearance in the circulation of highly specific antibodies. The conclusive evidence on which to base a decision is still lacking, but, if non-specific therapy did produce a specific response to *B. typhosus* in these patients, it would appear that the possibility of a preceding infection with this organism must be taken into account and that the arthritis may have been of typhoid origin. May it not be that, in such chronic conditions as rheumatoid arthritis, the beneficial results claimed from the use of protein shock therapy are as much attributable to a stirring up of the actual focus of infection as to a stimulation of the general defensive mechanism of the body, that the ultimate factor in determining cure is the specific response to the antigenic activity of the infecting organism, and that this response is evoked not directly, but indirectly, by the protein injected?[2]

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SOME PRODUCTS OF AUTOLYSED TUBERCLE BACILLARY CULTURES, WITH SPECIAL REFERENCE TO THEIR ANTIGENIC AND CURATIVE VALUE IN TUBERCULOUS INFECTIONS

THIS problem suggested itself to the author in 1920, and was mainly based on the consideration of some of the well-known physiological facts on enzymes in general and the specific nature of these bodies in specialized cells in particular, the specificity being purposive and depending mainly on the richness of the cells in one or another of their constituent proximate principles. Thus the hepatic cells contain glycogen, being rich in amylase, and the castor seed in lipase. Since tubercle bacilli are rich in higher fats and waxy substances which give them the acid-fast character, the question arose whether it was possible to demonstrate any specific ferments in them. Although Kendall, Day, and Walker had demonstrated a soluble lipase in the culture fluids during the growth of tubercle bacilli, they found that the bacilli themselves contained very little ferment. The problem, then, was to see if any lipase could be demonstrated in a mass of tubercle bacilli grown on suitable solid media, and, if so, what changes it would bring about on the bacillus itself.

That such a body does exist in tubercle bacilli put up for autolysis is demonstrable in a few days chemically, physically, and microscopically—as will be seen from the following table. A little later, in addition to the lipase, a

Tube	Content	Amount of N/100 NaOH required to Neutralize
1	Tubercle bacilli 2 tubes + 5 drops of toluene + 0·25 c.cm. of ethyl butyrate	41·2 c.cm.
2	Tubercle bacilli 2 tubes + 5 drops of toluene + 0·25 c.cm. of ethyl butyrate (boiled)	1·4 c.cm.
3	10 c.cm. of citrated solution + 5 drops of toluene + 0·25 c.cm. of ethyl butyrate	0·8 c.cm.
4	Tubercle bacilli 2 tubes + 5 drops of toluene + 0·25 c.cm. of methyl butyrate	30·8 c.cm.
5	Tubercle bacilli 2 tubes + 5 drops of toluene + 0·25 c.cm. of methyl butyrate (boiled)	3·7 c.cm.
6	10 c.cm. of citrated solution + 5 drops of toluene + 0·25 c.cm. of methyl butyrate	3·5 c.cm.

feeble protease is also demonstrable both chemically and by the physical nature of the digest, which becomes gluti nous, the bacillary portion going into an agglutinated sticky lump. With the help of petroleum ether such a digest yields three separate layers, of which the topmost two (1 and 2) are the most important, the lowest being practically the saline solution in which the autolysis was allowed to proceed.

(1) The uppermost layer is light amber coloured, and consists mainly of the fat solvent which has taken up all the lipased products of the fatty and waxy components of the tubercle bacilli, which gives them the acid-fast character, and when evaporated after filtration yields a waxy brownish mass consisting mostly of fatty acids. This is easily neutralizable with alkalis yielding in weak dilutions a colloidal solution suitable for serological investigation. The complement fixation test made with this as an antigen has invariably yielded a negative result in a large number of serums of undoubted cases of tubercle. The antigenic properties, as tested by administering to rabbits increasing doses of this material and then testing their serums, have also yielded a negative result.

(2) The middle layer forms a soft whitish cake and consists of agglutinated tubercle bacilli, most of which are non-acid-fast, while some, though taking up the stain feebly, appear eroded as though partially altered by incomplete lipolysis. Repeated washing of this mass after drying with fat solvents yields a purified product, which is finally powdered, weighed, and suspended in saline solution in definite strength for further study as in (1). The complement fixation test with this as an antigen in a large number

of serums of undoubted cases of tubercle has yielded a definite positive result, although this is feeble as compared with the Wassermann test, and the material may be considered as feebly antigenic The serums of guinea pigs treated to weekly doses of 0 5 mg have also yielded a definite positive complement fixation These treated guinea pigs stand the doses well, and when infected with live virulent tubercle bacilli show also a definite immunity—in some complete while in others partial, as the infection limits itself here to the proximal chain of lymphatic glands in one instance even after eleven weeks when this mass was incised the animal recovered and put on weight, showed no trace of tuberculous lesion, while the controls died of generalized tuberculosis in three weeks to three months

The curative value of this product was then tested in guinea-pigs, allowing a definite period for the infection to be well established Since then this antigen has been extended to man both in glandular and pulmonary infection The glandular cases show definite improvement, as the glands shrink to mere hard nodules felt more than seen, provided caseation and softening have not already started The general improvement in these cases is seen by the increase of weight and a feeling of well being with an accompanying improvement in digestion

The local effect of subcutaneous injection of this material depends on the dose, as anything over 0 025 mg produces in some a distinct local swelling and pain which takes over two weeks to subside and even then leaves a hard nodule and discoloration of the area which may even break down with a serous discharge A dose however, of 0 01 to even 0 025 mg is well tolerated It produces occasionally a mere oedematous swelling which subsides in two or three days The general reaction consists of a rise of temperature 1° to 2° above the usual during the first twenty four hours This drops to normal in two or three days A course of at least twelve injections given weekly seems to be requisite for a definite improvement

Memoranda:

MEDICAL, SURGICAL, OBSTETRICAL

FATAL SPLENOMEGALIC ANAEMIA IN A YOUNG CHILD

THE following notes on an unclassified case of fatal splenomegalic anaemia in a girl aged 3 seem worthy of record in view of the rarity of the condition

The girl was said to have been perfectly well until the previous day when it was noticed that the skin was yellow and she was thought to have jaundice Her appearance was that of an advanced case of pernicious anaemia The skin was lemon yellow the lips and nail beds colourless and the sclerotics pearly white There was no purpura and the child looked well nourished Marked dyspnoea was caused by movement, and the alae nasi were working No palpable glands could be found and the tongue and throat were quite clean Some dark red urine had been passed and a small amount of bile stained fluid vomited The bowels had acted normally the day before and the stool were of normal appearance The temperature was 101°, and the pulse 120 but its volume was quite good No physical signs of disease were detected Dr G P Still saw the case for me in the afternoon Late in the evening there was no change in the patient's condition but she died in coma during the night No blood examination was possible under the conditions The urine was highly acid and contained a few red and white blood cells and a few casts There was more albumin present than could be accounted for by the blood and the colour appeared to be due to a haemoglobinuria

A limited *post mortem* examination was done and revealed no abnormality other than moderate wasting severe anaemia an enlarged spleen and blood stained urine in the bladder The spleen appeared to be about four times the normal size Its capsule was smooth and its consistency firm but not tough its cut surface displayed an abundant purplish red pulp which somewhat obscured the Malpighian bodies and trabeculae The kidneys were not altered in size the pattern of their cortex was somewhat blurred their cut surface had a faint brownish tint but a portion treated with potassium ferrocyanide and hydrochloric acid did not give the reaction for free iron The liver was also negative to Perls's test it was moderately enlarged and its cut surface was pinkish grey and clouded The bladder contained several ounces of dusky blood stained urine and its mucous like that of the renal pelves was smooth and white The myocardium was pinkish grey with a clay like appearance and on the endocardial aspect the stippling characteristic of fatty degeneration was very faintly seen There was no enlargement of any lymphatic glands The lungs were aerated throughout but somewhat oedematous in their posterior parts The stomach and intestines were distended by gas The bone marrow, brain and cervical organs were not examined

Microscopic sections were made of spleen kidney and liver In the spleen there were collections of large mononuclear endothelioid cells chiefly in the periphery of the Malpighian bodies most of them were in advanced *post mortem* disintegration Many showed a swollen cytoplasm containing brown pigment which was very abundant throughout the section, and was probably a *post mortem* phenomenon it did not contain iron (Turnbull's blue stain) In the remainder of the pulp cells were sparse and there was no increase in fibrous tissue (van Gieson's stain) The blood everywhere was completely laked In the liver there was a considerable degree of fatty degeneration affecting chiefly the central and intermediate zones of the lobules here and there cell necrosis was seen There was no iron-containing pigment The blood in many capillaries was moderately well preserved and contained no abnormal constituents In the kidney there was advanced *post mortem* disintegration of the cells of the convoluted tubules but fat droplets were only present in the cells lining some of the collecting and discharging tubules Turnbull's blue stain revealed no iron-containing pigment

London E.12. A CAMPBELL STALK, M B, B S

THE ELECTRICAL REACTIONS IN FACIAL PALSY AFTER SUPPURATION IN THE MIDDLE EAR

IN the ordinary method of testing the function of the facial nerve by means of electric currents, the button electrode is placed over the trunk of the nerve and contraction from the facial muscles obtained by closing the current This method however, yields no indication as to the cause of the facial paralysis, but yields similar results whether the condition has originated as the result of suppurative disease within the middle ear or as the result of the condition known clinically as "Bell's palsy" In certain cases of facial paralysis, it is important to be able to determine whether the condition has arisen as the result of a necrosis of the bony wall of the canal of the facial nerve, or whether the paralysis is due to other conditions These points can be readily determined in such cases as can be examined within ten days of the onset of the paralysis The test depends upon the fact that, if the necrosis of the bony wall of the canal of the facial nerve is present in sufficient amount to allow the toxic products to reach the facial nerve, the electric current will reach the facial nerve very much more easily than if the bony wall of the facial canal is complete

In practice the test is applied as follows

The external auditory meatus of the affected side is filled with warm saline and an intrameatal electrode composed of a central metal core covered in insulating material such as rubber of such a size that it exactly fills the meatus is placed in the external ear and connected to a suitable source of electricity The indifferent electrode having been placed upon the opposite arm the current is alternately closed and broken and at the same time gradually increased until a cathodal closing contraction of the facial muscles has been obtained and a note is made of the number of milliamperes which are required to cause this contraction The electrode is now removed from the affected ear and placed in the normal ear which has previously been filled with saline and the test is repeated

It is found that the reaction is obtained in the normal ear with about 5 milliamperes of current but in Bell's palsy of recent origin from 6 to 7 milliamperes are required and that in cases of suppurative otitis media with facial paralysis of recent origin due to perforation in the facial canal the cathodal closing contraction is obtained with 1½ to 2½ milliamperes of current while in cases of suppurative otitis media without facial paralysis 5 milliamperes are required

From such cases as I have been able to examine it appears that facial paralysis does not occur as the result of suppurative otitis media unless the bony necrosis has allowed the pus to reach the facial nerve Unfortunately it is not possible to make any very definite statement on this point, as in the last two and a half years I have only been able to examine five cases of facial paralysis due to suppurative otitis media and about thirty of Bell's palsy but in these cases the difference in the amount of current required for stimulation showed the above marked differences

Birmingham. A LOWNDES YATES M D Lond, F R C S E

Reports of Societies.

FOCAL SEPSIS AND SKIN DISEASE

ON December 4th a joint discussion was held by the Sections of Dermatology, Laryngology, and Odontology of the Royal Society of Medicine on focal sepsis in relation to diseases of the skin. The President of the Section of Dermatology, DR. E. G. GRAHAM LITTLE, M.P., was in the chair.

DR. H. W. BARBER, who opened for the Section of Dermatology, said that all infections, except the rare general blood infections, were primarily "focal," and led to one of two results: either they ran a definite course and killed, or produced a more or less lasting immunity, or they *tended to persist or to recur*, since the immunity they produced was very transient. In the latter class, with which he was chiefly concerned, were tuberculosis and infections with the streptococci, staphylococci, pneumococci, *B. coli communis*, and the various "catarrhal organisms." Of these, the *streptococci* and *staphylococci* were the most important, the former were essentially inhabitants of the mucous membranes and the latter of the skin. Different strains of either organism differed greatly in their pathogenicity, and more or less virulent streptococci played the most important part in what was known as focal sepsis. If a substance could be discovered that was as effective in dealing with streptococcal and tuberculous infections as was salvarsan in the treatment of syphilis a great deal of acute and chronic skin disease would disappear. He emphasized (1) the difference in pathogenicity of different strains of streptococci, (2) the difference in the clinical manifestations in *different individuals of infection by the same organism*, and (3) the fact that the same organism might pick out different tissues for attack in different individuals. Dr. Barber went on to draw an analogy between the trichophytides, the tuberculides, and (coining a word) the streptococcides, but with this important distinction—*that whereas* the first tended to get well spontaneously, the latter two were liable to persist owing to the development of multiple foci. In his experience it was relatively uncommon for the removal of a septic focus either in the teeth, tonsils, nasal sinuses, or elsewhere to cause a dramatic cure of a skin lesion. He believed this to be due to the fact that in most cases *there was not one focus but several*. Thus, a patient with septic teeth was liable to have infected tonsils, and, as Sir W. Willcox had pointed out, to have a secondary intestinal infection as well. Further, the lymphatic glands connected with all these areas might also act as secondary foci. Secondary streptococcal intestinal infection might persist long after the primary focus had been eliminated. It was essential, not only to isolate a streptococcus from the focus, but also to determine by serological tests that this was the specific infecting organism of the patient. Dr. Barber passed to the consideration of some of the eruptions which, in his opinion, might be due to focal streptococcal infection. These included (1) urticaria, of which cases had been recorded which were cured rapidly by suitable operative treatment of antral and sinus affections or by the removal of infected tonsils, (2) purpura, and (3) erythema multiforme recurrens. The last especially was due in every case he had investigated to *chronic streptococcal* infection. As regards lupus erythematosus, while he agreed that the chronic discoid hyperkeratotic form might be a tuberculide, he was of opinion that the majority of cases were due to the sensitization of the skin of certain areas to a particular *Streptococcus longus*. But as the disease was usually very chronic it was only very rarely that the *removal of a primary focus alone would suffice to cure it*. With regard to alopecia areata, vitiligo, and scleroderma, his view was that these diseases were due to the involvement of different sets of sympathetic nerve fibres. This was not always due to the same cause, but the commonest cause was acute or chronic infection. Since no specific drug existed which would destroy streptococci *in situ*, it was necessary to find and deal with all primary *foci of infection*. In the teeth he considered the apical dental abscesses to be of more importance than pyorrhoea alveolaris. Antral disease or sinus infection was frequently missed, as was also a focus in tonsils scarred and damaged by repeated attacks of quinsy and incomplete removal. X-ray examination of the alimentary tract might reveal a chronically infected appendix, or, what was no less important, intestinal stasis. The object of these investigations was to discover the actual infecting organism which could be determined by the bacteriologist by serological tests with the patient's blood. Mere removal of the septic focus was not sufficient treatment, but every effort must be made to raise the patient's resistance to streptococcal infection by all possible means.

MR. J. F. O'MALLEY, who represented the Laryngological Section, said that while the laryngologist saw numerous cases of skin disease due to local sepsis in the ear, nose, or throat, it was only recently that cases such as lupus erythematosus, lichen planus, alopecia areata, and urticaria were referred to laryngologists for investigation of the nose and throat. The tonsil was at the present day the most popular organ in the whole domain of medicine, and in view of the fact that tonsillectomy had been very frequently performed during the past decade, some effect on the incidence of any skin diseases due to tonsillar infection should soon be visible. It was noteworthy that up to the present no effect on the incidence of acute rheumatism had been produced. He had circularized his colleagues with regard to their experience of cases of skin disease associated with focal sepsis in the nose or throat. Collectively they reported cases of alopecia areata, angio-neurotic oedema, urticaria, giant urticaria, lupus erythematosus, prurigo, erythema multiforme, and erythema nodosum, which had been either cured or very greatly ameliorated by appropriate treatment in the nose or throat. On the other hand, one or two members of the Section had been very disappointed with the results of tonsillectomy advised by their dermatological colleagues, particularly in urticaria and lupus erythematosus. Mr. O'Malley's own experience was limited to a few cases from which he was not able to claim any very striking results.

SIR KENNETH GOADBY carried on the discussion from the point of view of the Odontological Section. He said that the mouth was now regarded as the *primary focus* of many diseases of civilization, but there were very few skin diseases due to direct infection *from the mouth*—*that* was to say, it was very rarely that the same organism was obtained from a skin lesion as was present in the mouth. It was possible that that was due to the unsatisfactory state of their knowledge of oral bacteriology. Focal infections in the *mouth might result from* gingivitis, periodontal disease, and apical infections. Crowns had been unreservedly condemned by the opener, but he (Sir K. Goadby) considered that a crown properly fitted in a suitable case was preferable to a denture. The so-called apical abscess was often sterile. While it was illogical to condemn one area as the source of disease in another unless the same organisms were isolated from both, he was convinced that circulating toxins originating from the mouth did cause skin diseases, notably urticaria, erythema, and purpura. He suggested that the difference between chronic and acute disease lay in the nature of the toxins, those of the former being non-protein and so *not producing an immunity*.

SIR WILLIAM WILLCOX's contribution was read by one of the secretaries. He pointed out that the skin was specially sensitive to circulating toxins, as was proved by the rashes of various fevers. The commonest organism responsible *for skin diseases* was a streptococcus, and the common sites of the primary focus were the teeth and tonsils, from which there was a secondary *implantation upon the intestine*. He emphasized the importance of having a dental skiagram, which would often reveal apical sepsis when the teeth were apparently sound.

DR. W. HUNTER said that the time was past when there was any *doubt* as to the role of focal sepsis in the production of skin diseases. The skin was like a tuned instrument in its sensitiveness to toxins. He *was not sure that* the recent fashion of grouping streptococci would help very much.

DR. LOGAN TURNER wondered why genito-urinary and general surgeons and physicians were not also invited to take part in the discussion, since many primary foci came within their departments.

DR. LESLIE ROBERTS pointed out that focal infection must not be confused with true infection, and added that the

certain diagnosis of focal infections by the naked eye, particularly of the tonsil, was often impossible. In this connexion he stated that the cheesy material which could so often be expressed from the crypts of the tonsils was not a definite sign of sepsis.

Mr J. G. TURNER expressed himself a firm believer in the theory of focal infection from the mouth, and considered pyorrhoea to be a much more important factor than the so-called apical sepsis. Pyorrhoea was largely due to eating soft and sticky foods.

Dr H. G. ADDISON contended that there were many skin diseases for which no cause was known. So many cases got well without an infective focus being found, and on the other hand the removal of a focus of infection did not always cure the skin lesion, so that in his view the importance of focal infection had been somewhat exaggerated.

Dr W. HILL, speaking as a laryngologist, said that he had often removed tonsils at the express desire of his dermatological friends, but without benefit in the large proportion of cases, so that he was doubtful whether it was advisable to remove the tonsils unless they showed very definite signs of disease.

Dr ARTHUR BULLEID, Mr T. B. LAYTON, Dr K. SIDLEY, and Mr LIVINGSTONE also spoke, and Dr H. W. BARBER replied.

DIAGNOSIS OF CANCER OF THE THYROID

THE Section of Surgery of the Royal Society of Medicine held a meeting on December 3rd. In the absence of the President, Mr T. P. LEGG took the chair.

A discussion on the diagnosis of malignant disease of the thyroid was opened by Mr JAMES BERRY. After giving brief details of a number of illustrations of cases and specimens exhibited, Mr Berry proceeded to say that it was fortunate that malignant goitres were rare, since their recognition whilst still operable was often a matter of extreme difficulty. In the operable stage the only symptom often was a growing lump. Pain, dysphagia, dysphonia, and fixity of the tumour only occurred when the growth had extended to surrounding parts, and the difficulty of diagnosis was enhanced by the fact that these symptoms and signs might rarely be present in non-malignant goitres. If the great vessels of the neck were displaced by the tumour the growth was probably non-malignant, but there were exceptions even to this rule. Further, thyroid tissue might be found in any part from the thorax to the base of the tongue, and such outlying portions of the gland might be affected by malignant disease, giving rise to an unusual clinical picture. Two common forms of degeneration of simple goitres, the fibrosis and calcification of adenomata might, by producing a localized hardness, suggest malignancy especially as the latter might pass unnoticed by the patient for years. While the presence of a small hard lump of recent origin in the thyroid of a middle-aged patient at once gave rise to a suspicion of malignancy a diagnosis could not be made with certainty. Mr Berry then gave an instance of a case in which a cyst, tensely filled by recent haemorrhage in a woman of 68 had given rise to a diagnosis of malignancy—a diagnosis supported by paralysis of one vocal cord. This case had been regarded as inoperable and was sent to the Radium Institute for treatment. Mr Berry's diagnosis of haemorrhage, on which he operated, was based on the smooth globular surface of the tumour and its comparative mobility. It should be remembered that haemorrhage into thyroid tumours was very common and was no indication of malignancy. Dysphagia was very uncommon in innocent goitres, even when very large and pressing on the trachea, but was an early symptom in many malignant cases. This sign also might lead to error as in a case related by the speaker in which the dysphagia and vocal cord paralysis persisted after the removal of a benign thyroid tumour, and proved eventually to be due to carcinoma of the cervical oesophagus. The hard painless bilateral goitre of middle age was often erroneously regarded as malignant and extirpated entirely. The subjects of this variety of goitre generally presented the peculiar waxy pallor of early myxoedema, which was easily recognized and was not seen in malignant goitres. In any case the practice of total removal of the thyroid was to be condemned. A number of illustrations and specimens were then shown on the epidiascope.

Mr W. TROTTER referred to the similarity between the symptoms of malignant disease of the thyroid and of the cervical oesophagus. The symptoms of the latter in the order in which they occurred were (1) paralysis of the vocal cord, (2) enlargement of the thyroid, and (3) oesophageal obstruction. Mr Berry had already given an instance of this similarity, and Mr Trotter gave another. As regarded the diagnosis of operability, it should not be too readily concluded that a case was inoperable without making the attempt, for the apparent difficulties could frequently be overcome by patience and perseverance at the operation. He gave instances in which carcinomata of the thyroid already adherent to the oesophagus and the trachea had been successfully dealt with. The patients lived for five and ten years afterwards respectively. Kocher had said that where a malignant tumour of the thyroid had penetrated the capsule and secondary malignant glands were present, the outlook was very unfavourable. Yet he had operated on a girl with these conditions seventeen years ago and the patient was still alive.

Mr A. J. WALTON remarked that the whole subject of carcinoma of the thyroid presented many curious anomalies. It had been stated, on the one hand, that the disease was so malignant that once the diagnosis could be definitely established the prognosis was hopeless. But recent statistics tended to show that the [illegible]. In his series of cases malignant goitre [illegible] about 1·6 per cent. of all goitres. The type of malignant disease did not seem to have any definite relation to the prognosis, and, further, the pathological classification was difficult and unsatisfactory. Clinically malignant goitres might be classified as (1) secondary to adenoma or colloid enlargement, (2) apparently carcinomatous from the onset, (3) a type showing a slowly growing primary lesion, frequently overlooked, with large secondary deposits. In the first type the earliest symptom of malignant change was frequently hyperthyroidism, for which reason he regarded all adenomata with suspicion. The following signs suggested malignancy in a goitre: increase in size with irregularity of the outline and a firmer consistency, pain, and fixation to the trachea. Recurrent laryngeal paralysis was by no means an infallible sign of malignancy, nor was glandular enlargement.

Mr T. P. DUNHILL said that the cases under consideration fell into three classes: (1) those obviously malignant; (2) those where the diagnosis was not so obvious, but based upon such signs as indefinite edges, dyspnoea, pain, etc.; and (3) a type in which the diagnosis could only be made by the pathologist after operation. He made a strong plea for the removal of all adenomata of the thyroid since eventually they caused pressure or toxic symptoms or became malignant.

Mr G. W. DE P. NICHOLSON spoke on the pathology of malignant goitres and propounded the theory that the secondary deposits of apparently normal thyroid tissue which sometimes occurred in bone were not malignant but were attempts on the part of the body to produce accessory thyroid tissue. He thought it easily possible for the active cells of a ductless gland like the thyroid to be carried by the blood stream and to give rise to fresh growths of glandular tissue in other parts, without being in any way malignant.

Mr V. Z. COPE referred to the difficulty both in making a clinical diagnosis and in making a pathological diagnosis after removal of a doubtful tumour. He had removed a tumour from the right lobe of the thyroid of a boy aged 10 years. This was reported to be precancerous. A recurrence took place, which was reported to be cancerous. A further recurrence took place and the boy eventually died. The sections were shown to another pathologist, who considered the tumour to be a foetal adenoma.

Mr J. E. ADAMS and others also spoke, and Mr BERRY briefly replied. A large collection of pathological specimens had been arranged by Mr Berry and Dr Scott Williamson.

THE EFFECT OF CHEMICALS ON LEUCOCYTES

AT a meeting of the Section of Pathology of the Royal Society of Medicine on November 18th DR ALEXANDER FLEMING described the influence of certain chemicals on the bactericidal action of leucocytes

DR FLEMING first showed that the bactericidal power of blood as regards staphylococci was a function of the leucocytes, that serum had no lethal effect on these cocci, nor had blood from which the leucocytes had been removed Leucocytes, isolated from the blood, had this power to a marked degree The effect of the chemicals was tested by mixing known volumes of serial dilutions with volumes of defibrinated blood which had been infected with a small number of staphylococci and incubating the mixtures in "slide cells," after which the colonies which developed were counted It was found that nearly all the chemicals tested had, in certain concentrations, a deleterious effect on the leucocytes as evidenced by the development of an increased number of colonies In a series of salts of sodium so tested it was found that the fluoride and the silico-fluoride were especially toxic Various antiseptics in common use were found in certain concentrations to induce an enormously greater growth of bacteria in blood In the case of the poisonous alkaloids it required a relatively high concentration (in most cases about 1 in 1,000) to affect the leucocytes, it was shown that the two which were most toxic to leucocytes were those which were used for the destruction of protozoa in the body—namely, quinine and emetine The bearing of the bactericidal power of leucocytes on the procedure of blood culture was discussed While as the result of his experiments DR FLEMING did not think that any substance would be found more suitable for addition to blood for cultural purposes than trypsin (as recommended by Douglas and Colebrook), yet this had technical drawbacks in that its sterility had always to be controlled When sterile trypsin was not available he recommended the addition of some easily obtained chemical in a concentration just sufficient to destroy the bactericidal power of the leucocytes and yet permit every microbe to develop Suitable mixtures for blood culture suggested were one volume of blood with one volume of 2 per cent salt or 1 in 400 carbolic acid, or with 5 volumes of water

DR FLEMING also showed that with some chemicals, such as picric acid, the effect on the leucocytes as regarded their bactericidal power was more marked than was the effect on other leucocytic functions, such as the power of emigration and the phagocytic power, and was more nearly correlated to their lysozymic power

INSULIN AND DIABETES

AT a meeting of the Medical Society of London on December 8th, with the President, DR E M CALLENDER, *in the chair*, a discussion was held on the present position of the treatment of diabetes by insulin

DR GEORGE GRAHAM, who opened the debate, stated that discussion of the principles of the use of insulin could now take place, whereas a year ago one was more concerned with various details He proposed to present his remarks under five headings First, there was the question of the aims of insulin treatment Before the introduction of insulin one aimed, in a case of diabetes, at getting the urine sugar-free and the blood sugar between normal limits, and hence, in severe cases, low diets were essential With the introduction of insulin it was believed that the amount of ingested carbohydrate could be increased and bigger diets employed Dr Graham, however, still believed in the importance of keeping the blood sugar within normal limit in order that the beta cells of the islets of the pancreas should not be overworked This was sometimes difficult to achieve especially when patients left hospital The question of the presence of acetone bodies in the urine was also important, but it must be remembered that Rother's test was a very delicate one, and small amounts of aceto-acetic acid and acetone were not of great importance With regard to the weight of a patient one still aimed at slight undernourishment, but the difference between the normal weight and the weight maintained in diabetes was much less now than formerly In children it was particularly important to keep them slightly under weight and not allow them to get fat Secondly, there was the type of patient suitable for insulin treatment It used to be said that if a patient could take 50 grams of carbohydrate and an adequate calorie value in his diet, then insulin was not required DR Graham did not adopt this view, because insulin had some effects other than those on sugar metabolism, and patients felt all the better for it The patient with the acute attack of diabetes should be given insulin so that the beta cells were not overworked He referred to Joslin's figures of an average duration of five years for this type of case before the use of insulin, and pointed out that it would be interesting to see if insulin would extend this period Thirdly, he dealt with the type of diet to be used The great differences of opinion occurred mainly with regard to the use of carbohydrate He was in favour of comparatively small quantities and small doses of insulin, the latter being easier for the patient to manipulate and not requiring such exactitude as to time and carbohydrate dosage as if larger doses of insulin and bigger carbohydrate diets were employed There was also more danger of ill effects after a sudden stoppage if large doses of insulin were used With regard to the total calorie value, DR Graham was in favour of the lower values in the usual figures of 22 to 30 calories per kilo of body weight Fourthly, with regard to the use of insulin in diabetic coma, the dose should be large—about 100 units a day—and large amounts of sugar should be given at the same time The influence of intercurrent disease in the production of coma had been strikingly marked in the speaker's experience Fifthly, DR Graham emphasized the influence of other diseases on diabetes A cold in the head or an attack of diarrhoea in a diabetic would send the blood sugar rapidly up, and it was important to get diabetic patients to realize the seriousness of trivial ailments

PROFESSOR HUGH MACLEAN stated that insulin had been a great success, for by it *the majority of uncomplicated cases* could be controlled The best principle was *to follow* Nature, and while it was ideal to keep blood sugar within normal limits it was often impossible after patients left hospital He agreed that the presence of a slight amount of the acetone bodies in the urine could be disregarded, but he could not confirm DR Graham's fears as to the dangers of suddenly stopping insulin in the case of a patient on a high carbohydrate diet He found children were the most difficult patients to treat, and described how many developed coma during the winter months Professor Maclean stated that he had been asked whether a young man suffering from diabetes, controlled with insulin, should marry, and he rather thought the psychological effect of a ban on marriage would produce worse results than marriage might He thought that insulin should always be used in children, and he almost agreed with the *American* view that insulin should be used in every patient under 40 suffering from true diabetes He described an interesting case of diabetic coma and renal glycosuria in the same patient, pointing out the difficulties in treatment He also had found the tonic effect of small doses of insulin very valuable

DR C M WILSON observed that the whole question seemed to him to be still *sub judice* What were they trying to do? Were they trying to keep the blood sugar normal or the weight steady? He was rather in favour of keeping the blood sugar normal, and was it better to do this by dieting or by using insulin? The question of the tonic *effect of insulin* very much complicated matters He inquired as to the effect of insulin treatment in cases of eye complications, which in his experience had been disappointing

DR E G B CALVERT raised the question whether diabetes was a progressive lesion or not He cited several cases where the diabetes seemed to have got worse even with the blood sugar kept low, and suggested that further investigation was necessary on this subject as to the effect of toxins and other endocrine secretions on the lesion producing diabetes He described the use of parathyroid extract to enhance the action of insulin, and also quoted some work which suggested that there might be something in the

vitamin content of a diabetic diet which affected blood sugar curves

SIR JOHN BROADBENT inquired as to the after-results of insulin treatment, quoting a curious case where a patient's tolerance of carbohydrates was very quickly increased with comparatively small doses of insulin, he also referred to the difference in the metabolism of lævulose and dextrose as having some bearing on diet in diabetes

DR W LANGDON BROWN said that the greatest possible harm had been done by the statement that insulin treatment once begun must be continued for life The state of a patient after insulin treatment was left off was *not* worse than before He thought that DR WILSON was unduly pessimistic, and stated that cases which came under treatment promptly usually did well He expressed himself as very interested in the use of parathyroid extract

DR L P POULTON dealt with the severe case of diabetes and expressed his opinion that the large doses of insulin necessary in these cases were better spread out over the twenty four hours He thought that, especially in young patients, the earlier insulin treatment was employed the better, and even elderly patients felt great benefit from insulin injections The form that carbohydrate was taken in was important He found that roots such as artichokes produced a smaller increase in the blood sugar than green-stuffs containing the same amount of carbohydrate

DR GRAHAM replied to the various speakers He thought that the question of marriage was of great importance, especially to the female, where the risks of pregnancy were of grave danger to the diabetic He had not seen any improvement in cases of diabetic retinitis and he again emphasized the difficulty of treating children where the danger of various infections added to the fluctuations in the blood sugar

SEQUELS OF ENCEPHALITIS LETHARGICA

AT a meeting of the Section of Medicine of the Royal Academy of Medicine in Ireland held on November 21st, the President, DR F C PURSER read a paper on the sequelæ of encephalitis lethargica

The President said that the most constant and perhaps the most distressing after effects of encephalitis were mental Some writers said that in 95 per cent of cases there were mental sequelæ and many put the figure at 70 per cent he was inclined to adopt the lower figure The type and severity of the initial symptoms determined to a great extent the subsequent mental condition Patients with marked lethargy and coma were far more prone to mental sequelæ than those who were sleepless, delirious, or even maniacal in the acute stage The young, under 12, were likely to suffer most Mental deficiency and insanity were frequently recorded as sequelæ, including mania, melancholia dementia præcox, and states of unconsciousness like petit mal, lasting some hours and unaccompanied by convulsions The immediate outlook in post-encephalitic mania appeared to be good The milder mental afflictions appeared as impaired memory a change of disposition, and a disturbance of normal sleep The alteration in the patient's disposition was always for the worse They were restless, irritable, and dissatisfied Most of the physical sequelæ were residua of conditions characterizing the acute stage some form of ocular abnormality being the commonest This might amount to a total ophthalmoplegia, or be only a slight squint and diplopia, it might be ptosis, unequal pupils, Argyll Robertson pupils, or nystagmus It was estimated that over 75 per cent of patients who survived the acute attack showed some ophthalmological peculiarity In contrast with the age incidence of mental sequelæ, children were far less liable to these residua than adults, most cases occurring between the ages of 15 and 40 In general physical residua with the exception of the Parkinsonian syndrome, tended to abate as time went on This was especially so with ocular paralyses There was, however, much reason to fear that physical symptoms which followed an acute attack after an interval of some months, and which were not merely residua persisting from an acute attack, tended to progress rather rapidly Involuntary movements were said to occur in 15 [illegible] of cases, their form varying greatly Some resembled Sydenham's chorea so closely that no difference could be detected between the two conditions Hemiplegia or a less extensive paralysis showing involvement of the pyramidal tract, was not infrequently met with Sensory residua were indefinite, pains lasting some weeks, and possibly attributable to lesion of a posterior nerve root might occur Obesity was an unusual sequel of encephalitis, but it seemed to be the most common trophic change following an acuto attack Finally, the Parkinsonian syndrome was, next to ocular paralysis, the most common sequel of acute encephalitis It had been computed that about one-quarter of the acute non fatal cases ended in this tragedy The post-encephalitic Parkinsonian syndrome differed from typical paralysis agitans in many particulars which, apart from the patient's history of previous illness and other residua of encephalitis which might be present, made the differential diagnosis easy The differences were etiological and clinical Whereas paralysis agitans proper commenced after 45 and was commoner in men than in women, the post-encephalitic condition resembling it occurred at any age, from 15 to 40 years usually, and women were at least as frequently affected as men Further, compared with true paralysis agitans the condition was steadily and rapidly progressive

DR LEONARD ABRAHAMSON presented two patients with sequelæ The first patient was a boy, aged 11, who had had an attack of encephalitis in March, 1924, with abdominal myoclonus this myoclonus was still present It varied in intensity, and the contractions were often more forcible than those noted during the acute attack In addition to the muscular sequela, the boy showed great irritability, change in disposition, insomnia, and a habit of holding his breath The second case was that of a girl aged 19 who had had an attack of encephalitis in April, 1924, characterized by ocular paralysis, in omnia, and delirium She now suffered from delusions about her food which she thought was poisoned, and complained of yawning frequently At times during the yawn her mouth remained open, and she was unable to finish the yawn until some time had elapsed Another habit developed was that of frequently taking deep breaths Insomnia was present, and towards evening she showed restlessness of the left foot, which moved continuously during the night DR ABRAHAMSON referred to the variation in the incidence of the sequelæ of encephalitis after the different outbreaks The Parkinsonian syndrome seemed to have been much commoner after the last epidemic than after previous epidemics He discussed the changes in character noted in children, and referred to a child who developed marked kleptomania In discussing the frequency of sequelæ he referred to the difficulty in compiling accurate statistics as sequelæ were often considerably delayed in appearance and the patient might seem to have quite recovered from the original illness In his experience sequelæ occurred in about 50 per cent of patients In a few cases recrudescences indicated that the virus could remain in the system for long periods

DR J SPEARES mentioned the difficulty of diagnosing cases of encephalitis lethargica at first sight He had recently seen three cases of the Parkinsonian type in which the face particularly was affected, and it had been very difficult to get any history of an acute attack of the disease He had tried hyoscine in these cases, but without much result The drug he had found most useful was luminal, starting with 1/2 grain doses and increasing to 2-grain doses A patient of his who had suffered in 1920 from the disease, which was not at first diagnosed, was treated later and got well, but was now practically unable to swallow

DR ALFRED P PARSONS referred to the frequency of restlessness in cases of sequelæ of encephalitis lethargica both nocturnal and in the daytime He had at present a patient who was so restless that he could not sit still in a room for five minutes Occasionally patients recovered quite satisfactorily he had seen one with complete ocular paralysis who had made a complete recovery, and had no sequelæ of any kind whatsoever He agreed about the difficulty of getting a history of an acute attack from patients He had recently seen a case, a schoolboy, who had got a blow on the eye, it was thought that the injury

to the eye was quite sufficient to account for his symptoms, but later on he developed well marked Parkinsonian symptoms In this case there was no history whatever of any acute illness

DR T G MOORHEAD referred to a case which he had recently seen, and which displayed in a striking manner the Frohlich syndrome The patient, a woman aged 23, employed in clerical work, had suffered from a mild attack of encephalitis lethargica last January Since then she had been dull and listless, and she now presented a typical Parkinsonian appearance, together with an extraordinary adiposity of the entire body, but more especially the mammary glands and the hips There was complete amenorrhoea, with an almost complete disappearance of the pubic hair, and there seemed to be little doubt that the condition was due to involvement of the pituitary gland Dr Moorhead referred to the possible value of psychotherapy in the nocturnal restlessness of children In one recent case of his suggestion treatment had proved most valuable after drugs had failed Of the various drugs used for myoclonic spasm he had found hyoscine by far the most useful, but it was necessary to give it in fairly large doses

DR G E NESBITT drew attention to the fact that the Parkinsonian syndrome frequently occurred in the acute stage of encephalitis lethargica as well as in the later stage, and to the frequency of mental deterioration in these cases

DR V M SYNGE asked what dose of hyoscine should be given in these cases He had recently seen a statement by some observers who had obtained excellent results from the use of this drug, some bad cases had got well enough to allow the patients to go back to work, and others had shown a great improvement The dose given was one-fiftieth of a grain four times daily, and in some cases one-hundredth of a grain four times daily

The PRESIDENT, in reply, thought the Parkinsonian syndrome occurred in 50 per cent of cases, in nearly every case the face was affected He had not found luminal of any use, and hyoscine, even in small doses, had seemed to him to make the patients delirious, although he had found that in cases of paralysis agitans it had stopped the tremor for a time, he had not given it in cases of encephalitis lethargica He had never got good results from the use of parathyroid extract in any cases, but it had not done any harm He thought that the Parkinsonian syndrome occurred more frequently in the acute stage of encephalitis lethargica than in the later stages Uriotropine was sometimes given in the acute stages of the disease, and he had heard that intravenous injection of sodium salicylate was very good also in the acute stages, one injection a day being given of 1 gram in 5 c.cm of normal saline

THE VALUE OF THE SCHICK TEST

A MEETING of the Section of Pathology of the Royal Academy of Medicine in Ireland was held on November 7th The President, Professor J T WIGHAM, read a paper on early and pre-morbid diagnosis, with special reference to skin reactions

DR W M CROFTON said that apparently the Schick test for diphtheria was not really reliable It seemed to him much more simple to immunize with toxin itself, or with toxin modified with serum (which he did not think necessary), or modified with iodine, or by inoculations with the diphtheria bacillus itself

DR J W BIGGER remarked that it needed a good deal of thought to decide between a positive and a negative Schick reaction There were some substances which were harmful even to normal people, in some people diphtheria toxin was a harmful thing, and gave a positive reaction Other substances were harmless, ordinary horse serum when injected into people generally produced no bad result Certain substances when injected into some people would be harmless, and when injected into others would prove very harmful He considered that the term "anaphylaxis" should be limited to a condition of sensitiveness produced by the injection of a substance which was usually harmless There was no doubt about the utility of the Schick test Some people were very susceptible to diphtheria and others were not, and it would only be necessary to immunize those who had been proved by the test to be susceptible

DR T T O'FARRELL raised the question whether the Schick reaction was affected by the virulence of the bacilli DR W D O'KELLY did not think it was possible to immunize patients by injecting diphtheria bacilli If antitoxin was given on one occasion and the patient contracted diphtheria again he was liable to anaphylaxis, though cases of anaphylaxis in man were extremely uncommon

DR E T FREEMAN said that the results he had obtained from the Schick test had been very disconcerting In cases of eczema, etc., in children, one could usually detect some factor in diet which could be incriminated with some degree of certainty In adults this was usually impossible, and he was of opinion that the results obtained by the test were of very doubtful value

DIAGNOSIS AND TREATMENT OF GASTRIC AND DUODENAL DISEASE

AT a meeting of the Nottingham Medico Chirurgical Society held on November 7th, the President, DR W STAFFORD, presiding, Professor H MACLEAN of St Thomas's Hospital gave an address on modern methods in the diagnosis and treatment of gastric and duodenal disease

Professor MacLean, after a few remarks on the classification of digestive disorders, said that the test meal was of no importance in the diagnosis of gastric or duodenal ulcer, for, apart from the fact that there was generally an increase of hydrochloric acid with duodenal ulcer, test meal results were normal In the great majority of cases of cancer of the stomach there was no free hydrochloric acid, but lactic acid was present These findings *per se* were not pathognomonic of cancer, but if, after the stomach had been thoroughly washed out, a test meal showed the presence of lactic acid, then cancer might be diagnosed The best solution for testing for lactic acid was ferric chloride 0·2 gram, mercuric chloride 2·5 grams, hydrochloric acid 0·1 c.cm, water to 100 c.cm A few drops of this solution added to a quarter of an inch or so of filtered test meal in a test tube gave a yellow coloration in the presence of lactic acid This test was exceedingly useful even in early cases of gastric cancer The source of the lactic acid in cancer of the stomach was at present unknown It did not appear to be due to fermentation, but seemed to be produced from the diseased stomach It was now more or less definitely accepted that gastric ulcer very rarely passed into cancer In a very few cases it might do so, but as an outside figure not more than 3 to 5 per cent of gastric ulcers ever gave rise to cancer In haematemesis from gastric ulcer an operation was contraindicated, since most of the patients died after surgical treatment It was essential to keep the stomach alkaline, and to give no food by the mouth for several days Only very small amounts of milk should be given at first, and special care should be taken to keep the stomach alkaline for some time after the food was given In doubtful cases of ulcer or cancer definite evidence might frequently be obtained by examining the stools for occult blood When this was found it always signified an abrasion of the alimentary tract in the stomach or duodenum All the symptoms of ulcer were often present, and yet no ulcer was found at an operation In such cases a definite band was sometimes found extending from the duodenum to the gall bladder, and when this band was divided the dyspeptic symptoms generally disappeared

Both duodenal and stomach ulcers should be treated by alkaline therapy great care being taken that the stomach was really kept alkaline For this it was necessary to give 10 ounces of milk (containing sodium citrate) every two hours, together with 2 drachms of magnesium cream immediately after the milk Between the milk feeds 1 to 2 drachms of an alkaline powder such as sodium bicarbonate, magnesium carbonate, and bismuth carbonate, in equal parts to half an ounce, should be administered At 10 p.m or later 1/2 to 1 ounce of bismuth carbonate should be given in water, this treatment to be continued for two weeks

After that more solid food might gradually be added, but alkaline therapy should be continued for three weeks longer Careful attention for two years was necessary afterwards If this treatment failed surgical intervention was indicated Cases of cholecystitis, gall stones, etc, could often be diagnosed by means of the duodenal tube, suction secured some of the gall bladder contents, and microscopic examination would frequently reveal pathological changes in the bile

STREPTOCOCCI IN DISEASE

At a meeting of the Manchester Pathological Society held on November 12th, Professor W W C Topley delivered his presidential address on streptococci in relation to human disease

Professor Topley pointed out that streptococci must be regarded as the chief amongst pathogenic organisms to cause death in man, and particularly in association with affections of the respiratory tract The classification of these organisms was difficult, and must necessarily be somewhat inaccurate A classification suitable for ordinary purposes was suggested The influence of secondary streptococcal infections in influenza and measles was emphasized, and the importance of isolation and careful nursing precautions to prevent the spread of pneumonia in these cases The mass of clinical and experimental evidence was overwhelmingly in favour of scarlet fever being a primary streptococcal infection, in the case of rheumatic fever, though the evidence was by no means so definite, there was much to support the view that a streptococcus was responsible The pneumococcus group was also considered, and Professor Topley suggested that the Type I antiserum appeared to have a definite therapeutic value The certainty as to the efficacy of pneumococcal antisera could only be arrived at by the careful and combined clinical and bacteriological investigation of a large number of cases

Dr Cooper, Professor Shaw Dunn, and Dr G J Langley took part in the subsequent discussion

UTERINE BACKWARD DISPLACEMENTS

A meeting of the North of England Obstetrical and Gynaecological Society was held at Sheffield on November 21st, with the President, Professor A Donald, in the chair The discussion of the President's address on the treatment of mobile retro-displacements, adjourned from the previous meeting of the society (reported in our columns November 8th, p 858), was resumed Professor Donald's address is printed in full this week at page 1087

Mr W W King (Sheffield) only operated upon those cases of mobile retroversion in which the symptoms were relieved by replacement of the uterus and the use of a pessary No woman objected to a pessary for three months when it was pointed out that it was being used as a test as to the advisability or otherwise of operation The use of this test eliminated the necessity for suspension operations in all but a very few cases He considered that dyspareunia, sterility, and repeated abortions were, of themselves, indications for operation He related cases of the cure of symptoms by sling suspension operations and their recurrence when the round ligaments gave way so that the uterus again became retroverted He took this as proof that retroversion sometimes gave rise to symptoms He rarely undertook curettage except as a diagnostic procedure or in cases of retained products of conception

Dr Leith Murray (Liverpool) had tabulated his cases of ventrosuspension during the three years 1921-23, they numbered 31 out of a total of 593 abdominal operations performed at the Hospital for Women Of 12 ventrosuspensions, 9 were in married nulliparous women, mainly for sterility, 3 were in single women and were determined by exploration an original diagnosis of mild inflammatory disease having been made He agreed that there was little need for suspensory operations in nulliparous women, but contrasted the large number of conditions in which the President had recommended curetting with the rare occasions on which he himself considered this necessary No single woman had been cured during the three years analysed, and only one married nulliparous woman With regard to multiparous women he found much difficulty in appraising the more usual complications of child bearing such as subinvolution mild disease of the appendages and slight descent, in relation to symptoms He considered that in mobile retro displacements hyperaemia was intrinsic, and was not determined by the backward position Curettage was the best treatment for subinvolution except possibly when the uterus was very big, heavy, tender and retroflexed, when he thought that a suspensory operation in addition to the curettage would more quickly lead to improvement He preferred the term "functional hyperactivity" to "disordered action of the uterus," and "subinvolution," in most cases, to "endometritis"

Mr Miles H Phillips (Sheffield), who could not attend, had asked Dr John Chisholm to express the following views on his behalf He agreed that the chief symptom of mobile retroversion was pelvic discomfort, varying in amount, and even in the same patient at different times, if neglected neurasthenia followed often The other troubles were sterility, liability to abortion, and dyspareunia, more especially when the ovaries were prolapsed All these symptoms, uncomplicated by other conditions, could be cured by replacement of the uterus, and its retention by a pessary or suspension operation Mr Phillips was astonished that cases of this kind occurred so rarely in Dr Donald's practice The retroversion however, was often of much less importance than some other conditions also present—for example, gonococcal or other infection of the cervix, endometrium, myometrium, or appendages, vaginal prolapse, or hypertrophied vaginal cervix To overlook these and attend only to the retroversion was a frequent cause of disappointment It was often easy to decide what degree of attention the retroversion required in inflammatory cases, but in others a pessary was first employed as a test before operation was advised Mr Phillips was satisfied that retroversion did not cause endometritis He believed that congestion of the cervix and body of the uterus was produced by retroversion in many but not in all cases depending on the tone in the broad ligaments and utero-sacral folds He had on many occasions demonstrated that the engorgement and erosion of the posterior lip of the cervix in retroflexion disappeared after the uterus had been put in its proper position, that must point to some interference with the circulation Again, drainage was interfered with by retroversion during the puerperium, and occasional cases of lochiometra resulted In these the benefit of the semi prone position for an hour or two or even longer in bad cases was often seen Mr Phillips had seen three cases of acute abdominal pain produced by the retroverted uterus being caught and held by the utero-sacral folds In two of these cases the surgeon at the operation (abdominal section) had considerable difficulty in dislodging the fundus, although there were no adhesions In one of these cases the patient was a young nurse who had strained while lifting a heavy bed

Dr Fletcher Shaw who had on two previous occasions collaborated with Dr Donald in papers upon this subject, gave the reasons for his agreement with him Many years ago he had worked under two gynaecologists whose views on this subject differed In one ward these mobile retroflexed uteri were always fixed up, and in the other ward they were treated by curetting as an anteflexed uterus with the same symptoms would be, in order to form his own opinion on the subject he had investigated a large number of these cases which had been treated by curetting The symptoms were tabulated, the position of the uterus noted and a questionary sent to each patient asking for the result in each separate symptom These cases were then divided into two groups anteflexed and retroflexed uteri In each group the symptoms were the same the only difference being the position of the uterus and of retroflexion was the cause of the symptoms it would be impossible that curetting, which left the uterus in the same position should cure this group The results showed, under every heading,

that the group of retroflexed uteri had a slightly higher percentage of cures than the anteflexed uteri Quite recently he had made another investigation of a series of his own cases—163 altogether—and found the results exactly the same The anteflexed uteri gave 75 7 per cent of cures and the retroflexed 82 per cent After this investigation it would be impossible to believe otherwise than that a mobile retroflexion did not produce symptoms, except in very rare instances Most of the speakers who were supporting ventral fixation in this discussion seemed to be arguing largely from these exceptions, since they very seldom performed ventral fixation for simple mobile retroflexion

PARKINSON'S SYNDROME AND ENCEPHALITIS

A CLINICAL meeting of the Devon and Exeter Medico Chirurgical Society was held on November 20th with the President, DR VINCENT SMITH, in the chair

DR W GORDON showed a man in whom the symptoms of Parkinson's disease had developed after acute encephalitis lethargica In addition to the symptoms associated with Parkinson s affection, the man had considerable ptosis DR GORDON discussed the pathology of the disease, and traced the relation of the red nucleus (1) with the spinal cord after decussation, (2) and thence via the rubral tract with the anterior cornua, (3) with the corpus striatum and forwards to the frontal convolution DR C J VLIELAND compared the pathology in the true Parkinsonian syndrome with that which might have been expected in this particular case DR CRAIG cited foreign cases where Steinach's operation had been undertaken with a view to rejuvenation and arrest of the morbid process DR G L THORNTON had recently seen a similar case with ptosis and symptoms of paralysis agitans, a history had been obtained of a preceding illness suggestive of encephalitis

DR GORDON showed, with DR MILLER MUIR, a case of lymphadenoma in which x ray applications had caused a considerable reduction in the glandular swelling DR Miller Muir referred to the indirect and distant reduction of glands—in the axilla, for example—when applications were made elsewhere as in the neck, and also to the diagnostic value of x rays as shown by their effect on the glands in lymphadenoma DR Muir showed also a man with a large inoperable sarcoma of shoulder now under x ray treatment, and of whose ultimate recovery DR Muir was hopeful

MR A L CANDLER showed photographs of a young woman upon whom he had performed plastic repair of a broken nose The permanent improvement was very striking and there was no visible scar owing to the flap having been turned back from within MR Candler also demonstrated the technique employed in securing rib cartilage for the nasal bridge and of maintaining free cartilage in reserve in the event of failure of the first attempt He advocated the fat of the abdominal wall as a useful site for the so called "human larder"

DR R V SOLLY showed a specimen of sarcoma of the lung from a man, aged 40, who had been under the care of Dr J A Roper, the clinical diagnosis being made during life Nearly the whole of the left lung was involved, the growth obliterating the pleural cavity and being strongly adherent to the ribs and spinal column Enlarged glands were found at the root of the lung and beneath the diaphragm The heart was pushed over to the right side of the chest and there was bulging of the left side The percussion note had been dull over the whole lung with absence of the breath sounds, tactile fremitus and auscultatory vocal resonance, except at the extreme apex Repeated aspiration had been negative on all occasions except once, when a few ounces were withdrawn The growth proved to be a small round celled sarcoma

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AT the annual business meeting of the Aberdeen Medico Chirurgical Society held on November 20th, the following officers were elected President Dr Peter Howie, vice-president, Dr James Crombie secretary, Dr H Edgar Smith, treasurer, Dr George Rose, editor of *Transactions*, Mr G H Colt librarian Dr W Clark Souter, recording secretary, Dr H Ross Souper assistant secretary, Dr Robert Richards

Reviews.

THE EVOLUTION OF CHRONIC PULMONARY TUBERCULOSIS

PIERRE COLOMBAN, in his book on the evolution of chronic pulmonary tuberculosis,[1] sets out to prove a theory—a very dangerous thing to do, as all who are acquainted with the literature of tuberculosis or cancer will affirm Briefly, his theory is this The tubercle bacillus flourishes in tissue which is comparatively avascular, hence when it attacks the adult lung it selects that part where the circulation is poorest—namely, the apex If the blood flow to this part be increased, the progress of the disease is checked This increased blood flow can be induced either by drugs which raise the blood pressure, or by placing the patient in a recumbent position with the head at a lower level than the feet, so as to cause passive congestion of the upper parts of the lung

Neither the circulatory hypothesis of the selective incidence of pulmonary tuberculosis nor the methods of treatment advocated are new, and the sole merit of the author consists in the care he has taken to collect the evidence bearing upon this subject Some of this evidence is distinctly poor, for instance, he states that in diseases accompanied by hypertension, such as moderate alcoholism, lead poisoning, Bright's disease, and tertiary syphilis, pulmonary tuberculosis, when it does occur, progresses slowly, and he considers this to be due to the increased blood pressure and hence augmented blood flow in the pulmonary circulation which inhibits the activity of the tubercle bacillus Possibly this is so, but he entirely neglects to observe that these are diseases of middle age—an age, in fact, at which pulmonary tuberculosis naturally pursues a slow course

It is known that patients with a normal or high blood pressure have a better prognosis than those with a low blood pressure Not content with observing the systolic and diastolic pressures, the author has invented a method whereby he measures the amplitude of the oscillations of the needle of his Pachon apparatus at gradually diminishing pressures, plots a curve with the pressures along the abscissae and the amplitudes along the ordinates, calculates the area enclosed by the curve, and calls this the "oscillometric surface" This value, expressed in square millimetres, when divided by the product of the patient's weight in kilos and his height in metres, gives the "cardio vascular coefficient" What this means it is beyond our comprehension to grasp, and, as the author himself says, "its interpretation is delicate" However, in practice he finds that there is a correlation between the size of this coefficient and the prognosis His main aim is apparently to increase it as much as possible by the method already mentioned In his opinion the results of this treatment are superior to those obtained by the ordinary hygieno-dietetic treatment

The book, though marred scientifically by a number of unwarrantable assumptions, has evidently been compiled with great care, and in this respect alone is worthy of the attention of all who are interested in tuberculosis

DERMATOLOGY

THE appearance of a second edition of DR FREDERICK GARDINER'S *Handbook of Skin Diseases*[2] is proof that it supplies, as the author states in his preface, a felt want It is remarkable that dermatologists have not recognized the demand among students and practitioners for an abbreviated work of this kind With the curriculum so extensive the medical student of to-day must often be perplexed to know how to find opportunity for the study of the special subjects in addition to all that is required of him in his general work For the practitioner probably one of the larger works might prove more attractive, but even for him Dr Gardiner has provided a useful synopsis of the diagnos

[1] *L Evolution de la Tuberculose pulmonaire chronique dans ses rapports avec la circulation generale et locale* La Cure Declare Par Dr H Pierre Colomban (De Grasse) Paris Masson et Cie 1924 (Roy 8vo pp xv—3 illustrated Fr 12)

[2] *Handbook of Skin Diseases* By Frederick Gardiner MD B Sc Pub Health FRCSE FRSE Second edition Edinburgh E S Livingstone 1924 (Cr 8vo, pp 238 58 figures, 12 plates 10 col

and treatment of cutaneous disease The arrangement of the subject-matter is apparently based upon a series of lectures given in the Edinburgh Medical School, and for this reason differs from the more commonly accepted classification The many well produced coloured plates give a special character to the work

The reader will search in vain for a chapter on the subject of eczema—the word does not appear even in the index The explanation is that Dr Gardiner shares the view of Sir Norman Walker in preferring the term "dermatitis", but whether there is any profound advantage in substituting one word, with certain modifications, for another may be a matter of opinion A well constructed chapter is devoted to the forms of tuberculosis of the skin Here are described their diagnosis and treatment, and also the comparatively rare manifestations called tuberculides Evidently this is a subject in which the author takes great interest, and in which he has had considerable experience Perhaps the syphilitic manifestations of the skin might have been more fully dealt with, for it is the dermatologist who sees the disease in its early and curable stage, and it should be his peculiar function to instruct others in the phenomena belonging to this period

Taking into consideration the limited space at the author's disposal—and this is a considerable handicap—the result may be said to be good The book is what it professes to be a short account of diseases of the skin Apart from this the standing of the author is a recommendation and should ensure success for the new edition

A NEW FRENCH TEXTBOOK OF HUMAN ANATOMY

Most modern anatomical textbooks have grown to so immense a size that the unfortunate student is bewildered rather than guided and instructed, most teachers are dissatisfied and many are endeavouring to decide the form an ideal treatise on human anatomy for medical students should take It is therefore a welcome sign to read in Professor H Rouvière's preface to his new *Anatomie Humaine*[1] that he has attempted to remedy two of the most serious and common defects to be noted in the textbooks In the first place he has discovered that anatomical literature has been developed on so vast a scale that there is a real risk of obscuring the essential facts and fundamental principles, and of discouraging the reader, if an analysis is made of all the researches published on the various subject To eliminate as far as practicable this difficulty, Professor Rouviere has omitted any account of the insignificant details of irregularities and variations, and in electing references to recent researches claims to have been careful to choose only those which appear to be of greatest importance It is not to be expected that his selection will command universal approval, and we are bound to say that the omission of a number of highly significant researches especially some by English and American workers, is unfortunate In the second place Professor Rouviere has sought to reduce repetitions inevitable when the body is considered on the more usual system he has employed the regional method, and with very considerable success

The book is divided into three principal parts—the first dealing with the head and neck the second with the trunk and the third with the extremities a special chapter is devoted to the central nervous system The descriptions are in the main accurate and simple, but Professor Rouviere has not quite succeeded in carrying out the intention expressed in the preface of explaining wherever possible the anatomical facts by reference to embryology, comparative anatomy and physiology The sections on embryology are clear and adequate but very slight attention is directed to the intimate relation of structure and function At a time when so many anatomists are attempting by every available means to learn and teach the "living body" it is disappointing to find in a new textbook accurate accounts of the dead organs, without any reference to the different conditions prevailing during life and the changes the must undergo during normal physiological processes Unless all teachers of anatomy and writers of anatomical textbooks realize that their aim must be a complete understanding of the structure of the living body, and that structure and function cannot be divorced without serious loss, students will fail to obtain the training and knowledge which anatomy can offer, and progress will be retarded The information which can only be gained by personal dissection of the dead body must be corrected and supplemented during oral teaching and in textbooks by frequent references to the conditions in the living in no other way can a real interest in anatomy be aroused and the student receive an efficient training for his future work In the chapter on the nervous system the more important pathways and connexions have been selected, but the references to their function are quite inadequate, and an unfortunate confusion occurs between the spino-cerebellar tracts and the paths for the conduction of impulses induced by painful and thermal stimuli

The two volumes are printed on much thicker paper than any other modern anatomical textbook we have seen and this at first sight obscures the reduction in the length of the text which is undoubtedly one of the book's most striking features It is freely illustrated, nearly one thousand excellent figures being included, many of which are coloured and a high proportion prepared from special dissections made by the author Each volume is provided with an adequate index

[1] *Anatomie Humaine. Descriptive et Topographique* Par H Rouviere Tome I Tete Cou et Tronc Tome II Membres Systeme Nerveux Central Paris Masson et Cie 1924 (Cr 4to Tome I pp xxii–1011 with 668 figures Paper Fr 165 bound Tome II pp xv–760 with 368 figures Paper Fr 165 bound Fr 180)

"EUBIOTICS"

L'Eubiotique Sociale is the title of the French edition of a Tcheco-Slovakian treatise[1] by Dr Puzicka professor of hygiene and dean of the faculty of medicine in the Tcheco-Slovakian University of Bratislava Eubiotics may be accepted as its English equivalent, and may be defined as the science of living a healthy life just as eugenics may be defined as the science of producing a healthy life Dr Ruzicka discusses the measures required to establish a healthy organization of social life in natural surroundings A life in touch with Nature is the dominant note throughout He considers that the only rational basis of civilization is to bring the family into permanent touch with Nature by living more or less country surroundings Present-day civilization he tells us, has lost sight of this essential factor in the physical and moral health of human beings, because the evolution of a civilization based on industrial life involving urban in place of rural dwellings is opposed to the physiological and spiritual needs of the natural life of a man and his family Such a civilization has produced a deformed kind of existence which cities as they now are, perpetuate

His remedy is to remodel the cities and make the buildings in them merely centres of business and public offices to which the workers in them will be conveyed from rural dwellings during the day and from which they will return in the evening to enjoy a peaceful and healthy family life in their own cottages, garden, and farmyards To emphasize his point he contrasts in parallel columns the life of a family in the country with that of a family in the town Having drawn this picture of the physical and moral evils of a city home and the joys of a rural existence, Dr Ruzicka proceeds to discuss the practical aspects of eubiotics He estimates that, on a basis of 2 000 square metres, approximately an acre, being the requirement for a country cottage for a family of five, one square kilometre would be sufficient for a garden city of 500 families and, as the area of Tcheco-Slovakia is 141 000 square kilometres and the population 3,000,000, only 6 000 square kilometres of the total area would be needed to house the whole of the population in rural surroundings or as he continues to express it, "in constant touch with Nature" The chief difficulty, he foresees, would be the provision or cheap and rapid means of transport from the garden city areas to the centres of business and factories A garden city, for

[1] *L'Eubiotique Sociale* By Dr Stan Ruzicka Paris Maloine Frs 192 (Cr 8vo pp 52 1 illustration Fr 8.50)

example, in circular form would be thirteen miles in diameter for a population of 1,000,000 in families averaging five persons each, and this would require an extensive network of tramways or other cheap means of transport to and from the work centres Dr Růžička, however, sees no obstacles to the realization of such a scheme in Tcheco-Slovakia, where the problem of cheap transport is likely to be solved in time by electric power Its Government has already voted a sum of 75,000,000 crowns as a preliminary contribution towards the eventual electrification of the whole of the State Dr Růžička regards this as the most essential factor in the remodelling of cities by the removal of the inhabitants to areas of garden cities at a distance from their centres of work But what is possible in one country may not be so in a country where Nature does not provide cheap methods of producing electric power

The acquisition of a *rus in urbe*, on which a life that is, according to Dr Růžička, eubiotic depends, is one of the city dweller's oldest aspirations The garden cities of Letchworth and Welwyn are pioneer attempts at eubiotics in our own country, but they are still far short of Dr Ruzička's Utopia Eubiotics is no more an exact science than eugenics, and neither is likely to be fully realized in this world of troubles *L'Eubiotique Sociale* is nevertheless an interesting study of a question of physical and moral hygiene It is unfortunately marred by constant repetitions and emotional emphasis of words, lines, sentences, and headings by single and double underlining, capitals, italics, and suchlike devices for attracting attention

GUY'S HOSPITAL REPORTS

THE last quarterly instalment of the seventy-fourth volume of the *Guy's Hospital Reports*[5] contains ten papers, of which two deal with the alimentary canal, two with oral infections, and two with endocrine affections The editor, Dr ARTHUR F HURST, contributes an interesting review of the pathogenesis of gastric and duodenal ulcers, dealing with the influence of acid, the infective factor, the predisposing factors—namely, the ulcer diathesis—and with the accessory factors, such as excessive smoking, mental and physical fatigue and suprarenal exhaustion, and food In explanation of the mystery why chronic gastric ulcers are prone to become malignant, whereas chronic duodenal ulcers are not, he suggests that it is to be explained by the constant mechanical irritation to which gastric, but not duodenal, ulcers are exposed In collaboration with Mr P J Briggs, he also writes on diverticula of the stomach as a possible source of error in the radiological diagnosis of gastric ulcer, and records two cases, with ten radiograms in illustration

In a short paper Dr J Eyre shows that alveolar osteitis due to infection by *Streptococcus pyogenes longus* (var *viridans*) may persist and progress for months after the teeth implicated have been extracted From an experimental study of *Leptothrix buccalis* Mr Arthur Bulleid concludes that there is some reason to believe that this fungus plays an active part in the production of tartar, but that for its full and unrestricted activity some accessory factors, such as suitable protection, special pabulum, and possibly some particular microbic symbiosis, are necessary From the analysis by Dr J J Conybeare and G C Millis of twenty-nine cases of Addison's disease in Guy's Hospital between 1904 and 1923, it appears that while the twenty-two cases due to tuberculous change ran a rapid course, the seven cases with simple atrophy survived for much longer periods—one for ten years, one for five years, and two for more than a year There was very little evidence that adrenaline had any beneficial effect, and two patients on whom grafting of adrenals was performed died rapidly Dr C P Symonds and Mr N L Pickhoff describe a case of Frohlich's syndrome associated with a cystic tumour involving both optic thalami, and situated above but apparently not invading the pituitary, to this article is appended a commentary on the functions commonly ascribed to the pituitary Mr A W Ormond and Mr R G Williams publish a case of arachno-dactyly with special reference to the ocular symptoms, particularly congenital dislocation of the lens with concomitant trembling irides, which were reported in nine out of the seventeen cases they have collected In reference to the pathogenesis, arguments are brought forward against the view that it is due to endocrine disorder Dr N L Lloyd writes on methaemoglobinaemia, Dr W L Watt on deep *x*-ray therapy, and the last article is the second series of "Some cases from 'Clinical'" during the first quarter of this year

[5] *Guy's Hospital Reports* Vol lxxiv (Vol iv Fourth Series) No 4 October 1924 Edited by A F Hurst M D London Wakley and Son (1912) Ltd 1924 (Med 8vo pp 369+389 49 figures Subscription £2 2s for volume of four parts single numbers 12s 6d each)

WAR AGAINST RATS

MR MARK HOVELL'S book, *Rats and How to Destroy Them*,[6] gives in summary form the record of forty years' relentless war waged by him against the rat tribe His general conclusions and deductions are the outcome of applied scientific research and common sense His explanations and instructions are clear and readable The mechanical details of trapping and "blocking," apart from the lucid letterpress, are admirably illustrated in all necessary detail The manual is specially arranged so that each phase of rat destruction and prevention is treated as a whole, thereby enabling a reader who desires to get rid of rats on his premises to turn up the particular chapter without having to read the whole book Urban and rural conditions vary Consequently, Mr Hovell has chapters dealing separately with houses, shops, and warehouses, outbuildings, yards, pigsties, and other buildings, and also with gardens, streams, sewers, sporting estates, farms, and ships

Whilst the recurrence of individual paragraphs and illustrations would, in certain circumstances, mar the readable qualities of the work, the primary object—namely, to enable people to deal with the pest promptly, without unnecessary waste of time—outweighs other considerations

The book demonstrates by tables the enormous loss to the country of foodstuffs due to rats, and deals with the diseases caused and conveyed by rats, a section devoted to plague gives an interesting account of facts connected with that disease

Every medical officer of health, and every estate agent too, should have a copy in his reference library The reviewer has been a rat destroyer from his tenderest years, and, though pets were forbidden, kept ferrets at school, thus becoming a cause of offence to his schoolfellows when he took the said ferrets in his "tails" to chapel, etc, he has, for all that, discovered many fresh wrinkles in this book, very few points for criticism, and these trivial One has reference to the fecundity of the rat Mr Hovell states that one pair and their descendants in twelve months produce 1,130 Though in making this calculation he has been exceedingly cautious and conservative, he makes no allowance for casualties, in the shape of battle, murder, and sudden death, which, even without human agency, fortunately occur The second point is equally slight The question of cost is ever present in all vermin destruction Red squill appears to be one of the safest and best of poisons If the gardener and farmer knew he could grow the bulbs of *Scilla maritima* and how to prepare the dried bulb for poisoning purposes it would perhaps be an advantage For the rest Mr BENSUSAN'S introduction is in itself, a sufficient guarantee of the excellence of the book

CUTHBERT JAMES

[6] *Rats and How to Destroy Them* By Mark Hovell, F R C S With an introduction by S L Bensusan London John Bale Sons and Daniel son Ltd 1924 (Demy 8vo, pp xiii + 465 51 figures. 10s 6d net post free, 11s 3d inland, 12s abroad)

NOTES ON BOOKS

THE sixth edition of Mr L BATHE RAWLING'S *Landmarks and Surface Markings of the Human Body*[7] contains several new illustrations and a certain amount of revision of the text The fifth edition which was reviewed in our columns of July 19th, 1913 (p 127), has been reprinted seven times and the demand for this book has been deservedly great The illustrations, which are so valuable a feature of the work are even clearer than before, and the use of colour in depicting

[7] *Landmarks and Surface Markings of the Human Body* By L Bathe Rawling M B, B C Cantab F R C S Sixth edition London H K Lewis and Co Ltd. 1924 (Demy 8vo, pp viii + 97 56 figures 7s 6d)

details facilitates considerably the memorizing of anatomical relationships by the student This edition will doubtless be as popular as its predecessors, both with students and surgeons

In Economics of Fatigue and Unrest and the Efficiency of Labour in English and American Industry,[1] Dr P SARGANT FLORENCE has given a very comprehensive and readable study of the underlying causes of these important industrial conditions He has collected information and statistics from many sources in Great Britain, Europe and the United States which show that definite psychological and physiological causes are concerned He discusses the methods of preventing and curing these conditions, and lays stress on the human factor in industry This book will probably interest more especially those engaged in health and welfare work, but in the present critical state of industry it will be appreciated by others less immediately concerned

Mr BEPESFORD CHANCELLOR has undertaken to write *The Lives of the Rakes* in five volumes, and the first two[2] dealing with the Restoration period, have just been issued The *New English Dictionary* defines the word "rake" in this sense as "a man of loose habits and immoral character, an idle, dissipated man of fashion," and says that it is an abbreviation of rake hell a word, it states, which passed out of use about 1725 To afford subject for a biography a century or two later a man must have been something more than merely 'a dissipated man of fashion', he must have been a wit or a poet, or both, and Mr Chancellor's selections fulfil this condition The first volume, *Old Rowley* (King Charles II), is practically a biography of that monarch, omitting politics after the Restoration Why he was called "Old Rowley" is not very clear, it was probably not meant to be complimentary, and "Old Rowley the King" was the title of a popular ballad of the day Undoubtedly Charles was witty, and the rakes of his Court, who form the subject of the second volume, were all wits too and some of them poets also including Buckingham, Rochester, and Sedley Many of the pranks they played to the amusement of Charles were rather silly practical jokes, and a few of them grossly indecent, but in mitigation it may be pleaded that they had not the same wide choice of amusements as the man of fashion to-day they played tennis sometimes and did a little horse racing at Epsom and Newmarket, but the roads were bad and the coaches heavy so that there was difficulty in getting about, and for the most part probably they led a more or less sedentary life hanging about the Court Pepys notes as early as 1660, 'Court attendance infinite tedious' Mr Chancellor however, has taken care not to be tedious His volumes are amusing and both of them well illustrated with portraits In view of the season it may be said that the first volume stands more or less by itself

In noticing the issue of the *Medical Directory* for 1925 in our last issue (p 1059) we observed that the omission of the directory of dentists would be rather inconvenient to the medical profession, even though the publishers intended to publish a separate directory We must confess, however, after having seen the *Dental Surgeons Directory, 1925*[3] that inclusion of dentists would have added very seriously to the bulk of the *Medical Directory* The new volume contains 250 pages, and comprises particulars the main part furnished by themselves, of British licentiates and graduates in dental surgery practising in Great Britain, Scotland, Ireland, and abroad There is a local list and also a list of examining bodies and dental schools and hospitals

Dr W S DAWSON, who is senior assistant medical officer at the Maudsley Hospital has written a small volume entitled *Aids to Psychiatry*,[4] which will be found useful by those who are taking up the study of mental disorder or who are preparing for examination in this subject The book includes in a small compass the subject matter of the ordinary text book and it is thoroughly up to date The author provides a concise description of the various forms of mental disorder and devotes chapters to normal psychology, psychopathology, the causation of mental disorders, their treatment and differential diagnosis theories of the neuroses, legal aspects of insanity, and case taking The book is readable and written with commendable clearness

[1] *Economics of Fatigue and Unrest and the Efficiency of Labour in English and American Industry* By P Sargant Florence, Ph D London G Allen and Unwin Ltd 1924 (Demy 8vo pp 426 16s net)

[2] *The Lives of the Rakes* Vol I *Old Rowley* (Charles II) Vol II *The Restoration Rakes* Philip Allan and Co 1924 (Medium 8vo 10s 6d each)

[3] *The Dental Surgeons Directory* 1925 Fifty-fifth annual issue (Formerly part of the *Medical Directory*) London J and A Churchill (8s 6d net)

[4] *Aids to Psychiatry* By W S Dawson M A M D Oxon F R C P Lond D P M London Bailliere Tindall and Cox 1924 (Demy 8vo pp viii + 309 7s 6d net)

MEDICAL AND SURGICAL APPLIANCES

A Folding Retinoscope

DR G ZACHARIAH (Egmore Madras) writes The retinoscope shown in the accompanying sketch consists of two mirrors a plane and a concave fitted at either end of a foldable vulcanite handle The radius of curvature of the concave mirror is 16 cm for working at arm's length There is no hole through the mirrors but the silvering is scratched off for an area of 2 mm giving a clear opening through glass this practically eliminates the disturbing shadow one gets in the ordinary form with a hole The presence of two mirrors in one handle enables one to use either the plane or the concave at will and to check the results of the one with the other at once The folding arrangement suggested by the maker makes it a very convenient form to be carried about in the pocket without the mirrors being scratched Messrs Dixey and Son made this model for me three years ago and I find it extremely useful in my work



ROYAL MEDICAL BENEVOLENT FUND

AT the last meeting of the Committee thirty-seven cases were considered and £555 voted to thirty-three applicants The following is a summary of some of the cases relieved

Widow aged 70 of F R C P Ed recently deceased who was in receipt of £2 3s 4d a month from the Fund on giving up his appointment owing to ill health The Royal College of Physicians granted £25 towards funeral expenses and friends gave £10 Applicant is left without means and the Fund voted her a special grant of £10 and £25 in twelve instalments

Widow aged 58 of M D who died in April last Applicant has let her flat furnished and is staying with her married daughter whose circumstances do not permit her to help her mother to any great extent Voted £10

Widow aged 65 of L R C P Ed who died in 1915. Applicant has been able to help herself up to the present by taking various pupils but owing to an accident she is now lame Her only income is the eighth share of some property amounting to £40 per annum but this is not always regularly paid Her rent is 6s a week Voted £25 in twelve instalments

Widow aged 51 of M D Durh who died in 1923 Applicant has paralysis in legs and feet she has tried to support herself by teaching music but earns on an average only 7 6d a week The case was referred to the Fund by the Sunshine Society which allows her £3 and I gave a grant of £5 to help her to canvass for an annuity Voted £18 in twelve instalments

Daughter aged 40 of M R C S Eng who died in 1919 Applicant suffers from tabes dorsalis and finds it hard to support herself When able she makes sweets and cakes Her only income apart from this is an annuity of £40 from the Army Officers Benevolent Fund Voted £18 in two instalments

Subscriptions may be sent to the Honorary Treasurer, Sir Charters Symonds K B E C B M S at 11 Chandos Street Cavendish Square London W 1

The Royal Medical Benevolent Fund Guild still receives many applications for clothing especially for coats and skirts for ladies and girls holding secretarial posts, and suits for working boys The Guild appeals for second-hand clothes and household articles The gifts should be sent to the Secretary of the Guild 58 Great Marlborough Street W 1

ROYAL COMMISSION ON LUNACY AND MENTAL DISORDER

(Continued from page 1072)

THE Royal Commission on Lunacy and Mental Disorders resumed its sittings on December 2nd under the chairmanship of the Right Hon H P MACMILLAN K C

The Administration of London Mental Hospitals

Mr H F KEEVE chief officer Mental Hospital Department London County Council continued his evidence He was questioned as to the new dietary arrangements which were instituted in London mental hospitals in 1923 and which superseded a dietary scale based on a *per capita* allowance Discrimination was now made in the matter of diet between manual and non-manual workers plenty of green food was provided and the dietary was altogether less stodgy than under the old system The arrangement although instituted for an experimental period of six months was being continued During 1923 the number of patients admitted to London mental hospitals was 3 152 and 651 persons were discharged as recovered In the twenty-nine years since 1896 when statistics began to be kept 30 718 patients had been discharged recovered and 9 177 of these (29 87 per cent) had been readmitted About one-third of this latter number had been readmitted within twelve months of discharge An unknown number of the other patients might of course have been readmitted to other institutions outside the county of London In the nine London mental hospitals on January 1st 1924 there were 18 918 patients (7 723 males and 11 190 females) of these 1 063 were private-list patients and 120 were women patients admitted as private patients to the special wards provided at Horton Mental Hospital Of the 3 152 who were admitted during 1923 2 578 were admitted as patients on reception 128 were lunatics at large 33 were admitted because they were not under proper care or were cruelly treated or neglected and 7 were admitted as private patients on petition

The witness was questioned as to how far Visiting Committees

that it seemed to him that the Visiting Committee was the patients' safeguard as distinguished from the staff of the institution, and he was anxious to see that no obstacles were interposed between the patient and the Visiting Committee He felt also that certain discriminations were made against the rate aided patient, and the Commission had had a good deal of evidence to show that the position of private and of rate aided patients ought to be assimilated as regards their legal rights, more especially as regards the procedure in dealing with complaints Mr Keene said that he thought the present arrangements with regard to Visiting Committees did safeguard the interest of the patients and that the patients were further protected by the medical officers and by the chaplain and visiting ministers

Finally, the witness dealt with the position of the Metropolitan Asylums Board in relation to mental cases While the population of the mental hospitals under the London County Council was 18,918, that of the institutions of the Metropolitan Asylums Board was 5,148 The former population had largely increased during recent years, but there had been actually a diminution in the number of chronic and harmless lunatics in the Metropolitan Asylums Board hospitals This was partly due to the operation of the Mental Deficiency Act, but it illustrated the difficulties which arose when two authorities were dealing with the same class of persons

The Functions of Visiting Committees

Mr W G LOBJOIT, J P, chairman of the Visiting Committee of the Middlesex Mental Hospital, strongly urged that two certificates should be requisite for a detention order in pauper as well as in private cases The Chairman said that he agreed that the two classes of patients should be assimilated, but it was a question whether the assimilation should not take the form of requiring only one certificate in each case, instead of two as at present in the case of a private patient The Commission did not want to recommend those safeguards, or safeguards designed to allay the apprehension of risks which did not actually exist What he desired to know was whether there was a genuine risk which would be safeguarded against by the requirement of two certificates in the case of a pauper patient Mr Lobjoit was of opinion that if recourse was had to only one certificate that certificate should be given by a doctor qualified in mental diseases The Chairman rejoined that as the majority of cases presented no difficulty, it would perhaps serve the purpose if in any case of doubt the medical practitioner or the justice was entitled to call in the service of an expert to supplement the medical testimony already given

Mr W E LOVSEY, chairman of the Visiting Committee of the Birmingham Mental Hospitals, agreed that it was desirable that in every respect the procedure in the case of the Poor Law patient should be identical with that in the case of the private patient He was examined on the subject of discharges and said that in a few cases in his experience—not more than fifteen cases during the last ten years—patients had been discharged on the initiative of the Visiting Committee without the full approval of the medical superintendent In one case only, so far as he knew was there any disaster The patient was known personally to certain members of the Visiting Committee and was discharged although the medical superintendent was averse, and shortly after his discharge the man committed suicide Mr JOWITT pressed the witness as to whether, apart from the very few cases discharged on the initiative of Visiting Committees, a patient once certified had any chance of getting his discharge apart from the approval of the medical superintendent who naturally, knowing that he incurred a certain responsibility in discharging a patient, might hesitate to take the step after it became advisable The witness agreed that in theory this might be so, but in practice he thought the present system of discharge worked without any injustice With regard to allegations of ill treatment, the witness said that in his ten years experience disciplinary action had had to be taken in only one case, that of a probationer He considered that the criticism of asylums was largely the work of busybodies in every locality The Chairman agreed that the administration of lunacy laws was peculiarly subject to sinister suspicions Lord RUSSELL suggested that the remedy was publicity, and that it would be very desirable if lay persons like the witness could give popular lectures on asylum administration

Further Evidence of Medical Superintendents

The first witness on December 3rd was Dr Henry Yellowlees, O B E, M D, medical superintendent of The Retreat, York, who was accompanied by Mrs Crosland, a member of the managing committee The Chairman, the Right Hon H P MACMILLAN, K C, remarked upon the pleasure of seeing in the witness chair the son of a distinguished doctor who was much honoured in Scotland

Dr YELLOWLEES said that he had been medical superintendent of The Retreat since early in 1922 The institution which dealt only with private cases was founded by William Tuke, of the Society of Friends, in 1792 It really stood at the commencement of the humane treatment of the insane In reply to Sir Humphry Rolleston who asked whether the witness would claim that Tuke was earlier than Pinel in the Salpetrière and the Bicêtre, the witness said that both men appeared to have started their work in the same year—1792—but there was a suggestion that they were both anticipated by some reformer in Italy The Retreat was run on lines similar to those of the other twelve registered hospitals in this country—that is to say by a voluntary committee which worked without payment and had no financial interest in the institution It was an old-fashioned building with modern extensions Although it had two or three detached villas it was not on the villa principle The beds numbered 180 It was mainly self-supporting with a few endowed funds The medical staff ordinarily consisted of two doctors—one man and one woman—in addition to himself He was quite emphatic upon the value of a woman doctor He then gave details of the nursing staff and the facilities for the training of nurses He went on to describe the visits of members of the Board of Control, very few patients took advantage of such visits to lodge complaints Permission was given to patients to go on periodic shopping expeditions, not only as a species of recreation but as a means of testing their capacity to mix with ordinary people This was also helped by concerts, and lectures, and games If patients with musical tastes were making progress, they were allowed to attend a concert in the town He and his colleagues in the institution drew up a questionnaire to ascertain from patients whether they resented their detention Out of 150 certified patients, 15 replied that they resented their detention, 89 replied that they did not and 46 were incoherent or doubtful or silent With regard to discharges, when a patient was approaching recovery he informed the relatives, but in some cases, when the homes were unsatisfactory, there was some hesitation about having the patient back When poverty could not be alleged, and it was apparent there was some other motive, he brought about the discharge and compelled the friends to do their part

With regard to the provision in his institution for treatment Dr Yellowlees said that the psychological treatment, including analysis (if thought desirable) or suggestion, was given and glandular therapy and any other approved means was used He had never used, nor could he justify, any treatment such as croton oil being given as a punishment Hypnotic and similar drugs were carefully served out under medical supervision, and were in the charge of a sister The treatment might be said to include recreations and concerts If a patient suffered from sleeplessness he lived on the verandah all day The treatment of the patient from the medical standpoint was decided upon after a careful physical and mental examination

In answer to further questions, Dr Yellowlees said that the nurses employed in his institution were in the proportion of one to rather less than two patients It was a high proportion and in a sense the figure was misleading, because a large number of patients paid for the exclusive services of one or perhaps two nurses The standard charge at the institution was five guineas weekly but higher rates were charged for private accommodation and for special nursing, and specially low rates for persons connected with the Society of Friends The charges resulted in a small profit to the institution, which was applied to improvements or to reducing the fees The cases admitted were not selected, except that patients suffering from epilepsy or from the grosser forms of congenital mental defect were not taken Many general paralysis cases were admitted He went on to speak of the difficulty of grading patients Not the least of the difficulties arose from the fact that while many hopeless cases were quite suitable for association with newly admitted patients or any others, many of the recoverable cases were unpleasant and possibly dangerous Thus an admission block confined purely to recent cases was not so easy a proposition as it sounded Of four consecutive admissions each patient admitted might be quite unsuitable for mixing with the other three Rather more than half the admissions in one year were voluntary boarders, and not certifiable If he thought a case was going to recover he used the law's delays as far as he safely could, in the interests of the patient, to avoid certification Asked whether there was a possibility that the medical superintendent, through fear of incurring responsibility, might detain patients too long the witness said that he thought the danger was in the other direction the superintendent was more likely to let out a patient too soon not that the patient thus prematurely discharged was likely to be a danger to himself or anyone else but that his cure might have been more complete if he had had a longer stay The immense majority of the case in which there was any real difficulty about discharge were the convalescent melancholics Sir David Drummond questioned the witness about the advantages of having a lady doctor on the staff of a mental institution The witness said that the advantage was obvious because more than half the patients were women, and some of them had expressed a preference for a lady doctor Sir D Drummond asked whether the witness would suggest that the medical superintendent should be a lady, and the witness caused laughter by his reply "Not yet" He added that he did not think that men had any prescriptive right to be asylum superintendents

Dr J G PORTER PHILLIPS, physician superintendent of Bethlem Royal Hospital, was the next witness, and was accompanied by Mr Lionel Faudel Phillips, governor of that institution Dr Porter Phillips, after giving details of his own experience in dealing with mental cases said that the voluntary boarder system had been in vogue at Bethlem for forty years, and he believed it to be a system deserving of encouragement in many ways Almost 40 per cent of the patients were voluntary inmates The straightforward voluntary patient gave no trouble, he knew he was ill and he welcomed the advice and treatment he received Such voluntary patients were not necessarily paying patients, those admitted on a free basis represented sometimes 70 per cent of all the voluntary admissions The recovery rate among the voluntary patients was about 50 per cent He was in favour of a temporary observation order which would involve some power of control short of certification His experience with his clinic at St Bartholomew's showed that a certain number of mental cases could be adequately treated in a voluntary hospital, where they would have no anxiety about detention, nor any stigma The drawback was that in the intervals between coming up for treatment they tended to deteriorate owing to the pressure of home cares and conditions

Mr FAUDEL PHILLIPS spoke of his method of interviewing patients and investigating complaints, in twenty years he had known no complaints on the score of treatment

British Medical Journal.

SATURDAY, DECEMBER 13TH, 1924

MEDICINE IN INDIA

THE Cabinet decision to accept certain recommendations made last March by the Lee Commission on the Superior Civil Services in India in respect of improvements in pay and pensions and the grant of free passages, will be received with general satisfaction in this country at least. The decision concedes the claim of those whom it affects to a fair economic standard of life, not only as the due reward of service rendered but as one means of making such service effectual. It would be rash to assume that it is more than this, or that it will of itself suffice to secure an adequate flow of recruits from the universities to the Indian services. In this respect Lord Sydenham's warning in the *Times* of December 8th is opportune. The Commission itself fully recognized that its main proposals were vitally interdependent, and urged that they should be considered as a whole and acted on with as little delay as possible. Comparison of these proposals with the official communique shows that the latter is silent as to the very issues which are at once most complex and most fundamental to the development of the Indian commonwealth. Among these is the reorganization of medical services in India. In this connexion the wisdom of the expedients recommended is open to the gravest doubt. The proposed provincialization of the superior medical services is calculated to increase rather than to remedy the existing difficulty in obtaining for India the services of the quota of British practitioners requisite during the process of Indianization, and from this it must follow that the British residents will fail to secure medical attendance by *British practitioners*, that the military reserve of British qualified practitioners necessary in time of war will not be available, and that scientific medicine in India will suffer the loss of a due proportion of investigators trained in European schools.

On this aspect of the matter the Council of the British Medical Association has addressed to the Secretary of State for India representations which will doubtless receive full consideration. For the moment we have no indication of the attitude either of the Secretary of State or of the Government of India, and detailed discussion would be out of place. The point we would emphasize and the Government will do well to bear in mind, is that the basic question at issue is wider than the adjustment of conflicting service interests or the construction of an administrative machine which will perform correctly certain limited functions. Rather it is the provision for *making available for the population of India*, agricultural as well as urban, the resources of modern scientific medicine, and at the same time for creating standards of medical education and medical practice which will enable Indian practitioners to make in the future a worthy contribution to the development of medical science. We would refer those who wish to understand the difficulties of the position from an administrative point of view to the paper on the future of medicine in India read by Sir Gerald Giffard to the East India Association, and reported in the JOURNAL of November 22nd (p. 966). The conditions shown by Sir Norman Walker's report on the teaching of midwifery in the Indian medical schools, the subsequent failure of Calcutta University to maintain the standard required by the General Medical Council for the admission of its degrees to the British *Medical Register*, and the tendency to divert the slender financial resources so urgently required for other purposes to the resuscitation of the moribund Ayurvedic and Unani systems of medicine, are all factors in the problem and all point to the imperative need for strengthening rather than weakening the link between Indian and Western schools of medicine.

Meanwhile, the effect of the accepted concessions on the remaining members of the I.M.S. may be briefly summarized as follows. Captains with more than three years' service will be entitled to Rs. 250 a month overseas pay as against the present rate of Rs. 200, whilst majors with not less than eleven years' service and lieutenant-colonels will receive Rs. 300 in place of Rs. 250. Such pay may be remitted to this country at a fixed rate of 2s. the present rupee exchange tending to remain steady at 1s. 6d. Four return passages to England will be allowed to officers and their wives in the course of their service, and a single passage for each child. Officers holding administrative appointments of a value not exceeding Rs. 3,000 a month are to receive a monthly sterling addition of £13 6s. 8d., subject to a review by the Government of India of the posts to be covered by this provision. These increases are to be treated on the same basis as pay—that is to say, they will not be dependent upon the recurring votes of the Indian Legislatures—and they will be made effective as from April 1st last.

PREVENTION OF BOVINE TUBERCULOSIS

VACCINATION against tuberculosis has so often been attempted and has as often led to disappointment that developments of the tuberculosis campaign on this line are apt to be looked on with more than a little suspicion. However, Dr. Guérin of the Pasteur Institute of Lille[1] believes that ultimate success is not only certain, but that it is within measurable distance of being realized. Hitherto attempts to minimize the enormous losses in cattle caused yearly by the tubercle bacillus have been practised mainly by some method of isolation and segregation. It is not always understood how important this disease is to the stock breeder. It may be taken that on an average 18 per cent. of all cattle are infected—the percentage being naturally higher in confined animals than in those which live a free open life. Tuberculous carcasses are seized by the meat inspection authorities and infected animals eat much more to fatten than normal. Moreover, the lesions are frequently situated in the mammae, and this not only causes contamination of the milk but as a rule results in a much reduced yield. In cattle the tuberculin test is the usual criterion of infection, but a positive reaction does not necessarily mean that the subject presents grave lesions or can propagate the disease. Moreover, it cannot be declared that non-reactors do not harbour the bacillus in a dormant condition. The attempt to explain why this dormant condition exists and why such subjects do not rapidly succumb to tuberculosis has been the subject of much research in recent times.

It is however over twenty years since Marfan produced evidence that children with tuberculous glands only very exceptionally become consumptive when adult. This implies, or rather that children

[1] Rec. Méd. Vét., 1924, C. by Sc.

who retain a mild dormant form of the disease become immune, or practically so, to its more virulent manifestations That this generalization may be extended to bovine animals can be shown even more completely than might have been anticipated If two calves, one a reactor and the other not, be inoculated with a lethal dose of tubercle bacilli, it is the reacting animal which survives and the non-reacting which perishes This would seem to force the rather paradoxical conclusion that to resist tuberculosis a bovine animal must be tuberculous If we are tempted to apply the principle to man the prospect is not alluring, and this, no doubt, is the underlying reason for the numerous researches into means for vaccination The results obtained at Lille in this connexion are most interesting

After thirteen years of consecutive cultures in presence of ox bile, an innocuous race of bacilli has been obtained It is incapable of producing tuberculosis in man or animals A small subcutaneous inoculation in calves causes no reaction, local or general, neither does it give any immunity But a large dose (50 mg) causes in calves within twenty four hours an oedematous swelling about the size of a hen's egg It reaches its maximum next day, and in the following days becomes a hard mass, firm and mobile under the skin It slowly decreases in size, and disappears in about ten to eighteen months The animal at first reacts positively to the tuberculin test, but becomes negative with the disappearance of the swelling At Lille, in 1922, twelve calves were vaccinated thus, and six other animals were kept with them under identical conditions as controls At intervals of one, three, six, twelve, fifteen, and eighteen months two of the vaccinated animals and one of the control animals were injected intravenously with a lethal dose of virulent bacilli All the controls died of acute tuberculosis in less than two months, although none of the inoculated animals showed the slightest symptom They were finally slaughtered and carefully examined, but no trace of the disease could be seen Yet each animal had received 220 million virulent tubercle bacilli

Similar and more recent experiments have been instituted with equally successful results, and Dr Guérin is hoping to be able to conduct more in the future on a much larger scale He proposes an annual inoculation at present—partly because the protection seems to last for under two years, and partly because the French agriculturist is accustomed to annual inoculations for anthrax and blackquarter, and so may be expected to have the greater confidence in the treatment It is too early to predict the results of this experiment, but information will be eagerly awaited, not only by stock breeders on account of their own intrinsic interest, but by the medical profession also because of the possible future applications of the principle to the human disease

THE PHYSIOLOGICAL PROBLEMS OF EVEREST

Major R W G Hingston, medical officer to the Mount Everest expedition of 1924, lectured to the War Section of the Royal Society of Medicine on December 8th on the application of the efficiency tests of the Royal Air Force to the members of the expedition Only the simpler tests could be carried out, because nothing in the way of complicated or bulky apparatus could be taken up the mountain It was found that the power of holding the breath rapidly diminished with increasing height One climber who had been able to hold his breath, after deep expiration, for 64 seconds at sea-level, was able to sustain only 14 seconds at 21,000 ft , a similar reduction was found in all At altitudes above 14,000 ft shortness of breath was definitely felt At 18,000 ft any severe exertion made the breathing laboured and quick, at 21,000 ft the very slightest exertion was accompanied by respiratory distress, at 27,000 to 28,000 ft the breathing became so difficult that the rate of progress was incredibly slow, the climber had to rest for a minute or two every twenty or thirty yards, and a vertical ascent of 100 ft was as much as could be accomplished in an hour's climb Thus, although at the highest altitude reached the climbers were only 800 ft from the summit, it would have taken almost a full day to cover that distance and get back to the highest camp Oxygen was found to be of very little value in relieving the respiration, this was contrary to the experience of the previous expedition With some of the party oxygen caused a drying of the throat which was very disagreeable in the rarefied air It probably helped, however, to prevent frost-bite, and one climber, using oxygen at 27,000 ft , thought it helped to keep him warm Instances of Cheyne-Stokes respiration were frequently noticed, it occurred only during sleep, and was very marked in illness In some members of the party it occurred at an altitude of only 12,000 ft Every climber suffered from inflammation of the respiratory passages, due to the inhalation of cold air Some of the porters developed *bronchitis* and ulcerated *throats, which made* it necessary to send them down With increasing altitudes the expiratory force tended to improve, but this probably had little to do with the function of respiration, it was merely an indication of the muscular power of the chest, which had been exercised as a consequence of the march across Tibet There was a regular increase in the pulse rate in proportion to the *altitude of the experiment,* except at the very highest altitude of all, where the rate fell slightly Signs of impaired circulation were seen at all the high camps Cyanosis of the lips and lividity of the nails were frequently observed above 18,000 ft Some members experienced giddiness, but there was no instance of actual fainting All suffered from cold extremities A number of cases of frost-bite occurred, both of the *moist* and the dry gangrenous type There was no instance of *haemorrhage from* any of the mucous membranes Headache was common at high altitudes—the result, it might be, of cerebral anaemia It was increased by exercise, and especially by stooping to the ground, but was never severe The natives of Tibet also experienced headache, even at quite comfortable elevations Sleep was often difficult at high altitudes, but some members of the party slept fairly well at the *highest camps* It was advisable to sleep with the head raised, as this helped to ease the breathing The difference between the systolic and diastolic pressures diminished with the altitude—an indication of the strain on the circulation on reaching extreme heights An increase in the red corpuscles was noted *from* 4,480,000 at 700 ft to 8,320,000 at 18,000 ft Tests revealed a diminution in the *powers of endurance* at each successive height, and a slowing of the pulse towards the end of the endurance test was increasingly marked with altitude It appeared that the cardio-motor mechanism of a vigorous man at a height of 16,000 ft closely resembled that of a physically inefficient person at sea-level The e was much loss of muscular power, and, above 15,000 ft, persistent wasting Some members lost at least 2 st in weight as a result of living for five weeks at an average height of 21,000 ft Distinct dilatation of the heart was noticed, with a return to normal on reaching lower levels Some of the climbers retained their appetite, though few enjoyed any solid food above 25,000 ft Meat at *high* altitudes was particularly distasteful, sweet things were preferred There was no nausea or *vomiting* One member of the party at 19,000 ft could not taste onions, and another could only just get the flavour of peppermint Diarrhoea

in some cases was very persistent until the lower levels were reached. Though no impairment of judgement such as was described by airmen was observed, there certainly was mental lassitude and forgetfulness. One climber above 23,000 ft. had to record all his ideas, otherwise they would have been forgotten or distorted. At the highest altitudes all mental effort was a burden. No change in the knee-jerks was found. Three members of the party developed mild tremors of eyelids or fingers. Acclimatization seemed to increase, and those climbers who had been on two expeditions were unanimous in declaring that they suffered less on the second than on the first occasion. The physical deterioration during this expedition was increased owing to bad weather, a succession of gales and blizzards was encountered, so that the party was much debilitated before the final attempt was made. Yet they reached 28,000 ft. without oxygen, and, given good weather, Major Hingston was sure that the summit would be reached. There were no serious difficulties in what remained to be conquered of Everest, the problem was mainly physiological.

ANTHROPOMETRIC INVESTIGATIONS IN SCOTLAND

THE volume comprising the second and third reports of the William Ramsay Henderson Trust consists of two monographs by Dr. J. F. Tocher.[1] In the first Dr. Tocher gives the results of an anthropometric survey of samples of the industrial population in north-east Scotland (Aberdeenshire, Banffshire, and Kincardineshire) as regards hair and eye colours, certain cranial measurements, and stature. In this survey 1,559 adult and adolescent civilians engaged in active work were measured and the results are compared with those published in the first report of the Trust in 1905 relating to inmates of lunatic asylums in the same areas. Cranial measurements of 1,156 school children in Aberdeenshire and Glasgow are also included. The second monograph deals with a more extensive survey of the same characters in some 8,000 soldiers in Scottish camps carried out in 1915-16. The results obtained from those of Scottish birth are embodied in a series of maps which are of considerable interest. From a careful statistical analysis Dr. Tocher concludes that, though local differences in head height are of no significance, and those of head length are of doubtful import, the whole of the north of Scotland is definitely broad-headed, whilst the Lothians, Lanark, Ayr, Renfrew, and the Border Counties are distinctly narrow headed or, taking the cephalic index as criterion, the north-east is brachycephalic, the south and south-west dolichocephalic, Fife and Perth being buffer counties. This conclusion agrees with that previously reached from the study of asylum inmates. The northern counties are also found to be definitely superior in regard to cubical content of the head and in stature, whilst men from Lanark, Ayr and Renfrew are below average in height. A comparison with the parallel measurements from insane adults shows small but significant differences in all the characters measured, but the author considers that the explanation is to be found, not in the domain of pathology but in the fact that *both the civil and military samples were in reality selected* as regards stature and physique and to some extent as regards age, and, moreover, the race admixture in the samples compared may not have been the same. The effect of growth on the cranial characters from the 18th year onwards is shown in a series of curves which closely resemble the growth curve for stature, reaching an adult level about the 23rd year, with little, if any, subsequent change. The volume consists, of course, principally of tables in which the actual measurements are given in full, and which have in themselves a permanent value. In accuracy, clearness and style of production generally the work maintains a high standard. In *The Origin and Distribution of Racial Types in Scotland* a monograph also published under the auspices of the Henderson Trust Dr. John Brownlee summarizes the evidence already available relating to this question such as the survey of Dr. Beddoe and the distribution of archæological remains and of place names, and then inquires how this evidence may be correlated with the findings of the anthropometric surveys recorded in the three reports of the Trust. Most of this paper consists of the author's views or a discussion of those of his contemporaries on the controversial question of the sequence of invasions by differing racial types which has been responsible for the present population of these islands, and Scotland in particular. It cannot be said that any real relation between distributions of hair colour and cranial characters is proved by these surveys. There is a curious mistake on pages 20 and 27, where the author erroneously concludes that a difference of 3·6 inches between the mean statures of two groups numbering 36 and 67 respectively is not significant from the standpoint of probability, whereas calculation shows this difference to be nine times its probable error. Apart from a good deal of conjecture the paper does not throw much further light on the explanations underlying Dr. Tocher's findings, but it must be conceded that the attempt to unravel the racial components by studying populations resulting after several thousand years of mixture and intermarriage is not one which justifies the expectation of startling discovery or affords a basis for much dogmatic assertion.

MALARIA IN THE FEDERATED MALAY STATES

THE annual report for 1923 by the secretary of the Malaria Advisory Board contains interesting information about the progress made in combating the course of malaria in the Federated Malay States. In our issue of October 11th (p. 677) we referred to the valuable work of Sir Malcolm Watson in Malaya and the following details illustrate some features of the energetic campaign begun by him. A paper published in the *Bulletin of Applied Entomology* in October, 1922, showed that mosquito larvæ quickly die in rice fields which are temporarily drained and the Board therefore, has recommended the appointment of an engineer to investigate this matter more fully with a view to action on a large scale. A model has now been prepared for exhibition, showing how to overcome the difficulty of providing inexpensive and effective openings other than doors into mosquito-proof rooms, models of beds illustrating the use of mosquito nets have been sent for exhibition to the principal manufacturing firms. Recommendations were approved by the Government and circulated to all mosquito destruction boards urging closer co-operation between health officers and these boards in different areas so as to enable useful information to be more widely diffused. Every landowner is held responsible for the establishment of proper antimalarial measures upon his land the principal department being responsible for railway reserves. The health report of Port Dickson was particularly considered and it was decided that all possible precautions should be taken to free the coastal area from malaria and that antimalarial drainage should be started at once on the Port. Extensive propaganda work is being carried on. Posters dealing with malaria have been printed in various languages and circulated throughout the Malay States, lantern lectures have been delivered in English, Malay and Chinese in almost all the schools throughout the Federation, and pamphlets on malaria being freely distributed. Dr.

[1] *Measurements, Weights and Other Facts relating to Man.* Henderson Trust Reports II and III. J. F. Tocher. Edinburgh and London: Oliver and Boyd. 1924. (8 × 11 in., pp. 172, illustrated. Printed for private circulation.)

[2] *The Origin and Distribution of Racial Types in Scotland.* John Brownlee, M.D., D.Sc., F.R.A.I. Henderson Trust Lectures. London: Oliver and Boyd. (8½ × 11 in., pp. 32. Printed for private circulation.)

lantern lecture tour in Pahang thirty-three towns and villages were visited, and nearly 10,000 people—mainly Malayans—attended the lectures Other districts have been similarly visited during the present year In June an exhibit was arranged at the Malayan horticultural show in Kuala Lumpur, and was studied with great interest by 15,000 to 20,000 people Included in the exhibit were photographs, charts, and models illustrating the method of reducing malaria by drainage, and instructions with reference to personal prophylactic measures Educative information is circulated also through the local press from time to time

RECENT ADVANCES IN PSYCHIATRY

IN his presidential address to the Medico-Psychological Association of Great Britain and Ireland, delivered in the Queen's University of Belfast last July, Dr M J Nolan dealt with certain aspects of our present-day knowledge of psychiatry and the application of this knowledge to the treatment of the insane[1] Dr Nolan avoided any detailed discussion of recent theories or modern therapeutic measures, preferring to deal with broad issues and enunciate general principles The address was in the main philosophic and humanitarian At the outset he contrasted the opposing views entertained as to the causation of mental disorder, and expressed the opinion that the acceptance of a purely physical or a purely psychical causation was an indication of a temperamental bias rather than the result of impartial observation and deduction—a bias towards a materialistic or a metaphysical interpretation of phenomena This is reminiscent of William James's division of philosophers into the "tough-minded" and the "tender-minded"—those abiding by facts and those abiding by principles Dr Nolan cannot accept either hypothesis solely in any given case, preferring to believe in a combination of both as better explaining the origin of mental illness Most cases, he thought, showed a clearly defined vicious circle of cause and effect, bodily and mental Reviewing the problem first from the physical side, Dr Nolan reminded his hearers of the store of specialized knowledge available dealing with abnormal conditions of the brain and general nervous system, of the blood, and of the endocrine and other organs in mental disease This knowledge had thrown light on many dark places and afforded guidance in the treatment of the insane Turning to the psychical side, he insisted on the necessity of a just estimate of the patient's point of view, and urged the asylum physician to put himself in the patient's place and pursue the line of morbid thought True to this thesis, Dr Nolan placed reliance on both physical and psychical methods of treatment, and would leave no avenue unexplored in the search for means of ameliorating the patient's state When knowledge of the patient's standpoint has been obtained, "the line of suggestive treatment can be followed up and this, coupled with such medical treatment as is suited to the special case from our investigation of the bodily condition, holds out the best prospect of amelioration, if not complete removal of the mental trouble" We are in hearty agreement with Dr Nolan when he urges the intensive clinical study of the insane patient and advocates the closer co-operation of the general practitioner with those engaged in asylum practice Dr Nolan would discard entirely such a term as "alienist," which he considers has helped to bring about the estrangement between psychiatry and general medicine, and substitute that of "asylum physician" We cannot think, however, that a matter of nomenclature can be held responsible for the present state of affairs, nor that such a change would materially improve it A closer and better understanding is more likely to accrue as a result of treating mental diseases in their earlier stages in general hospitals, as outlined in our article on September 27th, 1924 (p 585), where we stated that "it is hardly possible to conceive of a more effective method of bridging the gulf which exists between psychiatry and general medicine than that which aims to treat mental cases in a hospital dealing also with surgical and medical cases"

[1] *Journal of Mental Science*, October 1924

AN OSLER MEMORIAL VOLUME

THE Osler memorial volume, which the International Association of Medical Museums has had for some time in preparation, will, we learn from a notice issued a few months ago, contain some 300 pages and will be freely illustrated In meeting the cost of publication the association is being helped by members of the late Sir William Osler's family and by numerous other friends The subscription list is still open, and Dr Lydia M Henry, who had an opportunity of inspecting the list at McGill University, Montreal, last summer, informs us that it contains relatively few names from Great Britain This is, no doubt, due to the fact that the project is not well known on this side of the Atlantic Dr Maude E Abbott of McGill University is the managing editor, and will receive subscriptions Dr Henry further informs us that the volume is now nearly ready, and that subscriptions ought therefore to be sent at once The sale and subscription price is 10 dollars A number of Sir William Osler's friends and pupils have made contributions, among them we notice the names of Sir Clifford Allbutt, Professor W Welch, Sir Arthur Keith, Colonel Fielding H Garrison, the late Sir German Sims Woodhead, Dr Thomas McCrae, Dr J G Adami, Dr Howard Kelly, Professor Llewellys F Barker, Sir Humphry Rolleston, Sir William Hale-White, Sir Seymour Sharkey, and Dr William Collier and Dr A G Gibson of Oxford The matter will be arranged under various headings first there will be general articles and contributions, next, an account of Osler's early life, then recollections of his work in Montreal, in Philadelphia, and finally in Oxford A classified bibliography has been prepared by Dr Maude E Abbott, Dr Henry Cattell (Washington), Dr E B Krumbhaar (Philadelphia), and Dr Archibald Malloch, with the assistance of Miss M W Blogg, who published a chronological bibliography of Sir William Osler's works in the *Johns Hopkins Hospital Bulletin* (1921)

FOOD PROBLEMS IN RELATION TO INDIA

THE influence of diet upon physical efficiency, as illustrated among the different races of India, was the subject of a lecture given by Lieut.-Colonel R McCarrison, C I E, I M S, before the Indian Section of the Royal Society of Arts on December 5th He said that anyone who had travelled far in India could not have failed to observe the remarkable differences in the physical efficiency of its various races Although a number of factors, climatic and other, played their part in determining those differences, yet there could be no doubt that nutrition was the principal Such foods as rice, maize, barley, wheat, millet, legumes, vegetables, and fruits formed the food of millions of Indians, animal foods, milk, and milk products were, as a rule, taken only by the better-to-do classes and by certain races of Northern India The commonest and poorest of all the dietaries consisted of rice, legumes, vegetables, and condiments, it was a diet poor in protein, in certain mineral elements, and in certain vitamins, and the people whose diet it was had the poorest health and physique and the lowest powers of resistance to bacterial infection among any of the races of India The people in the United

Provinces had a similar diet, but wheat was introduced, either in addition to or in substitution for rice. This diet, although deficient in certain respects, was an improvement on the rice legume diet because wheat furnished a better protein and more of it, and the people in consequence had a higher degree of physical efficiency and general well-being. Among races which, like the Rajputs, the Sikhs, and the Pathans, supplemented the cereal and vegetable diet with animal foods, especially milk and milk products, the highest degree of physical efficiency among Oriental races, or, indeed, among any of the races of mankind, was found. The diet of the Sikhs was lacto-vegetarian, and contained all the elements and complexes necessary for the maintenance of perfect nutrition. Throughout life the Sikhs used milk and milk products freely, they added meat occasionally, but it was a luxury rather than a common food. It would be difficult to conceive a diet which more adequately fulfilled the functions of food than that of the Sikhs, and those who were familiar with this race would acknowledge that for courage, manly qualities, and general physical efficiency they were unsurpassed. The diet of the Pathans was much the same as that of the Sikhs, but they ate more meat, they, too, were among the finest races of mankind. Colonel McCarrison referred in particular to the people of the Hill State of Hunza, in the extreme north of India, the diet of these people corresponded to that of the Sikhs, but included an abundance of fruit, especially apricots and mulberries, both raw and sun-dried. These people had exceptional powers of physical endurance, gastro-intestinal disease was extraordinarily uncommon among them, and they retained vigour to a very old age. Colonel McCarrison went on to speak of the connexion between certain rice foods and beri-beri, and described the experiments, already fully related in these pages, on pigeons fed on different rices. He led up to the conclusion that the fault in common dietaries was not solely vitamin deficiency, but an excess of starch or sugar, or both, or a deficiency of essential mineral elements. The results of such a combination of food faults as were found in the dietaries of Europeans as well as most Indians were exemplified in the prevalence of gastro-intestinal disease. At the close of his lecture Colonel McCarrison touched upon the interesting problem, discussed by him in our pages of March 29th, 1924 (p. 567), as to whether the food values of various rices in common use in India and the nutrition and vitamin value of cereals varied with the conditions of their growth. It had not been possible to put this to the test in the case of rice, but some experiments were made in the case of millet, another staple grain, and it was found that millet grown on soil with natural cattle manure was more nutritious and contained more vitamins than that grown on soil manured artificially, and, as was to be expected, millet grown on soil exhausted of manure was even worse than that grown on soil artificially manured. In a brief discussion following the paper Sir William Willcox spoke of his experiences in Mesopotamia during the war, where the British troops were fed on bread and biscuits (made of the usual sort of highly milled flour), jam, and tinned meat, with no fresh milk or vegetables, and on this diet developed beri-beri, although the small amount of fresh meat obtainable protected them from scurvy. The Indian troops, on the other hand, had a diet of wholemeal flour, lentils, and no meat, and their diet protected them against beri-beri, though not against scurvy. He emphasized the importance of educating public opinion in the matter of diet, especially as to the necessity of eating sufficient fresh and uncooked foods and bread made of whole flour. Dr. C. Muthu deplored, as did other speakers, that the Indian Government, for financial reasons, had withdrawn Colonel McCarrison from his work in India, and hoped that a way would be opened to send him back to complete his labours.

MILK AND ARTERIO-SCLEROSIS

THE suggestion that there may be some relation between the ingestion of milk and cheese, with their high calcium content, and the production of arterio-sclerosis was made in a letter in our columns of December 6th (p. 1082). In this connexion it may be interesting to note that W. J. Orr, L. E. Holt, Jun., and others, joint authors of a paper in the *American Journal of Diseases of Children*, November, 1924 (p. 574), produce evidence in favour of the view that excessive amounts of calcium in the diet tend to increase the total ab-orption and retention of it, impairing phosphorus ab-orption and retention. They believe also that an increase of phosphorus in the diet accelerates the excretion of calcium. Considerable controversy has arisen on this matter, especially in relation to rickets. Experimental work has generally confirmed the view that active rickets is associated with defective ab-orption of calcium and phosphorus, and that as improvement occurs large quantities of these elements are retained in the body. Bluhdorn, however, concluded, from the experimental study of the metabolism of two children, that calcium and phosphorus absorption ran parallel, and that an excess of either element in the diet caused an increase in the quantity of both retained in the body. Orr and his colleagues thereupon made a careful study of two children, one with incipient rickets and the other without, and produce evidence that increasing the intake of calcium causes calcium retention, the serum content of calcium rises if it was previously low, while at the same time more calcium is excreted in the urine. Phosphorus retention is simultaneously diminished, a considerable amount of pho phorus being diverted from the urine to the stools, the content of pho phorus in the serum is decreased. The effect of increasing pho phorus in the diet they found to be an increasing concentration of pho-phorus in the erum, a very marked decrea e in the amount of calcium retained, a great increa e in the calcium in the stools, a marked diminution of the calcium in the urine, and in one case, a definite fall in the calcium content of the serum. Orr suggests that the e phenomena arise from the precipitation of in oluble pho phates of calcium in the intestine, and, if this is true, any factor such as increased acidity of the intestinal contents, which favours olution of calcium pho-phate will promote the ab-orption of both calcium and phosphorus from the intestine. Orr has obtained evidence that calcium ab-orption is decreased by diets increasing the alkalinity of the tools. Further experimental work is necessary before definite deductions can be made, but it certainly appears from the report of Orr and his colleagues that the prevention of calcium ab-orption by the body may not be a very difficult matter.

BIOCHEMICAL NOMENCLATURE.

THE International Union of Chemistry Pure and Applied has a Committee on Biochemical Nomenclature, which presented a preliminary report to the conference at Copenhagen in June last. The report was adopted. It reiterates the recommendation that the name given to a substance the constitution of which is very complex or imperfectly known should have a terminat on corresponding to the principal chemical function, and that the termination ine, should only be used for immediate principles containing basic nitrogen. It advises that the glucides should be formed into two groups, that the term glucose, should be applied to a reducing non hydrolysable glucide and that another name should be found for a glucoside giving on complete hydrolysis one or more glucoses. The names of all glucides should terminate in oside,—that is to say, saliçine should become salicoside and amygdaline amygdaloside. The names of all lipides should terminate with "ide," thus stearine is to become stearid and palmitine

palmitide A further report on the nomenclature of proteins and diastases or enzymes is to be made to the next (the sixth) conference of the union

THE SOCIETY OF APOTHECARIES

THE winter livery dinner of the Society of Apothecaries of London was held at Apothecaries' Hall, Blackfriars, on the evening of Tuesday, December 9th, with the Master, Dr Algernon D Bienchley, in the chair The members of the Society and their guests were received by the Master and Wardens in the finely proportioned Court Room, and dinner was served in the charming old Livery Hall The original Apothecaries' Hall, it will be remembered, was destroyed in the Great Fire of London, and the present group of buildings forms a good example of seventeenth century architecture The medical banquets held there are looked forward to with more than common pleasure, for the hospitality of the Society is in keeping with its old-world habitation On the present occasion many distinguished members of the medical profession attended, notwithstanding the dense fog The toast of the Navy, Army, and Air Forces was proposed by Mr Samuel Osborn, FRCS (recently appointed to represent the Society on the General Medical Council), who acted as Deputy Senior Warden in the regretted absence, through illness, of Dr Vincent Dickinson It was responded to by Surgeon Vice-Admiral Joseph Chambers, CMG, Medical Director-General RN, and by Lieut.-General Sir William Leishman, KCB, FRS, Director-General Army Medical Services, who each spoke of the continued efforts of their departments to maintain efficiency with sadly depleted personnel, and asked for the co-operation of the civil profession in maintaining their great traditions The toast of the Royal Colleges and the Universities was proposed in historical vein by the Master, and was replied to by Sir Humphry Rolleston, Bt, KCB, President of the Royal College of Physicians of London, and Dr E Graham Little, MP, who represents the University of London in the new House of Commons The health of the guests was proposed by the Junior Warden, Dr Alfred Hepburn, and was responded to by the Right Hon Sir Henry Craik, KCB, MP, and by Mr Walter G Bell, FSA, whose interesting book on *The Great Plague in London in 1665* we discussed in our last issue The after-dinner speeches were interspersed with delightful songs and violin solos

THE Schorstein Memorial Lecture will be delivered by Sir Arthur Keith, MD, LLD, FRS, on Wednesday, December 17th, at 4.15 p.m., in the anatomical theatre of the London Hospital Medical College His subject is the clinical importance of the bulbus cordis The lecture will be illustrated by lantern slides Members of the profession are cordially invited to attend

THE first meeting of the Royal Commission appointed to inquire into the conditions prevailing in the wholesale and retail trades in articles of food of general consumption so far as they affect prices, was held on December 10th, when the Right Hon Sir Auckland Geddes, GCMG, KCB, MD, was in the chair Preliminary arrangements were made for the conduct of the inquiry

SIR JAMES MACKENZIE, MD, FRCP, FRS, Honorary Physician to the King in Scotland, has been awarded by the Council of the Faculty of Medicine of the University of Toronto the Charles Mickle Fellowship of that university The fellowship is awarded annually to that member of the medical profession who is considered by the council to have done most during the preceding ten years to advance sound knowledge of a practical kind in medical art or science The annual value of the fellowship is about 1 500 dollars

A SEVERE epidemic disease of the central nervous system has occurred recently in Japan, and 6,551 cases were reported up to the end of September The case mortality rate is 54 85 per cent, the symptoms resemble those of encephalitis lethargica, without the eye complications, and the persons affected have been mostly over 50 years of age Although the disease was widespread, rarely more than two cases occurred in the same family No pathogenic micro organism has been isolated, and the cerebro-spinal fluid was clear in all cases The summer has been unusually dry, and the epidemic began to decline when the autumn rains started

Medical Notes in Parliament.

[FROM OUR PARLIAMENTARY CORRESPONDENT]

The King's Speech

THE Speech from the Throne was read by the King in person on Tuesday, and debate on the policy of the Government, outlined in the speech, began in both Houses that day It continued on Wednesday, and will be resumed on the first three days of next week The King's speech, besides setting out the legislative programme for 1925, also indicates further lines of possible action which are now being investigated A promise is made to reduce public expenditure to the lowest limit compatible with the security and efficiency of the State, but promises are given to continue measures of alleviating the distress due to unemployment, to promote the development of the public system of education, and to encourage the rapid production of houses by new methods Passages more definitely bearing on public health declared that "the housing problem is not merely one of overcrowding, but also of the existence of large numbers of houses which fall below modern standards of propriety and sanitation Something is already being done under existing legislation to clear the worst areas and to remedy sanitary and structural defects in those which remain As new building increases it will be possible largely to develop this process, and my Government will take every opportunity of pressing it forward with vigour My Ministers are engaged upon inquiries into the possibility of combining with existing systems of insurance, provisions for improved old age pensions and pensions for widowed mothers Steps will be taken to carry out the principal recommendations of the committee on the use of preservatives and colouring matter in food, and for the ascertainment of costs and profits in the distribution of milk"

Bills are promised during this session dealing with medical examination and stokehold employment of young seamen, and to amend and consolidate the Factory and Workshop Acts and the law with regard to the use of road vehicles

In the opening stage of the debate on the Address late on Tuesday night, Dr F E Fremantle obtained the ear of the House for a succinct [illegible] objects for which medical members of Parl[illegible] Government should work in the present Parliament [illegible] drew the Government's attention to the fact that the death rate for tuberculosis in this country had been reduced to one half of what it was thirty or forty years ago If the other half of the death rate could be removed the annual saving of national income would be some £90,000,000, and about £5,000,000 Exchequer expenditure A Milk and Dairies Bill to eliminate tuberculous milk had been passed at the beginning of the war, but had never been enforced It ought to be re enacted with modifications The medical profession with its veterinary allies, said that tuberculosis could be eliminated in ten or twenty years In welcoming the references to housing in the Speech from the Throne as an important step towards improved national health, he referred to the activity of the building societies, which had built 295,000 houses in five years, mostly without subsidy He pointed out, however, that if the building programme proposed by the late Government were continued for ten or twenty years great blocks of houses would appear all over the country It was important to consider their distribution Town planning schemes had lagged behind, and he hoped that the Government would insist on town planning for all areas and also introduce new legislation applying town planning to areas already built up, but which were being pulled down or should be pulled down All over London the houses were coming to the end of their life, and they required a scheme for their replacement on proper town planning lines Dr Fremantle enumerated other health services which the Government should deal with The bill codifying factory laws would not suffice The factories should be linked up with the present health system of the country It was inevitable that they should have separate health services under the Ministry of Health, the Home Office (for factories), and the Ministry of Education, but those services should have a common policy He hoped that the medical profession would make a large contribution to the solution of the problems which confronted the Royal Commission on Health Insurance and also to those raised by the hospital system In conclusion he referred to the Indian Medical Service as affected by the Lee report, and to the perilous position of the Army Medical Service

The medical members of [illegible] other at the House of Commons on Wednesday enable the medical members who have sat in previous [illegible] to welcome their new colleagues

ST GEORGE'S HOSPITAL

NEW OUT-PATIENT DEPARTMENT

On the afternoon of Friday, December 5th, Sir Humphry Rolleston, Bt, K.C.B., M.D., President of the Royal College of Physicians, and Emeritus Physician to the Hospital, formally opened the out-patients' department extension at St George's Hospital, and unveiled the bust of John Hunter which has been erected over the new gateway leading into the Medical School.

SIR HUMPHRY ROLLESTON'S ADDRESS

In declaring the new out-patient department open Sir Humphry Rolleston said:

St George's Hospital—an offshoot from the Westminster Infirmary or Hospital (founded 1721), just as St Mary's Hospital was from St George's—was the outcome of disagreement in the parent institution, thus illustrating the dictum that "something good will be the final goal of ill." Our hospital, which had the advantage of a healthier as well as a wealthier neighbourhood, first opened its doors on January 1st, 1733-34, and during its life of 190 years has, of course, seen many changes and developments. At first an existing building, Lanesborough House, was utilized, and a staff of six physicians and three surgeons, shortly modified to four of each, "declared their willingness to serve without fee or reward," an obligation that has been loyally observed ever since. Starting with but 30 beds, the number was soon doubled, increased when the hospital was enlarged, about 1767, to 200 beds, in 1834 to 325, and at the present time is 342. The voluntary hospitals of London have had a struggle of increasing severity, especially during this century and since the war, and unfortunately St George's, in spite of its prosperous surroundings, is no exception to this rule, for at present the deficit between the assured income and the normal expenditure is £20,000 a year, it is, however, obviously an imperative duty to keep the hospital efficient, and hence a new out-patient department has become absolutely essential, even in the face of financial straits and the very considerable additional expense entailed by this necessary extension.

When a definite out-patient, as apart from a casualty, department was first inaugurated appears uncertain, during the hospital's first year of existence (1734) the number of out-patients was 258, in 1821 there were only 2,018, in 1851 they rose to 9,417, in 1886 to 23,180, and in 1923 the total of new out-patients was 34,028. Before 1893, when a third assistant surgeon and a third assistant physician, in the persons of the late Mr. A. Marmaduke Sheild and myself, were appointed, out-patients were seen on four days only in the week, and the change to six days a week has no doubt helped to swell the number of attendances, but the expansion of the special departments has been a noticeable and satisfactory feature in the activities of the out-patient service.

The out-patient department which is formally opened to-day is a great advance on that erected in 1891, just as that one was on its predecessor, which existed when I first came to St George's. The new and attractive arrangements now available, thanks to the skill of the hospital architect, Mr. Percy Adams, and the advice of the active medical and surgical staff, await your inspection and approval and need not be described in detail, but it would not be right to pass in complete silence the excellent operating theatre unit with its generous supply of waiting and recovery rooms.

The Functions of an Out-patient Department

The out-patient department (Sir Humphry Rolleston continued) has a number of functions, besides its primary one of providing relief to the sick poor, it is important that it should be a centre for consultation with general and panel practitioners, who can thus obtain an opinion by letter, I understand that more than half the out-patients come with this object. Further, the out-patient department has a great scope in teaching, the patients there are much more like those seen in ordinary practice than those admitted to the wards, but being often in an early stage of disease do not present the physical signs which are produced later by the morbid process responsible in the first instance for the symptoms. The study of these symptoms—that is, the manifestations of commencing disease—depends so largely on the patient's mentality and ability to describe his sensations that it is much more difficult than examination for the detection of physical signs in which we rely on our own powers, and with which it must be admitted, we are more inclined to be satisfied. Patients in the wards are to a great extent admitted there in virtue of either their physical signs or grave illness, and being usually in a more advanced stage of disease are therefore less amenable to cure than to temporary relief. The out-patient, on the other hand, is in a better position to benefit from the practice of the highest form of medicine—the ideal of the prevention of disease.

Unveiling of John Hunter's Bust

At the unveiling ceremony beside the new gateway of St George's Hospital Medical School Sir Humphry Rolleston said:

John Hunter, that wonderful genius, was born so much in advance of his time that even now, with the 200th anniversary of his birth due for celebration in 1928 he has hardly been overtaken. A pioneer in anatomy and physiology, an experimental philosopher, and the founder of scientific surgery, his name is immortal and needs no material memorial. It is our proud heritage to belong to the hospital where he did so much, and incidentally instituted clinical teaching, and this statue should serve to stimulate us, as we pass in and out of the Medical School, to follow, however distantly and imperfectly, his noble example of whole-hearted devotion to the sciences he so greatly adorned.

NEW YORK HOSPITALS

A survey of the hospitals of New York City has been undertaken by the Public Health Committee of the New York Academy of Medicine. Its report, prepared by Dr. E. H. Lewinski-Corwin, is published in a handsome volume[1] which deserves to be studied by members of hospital staffs and boards in this country as well as in the States.

New York hospitals had their beginning in one room of six beds set apart for an "infirmary" in the "Public Workhouse and House of Correction" built in 1736. It was the forerunner of the Bellevue Hospital. "A survey of the trend of hospital development since then," we are told, "reveals the same lack of conscious directing force which characterizes that of nearly every branch of social evolution. Scientific enthusiasm and individual initiative, generous benevolence and the rapidly extending city boundaries, combined to beget in rapid succession hospitals of one kind or another." The greatest growth of hospitals dates from 1850. There are now 32,000 beds, representing a capital value of sixteen million pounds sterling, not counting equipment. Of the 182 hospitals which contain these beds, 18 are municipally owned and contain 39 per cent. of the beds, 114 were founded by private philanthropy and hold 57 per cent. of the total, whilst 5 per cent. are in proprietary institutions. About 60 per cent. of the beds are in general hospitals. Special hospitals came into existence as a protest against the neglect or refusal of general hospitals to treat certain classes of cases. Now conditions have changed, and it is held that (except for orthopaedic and neurological cases which are very chronic) the special hospital has reached its zenith. The preferential value of small or large hospitals is debated, it is found that the small hospital are more difficult to staff, and would be more expensive if they took the same class of work as the large.

In the past it has been usual for the hospital staff to serve in rotation for only part of a year. A tendency for all-the-year service has rendered it imperative for the

[1] *The Hospital Situation in Greater New York. Report of a Survey in New York City by the Public Health Committee of the New York Academy of Medicine.* Prepared by E. H. Lewinski-Corwin, Ph.D. New York and London: G. P. Putnam's Sons. 1924. (Med. 8vo, pp. xi + 208, illustrated.)

hospitals to provide their attending staffs with private and semi-private rooms, sufficient for the accommodation of all their private patients In non-municipal general hospitals 70 per cent of beds are in public wards, and the rest in private or semi-private rooms The proportions vary greatly In some hospitals physicians are allowed to charge patients in the public wards, this is not considered a desirable practice Of the medical practitioners of the city 36 8 per cent are on the staffs of hospitals, on an average there is about one staff member to every ten beds Ambulances are maintained by both municipal and independent hospitals, the latter providing the larger proportion The ambulance problem is under discussion, and the view is held that it should be a municipal service

The data provided by the medical statistics are fragmentary, and do not afford more than an approximation to an index of disease incidence in the community Mortality statistics, it is held, are not an adequate index of hospital needs, but the decline in the death rate is considered to justify the assumption that there has been a reduction in the prevalence of disease, and therefore of the need for hospital provision The present accommodation provides a bed for *every fourth sick person There is still a prejudice against* going to hospital, but domestic service difficulties are reducing it Formerly not more than one-tenth of the sick persons went to hospital Unlike London, the vast majority of fever cases do not go to hospital There is an increasing tendency for hospitals to be used for obstetric cases, consequently the midwife as a factor in the situation is gradually declining in importance In 1909 midwives attended 40 per cent, in 1920 only 26 per cent, of all mothers

The utilization of hospital beds varies widely—from as high as 100 per cent to as low as 32 per cent Conditions of prosperity affect the demand, when the people are well off they go less to hospital Compensation (remuneration) for interns (house medical staff) averages 10 to 25 dollars a month with keep and uniform Surgical cases constitute 60 per cent of all general hospital patients, and in these are included 24 per cent gynecological Charges vary from 3 to 15 dollars a day, the higher priced rooms constitute 13 per cent Most charge extra for laboratory work, for x rays, for extra drugs, for the operation theatre, and for special nursing Fever hospitals show a very light demand, only 31 per cent of the beds are used, but with seasonal variations in these diseases this is inevitable Hospitals for children and infants show a light demand, and this is held to be undoubtedly directly related to decreasing mortality Maternity beds are much more used in private hospitals than in municipal hospitals

The only overcrowded hospitals are those dealing with mental cases, the State mental hospitals show an average utilization of over 130 per cent There is need for a psychopathic hospital in which mental cases may be treated without the stigma of commitment

The greatest need of change in hospital policy lies in regard to the "middle classes" Their standards are such that they dread the atmosphere of the public hospital ward, and the idea of charity and free medical services is repugnant to them This raises the question whether charges should not be regulated by the income of the patients, even if the private pavilion should thereby cease to be a money-maker for the hospital

The ratio of lay staff works out at one and a half to each patient It is much higher for the Presbyterian Hospital and lower for the Misericordia hospitals, where work usually done by maids is performed by the sisters

Costs are mounting heavily, but income also has increased The general prosperity and the insistence that those able to pay should pay has greatly decreased the amount of free treatment Voluntary contributions have increased, but they are now relatively less than patients' payments The 'United Hospital Fund" is increasing in popularity, and more benefactors give to hospitals through this fund than formerly instead of subscribing directly to a given hospital Endowments form a problem Most carry the right to nominate to the bed endowed This would mean a grave loss if it were fully acted upon, but it is not There is some thought of qualifying the terms of the deed Increase of income arises also from workmen's compensation cases The law provides for compensation to be paid by the employer or insurance company to physicians and the hospitals for the care and treatment given to injured workmen or those suffering from disease of occupational origin In some attending physicians make their own arrangements with the employers for the care of their cases in the hospitals, in most there is an established scale The State Board of Charities has recently put it on record that cases paid for under the workmen's compensation law are not suitable for treatment in dispensaries unless urgent Free days (the count is in days and *not by beds or patients*) average about 30 per cent

The independent hospitals are managed by boards, usually lay, sometimes with medical members, in others with a liaison medical representation All the staffs, lay and professional, record their attendances, and default leads to disciplinary action The mode of admission of patients varies, in some hospitals 90 per cent of patients are referred by the members of the visiting staff, while in one only 22 per cent were so referred It is suggested that there is need for a systematic inquiry into this matter, and into the *lapse of time between recommendation and admission*

The whole problem of financial control of expenditure is undergoing evolution, and there is a strong move in the direction of accountancy by "costing," so ably advocated by Mr Stone, the accountant of St Thomas's Hospital, London Most detailed and valuable information is tabled on the equipments of the various hospitals The common form of annual report is condemned, it is too much and too dry for the public, too little for professional uses, lines of reform are suggested

Medical organization is dealt with in a special chapter It is claimed that "*the medical staff is the most important* functional group of the hospital—its alpha and omega The selection of the medical staff therefore constitutes the greatest responsibility of hospital management" There are three types of staffing

1 All the attending doctors have alternating services, all are of equal rank and serve in rotation for a certain number of months in the year It is the most common type and the least satisfactory It limits research and responsibility But it has the advantage of increasing the number working at hospital

2 There is a head director who is all powerful he selects his assistants and assigns their work This plan has the advantage of centralization and definiteness of responsibility The disadvantages are in proportion to the personal limitations of the director

3 The third type is that common in the United Kingdom—namely, regular staffs, continuous service, each chief of a department directing the work of his staff It ensures continuity of treatment, good control of the house staff, good *teaching and* research work, and it links up the out patient work with the ward work But there is no "closed" staff, as every hospital has a so-called "courtesy' staff of men who have the privilege of sending in private patients and attending them at the hospitals, but *with* the exception of the proprietary hospitals there are no absolutely "open' hospitals

The *relation of the out-patient* department to the hospital has not been worked out satisfactorily, but the tendency is to link them together, so that unified organizations where hospital appointments carry with them responsibility for out-patient work is increasing Most hospitals have an age limit for retirement—from 60 to 69 years *In most* hospitals assistant physicians are required to make complete daily rounds of the patients, and *in thirty* seven this is also required of the chief of service Efficiency tests of hospital work are increasing, mainly owing to the work of the American College of Surgeons and the American Medical Association Staff meetings are becoming more frequent, and medical records are being imposed In many of the better hospitals the appointment to the internships are on a basis of a competitive examination, in others on credentials The nursing situation is dealt with in detail, and a very long chapter is given to the analysis of hospital medical records

There is a final chapter on a "*community policy*" which is most illuminating, and would serve as a text for a discussion on the hospital problem in this country equally well The book is a fine piece of work, clearly written, restrained and balanced in statement, and amply documented by facts and figures

Nova et Vetera.

KINGS AS PHYSICIANS

AFTER reciting instances culled from every part of the world, Sir James Frazer (*The Magic Art and the Evolution of Kings*, vol. i, p. 371) concludes that it

"On the whole, then, we seem to be justified in inferring that in many parts of the world the king is the lineal successor of the old magician or medicine man. When once a special class or sorcerers has been segregated from the community and entrusted by it with the discharge of duties on which the public safety and welfare are believed to depend, these men gradually rise to wealth and power, till their leaders blossom into sacred kings. But the great social revolution which thus begins with democracy and ends in despotism is attended by an intellectual revolution which affects both the conception and the function of royalty. For as time goes on, the fallacy of magic becomes more and more apparent to the acuter minds, and is slowly displaced by religion, in other words, the magician gives way to the priest who renouncing the attempt to control directly the processes of nature for the good of man, seeks to attain the same end indirectly by appealing to the gods to do for him what he no longer fancies he can do for himself. Hence the king, starting as a magician, tends gradually to exchange the practice of magic for the priestly functions of prayer and sacrifice."

The last of the instances cited by Sir James Frazer was that of the Tonga chiefs, who both healed and caused scrofula by their touch. The last but one was the Royal Touch of the monarchs of France and England.

This subject has a perennial attraction. Macaulay devoted to it some of his most trenchant pages—pages wherein the notes of the hammer, perhaps hitting the right nail on the head, re-echo merrily. Dr. Raymond Crawfurd dedicated a scholarly monograph to it, and now another scholar—Professor Marc Bloch of the University of Strasbourg—has composed a volume of more than 500 pages on the same theme.[1]

Professor Bloch has combined a Teutonic assiduity of research with something of the Gallic charm of style, it is hard to believe that even a German *Privatdozent* will discover "sources" untapped by Professor Bloch, who has, moreover, written pages which are not unworthy of a master of urbane and learned scepticism whom the world now mourns—his great fellow citizen Anatole France. Professor Bloch has not, indeed, the practical acquaintance with the psychology of ailing humanity which informs such a work as that of Dr. Crawfurd, but he has cast his net somewhat wider. The reader of the two books will certainly know all that anyone needs to know of a curious chapter in the history of mankind.

Just as the embryology of an animal recapitulates its phylogeny, the history of a custom or belief extrinsically of no more than local importance is intrinsically a mosaic of conscious and unconscious motives forming a typical pattern. The ground colour of the pattern is provided by unconscious motivation—beliefs handed down from a remote past and accepted not only without question, but without anyone being able to conceive that they would brook question. This is the ground colour, but tesserae of the mosaic, not indeed very numerous but disposed in a reasoned order, strike the eye by the brightness—or sombreness—of their hue, and stand up against the grey backing. These are conscious ambition, craft, and fraud. The history of the Royal Touch illustrates all these points.

In its origin this healing power was part of the divinity either inherent in or grafted upon the kingship. Professor Bloch rejects, it would seem with reason, some or Sir James Frazer's analogical arguments, in its origin the healing power of the Capetian dynasty was not, so to speak, wholly official; there was perhaps a eugenic element, but the Strasbourg professor fully recognizes the importance of the psychological correlation between kingship and magic powers. When, from the beginning of the eleventh century in France and from about a century later in England, the miracle becomes of importance, it is possible to trace the introduction of other elements. Perhaps Philip I. and still more probably our own Henry I. consciously exploited a belief that had an evident political importance; from thence onwards we can observe the working of both conscious and unconscious motivation. The prestige of the royal miracle worker is enhanced by the attribution of mysterious properties to the oil with which he has been anointed, there is partly a deliberate and partly an unconscious confusion between his inherent powers and those conferred by his anointing—a confusion which soon led to difficulties when the royal power and the papacy were in conflict. In France again, partly deliberately and partly unconsciously, the royal magician associated with the legend of an individual miracle worker. Professor Bloch's statement of his views may be thus translated:

"In France there were from about the eleventh century kings who cured *les écrouelles* (scrofula); there was also in the same country a century or two later a saint who was believed to possess a similar power: the disease was both the royal disease and the disease of Saint Marcoul. How was it to be supposed that these two wonderful facts did not—and in some relation to each other? Imaginations looked for a connexion, and because it was looked for it was found."

Finally, in the complex pattern we find indications of plain, simple lying, as in the invention of the Clovis myth by Forcatel in 1579, the enormous success of which proved, says Professor Bloch, that it supplied a sort of logical need of the popular imagination.

The end of the story makes it clear that of the various ingredients the primitive belief in a quasi-hereditary virtue of the dynasty was the most important. In England the miracle expired with the king *jure divino*; we have far too high an opinion of the astuteness of William of Orange to believe that he would have refused to touch for the evil if he had supposed for a moment that the ceremony would have had any of the value in a political sense that our Angevin kings probably attributed to it. The substitution of a king by Act of Parliament for a king by divine right deprived the miracle of its psychological basis. In France it survived another two generations, until the collective belief in the king's status had died out.

We have left to the last the most interesting of all the questions—namely, whether the king as a physician was a successful physician upon this point we find Professor Bloch hardly more illuminating than our Whig historian. Both of them leave many points in their harness pervious to the shafts of a Gilbert Chesterton. Professor Bloch tells us, with obvious truth, that to suppose the royal touch could cure a tuberculous adenitis is to defend a physiological heresy; with equal truth he remarks that the medical men of those days had neither a rigorous terminology nor exact methods of diagnosis, and he reaches the conclusion that "it is difficult to see in the belief in the royal miracle anything more than the result of a collective error, an error as a matter of fact much less injurious than most of those with which the history of mankind is full." For our part we find it difficult not to see in this reasoning an instance of the familiar round game, *chercher raison ou il n'y en a pas*.

The real problem is surely whether it is not true that "miracles" *do* happen when one expects them to happen—whether, in fact, the royal physicians did not really cure *some* patients so long as the patients believed they could cure them. None of Professor Bloch's or of Macaulay's arguments are addressed to this point. They are vitiated by a neocentric error that or substituting a technical connotation of recent date for a vague connotation of ancient date. It is idle to show that scrofula or *écrouelles* as defined by a modern pathologist cannot be cured by a witch-doctor. The experience of "Christian scientists" and other witch-doctors" in our own time makes it extremely probable that the royal medicine-man who effected a "cure" was surely as great as even Mrs. Eddy's prestige was; many patients—

The real case against miracle workers is that nowadays

[1] *Les Rois Thaumaturges. Étude sur le caractère surnaturel attribué à la puissance royale particulièrement en France et en Angleterre.* Pp. 502. Strasbourg and Paris: 1924. (London Agents: Oxford University Press.) Price 12s. 6d. net.

The healing by the touch of Clovis of a scrofulous creature, the case used by Forcatel, how a Professor of Medicine, that he was not acquainted with the vocabulary of the year 1579, could [illegible]

we have for so many diseases better remedies than resort to the miraculous The reason why all intelligent medical men protest against the miraculous treatment of, say, cancer, whether by the laying on of hands or by the use of violets or vitamin-free diets, is that these procedures delay or prevent the use of non-miraculous treatment, the average value of which is greater Not one of the "scrofulous" persons who were touched by a mediæval French or English monarch was thereby estopped from or delayed in the application of non-miraculous treatment which was likely to relieve or cure the disability Some derived benefit, some were harmed, others were unaffected Professor Bloch's statistics do not enable us to make a classification, so the pragmatic value of the royal miracle cannot be determined

England and Wales.

Forbes Fraser Hospital, Bath

Descriptions of the Forbes Fraser Hospital at Combe Park, Bath, were given in our issues of May 24th and July 26th, 1924 At the last meeting of the hospital committee the chairman, Sir Percy Stothert, was warmly thanked for a gift of £675, the cost of the new retiring rooms for the nurses A discussion took place regarding the site of the new nurses' hostel which is to be built in connexion with the hospital, and towards which Mr Stanley Wills recently gave £5,000, and a letter from Sir George Wills was read, enclosing one hundred guineas towards the cost of the equipment of the hostel The Mayor of Bath, Alderman Cedric Chivers, thereupon offered to present to the committee a site of some four acres adjoining the hospital, and this was gratefully accepted In the course of the meeting it was mentioned that the Forbes Fraser Memorial Fund now amounted to over £2,400, and that Mr Walter Mallett's contributions towards the Combe Park Children's Orthopædic Hospital amounted to £4,400

The Cost of Sanatorium Treatment

The Ministry of Health has issued a memorandum (94/T) containing details of the expenses incurred by 173 hospitals and sanatoriums throughout England and Wales in the treatment of tuberculosis Included in the data, which are classified under thirty-eight separate heads, are such items as the number of beds, the proportion occupied, the type of cases treated, the salaries of the staff, the amount spent on different kinds of foodstuffs, the structural and laundry expenses, and the rents, rates, and taxes Adding these together, and deducting the profits made on the farm and garden, and sources of income other than those derived directly from the patients, we have the average weekly cost per patient Dealing with those institutions which cater for adults only, one cannot fail to be struck by the differences presented by the individual institutions, for instance, Black Notley Sanatorium, Essex, shows a figure of 27s, whereas Peel Hall Hospital, Lancs, shows one of 69s a week It is clearly unfair to draw comparisons without intimate knowledge of all the factors concerned, but there seems to be little doubt that a difference such as this can hardly be ascribed entirely to local circumstances It is interesting, too, to note that the expenses of the county council bodies agree very closely with those of the voluntary ones On working out the average for forty of the former class we find the cost to be 49s and for thirty-one of the latter class 48s a week In most cases where figures are given both for 1923 and 1924 there is seen to be a reduction in the expenditure for the current year, part of this can be ascribed to the diminished cost of food, especially of meat Finally, attention may be drawn to the variations presented in the proportion of beds occupied to the number provided, in the majority of institutions, it is true, this proportion is high, but there is quite a number in which it does not reach above 75 per cent The Ministry evidently considers this as an argument in favour of the free interchange of patients between one area and another This document may be commended to the consideration of all interested in the administrative treatment of tuberculosis

Sheffield Local Medical Advisory Committee

An event of considerable importance in medical organisation is the establishment, recently, of a Local Medical Advisory Committee for the City of Sheffield The steps which have led up to the appointment of this committee will be of interest During the spring of this year a severe outbreak of epidemic encephalitis occurred in the district and it was felt that an investigation of the after effects of the disease, carried through by the co-operation of the hospital staffs and general practitioners with the health office, could not fail to be of value Accordingly, on the suggestion of Dr F E Wynne, medical officer of health, and Professor A J Hall, a meeting representing all branches of the profession was called by the Sheffield Division of the British Medical Association with the object of setting up a committee for the purpose of the proposed investigation At this meeting a wider scheme was put forward—namely, the formation of a permanent advisory committee, who advice and assistance would be available to the health authority, either in the event of other epidemic outbreaks or in any matters affecting the public health, such committee could also co operate with the medical officer of health in obtaining facts as to the incidence of disease There was found to be a strong feeling that the time was opportune for the institution of such a body, and the committee has now been formed It has already got to work, and a sub-committee has been appointed to undertake the investigation of the after-effects of epidemic encephalitis It is proposed at an early date to appoint a further subcommittee to investigate some questions concerning the incidence and effect of treatment of cancer of the breast It is believed that the co-operation of this new committee will be welcomed by the local health authority, and also that as a step in the direction of preventive measures its objects will appeal to all branches of the profession

Medical Women's Presentation to Dr T W Hope

At a special meeting of the Liverpool Branch of the Federation of Medical Women, held on December 3rd, an inscribed antique silver tray was presented to Dr T W Hope on his retirement from the post of medical officer of health for the city and port of Liverpool Miss Margaret Joyce, president of the branch, was in the chair, and there were forty-five women doctors and students present Miss Joyce, welcoming Dr Hope, said she had recently heard him eulogized for the various things that he had accomplished, but the medical women wished especially to show their appreciation of what he had done for the poorer women of Liverpool Miss M H F Ivens (President of the Federation of Medical Women), in making the presentation, laid stress upon the great work done by Dr Hope in improving the conditions of midwifery practice in the city, and his sympathetic co-operation in all efforts for the relief of suffering She thanked Dr Hope for his generous outlook and broad views with regard to medical women in his whole hearted support of their work he had shown vision and imagination Other speakers were Dr Vera Boley, Dr Chambers (representing the school medical officers), and Miss Beryl Chambers (representing the women medical students) Dr Hope, in acknowledgement, said he had belonged to the Liverpool Medical Institution for the last thirty years and had supported the application for membership of the first woman doctor in Liverpool He referred to women's work in public health, and mentioned that the reduction in infant mortality synchronized with the entrance of women into the public health service In Liverpool to-day the greater part of the maternity and child welfare work was performed by women doctors, and he hoped that the number of women engaged in this work would be largely increased all over the country Dr Hope was accompanied by Mrs Hope and his two daughters

Bethlem Royal Hospital

A course of lectures and practical instruction for the diploma in psychological medicine commences at the Bethlem Royal Hospital on January 5th, 1925 This course is comprehensive, and fulfils the requirements of the Universities of London, Cambridge, Durham, Leeds, Manchester and the English Conjoint Board The first part

includes lectures on the anatomy, histology, and physiology of the nervous system, lectures on the psychology of the emotions, including the related questions of psychopathology and psychotherapy, lectures on general psychology, and eight sessions on experimental psychology. The second part, dealing with neurology, includes clinical demonstrations upon selected cases of nervous disease, eight lectures on neurological diagnosis, eight lectures on diseases of the brain and spinal cord, and three lectures on the *post-mortem* examination of the central nervous system. All these lectures will be illustrated by clinical demonstrations, and, in addition demonstrations will be given on the morbid anatomy and morbid histology of the nervous system, including the preparation and staining of sections. The second part of the course also includes lectures and clinical demonstrations on psychological medicine in all its branches, and a special course of twelve lectures on mental deficiency, with clinical demonstrations. The fee for the full course is 15 guineas and either part may be taken separately for a fee of 10 guineas. Entrants for the course who pay a composition fee of 15 guineas may, by giving notice beforehand, attend either part and postpone the other until the next session. Those who take the complete course may attend the general clinical practice of the hospital on payment of 5 guineas for six months, or 10 guineas for one year. Further details of the course may be obtained from the Physician Superintendent, Bethlem Royal Hospital, S.E.1.

Scotland.

UNIVERSITY OF EDINBURGH: EXTENSION AND BENEFACTORS.—THE PRINCE OF WALES on December 3rd performed the opening ceremony at the King's Buildings, which form the Chemical Department of the University, in West Mains Road, near Blackford Hill, Edinburgh. The foundation stone of these buildings had been laid by the King four years ago. The Prince, in declaring the buildings open, said that during the past ten years there had been in commercial, industrial, and professional circles an ever growing demand for recruits who have had a competent training in one or other of the branches of science. It was to the credit of the governing bodies of the University that they had wisely embarked on new schemes of building and enlargement which would in the near future provide their students with the facilities for scientific instruction that the needs of the country and their own individual inclinations called for so imperatively. The King's Buildings were now completed in all material details and in complete in one respect only—the debt which the University had unavoidably incurred in carrying out this scheme and which had not yet been paid off. Continuing, he said that Scotsmen were famous for their power of looking ahead and anticipating the future and this building was in a sense a monument to this national gift designed to meet in advance the needs of a new age. He appealed to Scotsmen to mark their appreciation of it by helping to remove from the shoulders of the University of Edinburgh the burden which it now bore. An honorary degree was afterwards conferred upon his Royal Highness in the McEwan Hall, the Earl of Balfour, Chancellor of the University, presiding. At a luncheon held later in the Old University Library Principal Sir Alfred Ewing announced the receipt of several gifts from friends of the University. One anonymous donor interested in chemical manufactures had presented £2,500, others on being approached had promised respectively £1,000, £1,500 and £5,000. These together with smaller amounts had brought up the list of contributions to a total of £10,600. Further the Carnegie Trust of the Scottish Universities had decided to make a grant out of its surplus to the universities and the share to the University of Edinburgh would be something like £15,000. Recently a much larger gift had been made by Sir Alexander Grant, whose name was associated last year with the gift of £10,000 for the purpose of a Scottish National Library. The gift towards the completion of the King's Buildings amounted to £50,000. Altogether the amount, in round figures, presented in connexion with the opening of the buildings, towards their completion, was rather more than £75,000.

The King's Buildings stand on a piece of land some 115 acres in extent situated to the south of the city, and intended to provide sites for all the scientific departments of the University. Already the Department of Chemistry and Geology are located there. The chemistry building has a frontage of 220 feet and a depth of 320 feet. The front block is of two stories, and from it run outwards three parallel corridors, off which open the main laboratories and lecture rooms with their subsidiary offices and service rooms. These are one story in height and are lit on the factory shed principle by a glass roof with north slope window lights. On the ground floor of the front block are the physico-chemical laboratories, the dark rooms, and special rooms for gas analysis, etc. On the upper floor are the library, demonstration rooms, staff common room, research rooms and laboratories designed for special forms of work. The main laboratories are four in number, each 45 by 75 feet internal measurement and fitted with benches to accommodate 288 students in the elementary laboratory, 144 students in the laboratory of the second year, 48 students in the advanced inorganic laboratory, and 40 students in the advanced organic laboratory. The physico-chemical rooms further provide working places for about 30 students. Thus there is accommodation for 530 ordinary students and the special research rooms afford accommodation for 25 post-graduate workers—a number capable of being doubled when all the rooms are completed. A section of the department is devoted to technical chemistry, the object being to familiarize students with technical plant and processes. There are four lecture rooms, two seated for 180 students and two similar rooms for 100 and 50 respectively. These are lit by cupola and three of them can be darkened by lowering the false ceiling operated by electricity. The original estimate for the cost of the department was £250,000 but the actual cost of the buildings so far constructed, inclusive of scientific equipment and all other charges, has been somewhat less than £200,000.

WAR MEMORIAL TO GLASGOW R.A.M.C.—A memorial tablet in Glasgow Cathedral was unveiled on November 30th by Lieut.-General Sir William Leishman, K.C.B., F.R.S., Director-General of Army Medical Services. The memorial is for the men of the following Glasgow units in the R.A.M.C. Territorial Force who fell in the war: Lowland Mounted Brigade Field Ambulance, 1st and 2nd Lowland Field Ambulances, Lowland Divisional Casualty Clearing Station, and the 3rd and 4th Scottish General Hospitals. The tablet consists of bronze plates set in white marble and was designed by Mr. G. M. Brand, a Glasgow architect. It has been erected on the south wall of the Cathedral nave. The ceremony was attended by a large gathering of past and present members of the R.A.M.C., as well as relatives and friends of the fallen. Sir William Leishman in his address said that the Glasgow medical unit had good reason to be proud of their war record, and no words of his could do full justice to the gallantry and endurance of the officers and men under most trying circumstances. The memorial was dedicated by Dr. Lauchlan Maclean Watt, Minister of the Cathedral, and afterwards wreaths were placed by Colonel Sir G. T. Beatson, K.C.B., honorary colonel R.A.M.C., 52nd (Lowland) Division, and Colonel C. H. Edington, A.D.M.S., 52nd (Lowland) Division. Pipers subsequently played "Lochaber No More" and buglers sounded the "Last Post" and "Reveille."

NEW HOSPITAL FOR SICK CHILDREN AT ABERDEEN.—At a meeting of the town council of Aberdeen on December 1st a letter was submitted from the directors of the Royal Aberdeen Hospital for Sick Children, representing the urgency for the erection of a new hospital, and requesting the town council to sell to the directors a portion of the land which it was proposed to acquire in connexion with the joint hospital accommodation scheme. The directors of the Sick Children's Hospital stated that they

were impelled by circumstances to proceed independently, although they did not depart from the view that a joint hospitals scheme on the lines already suggested would be in the best interests of all the hospitals concerned The town council agreed by 25 votes to 8 that the ground should be exposed for public sale for the purpose of being used as a site for the new hospital The purchase price proposed is £5,500

COMPENSATION AND INSURANCE RIGHTS OF THE TRAINED NURSE

An important legal decision affecting the medical and nursing professions was delivered this month by the First Division of the Court of Session It arose out of an arbitration under the Workmen's Compensation Acts, between a trained nurse and a lady who employed her Apparently this is the first instance in which a qualified nurse employed on a private case has claimed to be a "workman" in domestic employment The facts of the case were that a lady, who took a friendly interest in a neighbouring family, provided a trained nurse at her own expense to attend to one of the children There was difficulty in getting the child to take food, and, on one occasion, the child spat out some of the food, which lodged in the nurse's eye, causing inflammation and permanent diminution of visual power in that eye The nurse thereupon intimated a claim under the Workmen's Compensation Acts against the lady who had employed her It was argued for the nurse that a direct contract for employment existed between the lady and herself and that, although in the performance of her professional work she was subject only to the authority of the doctor, he was in this case the agent of the lady It was argued on the other side that the nurse was a professional person who rendered skilled services, that the nurse, further, was in no respect under the direction or control of the lady, and that the directions of the doctor were exercised in respect of his professional opinion, and not as the agent of the employer In a lower court, the sheriff substitute had held that the nurse was a workman within the meaning of the Workmen's Compensation Acts, but the higher court on appeal reversed that decision, and the judgement delivered by their lordships is sufficiently wide to settle questions of great public importance The decision of the Court of Session appears to be equally applicable if the patient had been a member of the employer's household instead of a child in another family, as in the particular case tried If the judgement of the sheriff substitute had stood, then every householder employing a nurse would have to protect himself against possible claims by insurance, and the reversal of the original decision has thrown on nurses the responsibility of insuring themselves against risk of illness arising from their work, whether they are engaged through a doctor, through an agency, or directly by the sick person or his friends The decision does not appear to affect nurses engaged on the staff of nursing-homes and institutions, because they are then subject to the control of their employers in the institution, nor, presumably, does it apply to a nurse permanently employed in attendance on a child or aged person under conditions which may bring her within the terms of the Acts The decision raises another question of equal importance regarding the position of nurses under the National Health Insurance Acts The question often arises whether a trained sick nurse employed in a household should produce her health insurance card for stamping This question appears to be settled by the present decision, because the words used in the Compensation Acts to define employees coming within their scope are repeated in the similar clauses of the Insurance Acts The result of the appeal, however, in its bearing on the Insurance Acts, appears to be that sick nurses engaged on private nursing do not come under the compulsory clauses of the National Insurance Acts Probably such nurses have until now usually considered themselves to be within the compulsory clauses of these Acts and bound to insure It would now appear, however, that no charge should be made against the employer for stamps in such cases The matter is somewhat further complicated by the fact that, as regards unemployment insurance, a special exemption for "female professional nurses for the sick" was considered necessary to be inserted in one of the Amending Acts of 1922, and this suggests that in the official view such nurses would otherwise have come within the scope of the Unemployment Acts, and, consequently that they come under the Compensation and Health Insurance Acts, contrary to the recent decision of the Court of Session Probably this decision will lead to reconsideration of the whole matter and to the necessity for framing an amending bill to define precisely the position of nurses

INQUIRY ON HOUSING IN LEITH

An inquiry held by the Scottish Board of Health in connexion with the promotion of the Edinburgh improvement scheme was conducted last week in the City Chambers, Edinburgh, under the chairmanship of Mr J L Jack, Director of Housing to the Scottish Board of Health The inquiry concerned a corporation scheme aiming at a large clearance of what is alleged to be slum property in North Leith, and the rehousing of most of the tenants at Lochend Dr Robertson, M O H for Edinburgh, in giving evidence, stated that the question of the present slum clearance was the subject of a clause in the bill by which Edinburgh and Leith were amalgamated His experience in Leith and Edinburgh had shown that the environment of the population had a very marked effect upon the power of resistance to disease That was particularly true with regard to tuberculosis and infantile mortality Considerable improvement could be effected, and had been effected, by slum clearance schemes In one area, which it was proposed to demolish, conditions were altogether favourable to the development of tuberculosis There was want of light, want of air, and want of sunshine, there were no baths or washhouses, and no facilities for the drying of clothes In one place a four-story tenement was shut in on three sides by high buildings, which had the effect of seriously interfering with the lighting and ventilation of the houses, and there was, moreover, considerable overcrowding, so that in one instance five adults and three children were accommodated in a single apartment He was not in favour of rehousing people on these areas, on account of the congestion that must prevail, and he favoured rehousing them on areas away from the industrial centres where they worked Undoubtedly the whole aim and object of the present housing scheme was the scattering of the population

Ireland.

MEDICAL REGISTRATION IN THE FREE STATE

In his address of welcome to the licentiates who were recently admitted to the Royal College of Surgeons in Ireland, Mr R C B Maunsell, President, referred to the difficulty which had arisen with regard to the registration of licentiates and graduates from the Irish Free State, and expressed the hope that the Governments of the Free State and of Great Britain would look at the matter in a business like way, and grant the unanimous wish of the medical representatives who had been appointed to confer and advise He regretted to say that that hope had not yet been fulfilled The medical profession in the Irish Free State was in imminent danger of complete destruction The whole question had passed into the hands of politicians, who argued about clauses and subsections of clauses in Acts of Parliament and in treaties Unless these politicians were able to find a way out of the difficulty the life of the medical profession in Ireland and its glorious traditions would count as nothing Separation would be accomplished, but during the process of separation the profession would bleed to death A few days ago a message was published in the daily papers purporting to come from a Minister of the Free State Government The import of this message was that all was well, that the medical profession need not worry, that the delay was altogether due to the fact that the authorities in Great Britain were not ready to deal with the matter, but that when they were ready it would be plain sailing Mr Maunsell expressed his sincere hope that this optimism would be justified, but from what he knew, he

feared that it might not His advice to newly qualified men was to have their names inscribed in the *Medical Register*, nobody knew when that *Register* might be closed, but closed it would be unless a few broad minded statesmen appeared before it was too late Unless a graduate or licentiate from the Irish Free State had his or her name inscribed in the general *Medical Register*, or in its Colonial section, he or she would not be entitled to practise anywhere, except in the Free State—not even on the high seas as a ship surgeon Were this to happen, medical schools and colleges in the Free State would not have sufficient students to keep them open for a single year, and all the labours of famous physicians and surgeons of the past would be annulled Dublin, as a medical centre, would be wiped out, and students would flock to Belfast and elsewhere

India.

RABIES IN SOUTH INDIA

THE annual report of Lieut Colonel J W Cornwall, director of the Pasteur Institute of Southern India Coonoor, deals with the work from March 31st 1923 to February 29th, 1924 The number of patients who received complete courses of antirabic treatment during the year was 1,354, a decrease of 2,021 on the previous year This decrease was due to issue of the antirabic vaccine to Government headquarters hospitals in the Presidency, and to the Madras General Hospital, 3 692 patients being thus treated No patient died during the treatment two died less than fifteen days and two died more than fifteen days after the completion of treatment The last are classed as failures, giving a failure rate of 0 29 per cent The inquiry into the mortality due to rabies was continued during the year with the view of collecting figures to give a better indication of the value of the treatment than has hitherto been possible A considerable number of groups of people bitten by almost certainly rabid dogs have been kept under observation for several months Some were treated and others refused treatment It was found that 2 8 per cent of the persons treated succumbed to rabies whereas 6 3 per cent of the untreated perished This denotes a difference of 3 5 per cent in favour of treatment which in other words, saved more than half the number of those who would have died from hydrophobia if they had remained untreated A statistical table is included in the report indicating that the risk run of death from hydrophobia if bitten by a rabid animal which is really infective, is not less than one in three Different strains of rabies in dogs appear to differ in their infectivity towards man One rabid dog will infect one out of every three persons bitten whilst another will infect none Whatever the strain concerned the dog dies and his brain responds to all the laboratory tests for rabies Evidence is given that the widely held belief that European races are less susceptible to infection with rabies than Asiatic races is untenable A larger proportion of Europeans than Asiatics are bitten through cloth ing, they generally take immediate steps to have the wounds disinfected and cleansed, and they do not vaccinate time before beginning treatment

BOMBAY HOSPITALS

The report of the Bombay Medical Relief Committee, which was appointed by the Government was published in the *Times of India* (mail edition) for October 11th According to that journal there are four main issues First the number of hospitals required, secondly, their size, thirdly their control, and fourthly their finance The Medical Relief Committee came to the conclusion that under the present system 2,056 beds are available for a population of 920,704—that is, a ratio of 2 2 beds per 1,000 In its recommendations the suggestion is made that this ratio should be increased to 3 8 per 1 000, which could be effected by making additions to the existing hospitals, providing one new hospital for Worli and Mahim special hospitals for tuberculosis and venereal disease and increasing at the same time the number of maternity homes The report includes a warning against making any one of the hospitals unduly large, and advocates the formation of some central hospitals board to obtain co ordination of system and management, and to prevent overlapping and waste of money The committee urges the general public to become more interested in its hospitals, and advocates the extension of voluntary gifts and of the payment by patients for treatment There appears to be no suggestion for providing a special hospital for children at present

PLAGUE IN THE PUNJAB

The Punjab Government in view of the severe epidemic of plague which occasioned over 200 000 deaths during the first six months of the year 1924, determined to adopt special measures to prevent or mitigate a repetition of this during the next plague season The suggestion had been made that the recurrence of plague in epidemic form this year was largely due to the continued existence of plague amongst rats during the hot weather and the occurrence of climatic conditions favourable to the rat flea during the winter It was therefore decided to endeavour to stamp out the infection by destroying the rats during the hot weather The Public Health Department was accordingly increased by ten qualified medical practitioners thirteen sanitary inspectors and various subordinates who were engaged early in July and allotted to the districts to be dealt with About the middle of July an intensive rat destruction campaign was commenced involving 395 localities which were potential plague centres Traps were distributed to 17 363 houses smoking operations carried on in 14 711 houses and 397 784 baits were laid in 17 271 houses As a result of this work 71 339 rats were known to have been exterminated during July The scheme was continued and extended during the month of August, but the details of the results are not yet available It is expected that all the known epidemic plague centres of the Punjab will have been thoroughly cleared of rats before the commencement of the next plague season Vigorous educational work was carried on also and 235 lantern lectures were given by officers of the Public Health Department during July alone The Punjab Red Cross Society has arranged to provide every district with a magic lantern and a set of plague slides, together with the standard lecture prepared by the Public Health Department

BOMBAY RECLAMATION SCHEME

The first report of the campaign against mosquitos in connexion with the Back Bay reclamation cheme in Bombay is published by Captain B S Chalam, the medical and sanitary officer in charge, in the *Indian Medical Gazette* for October (p 481) Captain Chalam points out that the growth of Bombay comprises a series of reclamations the first of which started in 1835 an outbreak of malaria being associated with its later stages as was the case with some of the subsequent reclamation schemes It was therefore felt to be necessary that precautionary measures should be taken in the present instance and a sanitary committee including eminent medical practitioners in Bombay both official and non-official was appointed to give advice The campaign began in May, 1923 a laboratory was equipped and antimalarial gangs were organized Four species of anopheles have been detected up to date all of which were found to breed in the brackish water of the pools on the area being reclaimed Close co-operation has been maintained with antimalarial operations in the neighbourhood, including those in upper Colaba where the British troops in Bombay are housed the barrack being actually contiguous with the reclamation area The reclamation scheme consists in the construction of a massive sea-wall about four miles long the area between which and the present land margin is being gradually filled with material obtained by dredging This material pumped in liquid form on to the area to be reclaimed and will be subsequently covered with dry earth After making

ample provision for roads and open spaces two and a quarter million square yards will be available for building purposes As the sludge is deposited a large proportion of the water in it is drained off and runs back into the sea, but a small proportion of the water is side-tracked, pools being formed and antimalarial work necessitated The preventive work now carried on includes the systematic exploration of the whole area for mosquito larvae, the treatment of all receptacles capable of holding water, removal of waste vegetation and casual water collections, and the treating with paraffin oil, tar, or other larvicide of water that cannot be so removed An educational campaign has been arranged *in conjunction with the scheme*

Correspondence.

CANCER MORTALITY IN MENTAL INSTITUTIONS

SIR,—May I call attention to an error which is being circulated in certain newspapers and other periodicals in regard to the mortality from cancer in mental institutions? The error arises from a misinterpretation of figures given *on page 34 of the Report of the Board of Control* (Lunacy and Mental Deficiency) recently published These are quoted as implying that the cancer death rate in mental institutions is "3 per cent," whereas amongst the general community the cancer death rate is "12·4 per cent," and from this comparison it is alleged that support is given to a certain theory of cancer causation A moment's reflection would show that if the last figure is really correct the general community must be hastening so rapidly towards extinction that it would be well advised to take refuge in a mental institution without delay A glance at pages 32-34 of the report referred to, however, at once relieves us as a profession from the onus of having to recommend a course so drastic, for it is perfectly clear that the figures quoted are not death rates, but *percentages of the total deaths from all causes*—that is, of every 100 deaths occurring in mental hospitals 3 are due to cancer, whilst of every 100 *deaths occurring in the general community* 12·4 are due to cancer On page 32 we have been told that for 1922 the death rate from all causes per 1,000 living in mental hospitals was 90·0, as compared with 13·6 in the general community aged 15 and upwards, the general mortality rate in the institutions being, therefore, six or seven times that for the country as a whole The actual death rates from ten important causes are then compared on the same basis in a table on page 33, from which it is seen that the crude death rate from cancer per 1,000 living in mental hospitals was 2·7, as compared with 1·7 in the general community aged 15 and upwards

Several important factors are, of course, not taken into account in such a comparison For example (1) a considerable proportion of patients admitted to the mental hospitals die comparatively young from causes directly connected with the mental disorder for which they were admitted, and the population at risk to cancer and other diseases requires correction on this account, (2) the much higher mortality from tuberculosis in the mental hospitals, operating chiefly at ages before cancer comes into play, likewise reduces the population really at risk to cancer From the information given in the report the exact effects of these and other disturbing factors cannot be computed, but it seems evident that they would mostly tend to make the apparent crude death rate from cancer in the mental hospitals too low, and that the rate, when corrected to be comparable with that given for the general community, would be considerably *above* 2·7 If we content ourselves with the crude figures as they stand, however, and assume that mental hospital inmates are indeed saved, as stated, from most of the factors which are alleged to be the causes of cancer in the articles referred to, the greater cancer death rate per 1,000 living in these institutions provides a direct contradiction to the theory advocated —I am, etc,

PERCY STOCKS, M.D

Department of Applied Statistics
University College, London, Dec 4th.

EXPERIMENTAL CANCER IN THE GALL BLADDER OF GUINEA-PIGS

SIR,—The pulmonary lesions to which Dr Creighton refers (December 6th, p 1079) are not *uncommon* in rats they sometimes occur in rabbits, and, though I have not looked for them in guinea-pigs, I have no doubt they are to be found in them also I do not think that anyone who has had experience of them regards them as true tumours, much less cancers They bear no resemblance to the lesions we produced in the gall bladder

Dr Creighton says of my experiments that "it is clear that the tracts of fibrous callosity preceded the epithelial formations" In point of fact it was not so

"Large nuclei and deep chromatization" are not, by any means, invariable characteristics of malignant cells, but if Dr Creighton cares to insist on these features as criteria of true cancer his doubts may be removed by the statement that both were present in the section, for example, from which Fig 21 was taken —I am, etc,

ARCHIBALD LEITCH

Cancer Hospital Research Institute,
London, S.W., Dec 6th

EXERCISES FOR THE PELVIC FLOOR MUSCLES IN DYSCHEZIA AND RECTAL AND UTERINE PROLAPSE

SIR,—It is a curious fact that those who are specially interested in remedial exercises entirely ignore the extremely important muscles which form the pelvic floor I was therefore very glad to see the article by Dr T Stacey Wilson, on the "Cure of uterine prolapse by re education of the muscles constricting the vagina," in the JOURNAL of December 6th (p 1041) Fifteen years' experience has proved to me the great value of the same exercises in the treatment of the very common cases of constipation depending upon dyschezia or inefficient defaecation I described this treatment in the first edition of my book on *Constipation and Allied Intestinal Disorders* in 1909, my attention having been drawn to the subject shortly before by a monograph written by Pincus of Danzig [1]

I have seen several cases of rectal prolapse cured in the same way I was, for instance, consulted in June, 1915, by a lady who had had an operation performed twelve months before for a very large prolapse, but the condition returned almost at once She had been advised by a distinguished rectal surgeon to have another operation for its relief Instead of this she *succeeded in restoring* the normal activity of the muscles of her pelvic floor by exercises There has been no recurrence in the nine and a half years which have since elapsed, in spite of a very long *and severe illness, which resulted* for a time in great emaciation —I am, etc,

ARTHUR F HURST

New Lodge Clinic, Windsor Forest,
Berks, Dec 9th

SIR,—Dr T Stacey Wilson's article is most interesting and the thesis, I think, most sound Many women cultivate —from feelings of modesty—undue passivity in regard to their sexual feelings, this passivity, long continued, leads to loss of tone in the pelvic muscles I am of opinion that the same conclusion holds good in the case of constipation The public indulge in laxatives which evacuate the bowel without any muscular exertion, consequently there is loss of muscular tone and bad habits are originated I contributed a short note on this cause of constipation a few years ago, which you, Sir, did not think worth publication —I am, etc,

A ADAMS

Derby, Dec 8th

TONSILLECTOMY

SIR,—As the proposer of the resolution carried by the Laryngological Section at Bradford, which has given rise to considerable discussion in the JOURNAL, I would like to make it quite clear that method of operation was ruled out by the terms of reference in the discussion of the treatment of chronic tonsillitis

[1] L Pincus *Constipatio muscularis—traumatica* [illegible] (Volkmann's *Sammlung klinische Vorträge*, 474, 475), 1908

From the papers read at that discussion it seemed quite clear that the tonsil should be regarded as having no special function apart from that of a limited barrier against infection, that this barrier became not only useless but a source of danger when the tonsil was chronically infected, and that when surgical procedures became necessary total extirpation of the tonsil should invariably be done, no methods of achieving this were discussed

The terminology of the resolution "Tonsillectomy by enucleation" was possibly unfortunate, as giving rise to misunderstanding, the words "by enucleation" being redundant, but inserted in order to emphasize the word "tonsillectomy" It was felt that so many cases were quoted of patients having had tonsils "removed" two, three, or more times, that it was necessary to emphasize the word "tonsillectomy" in order to prevent, as far as possible, in the future patients being subjected to what everyone must consider a lamentable redundancy of operations

That tonsillectomy by dissection should be invariably performed was never hinted at, nor did the meeting understand the resolution in this sense but it was felt that, whatever the method of operation, it should be undertaken under strict surgical conditions, not haphazard hence the second resolution regarding the classification of the operation —I am, etc,

C A SCOTT RIDOUT

South ea Dec 8th.

SIR,—The discussion on this subject in your columns is very interesting, but it does not seem to be making many converts Indeed it would be strange if it were otherwise, for we have, on the one hand a large number of doctors who have removed adenoids and partially removed tonsils, and rightly claim great benefit to their patients while, on the other hand, we have a small body of specialists who say that nothing short of complete removal is enough

Both parties are right in their contention but unfortunately, as is often the case in these prolonged discussions, both parties are not talking about the same thing The tonsillotomists are talking about the results of operations upon so called tonsils and adenoids whereas the tonsillectomists are talking of diseased tonsils only, and there is a vast difference between the two

Adenoids produce the following group of symptoms nasal obstruction and, in consequence mouth-breathing, nasal catarrh and nasal sinus disease pharyngitis laryngitis, and broncho-pulmonary disorders They produce nearly all the diseases of the ear of childhood and a proportion of those of adult life They also cause enlarged glands in the posterior triangles of the neck This is a comprehensive list—and one poor child may have them all—so that it is not surprising that removal of adenoids is of great benefit to the patient

Tonsils have a far worse reputation but they bear the blame for many of the crimes committed by their neighbours the adenoids They produce enlarged glands in the anterior cervical triangle They produce a favourable site for many of the infectious diseases, and, when chronically infected, are the foci from which arise many system toxaemias and infections which undermine the health and efficiency of patients of all ages

On comparing these two groups of symptoms it will be noted that adenoid symptoms are more noticeable and dramatic, furthermore, the mouth breathing produced by adenoids aggravates if it does not produce the enlargement of the tonsils Hence, on removing the adenoids the patient is relieved from the symptoms produced by them, and the tonsils tend, if not too far gone, to return to normal

It is the careless combination of the symptoms produced by tonsils and adenoids which is responsible for the varied opinions on this question of tonsillectomy I am convinced that, when children are cured by removal of adenoids and partial removal of tonsils, it is the adenoids which are producing the symptoms and that the same result would be attained were the tonsils left untouched It has been proved that a diseased tonsil is diseased right down to the capsule, so that mere tonsillotomy cannot possibly eradicate the disease As it is impossible in many cases to differentiate between the symptoms produced by diseased tonsils and adenoids the safest plan is to enucleate the tonsils It is, in skilled hands, just as safe an operation as tonsillotomy, and those who have not the necessary skill should acquire it It is no excuse to say that there are not enough skilled men in the country to cope with the work There never will be enough if doctors will not take the trouble to learn —I am etc,

W STEWART

Southampton Nov 28th

SIR,—Mr Cecil Joll's letter (BRITISH MEDICAL JOURNAL, November 29th, p 1025) opens up the question of anaesthetic technique from a new point of view He indicts the anaesthetists because in their ranks he thinks there are not enough sufficiently trained This training, in his view, means that the anaesthetist has such easy command of the patient that he can divide his attention between the anaesthesia and the operation In practice this may sometimes obtain, but in theory it is absolutely wrong Mr Joll, although he has given up the rapid guillotine method for the method of dissection has it would appear failed to appreciate the radical difference in the anaesthesia required

In the old days when the guillotine method was universal, all that was required was that the patient be deeply under and the operation would be completed without the continuance of anaesthetic agents Then the anaesthetist could quite easily give as much operative assistance as the surgeon needed But with the advent of the enucleation method hurry and rush have been entirely superseded by the quiet and deliberate routine of a major operation In this there is usually very little haemorrhage all the surgeon requires of the anaesthetist is that he may proceed at his own pace He packs the tonsillar fossae himself, and why shouldn't he There is plenty of time for the sake of argument it matters not if the operation takes ten minutes or half an hour —I am etc,

BERNARD E POTTER

London W 1 Dec th

SIR —Now that tonsil warfare has once more broken out in the JOURNAL and before you yourself cry "enough" and apply the guillotine I would suggest that one matter-of-fact aspect of the case which helps to decide the surgeon's choice has been rather overlooked

In actual practice when the operator has to deal with a number of tonsil enucleations in a limited time and under short anaesthesia as is often the case the so-called Sluder way with the guillotine is clearly indicated and many have now acquired by practice great skill in this method When, however, time does not press so much and with difficult cases and longer anaesthesia most operators will prefer dissection I refer, of course to general anaesthesia local anaesthesia has its advantages but has not so far been generally accepted as suitable for the operation of tonsillectomy —I am etc,

W H KELSON

London W 1 Dec th

THE GENERAL PRACTITIONER AND THE MATERNITY SERVICE

SIR,—The discussion on puerperal fever which took place at the Royal Society of Medicine was strictly limited to the definition of the condition and the mean and manner of notification so that there was no opportunity to discuss the relative responsibility of the general practitioner but there can be no doubt that there is a opinion abroad especially in official quarters that he answerable for an unduly large share of the existing puerperal mortality and morbidity

His proportionate responsibility cannot be determined until we know the result of the work of the specialists in their private practices and of the various institutions which they serve though it is doubtful if properly comparable figures can ever be obtained Probably all are responsible for some mistakes but there is one fact that should not be overlooked a very small proportion of careless practitioners will vitiate the statistics of all concerned, and bring unmerited blame on the great majority

What are the charges brought against us in particular—

are they well established, are we alone to blame for them? The evidence is said to be found in the statistics of maternal mortality, which in twenty-three years has only dropped from 4 81 to 3 60 per 1,000 births If we examine these rates we find that "sepsis" has gone down from 2 18 to 1 30—that is, by 0 88—whereas "other causes" has dropped from 2 63 to 2 30, which is only 0 33 so that practically three-quarters of the total reduction of 1 21 is due to the decrease of that sepsis with the production of which we are charged—that sepsis which is to-day not much more than half what it was twenty-three years ago As to "other causes," it is admitted that some of these are, with our present knowledge, inevitable, and a considerable proportion of them must be due to the survival of the unfit child-bearers whose lives have been saved by the science and art of the best midwifery

It has been stated that after allowing for the cases in which the general practitioner has been called in by the midwife, he still has the larger ratio of septic cases, but it must be remembered that a large proportion of his own patients are primiparae and others who, for one reason or another, anticipate some difficulty

Although all will admit that faulty technique may be the most usual cause of puerperal sepsis, there can be little doubt that in many cases there must be other factors of the exact nature of which we are ignorant—conditions of the patient, both genital and extragenital, over which we cannot as yet exercise any control—just as some persons are liable to severe attacks of furunculosis or erysipelas without any obvious cause These puerperal fevers may all be directly due to three or four generally recognized bacteria, but that does not necessarily imply that they have gained access to the patient and overcome her resistance by the fault of her attendant

The practitioner is also often put at a great disadvantage, both as regards sepsis and other complications, because he is called in, too late, to remedy some condition that, had it been recognized before, might then have been dealt with successfully Until it is generally recognized, especially by the patients themselves, that the actual confinement is only one stage of the whole process of pregnancy, there seems little chance of this risk being done away with

The family doctor is said to show want of care in his technique, especially as regards asepsis, undue interference and haste, and to be ill informed in his art If these statements are correct, is he chiefly to blame? His education was what was given him, not what he asked, and after he was in practice he was often confused by changing and even opposing obstetric dogmas The conditions under which he has to do much of his work are such that I doubt whether any specialist would accept them—surroundings too often unsuitable, nothing clean, everything overcrowded, inefficient help, interfering relations and friends Time—and this is all-important—is against him He cannot choose the moment, it is too frequently wasted by doing the work of the nurse, by watching that should be done by the midwife, it may interfere with his other work and cause an actual loss of income The remedy for these things is not his, it rests with those who should provide better homes, proper institutions within reach of the practitioner, trained nurses or midwives to help, and fees proportioned to the skill, the time, the energy, the equipment required, and the responsibility entailed

And is the medical man, whose greatest encouragement to good endeavour is success in the practice of his art, likely to be interested in work that is so often disheartening, where time may have to be wasted, energy thrown away, trouble ill requited, and responsibility unfairly weighted? When one considers what the difficulties and discouragements have been, one can only wonder at the profound change which, in spite of all, has been wrought in general practitioner midwifery during the last forty years

If all concerned will make every possible endeavour to remove the causes that contribute directly to the diseases and disasters of midwifery, if they will make their prevention possible, general practitioners will, instead of letting themselves be displaced by midwives and specialists, be able and glad to take, with them, their proper place in the service for which they have done so much in the past, and will, if allowed, do still more in the future.—I am, etc.,

Bradford-on-Avon, Nov. 30th CHAS. E. S. FLEMMING

SIR,—I am afraid your appeal to the general practitioners to ventilate their views on the present practice of obstetrics is not likely to result in much good I cannot but think that the subject has been approached in a wrong way Nearly every correspondent refers to the "storm now raging," "the dispute," "the century-old controversy," whether it be between the midwife and the general practitioner or the consultant, or all three, and proceeds to add fuel to the flames

Why not recognize the fact that maternal mortality remains sadly too high, under the present condition of the service, and endeavour to improve matters? In a previous letter (November 22nd) I briefly indicated how this, in my opinion, might be done, and I would like to pursue my suggestion—namely, that every case of confinement be seen at least once by a medical practitioner—a little further Our aim should be to anticipate complications that may threaten, to recognize the conditions predisposing to sepsis, abnormal presentations, contracted pelvis, or any condition of the patient herself, such as cardiac disease or albuminuria The point is how to get the public to recognize the necessity for such examination Well, in these days, many women engage a midwife only to attend them, or only provisionally engage a doctor as well Why not make it compulsory that such contracts between patient and midwife be made in writing (or printed), in proper legal form, signed by both parties, and contain a clause that a doctor be consulted at least once, the patient being responsible for the fee? At what period such a consultation should take place would be a matter of opinion, and could be left to the patient and midwife to decide

In this connexion I consider it most essential that every area should have the services of one or more fully qualified and trained midwives available, and doctors should see to it that such are made full use of In some such way the services of both doctor and nurse would be co-ordinated and made interdependent and not antagonistic The doctor would know in time what cases would be best removed to a maternity home or other institution, and what cases would require further attendance in their own homes The advantage of such a scheme as this lies in that it could be put in operation at an early date Time would show whether the better results were obtained by institutional treatment or having the patient in her own home In the meanwhile, it is the business of each local authority to see that arrangements are made to provide proper accommodation and means of transport for cases requiring institutional treatment and the business of the training and licensing boards to see to it that the standard of the whole maternity service is improved.—I am, etc.,

Wymondham, Norfolk, Nov. 29th ALEX. P. AGNEW

SIR,—I have been interested and rather amused at the letters about institution treatment for maternity case Haven't we poor general practitioners already enough notifying and inspections without adding to our burdens? It is forty years since I left hospital, and for the whole of that time I have been engaged in private practice I have attended at over three thousand confinements and have never lost a mother I do not think any amount of institution treatment would have improved on this, and I am certain that there are hundreds of general practitioners who can boast of the same results

I have had to treat every complication conceivable, and have, with the help of a brother practitioner or assistant managed them all—except a Caesarean case that had had much ante-natal care and measurements done in London and when labour was fairly advanced I found a projection from the sacro-lumbar junction prevented delivery My knowledge of midwifery when I left hospital was beneath contempt—twelve "B.B.A.s," seven normal labours, and watching our resident obstetric officer extract with forceps

once I was fortunate in my first practice to get help and instruction from one of the best men who ever wielded a pair of forceps

Why this outcry about forceps? They have saved many a perineum, many hours of agony, and many a child's life A primipara with a dose of scopolamine morphine, chloroform, and forceps can spend her last four hours or so in a happy oblivion, instead of having an experience that will remain in her memory for a lifetime

Is not sentiment to have any part in the last months of pregnancy or the young mother? Is she not to have the doctor of her choice, in whom she has confidence (who may even have brought her into this world), the rapture of showing father the little darling almost as soon as it is born, the comfort of her own home, and the support of admiring relatives and friends? Instead of this—frequent examination, packed off to an institution, labelled by a number

How many confinements has the ordinary specialist attended? Would he do a Caesarean section for every occipito-posterior case? I have never yet failed to extract with forceps, and these cases are pretty numerous and getting still more so as woman is losing her pelvic curve and getting flatter—due, in my opinion, to too much athletics

No, leave us our freedom, our pain alleviatives and, above all, our forceps, and the results will not be so disastrous as some of the faddists think But give the student and make him take, more opportunities of perfecting himself in the practice of midwifery A man who can really use forceps, do a podalic version, and arrest haemorrhage in placenta praevia—all of which are simplicity itself to the average general practitioner—can be safely left to attend 99 per cent of the cases likely to come under his care —I am, etc,

Frinton-on Sea Dec 1st G CRAIGIE BELL

PUERPERAL SEPSIS

SIR —Recent articles and correspondence recall to mind an epidemic of puerperal fever which fell upon us in Mid Glamorgan in 1891, with numerous fatalities among the primiparae, of whom there were many in the new and growing colliery villages

In the centre valley there were three practices and together we must have lost at least a score of young mothers in the short space of a month There were four deaths in my practice in less than a fortnight and in no case was I present at the birth There were three midwives in the village, and they were as capable as most of their kind The fatal cases were impartially distributed amongst them, the labours being easy in each case During the same period a colleague in the same village lost at least an equal number of cases, also primiparae, and he also had not been present at any one of the births

The invariable history was a rigor on the fourth or fifth day (and at this period in the case we were called in), quickly followed by vomiting which soon become more and more bilious in character until the fatal issue As an Irish assistant tersely put it, "That green vomit is the very divil" Loss of consciousness occurred only in the final agony, which was not many days coming In no case was there marked enlargement of the uterus and tenderness was not complained of on pressure The discharges were not increased or foul smelling

The valleys on either side suffered in much the same way, in fact one of my expectant patients fled in terror to some friends who lived five miles away only to fall a victim when her first baby was born She fortunately escaped with her life, but with the loss of her baby

During the same weeks multiparae—even severe instrumental cases—went through their trouble without any disturbing incident

As a preventive measure the midwives were warned off their work, but this did not stay the epidemic The county medical officer came and made a painstaking inquiry as to causation, but his investigation did not add much to our knowledge or comfort The great epidemic of influenza was gradually dying out, and the vagaries of this strange disease were, I must confess more than suggested as possible causes

One interesting fact must be recorded Scalp wound and other colliery scars, which usually healed by first intention, at this time got into the bad habit of suppurating, reminding one of old days in the "surgery" at Bart's, when the linseed meal poultice was much in evidence —I am, etc,

Newport Mon Nov 21st J LEWIS THOMAS

SIR —Your September numbers have just reached me and I am keenly interested in the discussion on puerperal sepsis The great majority of cases which run a temperature of over 100° subside within four days and need no further treatment Where the temperature persists either the patient's normal resistance has not been sufficient, or he has some other focus of infection which has rendered her less refractory to the organism than she normally would be What she needs is to have her tissue resistance reinforced

For over a quarter of a century I have successfully used antidiphtheria serum for this purpose—but it is administered orally, as the antitoxin has nothing to do with the object in view and is not absorbed when orally exhibited The elements in the serum by which this tissue stimulation is produced are the endocrine gland secretions which have been developed in the animal to defend its tissues during the process of immunization for diphtheria They are tissue stimuli produced in Nature's laboratory for this definite purpose These secretions are available for the tissues in the presence of the staphylococcus and streptococcus as well as in diphtheria, and not in midwifery alone but wherever those organisms are found in disease

The use of antidiphtheria serum orally for septic conditions has steadily extended here and to supply the demand for it the Commonwealth Serum Laboratory has prepared a low potency serum and listed it at 7s per 100 ccm My own supplies for years came from Messrs Burroughs Wellcome and Co, and the strength was 200 units per cubic centimetre, and the serum was satisfactory The dosage is 30 to 100 ccm per diem in 10 ccm doses according to the severity of the case the larger doses only being used when the smaller fail I shall be glad to hear that it has been successful in other lands —I am, etc,

Melbourne Oct 9th D MONTGOMERIE PATON

MULE-SPINNERS' CANCER

SIR,—I read with interest your leading article of November 22nd on mule spinners' cancer There is however at the commencement of that article a statement which is not quite correct You write, 'It is difficult to realize that only two years ago the term 'mule spinners' cancer' was unknown" In the same number of your paper is the report of an article by Dr A Leitch on "Mule-spinners' cancer and mineral oil," in which there occurs the following sentence Strange to say no one until within the last two years seemed to have known or to have suspected this association"

In a previous letter, which you published on December 9th, 1922, I wrote I noted clinically the association of the disease with mule-spinners as far back as 1906-7 whilst house-surgeon for the late Mr G A Wright" The actual work was done whilst I held the Tom Jones Surgical Scholarship (1907-10), and was mentioned by Mr John Morley in a paper on the 'Lymphatics of the scrotum" (*Lancet*, December 2nd, 1911) Mr Morley refers to the fact that cancer of the scrotum is by no means so rare in Lancashire as is generally supposed and continues

> The frequency of the disease has been definitely established by the work (at present unpublished) of Mr S P Wilson who in the course of an etiological investigation into epithelioma of the scrotum has collected a series of 40 cases from the records of the Manchester Royal Infirmary and the Christie Cancer Hospital during the past ten years

Purely personal reasons interfered with publication at the time, and further delay occurred owing to the intervention of the great war I then asked Mr Southam to bring the work up to date, and we issued a joint publication in the *British Medical Journal* of November 18th 1922

I feel it is only fair to the Manchester Medical School and myself to mention these facts, for Manchester surgeons have taught the association of mule-spinning and epithelioma scroti since 1910.—I am, etc.,

Manchester, Dec. 2nd S. R. WILSON

RAIN-BEARING WINDS AND EARLY PHTHISIS

SIR,—My name appears in Dr. Gordon's paper in the BRITISH MEDICAL JOURNAL of November 29th (p. 983), so perhaps you will allow a few comments.

If Dr. Gordon's hypothesis is confirmed by independent observers, and rain-bearing winds are found to be the main factor in the incidence, and the most important factor in the prognosis, of phthisis, the tuberculosis problem will be at once simplified, and treatment will have to be profoundly modified. The subject merits dispassionate consideration.

My own experience in South Devon leads me to believe that Dr. Gordon is mistaken. My district contains several localities—Dartmouth, Brixham, and Salcombe, for instance—*which are almost entirely sheltered from south-west and* westerly winds, where yet the incidence and mortality from tuberculosis is higher than in Torquay, which is exposed for the most part to warm, rain-bearing winds but sheltered from cold winds.

For generations medical men have sent tuberculous patients from all over Great Britain to South Devon, and especially to Torquay, 40 per cent. of my notifications are importations, and one well knows that only the minority of importations are notified. It is difficult to believe that if *all these patients had done badly then doctors would* continue to send others.

Dr. Gordon presents us with a hypothesis based on statistics, but, it must be said, based on very malleable statistics, which lend themselves obviously to considerable subconscious moulding by an enthusiast. And even when another, perhaps apathetic, observer is co-operating with an enthusiast, the final result will not much differ from his unaided conclusions. It must be admitted that enthusiasm is infectious.

If this hypothesis is to be accepted, it will entail such important alterations in our methods that I would suggest certain steps before acceptance:

1. Dr. Gordon's chief axiom that an elevation of 100 ft. shelters half a mile should be carefully checked by accurate observations. On the face of it this seems most unlikely. Does St. Paul's Cathedral for instance shelter the Bank? Does a wall 10 ft. high shelter an area of 88 yards behind it? I very much doubt if 100 ft. will shelter even as much as another 100 ft.
2. The Meteorological Office might tell us the ten localities in Great Britain most exposed to rain-bearing winds and the ten most protected. The incidence and mortality from tuberculosis would then be investigated in those areas by three independent, unprejudiced observers.
3. The decision whether any spot is sheltered or not depends largely on the opinion of the observer. When houses and streets in a town are considered, the subject becomes still more nebulous. One hundred houses should be chosen and three observers asked to decide independently whether they are sheltered or exposed and their decisions compared. I doubt if there is any material difference in the air of adjoining localities when a strong wind is blowing.
4. The whole of Dr. Gordon's statistics should be carefully overhauled by independent observers.

These suggestions could easily be carried out, and we should then stand on solid ground. It is my impression that, in the great majority of cases of phthisis, an east wind is the most dangerous. Some robust patients may stand this, and improve because they have better appetites, but these form only a small minority.

The influence of winds depends on other associated factors. In a cold climate absence of wind (any wind) is important, and this is attained at Davos. In a warm climate, on the other hand, exposure to wind may be desirable. And whereas exposure in the summer (when sanatoriums are *mostly visited) may* be beneficial, the reverse is true in the winter. In this country, where extremes of temperature are unusual, I would regard the ideal sanatorium site as one at considerable elevation, well sheltered from the north and east but more open to the south and west. *The number of* days in a year when uncomfortable and harmful heat is to be expected at a high altitude in this country is negligible.—I am, etc.,

E. WARD,
Paignton, Nov. 29th Tuberculosis Officer, South Devon.

POST-OPERATIVE PULMONARY EMBOLISM

SIR,—The report of the discussion on post-operative pulmonary embolism in the JOURNAL of November 8th (p. 859) had a special interest for me in that whilst the discussion was taking place I was recovering from an attack of post-operative pulmonary embolism. My personal experience may therefore be of some interest and may help to guide someone in making an inquiry into this important and occasionally tragic complication of surgical work.

I have seen not a few cases where pulmonary infarction occurred after a clean operation. The symptoms were a sharp, sudden, stabbing chest pain, an area of dullness in the lung with altered breath sounds, and blood-stained sputum. Almost all these cases recovered. It was evident that the "clean" embolus was a small one. I have records of two cases where, after an "attack of piles," the patient developed an atypical "pneumonia" which finished up as an "empyema," and in these cases I have not the slightest doubt that a small infected embolus produced an infarction in which the organisms grew till the pleural cavity was invaded and the case became classified as an empyema. Drainage led to a successful issue in both cases. *I do not* think the thrombosed inflamed pile is sufficiently recognized *as the initial lesion in cases of atypical pneumonia in adult* persons where the termination of the case is a foul *"empyema."*

Massive thrombosis such as takes place in the lower limbs may lead to the separation of a large embolus which will almost certainly and quickly produce death, and it is this type of embolism which produces surgical catastrophe. This thrombus may, especially in pelvic cases, be septic, in the ordinary acceptance of the term, but I disagree with the view that all such thrombosis is the result of the presence in or near the vessel of pyogenic organisms or their products. There is undoubtedly an altered state of the blood, but that there is necessarily pyaemia, septicaemia, or a *localized pyogenic organism* as the causal factor I *do not believe*. The statement that every embolus, small or great, *which* occurs after an operation is traceable to a focus of sepsis at the site of the operation is, I consider, absurd.

Before my operation I was mentally and physically fatigued after a hard winter's work, and I had barely recovered from an "influenzal cold." However, I did not consider myself so very much below par, and in order to save time I submitted myself to a herniotomy and appendicectomy without a qualm. I was not purged, I was not starved, I did not lie on my back for more than twenty-four hours, I was out of bed on the third day, and I left the nursing home on the tenth day. None of the etiological factors, then, on which so much stress is laid are relevant to my case. All this time my temperature was normal and my pulse about 70 a minute. Nevertheless, I did not feel right. I had a little sense of "tightness" above the symphysis pubis. It crossed my mind to ask my surgeon if he had ligatured the deep epigastric vessels, but I thought little of it. At the beginning of the third week I noted that my pulse was between 90 and 100, though I was taking food well, was sleeping well, and was moving quietly about my home. Then one night after I had reached my bed all the classical symptoms appeared—the pain, the breathlessness, the palpitation, and later the blood-stained sputum. I thought at first it might be a flare-up in some residuum of my "influenzal cold," but when the symptoms recurred three, four, and five times and I was able to direct my physician's stethoscope to the site of the last stab, I concluded, with my advisers, that a piece of embolus was being shot off, probably from the site of the operation.

The two biggest emboli threw the bases of the lungs out of action, but after the immediate distress of the lodgement of the *embolus* was passed my tachycardia was "almost miraculously" controlled by an intravenous injection of strophanthin, and the use of *omnopon* enabled me to sleep and to reserve my strength. My sputum, at first quite blood-stained, later became clear and frothy, but never on any occasion was purulent or muco-purulent.

For several weeks I went along slowly, with a raised temperature and a *pulse of about* 100, feeling toxic and running very little. At last I was allowed out of bed that night

my left leg became painful (ten days previously I had had a twinge of pain in the calf), and by morning it was clear that a thrombosis was taking place My sensations led me to conclude that a degree of thrombosis took place up the external iliac vein (I was conscious of a peculiar ballooning of the sigmoid flexure) I had once more to resort to sedatives in order to get any rest and the whole of my leg became considerably swollen About seventeen days later the right leg followed suit, but the process was much less severe and after fourteen days I felt better than I had since the onset of my illness, and was shortly afterwards allowed up Three later small superficial veins crossing the hypothenar region became hard and uncomfortable, but in no way retarded my convalescence

My case therefore, was one not only of post-operative embolism by aseptic thrombi, most probably from the site of the operation, but I had a massive thrombosis, as I believe not only of the veins of both legs but also of the external iliac veins No one can explain why these small emboli were not followed by much larger ones at the later date My wounds healed perfectly and have never given the least concern A toxin, producing thrombosis, may have been present in my blood, but there never was the least manifestation of any localized or generalized sepsis

Like a good story teller, I have kept the essential part of my story till the end At my request my surgeon whilst I was anaesthetized removed three molar teeth which had been giving me some discomfort Healing in the jaw took place without a twinge of pain but I think, nevertheless, that all my illness is attributable to causes originating in the tooth sockets

The relation of dental and oral "sepsis" to thrombosis is a matter which requires investigation Before dismissing the subject as simply a manifestation of toxin absorption (that is confessing that at the moment we know next to nothing about it), the question of thrombosis being the result of a blood invasion by one or other of the many spirilla which we are told infest the oral cavity ought to be settled I once saw a demonstration of spirilla in the blood when the blood was being examined for some other reason and I now suggest to any competent observer that in cases of septic thrombosis search should be made in the blood in the clot and in the vessel walls for the presence of once so all spirillum which has hitherto escaped notice

The lesson to operating surgeons is of course that no operation of choice should be performed unless the patient is in top form and that attention to the condition of the teeth is more important than has even yet been recognized My colleague and friend who operated on me is of course in no way implicated, and I entirely take to myself the total responsibility for the course of events I am now after eight months in first-rate health and able to do a full day's work—I am, etc,

W RANKIN
Honorary Surgeon Royal Hospital for Sick Children Glasgow

Glasgow Nov 12th

Obituary

DR PERCY PETER JAMES STEWART, who died on November 24th at the early age of 37, was the youngest son of Dr Stewart of Dunedin, and was educated at the Otago University where he graduated M B Ch B in 1912, with distinction He served as junior house-physician and senior house surgeon to the Dunedin Hospital and in 1915 took the diploma of F R C S Edin after which he held a temporary commission in the R A M C and served at the Edinburgh War Hospital for six months He was then ordered to the East and served in Egypt Palestine, and Mesopotamia He was promoted to the rank of captain (acting major) and received the O B E He was surgical specialist to the 75th and 32nd Casualty Clearing Stations of the Egyptian Expeditionary Force After demobilization he joined Dr McMaster in practice at Rugby The cause of death was scarlet fever, contracted while attending a case Dr Stewart who was a member of the Warwick and Leamington Division of the British Medical Association is survived by his widow and two children

We regret to record the death of DR PHILIP LAMBERT BENSON, which took place suddenly at his residence at Steeple Claydon Bucks on November 25th He was born in Ireland in 1851, and was educated at Queen's College, Cork graduating B A R U I in 1870, M A with honours in 1871, M D with honours in midwifery in 1872, and M Ch in 1873 in the latter year he also took the diploma of L A H Dub He had practised in Steeple Claydon for about half a century He was medical officer for the Marsh Gibbon district of the Buckingham Union for forty-one years, and had been medical officer of health to the Buckingham Rural District Council since March 1893 Dr Benson was a vice-chairman of the Bucks Panel Committee, and took much interest in the work of the British Medical Association having been for several years a member of the Council of the South Midland Branch and was chairman of the Buckinghamshire Division in 1913 he was also an associate member of the Reading Division, and was president elect of the South Midland Branch

DR LUCIUS GERALD ARMSTRONG MACDONNELL died on November 27th at the age of 60 Dr MacDonnell was the second son of the late Colonel W E A MacDonnell, Deputy Lieutenant of County Clare, and of the Hon Mrs MacDonnell of Dublin He was educated at Eton and Trinity College, Dublin, and obtained the degrees of B A, M B, B Ch, B A O in 1890, proceeding M D in 1900 He spent the greater part of his life in medical practice in Queensland and was for many years the medical officer to the Herberton District Hospital, where he was distinguished for his surgical work Although well over the military age at the outbreak of war, he was one of the first to volunteer and was appointed to the 2nd Light Horse Field Ambulance, with which he saw active service Later on he was regimental medical officer to the 3rd Battalion at Lone Pine, and to the 5th Light Horse Regiment at Chatham's Post He contracted enteric fever and heart trouble and was invalided to Australia Although the heart lesions persisted he recovered sufficient health to undertake the command of No 6 Australian General Hospital at Brisbane, with the rank of lieutenant-colonel After the death of his only son in France, in July 1918 Dr MacDonnell came to England and was appointed medical adviser to the Reparations Claims Department of the Board of Trade which appointment he held at the time of his death He leaves a widow and a daughter A colleague writes

"He was beloved by all who knew him and died from his devotion to duty and his loyalty to his country"

The Services

DEATHS IN THE SERVICES

Lieut-Colonel Thomas Arthur Dixon R A M C (ret) died at Newlands Sheringham on November 17th aged 71 He was born at Upleatham York hire the second son of the late Rev T H Dixon Vicar of Upleatham He was educated at St Bartholomew's Hospital and took the M R C S in 1875 and the L R C P Ed in 1878 in 1897 he graduated M D St Andrews He entered the R A M C as surgeon in 1881 became lieutenant-colonel after twenty years service and retired in 1903 He was employed on the retired list at Maidstone from 1905 to 1908 and rejoined on the outbreak of the present great war

Lieut-Colonel Alexander William Sampey R A M C died at Cawnpore on November 16th aged 52 He was educated in Dublin and took the L R C S I and L R C P I in 1894 and the D P H from the same source with honours in 1896 He first joined the R A M C as a lieutenant in the beginning of 1900 took a commission in the Indian Medical Service in 1901 became major in 1913 and received a brevet lieutenant-colonelcy for services during the war in 1919

Surgeon Lieut-Colonel Julius John Wood Bengal Medical Service (retired) died at Twickenham on October 28th aged 62 He was the son of the late Rev James Wood Free Church minister of Dumfries and was educated at Edinburgh where he graduated M B and C M in 1885 He entered the I M S as a lieutenant-surgeon in 1886 attained the rank of lieutenant-colonel after twenty years service and retired in Bengal in the sanitary department where he was deputy sanitary commissioner for the Chittagong and the Darjiling circles successively He was the author of a botanical work the Plants of Chittagong Vol I published in 1902.

Universities and Colleges.

UNIVERSITY OF CAMBRIDGE

Diploma in Psychological Medicine

A COURSE of instruction covering the material necessary for the psychiatrical portion of the examinations in Part II of the Diploma in Psychological Medicine will be held in the Psychological Laboratory, Cambridge, and in the Fulbourn Mental Hospital on Tuesdays and Fridays of the Lent Term, 1925, from January 16th to March 10th inclusive The fee for the entire course will be 8 guineas The course will include sixteen lectures on psychopathological theory and sixteen lectures on clinical psychiatry by Dr MacCurdy, clinical demonstrations by Drs Reardon and MacCurdy, and instruction in forensic psychiatry, treatment, and hospital management by Dr Reardon Those wishing to take this course should communicate not later than December 31st with the Secretary, Committee in Psychological Medicine, Psychological Laboratory, Cambridge

At a congregation held on December 5th the following medical degrees were conferred

M B B Chir—G G Penman F B Sudbury F H Mather

UNIVERSITY OF LONDON

It has been decided to institute, in accordance with the regulations on university titles, a university chair of pathology, tenable at the London School of Medicine for Women, at a salary of £800 per annum Applications to be sent to the Academic Registrar at the University by January 29th, 1925

Dr Joseph Bamforth and Mr Alexander L Urquhart have been recognized as teachers of bacteriology and morbid anatomy respectively at St Thomas's Hospital Medical School

Mr S J Worsley has been appointed secretary to the Board of the Faculty of Medicine for 1924–25

The following have been constituted the boards of examiners for the first and second examinations for medical degrees in 1925, the chairman of each board being indicated by an asterisk

Inorganic Chemistry—*Mr J A Gardner (St George's Hospital Medical School and London School of Medicine for Women) and Professor C S Gibson (Guy's Hospital Medical School), together with the external examiners

General Biology—Dr Doris L Mackinnon (King's College) and Dr F J Salisbury (University College) together with the external examiners

Physics—*Mr J H Brinkworth (St Thomas's Hospital Medical School) and Mr B L Worsnop (King's College) together with the external examiners

Organic Chemistry—*Mr J A Gardner (St George's Hospital Medical School and London School of Medicine for Women) and Professor J C Drummond (University College) together with the external examiners

Anatomy—*Professor E Barclay Smith (King's College) and Professor F G Parsons (St Thomas's Hospital Medical School) together with the external

Physiol London Hospital Medical College)
and Profe... Hospital Medical School) together with the external examiners

Pharmacology—Dr O F F Leyton (London Hospital Medical College) and Dr O Inchley (King's College) together with the external examiners (*Professor A J Clark)

The following have been appointed associate examiners for M B, B S examinations in 1925

Medicine—Professor F R Fraser Professor F S Langmead Professor H MacLean and Dr Gordon M Holmes

Surgery—Mr H S Souttar Mr C H S Iranhan Mr E D Telford and Professor C A Pannett

Obstetric Medicine—Mr M H Phillips and Professor Louise McIlroy

Pathology—Dr S MacDonald and Dr L H Kettle

NATIONAL UNIVERSITY OF IRELAND

Dr DENIS J COFFEY, LL D, President of University College, Dublin, has been elected Vice Chancellor of the University for two years from December 31st 1924

The degree of M D has been conferred on Michael J Horgan

Mr Joseph Reilly, M A D Sc F I C, has been appointed Professor of Chemistry at University College, Cork

ROYAL FACULTY OF PHYSICIANS AND SURGEONS OF GLASGOW

The following have been admitted Fellows H L Sloan, G P Mann

ROYAL COLLEGE OF PHYSICIANS OF IRELAND

At the monthly business meeting of the President and Fellows, held on December 5th Sir Humphry Rolleston Bt, M D President of the Royal College of Physicians of London, was unanimously elected an Honorary Fellow of the College

The following successful candidates at the winter Conjoint Final Examination of the Royal Colleges of Physicians and Surgeons Ireland, were duly admitted licentiates in medicine and midwifery of the College

J I Boutle A F Cook T F Crean T A Cronhelm J Dalrymple I T A Dougan Mary J Fagan F M Finegan F C Greer T T Joyce C Keating M G Kelly A B Kennedy Wilhelmina C Mayne J C Murphy Mary F M Dermott Mary F Nelson T J O'Connor C R A O'Riordan A Owen Flood J H Owen Flood P C Rafferty L C Snider R Taylor I W Wilson

Medical News.

A CONFERENCE will be held in the New Year, at the Royal Colonial Institute, to inaugurate an Empire Food Council organized to encourage the consumption in these islands of the food products of the overseas empire and of Great Britain, to spread general information about food, and to arrange a campaign to popularize bread made from wheat grown in Great Britain and the Dominions and ground in Great Britain and Ireland The chair will be taken by Professor H R Kenwood, who will be supported by, among others, Sir Harry Baldwin, Sir Arthur Mayo Robson, Sir Frederick Mott, Dr J E Molson, Dr Nathan Raw, and Dr C W Saleeby Further information can be obtained from the Honorary Secretary, Bread and Food Reform League, 37, Essex Street, London, W C 2

THE Lord Mayor of London presided at the annual meeting of the Royal Surgical Aid Society held at the Mansion House on December 9th He expressed his gratification that the society at the close of fifty two years' work was able to present so satisfactory and encouraging a report of work accomplished and public support received The society, he said, enjoyed the continued support of the City Guilds, and its provincial branches were growing rapidly, and by the reconstruction of its premises it was able to provide improved facilities at the head office for the relief of patients The annual report stated that during its existence the society had supplied 1,171,871 surgical appliances to 770,177 patients, of which 30,642 had been provided during the past year

THE third annual report of the Tropical Diseases Library for the year ending July 31st, 1924, contains the announcement that the library, together with the London School of Tropical Medicine, passed on August 1st under the control of the newly constituted London School of Hygiene and Tropical Medicine (University of London) The volumes of periodicals belonging to the Tropical Diseases Bureau will remain as before on permanent loan in the library During the past year 261 bound volumes have been added to the library, and, in addition, thirty two old books (mostly published before 1800) on tropical diseases and naval and military hygiene have been acquired in order to form the nucleus of an historical collection The number of those who make use of the library shows a gradual, but steady, increase

ON his retirement from the staff of the Middlesex Hospital Dr H Campbell Thomson's colleagues and old fellow students entertained him to dinner at Oddenino's Restaurant on December 3rd Eighty nine sat down to dinner, and Dr Campbell Thomson was presented with a pair of prismatic field glasses and a George III silver tankard on a base suitably inscribed, as a memento of the occasion and a mark of affection and appreciation

THE late Dr Henry Gervis of Bath, and formerly of London, an ex president of the Obstetrical Society and of the Hunterian Society, has left estate of the gross value of £100,457, with net personalty of £97,233 He bequeathed to the Royal College of Physicians of London the *miniature of* Dr William Hunter on ivory by Cosway, and to the St Thomas's Hospital Medical School the engraving by Simon of the portrait by Kneller *of* Sir Samuel Garth, a former physician of St Thomas's Hospital The Royal Hospital for Incurables, Putney, receives £100, and the Bath Nurses' Home £50

AT *the meeting of* the West Kent Medico Chirurgical society to be held at the Miller General Hospital, Greenwich *Road*, S E, to day (Friday, December 12th), at 8 45 p m, the Purvis Oration will be given by Mr G Bellingham Smith, F R C S on the importance of the ante natal *clinic* This will be followed by a demonstration of the super microscope by Mr I Davidson, F R M S, illustrated by lantern slides Afterwards a conversazione will be held

DR J DUVERGIER has been nominated professor of diseases of the genito urinary organs at the Bordeaux Faculty of Medicine

A NEW in patient block has been opened in connexion with the Church Missionary Society Hospital in Yunnanfu, China Accommodation is provided for fifty patients, and the building includes a maternity department, an operation theatre, and a second *x* ray plant, in addition to the one already in the out patient department A training class for nurses has been started, and one for midwives is planned

A POST GRADUATE course on diseases of the nervous system will be held at the National Hospital for the Paralysed and Epileptic, Queen Square, W C 1, from February 2nd to March 27th, 1925 The fee for the general course, which will consist of clinical lectures and demonstrations, teaching in the out patient department and pathological lectures and demonstrations, will be £5 5s

THE house and library of the Royal Society of Medicine will be closed from the evening of Tuesday, December 23rd, until Monday morning, December 29th

SIX Christmas lectures for young people will be given at the Royal Institution from December 27th to January 8th, at 3 p.m. Mr Frank Balfour Browne, M.A., lecturer in zoology at the University of Cambridge, will deal with the habits of insects, and in the concluding lecture indicate the value of entomology to humanity, with special reference to malaria and other diseases. The programme of lectures at the Institution before Easter includes evening discourses (at 9 o'clock) by Professor T. H. Pear of Manchester on "Acquiring muscular skill" (February 20th) and by Professor Sir Ernest Rutherford on "Studies of atomic nuclei" (March 27th). Dr. Leonard Hill will give two lectures on the biological action of light on the afternoons of March 12th and 19th.

THE Fellowship of Medicine programme of special courses for January contains a two weeks' intensive course from January 12th to 24th at the London Temperance Hospital. This course will cover the whole day, and will include all the general and special departments of the hospital, in addition to a special lecture at 4.30 p.m. to which members of the medical profession are invited. Bethlem Royal Hospital, the Royal Westminster Ophthalmic Hospital and the North Western Fever Hospital will co-operate with the London Temperance Hospital. An intensive course will also be held in cardiology, at the National Hospital for Diseases of the Heart, from January 12th to 23rd, a series of lecture demonstrations on the treatment of common nervous diseases will be given at the West End Hospital for Nervous Diseases from January 5th to 31st. Other plans include a two weeks' course in ophthalmology at the Royal Eye Hospital from January 5th to 17th, comprising clinical work followed by lectures on the more important diseases of the eye, eight lecture demonstrations in psychological medicine at the Bethlem Royal Hospital and a four weeks' course in urology at St. Peter's Hospital from January 12th to February 7th. The syllabus of each of the above mentioned courses, together with the list of special courses arranged up to June 1925, may be obtained on application to the Secretary to the Fellowship of Medicine, 1, Wimpole Street, W.1.

AN intensive course of instruction in mental disorders and mental deficiency was recently held at the Maudsley Hospital, lasting one week. It was organized by the Central Association for Mental Welfare, and was attended by over fifty social workers from all parts of the country, including the county secretaries of the Central Association for Mental Welfare, representatives of the Board of Control, lay officials in charge of institutions, representatives of county councils, of Poor Law guardians, and of the Charity Organization Society, and the almoners of several London hospitals. Lectures were given on the nature and institutional treatment of mental disorders, the methods of procedure in cases of mental deficiency, and the duties of the social worker in these connexions.

THE sixteenth international post graduate course at Vienna, from February 9th to 21st, 1925, will deal with the diseases of the digestive organs, with special reference to treatment and will be followed by clinical work from February 23rd to March 7th; this will include endocrine diseases and pathological conditions of the heart, blood, and lungs. The seventeenth international course on modern forms of treatment will be held from June 15th to 27th. Further particulars about these courses can be obtained from Professor Dr. Richard Wasicky, Buro der Wiener Arztekurse, Schlössel gasse 22, Wien (VIII).

AT the next meeting of the Society for the Study of Inebriety in the Rooms of the Medical Society of London, 11, Chandos Street, Cavendish Square, W., on Tuesday, January 13th, 1925, at 4 p.m. Sir James Purves Stewart, K.C.M.G., C.B., M.D. will open a discussion on "Drunkenness: Its Tests and Medico-Legal Aspects." Each member and associate is at liberty to introduce visitors.

AT a ceremony to be held in the Town Hall, Leeds, on Tuesday next, December 16th, during the University jubilee celebrations the honorary degree of Doctor of Laws will be conferred upon Sir Berkeley Moynihan, Bt., Professor of Surgery, and that of Doctor of Science upon Emeritus Professor John E. Eddison, formerly Professor of Medicine.

THE late Mrs. Hulke, widow of Mr. John W. Hulke, an ex-president of the Royal College of Surgeons of England, left unsettled property of the value of £18,922. After providing for certain bequests she has given the residue of her property to the governors of Middlesex Hospital, for their convalescent home at Clacton-on-Sea, on condition that it be called the Hulke Endowed Convalescent Home. Otherwise, the residue is to go towards founding and maintaining a home for incurables.

Letters, Notes, and Answers.

ORIGINAL ARTICLES and LETTERS *for carded for publication are understood to be offered to the* BRITISH MEDICAL JOURNAL *alone unless the contrary be stated.* Authors desiring reprints of their articles published in the BRITISH MEDICAL JOURNAL are requested to communicate with the Financial Secretary and Business Manager, 429 Strand, W.C.2, on receipt of proof.

CORRESPONDENTS who wish notice to be taken of their communications should authenticate them with their names—not necessarily for publication.

ALL communications with reference to advertisements as well as orders for copies of the JOURNAL should be addressed to the Financial Secretary and Business Manager, 429 Strand, London, W.C.2. Attention to this request will avoid delay. Communications with reference to editorial business should be addressed to the Editor, BRITISH MEDICAL JOURNAL, 429 Strand, W.C.2.

Communications intended for the current issue should be posted so as to arrive by the first post on Monday or at latest be received not later than Tuesday morning.

THE telephone number of the BRITISH MEDICAL ASSOCIATION and BRITISH MEDICAL JOURNAL is Gerrard 2630 (Internal Exchange). The telegraphic addresses are:

EDITOR of the BRITISH MEDICAL JOURNAL, *Articulate, Westrand, London.*

FINANCIAL SECRETARY AND BUSINESS MANAGER (Advertisements, etc.), *Articulate, Westrand, London.*

MEDICAL SECRETARY, *Medisecra, Westrand, London.*

The address of the Irish Office of the British Medical Association is 16, South Frederick Street, Dublin (telegrams, *Basilus, Dublin*; telephone 4737 Dublin); and of the Scottish Office, 6, Rutland Square, Edinburgh (telegrams, *Associate, Edinburgh*; telephone 4361 Central).

QUERIES AND ANSWERS.

INCOME TAX.

Late Assessments. Travelling Expenses.

"JORE'S" 1922-23 return was sent in late, the delay not being entirely on his part. Is it in order to make an additional assessment now for that year? His work is away from his home, to which he returns each week, can he claim an allowance for the expense of travelling?

The revenue authorities can at the present time, raise first or additional assessments for 1920-21 and subsequent years. Travelling expenses are allowable if incurred wholly, exclusively, and necessarily in the performance of the duties of the office but not where they are incurred apart from and preliminary to their performance. If for instance "Jore" has an appointment at N. which necessitates his travelling in and around that town, then those expenses are allowable, but not the additional expenses which he incurs in travelling because he has a residence in A. and travels for personal reasons between N. and A.

Locumtenent's Expenses.

"PERPLEXED" states that his total earnings were £412 as locumtenent and assistant, out of which he paid £15 15s. as agents' fees, £18 as interest on loan and £46 13s. 4d. as a life insurance premium. What should the assessment be? Is a fee of £20 for membership in the R.A.F. Reserve assessable?

*** In our view the income should be divided between locumtenent earnings, which are assessable under Schedule D, and earnings from the assistantship which fall for assessment under Schedule E, the point is not important except for the fact that the agency fees are deductable from miscellaneous professional receipts but not from the earnings of employment. Assuming that on this basis however no portion of the agency fees is deductable the liability would work out as follows:

Gross earnings				£412
Deduct 10 per cent. allowance for earned income				41
Assessable income				£371
Less personal allowance				120
				£251
Of this £18 is chargeable at	6/-	due	£4 1s.	
And £123	2s. 3d.		£14 8s.	
Total duty				£18 9 0
Life assurance allowance at 4/6 on £46 13s. 4d.				2 9
Net duty payable				£15 6 3

The reason why £18 is chargeable at 6/- is that from his amount—that is the loan interest paid—Perplexed is entitled to deduct or retain tax at 4s. 6d. in the £, in other words he need only pay £18 actually to the lender—all he is required by law to do is to pay £18 less £4 1s.=£13 19s. of this in the end on of the £13 6s. 3d. he bears himself only £9 3s. 1½d. as regards the R.A.F. retaining fee we understand that the amount received is assessable less an allowance for uniform which is usually regarded as £7 10s.

Motor Car Replacement

"A B" refers to a reply in our issue of November 22nd (p 982) in which it was stated that the deduction due to the excess of the cost of a new car over the amount received for the sale of the car replaced, and refers to the fact that in his district the amount allowed is the excess of the cost of the car replaced over the amount received for it

*** The latter basis is correct if the car purchased is superior in grade and cost to the car replaced, in such a case part of the total cost of the transaction is capital expenditure incurred in improving the equipment of the practice and must be restricted according to the cost of the old car In other cases we are of opinion that the net actual cost incurred is the legal basis of the allowance The fee charged by an accountant for examining a practitioner's accounts and preparing his income tax return is an allowable expense

Receipt of Rent for Rooms

"L A" is in general practice and rents his house at £150 per annum, subletting the top flat of four rooms for £130, inclusive of rates How should this transaction be dealt with for income tax purposes?

*** There is no liability to assessment in respect of profits derived from letting unfurnished rooms, the reason being that any assessment in respect of such rents would fall to be made under Schedule A, and the existing assessment on the £150 rent must be regarded as covering all such liability arising in respect of those premises On the other hand, we are of opinion that "L A" is not entitled to ignore the subletting, because it affects the amount deductable by him as expended for professional purposes—for instance, treating the amount of local rates as £75, the amount deductable would be calculated as follows.

Total cost of premises—	£150	
Rent	£75	
		£225
Rates		£130
Deduct rent and rates received		£95
Net cost of premises		

Amount deductable on the basis that the proportion applicable to professional purposes is 50 per cent of the unlet portion of the premises is £47 10s There appear to be no decided cases on this point, but the above is, we believe, legally correct and also not unreasonable

KLOID VACCINATION SCARS

DR W ROSSELL JUDD (Ashton under Lyne) writes In reply to Dr J Crisp's inquiry (December 6th, p 1086), I have found fibrolysin injections, according to Dr Mendel of Essen, very successful in cases of ugly scars and keloid A young lady who was badly cut by the smashing of the screen in a motor accident consulted me for an ugly scar involving the whole of the left cheek and the anterior portion of the cornea of the left eye Fibrolysin injections caused a marked disappearance of the scar, which is now only noticeable as a white line when the face becomes flushed Still more interesting was the corneal scar, which caused a traumatic diplopia, and this also disappeared

LETTERS, NOTES, ETC.

CANCER OF THE SCROTUM

DR WILLIAM BRAMWELL (Liverpool) writes with reference to Dr Archibald Leitch's paper on mule spinners' and chimney sweeps' cancer (BRITISH MEDICAL JOURNAL, November 22nd, p 941) to call attention to the author's question why the scrotum is exclusively affected, while the thighs and arms escape This, Dr Bramwell suggests, may be due to the failure of the workman to wash the part frequently and regularly Sweeps and workers in mineral oils should, in consequence, be instructed in the importance of frequent bathing as a preventive of cancer and warned against the danger of scratching with work soiled fingers Such precautions, he judges, would help considerably to eliminate cancer of the scrotum

SEA SICKNESS

MR A P BERTWISTLE F R C S Ed (Appleby), writes I have read Mr Money's article in the JOURNAL of December 6th (p 1040) with keen interest He has certainly solved the problem of administering an unpleasant drug to a patient suffering from sea sickness I should be glad to heal his explanation of the mode of action of the following mixture Sodii bicarb gr xv, tinct gentian m xx, sp chlorof m v, aq ad 5ss One tablespoonful is taken every four hours, or oftener Its use is followed by very beneficial, and sometimes even dramatic results The advantages are (*a*) It is tolerated when the patient is actually sick (*b*) If vomited it serves to wash out the stomach, and so confers a benefit and is not so disagreeable as is the vomit after the administration of some drugs —for example, chloretone (*c*) It is quite harmless, which can hardly be said of chloral if pushed to the point of somnolence

UMBILICAL INFLAMMATION AND INFANTILE WASTING

MAJOR J W LANE, M D, R A M C (Malta), writes A few of my patients have steadily lost weight after birth, although they slept well, ate well, had no digestive disturbance, and were not fretful The only abnormality detected was an unhealed navel Tying off, or rubbing off, this friable granulation like lump resulted within three days in a steady and increasing gain in weight This small operation was performed on patients aged from 3½ weeks to 3 months I have hitherto observed no mention of this condition as a cause of loss of weight in young infants Inanition and marasmus are said to occur almost entirely in artificially fed children I suggest that this infection of the navel and not the artificial food may be the fundamental cause I should be glad to hear of other experiences of this kind and I recommend close attention to the umbilical region in such cases After removing the growth spirit should be applied to the stump

LISTER'S VIEW OF SUPPURATION

DR JOHN W WEIR (East London, South Africa) writes I have read with great interest Sir Hector Cameron's oration at the unveiling of the statue to Lord Lister in Glasgow I have no wish to criticize, but if the BRITISH MEDICAL JOURNAL of September 27th gives a verbally correct account of it there is one statement in it which, with every respect to Sir Hector Cameron, I think requires a little explanation for the benefit of those who may not be thoroughly conversant with the antiseptic theory and practice of Lord Lister In the course of his excellent speech Sir Hector Cameron referred to a letter he had received from Dr Collins Warren of Boston, who attended a meeting one evening of the Pathological Society of London, where he heard of a surgeon in Glasgow who claimed to be able to prevent the occurrence of suppuration in wounds, but whose claims were received with much incredulity and no little sneering I was a student in Professor Lister's class when he introduced the new system of antiseptic surgery and was dresser under him in the wards of the Glasgow Royal Infirmary Subsequently when resident in the infirmary, I had for some months Sir Hector Cameron as my esteemed chief, so that I came to know of the subject at first hand If there was one point more than another which Professor Lister wished to impress on the minds of his students it was the distinction between suppuration and decomposition Suppuration was an alteration of the normal tissues and physiological processes which might continue in diminishing degree throughout the healing process It was not this he claimed to prevent, but the morbid process of decomposition caused by germs discovered by Pasteur, towards the exclusion and destruction of which his efforts were successfully directed My regard for a great surgeon and fascinating teacher is my excuse for making mention of this

ASSISTANTS IN GENERAL PRACTICE

"NOTON" writes It has been interesting and amusing to read the letters on this subject in your recent issues, as I have employed many assistants and been one myself My experience has been that many assistants are more interested in their "outings" and their time off than in their work I am of opinion that an indoor assistant receiving £300 per annum is a very well paid man In colliery, iron and steel works, and similar practices where accidents have to be attended night and day, and a large number of confinement cases as well, more than £300 a year may be necessary for adequate remuneration Assistants' salaries have increased out of all proportion to private practice fees during the last twenty years There is to my mind a great difference between hospital work and general practice, in the former one learns one's job, in the latter one employs one's knowledge to earn one's living When assistants talk of "bonds" being objectionable, and of obtaining partnerships without capital they are not talking business but philanthropy In a business firm, to be given a partnership without capital implies that one is a very exceptional and valuable man indeed Two years premium for the purchase of a partnership, or of an established medical practice is an extremely moderate charge—compare for example, legal practices

"BACKWATERS OF LETHE"

MR J JACKSON CLARKE F R C S, writes When Dr G A H Barton was accidentally killed early in the present year he was in the first rank of London anaesthetists His *Backwaters of Lethe*, published in 1920 by H K Lewis and Co, is a short, bright, and clear account of his experience and practice in the use of anaesthetics for ordinary and special operations The book is a safe and stimulating guide for any general practitioner who desires to become a skilled anaesthetist while still engaged in general practice, as Barton was to the end of his tragically shortened career

A DISCLAIMER

DR V S HODSON (London, W 1) writes It has been brought to my notice that in a recently published book the author in addition to personal references, has added my professional address in a footnote I wish to state that I had no knowledge that such information would be given, nor had I any idea that reference would be made to me in any form

VACANCIES

NOTIFICATIONS of offices vacant in universities medical colleges, and of vacant resident and other appointments at hospitals will be found at pages 33 34 35 38 and 39 of our advertisement columns, and advertisements as to partnerships, assistantships, and locumtenencies at pages 36 and 37

A short summary of vacant posts notified in the advertisement columns appears in the *Supplement* at page 23

EPITOME OF CURRENT MEDICAL LITERATURE

Medicine.

Myeloid Leukaemia of the Skin

431 J L TENENBAUM (*Arch Derm and Syph* November 1924 p 557) reports the extremely rare condition of myeloid leukaemia of the skin in a man, aged 60 with negative family, personal and venereal history The skin, especially on the trunk and flexor surfaces of the extremities, was mottled with small petechiae and larger coalescent purpuric spots, and the oral and pharyngeal mucous membranes were studded with haemorrhagic lesions There were also large numbers of bluish brown papules and slightly elevated discrete globular nodules, a few larger tumours of the same character were present, the largest being on the inner side of the left thigh With bubo like glandular masses in the groins The diagnosis was based upon the rather sudden development of the bluish, firm, painless tumours and nodules which showed no tendency to ulceration together with the absence of internal malignancy, and the haemorrhagic cutaneous diathesis in a well nourished man who showed no sign of any grave constitutional disturbance The spleen and liver were enlarged and the blood picture was atypical, with the appearance of immature myelogenous cells and a relatively low white blood count The absence of fever and the slow chronicity distinguished the case from the fulminating form of myelosis

Lesieur's Sign in Typhoid Fever

462 J CHALIER (*Progres med*, October 15th 1924 p 619) states that in 1908 Lesieur in the thesis of his pupil Collignon, drew attention to the frequency in typhoid fever of impaired resonance at the right base especially on percussion posteriorly and in the axilla He attributed the phenomenon to hepatic enlargement or to pushing back of the liver by the distended colon In a subsequent paper published in 1913 (*Presse medicale* July 30th), he furnished statistics of 150 cases in which he had investigated the sign His observations as to the frequency of the sign in typhoid fever were confirmed by the Roumanian clinicians Radulesco and Atanassiu The sign is investigated as follows The patient is placed in a sitting position with the trunk slightly bent forwards and the shoulders dropped The right base is then percussed in a transverse direction between the vertebral column and the posterior axillary line and vertically between the apex of the scapula and the lower ribs A rectangular zone is thus marked out in which impairment of resonance can easily be detected The sign appears early and persists throughout the height of the disease Lesieur found it present in 80 per cent and Mouriquand in 70 per cent of their typhoid cases In Chalier's series of 85 cases it was found in 65 or 77 per cent so that it was almost as frequent as enlargement of the spleen which was present in 85 per cent and much more frequent than rose spots, which were present in only 60 (65 per cent) and palatal ulcers, which were found in only one fifth to one sixth of all the cases The sign is also of some prognostic value, as it is more likely to be absent in mild than in severe cases

Cerebro spinal Complications in Recent Syphilis.

463 J LEYBERG and A STARZYNSKI (*Ann de Dermatol et de Syph*, October, 1924, p 571) observe that neuro syphilis may exist for a long period without clinical signs, and be discovered only by examination of the cerebro-spinal fluid (Ravaut) They add that the spirochaete seldom invades the central nervous system by the lymph channels surrounding the nerve endings of the area of primary infection more frequently there is a general blood infection, during which the spirochaetes may penetrate the arachnoid and pia mater of the brain and cord Many authorities find, however, that the majority of these patients show no pathological changes in the cerebro spinal fluid Jacob and Weygandt have found only 50 per cent of lesions of the central nervous system in cases of recent syphilis Steiner has found 33 per cent Several investigators have stated that in recent infections they have found spirochaetes in the cerebro spinal fluid which had produced no local pathological change the present authors think that in the absence of some unknown factor spirochaetes are unable to attack the tissues, remaining as saprophytes, and sooner or later dying Levaditi and Marie attribute nerve involvement to a particular strain of *Spirochaeta pallida* The present authors only insist on meningeal invasion being considered the beginning of nerve lesions, occurring only in a certain number of cases, and being recognizable in the early stage by examination of the cerebro-spinal fluid Symptoms of meningeal and neuro syphilis may follow small repeated doses of salvarsan Meningoneural relapses may occur in patients no under treatment at the time, and must be distinguished from haemorrhagic encephalitis occurring two or three days after an injection of salvarsan and always fatal The former appear some weeks after the last injection of salvarsan and, if recognized in time, may be cured by stronger doses of salvarsan In view of the fact that after the intravenous injection of large doses of salvarsan only minute quantities of the drug can be recovered from the cerebro spinal fluid, the authors think it probable that these small quantities of salvarsan serve to stimulate rather than kill the spirochaetes They quote statistics to show that neuro syphilis occurs more frequently in cases without cutaneous eruptions They add that inequality of the pupils or absence of reaction to light are very important symptoms of invasion of the central nervous system and insist on the necessity of examining the pupils in every case of recent syphilis The authors conclude that (1) The clinical complications affecting the nervous system occur far more frequently in cases of recent syphilis than hitherto supposed (2) Subjective phenomena (headache vertigo tinnitus, etc) ought never to be neglected (3) In all cases of syphilis at the period when relapse may occur a careful examination of the nervous system especially of the visual and auditory apparatus should be made (4) In cases of nerve lesions the Bordet Wassermann examination of the blood without that of the cerebro spinal fluid is insufficient and misleading (5) The disappearance of clinical symptoms under specific treatment does not exclude the possibility of relapses nor prove that cure has been effected The condition of the cerebro spinal fluid may assist in prognosis, and indicate the necessity of further treatment (6) The cerebro spinal fluid must be considered pathological in the presence of any one of the three reactions of Nonne (Wassermann reaction, globulin reaction, and cellular reaction) (7) Normal cerebro spinal fluid does not contraindicate a diagnosis of syphilis for it remains normal (*a*) when the morbid process does not commence in the meninges but in the vessels and the fluid remains separated from the morbid focus, (*b*) when the anatomical process has completed its evolution

Surgery.

Empyema Mortality in Children

464 W E LADD and G D CUTLER (*Surg Gynecol and Obstet*, October 1924, p 429) discuss the question why empyema in children is quite different from that in adults, basing their conclusions on a series of 268 operation cases The mortality in infants under 1 year suffering from pneumonia even without the complication of empyema, is exceedingly high being about 66 per cent With increasing age the mortality falls, and after the eighth year is very small The next most potent factor in mortality is the type of the infecting organism The streptococcus was found to be associated with the highest mortality, which in a series of 35 cases was 23 per cent in 160 cases of pneumococcal infection the death rate was 15 per cent The mortality is very high if an operation is performed during the pneumonic stage Aspiration should be practised during this stage, reserving more thorough drainage until the less acute stage is reached Intercostal drainage and an attempt to keep the thorax closed round the tube is said to be the operation of choice for most cases with streptococcal infection Rib resection and freeing of pleural adhesions, to allow the lung to expand is recommended for convalescent cases The authors consider gas oxygen to be the anaesthetic of choice for rib resection operations Novocain with adrenaline is valuable in those for intercostal drainage, but ether is contraindicated in all cases

Ulceration of Meckel's Diverticulum.

465 A BRASSER (*Zentralbl f Chir*, November 1st 1924 p 2824) states that the occurrence of Meckel's diverticulum in the lower ileum is relatively common and is of practical importance, since it may cause strangulation by bands and originate other forms of acute intestinal obstruction Hilgenreiner collected 185 cases in which obstruction was due to perforation of the diverticulum, and Brasser thinks that it should be borne generally known that ulceration and perforation of Meckel's diverticulum may occur Brasser's patient was a boy aged 15,

who had violent pain in the hypogastrium, followed by such severe haemorrhage from the bowel that a polypus or other tumour was suspected On admission the patient was profoundly anaemic, an exploratory laparotomy showed the entire large intestine to be full of blood, no tumour could be felt and the mesentery appeared to be normal In the circumstances the intestine was not opened, but peritonitis supervened in eight days, and the patient died on the tenth day At the autopsy a Meckel's diverticulum was found in the *usual position, 20 inches* above the ileo caecal valve *It* was conical, as large as a pigeon's egg, and at its distal end there was a club shaped swelling To this swelling was attached the apex of the appendix, which was 4 inches in length There was no communication between the diverticulum and the lumen of the appendix, but on the posterior wall of the diverticulum, close to its origin from the ileum, there was a circular perforation and the surrounding peritoneum was reddened and covered with flakes of fibrinous exudate The mucosa of the appendix was intact Although several authors have described fatal cases of ulceration of Meckel's diverticulum due to the presence of concretions and entozoa, Brasser found nothing but a chronic catarrhal hypertrophy of the mucosa in this case.

466 Post-operative Tetanus.

F SATTA (*La Chirurgia degli organi di movimento*, August, 1924, p 605) alludes to a recent paper by Wohlgemuth, who had collected 27 cases of post operative tetanus which had occurred in the course of twenty five years In most of the cases the possibility of exogenous infection due to imperfect asepsis and contamination of catgut ligatures could be excluded As all the cases had occurred after abdominal operations in which the intestine had been injured or the operation wound had been contaminated with faeces, and none had occurred after operations on the thorax, extremities, or skull, and in view of the fact that the faeces have been found to contain *B tetani* in 5 per cent of all cases, the infection probably arose from the intestinal contents Consequently Wohlgemuth was of opinion that a prophylactic injection of antitetanic serum should be given after operations in which the intestine was injured, just as after a recent wound Satta now records three cases of post operative tetanus, two of which were fatal, while one ended in recovery, following orthopaedic operations on the feet As the operations had been carried out under the most rigorous asepsis, Satta, like Wohlgemuth, considered that the infection was endogenous and was due to the presence of *B tetani* in the skin and subcutaneous tissue He therefore recommends that all subjects whose skin shows signs of previous ulceration should receive a prophylactic injection of tetanus antitoxin before operation

467 Syphilis of the Stomach

GUIOT and J CHAVANNAZ (*Journ de Med de Bordeaux et du Sud Ouest*, October 10th, 1924, p 818) describe the case of a married woman, aged 42, who had suffered from abdominal pains of so severe a type that her medical attendant had diagnosed gall stone colic and had given morphine hypodermically No vomiting or fever was present, but there was emaciation and slight jaundice At 22 years of age she had had a healthy child, and later two miscarriages, the latter of which occurred in 1919 She was then confined to bed for two and a half months, and had since suffered from abdominal pains A very tender spot was found over the head of the pancreas, and the stomach was obviously dilated No history of haematemesis nor of melaena was obtained, and the gastric contents contained no free acid A skiagram showed a dilated stomach descending well below the umbilicus, with a permanent central constriction corresponding to the painful spot No evidence was obtained of diverticulum, ulcer, pyloric stenosis, tabes dorsalis, nor of syphilis A median supraumbilical laparotomy was performed, the stomach was found to be very dilated, and a narrow band across its anterior surface was excised No other gastric lesion was found nor any scarring, but there were numerous enlarged lymph nodes on both curvatures The gall bladder and ducts were healthy Two of the enlarged lymph nodes were excised, but showed no evidence of cancer nor of tuberculosis As the pain persisted the Bordet Wassermann test was performed, and a positive result obtained The patient was given a course of five injections of novarsenobenzol in novocain solution subcutaneously, because her veins were so small that the intravenous route was practically impossible She was discharged three weeks later in good general health, and two months afterwards her sister reported that she had resumed her normal life and could eat any food without pain In the subsequent discussion Masse remarked that, according to certain authors, gastric ulcer was a specific lesion, and that the Bordet Wassermann reaction was always positive

Therapeutics.

468 The Therapeutic Use of Oleum Chenopodii

W STRAUB (*Klin Woch*, October 28th, 1924, p 1993) reports a case of poisoning from oleum chenopodii given three times a day in the usual doses Severe enteritis followed and death occurred in a few days Four other cases of a similar nature are mentioned Oleum *chenopodii* is a *valuable* drug in the treatment of affections due to ankylostoma (hookworm) The secret of its satisfactory use lies in preventing absorption, Straub thinks that the fatal results were probably due to the drug being given three times a day He states that it is important that the drug should be given in one sufficiently large dose, and that then it should be expelled from the intestines by an aperient If a satisfactory result is not obtained by this dose, an interval should elapse before the treatment is repeated The method used in Central America (W E Deeks) is quoted The evening before the treatment the intestines are cleared by magnesium sulphate, next morning at 7 o'clock twenty four drops of oleum chenopodii in a gelatine capsule are given on an empty stomach This is stated as the dose for an adult, and the capsule should have been recently filled Two hours later a similar dose of the aperient is given, and the treatment is then complete The second aperient is given in order that the oleum chenopodii may not remain longer in the intestine than is absolutely necessary Repetition of the treatment, if required, should only be undertaken after two weeks In no case should a second treatment immediately follow the first, as otherwise toxic symptoms may be expected Straub concludes that by taking these precautions oleum chenopodii may be used without risk.

469 Protein Therapy in Gonorrhoea

H E AHLSWEDE and W BUSCH (*Urol and Cut Review*, November, 1924, p 659) have employed non specific protein therapy in the form of injections of milk as an adjuvant treatment of gonorrhoea The injections were given intramuscularly at a point in the upper and outer quadrant of the gluteus about 4 or 5 cm below the upper edge of the pelvic basin In acute gonorrhoea the first dose should be at least 4 c cm, and each following dose is increased by 2 c cm The result is often astonishing The secretion suddenly decreases, the pain ceases, and the urine becomes clear Local treatment meanwhile should not be neglected Usually the total duration of the treatment with simultaneous milk protein injections is much less than with the ordinary treatment alone The effects upon inflammation of the epididymis are particularly favourable After three or four injections the swelling and pain disappear and the cloudy urine becomes clear Protein therapy is also of value in suppurative adenitis In about half the cases suppuration may be prevented by energetic doses In the remainder the severe pain decreases, the abscess forms much more quickly, and complications are much fewer Injections of milk are also very beneficial in soft sore associated with gonorrhoea

470 Vaccine Treatment of Soft Chancre

FURTHER work on the bacteriology and treatment of soft chancre has been performed by C NICOLLE and P DURAND (*Arch de l'Inst Pasteur de Tunis*, October, 1924, p 243), with some very interesting results In this article they recapitulate the methods for isolating the bacillus of Ducrey *from the* lesion in the human body After opening the chancre under aseptic conditions cultures were made on a medium consisting of 3 per cent nutrient agar containing 20 per cent of defibrinated rabbit blood, put up in large tubes with a big surface for the slope After isolation, the bacillus was best maintained in a medium of 0 25 per cent nutrient agar, likewise containing defibrinated rabbit blood Subcultures were made from one medium to the other, on the first medium growth was allowed to continue for three days, on the second for twelve days—both at incubator temperature Emulsions of the organism were made by incubating it on the first medium, washing the growth off in saline, centrifuging, suspending the deposit in saline, shaking with glass beads to break down the clumps and chains of the streptobacillus, centrifuging and repeating the breaking up process, and finally suspending the bacilli in saline and standardizing to a strength of 450 million organisms per cubic centimetre This they call their normal emulsion, it was preserved with 2 per cent phenol This emulsion is the one used for Reenstierna's intradermal diagnostic test An intracutaneous injection of 0 2 c cm is given If the patient is suffering from, or has suffered from, a soft chancre, a local reaction appears on the next day in the form of a papule, which reaches its maximum size after forty eight hours, as a rule, when it is surrounded by a zone of congestion and oedema The reaction is stated to be absolutely specific and of great practical value It is

sometimes absent during the week following infection, but it may be present within two days Its intensity appears to increase proportionately with the time elapsing since the incidence of infection, and to be greater in cases with buboes Vaccine treatment has resulted in considerable success An emulsion of organisms of half normal strength—225 million per cubic centimetre—was injected intravenously every other day, starting with a dose of 1/2 to 1 c cm and increasing up to 2 c cm In 25 cases of uncomplicated chancre cure resulted in an average period of twelve days while in the case of those complicated with buboes or with ulceration the neces ary time was seventeen days The treatment was most successful in early cases The general reactions caused by the vaccine were very irregular both in appearance and degree, but they did not appear to give rise to any serious inconvenience Only one patient out of 41 treated proved refractory to vaccine treatment, and in this case the diagnosis was doubtful

Dermatology

471 Indurative Erythema of the Lower Limbs

S N VENDEL (*Ugeskrift for Laeger*, October 16th, 1924 p 791) describes a condition observed in about 75 persons by six neighbouring practitioners in Denmark during the past five or six years Though the disease appeared to be well defined, even consultations with specialists failed to give it a generally recognized label such as erythema pernio, nodosum, or induratum (Bazin) The skin and subcutaneous tissues of both legs were thickened from a point just above the external malleolus The front and outer aspects of the legs were involved, the patches of thickened skin being of the size of a child's hand or larger The upper limit of this thickening was ill defined, whereas the lower limit was fairly abrupt The skin was red cyanosed or blue, the colours resembling those following Bier's stasis Cutis anserina was often observed, and the first impression given on examining the skin was that of oedema, but there was no pitting on pressure with the tip of a finger The pallor induced by pressure lasted only so long as it was maintained The patients felt cold and complained of pain tenderness paraesthesia and great lassitude The disease was always bilateral and was confined to young women beginning usually for the first time between the ages of 14 and 20 It lasted throughout the year, but was most troublesome in the cold seasons In one case it had lasted for twelve years In many cases there were other signs of a defective circulation such as cyanosis of swollen hands and arms In about a third of all the cases flat foot was also present but in no case was tuberculosis diagnosed and only in one case were superficial varicose veins, and in another case varicose veins in the popliteal space, observed The author eliminates chilblains from the diagnosis on account of the absence of itching, seasonal incidence, and of ulceration the site of the lesions was also not characteristic of chilblains Erythema nodosum could also be eliminated on account of absence of fever and an acute onset, and the author indicates his ignorance of this condition by heading his paper "Erythema?"

472. Acute Disseminated Lupus Erythematosus.

C S KEEFER and A R FELTY (*Bull Johns Hopkins Hospital* September, 1924, p 294) report three fatal cases of this disease which was first described by Kaposi (1872) All the patients were women—one white (aged 21) and two negresses (aged 26 and 36 years) The white patient and the elder negress had swelling and pains in joints with some fever the younger negress complained of "soreness in the stomach" The family history in each case was negative and all had been in good health prior to their fatal illnesses None had had any previous skin eruption Fever was present in all cases it was remittent and prolonged Two were known to have had several remissions, during which no symptoms were present, after varying periods they relapsed Arthritis with slight periarticular swelling (shown by x rays) was present in each case The skin lesions were diffusely scattered chiefly over the face, extremities, chest and trunk, in two cases on the palms as well The lesions were dry, scaly, and pinkish, and they healed with slight scar formation and some spots of pigmentation and atrophy Extreme tenderness and marked swelling of the limb muscles were present Profound prostration, sweats and delirium were outstanding features, with moderate general lymphadenitis, in two cases the spleen was palpable In one case each exacerbation of fever was accompanied by great swelling of the lymph nodes and spleen, as well as by increase in the extent and severity of the skin lesions There was no clinical evidence of tuberculosis, no petechiae, and no evidence of organic heart disease in any case Moderate secondary progressive anaemia was present in all The leucocyte counts were normal except when another infection was superimposed, leucocytosis then occurred The differential counts were normal The Wassermann reactions were negative and all blood cultures were negative, except in one case where there was a transient *Streptococcus viridans* bacteriaemia No gross distinctive lesions were found at the necropsies The authors conclude that "the etiology of lupus erythematosus is far from being settled, though the general consensus of opinion is distinctly against the theory that the skin lesions are tuberculous They quote MacLeod as remarking "It is not a pathological entity but rather a cutaneous symptom of peculiar type, which may be called forth by a variety of causes toxic or septic in character"

473 Psoriasis and Seborrhoeic Eczema.

A CIVATTE (*Brit Journ Derm and Syph*, November, 1924, p 461) discusses the pathological anatomy and diagnostic histology of psoriasis and seborrhoeic eczema While clinically the two conditions may present difficulties in differential diagnosis, histologically they are clearly defined, since microscopic sections show preceding stages side by side with the fully developed lesion In psoriasis polynucleosis is present, no vesicle, but a rupture of the rete mucosum with intracellular rather than intercellular oedema, and little or no spongiosis, whereas in the eczematide there is mononucleosis, vesiculation, and spongiosis The lesion of psoriasis is attributed to the action of a virus or toxin coming from within while the initial subcornical lesion of an eczematide suggests surface infection This bears out the clinical manifestations of the two conditions in that psoriasis is always threatening to relapse in spite of treatment, whereas external treatment of an eczematide results in permanent cure Civatte adds that histologically the two conditions are clearly seen to be distinct diseases although their terminal stages give rise to difficulties in differential diagnosis

474. Besnier's Prurigo in Association with Asthma.

K BAAGÖE (*Ugeskrift for Laeger*, August 14th, 1924, p 609) draws attention to the frequency with which Besnier's prurigo occurs among young persons suffering from asthma Among 67 asthmatics under the age of 20 he found Besnier's prurigo in 13 in another case of Besnier's prurigo the brother of the patient suffered from asthma and in yet another case of prurigo the patient's father was an asthmatic These cases of prurigo were tested for anaphylaxis by skin reactions to such substances as pollen, feathers, hairs and horse dandruff, and in every case a positive reaction was obtained to one or more of these substances The author believes that the association of Besnier's prurigo with asthma is not a coincidence and accidental but that the two manifestations come from one and the same cause The relation of these two diseases to each other has hitherto been overlooked largely because Besnier's prurigo tends to disappear automatically after childhood

Obstetrics and Gynaecology

475 Hyperplasia of the Endometrium

HAVING studied a series of 66 cases of hyperplasia of the endometrium E NOVAK and K H MAPTZLOFF (*Amer Journ Gynecol and Obstet*, October 1924 p 365) have come to the opinion that it is one of the most important of all endometrial lesions The condition gives rise to excessive menstruation both as regards the duration of the period and the amount Metrorrhagia is not common but the passage of clots is not unusual The condition may occur at any age, but is most common about the menopause when it has to be distinguished from cancer by microscopical examination Child bearing seems to have no effect in causing the disease but when it has developed sterility is the rule though some exceptions are mentioned The endometrium may be enormously increased in amount and be polypoid but equally often it is smooth and of normal thickness Schroder had suggested that the hyperplasia was due to the absence of corpora lutea in the ovary, but the present authors did not find this to be always the case, and the matter still requires investigation They add that treatment consists of a diagnostic curettage in the first place in some cases this may cure the condition Return of the bleeding after a short interval occurs more commonly, and repeated curettage may be required in young patients when radiotherapy and hysterectomy are undesirable When the disease occurs after the age of 40 radium is the ideal form of treatment, and hysterectomy is only advised when radium is not available for an intractable case or when the disease is associated with some pelvic lesion which makes laparotomy necessary

476. Tuberculosis and Pregnancy

L SAYL, F CARRERAS, and T. SEIX (*Rev med de Barcelona*, September, 1924, p 227) hold that in dealing with a case of tuberculosis in pregnancy the practitioner must determine the anatomical type of the tuberculous process as soon as possible. If it is a mild form such as pleurisy or fibroid phthisis, hygienic and symptomatic treatment is all that is required In malignant forms artificial pneumothorax should be performed in unilateral cases, and, if this is not possible, surgical measures, such as section of the phrenic nerve or thoracoplasty, should be considered In other cases strict sanatorium treatment should be advised, so as to check as far as possible the course of the disease In view of the strain that pregnancy imposes on the organism the practitioner should warn women with fibroid phthisis to avoid becoming pregnant and inform them of the risks entailed

477 Pseudo-neoplastic Tuberculosis of the Breast

ACCORDING to H HARTMANN, M RENAUD, and G D'ALLAINES (*Gynecol et Obstet*, 1924, x, 2, p 81), the rare fibrous form of mammary tuberculosis, which clinically simulates malignant disease, and was first described by Scott in 1904, does not occur except in females The classic forms are noted most commonly between the ages of 20 and 25, the pseudo neoplastic form has usually come to operation between the ages of 35 and 60 It is probable that in the absence of histological examination of all breasts amputated for malignant disease, many cases of fibrous tuberculous disease escape detection The other organs of the patients usually appear healthy, the onset is insidious, and there is little or no pain The affected breast shows, as a rule, a small, ill defined, slow growing, hard tumour, which is usually adherent to the skin the skin may present a "*peau d'orange* appearance," accompanied by retraction of the nipple Enlargement of the axillary glands is the rule, blood stained discharge from the nipple was found in Scott's case The authors add that a diagnosis has never been made prior to examination of the operation specimen, animal inoculations have rarely been employed, but positive results have been obtained in at least two cases.

478 Obstetrics and Radiology

PORTES and BLANCHE (*Gynecol et Obstét*, 1924, x, 5, p 333) remark that the hopes raised at the end of last century that the *x* rays would be of considerable assistance in obstetrical diagnosis were speedily abandoned, nevertheless, more recent trials have been promising, and the use of more powerful installations and the perfecting of technique will probably in the future lead to wider and more successful use of radiology in obstetrics Radiography of the foetus removed from the uterus has shown that the first (clavicular and mandibular) centres of ossification are to be seen on the plates at the seventh week, and after the ninth week ossification is visible in all parts of the skeleton Theoretically, therefore, it ought to be possible, between the end of the second month and the appearance of clinical signs, to diagnose pregnancy by *x* ray examination, but in practice *x* ray detection of foetal bones *in utero* is difficult It has been reported by Edling in 17 cases between 3½ and 4 months, but Barnes and Galloway, repeatedly screening 24 women in the early months of pregnancy, found negative results up to the fifth month, and positive results during that month in 8 cases only. The results of Portes and Blanche have been similar, and they conclude that a radiological diagnosis is possible before a clinical one in very exceptional cases only, a negative plate is of no value up to the fifth month In the late months radiological diagnosis of twin or triplet pregnancy is of definite value, but the plates call for very careful study Foetal monstrosities lend themselves to *x* ray detection, as in a case of anencephaly illustrated by the two authors In two instances confirmation was obtained of the value of the radiological signs of foetal death *in utero* recently described by O B Spalding, the cranial bones overriding each other at their margins, and at the same time the cranial contents appearing more shrunken, in proportion, than the skull From the few recorded cases it seems probable that maceration of the foetus is associated with disappearance of the opacity of the bones, so that plates taken towards term are negative Radiological diagnosis of uterine from extra uterine gestation has not yet been possible A case of Demelin's is mentioned in which during the ninth month examination of a very swollen abdomen left the diagnosis uncertain between hydramnios and ovarian cyst The *x* ray report, verified later at operation, indicated pregnancy and a large ovarian cyst behind the uterus The authors state that the radiological diagnosis of obstetric presentation and position is, as a rule, comparatively simple even when the clinical examination gives doubtful findings.

Pathology.

479 Active Immunization against Sarcoma.

V E MERTENS (*Deut Zeit f Chir*, October, 1924, 3 bis, 4 Heft, p 216) states that von Dungern in 1899 taught that it was possible to produce immunity to tissue cells A few years later W J Hoyter (JOURNAL, 1902, ii, 1342) employed expressed serum without the addition of saline solution for malignant growths, with the result that the growth of the tumour was checked for some time, the lymph glands became smaller and the pain less Hoyter's communication followed Leyden and Blumenthal's paper in which they described how a dog with two tumours of the rectum was treated by a serum from the recently extirpated carcinomatous tumour of another dog, with the result that only a small remnant of the growth remained, which on microscopical examination proved to be an epithelial carcinoma Mertens now reports the case of a white male, 14 years of age, with a melanotic sarcoma of the abdominal wall and secondary growths in the rectum and vulva Repeated subcutaneous injections of an emulsion of the melanotic sarcoma was followed by diminution in size of the primary growth, healing of the ulcers, and diminution in size of the vulvar and rectal tumours, so that their removal was rendered possible At the same time patches of discoloration appeared in various parts of the skin throughout the body, for which no explanation could be given

480 The Skin Reaction in Hydatid Disease

J GOUDSMIT (*Nederl Tydschr v Geneesk*, September 6th, 1924, p 1235) states that Casoni's intradermo reaction for hydatid disease is very reliable according to Italian and South American clinicians Ithurrat found it positive in 133 out of 137 cases, and others found it positive in 84 per cent The reaction is carried out as follows Sterile hydatid fluid is used as an antigen The forearm is prepared by placing on it for a few minutes a swab soaked in alcohol (rubbing should be avoided, because the erythema caused thereby would interfere with the reaction), 1/2 c cm of antigen is then injected intradermally If no change occurs in the skin in a quarter of an hour's time the reaction is negative If the reaction is positive, a few minutes after the injection an erythema develops round the injection site and rapidly spreads, reaching its greatest development in half an hour Ten or fifteen minutes after the injection an urticarial wheal appears about the size of a sixpence, and at the end of half an hour becomes converted into an oedematous infiltration All observers are agreed that the reaction is quite free from any risk The antigen is prepared as follows Sterile hydatid fluid is collected in test tubes and kept at the room temperature for five or six days and then carefully examined for aerobic or anaerobic bacteria If the fluid is turbid it is unfit for use, but if it is clear it is suitable for the test Goudsmit records three illustrative cases of hydatid disease in which the skin test was positive, while Weinberg's test was negative in one and only feebly positive in another, although the diagnosis of hydatid disease was confirmed in both cases by operation.

481 Alcohol and Bacterial Inhalation.

E G STILLMAN (*Journ of Exper Med*, September, 1924, p 353) finds that in mice exposed to a dense spray containing bacteria in suspension the inhaled organisms penetrate to the smaller bronchi The further history of the bacteria depends not only upon the kind, number, and invasive quality of the bacteria, but also upon the normal defensive mechanism of the host The defensive mechanism of the host was in the present instance depressed by alcohol, the average 20 gram mouse became stupefied within three minutes after an intraperitoneal injection of 1 5 c cm of 10 per cent alcohol in salt solution, and remaining so for three to four hours The pneumococcus, though highly virulent for normal mice when given intraperitoneally or subcutaneously, rarely gives rise to infection when inhaled, disappearing from the lungs within a few hours But in alcoholized mice inhaled pneumococci persist in the lungs for a longer time, and frequently invade the blood In the experiments less than 3 per cent of the normal mice died of pneumococcus septicaemia, while over 40 per cent of the intoxicated animals succumbed to fatal blood infection The author adds that the experiments throw no light on *whether* the inspired bacteria are killed *in situ*, are taken up by leucocytes, or are carried to other parts of the body They do not show how the alcohol exerts its harmful effects, or whether alcohol intoxication causes local changes in the permeability of the respiratory mucosa or acts adversely on the systemic resistance He considers, however that they show that alcohol delays the removal of inhaled bacteria from the lungs, and favours their invasion of the blood stream.

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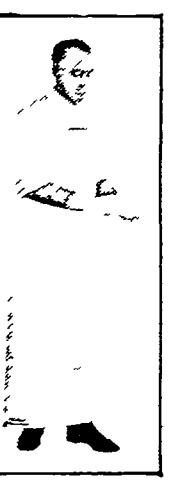
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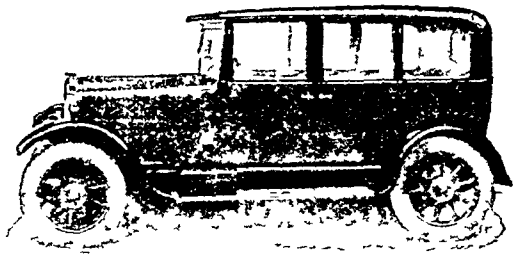
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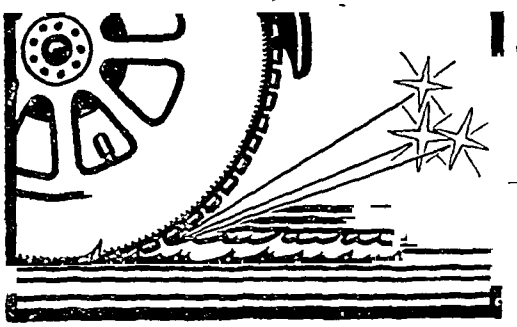
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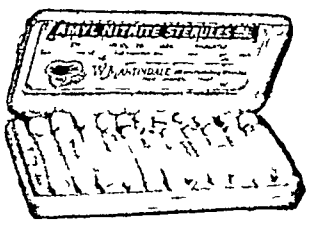


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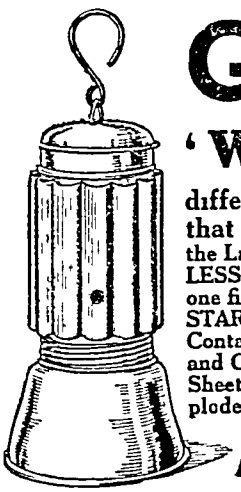


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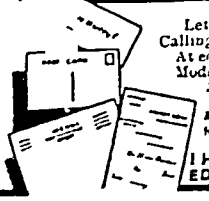


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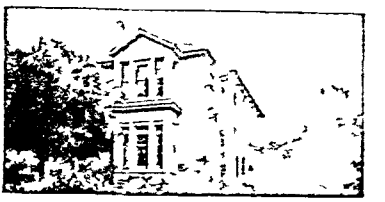
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A comfortable Private HOME for Treatment of
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Apply Resident Physician, HECTOR SMITH, M B B S (Lond) D P H (Lond)

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FOR MENTAL DISEASES,
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President—
The Most Hon the MARQUESS OF EXETER, C M G C B E

This Registered Hospital receives for treatment PRIVATE PATIENTS of the UPPER and MIDDLE CLASSES of both Sexes The Hospital its branches (including a Seaside Home at Llanfairfechan North Wales) and numerous villas are surrounded by over 1 000 acres of Park and Farm.
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HOSPITAL FOR MENTAL DISEASES
BARNWOOD near GLOUCESTER
Telephone No 7 Barnwood
Exclusively for PRIVATE PATIENTS of the UPPER AND MIDDLE CLASSES
This Institution is devoted to the care and treatment of persons of both sexes at moderate rates of payment
Voluntary boarders not under certificates are admitted
Under special circumstances the rates of payment may be reduced by the Committee
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For further information apply to ARTHUR TOWNSEND M D the Medical Superintendent

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A first class Country Mansion especially adapted for the reception of a limited number of ladies and gentlemen mentally affected.
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This well appointed private establishment overlooks Morecambe Bay and possesses extensive gardens and grounds with tennis and croquet lawns. Varied scholastic and manual instruction. Individual attention given by experienced staff under Lady Matron. For terms apply Dr. W H. COUPLAND Medical Superintendent.

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VOLUNTARY BOARDERS can now be admitted
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An intensive treatment with satisfactory results at
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Private Nursing Home for Cases of Neurasthenia and allied Functional Nervous Disorders, for general Convalescent Cases, and those requiring Electrical Treatment.
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For the CARE and TREATMENT of Ladies and Gentlemen MENTALLY AFFLICTED with or without certificates. Consultations in Liverpool or Southport can be arranged by telephone.
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MAUDSLEY HOSPITAL,
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Telephone Brixton 788
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OUT PATIENTS—2 p m MEN—Mondays and Thursdays WOMEN—Tuesdays and Fridays
IN PATIENTS (a) 141 beds (both sexes) in wards or separate rooms (b) 13 private rooms (for ladies) with special sitting rooms, garden and dietary
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(a) £5 a week but in case of patients with a legal settlement in the County of London a less sum may be charged according to means
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Terms include (with rare exceptions) all forms of treatment for which exceptional facilities exist there being staff of consultant specialists and the central laboratory of London County Mental Hospital being attached to the hospital Inquiries of EDWARD MAPOTHER, M.D M R C P F R C S Medical Superintendent

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A HOUSE licensed for the reception of a limited number of ladies of unsound mind. Both certified and voluntary patients received. This is a large country house with beautiful grounds and park 3 miles from Sheffield Station Grange Lane, G C. Railway Sheffield. Telephone No 61 Rotherham. Resident Physician—GILBERT E. MOULD L.R.C.P., M.R.C.S (Consulting Physician—CROCHLEY CLAPHAM M.D F.R.C.P.E.

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Extensive Grounds Detached Villas Chapel Garden and Dairy Produce from own Farm.

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PECKHAM HOUSE MENTAL HOSPITAL

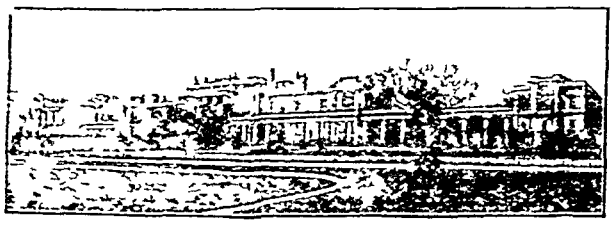
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HOVE VILLA BRIGHTON —A Convalescent Branch of the above to which all Suitable Patients may be sent on Holiday

BAILBROOK HOUSE,

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A PRIVATE HOME for the care and treatment of persons with mental and nervous disorders

TERMS: from 3½ guineas a week according to requirement. Voluntary Boarders received

Mansion on outskirts of Bath, with 10 acres of grounds (see MEDICAL DIRECTORY page 1 6)

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This Registered Hospital for **MENTAL DISEASES** with its seaside branch Glan-y-Don, Colwyn Bay is for the treatment of PRIVATE PATIENTS of the UPPER and MIDDLE CLASSES Voluntary Boarders received.

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Near BEDFORD

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For Mental Cases, with or without Certificates

Ordinary Terms Five Guineas per week

Including Separate Bedrooms for all suitable Cases without extra charge)

For forms of admission &c. apply to the **Drs. BOWER**, as above or at 10 Duchess Street, Portland Place W 1 on Tuesdays from 4 to 5

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A High-class Private Nursing Home for Ladies desiring **Curative Treatment** for Nervous Affections **Hysterical** and **Border land Cases** in the early stages and those suffering from **Incipient** mental trouble are received as **Voluntary Boarders.** Apply to the Misses McLINTOCK or to Dr S BARTON 34 Surrey Street, Norwich Visiting Physician

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A Private HOME for the Care and Treatment of a limited number of Ladies with Mental and Nervous Disorders. Voluntary Boarders received

Large Mansion with 12 acres of ground. (See Medical Directory pp 2126) —Apply J. H. EARLS, M.D. Resident Physician. Tel.: Brixton 115

STRETTON HOUSE,

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For the treatment of Ladies and Gentlemen mentally afflicted Voluntary Boarders received. Situated 1,200 ft above sea level facing S 14 acres of ground —For terms apply to the Resident Medical Superintendent, W. W. HORTON M.D Nat. Tel. 100.

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CASES of MENTAL and NERVOUS DISORDER are received for Treatment

There are at present a few vacancies for Paying Patients at **£3 3s 0d.** per week

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Established 1816 For the TREATMENT of a few LADIES suffering from NERVOUS and MENTAL DISORDERS Voluntary patients received

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Large grounds 400 ft above sea. HOME for LADIES Mentally Afflicted. Voluntary Boarders received Stations Brentwood 1 mile Shenfield 1 mile Liverpool Street 20 minutes.—Apply Dr HAYNES

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PLYMPTON HOUSE,

PLYMPTON, S. DEVON

This old-established Licensed House offers every advantage that experience can suggest for the care and treatment of mental cases

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A limited number of beds are available in the GENERAL WARDS at 2 Gns per week inclusive

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Every kind of Bath Plombière Lounge.
Every kind of Massage
Every kind of Electricity
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High Frequency Electric Lift.

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Famous Natural Brine Baths. Golf Music, etc.
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COMPLIMENTARY FACILITIES TO MEDICAL MEN

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Prospectus and full information on application to **H. CHALLAND** Managing Director
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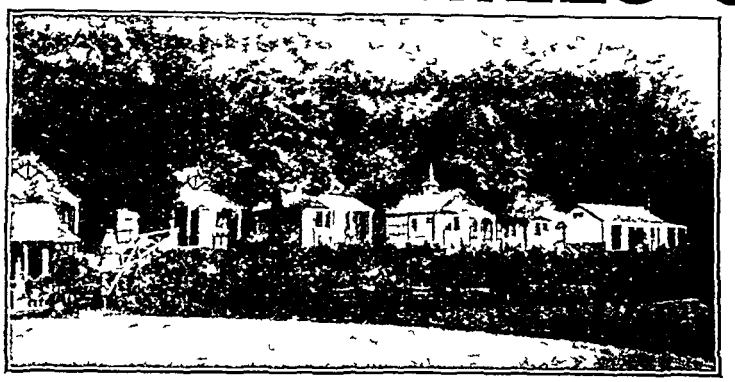
BUXTON HYDRO HOTEL :: BUXTON

If it is Comfort Excellent Cuisine, and Convenience of Situation, choose the Buxton Hydro Hotel. With over 200 Rooms Electric Elevators, and three large Dining Rooms, there is accommodation for upwards of 400 guests.

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Specially built, facing south 300 acres of Sanatorium grounds—meadow and woodland, sheltered pine avenues Altitude 850ft Magnificent view for miles south, hot water radiators and electric light in each room and chalet

All forms of treatment, including X ray, Vaccines, and Pneumothorax in suitable cases Trained Nurses Individual attention

For particulars, apply SECRETARY, Hillgrove, Wells, Somerset Telegrams Hillgrove Wells Somerset.

Resident Physicians { Dr C MUTHU / Dr T C BRENTNALL

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Specially built for the Treatment of PULMONARY TUBERCULOSIS Recently redecorated and largely refurnished Ideal Situation on the Crooksbury Ridges, amidst pine trees and heather (opposite Farnham Golf Links), in the most beautiful part of Surrey Electric lighting throughout

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For particulars, apply to the SECRETARY, Crooksbury Sanatorium, Farnham, Surrey

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FOR THE TREATMENT OF CASES OF TUBERCULOSIS

Pleasantly situated on the "Upper Bagshot Sands" 200 feet above sea level, it stands in its own charming grounds facing South and West and sheltered from the North and East in a mild and bracing climate

Trained Nurses on duty night and day Facilities for Artificial Pneumothorax and other modern methods

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Recently opened for the Treatment of PULMONARY TUBERCULOSIS

Well situated on high ground and surrounded by pines and heather

Resident Medical Superintendent, DR H O BLANFORD, late Medical Superintendent, King Edward VII Sanatorium, Midhurst, to whom applications for particulars may be made

PALACE SANATORIUM, MONTANA-SUR-SIERRE

Tuberculosis Cure Station, 5,000 feet high, SWITZERLAND.

Accommodation for 100 Patients

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This Sanatorium provides for the treatment of patients suffering from PULMONARY and other forms of TUBERCULOSIS The Medical Staff consists of a consulting Physician and two visiting Physicians Terms from seven guineas a week There are no extras One hour by road or rail from London

For full particulars, apply to the Lady Superintendent, Farmwood, Ascot

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KINGUSSIE, INVERNESS SHIRE.

Specially built for the Open Air Treatment of Tuberculosis and opened in 1901 Bracing mountain air Elevation 850 feet above sea level Sheltered situation in pine wood. Graduated walks

Electric light throughout building and in shelters Fully equipped X Ray Plant Inoculation Treatment available for patients—4 beds Trained Nurse on duty all night **A few rooms are now reserved for Surgical Cases not requiring immediate operation.** Terms 4 to 6 guineas per week Medical Superintendent FELIX SAVY M B Ch B

For particulars apply to the Secretary



HOSPITAL FOR CONSUMPTION

AND DISEASES OF THE CHEST,

BROMPTON,

and FRIMLEY SANATORIUM.

SPECIAL WARDS FOR PAYING PATIENTS

3 to 3½ Guineas per week.

Apply to the Secretary, Brompton Hospital S W.

HE DEESIDE SANATORIA IN SCOTLAND

FOR THE OPEN-AIR TREATMENT OF

PULMONARY TUBERCULOSIS and ALLIED DISEASES

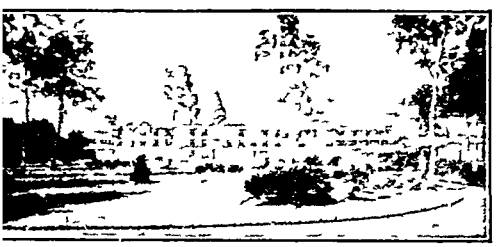
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Medical Director - - DAVID LAWSON, M A, M D, F R S E

These Sanatoria are situated amongst **Ideal Surroundings** in Middle Deeside, the reputation of whose limate in the treatment of Lung Disease is well established

Both Institutions are well equipped with **Research Laboratory, Throat Room, Dental Facilities,** nd powerful **X-Ray Plant** **Full Day and Night Nursing Staffs** are employed

Special Treatment by artificial **Pneumothorax** (with X ray control), the various **Tuberculins,** and utogenous **Vaccines,** etc , is available without extra charge



NORDRACH-ON-DEE

At BANCHORY near BALMORAL.

Physician

Dr IAN STRUTHERS STEWART

Assistant Physician Dr J C LORRAINE

For particulars apply SECRETARY



TOR-NA-DEE SANATORIUM

AT MURTLE, ABERDEENSHIRE

Senior Physician Dr J M JOHNSTON

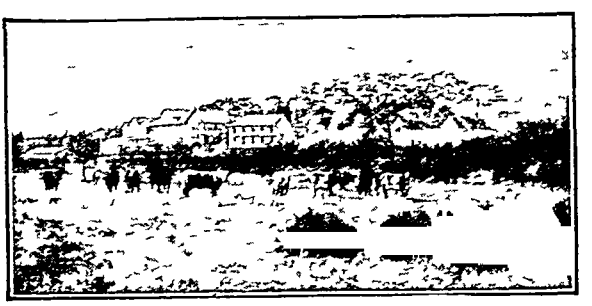
Assistant Physicians Dr R J DUTHIE and Dr H TRAIL

The Scottish Branch of the British Red Cross Society is prepared to contribute towards payment of the fees of ex Officers and Nurses recommended by the Society and such Officers and Nurses obtain priority of admission

Inclusive terms **7 Guineas a week.**

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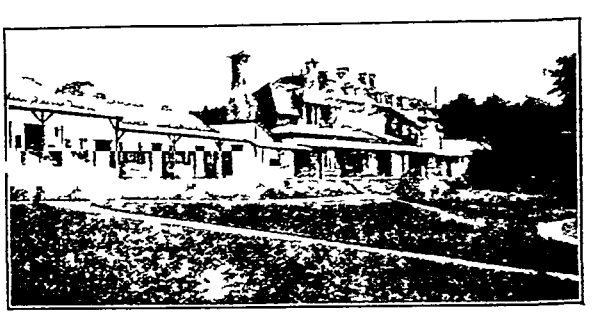
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Final F.R.C.S.(Eng)., 1906-24 **83**
M.R.C.P.(Lond.), 1914-24 - **85**
D.P.H. (Various) 1906 24 - - (Complete Exam) **228**
F.R C.S.(Edin.), 1918 24 - - **22**
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Telephone MUSEUM 700

LONDON HOSPITAL MEDICAL COLLEGE.
(UNIVERSITY OF LONDON)

SCHORSTEIN MEMORIAL LECTURE

The above Lecture will be delivered by Sir ARTHUR KEITH M D LL D F R S , on Wednesday December 17th 1924 at 4 15 p m in the Anatomical Theatre of the College

Subject The Clinical Importance of the Bulbus Cordis (Illustrated by lantern slides)

Members of the Profession are cordially invited to attend

PROFESSOR WILLIAM WRIGHT
M B D Sc F R C S , Dean

October 23rd 1924

LONDON SCHOOL OF HYGIENE & TROPICAL MEDICINE
Division of Tropical Medicine & Hygiene,
Endsleigh Gardens, N W 1

Next Session will commence January 7th 1925

For Prospectus and further particulars apply to The Secretary Endsleigh Gardens, N W

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Special Two Weeks' Post Graduate Course in Cardiology—January 12th to 23rd, 1925

FIRST WEEK. MORNING

Date	10 0—11 0 a m	11 15—12.30 p m
Mon 12th Jan	The Anatomy of the Heart Dr B T Parsons Smith	The Polygraph Dr T F Cotton
Tues 13th Jan	The Physiology of the Circulation Dr J Strickland Goodall.	The Polygraph Dr T F Cotton
Wed 14th Jan	Cardiac Rheumatism Dr John Parkinson	The Electrocardiograph Dr F W Price.
Thur 15th Jan	Blood pressure Dr John Parkinson	The Electrocardiograph Dr F W Price.
Fri 16th Jan	Infective Endocarditis Dr T F Cotton	Physical Examination Dr John Parkinson

SECOND WEEK. MORNING

Date	10 0—11 0 a m	11 15—12.30 p m
Mon 19th Jan	Functional Disturbances of the Circulation Dr B T Parsons Smith	X Ray Examination in Heart Disease Dr J Strickland Goodall.
Tues 20th Jan.	Cardiac Arrhythmias Dr I O Moon	Aortic Disease Dr B T Parsons Smith
Wed 21st Jan	Diseases of the Arteries Dr F W Price.	Mitral Disease Dr T F Cotton
Thur 22nd Jan	Treatment of Cardiac Failure Dr J Strickland Goodall.	Angina Pectoris Dr W Price.
Fri 23rd Jan	Prognosis in Heart Disease Dr R O Moon	Cardiovascular Syphilis Dr T F Cotton

Each Afternoon Ward Demonstrations will be held from 2—3 p m and Out patient Demonstrations from 3—4 p m Two Pathological Demonstrations will be given also

FEE for the Course, £7 7s 0d (Special Ticket)

The Course is limited to *16* Early application to the Secretary is recommended

NATIONAL HOSPITAL FOR THE PARALYSED AND EPILEPTIC,

Queen Square, W C 1

MEDICAL SCHOOL.

A POST GRADUATE COURSE on DISEASES OF THE NERVOUS SYSTEM will be held at the above Hospital from Feb 2nd to March 14th 1925

The General Course will consist of CLINICAL LECTURES and DEMONSTRATIONS TEACHING in the OUT PATIENT DEPARTMENT and PATHOLOGICAL LECTURES and DEMONSTRATIONS

The fee for this Course will be £5 5s

The ANATOMY of the NERVOUS SYSTEM will be demonstrated

Fee £2 2s

A COURSE OF CLINICAL DEMONSTRATIONS chiefly on METHODS OF EXAMINATION OF THE NERVOUS SYSTEM will be given.

Fee £2 2s

A limited number of students can be enrolled as WARD CLERKS or as CLINICAL ASSISTANTS in the Out patient Department

Applications should be addressed to the Secretary Medical School National Hospital for the Paralysed and Epileptic, Queen Square London W C 1

J G GREENFIELD Dean

Tickets entitling to attend the Out patient Clinics only (£2 2s for three months) may be obtained from the Secretary

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COUNTY OF LONDON
LONDON COUNTY COUNCIL.
LECTURES AND PRACTICAL COURSES OF INSTRUCTION AT
THE MAUDSLEY HOSPITAL
DENMARK HILL FOR A
DIPLOMA OF PSYCHOLOGICAL MEDICINE

The VIIIth Course will commence on Jan 6th 1925

Inquiries as to Lectures should be addressed to The Director of the Pathological Laboratory Maudsley Hospital Denmark Hill S E 5

JAMES BIRD
Clerk of the London County Council

Royal College of Surgeons of ENGLAND

LICENCE IN DENTAL SURGERY

Notice is hereby given that the First Professional Examination will commence on Friday February 6th 1925

Notice is hereby given that the Second Professional Examination will commence on Friday February 27th 1925

Candidates are required to give not less than twenty one clear days notice in writing of their desire to present themselves for these Examinations to the Director of Examinations (Mr F G Hallett) Examination Hall Queen Square Bloomsbury W C from whom all particulars relating thereto may be obtained

December 3rd 1924

University of Cambridge

DIPLOMA IN MEDICAL PADIOLOGY AND ELECTROLOGY

Six Months Courses of LECTURES and PRACTICAL INSTRUCTION in Part I (Physics and Electro-technics) and in Part II (Radiology and Electrology) will be given in London beginning October 1st 1924 and in Cambridge and London beginning January 7th 1925 for Examination at the end of the Courses.

For further particulars of the London Courses apply to Stanley Melville, M D British Institute of Radiology 32 Welbeck Street London W and of the Cambridge Courses to P Shillington Scale M A M D Medical Schools Cambridge

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COMMISSIONS in the ROYAL ARMY MEDICAL CORPS

An Examination for not less than 20 Commissions in the Royal Army Medical Corps will be held on January 14th 1925

Applications to compete should be made to The Under Secretary of State, the War Office not later than January 14th 1925 The presence of Candidates will be required in London from January 9th to 17th

Intending Candidates can obtain a full statement of the duties and emoluments of the Service on making a written application to The Under Secretary of State (A M D I) the War Office Whitehall London S W 1

ST MARY'S HOSPITAL, INSTITUTE OF PATHOLOGY AND RESEARCH.

Principal
SIR ALMROTH E WRIGHT K B E C B F R S

Applications are invited from qualified medical practitioners for a RESEARCH STUDENTSHIP This will be tenable for six months and may be

Chemical Pathology Clinical Bacteriology Systematic Bacteriology and Immunology

The student who will receive an honorarium at the rate of £200 per annum may elect to carry out his researches in any one of these departments and would be required to work under the direction of the head of the department concerned. Preference will be given to old St. Mary's Students.

For further particulars apply to the Secretary Institute of Pathology and Research St. Mary's Hospital Paddington, W.2 to whom applications must be sent not later than first post December 15th

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Edmonton Education COMMITTEE.

ASSISTANT SCHOOL MEDICAL OFFICER (WOMAN)

Applications are invited from well-qualified women practitioners for the post of Assistant School Medical Officer To work under the direction of the School Medical Officer (who is Deputy Medical Officer of Health) and to devote whole time to the service of the Committee. Salary £600 per annum.

Form of application can be obtained from the undersigned. The application, which must be accompanied by three recent testimonials, must be returned not later than Saturday 20th inst.

Canvassing directly or indirectly will be a disqualification.

E O TAYLOR,
Education Offices, Secretary to Education Committee
Bretteham Road Edmonton N 18. December 5th 24.

Malayan Medical Service

(STRAITS SETTLEMENTS
FEDERATED MALAY STATES,
AND
UNFEDERATED MALAY STATES)

THERE are vacancies for Medical and Health Officers in the Malayan Medical Service on the time scale below the senior posts Candidates who should not be over 35 years of age should apply to the Private Secretary (Appointments), the Colonial Office, Downing Street, London, S W 1

2 Below the senior posts are appointments on a time scale salary which over 16 years rises from an initial alary of $5 280 (£616) a year to $9 600 (£1,120) a year by annual increments of $240 (£28) a year for the first four years and thereafter of $300 (£35) a year Selected candidates will be appointed at the initial salary of the scale, viz $5 280 a year

3 On all salaries a temporary allowance is at present paid of 10% to unmarried and 20% to married officers Salaries are paid monthly

4 Senior posts and salaries are at present as follows —

- Principal Civil Medical Officer Straits Settlements and Principal Medical Officer, *Federated Malay States*, $14,400 (£1,680) per annum
- Director Government Laboratories Federated Malay States $13,200—$13,800 (£1,540—£1,610) per annum
- Principal of the College of Medicine, Straits Settlements (Class A), $13,200 (£1,540) per annum
- Chief Health Officer, Singapore (Class A), Senior Surgeon, Singapore (Class A), Senior Health Officer, Federated Malay States Chief Medical Officer Singapore (Class A) Senior Medical Officer, Perak, Senior Medical Officer Selangor Senior Surgeon, Kedah Chief Medical Officer, Penang (Class A) Principal Medical Officer, Johore, $12,600 (£1,470) per annum
- Ophthalmologist, Federated Malay States, Chief Surgeon, Federated Malay States, $12 000 (£1,400) per annum
- Pathologist, Singapore Superintendent, Central Mental Hospital, Federated Malay States Bacteriologist Federated Malay States Professor of Surgery College of Medicine Senior Medical Officer Negri Sembilan Senior Medical Officer, Pahang, $10,200—$12 000 (£1,190—£1 400) per annum
- Professor of Physiology, College of Medicine Professor of Midwifery College of Medicine Professor of Anatomy, College of Medicine Chief Medical Officer, Malacca, $10 200—$12 000 (£1,190—£1 400) per annum
- Pathologist, Penang, $8,400—$9,600 (£980—£1,120) per annum
- Malaria Research Officer Federated Malay States $6,600—$9,600 (£770—£1,120) per annum

5 The currency of the Straits Settlements and the Malay States is based on the Straits Settlements dollar All salaries are fixed in dollars and are so paid while officers are on service in the Colony For purposes of paying salary when on leave or pension after retirement, dollars are converted into sterling at the Government rate of exchange, which is at present 2s 4d to the dollar No change has taken place in this rate for the past 18 years and no alteration is contemplated so far as can be foreseen at present

6 After three years' satisfactory service an officer is usually placed on the permanent establishment

7 In the Federated Malay States, on quarters provided by the Government and on the furniture provided *a rent ranging between* $25 50 (£3 1s 10d) and $65 (£7 11s 8d) a month and depending on the salary and the class of the quarters is charged, while in the Straits Settlements the rent on all quarters is 6% of the officer's salary Quarters are usually available

8 Eight months leave on full pay with at present a free return passage is granted after every four years service and casual leave may be taken locally in addition Leave on full pay counts for pension

9 Free passages are provided on appointment Half salary only is paid on the voyage out

10 Information and advice generally regarding mode of life, climate cost of living outfit and other particulars should be sought from Sir F I Brockman K C M G The Malay States Information Agency, 88, Cannon Street, London, E C 4

Blackburn & East Lancashire
ROYAL INFIRMARY

THIRD HOUSE SURGEON (Male) wanted at a salary of £150 per annum with board residence laundry &c The Hospital contains 190 beds with X-ray and Massage Departments V D Department Pathological Laboratory Eye Ear Nose and Throat Department &c Last year there were 1 917 In patient Operations and 7-7 Out patient Operations There is no outside work

Applications with copies of testimonials stating age nationality experience &c. to be sent at once to the undersigned

Royal Infirmary, Blackburn — NATHAN A SMITH General Supt & Secretary

The University of Adelaide.

MARKS LECTURESHIP IN APPLIED PHYSIOLOGY AND SHERIDAN FELLOWSHIP

Applications are invited from graduates in Medicine for the above position

Applicants are requested to submit testimonials statement of academic qualifications published researches, and a recent photograph to the Vice Chancellor c/o Agent General for South Australia Australia House Strand, London The envelope containing the application should be marked "Application for Marks Lectureship Applications will not be received later than January 31st, 1925

The Lecturer will carry out his work under the general direction of the Professor of Physiology and Biochemistry He will be required to lecture and conduct practical classes and demonstrations in Mammalian Physiology, and in its applications to clinical Medicine, during two terms of approximately ten weeks each This course will form part of the third year of the Medical curriculum During the remainder of the academic year the incumbent will conduct research in Physiology and may from time to time be required to furnish a report on this research to the Council of the University

The salary will be £750 per annum If the successful candidate is appointed from beyond the Commonwealth of Australia the sum of £100 will be paid towards travelling expenses The appointment will be for a fixed term of 5 years, and will continue thereafter from year to year subject to six calendar months notice in writing on either side, given on or before June 30th

The gentleman appointed will be expected to take up his duties in Adelaide at the beginning of the second term namely, June 1st He will not be allowed to engage in private medical or surgical practice

Further information may be obtained from the Agent General for South Australia, Australia House Strand, London

University of London

The Senate invite applications for the UNIVERSITY CHAIR OF PATHOLOGY, tenable at the London (Royal Free Hospital) School of Medicine for Women Salary £800 a year Applications (12 copies) must be received not later than first post on January 29th, 1925 by the Academic Registrar, University of London South Kensington, S W 7, from whom further particulars may be obtained

West London Hospital,
Hammersmith Road, W 6

Required one HOUSE PHYSICIAN one HOUSE SURGEON and one AURAL HOUSE SURGEON and RESIDENT CASUALTY OFFICER (males) These three appointments are tenable for six months from January 1st next subject to one months notice on either side Salary £100 per annum with board, lodgings, and washing allowance

Candidates are required to be registered under the Medical Act to send four copies of their letters of application and four copies of each testimonial submitted so as to reach me by first post on Monday December 15th Selected candidates will be required to call upon such members of the Medical Staff as directed to be in attendance at a meeting of the Medical Council on Monday December 22nd at 1 p m , and the House Committee Meeting at 4 45 p m the same day, when the appointments will be made

NOTE.—Candidates applying alternatively for more than one of these appointments should send an additional four copies of application and testimonials for each post so applied for

H A MADGE *Secretary*

West Suffolk County Council

ASSISTANT COUNTY MEDICAL OFFICER OF HEALTH AND ASSISTANT SCHOOL MEDICAL OFFICER

Applications are invited for the above whole time appointment which includes duties in School Medical Inspection, Maternity and Child Welfare Tuberculosis, Venereal Diseases etc work Salary £600 per annum and travelling allowance

Applications on forms to be obtained from the undersigned and accompanied by copies of not more than three recent testimonials must be received not later than December 29th 1924

Canvassing in any form will be a disqualification

L G H MUNSEY,
Clerk of the County Council

Shire Hall *Bury St. Edmunds* December 8th 1924

Stroud General Hospital

HOUSE SURGEON WANTED

Candidates must be duly qualified and registered Salary £120 to £150, according to experience with board lodging and washing

The Hospital (50 beds) serves a population of about 40 000 in a manufacturing and agricultural district and is well equipped (X-ray, apparatus etc) V D Clinic. Applications with testimonials should be sent to the Honorary Secretary the Hospital, Stroud, on or before December 15th 1924

Hampshire County Council

ASSISTANT MEDICAL OFFICER OF HEALTH

The Hampshire County Council require the services of Assistant Medical Officer of Health qualified in Public Health and previous experience in health work bacteriology and pathology tuberculosis medical inspection of school children maternity and infant welfare or venereal diseases will be considered an advantage Salary £400 a year rising by increments to £750 subject to deductions under the Local Government Superannuation Act In addition to travelling expenses and subsistence allowances

Applications with copies of not more than three testimonials upon a form which with the conditions of appointment may be obtained from the County Medical Officer The Castle Winchester should be sent to him as soon as possible

The Castle, Winchester — R A HASTLE County Medical Officer

November 1924

Devonshire Hospital, Buxton,
Derbyshire (200 Beds)
(A special Hospital for Rheumatism and Allied Diseases.)

ASSISTANT HOUSE PHYSICIAN The Committee invite applications for this post to commence duties about Jan 1st 1925 The successful Candidate will be engaged for a period of not less than six months The appointment is not open to ladies Salary commencing £150 per annum rising to £175 after three months service with furnished apartments, board (except stimulants), and laundry Applications with copies of three recent testimonials, and read

Assistant House Physician to be sent in at once to eight Honorary a Bacteriologist, and two Resident pital contains a Department

Canvassing will disqualify

By order
TOM B HARRISON
General Superintendent and Secretary

St. Mary's Hospital,
London, W 2

OPEN APPOINTMENT

Applications are invited for the post of MEDICAL SUPERINTENDENT

The Medical Superintendent is the Senior Resident Medical Officer of the Hospital His duties are administrative and professional and include the charge of certain beds

Candidates must be qualified both in Medicine and Surgery and have held the post of Resident Medical Officer to some General Hospital

Tenure of post —the appointment is for one year the holder being eligible for re election for a second and third year

Inclusive salary £400 per annum, with board and residence provided

The successful candidate will be expected to commence duty as soon as possible in January

Applications to reach the undersigned not later than Wednesday December 31st 1924

W PARKES Secretary

St Mary's Hospital, W 2.

MEDICAL REGISTRAR

The Board of Management invite applications for the above post which will fall vacant on January 11th 1925

Candidates for the appointment must be registered Medical Practitioners and Fellows Members or Licentiates of the Royal College of Physicians or Graduates in Medicine of a University within British Empire

The salary is £200 per annum, with lunch and tea

Copies of the regulations for the Medical Staff may be obtained on application at the Secretary's Office

Applications with copies of testimonials to reach the undersigned before noon on Monday December 22nd 1924

W PARKES Secretary

Devon Mental Hospital

Required JUNIOR ASSISTANT MEDICAL OFFICER (Male) Candidates must be registered *Medical Practitioners and unmarried* Preference will be given to candidates who either have or are anxious to obtain a Diploma in Psychological Medicine Salary £300 per annum rising by £25 per year to £350 with board apartments and attendance The appointment is subject to provisions of the Asylums Officers Superannuation Act 1909

Form of application to be obtained from and to the Devon Mental Hospital Exminster must be returned completed on or before December 20th 1924

APPOINTMENTS—Important Notice.

(a) British Islands.

Medical Practitioners are requested not to apply for any appointment referred to in the following table without having first communicated with the Medical Secretary of the British Medical Association, 429, Strand, London, W C 2

CONTRACT PRACTICE.

ENGLAND

CANNOCK CHASE AND DISTRICT
(Clubs and Friendly Societies Appointments.)

MIDDLESBOROUGH
(Medical Aid Associations or Workmen's Clubs.)

SOUTH BANK & ESTON
(Medical Aid Associations or Workmen's Clubs.)

WALES.

ABERTRIDWR GLAMORGAN
Windsor Colliery (Medical Scheme.)

EBBW VALE MON
(Workmen's Medical Society)

GILFACH GOCH GLAMORGAN
(Workmen's Medical Scheme.)

LLWYNYPIA CLYDACH VALE PENYGRAIG GLAMORGAN
(Workmen's Medical Scheme)

MARDY GLAMORGAN
(Workmen's Medical Scheme.)

OAKDALE MON
(Medical Officer for Medical Aid Association.)

WALES (continued)

OGMORE VALLEY GLAMORGAN
(Wyndham Colliery Medical Aid Society.)
(Workmen's Medical Scheme.)

TONDU & ABERKENFIG GLAMORGAN
(Workmen's Medical Scheme.)

PUBLIC HEALTH

DULVERTON UNION
(Medical Officer of Workhouse and No 1 District)

EAST SUFFOLK COUNTY EDUCATION COMMITTEE
(Male Assistant School Medical Officer)

KENT EDUCATION COMMITTEE
(Woman School Medical Inspector)

LANARK COUNTY
(Medical Officer of Health.)

LINCOLN CITY EDUCATION AUTHORITY
(Woman Assistant School Medical Officer)

PUBLIC HEALTH (continued)

NORTHAMPTONSHIRE COUNTY COUNCIL
(Medical Officer of Health.)

NORTHUMBERLAND COUNTY COUNCIL
(Woman Assistant Medical Officer of Health.)

NUNEATON RURAL DISTRICT
(Medical Officer of Health)

SOUTHWARK METROPOLITAN BOROUGH
(Tuberculosis Officer)

STIRLING ROYAL BURGH
(Medical Officer of Health, Tuberculosis Maternity and Child Welfare and V.D Officer Police Doctor and Medical Attendant at Corporation Infectious Diseases Hospital)

SUTHERLANDSHIRE
(Medical Officer of Health, Tuberculosis Officer and School Medical Officer) (Combined post.)

WEST HAM COUNTY BOROUGH
(Assistant School Medical Officer)

WIGAN COUNTY BOROUGH
(Assistant School Medical Officer)

YORKSHIRE NORTH RIDING
(Assistant School Medical Officer)

(b) Colonial Medical Service.—WINDWARD ISLANDS MEDICAL SERVICE (Grenada with Carriacou St. Vincent and St. Lucia)

(c) Overseas Appointments.

Medical Practitioners are requested not to apply for any appointment referred to in the following table without having first communicated with the Honorary Secretary of the Division or Branch named in the second column or with the Medical Secretary of the British Medical Association, 429 Strand, London, W C 2

Town or District.	Hon. Sec. of Division or Branch	Town or District	Hon. Sec. of Division or Branch	Town or District.	Hon. Sec. of Division or Branch
NEW SOUTH WALES (All Friendly Societies Appointments.)	Dr. R. H. TODD (Hon. Sec. New South Wales Branch) B.M.A. Building 30-34 Elizabeth Street, Sydney N.S.W.	QUEENSLAND (Brisbane Associated Friendly Societies Dispensary.)	Dr. R. MARSHALL ALLAN Hon. Sec. Queensland Branch) Adelaide Street Brisbane	VICTORIA (All Institute or Medical Dispensaries.)	Dr. FRANK DAVIES (Hon. Sec. Victorian Branch) Medical Society Hall E. Melbourne Victoria.
				WESTERN AUSTRALIA (Contract and Lodge Practices.)	Hon. Sec. Western Australian Branch, No. 6 Bank of New South Wales Chambers, St. Georges Terrace Perth.

Address 429 Strand W C 2.
December 10th 1924

By order of the Council of the British Medical Association.
ALFRED COX, Medical Secretary

Queen Mary's Hospital
FOR THE EAST END Stratford E 15
Telephone Maryland 2616 & 2617
Beds 150 Out-patient Attendances 129 943.

HONORARY ASSISTANT PHYSICIAN

fo

to see out patients

Applications accompanied by copies of testimonials from candidates who must be duly registered practitioners either Graduates of [illegible] Royal the

Queen Mary's Hospital for
THE EAST END E 15

Applications are invited for the post of CLINICAL ASSISTANT to the Throat Nose and Ear Department

Candidates must be registered Medical Practi[illegible]

December 10th. 19[illegible]
RAPHAEL JACKSON (Major) Secretary

Addenbrooke's Hospital,
Cambridge

Applications are invited for the post of CASUALTY OFFICER AND RESIDENT ANÆSTHETIST (male The appointment will be for a period of six months from December 29th 1924 but is terminable at an earlier date by one month's written notice on either side Salary £130 per annum with board residence and laundry

Candidates who must be unmarried and duly registered are requested to forward their applications stating age qualifications etc together with copies of not more than four recent testimonials to the undersigned at the Hospital on or before Tuesday December 16th 1924

W H HEAD Secretary Supt

Royal South Hants and
SOUTHAMPTON HOSPITAL, Southampton

Required a SENIOR HOUSE SURGEON (Male Candidates must be doubly qualified and be willing to engage for Twelve Months Salary £200 per annum with room board and laundry A Venereal Clinic is established the emolument for which is £75 per annum

Duties to be taken up on January 19th 1925

Applications stating age with printed copies of testimonials (limited to five) to be sent to the undersigned by December 19th 1924.

T A. FISHER HALL,
December 4th, 1924 Secretary

Derbyshire Royal Infirmary

APPOINTMENT OF HONORARY ASSISTANT SURGEON

The Board of Management invite applications for the office of Honorary Assistant Surgeon to the Infirmary Candidates must be qualified in accordance with the Rules of the Institution Any further information may be obtained on application at the Infirmary

Candidates must send eighty copies of their application and testimonials (not more than five) which must be received no later than 10 a.m on Saturday January 3rd 1925

Candidates are prohibited from personal canvass but may send copies of their applications and testimonials to the Member of the Selective Committee By order

WALTER BANKS
Superintendent and Secretary

November 10th 1924

East Sussex County Mental
HOSPITAL, Hellingly Sussex

Pensioned PATHOLOGIST Salary £400 a attend [illegible] and Adams [illegible] (except laboratory Transit and out-patient duties to the Resident Physician and Medical Superintendent by the Chairman

Wanted, in Glamorganshire, a qualified ASSISTANT single, male must be temperate. Small colliery and panel practice State age, references, qualifications nationality, and when at liberty Salary £400 p a outdoor with rooms fire, light and caretaker provided The usual bond *If suitable* partnership in six months time —Address, No 6230, BRITISH MEDICAL JOURNAL Office, 429, Strand, W C

Wanted —Assistant, with view to partnership in Northern Colliery and seaport town Good salary and prospects to suitable man with some experience Cyclist and motor cyclist House or rooms available Interview essential Address, stating age, nationality, references and other essential particulars to No 6204, BRITISH MEDICAL JOURNAL Office, 429 Strand

Wanted —Indoor Assistant, near large Midland town Prospects to good man, single State particulars —Address No 6207, BRITISH MEDICAL JOURNAL Office, 429 Strand, W C 2

Wanted -Outdoor Assistant, January 1st Rooms, fire light and attendance Single, motor cyclist R C preferred Usual agreement Colliery £350 per annum *Photo —Address No 6217 BRITISH MEDICAL* JOURNAL Office, 129 Strand W C 2

Wanted —Assistant, outdoor, in mining district near Newport Mon Loyal, abstainer Scotsman Usual bond To commence Jan 1st. Particulars to No 6210 BRITISH MEDICAL JOURNAL Office, 129, Strand W C 2

Wanted —Junior Assistant (indoor), Manchester Industrial practice private and panel Salary £300 Usual bond —Address No 6232 BRITISH MEDICAL JOURNAL Office 129 Strand W C 2

Wanted by Scotch M B, aged 30, ASSISTANTSHIP with view to purchase, or six months PARTNERSHIP introduction to sound general practice in good provincial town or near large city Can take full charge of practice *Would suit doctor about to retire Income £1 000* to £1 400 —Add, No 6212, B M J 429, Strand

Wanted at once, Male ASSISTANT (outdoor) with view to Partnership in a Country Practice, with no mines or factories. Must be well experienced Apply, with full particulars Dr GORDON RICHARDSON, Brynceed Rhayader Radnorshire

Assistant, with view to PARTNERSHIP or Partner immediately if suitable in highly desirable country practice of £1 800 p a Welsh speaking well qualified gentleman preferable, with a liking for surgery keen and an abstainer —Address No 6215 BRITISH MEDICAL JOURNAL Office 429 Strand W C 2

Assistantship wanted by M R C S L R C P (Lond) D P H (Camb) woman in either town or country Aged 32 Experience in Diseases of Children, Tuberculosis Refraction Can drive car —Address No 6027 BRITISH MEDICAL JOURNAL Office 429 Strand W C

Assistantship wanted by M B, Ch B D P H, woman Experienced in general practice and hospital Keen on midwifery Motor cycles and drives car Free in January —Address No 6219 BRITISH MEDICAL JOURNAL Office 129 Strand W C 2

Assistantship, permanent or temporary required by experienced medical man *Conscientious capable young*, reliable and of good address Cyclist Accustomed to take sole charge Terms very moderate Excellent testimonial —Address No 6218, B M J 429 Strand

Lancashire or Cheshire — ASSISTANTSHIP, with a view to PARTNERSHIP in a panel practice wanted by M B (married) Some capital later —Address No 6216 BRITISH MEDICAL JOURNAL Office 129 Strand W C 2

M.B, Ch.B, M R C S, L R C P (woman) recently qualified aged 27 requires ASSISTANTSHIP with or without view to small PARTNERSHIP Healthy energetic good personal appearance Good testimonials Cycle drive car —Add No 6208 B M J Strand

M.B, Ch B (Edinburgh), desires ASSISTANTSHIP or LOCUM Aged 27 tall energetic Good knowledge midwifery A D anaesthetics etc Experienced in G I Now free —Address No 6221 BRITISH MEDICAL JOURNAL Office 429, Strand W C

M.B, Ch B (Glas), man, single, desires ASSISTANTSHIP indoor or outdoor would do Locum Ex service aged 30 Scotch, and abstainer keen and energetic hospital and dispensary exp, drive cycle or car good tests Now free —Address, No 6229 B M J, 429, Strand

Medical Radiology and Elec- TROLOGY TUITION practical and oral, by experienced man London W 1 Either privately or in class (at reduced fee)—Address, No 6224 BRITISH MEDICAL JOURNAL Office, 429, Strand W C 2

North Wales- Country Practice outdoor ASSISTANT required Welshman preferred Rooms provided In replying state age, previous experience whether able to drive car or motor cycle and other essential particulars —"X" c/o R SUMNER & Co, LTD, Wholesale Druggists Liverpool

£400 to £500 (according to experience) Outdoor ASSISTANTSHIP in Nottinghamshire Hospital and/or G P experience essential Aged 28 upwards —G M A Ltd 12 Victoria St Nottingham

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Note —It is against the Rules of the Post Office to receive *poste restante* letters addressed either in initials or numbers

Doctors requiring Lady DISPENSERS should write to Mr J B WALDEN Westminster College 112 St. George's Road, S E 1 (only address) No fees to Doctors 25 years experience Daughters and other relatives of medical men always in training

Doctor's Widow, aged 28, requires post as SECRETARY Thorough knowledge shorthand typewriting and secretarial duties Excellent references —Address No 5927 BRITISH MED JOURNAL Office 429 Strand W C 2

Lady Driver, nine years' experience wishes POST in Birmingham district Business or private car —Address No 6202 BRITISH MEDICAL JOURNAL Office 429 Strand W C 2

FOR A RELIABLE
LOCUM TENENS OR ASSISTANT
APPLY TO
ARNOLD & SONS,
(JOHN BELL & CROYDEN, LTD)
50/2, WIGMORE STREET, W 1
Mr W H GRANT, Manager
Telephone LANGHAM 3000 *Telegrams* INSTRUMENTS WESDO LONDON

Locum wanted in a General Practice in Midlands, from January 16th to March 13th to act during absence of one principal Must be reliable capable and have good references —Address with full particulars, No 6213 BRIT MED JOUR Office 429, Strand W C

M.R C S, L R C P (Male), aged 27 with short experience G P desires LOCUM TENENCY or ASSISTANTSHIP for Christmas and New Year, or for longer period —Address No 6220 BRITISH MEDICAL JOURNAL Office 429 Strand, W C 2

15/- per diem —An experi- enced Doctor who has had own Practice and now does some ten Locums annually will UNDERTAKE ENGAGEMENTS of any length, locum or otherwise Lond preferred Well recommended —Address MEDICUS 38 Talbot Rd Bayswater W

FOR LOCUM TENENS APPLY TO
MR PERCIVAL TURNER
The oldest and only Agent who for 10 years has supplied substitutes at short notice without fee to principals
1 ADAM ST STRAND, LONDON W C 2
Tel Temple London Phone Gerrard

Wanted by M.B, B.S Lond class D P H hosp, PARTNERSHIP in a knowl 33 Pu etc. Has held Pathological appointments L hospitals 3½ years, and has done consulting w London —Add, No 6201, B M J, 429, Stra

Wanted —Partnership o PRACTICE £1 000 income, by ret retired I M S Officer in Surrey, Sussex or K kent. Good class in pleasant surroundings Address, No 6231 BRITISH MEDICAL JOU Office 129, Strand, W C

Wanted, a Partnership in

Tredegar Chambers Queen's Square Newport, M

Wanted by M B Camb F R C S, D P H aged 33, a good cl PARTNERSHIP in the South of England Inc £800 up Now free and can pay cash — c/o BLUNDELL & Co, 22, Craven St, Strand, W

A Partner in a good-class non panel old established PRACTICE Is required Receipts nearly £3 000 and capable increase One third share would be sold at t years purchase Incoming partner must be we qualified keen on Surgery and preferably H S a H P —Address No 6211 BRITISH MEDIC JOURNAL Office 429 Strand, W C 2

Dorset —Half Partnership i *Country Practice of over £1 000, with gre* scope Nice house good garden garage £20 su young man Price 3½ years purchase Really d trict plenty of sport —MANCHESTER MEDICAL SCHOLASTIC ASSOCIATION 6 Brown Street

For Sale —Partnership abou £1 250 p a increasing Panel and contra house available low expenses premium by ye purchase —HAROLD GRIFFITHS & Co Tredeg Chambers Queen's Square Newport Mon

Partner wanted —Shor Preliminary Assistantship Must be capa Surgeon, preferably F R C S South Coast To Sussex —Address full details to No 5419 BRITI MEDICAL JOURNAL Office 429 Strand W C

Partnership —Home County In prosperous and increasing residential town and pleasure resort Good class Pri PRACTICE Receipts say £4 000 p a Two-fi share, up to a half later Senior Partner retiri One and a half years purchase —Apply, Mr J RESIDI The Medical Agency Watergate Hou Adelphi W C 2

Partnership, wanted by M B B Ch part share in mixed general practi in or near London preferable Has had experience in general practice Young and married Capital available £1 100 Free n Address No 6233 B M J Office, 429 Strand W

Wanted —Practice £2,00 p a including panel Good detached ho garden garage absolutely essential tennis lawn rental preferred Details strictest confidence ca available at once not North or Wales —Addre No 6228 BRIT MED JOUR 429 Strand W C

Wanted —General Practic £1 000–£1 500 in Scotland by Edi burgh graduate of experience Capital available Address No 6223 BRITISH MEDICAL JOURN Office 429 Strand W C 2

Wanted —General Practic or PARTNERSHIP London or Sub Income £1 000 a year or more Purchase c invest up to £3 000 If necessary —Apply PEACOCK & HADLEY 19 Craven Street Stra W C 2 (*No charge unless sale effected*)

Wanted —Small Practice i Thornton Heath or district Lond preferred No panel or midwifery —Ad *No 6225 BRITISH MEDICAL JOURNAL O* Strand W C

Wanted, Electro-therapeut PRACTICE PARTNERSHIP or LOCU in West End by experienced provincial Spe who is prepared to dispose of whole or p present (Northern) practice —Address BRITISH MEDICAL JOURNAL Office 429 Str

Wanted — Provincial or Country Town—about 20 000 inhabitants—PRACTICE non-panel preferred about £2 000 Good house ample accommodation Applicant must complete immediately Details in confidence to No. 5432 c/o Mr PERCIVAL TURNER, 4 Adam street, Adelphi W C

Wanted—Country or Country Town PRACTICE returning from £1 000 to £2.000 a year Good house with garden. Purchaser ca ice.—Apply [illegible] CACOCK [illegible] et Strand W C

Wanted by experienced practitioner general PRACTICE in good Country Town Good detached house and garden essential Ample capital. No Agents.—Address No 5928, BRITISH MEDICAL JOURNAL Office 429 Strand W C.2

Wanted — Yorkshire preferred private and panel PRACTICE with House. Capital £2.500 —Address No. 6206 BRITISH MEDICAL JOURNAL Office, 429 Strand W C.2

Birmingham District — Wanted a PRACTICE with panel income £1 000—£1 500 particulars in confidence — MEDICO 218 Moseley Road Birmingham

Cheshire — Required immediately Country PRACTICE price £1.000 to £1 200 Good house (6 bedrooms) to rent essential Sanitation or Suburban districts preferred —Address No 6205. BRITISH MEDICAL JOURNAL Office 429 Strand W C

Death Vacancy — Manchester suburb Receipts about £1.800 Nice house garden garage purchase or lease No panel but great scope for same. Part payment by instalments —MANCHESTER MEDICAL & SCHOLASTIC ASSOCIATION Ltd 6 Brown Street.

For Sale — Old-established lucrative PRACTICE, in attractive town Population about 20 000 all classes private and panel. Income £2.500 per annum. Good opportunity for major surgery Terms if years purchase part by instalments to anyone of undoubted integrity) No agents —Address No 5629 BRITISH MEDICAL JOURNAL Office 429 Strand W C.2.

For Sale — (1) Suburban Practice and House in Western City (easy terms) (2) Two South Coast Nursing Homes Devon and Dorset (3) Two Cornish Rural Practices and Houses — WESTERN TRIPLE AGENCY Woodfield Rd Torquay

For Disposal — A good Prac-

London, East — Panel £1,200, private £300 radius 2 miles hospital 9 miles House garage (no car needed) Easy one man PRACTICE owner retiring Premium £2.300 — Address No 6209 BRITISH MEDICAL JOURNAL Office, 429 Strand W C 2

Lancashire Practice for sale Panel 900 Income about £1,700 Well appointed house with surgery complete also garage for two cars (property of vendor) —Apply "U W" HOLGH HOSEASON & Co Ltd Manchester

Old established Practice for sale with house in Leed Excellent opportunity for a young man —Apply S H A c/o JAMES WOOLLEY SONS & Co Ltd. P O Box 541 Manchester

Practice for Sale on South Coast Old-established Exceptional opportunity picked district best introductions by vendor purchaser should be M.D London and M R C S if possible. Full particulars to principals only from EDWARD S licitor Leadenhall House London

Splendid Practice for Sale, in good Cheshire Splendid opportunity absolutely genuine — D B F HOUGH HODGSON & Co Ltd Manchester

To Purchasers — Do not Buy without expert assistance With 40 years experience Mr PERCIVAL TURNER can advise in all cases Terms free on application to 4 Adam Street Strand W C Telephone Gerrard 399 Telegrams Lipsomian London.

Ophthalmic Practice — East-ern Counties — For immediate SALE the Practice of the late SIDNEY JOHN TAYLOR, M D of the City of Norwich who had an extensive practice throughout the Eastern Counties as an ophthalmic surgeon and specialist Established over 30 years Expenses small Certified figures can be given for the last 10 years. A very excellent opportunity for the right qualified man — Apply DANIEL HAVERS Solicitor 14, Bank Street Norwich

Unopposed Country Practice, agricultural and residential charming countryside within easy reach of several large towns. Average £1.350 per annum Small panel and other appointments Convenient House at low rental.—Apply No 6226 B.M.J Office 429 Strand

X-Ray and Electro- THERAPEUTIC PRACTICE wanted (or Partnership) by D M R E Informal on treatment as strictly confidential —Address No 6203, BRITISH MEDICAL JOURNAL Office 429 Strand W C.

North of England — Old-established Country Town PRACTICE Average receipts £1.460 Good panel Expenses small Good house garden tennis lawn and hard —LEE & MARTIN Ltd 21 Temple Row Birmingham

Large industrial and middle-class PRACTICE Panel over 2 000 Average receipts £2.700. Well established and easy to manage Very suitable house easy to run Separate professional accommodation. Ill health reason for selling Partnership introduction for about three months or possibly longer Reasonable price for quick sale.—LEE & MARTIN Ltd

West Midlands — Old-estab Town and Country PRACTICE in a County

Napsbury Mental Hospital, Nap bury st Albans

FOR DISPOSAL.

The Committee of this Hospital have a Manchester Vulcanite Disinfector two Pressure Washing Machines Vertical and Steam cles may be seen at any time except Saturdays and Sunday between the hours of 10 and 4

Detailed lists may be obtained on application to the Clerk and Steward and offers should be sent not later than December 31st 1924

Wanted — Pluviostat or PANTOSTAT UNIVERSAL MACHINE for A C or D C also BARNET PORTABLE VIBRATOR Second hand — Address (giving full particulars) No 5201 BRITISH MEDICAL JOURNAL Office 429 Strand W C 2

Wanted, any pieces Antique SILVER, CHINA FURNITURE GLASS PORTFOLIOS JEWELLERY LACE Good prices given. — Address, Collector No 6214 BRITISH MEDICAL JOURNAL Office 429 Strand W C

For Sale — Universo Machine 220— 40 volts D C, by H W Cox & Co Ltd Cautery Light Sinusoidal Faradization and Galvanization New Mill Amp Meter and Parts £20 or nearest offer —THE URBAN ELECTRIC SUPPLY Co Ltd Caterham Valley

For Sale — Gentleman's smut Black OVERCOAT Lined brown musquash fur Large collar Persian lamb Perfect condition 20 guineas Seen by appointment.—Write J P CURWEN 29 Market Street Shepherd Market Mayfair W 1

Med and Surg Sundries (new and secondhand) also Gov Surp. Maj Op Outfits £10 Stethoscopes from 10 Spencer Wells Forceps 2 6 Wool 2 oz. Comp plts 1.4 lb Iod Catgut 6 tubes 1/6 Sterile Silk or Catgut 1 tubes 1 — A. W AUTY 81 Swinderby Road, Wembley

Consulting Room with use of Waiting Room and Bedroom, unfurnished with service wanted by medical woman near Harley Street. — Address No 6222. BRITISH MEDICAL JOURNAL Office 429 Strand W C 2

Harley St — Large beautifully furnished CONSULTING ROOM first floor back part time With or without phone Also second floor front — Address No 6227 BRITISH MEDICAL JOURNAL Office 429 Strand W C 2

To Let — Large Consulting ROOM first floor Grosvenor Street New house passenger lift Excellent service Three years lease or longer Free now —Box 383, SCRIPPS'S South Molton Street W 1

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Medical Men requiring DISTINCTIVE DRESS can secure Perfectly Tailored Clothes OF UNEQUALLED VALUE Fine Quality Materials Best Workmanship only

SPECIAL OFFER.

JACKET & VEST (in Black or Grey) £4 4s.
SOLID WORSTED TROUSERS, £2 2s
An Ideal Suit for Professional or Evening Wear
OVERCOATS (ready to wear) £5 5s. SUITS from £5 5s.
MOORLAND JACKET & PLUS FOURS from £6 6s.
Two expanding pleats. Perfect arm freedom
An IDEAL Coat for ALL Sporting Purposes.
DRESS SUITS fr £3 3s. RIDING BREECHES fr £2 2s.
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Bournemouth — Eminently situated for Professional Man or Contrasted Home COMMODIOUS HOUSE 20 rooms, bathroom and offices on ground floor 8 rooms bathroom and offices on two floors above South aspect Good etc. Good ease. Gl 4 4 rooms £175 p.a. Full particulars from agents The

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City of Bradford

Applications are invited for the following appointments —
SENIOR DENTAL OFFICER salary £650 per annum.
ASSISTANT SCHOOL DENTIST salary £450 per annum plus war bonus (at present £33 16s. 0d per annum)
Forms of application may be obtained from the Medical Officer of Health Town Hall Bradford and should be lodged with him not later than December 29th, 1924
S. L. PLEMING Town Clerk
Town Hall Bradford December 4th 1924

St Andrew's Hospital, Dollis Hill London.

Aurist-laryngologist (hon.) to the LIVERPOOL HOSPITAL. Apply stating age and [illegible] experience to the SECRETARY Hope Street Liverpool

Brighton Parish.

APPOINTMENT OF MEDICAL OFFICER.

The Guardians invite applications for the appointment of Medical Officer of their Poor Law Institution and Infirmary Elm Grove, and of the Warren Farm (*Poor Law*) *Schools*.

STATISTICAL INFORMATION

	Accommodation for	Present numbers	Resident Staff
Poor Law Instn (House, &c.)	490	299	27
Mental Wards	100	88	
Infirmary	477	317	56
Warren Farm Schls	300	295	30

Applicants must be duly qualified Medical Practitioners and possess the degree of F R C S, and be capable of performing major operations at the Infirmary

Candidates, whose age should not exceed 40 years, must have had experience in the work of a General Hospital

The successful candidate will not be permitted to engage in private general medical practice or to hold any other salaried appointment but he will be permitted to practice in operative surgery

The combined salary assigned to the appointments is £800 per annum, upon which no bonus will be paid

The successful candidate will also be appointed Public Vaccinator for the Poor Law Institution

The appointment will be made subject to the approval of the Ministry of Health and the provisions of the Poor Law Officers Superannuation Act 1896

The duties of the appointment will include the general medical and surgical control of both Institutions, responsibility for the efficient training of the Nurses in accordance with the requirements of the General Nursing Council and the carrying out generally of all orders of the Ministry of Health applicable to his office

In the event of the existing Infirmary at the Poor Law Institution being subsequently declared by the Ministry of Health to be a separate Infirmary, the Medical Officer must be prepared to accept the appointment of Medical Superintendent thereof, *without alteration of salary or compensation for* loss of office

A qualified Assistant Medical Officer resides at the Infirmary

Form of application, together with a list of duties, conditions of appointment, &c may be obtained by forwarding me a stamped addressed foolscap envelope which form duly filled up in the candidates own handwriting must be returned to me not later than 10 o clock in the forenoon of Wednesday, December 31st 1924

Canvassing the Guardians either directly or indirectly will be considered a disqualification for the appointment

By Order

Poor Law Offices, Prince s Street, Brighton — HORACE BURFIELD, Clerk to the Guardians, December 8th 1924

St. Pancras Dispensary,

39, Oakley Square, N W 1

There is a vacancy for the post of HONORARY PHYSICIAN to attend this Dispensary one day each week Every candidate must be a Member or Fellow of one of the Royal Colleges of Physicians and a Graduate in Medicine of one of the Universities of Great Britain or Ireland and not practising Pharmacy

There is also a vacancy for the post of HONORARY OPHTHALMIC SURGEON to attend this Dispensary one day each week Every candidate must be a Fellow of one of the Royal Colleges of Surgeons of Great Britain and Ireland and not practising Pharmacy

Applications and testimonials to be sent to the Honorary Secretary H PETER BODKIN, 2, Endsleigh Street Tavistock Square W C 1, on or before the December 29th, 1924 The election will take place on January 9th 1925

West Bromwich and District

HOSPITAL (100 Beds)

Wanted a RESIDENT ASSISTANT HOUSE SURGEON (Male) He must be doubly qualified and unmarried Salary £180 per annum, with board residence, and washing

Applications stating age and if possessing a knowledge of Ophthalmic Surgery and accompanied by copies of testimonials should be sent to me on or before December 18th, 1924

By Order

FRANK I HANCOCK
Secretary & Superintendent

The Royal Masonic Institution

FOR GIRLS, Clapham Junction.

The House Committee invite applications for the post of NON RESIDENT MEDICAL OFFICER to the above Institution. Salary £350 per annum.

Applications stating age, qualifications, etc with not more than three recent testimonials, should be addressed to the Secretary at the Offices of the Institution 21 Great Queen Street, London, W C 2, not later than January 2nd, 1925

Manchester Royal Infirmary.

SECOND SURGICAL REGISTRAR

The Board of Management of the Manchester Royal Infirmary invite applications for the above appointment

Applicants must be registered and hold a medical and surgical qualification, and are required to devote the hours of 10 a m to 1 p m (Sundays excepted) to the duties of the post

The appointment (non resident) is for one year, renewable for a further period of one year subject to the provisions of the bye laws as to notice

Salary at the rate of £150 per annum

Applicants must state age, and address their applications and testimonials to the Chairman of the Medical Board by Saturday Dec. 20th 1924

(By order), FRANK G HAZELL.
Dec 5th 1924 — Gen Supt and Secretary

Chelsea Hospital for Women,

Arthur Street, Chelsea, S W 3

A vacancy has occurred for the post of SURGEON to the Hospital Candidates must be Fellows of the Royal College of Surgeons of England Edinburgh, *or Ireland They must be registered under the* Medical Act, and engaged in Consulting Practice only

The Senior Surgeon to Out patients is a candidate for the post If he be elected there will be a vacancy for a SURGEON to Out-patients Candidates for this appointment must be qualified as above

Applications must be sent accompanied by three testimonials, to the undersigned on or before Friday, January 2nd next

HERBERT H JENNINGS Secretary

St. Bartholomew's Hospital.

ASSISTANT IN THE SURGICAL PROFESSORIAL UNIT

Applications are invited for the above post Candidates for the post should be trained in bacteriology

Appointment will be made for one year from January 1st, 1925, with eligibility for re election

Particulars, as to duties, etc, can be obtained from the undersigned, with whom applications must be left on or before December 27th, 1924

THOMAS HAYES,
December 8th, 1924 — Clerk to the Governors

St. Bartholomew's Hospital.

ASSISTANT IN THE MEDICAL PROFESSORIAL UNIT

Applications are invited for the above post

Appointment will be made for one year from January 1st, 1925, with eligibility for re election

Particulars as to duties, etc, can be obtained from the undersigned with whom applications must be left on or before December 27th 1924

THOMAS HAYES
December 8th 1924 — Clerk to the Governors

Birmingham City Fever

HOSPITALS

ASSISTANT MEDICAL OFFICER (male), wanted immediately for service at the City Hospital, Lodge Road Commencing salary £400 per annum rising to £500 by annual increments of £30 with usual residential emoluments

Applications stating previous hospital appointments and War service should be sent together with copies of three recent testimonials as soon as possible to Dr E H R HARRIES, Medical Superintendent, City Hospital, Little Bromwich, Birmingham

Royal Waterloo Hospital for

CHILDREN & WOMEN, Waterloo Rd, S E 1

Applications are invited from qualified male practitioners for the following post vacant on January 1st, 1925 Non resident CASUALTY OFFICER to work in the Out patient Department on weekdays at £150 per annum, lunch and tea provided Applications with copies of testimonials should be forwarded by Monday December 15th to the Secretary at the Hospital from whom further particulars can be obtained

The Montreal General

HOSPITAL, 20 Dorchester Street, East, Montreal

ROENTGENOLOGIST

Applications will be received for the position of Roentgenologist to the above mentioned Hospital Address Superintendent stating qualifications

Applications are invited by

the Committee of THE WEIR HOSPITAL Grove Road Balham S W 12 for the appointment of HONORARY VISITING PHYSICIAN Further information may be obtained from the Secretary at the Hospital

All Saints' Hospital

GENITO URINARY DISEASES

Out patient Dept and Offices 49-51, Vauxhall Bridge Road S W 1

In patient Dept., 91, Finchley Road, N W 3.

RESIDENT SENIOR HOUSE SURGEON required on January 1st next for a period of 6 months Salary £200 per annum together with board lodging and laundry

NON RESIDENT JUNIOR HOUSE SURGEON required on January 1st next for a period of 6 months, at the expiration of which time he may be elected to the Senior Office, subject to the approval of the Board of Management. The duties comprise attendance in the Out-patient Department every afternoon, and three evenings weekly Salary £100 per annum

Applications stating age, experience, qualifications and enclosing copies of testimonials should be sent to the Secretary on or before December 15th

D H RADE Secretary

Dumfries & Galloway Royal

INFIRMARY.

Applications are invited for the post of JUNIOR RESIDENT MEDICAL OFFICER *(male)*, at the above Infirmary The Institution which contains over 100 beds, is one of the premier provincial Hospitals in Scotland, and offers exceptional opportunities of gaining experience in all branches of the profession Period of engagement, twelve months from February 1st next Salary £125 per annum

Applications, with testimonials, to be forwarded to the Treasurer, Dumfries & Galloway Royal Infirmary, 84, Irish Street Dumfries, by Dec. 15th, 1924

Bristol Royal Infirmary.

Applications are invited for the post of HONORARY REGISTRAR to the Ear Nose and Throat Department Candidates who must be Doctors of Medicine or Graduates of one of the Universities of Great Britain or Ireland, or Members or Licentiates of the Royal College of Physicians of London, Edinburgh or Ireland to send in their application together with copies of testimonials to the undersigned on or before December 20th 1924.

ELLIS G SMITH, F C I S, *Secretary*

Ingham Infirmary,

South Shields

Wanted SENIOR HOUSE SURGEON (Male) Salary £200 with residence board and washing No out visiting Candidates must hold registered qualifications in medicine and surgery The appointment will be terminable by one months notice Applications stating age and accompanied by copies (which will not be returned) of recent testimonials to be sent to the undersigned, from whom further particulars may be obtained

JOHN POTTER, Secretary

Merthyr General Hospital,

Merthyr Tydfil.

Applications are invited for the position of RESIDENT HOUSE SURGEON for a period of six months at the Merthyr General Hospital (80 beds) Salary at the rate of £100 per annum, with board and laundry

Applications, to be endorsed "House Surgeon" to be sent to the Secretary E LEWARDS Merthyr General Hospital Merthyr Tydfil.

Preston Royal Infirmary.

There is a vacancy for a JUNIOR HOUSE SURGEON (male doubly qualified and registered Previous experience will be a recommendation.

Salary £175 with board, residence and laundry

Applications together with copies of three testimonials to be forwarded to the undersigned one before 17th instant

JOHN GIBSON
Superintendent and Secretary

Willesden General Hospital,

Harlesden Road N W 10

PATHOLOGICAL LABORATORY ATTENDANT required

Applications including copies of testimonials and stating particulars of experience salary required and date when available to commence duties to be sent addressed to the Secretary *immediately*

December 8th 1924

House Surgeon (Male) wanted

for ILFORD EMERGENCY HOSPITAL 34 Beds fully qualified and registered Salary at the rate of £150 a year with board and residence in the Hospital *Duties to begin* Jan 11th Applications stating age qualifications experience and accompanied by two copies of three recent testimonials to the Secretary of the Medical Committee Emergency Hospital, to be sent before December 20th, 1924

County Borough of West HAM

APPOINTMENT OF TUBERCULOSIS OFFICER

Applications are invited for the appointment of TUBERCULOSIS OFFICER (Male) who will be attached to the Public Health Department and will be required to work under the administrative control of the Medical Officer of Health and to supervise the work of the Assistant Tuberculosis Officer

The salary will be at the rate of £900 per annum inclusive

The gentleman appointed must be a Registered Medical Practitioner have had Resident Hospital appointments and have had special experience in the diagnosis and treatment of Tuberculosis and in administration He will be required to devote the whole of his time to the duties of the office

The appointment will be subject to the provisions of the Local Government and Other Officers Superannuation Act 1922 and to a Medical Examination as required by the Council for the purposes of that Act, and the statutory contributions to the Superannuation Fund under the Act will be deducted from the salary

Application on the form provided (which will be forwarded by the undersigned on receipt of a stamped addressed foolscap envelope) must reach me not later than Saturday December 20th 1924

Applicants must be Members of a Recognized Medical Organisation

Canvassing Members of the Council is prohibited and will disqualify

By Order

GEORGE E. HILLFARY
Town Clerk

Nov 29th 1924 Town Hall Wes Ham E 15

County Borough of West BROMWICH

ASSISTANT MEDICAL OFFICER OF HEALTH AND ASSISTANT SCHOOL MEDICAL OFFICER

time to Maternity and Child Welfare work including the Inspection of Midwives

(b) Every third week end for duty at Fever Hospital and Bacteriological Laboratory

(c) To devote whole time to the duties of the office and will not be allowed to engage in private practice

Salary £600 without bonus.

The D P H Diploma is preferable but not essential.

All candidates must have been qualified for at least three years and preference will be given to applicants who have had—

(a) Special opportunities for the study of Children

(b) Experience in an ante-natal Maternity and Child Welfare work and

(c) General Practice

Assistant Medical Officers more than three years since qualification to obtain this appointment must apply on form to be obtained from the undersigned not later than Dec 15th 1924

Town Hall ALFRED WICKHAM
Wes Bromwich Town Clerk
December 1st 1924

Telephone: Langham 2728.
Telegrams: Assistamo London

NURSES

MALE OR FEMALE

TRAINED NURSES FOR MENTAL, MEDICAL, SURGICAL AND FEVER CASES

Nurses reside on the premises and are available for urgent calls. Day or Night.

THE NURSES' ASSOCIATION
(In conjunction with the MALE NURSES ASSOCIATION)
29 York Street, Baker Street, London, W 1
(Mrs) MILLICENT HICKS Superintendent.
W J HICKS Secretary

York Road (General Lying-

[illegible] Practitioners admitted to the Practice of this Hospital Telephone 94 Central For rules fees, etc apply ROSE E WHITE, Secretary

ESTABLISHED 1869

PEACOCK & HADLEY,
(Mr A HADLEY)
MEDICAL TRANSFER AGENCY,
19, Craven Street, Strand, W C 2.
Telegrams Herbaria Westrand London
Telephone Central 111

[illegible] tion No charge made unless a sale be effected.

LOCUM TENENS and ASSISTANTS supplied

FOR SALE.

1 NORTH BRITAIN —Old established Family and General PRACTICE Receipts nearly £2,000 a year Fees from 2 6 to 10 6 medicine extra Scope for surgery Good house (11 rooms) large garden stabling etc £[illegible] purchase

2 PRACTICE of an pleasant dis[illegible] garden etc

3 Freehold and Practice for sale together

4 MIDLANDS —Country PRACTICE situate in a delightful agricultural and residential district Receipts average £1,500 a year Panel 1,000 Good detached house with large garden etc Free hold for sale with Practice

5 CHESHIRE —Small Residential Town. Good class General PRACTICE returning £1,500 a year Good residence (8 bedrooms) garden and garage Rent £84 Premium 1½ years purchase

6 YORKS —Small PRACTICE with great possibilities situated in large Town Receipts £1,000 per annum Panel 1,200 Modern detached house (8 room freehold House and Practice for sale on easy terms

7 S E LONDON —General and Panel PRACTICE yielding over £2,000 a year Panel 1,[illegible] Very good house with large garden To be let or sold Good introduction Premium 1 years purchase

8 MIDLANDS —Small Industrial Town PRACTICE returning about £2,500 p a Panel [illegible]

9 [illegible]

LEE & MARTIN, LTD.,
THE BIRMINGHAM MEDICAL AGENCY
71 TEMPLE ROW, BIRMINGHAM.

TELEGRAMS Locum Birmingham TELEPHONE 1116 Central, Birm.

Transfers of Practices and Partnerships arranged

Accounts Investigated. Income tax Returns prepared.

LOCUMS AND ASSISTANTS SUPPLIED

MR. HERBERT NEEDES,
31, BEDFORD ST., STRAND W C 2.
(Gerrard 33 3.) (Estab. 1311)

This Agency (the Oldest in the Kingdom) undertakes the SALE of PRACTICES and PARTNERSHIPS AUDITS and VALUATIONS and the SUPPLY of LOCUMS and ASSISTANTS

No Charge to Purchasers. All Business receives Mr NEEDES' personal attention

G. M. A.
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Outdoor ASSISTANTSHIP vacant as advertised elsewhere Industrial PRACTICE for sale in West Ridings Write or phone for your LOCUM during Christmas Holidays

Telephone 5334 & 5335.
Telegrams "LACIDEM," NOTTINGHAM.

ST. LUKE'S HOSPITAL.
ESTABLISHED 1751

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TRAINED NURSES for MENTAL and NERVOUS CASES can be had immediately Apply to LADY SUPERINTENDENT 16 Nottingham Place London W 1. Telephon[illegible]

NORTHERN BRANCH —Apply LADY SUPERINTENDENT Clarendon Rd. Leeds. 'Phone Leeds 2[illegible]

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LANGHAM 3000
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LOCUM TENENS provided at short notice

FOR SALE

LONDON S W —suburban G P —Main road position Panel nearly full Old established Income £1,200 Valuable lease to rent Premium £[illegible] for half

HUNTS —NUCLEUS —Country Non-panel Income over £300 p a Excellent residential position for retirement of partner Premium £1,500 to include house

LONDON N W —suburban G P Panel nearly full Income £1,700 Valuable lease to rent Premium 1 years purchase

LIVERPOOL (Growing suburb) —Suburban G P Panel nearly full Income £212 Freehold House (8 beds) Premium £1,150 to include house

LONDON S E —Suburban G P Panel full Average income £2,353 Opportunity for well-connected free-holder Premium £3,500 cash House if required

DORSET —PARTNERSHIP in Established G P (Hospital in town) Panel nearly full Appointments £140 Average income over £2,000 House at rent or lease Two-thirds share 3 years purchase Assistantship Vacancy Graduate aged [illegible]

LONDON W —PARTNERSHIP —Suburban G P Panel full Average income £1,700 House to rent or lease Premium £1,450 half share cash)

CHESHIRE —Old established Subscription Country Practice in Town Excellent detached house Panel nearly full Gross income £2,329 p a Premium £4,000 cash, including house

SOMERSET —Old-established Country G P Panel over 600 Income £600 Excellent sport hunting, etc Good centre for young practitioner Premium 1 years purchase

SOUTH COAST —Well established NUCLEUS G P in well-known east resort Income £500 (increasing) Panel full Good fees. Small house to rent or for sale Premium £1,000

Purchasers stating their requirements will be sent particulars of other suitable Practices and Partnerships for sale, free of charge

Please address all communications to the Manager Mr W H. GRANT Medical Transfer and Insurance Department.

THE MEDICAL AGENCY,
WATERGATE HOUSE,
York Buildings, Adelphi, W C 2.

Managing Director J A REASIDE
Telegrams [illegible] Telephone
TURRECK, LONDON GERRARD 1[illegible]

The Agency undertakes the Transfer of Practices, Introduction of Partners, Investigations of Purchasers, Valuations, Negotiation of Terms, the Supply of Locum Tenens and Assistants, and Medical Accountancy

THE MANCHESTER MEDICAL AND SCHOLASTIC ASSOCIATION, LTD.,
6 BROWN STREET

Telegraphic address "[illegible]" Telephone 932 C[illegible]

TRANSFERS and PARTNERSHIPS arranged Valuations made Investigations undertaken

ASSISTANTS & LOCUM TENENS SUPPLIED

PRACTICES [illegible]

BOVRIL MEDICAL AGENCY, Ltd.

ALDINE HOUSE,

10-13, BEDFORD STREET, STRAND, LONDON, W.C.2.

Telegrams BOVMEDICAL, WESTRAND LONDON *Telephone* GERRARD 3543 (3 Lines).

Established by Bovril, Limited, to provide an efficient and reliable transfer service for the Profession at minimum Charges.

Under the personal direction of Dr. J. FIELD HALL, and Mr. J. C. NEEDES.

An Accountant's certified report is required in respect of every practice or partnership the disposal of which is undertaken by the Agency

The commission chargeable in respect of any practice in Great Britain placed exclusively in the hands of the Agency for transfer has been fixed on an exceptionally favourable scale, the maximum chargeable on any transfer being fifty pounds (£50). In the case of Foreign and Colonial practices similarly placed the maximum is seventy-five pounds (£75).

NO CHARGE IS MADE TO PRINCIPALS FOR THE INTRODUCTION OF LOCUM TENENS OR ASSISTANTS

Accountancy and legal services furnished by the Agency, where desired, at moderate inclusive charges.

PRACTICES AND PARTNERSHIPS FOR SALE

1 PARTNERHIP, with SURGICAL scope —SOUTH MIDLANDS —Plea ant Hospital Town A one third share (with increase up to one half later) is for disposal in a sound, better and middle class non dispensing Practice Average income for last 3 years £3 570 including a panel of 1 400 Fees for advice 3/6 and 5/- visits 5/-, 7/-, and a few at one guinea. About 50 midwiferies a year at from 3 to 10 guineas Choice of two good and well situated houses, with gardens and lit with electric light on lease There is an up-to date Hospital in the town and the incoming partner would almost certainly be appointed to the Staff The Purchaser should be well qualified and experienced in major surgery Excellent schools and exceptional social advantages Sport of all kinds Premium for the third share £2 500

2 WARWICKSHIRE — Unopposed old established PRACTICE, situated in the centre of hunting district within 10 miles of a large town Average receipts £1 650 including appointments Panel of 1 100 Visits 3/6 to 21/ Midwifery 2 to 5 guineas 50 cases Very good house ample accommodation bathroom, tennis lawn Water laid on Electric light Freehold Entirely redecorated Price £2 500 Premium £2 000 cash or £2 200 by instalments Plenty of social life

3 LANCASHIRE (LAKE DISTRICT) —Unopposed, very old established PRACTICE situated in a small market town in a delightful agricultural and residential district (population over 5 000) close to the sea Cash receipts for the last three years average £2 250 including appointments worth £150 and panel of 800 Held 8 years Nearest opposition 3 miles Railway station 2 miles Visits 2/6 to 21/ Midwifery 2 to 10 guineas about 50 cases yearly Pleasant house containing option and 6 bedrooms, bath Rent £45, on lease Prem ory reasons for selling

4 PARTNERSHIP —A one half share is offered in an old established PRACTICE, situated in a Hospital Town within 50 miles of London (North) The average income is about £2 000, and there is a panel of nearly 800 Advice and medicine from 2/6 Very little midwifery Double fronted house, detached and with ample accommodation Price £2 000 of which half can remain on mortgage There is an up-to-date Hospital and an early vacancy on the staff is probable Premium 2 years purchase

5 NORTHERN CATHEDRAL CITY —Old established middle and working class PRACTICE Average income for the last three years about £1 400 including panel of 1 000 Visits from 5/ to 7/6 Midwifery 3 gns upwards about 30 cases yearly Twelve roomed house with garden will be let on lease at £60 p a or sold for £1 100 Premium £2 100

6 RESIDENTIAL TOWN within 100 miles of London Non dispensing chiefly better class PRACTICE producing an income of about £2 000 a year including small panel of about 600 Fees from 2/6 to 21/, mainly 7/6 upwards Only a few cases of midwifery yearly at 2 to 25 guineas Attractive and commodious house (3 reception 7 bedrooms etc garden) on rental at £100 p a Good society and sport of all kinds Premium £4,000, payable £2 000 cash and £2 000 by instalments

7 LONDON N W —Non panel middle class PRACTICE to which is attached a Nursing Home Total average income for the last three years £1,500 Advice and medicine 3/6 to 5/- Visits and medicine 5/- to 10/6 About 40 cases of midwifery a year from 3 to 5 guineas Large well-situated non basement house held on lease with 60 years to run with a ground rent of £10 Price £1,500 Prem £2 250, or near offer

8 LONDON S W (Riverside Suburb) —Old established better and middle-class PRACTICE non panel and mainly non-dispensing *Average income for the last three years £1 658 Visits 3/6* to 10 6 about 10 cases of midwifery yearly at from 3 to 10 guineas Commodious house with good garden garage Will be let on rental or £160 or the *Leasehold sold for* £2 500 Premium £3 000 payable £1 500 down.

9 L N (, ,
and medicine 3/6 to 7/6 Practice is easily worked with no conveyance Nice house in good decorative repair Rent £125 Garage can be let off at £26 or £54 Premium £2 000

10 KENT —SMALL TOWN, within one hour of London Old established mixed general PRACTICE Average income about £1 800 including valuable appointments probably transferable and panel of nearly 1 200 Fees 3/- to 10/- Twenty cases of midwifery yearly at 2 to 5 guineas Excellent house containing 2 reception and 8 bedrooms separate entrance to professional rooms standing in its own grounds of ¾ of an acre with full sized tennis court etc Vendor's freehold price £2 300 Good Hospital in town and Vendor on the Staff Premium £2,700 Introduction as desired up to six months

11 NEAR LIVERPOOL —In a large town (population nearly 100 000) close to seaside resort, an old established flourishing, and increasing PRACTICE worth last year £2 100 including 1 000 panel patients Visits 2/6 to 5/ Midwifery 2 to 4 guineas about 100 cases yearly Good house with garage, available Vendor's property, and will be let to Successor at £100 a year or can be purchased Prem 1½ yrs purchase Efficient intro given

12 WEST OF ENGLAND —RESIDENTIAL TOWN —A well qualified and experienced man can secure a PARTNERSHIP with ultimate succession in a good Consulting Practice The present income is only about £1 500 a year but there is large scope for increase particularly if general practice is also undertaken Fees mainly 1 and 2 guineas, and a few at 10 6 Choice of houses on rental and to purchase Premium for the *half share £1 500*

13 EASTERN COUNTIES —Within 4 hours run of London Practically unopposed PRACTICE old established and situated in a very pretty Country Town with beautiful surroundings Cash receipts for last financial year £2 022 including appointment of £50 and panel of 500 Visits up to 21/ Very little midwifery Car optional Railway station Charming residence (with ample accommodation) in its own grounds of ¾ of an acre Price £2 900 all of which can remain on mortgage at 5 per cent Premium for practice £2 500 Excellent prospects Tennis, golf hunting, shooting etc

14 INDIA.—ASSISTANTSHIP with view to PARTNERSHIP —A well qualified man holding the Fellowship and between 30 and , Sal , spect years purchase payable by instalments, at termination of engagement

15 WESTERN AUSTRALIA —Unopposed PRACTICE situated in a small Township (population 1 000) amidst very picturesque surroundings, and within 12 miles of the sea coast Cash receipts over £1 500 a year inc Lodge worth £389 Visits 10/6 (, 5 guineas upwards Increases yearly Comfortable compact Bungalow Res , taining 6 rooms bathroom, etc and ample land attached Rent £86 a year Premium £1 000 half down and balance in 12 months Small Hospital (with 6 beds) Sport

16 SOUTH OF ENGLAND—COAST TOWN —A fourth PARTNER is required in an increasing Average income about £5,000 per of nearly 3 000 and various appointments or disposal will produce about £800 per annum Comfortable rooms at the Surgery are available for the ingoing partner Rent £60 p a. Premium 3 years purchase

17 SOUTH COAST WATERING PLACE — (Population 30 000)— Par years to an old estab three years o cr £1 visits 3 6 5 and 7/6 able with any 6 accommodation garden etc will be sold or can be rented Half share for disposal at 2 years purchase Good society and sport of all kinds etc Small Hospital Scope for increase

Profits accruing to Bovril, Limited, from the Agency will be allocated amongst recognized Medical Charities.

Full Schedule of Terms and Conditions will be forwarded on application

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Printed Prospectus of Terms, etc. post free on application.

Devonshire —Old-established Country PRACTICE Nearly £1 000 p.a Panel 4. Other appointments about £90 Fees 3/ to 21. Detached house large garden tennis, etc. Vendor retiring —Apply No 7652

Country Practice, Notts — About £1,000 p.a unopposed Panel of 4 0 Appointments £150 Not much midwifery Visiting fees to 21. Good detached house with 6 bed bath outhouses and one acre of garden Rent £36 All sports —Apply No 7650

London, N — About £1,550

London, West —Partnership About £2,000 a year One third or one half share for disposal Very old established Panel about 1 880 Other appointments £100 Few midwifery case ample scope Fees 3 6 to 21. Excellent corner house to rent —Apply No 7647

Worcestershire — About £800 p.a. and scope Old established Panel 4,000 Good fees Appointments over £100 Convenient house. 1¼ acres of garden and orchard Rent or sell Premium £1 000 —Apply No 7640

Sussex Coast —Nearly £800 p.a. Old-established Panel 900 Visiting fees 5 to 10/ Very few midwifery cases Appointments £80 Good house on lease —Apply No 7638

London, S W —Partnership About £1 360 Share worth £500 p.a for disposal now half later and ultimate succession Panel 1 600 Visiting fees 3 6 up Few midwifery cases Ample scope —Apply No 7636

London, N —About £1,500 a year Old established PRACTICE Small panel Appointments about £400 Visiting fees 3 6 to 15/ Good house on lease with garden and garage Can be rented or lease purchased —Apply No 7634.

South Coast — Partnership About £2 700 a year Non dispensing small panel One third share for disposal now up to one half later Visiting fees chiefly 10/6 Applicants should be Graduate and P H C S for preference —Apply No 7631.

Cheshire — About £1,900 a year Old established Very little midwifery Panel 938 Fees 3 6 to 21/- Medicine extra. Good detached house garage and garden Mortgage can be arranged.—Apply No 7628

London, S E —About £2,000 a Densely anel 500 e £5 5s Corner house ample accommodation rent £55 on lease —Apply No 7625

South-East Coast —Over £2 000 a year Good fees Panel nearly 1 000 House with ample accommodation and garage on lease at moderate rent —Apply No 7618

Lancashire —About £1,200 a year Non panel Old-established Vendor retiring No midwifery or appointments Fees 2 6 to 10/6 Small house rent £36 Including rates and taxes Ample scope for both midwifery and panel Easy terms —Apply No 7612

Lincoln —Country Town, about £1,850 p.a Very old established Panel over 1 000 Visits 3 6 up Appointments about £70 Good detached house tennis garden ½ of an acre Long introduction.—Apply No 7593

Yorkshire —Average £1,286 Appointments £350 Visiting fees 3 6 to 10,6 Panel nearly 1 300 Few midwifery case Good house every convenience.— Apply No 7581

Eastern County — Partnership With view to Succession Large Hospital Town Over £2 000 a year One third share for disposal Panel 2 000 Other appointments £40 Visiting fees 3 6 up. Midwifery 2 to 3 guineas Good house on succession —Apply, No 7564

MEDICAL PRACTITIONERS' UNION AGENCY, LIMITED,

56, Russell Square,
LONDON, W C 1

TRANSFER DEPT.

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Telegrams
UFFABRINI WESTCENT LONDON

PRACTICES & PARTNERSHIPS for Sale

ASSISTANTS and LOCUM TENENS Supplied

INVESTIGATIONS and VALUATIONS undertaken

List of Practices etc, in the "Medical World" each Friday

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Telephone "No GERRARD
Inland Telegrams
BLUNDELL, 22 CRAVEN STREET"
Cable Address (via Eastern) LECALLABLE, LONDON"

LOCUMS SUPPLIED

London, N W —Old established non panel PRACTICE of £1,000 in residential district Scope for panel Fees 3 6 to 10 6 Premium £1 500 Very good house with large garden can be bought cheaply

Death Vacancy, Yorks — PARTNERSHIP Half-share of £3 2.0 in manufacturing town Panel 2 00 Good opening for surgeon Excellent house with garage Premium £2 200

X-Ray practice of £1,350 in large town near London House rent £75

South London —Cash Practice of £2,300 Panel £900 Good house with nice garden Price £3 100

Lancs —Nice middle and working class PRACTICE of £3 280 on Borders of Moorland country Panel 1 0 Choice of houses Scope for surgery

West Riding — Practice of £1,460 in fine town Panel 8 0 Clubs £160 Fees 3 6 to 1 gn No midwifery Good house can be rented Premium 1½ years purchase or near offer for quick sale

Within 70 Miles —Increasing PRACTICE of £7,0 in prosperous town with good schools Opposition slight in proportion to population Panel Good house on lease Rent £95 Cottage Hospital. Premium 1½ years purchase

London, S E —Practice of £1,330 with house in residential part and separate surgery Panel 810 House has consulting room waiting room 3 bedrooms nice garden and garage Can be bought at a reasonable price

North London —Practice of £1 600 Panel 1 100 Appointments £420 Good introduction Rent £60

South Coast —Old established PRACTICE £2,000 Panel 1 0 Few midwifery Long lease Rent £60 Premium 1½ years purchase

London, S W —Partnership Half share of £2 500 Panel 1 00 Few midwifery 3 gns up Choice of suitable flat

East Coast — Practice in beautiful seaside place Receipts £1,500 Schools golf etc Panel 00 Appointments £80 Good detached house with large garden on lease

Cornwall — Unopposed PRACTICE of £850 Appointments £100 Panel £200 Rent £75 Premium £1,000

Cheshire —Practice of £1,500 in nice country town Panel 1 00 Appointments £160 Double fronted detached house can be bought or rented.

London, S E — Practice of £1 100 in nice residential suburb Appointment £240 No panel Nice house with large and tennis court can be bought

North London —Practice of £950 Increasing Panel 00 House in main road with small garden can be bought.

Opening in growing residential district. House with surgery etc. NUCLEUS of about £200

Colliery Practice of £2,300 Panel 1 0 Rent £65 Opposition slight Hospital and scope for surgery

New Zealand — Unopposed PRACTICE of £1,800 in Auckland with good roads Rent £100 Premium £1,500 including furniture.

South London — Very old-established practice of £1,000 Appointments £190 Panel 00 Also 2 dispensaries Nice house with small garden and garage Rent £70

Purchasers wishing for Partnerships etc. also for Assistants of all Practices are also solicited

THE SCHOLASTIC, CLERICAL & MEDICAL ASSOCIATION, LIMITED.

(Formerly at 22, Craven Street, Trafalgar Square, W C)

12, STRATFORD PLACE, OXFORD STREET, W.1.

Telegraphic Address "TRIFORM, WESDO, LONDON" *Telephone MAYFAIR 2400*

Practices and Partnerships for Disposal. No charge to Purchasers.

INLAND SPA —(1) PARTNERSHIP in good-class non-dispensing Practice (largely Consulting) over £2 500 One fourth share at first at two years purchase London, Oxford or Cambridge Graduate preferred

SOUTH WEST OF ENGLAND —(2) Very old-established middle and better class PRACTICE over £4 200 in important Seaside Town No panel or appointments Commodious house in excellent position Rent £100 Premium one and a half years purchase

MIDLANDS — (3) Old established PRACTICE over £2 000 in Country Town, beautifully situated amidst charming scenery Panel 500/600 Well accommodated house to let or sell Premium one and a half years purchase

SOUTH MIDLANDS —(4) PARTNERSHIP in old-established PRACTICE about £2 500 in desirable Residential District under 20 miles from London Panel 1 100 Premium one third share two years purchase and up to one half later

DEATH VACANCY —(5) NUCLEUS of old-established Practice in Inland Health Resort with good house, to be sold

INLAND HEALTH RESORT —(6) NUCLEUS of Special Ophthalmic Practice

SPECIAL OPHTHALMIC PRACTICE —(7) About £550 in Seaside Town South of England Would suit elderly practitioner retiring and wanting quiet Practice with small expenses in healthy place Premium one and a half years purchase

EAST ANGLIA —(8) Unopposed Country PRACTICE, nearly £700 p a in Agricultural District Panel about 120 Small house (6 beds) garden nearly 3 acres Prem one and a half years purchase

SOUTH EAST COAST —(9) PARTNERSHIP in good middle-class Practice £4 200 per annum, in popular and developing Residential Resort No panel Two fifths share at first at one and a half years purchase Partner should be aged between 30 and 40, and have a leaning towards medicine

MIDLANDS —(10) Unopposed Country PRACTICE over £1 150 in beautiful part Panel about 720 Detached house (4 bed rooms) with half an acre garden Mild climate

LONDON, N W —(11) Old-established good middle-class PRACTICE averaging £1 127 in Residential District No panel Fees 5 to 10 6 Good corner house (7 bedrooms) in one of the best roads to be sold Premium for Practice one and a half years purchase

HOME COUNTY —(12) PARTNERSHIP in old-established good class Country Practice about £3 300 p a, in delightful Residential District Excellent modern detached residence (7 bed and dressing rooms) with beautiful grounds to be sold Premium one-third or two fifths share two years purchase and up to one half later Cottage Hospital

HOME COUNTY —(13) PARTNERSHIP in well-established and increasing Practice over £2 200 in delightful Residential Country Town within 30 miles of London Panel 800 Cottage Hospital Premium one-third share £1 425 Great scope

MIDLANDS —(14) Old established good class non-dispensing PRACTICE about £1 300 in large Town About 50 per cent of income is from special Ear, Nose and Throat work Good house (8 bedrooms) to be Sold Premium for practice £1 800

NORTH WALES —(15) Well-established working-class PRACTICE over £2 400 in Country Town Panel 2 065 House with 4 bedrooms &c to let on lease Beautiful surrounding Country Premium one year's purchase, cash

WEST OF ENGLAND — (16) Small good-class non-dispensing PRACTICE about £400, in first rate Residential Town and Health Resort No panel Choice of houses Premium £300

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LONDON, S W —(27) Well established PRACTICE of £600 to £700 p a in favourite Residential Suburb Panel 900 Not much midwifery Excellent detached house (9 bedrooms) with good garden, one and a half years purchase

[illegible] Old-estab unopposed Country p a in picturesque part, easy distance of Good house (6 bedrooms) in grounds ole scope for increase Premium one and

WEST OF ENGLAND —(29) Well-established PRACTICE averag[illegible] 900 Midwifery discouraged Price £2 000 part on mortg ittings

FAVOURITE HOME COUNTY —(30) PARTNERSHIP in well established Practice £2,300 p a, in charming and select Country Town Panel 1 000 Prem one-half share two years purchase Cottage Hospital

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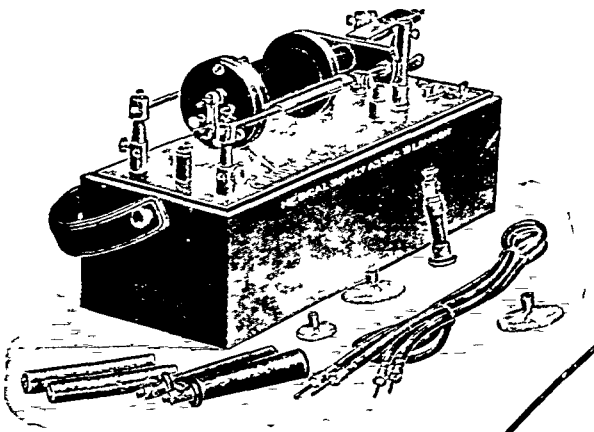
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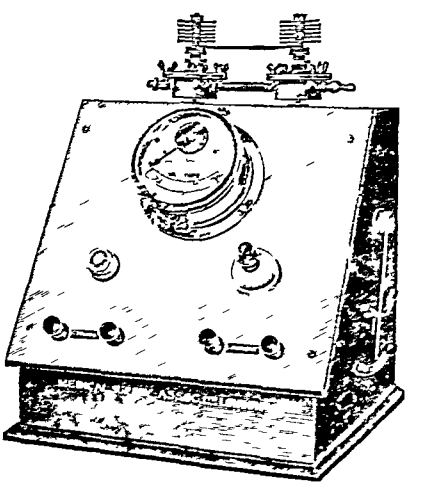
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Including an Epitome of Current Medical Literature
WITH SUPPLEMENT.

No 3338 SATURDAY, DECEMBER 20, 1924. Price 1/3

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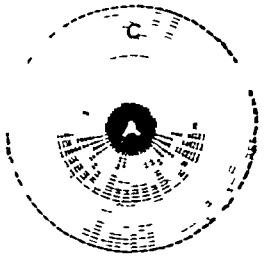


Diagram represents inflamed area In zone 'C' blood is flowing freely through underlying vessels This forms a current away from the Antiphlogistine whose liquid contents, therefore follow the line of least resistance and enter the circulation through the physical process of endosmosis In zone A' there is stasis no current tending to overcome Antiphlogistine's hygroscopic property The line of least resistance for the liquid exudate is therefore, in the direction of the Antiphlogistine. In obedience to the same law exosmosis is going on in this zone, and the excess of moisture is thus accounted for



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British Medical Journal.

DECEMBER 20TH, 1924

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education authority as difficult to educate, into the district asylum, the Board of Control deprecates this practice For the great majority of mentally defective persons the process of education, whether in special schools or classes or in special training institutions for juvenile and adult defectives, develops their capabilities to the greatest extent, so as to fit them at least to take care of themselves and to live useful lives under the care of others The benefits of education, in the broadest sense of the term, will ultimately fit mentally defective children for home life under the care of parents and relatives, or, in cases where this is unsuitable, they can be most satisfactorily dealt with by being boarded out in circumstances closely approaching home conditions It is pointed out that, on the other hand, the treatment of the insane is wholly of a medical nature Several institutions for the reception and training of mental defectives have recently sprung up The Edinburgh District Board of Control has started a new institution at Gogarburn which it is desirous of making the nucleus of a place for the training of juvenile defectives and for the establishment of a colony system for adult defectives The Paisley District Board of Control is considering plans for the erection in the first place of two houses to accommodate fifty defectives of each sex on the same lines as at Gogarburn A mansion-house at Custhus, with a large amount of ground attached, has been acquired by the Glasgow authority for a similar purpose An institution at Whitehall, near Edinburgh, also consisting of a mansion-house within extensive grounds, has been instituted for the accommodation of one hundred mentally defective Roman Catholic children The Board hopes that such developments, assisted by the mental deficiency grant, may be the means of providing for the education and training of juvenile and adult defectives, who may thus be prevented from drifting into criminal habits owing to absence of necessary institutional care

The Board suggests that patients labouring under the mental states incidental to old age, who now constitute almost 20 per cent of the admissions to asylums, could probably with advantage be cared for in places more nearly approaching the nature of cottage hospitals and homes than in elaborate and expensive institutions like modern asylums

In the ninth annual report extensive reference was made to the observation wards established at the general hospital at Stobhill and the Eastern District Hospital at Duke Street, Glasgow It is believed that the much needed rest which these wards afford, the efficient nursing, and special care and treatment given to patients in the early stages of mental disease often prevent a complete breakdown and obviate the need for certification The experience that has been gained, as the result of the treatment of early cases of mental disorder in circumstances which are exactly similar to those of general hospitals throughout the country, prove that the divorce between patients suffering from physical disorder and patients suffering from mental disorder is artificial The Board has come to the conclusion that powers should be given to establish nursing homes, hospitals, outdoor and indoor clinics, particularly by arrangement with the managers of general hospitals throughout the country, in which anyone desiring advice, care, and treatment may receive these as a voluntary patient Such an arrangement at hospitals would tend to dispel the natural fear that persons seeking advice, care, and treatment might have that they could be certified as insane and detained against their own free will

TRAINING FOR JUVENILE UNEMPLOYED

In a report to the education authority of Edinburgh, Mr D M'Nally, organizer of continuation classes, states that a dangerously large proportion of the men and women of the future are acquiring the loafing habit when they should be learning some skilled occupation On April 21st, 1924, there were on the unemployed registers in Scotland 5,053 boys and 4,523 girls between the ages of 14 and 18 Of these 474 boys and 396 girls were in Edinburgh, and 2,700 boys and 2,500 girls in Glasgow The Government is realizing the importance of preventing these juvenile unemployed from losing the habits of regularity, punctuality, and discipline, and has asked education authorities to co-operate with it by opening juvenile unemployment centres where a certain amount of educational and recreational work is provided for them Under the Unemployment Insurance Act of 1920 there is power to require attendance by juvenile unemployed at educational centres Owing, however, to financial considerations, centres have been opened in only some six or seven towns The Government has now intimated that it is prepared to pay the total out-of-pocket expenses of authorities carrying on juvenile unemployment centres In Edinburgh the position is fairly good, as voluntary day schools which were opened in 1914 have been steadily growing in popularity At the present time, of the 870 juvenile unemployed between the ages of 14 and 18, 200 are in regular attendance at workshops, and nearly 300 attend voluntary day centres It is suggested that all juveniles leaving the day schools without having secured employment should be drafted into suitably situated schools where they would be shielded from the deteriorating effects of continued unemployment and also receive a preliminary training which would determine the trade in which they might afterwards be most usefully employed The labour market appears to be improving in certain towns in the Glasgow area, where juvenile unemployment centres established about a year ago have been now closed as most of the unemployed juveniles between 16 and 18 have been absorbed

Ireland.

SIR PATRICK DUN'S HOSPITAL

THE Board of Sir Patrick Dun's Hospital, in the course of a public appeal for £100,000 to rebuild the institution, states that repeated efforts have been made to alter and improve some of the arrangements of the hospital, but the main fabric of the building remains substantially as it existed one hundred and twenty years ago, and, after careful investigation, it has been found impossible to alter it to meet modern requirements except at a prohibitive cost and with a questionable result It is a well known fact that conditions prevailing in Dun's Hospital are common to a number of Dublin hospitals, as evidenced by the numerous references to this condition of things at annual meetings of hospitals and elsewhere The Board observes that citizens of Dublin recognize with pride and satisfaction the eminence and renown of its leading physicians and surgeons, and it is due to the fact that they have kept pace with the most advanced medical science and practice that they have been, and are, insistently calling the attention of their various hospital boards to the inadequacy of the existing buildings and equipments, and are urgently calling for facilities that cannot be provided by their boards, except in a very inadequate way, owing to the twin obstacles of construction and finance Thus physicians and surgeons in Dublin are handicapped at every turn in a department of civic life where to stand still means decay, and to decay means death The Board is well aware that there exists a growing feeling amongst the citizens that there are too many hospitals in Dublin, and that a number of them could be amalgamated into one large general hospital The Board is of the opinion that the work now proposed to be done will be a step towards the realization of its ideals The hospital is close to a very large industrial section of Dublin, and is convenient to both doctors and students Over 25,000 extern patients and over 1,500 intern patients were treated in the hospital during the last year The Board also undertakes at conferences to work towards joint action in obtaining for Dublin a large grant from some of the great medical foundations of the world, on the lines of the Rockefeller grant of £1,205,000 recently made to a London hospital, so that Dublin may be made a great centre in which surgical and medical research and development may be promoted and fostered The success of the appeal now being made is, in the opinion of those qualified to judge, an essential preliminary to securing such a grant

Correspondence.

X-RAY INTERPRETATION

SIR,—I think Sir Thomas Horder is to be congratulated on his letter in the JOURNAL of August 23rd (p 344)

There seems to be an idea prevalent amongst some radiologists that when the clinician has exhausted all his skill he refers his difficulties to the x-ray department for a final solution, and that therefore a definite diagnosis must be given Personally I am very happy to be quite sure of a simple fracture

Surely the function of the radiologist is to give one more clue to the clinician who correlates all the evidence of his own senses, together with special departmental reports, and arrives, at any rate, some way towards a diagnosis Such, at any rate, is my teaching to students with whom I come in contact, *and only in this way can we be of real value* to the science, and take our proper place in the scheme of things —I am, etc,

London S.E.1 Aug 23rd. GEOFFREY FILDES

NON-OPERATIVE TREATMENT OF TUBERCULOUS CERVICAL GLANDS

SIR,—"Quite Well" has given us what is perhaps an unexampled record of such data and experience as people in the Middle Ages used to pin their faith on the touch of a regal hand for the cure of scrofula in its various manifestations The touch confirmed the faith and the faith got what it needed—*time*—for the body to gain the upper hand over its enemy the tubercle parasite Time however, is of but little value unless there be a period of body growth to run He has also prompted an interesting question—namely, What would, in all probability have been the record of his life if when the cervical glands were first judged to be tuberculous in their nature they were *at that time completely removed by operation?* I conjecture, from experience, that the record would be blank from 9½ to 44 years, apart from accidents, and that robust health would have replaced an existence that a youth may and does tolerate and a survivor considers as *all right* —I am, etc,

Cambridge Aug 25th JOSEPH GRIFFITHS

SOME OPINIONS ON CANCER

SIR,—In your issue of August 23rd you reviewed my book *Cancer How it is Caused and How it can be Prevented*, under the heading "Some opinions on cancer," and you state in it that, according to my opinion, cancer "is caused by intestinal stasis, and this in turn is due to chronic vitamin starvation" I am afraid that phrase does not quite correctly summarize the doctrine of my book. I have stated in my volume dozens of times that in my opinion cancer is caused by chronic poisoning and vitamin starvation Among the chronic poisons are not merely bowel poison, *due to stasis, but chemical poisons*, such as arsenic, aniline etc, and other chemical poisons which we are entitled to suspect as cancer producers, such as poisonous chemical preservatives and colouring matters, many of which are derived from coal tar, which in itself is a cancer poison Besides, I mentioned chronic poisoning in the form of chronic burns burns having an action equivalent to poison, and I gave details about x ray and radium burn concluding that chronic burning by over-hot drink produces the equivalent of kangri cancer in the human oesophagus and stomach I trust that, *in common fairness*, you will allow me to make this correction I attribute the very greatest importance to chronic burns due to over-hot drink We take our tea and coffee at 150°, whereas the hot bath has 105° or so, and many cases of cancer of the stomach or of the oesophagus which have come under my notice were undoubtedly due to this dangerous habit

I note with regret some disparaging remark due to the fact that I am not a medical man The BRITISH MEDICAL JOURNAL is distinguished for its broad mindedness and fairness, and I am sure that you will agree with me that the most important medical and surgical discoveries were made not by qualified medical men, but by outsiders, savages, and animals Modern surgery and medicine are based upon the observations of illiterate milkers who discovered that cowpox protected against small-pox, observations which Jenner made use of and published, and upon the discoveries of Pasteur and Metchnikoff, who were non-doctors My cancer theory may be useful or it may be useless I think it will prove useful At all events, my book has been received with enthusiasm by a great many eminent medical men and writers among them some cancer specialists Besides, I am receiving every day, from medical men and others, most valuable confirmatory evidence in support of my theory that cancer is a disease of civilization, and that it is due to chronic poisoning and vitamin starvation Some of the evidence will be published in the September issue of the *Fortnightly Review*, and other material will appear in the *Spectator* —I am etc,

London N.2 Aug 24th J ELLIS BARKER

SIR,—With respect to your review "Some opinions on cancer" in your issue of August 23rd (p 324), I should like to make a suggestion or two purely as an ordinary general practitioner of many years' experience

Is it possible that intestinal stasis (termed in the vulgar tongue, constipation), given as a cause, is merely one of the early symptoms of cancer? In many cases of intestinal carcinoma, constipation is one of the most insistent of the early symptoms, later, and especially where the growth is low down, alternating with or replaced by diarrhoea

What strikes one in general practice is the infinitesimal proportion of people suffering from chronic constipation for many years who ever develop carcinoma One might almost as logically formulate a theory that chronic constipation is a great safeguard against carcinoma, as so small a proportion of people chronically suffering from the former ever develop the latter'

Secondly as regards deficiency of vitamins as a cause of carcinoma (leaving as Mr Ellis Barker does sarcoma out of the question) may I suggest that from all one has observed, heard, and read about carcinoma all the facts seem to point to its being an excess disease (like gout, etc), rather than a deficiency disease (like rickets, etc)— I am, etc

Flackwell Heath Bucks Aug 25th G D PAPPER

POOR LAW PATIENTS AND FREE CHOICE OF DOCTOR

SIR —The motion urging "free choice of doctor for *Poor Law patients*" presented by the Dartford Division at the Annual Representative Meeting at Bradford was carried by general consent, limited, however, in the resolution to 'domiciliary attendance' which, in fact, was the intention of the Dartford Division

A number of inquiries have been made since as to how the principle is intended to be applied in the Dartford Union The practitioners agreed with the Dartford Board of Guardians to attend—

(*a*) *ordinary outdoor patients* for a capitation payment of 17 6d per case (*b*) *recipients of temporary relief* at the rate of 7 6d per quarter such being classed as ordinary after the expiry of three months

The number of practitioners attending the sick poor will be increased sixfold, which means improvement in the service, with economy in time spent and mileage covered

The high sickness incidence among the poor is balanced by the provision of a prompt system of admission with ambulance service to a well equipped hospital adequately elastic in accommodation so that there is no 'waiting list" blocking admissions at any hour, the attendance on difficult and complicated cases being thus greatly relieved

I will not succumb to the temptation to discuss "hospital politics" in relation to national health and private" practice, my intention being to reply to the inquiries from Derbyshire and elsewhere —I am, etc,

Aug 23rd. J W PENTON,
Panel and Private Practice Department,
British Medical Association

THE R A M C (T A)

Sir,—The letters appearing in the British Medical Journal on the R A M C (T A) show that a good deal of interest has been aroused Surely it is false economy to have abolished two field ambulances in London, for instance, and to have housed the remaining ambulance in totally inadequate headquarters

To bring recruits to the ranks surely the Territorial should occasionally be seen on parade The annual inspection in Hyde Park of Volunteer days served a useful purpose in showing Londoners their citizen troops

A smarter kit than khaki is urgently needed for ceremonial and "walking out" purposes Full dress for such occasions should be gradually reissued It engenders a feeling of *esprit de corps* and self-respect, and stimulates recruiting—I am, etc,

August 23rd EX-VOLUNTLER

ALCOHOL AS A NARCOTIC POISON

Sir,—I was interested to read in the Supplement to the Journal of August 2nd, in the account of the temperance breakfast at the meeting of the British Medical Association at Bradford, that Sir William Willcox is reported to have said that "to quote Dr W E Dixon, the most that could be said for alcohol was that it was one of the less harmful narcotic poisons" I should very much like to know whence Sir William Willcox obtained his quotation, because I have failed to find any such statement in Dr Dixon's works Perhaps Sir William Willcox will be good enough to give the reference?—I am, etc,

ELISABETH WILLIAMS,
Secretary True Temperance Research Committee
Donington House, Norfolk Street,
Strand, W C 2, Aug 18th

Obituary.

Dr John Lascelles, who died suddenly of heart failure on August 16th at his residence at Earlestown, Lancashire, was born in July, 1892, at Downpatrick He matriculated at Queen's University, Belfast He won scholarships in the second and third medical examinations and a special exhibition in surgery in the final examination for the degrees of M B, B Ch, and B A O, which he took with honours in June, 1917 He joined the R A M C as lieutenant, being subsequently promoted to captain, and saw service in East Africa and Constantinople On demobilization he went into general practice at Earlestown He was a member of the St Helens Division of the British Medical Association In November, 1921, he married a daughter of the late Dr Wallace of Rochdale, by whom he is survived, and for whom deep sympathy is felt

Dr T McCraith Foley of Scarborough died on August 24th, aged 65 He was the son of the late Rev Patrick Foley, rector of Kilscoran, co Wexford, and received his medical education at the Ledwich School of Medicine and the Royal College of Surgeons in Ireland He took the diplomas of L R C P and S I in 1880, and that of L A H Dubl in the following year In his early days he was surgeon on the Sultan of Morocco's yacht, and afterwards served as ship surgeon on liners going to America About thirty years ago he settled in practice in Scarborough He served with the 5th Yorkshire Regiment (Territorial Army) and retired with the rank of lieutenant-colonel During the war he was attached to the R A M C (1914-17), and was D C M S (1917-18) He was formerly a member of the Scarborough Town Council and chairman of the Health Subcommittee Owing to ill health he retired from private practice about three years ago Dr Foley, who was a member of the Scarborough Division of the British Medical Association, is survived by his widow

Dr Frank Elvy died at Fouriesburg, Orange Free State, in May last, from heart failure following pneumonia, after fifteen days' illness He was 58 years of age He studied medicine at the Middlesex Hospital Medical School, and took the diplomas of the English Conjoint Board in 1893 For a time he practised at Eastbourne, where he was surgeon to the Lady Wellesley Hospital and Dispensary, but owing to asthma and bronchitis was compelled to leave this country He was district surgeon at Fouriesburg and a member of the Orange Free State and Basutoland Branch of the British Medical Association He was held in high esteem by his patients and a large circle of friends He is survived by his widow and three daughters

The Services.

DEATHS IN THE SERVICES

Captain David Hamilton Hadden, *M C*, R A M C, died at the Military Barracks, Omagh County Tyrone, on June 18th, aged 32 He was the eldest son of Dr W E Hadden of Portadown, County Armagh, and was educated at Trinity College, Dublin, where he graduated B A M B, B Ch, and B A O in 1913, gaining the University Fitz Patrick scholarship and the Haughton clinical prize and medal in surgery at Sir Patrick Dun's Hospital After filling the post of house physician at the county hospital, York, he took a temporary commission as lieutenant in the R A M C on September 26th, 1914, was promoted to temporary captain after a year's service, and confirmed as captain from March 26th, 1918 He served throughout the war of 1914-18, and received the Military Cross on September 16th, 1918, with a bar on April 2nd, 1919, and also the M B E

Surgeon Lieutenant-Commander G A Melville Anderson, R N, died suddenly in the Royal Naval Hospital, Plymouth, on July 26th, He was the eldest son of the Rev D Anderson, parish minister of West Calder, and was educated at Edinburgh, where he graduated as M B and Ch B in 1913, after which he entered the navy, reaching his late rank on April 24th, 1920 At the time of his death he was serving on H M S *Impregnable*

Medico-Legal.

THE WORKMEN'S COMPENSATION ACT

A remarkable decision is recorded in the Gloucester daily paper *The Citizen* of August 6th as having been made in the Gloucester County Court in a compensation case, which exemplifies the readiness of not a few courts to accept *post hoc* as if it were *propter hoc* in claims for compensation In the case in question it appears that the husband of the applicant had been suffering from diabetes for some years, and while at work on November 9th, 1923, he sustained a wound on the right shin He was away from work for about eleven weeks, but was declared by his medical attendant fit to resume work on January 25th, and did so Some time later his right leg became swollen, and on April 10th he had a stroke with right sided paralysis, and died on April 19th At the time of his death he had a small patch of commencing gangrene on his other foot There was some discussion in the court as to whether the stroke was due to cerebral haemorrhage or embolism The medical officer who attended him when he was admitted to the infirmary after the stroke felt confident that death was caused by cerebral haemorrhage directly due to advanced diabetes, and said that the accident in November had had nothing to do with the stroke in April In spite of this definite opinion of the medical man, who had had the fullest opportunity of attending and treating the case, the county court judge, without referring the matter to the referee or making use of his services as medical assessor, and while describing the case as an extremely difficult one, gave judgement in favour of the applicant's claim for £289 with costs

Evidence connecting the accident in November with the death in April was very slight, and judgements of this sort will inevitably tend to make employers of labour chary about engaging or retaining in their employment men suffering from diabetes or any other disease where there is any chance of claims of this character succeeding in a court of law We cannot help feeling that the excellent provisions of the Workmen's Compensation Act are in some danger of being exploited in this and not a few other cases of a parallel character, and there is some reason to demand that a quite mutual sympathy with the employed should be tempered with justice to the employer

Universities and Colleges.

SOCIETY OF APOTHECARIES OF LONDON

The following candidates passed in

Surgery—M Bannoonah E H Boodhe J Crawford F M Deighton C S Forrest J W Graham J C C Langford Z Roodyn C W Warne

Medicine—F M Deighton J W Graham G L W Iredale W R S Jacques A J Moody H Morris (Section II) W L Pennington Z Roodyn J G E Vachell

Forensic Medicine—H L Bernstein A K A Carter F M Deighton R C Glover J W Graham A J Moody, W L Pennington B A Perott M Schwartzman Z Roodyn

Midwifery—W Bentley F M Deighton J W Graham J C C Langford E J P McDowell W E Pennington Z Roodyn

The Diploma of the Society has been granted to Messrs J Crawford, F M Deighton, J W Graham, G L W Iredale, J C C Langford H Morris Z Roodyn, and J G E Vachell

DEATH OF SIR WILLIAM BAYLISS

As we go to press we hear of the death of Sir William Bayliss on Wednesday, too late in the week to permit us to publish any adequate obituary notice He had been ill for nearly a year He was born in 1860 and began the study of medicine early, but never entered the profession He was one of the men who had done most to make the English school of physiology great He was a pupil of Sanderson and Schafer, who had both been pupils of Sharpey, and Bayliss himself was associated with the physiological department of University College, London, nearly all his working life He was extraordinarily modest about his own researches, many of them done in collaboration with others, some of the most important with his brother-in law, E H Starling, and it is quite possible that he is best known and will be longest remembered for his book on the *Principles of General Physiology*, which might be called a textbook for professors The conception of the work was quite original, and one aspect of Bayliss's interests is shown by the numerous portraits introduced and by the way in which his extensive acquaintance with the history of physiology was woven into the text It was first published in 1914, and when a fourth edition was called for a short time ago, and Bayliss was not well enough to undertake it, a committee of the younger physiologists, with Professor A V Hill at their head, was formed to supervise it

Medical News.

THE offertory at the official religious service held in Bradford Cathedral in connexion with the recent Annual Meeting of the British Medical Association amounted, after deducting the church expenses, to £37 The executive committee of the meeting, having increased the sum to £40, has divided the amount equally between the local hospital fund and the Royal Medical Benevolent Fund

THE Prince of Wales as President of King Edward's Hospital Fund for London, has appointed the following persons a committee to exercise the powers of President of the Fund during his absence The Earl of Donoughmore, Viscount Cave, and the Governor of the Bank of England

THE annual dinner of the past and present students of University College Hospital will be held at the Hotel Cecil on Friday, October 3rd Dr Michael Foster, O B E, will take the chair at 7 30 p m Tickets can be obtained from the secretaries, Dr Gwynne Williams and Dr T P Elliott, University College Hospital Medical School.

As announced in our advertisement pages applications for the William Julius Mickle Fellowship of the University of London should be sent in before October 1st to the Academic Registrar, University of London, South Kensington, S W 7, from whom further particulars can be obtained The fellowship, which is of the value of at least £200, is awarded by the Senate to the graduate of the University resident in London who has done most to advance medical art or science during the previous five years

THE following courses are announced by the Fellowship of Medicine and Post Graduate Medical Association On September 1st a two weeks' course in dermatology will commence at the Hospital for Diseases of the Skin (Blackfriars) consisting of instruction in the out-patient department every afternoon from 2 30, and a venereal clinic twice a week from 5 30 Beginning on September 8th a three weeks course in ophthalmology at the Royal Westminster Ophthalmic Hospital will include clinical instruction each afternoon from 2 o clock, and special demonstrations three times a week on methods of examination and common affections of the eye A fortnight's course at the Infants Hospital from September 15th to 27th will deal with diseases of infants from various aspects, and consist of clinical demonstrations, "round table" consultations, lectures, etc Visits will be made to St Margaret's Hospital for Ophthalmia Neonatorum, Thavies Inn (Holborn), and the Nursery Training School (Golders Green) Further information may be had on application to the Secretary, Fellowship of Medicine, 1, Wimpole Street, W 1

THE August number of *Medical Science*, published on behalf of the Medical Research Council, contains a review by C da Fano of the investigation of spontaneous and experimental encephalitis in rabbits The number contains also reviews and abstracts of medical and scientific journals

THE Home Secretary, at the instance of the National Society of Pottery Workers, has directed an inquiry to be made into the incidence of silicosis in the pottery industry, in order to decide whether it should be scheduled as an industrial disease under the Workmen's Compensation Act

THE annual congress of the National Veterinary Medical Association of Great Britain and Ireland will be held at Aberdeen from September 8th to 15th

Letters, Notes, and Answers.

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Communications intended for the current issue should be posted so as to arrive by the first post on Monday or at latest be received not later than Tuesday morning

ALL communications with reference to advertisements as well as orders for copies of the JOURNAL should be addressed to the Financial Secretary and Business Manager 429 Strand, London, W C.2. Attention to this request will avoid delay Communications with reference to editorial business should be addressed to the Editor BRITISH MEDICAL JOURNAL 429 Strand, W C.2

CORRESPONDENTS who wish notice to be taken of their communications should authenticate them with their names—not necessarily for publication

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The address of the Irish Office of the British Medical Association is 16 South Frederick Street Dublin (telegrams *Bacillus Dublin* telephone 4737 Dublin) and of the Scottish Office 6 Rutland Square Edinburgh (telegrams *Associate, Edinburgh* telephone 4361 Central)

QUERIES AND ANSWERS.

"N M C"—No notice can be taken of communications not verified by the writer's name

THREADWORMS

"J E W" asks for advice in the treatment of threadworms in an adult All the usual remedies have been tried assiduously, and for a time each seems to be successful but after a few weeks the threadworms seem to return as numerous as before The case is of some years' standing, and has had careful treatment for over a year

INCOME TAX

Expenses, Subscriptions, and Motor Car

"L L" writes to say (*a*) that the inspector of taxes has disallowed his claim to deduct subscriptions paid to the Medical Defence Union and to the Birmingham Medical Benevolent Society, and (*b*) that £10 of £26 claimed for car expenses had been refused on account of private use of the car

*** (*a*) With regard to the subscriptions we understand that it has been definitely agreed that subscriptions to the following bodies are allowable the London and Counties Medical Protection Society the British Medical Protection Society the Royal Society of Medicine, and the British Medical Association Whether any particular subscription is allowable as being analogous to these paid to these bodies depends on the constitution and rules of the society The position of the Medical Defence Union has not yet we understand been actually determined (*b*) £10 out of £26 seems to be a high proportion for private use but "L L" should take into account apparently not only petrol but also oil wear and tear of tyres etc We suggest that in putting the amount at £10 the inspector may have taken into account the wear and tear of the car as a whole we assuming that there is no depreciation or replacement cost in the £26, the amount should be limited to running costs only

LETTERS, NOTES, ETC.

FOREIGN BODIES IN THE EAR

DIXON (Kansas City), being baffled in removing from the external auditory meatus a cherry stone which filled the canal too exactly reported (*Journ Amer Med Assoc* vol 83 p 257) on the use of dental cement which sets very quickly The cement was mixed fairly thick and taken up with a camel's-hair brush by which it was held firmly against the cherry stone for a couple of minutes, when withdrawn it brought the foreign body with it

HELMINTHOLOGY

A NEW volume of collected papers from the Department of Helminthology of the London School of Tropical Medicine has been issued It is dated July, 1924, and contains seventeen papers, reprinted from various journals, chiefly the *Journal of Helminthology*, there are two from the *Proceedings* of the Royal Society of Medicine and one from our own columns The papers are well illustrated, and specialists will find the volume convenient for reference

POOR LAW PATIENTS AND FREE CHOICE OF DOCTOR

DR T MURRAY (Killamarsh) informs us that the Chesterfield Rural District Council has adopted the following resolution

> That the members of this Board are of opinion that the time has arrived when recipients of out relief should be permitted a free choice of doctor in case of sickness, that the Ministry of Health be asked to provide therefor by the issue of an Order authorizing the formation of a district medical officer panel subject to such conditions and restrictions as may appear to the Ministry to be necessary

This matter is also referred to at page 389

CATERPILLAR DERMATITIS

DR A S GUBB (Algiers) writes With reference to Dr Castle's remarks on caterpillar dermatitis, in your issue of August 2nd (p 218), it may interest him to know that over here there is a very interesting variety of the hairy caterpillar—the processional caterpillar, so called because they are met with in the spring in series many yards long, nose to tail They are covered with brilliantly and variously coloured long hairs, which are extremely brittle When handled these hairs break off and penetrate the skin, where they set up itching comparable only to that caused by the bristles of the prickly pear (now in season) In subjects with sensitive skins the irritation determines very troublesome urticaria, which may last for several days I saw an instance of this last summer when an American child made pets of some of these caterpillars and suffered in consequence Their nests are conspicuous in the branches of the *Pinus halepensis*—woolly masses the size of a large orange Visitors are warned not to sit under these nests lest some of the hairs should perchance come their way Fabre, the great French entomologist, devotes a delightful chapter to these insects, which are evidently met with in the South of France, where he lived

PHYSICAL EXERCISES FOR RURAL SCHOOLS

THE Board of Education has issued a pamphlet (price 3d) giving information regarding the teaching of physical exercises and games in rural schools Experience has shown that many of the smaller rural schools find difficulty in making a suitable adaptation of the tables given in the Board's Syllabus of Physical Training The difficulty in arranging a satisfactory course of physical training for these small schools is chiefly due to the fact that children of different ages have to be taught together and that facilities are limited The new tables are designed to meet the needs of these small schools, in which the utmost simplicity consistent with adequate results is essential They are constructed primarily for schools with only two teachers, but they can be adapted to schools with three teachers or only one teacher In schools with only one teacher the fullest possible use is to be made of the older children as team leaders The purpose is to give the children exercise—a fact that is often forgotten Active movement is an essential element in physical training, postures and positions are useful only in so far as they ensure that the movement, the essential exercise is of the most beneficial kind In order that the children may be well exercised they need to repeat the movements of the exercises a sufficient number of times and carry them out with plenty of energy Limply stretching the arms sideways a couple of times is not beneficial exercise, and strengthens neither the body nor the will Children come to no harm by working as hard as they can while they are at it, on the contrary, being generally active and alert, that is the way in which they reap the full benefit of their lesson When children play by themselves their output of energy is enormous, and this is Nature's way of securing the healthy development of their bodies Stress is laid upon the necessity for giving free practice in the movements of an exercise The teacher should tell the children what to do, and then let them try it for themselves Accuracy of performance must be insisted on if the exercises are to fulfil their purpose, and this can only be obtained by securing the lively response of the children The team system, whereby the older children who have become skilful in the performance of the exercises are the leaders and almost the teachers of the younger and newer children, is of the greatest advantage, both benefit—the older by the sense of responsibility and leadership engendered, and the younger, who follow an example which cannot always be given by the older and more sedate teachers Tables of exercises and games are given graded according to age and condition Some fault may be found with the manner in which these are set out There is constant reference to other publications The majority of the exercises tabled have appended to them such marks as (S G, p 24) This is a bad practice It requires a possibly overburdened teacher to be constantly referring to another or other documents, the waste of time and energy is obvious It would be far better to make the pamphlet complete in itself The extra cost entailed would be small and the expenditure would be well worth while

VACANCIES

ASHTON UNDER LYNE DISTRICT INFIRMARY—Resident Surgical Officer (male) Salary at the rate of £200 per annum

BRIDGE OF WEIR CONSUMPTION SANATORIA OF SCOTLAND—COLONY OF MERCY FOR EPILEPTICS—Assistant Resident Medical Officer (male) Salary £200 £250

COLCHESTER ROYAL EASTERN COUNTIES INSTITUTION FOR MENTAL DEFECTIVES—Assistant Medical Officer (unmarried) Salary £300 per annum

COVENTRY AND WARWICKSHIRE HOSPITAL—Vacancy on Honorary Surgical Staff

DEVONPORT ROYAL ALBERT HOSPITAL—Resident Male House-Surgeon Salary £150 per annum with £1 1s per week additional while working single handed

EGYPTIAN SCHOOL OF MEDICINE, CAIRO—(1) Professor of Physics (2) Professor of Clinical Medicine (3) Professor of Clinical Surgery (4) Lecturer on Physics Initial salary for (1), (2), and (3) £E 900 a year, in a class £E 900 1,400 and for (4) £E 540, in a class £E 540 840

EXETER ROYAL DEVON AND EXETER HOSPITAL—Assistant Physician

GLASGOW EYE INFIRMARY—Anæsthetist Honorarium £100 per annum

GLOUCESTERSHIRE ROYAL INFIRMARY AND EYE INSTITUTION, Gloucester—Assistant Physician and Pathologist

LANCASHIRE COUNTY MENTAL HOSPITAL, Winwick—Male Assistant Medical Officer Salary £300 per annum plus bonus, at present £140 16s 8d

LEEDS GENERAL INFIRMARY—Resident Ophthalmic Officer Salary £120 per annum

LIVERPOOL SCHOOL OF TROPICAL MEDICINE—Assistant on the staff of the Sir Alfred Jones Research Laboratory, Freetown, Sierra Leone

MANCHESTER ANCOATS HOSPITAL—Resident Medical Officer Salary £175 per annum

MANCHESTER EDUCATION COMMITTEE—Assistant School Medical Officer Salary £600 per annum, rising to £750

METROPOLITAN ASYLUMS BOARD—Assistant Medical Officer at Colindale Hospital, Hendon Salary £500 per annum

NORTHAMPTON COUNTY MENTAL HOSPITAL, Berrywood—Junior Assistant Medical Officer (male), single Salary £350 per annum rising to £450

NOTTINGHAM CITY—Resident Assistant Medical Officer at the Bagthorpe Institution and Infirmary Salary £300 per annum

REDDITCH SMALLWOOD HOSPITAL—Honorary Consulting Gynæcologist

ROCHDALE INFIRMARY AND DISPENSARY—Junior House Surgeon (male) Salary £200 per annum

ROYAL CHEST HOSPITAL, City Road, E C—(1) Physician with charge of Out Patients (2) Resident Medical Officer, salary £150 per annum (3) House Physician salary £100 per annum

ROYAL MANCHESTER CHILDREN'S HOSPITAL, Pendlebury—(1) Resident Surgical Officer, salary £80 per annum for six months, but eligible for re appointment as Resident Medical Officer at salary of £120 per annum (2) Assistant Medical Officer (non resident) at Out patients Department, Gartside Street, salary £150 per annum for six months, but eligible for re appointment as Medical Officer at salary of £200 per annum

ROYAL NORTHERN HOSPITAL, Holloway Road, N—House Surgeon Salary at the rate of £75 per annum

SALFORD UNION INFIRMARY—Third Assistant Resident Medical Officer (male) Salary £275 per annum

SCARBOROUGH HOSPITAL AND DISPENSARY—House Surgeon (female) Salary £150 per annum

SHEFFIELD ROYAL HOSPITAL—Resident Medical Officer (male) Salary £200 per annum

SHEFFIELD ROYAL INFIRMARY—Resident Surgical Officer £200 per annum.

WEST LONDON HOSPITAL, Hammersmith Road, W 6—(1) House Physician (2) Two House Surgeons Males Salary, £100 per annum each

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CERTIFYING FACTORY SURGEON—The Chief Inspector of Factories announces the following vacant appointment Milborne Port (Somerset)

MEDICAL REFEREE under the Workmen's Compensation Acts 1906 to 1923, for the county of Antrim and the county and city of Belfast Applications to the Secretary Ministry of Labour, 7, Upper Queen Street, Belfast, by September 15th

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NOTIFICATIONS of offices vacant in universities, medical colleges, and of vacant resident and other appointments at hospitals, will be found at pages 23, 26, 27, and 23 of our advertisement columns, and advertisements as to partnerships, assistantships, and locumtenencies at pages 24 and 25

POST GRADUATE COURSES AND LECTURES

FELLOWSHIP OF MEDICINE AND POST GRADUATE MEDICAL ASSOCIATION, 1, Wimpole Street W 1—*Hospital for Diseases of the Skin* Blackfriars Instruction in the Out patient Department daily from 2 30 p m Venereal Clinic, Tues and Fri, 5 30 to 7 p m *West End Hospital for Nervous Diseases* Daily at 5 p m Mon Tabes Dorsalis Tues, Orthopædic Treatment in Diseases of Nervous System Wed Examination of the Eye in Nervous Diseases Thurs, Hemiplegia and Monoplegia Fri, Investigation of Cranial Nerve Disorders

WEST LONDON HOSPITAL POST GRADUATE COLLEGE Hammersmith, W—Mon, 12 noon, Applied Anatomy Tues, 12 noon Chest Cases Wed, 11 a m, Medical Wards Thurs, 2 p m, Genito Urinary Department Fri, 2 p m, Throat Nose, and Ear Department Sat 10 a m Medical Diseases of Children Daily 10 a m to 6 p m Sat 10 a m to 1 p m, In and Out patients, Operations, Special Departments

BIRTHS, MARRIAGES, AND DEATHS

The charge for inserting announcements of Births, Marriages, and Deaths is 9s, which sum should be forwarded with the notice not later than the first post on Tuesday morning, in order to ensure insertion in the current issue

BIRTHS

JOHNSON—On August 21st, at Wykeham House Romsey, Hants, to Madeleine wife of Dr G H Johnson a son

MUSGRAVE WOODMAN—On August 21st at 132 Hagley Road Edgbaston, the wife of E Musgrave Woodman M S, F R C S a daughter

PEEBLES—At Salterley Grange Cheltenham, on August 20th, to Dr and Mrs D J Peebles, a daughter

MARRIAGE

PRITCHARD—COOKE—On August 9th, John Craven Pritchard son of the late C F Pritchard and Mrs Pritchard of 2 The Croft Hampstead, to Rosemary Cooke, I R C P M R C S, daughter of Mr and Mrs Henry Cooke, of 18, Airlie Gardens Campden Hill, W

DEATH

LASCELLES—On August 16th, at his residence Caulfield Farlestown, Banes suddenly of heart failure John Lascelles M B B Ch B A O, aged 32. Buried at Downpatrick Presbyterian Church, August 19th 1924.

EPITOME OF CURRENT MEDICAL LITERATURE.

Medicine.

154 **Syphilis and Pernicious Anaemia**

RAHLWES (*Dermatol Woch* June 21st, 1924, p 703) states that although it has been known for a long time that syphilis is sometimes associated with pernicious anaemia the exact relationship of the two diseases has not been discovered Rahlwes therefore reports the following case A man aged 52, who was suffering from fever and severe anaemia, presented the complete blood picture of pernicious anaemia red cells 1½ million per c mm , leucocytes 3,500 haemoglobin 17 3 per cent The spleen and liver were much enlarged , there was no free hydrochloric acid in the gastric juice, the total acidity being 12 , occult blood was absent He had had gonorrhoea at 20, but denied syphilis The Wassermann reaction was, however, strongly positive, and under a course of neosalvarsan, grey ointment, and potassium iodide his condition rapidly improved In three months the haemoglobin count rose from 17 3 to 61 8 per cent and the red cells from 1,200,000 to 4,700 000, while the anisocytosis was greatly improved Three months later he left hospital much improved, but about nine months later he was readmitted and a blood count showed that the red corpuscles had fallen to 1 150,000 per c mm , and the leucocytes to 2,300 , there was much anisocytosis, and the haemoglobin count was 27 per cent The urine was free from albumin, but the deposit contained scattered leucocytes, epithelial cells, and casts, the Wassermann reaction was negative The patient was very anaemic, weak, and exhausted, slightly jaundiced, and the liver was still much enlarged and very hard There was a systolic brut at the heart apex In view of the evidence of syphilis and the great improvement that had followed the previous treatment, another course of neosalvarsan, together with grey ointment and potassium iodide, was prescribed, but the patient failed to respond Signs of heart failure appeared, digitalis and caffeine were tried without success, and the patient died nineteen days after readmission At the necropsy the heart was pale, flabby, and dilated , the aortic intima was irregularly thickened and somewhat rough The apices of both lungs contained hard, blackish masses, each as large as small apples , that in the right apex was free from caseation, but in the left apex there were signs of caseation Pahlwes suggests that pernicious anaemia, while due to some unknown toxaemia, may remain in abeyance for a long period, but that an infection such as syphilis (which is itself capable of producing severe anaemia) sets free some toxin hitherto held in abeyance by the protective mechanism of the organism

155 **Angina Pectoris and Syphilis**

In spite of Disraeli's dictum as to the superlatively deceptive value of statistics, L GALLAVARDIN (*Pre se Med* , July 16th, 1924, p 598) ventures to publish certain deductions derived from an experience of 450 cases of definite angina pectoris He has only included those cases of angina which follow exertion, and has excluded all cases developing in the course of valvular disease Speaking generally, he has found evidence of syphilis in 30 per cent of his cases (including 9 per cent doubtfully syphilitic) Separating these into groups he found 88 per cent syphilitic in cases of angina associated with aortic insufficiency (constant in aortic aneurysm) In angina without aortic lesion the proportion of syphilis sinks to 20 per cent , the earlier the case (that is, below 40 years) the greater the proportion of syphilis In cases of angina with breathlessness after exertion in patients with high blood pressure the evidence of syphilis fell still lower—to 14 per cent These statistics show that it is not right to assume that angina pectoris means of necessity antecedent syphilis, a view taken by some cardiologists

153 **Alcoholism and Tuberculosis**

I W SAMSON (*Deut med Woch* , May 9th, 1924 p 613) medically examined 1,300 prostitutes in Berlin before and during the first part of the war Apart from venereal disease, nicotine poisoning, and the ill effects of temporary, but frequent, sojourns in prisons, the life of a prostitute was fairly healthy, and it was possible to form a comparatively reliable opinion of the relationship of alcoholism and tuberculosis Among the 1,300 there were 384 prostitutes who were more or less addicted to alcohol (29 1 per cent) These drinkers were classified in three groups, according as their consumption of alcohol was moderate, considerable, or excessive Samson discovered 299 cases of pulmonary tuberculosis and found that 66, or 17 2 per cent , of the 384 alcoholics were suffering from tuberculosis, whereas 233 or 25 4 per cent , of the 916 sober prostitutes were suffering from this disease Of the 299 tuberculous prostitutes 66, or 22 1 per cent , were alcoholics, whereas of the 1,001 healthy prostitutes as many as 318, or 31 8 per cent , were alcoholics In other words, the proportion of alcohol consumers was considerably higher among the healthy than among the consumptive prostitutes The author notes that his clinical findings are confirmatory of the report of Johannes Orth, who in 1916 published an account of necropsies performed over a period of ten years on 218 drinkers, most of whom were heavy drinkers Orth found that the heavier the drinker the more likely was the pulmonary tuberculosis to be healed Some what similar findings were published in 1913 by Bertholet of Lausanne, who discovered a slightly lower incidence of tuberculosis in necropsies on alcoholics than on non alcoholics After discussing these and other observations, the author insists that if the campaign against alcoholism is to be rational and efficient it must be supported by scientifically established facts and not by speculative hypotheses which do not bear scrutiny

157 **Acid Sodium Phosphate in Neurasthenia and Graves's Disease**

H J VETLESEN (*Norsk Mag f Laegevidensk aben*, May, 1924, p 337) has for nearly thirty years been giving acid sodium phosphate in cases of neurasthenia, psychasthenia, and general debility, with marked success, but, till he read about Emden's investigations during the war at the Physiological Institute in Frankfurt he felt his advocacy of this drug was only empirical Emden showed in 1915 that the output of work by horses living only on cabbages could be greatly increased by giving them 80 grams of acid sodium phosphate daily, and the bodily and mental vigour of soldiers was also found to be greatly increased by a single daily dose of 5 to 7 5 grams of the same drug The author has given it to several hundred patients with simple goitre, and in most cases has succeeded in arresting the development or actually diminishing the size, of the thyroid gland He has also treated 77 cases of genuine Graves's disease, the total amount of acid sodium phosphate given in the day being 4 grams Ten of these patients subsequently underwent an operation, and one of them, a man was operated on twice He returned to the author showing marked signs of Graves's disease, great exophthalmos, and a pulse of 158 On palpation there seemed to be nothing left of the thyroid gland. The author gives acid sodium phosphate for months and even years, with short intervals, and has never seen intolerance to it On the other hand, he has found it an excellent sedative, the pulse rate declining and tremor disappearing He has even known exophthalmos diminish or disappear under this treatment

158 **Chronic Haemorrhagic Gastritis**

L URRUTIA (*Arch de med , cir y esp* , March 1st, 1924, p 377) states that, in addition to acute erosion due to circulatory disturbances intoxications, infections, etc , there is a group of chronic erosions of the stomach which was described by Einhorn in 1894 This group is characterized by chronic pain, which is usually not intense, occurring immediately after meals, but not connected with their quality, and lasting one to two hours It is rarely continuous, and may appear independently of food There is also debility and loss of flesh The course is chronic and relapses are frequent The gastric chemistry does not show any specific characters although diminution of acidity is the rule and hyperchlorhydria is exceptional There is abundance of mucus in the gastric contents, but the essential diagnostic feature, according to Einhorn, is the constant presence of small particles of the mucous membrane in the stomach washings which are usually clear and only exceptionally cloudy The probable cause of these erosions which have not been demonstrated anatomically, is in the majority of cases chronic gastritis In 1900 Pariser published similar cases but accompanied by intense pain diffused throughout the stomach, and insisted on the regular presence of small pieces of mucous membrane in the stomach washings attributing the symptoms to ulcerative gastritis These findings were subsequently confirmed by many other observers such as Ewald Boas, Albu Straus, and Knud Faber, and Urrutia himself has seen about half a dozen examples The prognosis of erosive gastritis is good The treatment consists in washing out the stomach with a 1 per 1 0.0 solution of silver nitrate and in the administration of large doses of bismuth In addition to Einhorn's

disease—as it is called by Muntz—Nauwerk, Mathieu and Sansoni have described a chronic ulcerative anachlorhydric gastritis characterized by large or small gastric haemorrhage, but without any ulceration being found *post mortem*

159 The Initial Fever in Tertian Malaria

P C KORTEWEG (*Nederl Tijdschr v Geneesk*, April 12th, 1924, p 1622) records his observations on the initial fever in cases of general paralysis inoculated with tertian malaria in the clinics of K H and L Bouman at Amsterdam From September, 1921, to the end of November, 1923, 66 patients were inoculated, two of them twice, as no result followed the first inoculation In 52 cases a careful examination of the blood was made for the first appearance of *Plasmodium vivax*, and it was found that it never appeared before the fifth day or later than the twenty first day after inoculation, and that it was most frequently present between the sixth and twelfth days Usually there was no constitutional reaction directly after the inoculation, but in about a third of the cases there was a rise of temperature to 100 4° or 102 2° on the day of injection, or one or two days later This rise of temperature had nothing to do with malaria, and entirely disappeared within a few hours The malarial pyrexia began about the same time as the plasmodia were first found in the blood Among 37 cases Korteweg found that the plasmodia appeared before the rise of temperature in 13 on the same day and in 6 afterwards The character of the initial fever in 63 cases was as follows in 36 it was a continued remittent, in 12 intermittent, and in the rest irregular

Surgery.

160 Diagnosis of Ruptured Urinary Bladder

R T VAUGHAN and D F RUDNICK (*Journ Amer Med Assoc*, July 5th, 1924, p 9) describe a new way of diagnosing rupture of the urinary bladder sufficiently early to forestall peritonitis A small rubber catheter is passed through the urethra with the usual asepsis If the bladder is ruptured a few cubic centimetres of blood or blood stained urine usually escapes The catheter is fastened temporarily in the urethra by means of adhesive strips, and the patient is examined by *x* rays Air is introduced through the catheter into the bladder by means of a hand bulb, about 50 to 100 c cm being ample, though more may be introduced if desired In the case of intraperitoneal rupture the air is seen to escape into the abdominal cavity, and, with the patient lying on his left side, it accumulates immediately under the peritoneum, allowing the bowel and liver to fall away from the right abdominal wall If the patient sits up this free air is seen to collect between the diaphragm and the liver In extraperitoneal rupture the air escapes into the loose tissue around the bladder, and is seen to spread along the fascial planes outside the peritoneal cavity In cases without rupture the air accumulates in the bladder, distends it, and the regular vesical outline is produced The authors describe in detail the treatment of five cases, and point out the value of differentiating between intraperitoneal and extraperitoneal rupture, the surgeon being able in the latter case to avoid opening the peritoneal cavity They do not think that there is any added risk to the patient either from air embolism or from infection, and no discomfort is caused

161 Modern Treatment of Bone and Joint Tuberculosis

G R GIRDLESTONE (*Journ Bone and Joint Surg*, July, 1924, p 519), discussing the modern treatment of tuberculosis of the bones and joints, points out that while a tuberculous focus in a bone or joint is part of a deeply rooted disease and evidence of a pre existing infection of the body, which is advancing and gaining the upper hand, modern treatment by rest, diet, open air, and sunshine, if continued for a sufficient length of time, will almost always effect a cure, which after care measures can render permanent The necessity for such skilled after care is shown by the frequency of relapses when the patient is discharged from hospital to unsatisfactory home surroundings unless continuous after care supervision is maintained, with prompt readmission when necessary Treatment aims at raising the patient's general vitality, health, and powers of resistance, the elimination of any factors harmful to the diseased part, the avoidance of septic infection, and the restoration of function, all of which require rest, good feeding, open air, and sufficient time In the application of heliotherapy the gradual exposure of the body is important in order to develop pigment, which, by protecting the deeper layers of the skin and underlying tissues from the photochemical effect of sunlight, allows the patient to respond better to treatment While the sun heats and the wind cools, active hyperaemia of the skin is promoted and metabolism stimulated—the wind causing a reflex stimulation of the deep organs from the skin In providing rest splintage should hold the parts accurately and comfortably in position without constricting the circulation or interfering with respiration, while allowing exposure of the affected part to the sun and air together with as much exposure of the rest of the body as possible During active disease perfect un interrupted surgical rest is indicated, but with the cessation of all pain and spasm comparative immobilization permitting of minor movements should be adopted A cold abscess, the fluid of which is harmless, should only be aspirated if the skin is threatened, it should never be opened and drained

162 Nephrectomy for Bilateral Renal Tuberculosis

G EKEHORN (*Hygiea*, June 15th and 30th, 1924, pp 353 and 386) is in favour of removing the more diseased kidney in cases of advanced bilateral renal tuberculosis when there are grounds for believing that it is responsible for severe pain and fever Among about 200 cases of renal tuberculosis he has observed 27 advanced cases (24 males and 3 females) in which he could not carry out every exploratory test, such as catheterization of the ureters, cystoscopy, etc In these cases he directly explored the kidneys by operation, and in 7 cases found the conditions to be unsuitable for nephrectomy He performed this operation in the remaining 20 cases, the exploration of the kidney on one side and the nephrectomy on the other being undertaken at the same time The wounds were closed at once and healed uneventfully Almost all the 20 patients responded to this treatment by an improvement in their condition, pain diminishing, and the urine becoming clearer They were operated on between 1910 and 1922, and an inquiry conducted in the autumn of 1922 showed that 10 were dead, 5 could not be traced, and 5 were still alive Among the survivors there were 2 whose operations dated back twelve years They were still fit for work and complained of no pain The urine contained no albumin, but they still had to micturate more than once during the night A third survivor, operated on five years earlier, could also work as before and had no pain Of the 10 patients who were known to have died, one had lived six years after the operation, and another two years It would thus seem that, in selected cases, nephrectomy may be more than temporarily beneficial in cases of bilateral renal tuberculosis

163 Erect Dislocation of the Shoulder

F S LYNN (*Surg, Gynecol and Obstet*, July, 1924, p 51) draws attention to the frequency of dislocations of the shoulder, whilst the number of erect dislocations of the joint is small In some clinics no cases of the latter have been recorded, none occurred among 539 shoulder dislocations at St Thomas's Hospital, London This dislocation is a variety of the subglenoid, and the head of the bone is always found against the side of the chest There are three cardinal symptoms (1) elevation of the arm, (2) fixation in this position, and (3) pain, increased by any attempt to lower it The forearm is usually flexed and resting on the top of the head The fixation of the arm in this position is explained by the tenseness of the anterior and posterior parts of the capsule, whilst the long head of the triceps also fixes the head of the bone The ages of the patients range from 21 to 60 years If over 60 there is usually a fracture because of the brittleness of the bone For the actual production of the dislocation violent force is not necessary, when it occurs the bone is usually abducted or extended and the forearm pronated, occasionally nerve injuries may be present Reduction by upward traction of the arm has been successful in most cases It has been possible to collect records of 28 cases, and the author reports 3 further cases

164 A Case of Congenital Megacolon

A BERGE, CHEVRIER, and P LEFÈVRE (*Bull et Mém Soc Med des Hop de Paris*, July 17th, 1924, p 1111) record an example of enormous congenital dilatation of the colon in a boy aged 15 years When admitted his abdomen was much distended and he was slightly cyanosed on exertion He had not passed faeces for three weeks, but much flatus was escaping From birth he had been troubled with constipation Faecal vomiting set in, and the abdomen was opened for obstruction The patient died ten days later, he had passed no faeces naturally for thirty eight days At the autopsy the colon was found enormously dilated—20 in long, 11 in wide, and 21½ in in circumference—the lungs and heart being pushed high up behind the sternum There was a large mass of retained faeces weighing 30 lb, and a hydronephrosis due to pressure of hard faeces in the pelvis Histologically the colon showed hypertrophy of the walls, especially of the circular layer, and a growth of connective tissue in all the planes, more particularly in the mucous layer, where epithelium had completely disappeared A diagram of the abdomen shows clearly how enormous the colon was

Ophthalmology

165 **Papilloedema.**

W A HOLDEN (*Arch of Ophthalmol*, July, 1924 p 316) in this paper emphasizes the fact that true papilloedema due to raised intracranial pressure almost invariably leads to blindness unless a decompression operation is done It is necessary, though often difficult, to distinguish between papilloedema, papillitis, and pseudo-neuritis In papilloedema the nasal border of the disc becomes blurred first and the temporal border last, the disc becomes elevated to as much as 3 to 5 dioptres of swelling, the physiological cup becomes obliterated, and haemorrhages appear Papilloedema is rare in myopic eyes, and does not develop in an atrophic nerve Vision is for some time unaffected and the visual field remains full, though the blind spot is enlarged Later, contraction of the field, first on the nasal side and then concentrically, occurs with reduction of central vision Papilloedema is essentially a non inflammatory process, and is associated with increased pressure of the spinal fluid, as can be shown by lumbar puncture Papillitis is a true inflammation of the disc and is usually unilateral The swelling of the disc rarely exceeds 2 dioptres but there is generally considerable oedema of the surrounding retina Vision fails early the first changes being enlargement of the blind spot and a central scotoma The common causes of the condition are nasal sinusitis and inflammation of the orbit The spinal fluid is not under pressure Pseudo-neuritis is seen in high hypermetropia, it is an anatomical condition, and remains stationary there is slight swelling of the disc, but no oedema and no haemorrhages

166 **Retrobulbar Optic Neuritis of Ethmoido-spheno dal Origin**

G POPTMANN and P PESME (*Rev de Laryngol, Otol et Rhinol*, May 15th, 1924 p 283) describe two cases of retrobulbar neuritis in which the sphenoidal and posterior ethmoidal sinuses contained pus and granulation tissue In each case there was a small but absolute central scotoma In one there was marked papillitis with a red disc, some swelling, and engorged vessels, in the other the changes in the disc were much less marked Operative treatment of the sinuses caused a very rapid recovery to almost normal sight The central scotoma is the subjective phenomenon of a lesion of the papillo macular bundle The term retrobulbar, or better retro ocular, neuritis is fittingly applied to inflammation of the papillo macular bundle, and is distinguished from a descending neuritis, which does not give rise to a central scotoma The disc in the latter type shows a discoloration of the temporal portion, which is due to atrophy of the macular bundle this type corresponds more to that which follows intoxication by tobacco and by alcohol The neuritis provoked by diabetes and by syphilis is usually bilateral, is accompanied by other signs of the disease, and has a less acute onset In the cases described the central scotoma is accompanied by the condition of papillitis, and this association of symptoms and signs, which is apparently only found in cases which follow posterior sinus suppuration, should always lead to investigation of the sinuses

167 **Leber's Disease**

BAUDOT (*Rev med de l Est*, May 1st, 1924, p 296) records a case of Leber's disease or hereditary optic atrophy The patient was a man, aged 23, who sought advice because his vision had been getting progressively weaker for the last two years, so that he was unable to walk without a guide At the onset he had had some transient frontal headache On examination the reaction to light was diminished, but the reaction to accommodation and convergence was preserved in both eyes The cornea, iris, lens, and media were normal in both eyes, which showed slight myopia Visual acuity in both eyes was reduced to perception of light The fundi showed well marked bilateral optic atrophy The Wasser mann reaction was negative On inquiry, a history was obtained of five other similar cases in the family—namely, a maternal uncle affected at 33, his two cousins, male and female affected at 24 and 25 respectively, a son of the female cousin affected at 13, and the patient's maternal great uncle in whose case the date of onset could not be ascertained The present case corresponds to the description of the disease given by Leber under the name of "familial retrobulbar neuritis" in presenting the following characters greyish white atrophy of both papillae with regular margins, dyschromatopsia for green and the absence of any cause such as intoxication infection or cranial deformity The date of appearance of the atrophy, both in the patient and the other affected members of the family corresponded to the average age, which ranges from 13 to 33, with a maximum between 21 and 25 The character of the disease was distinctly hereditary, as five persons were affected in three generations Males are affected in preference to females, only one of the five being a female in the present case In spite of the absence of a history of syphilis slight improvement took place after treatment by bismuth

168 **Intrinsic Ocular Paralysis after Acute Infections**

J DE J GONZALEZ (*Amer Journ of Ophthalmol*, May, 1924, p 351) suggests that these late paralyses coming on after acute infectious diseases may be due to a non specific substance which is possibly a by product of the chemical defensive substances elaborated by the body against the toxins of the infectious disease Significant facts in support of this idea are that the paralyses usually occur in the second or third week of convalescence, when it might be supposed that any direct action of the infecting organisms and their toxins would be absent that it is more often in the mild cases of the diseases that the paralyses occur, and that when the paralysis has appeared curative serums have little or no effect upon its progress The hypothetical paralysing substance he likens to a drug, such as atropine or nicotine, and thinks that its specific site of action is the neuro-muscular synapse

Obstetrics and Gynaecology.

169 **Are Ovarian Extracts Therapeutically Useful?**

M R ROBINSON and B ZONDEK (*Amer Journ Obstet and Gynecol*, July, 1924, p 83) cast further doubt on the specificity of the effects produced by administration of extracts of ovarian substance Their experimental work was carried out in virgin guinea pigs previous investigators, they think have not attached sufficient importance to the fact that animal genital organs show marked seasonal variations in size and blood content, and they have relied on naked eye inspection rather than the weight of the uterus as compared with the total body weight Proprietary ovarian products produced after tryptic fermentation were found uniformly ineffective, but chemically de albuminized products from time to time produced uterine hypertrophy Chemically de albuminized extracts of testis, pineal gland, and thymus were equally effective in some cases but extracts of the anterior lobe of the pituitary gave no results Parenteral injections of an albuminoid mixture, such as sterilized milk, were as successful as 'ovarian therapy' in inducing uterine hyperplasia Testing the biogenic amino bodies the authors found that guanidine, arginin, tyrosin, and tyramin were ineffective, histamine, alone or in a proprietary product combined with tyramin, brought about with fair regularity enlargement of the uterus The general conclusion drawn is that genital growth may be stimulated by administration of non specific amino-bodies which are the result of protein decomposition, as well as by the so-called specific extracts To obtain a true endocrine effect with ovarian extracts is impossible for in the process of preparation the active principle is destroyed any slight therapeutic success is obtained by non specific means

170 **Rupture of the Uterus.**

D S HILLIS (*Surg, Gynecol and Obstet*, July 1924, p 32) reports four cases of ruptured uterus encountered in eight months There was a striking similarity between these cases in all of them the rupture occurred during pregnancy, and occupied the site of a Caesarean section scar In each case the uterus was removed and the patient recovered He draws the following conclusions from the study of these cases The scar of a Caesarean section may rupture not only during the course of labour but at any time during the last three months of pregnancy The localization of the placenta over the scar seemed to have no influence in two cases fragments of syncytium were found over the scar while in the two other cases no sign of placental tissue could be seen at the site of the scar In one case there may have been a traumatic cause, since the patient fell down in a faint before the pain began, in the three other cases severe and sharp pain was the first symptom noted, and in one case the rupture occurred while the patient was asleep The rupture in the scar allowed the uterus to empty completely and good contraction and retraction followed stopping the haemorrhage In no case was there external bleeding because labour had not begun and the cervix was closed The line of rupture in each case was in the scar tissue, and the contraction of the uterus held the edges of the wound so far apart that they could only be approximated with great difficulty The author considers it advisable to remove the uterus in these cases owing to the

171 Treatment of Progressive Phthisis during Pregnancy

J MISGELD (*Zentralbl f Gynak*, June 28th, 1924, p 1438) has followed Bumm's advice, and during the last fifteen years has treated 56 cases of advancing phthisis in pregnant women by hysterectomy and double salpingo oophorectomy During the same time 46 patients with phthisis have been treated by induction of abortion, and the results are compared, showing the operative treatment to be markedly the better Thus the mortality for operative cases was 28 2 per cent, as compared with 37 per cent for induction, 3 5 per cent remained unbenefited after operation, 17 per cent after induction, only 3 4 per cent became worse after operation, whereas 35 5 per cent deteriorated after induction Post operative symptoms, such as flushings, etc, were not frequent, and in the worst cases only lasted for a year at the most The author states that the condition warrants this somewhat drastic treatment, since pregnancy is the worst complication which can affect the tuberculous woman This, according to Winter, is due to the increased need of oxygen and nutriment during pregnancy, the frequent accompaniment of hyperemesis, and the increased chances of mechanical spread of infection During labour tubercle bacilli pass readily from the placental site into the blood, and the loss of blood is a weakening influence In the puerperium exhaustion from loss of lochia and blood, and, above all, from lactation, causes the disease to progress rapidly Phthisis is also aggravated during sexual life, increased sexuality causing rises of temperature Misgeld adds that the following conditions are to be observed before operation should be undertaken (1) No cavities must be present in the lungs (2) The woman must be normal mentally (3) The pregnancy must be under four months' duration, if over six months operation is contraindicated, as also is induction (4) The woman, if possible, should have several living children With these provisions the author is in entire agreement with Bumm that hysterectomy, together with the removal of the appendages, is the best method of treatment

Pathology.

172. Bacteria of the Stomach Duodenum, and Bile Ducts

F VIRGILLO (*Arch Ital di Chir*, June, 1924, p 393), as the result of his investigations in the Surgical Clinic of Padua University, has come to the following conclusions (1) There is a slight difference in the results obtained from examination of the gastric contents removed by Einhorn's tube as compared with direct examination of the contents during gastro entero anastomosis By the former method the contents were found to be sterile in 19 per cent and in the latter in 23 5 per cent After extraction with Einhorn's tube the gastric contents were found to be sterile in 1 out of 4 cases of duodenal ulcer, in 2 out of 6 cases of pyloric stenosis due to gastro pyloric or pyloro duodenal ulcer, and in 2 out of 9 cases of disease of the bile ducts The gastric contents always showed an abundance of organisms in carcinoma of the stomach Direct examination of the gastric contents during gastro entero anastomosis showed that they were sterile in 1 out of 2 cases of active gastric ulcer and in 2 out of 5 cases of duodenal ulcer There was an abundance of organisms in 7 cases of pyloric stenosis and carcinoma of the stomach (2) In normal subjects removal of the gastric contents with Einhorn's tube showed that they were sterile in 2 out of 3 cases (3) No definite relation could be established between the amount of free hydrochloric acid and the bacterial content of the stomach (4) After gastro entero anastomosis the gastric flora remained unchanged for the first fifteen or twenty days after the operation (5) The duodenal contents removed by the Eustachian tube were found to be constantly sterile in normal subjects and in 1 out of 2 duodenal ulcers In pyloric stenosis there was a development of staphylococci in one case, and in gastric carcinoma organisms were always present In affections of the bile ducts the duodenal cultures were sterile in 3 out of 13 cases (6) The contents of the gall bladder in cholelithiasis, cholecystitis, and pericholecystitis were sterile in 11 out of 21 cases (7) Comparison of the bacterial flora of the duodenum before and after cholecystectomy showed that the duodenal fluid was sterile in 23 per cent before cholecystectomy and in 0 per cent after the operation (8) The cores of the calculi contained in the gall bladder were sterile in 20 per cent (9) The contents of the first loop of the jejunum were sterile in 20 per cent (10) The organisms most frequently found were staphylococci, streptococci, *B coli*, a coliform organism, pseudo diphtheria bacilli, saccharomycetes, and *Oidium albicans* Staphylococci predominated in the stomach, and saccharomycetes and *Oidium albicans* were usually attached to the mucosa In the duodenum streptococci and staphylococci were present in equal amounts, and a few bacillary forms were seen In the first loop of the jejunum coccal and bacillary forms, especially *B coli*, were present in equal amounts (11) The presence of the typhoid and paratyphoid bacillus in the gall bladder and duodenum is of special importance in non pathological conditions (12) In all the cases studied the virulence of the organisms was very slight or *nil*

173. Early Changes in the Pancreas after Death

G CAMERON (*Med Journ of Australia*, May 31st, 1924, p 537), from investigations into the changes occurring in the pancreas during the first eight hours after death, found that the islet cells begin to shrink, becoming less defined in outline with alterations in the nuclear staining, the acinar cells showing similar changes in less degree, and signs of the nuclear material being discharged into the cytoplasm The earliest changes are seen in the granular cells, which are classed according to the proportion of granules and the depth with which they stain, and changes in their shape and the appearance of the nuclei The most granular cells gradually alter into that class of cells where granules are less or no longer distinguished Following on these changes alterations in the nuclei occur, so that the granular cells still further resemble the non granular, and destruction of whole islet cells occurs, leaving empty spaces, while the acinar cells lose their granules more slowly, these being more resistant to autolytic and other enzymes than the islet granules Islet granules disappear some time before nuclear changes are seen, so that they are of a very unstable character These early *post mortem* changes are identical with those resulting from disease, so that unless the pancreas can be examined within four hours of death its pathology must remain obscure From these investigations it appears that the most important changes after death occur within the first eight hours, owing to the cutting off of the blood and the starting of autolysis by ferments Zymogen granules are much more resistant to changes than other granules, and the similarity of early changes in the islets to those occurring in experimental and human diabetes is apparent

174. Experimental Epidemic Encephalitis and Herpes

G AURIAT and P E F SAINTE MARIE (*C R Soc de Biologie*, June 13th, 1924, p 46), as the result of their experiments on rabbits, come to the following conclusions (1) For a long time after the acute stage of epidemic encephalitis the cerebro spinal fluid retains its virulence, although in an attenuated form (2) A virus of encephalitis and herpes of weak virulence, after inoculation of the rabbit's cornea, may produce chronic lesions of the brain without previous keratitis or other clinical symptoms If, as some writers hold, the virus of encephalitis is distinct from that of herpes, the lesions in inoculated animals do not show any evidence to justify such a differentiation

175 To Prevent Decomposition of Specimens of Urine.

T BRANDT and R C STORSTAD (*Norsk Mag f Laegevidenskaben*, June, 1924, p 456) point out that when the urine of a diabetic is collected during twenty four hours decomposition of some of its contents may stultify an analysis Yet an analysis of only one sample of urine is unreliable, since the contents of the urine vary during the twenty four hours The authors have tested a variety of disinfectants, including thymol, toluol, xylol, chloroform, and mercury perchloride, and they note that several common disinfectants, such as formalin and carbolic acid, are unsuitable for this purpose because they act as reducing agents Other disinfectants, such as thymol, might serve the desired purpose were the problem merely bacteriological, but it has been observed that with the same quantitative and qualitative bacterial contamination the rate of decomposition of various urines differs enormously The problem is therefore physical and chemical, as well as bacteriological The authors have found that there is practically no ammoniacal decomposition taking place in a urine with a *p*H below 5, even when the urine is kept in a thermostat for twenty four hours Many disinfectants being expensive as well as unreliable, it would seem wiser to abandon them in favour of simply altering the hydrogen ion composition of the urine by the addition of a little acid, which prevents the *p*H becoming less than 5 As long ago as 1886 Muller recommended adding acids to urine to prevent bacterial decomposition, and the explanation of this process at that time was that the acid acted as a germicide The authors consider that any acid may be used for this purpose, provided it is not nitric acid, which destroys several organic substances Sulphuric acid and hydrochloric acid are excellent for this purpose, and about 15 c cm of hydrochloric acid should be added to every litre and a half of urine The chief advantages of acids over disinfectants are that the former cost less, are readily soluble, and act with greater certainty over a short period.

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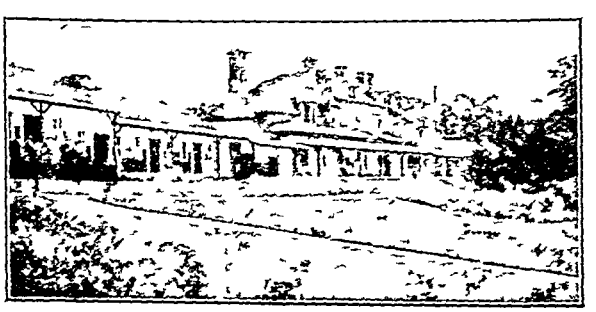
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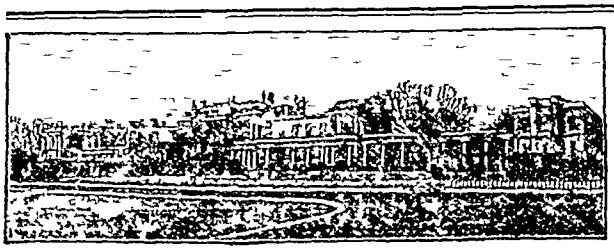
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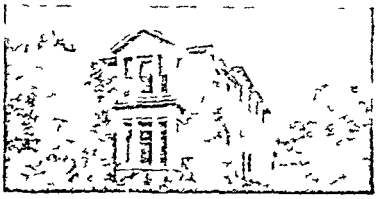
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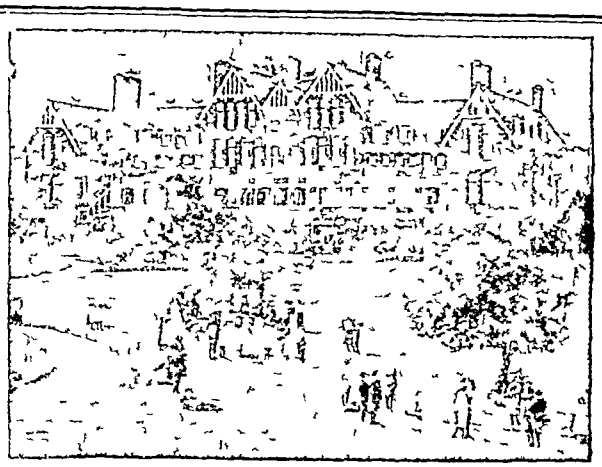
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Young energetic practitioner desires ASSISTANTSHIP, preferably with view to lower middle class practice in London Experience l panel and private practice Specially ed midwifery Willing to work hard for good salary — Address No 4311 B M J Office, 429, Strand W C 2

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Dispenser, thoroughly experi- enced in Surgery routine and Book keeping seeks POST in London Excellent references — Address, stating salary offered No 4232 BRITISH MEDICAL JOURNAL Office 429 Strand W C 2

Dispenser, male, seeks posi- tion with Doctor, anywhere Could keep books —W G MILLS, 17, Wrotham Road, Barnet, Herts

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Wanted immediately, Locum or Assistantship with or without view British ex Service, aged 30 married One year General Practice experience Excellent te ti monials —Address No 4329 BRITISH MEDICAL JOURNAL Office 129, Strand W C 2

Wanted —Locum or Assis- tantship in Panel, Private Practice by M R C S and F R C P Free at present —Address No 4303 BRITISH MEDICAL JOURNAL Office, 4 9, Strand W C 2

Wanted —Locum work, September and October by experienced G P R A M C (T)—Address, No 4338 BRITISH MEDICAL JOURNAL Office, 129, Strand W C 2

Hospitality Locum Tenency offered for a month at small Northern Hospital —Address, with references, No 4305 BRITISH MEDICAL JOURNAL Office, 429, Strand, W C 2

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Locums Engagements wanted by Scotch Graduate (M B, Ch B Aberdeen) Good experience of private or panel Practice Free to engage from about Sept 10th Terms moderate where work light —Address No 4335, BRITISH MEDICAL JOURNAL OFFICE 129 Strand W C 2

Locum —Doctor, retired from own practice desires further ENGAGE MENTS for S ptember and October Terms 6 gns per week London preferred, not es ential Does some ten locums annually Good recent refs — Apply Medicus 58 Talbot Road Bayswater W

M B, Ch B Edin (Woman), wishes LOCUM Work for September Pre vious experience —Address No 4331 BRITISH MEDICAL JOURNAL Office 429 Strand, W C 2

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PROVIDED
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Mr. W. S. ATKINS
43, BEDFORD STREET, STRAND, W.C.2.
Telegraphic Address
Positions, Westrand, London.
Telephone Regent 229

Wanted —Partnership, Town or Country by Public School Man Single aged 38 ex H S and H P where he could live in or be in rooms Has recently sold Practice after 13 years in one place Experienced in all branches of General Practice Able to commence end September —Address No 4306 BRITISH MEDICAL JOURNAL Office 429 Strand, W C 2

Abstainer (not bigoted), 32, M B (Honours certificates) excellent testi monials, seeks South Country (preferably Coast) PARTNERSHIP cum or sine succession, or pre liminary Assistantship —Address No 4308 BRITISH MEDICAL JOURNAL Office 429 Strand W C

Partnership wanted by Dur- ham G aduate in good c ass Eastern or North Eastern country or county town Practice Capital available References —Address No 4332 BRITISH MEDICAL JOURNAL OFFICE 129 Strand W C 2

Partnership offered —In a Northern University City Old established Practice Average receipts £2 200 Panel 2 0.0 Good house and garden tennis lawn Englishman or Scot man preferred No agents —Add No 4328 BRITISH MEDICAL JOURNAL Office 429 Strand W C

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Partnership in Pathological and Public Health Laboratory in London offered to a fully qualified gentleman.—For further particulars, address as Clinical c/o DEACONS Leadenhall Street E.C.3.

Midlands.—Partnership (¼ to commence) in rapidly growing industrial practice earning this year over £2,600. State age experience if married. Must be energetic. Preliminary assistantship may be required.—Address No 4313 B.M.J. Office, 429 Strand, W.C.2.

Splendid opportunity for graduate of Oxford or Cambridge. PARTNERSHIP in first-class practice in University Town. ½ share for disposal (£1,000 guaranteed). Option of increase. No panel, no dispensing. Partner must be well qualified, with leaning towards medicine. Prem. 2yr. purchase. (Other things equal, sportsman pref.).—Add. No. 4233, B.M.J., 429 Strand.

Wanted.—Middle and working-class PRACTICE, yielding from £1,000 to £3,000 a year, in London or any good town. Partnership entertained.—Apply PEACOCK & HADLEY, 19 Craven Street, Strand, W.C.2. (No charge unless sale effected.)

Wanted, in large Country or County Town a good-class Non-panel PRACTICE with opening for Consulting Work or Specializing. House at rental. Necessary capital available. No agents.—Address in first instance to No. 4112, BRIT. MED. JOURN. Office, 429 Strand, W.C.

Wanted.—F. PRINCE, 32, Charing Cross, London, S.W.1, always having clients desirous of PURCHASING PRACTICES or PARTNERSHIPS in Town & Country, prepared to pay good premiums, can usually effect a quick sale. Terms without obligation, post free.

Wanted.—West or S.W. (suburb or district) PRACTICE, PARTNERSHIP or SUCCESSION in middle and working class locality, with good panel. Capital available. Experienced. No agents. Strictly confidential. Interview if reqd.—Add. No. 4316, B.M.J., 429 Strand.

Wanted by F.R.C.S., aged 30, a PRACTICE or PARTNERSHIP in town in the S. or Midlands with scope for surgery. Income about £1,000. Now free and can pay cash.—F., c/o BLUNDELL & Co., 22 Craven Street, Strand, W.C.2.

Wanted by F.R.C.S., M.B. (Cantab.), at present in practice and for 20 years on Surgical Hospital Staff, OPENING for practising Surgery in Some set or near.—Address No. 4121, BRIT. MED. JOURN. Office, 429 Strand, W.C.

Death Vacancy.—£1,000 a year.—Favourite riverside resort. Very old established. Same hands over 50 years. Small and select panel. Night work mostly refused. Excellent opportunity for prompt purchaser. Premium for immediate sale £2,000. Another 1,000 panel patients can be obtained if required.—Apply No. 7556, Mr. PERCIVAL TURNER, 4, Adam Street, Adelphi, W.C.2.

Death Vacancy.—Medical PRACTICE for Sale (West Riding). Panel about 900. Receipts for 1921-19-3 average £750. For further particulars apply to DR. LING, Skipton Road, Keighley, Yorks.

For Disposal.—A good Prac- TICE is not always to be had directly but Mr. PERCIVAL TURNER can generally offer applicants something suitable. Nearly all the best Practices are sold by him with out being advertised.—Full information free on application to 4 Adam St., W.C.2.

Industrial Practice for sale in busy Lancashire Centre. Income £2,500. R.C. preferred. Really suitable for two men. Genuine.—P.Q.R.," HOUGH, HOSKISON & Co., Ltd., Manufacturing Chemists, Manchester.

London, S.W.—Half share of an old-established PRACTICE returning £3,000 a year. Middle and working class. Good living accommodation available. Premium £2,750 cash. Apply PEACOCK & HADLEY, 19 Craven Street, Strand, W.C.2.

London, residential, within 10 to 12 miles radius.—Wanted by M.D., F.R.C.S. Edin., aged 30, single, good PRACTICE (or Partner hip) preferably with some prospects of surgical post or opportunities for operative work. Can take available.—Add., No. 4317, B.M.J., 429 Strand, W.C.

Lancs.—Old-established PRACTICE. Nice house, garage. £32. Receipts over £3,000, scope for increase. Panel 1,100, appointments £80. Modern partnership introduction. Price £4,500, part by instalments. MANCHESTER MEDICAL & SCHOLASTIC ASSOCIATION, Ltd., 6 Brown Street.

M.D., B.S. (Lond.), 20 years' in tropics, wishes to settle at home about March 1925. Would consider PRACTICE, or PARTNERSHIP with early succession preferably where Surgery and/or Tropical Medicine would be of value. London preferred or country town with chance of Hospital appointment. Capital available.—Address No. 4208, BRIT. MED. JOURN., 429 Strand, W.C.2.

Midland City.—Practice for Sale established over 40 years. Panel 800. Receipts about £1,000. Scope for increase. Commodious house with accommodation for maternity cases. Specially equipped professional rooms. XYLOL" Southall Bros. & Barclay, Birmingham.

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Required at once.—Practices and PARTNERSHIPS.—Mr. W. S. ATKINS (late of ARNOLD & SON, London) has a large number of Clients who are seeking Practices and Partnerships, and wish to settle down at once.—Send full particulars in confidence, to Mr. W. S. ATKINS, Medical Transfer Agency, 43 Bedford Street, Strand, London, W.C.

South Coast.—Good class PRACTICE for Sale, situated in fashionable small seaside resort. Excellent small house, recently decorated inside and out this year, on long lease. Practice worth over £1,200 p.a., easily transferable and with only slight opposition. Yachting and all sports. Ample leisure. Two years' purchase.—Address No. 4328, B.M.J. Office, 429 Strand, W.C.2.

South London.—Working- class PRACTICE. Receipts about £950 p.a. Panel 900. Large house (18 rooms) held on lease, 13 years to run, rent £80. Garage, stabling, at £50. Apply PEACOCK & HADLEY, 19 Craven Street, Strand, W.C.2.

To Purchasers.—Do not Buy without expert assistance. With 40 years experience Mr. PERCIVAL TURNER can advise in all cases. Terms free on application to 4 Adam Street, Strand, W.C. Telephone: Gerrard 309. Telegrams: Lycomian, London."

Urgent Sale. Unusual oppor- tunity. £2,200 a year increasing, easily worked PRACTICE in a Seaport Town in West of England. Very little night work. Fees for visits from 5/ upward. Panel 1,400. Excellent corner house (not large) with garden. Every investigation. Personally investigated and recommended. For a quick sale the low price of one year's purchase will be accepted.—Apply No. 7560, c/o Mr. PERCIVAL TURNER, 4 Adam Street, Strand, W.C.2.

Within 12 miles South of London, a large convenient and well-placed HOUSE eminently suitable for Resident Patients or as Nursing Home, fine garden. Freehold, together with a small good class PRACTICE easily worked; no dispensing. Price together £4,350 on equitable terms for quick sale.—Address No. 4337, BRITISH MEDICAL JOURNAL Office, 429 Strand, W.C.

Yorks (East Riding). In a town of 7,000 population with Hospital. General PRACTICE yielding about £2,000 a year. Panel 1,100. Good residence, rent £60. Premium £2,000, easy terms. Apply PEACOCK & HADLEY, 19 Craven Street, Strand, W.C.2.

Consulting Rooms, furnished or unfurnished with Waiting Room and attendance, who or part time. Large and light.—Miss STEAR, 8 New Cavendish Street, W.1.

Harley Street (two doors from). For Sale, the Long Lease of DOUBLE FRONTED HOUSE. Modern Built and handsomely appointed throughout. Adequate bedroom accommodation and three rooms each on ground and first floors. Rent £80 p.a. Very moderate price and with vacant possession.—Apply LILLOT, SON & BOTTON, 9, Vere Street, W.1.

Harley Street.—Large newly decorated and beautifully furnished consulting room. First floor back. Part-time, with plate. All morning and three afternoons. Or less if required.—Address No. 4225, BRITISH MEDICAL JOURNAL Office, 429 Strand, W.C.

Leyton.—Freehold House in main road for Sale. Suitable position for professional man; 2 reception, 4 bedrooms, bath, 3 w.c.s. With vacant possession. £850.—Write W.H.G., 4 Arundel Street, Strand.

Southport.—Two self-con- tained flats TO BE SOLD at most in centre of town; suitable for Doctor or Dentist practice.—Apply BALL & PERCIVAL, F.A.I., 129 Lord Street, Southport.

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Cowan-Heron Hospital, Dromore, Co. Down, has for Sale MEDICAL ELECTRICAL APPARATUS, latest pattern, approved Ministry of Pensions for Massage and Electric Treatment.—Particulars from T. B. WALLACE, Hon. Secretary.

For Sale.—Complete X-Ray Outfit comprising Coil, two mercury breaks (Dreadnought and Sanax), excellent table, tantalum Maximum & Dark Room couch, foot switch and three focus tubes all in good working order.—Box O, KIDD'S ADVT. AGENCY, Mitchell Street, Glasgow.

Himmer Microscope, nose-piece with 3 objectives, eye ring and revolving mechanic stage. Huyghens Eyepieces 2 & 3. Magnifies 40 to 1,000 diameters. In case. £20.—Address No. 4302, BRIT. MED. JOURN. Office, 429 Strand, W.C.

Microscopes.—Great Clearance Sale of all makes at Real Money Saving Prices. Send for free Catalogue of hundreds of Bargains post free on application. Enormous price reductions now in order to effect immediate clearance of our big and varied stock. Cash or easy payment terms approval willingly. Your own apparatus accepted in exchange as part or whole payment.—THE CITY SALE & EXCHANGE, Ltd., 61 Aldersgate Street, London, E.C.1.

Medical and Surgical Sundries (new and secondhand). Midwifery Outfits £10. Sterilizers fr. 10/. Spencer Wells Forceps 2/6. Wool 2oz. compressed 1/4 lb. Record Syringes fr. 5/. Iodized Catgut tubes 1/6. Sterilized or Catgut tubes 1/-.—A. W. AUTY & Co., 47, Swinderby Rd., Wembley.

An I.M.S. Officer wishes to obtain ACCOMMODATION in the house of a medical practitioner, where he can be entertained as a boarder, in exchange for his services to the latter.—Address No. 4314, B.M.J. Office, 429 Strand, W.C.

Bournemouth.—In local Harley Street CONSULTING ROOM and use of Waiting Room, to Let. Dark Room available. Suitable for Radiologist or other Specialist.—Address No. 4007, BRITISH MEDICAL JOURNAL Office, 429 Strand, W.C.2.

Excellent room, ground floor, in good position facing park, for Gent. ex-Army Consultant; small room if required; separate entrance, telephone.—Apply 4 Hyde Park Place, Marble Arch, W.2.

Good Opening for Doctor Pretty Suburb London, 8 freehold house, main road, two receptions, four bedrooms, bath, nice garden, small motor shed, 30 hours bus, electric, possession. Price £1,500, mortgage if required. No Agents.—Add. No. 4315, B.M.J., 429 Strand.

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City of Nottingham

ASSISTANT MEDICAL OFFICER (RESIDENT)

The Guardians of the Poor of the City of Nottingham invite applications for the appointment of Resident Assistant Medical Officer at their Basthorpe Institution and Infirmary, for a period of six months certain, subject to renewal Applicants (either men or women) must be registered medical practitioners

The Hospital is a separate modernly designed building comprising four pavilions, and providing accommodation for 700 patients The Staff consists of a Consulting Surgeon, Visiting Medical Officer, and two Resident Assistant Medical Officers There is opportunity for experience in all departments, including Medical, Surgical and Midwifery cases and Bacteriological work An X ray apparatus is installed

Salary at the rate of £300 per annum, with furnished apartments service board laundry, etc

Applications giving age and full particulars of experience and qualifications, accompanied by copies of three recent testimonials, to be sent to me on or before Friday, September 12th next

Poor Law Offices, Shakespeare Street Nottingham

J ALLAN BATTERSBY, Clerk to the Board

Borough of Scarborough

SCHOOL MEDICAL INSPECTOR & DEPUTY MEDICAL OFFICER OF HEALTH

Applications are invited for the position of School Medical Inspector for the Borough of Scarborough, to undertake such of the duties (including those of refraction) in connection with the medical inspection of School Children as the Education Authority may require, and such of the duties of Deputy Medical Officer of Health as the Council may require The total commencing remuneration will be £300 per annum

The duties are expected to occupy half the Officer's time and private practice may be undertaken He may also undertake with the consent of the Borough Authority similar duties at schools under the County Education Authority and receive such further remuneration as may be granted

Candidates should possess the qualifications prescribed in Article 5 of the Sanitary Officers Order, 1922

Applications, with copies (not originals) of not more than three testimonials should reach me, marked 'Medical Inspector,' not later than Sept 6th, 1924

SYDNEY JONES, Town Clerk

Town Hall, Scarborough August 1924

Salford Royal Hospital

(200 Beds)

Applications are invited for the following vacancies which will occur in the Resident Medical Staff (male) during September next —

Two HOUSE SURGEONS Salary at the rate of £125 per annum

Casualty HOUSE SURGEON Salary at the rate of £125 per annum

HOUSE PHYSICIAN Salary at the rate of £125 per annum

The appointments are for a period of six months with board and residence

Candidates must be registered under the Medical Acts

Applications stating age and qualifications together with copies of testimonials and certificate of registration to be addressed to the undersigned without delay,

By order of the Board

GEORGE RUDDLE, General Superintendent and Secretary

Salford Royal Hospital, Manchester

August 25th, 1924

West Kent General Hospital

Maidstone (101 Beds.)

Applications are invited for the appointment of TWO HOUSE SURGEONS, who must be males and of British nationality Salary at the rate of £220 per annum with board, apartments, and laundry Candidates must possess registered medical and surgical qualifications

Write in first instance to the undersigned for form of application which must be in by 12 n on on Wednesday September 10th 1924

H ST JOHN WOOD, Secretary

August 26th, 1924

Bootle Borough Hospital

(General Hospital (100 Beds)

Applications are invited for a SENIOR MEDICAL OFFICER (male), and two JUNIOR MEDICAL OFFICERS (male), for a period of six months

Salaries £150 per annum Senior Officer £125 per annum each Junior Officer (inclusive of V D work) with board residence and laundry Duties to commence on September 30th

Applications stating age and qualifications with copies of testimonials to be sent to the Secretary Bootle Borough Hospital Derby Road nr Liverpool by September 13th

Coventry and Warwickshire

HOSPITAL, Coventry (213 Beds)

A vacancy having occurred on the HONORARY SURGICAL STAFF of the above Hospital, applications are invited for the post

In conformity with the Laws of the Institution, candidates must be Graduates in Surgery of a British or Irish University, or Fellows of the Royal College of Surgeons of England, Edinburgh or Ireland Such qualifications if not held, would have to [illegible] ment

Candidates must reside within a radius of Coventry, and take up their residence within that radius within six months from date of appointment

Canvassing, either directly or indirectly, will be deemed a disqualification

Applications with original testimonials and Registration Certificates, must reach the undersigned on or before September 9th 1924

Candidates will in due course receive notice of their eligibility or otherwise from the Secretary and after receipt of such notice eligible candidates are at liberty to send through the post printed copies of their application and testimonials to the Governors of the Hospital a list of whose names and addresses will be furnished by the Secretary

By Order of the Committee,

(MISS) R HOOPER Secretary

August 25th, 1924

Manchester Education

COMMITTEE

ASSISTANT SCHOOL MEDICAL OFFICER

Applications are invited from fully qualified Medical Men for the post of Assistant School Medical Officer Experience in Refraction and Children's Diseases desirable Salary £600 per annum rising by yearly increments of £25 to a maximum of £750 There is no bonus Yearly travelling expenses of £10 are allowed Application form may be obtained by sending stamped addressed envelope to the undersigned and all applications must be received at these offices not later than Wednesday, September 10th

SPURLEY HEY Director of Education

Education Offices Deansgate Manchester

Royal Devon and Exeter

HOSPITAL, Exeter

ASSISTANT PHYSICIAN

Applications are invited for the post of Honorary Assistant Physician at this Hospital Candidates must be Fellows or Members of the Royal College of Physicians of London and Graduates in Medicine of some University of the United Kingdom

Particulars as to duties, &c, may be obtained from [illegible] with certificate of birth should be delivered at [illegible] President, on or before [illegible] 1924

[illegible] be no canvassing by or on behalf of candidates

Signed on behalf of the Committee

S S COLE, Secretary

Date of Advertisement August 18th 1924

The District Infirmary,

Ashton under Lyne (General Hospital, 200 Beds, mainly Surgical)

Wanted RESIDENT SURGICAL OFFICER (Male) Salary at the rate of £200 per annum with [illegible] experience There are [illegible]

Applications with testimonials, should be sent at once to the Hon Secretary Leonard Bottomley Esq, M A, LL D 120, Stamford Street, Ashton under Lyne

FRANK OLIVER, General Superintendent and Secretary

August 25th 1924

Scarborough Hospital and DISPENSARY

Wanted, September 22nd HOUSE SURGEON (Female) Duties include house visiting Salary £[illegible] etc [illegible] of testimonials to be sent to the undersigned by September 9th, 1924, from whom further particulars may be obtained

J DOUGLAS MUNBY, Hon Secretary

The Royal Infirmary,

Sheffield (363 Beds)

The Weekly Board of Management invite applications for the post of RESIDENT SURGICAL OFFICER The salary attached to the appointment is £200 per annum with board and residence

Applications with copies of testimonials, to be addressed to the undersigned

JNO W BARNES Secretary

Board Room

August 25th, 1924

The General Infirmary at LEEDS

Wanted, by the Department for Venereal Diseases at the General Infirmary at Leeds TWO ASSISTANT MEDICAL OFFICERS

(a) A fully qualified and registered medical man whose whole time must be devoted to the Department Salary £500 per annum

(b) A fully qualified and registered medical woman, who shall have the right to consulting practice in Venereal Diseases Salary £300 per annum

In making these appointments special consideration will be given to candidates who have had previous experience in treating Venereal Diseases

[illegible] of testimonials to be sent to the Infirmary at Leeds on or [illegible]

By Order

FRED J BRAY, General Manager

August 25th, 1924

The General Infirmary at LEEDS (630 Beds)

Wanted RESIDENT OPHTHALMIC OFFICER, Salary £120 per annum, with board, residence, and laundry

Candidates must be legally qualified and registered

Applications at once, with copies of testimonials, should be addressed to the Infirmary

FRED J BRAY, General Manager

August 21th 1924

Royal Albert Hospital,

Devonport

Applications are invited for the position of RESIDENT MALE HOUSE SURGEON who must be fully registered and unmarried

Salary £150 per annum with £1 1s Od per week additional while working single handed, and board

[illegible] not more than three of the Chairman of the [illegible] later than Saturday,

September 6th, 1924

GEORGE W WHERRY Secretary

August 25th 1924

Consumption Sanatoria of SCOTLAND

COLONY OF MERCY FOR EPILEPTICS

Bridge of Weir

Wanted, ASSISTANT RESIDENT MEDICAL OFFICER (Male) One with laboratory experience preferred Salary £200—£250

Apply Dr CROCKET Medical Superintendent

Rochdale Infirmary and DISPENSARY (110 Beds)

Wanted JUNIOR HOUSE SURGEON (Male) Salary £200 p a, including board residence and laundry Applications stating age nationality, etc together with three recent testimonials to be sent to the Secretary endorsed 'House Surgeon' Conditions of appointment on application to

W WYNNE, Secretary

Wanted by the Burma Corporation, Ltd

(Incorporated in India) for service at Namtu in the Northern Shan States of Burma, an ASSISTANT MEDICAL OFFICER Applicants should not be over 30 years of age Experienced Physician with special knowledge of Bacteriology and Tropical Diseases D P H desirable Climate sub tropical and healthy Prospects good for a keen man —Apply D ANDERSON, No 1, London Wall Buildings, London E C 2

Mansfield & District Hospital

The Board of Management invite applications for the post of JUNIOR HOUSE SURGEON (male) at the above Hospital Salary at the rate of £150 per annum with board residence, and laundry

The duties to commence on or about September 15th next Applications accompanied by not more than three recent testimonials, are to be sent to the undersigned

Dated this 26th day of August 1924

A H LIMB Secretary

Haywood Hospital, Burslem.

RESIDENT MEDICAL OFFICER required (male or female) one with previous hospital experience preferred To commence duties on October 1st Salary £175 per annum with board, residence and laundry Applications with copies of three recent testimonials to be sent to me not later than September 5th

Fountain Place, Burslem.

F C POWELL Secretary

APPOINTMENTS—Important Notice.

(a) British Islands.

Medical Practitioners are requested not to apply for any appointment referred to in the following table without having first communicated with the Medical Secretary of the British Medical Association, 429, Strand, London, W C 2

Town or District	Town or District	Town or District
CONTRACT PRACTICE.		**PUBLIC HEALTH** *(continued)*
ENGLAND.	**WALES** *(continued)*	LEEDS EDUCATION COMMITTEE *(Assistant School Medical Officer)*
CANNOCK CHASE AND DISTRICT *(Clubs and Friendly Societies' Appointments)*	OGMORE VALLEY GLAMORGAN *(Wyndham Colliery Medical Aid Society) (Workmen's Medical Scheme.)*	LINCOLN CITY EDUCATION AUTHORITY *(Woman Assistant School Medical Officer)*
MIDDLESBOROUGH *(Medical Aid Association or Workmen's Clubs)*	TONDU & ABERKENFIG GLAMORGAN *(Workmen's Medical Scheme)*	MIDDLESBROUGH EDUCATION COMMITTEE *(Assistant School Medical Officer)*
SOUTH BANK & ESTON *(Medical Aid Associations or Workmen's Clubs)*	**PUBLIC HEALTH.**	MIDLOTHIAN EDUCATION AUTHORITY *(School Medical Officer)*
WALES.	ARGY —	NORTHUMBERLAND COUNTY COUNCIL *(Woman Assistant Medical Officer of Health)*
ABERTRIDWR GLAMORGAN *(Windsor Colliery Medical Scheme)*	BA — *(Asst.*	NOTTINGHAMSHIRE *(County Medical Officer of Health)*
EBBW VALE MON *(Workmen's Medical Society)*	GLA —	SHEFFIELD EDUCATION COMMITTEE *(Assistant School Medical Officer)*
GILFACH GOCH GLAMORGAN *(Workmen's Medical Scheme)*	HUDDERSFIELD COUNTY BOROUGH *(Woman Assistant Medical Officer of Health)*	SOUTHWARK METROPOLITAN BOROUGH *(Tuberculosis Officer)*
LLWYNYPIA CLYDACH VALE PENYGRAIG GLAMORGAN *(Workmen's Medical Scheme.)*	HUNTINGDON ADMINISTRATIVE COUNTY *(Assistant County Medical Officer and Assistant School Medical Officer)*	STOKE ON TRENT EDUCATION COMMITTEE *(Assistant School Medical Officer)*
MARDY GLAMORGAN *(Workmen's Medical Scheme)*	INVERNESS SHIRE EDUCATION AUTHORITY *(Temporary Assistant School Medical Officer)*	WIGAN COUNTY BOROUGH *(Assistant School Medical Officer)*
OAKDALE MON *(Medical Officer for Medical Aid Association)*	LANARK COUNTY *(Medical Officer of Health)*	YORKSHIRE NORTH RIDING COUNTY COUNCIL. *(Assistant School Medical Officer)*

(b) Colonial Medical Service.

WINDWARD ISLANDS MEDICAL SERVICE (Grenada with Carriacou St Vincent and St Lucia)

(c) Overseas Appointments.

Medical Practitioners are requested not to apply to any appointment referred to in the following table without having first communicated with the Honorary Secretary of the Division or Branch named in the second column or with the Medical Secretary of the British Medical Association, 429, Strand, London, W C 2

Town or District	Hon Sec of Division or Branch	Town or District	Hon. Sec of Division or Branch.	Town or District	Hon Sec of Division or Branch
NEW SOUTH WALES *(All Friendly Society Appointments)*	Dr R H. TODD (Hon Sec New South Wales Branch) B M A. Building 30-34 Elizabeth Street, Sydney N S W	QUEENSLAND *(Brisbane Associated Friendly Societies' Institute.)*	Dr R. MARSHALL ALLAN (Hon Sec Queensland Branch) Adelaide Street Brisbane	VICTORIA *(All Institute or Medical Dispensaries)*	Dr FRANK DAVIES (Hon. Sec Victorian Branch) Medical Society Hall E Melbourne Victoria.
				WESTERN AUSTRALIA. *(Contract and Lodge Practices)*	Hon. Sec Western Australian Branch No 6 Bank of New South Wales Chambers St Georges Terrace, Perth.

Address 429 Strand, W C 2
August 27th, 1924.

By order of the Council of the British Medical Association
ALFRED COX, Medical Secretary

Lancashire County Mental Hospital Winwick Warrington.

Male ASSISTANT MEDICAL OFFICER required Salary £300 per annum together with board furnished apartments attendance and washing valued at £150 per annum for superannuation purposes plus the Civil Service bonus which fluctuates and which at present is £140 16s 8d Candidates must be registered under the Medical Act.

The appointment is subject to the provisions of the Asylums Officers Superannuation Act 1909

Applications stating age whether married or single together with copies of testimonials &c., should be received by the Medical Superintendent by first post on September 3rd

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Royal Chest Hospital, City Road E C (Royal Northern Group of Hospitals)

The post of RESIDENT MEDICAL OFFICER at this Hospital will be vacant on October 1st The appointment is for six months Salary at the rate of £150 per annum with board, lodging, and washing

Applications with copies of testimonials should be sent by Wednesday September 17th to the undersigned from whom forms of application and rules of the post can be obtained

GILBERT G PANTER Secretary
Royal Northern Hospital Holloway

West London Hospital, Hammersmith Road W

Required one HOUSE PHYSICIAN and two HOUSE SURGEONS (Males) These appointments are tenable for six months from 1st October next

Salary £100 per annum with board lodging and washing allowance

Candidates are required to be registered under the Medical Act to send four copies of their letters of application and four copies of each testimonial submitted so as to reach me not later than Tuesday September 16th Selected candidates will be required to call upon such members of the Medical Staff as directed to be in attendance at a Meeting of the Medical Council on Friday September 26th at 4 p.m. and the House Committee meeting at 4.45 p.m the same day when the appointments will be made H. A. MADGE Secretary

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Royal Chest Hospital, City Road E C (Royal Northern Group of Hospitals)

The post of HOUSE PHYSICIAN at this Hospital will be vacant on October 1st. The appointment is for six months Salary at the rate of £100 per annum with board lodging and washing

Applications with copies of testimonials should be sent by Wednesday September 10th to the undersigned from whom forms of application and rules of the post can be obtained

GILBERT G PANTER, Secretary
Royal Northern Hospital Holloway

Ancoats Hospital, Manchester

RESIDENT MEDICAL OFFICER required to commence duty October 1st next Salary £175 per annum with board, residence etc

The appointment is for 6 months but the successful candidate will be eligible for re election for a further period of 6 months

Applications stating age qualifications and experience together with copies of 3 recent testimonials to be forwarded to the undersigned on or before September 6th.

By order of the Board.
HERBERT J DAFFORNE Secretary

Royal Chest Hospital, City Road E C (Royal Northern Group of Hospitals)

A vacancy occurs for a PHYSICIAN with charge of Out patients Candidates must possess the degree of M.D or M.B obtained by examination at a British University and be Fellow or Members of the Royal College of Physicians of London

Applications should be sent not later than Wednesday September 10th to the undersigned from whom particulars of the office and details with regard to the submission of testimonials, etc may be obtained.

GILBERT G PANTER Secretary
Royal Northern Hospital, Holloway

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Printed Prospectus of Terms, etc., post free on application.

Lancashire—About £585 p a Panel 450 Old-established PRACTICE. Very little midwifery cope for increase House with good garden can be rented. Premium for cash by arrangement—Apply No 7589

London, S W—£400 p a Panel 60 Visiting fees 3/6 to 5/ Ground floor flat on lease Rent £60 including rates.—Apply No 7588

West of England—PARTNERSHIP in Country Practice of over £2,600 p a One-third or one-half share for sale Small panel and not much midwifery Visiting fees 5/ to 21/ Good house with 5 bed large garden tennis court etc to rent or could be purchased—Apply No 7587

London, S W—Partnership £3 000 a year Half share for disposal Panel 1 600 Good fees Flat available—Apply No 7585

Suffolk—Nearly £1,600 a year Non-dispensing PRACTICE Panel 700 Fees 5 to 10 6 Good detached house large garden Rent £70 Some surgery and ample scope—Apply No 7583

Yorkshire—Average £1,286 Appointments £350 Visiting fees 3 6 to 10 6 Panel nearly 1 300 Few midwifery cases Good house every convenience—Apply No 7581.

North-West County—

[illegible] ld
establis [illegible] 57
guinea [illegible]
core—Apply No 7579

Death Vacancy—London, S E About £1,524 per annum Cash and panel PRACTICE Visiting fees 2 6 to 5/ Excellent premises on lease Small panel No Sunday or night work—Apply No 7576

London, N—About £450 p a Small non-residential PRACTICE Panel about 250 Fees for visits 2 6 to 7/6. Good premises on lease No appointments or midwifery—Apply No 7574

Near Manchester—Nearly £2 000 p a. Panel worth about £600 p.a. Moderate house with separate surgery to rent Premium 1½ years purchase easy terms Good school near—Apply No 7565

Eastern County Partnership About £2,200 p a Panel about 2 000 and other appointments. Fees 3 6 up One-third share for disposal with succession in about 3 years Apply No 7564.

London, W—About £1,100 a year Non-dispensing Very small panel Fees 5/ up wards Very few midwifery cases Corner house to rent.—Apply No 7561.

London, S W—Partnership Assistantship £2 000 a year Half share for disposal immediately Panel 1,900 Old established Good fees Excellent house and large garden Premium 2 years purchase—Apply No 7560

Yorkshire—About £1,700 a year Panel 1 120 Visits 2 6 to 10 6 medicine extra. About 30 midwifery cases up to £5/5 0 Appointments £60 Good house with garden and garage for sale or would let on lease.—Apply No 7559

Cheshire—Nearly £4,000 a year Old-established Practice. HALF SHARE For Sale at 1½ years purchase Panel about 1 400 Appointments £45 Good fees Good house and garden to rent.—Apply No 7558.

South County—Over £1,000 p.a. Panel 440 other appointments £120 Practice fully unopposed Excellent house and cycling etc. Good garden. All sport Exceptional terms can be arranged—Apply No 7535

Midland Town—About £1 100 a year Old-established PRACTICE Panel 530 Appointment £10 Very little midwifery Large house and garden Premium £1 000 including drugs etc—Apply No. 7534.

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LANGHAM 3000
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FOR SALE.

WEST COUNTRY—Well-established G P situated in fashionable town Panel over 1 [illegible] Income nearly £1,700 Excellent house on rental Premium 1½ years purchase

N E COAST—Old-established non-panel PRACTICE situated near industrial centre. Large house and garage for sale at £ [illegible] or would let Average income (certified) £4,276 Scope for surgery Excellent fees No night work 3 appointment Good introduction Premium £4 470 Scope for midwifery and abdominal surgery

NORTH MIDLANDS—Old established G P situated in charming town Panel over 1 [illegible] Income over £1 460 p.a. House of 6 bedrooms 2 Large old world garden. Rent £70 p.a. Premium £2,150

LONDON, S W—PARTNERSHIP in old-established Practice situated within 10 minutes of West End Income about £3 300 Panel about 1 000 Half share 2 years purchase

EAST COAST—Old-established G.P situated in charming locality Excellent house 6 bedrooms to rent at £ [illegible] p.a. Panel 1, [illegible] Income £1,750 2 appointments Premium 1½ years purchase

LONDON, S W—NUCLEUS G P (branch.) Panel 1 [illegible] Income £150 p.a (great scope) Rent [illegible] per week Premium £190

LANCS (Manufacturing Town—Old-established G.P Panel nearly 2 [illegible] Income £3 300 House 4 bed 3 reception rooms let at £32 p.a. Premium 1½ years or would sell one-third share for £2,000 Suitable for young North Countryman Cottage Hospital.

BIRMINGHAM (near)—Old-established G P Good house to rent situated in busy district Income over £1,700 p.a Panel over 2 [illegible] Premium 1½ years purchase

SOUTH WALES (Nr Colliery)—Old established G P situated in excellent surroundings. Panel 2 [illegible] Income over £2 700 Splendid house etc Suitable for two in partnership though not necessary Opportunity gilt Premium 1½ years purchase Reasonable terms entertained.

MID CHESHIRE—NUCLEUS General Practice situated in busy quarter small house (6 bed room.) Panel and cash Income over £600 per annum Premium £1 450 to include house

Purchasers stating their requirements will be sent particulars of other suitable Practices and Partnerships for sale free of charge

Please address all communications to the Manager Mr W H. GRANT Medical Transfer and Insurance Department.

ESTABLISHED 1883

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LOCUM TENENS and ASSISTANTS supplied

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Surrey—Partnership in first-class Practice in best residential district Receipts over £7 000 One-sixth share for sale after 3 years purchase Exceptional prominent position to retire.

Within 25 miles—Middle and working-class PRACTICE Receipts average £1 700 Panel over 1 [illegible] Very good retiring House worth £42. Premium 3 years purchase.

East Coast—Steadily increasing PRACTICE in vicinity of seaside resort in Yorkshire Receipts average £1,500 Panel 400 Excellent house with good garden and garage on lease

Within 80 miles—Old-established PRACTICE over £1,280 in nice town. Panel 11 [illegible] nice house with good garden. Rent £70 Schools, Society etc

London, S W—Cash Practice doing over £450 including 3 per Week from small house on ground floor Great scope for increase.

Northumberland—Old-established non-panel PRACTICE in large town. Receipts over £3 000 Scope for [illegible] and panel. Good house can be rented

Opening—In small Village in beautiful country Receipts about £300 including [illegible] panel House with large garden Rent £40 Will be sold cheap

South Midlands—Partnership Third share £3,867 Unopposed PRACTICE in country town with [illegible] Appointment £600 Panel 1 [illegible] house with nice garden tennis court garage etc Rent £80

Within 80 miles—Practice over £1,380 in country town in beautiful district Actually has the income from panel and appointments Rent £45

Midlands—Surgeon required as PARTNER. Half share of £3 000 scope for major surgery and vacancy on staff of hospital Premium £2,100 Highest interest

Death Vacancy—Partnership Third share £4 500 Panel practice in open suburb Scope for midwifery Rent £75

South Wales—Practice of £1,400 with great scope in large town Small panel and some shipping work and good fees. Practice formerly let £3 000 Rent £52. Premium 1 years purchase

Lancs—Practice of £2,000 in prosperous town Scope for Surgery and vacancy on staff Panel [illegible] Good house £80 Premium only £1,500 £1,000 down.

London, S W—Middle-class PRACTICE of £700 in nice residential district Small panel scope for increase Nice freehold house can be bought.

Yorks—Middle and working-class PRACTICE in fine town Receipts £1,750 Panel [illegible] Present owning to ill-health House can be rented

Near Peak District—Old-established PRACTICE over £1,000 held by vendor for about 30 years in beautiful district Panel [illegible] Appointments £100 Fine residence with large garden rent £75. Premium 1 years purchase.

Midlands—Practice of £1,800 in prosperous town Panel 2,200 Appointments £110 Great scope for anyone desiring more than present Income House with garage Rent £50 or sale

Liverpool—Practice of £1,400 [illegible] Appointments £110 Panel [illegible] Opening owing to death Rent £50

Home County—Partnership Half share of over £2,500 in nearly country town Good-class panel practice Fees 3 6 to 15 [illegible] Good house and garden can be bought cheap

Purchasers stating their requirements can save Purchasers' Private and Confidential

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Established by Bovril, Limited, to provide an efficient and reliable transfer service for the Profession at minimum charges.

Under the personal direction of Dr J FIELD HALL, and Mr. J C NEEDES

An Accountant's certified report is required in respect of every practice or partnership the disposal of which is undertaken by the Agency

The commission chargeable in respect of any practice in Great Britain placed exclusively in the hands of the Agency for transfer has been fixed on an exceptionally favourable scale, the maximum chargeable on any transfer being £50. In the case of Foreign and Colonial practices similarly placed the maximum is £75.

NO CHARGE IS MADE TO PRINCIPALS FOR THE INTRODUCTION OF LOCUM TENENS OR ASSISTANTS

Accountancy and Legal services furnished by the Agency, where desired, at moderate inclusive charges

PRACTICES AND PARTNERSHIPS FOR SALE.

1 NEWCASTLE UPON TYNE AREA.—Old established non panel PRACTICE held by Vendor many years. Steady average income of about £3 350 There is a Hospital in the town, and a reasonable prospect of obtaining an appointment on the Staff. Various appointments worth about £150 a year Very little midwifery, but large scope if desired Fees 4/6 to 21/ Well situated house Vendor's freehold will be let or sold Excellent educational facilities Premium to include drugs, etc £3,600

2 GROWING COAST TOWN within easy access to London Old-established mixed general PRACTICE £1 800 Fees mainly 3/6 to 10 6 situated commodious corner house [illegible] freehold Price £2,150 There is a Cottage Hospital and very good prospects for a Surgeon. Premium 1½ years purchase

3 MIDLANDS COUNTY TOWN PARTNERSHIP —A sixth share to commence with, in a very old established mixed general practice with panel of approximately 1 000. Fees from 3/6 and 5/ upwards. Very little midwifery Centrally situated house with 2 reception rooms 5 bedrooms small garden. Rent £56 There is large scope for increase and a larger share will be sold later on Premium £1 250 payable part cash and balance by instalments

4 BORDERS OF CO DURHAM AND NORTHUMBERLAND — Old established village PRACTICE Income for last year £715, but there is scope for increase 300 panel patients Advice and medicine 2 6, 3/6, and 5/- Visits 3/6 to 10 6 medicine extra Small convenient house Price for house and practice £1 500

5 PARTNERSHIP —Growing prosperous Town within 70 miles of London A one third share to commence with is for disposal in an old established practice producing an income of nearly £5 000 a year Including a panel of about 2 000 Visits 3 6 to 21/ Well situated freehold house, with garden Price £1 600, part on [illegible] a Cottage over 35) will [illegible]

6 RESIDENTIAL TOWN within 100 miles of London Non dispensing chiefly better-class PRACTICE, producing an income of about £2,000 a year Including small panel of about 600 Fees from 2/6 to 21/ mainly 7/6 upwards Only a few cases of midwifery yearly [illegible] house (3 recept Good society

7 MIDLANDS — beautiful surroundings and within 4 hours run of London an old-established lucrative PRACTICE worth over £3,000 per annum, including large panel Good fees The house is well situated has ample accommodation and can be rented on lease at £100 a year Premium 1½ years' purchase, part by instalments Satisfactory reasons for selling Educational facilities and sport of all kinds

8 PARTNERSHIP —A Junior Partner is required in an extensive and old established non panel Practice situated in a large Town within 4 hours run of London The share (which can be increased after a time) produces £1 015 on average of past 3 years. Visits 5/ upwards Good house available on lease at moderate rent Ample accommodation garden etc Married gentleman (under 30 years of age) with Hospital experience preferred and if possible well qualified. Easy terms of purchase would be conceded if necessary to suitable man Premium about £1 500

9 HOME COUNTY —Hospital Town, within 50 miles of London PARTNERSHIP A one-half share in a mixed general practice held by senior partner 20 years. Average income over £2,000 Panel of 700 Advice and medicine from 2/6 Visits and medicine from 3/6 Very little midwifery Detached double fronted house, with ample accommodation and good garden Price £2 000 of which £1,000 can remain on mortgage There is an up-to-date Hospital and an early vacancy on the Staff is probable Good sport, schools etc. Premium 2 years purchase half by arrangement

10 SOUTH WEST OF ENGLAND —COUNTY TOWN —A ONE THIRD SHARE producing £800 (and increasing later) is offered in a good class non panel and non-dispensing practice, with a considerable amount of surgical work There is a good Hospital in the town, and the incoming partner (who must hold the F R C S Eng) will eventually be elected on to the staff Premium £1 600

11 EASTERN COUNTIES —UNOPPOSED COUNTRY PRACTICE, within 80 miles of London Very old established, and easily worked, and situated close to a County Town Average income for the last three years £70, and panel of 188. to 10/6 medicine [illegible] cases yearly Very att [illegible] groun s, containing consulting room surgery (with separate entrance) 3 reception, 4 bedrooms, etc garage, stabling One acre of garden and two acres of meadowland Price, freehold, £1,200 part on mortgage, Premium £2,000

12 LONDON WEST END —PARTNERSHIP —A quarter share (to commence with), and up to one-third in 2 years and one-half in 4 or 5 years with ultimate succession if desired, is for disposal in a first-class general Practice Income £3 020 Fees mostly 1 guinea Purchaser should be a Graduate Premium for the quarter share £1 500

13 LONDON EAST.—Old established sound middle and working class PRACTICE Income over £1 150 Panel of 1 300 Surgery fees 2/6 visits 3/6 upwards No midwifery Can be much increased if desired Small house suitable bachelor or lease Would suit lady doctor Premium £1 750

14 CHILTERN —Twelve months PARTNERSHIP introduction will be given to an old established middle-class and panel Practice (1 600 patients on list) worth last year £2 100 Situated in a large town (population nearly 100 000) close to seaside resort Visits 2/6 to 5/ Midwifery 2 to 3 guineas about 100 cases yearly Car not required. Good house, with garage, available at end of introduction Premium 1½ years purchase.

15 SOUTH COAST —LARGE TOWN PARTNERSHIP A quarter or one-third share in a middle and working class Practice. Income over £4,000, with scope Panel of over 1,000 Fees 2/6 to 7/6 chiefly 3/6 to 5/ No midwifery, and very little night work Purchaser should preferably be not over 35 Prem 2 years purch

16 PARTNERSHIP —LANCS Large Town The third share of an old established lucrative and money making Practice worth, for the last financial year, £3,722, can be acquired by a young unmarried man Panel list of over 1 800 and patients operative class Visits 2/ to 5/ Midwifery 2 to 3 guineas Ingoing partner could reside with Vendor, or unfurnished rooms are available Golf to be had Premium 1½ years purchase

17 INDIA —ASSISTANTSHIP with view to PARTNERSHIP A single man (about 30 years of age and not over 35, who must be an F R C S Eng of good appearance and a sportsman) is required on a two years engagement to commence next March, in a practice producing £7 000 a year Salary 650 Rupees a month plus board and lodging (the total equals £800-£850 p a) At termination of engagement a one sixth share will be sold, if satisfactory, at one year's purchase with increase ultimately up to one-third Premium payable out of receipts One of the Partners is in England at present and a personal interview during the next month is essential

18 MIDLAND CITY —PARTNERSHIP —A half share in a Midland working class Practice established and held by the Vendor 10 years Succession to the whole within a reasonable period Average income for the last three years £1 733 Panel of 1 575 There is large scope for increase in the hands of a young energetic man Fees advice and medicine 4/ cash visits and medicine 5/ to 10 6 Midwifery has been entirely refused for many years There is no house available on rental but Vendor is willing to financially assist a purchaser to find a suitable house All kinds of sport and exceptionally good schools for boys and girls. Premium £1 300 of which £300 can be paid out of income if desired.

19 NORTH EAST COAST —FAVOURITE RESORT Old established non dispensing PRACTICE Income only about £400 per annum at present but there is very large scope for increase by a young well-qual man. Good fees Excel corner house with 3 recep, 6 bed garden Freehold Price for House and Practice £2 500

20 FAR EAST —Wanted in November a young, unmarried ASSISTANT (not over 30 years of age) on a two years agreement with possibility of succession at end of engagement Return passage paid Interview in London essential before ultimate engagement

Profits accruing to Bovril, Limited, from the Agency will be allocated amongst recognized Medical Charities

Full Schedule of Terms and Conditions will be forwarded on application.

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Practices and Partnerships for Disposal No charge to Purchasers

MIDLANDS —(1) PARTNERSHIP in sound old established non dispensing Pr c ice between £7 000 and £8 000 per annum in first rate Town No app intments or panel Premium one fourth share two years purchase Incoming partner should be aged 30 to 5 and be keen on his work

LONDON (WEST) —(2) Well established PRACTICE about £1 500 p a easy reach of Marble Arch Panel 1 00/1 00 Doub e fronted house (4 bedrooms) to rent

WILTSHIRE —(3) Old established unopposed Country PRACTICE nearly £1 050 p a Panel 6 0 Ex ellent detached hou e (6 be f and dressing rooms) bath h &c and about an acre garden to be sold Climate bracing Premium to effect prompt sale £1,000

[illegible] COUNTIES —(4) PARTNERSHIP in old- in first rate Town F R C S Hospital rst at one and a half

WITHIN 50 miles of LONDON —(5) PRACTICE £1 500 in first rate Re idential Di trict Modern detached house (5 bedrooms n grounds to be sold Excellent educational facilities Premium £2 000

SOUTH AFRICA (CAPE PROVINCE) —(6) PRACTICE about £1,000 in one of the wealthies Pa tor I Districts on line of Railway Ideal equable dry climate Very comfortable house to rent L ving very cheap I remium £800 Vendor known to the Associa ion

LONDON, S W —(7) Sound over £480 p a in well popu ated Di Cross Panel 3 0 Practically no Midwifery I rem or e and a half years purcha e Ample scope for I anel an

HOME COUNTY —(8) Well established and increas- ing mixed-class PRACTICE over £1,000 in Residential District Panel about 400 Not much Mi lwifery O d fashioned detached hou e (4 bedroom I n rood position. Premium £1,500

MA[illegible] established Small panel One f increase up to one half [illegible] R C S

SPECIAL OPHTHALMIC PRACTICE —(10) About £1 400 in high cl s s in and Health Resort. Operative and acute ca es refuse l or la e years Considerable cope for increase Premium £1,400

SOUTH WALES —(11) Old established increasing working-class PRACTICE over £2 200 in one of the chief Seaports Panel 1 400 Det ched house with 4 bedroom to rent on leas Premium £2 500 part ly instalments or £2 200 cash

FAVOURITE RESIDENTIAL DISTRICT up the Thame —(1) PARTNERSHIP n better class Practice nearly £2 900 per annum One thir I share a first at two years purcha e

NORTH [illegible] of £1 4 hou e (5 bedro [illegible] an l grounds £4,000 Mortga e could be had on nou e

CARDIFF —(14) Old establishe l PRACTICE £1,400 p a Sma l panel. No midwifery House on lease Prem u n £1,500

EASTERN COUNTIES —(15) Old established unopposed Country PRACTICE of £828 p a. Panel about 00 Very good house in 2 acres of garden to rent or purchase

MIDLANDS —(16) PARTNERSHIP in very old established unopposed Practice in Market Town Panel 1 00 House contains 4 bedroom &c Rent about £70 Share wor h about £1 000 at 2 year purcha e Partner should be 30-

EAST COAST [illegible] PRACTICE £3 [illegible] 4 bedrooms t rent I be a good urge n Pre[illegible]

NORTH OF ENGLAND —(18) Unopposed PRACTICE between £700 £800 in an attractive model little village four miles from Cathedral City Panel worth about £240 p a Premium, Practice and hou e £2 700

SCOTLAND [illegible] Old estab PRACTICE over £900 p a ol house with garden and garage

YORKSHIRE WEST RIDING —(20) Well established m dile a l wo kin g e ass PRACTICE over £1 300 (£920 fr m Panel and apts) in lar e clean town Good detache l corner house Prem £1,400

EAST COAST —(21) Increasing PRACTICE over £500 in rapidly evelo ing District Panel about 100 Neare t opponen 4 mile Bunga ow residence (5 rooms) Premium £750

EGYPT —(22) Well established PRACTICE £700 to £800 ma nly among Eng ish Residents an l Vi itors Excellent semi-detached residence (5 bedrooms) Premium to include Furniture £1,100

MIDLANDS —(23) PRACTICE over £2,200 in Country Town near Birmingham Panel 1 0 Charming hou e (6 be rooms large garden Rent £100 I remium one and a half years purchase

SURREY —(24) PARTNERSHIP in first-rate Pract ce, £7 000/£8 000 per annum in one of the best Residential Di t House (7 bedrooms) to rent Premium one-sixth share two years' pur ha e Partner should be aged over 30 and have be t ho p tal appointment

MIDLAND TOWN —(25) Old established PRACTICE about £1 100 per annum in I esidential Suburb Pane 00 Good hou e an l large garden Premium £1,500

LONDON, N W —(26) PRACTICE worth about £4 0 per annum in working-class di trict Panel 4 0 increasing Small wifery Double-fronted corner hou e Premium Practice and freeho d house £1,500 Great scope for young man

FIRST-RATE RESIDENTIAL DISTRICT up the THAMES —(2) PARTNERSHIP in good-class Prac ice averaging a £1 550 p a Not mu h Mi lwifery Good hou e with garage to be sold Premium one half share £1,200 Scope for Surgery

LONDON, E C —(28) PARTNERSHIP in Special City Practice Excellen opening for gentleman (ged 30- 5) specia ising in Skin work and experience l in Nervous and Di estive Disorder Share worth about £500 at one an l a half years purchase

LONDON S W —(29) Recently established Lock up [illegible] on lying Suburban Di tric len [illegible] lease furniture and fi ings £250

SCOTLAND, NORTHERN HIGHLANDS —(30) PRACTICE a era ing over £1,600 p a. In a Town No panel Hou e (5 bedrooms etc) in be t resid ntial part Amp e cope fo mid wifery an l panel Premium £1 200

W [illegible] (31) PARTNERSHIP in old estab- over £3 600 p a Panel 2 3 Lent with ome Surgical experience We l rd share one and a half year's purcha e

LONDON, S W —(32) Well established PRACTICE of £800 to £700 p a in favourite I esidential Suburb Panel 6 much midwifery Excellent detached hou e (bedrooms) wi h good gard n for Sale Amp e scope. Premium one and a l a f years purcha e

SOUTH OF ENGLAND —(33) Unopposed Country PRACTICE n arly £500 per a num Panel 4 0 House (7 b dr oms 3 attics) with well s cke l garden Rent £25 P emium £650

SURREY —(34) PARTNERSHIP in good middle class compact practice over £2 6 0 in I esidential Di tric easy reach of London Panel 1 2 0 Two-fi ths share a firs at two years purcha e

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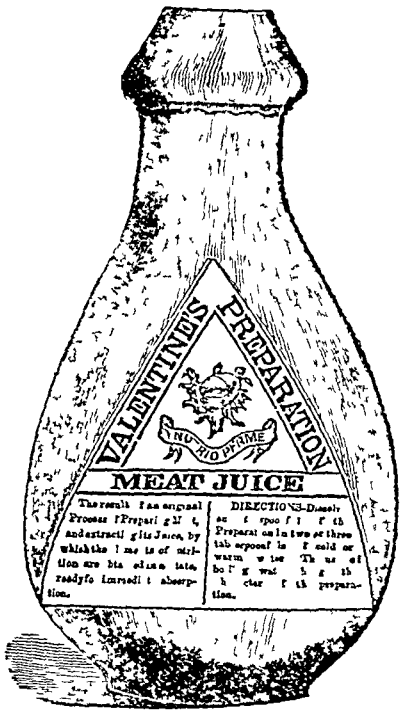
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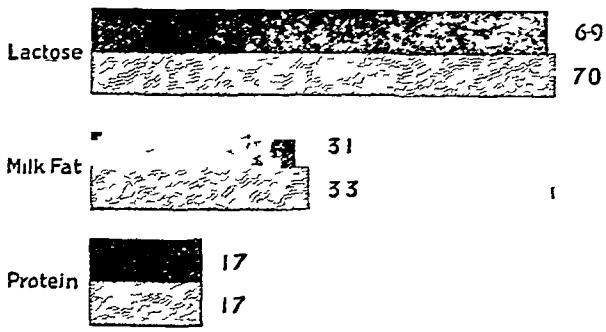
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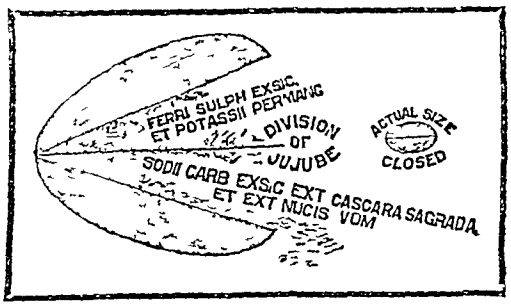
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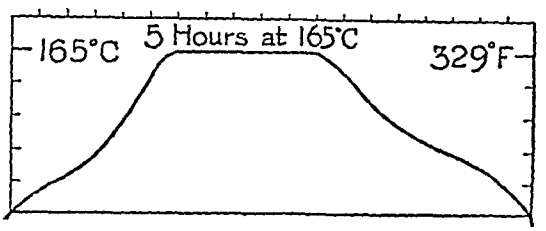
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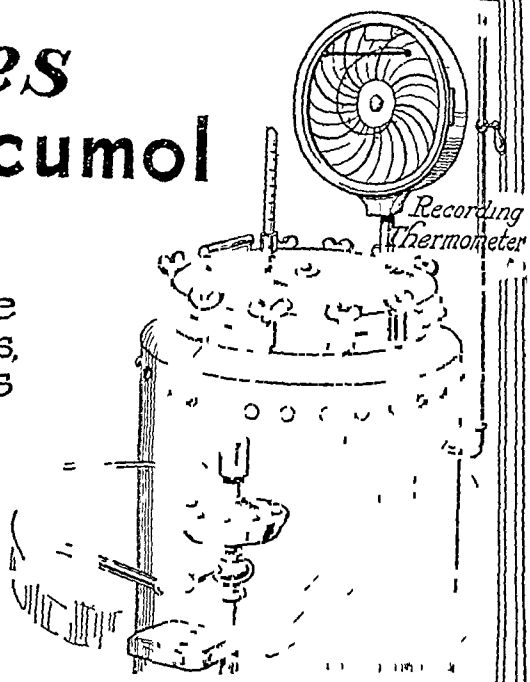
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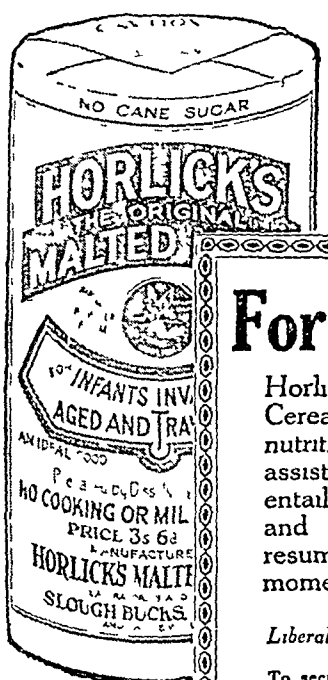


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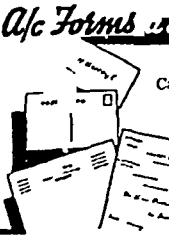
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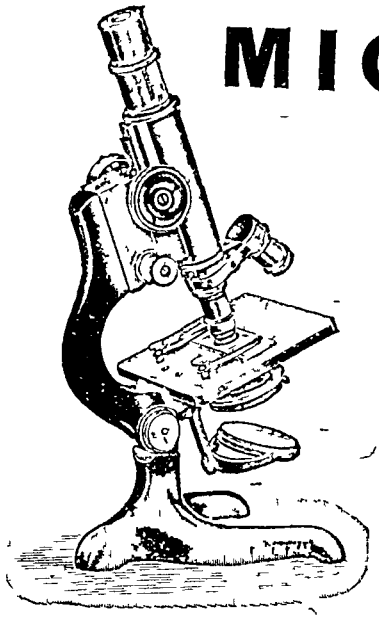
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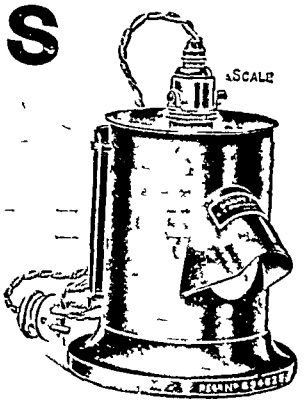
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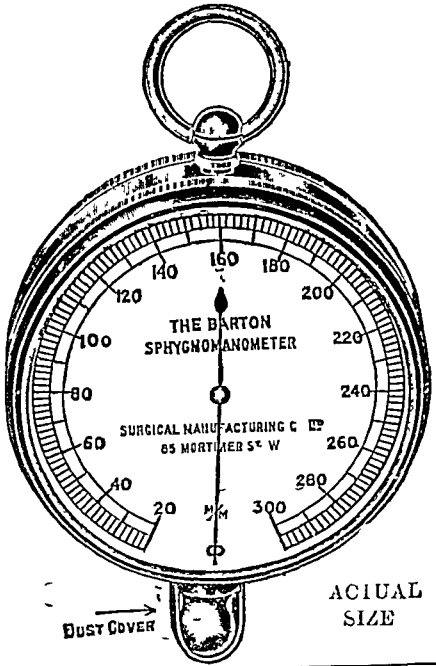
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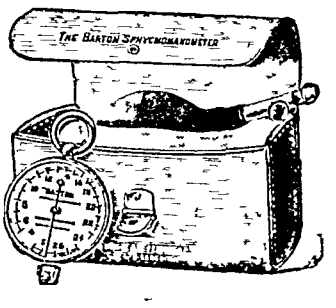
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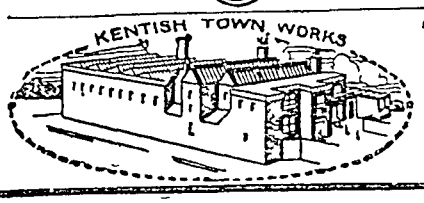
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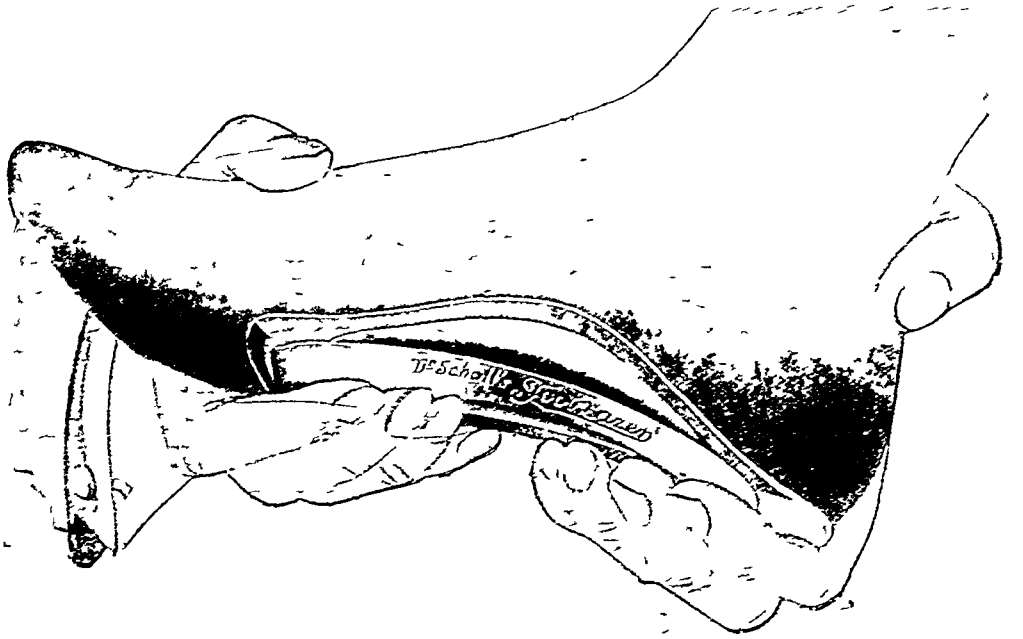


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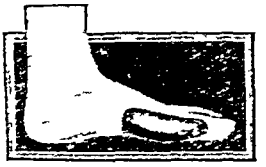
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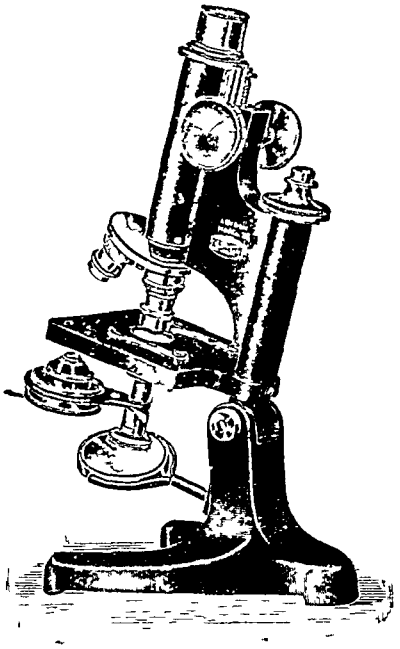


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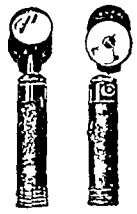
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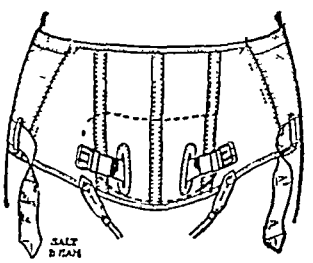
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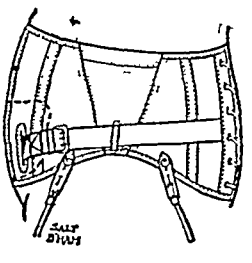
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See Article, *B M J*, May 14th, 1921



SIDE VIEW

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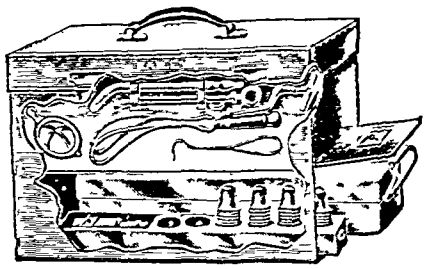
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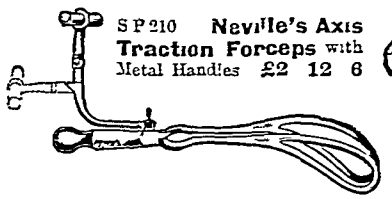
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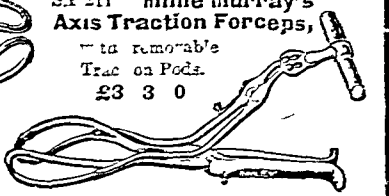
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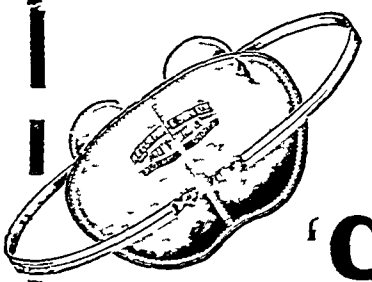
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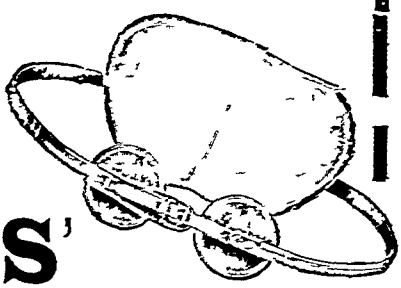


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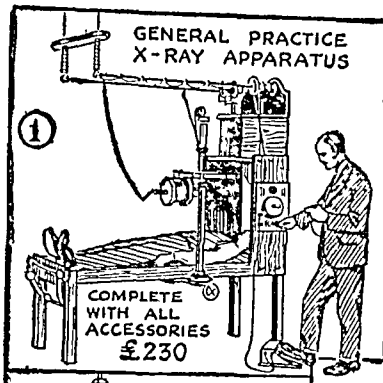
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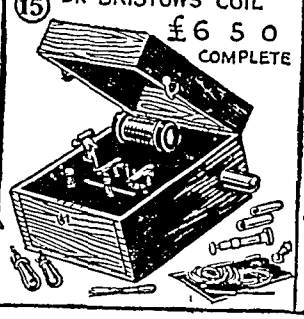


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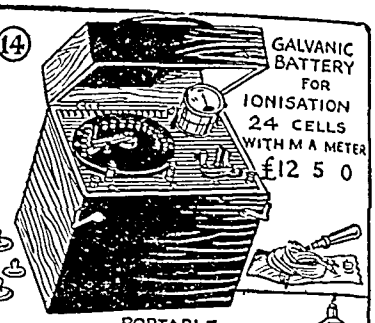
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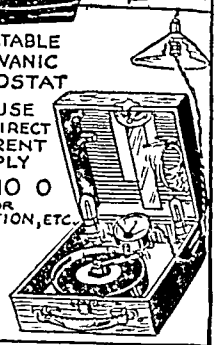


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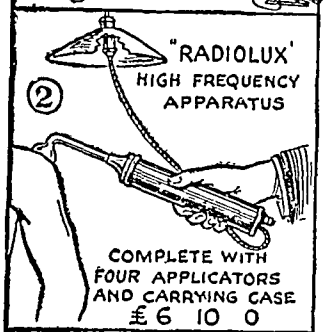


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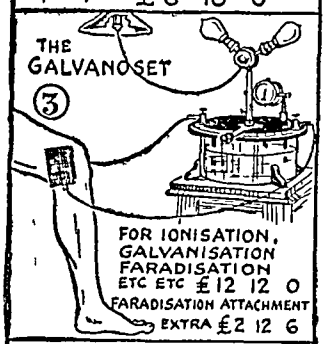
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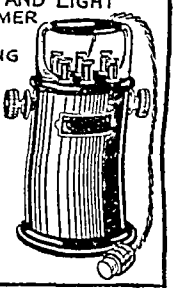
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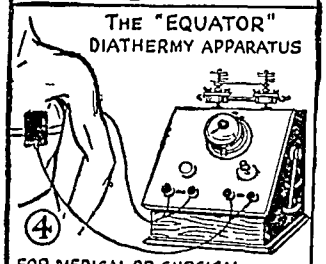
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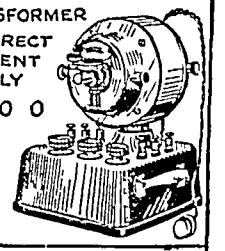
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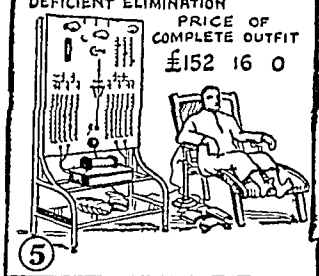
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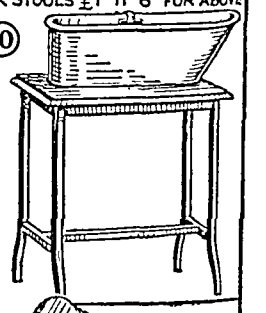
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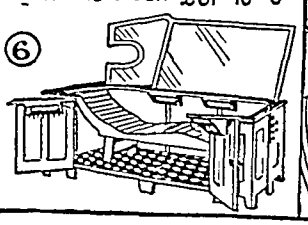
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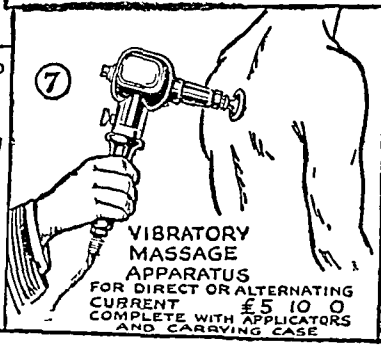


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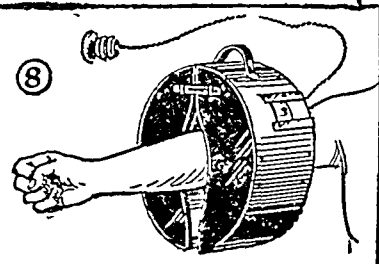


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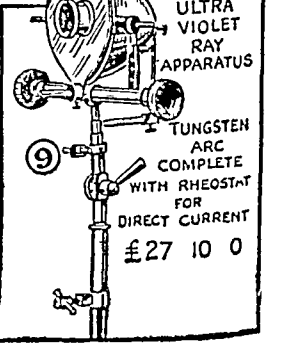
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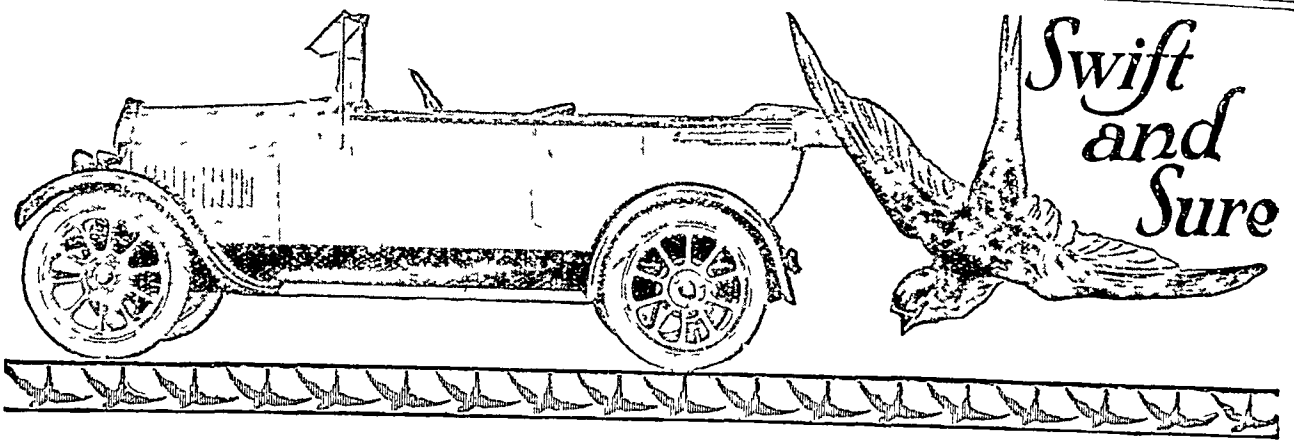
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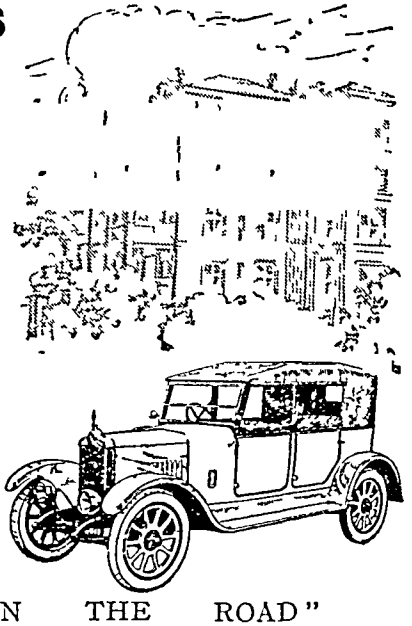
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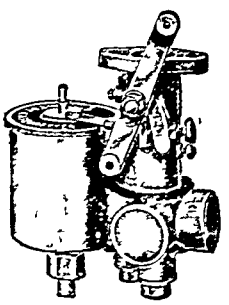
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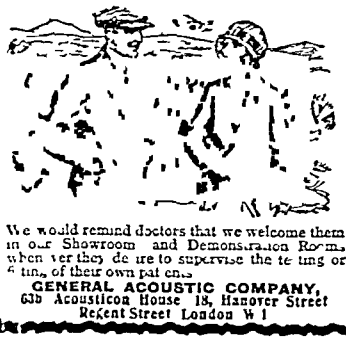
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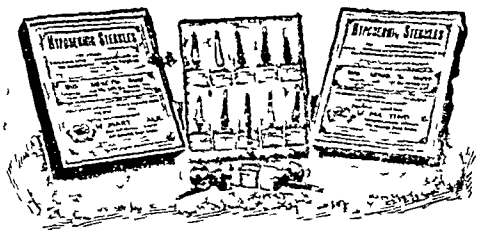
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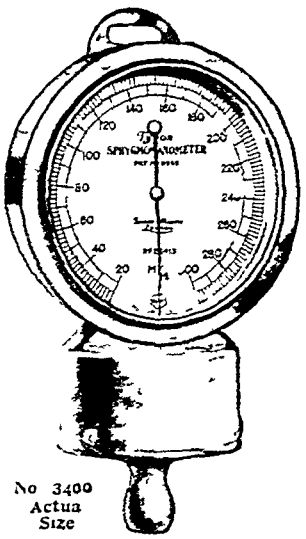
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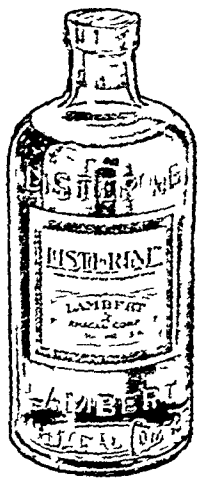
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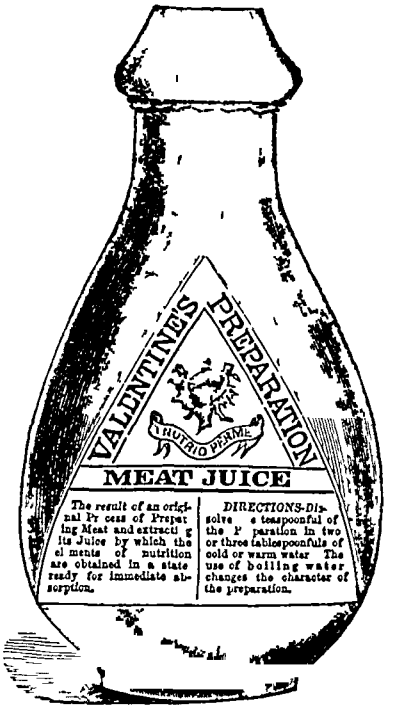


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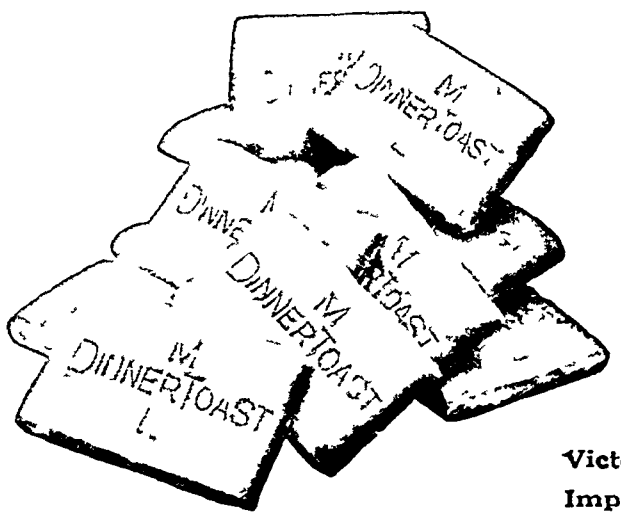
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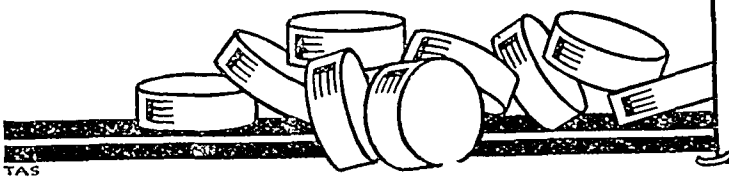
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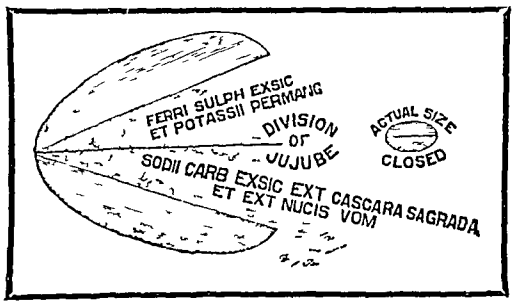
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NEW CONCEPTIONS IN THE TEACHING OF PUBLIC HEALTH

BY

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THERE has been a cry from Chile, faint and far distant, but not without a certain significance for this country at the present time. It was raised by Dr. Alejandro Del Rio in the course of an address to the University of Chile, wherein he bemoans the state of the public health in that South American republic. It is noteworthy that he cited England as "the cradle of hygiene," and compared the huge sum spent there annually by the State and by municipalities in safeguarding and promoting the health of the populace with the two million pesos—roughly £83,333—which is all that Chile in 1923 was expending for like purposes.

Dr. Del Rio's address is embodied in a paper recently published. He pleads for revised sanitary organization in Chile, for a stirring of bones which, if not dry, are yet tending towards *desiccation*, for a *recognition* of all that hygiene means to a modern community. He acknowledges England as the leader in that great movement which, during the last seventy years, has revolutionized health conditions in many parts of the world, but let it be noted that, in framing his budget, he takes as his basis the American standard of one dollar per person per year for public health work.

While it is to the two great English-speaking countries of the globe that he turns, there is possibly a suggestion that, though he sees in England the fount of hygienic knowledge, he finds, in the application of that knowledge, the United States nowadays leading the way.

Be that as it may, in hygiene, as in other departments of medical *science*, progress, as the distinguished Chilian recalls, depends on education, and the enlightenment of the people can only proceed on sound lines if those who specially profess public health work are afforded full facilities for the study of hygiene in all its branches. Now the hygiene of to-day differs markedly from that of thirty years ago. Indeed, we may go farther and say that even in the last fifteen years, or, for that matter, the last ten years, the outlook in matters hygienic has not only been greatly extended but has actually changed in many directions. Certain aspects of public health have receded, others have come notably to the front, and, in addition, there has been a correlation and co-ordination previously lacking. Our views have widened with increasing knowledge, with increasing responsibilities, and with the increasing pressure which the complications of so-called civilized life impose upon us.

THIRTY YEARS AGO

Thirty years ago the student of public health did very fairly well upon a regimen which included a certain amount of bacteriology, a considerable amount of chemistry, a smattering of physics. Here and there he got a little geology in addition, and, if he was fortunate and had good teachers, he learned something of the application of these sciences to preventive medicine. Some instruction in meteorology was given him, and he was taught in a perfunctory kind of way the elements of building construction. He had to study what were called the general principles of sanitary engineering, a study which certainly did not fit him to discuss intelligently the problems of that science with an engineer. Much time was devoted to disinfection and disinfectants, but the consideration was more theoretical than practical. The microscopical examination of foods was quite a feature of the curriculum, but resolved itself largely into a recognition of starch granules and the method of detecting chicory in samples of coffee. In addition, some time was devoted to rather vague generalities entitled the general pathology of infection, and to a few facts concerned with some diseases of animals transmissible to man. Those of a parasitic *nature* were usually expounded in an erroneous manner.

Having passed the first part of his examination for the D.P.H. he found that Part II. required of him quite an extensive knowledge of sanitary law, which, as a rule, had to be acquired in a parrot-like fashion, a familiarity, usually dreaded, with vital statistics, which, if vital for examination purposes, were shorn of any other vestige of vitality, and a rather thorough acquaintance with abattoirs and common lodging-houses. He was supposed to know something about meat inspection, about nuisances injurious to health, and about insanitary dwellings, with defective water-closets as a prominent feature. The great subject of industrial hygiene was represented by a few lectures on dangerous trades and occupations, which often took the form of discourses on lead poisoning, and finally there was a kind of *olla podrida* consisting of *exercises concerned with season*, climate, and what was called general epidemiology, which rarely proved an inspiriting form of mental pabulum.

THE NEW OUTLOOK

It will be seen that, in large measure, this course of study was overshadowed by the idea that environment was, if not all important, at least the principal factor determining the health or otherwise of the people. This view was sound enough within limits, but of late years we have come to recognize the significance of the *individual*, a new conception has arisen not only as regards the factors influencing health, but with respect to the aims and aspirations of the hygienist. Thirty years ago there was a tendency to divorce State medicine, as it was called, from the medicine taught the medical student and practised by the physician and the surgeon. To-day the eloquent pleading of Sir George Newman for the permeation of the medical curriculum with

the preventive idea has reminded us that the subjects are one and indivisible It is this widening of view, this recognition of the paramount importance of such problems as those presented by maternity and infant welfare, by the safeguarding of the health of the "toddler" and the school child, by the care of the adolescent, by the control of the healthy or unhealthy disease "carrier," by the study of the mentally defective, by the efforts to eliminate the alcoholic and the drug-taker, by the campaign against tuberculosis and venereal disease, by the dental service, by industrial welfare, by the necessity for a sanitary cordon, by the need for combating many so-called minor maladies—it is this new conception that has resulted in the movement to alter the public health curriculum There have also been other determining factors Largely as the result of the progress made in tropical medicine, the great part which parasitology plays in the incidence and spread of disease, both at home and abroad, has been demonstrated, and, as a result, the study of medical biology has attained a prominence formerly denied it The same is true as regards comparative pathology, for every year sees the bonds more closely forged between human and veterinary medicine Again, the principles of immunology are so well established, and the practical results arising from their elucidation are so far-reaching, that any study of bacteriology, and indeed of pathology, using the word in its widest sense, necessitates instruction in both the theory and practice of what thirty years ago was a science in the making The whole outlook as regards food, drink, and dietaries has changed It is the age of vitamins and of deficiency diseases, and here and elsewhere biochemistry has come, or is coming, into its own Our views regarding industrial hygiene have been revolutionized, and we perceive the role which physiology plays in determining the fitness of the worker for his task, the influence of labour upon both his mind and his body, and the duty of the employer and of the State towards the producers, the most important section of the community Considerations of this kind—and many more might easily be cited—led the Athlone Committee, in the report which it issued in 1921, and which dealt with post-graduate medical education, to urge that further facilities should be provided in the instruction in public health Two years before, the General Medical Council had resolved on reform of the D P H regulations, and had dispatched Dr Bruce Low on his famous inspection In 1922 new regulations for the Diploma in Public Health were issued

That some alteration was required will be generally conceded, for, apart from the new outlook to which we have referred, there was a well founded feeling of dissatisfaction with the manner in which training in public health was being conducted As a matter of fact, the old enthusiasm which in the earlier days fired the disciples of the goddess Hygeia and enabled so much to be accomplished had, in some measure, waned, there was a tendency to stereotype the teaching, the interests of the examination bulked too largely, and there were other defects, at least in certain quarters

THE NEW D P H REGULATIONS

Somewhat stringent measures were required, and the decree of the General Medical Council brought them into operation The new regulations for the D P H became operative on January 1st of this year, but their immediate effect, in London at least, was to crowd some of the larger teaching schools with students anxious to enter and qualify under the old regime Thereafter there was a marked diminution in the number of applicants, partly because the new regulations entail the expenditure of more time and money in obtaining the diploma, partly, perhaps, because the stiffening of the examination repelled the faint-hearted, partly because the regulations were in certain instances misunderstood, partly, without any doubt, because it was felt by would-be candidates that the game was not worth the candle—in other words, that the prizes to be gained were not commensurate with the effort demanded, that the remuneration of whole-time medical officers of health was inadequate Another result was to determine certain of the medical schools which had hitherto conducted courses for the D P H to abandon them, so that at the present time the London student can only pursue his studies at four places—namely, University College, King's College, Middlesex Hospital Medical School, and the Royal Institute of Public Health These institutions have made provision, more or less adequately, for giving instruction in accord with the new regulations These last may be briefly considered and the erroneous ideas which prevailed regarding them dispelled, although efforts have already been made in this direction (BRITISH MEDICAL JOURNAL, June 21st, 1924)

Rule 1 provides that a period of not less than two years shall elapse between the attainment by a candidate of a registrable qualification in Medicine, etc, and his admission to the *Final* Examination for a diploma or degree in Sanitary Science, Public Health, or State Medicine The three terms are used because different teaching bodies unfortunately have not adopted uniformity of nomenclature It would be better to drop Sanitary Science and State Medicine in favour of Public Health, at once the most comprehensive and suitable term

Now this rule does not mean, as it has been assumed to mean, that an interval of two years must separate the two parts of the examination in Public Health It means that, from the time when he has qualified himself to be placed on the *Medical Register* as a fully qualified medical man, the public health student must allow two years to run their course before he can proceed to Part II of his Public Health examination This provision is made to give candidates time to review the situation and to gain, either in practice or in hospital or laboratory posts, experience of medical work in a responsible capacity, so that they will be more mature and better able to envisage the situation and direct their energies to good ends when they enter upon public health careers It is the same kind of opportunity which is vouchsafed to those who, after graduating and before commencing practice, are fortunate enough to secure resident hospital appointments Candidates from the dominions in possession of medical qualifications registrable in this country are eligible for the examinations under the same conditions

Rule 2 determines that the curriculum shall extend over not less than twelve calendar months subsequent to the attainment of a registrable qualification Hence only one year's Public Health study in all is required, and while, under Rule 7, no one may proceed to Part II until he has passed all the subjects of Part I, and while, in the case of both parts, he must pass all the specified subjects for each at one time, there is no necessity, as has been supposed, to take the *whole* course of studies prior to appearing for Part I All that is required, as Rule 8 affirms, is that the candidate cannot sit for Part I until he has completed the courses of instruction in the subjects prescribed for that part Rule 9 makes the same provision as regards Part II of the examination

Let us now see what subjects the student has to study and profess We need not here consider the amount of time he has to devote to each, save in two instances, for the information is readily attainable and we are concerned rather with indicating how the new regulations differ in certain important particulars from the old

The following is the full course of study, which, as we have seen, must extend over not less than one year As of yore, bacteriology, chemistry, physics, meteorology, and climatology figure, but, ranked along with bacteriology, stands parasitology—including, be it noted, medical entomology These subjects are to be studied in their relation to the diseases of man and to those diseases of the lower animals which are transmissible to man As formerly, the student has to gain familiarity with the principles of public health and sanitation, with epidemiology and vital statistics, with sanitary law and administration, with sanitary construction and planning The change here will be more in the method of teaching than in the subjects taught, but it is significant that sanitary administration will include the Public Medical Services—for example, all that elaborate organization which has been established of late years under the National Health Insurance Act, and the activities of the Poor Law, Public Health, and School Medical Services

As in the past, attendance at a recognized hospital for infectious diseases is compulsory, and so is a course of practical study under a medical officer of health, but, in the former case, although the total period of attendance is, as before three months, the daily attendances required are specified, which was not previously the case, while, in the latter six months' study instead of three is required. Moreover in addition to public health administration, the candidate must show evidence of having received instruction in maternity and child welfare, health service work for children of school age, venereal diseases service, tuberculosis service, industrial hygiene, and inspection and control of food, including meat and milk. This constitutes a great advance, and if suitable arrangements can be made, should familiarize the student with some comparatively new and most important aspects of public health work.

At Part I the aspirant must satisfy the examiners in what may be called the laboratory subjects, both on their theoretical and practical side, together with meteorology and climatology. The examination is practical, written, and oral.

At Part II the candidate must pass in hygiene and sanitation (including sanitary construction), in epidemiology and infectious diseases, in sanitary law and vital statistics, and in public health administration. The examination is written and oral and includes practical examinations with respect to infectious diseases, foods, and premises of various kinds.

The new regulations have been the subject of considerable criticism. It has been affirmed that they will defeat their own ends, and prophets are not lacking who maintain that they will require revision, if not abrogation. Those best qualified to speak, however, are of opinion that they constitute a distinct and useful step in advance. In this connexion the pronouncement of a distinguished medical officer of health of wide experience, who has been for many years closely associated with public health teaching is of special interest and value. In a paper which appeared in the BRITISH MEDICAL JOURNAL of August 2oth, 1922, Dr Hope of Liverpool expresses his satisfaction with the new regulations, although, as regards one or two points, he thinks they might be made a little more explicit. Much undoubtedly will depend on the success attending the effort to improve the salaries paid to whole-time medical officers of health. The public must realize that if it wants health work it must pay for it, and that, considering the vast developments of recent years, and the increasing burden and responsibilities to which health officers are subjected, these servants of the people who are also guides and counsellors, or as Sawyer, the American, would fain regard them, sanitary statesmen, must receive adequate remuneration. If we are to have skilled and highly trained medical officers of health (and surely no one nowadays will dispute such a desirability), then it is essential that they should receive, not a mere living wage, but a salary commensurate with their attainments and bearing a reasonable relationship to the amount of time and money that has been expended in fitting them for their onerous and all important duties.

To do the people of this country justice they have, as a rule in health matters, risen to the occasion and though in former days fear, discomfort, and, in the case of employers of labour, the pinch of the pocket, were the chief factors in determining the tension of the purse strings, to-day a new spirit is abroad. True it is neither so robust nor so widespread as could be desired. Familiarity with health has in certain quarters bred contempt of health measures, or, to put it another way, unfamiliarity with epidemics has led to forgetfulness of how such immunity was purchased, and how alone it can be maintained. Still at heart we are a sensible, if not always a logical people, and there can be little doubt that those who really count appreciate the medical officer of health at his proper value, and will not be indisposed to see him receive the monetary recognition he deserves, especially when they understand how much is now expected of him, how infinitely greater is the scope of his duties, and how dependent they are on his expert knowledge.

There is, therefore, reason to hope that ere long there will be an improved economic outlook for the public medical services and that consequently it will be unnecessary *materially*, to modify the new regulations for public health diplomas and degree. As has been said, the Athlone Committee duly recognized the necessity for a radical change in the post-graduate teaching of public health, but it also recognized that this country, impoverished by the war and burdened by heavy taxation, was not in a position to make adequate provision for the desired reorganization.

THE ROCKEFELLER BENEFACTION

Happily the Rockefeller Foundation, which had already done so much for humanity, which had aided so many of our colonies in the struggle against the hookworm, and which had enabled certain aspirations for improvement in medical teaching in this country to be realized, came to the rescue. It offered the sum of two million dollars for the purpose of purchasing a site in London, and erecting thereon and equipping in an up-to-date manner a school for instruction in hygiene, similar to those schools at Harvard and Baltimore which its munificence had already brought into being, and which had already embarked upon their careers of usefulness. This great and generous gift was made with the proviso that the British Treasury should provide funds for the upkeep of the school, such funds to be paid through the Ministry of Health. The Rockefeller Foundation as a rule proceeds upon such lines, the wisdom of which is enshrined in the old saying, "God helps those who help themselves."

The gift and its terms were accepted, and measures were taken to give effect to the decision. As it would take time before the necessary buildings could be erected, the Foundation went even farther, and provided an annual sum of money to enable a start to be made with the preliminary organization required. It was decided that when the institute was built it should become a recognized school of the University of London. A special committee secured a suitable site in Gower Street, framed provisional plans, and drew up a provisional course of studies. Then the conduct of affairs passed into the hands of a Transitional Executive Committee, and this body amongst other things, arranged that the existing London School of Tropical Medicine should become an integral part of the new School of Hygiene. It was desired that the work of the school should be of an imperial, and indeed of an international, nature. Year by year the hygiene of the tropics approximates more closely to that of the homeland. There is no dividing line. The principles governing both are the same even if the practice of hygiene in the tropics differs, and will continue to differ in many respects from that of lands with temperate or cold climates.

Moreover, tropical medicine, although a special subject requiring special study, should not be, indeed cannot be, wholly divorced from the medicine taught at our medical schools. There are few diseases which are entirely limited to the tropics, while the role of medical biology, at first apparently more or less confined to maladies of hot countries, has now been found to extend to many diseases which have no special connexion with the torrid zone.

It was felt that a great opportunity had arisen for linking the homeland with its overseas possessions, so far as the conquest of disease was concerned, and for establishing a centre of light and learning, a Mecca to which the devout students of medicine and hygiene might resort, not only with a view to acquire knowledge but to conduct research and to gain opportunities of discussing their problems and their perplexities.

The Transitional Executive Committee paved the way, and in the fullness of time relinquished its duties to a board of management, some members of which were appointed directly by the Ministry of Health, while some were representatives of the large Court of Governors which had been established, and to which the board will report annually upon the work and progress of the institution.

PLANS FOR THE SCHOOL OF HYGIENE AND TROPICAL MEDICINE

The provisional scheme of lectures and practical work to which we have referred has been framed on broad lines and with due regard to the new regulations for the D P H

In certain respects it may require modification, either in the way of curtailment or of extension, but in all probability the six main divisions will hold good These are as follows (1) Applied Physics, Physiology, and the Principles of Hygiene, (2) Chemistry and Biochemistry, (3) Immunology and Bacteriology, (4) Medical Zoology, Parasitology, and Comparative Pathology, (5) Epidemiology and Statistics, (6) The Principles and Practice of Preventive Medicine, General Sanitation, and Administration In addition there will be theoretical and clinical instruction in tropical medicine—the bedside teaching, thanks to the continued courtesy and interest of the Seamen's Hospital Society, being carried on for the present, as heretofore, at the Hospital for Tropical Diseases in Endsleigh Gardens It is hoped also to extend very considerably the altogether inadequate instruction now given in tropical hygiene

In connexion with each of the divisions there will be special courses, and the instruction, as far as possible, will be of a practical nature Thus, to take but one example, the science of vital statistics will be taught not so much in the classroom as in the laboratory Its principles will be applied to actual problems in epidemiology, and the student will be made familiar with the methods employed by statisticians, and will himself make use of these methods No better exposition of the system required could be given than that set forth by Dr Hope, but the reader's attention is directed also to an article in the BRITISH MEDICAL JOURNAL of April 7th, 1923 (p 600)

Every branch of public health work will receive attention, but naturally greater stress will be laid on some subjects than on others In the past, public health chemistry would appear to have bulked unduly in the training of the student It must be recognized that it is a mere waste of time and money to try and produce chemical pundits, they are not required in the public health services What is needed is that a medical officer of health should be well grounded in the principles underlying public health chemistry and should be able to evaluate intelligently an analyst's report on water, food, or sewage It is, for example, very much more important that he should spend time, formerly devoted to making minute chemical examinations of foodstuffs, to the study of those biochemical developments as regards dietaries which have so large a bearing on the health of communities Instead of spending hours analysing a sewage effluent he should be taught to grasp the significance of the bio-aeration of sewage, and the factors involved in the various processes of purification Instead of searching for metals in a water he should concentrate on such a question as chlorination, and be made to understand the paramount importance of a survey of a watershed or gathering ground

In his training with a medical officer of health he should be given an opportunity of seeing something both of urban and rural conditions, and when he is taught the problem of industrial hygiene he should see for himself the conditions obtaining in the factory and the workshop When he comes to apply his bacteriology to immunology he should gain at first hand a familiarity with the practical outcome of immunological studies, with the production of vaccines and serums on the large scale, and so, in every department, the inculcation of precepts should be supplemented by the visual lessons of practice Still more important is it that the teachers should realize what is required of them, and should bear in mind a statement made regarding the school to this effect "We do not wish to see either a mere machine for enabling youths to pass certain examinations or a temple of esoteric study and academic research"

PROVISION FOR RESEARCH

Research, of course, there should be, there will be Research is as the breath of life to any teaching institution It quickens and refines it, but research in a school of this kind must be devoted very largely to practical ends Think what might be achieved by co-operation between the bacteriologist, the chemist, and the sanitary engineer! At present these three worthy classes of inquirers tend to work in watertight compartments

If anything were required to show the need of research on public health problems it is the humiliating reflection that in no single instance has the causative organism of any one of the common communicable diseases *in this country* been discovered by a British worker Take typhoid, take cerebro-spinal fever, take tuberculosis, take diphtheria, take syphilis, take any of the others, and the same sad tale has to be told Surely there is something wrong here—something that might be, and should be, remedied, for that men of our race possess the ability to make such discoveries is shown by their triumphs in the tropical field

It may be that our medical officers of health who handle much of the material are not given opportunities for study and research It is hoped at the new school to provide them with "refresher" courses, and to make arrangements which will permit them to attend such courses Here it is that a great graphic museum of hygiene might play a notable part, just as it might also serve the needs of the populace at large, and just as its section on tropical medicine would come as a boon and a blessing to the student from our colonies and dependencies The part played by the medical museum as a teaching force has never been fully exploited in this country, but a glance at the Tropical Health Section at Wembley will give some idea of its possibilities There are many other points which might be mentioned, but we have wellnigh exceeded the limits of our space

THE IMMEDIATE FUTURE

Whether or not the school can embark on any part of its curriculum before the building is erected is a question not yet settled It would assuredly seem that, in several directions, a start might well be made, especially as a promise of certain facilities has kindly been extended to it There are some subjects in the proposed curriculum for which, at present, proper provision does not exist, and it would appear both justifiable and advisable to establish courses for them At the same time it must be remembered that the Treasury grant cannot be claimed until the building has been completed and is ready for occupation, so that there may be difficulties in the way of financing any such project

The same is true as regards the extension of the course in tropical hygiene to which reference has been made, and lack of funds may also militate against any scheme for encouraging instruction in biochemistry in the Division of Tropical Medicine and Hygiene, as the London School of Tropical Medicine became on August 1st, 1924

All these questions are receiving careful consideration When the building is ready, say two years hence, and the school is prepared to undertake its task of post-graduate teaching in public health in all its branches, there is every probability that all such teaching in London will be concentrated within its walls Until that time the requirements of public health students will be met at one or other of the institutions above mentioned, while the teaching of tropical medicine and hygiene will continue, together with research work on these subjects, at 23, Endsleigh Gardens At the same time it should be noted that a special course of lectures on sanitary law and sanitary administration will be available at St Bartholomew's Hospital Medical School

For the present there will be no alteration in the short twelve weeks' course for the certificate in tropical medicine and hygiene, and for the D T M and H It is, however, fully recognized that such a course has become quite inadequate Tropical medicine has grown by leaps and bounds, and it is hopeless to try and cram all that should be known about it into the period which sufficed when Sir Patrick Manson was laying the foundations for the study of the subject, which owes to him, more than to any other man, its present position and importance

It is hoped, therefore, to institute two five month courses in the academic year, but naturally there are many points requiring careful consideration before such a radical change can be made Within limits *festina lente* is a good motto, as is the kindred and more vulgar saying, "Haste is begotten of the devil"

Not long ago a witty after-dinner speaker contended that the function of the new school was to make this country "a fit place for Americans to live in" He was but joking, yet there is more than a grain of truth in the remark Americans visiting England, and more especially London,

are with good reason shocked at the way our foodstuffs are transported and handled They also find other causes for criticism, though happily there is much they can admire, and even perhaps a little they might copy, more especially in the way of administration Yet only the other day, in Liverpool, a distinguished American hygienist commented unfavourably, and it is to be feared justly, on the appearance of a crowd congregated in the streets of that great city He saw there signs of destitution and drink, which it would not have been easy to match in any similar gathering in the United States Here is evidence of failure and food for thought

The students of the school must be so trained and guided that they will acquire the wider outlook They must be versed in the elements of sociology they must become apostles of the doctrine of co-ordination and consolidation of social effort in all its ramifications, and there must be impressed upon them the significance of what has been called the "anticipatory work" of the epidemiologist It will be well if they and their preceptors bear constantly in mind the truth of Hermann Biggs's dictum which Dr Sprott of Tasmania recently quoted to such good effect 'To make the unfit fit is a noble task, but to make the fit fitter is a larger and higher achievement"

OPHTHALMIC PRACTICE

BY

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THE Educational Number of the BRITISH MEDICAL JOURNAL is, for the most part, of interest to prospective medical students, or their parents, guardians, or teachers For these the store of information furnished therein regarding medical schools, medical degrees, and medical appointments is as the map that guides the stranger who essays an entry into a new land To these this article on ophthalmic practice will make small appeal It is written mainly for those who have already explored the land in some directions and staked out some claim to prospect therein To two sets of men these observations upon ophthalmic work may be of value first, to the man who proposes to take up ophthalmology as his life work as an ophthalmic surgeon and secondly, to the man who proposes to enter general practice, or may even now be in general practice, and who desires at the same time to make himself proficient in some special branch of medicine and surgery, and whose inclination turns towards eye work For both of these types of men there is a steadily increasing field for work, and the work itself is particularly fascinating and satisfying

THE FIELD FOR WORK

Within the last score of years the demand for qualified practitioners competent to deal with ophthalmic work has increased greatly The first great move promoting this demand was brought about by the establishment of the medical inspection of school children Indeed, it may be said with much truth that it was the work of ophthalmic surgeons amongst school children that created the demand for the medical inspection and treatment of school children Now little more than twenty years since the inauguration of this work, there are throughout the country medical men and women habitually investigating the problems of errors of refraction and diseases of the eye, and doing this work in a fashion that is a credit to themselves and the service to which they are attached, and to real advantage to the school children who are their patients There is a repercussion from this systematic work amongst school children upon the general public Parents are learning that what they thought good enough for themselves is now good enough for their children The casual choice of glasses from the counter of any spectacle vendor or the more mystifying supply of glasses from a prescribing optician the parents now know is not good enough for their children, and they are beginning to wonder if these casual methods are good enough for themselves Hence there arising a steadily increasing demand for the provision of an ophthalmic benefit for the million and through it the possibility of obtaining the service of medical practitioners competent in ophthalmic work when need arises The demand is based upon the ever increasing complexity and strain of a highly organized civilization Statutory authorities, shipping and railway controllers, manufacturers and other employers, are bound to select fit persons for their particular work, and eye fitness is a primary necessity Workers in every walk of life, teachers, scriveners artisans, seamstresses, and mothers, each in turn feel the need to remove a possible handicap arising from defective eyesight, or from conditions of sight ill adapted to the work in hand The intimate relation of the conditions of the eyes to general bodily health and disease makes it inevitable that this demand can only be satisfied by the provision of fully qualified medical practitioners Any lesser provision would prove an expensive substitute in the long run There are the new fields for eye work now being added to the existing forms of ophthalmic practice, and they may ultimately prove to be the wider fields

THE WORK

There is perhaps no form of practice furnishing such a variety of experience as eye work, and it is certain there is no happier field of work for those whose minds desire something like completeness in their work The examination of each eye patient is a voyage of discovery The sorting methods of the receiving room of an out-patient department of a hospital have no place with eye patients The wiser the doctor the less inclined is he to satisfy the dramatic instinct for a "lightning diagnosis" based upon the patient's statement of complaint He learns to value scientific methods and to use them But scientific methods of inquiry alone will not satisfy, they must lead to something, and in eye conditions we have this requirement, for there is so large a mastery over means that the end is obtained with a frequency and a completeness that is a source of gratification to both patient and doctor

THE YOUNG GRADUATE

The young graduate in medicine may well take stock of his equipment He has worked diligently during the years of his novitiate, passed his qualifying examination with credit, and perhaps held a house appointment at his hospital During these six years he will have learned something of the anatomy and physiology of the eyes, and of their neural and vascular connexions he will have attended the eye clinic for the prescribed period and a few lectures and demonstrations on the diseases of the eyes He will have learned that a 'pink eye' may be due to conjunctivitis, an iritis or a glaucoma and possibly be able to give a fair account of the means whereby the necessary distinction is to be made in any given case But in the absence of that assurance born of habit he knows that the next time he sees a red eye facing him he will feel hopelessly confused by the minuteness of the symptoms, even though he has been assured that they are writ large for him to read with his own eyes He knows what an ophthalmoscope is, and has made a valorous effort to master that "open sesame" to vascular and cerebral conditions Indeed once he got such a view into the interior of an eye that he ventured to pronounce (with some hint of reservation) that the eye was normal for which daring he received high commendation from his preceptor in that he had recognized a "normal fundus oculi" But alas! three weeks later on his return from a jolly holiday he found he had forgotten the magic words, and by no means could he peep again through that chink in the human anatomy which revealed such wonders The memory annoys him now, and it is aggravated by the recollection of the assurance of the eye surgeon, who, when called into the wards by his neurologist or physician

colleagues to examine a hard case for them, saw things and wrote them down as definite statements of fact that had the determining influence in clearing up the knotty diagnosis Or he remembers another case of obscure headache or of wry-neck which had baffled physician and surgeon, and which the ophthalmic surgeon claimed as his own proper case, for the symptoms were due, he said, to an undetected defect of muscle balance, a hyperphoria, or latent vertical squint, which being corrected by glasses gave the patient immediate and permanent relief These and other such cases are impressed upon his mind, and he feels a very proper greed for the mastery of that power for himself He cannot buy it, he must win it And now, just as he is going out from the house of learning after half a dozen years he wonders how he is to get it

First let me sketch out a course of work for the would-be ophthalmologist, and next indicate the manner in which the general practitioner may render himself reasonably competent in eye work

THE YOUNG OPHTHALMOLOGIST

The young ophthalmologist has before him a strenuous course of preparation, one which will absorb some three years before he can expect to be able to settle himself in the practice of his specialty and hope to obtain the suffrages of the practitioners of his chosen area of work He must be so well reported of to them as to secure their initial attention, and so well equipped for his work as to be able to retain and increase what he obtains by report

He will need to attach himself to an eye hospital of good standing, where there is plenty of work and a good teaching staff, or, failing that, to the eye department of a large general hospital, again preferably a teaching hospital His former teachers will furnish him with introductions to the school and possibly to some member of the staff There he will learn the everyday practice of his chosen work He will find ample, often superabundant, clinical material for investigation But unless he is content to become little more than a rule-of-thumb worker, a mere copyist of other men's methods (and a poor copyist, since he may not know the sources of their inspiration), he will not be content with absorption in clinical work He will take out a course in optics, wrestle with the complexities of mathematical and applied optics, he will proceed to learn how lenses are made, and even to know something of the making of the instruments he uses and the spectacles he proposes to order He will take out courses on the physiology of the eye, become familiar with the intricacies of muscles and muscle movements, and also in neurology, and learn to think in nerve paths, so that at least he will be able to meet the neurologist in his own house If time allows he will work at a nerve hospital and perhaps hold a house office there He will make friends with the clinical pathologist and carry off from him as much as he is able to bear At his chosen eye hospital there will be work in the bacteriological laboratory, and he should constitute himself liaison officer between the clinician and bacteriologist, so as to see both ends of the lines of communication and be able to judge of their significance Again, he will work in the pathological laboratory and learn the technique of the preparation and examination of excised eyes and pathological material In all these things he should strive to put himself in such a position of practical knowledge that he could if needs be do the work himself, for it may be that his lot will be cast in a place where a multiplicity of skilled workers is not available, so that if he is to continue in scientific methods or carry out research for himself he must have the assured knowledge that will enable him to set others to work

As a corrective to this intensive study of disease he will do well to get out into the world and see what the average man, woman, and child is like Let him make friends with the school medical officer, visit the schools, do some of the medical inspection himself, go to the clinics and take a hand in the work, let him visit the several types of special schools—for the blind, the myopes, for the sufferers from contagious eye diseases, for the deaf, the cripple, the mentally defective—and the open-air schools for the weakly, and let him observe the special features of each Let him go round with the factory surgeon and see the inside of the works whence come the injured eyes Let him by hook or by crook see the inside of every sort and condition of human activity where work and lighting are likely to have any effect upon the eyes Lastly, his holidays must be wholly devoted to the exploration of new fields of eye work, to visits abroad to Continental and, if possible, American clinics, so that his mind may receive the enlargement of other men's methods

During all this period he will read assiduously, first from advanced textbooks and then from original papers, and gradually he will find that some one or other branch of the work will seize upon his imagination, so that his daytime clinical and practical work will be turned to special account in the investigation of some problem, and he will find himself a research worker Examinations will need to be considered, and these should be got over early as a necessary evil He will need the Fellowship of the College of Surgeons of the chosen area of his work, or if he proposes to work in the dominions one or other of these Fellowships or a diploma in ophthalmology will serve his turn He will have served as clinical assistant or chief clinical assistant or as a house officer in the eye hospital or department, and these also will serve as vouchers to his credit when he seeks to obtain a hospital appointment

THE GENERAL PRACTITIONER AND EYE WORK

The programme of the general practitioner who wishes to secure a reasonable competence in eye work will be much less ambitious He can give but months where the other man must give years But if he is intent upon his effort and is prepared to make the necessary sacrifice of his leisure and of some of his general practice, he can secure his end, for others have done it before him He will be wise, at any rate at first, to confine his effort to a mastery of the diagnosis and treatment of the ordinary disorders and diseases of the eye For his purpose he must become thoroughly familiar with the use of illumination, corneal loupes, and retinoscopy mirror, and the ophthalmoscope A real working knowledge of these instruments based upon his prolonged training in general medicine will make him a reasonably competent worker in ophthalmology, who may be trusted to carry on the work of a school clinic and investigate and treat the ordinary run of private eye cases These limitations need not bound his vision, for I have known men in general practice who were able to diagnose accurately a complicated defect of muscle balance

The man in general practice should, if he could, get a clear three months' course at an eye hospital or post-graduate college where "refresher courses" are provided If he cannot do that he should attach himself to the eye clinic nearest his home, and arrange to attend there regularly at definite hours It may be he can only find a school clinic near enough, but that will do If he can show the worker in the clinic that he is in earnest, that he will attend on the stated days and regularly—no matter at what cost to himself—he will find that the doctor in charge of the clinic will welcome him as a colleague and show him all the treasures of his clinic, but for the casual dropper-in no one will have any use, or count him other than a hindrance to work—a nuisance

Work of this order to be effective should be carried out on a system, combining practice with reading It is well to confine the work at the clinic at each visit to the working out of one case only A patient of intelligence should be chosen, and every mode of examination known to the worker carried through methodically Every step should be recorded in his private case-book, and each difficulty experienced and fact observed noted therein At the close of the work his experienced colleague will go over this record with him, and later at his home he will compare his observations with the statements of his textbooks If he will work in this slow and methodical way he will make steady advances in the mastery of his work, and, better still, he will know the reason for what he is doing It is only through such a process of observation and thought that he can arrive at that maturity of judgement which knows how to apply the ascertained fact to the life and habits of each patient, and so achieve the treatment of the patient and not of mere symptoms

The Profession of Medicine.

INTRODUCTORY

For long past it has been our custom to publish a special Educational Number of the BRITISH MEDICAL JOURNAL at this time of year, shortly before the opening of the winter session at the medical schools. The remarks that follow, on the profession of medicine, are addressed more particularly to intending students and their parents. While it would be out of place to discuss medical politics here, the occasion may be taken to touch on a few current matters affecting professional study and practice. Our object in doing so is to put certain considerations before those who think of devoting themselves to medicine, and thus help them to judge of their fitness for the profession and of the prospects it holds out, for there is no walk of life in which a special vocation is more necessary, and few about which so many misconceptions linger in the public mind.

The Educational Number is largely a guide to the steps that must be taken in order to become a *legally* qualified practitioner. With the passage of years the form and contents of this issue have undergone more or less change, but its primary object remains unaltered. It contains also certain sections intended for younger members of the profession who may be in doubt as to the path in medicine they should choose as a career, and a section on the existing opportunities for post-graduate medical study in Great Britain. The particulars given under these two main heads are founded for the most part on official information, and are arranged along the customary lines. We publish also in this issue an introductory article by Dr ANDREW BALFOUR on new conceptions in the teaching of preventive medicine, in which he discusses the new regulations for the Diploma in Public Health, and indicates some of his hopes for the future of the London School of Hygiene and Tropical Medicine, of which he has been appointed the first Director. Dr Balfour's article is followed by a note, written at our request by Mr BISHOP HARMAN, on the teaching and practice of ophthalmology.

Apart from these and other special articles, the prospective student will find in subsequent pages an account of the course of education required of him, the places where this training can be obtained, and the universities and other licensing bodies which test the knowledge gained and issue degrees or diplomas entitling successful candidates to become registered medical practitioners. Here we may draw attention to the need, which increases with the advance of scientific medicine, for a thorough grounding in the fundamentals of science. As Sir Ernest Rutherford said four years ago to the Section of Medical Education at the Cambridge Annual Meeting of the British Medical Association: "In order to maintain and raise the standard of the profession, the medical teaching must be reared on a sound basis of scientific principle. Without that, the energy and enthusiasm of medical teachers is largely wasted."

PORTALS OF THE PROFESSION

Perusal of the articles in this issue will give the idea that there is an almost bewildering number and variety of portals through which admission may be obtained to the *Medical Register*[1]. Nevertheless, although there is no single State examination in medicine in this country, the medical courses of the various universities and schools in Great Britain and Ireland run on parallel lines, and the obligatory curriculum is much the same in all. Within these broad lines, however, there are many differences between the requirements of the individual teaching and examining bodies. The choice should therefore be made early, so that a definite plan may be followed throughout the years of study. To prevent a false step at the outset the student and his advisers should try to obtain a clear idea of the object to be aimed at, or the relative advantages or taking one or other of the degrees or diplomas open to him, and of the comparative difficulties they present.

All who wish to enter the medical profession must comply with certain conditions. These are prescribed by the General Medical Council, which is a statutory body established under the Medical Acts, a statement of its requirements is given at page 403. Many changes have lately been made in the medical curriculum, and this section should be studied with care. Every medical student, after passing examinations in the subjects of general education and in the preliminary sciences, must take a course of training at a recognized medical school, covering at least a period of five years, but usually extended to six years or more. The examination of candidates as to their fitness to practise medicine, surgery, and obstetrics is left to the licensing bodies, which are of two kinds—the universities, and certain corporations in England, Scotland, and Ireland. One of the functions of the General Medical Council is to make sure that the tests at each stage do not fall below a certain standard, and that the students examined have undergone prescribed courses of instruction at recognized institutions. Successful candidates at such examinations eventually receive from the body holding them either degrees, in the case of a university, or diplomas or licences, in the case of a corporation, these qualifications entitle them to claim insertion of their names in the *Medical Register* kept by the General Medical Council. Holders of diplomas and licences once made up the great majority of all medical men, especially in England and Wales. But universities have greatly multiplied, and so many practitioners are now graduates that a student of ordinary ability will be well advised to aim at a medical degree, though it may be desirable to take also a diploma or licence.

COST OF MEDICAL EDUCATION

The question, What does a medical training cost? cannot be answered in a single precise statement, because the outlay varies within wide limits. Besides differences in the charges made by medical schools for instruction there are differences in examination fees as well as in the fees for certificates of qualification, and those who aspire to the higher degrees and diplomas must expect to pay more for the additional courses and tests and certificates. Again, not all students, however industrious, pass examinations with equal facility, and every setback due to failure in the examination room or to illness means added expense. Since professional education must in any case continue for five years at least (a period exceeded by the vast majority), and since the cost of living in different parts of the country varies much, while personal expenditure varies still more, it can only be said in a general way that all those who hope for entering the profession should reckon on an outlay—first and last—of at least £1 500. On the other hand, the number of scholarships and prizes now offered is larger than in the past, in the Scottish universities bursaries are numerous, and the Carnegie Trust (whose regulations are summarized at page 414) gives financial assistance to many Scottish students. The main thing to bear in mind is that, as compared with other professions, the period of training in medicine is long, and for most students costly. There is also to be remembered the time of waiting after qualification when income is apt to lag behind expenditure.

[1] The *Medical Register* is the official statutory list of qualified medical practitioners kept by the General Medical Council.

THE NUMBERS OF MEDICAL STUDENTS

One effect of the war and of after-war circumstances was a great increase in the number of medical students, both men and women, but especially women. The reasons for this increase are suggested in a paragraph in the report[1] lately submitted to the Treasury by the University Grants Committee:

"It would have been strange if a long and devastating war under modern conditions had failed to swell the ranks of the medical students. The unprecedented demands made upon the medical profession—and triumphantly met—for the alleviation and cure of the sufferings of the fighting forces, the revelation through the examination of recruits of an unsuspected amount of physical disability among the civil population, and the losses which the medical profession itself experienced in the field, all no doubt served to draw young men and women to the Medical Schools and Departments."

The following brief survey of the position should be read in conjunction with the note on page 403 on the numbers of registered practitioners. In the thirteen years before the war the annual entry of medical students in Great Britain and Ireland averaged about 1,400, during the war period, although many students left to serve with the forces, the whole number actually studying in the schools was growing steadily larger. In 1914 the entries rose to 1,600, and in 1915 to 1,918, in 1916 they fell to 1,875, in 1917 they rose again to 2,150, in 1918 to 2,253, and in the following year, when demobilization was in active progress, as many as 3,420 new students were registered. After 1919 the number of entries rapidly fell. In 1920 there were 2,531 registrations of new students, in 1921 there were 1,808, and in 1922 there were 1,833. In 1923 a very considerable drop occurred, which led to some misunderstanding, but Sir Donald MacAlister, in his last presidential address to the General Medical Council, has explained the situation. The smallness of the number of students registered last year—545 in all—he attributes to the fact that under the new regulations of the Council a student must now postpone his registration until, in addition to his examination in general education, he has also passed a recognized examination in elementary chemistry and physics. The figures for 1924 will, without question, be considerably higher, and will represent more truly the actual numbers who are undergoing professional instruction for medical qualifications. The great increase in the number of students during the war and after the armistice threw a heavy strain on the teaching resources of the medical schools and colleges. This period of strain is now practically at an end. "In the comparative calm which now prevails the teaching institutions will have leisure to introduce the improvements in the medical curriculum which, with their assistance, the Council has laid down as necessary or desirable at the present time." The recent fall in students' registration is to be welcomed for another reason. Excessive entries of students lead to overstocking of the profession. In 1921 and 1922 the numbers of new practitioners registered greatly exceeded the figure of 1,200 so which was the average before the war, and last year the medical registrations were no fewer than 2,482. These recent large increases have brought the total number of names in the *Medical Register* up to 48,410, and the ratio of qualified medical practitioners to population is now greater than at any previous time. The new regulations, which came into force at the beginning of last year, should do something to keep the entries of students—and, as a consequence, the numbers of the profession—within manageable bounds.

[1] University Grants Committee. Returns from Universities and University Colleges in Receipt of Treasury Grant, 1922-1923. London: H.M. Stationery Office. 1924. 3s. 6d. net.

CHOICE OF A CAREER IN MEDICINE

The student, having passed all his tests and placed his name on the *Medical Register*, becomes a member of the profession and assumes the privileges and responsibilities that go with legal qualification. But the final examination, though a great event, is only the opening of a door into a wider field of training and experience. Education must continue throughout his career: a good doctor remains always a student. As Sir Arthur Keith said the other day, "No medical man is honest who is not familiar with what is happening in the best medical circles in the way of discovery and advance in medicine." As an introduction to practice nothing is so useful to the newly qualified man or woman as a year or more spent in junior hospital appointments, and all who can afford the time should look upon the holding of such posts as a most valuable investment. Next comes the choice of a career in the larger world of medicine. Many paths are now open—for example, general practice, Government service at home or abroad, and special work in public health and mental disorder, in scientific research, or in one of the many modern subdivisions of medicine and surgery. Most of these careers are discussed in some detail in the later sections of this number, but a few words may be said here about general practice and the work of a consultant or specialist. A good deal of information on these and other cognate matters will be found in the *Handbook for Recently Qualified Medical Practitioners*, published by the British Medical Association[2].

GENERAL PRACTICE

General practice is still the goal of the great majority of all medical students. The life is onerous and exacting. It has been said with much truth that of all professional men the general practitioner is the worst paid and the hardest worked. Nevertheless, general practice has its compensations, and, for one reason or another, it appeals to many of the very best students. Thus it comes about that this country continues to produce the finest body of general practitioners in the world.

This career is usually entered upon in one of three ways. The newcomer may take a house and wait for patients to seek his services, he may purchase the goodwill of a practice rendered vacant by retirement or death, or—perhaps best of all—he may become a partner in an established practice. A well managed multiple partnership has obvious advantages over single-handed practice, for instance, it allows each partner leisure for recreation and for keeping up with the progress of medical art and science. Success in the work of a private practitioner demands a great deal of knowledge other than that gained at the medical schools, and consequently a man is more likely to be accepted as a partner, or to do well on his own account, if he has already some experience of family practice as an assistant or deputy. A large proportion of general practitioners, therefore, begin their work as assistants.

An all-round knowledge of practical medicine, surgery, and obstetrics should, if possible, be supplemented by skill in some particular branch of practice. Moreover (as already indicated) the value to a general practitioner of having held one or more resident hospital posts is incalculable. In after-life (we quote the words of a great surgeon and teacher) one can generally pick out those who have been thus trained, as they gain a confidence and reliance and experience which they cannot easily obtain elsewhere. Before leaving this subject it ought to be added that the strain of busy general practice is so heavy and often so continuous that only those of sound physique can hope to last the course.

[2] *Handbook for Recently Qualified Medical Practitioners*. British Medical Association, 429 Strand, W.C.2. 2s. 6d. net.

CONSULTANTS AND SPECIALISTS

For those who aim at becoming consultants or specialists, success will depend in the long run not only upon mental gifts and capacity for hard work, but (as is true of practitioners of all branches) on the possession of those qualities which inspire confidence both in patients and in colleagues. In practice, personal tact and character are as important as scientific equipment. Moreover, since the consultant or the specialist can scarcely hope at first to pay his way by consulting work or by the exercise of his specialty, he must either have the means to support himself for an uncertain period or be prepared by teaching or in other ways to defray expenses. A successful physician, surgeon, or specialist is made, not born, and the process of making himself is not remunerative.

The question of additional degrees and diplomas is of special moment to those whose ideas turn in this direction, if only because these are important factors in securing election to the visiting staff of a hospital. Beyond the qualifications, such as Bachelor or Licentiate, which admit to the *Medical Register*, most of the licensing bodies bestow higher titles, such as Doctor, Master, or Fellow, after further tests. For the career of a consulting physician the M.D. degree of a university is usually necessary, and also the Membership of one of the three Royal Colleges of Physicians, according to the part of the British Isles in which practice is contemplated. In the same way, the Fellowship of one of the three Royal Colleges of Surgeons should be sought by those proposing to devote themselves to surgery. There are also diplomas in a growing number of special branches of work, such as public health, tropical medicine, ophthalmology, radiology, and psychological medicine, which are superfluous for most practitioners, but either useful or indispensable for the medical man or woman who wishes to specialize in these subjects. Information about the several diplomas will be found elsewhere in this issue. For all consultants and specialists ample occasions for exchanging ideas and information with their fellow workers are most necessary. Such opportunities are provided by the various medical societies, by the scientific sections of the British Medical Association's Annual Meetings, and by the medical journals, both general and special.

FINANCIAL AND SOCIAL CONSIDERATIONS

It has never been easy to assess the attractions of medicine as a means of livelihood, and at the present moment this would perhaps be more difficult than ever. On the financial aspect of our profession two or three general observations only need be made. Medicine is not to be regarded as a path to fortune, and anyone who enters it with the sole idea of making money has mistaken his calling. The competent practitioner can always make a living, but the main reward of the medical life is the knowledge of good work well done. Whatever the branch of medical work chosen, there are few doctors who become what a business man would consider even moderately rich by the practice of their profession.

But if medical practice, from the financial point of view, offers to the majority little more than a means of livelihood, in its social and intellectual aspects the prospect is brighter. The culture which once belonged to the physician alone, entitling him to his place among members of the learned professions, has spread, and is spreading further, into all ranks of the practitioners of medicine. The great improvement in the education, general as well as technical, of the practitioner has added much to his influence in public life, and has been a large factor in raising his social status during the sixty-five years that have passed since the General Medical Council was constituted under the Medical Act of 1858. A family doctor of the kind that is well styled "the backbone of the profession" occupies an excellent position among his neighbours, and is the friend and confidant as well as the medical adviser of many of his patients.

PRIVATE PRACTICE: THE OUTLOOK

The prospects held out by the various public medical services are indicated in later sections. Here may be noted very briefly some circumstances of to-day that have a bearing on private practice. In the first place, efforts are being made to bring professional training more into line with the growth and differentiation of medical science, and so to raise the level of medical practice, it was with this in view that the student's curriculum was lately recast. Next, the fundamental importance of the work done by the general practitioner is better understood, and it is more fully recognized that an efficient medical service for the community must be based upon the individual skill and devotion of the family medical attendant, working in close touch with the aims and methods of preventive medicine. The private practitioners of to-day are taking a wider view of their duties towards the environment and the habits of their patients. On the other hand, increasing contact with public duties makes new demands on the practitioner. The multiplication of official requirements and time-some administrative details has a tendency to cramp his independence of action, and there are those who see in the "officialization of medicine" the gradual undermining of professional freedom.

The National Insurance system, now more than twelve years old, has already had a profound influence upon the private practitioner and his work, so much so that it needs some little effort to recall clearly the conditions of industrial practice before the year 1913 both as affecting the medical profession and the large section of the community which became insured under the Act of 1911. The Insurance Medical Service now comprises nearly 14,000 practitioners, some doing much work among insured persons, others little. If the freedom of family practice and the robust individualism of the private practitioner have been restricted by the Insurance Acts and Regulations, there is a general belief that the panel system has provided a better service than existed under the old "club" arrangements, though it is by no means as complete or as effective as it might be made. Whether the remuneration is adequate to the services required may well be doubted, but it is easier now for a doctor to make an assured income out of attendance on working-class patients.

The full effect of the insurance scheme upon the medical profession as a whole, and upon the private practitioner as an individual, is as difficult to gauge as its effect upon the public health. Some of its most objectionable features have been removed through the efforts of the Insurance Acts Committee of the British Medical Association, which is the central executive of the Local Medical and Panel Committees of the country, and represents, with conspicuous success, the interests of insurance practitioners in all negotiations with the Government. The question is often asked: Has the National Health Insurance system justified its existence? If we may judge from the interesting discussion held in the Section of Medical Sociology during the recent Annual Meeting at Bradford, the answer of the medical profession at large, and of the other interests concerned, is an unhesitating but qualified Yes.[1] A Royal Commission has now been appointed to inquire into the existing scheme, and to report what, if any, changes, extensions, or developments should be made in its scope, and in the administrative, financial, and medical arrangements set up under it. The scheme may therefore be considered as still in the experimental stage, and the future of private medical practice as still rather obscure.

[1] See BRITISH MEDICAL JOURNAL, August 2nd, 1924, pp. 173, 175.

PROFESSIONAL ORGANIZATION

The strong sense of *esprit de corps*, which adds so greatly to the value and happiness of undergraduate medical study, is equally an advantage to the qualified practitioner. In these days no doctor, whatever his position or the nature of his work, can safely stand aside from his fellows. Medical men and women must therefore band themselves together for the common protection of their profession and themselves. Experience shows that individuals and isolated bodies of medical practitioners are always handicapped when they attempt to defend their own interests unsupported by their fellows against organized bodies. This applies, whether the organized bodies are Government departments, local authorities, or bodies of workmen. While the individual doctor is quite capable of dealing with the individual patient, he requires an organization at his back when he is dealing with other organizations. The first step after qualification should be to become an active member of the British Medical Association. A young practitioner will find in the meetings of the local Division of the Association, and in the Annual Meetings held in large medical centres, many opportunities, not only of keeping abreast with the progress of medicine, but also of friendly intercourse with colleagues. Another thing that no new graduate should fail to do is to join one of the professional societies which undertake individual legal defence of their members.

The British Medical Association was founded in 1832 to promote the medical sciences and to maintain the honour and interests of the profession. It is the great general forum of the profession, and it is the one organization which acts for the profession as a whole in times of stress. A brief note on the objects and constitution of the Association, and the advantages offered to members, will be found at page 450. The record of ninety-two years' work shows that professional organization, directed with wisdom and imagination, can successfully combine service for its members with service for the public. Greater work remains to be done in each direction, and we look confidently to the rising generation of doctors to take their share.

THE NEW ERA IN MEDICAL EDUCATION

A FULL account of the resolutions and recommendations of the General Medical Council which have applied since the beginning of 1923 is given in the present issue of the JOURNAL. Here we propose to indicate some of the salient features of the scheme, both of study and of examination.

The Revised Curriculum

The minimum age for registration as a medical student has been increased from 16 years to 17 years. Formally, the length of the medical curriculum is not added to, practically it is, by transferring to preliminary study and examination the subjects of elementary physics and chemistry in their purely scientific aspects. In their applications to the professional courses—as in biophysics, biochemistry, and pharmacological chemistry—appropriate instruction is to continue throughout the curriculum, and is to be tested by examination, so that the student shall no longer be able to put behind him as passed and done with the knowledge which he acquired as a preliminary. If he has had no facilities at a secondary school or otherwise for obtaining what is necessary for the preliminary examination in these subjects, then he can come for it to the university or college, but study there will not count for the medical curriculum.

In biology it is understood that comparatively few secondary schools are equipped for elementary tuition, but the Council has suggested an ingenious arrangement for utilizing the work of such schools as are qualified for the purpose. The examination will not be "pre-curriculum," but the instruction may be so, and a licensing body can allow students who so desire to sit for the examination immediately after matriculation. Here again, however, the applications of biology to medicine, surgery, and midwifery will continue to receive attention throughout the courses.

The Council attaches great importance to the reservation of sufficient time for the later subjects of study, free from all worries about passing the examinations of the earlier parts. To that end it recommends what is practically a block system. A minimum of three years should be available, not merely after the courses of anatomy and physiology have been taken, but after the professional examinations have been passed. The value of this proposal is obvious.

Examination Reform

Another notable feature is that in assessing marks in the several examinations account may be taken of "duly attested records of the work done by the candidate throughout his course of study" in the subject. This is an effort to meet the long felt difficulty that a man's mental agility, or the want of it, counts far too much in his being passed or rejected. The difficulty is real, but the remedy is not easy, and the Council is wise in the cautious approach it makes towards a solution. Where, as in the colleges, a student will only by chance come before his own teacher as an examiner, absolute impartiality in the attested records will be necessary. A teacher must not play for popularity with students by too easy certification of diligence or success in class. On the other hand, at the universities, where the teacher is always one of the examiners, no personal like or dislike of a student must influence the report of the internal to the external examiner. The class records should, of course, be available, but the scheme will put a serious ethical obligation on all concerned, and the Council will doubtless watch its operation with keen and critical interest.

Besides the resolutions of the General Medical Council in regard to professional education and examination (see pages 403-406) a series of additional resolutions was adopted on May 26th, 1922, as follows:

> (*a*) That throughout the whole period of study the attention of the student should be directed by his teachers to the importance of the preventive aspects of Medicine,
>
> (*b*) That each Licensing Body should make adequate arrangements for the effective correlation of the several subjects of study throughout its curriculum,
>
> (*c*) That the teaching of Anatomy and Physiology should include as a regular part of the courses the demonstration on the living human body of structure and function,
>
> (*d*) That the curriculum should be so arranged that a minimum period of three years shall in every case be available for study after the completion by the student of the Professional Examinations in Anatomy and Physiology held at the close of the second year,
>
> (*e*) That the curriculum should be so framed as to afford sufficient opportunities for the study, during the last three years of the course, of Physics, Chemistry, Biology, Anatomy, and Physiology in their practical applications to Medicine, Surgery, and Midwifery, and that the student's knowledge of these applications should be subject to test in the Final Examination,
>
> (*f*) That before the student is admitted to his clinical appointments he should have received practical instruction in clinical methods and in the recognition and interpretation of physical signs,
>
> (*g*) That instruction should be given, in the courses of Forensic Medicine and Public Health or otherwise, on the duties which devolve upon practitioners in their relation to the State, and on the generally recognized rules of medical ethics. Attention should be called to all *Notices* on these subjects issued by the General Medical Council.

Training in Preventive Medicine

The first of these resolutions should be borne in mind by every teacher throughout the whole curriculum, and not merely in the clinical subjects. As indicated in a questionary issued by the Council in 1918, all the earlier subjects—Physics, Chemistry, Biology, Physiology, Anatomy, and, of course, Pathology, Bacteriology, and Therapeutics also—afford opportunities from the very beginning for instilling into the mind of the student the necessity for his keeping constantly in view in all the

advice and treatment he may give throughout his professional life, the primary importance of promoting the general health of those who entrust themselves to his care, and of preventing trivial ailments from developing into definite disease In his presidential address to the Council in 1918 Sir Donald MacAlister pointed out that if "the efficient practice of their profession" by doctors was "to be judged by new civic standards, and to be carried on under new conditions," the student would have to be trained accordingly The era of that training began formally in 1923 Though no details are given in resolution (*a*), and though it may require some change of orientation by teachers who have hitherto given no special heed to the bearings of their subject on the maintenance of health and the prevention of disease, yet they will doubtless join heartily in what will indeed be an epoch-making advance in medical education in this country Its reflex and reward will surely be found as time passes in a diminution of sickness and prolongation of life, in the raising of the present standards of physical health and national welfare

New Rules for the D P H

It is important to note the bearing that this development of the teaching of disease prevention to all students of medicine has upon the stringent rules which came into force for new candidates at the beginning of 1924 for the obtaining of diplomas in public health (see page 441) Fears are expressed that the stiffening of the requirements will discourage those who intend to go into ordinary medical practice from taking the additional qualification which would specially fit them for co-operation with the health officer of their district The reply is twofold Henceforward all new practitioners will have received tuition qualifying them generally for such co-operation, and in addition they are already being systematically educated in "the duties which devolve upon practitioners in their relationship to the State" The balance, therefore, seems clearly on the right side as to the ordinary practitioner and there will unquestionably be advantages in strengthening the education of those who aspire to a life spent in the public health service In America, it may be mentioned the standard of study for a "doctorate" in public health will at most medical schools probably correspond with that for the new health diploma in this country

THE NUMBERS OF THE MEDICAL PROFESSION

A Review of Forty-eight Years

Since the year 1876 the General Medical Council has kept an analytical record of the number of names entered in, added to, or removed from the *Medical Register* in each twelve months The *Medical Register* has been published annually since the Council was constituted under the first Medical Act of 1858, but before 1876 no such data as these were ascertained or preserved

In order to gain a general view of the numerical strength of the medical profession during the past forty-eight years we have extracted from the tables and set down in parallel columns the total number of names in the *Medical Register* on December 31st of each year, and the numbers added annually by registration between 1876 and 1923

Numerical State of the Medical Register

Year	Names added in Year	Total No on Dec 31	Year	Names added in Year	Total No on Dec 31
1876	1 009	22 713	1900	1 345	36,355
1877	940	22 841	1901	1 318	36 912
1878	996	22 600	1902	1 275	37 232
1879	996	22 516	1903	1 233	37 878
1880	1 123	22 936	1904	1 163	38 432
1881	1 053	23 275	1905	1 240	39 060
1882	1 171	23 801	1906	1 197	39 529
1883	1 304	24 517	1907	1 221	39 627
1884	1 323	25 321	1908	1 137	40 257
1885	1 377	25 938	1909	1 143	39 818
1886	1 431	26 452	1910	1 062	40 23
1887	1 531	27 246	1911	1 042	40 913
1888	1 184	27 939	1912	1,157	41 433
1889	1 305	28 348	1913	1 168	41 940
1890	1,266	29 163	1914	1 433	42,378
1891	1 345	29 555	1915	1,526	43,225
1892	1 513	30 590	1916	1,402	43 431
1893	1 579	31 644	1917	1 134	43 819
1894	1 426	32 637	1918	1 077	43 926
1895	1 446	33 601	1919	1 342	44,510
1896	1 505	34 478	1920	1 457	44 761
1897	1 230	34 642	1921	1 760	45 468
1898	1 210	35 067	1922	1 983	46 476
1899	1 351	35 836	1923	2 462	48 140

The following table indicates the varying proportion of registered medical practitioners to population during the period under review It shows the population of the British Isles at each decennial census since 1881 and the corresponding number of names on the *Medical Register*

Proportion of Practitioners to Population

Year	Registered Practitioners	Population of British Isles
1881	23 275	35,241 482
1891	29 555	38,104 975
1901	36 912	41 976 427
1911	40 913	45 379 570
1921	45 468	47,261 570

These figures reveal a general tendency towards an increase in the ratio of doctors to population The number of registered practitioners at the end of 1921 was almost exactly double the number at the end of 1876 but the population within that period only increased by about 50 per cent During the year 1923 the new medical registrations numbered no fewer than 2,482—by far the largest entry on record—and there was a net increase of 1,634 names Owing to the large increases during the past three years there is now for the first time approximately one name in the *Medical Register* to every thousand of population

THE GENERAL MEDICAL COUNCIL

The General Medical Council was set up by the first Medical Act of 1858 and now consists of thirty-eight members six of whom are elected by the medical profession, five nominated by the Privy Council, and the remainder are representatives of the universities and such medical corporations of the United Kingdom as have a statutory right to issue diplomas Under the Dentists Act, 1921, three additional members have been appointed by the Privy Council for dental business they must be qualified and registered dentists and members of the Dental Board The Council's headquarters are at 44 Hallam Street, Portland Place, W 1, and it has branch offices at 20, Queen Street, Edinburgh, and 35, Dawson Street, Dublin Its duties are to control the medical and dental professions in the interests of the general public, and to that end to maintain a register of legally qualified medical practitioners It is admission to the *Medical Register*, and not the possession of a degree or diploma, that constitutes a person a legally qualified practitioner The Council is bound to admit to the *Medical Register* those who hold the qualifications granted by the bodies represented among its members, but it exercises supervision through the Privy Council over the terms on which those bodies grant such diplomas or degrees and it can erase from the *Medical Register* or the *Dentists Register* the name of any medical man or dentist who has been convicted before a court of law of an ordinary crime or of a serious offence against public order, or who is proved before the Council itself to have been guilty of certain actions which the Council regards as professionally "infamous" Its disciplinary powers are limited to legally qualified practitioners, and it has no control whatever over irregular practitioners of any kind In that respect it differs from the Midwives Board in England and Scotland, which can penalize unqualified midwives even if they make no pretence to be on the midwives roll, and from the Dental Board of the United Kingdom, which now that the Dentists Act 1921, is in operation can prosecute unregistered persons practising dentistry

An account of the recommendations that the Council has drawn up in respect of the education of medical students here follows

Registration of Medical Students

The Council recommends that every intending student of medicine should be registered as such at one of its three offices whose addresses are given below

Candidates must produce evidence (*a*) that they have attained the age of 17 years, (*b*) that they have passed an examination in general education which is accepted for matriculation or entrance to the Faculties of Arts or Pure Science in a university in the United Kingdom, (*c*) and in addition thereto that they have passed an examination in elementary chemistry and elementary physics conducted or recognized by one of the licensing bodies

Application for registration should be addressed to the Registrar for the division of the United Kingdom in which the applicant is residing—England and Wales, or Scotland, or Ireland. It must be made on a special form, which can be obtained from one of the offices of the General Medical Council itself or from one of the various licensing bodies and medical schools

The regulations with regard to registration apply equally to medical and dental students, with the exception that in the case of the latter pupilage with a registered dental practitioner may be regarded as a commencement of professional study, and that applications for registration should be addressed to the *London office only*

PROFESSIONAL EDUCATION

The rule is that it is only from the date which appears against his name in the *Students Register* that the medical student's career officially begins, thereafter five years must pass before he can present himself for the final examination for any diploma which entitles its lawful possessor to registration as a qualified medical practitioner under the Medical Acts, but to meet the circumstances brought about by the dates at which sessions of the medical schools begin and end, *the close of the fifth year may be reckoned as occurring at the expiration of fifty-seven months from the* date of registration. In any case, the period of five years must be one of bona-fide study, and in every course the following subjects should be included

(i) Elements of General Biology, including an introduction to Embryology. This course, if the Licensing Bodies permit, may be taken before registration, and the examination may be passed immediately after registration

(ii) Chemistry, Physics, and Biology in their application to Medicine

(iii) Human Anatomy and Physiology, including Histology, Elements of Embryology, Biochemistry, and Biophysics

(iv) Elementary Bacteriology, prior to regular clinical appointments

(v) Pathology, general, special, and clinical, and Morbid Anatomy

(vi) Pharmacology and Materia Medica, to be taken concurrently with clinical instruction

(vii) Forensic Medicine, Hygiene and Public Health

(viii) Medicine, including Applied Anatomy and Physiology, Clinical Pathology and Therapeutics, Children's Diseases, Acute Infectious Diseases, Tuberculosis, Mental Diseases, Skin Diseases, and Vaccination

(ix) Surgery, including Applied Anatomy and Physiology and Clinical Pathology, Anaesthetics, Diseases of the Eye, Ear, Throat and Nose, Radiology, Venereal Diseases, and Orthopaedics

(x) Midwifery and Diseases of Women, including ante-natal conditions and infant hygiene

The Council recommends that during the last three of the five academic years clinical subjects shall be studied

The first two years must be passed at a school of medicine recognized by any of the licensing bodies enumerated in the schedule to the Medical Act of 1858, and the remainder must be devoted to clinical work at any public hospital or dispensary at home or abroad which is recognized by a licensing body

SPECIAL CONSIDERATIONS

The requirements of the General Medical Council in respect of the education of those who desire to enter the medical profession have now been given in outline, but before leaving this part of the subject the steps which the aspirant should take may be rehearsed in their due order

(1) Pass an examination in arts,

(2) Pass an examination conducted or recognized by a licensing body in elementary physics and elementary chemistry

(3) Enter himself at a medical school recognized by one of the Licensing Bodies

(4) Obtain registration as a medical student

(5) Study for a *minimum of five years* certain prescribed subjects,

(6) Meanwhile pass sundry intermediate examinations, and at the end of the fifth year pass a "qualifying examination" which will entitle him to receive from a licensing body a legal authority to practise

The Minimum Period.—It must be remembered that the period of five years is a minimum, more is often required even by the man of good abilities and reasonable industry. Besides these qualities a student, to obtain a registrable qualification in the minimum period of five years, or fifty-seven months, must have a considerable amount of good luck, in other words, he must keep in good health through every term, *and never fail at a single examination*. Thus, for instance, before presenting himself for any examination he must be "signed up" for the subjects covered by that examination, this means that his teachers have to certify that he has diligently attended the required number of lectures or classes in the subjects in question. If, however, the student happens to be ill during the term when such lectures or classes are taking place he may miss enough of them to make it impossible for him to be signed up. Then, again, should he fail to satisfy the examiners at some examination, he cannot present himself for re-examination for at least three months. This generally entails further consequences, because, apart *from the student's success at the next stage in his career being imperilled by the need* for restudying the subjects in which he has failed, the Examining Boards usually insist upon a definite interval elapsing between one examination and the next. Further, many Boards have refused to recognize lectures and classes which have been attended before the student has passed the requisite examination in earlier subjects, and the Council now recommends that the professional examinations in anatomy and physiology be passed before the minimum period of three years' subsequent study be entered on, in other words, *no clinical study should count as such until these examinations have been successfully completed*. Failure at an examination may thus not only mean deferment of the date of examinations, but deferment of the beginning of the student's study of certain subjects. It is thus exceedingly easy for a student to fail to qualify in five years, and, as a fact, the majority of students take longer.

In speaking of the minimum period, it is to be remembered also that that time is only sufficient to gain a registrable qualification, such as a Bachelorship of Medicine or Surgery or the diplomas of the Royal Colleges. Those who wish to take a higher qualification—for instance, the F.R.C.S. Eng.—must prolong their work for another year or more. So, too, must in some cases those who desire to convert their Bachelorship into a Doctorate. This may entail further formal examination, but at some universities the M.D. is obtainable on presentation of a thesis when the Bachelor has attained a certain age and has practised for a certain number of years. However, a student's career proper may be considered, perhaps, to have ended when he obtains his first registrable qualification, for while preparing himself for any further tests he can, and usually does, hold some junior appointment which more or less covers his expenses.

MEMORANDUM ON STUDENTS' REGISTRATION

The following memorandum has been drawn up by the Registrar of the General Medical Council as to the procedure for those who desire to be registered as medical or dental students.

The requirements for the registration of medical and dental students are the same, and every intending student should, in his own interest, register as soon as he commences his professional curriculum.

A recognized examination in general education must first be passed. If the student intends to obtain a university degree, he should apply to the university he selects for information as to its matriculation requirements in arts or pure science, or as to any examinations which may be accepted in lieu of its matriculation examination. If the student intends to obtain a qualification from one of the licensing corporations (these are the Conjoint Boards in England, Scotland, and Ireland, the Society of Apothecaries of London, and the Apothecaries' Hall of Dublin) any of the examinations indicated below will be accepted. The subjects required are (1) English, (2) Mathematics (elementary), (3) a language other than English, and (4) an additional subject or subjects, as required by the regulations of the particular examination, to be chosen from the following—namely, *History, Geography*, Physical Science, Natural Science, Latin, Greek, Hebrew, French, German, or other language accepted by the university for matriculation.

The requirements of the preliminary examination in general education being satisfied, it is then necessary to pass an examina-

tion in Elementary Chemistry and Elementary Physics which is conducted or recognized by one of the licensing bodies—that is university or corporation. The student should write to the body whose qualification he desires to obtain (a list will be found below) for information in regard to its requirements for this examination.

These two examinations having been passed and the student having attained the age of 17 years *he should apply to one of* the universities or one of the medical schools for admission in order to commence therein his professional curriculum. Immediately his course of medical study has been begun he should apply to the Dean of the school or to the Registrar of one of the branches of the General Medical Council for a form of application for registration as a student and should have it completed and sent in to one of the Branch Councils as soon as possible. There is no fee for this registration. The medical curriculum will extend for at least five years and the dental curriculum for at least four years *from the date of* registration as a student.

A student who has studied the subject of elementary biology at an institution recognized by one of the licensing bodies may if the *body sees fit, be admitted to the professional* examination in this subject immediately after his registration as a student. For information in regard to this he should apply to the body whose medical qualification he seeks.

A dental student may commence his curriculum at he so desires as a pupil with a registered dental practitioner but it is desirable if possible that he should commence professional study at a dental school. If however he is apprenticed to a dental practitioner he may have to take out a course of four years of dental mechanics *and this will have the effect of* lengthening the duration of his curriculum to five or six years instead of four.

The addresses of the Branch Registrars are:

General Medical Council 44, Hallam Street, Portland Place, *London* W.1.
Scottish Branch Council, 20 Queen Street, Edinburgh.
Irish Branch Council, 35, Dawson Street, Dublin.

Examining Bodies in Preliminary Education

The following is a list of the officials of the examining bodies in preliminary education, with the names of the examinations—in parentheses:

Registrar, Queen's University of Belfast, Belfast. (Matriculation.)
Registrar, The University, Bristol. (Matriculation, School Certificate, or Higher School Certificate.)
Assistant Registrary, The University, Cambridge. (Previous.)
Secretary, Cambridge Local Examinations Syndicate, Buildings, Cambridge. (School or Higher School Certificate.)
Director, Central Welsh Examination Board, Cardiff. (Senior Certificate.)
Registrar, University of Dublin, School of Physic, Dublin. (Junior Freshman, Special Preliminary, Junior Exhibition, or Examination to first, second, third, or fourth year in Arts.)
Dean, University of Durham, School of Medicine, Newcastle-on-Tyne. (First School Certificate or Matriculation.)
Registrar, Irish Conjoint Board, Royal College of Surgeons, Dublin. (Preliminary Examination.)
Registrar, National University of Ireland, Dublin. (Matriculation.)
Joint Commissioners, Intermediate Education Board for Ireland, 1 Hume Street, Dublin. (Middle and Senior Grade Examinations.)
Academic Registrar, The University of London, South Kensington, London, S.W.7. (Matriculation or General Schools Certificate.)
Secretary, Northern Universities Joint Matriculation Board, 36a Oxford Road, Manchester. (Matriculation or Senior School Certificate.)
Registrar, The University, Oxford. (Responsions or Moderations.)
Secretary, Oxford and Cambridge Schools Examination Board, Schools Examination Office, Balliol College, Oxford. (School or Higher School Certificate.)
Secretary, Oxford Local Examinations, University Press, Oxford. (School or Higher School Certificate.)
Secretary, College of Preceptors, Bloomsbury Square, London, W.C.2. (Senior Certificate.)
Secretary, Educational Institute of Scotland, 47 Moray Place, Edinburgh. (Preliminary Medical Examinations.)
Secretary, Scottish Education Department, 1 Queen Street, Edinburgh. (Leaving Certificate.)
Secretary, Scottish Universities Entrance Board, 31 North Street, St Andrews. (Scottish Universities Preliminary Examination.)

Licensing Bodies

The following is a list of the officials of the various licensing bodies to whom communications should be addressed:

Secretary, English Conjoint Board, 8 Queen Square, Bloomsbury, W.C.1.
The Clerk, Society of Apothecaries, *Blackfriars*, E.C.4.
Registrar, The University, Oxford.
Registrary, The University, *Cambridge*.
Secretary, University of Durham, School of Medicine, Newcastle-on-Tyne.
The Principal, University of London, South Kensington, S.W.7.
Registrar, Victoria University, Manchester.
Registrar, The University, Birmingham.
Registrar, The University, Liverpool.
Registrar, The University, Leeds.
Registrar, The University, Sheffield.
Registrar, The University, Bristol.
Registrar, University of Wales, Cathays Park, Cardiff.
Secretary, Scottish Conjoint Board, 29 Lauriston Place, Edinburgh.
Dean of the Faculty of Medicine, The University, Edinburgh.
Registrar, The University, Glasgow.
Secretary of the Medical Faculty, The University, Aberdeen.
Secretary, The University, St Andrews.
Secretary, Irish Conjoint Board, Royal College of Surgeons, Dublin.
Registrar, Apothecaries Hall of Ireland, 95 Merrion Square, Dublin.
Medical Registrar, The University, Dublin.
Registrar, National University of Ireland, Dublin.
Registrar, Queen's University of Belfast, Belfast.

Medical Schools

The following is a list of officials of the Medical Schools of Great Britain and Ireland other than the universities:

Secretary, University of Durham, College of Medicine, Newcastle-on-Tyne.
Dean of the Medical School, St Bartholomew's Hospital, London, E.C.1.
Dean of the Medical School, Charing Cross Hospital, W.C.2.
Dean of the Medical School, St George's Hospital, S.W.1.
Dean of the Medical School, King's College, Strand, W.C.1.
Dean of the Medical School, King's College Hospital, S.E.5.
Dean of the Medical School, London Hospital, E.1.
Dean of the Medical School, St Mary's Hospital, W.2.
Dean of the Medical School, Middlesex Hospital, W.1.
Dean of the Medical School, St Thomas' Hospital, S.E.1.
Dean of the Medical School, University College Hospital, W.C.1.
Dean of the Medical School, Welsh National School of Medicine, Cardiff.
Dean of the Medical School, University College, Swansea.
Dean of the Medical School, University College, Dundee.
The Misses Queen Margaret College, Glasgow.
Registrar, School of Physic, Trinity College, Dublin.
Registrar, University College, Cork.
Registrar, University College, Dublin.
Registrar, University College, Galway.

PROFESSIONAL EXAMINATION

The Council's Recommendations

The following recommendations of the General Medical Council in regard to professional examinations for medical and surgical qualifications were adopted in May, 1922:

1. In order to secure due continuity and sequence in medical study two or more Professional Examinations in the earlier subjects should be held antecedently to the Final Examination in Medicine, Surgery, and Midwifery.

2. Three years at least should intervene between the date of passing the Professional Examination in Anatomy and Physiology and that of admission to the Final Examination in Medicine, Surgery, and Midwifery.

3. A candidate remitted in any subject of a Professional Examination should before he is readmitted to examination therein be required to produce satisfactory evidence that he has during the interval of remission, pursued the study of the subject in which he was rejected. Candidates who obtain less than 30 per cent. of the marks in any subject should be remitted for a longer period than three months.

4. In all the Professional Examinations sufficient time should be assigned to practical work in order to test the thoroughness of the candidate's knowledge and to encourage practical methods of study.

5. Candidates in all their examination work should be carefully supervised.

6. Two examiners should always participate in the oral examination of a candidate, except in subordinate parts or practical examinations.

7. In all written examinations the questions in each subject should be submitted for the approval of all the examiners in that subject.

8. In all written examinations an average of at least half an hour should be allowed for a candidate to answer each question.

9. It is desirable that examiners, and in particular those for the Final Examination in Medicine, Surgery, and Midwifery, should be appointed or re-elected for at least three consecutive years.

10. Whatever may be the system of marking, the percentage for a pass in each subject should be not less than 50.

11. In the regulations for the several Examinations it should be provided that examiners in assessing marks be empowered to take into account the duly attested records of the work done by the candidate throughout his course of study in the subject of the examination.

12. The Final Examination in Medicine, Surgery, and Midwifery, with the exception of the Clinical and Practical Examination in Midwifery and Gynaecology, must not be passed before the close of the fifth academic year of medical study.

13. The three portions of the Final Examination in Medicine, Surgery, and Midwifery should not be further subdivided into sections which may be entered for or passed separately.

14. Compensation in respect of marks as between the three different portions of the Final or Qualifying Examination—namely, Medicine, Surgery, and Midwifery—is contrary to the intention of the Medical Act (1886).

15. The Final Examination should include clinical and practical examinations in Midwifery and Gynaecology.

16. The clinical examinations in Medicine, Surgery, and Midwifery should be held in properly-equipped hospitals or examination halls well provided with suitable patients.

17. In the examinations in clinical medicine at least one hour, and in clinical surgery at least half an hour, should be allotted to the candidate for the examination of, and report on, his principal case.

18. In Medicine, in Surgery, and in Midwifery no candidate should be allowed to pass who fails to obtain 50 per cent. of the aggregate marks assigned to the whole examination or who fails to obtain 50 per cent. of the marks assigned to the clinical examination or who fails to obtain 50 per cent. of the aggregate of the marks assigned to the written and oral examination. In

Midwifery, where a clinical examination is not held, the duly attested records of the work done by the candidate in clinical midwifery must be presented to the examiners for assessment in the Final Examination, and no candidate should be allowed to pass who fails to obtain 50 per cent of the aggregate marks assigned to Clinical and Practical Midwifery and Gynaecology

19 The Final Examination should include the examination of secretions, the testing of urine, clinical microscopy, and prescription writing, and there should always be an oral examination in Medicine, Surgery, and Midwifery, which should include an examination on pathological specimens

20 At the Final Examination each candidate should be submitted to a practical and oral examination in Pathology (macroscopic and microscopic), unless this has been included in a Professional Examination preceding the Final Examination

21 Whatever be the method of entry for the Final Examination all candidates should be required to complete the three portions of the Final Examination within a period of nineteen months

The English Universities.

THERE are eleven universities in England and Wales, and some account of each of them follows They all have now fully developed medical faculties Until recently the only exception was the University of Wales, whose constituent colleges are those of Aberystwyth, Bangor, Cardiff, and Swansea This university grants degrees, and has laid down a six years' curriculum for candidates for the M B and B Ch degrees, and it now provides, at the Welsh National School of Medicine at Cardiff (see page 412), instruction in all the subjects of the medical curriculum

UNIVERSITY OF OXFORD

THE professional degrees conferred by this university are those of Bachelor of Medicine (B M), Bachelor of Surgery (B Ch), Doctor of Medicine (D M), and Master of Surgery (M Ch) It also grants a diploma in *Public Health* and a diploma in Ophthalmology On receiving the B M the candidate is entitled to registration by the General Medical Council In favourable circumstances this degree and the B Ch may be obtained in six or seven years from matriculation Before receiving either, the candidate must have taken a degree in Arts (B A), for which three years' residence within the university is necessary This, however, does not necessarily mean deferment of professional study for that period, for some of the subjects chosen for the final stage of the arts course may be the same as those in which examinations would in any case have to be passed for the medical degree

In accordance with a statute which came into force on October 7th, 1920, women may be matriculated and admitted to degrees in the university The statute is retrospective under certain conditions Before matriculation a woman must have been admitted as a member of one of the five societies of women students (Lady Margaret Hall, Somerville College, St Hugh's College, St Hilda's Hall, or the Society of Oxford Home Students) Women members of the university are admitted to all degrees, except those in Divinity, under the same conditions as those laid down for men in regard to examinations, courses of study, and fees, and under corresponding conditions as to residence at the university Among the university diplomas open to women are those in anthropology, ophthalmology, and public health

A candidate may obtain the B A degree in either of the following ways, of which the former constitutes the normal course for medical students

(*a*) By passing Responsions, the Scripture examination, some of the preliminary examinations in the Natural Science School,[1] or the Honour School of Mathematics in the first public examination, and one of the final honour examinations The Final Honour School of Natural Science (Physiology) is that usually taken

(*b*) By passing Responsions (or one of the examinations which are accepted as equivalent) Moderations, a Scripture examination, or in the event of a candidate objecting an examination on some substituted book and the Final Pass School in three subjects, two of which may be the same as two of the preliminary examinations in natural science [1]

[1] The four subjects of the medical preliminary examinations are four of the subjects in the natural science preliminary and can be commenced directly after passing Responsions.

Responsions and the preliminary examinations in Natural Science may be passed before a candidate is a member of the university[1], Moderations and Scripture can be passed in or after the second term, the final pass school may be taken any time after Moderations, a final honour school may be taken at the end of the third or fourth academical year—that is, within nine or twelve terms respectively, the preliminary examinations of the Natural Science School may be taken as soon as Responsions have been passed

PROFESSIONAL DEGREES

To obtain the B M , B Ch degrees the candidate must first pass in four of the subjects of the Preliminary Examination of the Natural Science School—namely, physics, chemistry, zoology, and botany

He then has two further examinations to pass—the First B M and the Second B M These take place twice a year, the first on the Thursday, the second on the Wednesday, of the eighth week of Michaelmas and Trinity terms Every candidate at the First B M is examined in human anatomy, in physiology, and in organic chemistry, but is excused from physiology if he has obtained a first or second class in the Honour School of Physiology, and from organic chemistry if he has satisfied the examiners in Part I of the Honour School of Chemistry Once he has passed this examination he can, on production of certain certificates, be examined as soon as he pleases in pathology, forensic medicine, and hygiene, materia medica, and pharmacology (subjects of the second examination), but cannot present himself for the remaining subjects—medicine, surgery, and midwifery—until the eighteenth term from the day of his matriculation, and not until a period of at least thirty-three months has elapsed from the date of his passing the first examination,[2] and he must pass in all the three subjects at one and the same time

Before admission to the second B M examination the student must produce certificates of instruction from a medical school recognized by the university of having acted as clinical clerk and dresser, each for six months, and as *post-mortem* clerk for three months, of attendance on labours, of instruction in infectious and mental diseases and ophthalmology, and of proficiency in vaccination and the administration of anaesthetics [3] He must also produce certificates of attendance in laboratory courses in pathology, bacteriology, and pharmacology, either in Oxford or in a recognized medical school

D M AND M CH DEGREES

A Bachelor of Medicine who wishes to proceed to the D M must have entered his thirtieth term and must present a dissertation for approval by the appointed examiners on a subject previously approved by the Regius Professor of Medicine If a candidate for the M Ch he must have entered his twenty-first term and must pass an examination, which is held in June

Examinations for the Diploma in Public Health are held in Trinity and Michaelmas terms, that for the Diploma in Ophthalmology is held annually, commencing on the third Monday in July For the Diploma in Ophthalmology attendance on a twelve months' course of clinical ophthalmology in hospitals or institutions recognized for the purpose by the Board of the Faculty of Medicine, and on a course of instruction in Oxford lasting two months, is obligatory Candidates must have their names on the *Medical Register* of the United Kingdom, unless, being Bachelors or Doctors of Medicine of universities outside the United Kingdom, they have obtained special permission from the Board of the Faculty of Medicine

TEACHING

The several colleges provide their undergraduate members with tutors for all examinations up to the B A degree In addition, the university provides certain courses of instruction, including lectures, demonstrations, and practical

[1] Membership is conferred by matriculation and by becoming either a member of a College or a Hall or a *non collegiate* student

[2] For students commencing medical study after December 31st, 1925 this period will be thirty three months

[3] For the certificates that will be required from candidates proceeding to the new Regulations of the General Medical Council see *Examination Statutes*, Clarendon Press, Oxford, 1924 edition (in the press)

work which cover all the subjects of the Preliminary Examination and First B M, and in part those of the Final Examination

Scholarships

Most colleges grant scholarships open to intending medical students of £60 a year tenable for four years in natural science, chemistry, physics and biology. Exhibitions of varying value are also awarded in these subjects at two colleges (University and Pembroke) there are medical entrance scholarships of £100 a year. Particulars can be obtained on application to the college tutors. Scholarships for women are also offered by the various women's colleges from the principals of whom details of the examinations may be obtained. A Radcliffe Travelling Fellowship of £300 a year tenable for two years is conferred annually; candidates must have taken the B M degree. A Philip Walker studentship in Pathology of £200 a year tenable for two years is awarded biennially for the encouragement of research in pathology, as also are the Polleston Memorial Prize and the Radcliffe Prize (£50) for research in natural science (including pathology) and the three Theodore Williams Scholarships in Anatomy, Physiology and Pathology of the value of £50 each tenable for two years. A Radcliffe Scholarship in Pharmacology of £50 for one year open to the University is awarded annually by the Master and Fellows of University College. A Burney Yeo, King's College Hospital Scholarship of £80 is awarded annually.

Fees

An annual fee of £4 10s is paid to the university for the first four years, being reduced to £1 when the B A has been taken. For the degree the fees are: the B A., £7 10s; the B M. and B Ch., £14; the D M., £25; the M Ch., £12. College fees, varying in amount, are paid for the first four years of membership and in taking degrees. Tuition fees vary from £21 to £50. The minimum annual cost of living during the three university terms may be regarded as not less than £160 or for women no less than £140.

For further information application may be made to Dr. E. W. Tinley Walker, Dean of the School of Medicine, University of Oxford.

UNIVERSITY OF CAMBRIDGE

THE professional degrees given by this university are those of Bachelor of Medicine (M B.) and Bachelor of Surgery (B Chir.), each of which entitles the possessor to admission to the *Register* by the General Medical Council, and the higher degrees of Doctor of Medicine and Master of Surgery. It also grants diplomas in Tropical Medicine, in Public Health, in Hygiene, in Psychological Medicine, and in Medical Radiology and Electrology to medical practitioners not necessarily graduates of the university. Information regarding these diplomas will be found in later sections under the headings Tropical Medicine, Psychological Medicine, Public Health, and Radiology. A candidate for the M B., B Chir. degrees need not possess a degree in arts, it is sufficient if he has passed the Previous examination or some other examination accepted by the university as its equivalent. Most students, however, are advised to take the B A. degree, preferably by obtaining honours in the Natural Sciences Tripos at the end of their third year. Under the new regulations the attainment of a sufficient standard in chemistry or in physiology in this Tripos will secure exemption from the corresponding tests in the First and Second M B. examinations. Women students, members of Girton or Newnham College, are now admitted to the M B. examinations.

Professional Examinations

To obtain the M B. degree the candidate must pass three examinations; those who are finally successful may receive the B Chir. degree (which is a complete registrable qualification) without further examination.

First M B.—This comprises (1) general and inorganic chemistry, (2) mechanics, (3) physics, (4) elementary biology. The parts may be taken together or separately. In either case the candidate before admission to examination must have satisfied the requirements in respect of the Previous examination and paid the matriculation fee. Certain exemptions from the First M B. examination are allowed; the regulations may be obtained from the Registrary. The complete examination is held twice a year—in October and June; an additional examination, in Parts 2 and 4, is held in December.

Second M B.—This examination comprises Part I, organic chemistry, Part II, human anatomy and physiology, Part III, elementary pharmacology, including pharmaceutical chemistry and the elements of general pathology. No student is admitted to the first part of the second examination until he has passed the first part of the first examination. No student is admitted to the second part of the second examination until he has passed all parts of the first examination. No student is admitted to the third part of the second examination until he has passed the first and second part of the second examination. No one may enter for Part III until he has passed Parts I and II. The candidature is reckoned up in all three subjects and has direction for one academic year. The examination for Parts I and II is held in December and June, that for Part III in October and April.

Third M B.—This is divided into two parts, to neither of which the candidate is admitted until he has passed the examinations previously mentioned. A candidate for the first part which deals with the principles and practice of surgery (including special pathology) and midwifery and diseases peculiar to women must have completed five years of medical study and be signed up in these subjects and have completed two years and a half of hospital practice. Before admission to the second part the candidate must have completed five years of medical study and be duly signed up in all subjects and have completed five years of hospital practice. He must also pass examinations showing that he has fulfilled all the requirements as well as the requirements of the General Medical Council. The examination is in the principles and practice of physic (including diseases of children), mental diseases and medical jurisprudence, pathology (including bacteriology and preventive medicine) and pharmacology (including therapeutics and toxicology). The Third M B. examinations are held twice a year—in June and December.

Act for the M B.—Before receiving his M B. degree a candidate who has been successful at the final M B. examinations has to write a thesis. This he reads in public on an assigned day, and is then questioned concerning it and other subjects of medicine by the Regius Professor of Physic. If approved at this test he is then certified as having "kept the Act" canonically, and in due course receives his degree. Medical degrees may be taken in absence by those living abroad, the candidate sending to the Regius Professor of Physic a dissertation, which is laid before the Degrees Committee.

The Higher Degrees

The M D. degree may be taken by a bachelor of medicine of three years' standing after writing a thesis approved by the M.D. Degrees Committee, and keeping a further Act, at which he reads his thesis and is examined thereon. Previously to the Act being kept a topic taken from the general subject of his thesis (whether it be physiology, pathology, pharmacology, practice of medicine, State medicine, or the history of medicine) is submitted to the candidate, on which he is required to write an extemporé essay.

The M Chir. degree may be granted to a candidate who has qualified for the B Chir. at least two years previously; he is then examined in pathology, surgery, surgical anatomy and surgical operations. The tests are partly in writing, partly oral, and partly practical, the latter including the writing of an extemporé essay.

Fees

In addition to college fees, tuition and examination fees are payable, the following examination fees being payable to the University: First M B., £3 5s.; Second M.B., £5 5.; Third M.B., £10 10s. For particulars referring to the examinations, lists of courses recognised for the various degrees, and for information as to application for admission to the University, Registrary, Cambridge.

UNIVERSITY OF LONDON

Under the regulations of the University of London degrees obtainable in the Faculty of Medicine are those of Bachelor of Medicine and Bachelor of Surgery (M B., B S.) in two parts, and Doctor of Medicine in different branches. The university has been granted the power of examination and has to appoint examiners and to confer degrees upon candidates found worthy by the boards related to it. The regulations for examinations in medicine are given in the calendar of the university, which may be obtained from the Registrar, University of London, South Kensington, S.W. 7.

It is held in January, June, and September, and lasts four days, the first two take place both in London and in certain provincial centres, the September examination is held in London only

In no circumstances is a degree granted to anyone in less than three years after the date at which he passed the Matriculation Examination or obtained registration in some other way, and, unless they are already registered medical practitioners of a certain age and standing, all medical students must pass not less than five and a half years in professional study subsequent to matriculation, of which the last three years must be spent at a school of advanced medical studies

PROFESSIONAL EXAMINATIONS

M B, B S—There are three examinations, the last two being subdivided They are held twice a year

The First Examination (held in July and December) covers inorganic chemistry, general biology, and physics, there being two papers, a practical test, and a possible oral test in each subject The names of successful candidates are placed in alphabetical order, with a note as to any subject in which a candidate has distinguished himself or herself

The Second Examination is held in March and July Part I cannot be passed within six months of the passing of the First Examination It covers organic and applied chemistry, the candidate's knowledge being tested as in the earlier examination It is a pass examination, but a mark of distinction may be won Candidates for Part II must have passed the First Examination at least eighteen months previously, besides having completed Part I of the Second Examination The subjects are anatomy, physiology, and pharmacology, the tests being written, oral, and practical Candidates who fail in one subject may sit for re-examination in that subject alone if the examiners think fit

No candidate is admitted to the third M B, B S Examination within three academic years from the date of his completing the Second Examination The subjects are medicine (including therapeutics and mental diseases), pathology, forensic medicine and hygiene, surgery, and midwifery and diseases of women They may be divided into two groups, one comprising medicine, pathology, forensic medicine, and hygiene, and the other surgery and midwifery and diseases of women Either group may be taken first at the option of the candidate, or the groups may be taken together Only candidates who show a complete final stage of the curriculum consisting a group of subjects case have to be held for the degree passed There is no separate examination divided honours, but the names of successful candidates are medal into in honours list and a pass list, and a university distinguished may be awarded the candidate who has most distinguished himself in the whole examination

THE HIGHER DEGREES

M D—An examination for the M D is held twice yearly in December and July Every candidate must have passed the examination for the M B B S, unless he became M B before May, 1904 He may present himself for examination in any one of the following branches (1) Medicine, (2) pathology, (3) mental diseases and psychology, (4) midwifery and diseases of women, (5) State medicine, (6) tropical medicine and, if he wishes, may pass also in another branch at a subsequent examination

The period that must elapse between acquiring the M B and sitting for the M D in any branch varies *between one* and two years, according to the nature of the candidate's previous work, and in all cases evidence must be afforded of special study of the subject chosen, both written and practical examinations must be passed, though exemptions can be obtained from the former in exceptional circumstances In each branch the scheme of examination is the same two papers on its special subject, a paper on an allied subject—for example, medicine in the case of branch (4) pathology in branch (1)—an essay on one of two suggested topics connected with the special subject, and a clinical or other practical test In any branch of the M D Examination a gold medal of the value of £20 may be awarded

M S—The regulations with regard to the Mastership in Surgery are of a corresponding kind, but there are only two branches in which it may be obtained—General Surgery and Dental Surgery

FEES

The examination fees have been raised from pounds to guineas for all examinations held after September 1st, 1918 For Matriculation 2 guineas for each entry First Examination 5 guineas for each entry to the whole examination For re-examination in one subject the fee is 2 guineas Second Examination, Part I 2 guineas for the first and each subsequent entry Second Examination, Part II 8 guineas for each entry to the whole examination For re-examination in one subject the fee is 4 guineas M B, B S Examination 10 guineas for each entry to the whole examination, and 5 guineas for examination or re-examination in either group M D and M S Examinations 20 guineas, and 10 guineas on re-examination

Inquiries should be addressed to the Registrar, the University of London, South Kensington, S W 7

UNIVERSITY OF BIRMINGHAM

THIS university confers the ordinary medical and surgical degrees—M B, Ch B, M D, and Ch M—and also diplomas and degrees in State medicine and dentistry It has a plan, too, by which, extending his study to six instead of five years, the M B, Ch B candidate may become a Bachelor in Science as well Of the five years' curriculum, the first four must be spent, as a rule, at the university itself, the fifth being passed at any approved school or schools Occasionally, however, the Senate will reduce the period of enforced residence to three years and exempt from the First M B (Part I) those who have passed elsewhere an examination considered to be its equivalent A degree of Ph D is also conferred for research study in medicine under special regulations Candidates must be graduates in medicine of a recognized university

Students entering the Medical Faculty for the M B, Ch B degrees must have passed—

(1) Either (*a*) the matriculation examination of the Joint Board of the Universities of Manchester, Liverpool, Leeds, Sheffield, and Birmingham, or (*b*) some other examination recognized as equivalent to the matriculation Candidates for medical degrees are recommended to take Latin and a science subject—chemistry or physics—at the matriculation examination, although these subjects are no longer compulsory The matriculation examination of the Joint Board is held in July and September The regulations and the list of examinations accepted in lieu thereof will be sent on application to the Secretary to the Board, Joint Matriculation Board, 315, Oxford Road, Manchester

(2) A recognized pre-medical examination in the subjects of chemistry and physics—for example, the Higher School Certificate of the Joint Matriculation Board, or a candidate may attend courses for pre-medical year in the university, October to June, taking chemistry and physics, and biology (optional)

PROFESSIONAL EXAMINATIONS

The candidate for the M B, Ch B degrees has five examinations to pass In the second and final examinations the candidate must pass in all the prescribed subjects or undergo the whole examination again

The First M B (Part I) deals with elementary biology, physical and organic chemistry The First M B course of instruction anatomy and physiology, and the candidate both simultaneously The Second (Part II) deals ister of pathology and] rmacology, materia student must Doctors of M ny , and M B the M B deals ngdom, they have obtained subjects be *medica*, and ard of the Faculty of Med place at th forensic me and special

TEACHING

colleges provide their unde for all examinations up to and diseases the university provides certa The candidate cluding lectures, demonstratio must be pre

post-mortem is counted by matriculation and b instruction college or a Hall or a non collegiate stud its commencin medical study after Decem diseases the thirty three month log of the certificat s that will be required from can the new Regulations of the General Medical Council Statutes Clarendon Press, Oxford, 1924 edition can be pr

gynaecological cases, and certificates drawn up by himself regarding four actual cases of lunacy and notes on two others

M D —An ordinary candidate for this degree must be a M B , Ch.B of not less than one year's standing He presents an original thesis for approval, and then passes a general examination in the principles and practice of medicine. From the latter the Board of Examiners may exempt a candidate whose thesis is of exceptional merit The regulations respecting the Ch M are of the same general character Subject to certain requirements as to special research or other post-graduate study, graduates of other universities may obtain the M D and Ch M in the same way as holders of the Birmingham M B , Ch B

FEE

The fee for matriculation is £2 £2 10s for pre medical examination (if taken in university) and £2 10s for each of the first four professional examinations M B , Ch B degree fee £10 M D and Ch M examinations £12 10s each For further particulars application should be made to the Dean of the Medical Faculty University of Birmingham

UNIVERSITY OF BRISTOL

In the Faculty of Medicine the following degrees are conferred Bachelor of Medicine and Bachelor of Surgery (M B and Ch B), Doctor of Medicine (M D), Master of Surgery (Ch M), Bachelor of Dental Surgery (B D S), and Master of Dental Surgery (M D S) There are also the following diplomas Diploma in public health (D P H), diploma in dental surgery (L D S), and diploma in veterinary state medicine All candidates for degrees in medicine, surgery, and dentistry are required to pass an examination called the School Certificate Examination, or to pass such examination as may be regarded as equivalent by the Senate All courses, degrees, and diplomas are open to men and women alike

Conjoined Degrees of Bachelor of Medicine and Bachelor of Surgery —Candidates must be not less than 21 years of age and have pursued the courses prescribed by university regulations during not less than five years after passing the first examination in chemistry and physics, of which three shall have been passed in the university, and two of these three subsequent to passing the second examination All candidates for the degrees of M B , Ch B are required to satisfy the examiners in the several subjects of three examinations

The First Examination —The subjects of examination are chemistry (inorganic), physics, and biology, the courses pursued being those for the time being approved for the intermediate part of the B Sc curriculum This part of the curriculum shall extend over one year (Candidates who have passed the Higher School Certificate approved by the Board of Education in these subjects will not be required to sit for the First Examination and will be regarded as having completed one year of study)

The Second Examination —The subjects of examination are organic chemistry and elementary anatomy (Part I) and advanced anatomy and physiology (Part II) Parts I and II may be passed separately or together

The Final Examination —The subjects of examination are materia medica and pharmacy, pharmacology and therapeutics, general pathology, morbid anatomy, and bacteriology (Part I), special pathology, forensic medicine, toxicology, and public health, obstetrics (including diseases of women), surgery (systematic, clinical, practical, and operative), medicine (systematic, clinical, and practical, including mental diseases) (Part II) The subjects included in Part II may be taken in two groups—namely, Group I surgery and obstetrics, Group II medicine, public health, special pathology, forensic medicine, and toxicology Candidates may pass Parts I and II together, or separately, and the two groups of Part II may likewise be taken together or separately Forensic medicine and toxicology may be taken either with Part I, or with Group II of Part II

Degree of Doctor of Medicine —Candidates must be Bachelors of the university of not less than two years' standing as such, and may elect either (1) to pass an examination in general medicine, or (2) to pass an examination in State medicine, or (3) to present a dissertation The candidate who elects to pass the examination in State medicine must hold a Diploma in Public Health of some university or college, and the candidate who elects to present a dissertation may be examined in the subject thereof

Degree of Master of Surgery —Candidates shall be Bachelors of not less than two years' standing as such, during which period they shall have attended the surgical practice of an institution approved for the purpose They shall pass an examination in surgical anatomy, pathology, and bacteriology, and operative, clinical, and general surgery, and present to the university a dissertation on some subject of surgery The degree may be taken also in general surgery, and a special subject—for example, oto-rhino-laryngology, ophthalmology, and gynaecology

Diploma in Public Health —Candidates must be at least 23 years of age, be fully registered medical practitioners of not less than two years' standing as such, and have passed the examination prescribed by regulation The examination is divided into two parts.

UNIVERSITY OF DURHAM

To its own undergraduates, who may be of either sex, this university grants the degrees of Bachelor of Medicine and Bachelor of Surgery (M B , B S) and Doctor of Medicine (M D), Master of Surgery and Doctor of Surgery (M S and D Ch), and Bachelor of Dental Surgery and Master of Dental Surgery (B D S and M D S), it also grants special degrees and diplomas in public health, psychiatry, and dental surgery The university accepts the Durham University School Certificate Examination (if the required subjects are passed with credit) for matriculation purposes, but also accepts the tests of a considerable number of other educational bodies as a full or partial equivalent A list may be obtained on application In addition to satisfying the matriculation requirements of the university, every student must (1) pass a pre-registration examination in physics and inorganic chemistry conducted or recognized by the university, and (2) be registered on the books of the General Medical Council To become a graduate, however, at the university it is not necessary to pass the major portion of the five years' curriculum within its precincts It is sufficient if, before he presents himself for his final examination, the candidate has passed at least one year in study at the University of Durham College of Medicine, Newcastle upon-Tyne, including the practice of the Royal Victoria Infirmary in the same city The earlier examinations may be passed while the student works elsewhere

PROFESSIONAL EXAMINATIONS

There are four professional examinations for the M B , B S degrees Each is held twice a year—in June and December The first deals with biology, chemistry, and organics, the second with anatomy and physiology, the third with pathology, bacteriology, medical jurisprudence public health, materia medica, and pharmacy At the final M B , B S , the candidate is examined in medicine and clinical medicine, surgery and clinical surgery, midwifery and diseases of women and children, clinical and practical gynaecology, therapeutics, and clinically in psychological medicine, diseases of the throat nose, and ear, diseases of the skin, diseases of the eye, and diseases of children

M D —A Bachelor of Medicine who wishes to proceed to this higher degree must be of at least two years' standing, and must comply with the regulations printed in the Calendar of the College of Medicine If the candidate is not a M B of the university he must be a practitioner of fifteen years' standing, 40 years of age, and submit to special tests (See under Degrees for Practitioners, p 433)

M S —Candidates for this degree must have been engaged in practice for at least two years subsequent to becoming M B B S Durham They are submitted to an examination which covers the whole range of surgical knowledge

D Ch —The university grants also the degree of Doctor of Surgery Candidates for this degree must be registered medical practitioners, not less than 24 years of age They

must devote three years, subsequent to obtaining a registrable qualification, to the study of surgery and ancillary subjects, one at least of the three years must be spent in the university The candidate must submit to the professor of surgery the course of study he proposes to follow, and this course must be approved by the Board of the Faculty of Medicine

One year shall be devoted mainly to work in the departments of anatomy, physiology, pathology, and bacteriology, and the candidate must submit evidence of having so worked Not less than six months of another year must be spent as resident surgeon in a recognized teaching hospital, and the rest of the year in the study of surgery in a recognized medical centre Not less than six months of one of the three years must be spent in surgical study abroad

Regulations for Degree of Bachelor of Hygiene and the D P H

1 No candidate is admitted to the final examination for the degree of B Hy unless he is a Bachelor of Medicine and Surgery, of not than two years' standing, of a recognized university

2 No candidate is admitted to the final examinaion for the D P H unless he is a registered medical practitioner, of not less than two years' standing

3 The course of study for the B Hy and D P H shall extend over a period of not less than twelve calendar months, subsequent to the attainment of a registrable qualification Candidates for the B Hy must attend this course at the University of Durham, candidates for the D P H may attend it at the University of Durham or at any medical school or institution which is recognized by the university

4 The examination for the diploma or degree shall be divided into two parts Part I and Part II, each of which shall extend over not less than two days, and shall be conducted by examiners specially qualified A candidate must pass in all the subjects of Part I before being admitted to examination for Part II In Part I, and also in Part II, a candidate must pass in all the specified subjects at one time

5 The examination for Part I shall be practical, written, and oral, and shall include the following subjects bacteriology and parasitology (including medical entomology), chemistry and physics and meteorology and climatology, in relation to public health Candidates may not be admitted to examination for Part I until after they have completed the prescribed courses of instruction in the subjects thereof

6 The examination for Part II shall include the following subjects hygiene and sanitation (including sanitary construction) epidemiology and infectious diseases, sanitary law and vital statistics, public health administration The examination shall be written and oral, and shall include practical examinations in infectious diseases, food inspection inspection of premises—dwellings, factories, workshops schools, etc Candidates may not be admitted to examination for Part II until after they have completed the prescribed courses of instruction in the subjects thereof

The fee for the examination for the degree of B Hy is £10 10s, and for the degree £6 6s

Candidates for the degree of Doctor of Hygiene (D Hy) shall be Bachelors of Hygiene of two years standing, and shall be required to satisfy the examiners that they have conducted original research in the subject of public health The fee for the examination for the degree of D Hy is £20, and for the degree £10 The fee for examination for the diploma in public health is £10 10s, and for the diploma £3

FEES

The following fees are payable Matriculation or its equivalent, £2, First Second, and Third M B, B S Examinations, each £5, Final M B, B S, £15, M D and M S, £5 for each examination and £12 12s for the degrees of M B and B S The fee for the degree of M D is £10 The fee for the examination of D Ch is £20, and the fee for the degree £10

Further information may be obtained from Professor Howden, Registrar, University of Durham College of Medicine, Newcastle-upon-Tyne

UNIVERSITY OF LEEDS

THE degrees granted in the Medical Faculty of this university are Bachelor of Medicine, Bachelor of Surgery (M B and Ch B), and Bachelor of Dental Surgery (B Ch D) Doctor of Medicine (M D), Master of Surgery (Ch M), and Master of Dental Surgery (M Ch D) It also gives diplomas in public health, in psychology, in dental surgery, and in nursing

Candidates for the M B must have attended courses of instruction approved by the university for not less than five years, two at least of such years having been passed in the university, at least one year being subsequent to the date of passing the first examination They must also have matriculated by satisfying the examiners in

I *Either* English Composition and English Literature, *or* English Composition and History
II *Either* Mathematics *or* Latin
III, IV, V *Three* other subjects not already taken under I and II above, chosen from the following list

1 English Literature	9 Mathematics
2 History	10 Mechanics
3 Geography	11 Physics
	12 Chemistry
4 Greek	13 General Experimental
5 Latin	Science
6 French	14 Natural History
7 German	15 Botany

8 Some one other language approved by the Board

Provided that (*a*) candidates who take Mathematics under II above must include one of the subjects 4—8, (*b*) candidates who take Latin under II above must include one of the subjects 9—15

Exemption from the examination may be granted to applicants holding certificates of having passed examinations of a standard deemed by the Matriculation Board to be at least equal to the Board's examination

PROFESSIONAL EXAMINATIONS

The examinations for the M B, Ch B number three The first deals with (1) physics and chemistry, (2) biology In each subject laboratory work is included, but the two parts can be taken separately For neither can the candidate present himself until after matriculation and a period of approved work in the respective subjects

Second M B—This examination may be taken in two parts (*a*) anatomy and physiology, including practical work, (*b*) materia medica and pharmacy, including actual compounding of drugs The candidate's certificates must show, among other things, that he has dissected during at least five terms

Final M B—This may be divided into three parts The first (pathology and bacteriology) may be taken at the end of the tenth term, the second (forensic medicine and public health) and the third (medicine, surgery, obstetrics, and pharmacology and therapeutics) cannot be taken before the end of the fifth year, before admission to the examination in its subjects the candidate, besides ordinary certificates, must produce proof that he has done both interne and externe maternity work, and received clinical instruction in gynecology in diseases of the eye, skin, or larynx, and in the administration of anæsthetics This division covers all branches of surgery, medicine (including mental diseases and diseases of children), and obstetrics and gynæcology First and second class honours may be obtained in this division

The regulations and curriculum are now under revision in accordance with recent recommendations of the General Medical Council

M D—A candidate for this degree must be a M B, Ch B of the university of at least one year's standing He presents a dissertation embodying the results of personal observation or original research, and, if this is approved, he may be required to write a short extempore essay on some topic connected with medicine, and may be examined orally on the dissertation or other work submitted

Ch M—The candidate for this degree must have been admitted to the M B, Ch B of the university not less than a year previously, and during that time must have held for at least six months a surgical appointment in a public institution affording full opportunity for the study of practical surgery He must also have attended certain courses, including one on ophthalmology and one on bacteriology, he is then examined on the subject of surgery in all its branches

FEES

The matriculation fee is £2, and on readmission £1 10 For each of the other examinations £6 (£7 for Ch M) and £3 on readmission On conferment of the degree of Ch M £7 is payable, and £6 for the M D degree

UNIVERSITY OF LIVERPOOL

THIS university, besides granting degrees in medicine (M B and M D) and in surgery (Ch B, M Ch Orth, and Ch M) gives degrees in dental surgery (B D S and M D S), a degree in hygiene (M H), and degrees in veterinary science (B V Sc, M V Sc, and D V Sc) Diplomas are awarded in dental surgery (L D S), tropical medicine (D T M), public health (D P H), veterinary hygiene (D V H), and medical radiology and electrology (D M R E)

MATRICULATION

The Matriculation Examination is governed by the Joint Matriculation Board, 315, Oxford Road, Manchester, which accepts, under certain conditions, the tests of several other bodies as its equivalent Chemistry and physics are essential pre registration subjects

PROFESSIONAL EXAMINATIONS

Candidates for the M B, Ch B degrees have three examinations to pass, the first including (1) chemistry, (2) physics, (3) biology (zoology and botany)

Second M B—This test covers (*a*) (1) anatomy, (2) physiology, including physiological chemistry and histology, and (*b*) (3) elementary bacteriology, (4) clinical chemistry, (5) general pathology Candidates may present themselves in (*a*) and (*b*) separately

Final M B—The subjects of the Final Examination are (*a*) (1) special pathology and morbid anatomy, (2) forensic medicine and toxicology, (3) public health, (4) pharmacology and general therapeutics, (*b*) (5) obstetrics and diseases of women, clinical, operative, and practical— (7) medicine—systematic and clinical, (8) therapeutics, mental diseases, and diseases of children Candidates may take Parts (*a*) and (*b*) separately, but Part (*b*) may not be taken until five years of study have been completed

M D and Ch M—Candidates for these degrees must have received the M B and Ch B at least two years previously Students holding equivalent degrees of other approved universities may become candidates for the M D degree after two years study in the university or clinical school of the university The M D candidate submits for approval a thesis covering original work in some branch of medicine or some science directly relative to medicine, together with, if desired, copies of published work The M Ch candidate undergoes an examination Other information concerning the diplomas of this university and its medical school will be found on page 426

FELLOWSHIPS SCHOLARSHIPS AND EXHIBITIONS

The university awards Fellowships annually to students of distinguished merit as follows

(1) John Rankin Fellowships in Anatomy two each of the value of £120 tenable for two years (2) Ethel Bovce Fellowship in Gynaecology value £100 and tenable for one year open to fully qualified medical students of either sex (3) John W Garrett International Fellowship in Bacteriology value £100 and tenable for one year (4) Robert Gee Fellowship in Human Anatomy value £100 and tenable for one year (5) Holt Fellowships in Physiology and Pathology two in number value £150 each and tenable for one year (6) John ton Colonial Fellowship in Bionable for one year (7) Thelwall Pathology value £150 and tenable Fellowship £100 (9) Lady Jones gery one value £200 offered every two years

There are in addition scholarships and exhibitions open to medical students

VICTORIA UNIVERSITY OF MANCHESTER

THIS university grants the four ordinary degrees in medicine and surgery—M B and Ch B and M D and Ch M a degree and diploma in dental surgery, a diploma in public health, a certificate in factory and in school hygiene a diploma in psychological medicine, and a diploma in bacteriology Candidates for degrees must pass the special Matriculation Examination prescribed by the Faculty of Medicine (or some equivalent examination accepted in lieu thereof, see the prospectus of the Joint Matriculation Board), and study at the university itself for at least two years of the six years' curriculum, subsequent to the passing of the first M B Examination The Matriculation Examination comprises (1) Latin (2) mathematics, (3) the English language, its literature and history, (4) mechanics, (5) two subjects at choice as approved by the Joint Board It is held in July and September

PROFESSIONAL EXAMINATIONS

M B, Ch B—There are four examinations for this degree They must be passed in proper order, and before admission to them the candidate must be duly certified as having attended in the subjects involved The first M B is divided into Part 1, chemistry and physics, Part 2, biology—(*a*) botany, (*b*) zoology The parts may be taken separately or together At the second M B the candidate is examined in anatomy (including histology) and physiology, at the third, in pathology and pharmacology (including materia medica and practical pharmacy The Final Examination is divided into two parts, which may be taken separately, and includes medicine (systematic and clinical), mental diseases, and diseases of children, surgery (systematic, clinical, and practical), obstetrics and gynaecology, preventive medicine, forensic medicine, and toxicology

M D—A candidate for this degree must be a bachelor of medicine of at least one year's standing He has a choice between presenting an original dissertation or undergoing a written (as well as practical and clinical) examination in medicine, and a written and practical examination in pathology, and one other subject selected by himself

Ch M—A candidate must have held, since becoming Ch B, and for not less than twelve months, a post in a public institution affording opportunity for the study of the branch of surgery in which examination is desired The examination in Branch I comprises the general field of surgery, Branch II, obstetrics and gynaecology, Branch III, ophthalmology, Branch IV, otology, laryngology, and rhinology

FEES

The following examinations Matriculation £2 on readmission £1 10s admission £3 3s M D £3 8 on re of the degree £15 15s Ch M £6 6s for examination 3 9 for conferment of degree Application for further information should be addressed to the Dean of the Medical Faculty

UNIVERSITY OF SHEFFIELD

THE degrees of this university (M B, Ch B, M D and Ch M, B D S and M D S), the diploma in public health, and the diploma of licentiate in dental surgery, are open to candidates of either sex Candidates for a degree must have matriculated in the university or have passed such other examination as may be recognized for this purpose and have passed the further examination in chemistry and physics

PROFESSIONAL EXAMINATIONS

A candidate for the degree of M B Ch B must produce certificates that he will have attained the age of 22 years by the day of graduation, that he has pursued the courses of study required by the university regulations during not less than five years subsequent to the date of his matriculation or exemption from matriculation, and the passing of the further examination in chemistry and physics, three of such years at least having been passed in the university, one at least being subsequent to the passing of the first examination The following examinations must be passed in due order

First Examination—The subjects are chemistry, physics and biology The intermediate examination in science—chemistry, physics, and zoology—will, on payment of the required additional fee, be accepted instead of this examination Candidates on presenting themselves for this examination are required to furnish certificates of having attended for not less than one year approved courses of instruction, after matriculation and the passing of the further examination in physics and chemistry, in (i) chemistry, inorganic and organic (ii) physics, (iii) biology

Second Examination—The subjects are anatomy and physiology The candidate must have completed the second year of professional study, must have passed the First Examination, and must have attended (1) lectures on anatomy and dissections during three terms (2) lectures on practical experimental, and chemical physiology and histology during three terms

Third Examination.—The subjects are pathology and pharmacology, anatomy and physiology. Candidates must have completed the fourth winter of medical study and the requisite courses in these subjects, including *post-mortem* clerkship for three months.

Final Examination.—The subjects are—Part I, forensic medicine and public health, Part II, medicine (including mental diseases and diseases of children), surgery, obstetrics (including gynaecology). Candidates must have completed the fifth year of study.

M D.—Candidates for the degree of Doctor of Medicine must have passed the examination for the degrees of M B, Ch B at least one year previously, must present a thesis embodying observations in some subject approved by the Professor of Medicine, and must pass an examination in the principles and practice of medicine.

Ch M.—Candidates for the degree of Master in Surgery must have passed the examination for the degrees of M B, Ch B at least one year previously, and must, since taking the degrees of M B, Ch B, have held for not less than six months a surgical appointment in a public hospital or other public institution affording full opportunity for the study of practical surgery. The subjects of examination are systematic, clinical, and operative surgery, surgical anatomy, surgical pathology, and bacteriology.

Other information concerning this university will be found in the section devoted to Provincial Medical Schools.

UNIVERSITY OF WALES

THE Charter and statutes of the University of Wales provide *inter alia* for a Faculty of Medicine and for the granting of the following degrees: Bachelor in Medicine (M B), Bachelor in Surgery (B Ch), Master in Surgery (B Ch), and Doctor in Medicine (M D).

A candidate for the M B, B Ch is required to pursue a course of study of not less than six academic years subsequent to matriculation in the university, and of these years at least three must have been passed as a student in one of the constituent colleges of the university. These are the University College of Wales, Aberystwyth, University College of Wales, Bangor, University College of South Wales and Monmouthshire, Cardiff, and University College, Swansea. He must also hold an Arts or Science degree of the University of Wales, or of some other university approved for this purpose. Certain of the courses of study pursued for a B Sc or B A degree may be counted as part of the courses required for the degrees in the Medical Faculty.

The courses for the M B, B Ch are divided into two sections, of which the first includes the preliminary subjects—physics, chemistry, botany, zoology, and the ancillary subjects—organic chemistry, human anatomy, and physiology. Study of the preliminary subjects and of organic chemistry must extend over at least one academic year, study of physiology and anatomy must extend over at least two academic years, and cannot be commenced until all the preliminary courses have been completed, hence the first section of the course must occupy not less than three years. The second section includes courses in pathology, bacteriology, pharmacology, medicine, surgery, and obstetrics and gynaecology, and cannot be commenced, except in the case of pharmacology, until the examinations relating to the preliminary and ancillary courses have been passed. Examinations in the earlier subjects are held at the end of each academic year, and in the subjects of the second section each July.

The university also offers courses of study in public health and in tuberculosis. Candidates for the Diploma in Public Health (D P H) and for the Tuberculous Diseases Diploma (T D D) must possess a medical qualification registrable for practice in Great Britain and Ireland, and must have completed courses of study as prescribed by the regulations either at the Welsh National School of Medicine, Cardiff, or at another institution approved by the university.

WELSH NATIONAL SCHOOL OF MEDICINE

Students can complete the whole of their curriculum in the Welsh National School of Medicine, which is an integral part of the University College of South Wales and Monmouthshire, and qualify for the degrees of M B, Ch B in the university.

Further information may be obtained from the Registrar, the University Registry, Cathays Park, Cardiff.

English Medical Corporations.

THERE are three medical corporations in England—the Royal College of Physicians of London, the Royal College of Surgeons of England, and the Society of Apothecaries of London. The first two combine for certain purposes to form what is known as the Conjoint Board in England. Details concerning this body, its component Colleges, and the third licensing body here follow.

THE CONJOINT BOARD

THIS body—the Examining Board in England—deals with the qualifications of all candidates for the Licence of the Royal College of Physicians of London and for the Membership of the Royal College of Surgeons of England. It prescribes for them certain periods of study, and recommends those who pass the required examinations for the Licence and for the diploma of Member respectively. The successful candidate is then entitled to register as L R C P Lond, M R C S Eng. It performs the same task in connexion with diplomas in State medicine, tropical diseases, ophthalmic medicine and surgery, psychological medicine, and laryngology and otology—jointly issued by the two Colleges in question. Under the new regulations, which apply to all students who have not passed the required preliminary tests of general education before January 1st, 1923, every candidate for the M R C S and L R C P must (1) complete five years of professional study after passing a recognized preliminary examination and a recognized pre-medical examination in chemistry and physics, (2) comply with the regulations, which may be had from the Secretary, Examination Hall, 8-11, Queen Square, Bloomsbury, London, W C 1, and (3) pass the two professional examinations of which particulars appear below. The old regulations for the Conjoint diploma, of which an account was given in the *Educational Number* for 1922, still apply to students who passed their preliminary examination in general education before January 1st, 1923.

NEW REGULATIONS FOR THE CONJOINT DIPLOMA

The following is an outline of the regulations applicable to candidates for the L R C P Lond. and M R C S Eng., who passed the required Preliminary Examination in general education on or after January 1st, 1923. The full regulations and synopses and forms of certificate may be obtained from the secretary.

PRE-MEDICAL EXAMINATION

Students are required to pass a Pre-Medical examination in Chemis[try] by the Conjoint Examining Board before [stu]dents' curriculum of professional study or some [rec]ognized by the Board—namely, the examination in Chemistry and Physics for the degree in Medicine of any university recognized by the Board, the Higher School Certificates of Oxford and Cambridge Universities and the Oxford and Cambridge Schools Examination Board, the Higher Certificates of London, Bristol, Durham Universities, and the Joint Matriculation Board of the Northern Universities, and the Central Welsh Board Higher Certificate.

A candidate must enter for Chemistry and Physics together and he will not be allowed to pass in one without obtaining at the same time at least half the number of marks required to pass in the other subject. He will be admitted to the examination on producing evidence of having passed the required Preliminary Examination in General Education and of having received instruction during 120 hours in Chemistry and 120 hours in Physics to the satisfaction of his teachers. These courses may be commenced or attended before the required Preliminary Examination in General Education is passed.

The examination is partly written, partly oral and partly practical. A candidate rejected in one or both subjects of the examination will not be admitted to re-examination until after the lapse of a period of not less than three months and he must produce evidence of further instruction in the subject or subjects of failure.

PROFESSIONAL EXAMINATIONS

There are two Professional Examinations, called the First and Final Examinations. The courses of study for these examinations

must not be commenced until the Pre Medical Examination in Chemistry and Physics or some equivalent examination has been passed

First Professional Examination—The subjects of this are Section I (*a*) Anatomy including Histology and Embryology (*b*) Physiology including Biochemistry Section II Pharmacology Practical Pharmacy and Materia Medica A candidate must have Medical School courses of instruction in ryology during five terms during which the truction in ener and Bio- co rmacology- d Materia Medica A candidate may present himself for the two Sections together or separately, but he must take parts (*a*) and (*b*) of Section I together until he has passed in one or both parts but a candidate will not be allowed to pass in one part unless he obtains at the same time at least half the number of marks required to pass in the other part Section II of the examination may be passed at any time before the candidate enters for the Final Professional Examination A candidate who produces satisfactory evidence of having passed an examination in the subjects of Section I or of either part of Section I and of Section II in the examination for the degree in Medicine conducted at a university recognized by the Board will be exempted from further examination in such subject or subjects

Final Professional Examination—The subjects of this are Section Morbid Anatomy Morbid Hi tology Bacteriology Section II Part I natomy Forensic Medicine and Pub including Surgical Anatomy and the Part III Midwifery and Gynaecol ly written partly practical partly clinical and partly oral A candidate may take Sections I and II and the three parts of Section II of the Final Examination separately or may take the whole examination together He will be required to produce the certificates required by the regulation before being admitted to the respective parts of the examination A candidate who produces evidence of having passed an examination for a degree in Medicine in the subjects of Pathology and Bacteriology at a university recognized by the Board is exempted from Section I

FEES

The fee for the *Pre Medical Examination* is three guineas for re examination in Chemistry two guineas and for re-examination in Physics one guinea The fee for the *First Professional Examination* is ten guineas for re-examination after rejection in Section I six guineas for re-examination after rejection in either part of Section I three guineas for re-examination after rejection in Section II three guineas The fee for admission to Section I of the *Final Professional Examination* is four guineas for admission to Section II Part I ten guineas Part II ten guineas Part III six guineas and the re-examination fees are respectively three guineas six guineas and four guineas

ROYAL COLLEGE OF PHYSICIANS OF LONDON

THIS College has three grades—its Licentiates, its Members and its Fellows The Licence is now only issued through the Conjoint Board The Membership is only granted to those who have passed the final examinations for the Licence or those who are registered practitioners and graduates of a recognized university, in any case they must be persons over 25 years of age Candidates are examined in pathology and the practice of physic, partly in writing and partly viva voce, they are also examined in Latin, Greek, French, and German The languages are not compulsory, but credit is given to those who show a knowledge of them The fee for the Membership is £12, or in the case of a Licentiate £21 There is a fee of £6 6s, payable before entrance to the examination which in the case of successful candidates is reckoned as part of the Membership fee The body of Fellows is maintained by election from among the Members

ROYAL COLLEGE OF SURGEONS OF ENGLAND

THIS College has two grades—Members and Fellows The Members are admitted as stated in the section dealing with the Conjoint Board The Fellowship is granted after examination to persons at least 25 years of age who have been engaged in professional studies for six years There are two examinations for the Fellowship—the first in anatomy and physiology which may be passed after the third winter session, the second chiefly directed to surgery which may be passed after six years of professional study Candidates must pass the Final Examination of the Examining Board in England and be admitted Members of the College before admission to the Second Examination for the Fellowship except in the case of graduates in medicine and surgery of not less than four years' standing of universities recognized by the College for the purpose who are required to attend for one year the surgical practice of a general hospital recognized by the College after obtaining their degrees

Fees—At first examination £8 8 for re-examination £5 5 At second examination £12 12s Diploma fee for non members, £10 10s

SOCIETY OF APOTHECARIES OF LONDON

THIS body confers a registrable diploma in medicine, surgery, and midwifery, now known as the L M S A (Licentiate in Medicine and Surgery of the Society of Apothecaries), on those successful at the following examinations

Primary Examination—This is divided into two parts, of which Part I includes chemistry, chemical physics practical chemistry, biology, and pharmacy Part II includes anatomy, physiology, and histology, and cannot be passed before the completion of twelve months' practical anatomy with demonstrations Candidates will be excused any or all the subjects of the primary examination on producing evidence that they have passed equivalent examinations before an examining body recognized by the Society Candidates referred in anatomy will be required to produce evidence of further work in the dissecting room before being admitted to re-examination

Final Examination—This is divided into three parts Part I includes clinical surgery, the principles and practice of surgery surgical pathology, operative manipulation surgical anatomy instruments and appliances Part II includes clinical medicine (*a*) The principles and practice of medicine (including therapeutics pharmacology, and prescriptions) pathology and morbid histology, (*b*) forensic medicine hygiene theory and practice of vaccination, and mental diseases Part III includes midwifery, gynaecology, and diseases of new-born children, obstetric instruments and appliances

The fee for the primary examination is £5 5s for the final, £15 15s The regulations and syllabuses relating to the several examinations and other information, may be obtained from the Secretary, Court of Examiners, Apothecaries' Hall, Blackfriars, E C 4

The Scottish Universities.

THERE are in Scotland four universities, each possessing a faculty of medicine and having the right to confer degrees which admit the holder to the *Medical Register* In essential points the regulations in their medical faculties for undergraduates are much alike, so that a general account can be given of all of them together

The universities are those of Edinburgh Glasgow, Aberdeen, and St Andrews The provision each of the cities in which these universities are situated makes for the education of medical students will be found in the section on Medical Schools in Scotland, here it need merely be said that degrees in medicine from Scotland as a whole have always enjoyed a high repute

The degrees granted in medicine and surgery to candidates of either sex are four in number—Bachelor of Medicine (M B), Bachelor of Surgery (Ch B), Doctor of Medicine (M D), Master of Surgery (Ch M) The two former are not obtainable one apart from the other Besides these degrees a diploma in tropical medicine and hygiene is obtainable from the University of Edinburgh as also diplomas in psychiatry and public health As for public health, registrable degrees in this subject are granted by the Universities of Edinburgh and Glasgow, while diplomas in public health may be obtained from the Universities of St Andrews and Aberdeen

The conditions for admission of graduating students of medicine are the same as those in the Faculties of Arts or Science (for degrees in pure science)

As from January 1st, 1923, prospective medical students are also required to pass a pre-registration examination in chemistry and physics

PROFESSIONAL EDUCATION

The regulations comply in all respects with the requirements and recommendations of the General Medical Council, and in addition necessitate definite study for stated periods of diseases of children, of the larynx, ear and nose, of the skin, of ophthalmology, and of mental diseases In respect of the various courses certificates must be obtained showing that the student has not only attended regularly, but has duly performed the work of the class Out of the necessary five years of medical study, not less than two must be spent at the university whose degrees the student hopes to obtain, and the balance at any place officially recognized for such purpose In each academic year there are two sessions—one lasting from the beginning of October to the middle of March, and the other from the beginning of May to the middle of July

PROFESSIONAL EXAMINATIONS

The distinctive feature of the Scottish curriculum is that, though nominally there are only four examinations, each of these may be, and habitually is, split up by the student into sections Hence, a student may complete some stage of his career during the course of nearly every session Thus, by the end of the first winter session the student may pass in zoology and chemistry At the end of the first summer session he can finish with botany and physics, and with anatomy and physiology at the end of the second Pathology and materia medica he will pass at the end of the third year, and so on, until the final examination in midwifery, surgery, and medicine, and the corresponding clinical subjects, at the end of the fifth year of study At each examination the candidate may pass "with distinction," and a record is kept of the merit displayed, so that, when the time comes for the candidate to graduate, one who has done well throughout can be declared as graduating with first or second class honours A further point in the system is that the student's own teachers commonly take some part in his examination

Of the four examinations, the first deals with physics, botany, zoology, and chemistry, the second with anatomy and physiology, the third with materia medica and pathology, the fourth with medicine and surgery (clinical and systematic), midwifery, clinical midwifery, and clinical gynaecology, and forensic medicine and public health The first three examinations are held three times a year, the final twice a year

Exemption from the first professional examination can be obtained by candidates who have passed an arts or science degree examination in its subjects at any recognized university When a candidate presents himself for an examination in several of its parts, but is not successful in all of them, he is credited at the next examination with those subjects in which he has already been approved

THE HIGHER DEGREES

It is open to those who are already M B, Ch B to proceed either to the M D or the Ch M A candidate for the former must have been engaged for not less than one year in work in the medical wards of a hospital, or in scientific research in a recognized laboratory, or in the Naval or Military Medical Services, or have been at least two years in general practice, and he must be 24 years of age He has to write a thesis on any subject not exclusively surgical, and is examined in clinical medicine and in some one or other of its special departments The regulations for candidates for the Ch M are of a corresponding character, a period of surgical work in a hospital or elsewhere being substituted for medical work, and the thesis being on a surgical rather than a medical subject He is examined in surgical anatomy, clinical surgery, operative surgery, and in some of the special departments of surgery

FEES

It is estimated that the class examination, and other fees for the M B, Ch B come altogether to about £247, the separate examination fees included in this calculation being as follows

	£ s d
First Professional	9 9 0
Second Professional	7 7 0
Third Professional	6 6 0
Final	11 11 0

Re entry in any subject in which the candidate has failed entails a fresh payment of £1 1s Candidates for the M D and Ch M pay £21, and on re entry £5 5s

More detailed information with regard to the University of Edinburgh can be obtained from the *Medical Programme*, price 6d, which is published by Mr Thin, 55, South Bridge, Edinburgh, or on application to the Dean of the Faculty of Medicine Similar information about Glasgow should be sought from the Assistant Clerk, Matriculation Office, Glasgow With regard to Aberdeen, application may be made to the Secretary of the Medical Faculty, Marischal College In respect of St Andrews information can be obtained either from the Secretary of the University, or, alternatively, the Secretary of the United College, St Andrews, or the Secretary of University College, Dundee, these being the two constituent colleges of the University of St Andrews

Finally it should be mentioned that in connexion with all the Scottish universities there are valuable bursaries and scholarships, some information as to which will be found in the article on Medical Schools

THE CARNEGIE TRUST

The following is a summary of the regulations made by the Carnegie Trust for the Universities of Scotland for assistance in the payment of class fees in the universities and extramural colleges of Scotland

Applicants must be over 16 years of age, they must be of Scottish birth or extraction, or have attended for two years, after the age of 14, at a school or institution under inspection of the Scottish Education Department Applicants so qualified who have been pupils of schools under the Scottish Education Department will be eligible for assistance in the payment of class fees if they have obtained the leaving certificate of the Department, provided that it bears evidence of such preliminary education as is required by the universities for their graduating curricula, or that it has been supplemented by such passes either in the Scottish Universities Preliminary or other examination as will satisfy the above requirement of the universities Where applicants have not been pupils of schools under the Scottish Education Department, or where other good ground for not having obtained the leaving certificate can be shown, the Executive Committee has power to accept instead what it deems equivalent evidence of attainments

Applicants in the Faculties of Arts and Science must have had their course of study for each academic year approved by the University Adviser of Studies, and they must have passed the graduation examinations belonging to the previous stage of their curriculum before becoming eligible for assistance in the payment of fees of classes belonging to a further stage Beneficiaries must submit to the Executive Committee at the end of each session particulars as to their attendance and work, any distinctions gained, and any graduation examinations passed

The annual allowance towards payment of class fees offered to beneficiaries by the Trust in the Faculty of Medicine is £20 for four years, in all £80 Any unexpended part of a grant will be carried forward to the succeeding year In combinations of Faculties the allowances available for beneficiaries are Arts and Medicine two Arts grants of £9 and four Medicine grants of £20, in all £98, Science and Medicine two Science grants of £18 and four Medicine grants of £20, in all £116

Applicants, in writing for application forms, must name the university and faculty in which they intend to study, and state whether they have previously obtained the benefits of the Trust Applications must be lodged not later than October 25th for the winter session, or May 10th for the summer session Payments are made by means of fee coupons, and fees already paid are not refunded

The Scottish Corporations.

THERE are three medical corporations in Scotland—the Royal College of Physicians of Edinburgh, the Royal College of Surgeons of Edinburgh, and the Royal Faculty of Physicians and Surgeons of Glasgow Their licences can be separately obtained only by persons who are already in possession of a recognized qualification—in surgery in the case of the College of Physicians, and in medicine in the case of the College of Surgeons and the Faculty of Physicians and Surgeons of Glasgow All others must submit to the examinations held by the Conjoint Board which the three corporations have combined to form Details concerning this Board and its component colleges follow The conditions on which their higher qualifications are granted will be found set forth separately in connexion with each corporation

THE CONJOINT BOARD IN SCOTLAND

This body has charge of all questions connected with candidates for the Conjoint Licences of the Royal College of Physicians of Edinburgh, the Royal College of Surgeons of Edinburgh, and the Royal Faculty of Physicians and Surgeons of Glasgow. Those finally approved by it are entitled to registration and to the initials denoting the Licences of the three bodies concerned—namely, I.R.C.P. Edin., L.R.C.S. Edin., and L.R.F.P.S. Glas. The Board requires all candidates to comply with the regulations of the General Medical Council. It has an arts examination of its own, but is prepared to accept in its place any of the other educational tests approved by the General Medical Council. All candidates must obtain registration with the General Medical Council.

Professional Curriculum for Candidates registered as Medical Students prior to January 1st, 1923.

Subsequent to registration as a medical student the candidate must pass not less than five years in medical study, each comprising a winter and a summer session. The Board does not insist that candidates shall pursue their study at any particular place, and is prepared to accept certificates of having attended the necessary courses from any recognized medical school.

Its examinations are four in number, each of them being held four times every year, and these will fall to be held twice in Edinburgh and twice in Glasgow during the next period. It is open to candidates to present themselves for examination at either place. The first examination deals with physics, chemistry, and elementary biology, the second with anatomy and physiology, including histology, the third with pathology and materia medica, including pharmacy, and the final with (1) medicine, including therapeutics, medical anatomy, and clinical medicine, (2) surgery, including surgical anatomy, clinical surgery, and diseases and injuries of the eyes, (3) midwifery and diseases of women and of newborn children, and if it has not been passed previously, (4) medical jurisprudence and hygiene. Candidates may also be examined on diseases of children, diseases of the ear and throat, insanity, vaccination, etc.

These examinations must be passed in due order, and before admission to any of them the candidate must supply certificates showing that he has completed the due periods of study of their subjects. He can present himself in any single subject of the first three examinations. As regards the final examination, a candidate can present himself in medical jurisprudence and hygiene at any time after completion of the third examination and of his study of these subjects, but in medicine, surgery, and midwifery he cannot present himself until the completion of five years' study, and he must take them all simultaneously. A candidate who takes up several subjects of an examination or the whole of the subjects at one time, but fails in some of them, is credited at the next examination with those subjects in which he has been approved.

Part or entire exemption from the first three examinations may be granted to those who have already passed before other bodies examinations deemed by the Board equivalent to its own, but all candidates for the Conjoint licence must sit for the final examination, and at no examination can a candidate present himself within three months of his rejection by some other licensing body.

Professional Curriculum for Candidates registered as Medical Students after January 1st 1923.

The curriculum has been extended to meet the recommendations of the General Medical Council. Candidates when applying for copies of regulations should state date of medical registration.

FEES

It is estimated that the total cost of lectures and fees for the Conjoint licence is about £152. The separate examination fees are as follows: First, Second, and Third Professional £5 each; Final £15. On re-entry for any of the first three examinations £3, and on re-entry for the Final £5. If the re-entry is only in one or two subjects the fee are smaller.

Information concerning this Board should be sought either from Mr. D. I. Fadie, 49 Lauriston Place, Edinburgh, or from Mr. Walter Hurst, Faculty Hall, 242, St. Vincent Street, Glasgow.

ROYAL COLLEGE OF PHYSICIANS OF EDINBURGH

This College has three grades—Licentiateship, Membership, and Fellowship—all of which are open to men and women. The regulations applying to candidates for the Licentiateship have already been generally indicated. If desirous of receiving it apart from those of the other two corporations they must be holders of a surgical qualification recognized by the College, and must pass an examination corresponding to the medical part of the Final Examination of the Conjoint Board, and conditioned in the same way, and also an examination in materia medica. The fee for examination is 15 guineas, a special examination being obtainable on due cause being shown, and on payment of 5 guineas extra. Ordinary examinations take place monthly on the first Wednesday, except in September and October. Candidates for the *Membership must be* either Licentiates of a British or Irish College of Physicians or alternatively graduates of medicine of a university approved by the Council, and in either case not less than 24 years of age. Candidates are examined in medicine and therapeutics, also on one or more departments of medicine specially professed, and approved by the Council, in which a high standard of proficiency will be expected. The fee to be paid by a candidate for the Membership is £36 15s. The examination is held quarterly, and application *for admission to it must be made a month previous* to its date. For the Fellowship the candidate must have been a member of the College for at least three years, and, if accepted, pays fees, including £25 stamp duty, amounting altogether to £64 12s. Further details can be obtained on application to the Secretary of the College.

ROYAL COLLEGE OF SURGEONS OF EDINBURGH

This College has two grades—its Licence and its Fellowship. Licentiates may be of either sex, and for the Fellowship women are eligible also.

Licence.

As an original qualification the Licence is only granted after fulfilment of the regulations of the Conjoint Board, but as an additional qualification it can be obtained by those already possessed of a registrable qualification in medicine. In this case the candidate has to pass a written, oral, and clinical examination in surgery and surgical anatomy, and may be asked to operate on the dead body.

The fee is £15 15s. of which £10 10s. is returned to unsuccessful candidates. On due cause being shown a special examination may be granted the fee being £20 of which £10 is returned to a candidate if he is not approved.

Fellowship.

Candidates for the Fellowship must be not less than 25 years of age, and have been in the practice or study of their profession subsequent to registration for at least two years, and must hold either a surgical degree from a university recognized for that purpose by the College, or a registrable diploma obtained as the result of an examination which includes surgery as well as medicine and midwifery. Candidates are examined in (*a*) the principles and practice of surgery, including surgical anatomy, (*b*) clinical surgery, and (*c*) one optional subject, which they may choose from among the following: surgical pathology and operative surgery, ophthalmology, laryngology, otology, and rhinology, gynaecology, obstetric surgery, anatomy, and dental surgery and pathology. The examination is written, oral and clinical or practical. A candidate who desires to be examined must give one month's notice, his application for admission being supported by two Fellows of the College, one of whom must be resident in Edinburgh, or, in default, by testimonials specially obtained for the purpose. *Candidates are not allowed to appear more than three times at the examinations.*

Licentiates of the College pay £35, and others £45. For further information application should be made to the *Clerk of the College*, Mr. D. L. Fadie, 49, Lauriston Place, Edinburgh.

ROYAL FACULTY OF PHYSICIANS AND SURGEONS OF GLASGOW

THIS body possesses two classes—Licentiates and Fellows The regulations applying to the former correspond with those respecting candidates for the Licence of the Royal College of Surgeons of Edinburgh Candidates for the single Licence are examined in surgery (including clinical surgery and surgical anatomy) The fee is £15 15s and examinations are held quarterly Candidates for the Fellowship must be qualified medical men of not less than two years' standing and 24 years of age Candidates approved at this examination are then eligible for election as Fellows Special regulations are in force for medical practitioners who served in the late war The Faculty can also elect four Fellows annually without previously submitting them to examination, providing they "have highly distinguished themselves in medical science or practice" They must be of not less than ten years' standing and 40 years of age Further information can be obtained from Mr Walter Hurst, Faculty Hall, 242, St Vincent Street, Glasgow

The Irish Universities.

THERE are three universities in Ireland, each with a medical faculty These are the University of Dublin (usually known as Trinity College, Dublin), the Queen's University of Belfast, and the National University of Ireland The two former teach students, examine them, and grant degrees, while the third is an academic body only, inasmuch as its practical work is divided among three constituent colleges, situated, one at Cork, another at Galway, and the third in Dublin Information as to the arrangements for the education of medical students will be found in the section relating to Irish Medical Schools

UNIVERSITY OF DUBLIN TRINITY COLLEGE

THIS university grants two degrees in medicine (M B and M D), two in surgery (B Ch and M Ch), two in midwifery (B A O and M A O), and a post-graduate diploma in public health It also grants a post-graduate diploma in gynæcology and obstetrics, for which nine months' study is required The degrees are granted to those who, having passed the Professional Examination, have also graduated in arts

PROFESSIONAL EXAMINATIONS

A candidate for the Final Examination for the M B, B Ch, and B A O degrees must be a matriculated student of at least five years' standing The examinations which students must pass are the Preliminary Scientific, the Intermediate Medical, and the Final Before admission to any of these examinations students must have completed the courses of study in the subjects involved

Preliminary Scientific—This covers (*a*) chemistry, (*b*) physics, (*c*) botany and zoology, the three divisions may be taken together or at different times

Intermediate Medical—This is divided into two parts (*a*) anatomy, physiology, organic chemistry, and histology, (*b*) applied anatomy and applied physiology The two parts may be taken separately or together

Final Examination—*Part I* Hygiene and medical jurisprudence, pathology and bacteriology, materia medica, and therapeutics *Part II* (*a*) Midwifery and gynæcology, (*b*) medicine and mental diseases, (*c*) surgery in all branches, including clinical ophthalmology The three sections of Part II may be taken separately or together In either case the full curriculum must have been completed, and the final examination cannot be completed before the end of the fifth year

M D—The candidate must have passed all the qualifying examinations in medicine, surgery, and midwifery, and have taken, or have been qualified to take, the degree of B A three years previously He must send in a thesis for approval Subsequently the Regius Professor of Physic and an assessor will discuss with him questions connected with the thesis and may also examine him viva voce on other medical subjects of a more general nature

M Ch—The candidate must be a B Ch of not less than three years' standing, and have been engaged in practice for two years

M A O—The candidate must be a B A O of not less than two years' standing and must produce satisfactory evidence of having been engaged for two years in obstetric science The examination is specially directed to obstetrics and practical gynæcology

Further information regarding courses of instruction, etc, may be obtained from the Registrar of the School of Physic, Trinity College, Dublin

QUEEN'S UNIVERSITY, BELFAST

THE degrees granted by the Medical Faculty of this university are as follows Bachelor of Medicine (M B), Bachelor of Surgery (B Ch), Bachelor of Obstetrics (B A O), Doctor of Medicine (M D), Master of Surgery (M Ch), Master of Obstetrics (M A O) The university also confers a diploma in public health The first three degrees mentioned serve as a qualification for admission to the *Medical Register*, and are not granted separately In addition to matriculating and passing his professional examinations, a candidate for these degrees must have passed three of the regulation five years as a student at the Belfast School of Medicine Degrees in dental surgery (B D S and M D S) are conferred by the university, and also a diploma in dental surgery (L D S)

PROFESSIONAL EXAMINATIONS

The examinations for the M B, B Ch, B A O are four in number The first deals with (1) Inorganic, organic, and practical chemistry, (2) experimental and practical physics, (3) botany and practical botany, (4) zoology and practical zoology It is divided into two parts, of which botany and zoology form one The Second Examination covers anatomy and physiology, and may be taken at the end of the second year of the student's career The Third Examination includes (1) Pathology, (2) materia medica, pharmacology, and therapeutics, (3) medical jurisprudence, and (4) hygiene To be valid a certificate in regard to the study of the subjects of this examination must show that the work has been done after the First Examination has been passed

The Final Examination includes (1) Medicine, (2) surgery, (3) midwifery, (4) ophthalmology and otology The student may pass in all subjects at once at the end of his fifth year, or he may divide the examination into two parts—namely, (1) systematic, (2) clinical, practical, and oral The first part may be taken at the end of the fourth year, but for the second part the candidate may not present himself until the end of his fifth year, but students invariably take both parts at the end of their course No certificate in regard to the study of the subjects of this examination will be valid unless the work was done subsequent to passing in all the subjects of the Second Examination

THE HIGHER DEGREES

Candidates for the degree of Doctor of Medicine must be graduates in medicine of at least three years' standing, unless they hold also a degree of the university in arts or science, in which case a standing of two academic years will suffice Moreover, candidates must be able to show that the interval has been passed in the pursuit of such courses of study or practical work as may be prescribed The degree may be conferred either (*a*) after a formal examination, or (*b*) in recognition of the merits of a thesis or of some piece of original study or research carried out by the candidate, followed by an oral or other examination in its subject When an ordinary examination is imposed it will include (1) a written paper on the principles and practice of medicine, (2) a commentary on a selected clinical case, (3) a clinical and viva voce examination, and (4) a written paper and clinical or practical and viva voce examination on a subject chosen from the following list (*a*) human anatomy, including embryology, (*b*) physiology, (*c*) pathology, (*d*) pharmacology and therapeutics, (*e*) sanitary science and public health, (*f*) forensic medicine and toxicology, (*g*) mental diseases The regulations for the degrees of M Ch and M A O are of the same general nature

NATIONAL UNIVERSITY OF IRELAND

THE National University of Ireland carries on most of its educational work through three constituent colleges—one in Dublin, one in Cork, and one in Galway. Each of these provides a full medical curriculum, and all candidates for the medical degrees of the university must pass three of their five years of study at one or other of them. These years do not count except after matriculation or recognition as a student of the Medical Faculty obtained in some other fashion. The candidates at each constituent college are examined thereat by the university, and a common standard of education is secured by all courses of instruction and the regulations concerning them having to be approved by the Senate, after considering report thereon from the Board of Studies of the university. In addition to the ordinary degrees in medicine and surgery, the university grants those of Bachelor and Master of Obstetrics, Bachelor and Doctor of Science in Public Health, and Bachelor and Master in Dental Surgery, as well as diplomas in Public Health, in Mental Diseases, and in Tropical Medicine.

Application for other information may be made to the Registrar, National University of Ireland, Dublin.

The Irish Corporations.

THERE are three licensing bodies other than the Medical Faculties of the Universities and in Dublin, just as in London, there is a Royal College of Physicians of Ireland, a Royal College of Surgeons in Ireland, and an Apothecaries Hall. In Ireland, as in England, the two Colleges have formed an examining Conjoint Board, which is responsible for the recommendation of candidates to the two bodies for their respective licences. The Apothecaries' Hall of Ireland, like the Apothecaries' Society of London, gives its licence separately.

THE CONJOINT BOARD IN IRELAND

This body requires of candidates the passage either of its own preliminary examination in the subjects of general education or proof that the candidate has passed one of the tests accepted by the General Medical Council as well as passing in the Pre-Registration Examinations in *Chemistry and Physics and Biology*.

PROFESSIONAL EXAMINATIONS

There are three professional examinations the first of which cannot be passed earlier than the end of the second winter session, nor the final before the conclusion of full five years of medical study. Before being admitted to any of them the candidate must show that he has studied the different subjects in practice and theory for the requisite periods, certificates to this effect being accepted from the authorities of most of the recognized medical schools at home and abroad. The first examination deals with (*a*) anatomy, and (*b*) physiology and histology. The second examination deals with (*a*) pathology, (*b*) materia medica, pharmacy, and therapeutics and ophthalmology, and may be taken separately.

Final Examination.—This is divided into three divisions, which cannot be completed until at least five years have passed in medical studies other than those for the Pre-Registration Examinations and five years at least since the beginning of the curriculum. The divisions are (*a*) medicine, including fevers, mental diseases, and diseases of children, (*b*) surgery, including operative surgery, (*c*) midwifery, including diseases of women and newborn children and the theory and practice of vaccination.

Fees.—Preliminary Examination £2 2s. Pre-examination £2 2s. Pre-Registration Examination £3 3. Re-examination in Chemistry £2 2s. in Physics £1 1s. First Professional Examination £15 15s. Second £15 15. Final £6 6s. Re-examination fee is £2 2s. for each division.

Diploma in Psychological Medicine

There are two examinations in connexion with this diploma. Part I consists of (*a*) anatomy and physiology of the nervous system, (*b*) psychology. Part II.—(*a*) neurology, including clinical and pathological neurology, (*b*) psychological medicine, including its legal relationships.

Fees.—£3 3 for each part.

Further information can be obtained from Mr. Alfred Miller, Secretary of the Committee of Management, Royal College of Surgeons, St. Stephen's Green, Dublin.

ROYAL COLLEGE OF PHYSICIANS OF IRELAND AND ROYAL COLLEGE OF SURGEONS IN IRELAND

The Diploma in Public Health

Every candidate for the Diploma in Public Health must observe the following rules:

Rule 1. A period of not less than two years shall elapse between the attainment by a candidate of a registrable qualification in Medicine Surgery and Midwifery and his admission to the Final Examination for a Diploma in Public Health.

Rule 2. The curriculum for the Diploma in Public Health shall extend over a period of not less than twelve calendar months subsequent to the attainment of a registrable qualification.

Rule 3. Every candidate shall produce evidence of having attended during a period of not less than five months at an institution approved by the Licensing Body granting the Diploma practical instruction in—

(*a*) Bacteriology and Parasitology (including Medical Entomology) especially in their relation to diseases of man and to the diseases of the lower animals which are transmissible to man.
(*b*) Chemistry and Physics in relation to Public Health.
(*c*) Meteorology and Climatology, in relation to Public Health.

At least 150 hours must be devoted to Course (*a*) of which not less than 150 hours shall be occupied in practical laboratory work.

At least 50 hours must be devoted to Course (*b*) of which not less than 40 hours shall be occupied in practical laboratory work.

At least 10 hours must be devoted to Course (*c*).

Rule 4. Every candidate shall produce evidence of having received during not less than 80 hours at an institution or from teachers approved by the Licensing Body, granting the Diploma instruction in the following subjects:

(*a*) The Principles of Public Health and Sanitation (*20*).
(*b*) Epidemiology and Vital Statistics (*20*).
(*c*) Sanitary Law and Administration (including Public Medical Services) (*20*).
(*d*) Sanitary Construction and Planning (*10*).

[The numbers indicate the normal proportion of time to be given to each subject.]

Rule 5. Every candidate shall produce evidence that he has attended for three months on the clinical practice of a recognized Hospital for Infectious Diseases and has received therein instruction in the methods of administration. At least thirty daily attendances of no less than two hours in each week shall be required.

Rule 6. Every candidate shall produce evidence that he has during a period of not less than six months been engaged in acquiring a practical knowledge of the duties routine and special of Public Health Administration under the supervision of a Medical Officer of Health who shall certify that the candidate has received from this Officer or other competent Medical Officer during not less than three hours on each of sixty working days practical instruction in these duties and also those relating to:

(*a*) Maternity and Child Welfare Service.
(*b*) Health Service for Children of School Age.
(*c*) Venereal Diseases Service.
(*d*) Tuberculosis Service.
(*e*) Industrial Hygiene.
(*f*) Inspection and Control of Food including meat and milk.

Certificates of having received the prescribed instruction in Public Health Administration must be given by a Medical Officer of Health who devotes his whole time to Public Health work or by the Medical Officer of Health of a Sanitary Area having a population of not less than 50,000 or in Ireland the Medical Superintendent Officer of Health of a County or County Borough having a population of no less than 40,000.

Rule 7. The examination for the Diploma shall be divided into two parts: Part I and Part II.

Rule 8. The examination for Part I shall include the following subjects:

Bacteriology and Parasitology (including Medical Entomology).
Chemistry and Physics and Meteorology and Climatology in relation to Public Health.

Rule 9. The examination for Part II shall include the following subjects:

Hygiene and Sanitation (including Sanitary Construction).
Epidemiology and Infectious Diseases.
Sanitary Law and Vital Statistics.
Public Health Administration.

The examination shall be written and oral and shall include practical examinations in Infectious Disease. Food inspection. Inspection of Premises—dwellings factories workshops schools etc.

ROYAL COLLEGE OF PHYSICIANS OF IRELAND

THOSE whose names already appear on the *Medical Register* can obtain the separate Licence in Medicine of this College, and its Licence in Midwifery. In either case an examination has to be passed in the subjects indicated, questions on midwifery, hygiene, and jurisprudence being included in the examination for the Licence in Medicine. For the Licence in Midwifery practitioners of over five years' standing are exempted from examination by printed questions. The other grades of the College are Members and Fellows. The former are admitted after an examination which is open to all university graduates in medicine and Licentiates in medicine of Royal Colleges of Physicians, and deals with the general subjects of medicine. Fellows

are selected, by vote, from among the Members of the College, irrespective of sex

Fees—For the Licence in Medicine, 15 guineas, Special Examination, £21, for the Licence in Midwifery, 8 guineas, Special Examination, 16 guineas For the Membership, 20 guineas to a Licentiate of the College, 35 guineas to others, a special examination costs 10 guineas extra The Fellowship, £35, in addition to stamp duty, £25

Information as to special examinations and other matters can be obtained from the Registrar, the Royal College of Physicians, Kildare Street, Dublin

ROYAL COLLEGE OF SURGEONS IN IRELAND

THIS body, besides granting a Licence in Surgery, admits those possessed of registrable surgical qualifications to its Fellowship under certain conditions Its Licence is usually granted conjointly with that of the College of Physicians, but it is given separately to holders of a registrable qualification in medicine, provided the College is satisfied that adequate courses of study have been pursued, and provided its own provisional examination is passed This examination is held on its behalf by the Conjoint Board, and is identical with the ordinary surgical portion of the examinations imposed by that body

The Fellowship—Candidates for the Fellowship must pass two examinations, of which the first is in anatomy (including , and histology, and the second in s gical anatomy) and pathology Both examinations are partly written, partly practical, and partly viva voce, while the final examination includes the performance of operations All subjects of either examination must be passed at one time, and to neither can a candidate be admitted who has been rejected in any of its subjects by any other licensing body within three months Candidates are not admitted to the Primary Examination except on evidence that they have already passed an examination in anatomy, physiology, and histology, held by some university or other body whose degrees or licences entitle the holder to admission to the *Medical Register*, if, however, the candidate's name is on the Colonial or Foreign List in the *Medical Register*, at the discretion of the Council Candidates for the Final Examination must be over 25 years of age, produce a certificate of general good conduct signed by two or more Fellows of the College, and, if successful, must make a declaration before admission to the effect that they do not conduct dispensing practices, and will not do so as long as they are Fellows

Fees—Candidates for the Licence pay 5 guineas for examination, which sum, if they pass, is counted as part of the fee payable on admission to the Licence, this being 25 guineas Candidates for the Fellowship pay 5 guineas for each examination, the total of 10 guineas being reckoned as part of the fee payable on admission to the Fellowship That fee is 25 guineas in the case of those who are already Licentiates, and 40 guineas in the case of others

APOTHECARIES' HALL OF IRELAND

A DIPLOMA is granted by this Hall which entitles the holder to be registered as a practitioner of medicine, surgery, and midwifery, and confers also the privileges of an apothecary Two periods of dissection, each not less than six months, must be included, and twenty-seven months of hospital attendance, or its equivalent Three professional examinations have to be passed, they are held three times a year The Primary Examination deals with biology, physics, and chemistry, practical and theoretical, the Intermediate Examination is in practical anatomy and physiology, and histology and *materia medica* A candidate who has passed tests in any of the subjects of these examinations before another licensing body is exempt from further examination in such subjects The Intermediate Examination, Part II, consists of pathology, medical jurisprudence, and hygiene The Final Examination deals with medicine, surgery, and midwifery, and pharmacy The Hall's own examination in all these subjects must be passed Women candidates are eligible

Fees—Primary Examination £10 10s Intermediate Examination £10 10s Final Examination £21 Final alone, when the others have been passed elsewhere, £26 5s

Application for other information should be made to the Registrar, 95, Merrion Square, Dublin

MEDICAL SCHOOLS AND COLLEGES.

LONDON

INFORMATION as to the fees at each of the various metropolitan medical schools, and the scholarships, prizes, and junior appointments which they offer, will be found in the following pages The courses they provide are fundamentally the same, and in all of them the arrangements made are such as to meet the requirements of students of every class—of those who are aiming at the diplomas of the English Conjoint Board or the Apothecaries' Society, not less than of those who have London or other university degrees in view At all, too, special facilities are offered to students who have commenced their professional education at Oxford or Cambridge

CHARING CROSS HOSPITAL

THIS school, with its hospital, is situated in the centre of London, and is easily accessible Primary and intermediate students attend lectures and practical work at King's College The final studies are taken in the school and hospital, where systematic lectures, demonstrations, and tutorial classes are arranged to cover all the subjects necessary for the qualifying examinations Departments are also available for the other final subjects of bacteriology, clinical pathology, materia medica, public health, operative surgery, and for research work An Institute of Pathology, with a whole-time staff of scientific workers and fully equipped laboratories, has been established in the school Students receive their training in preventive medicine, pathology, and bacteriology here, and are encouraged to undertake research

Women students are admitted to the school and hospital upon the same terms and conditions as men, and after qualification are eligible for resident hospital appointments A separate common room and a female attendant are provided, but beyond this no further distinction is made

The fees are as follows—Entrance Primary and Intermediate, 10 guineas, Final, 8 guineas Annual, £42

Further information may be obtained on application to the Dean of the Medical School, Charing Cross Hospital, London, W C 2

GUY'S HOSPITAL

THE hospital contains 626 beds in constant occupation Twenty-six beds are set apart for diseases of the eye, and 40 for the most urgent and interesting medical cases, which form the subjects of the weekly clinical lectures There is a special ward of 32 beds for the reception of cases of diseases of women and for cases of difficult labour Beds are also allotted to the throat and ear departments, the departments of orthopædics, neurology, and dermatology, the department for the treatment of diseases of the genito-urinary system, and the children's department there are also some special beds for the treatment of syphilis

The residential college fronts the east gate of the hospital, providing accommodation for resident students This contains a dining hall, reading rooms, a library of general literature, and a gymnasium for the use of the residents and of the members of the Clubs Union The athletic ground at Honor Oak Park is reached from the hospital in twenty minutes The Gordon Museum of Pathology, the Wills Library, the Departments of Chemistry, Physics, Pathology, and Pharmacology, and the school buildings in general, afford opportunities for a liberal education and for research, and provide the full curriculum for a medical qualification New departments of Anatomy, Physics, and Biology were opened in July, 1923 They are equipped on modern lines, and provide ample accommodation for teaching and research Special classes are held for the First and Second Examinations for medical degrees of the University of London and for the first F R C S Eng Special teaching is provided to meet the requirements of the Universities of London, Oxford, and Cambridge in general pathology and pharmacology

Appointments—All appointments are made according to the merits of the candidates, as determined by a committee of the medical staff Sixteen out-patient officers, eight

house physicians, twenty assistant house-surgeons, eight house-surgeons, four ophthalmic house surgeons, two genito-urinary house surgeons, two house physicians (children's department), and nine resident obstetric assistants are appointed annually. The house-physicians and house-surgeons, obstetric residents, ophthalmic house-surgeons, and genito-urinary house surgeons hold office for six months each, and receive free board and lodging in the college. Every student is provided with rooms and commons in the hospital during the period of his "take in" as senior dresser. In addition to the clerkships and dresserships in the medical and surgical wards, students are appointed to the posts or clinical assistant, dresser, or clerk in the special departments of ophthalmology, laryngology, gynæcology, diseases of children, diseases of the nervous system, dermatology, otology, actino-therapeutics, anæsthetics, dentistry, orthopædics, vaccine, tuberculosis, and genito-urinary and venereal disease; clinical assistantships in the various special departments are open to post-graduates.

Scholarships, Prizes, etc.—The following scholarships in Arts and Science are awarded: A. Open Junior Scholarships: (1) An Arts Scholarship of the value of £160; (2) a Science Scholarship of the value of £100; these are awarded annually in July. (3) A War Memorial Scholarship of the value of £200, awarded alternately in Arts and Science. This Scholarship is open every other year; the next award will be made in July, 1925. B. Confined Scholarship in Science. A Junior Science Scholarship of the value of £100 is offered for competition annually in September to candidates who have attended preliminary science classes at this school. Candidates for these scholarships (male students only) must be under 21 years of age on October 1st of the year of the competition. C. Open Senior Science Scholarships: (1) A War Memorial Scholarship of the value of £80; (2) an Open Scholarship of the value of £80; both of these are awarded annually in July. Full particulars as to the scholarships may be obtained from the Dean of the Medical School. Junior prizes for general proficiency £20, £15, £14. Hilton prize for Dissection, £5. Michael Harris prize for Anatomy, £10. Sand Cox Scholarship for Physiology, £15 for three years. Wooldridge Memorial prize for Physiology, £10. Beaney prize for Pathology, £34. Treasurer's gold medal in Medicine. Treasurer's gold medal in Surgery, and the Golding Bird gold medal and scholarship for Bacteriology (£20) are awarded annually after competitive examination. The Gull Studentship in Pathology of the value of £250 per annum; the Beaney Scholarship in Materia Medica of the annual value of about £50; and the Anderson Demonstratorship in Clinical Chemistry, value £150 per annum, are awarded without examination to enable research to be carried on in these subjects. An Arthur Durham Travelling Scholarship of £100 is awarded triennially. The Griffiths Demonstratorship in Pathology of the value of £320 per annum and the Hilda and Donald Poulton Fellowship, value £150 per annum, are awarded without examination.

An annual composition fee is paid by all students until a registrable qualification is obtained. Further information may be obtained from the Dean of the Medical School, Guy's Hospital, London Bridge, S.E. 1.

KING'S COLLEGE HOSPITAL

THE medical school of this hospital, which is situated at Denmark Hill, deals with the advanced or final subjects of the medical curriculum. The hospital was opened in 1913, and is the most modern and best equipped in England. The number of attendances in the casualty and out-patient departments during the year 1923 amounted to 208,955. In the education at the hospital a special feature has always been the individual attention given to each student. The studies are co-ordinated under the direction of senior members of the honorary staff, assisted by medical, surgical, obstetric, and pathological tutors. There are special departments for diseases of women and children, nervous diseases, ophthalmology, otology, laryngology, and rhinology, dermatology, radiology, and physico-therapy. The laboratory and pathological department are specially noteworthy.

Appointments.—Fifteen resident medical and surgical officers are appointed half-yearly, as well as dressers and clerks in the wards, out-patient departments, *post-mortem* room, and special department. Each of the special departments has several clinical assistants. There are three registrars and four tutors, all of whom receive salaries. The Clubs and Societies Union combines athletics, music, and other societies connected with the school, and provides also a common room.

Scholarships, etc.—At entrance: Science Scholarship £50. At commencement of Final Studies: Anatomy and Pathology Scholarship £50; Pathology and Pharmacology Scholarship £50; two Burney Yeo Scholarships, each £20 (for Oxford and Cambridge students); Epsom College Scholarship £50. Senior Scholarship £40, Todd Prize, Tanner Prize, Clay Prizes and Medals.

Fees.—The composition fee is 95 guineas if paid in one sum. Entrance fee of 10 guineas includes membership of the Clubs and Societies Union.

The calendar of the school can be obtained on application to the Dean, H. Willoughby Lyle, M.D., F.R.C.S., or to the Secretary, S. C. Panner, M.A., King's College Hospital, Denmark Hill, S.E. 5.

THE LONDON HOSPITAL

THIS hospital with its medical college and dental school, is situated in the Mile End Road, E. 1. The hospital contains 948 beds, and during 1923, 17,977 patients passed through the wards and 119,749 out-patients received treatment. Of the latter number, 39,092 received treatment in the departments for diseases of the ear, nose, throat, eye, skin, and teeth, and in the pediatric, orthopædic, venereal, radiological, electro- and physico-therapeutical and inoculation departments. The number of major operations which were performed amounted to 7,543.

The hospital presents therefore a large field for clinical instruction and in its wards and out-patient and special departments exceptional opportunities are afforded for acquiring an extensive and practical experience of all phases of disease.

A clinical unit in medicine, under the charge of a whole-time director, provides for the more elaborate methods of diagnosis and treatment, and takes a leading part in the initiation and co-ordination of medical research. To each medical and surgical firm throughout the hospital there is attached a first assistant, who is responsible for instructing the clerks or dressers of the firm in elementary medicine and surgery, and who assists the honorary members of the firm in the preparation of their demonstrations. Special courses of lectures and demonstrations are arranged in medicine and surgery and in their ancillary subjects. Opportunities for research are provided under the supervision of the staff.

All the departments are modern and adapted for the teaching of all subjects in the various curricula. Special courses of instruction are held in preparation for the examinations of the University of London, for the Fellowship or the Royal College of Surgeons, and for the Membership of the Royal College of Physicians. Special entries can be made for the medical and surgical practice of the hospital. A residential hostel on hospital ground is provided for the convenience of students who wish to live near the wards and casualty departments. The athletic ground, of over thirteen acres, is at Highams Park, and is open to all members of the Clubs Union.

Appointments.—The salaried appointments open to past students of the hospital are those of assistants to the medical unit, first assistants to the medical and surgical firms, obstetric registrar, medical, surgical, and obstetric tutors, clinical assistants in the medical, surgical, ophthalmic, aural, light and skin, orthopædic, and electrical departments, and in the Pathological Institute. There are appointed annually 4 resident accoucheurs, 14 resident house physicians and 22 resident house-surgeons, 14 resident receiving room officers, 8 resident emergency officers, 8 clinical assistants to the medical out-patient department, and 16 clinical assistants to the surgical out-patient department; also paid and unpaid clinical assistants in the various special departments. In addition there are numerous assistantships, clerkships, and dresserships in the departments of medicine, surgery, gynæcology, and obstetrics.

Scholarships and Prizes.—The following list of scholarships and prizes:—At Entrance: Price Scholarship in Science, £50. Price Scholarship in Anatomy and Physiology, open to students of Oxford and Cambridge Universities, £15. Entrance Scholarship in Science, £50. Epsom Scholarship. Free Medical Education. After Entrance: Buxton Prize in Anatomy and Physiology, £40. Lichfield Prizes in Organic Chemistry and Chemical Pathology, £25. Prizes in Clinical Medicine, Surgery, and Obstetrics and Gynæcology, £20 each. Duckworth Nelson Prize in Practical Medicine and Surgery, £10. Hutchinson Prize in Clinical Surgery, £10. Sutton Prize in Pathology, £20. Sir Andrew Clark Prize in Clinical Medicine and Pathology, £28. Anderson Prize in Elementary Clinical Medicine, £20. Dresser Prizes, £40. Practical Anatomy Prizes, £19. Arnold Thompson Prize in Medical and

Surgical Diseases of Children, £15, Liddle Prize £120, Francis Palmer Scholarship in Dental Surgery, £25, Harold Tink Prize in Dental Surgery £8 8s The 'London' prizes in Dental Surgery and Pathology, £5 5s, and in Dental Prosthesis £5 5s Seven class examination prizes, each of the value of £3 3s, are offered for competition at the end of the courses of lectures in the dental curricula The London Hospital Medical College and the Eliza Ann Alston Medical Research Funds amount to over £26,000

Fees—Entrance fee, 20 or 15 guineas, according to examinations passed, annual fee, 40 guineas

Full information may be obtained from the Dean at the London Hospital Medical College, Mile End, E 1

THE MIDDLESEX HOSPITAL

THE school and hospital are in Mortimer Street, W, close to Oxford Circus, Goodge Street, and Great Portland Street stations There are prosperous athletic clubs and a gymnasium within the hospital precincts The hospital contains over 450 beds, including a wing containing 92 beds for patients suffering from cancer There are special wards for maternity and gynaecological cases, for mental cases, for cases of venereal disease, and for diseases of children and of the skin and eye

The medical school, which includes the Bland-Sutton Institute of Pathology and the cancer research laboratories, is completely equipped for teaching the entire medical curriculum, including the pre-medical subjects, chemistry, physics, and biology The Bland-Sutton Institute, under the charge of the Professor of Pathology, contains large pathological and public health laboratories, and smaller rooms for original investigation as well as a pathological and anatomical museum Bacteriological, chemical, and microscopical examinations of material from the wards, operating theatres, and out-patient departments are carried out in the laboratories, and senior students are eligible for clerkships in connexion with this work Every facility is given for original research The cancer research laboratories offer unrivalled opportunities for the study of this disease, in both its clinical and pathological aspects Several valuable scholarships are awarded in this connexion Students also receive special instruction in the electro-therapeutic and electro-cardiographic departments

Appointments—Twenty-two resident appointments are open annually for competition among students of the hospital The officers reside and board in the residential college free of expense Two casualty medical and two casualty surgical officers, and two resident officers to the special departments, are appointed annually Eight house-surgeons are appointed every year at intervals of two months, after examination, six house-physicians are also appointed annually at similar intervals An obstetric and gynaecological house-surgeon is appointed every six months Eight registrars are appointed annually In the out-patient departments the appointments are clerk and dresser to the physicians and surgeons to out-patients, clerk in the departments for diseases of the skin and nervous diseases, dressers to the department for diseases of women, to the ophthalmic surgeon, to the throat and ear department, and to the dental surgeon Extern midwifery clerks and post-mortem clerks are also appointed The appointments are so arranged that every student may, during his course, hold all the out-patient and in-patient clerkships and dresserships Students must have held an out-patient clerkship and dresserships before holding in-patient clerkships or dresserships Non-resident qualified clinical assistants are appointed in the medical, surgical, skin, neurological, ophthalmic, throat and ear, odontological, children's and electro-therapeutic out-patient departments

Scholarships—There are two Entrance Scholarships, value £100 each An annual Entrance Scholarship of the value of £50 is open to students of the universities or the United Kingdom who have completed the curriculum for, or passed the examinations in anatomy and physiology Students joining the school in the previous April are eligible The Freer Lucas Scholarship is annually awarded on the nomination of the head master to a pupil of Epsom College who has passed the first examination for medical degrees (Preliminary Scientific Examination) There is also a scholarship, value £50 awarded annually to students from New Zealand In addition to the Entrance Scholarships there are numerous other valuable scholarships prizes and exhibitions open to students of the hospital including the Brodrip Scholarship, value £60 and £10, Lyell Gold Medal and Scholarship, value £55 5s, Freeman Scholarship, value £30, John Murray Gold Medal and Scholarship, value £25, Hetley Clinical Prize, value £25, Leopold Hudson Prize, value 11 guineas, and the Second Year's Exhibition, value 10 guineas

Fees—(a) Pre medical students For one year or less, £21 (b) Students who have completed the Preliminary Science course Entrance fee, 15 guineas, five annual fees of £42 The annual fee for further attendance at the medical school, if a registrable qualification has not been obtained, is £21 Three quarters, one half, or one quarter of the last annual fee may, at the discretion of the School Council, be returned if the student obtains a registrable qualification within three, six, or nine months of the annual payment becoming due (c) Oxford and Cambridge and other students who have completed the Intermediate course Entrance fee, 10 guineas, two annual fees of £42, further annual fees as above

Further information may be obtained from the Dean or the School Secretary

ST BARTHOLOMEW'S HOSPITAL

THIS institution fills one side of Smithfield and Giltspur Street, covering the greater part of a large island of ground separated practically from all other buildings, it is on the edge of the City, and easily reached from all parts of London The hospital contains 757 beds Extensive buildings, opened in July, 1907, occupy part of the ground acquired from the old Bluecoat School, and these materially enhance the attractions of the hospital as a place of medical study The medical school buildings, including the library, the museum, and the chemical, biological, and anatomical departments have now at their side a very large building, which includes club rooms for the Students' Union, a writing room, luncheon and dining halls, new quarters for the resident staff, and an out-patient department and accommodation for special departments of such large size as to be unsurpassed by any hospital in the kingdom During the year 1909 a second block of new buildings was completed These form the pathological department, and include, in addition to an extensive post-mortem room, large and well equipped laboratories for clinical pathology, pathological histology, bacteriology, and chemical pathology, altogether forming the most complete pathological department in the country A further large block in Giltspur Street was acquired in 1923, and has been equipped by the construction of new lecture theatres and extensive laboratories for physics, chemical physiology, experimental physiology, histology, and pharmacology Within the precincts of the hospital also there is a residential college for a large number of students The Students' Union owns, moreover, grounds of some ten acres in extent for recreative purposes at Winchmore Hill, which is easily accessible from the hospital

Special classes are held for students preparing for the Preliminary Scientific and other examinations, for the M B, M D of the Universities of London, Oxford, and Cambridge, and for the higher surgical degrees at the same universities, including the M Ch Oxon, M Ch Cantab, M S Lond, and F R C S Eng Special laboratory instruction for the D P H of Cambridge, Oxford, Durham, and London is also given

Clinical Units—Special Clinical Units have been established in Medicine and Surgery, each under the charge of a professor and director who devotes the whole of his time to the purpose of hospital practice, teaching, and research In each unit there are an assistant director and four assistants, for whom special laboratory accommodation has been provided by a gift from the Sir William Dunn Trustees The appointments of clerks and dressers are open to all students in these departments, and arrangements are made for all students to study in these units during a part of their clinical course

Appointments—Clinical clerks to the physicians and to the physician-accoucheur, and dressers to the surgeons and in the casualty department, are chosen from the students, clerks and dressers are also selected from the students to attend in the out-patient rooms, in the special departments (ophthalmic orthopaedic, gynaecological, children's, laryngological, aural, dermatological, venereal, electrical, and dental), and in the post-mortem room Chief assistants and clinical assistants are selected from qualified men appointed yearly to help in the general medical, surgical, and in the special departments Ten house-physicians and ten house-surgeons are appointed annually During their

first six months of office they act as "junior" house-physicians and house-surgeons, and receive a salary of £80 a year. During their second six months they become "senior" house physicians and house-surgeons, and are provided with rooms by the hospital authorities, and receive a salary of £80 a year. A resident midwifery assistant, an ophthalmic house surgeon, a house-surgeon to the skin and venereal department, and a house-surgeon for diseases of the throat, nose, and ear are appointed every six months, and are provided with rooms and receive a salary of £80 a year. Three resident administrators of anæsthetics are appointed, the senior for one year at a salary of £150, and two juniors for six months with a salary at the rate of £80 per annum, and all are provided with board and rooms. An extern midwifery assistant is appointed every three months, and receives a salary of £80 a year.

Scholarships.—Four entrance Scholarships are annually awarded after an examination held in September. The subjects of examination and conditions of eligibility for these scholarships are: (1) One scholarship value £75 in not fewer than two and not more than three of the following subjects: Chemistry, Physics, Botany, Zoology, Physiology, and Anatomy; limited to students under 25 years of age who have not entered on the medical or surgical practice of any London medical school. (2) One scholarship value £100, in not fewer than three of the following subjects: Chemistry, Physics, Botany, Zoology, and Physiology; limited to students under 21 years of age who have not entered on the medical or surgical practice of any London medical school. (3) The entrance scholarship in Arts of the value of £100 will be given in Latin and mathematics with one other language—Greek, French, or German. (4) The Jefferson Exhibition in Mathematics, Latin, and one other language—Greek, French, or German—of the value of £50. The value of the scholarships and prizes is over £900 annually.

Further information and a handbook can be obtained on application to the Dean of the Medical College, St Bartholomew's Hospital, E.C.1.

ST GEORGE'S HOSPITAL

THIS school is at Hyde Park Corner, and is carried on in *connexion with St George's Hospital, an institution having* a service of 436 beds, of which 100 are at the convalescent hospital at Wimbledon. It provides for the instruction of its students in the preliminary and intermediate subjects of the curriculum at the teaching centres of London University established at King's College and University College. The school at Hyde Park Corner is devoted entirely to the teaching of clinical subjects, great attention being paid by the members of the staff to individual teaching. A number of special courses are given, in which the requirements of university and all other examinations receive careful attention.

The St George's Hospital Club consists of an amalgamation club, with smoking and luncheon rooms on the hospital premises, and other students' clubs, with an athletic ground at Wimbledon. Students have the advantage of a well filled library of medical and scientific books. A register of accredited apartments and a list of medical men and others willing to receive St George's men as boarders may be seen on application to the Dean.

Appointments.—Two house physicians, two house surgeons, and two casualty officers are appointed every three months. The house officers reside and board in the hospital free of expense. The casualty officers are non-resident, and receive salaries at the rate of £100 per annum. After the student has held a house appointment, the following are, among others, open to him: Medical registrarship at £200 per annum, surgical registrarship at £200 per annum, assistant curatorship of the museum, £100 per annum, obstetric assistantship resident at £50 per annum, the post of resident anæsthetist at £100 per annum, the posts (two) of junior anæsthetist, each at £30 per annum.

Scholarship.—The following Entrance Scholarships and Exhibitions in Anatomy and Physiology are awarded in July to candidates who have passed the second M.B. London or corresponding examination. Senior Scholarship of the value of 90 guineas. Junior Scholarship of the value of £70. Devitt-Pendlebury Scholarship of the value of £50, and Exhibitions each of the value of £40 and up to eight in number. The William Brown Exhibition of the value of £150 per annum (tenable for two years) is awarded by examination to a perpetual pupil of the hospital every second year. The William Brown Exhibition is £49 (tenable for three years) and is awarded by examination to a perpetual pupil of the hospital every third year. Other prizes to the value of £200 are awarded annually to the students of the hospital.

Fees.—First year £36 15, second and third years £42 each. For the course of clinical study in the fourth and subsequent years entrance fee £10 10s., annual composition fee £42. No entrance fee is payable by St George's students who have studied at King's and University Colleges.

Further information may be obtained from the Dean of the Medical School.

ST MARY'S HOSPITAL

THIS hospital and medical school are situated close to Paddington Station (G.W.R.), having on one side a poor district of 500,000 persons, and on the other side the residential district of Kensington and Bayswater. The hospital contains 505 beds, and, by a scheme of affiliation, for teaching purposes, of several neighbouring hospitals, the teaching facilities extend over 1,000 beds. By arrangement with the Lock Hospital, students take the courses of instruction in venereal diseases there. The athletic ground (ten acres) is situated at Wembley, *and can be reached in twenty* minutes by a constant service of trains, a large pavilion has recently been erected.

Clinical Facilities.—Clinical Units in Medicine and Surgery were established in 1920, and have now been formally recognized by the University Grants Committee, St Mary's being one of the six medical schools in London which enjoy this privilege. In addition to the lying-in beds at St Mary's, every student attends a short course at Queen Charlotte's Maternity Hospital (which is situated near to St Mary's) before holding a post on the maternity district of the hospital.

Institute of Pathology and Research.—Students specially interested in pathology and bacteriology have singular advantages at St Mary's. The Institute comprises seven special departments, the whole being under the personal direction of Sir Almroth Wright, F.R.S. Research scholarships of £200 each are awarded annually to students working in the departments of the Institute, and research beds are provided. Clerkships in pathology and bacteriology and chemical pathology, lasting for a period of three months, are open to students of the fifth year, and enable them to carry out the pathological and bacteriological investigation of the wards, and learn the necessary technique under supervision. Seventy-two of these posts are available annually.

Complete Curriculum.—The medical school provides complete courses of instruction, and students can join at once on passing a Preliminary Examination in Arts. Terms begin in October, January, and April.

Entrance Scholarships.—Three entrance scholarships of £210 each and one of £26 5s. are awarded annually in July by nomination on the lines of the Rhodes Scholarships. Two University Scholarships of £200 are awarded annually in July.

Fees.—Composition fees for entire curriculum (5½ years) £200 in one sum or £210 by five annual instalments. Composition fee for clinical curriculum (2½ years) 90 guineas in one sum or £5 guineas by two annual instalments. As an alternative students may pay an annual fee of 40 guineas with an entrance fee of 10 guineas.

ST THOMAS'S HOSPITAL

THIS school and hospital are situated in Lambeth, on the south bank of the Thames, facing the Houses of Parliament and form one of the well known architectural features of London.

The school buildings, which are separated from the hospital by a quadrangle, comprise lecture theatres, laboratories, and classrooms well adapted for the modern teaching of large bodies of students in the subjects of the medical curriculum. A splendid library and reading room and a complete museum are open to all students from 9 a.m. to 5 p.m., on Saturdays to 1 p.m. The Students' Club premises contain a dining room and smoking and reading room supplied with daily and illustrated weekly papers, and a gymnasium. Good meals are obtainable at a moderate tariff. The terrace affords facilities for exercise and recreation. The sports ground, of more than nine acres in extent is at Chiswick. It can be reached in forty minutes from the hospital, it is admirably adapted for football, cricket, lawn tennis, and athletic sports.

The hospital proper contains 632 beds. In addition to the ordinary provisions of a great hospital there are connected

with the out-patient department physicians' and surgeons' rooms provided with ample sitting accommodation, so that students are enabled to follow closely the practice and teaching of the out-patient staff There is a full complement of special departments, and connected with the hospital a special tuberculosis department gives opportunity for instruction of students There is a clinical theatre, centrally situated, so as to facilitate the illustration of lectures by patients from the wards and out-patient room, it is arranged also for lantern demonstrations The maternity ward, containing 20 beds, gives students full facilities for maternity training, under supervision, within the precincts of the hospital This obviates any necessity for supplementary instruction elsewhere, and fully prepares the student for the extern maternity practice of the hospital district The revised regulations of the examining bodies can thus be fully complied with

Appointments.—All hospital appointments are open to students without charge A resident assistant physician, a resident assistant surgeon, and a resident anaesthetist are appointed annually at a salary of £200 each per annum Two hospital registrars, medical and surgical, at an annual salary of £250 each, are appointed yearly The tenure of these offices may be renewed for a term not exceeding two years An obstetric tutor and registrar, an ophthalmic registrar (at an annual salary of £50 each), and an orthopaedic registrar (unpaid) are appointed yearly Ten resident casualty officers and anaesthetists (including two senior) are appointed every six months Seven house-physicians (including two obstetric house-physicians and one house-physician to the department of diseases of children) and nine house-surgeons (including two ophthalmic house-surgeons, one orthopaedic house-surgeon, and two house-surgeons to the ear, nose, and throat department) are appointed every six months Eight or more clinical assistants in the special departments are appointed every three months, and hold office for six months if recommended for re-election Clinical clerkships and dresserships to the in-patient and out-patient departments are available to the number of 400 each year

Scholarships.—There are five entrance Scholarships Two in Arts, giving one year's free tuition, one of £150 and one of £60, in Chemistry, Physics, and Biology, for students who have not received instruction in Anatomy or Physiology, one of £100 in any two of the following subjects Anatomy, Physiology, or Chemistry, for students who have completed their examinations in Anatomy and Physiology, for a medical degree in any of the universities of the United Kingdom or the Colonies, and have not entered as clinical students in any London medical school The money value and subjects of examination of the remainder are as follows (*a*) William Tite Scholarship for second year students, £25, (*b*) and (*c*) Musgrove Scholarship or (alternately) Peacock Scholarship each for third-year students and tenable for two years, £35 each (*d*) Cheselden Medal, Surgery and Anatomy, (*e*) Mead Medal, Medicine, Pathology, and Hygiene, (*f*) Toller Prize, Medicine Pathology, and Hygiene (*g*) Bristowe Medal, Pathology, and Morbid Anatomy, (*h*) Solly Medal and Prize, *biennially*, Surgical Report, (*i*) Clutton Memorial Medal in Clinical Surgery, biennial, (*j*) Wainwright Prize, Medicine, Pathology, and Hygiene (*k*) Hadden Prize, Pathology, (*l*) Berney Scholarship, £50 biennially Surgery and Surgical Pathology, (*m*) Sutton Sams Prize, biennially reports of cases in Obstetric Medicine, (*n*) Grainger Testimonial Prize, £31 10s Anatomy and Physiology (*o*) Louis Jenner Research Scholarship, tenable for two years, £60 annually, Pathology

Fees.—The annual fees are For each year of study £50 These fees cover all tutorial classes, but do not include instruction in infectious fevers pharmacy and vaccination Qualified practitioners are permitted to attend the hospital practice on terms which may be ascertained from the Medical Secretary

Special courses of instruction are given for various examinations, and a register of lodgings is kept at the school Further information may be obtained from the Medical Secretary of the School, St Thomas's Hospital, Albert Embankment, S E 1

UNIVERSITY COLLEGE HOSPITAL

THE school, which forms part of the Corporation of University College Hospital, is in immediate proximity to the hospital in University Street, and opposite University College It comprises departments of medicine and clinical medicine, surgery and clinical surgery, midwifery and gynaecology pathology including morbid anatomy, chemical pathology, biochemistry and bacteriology, cardiography, forensic medicine, mental physiology and mental diseases, dental surgery, practical pharmacy, and other departments for the study of special diseases, such as those of the eye, skin, ear and throat, venereal diseases, and for instruction in anaesthetics, electro-therapeutics, and skiagraphy The Hospital and School have acquired the National Dental Hospital and College as their Dental Departments, thus providing every facility for the study of dental subjects The Royal Ear Hospital, Dean Street, Soho, has also been amalgamated as the Ear, Nose, and Throat Department

The school thus provides the final course of study for the degrees of the Universities of London, Oxford, Cambridge, Durham, and other British universities, and for the diplomas of the Royal Colleges of Physicians and Surgeons in Medicine and Dental Surgery, and the Licence of the Society of Apothecaries Special bacteriological classes are also held in preparation for the various diplomas in public health Each department is also equipped for more advanced work, and provides facilities for research

Clinical Units in Medicine and Surgery are now in operation The whole-time directors of the Units are concerned with the organization of the teaching generally, but the honorary staff is responsible for the largest share of the teaching in the wards and out-patient department of the hospital A Unit in Obstetric Medicine will be established as soon as the new obstetric hospital now in course of construction is finished

The new buildings of the obstetric hospital of 60 beds (rendered possible by the Rockefeller benefaction), the new Residents' House (with accommodation for 30 residents and students), the extension of the Nurses' Home, and the new research laboratories for the Medical School, are well under way, and these buildings should be ready for occupation by the spring of 1925

Scholarships.—The following scholarships and prizes are open to competition Two Entrance Exhibitions of £12 guineas each, awarded after a competitive examination in anatomy and physiology, Radcliffe Crocker Travelling Scholarship in dermatology for one year, value about £280 the Graham scholarship in pathology of a sum not exceeding £300 per annum, Leslie Pearce Gould Research Scholarship in surgery for one year, value about £200 the Atkinson Morley Scholarship of £45 a year for three years awarded after examination in the theory and practice of surgery the Atchison Scholarship of £55 a year for two years for general proficiency in medical studies, the Magrath Clinical Scholarship value about £100 the Fillitei Exhibition in pathology of £30, the Percival Alleyn Prize for the advancement of surgery by research value about £60, the Graham Gold Medal for research work four Fellows Medals in clinical medicine, Liston Medals in clinical surgery, the Bruce Medal in pathology and surgery, two Tuke Medals in pathology, and the Erichsen Prize for practical surgery

Fees.—The fee for the full course of final studies at the school is 112 guineas if paid in one sum, or 115 guineas if paid in two instalments Fees for vaccination and fevers not included

Appointments.—The qualified appointments, in addition to a number of posts as house-physicians and house-surgeons and obstetric assistants, include the appointments of resident medical officer, surgical registrar, obstetric registrar, Harker Smith radium registrar, casualty medical officers, casualty surgical officers, assistants in ear, nose and throat, ophthalmic, skin and venereal diseases departments, and house anaesthetists

Particulars of general and special courses can be obtained on application to the Dean of the Medical School, University College Hospital, University Street, W C 1

WESTMINSTER HOSPITAL

THIS school, with its hospital, situate in Broad Sanctuary, opposite Westminster Abbey, provides for the education of its students in the preliminary and intermediate subjects of the University of London at King's College The rest of the work is done in the school buildings near the hospital The number of in-patients averages 3,000 and out-patients upwards of 30,000 annually, and the hospital and school afford ample facilities for instruction in all branches of medicine and surgery

Appointments.—A medical and surgical registrar are appointed annually, each with a salary of £150, and obstetric registrar with a salary of £50 Three house-physicians, three house-surgeons, one assistant house-physician, one assistant house-surgeon, and a resident obstetric assistant are appointed after examination, and are provided with rooms commons, and salary of £52 per

annum, except the assistant house-physician and the assistant house-surgeon, who are provided with commons only The assistant house-physician after three months' service becomes house-physician for a further period of six months, and the assistant house-surgeon after three months' service becomes house surgeon for a further period of six months Clinical assistants to the assistant physicians and assistant surgeons, and to the officers in charge of special departments, are appointed from among the qualified students Every student must perform the duties of out-patient dresser for four months, and afterwards hold the office of in-patient dresser for four months He is also required to serve two terms of four months each as medical clinical clerk to in patient physician and one term as gynaecological clinical clerk Two pathological clerks are appointed every three months to assist in the *post mortem* room No student is eligible as an in-patient dresser or clinical clerk until he has passed the Second Examination of the Conjoint Board, or an equivalent examination Clerks and dressers in the special departments of hospital practice are periodically appointed So far as vacancies permit, students of other hospitals are admitted to in-patients' dresserships or clerkships

Scholarships—The following open scholarships are offered for competition during the year 1924-25 In the winter session two scholarships in anatomy and physiology £70 each In the spring two scholarships in anatomy and physiology £70 each A certain number of scholarships have been allotted to universities of England Wales and the Colonies and to public schools These scholarships are awarded entirely on the nomination of the Principal of the University or School

Fees—The annual composition fee is 35 guineas An entrance fee of 10 guineas is payable by all students—namely primary and intermediate students £10 10s students entering for the final subjects £8 8s These fees include subscriptions for membership of the Clubs Union

Further information and a prospectus can be obtained on application to the Dean at the Westminster Hospital, Westminster, S W 1

The governors of the hospital have now completed the extensive improvements and alterations to the hospital, which render it a still more efficient teaching institution, with an increased number of beds

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LONDON (ROYAL FREE HOSPITAL) SCHOOL OF MEDICINE FOR WOMEN

THE school is situated at 8, Hunter Street, Brunswick Square, W C 1, close to the Royal Free Hospital It is, like all the other London schools which have so far been mentioned, one of the constituent schools of London University The school buildings have recently been enlarged The laboratories are extensive and well lighted, and are fully equipped for the examination courses of the University of London and the Royal Colleges of Physicians and Surgeons Research laboratories are attached to all departments A large, well equipped library, common room, Union room, and refectory are provided for the use of students Resident accommodation for 60 students is provided in students' chambers attached to the school

The Royal Free Hospital, Gray's Inn Road, W C 1, has 240 beds, all of which are available for clinical instruction A new block contains the Obstetrical and Gynaecological Unit, which, with the Marlborough Maternity Department controls 68 beds There are separate departments for diseases of the eye, ear, and skin, infant welfare, venereal diseases, massage, electrical and *x*-ray work, dentistry, and casualty The instruction given covers the full curriculum for the M B, B S degrees of the University of London, including first medical courses Students attend the practice of one of the fever hospitals of the Metropolitan Asylums Board and receive special instruction in lunacy at Bethlem Hospital, they are also admitted to the practice of a number of special hospitals, and hold clerkships and dresserships at the Elizabeth Garrett Anderson Hospital, the Cancer Hospital, Hospital for Sick Children the National Hospital for Nervous Diseases the South London Hospital, and the Royal Ophthalmic Hospital The work of the school includes preparation for the Primary Fellowship examination, and also for the Medical school and general hospital course for dental students

Appointments—Qualified students of the school can obtain appointments as house-physicians and house surgeons, obstetric assistants, surgical, gynaecological, and medical registrars, assistant pathologists, assistant anaesthetists, medical electrician, skiagrapher, and clinical assistants and demonstrators in various subjects

Scholarships—The Isabel Thorne Entrance Scholarship value £30 the St Dunstan's Medical Exhibition value £60 a year for [illegible] extended to five years and the Mabel value £20 a year for four years each year The Sir Owen Roberts [illegible] alue of £75 a year for four years the Mrs George M Smith Scholarship of the value of £50 a year for three years which may be extended to five years the Dr Margaret Todd Scholarship of the value of £37 10s a year for four years and the Sarah Holborn Scholarship of the value of £20 a year for three years which may be extended to five years are awarded in alternate years The Bostock Scholarship value £80 a year for two or four years is awarded by the Reid Trustees on the result of an examination held in May by the University of London every fourth year The holder of the cholarship must enter the London School of Medicine for Women The Lieutenant Edmund Lewis and Lieutenant Alan Lewis Memorial Scholarship of the value of £25 a year for four years is awarded every fourth year The John Byron Bursary of £20 a year for two years the Helen Prideaux Prize of £40 the Mabel Webb Research Scholarship of £30 for two years the Fanny Butler Scholarship of £14 10s a year for four years together with many other scholarships and prizes are offered on sundry conditions The Dr Edith Pechey Phipson Post Graduate Scholarship of £100 is awarded annually Various missionary societies also offer scholarships on certain conditions and assist ladies who wish to go to India and other countries as medical missionaries

Fees—Courses for the University of London degrees and the diplomas of the Conjoint Board in England and other qualifications £240 payable in five instalments These sums include library and laboratory fees

The Students' Union exists to promote corporate action of the students on matters of common interest, to promote and maintain athletic and other clubs and to issue a school magazine All students are required to become members of the Union

Further information can be obtained from the Warden and Secretary

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KING'S COLLEGE

IN the Faculty of Medical Science instruction is given in the preliminary and intermediate subjects of the first and second examinations leading to the degree of M B, B S of the University of London, of the corresponding examinations of other universities, and of the Conjoint Examining Board of the Royal Colleges of Physicians and Surgeons, including the primary examination for the F R C S Eng The courses are open to women students on the same terms as to men

Regular students who have completed their preliminary and intermediate examinations proceed to a hospital to pursue their studies for the final examinations The hospitals associated with King's College are King's College Hospital, Denmark Hill, S E 5, Westminster Hospital, S W 1, St George's Hospital, Hyde Park Corner, S W 1, and Charing Cross Hospital Strand, W C 2

There is a Department of Public Health and Bacteriology under the direction of Sir William J Simpson and Professor R T Hewlett Full particulars of this department may be obtained from the Secretary of the College

A course for the diploma in dental surgery in conjunction with King's College Hospital Medical School has been arranged Full details may be obtained on application to the Secretary, King's College Hospital Medical School, Denmark Hill, S E 5

Scholarships—The entrance Scholarships are (1) Two Warneford Scholarships each £30 for four years subjects—selected from mathematics classics divinity and science (2) One Sambrook Scholarship of £30 for three years subjects of examination selected from mathematics classics and science The holders of the preceding awards must proceed to King's College Hospital (3) Worsley, £100 paid in five annual instalments (4) Rabbeth Scholarship value £20 in July for the best student of the first year (5) Second year's scholarship value £20 for the best student of the second year (6) Daniell Scholarship £40 awarded on the results of the University Honours Examination

Full information as to admission, fees, and scholarships can be obtained from the Dean of the Faculty of Medical Science (Professor E Barclay-Smith), King's College Strand, W C 2

UNIVERSITY COLLEGE

THIS institution, one of the principal component parts of the University of London, possesses a Faculty of Medical Sciences whose work covers all the subjects included in the group commonly known as the preliminary medical sciences—namely, physics, chemistry, botany, and zoology, and also the intermediate medical sciences—namely, anatomy, physiology, and pharmacology The new anatomy building, provided by the munificent gift of the Rockefeller Foundation of New York, was opened on May 31st, 1923, by His Majesty the King This building forms part of the block which includes physiology and pharmacology The Department of Hygiene and Public Health prepares for the diplomas in public health of the Royal Colleges and of the various universities Research work is undertaken in all the above-named departments The College undertakes the education of students in all the subjects mentioned, leaving them free to complete their education in the strictly professional subjects—medicine, surgery, and the like—at any one of the recognized schools of advanced medical studies The work is somewhat differently arranged, according to whether the student has in view the degrees of the University of London or the diplomas of the Royal Colleges In either case the whole work to be done is divided into courses devised to meet the requirements of different examinations, and students can join the College for any of them Women students are admitted to all courses on the same terms as men The general arrangements for the benefit of students include membership of the Union Society of the Women's Union Society with the College gymnasium and the athletic grounds There is also a collegiate residence for about fifty-five men students at Ealing, and for about seventy women students at Byng Place, Gordon Square

Scholarships—The scholarships and exhibitions obtainable include the Bucknill Scholarship, value 135 guineas, in chemistry, physics, botany, and zoology (the successful student must complete his work at University College Hospital Medical School), and two entrance exhibitions in the same subjects, each of the value of 55 guineas

Fees—The fees for the courses covering the work of the First Examination for medical degrees of the University of London, and in both parts of the Second Examination, amount to 115 guineas The fees for the courses covering the corresponding examinations held by the Conjoint Board in England also amount to 115 guineas These fees may be divided into payments for the different courses which it may be desired to take out, but do not cover tuition for more than a stated period

A handbook specially relating to this faculty may be obtained on application to the Secretary of University College, Gower Street, London, W C 1

THE PROVINCES

THERE are in England and Wales, not counting London, ten medical schools, each supplying instruction in the full medical curriculum Accounts of them here follow In several cases there is appended information concerning hospitals other than those directly connected with the school in question, such hospitals, officially and unofficially, play a part in the education which the students of the school receive, and in any case serve as places of additional or post-graduate study

OXFORD AND CAMBRIDGE

BOTH at Oxford and Cambridge there are medical school which furnish unsurpassed opportunities for obtaining a good knowledge of the preliminary sciences and of anatomy, physiology, and pathology The laboratories are excellently furnished, and the teaching staffs most distinguished Both schools provide a full medical curriculum, and there is no essential reason why the student should not complete his career at either of them, but this is not commonly done The local hospitals, though well equipped, are comparatively small The university authorities therefore encourage the students, as soon as they have completed the earlier examinations and taken a degree in Arts, to join some London school, and thus spend the time of their preparation for the final examinations in a city where the opportunities for gaining clinical knowledge are greater and more varied A considerable proportion of Oxford and Cambridge medical students take the London Conjoint diplomas before graduating in medicine and surgery at their own university

BIRMINGHAM

THE school in this city is carried on by the Medical Faculty of the University of Birmingham, its students having adequate number of good laboratories, classrooms, and other necessaries devoted to their use by the university The clinical work is done at the General and Queen's Hospitals, which are amalgamated for this purpose Together they have upwards of 600 beds for medical, surgical, and special cases, and with an array of special departments of all kinds, including one for lying-in women Clinical instruction is given in the wards and out-patient and special departments daily, and formal clinical lectures delivered weekly throughout the winter and summer sessions Special tutorial classes are also held alike for the degrees of Birmingham and some other universities and for the diplomas of corporations

Appointments—The large number of appointments open to past or other students includes the following —At the General Hospital surgical registrar, £200 a year, one resident medical officer, salary £155 a year, one resident surgical officer, salary £180 a year, one resident pathologist, salary £70 a year, two visiting anaesthetists, salary £50 a year, four house-surgeons, office tenable for nine months, £70 a year, one house-surgeon to the gynecological and one to the special departments, each tenable for six months, £70 a year, three house-physicians, *post tenable* for six months, £70 a year At the Queen's Hospital one medical registrar and one surgical registrar, non-resident, tenable for three years, renewable, salary £100 per annum, three house-physicians, three house-surgeons, and one obstetric and ophthalmic house-surgeon, tenable for six months, salary £70 per annum, with board, lodging, and washing, one casualty house surgeon, tenable for three months, salary £70 per annum, with board, lodging, and washing At the Maternity Hospital one house-surgeon, salary £50 a year At the City Workhouse and Workhouse Infirmary five resident medical officers At the Birmingham General and Branch Dispensaries twelve resident surgeons At the Birmingham Mental Hospitals five assistant medical officers At the City Fever Hospitals three assistant medical officers At the Children's Hospital one resident surgical officer, one resident medical officer At the Birmingham and Midland Eye Hospital four resident surgeons At the Orthopaedic and Spinal Hospital two clinical assistants (non-resident) At the Ear and Throat Hospital one house-surgeon, £70 a year, four clinical assistants (non-resident) Four non-resident Poor Law appointments are in the gift of the Board of Guardians

Scholarships—There are numerous money and other awards for students of sufficient merit among them being the following The Walter Myers Travelling Studentship of £300 offered each alternate year and tenable abroad (next offered in 1925), the Sands Cox Scholarship of £42 (an entrance scholarship in the Faculty of Medicine, awarded on Higher School Certificate Examination of the Joint Matriculation Board (July), four Queen's Scholarships of £10 10s each, awarded annually at the second third fourth and final university examinations respectively, one or more Sydenham Scholarships, allotted on entrance to students who are the sons of deceased medical men the Ingleby Scholarships (two) of £10 for proficiency in midwifery and diseases of women the Arthur Foxwell Memorial Gold Medal (Clinical Medicine) at Final M B examination There is also an entrance scholarship of £37 10s for students proceeding to a degree in dental surgery University Clinical Board Prizes are awarded annually as follows Senior Medical Prize Gold Medal, Senior Surgical Prize, Gold Medal, Midwifery Prize Gold Medal Junior Medical Prize, Silver Medal, Junior Surgical Prize, Silver Medal

Fees—The composition fee for university classes is £106 5s This covers all the work required for the degrees of Birmingham and some other universities and for the ordinary qualifications of licensing corporations but not the additional courses required for the Fellowship of the Royal College of Surgeons of England the diploma and degrees of the university in State Medicine, and some other special work The total cost for the five years' curriculum, including hospital and examination fees, is estimated at £199 2s 6d

Other information should be sought from the Dean of the Medical Faculty, University, Edmund Street, Birmingham

BRISTOL

THE school is carried on by the Faculty of Medicine of the university, and provides full instruction for all its degrees and diplomas

Clinical Instruction.—The allied hospitals (Bristol Royal Infirmary and Bristol General Hospital) have between them about 600 beds and extensive out-patient departments, special clinics for diseases of women and children, and those of the eye, throat, and ear, in addition to large and well equipped departments for dental work and large outdoor maternity departments. At each of these institutions there are well arranged pathological museums, *post-mortem* rooms, and laboratories for morbid anatomy. There are also laboratories for work in clinical pathology, bacteriology, and cytology, in which special instruction is given in these subjects. Departments are provided and well equipped for x ray work, both for diagnosis and treatment, the various forms of electrical treatment, including high frequency currents, electric baths, Finsen light treatment, and massage. The students of the school also attend the practice of the Royal Hospital for Sick Children and Women containing 140 beds, and that of the Bristol Eye Hospital, with 40 beds. The total number of beds available for clinical instruction is therefore about 750.

Appointments.—(1) Undergraduate: Clinical clerkships, *dresserships, also ophthalmic, obstetric, pathological ear*, nose, and throat clerkships, are tenable at the Bristol Royal Infirmary and the Bristol General Hospital. In these institutions the dressers reside in rotation free of charge. (2) Post-graduate: At the Bristol Royal Infirmary four house surgeons, £80 each per annum, two house-physicians, £80, two resident obstetric officers, one of whom is also ophthalmic house surgeon, £100 and £80, ear, nose, and throat house-surgeon, £80, dental house surgeon, £80. All these appointments are made for twelve months. From the resident officers a senior resident officer is appointed at a salary of £200. At the Bristol General Hospital: Senior resident medical officer, £250 per annum, casualty house-surgeon, £80 per annum; two house-physicians, £80 per annum, house surgeon, £80 per annum, special obstetric physician, £80 per annum, house-surgeon to special departments, £80 per annum, dental house-surgeon, £300 per annum. All these appointments are for six months, except that of senior resident medical officer, which is for two years.

Scholarships.—The following are among the scholarships and other awards open to students of the school: The Ashworth Hallett Scholarship, value £45, open to women only; two Martin Memorial Pathological Scholarships of £10 each; the Tibbits Memorial Prize, value 9 guineas, for proficiency in practical surgery; the Committee's Gold and Silver Medals for fifth year students for general proficiency; the Augustin Prichard Prize, value about 6 guineas, for proficiency in anatomy; the Henry Clark Prize, value 11 guineas, for proficiency in gynæcology; the Crosby Leonard Prize, value 7 guineas, for proficiency in surgery; the Suple Surgical Prize, a gold medal and 7 guineas; the Suple Medical Prize, a gold medal and 7 guineas; the Henry Marshall Prize, value £12, for dressers; the H. M. Clarke Scholarship, value £15, for proficiency in surgery; the Sanders Scholarship, value £22 10s., for general proficiency; the Barrett Roué Scholarship for proficiency in diseases of the eye, ear, nose and throat, value £14; Lady Haberfield Scholarship, value about £5 guineas; Phyllis Stepman Prize for proficiency in diseases of children, value £50; Bristol City Senior Scholarships; and the Senior Scholarships offered by the counties of Gloucestershire, Somerset, Wilts, Devon, etc., are tenable in the university.

Some of the Fellowships awarded by the Croston Research Society for research in the university are allotted to the Faculty of Medicine.

Fees.—The fee for all the courses required for the medical curriculum, including hospital practice, is £65 guineas, paid by annual instalments.

UNIVERSITY OF DURHAM COLLEGE OF MEDICINE

THIS, the Medical School of the Faculty of Medicine of the University of Durham, is in the neighbouring city, Newcastle-upon-Tyne. Its classes and lectures are arranged to meet the requirements of the university in all the degrees which the latter grants, and also those of the other examining bodies. The students do their work in the preliminary sciences at Armstrong College, also part of the university, and their clinical work in the Royal Victoria Infirmary, an institution with about 550 beds and special accommodation for the benefit of students. Students do their practical midwifery at the new Princess Mary Maternity Hospital, which was opened by H.R.H. Princess Mary (Viscountess Lascelles) in November last. The hospital, which contains 65 beds, is thoroughly up to date, and there is an annual indoor and outdoor attendance on 3,000 cases. In a Heath wing of the school itself there is the department of physiology. There are also in this wing a gymnasium and a set of rooms for the use of the Students' Union. A new bacteriological department has recently been erected adjacent to Armstrong College.

Students' Union.—Students' Union Buildings are being erected at a cost of about £40,000, and will be opened early in 1925. Separate accommodation (non-residential) is provided for men and women students.

Appointments.—Pathological assistants, and assistants in the eye department, throat and ear department, and department for skin diseases, are elected periodically. Clinical clerks and dressers are appointed every three months.

Scholarships.—University of Durham Entrance Scholarship £25 a year for four years. Pears Entrance Scholarship £40 a year for three years (awarded every third year). Province of Durham Masonic (Entrance) Scholarship £60. Heath Scholarship for surgery £200 available every second year.

The following Scholarships are tenable for one year—namely: Tulloch Scholarship for elementary biology and organic chemistry £20. Dickinson Scholarship for medicine, surgery, midwifery and pathology, Gold Medal and £20. Charlton Scholarship for medicine, £25. *Gibb Scholarship for pathology* £23. Luke Armstrong Scholarship for comparative pathology £25. Stephen Scott Scholarship for surgery £40. Philipson Scholarships for highest marks in Final M.B., B.S. Examinations, two of £43 each. Goyder Memorial Scholarship for clinical medicine and clinical surgery, interest on £325. Gibson Prize for midwifery and diseases of women and children £10. Turnbull Prize and Silver Medal for surface anatomy and Outterson Wood Prize for psychological medicine, £10. At the end of each session a prize of books is awarded in each of the regular classes.

Fees.—The composition fee for lectures at the college is £122. Composition fee for hospital practice £46 *plus* £2 2s. yearly for three years, payable to the *Committee of the Royal Victoria Infirmary*. Other information should be sought from the Registrar of the College of Medicine at Newcastle.

LEEDS

THE School of Medicine—which is open to both male and female students—in this city forms the teaching centre of the Medical Faculty of the University of Leeds, and is situated in immediate proximity to the General Infirmary, where students sufficiently advanced receive their clinical instruction. The buildings were opened in 1894, and contain excellent dissecting rooms, several well arranged laboratories for physiology, pathology, and bacteriology, three lecture theatres, and several similar classrooms. In addition, there are a library and reading room and two museums, one being devoted to pathology and the other to anatomy. The comfort of the students is secured by common rooms and a refectory in which they can take meals. The General Infirmary has 632 beds and includes gynæcological and ophthalmic wards, a special children's ward, and a large out-patient department. The Ida and Robert Arthington Semi-convalescent Hospitals, Cookridge, a tached to the Infirmary, have 28 beds. The West Riding Mental Hospital at Wakefield is also open for the study of mental diseases. Students can, in addition, attend the practice of the Leeds Public Dispensary, the Hospital for Women and Children, and the Leeds Maternity Hospital, where the obstetric work is done.

Appointments.—One senior anæsthetist, £50, seven anæsthetists, £25 each, one resident medical and one resident surgical officer, each at £150 per annum; one casualty officer, at £125 per annum; one resident ophthalmic officer, at £100 per annum; one resident aural officer, at £100 per annum; one resident orthopædic officer, at £150, one ophthalmic house-surgeon, and one resident obstetric officer, at £50 per annum; four house-physicians, each holding office for six months, and four house-surgeons, holding office for six or twelve months. Surgical dressers are appointed every six months; physicians' clerks, ophthalmic and aural dressers, gynæcological ward clerks, gynæcological out-patient clerks, maternity clerks, assistant physicians' clerks, dermatological clerks, and assistant surgeons' dressers, dressers in the casualty room, *post-mortem*

clerks, and laboratory assistants every three months, and dressers in the venereal clinic every month A resident medical officer (honorarium at rate of £30 per annum) is also appointed every six months for the Ida Semi-convalescent Hospital Appointments are also open to students at the Leeds Public Dispensary (four resident medical officers), at the Hospital for Women (two house-surgeons, at £50 per annum, and two anaesthetists, £20), and at the West Riding Asylums

Scholarships.—The university awards annually a scholarship in the form of a free admission to the lectures and classes given in the university, which are covered by the composition fee The university also awards a scholarship on the results of the first examination, of the value of £68, in the form of a free admission to the clinical teaching of the infirmary

Fees.—It is estimated by the authorities that the approximate cost of medical education to a student in this university is £300 *plus*, of course, the expenses of living during the five years covered by the curriculum The fee for a complete course for the First M B is £41, the composition fee for the course for the second and third examinations, and for the clinical work at the infirmary, is £174 The composition and clinical fee for those who have passed the second examination is £138

Further information can be obtained from the Academic Subdean or Clinical Subdean, School of Medicine, Leeds

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LIVERPOOL

THE Medical School of this city is part of the university, and, owing to the enlightened liberality of several men of wealth, is exceptionally well provided with special laboratories, as well as with ordinary spacious and well equipped classrooms and laboratories for the instruction of students proceeding to medical degrees and diplomas in special and ordinary subjects All the laboratory and other rooms are situated close to one another and intercommunicate, together forming large blocks of buildings The work of students throughout all stages of their career is arranged upon very satisfactory lines, and the teaching hospitals, of which an account is given below, have amalgamated to form the clinical school of the university

Appointments.—The nature of the appointments open to past and other students at this school will be gathered from the account which follows of the hospitals forming its clinical department

Scholarships.—The awards made each year to successful students total over £1,500 They include the following Two Holt Fellowships, one in Pathology, the other in Physiology, a Robert Gee Fellowship in Anatomy, two John Rankin Fellowships in Anatomy, a John W Garrett International Fellowship in Bacteriology a Johnston Colonial Fellowship in Biochemistry an Ethel Boyce Fellowship in Gynaecology, and a Thelwall Thomas Fellowship in Surgical Pathology one Lady Jones Fellowship in Orthopaedic Surgery, one University Fellowship (value of Fellowships one at £200, three at £150 two at £120 five at £100), a University Scholarship of £25 awarded on the results of the Second M B Examinations, a Scholarship in Mechanical Dentistry of £20, two Lyon Jones Scholarships, of the annual value of £21 each for two years, one for the junior and the other for the senior students, the Derby Exhibition of £15, the Clinical School Exhibition of £15, the Owen T Williams Prize the Tom Gold Medal in Anatomy, John Rankin Exhibition in Practical Anatomy, £25 the George Holt Medal in Physiology the Kanthack Medal in Pathology, Mitchell Banks Medal in Anatomy, the Robert Gee Prize of £5 5s in Children's Diseases, Mary Burrell Davies Memorial Scholarship, £60 per annum for four years two Robert Gee Entrance Scholarships, each of the value of £25 per annum for two years, Dental Operating Prizes (four), Orthodontia Prizes (two) Samuels Memorial Scholarships three at £20 each one Thomas H Bickerton Prize in Anatomy, Dr N L Robert Prize in Zymotic Diseases, Ash's Prize in Dental Surgery, value £2 2s Gilmour Medal, and other entrance scholarships

Fees.—Information as to the fees for the courses of instruction provided by the schools should be sought from the Dean of the Medical Faculty

The Clinical School

As many as ten hospitals have combined to form the clinical school of the university, these being The Royal Infirmary, the David Lewis Northern Hospital, the Royal Southern Hospital the Stanley Hospital, the Royal Liverpool Children's Hospital, the Hospital for Women, the Liverpool Maternity Hospital and Ladies' Charity, the Eye and Ear Infirmary, St Paul's Eye Hospital, and St George's Hospital for Diseases of the Skin Between them they provide about 1 445 beds

MANCHESTER

THE staff of the Medical School in this city constitutes the Medical Faculty of the Victoria University, all the arrangements for the instruction of students, both in their earlier and their later studies, being of an elaborate nature The clinical work of the undergraduates is done chiefly in connexion with the Royal Infirmary, an institution which itself contains about 671 beds, and has associated with it a large convalescent home (136 beds), and the Mental Hospital at Prestwich Instruction in practical gynaecology and midwifery is given at the Royal Infirmary and the St Mary's Hospitals

Appointments.—The following are among the appointments open to past and present students of this school in connexion with its arrangements for clinical tuition A surgical registrar, at £150 per annum, a pathological registrar, at £350 per annum, two medical registrars, at £150 per annum, a surgical tutor, at £30 per annum, a director of the clinical laboratory, at £400 per annum, and one assistant director at £300, three assistant medical officers and three assistant surgical officers, each at £35 per annum, two assistant surgical officers, aural department, at £35 per annum, seven anaesthetists, from £75 to £100 per annum each, one radiological registrar, at £250 per annum, one resident medical officer, one year, £250 per annum, ditto at Royal Lunatic Asylum, Cheadle, one year, £300 per annum, one resident surgical officer, one year, £250 per annum, two resident medical officers for Central Branch, £200 and £100 per annum, one assistant resident surgical officer, six months, £200 per annum, one assistant medical officer at the Convalescent Hospital at Cheadle, appointed every six months, at a salary of £80 per annum, ten senior and ten junior house-surgeons and ten house-physicians, appointed during the year for a term of six months, at a salary of £50 for the first six months, and £100 for the second six months Resident officers are appointed to the gynaecological, the eye, and the ear and throat departments every three months Clinical clerks and surgical dressers are appointed to the various departments of the hospital every three months

Entrance and other Scholarships.—The following are among the scholarships obtainable by students of the school Rogers and Sexton Scholarships in Arts (in alternate years) £40 per annum, tenable for two years Derby Entrance Scholarship in Mathematics, tenable for one year, value £25 one being awarded annually, except in such years as a Cutwright Scholarship is awarded Cutwright Scholarship, £35 per annum, tenable for three years, three Hulme Scholarships tenable for three years, of £35, one being awarded annually for proficiency in subjects of general education Two James Gaskill Scholarships of £35, tenable for two years, one being awarded annually for of mechanics and chemistry A Dora annum, tenable for three years, and of women students only This is awarded triennially Sir J P Kay Shuttleworth Scholarship, £30 per annum tenable for three years awarded triennially, open to the competition of scholars from Sedburgh School, Giggleswick School, and Burnley Grammar School Subjects mathematics, chemistry, and mechanics Dreschfeld Memorial Scholarship, value £20, tenable for two years and awarded triennially on the result of the Entrance Examination A Theodores Modern Languages Exhibition, £20, awarded annually Two Dauntesey Medical Scholarships, value £45 and £35 tenable for one year, for candidates who have not ond year of study leading to a medical zoology, botany and chemistry Two En Medicine, value 160 guineas, awarded annually for proficiency in Arts or Science respectively One Research Scholarship in Public Health of £100, awarded annually Tom Jones Exhibition in Anatomy, £25 offered annually A Robert Platt Physiological Scholarship of £90, tenable for one year A Leech Fellowship of £100 for original research after graduation A Graduate Scholarship in Medicine, value £25, tenable for one year awarded annually for proficiency shown at Final M B Examination A Dumville Surgical Prize, value £15 awarded annually at graduation The Tom Jones Memorial Surgical Scholarship value £60 tenable for one year, usually awarded annually The Turner Medical Prize value £20 awarded annually for proficiency in certain subjects of the Final M B Ch B Examination The John Henry Agnew Scholarship of £30, awarded annually for proficiency in the Diseases of Children The Ashby Memorial Scholarship tenable for one year (£100), for research in the Diseases of Children, offered triennially Sidney Renshaw Exhibition in Physiology one offered annually The details and kinson Scholarships—(1) for Anatomy, (2) search Scholarship in Surgery and (4) Travelling Scholarship in Medicine—may be obtained from the Secretary to the Trustees The Sam Gamble Scholarships—the trustees are prepared to award four scholarships of not less than £40 per annum tenable for not more than four years to women students who have passed the

First M B Examination the conditions can be obtained from the Registrar The Knight Prize of £50 for original research in the psychological factors in the causation of mental disorder—open to holders of the Diploma in Psychological Medicine or medical practitioners who have been registered in the university as candidates for that diploma

Fees—The composition fee for the university course in medicine is 104 guineas, payable in four instalments of 26 guineas but this sum does not include the fee to cover the work required for the First M B Examination This is 36 guineas payable in one sum Hospital fees are additional, and usually amount to about 77 guineas.

A prospectus and further information about the school and scholarships may be obtained from the Registrar

Clinical Work—The Royal Eye Hospital, the Hospital for Diseases of the Skin, the Manchester Northern Hospital for Women and Children, the well known Hospitals for Children at Pendlebury, and St Mary's Hospitals for Women and Children, all make arrangements for the instruction of students

SHEFFIELD

In this city the medical school is one of the departments of the university, being conducted and controlled by its Medical Faculty, and occupying practically the entire north wing of the quadrangle of the university buildings overlooking Weston Park The laboratories and lecture rooms connected with the subjects of the first and second examinations—namely, chemistry, physics, biology, anatomy, and physiology—are, both as regards structural arrangement and scientific equipment, on the most modern and complete lines

For students of pathology and bacteriology there are laboratories replete with everything necessary for the most advanced work, and a large pathological museum which is open daily In addition, there is a museum devoted to materia medica specimens and a large library and reading room There are a number of recreation, athletic and other societies, all under the management of an annually elected students' representative council, and large and comfortable common rooms both for men and women students There are also two student unions—one for men and one for women students In the university buildings there is a refectory open to all students of the school, and a university journal is published each term The ordinary clinical work of the school is done at the Royal Infirmary and Royal Hospital, which have amalgamated for the purpose of clinical instruction, and provide over 500 beds for medical, surgical, and special cases, including diseases of the eye

In addition, the Royal Infirmary has special departments for the treatment of diseases of the skin and ear, with beds assigned to them, whilst at the Royal Hospital there are special out-patient departments for diseases of the throat ear, skin, orthopaedics, and mental diseases The medical and surgical staffs attend daily, and give clinical instruction in the wards and out-patient rooms Clinical lectures in medicine and surgery are given weekly Instruction in the practical administration of anaesthetics is given at either institution by the anaesthetists, and the *post-mortem* examinations at both institutions are in charge of the Professor of Pathology, and afford ample material for study of this subject Students are able to attend the practice of the Jessop Hospital for Diseases of Women and the Hospital for Sick Children, while special courses on fever are given at the City Fever Hospital, and on mental diseases at the South Yorkshire Asylum

Appointments—The following appointments are open to all students who have passed their examinations in anatomy and physiology (1) Casualty dresserships, (2) surgical dresserships, (3) medical clerkships, (4) pathological clerkships, (5) ophthalmic clerkships (6) clerk to the skin department, etc These appointments are made for three months, commencing on the first day of October, January, April and July

Scholarships—Entrance Medical Scholarship value about £100 open to both sexes Six Edgar Allen scholarships of £125 a year for three years may be held by students taking the degree course in Medicine Two Town Trustees Scholarships each of the value of £50 tenable for three years for boys or girls under the age of 19 years who have been educated in a Sheffield secondary school for a period not less than two years immediately preceding the examination Four Town Trustees Scholarships value £50 each tenable for one year by boys or girls under 19 years of age educated in any school in Sheffield secondary or otherwise Town Trustees Fellowship value £75 tenable for one year Mechanics Institute Fellowship value £50 (with remission of fees) tenable for one year and renewable for a second year The Frederick Clifford Scholarship value about £50 tenable for two years Kaye Scholarship for proficiency in anatomy and physiology value £22 10s Gold and bronze medals are also awarded for proficiency in various subjects

Fees—Students in the Faculty taking the complete medical course in the university pay an inclusive composition fee of £52 for each of the five years Students taking a complete dental course pay a composition fee of £26 at the beginning of each year of the course In addition a fee of £50 is payable each year the student receives instruction in Mechanical Dentistry in the Dental Department The fees for special courses taken separately can be ascertained by inquiry of the Dean

WELSH NATIONAL SCHOOL OF MEDICINE, CARDIFF

THIS school is staffed on the Unit system, and its courses of instruction are open to both men and women students

Students can complete the whole of their curriculum in the school and qualify for the degrees of M B, B Ch in the University of Wales, and the M B, B S in the University of London Students can also qualify for the Diploma of the Conjoint Board in England Hospital instruction is given at the Cardiff Royal Infirmary, at the City Lodge Hospital, and at other recognized institutions The attention of students about to matriculate is drawn to the numerous entrance scholarships offered for competition at the University College, Cardiff, most of which may be held by medical students Full particulars of the examination for these may be obtained by application to the Registrar Medical men wishing to prepare for the Diploma in Public Health or the Tuberculous Diseases Diploma of the University of Wales can attend complete courses of instruction in the school Prospectuses can be obtained on application to the Dean of the Faculty of Medicine, or to the Secretary, at University College, Cardiff

SCOTLAND

As will be gathered from the following paragraphs, the facilities for acquiring a medical education in Scotland are very ample, whether the student be proceeding to a university degree or to a diploma To the descriptions of the different Scottish medical centres is in some cases added an account of hospitals which either play an official part in the education given to students as yet unqualified, or offer valuable opportunities for post-graduation work

ABERDEEN

THE school is conducted by the Faculty of Medicine This comprises twelve chairs, from which instruction is given in all the main branches of medical science—namely, botany, zoology, physics (ordinary and pre-registration), chemistry (ordinary and pre-registration), anatomy, physiology, materia medica, pathology, forensic medicine, surgery, medicine, and midwifery Courses of instruction in public health and infectious diseases, tropical medicine, medical ethics, and sanatorium treatment of tuberculosis, are conducted by lecturers appointed by the University Court Special opportunities for practical instruction are afforded in the laboratories and museums attached to the departments

Clinical instruction is obtained in the Royal Infirmary (accommodating 270 patients), the Royal Mental Hospital (900 patients) the Sick Children's Hospital (65 patients), the City Fever Hospital (250 patients) the General Dispensary, Maternity, and Vaccine Institution (10 000 out-patients annually), and the Ophthalmic Institution (3 000 patients annually) Courses of practical instruction are given in diseases of children at the Sick Children's Hospital in fevers at the City Fever Hospital, in mental diseases at the Royal Mental Hospital, in diseases of the ear, nose, and throat at the Infirmary and Dispensary in diseases of the eye at the Infirmary and Eye Institution in venereal diseases and diseases of the skin at the Royal Infirmary

The degrees granted in medicine are Doctor of Medicine (M D), Master of Surgery (Ch M), Bachelor of Surgery

and Bachelor of Medicine (M B, Ch B) A Diploma in Public Health is conferred after examination on graduates in medicine in any university of the United Kingdom

The degree of Ph D is also granted in this faculty

Bursaries, Scholarships, and Fellowships, to the number of fifty and of the annual value of £1,180, may be held by students of medicine in this university They range from £8 to £100 per annum, and are tenable in most cases for two or three years The winter session begins on October 13th, 1924, the summer session on April 21st, 1925

Fees—An inclusive fee of 126 guineas is payable for instruction within the university, and the fee for the degrees of M B, Ch B is 33 guineas The total cost, including hospital fees, class and matriculation fees, and degree fees, is about £240

EDINBURGH

THERE are two Schools of Medicine the School of the University, and the School of Medicine of the Royal Colleges of Physicians and Surgeons of Edinburgh

THE UNIVERSITY SCHOOL—This school, in addition to other resources of the university, has the following means of affording practical instruction Royal Botanic Garden, Herbarium, and Museum, Zoological Laboratory and Museum of Science and Art, Physical Laboratory, Chemical Laboratories, Dissecting Room, Bone Room, and Anatomical Museum, Physiological Laboratory, Medical Jurisprudence Laboratories, John Usher Institute of Public Health, Materia Medica Museum and Laboratory, *Post-Mortem* Department of the Royal Infirmary and University Pathological and Bacteriological Laboratory, Tutorial Classes of Practice of Physic, of Clinical Medicine, and Clinical Surgery, Surgery and Midwifery, and the practice of certain other hospitals

Fees—The sessional fee for chemistry, anatomy lectures, physiology, pathology, materia medica, surgery, medicine, and midwifery is £6 6s each Physics, botany, zoology, forensic medicine, and public health, £5 5s Practical zoology, practical anatomy (summer), morbid anatomy, practical materia medica, mental diseases, practical pathology and medical entomology and parasitology, £4 4s Experimental physiology, diseases of tropical climates, practical botany, histology operative surgery, clinical surgery (per term), and experimental pharmacology, £3 3s Practical anatomy (winter), £6 16s 6d Clinical medicine, £3 13s 6d first term, subsequent terms £3 3s Practical chemistry, £4 14s 6d Regional anatomy, chemical physiology, surgical pathology, applied anatomy, and infectious diseases £1 11s 6d Tuberculosis, diseases of children, diseases of the eye, diseases of the larynx, ear, and nose diseases of the skin and venereal diseases, £2 12s 6d Advanced bacteriology, £7 17s 6d Clinical gynaecology, £2 2s

Scholarships—There are many funds for the assistance of students by means of bursaries, scholarships, exhibitions, and money awards from the beginning to the end of their undergraduate career In addition there are funds which help those who have taken a first degree in medicine and surgery to continue at work as research students The value of these awards, and the conditions attaching to them, are so varied that those interested should consult the prospectus of the school itself No other university is in a better, even if as good, a position to smooth the financial path of earnest students

THE SCHOOL OF MEDICINE OF THE ROYAL COLLEGES—This school is composed of lecturers licensed by the Royal College of Physicians and the Royal College of Surgeons, and also recognized by the university through their *licentia docendi*, for the sake of convenience they lecture in separate buildings near to the Royal Infirmary, but form a single corporate body governed by a board consisting of five members elected by the Royal College of Physicians, five members elected by the Royal College of Surgeons, and five members elected by the lecturers in the school This board, with the assistance of the standing committees of the school, supervises the whole management and especially the maintenance of the efficiency and discipline of the school The different buildings at present utilized for the purposes of lecturing are the following (1) Surgeons' Hall, Nicolson Street, (2) New School, Bristo Street, (3) Nicolson Square, (4) Marshall Street, and other places The teaching is similar to that of the Scottish universities, and the students receive similar certificates at the close of each session The courses on the special subjects not included in the curriculum of the Examining Boards are also conducted by teachers specially qualified in each branch, and have for the last quarter of a century formed a special feature of the school The fees payable for class and other instruction, and including the sums payable on admission to the examination of the Conjoint Board for the triple qualification, amount to about £180 The Calendar, giving full information regarding classes and fees, can be obtained (price 6d) on application to the Dean of the School, 11, Bristo Place, Edinburgh

WOMEN STUDENTS IN EDINBURGH—Until the close of the summer session of 1916 women students intending to proceed to graduation in the University of Edinburgh, as well as those entering for the triple qualification of the Royal Colleges of Edinburgh and Glasgow, received their training in the Edinburgh School of Medicine for Women Now women students study under the same conditions as men, and may obtain either the university degree or the diploma of the Royal Colleges In the university systematic lectures are given to them by the professors in the ordinary classes, which are therefore mixed In Clinical Medicine and Clinical Surgery, however, while the lectures are attended by mixed classes, the women students are restricted to the wards of one charge The particular wards are changed every session, each of the physicians and surgeons to the Infirmary taking the women students in rotation With few exceptions, prizes, scholarships, bursaries, and similar distinctions are open to women under the same conditions as for men The women students also have the same privileges as in the past have been given to the men of attending a certain proportion of the extramural classes taught by the lecturers of the School of Medicine of the Royal Colleges Most of the Students' Societies are open to women, with the exception of the University Union and the Royal Medical Society Their place is taken by the Women Students' Union and the Women's Medical Society There is also a Women's Athletic Club, with playing fields gifted to it by the university Information on matters connected with women's studies may be obtained from the Lady Warden, University New Buildings, Edinburgh

GLASGOW

THE UNIVERSITY SCHOOL FOR MEN—The whole course of study required for graduation (M B, Ch B) at the University of Glasgow can be taken here Besides ample provision for lectures there is practical and clinical work at the hospitals, and practical courses are conducted in the laboratories of the following departments Surgery, Pathology, Public Health, Pharmacology, Physiology, Anatomy, Chemistry, Zoology, Physics, and Botany, the Botanic Garden and the Hunterian Museum (Zoology and Pathology) are also open to students New buildings and equipments have been provided for botany, zoology, for practical anatomy, for operative surgery, as well as for pathology, the very large additions made a number of years ago to the chemical laboratory rendered it one of the most extensive in Scotland The classrooms and laboratories for the departments of Physics, Physiology, Pharmacology, Materia Medica, Medical Jurisprudence, and Public Health are also of recent erection, and are elaborately equipped Four additional chairs of Medicine, Surgery, Obstetrics, and Pathology have been recently established, the professors being specially attached to the Royal Infirmary, and a number of university lectureships in Clinical Medicine, Clinical Surgery, Venereal Diseases, Laryngology, Dermatology, Otology, Psychological Medicine, Tuberculosis, and Electrical Diagnosis and Treatment have been founded there Five other chairs have been founded at the university, in Bacteriology, Organic Chemistry, Physiological Chemistry, Applied Physics, Public Health, and another in Pediatrics There are also lectureships on the Surgical and Medical Diseases of Children and on Electrical Diagnosis and Therapeutics The university, in short, has made great and successful efforts to extend and improve the accommodation of the medical departments, to strengthen the teaching staff and to encourage post-graduation and research work Three very extensive general hospitals in the city afford exceptional opportunities for clinical instruction—namely, the Western Infirmary (600 beds), near the university, to which the Regius Professors are attached, the Royal Infirmary (630 beds), and the Victoria Infirmary (260 beds) while the Royal Mental Hospital Gartnavel (460 beds), the Royal Hospital for Sick Children (200 beds), the Royal Maternity and Women's Hospital

(108 beds), the Glasgow Eye Infirmary (100 beds), the Ophthalmic Institution (35 beds), the fever hospitals at Belvidere (680 beds), and Puchill (540 beds), and other institutions afford facilities for the practical study of special branches. The large general hospitals of the parish council are now also available for clinical instruction in Medicine and Surgery. Information regarding post-graduate study will be found at page 435.

Bursaries.—Bursaries connected to the Medical Faculty amount in annual value to about £1,600, while bursaries in any faculty amounting to about the same annual sum may be held by students of medicine; a number of both sets being open to women. Several valuable scholarships may be held by medical students who have graduated in Arts.

The following bursaries are open to undergraduates of both sexes. The Gibson Bursary, annual value £36, tenable for four years. This is open to medical students who are preparing for service as medical missionaries in connexion with the Church of Scotland, and will be awarded to the eligible candidate who has gained the highest number of marks in the First Professional Examination. The Arbroath Bursary, annual value £40, tenable for three years, is awarded by the Senate on the recommendation of the Faculty of Medicine to the student who is of the highest merit among the candidates as shown by their class records and their performances in the First and Second Professional Examinations. One Logan Bursary, annual value £16, tenable for four years, appointment by the Senate. Six Lorimer Bursaries (each £20 and tenable for one year) are awarded to the best students in each of the following classes: botany, zoology, physics, chemistry, anatomy, physiology. The Macintosh Mental Science Bursary in medicine of the value of £31 is awarded annually to the student (of either sex) attending the class of insanity who stands first in an examination in that subject, the bursar to continue the practical study of the subject to the satisfaction of the Faculty of Medicine. The Gardiner Bursary, annual value £14, tenable for two years, will be awarded after the autumn professional examination to the candidate who has passed in physiology at the *Second Professional Examination and whose aggregate of marks* in that subject and in chemistry and physics of the First Professional Examination is the highest. Of the eight James A. Paterson Bursaries two are awarded each year, there are of the value of £30 and £20 respectively, and are tenable for four years. Examination in mathematics and natural philosophy in June for students entering the first and second year of medical study. The following are tenable in any faculty. *Four Nelson Bursaries* (each £75 and tenable for four years) two Pratt Bursaries (each £20 and tenable for four years) and two Taylor Bursaries (each £10 and tenable for four years). Andrew and Bethia Stewart Bursaries (£50 each, tenable for three years) candidates must have taken the M.A. degree of Glasgow. There is a special examination. Nine Glasgow Highland Society's Bursaries for students of Highland descent of the annual value of £25 and tenable for five years, two vacant each year.

The Carnegie Trust for the Universities of Scotland is empowered to pay the whole or part of the university ordinary class fees of students of Scottish birth or extraction under conditions given in the *University Calendar* and summarized at page 414 of this issue. The Dobbie Smith Gold Medal is awarded for the best essay on a prescribed subject within the science of botany. The Brunton Memorial Prize of £10 is awarded annually to the most distinguished graduate in medicine of the year. The University Commissioners issued an ordinance to make regulations for the admission of women to certain bursaries, scholarships and fellowships. Scholarships and fellowships are offered by the Carnegie Trust in science and medicine for post-graduation study. There are also four McCunn Medical Research Scholarships (two of £205 and two of £400) for graduates in medicine of the Scottish universities; one Faulds Fellowship for Research in Medical Science of approximately £200 for three years, and one Strang Steel Scholarship value £160 for one year. There is in addition the Captain H. S. Rankin V.C. Memorial Prize in Pathology.

Fees.—*The matriculation fee for each year* is £2 2s. In most cases the fee for each university class is £6 6s., but in some cases it is £4 4s. For hospital attendance students pay an entrance fee of £7 at the Western Infirmary with an additional fee of £5 5s. for each winter and £2 12 6d. for each summer clinical course at the Royal Infirmary the fees are somewhat similar. The university fee for the four professional examinations is £34 13s. For the whole curriculum the fees for matriculation, class attendance, hospital attendance and professional examinations amount to about £225.

For further information apply to the Registrar, Glasgow University.

QUEEN MARGARET COLLEGE.—*In this, the Women's Medical* School of the University of Glasgow, the courses of study, degrees, regulations, fees, etc., are the same as for men. Women students have their own buildings, with classrooms, reading room, library, etc. They are taught in some classes apart from male students, in others together with them, but in either case have all the rights and privileges of university students. Their clinical studies are taken in the Royal Infirmary, where wards containing 520 beds are available for their use, and in its dispensary, and similarly in the Western Infirmary and in the Victoria Infirmary, also in the Royal Hospital for Sick Children, the Glasgow Ear Hospital, the Royal Asylum, Gartnavel, Hartheid Asylum, the Ophthalmic Institution, the City of Glasgow Fever Hospitals, Belvidere and Puchill, and the Glasgow Royal Maternity and Women's Hospital.

Scholarship.—The Arthur Senolar hip, annual value £20, tenable for three years. Open to competition by medical students of first year at the First Professional Examination in October 1925. The scholarship is restricted to women medical students.

Full information can be obtained from the Mistress, Queen Margaret College, Glasgow.

Board for Students.—A house of residence for women students, Queen Margaret Hall, is situated near the college, in Bute Gardens. The cost of board and residence is from 27s. to 32s. 6d. a week, according to accommodation. Applications to be made to the Lady Superintendent. Another hostel near the college is South Park House, Ann Street, belonging to the Student Christian Movement and open to women students of all colleges in Glasgow. Cost of board is from 22s. to 30s. weekly. Applications to be made to the Warden.

ST MUNGO'S COLLEGE.—This is the Medical School of the Royal Infirmary, which is the largest general hospital in Glasgow. The infirmary is situated in Cathedral Square, Castle Street, and has easy communication with every part of the city. St Mungo's College is in the infirmary grounds, and affords full courses in all the subjects of the medical curriculum, and in all the medical subjects of the dental curriculum.

The infirmary has (including the ophthalmic department) *over 700 beds, the average number occupied in 1920 being over 600. There are special beds and wards for diseases of* women, of the throat, nose, and ear, venereal diseases, burns, and septic cases. In the out-patient department the attendances in 1921 numbered 168,610. In addition to the large medical and surgical departments, there are departments for special diseases—namely, diseases of women, of the throat and nose or the ear, or the eye, or the skin, and of the teeth. There is also a fully equipped electrical pavilion, with the latest and most approved apparatus for diagnosis and treatment.

Appointments.—Five house physicians and eleven house surgeons, who must be fully qualified, are appointed every six months, and board in the hospital free of charge. Clerks and dressers are appointed by the physicians and surgeons. As many cases of acute diseases and accidents of a varied character are received, these appointments are very valuable.

Fees.—The average class fee is £3 3s. for summer classes and £4 4s. for winter classes. The fees for all the lectures, practical classes and hospital attendance necessary for candidates for the diplomas of the English or Scottish Colleges of Physicians and Surgeons amount to about £60. The classes are open to male and female students.

A syllabus of classes can be obtained on application to the Secretary to the Medical Faculty, St Mungo's College, 86, Castle Street.

THE ANDERSON COLLEGE OF MEDICINE.—This school provides education in all subjects of the curriculum for both medical and dental students. The school buildings are situated in Dumbarton Road, immediately to the west of the University and Western Infirmary. The hospital practice and clinical lectures are provided in the Western or Royal Infirmary, pathology in the Western or Royal Infirmary, vaccination and dispensary practice in the Western or Royal Infirmary Dispensary. These classes are recognized by all the licensing corporations in the United Kingdom also by the Universities of London, Durham, Glasgow, and Edinburgh (the latter two under certain conditions stated in the School Calendar). The courses (lectures and laboratory) in public health are recognized by the Scottish Licensing Board, the Universities of Oxford, Cambridge, and London, and the London and Irish Colleges.

Fees.—The fees for the lectures and practical work required by ordinary students range between 2 and 5 guineas a session. In the Public Health Department the fee for a six months' course is £15 15s. The Carnegie Trust pays the fees of students at Anderson College on condition regarding which particulars may be obtained from the Secretary, Carnegie Trust Offices, Edinburgh.

A Calendar will be sent on receipt of a postcard by the Secretary to the Medical Faculty, the Anderson College of Medicine, Glasgow, W, who will forward any further information which may be desired

The Royal Samaritan Hospital for Women, Glasgow, with over 90 beds, offers facilities for clinical instruction in the diseases peculiar to women Particulars may be obtained from T Mason Macquaker, M A, honorary secretary, 149, St Vincent Street, Glasgow

ST ANDREWS AND DUNDEE

THE medical departments in these two teaching centres cater specially for students proceeding to the degrees of the University of St Andrews, but admit other students as well *In the former city the United College provides* education in all subjects for the first two years In Dundee, University College provides for the needs of students from the beginning to the end of the five years' curriculum Its buildings are modern, and contain fully equipped laboratories The clinical work of the school is facilitated by various institutions The class fees are from £6 6s to £5 12s 6d for systematic classes, and from £4 14s 6d to £4 4s for practical classes The hospital ticket is £1 8s for three months, £4 4s a year, or perpetual, £13 6s 8d in one sum The inclusive or composition fee for the curriculum is £182 In connexion with both institutions there are bursaries and scholarships of considerable value, which are awarded after competitive examination Information as to these can be obtained from the Secretary of the University of St Andrews Information regarding the clinical facilities may be obtained from the Dean of the Medical Faculty, Medical School, Dundee

Clinical Work

Good opportunities for clinical work are afforded by the Dundee Royal Infirmary, the instruction given thereat being recognized for purposes of graduation by all the Scottish Universities, the University of Cambridge, the University of London, the National University of Ireland, and by the Royal Colleges of England and Scotland

IRELAND

THERE is a choice of six schools for those pursuing their medical studies in Ireland For clinical instruction the choice is equally satisfactory and varied, though the hospitals themselves are comparatively small Some account of the schools follows

DUBLIN

School of Physic

THIS school is in Trinity College, Dublin, and is carried on under the joint auspices of the University of Dublin and of the Royal College of Physicians of Ireland, the King's professors of institutes of medicine (physiology), practice of medicine, materia medica, and midwifery being appointed by the latter Clinical instruction is given at Sir Patrick Dun's Hospital, and some twelve other metropolitan hospitals and asylums are recognized by the Board of Trinity College The courses of instruction are open to all medical students, whether they belong to the university or not

The Schools of Surgery

These are schools carried on in Dublin under the supervision and control of the Council of the Royal College of Surgeons They are formed of the College's own school, combined with two famous old medical schools—Carmichael and Ledwich, they are attached to the College by charter The buildings contain spacious dissecting rooms, special pathological, bacteriological, public health, chemical, and pharmaceutical laboratories Advantage can be taken of the lectures and instruction afforded by students otherwise unconnected with the College

Prizes—Among the prizes annually awarded are The Barker Anatomical Prize (£26 5s) the Carmichael Scholarship (£15), the Mayne Scholarship (£8), the Gold Medal in Surgery, the Stoney Memorial Gold Medal in Anatomy the H Macnaughton Jones Gold Medal for Midwifery and Gynaecology class prizes accompanied by silver medals will also be given in each subject

A prospectus can be obtained post free on application to the Registrar, Royal College of Surgeons, Dublin

University College, Dublin

This is one of the constituent colleges of the National University of Ireland, and at present conducts its work at buildings on St Stephen's Green It possesses a good library, and the arrangements for the teaching of medical students from beginning to end of the curriculum are adequate Applications for other information may be addressed to the Secretary and Bursar, University College, Dublin

Clinical Work

There are numerous well arranged hospitals in and around the city, and almost all of these are recognized for teaching purposes by the Conjoint Board of Ireland, the University of Dublin, the National University of Ireland, and by like bodies elsewhere in the British Isles Among them are the Mater Misericordiae Hospital, with 345 beds, Dr Steevens's Hospital at Kingsbridge, with 150, Meath Hospital and County Dublin Infirmary, with 160, Mercer's Hospital, close to Trinity College, with 120, the Royal City of Dublin Hospital, with 124, the Adelaide Hospital, with 140, the Royal Victoria Eye and Ear Hospital, with 100 beds, Sir Patrick Dun's, which has a direct connexion with the School of Physic, and the combined institutions formed by the Hardwicke Fever Hospital, the Richmond Surgical Hospital, and the Whitworth Medical Hospital, with an aggregate of 230 beds

As for the famous Dublin medical institution known as the Rotunda Hospital, this practically consists of two distinct hospitals, and is believed to be the largest combined maternity and gynaecological hospital in the British Isles It receives nearly 3,000 patients every year, and, apart from ordinary out-patient work of a gynaecological order, annually attends some 2,000 women *at their own homes* during their confinement It possesses residential quarters for students, and, taken as a whole, offers exceptional opportunities for study both to ordinary students and to medical graduates of any nationality

BELFAST

THE Medical School is part of the Faculty of Medicine of Queen's University, Belfast, and provides a complete medical curriculum for all purposes The laboratories in connexion with the departments of biology, chemistry, physiology, pathology, anatomy, physics, and materia medica are all excellent, and there is a Students' Union which gives students the advantages of dining rooms, reading rooms, a library, and various recreation rooms Women are eligible as students Clinical instruction is given at the Royal Victoria Hospital, which was rebuilt a few years ago and has 300 beds, and the Mater Infirmorum Hospital, which has 150 beds Other hospitals open to the students of the university are the Maternity Hospital, the Ulster Hospital for Women and Children, the Hospital for Sick Children, the Ophthalmic Hospital, the Benn Ulster Eye, Ear and Throat Hospital, the Union Infirmary and Fever Hospital, the Fever Hospital, Purdysburn, the District Lunatic Asylum, the Samaritan Hospital, Forster Green Hospital for Diseases of the Chest, and the Belfast Hospital for Skin Diseases

Scholarships—(1) Twelve, of the value of £40 each, are assigned as Entrance Scholarships in the Faculties of Arts, Science and Medicine, tenable for one year, (2) sixteen Professional Scholarships, value from £15 to £40 each, (3) one Hutchinson Stewart Scholarship, £12, in mental diseases, (4) one Mackay Wilson Travelling Scholarship, £100, awarded triennially, (5) Isabella Tod Memorial Scholarship tenable for three years, awarded triennially to a woman student, (6) Magrath Clinical Scholarship, awarded annually, value about £112, (7) two Musgrave Studentships of £200 in Physiology and Pathology, (8) numerous sessional prizes There is also a post-graduate research fund, open to all graduates of not more than three years standing Gold medals are awarded at the M D examination

Fees—The cost of the curriculum intended for students proceeding to the degrees of the Queen's University of Belfast is approximately £150 This includes examination fees and a perpetual ticket for attendance at the Royal Victoria Hospital or the Mater Infirmorum Hospital and fees for the special hospitals If course for the Conjoint Board costs about the same amount

The Regulations of the Medical Faculty, containing full information, can be obtained on application to the Secretary, Queen's University, Belfast, price 4d

UNIVERSITY COLLEGE, CORK

THIS institution, formerly known as Queen's College, Cork, is one of the constituent colleges of the National University. It holds examinations for all the faculties of that university, in addition to continuing the work which it has hitherto performed—namely, that of providing education adapted to the needs of medical students at all stages of their career. Its first aim is to fit students for the degrees of the new university, but students proceeding for the examinations of the Conjoint Board of England, Scotland, or Ireland, the Society of Apothecaries of London, or the Apothecaries' Hall of Ireland, or London University, can arrange the courses of lectures which they attend, and the order in which they attend them, to meet the requirements of those bodies. Certificates of attendance at the college courses are also accepted by the University of Cambridge. Clinical instruction is given at the North and South Infirmaries (each 100 beds) and at the Cork Union Hospital (1,200 beds). Students can also attend the Mercy Hospital (60 beds), the County and City of Cork Lying-in Hospital, the Maternity, the Hospital for Diseases of Women and Children, the Fever Hospital, the Ophthalmic and Aural Hospital, and the Eglinton Lunatic Asylum. The session extends from October to June.

There is a Dental School in which the degree of Bachelor of Dental Surgery of the National University of Ireland can be obtained. There is a large well equipped dental hospital in connexion with the school.

Scholarships.—Over £1,000 is available annually for scholarships in the College. Particulars as to each of them can be obtained on application to the Registrar.

Fees.—The fees for the lectures and hospital attendances required by the National University of Ireland course including examination fees come to about £150.

Further information can be found in the college regulations or obtained on application to the Registrar.

UNIVERSITY COLLEGE, GALWAY

THIS institution is one of the constituent colleges of the National University of Ireland, and includes Faculties of Art, Science, Law, Celtic, Engineering, Commerce, and Medicine. The college buildings are well lighted and well ventilated and contain dissecting rooms, an anatomical theatre, and laboratories for the study of physiology, chemistry, physics, and other departments of medical science. For pathology and chemistry new laboratories are now provided. It has good grounds surrounding it and there are many arrangements, such as a library, a college union, and an athletic union, for the benefit of those belonging to the Medical Faculty, as well as for students in other departments of the college. The clinical teaching, which is recognized as qualifying not only for the degrees of the National University, but for those of London University and the diplomas of the various colleges in the three kingdoms, is carried on at the Central Hospital, Galway County Hospital, the Galway Fever Hospital, and the Galway Dispensaries. The Galway Central and County Hospitals are general hospitals, and at the other two hospitals and at the dispensaries students have ample opportunities of studying zymotic and chronic diseases. The Central Hospital has a special ward for diseases of children. Each year the governing body offers about £1,500, and the County Councils of Connaught offer about £3,500, in scholarships. These scholarships are tenable in any faculty. Additional information regarding these scholarships can be obtained on application to the Registrar, and to the Secretaries of the Connaught County Councils.

CLINICAL HOSPITALS IN ENGLAND

MANY hospitals in Great Britain and Ireland, though not connected with any medical school, open their doors either to those who have yet to be qualified, to those who are doing post-graduation work, or to both. The facilities they offer for gaining practical clinical experience are very great, and should not be overlooked. Their honorary staffs commonly make a point of giving such instruction as opportunity offers, and at those situated in the larger towns there are often appointments as clinical assistants to be obtained. In addition, they all have to offer, at shorter or longer intervals, appointments for resident medical officers, house-physicians, and house-surgeons. These are usually paid offices, which may be held for periods varying from six months to a year. Some of those situated in the great medical centres in the provinces, and in Scotland and Ireland, have already been mentioned in speaking of the medical schools in those localities, but it should be added that there are many other provincial hospitals where admirable work is done, and at which much valuable experience can be gained by both senior and junior students, and by those already qualified. Cases in point are the Royal Infirmary, Bradford, the Royal Sussex County Hospital, Brighton, the Royal United Hospital, Bath, the Kent and Canterbury Hospital, the Derbyshire Royal Infirmary, the Royal Albert Hospital and Eye Infirmary, Devonport, the Royal Devon and Exeter Hospital, the West of England Eye Infirmary, Exeter, the Gloucestershire Royal Infirmary and Eye Institution, the Royal Infirmary, Leicester, the County Hospital, Lincoln, the General Hospital, Northampton, the Norfolk and Norwich Hospital, the General Hospital, Nottingham, the Royal Portsmouth Hospital, the Royal Berks Hospital, Reading, the Royal South Hants and Southampton Hospital, the Staffordshire General Infirmary, Stafford, the North Staffordshire Infirmary at Hartshill, the Royal Hants County Hospital, Winchester, the Wolverhampton and Staffordshire General Hospital, the County Hospital, York, and the Coventry and Warwickshire Hospital.

London Clinical Hospitals

As for the hospitals in the metropolis, so many of these take a share in the giving of clinical instruction that it is worth while to classify them.

General Hospitals.—These include the Dreadnought Hospital at Greenwich and its annexe at the Albert Dock, which form the headquarters of the London School of Clinical Medicine and the London School of Tropical Medicine with its hospital at Endsleigh Gardens; the West London Hospital and the Prince of Wales's General Hospital, Tottenham, both of these being described in the article on post-graduate work; the Royal Northern Hospital, Holloway Road, an institution containing 185 beds; and the Temperance Hospital in Hampstead Road.

Children's Hospitals.—There are at least seven of these, the leader among them being the Hospital for Sick Children, Great Ormond Street, which has 240 beds. There are also the East London Hospital for Children, Shadwell, with 124 cots; the Queen Elizabeth Hospital for Children, Bethnal Green, with 134; the Victoria Hospital for Children, Chelsea, with 104; the Belgrave Hospital for Children, which has a considerable out-patient department but in-patient accommodation for only 40 children; the Paddington Green Children's Hospital, an institution of about the same size; and the Evelina Hospital for Sick Children, Southwark, Brid Road, with 76 beds. The largest and the oldest of the hospitals for both women and children is the Royal Waterloo Hospital for Children and Women, Waterloo Road, S.E.1.

Hospitals for Women.—Queen Charlotte's Maternity Hospital, Marylebone Road, with 70 beds and a residential college for students and practitioners specializing in the teaching of midwifery; The Samaritan Hospital for Women, Marylebone Road, admits qualified practitioners as clinical assistants to both the in-patient and out-patient departments; demonstrations are given daily in both departments; the fees—payable in advance—being £3 3s. for three months; full particulars may be obtained from the secretary. In addition may be mentioned the Hospital for Women, Soho Square, whose teaching is confined to post-graduates in limited numbers; the Chelsea Hospital for Women, Arthur Street, Chelsea; and the Elizabeth Garrett Anderson Hospital for Women, in Euston Road, the latter being in the nature of a general hospital so far as concerns the classes of case treated.

Eye Hospitals.—The largest of these is the Royal London Ophthalmic Hospital (Moorfields), City Road. At this hospital there are complete courses of instruction are given during the year—October to February, and March to July—comprising the following subjects: anatomy, physiology and optics; ophthalmic medicine and surgery—(1) external disease, (2) motor anomalies and squint, (3) ophthalmoscopic conditions (weekly classes), (4) pathology; practical refraction classes; methods of examination (practical); operative surgery; practical pathology; practical bacteriology; x-ray and radiotherapy; clinical lectures; discussion classes. A fee of 24 guineas entitles the holder to one full five months course (with the exception of practical pathology and practical bacteriology together with a permanent ticket for the practice of the hospital. Fee for the practice of the hospital (permanent) £5 5s.; for three or six months £3 3s.; for two months £2 2s.; for one month £1 1s. Gentlemen are eligible under certain conditions for the posts of chief clinical assistant, clinical assistant, and junior assistant. Clinical work takes place every morning at 9 o'clock and operations at 10. An additional special course in the preliminary subjects (namely, anatomy, physiology, and optics) for the D.O.M.S. and other examinations in ophthalmology will be held immediately preceding the date of the examination. There are

for this course will be 12 guineas, or £5 5s for any subject separately Further particulars may be obtained from the Dean of the Medical School Other eye hospitals are the Royal Westminster Ophthalmic Hospital near Charing Cross, the Royal Eye Hospital, Southwark, and the Central London Ophthalmic Hospital, Judd Street, W C 1, each with about 40 beds

Fever Hospitals—The Metropolitan Asylums Board has under its control a good many institutions in and around London for the treatment of the more serious zymotic disorders, it makes special arrangements for the instruction of students in this subject, and grants certificates at the end of the courses Detailed information should be sought from the Clerk to the Board, Victoria Embankment, E C 4

Chest Hospitals—The largest of these is the Brompton Hospital for Consumption, which has 333 beds and a large sanatorium at Frimley with 150 beds There is also the City of London Hospital for Diseases of the Chest, Victoria Park, with 175 beds, and the Royal Hospital for Diseases of the Chest, City Road, now amalgamated with the Royal Northern Hospital, Holloway Road

Nose, Throat, and Ear Hospitals—The institutions which confine their work to disorders of the throat, nose, and ear all make special arrangements for the benefit of senior and post graduate students They are the Metropolitan Ear, Nose, and Throat Hospital, Fitzroy Square, the Royal Ear Hospital Dean Street the Central London Throat, Nose, and Ear Hospital, Gray's Inn Road, and the Hospital for Diseases of the Throat, Golden Square—the last, which possesses 75 beds, being the largest of the four institutions

Miscellaneous Special Hospitals—Among these are the Bethlem Royal Hospital, St George's Fields, S E 1, which confines its work to the treatment of mental diseases, and includes a department for nervous and early mental disorders, St Peter's Hospital for Stone and Urinary Diseases, Henrietta Street, Covent Garden, St Mark's Hospital, City Road, which devotes itself to the treatment of diseases of the rectum, including cancer and fistula, the National Hospital for Diseases of the Heart in Westmoreland Street, W 1, St John's Hospital for Diseases of the Skin, in Leicester Square, the Hospital for Diseases of the Skin Stamford Street, Blackfriars, and the National Hospital for the Paralysed and Epileptic, Queen Square, W C 1, an institution possessing 200 beds and a world-wide reputation

Detailed information as to the teaching arrangements of all these institutions may be obtained on application to their secretaries

WOMEN IN MEDICINE

THE regulations of the General Medical Council and of the various universities and colleges set out in previous sections apply to women as to men

Examinations

Women are admitted to all the medical examinations of the following qualifying bodies the Royal College of Physicians, London, the Royal College of Surgeons of England, the Society of Apothecaries of London, the Conjoint Boards in Scotland and in Ireland, and all the Universities of Great Britain and Ireland

Medical Education

The London (Royal Free Hospital) School of Medicine for Women, which is one of the constituent schools of the Medical Faculty of the University of London, is the sole school for medical education which admits women only All the resident appointments at the Royal Free Hospital, of which there are nineteen yearly, are held by women Arrangements are made for students of the School to obtain clinical instruction at the Hospital for Sick Children, Great Ormond Street, the National Hospital for Nervous Diseases, the Royal London Ophthalmic Hospital (Moorfields), the Elizabeth Garrett Anderson Hospital, the South London Hospital for Women, and the Cancer Hospital Further particulars with regard to the London School of Medicine for Women will be found on page 423

Women are also admitted to the following men's schools in London University College Hospital (a limited number only), King's College Hospital, Charing Cross Hospital, the Westminster Hospital, and St Mary's Hospital Further particulars about these schools will be found in the article on London Medical Schools at page 418 et seq The medical schools of Birmingham, Bristol, Cardiff, Leeds, Liverpool, Manchester, Newcastle, and Sheffield admit women In Scotland, the medical schools of Aberdeen, St Andrews, Edinburgh, and Glasgow admit women, although they do not in every case accord them equal facilities with men The Irish Universities and Colleges are open to women

Openings for Medical Women

The London School of Medicine for Women celebrates its jubilee in October of this year During the fifty years of its existence over 1,000 women have graduated from this school At the present time most of them are engaged in active medical work During the war the number of fresh students increased very considerably, and this has resulted in keen competition for appointments in recent years During the last six months of 1923 sixty graduates of the School obtained appointments.

The Public Health Service, and especially its department of Maternity and Child Welfare, provides openings for women, but in this connexion heed should be paid to the notes of caution sounded in the paragraphs printed below. In addition nearly all the voluntary welfare centres in the country are officered by medical women The rapid growth in recent years of Maternity and Child Welfare Centres has given women, to whom such work is peculiarly suited, an opportunity of participating in this important branch of preventive medicine Under the Board of Education there are appointments for women as medical advisers and school medical inspectors The London County Council has medical women as lecturers and examiners on the care of children, home nursing, health, and first aid Many of the venereal disease clinics have at least one medical woman on the staff A certain number of appointments as tuberculosis officer are held by women An increasing number of women are engaged in private practice in England

Appointments are held by women as residents in general hospitals, hospitals for women and children, sanatoriums, infirmaries, fever hospitals, and asylums

Particulars of the Colonial appointments which may be held by women in British West Africa and the Malay States can be obtained from the Medical Branch of the Colonial Office In India, both in private practice and in the various mission services, there is a large field, especially in obstetrics and gynaecology Information regarding the women's medical service for India may be obtained from the Honorary Secretary, United Kingdom Branch of the Countess of Dufferin's Fund, c/o General J B Smith, India Office, Whitehall, S W 1

Equal Pay for Equal Work

The British Medical Association was the first of all professional organizations to lay down the principle that no distinction should be made on the ground of sex as regards the emoluments to women members of the profession Attempts are continually being made by public authorities to obtain the services of women doctors at lower salaries than those paid to men, and the Association looks to all medical women to help it in resisting such attacks upon the solidarity of the profession In its constant efforts to maintain this principle the Association works in close co-operation with the Medical Women's Federation (9, Clifford Street, New Bond Street, W) In defence of the principle the British Medical Association has at various times fought—usually with success—Government departments and local authorities of all kinds Where the authorities concerned have declined to recognize the justice of the claim that equal pay should be given for equal work the machinery, local and central, of the Association has been put into operation, and as a result the authority has generally seen fit to drop the proposed distinction between men and women practitioners or given up the attempt to fill the post It is hardly necessary to add that the British Medical Association can only be successful in carrying out this policy if it receives the loyal support of all medical women

Public Health Work

In regard to the openings for women in the various branches of the Public Health Service, briefly mentioned above, it may be well to draw attention to an editorial article which appeared in the February issue of *Public Health*, the journal of the Society of Medical Officers of Health, and to an article on public health work as a career by Dr Winnifred M Gray, published in the Medical Women's Federation *News-Letter* for July, 1924

The article in *Public Health* is a warning, couched in very plain terms, addressed to young women and their parents. We quote the last three paragraphs:

During the past two or three years we have received with increasing frequency numbers of letters from qualified medical women. All these letters show clear signs of disillusion following on the enthusiasm originally inspired by the brightly coloured pictures painted by the well-meaning enthusiasts whose ob-ject is to keep up to a maximum the number of women entrants into the medical schools. Many of the writers state plainly that they find it impossible to make a living in general practice, while others declare that the continual grind and petty annoyances of practice are unendurable for women and that they are on the verge of a breakdown in health.

All these writers who are in practice make a pathetic appeal for advice and help with regard to obtaining a public health appointment. It should be clearly understood however that public health represents an extremely limited field for women, and even among those who have obtained such appointments there is great discontent and disappointment. The majority of women who hold public health appointments have far less leisure, shorter holidays and more annoyances and worries than the average woman teacher who has in many instances only a slightly lower salary.

Attracted by the bright prospects held out to them there are large numbers of women every year entering the already overcrowded profession of medicine, and all parents and guardians who are considering possible careers for girls should be warned that there are at the present time many qualified women in actual poverty, and that the number of these is likely to be considerably increased in the near future.

Dr. Winnifred Gray's opinions are much more cautiously expressed. While agreeing that there are a considerable number of openings in all branches of the Public Health Service, she declares that the greatest mistake a recently qualified person can make is to go straight into a full-time public health appointment such as that of school medical inspection or maternity and child welfare work. She then discusses the qualifications and experience required for public health work, the opportunities and openings, and the remuneration which this work offers. The openings in public health work, she says, are many, but the outlets are few:

Medical practitioners are led to accept these posts and are attracted to them in the hope that they may lead to an appointment as a chief medical officer of health, but few ever reach that position even among men medical officers, although these posts are the stepping-stones to the higher offices. The opportunities for good individual research work vary. The work is there crying to be done, but one is often hampered as far as elementary school inspection is concerned by regulations as regards the number of children to be examined per day, bad or unsuitable accommodation, etc.

Dr. Gray then suggests certain questions which might well be investigated by women practitioners engaged in this branch of work, to show that there is a wide field practically unexplored and ample opportunity for observing the beginnings of disease. She continues:

The opportunities for good work are there, but that does not mean that there are many chances of promotion in the Public Health Service. There are very few senior posts, and the waiting list is long, so the prospects of promotion, especially for women, are not good, and in the evening clerical work or venereal diseases clinic work is often heavy.

Discussing remuneration, Dr. Gray points out that while the number of posts as assistant medical officers to local or educational authorities has increased greatly, the majority of these posts carry a salary of £600 per annum for full time work, with no prospects of increase; that with some authorities there is no superannuation scheme, and that there is no regular system of promotion:

Owing to the great increase during the past ten years or so in the number of women medical students there is keen competition for posts, and some women may feel disheartened and be glad to accept even the smaller paid posts. Rather than accept a post with poor prospects, poor (initial and final) salary, and machine-like ineffectual work, it is far better in every respect to go further afield and gain good general experience, and then come back and take up general practice. There would then be some interest in the work.

After insisting that it is the duty of all women who qualify to support the principle of equal pay for equal work at suitable scale standard, Dr. Gray sums up her conclusions as follows:

1. Nobody should take up Public Health work without good qualification and post-graduate experience, as in most cases it is a useful diagnostic occupation.

2. The £600 minimum salary for Public Health work will in many instances be a maximum, and due consideration should be given to the various pros and cons of personal settling in such work. Preventive medicine is a good field, but one should not enter it with one's eyes shut. I may therefore appear critical, but I am merely trying to show that it may often be difficult to alter one's course, and it is therefore best to be forearmed.

3. General practice will for some time afford better chances of advancement for women than Public Health.

4. Experience and good work are valuable in India, China, etc., and would relieve the unemployment among medical women in this country, and at the same time offer a true service to the women in these parts.

DEGREES FOR PRACTITIONERS

At one time it was almost the universal custom for medical students educated in London and aiming at general practice not to seek a university degree, and as that custom still prevails to a considerable extent a large proportion of medical men in England possess diplomas or licences to practise but not degrees in medicine. This is a fact which they sometimes find reason to regret, and to such practitioners the following paragraphs may be of interest. It should be noted however that the M.D. Brux. diploma, if obtained subsequently to June, 1926, is not registrable, and that the University of Brussels no longer holds special examinations for foreign medical practitioners.

University of London

Registered medical practitioners who have passed the First Examination for medical degrees and the Second Examination for medical degrees, Part I, may proceed to the Second Examination for medical degrees, Part II, and M.B., B.S. Examinations without observing the intervals prescribed by the regulations on producing certificates that they have gone through the required course of study at a school of the university, subject to the proviso that no degree of the university can in any circumstances be granted by examination to anyone in less than three years after passing the Matriculation Examination or after admission by the university or the candidate's right to exemption therefrom.

Persons over the age of 25 years who have *not entered* for the ordinary Matriculation Examination of the University but *hold certain definite professional* qualifications may be admitted to a special Matriculation Examination in four subjects, of which mathematics or logic must be *one*. This Professional Matriculation Examination is open to ministers of religion, barristers and solicitors, medical practitioners, registered teachers, also to engineers, architects, surveyors, pharmacists, accountants, auditors and associates of the Institute of Bankers, holding recognized qualifications conferred after examination. Information should be sought from the Registrar, The University of London, South Kensington, S.W.7.

University of Durham

The degree of M.D. is granted by the University of Durham to registered practitioners of not less than fifteen years' standing, who have been qualified and in practice for that period, upon the following conditions without residence. The candidate must be 40 years of age, and must produce a certificate of moral character from three registered medical practitioners. Should he not have passed an examination in Arts previously to the professional examination in virtue of which his name was placed on the *Register*, he is examined in classics and mathematics, if otherwise he is required to translate into English passages from any one of the following Latin authors: Cæsar, *De Bello Gallico* (first three books); Virgil, *Æneid* (first three books), or Celsus (first three books). Natives of India or the British colonies are placed on the same footing as natives of Great Britain. Natives of India must produce evidence from an Indian university that they have passed within one year an examination in Latin.

Professional Examination.—The candidate must pass an examination in the following subjects: (i) Principles and practice of medicine, including psychological medicine, hygiene and therapeutics, (ii) principles and practice of surgery, (iii) midwifery and diseases of women and children, (iv) pathology, medical and surgical, (v) anatomy,

medical and surgical, (vi) medical jurisprudence and toxicology. The examination is conducted by means of printed papers, clinically, and viva voce, at the College of Medicine, Northumberland Road, Newcastle, and in the Royal Victoria Infirmary. The classical part of the examination may be taken separately from the professional on payment of a portion (£10 10s.) of the full fee.

The examinations are held twice a year, towards the end of June and of December. Notice, accompanied by the fee and certificates, must be sent to Professor Howden, Registrar of the University of Durham College of Medicine, Newcastle-upon-Tyne, at least twenty-eight days before the commencement of the examination.

Fees.—The inclusive fee is 50 guineas, if a candidate fail to pass, 20 guineas are retained, but if he present himself again, 40 guineas only are required.

UNIVERSITY OF BRUSSELS

Until recently this university granted its M.D. to such foreign candidates as were already duly qualified in medicine and surgery in their own countries, provided they passed the three special examinations imposed. The examinations were conducted viva voce. The University of Brussels, however, announced three years ago that these special examinations would no longer be held, nor would the M.D. Brux. diploma be granted by the university to foreign medical practitioners as formerly. Nevertheless, we have been informed by the Secretary of the University, Dr. Jean Willems, that it is still possible for a foreigner to obtain in Brussels a diploma of "Docteur en medecine, chirurgie et accouchements," which, although it does not entitle to practise in Belgium, has exactly the same value as the Belgian legal diploma.

For Belgians (Dr. Willems writes) the usual length of studies is seven years: two years of candidature in sciences, two years of candidature of medicine, and three years of doctorate of medicine. But it rests with the Faculty concerned to decide on questions of equivalence of foreign academic records with the ordinary Belgian qualifications for admission to university courses, so that a student who has several years of university training in Great Britain may, on presentation of his certificates or diplomas, be admitted to follow the courses of the first, second, or even the third doctorate. I beg to insist on one point which, if properly understood, may spare your citizens much useless trouble. It happens that English practitioners, already bearers of an M.D. diploma, ask from the Faculty that our degree of doctor be conferred on them *ad eundem on payment of necessary fees*. The regulations of our University absolutely forbid that a diploma be granted to anybody, without at least one year's attendance on the courses.

POST-GRADUATION STUDY

THE POSITION IN LONDON

It is unfortunate that so far very little success has attended efforts made to establish in London a great centre of post-graduate education. There is no lack of material for post-graduation study, and teachers are plentiful. But of real organization capable of affording facilities such as exist even in post-war Vienna there is very little evidence. In any such organization two objects must be held in view: first, provision for study which will attract men of capacity from the Dominions, America, and foreign countries; secondly, courses which will benefit practitioners in this country whether they intend to perfect themselves in special forms of treatment or to bring up to date their knowledge of general subjects in medicine and surgery.

A committee under the chairmanship of the Earl of Athlone, appointed by Dr. Christopher Addison when Minister of Health, did something to crystallize ideas on the subject of post-graduate education. This committee recommended that a school attached to a hospital centrally situated in London should be devoted solely to post-graduate medical education, that it should be a school of the University of London, and that it should receive financial assistance from Parliament. These recommendations have not been carried out.

Many have held that a hospital entirely devoted to post-graduate students need not for the moment be regarded as essential to a *post-graduate* scheme for London, but that a central co-ordinating body for post-graduate students might, with the material already available, lay the foundation of a scheme of which a post-graduate hospital might ultimately come to be the centre.

The Fellowship of Medicine was established in London in 1918 for the purpose of drawing together the members of all the inter-allied countries for the exchange of medical knowledge and the advancement of medical science. In May, 1919, a Post-Graduate Medical Association was founded. It owed its existence largely to the efforts of Dr. A. F. Hurst, physician to Guy's Hospital, and the majority of the London undergraduate medical schools promised their co-operation. Its president was the late Sir William Osler, who, at the inaugural meeting, said that the important thing was to pool interests and get the teachers everywhere to realize the importance of post-graduate instruction, energy, patience, and organization would do the rest. The two bodies were amalgamated in October, 1919. The combined body, which has been generously provided with an office by the Royal Society of Medicine (1, Wimpole Street), gives information regarding post-graduate facilities and organized courses of instruction at various hospitals scattered throughout London. After a time, however, the undergraduate hospitals withdrew from the organization, and the combined Fellowship of Medicine and Post-Graduate Medical Association has been reconstituted as representative of a number of hospitals not engaged in undergraduate teaching. A monthly *Bulletin* is issued containing a list of those hospitals which welcome the attendance of graduates. The facilities afforded are undoubtedly of great value in meeting the needs of visitors to London, whether from England, the Dominions and Colonies, or from foreign countries, but many consider that London is not yet in a position to take its proper place as a leading centre of post-graduate education.

For those who desire to revise or increase such medical knowledge as is useful in their professional work, the West London Post-Graduate College and the North-East London Post-Graduate College are eminently suitable. Some of the large undergraduate teaching hospitals provide short post-graduate courses, which are usually quickly filled up by old students; courses in special diseases can be obtained at a large number of special hospitals, a list of which is printed in the *Handbook for Recently Qualified Medical Practitioners*, issued by the British Medical Association.[1] Many of these hospitals are of world-wide renown, and are attended by post-graduate students from all parts of the world. Special note may perhaps be made first of the London School of Tropical Medicine, which has now been incorporated in the new London School of Hygiene and Tropical Medicine, of which Dr. Andrew Balfour has been appointed Director (see pages 395 and 437) and secondly, of the Maudsley Hospital, Denmark Hill, S.E. 5, and Bethlem Royal Hospital (p. 439), at both of which courses in psychological medicine are given preparatory to the examinations for the diplomas in that subject.

FELLOWSHIP OF MEDICINE AND POST-GRADUATE MEDICAL ASSOCIATION

The Fellowship of Medicine has arranged regular courses in general medicine and surgery, including special departments, each lasting two weeks, they are held once a month, and the fee for each course is 3 guineas (2 guineas for one week). Courses in ophthalmology, diseases of children, proctology, diseases of the heart, diseases of the nervous system, and gynæcology are given from time to time at the special hospitals in association with the Fellowship of Medicine. The monthly *Bulletin* contains a diary of the arrangements available for post-graduates in hospitals in London, and announces special courses of clinical lectures arranged for post-graduates. The programme for the immediate future includes a two weeks' course in general medicine and surgery, from September 22nd to October 4th, at the Westminster Hospital and associated special hospitals. There will also be special courses in infants' diseases at the Infants Hospital from September 15th to 27th, in ophthalmology at the Royal Westminster Ophthalmic Hospital (Charing Cross) from September 8th to 27th, and a course in psychological medicine at the Bethlem Royal Hospital from September 30th to October 25th. The offices of the Fellowship are,

[1] *Handbook for Recently Qualified Medical Practitioners.* 1923. British Medical Association, 429 Strand, W.C.2. 2s. 6d. net.

by favour of the Royal Society of Medicine, at No 1, Wimpole Street, W 1 (telephone, Mayfair 2263) The secretary is in attendance daily from 10 a m to 5 p m, excepting Saturday The annual subscription for membership of the Fellowship of Medicine and Post Graduate Medical Association has been fixed at a minimum of 10s

Provincial Universities

In the Provinces post-graduate courses have been organized in connexion with the universities at Birmingham, Bristol, Edinburgh, Manchester, and Oxford, and through the Post Graduate Medical Association at Glasgow Special courses also exist at Newcastle-upon-Tyne (University of Durham), Leeds and elsewhere Liverpool has its School of Tropical Medicine There is a course at Addenbrooke's Hospital, Cambridge, during the Long Vacation

It is a matter for satisfaction that the interest in post-graduate medical education is becoming more widespread, and in the development of this interest it is not impossible that the British Medical Association may take a part under the enlargement of the scope of its activities which its new buildings in Bloomsbury will render possible

Newcastle-upon-Tyne

For the year 1924-25 the following post-graduate courses have been arranged by the College of Medicine, Newcastle-upon-Tyne (University of Durham)

1 General courses in clinical medicine surgery and pathology at the Royal Victoria Infirmary meeting once weekly for ten weeks One course will be held from October to December and one from April to June

2 *Special courses of clinical instruction meeting once weekly* for ten weeks in the following subjects Gynaecology diseases of the eye diseases of the throat nose and ear diseases of the skin venereal diseases neurology

Special courses in midwifery will be held at the Princess Mary Maternity Hospital

3 An intensive course of fourteen days *duration* in the early part of the Summer Vacation, 1925

4 In addition to the regular post graduate courses practitioners may attend the ordinary medical and surgical practice of the Royal Victoria Infirmary *for specified periods*

Courses for Medical Graduates at Bristol

The University of Bristol provides courses of post-graduate study for practitioners Details of set courses at the Royal Infirmary and General Hospital are announced locally In addition, practitioners may become clinical assistants in medicine, surgery, or special subjects for periods of a month or more

The university also holds courses or demonstrations in outlying centres in the West of England Resident practitioners form themselves into a committee and consider *the type and extent of demonstrations required* The university furnishes the lecturers and makes all the necessary arrangements All inquiries should be addressed to the Director of Post-Graduate Studies, Pathological Department Bristol University

Daily Post-Graduate Study.—For those who are able to devote several hours each day to hospital practice the university offers special facilities for post-graduate work Qualified medical practitioners may be appointed as clinical assistants for a period of one or more months They may act as assistants, at times permit, in more than one department and in any of the hospitals during their period of study They will be entitled to the use of the clinical laboratories and medical library and have the right to attend in all departments, including operations, post-graduate and ordinary clinical demonstrations, and *post-mortem* examinations Fee, £3 3s a month

Post Graduate Clinical Work.—Demonstration courses with weekly lectures are held during May, June, and July Fee, £2 2s All inquiries and applications for admission should be addressed to the Director of Post-Graduate Studies (Clinical Section), Pathological Department, University of Bristol who can be seen on any day by appointment at the Pathological Department

Further information as to scholarships, curricula, and fees can be obtained from the Dean of the Faculty of Medicine, or the Registrar of the University, Bristol

Edinburgh Post Graduate Courses

In connexion with the University and Royal Colleges post-graduate courses are arranged every year from about the middle of July to about the middle of September, comprising (*a*) This year a Course in Obstetrics and Gynaecology was held from July 14th to August 8th (*b*) a Course on Diseases of Children from July 14th to 25th, (*c*) a General Medical Course (*d*) a General Surgical Course Courses (*c*) and (*d*) extended for four weeks from August 11th to September 6th Similar courses are held each year

The Course in Obstetrics and Gynaecology comprises instruction in Clinical Midwifery and Clinical Gynaecology, Obstetrics and Gynaecological Pathology, Child Welfare and Ante-natal Clinics, etc

The Course on Diseases of Children includes Medical and Surgical Clinics and Special Clinics on Diseases of the Skin, Venereal Diseases, Child Welfare, Mental Defect, Ear and Throat, Dental Clinics, and Ante-natal Clinics The General Medical Course includes lecture demonstration and where possible, practical instruction on Medical Anatomy, Medical Side-room Work, Examination of the Blood, X-Ray and Electrical Therapy, Morbid Anatomy, and *Post Mortems*, Clinical Instruction in Medicine, Diseases of Children, Diseases of the Skin, and Infectious Diseases, and Special Instruction in the Diseases and Methods of Examination of the Nervous, Circulatory, Respiratory, Alimentary and Renal Systems, and in Diseases of the Ductless Glands The General Surgical Course includes lecture demonstrations on Surgical Anatomy, Surgical Pathology, and Surgical X-Ray Diagnosis, Clinical Instruction in Surgery at the Royal Infirmary and Royal Hospital for Sick Children, Clinical Instruction in Venereal Diseases, Surgical Out-patients, Surgical and Gynaecological Operations and Special Instruction in Abdominal and Genito-Urinary and other branches of Surgery

A series of special lectures, open to all graduates, is delivered thrice weekly, on subjects of general medical and surgical interest, including recent advances in treatment Among the special courses also arranged are Examination of the Blood, Vaccine Therapy, Clinical Chemistry, Diseases of the Ear, Nose and Throat, and Venereal Diseases

Particulars regarding the courses, dates of commencing, fees, etc, may be had on application to the Honorary Secretary, Post-Graduate Courses in Medicine, University New Buildings, Edinburgh

Graduate Medical Teaching in Glasgow

Organized post-graduate medical teaching is available in Glasgow under the auspices of the Post-Graduate Medical Association This association is composed of practically all the teaching institutions in Glasgow and the various teachers giving post-graduate instruction, and its business is managed by a board elected periodically by them The chairman of the board is Principal Sir Donald MacAlister, Bt, and the vice-chairman Sir Hector C Cameron During the winter months special courses in various subjects are conducted, and there is a series of weekly demonstrations specially designed for local practitioners A comprehensive scheme of Clinical Courses is carried out during the summer months, from May till October, and arrangements have also been made whereby a limited number of graduates may become attached to wards or out-patient departments nominally as clinical assistants for definite periods throughout the year As such they work under the direct supervision of the physician or surgeon in charge, and carry out such detailed investigations as directed Those desiring further information should apply to Dr James Carslaw, Secretary, Post-Graduate Medical Association, 6, Woodside Crescent, Glasgow, C 3

West London Post-Graduate College

The work of this institution is carried on at the West London Hospital, the first in London to devote its clinical material solely to the instruction of qualified medical men The college started in 1895 it is provided with lecture, reading, writing, and class rooms, and accommodation of all sorts for the convenience of post-graduate students In the five years before the war the yearly entry averaged over 220 The work of the college is eminently suitable for men who wish to revive their general clinical knowledge after war work

As for ward work, the students accompany the senior staff on their visits to the wards at 2 30 p m daily, and also go round with the resident medical officers in the morning Out patient work begins at 2 p m This department is large, and affords ample facilities for post-graduates to see and examine patients There are the usual special departments Post-graduates are appointed to act as clinical assistants for three or six months, no charge being made Special practical classes are held in medicine, general practical surgery, gastro-intestinal surgery, medical and surgical diseases of children, analysis of blood and urine, cystoscopy, venereal disease, tropical diseases, retinoscopy, ophthalmic operative surgery, and, when material is available, in operative surgery The size of the classes is limited A special clinic for the treatment of venereal diseases (male and female) is held every evening (Saturdays included) at 5 30 Graduates are admitted to the work of the clinic free, and certificates of satisfactory attendance and work are given

Operations take place at 2 p m daily, the surgeons often availing themselves of the assistance of the post-graduates, and in any case making arrangements so that they can readily see what is going on The anaesthetists give instruction in the administration of anaesthetics, including spinal analgesia, on the operating days, students being allowed to administer them under supervision, while special classes are held in each session The pathological laboratory is in charge of a pathologist who attends every day

Demonstrations are ordinarily given in the morning by the assistant physicians and surgeons, and by the medical and surgical registrars

Fees—Hospital practice, including all ordinary demonstrations and lectures, £1 11s 6d for one week, £4 4s for one month, £7 7s for two months, £9 9s for three months £15 15s for six months, £23 12s 6d for one year, and £45 for a life ticket Instruction in the administration of anaesthetics is given at the rate of £3 3s a month

The certificates of the school are recognized by the Admiralty, the War Office, the Colonial Office, the India Office, and the University of London (for higher degrees) A prospectus can be obtained on application to the Dean

NORTH-EAST LONDON POST-GRADUATE COLLEGE

The headquarters of this post graduate school are situated at the Prince of Wales's General Hospital, in the midst of a densely populated North London district It contains 185 beds, and is within a few minutes' walk of South Tottenham station, on the London, Midland, and Scottish Railway, and Seven Sisters and Tottenham Hale stations, on the London and North-Eastern Railway It is readily accessible by electric tram from Finsbury Park and Hackney, and from Dalston, Edmonton, and other parts of North London

The college is recognized by the Admiralty and the India Office for the purposes of study leave, and by the University of London as a place for advanced study for the M D and M S degrees, the course of practical teaching of bacteriology is approved by the University of Cambridge for its D P H diploma, and there are ample arrangements for the convenience of men who are thus working or who, being in active practice, are desirous of getting themselves into touch with modern methods The hospital as a whole affords excellent facilities to qualified medical practitioners who wish to take part for a time in the work of an active general hospital, or to obtain special instruction in the several branches of medicine and surgery, since it is open to them to study diseases of the eye ear, throat, nose, skin, fevers, children's diseases, psychological medicine, dental surgery, radiography, the application of electricity in disease, and the administration of anaesthetics Throughout the sessions into which the year's work is divided, clinics lectures, and demonstrations are given by members of the teaching staff Operations are performed every afternoon of the week except Saturday Special intensive courses are held at intervals throughout the year, each lasting two weeks, clinical instruction being arranged for each hour of each day

Fees—Two guineas for a three months course of study in any one department which may be begun at any time A fee of 5 guineas admits to the whole practice of the hospital for a similar term (one month, 2 guineas, and one year, 10 guineas), and a perpetual ticket for the practice of the hospital may be obtained for 15 guineas

The winter session will be opened on October 21st, at 4 30 p m, with a cinematograph demonstration on the diagnosis and treatment of gonorrhoea in the male, to which members of the profession are invited

Additional information can be obtained from the Dean of the Post-Graduate College, at the hospital, or at 19a, Cavendish Square, London, W 1

AUSTRALIAN AND NEW ZEALAND MEDICAL ASSOCIATION

The Australian and New Zealand Medical Association gives information and advice to medical visitors from the Commonwealth and Dominions with regard especially to attendance at special clinics, post-graduate work, and facilities for preparing for examinations such as the M R C P, F R C S (England and Edinburgh), and the D P H, and also as to house appointments and clinical assistantships in London and the Provinces Information will also be given as to lodgings, sports, and social opportunities All medical graduates or undergraduates born in Australia or New Zealand and resident or visiting England are eligible to become members The fee is one payment of 5s Further information can be obtained from the joint honorary secretaries, Mr E T C Milligan, F R C S, and Mr Bedford Russell, F R C S, 86, Harley Street, London, W 1

TROPICAL MEDICINE

THERE are large and important schools of Tropical Medicine in London and Liverpool, and several universities and other examining bodies have instituted diplomas or degrees in the subject The Colonial Office now expects all nominees for the Colonial Medical Service to pass through one or other of the two schools mentioned before their appointments are confirmed, and commercial firms engaged in tropical enterprise commonly demand from medical applicants for employment corresponding evidence of special knowledge Information with regard to these schools and diplomas and degrees follows

DIPLOMAS AND DEGREES

LONDON UNIVERSITY—Tropical medicine is one of the six branches in which the M D degree may be obtained The regulations relating to the curriculum and examination correspond to those applying to the other branches

LONDON CONJOINT BOARD—This body grants a diploma in tropical medicine to candidates after an examination usually held in the months of April, July, and December Candidates must present evidence of having attended, subsequently to obtaining a registrable qualification in medicine, surgery, and midwifery, (1) practical instruction in pathology, protozoology, helminthology, entomology, bacteriology, and hygiene in relation to tropical medicine, in an institution recognized for this purpose, during not less than three months, (2) the clinical practice of a hospital recognized for the study of tropical diseases during not less than three months These conditions may be modified in the case of candidates who have had practical experience in tropical countries The fee for admission to the examination is £9 9s The Board also grants diplomas in psychological medicine, in ophthalmic medicine and surgery, and in laryngology and otology Candidates must hold a medical qualification registrable in the United Kingdom or be graduates in medicine of an Indian, Colonial, or foreign university Particulars and conditions of admission to these examinations, fees, etc, may be obtained from the Secretary of the Examining Board, Examination Hall, Queen Square, Bloomsbury, London, W C 1

UNIVERSITY OF LIVERPOOL — A diploma in tropical medicine is given by this university to students who have been through the courses provided by the Liverpool School of Tropical Medicine and have passed the examination held twice yearly by the university examiners The subjects of examination are (*a*) tropical pathology, parasitology, and entomology; (*b*) tropical and applied bacteriology, (*c*) tropical hygiene

and sanitation, (d) tropical medicine, including etiology, symptoms, diagnosis, and treatment of tropical diseases Further information can be obtained from the Dean of the Faculty of Medicine, University of Liverpool

UNIVERSITY OF CAMBRIDGE.—This university grants a diploma in tropical medicine and hygiene to any person whose name has been on the *Medical Register* for not less than a year provided that he passes the examination of the university in this subject Previous to admission to the examination he must produce approved evidence that he has studied pathology (including parasitology and bacteriology in relation to tropical diseases), clinical medicine, and surgery at a hospital for tropical diseases, and hygiene and methods of sanitation applicable to tropical climates Examinations are held in January and August each year and last four days The fee for the examination and diploma is 9 guineas on admission or readmission Application for further information should be made to Dr G S Graham-Smith, Pathological Laboratory, Cambridge

SCHOOLS

LONDON SCHOOL OF HYGIENE AND TROPICAL MEDICINE

The London School of Tropical Medicine, formerly under the auspices of the Seamen's Hospital Society, has, from August 1st, 1924, been incorporated by Royal Charter in the London School of Hygiene and Tropical Medicine, and the work of the School will continue as the division of Tropical Medicine and Hygiene of the new institution By the generosity of the Rockefeller Foundation a large sum has been provided for new buildings in Bloomsbury, but for the present the work of the School will be continued as heretofore in the Seamen's Hospital Society's buildings at the Hospital for Tropical Diseases, Endsleigh Gardens, N W 1, where the specially equipped laboratories, museum, library, and clinical facilities afford excellent opportunities to the student and others who may be desirous of studying diseases incidental to tropical climates before entering the services or going abroad In the wards of the Hospital for Tropical Diseases are to be found cases such as may be met with in actual practice in the tropics There are three courses in the year, lasting three months, beginning September 25th, January 9th, and April 24th approximately The course is so arranged as to equip men for the Cambridge D T M and H and the D T M and H of the Conjoint Board Tropical medicine has been admitted as a sixth alternative subject for the M D of the University of London, and the school curriculum is adapted to afford facilities for candidates desirous of taking the M D in this subject Further information may be obtained from the Secretary, London School of Hygiene and Tropical Medicine, 23, Endsleigh Gardens, London, N W 1

LIVERPOOL SCHOOL OF TROPICAL MEDICINE

This school is affiliated with the University of Liverpool and the Royal Infirmary of Liverpool Two full courses of instruction are given every year, commencing about January 6th and September 15th lasting for the term of about thirteen weeks, and followed by the examination for the diploma in tropical medicine given by the University of Liverpool Two courses in veterinary parasitology are also given, commencing about the same dates as the diploma courses In addition to the full courses, an advanced course of practical instruction in tropical pathology and medical entomology lasting a month is given every year in June It is of such a kind as to be very useful to medical men returning from the tropics on short leave A special course of instruction in entomology etc is also given three times a year to officers of the East and West African Colonial Services Students of the school who do not care to undertake the examination held by the university at the end of each term for the diploma in tropical medicine are given a certificate if attendance has been satisfactory

Fees.—The fee for the full course of instruction is 20 guineas with an extra charge of 1 guinea for the use of a microscope if required The fee for the Diploma Examination is 5 guineas for the advanced course 6 guineas and for the course in veterinary parasitology 15 guineas

The new laboratories of the school adjoin the university and the tropical ward of the Royal Infirmary The dimensions of the building are 162 ft in maximum length by 84 ft in width In addition to the basement, in which are accommodated the photographic department and large storage rooms, there are four floors The ground floor has (1) lecture theatre, with accommodation for about seventy students, (2) library (3) a spacious museum, with preparation room adjoining The first floor has twelve rooms, in which are housed the Departments of Tropical Medicine and Entomology The second floor has the main class laboratory, 69 ft by 58 ft, excellently lighted and three other rooms, devoted to the Department of Parasitology The third floor has a large research laboratory and two research rooms On the roof is an insectarium, a mosquito-proof house, and other accommodation

Since it was instituted the school has dispatched to the tropics thirty-two scientific expeditions many of the workers having been taken from among its students The work done by them has been published in twenty-one special memoirs, besides textbooks and numerous articles in the scientific press also in the *Annal of Tropical Medicine and Parasitology* of the school In connexion with the school are (1) the Manaos Research Laboratory in Brazil, and (2) the Sir Alfred Lewis Jones Tropical Laboratory, Sierra Leone, which was opened on January 10th, 1922 Further information may be obtained from the Honorary Dean, School of Tropical Medicine, Pembroke Place, Liverpool

PSYCHOLOGICAL MEDICINE

IT cannot be impressed too strongly upon the medical student that a knowledge of mental disorder is just as essential as a knowledge of the other forms of disease which he will be called upon to treat in the routine of general practice *It must be understood* that by the term mental disorder is not only meant those severe forms which are to be found in asylums, but the term also includes mental defectives of all grades, nervous, difficult, and backward children, the mild and often unrecognized psychoses, and also the various types of psychoneurosis Such disorders provide the general practitioner with a large proportion of his most difficult cases, and he will find a good knowledge of mental disorder invaluable in his work Apart from general practice, the student who proposes to take up a career in the prison service or, still more importantly the school medical service, will find a knowledge of psychological medicine an almost essential part of his equipment

Instruction

At the present time the instruction given to the student is far from adequate to supply the knowledge of mental disorder requisite for the needs of the general practitioner The facilities for the study of psychological medicine in the general hospitals are now much greater than in former years Thus many of the teaching hospitals have out-patient departments for the treatment of mental cases, and in some of these hospitals special lectures are given on psychopathology These facilities need not be utilized by the student, however and the compulsory part of the curriculum is confined to formal lectures and a few attendances at some mental hospital Here the student is apt to see mainly the terminal states of mental disease, and he is also apt to gain the impression that mental disorder is necessarily related to segregation and custody We would therefore impress upon him the importance of attending the out-patient department for mental disorders where he will be able to observe the mild and early cases such as he will hereafter meet with in general practice

The Ministry of Health issued last year a memorandum by Sir George Newman on *Recent Advances in Medical Education in England*[1] The inadequacy of the facilities for the teaching of psychopathology is here commented upon, and it is pointed out that the general practitioner must be competent to diagnose all the chief forms of mental disease and defect (Lunacy Act, 1890, Mental Deficiency Act, 1913 Elementary Education (Defective and Epileptic Children) Acts, 1899 and 1914) The certificates under these Acts are shown to necessitate a diagnosis, a record of the clinical grounds for it, and in some cases the medical

[1] H M Stationery Office, 1923 To be purchased through any bookseller 1s. 3d. net

reasons for detention or custodial care. It is evident, as Sir George Newman points out, that these requirements are sufficiently exacting to render necessary the proper education in this subject of every medical student, and it should be practical and the subject of examination. The curriculum in mental diseases suggested is as follows:

"(i) A short course of lectures in normal psychology, preferably as part of the course in physiology (reflexes, habit, instinct, emotion, intelligence, the conscious and the unconscious mind, Binet tests, investigational methods, etc.)

"(ii) Half a dozen explanatory discourses in abnormal psychology, to be taken concurrently with clinical work in mental disease.

"(iii) Ten or twelve systematic lectures on mental disease, concurrently with clinical work, and clinical demonstration, at a mental hospital, of in-patients, pronounced cases (recent or chronic), and the usual types of insanity.

"(iv) A series of demonstrations in the out-patient clinic for nervous and mental disorders at the general hospital.

"What the student needs is instruction in the etiology, symptoms, diagnosis, treatment, and prognosis of the morbid mental states most commonly [illegible]. The student must also be trained in [illegible] of patients, dealing with relatives of [illegible] ions, etc."

A scheme is now in actual operation at the Middlesex Hospital in which a small number of mental cases are treated in the hospital as in-patients. This is an important move from the teaching point of view, because the student will gain true insight into the relation between mental disorder and medicine as a whole, and he will realize that it is a form of illness to be studied with other diseases and to be treated along similar lines.

In London post-graduate courses of instruction of a comprehensive kind are given at the Maudsley Hospital and at Bethlem Hospital, and at the National Hospital for the Paralysed and Epileptic, Queen Square, courses are arranged to meet the requirements for the diploma in psychological medicine in regard to nervous diseases. Courses in mental deficiency are arranged by the University of London. There are also post-graduate courses at the Universities of Edinburgh, Glasgow, Cambridge, Birmingham, Leeds, Manchester, Durham, and elsewhere.

Diplomas

Those who are taking up psychiatry as a career will find it desirable to obtain a diploma in psychological medicine. Such a diploma is not at present compulsory for a permanent position on the staff of all mental hospitals, but it will probably become so in course of time, just as it is now essential to obtain the D.P.H., if a career in public health is contemplated. Psychiatry is one of the branches of medicine which candidates for the M.D. degree of the Universities of London and Edinburgh can take up, and, in addition, diplomas in psychological medicine, to which reference has been made, can be obtained from the Universities of Cambridge, London, Edinburgh, Durham, Leeds, Manchester, and the National University of Ireland, and from the Conjoint Board in England. The Medico-Psychological Association of Great Britain and Ireland also grants certificates of proficiency after examination, and encourages the study of psychiatry by the offer of prizes for original and research work.

The requirements for a diploma differ to some extent in the various universities and colleges, but the following model scheme suggested by the Medico-Psychological Association, and already adopted by the Royal College of Physicians of Ireland, will give an indication of the scope of the examination for a diploma.

Model Scheme for a Diploma in Psychological Medicine

1. The candidate must be already a registered medical practitioner.

2. The candidate may present himself for examination on the subjects detailed under Part I of the curriculum (see para. 4) immediately he has concluded the prescribed courses of instruction, or can produce such other evidence of diligent study of the subjects to be examined upon as may be demanded. Part I must be passed save by special permission at least three months prior to entering for examination on Part II of the curriculum.

3. The candidate may not present himself for examination on the subjects detailed under Part II of the curriculum (see 4) until he has been a registered medical practitioner for not less than two years. He must subsequently to qualification, have been in the practice of an approved mental hospital for not less than two years or have attended for six months at a hospital, mental or general, for clinical instruction in psychological medicine and subsequently held a resident appointment at an approved mental institution or mental wards of a general hospital for not less than six months. In both cases he must produce a certificate from a recognized source that he can apply his theoretical knowledge, and has practical acquaintance with and is well and adequately versed in, the current clinical methods of examination and treatment of nervous and mental disorders. In the case of mental deficiency the certificate should include a practical knowledge of the various intelligence tests and other methods of ascertaining the degree of mental defect. He must also produce evidence of having attended, subsequently to qualification, courses of lectures, demonstrations, or other evidence of diligent study of the subjects upon which he presents himself for Part II of the examination, as may be demanded.

4. Curriculum. Part I.—(*a*) Anatomy, histology and physiology of the nervous system, including the autonomic system, anatomy and physiology of the endocrine glands, chemistry and cytology of the cerebro-spinal fluid. (*b*) Psychology, systematic and experimental. Part II.—(*a*) Morbid anatomy, histology and pathology of the systems mentioned under Part I, (*a*) post mortem and laboratory technique, (*b*) neurology and clinical neurology, (*c*) psychiatry (including the psycho-neuroses), clinical psychiatry and the medico-legal relationships of mental disorders and mental deficiency. In addition the candidate for Part II will need to show special knowledge of any one subject, to be selected by him from the subjects comprising Part I or Part II, or may choose to be examined in any one of the following subjects. (*d*) Mental deficiency and the mental disorders of childhood and adolescence, and the duties of school medical officers in relation thereto. (*e*) Bacteriology as applied to mental and nervous disease. (*f*) Psycho-pathology and psycho-therapy. (*g*) The principles of diet, vitamins, and basal metabolism, and their application. (*h*) Eugenics and vital statistics. (*i*) Criminology and the jurisprudence of criminal responsibility.

5. The diploma, by request, may be endorsed that special knowledge has been shown in the subject selected.

6. It is suggested that any compulsory attendance at lectures or demonstrations and clinical courses should be limited to the subjects detailed for Part II and that the course for Part I or Part II should not exceed eight weeks.

Mental Hospital Appointments

Those who take up psychiatry as a career work as medical officers of public or private mental hospitals or similar institutions. Except in the larger institutions, such as those under the control of the London County Council, where a number of the medical officers are allowed to live out if married, the medical staff are resident officers, having board, lodging, etc., either in the hospital itself or a residence in the grounds. Junior assistant medical officers receive about £300 to £400 per annum, and senior assistant medical officers about £500 to £700, in both cases with board, lodging, laundry, etc., in addition, if married, the board, etc., is commuted for cash. As the mental hospitals are under local control the salaries vary much in different asylums. Medical superintendents, whose pay commonly ranges between £800 and £1,500 per annum, are provided with a house in the grounds of the hospital and draw various allowances.

Since the passing of the Asylum Officers' Superannuation Act of 1909, all officers and others of the established staff of a public (county or borough asylum) mental hospital may retire at the age of 55 on a pension varying from one-half to two-thirds of the value of their pay and emoluments, or one-fiftieth for every year served, paying as contribution 3 per cent. of the value of their appointments annually. This very favourable prospect may not appeal to junior practitioners joining the services, but will eventually prove to be a valuable asset.

Prospects in the Public Service

Appointments to the public mental hospitals are made by the visiting committees, and in most cases only the junior posts are open to those who have not had previous experience in psychiatry. Since the public mental hospital service is a local and, except indirectly, not an imperial one, the promotion tends to be slow and uncertain, and the higher positions are not always advertised and thus thrown open to competition. For this and other reasons mental hospital work has undoubtedly not been in favour with newly qualified men in years past, but the general conditions of service have tended to show a progressive improvement and will in all probability continue to do so in the future.

In March, 1920, the Board of Control did useful service by issuing to visiting committees of asylums a circular upon the three following matters: (*a*) the dearth of suitable applicants when vacancies occur for the post of assistant medical officer, and the probable causes thereof; (*b*) the need of provision for the more effective treatment

upon modern lines of recoverable cases of mental disorder, (c) the necessity for raising the standard as to the training of existing and future assistant medical officers in asylum practice, and of affording facilities for such training.

Under (a) the Board of Control, after pointing out some of the disadvantages of the present state of affairs, made the following suggestions:

(i) That an improvement be made in the salaries of the assistant medical officers at least to such an extent that in the cases of all those who have been in the service above a certain number of years and are regarded as permanent officials the salary should be reasonably sufficient for a married medical man, and that in the case of the deputy superintendent it should more closely approximate than at present to that of the superintendent.

(ii) That in the case of a permanent official, application for permission to marry be not required that according to circumstances proper accommodation for a married man be provided and that subject to rules approved by the Secretary of State for the protection of the patients and with due regard to the proper administration of the institution permission to live out may be granted.

(iii) That to the title of assistant medical officer the words and deputy superintendent should be added to that of the one elected to be in charge during the absence of the medical superintendent.

(iv) That the use of the title senior assistant medical officer should not be restricted as at present to the post of first assistant but should be extended and be indicative of a certain standing and expert knowledge. By the adoption of this suggestion there would in many asylums be two senior assistant medical officers and perhaps even three or four in the larger asylums.

(v) That except where there has been previous asylum experience appointments to posts of assistant medical officers should in the first instance be temporary in character.

Under (b) the Board suggested that the treatment of recent recoverable cases should be carried out by members of the medical staff conversant with modern methods, and that the number of the medical staff should be sufficient to ensure that none of them is required to undertake the treatment of more than fifty recent cases at any one time. Under (c) suggestions were made with a view to encouraging assistant medical officers to obtain a diploma or degree in mental diseases, including provision for study leave on full salary. The attitude of the Board of Control is clearly shown in the following sentence:

> If the welfare, treatment and recovery of patients is not to be jeopardized and the study of mental diseases is not to lag behind the study of other branches of medicine the Board feel the necessity of initiating measures to maintain progress and to secure the best possible treatment of the patient.

Both the British Medical Association and the Medico-Psychological Association are working separately and together to improve present conditions of service and have for example already removed the "celibacy" objection to the service. The salaries have also been considerably increased, especially in the junior ranks and contrast favourably with those which were paid before the war. During the next few years considerable progress may be anticipated in the conditions under which the insane are treated. The asylums will tend to develop an atmosphere approximating more closely to that of the general hospitals. In these most desirable changes are brought about, the mental hospital service will become more attractive, and will afford greater opportunities for the medical graduate who proposes to specialize in psychiatry.

It may be said that while routine, administrative and clerical work bulk largely in mental hospital duties as they do in other public medical services, there is ample material, time, and scope for purely medical work and research—difficult as the subject may be—in psychiatry as one of the branches of medicine open to young graduates. A change in the Lunacy Law, in which power was given to local authorities to make provision for the treatment of early and acute cases of mental disorder without certification would do much to make psychiatric work more attractive to medical men. If this alteration in the law were made hospitals either in the precincts or the grounds of the county or borough mental hospitals or in adjacent towns would be erected in course of time or wards in general hospitals might be utilized for the same purpose. Such clinics would render appointments in mental hospitals more attractive because the work would be entirely free from the custodial aspects of mental disorder and attention could be given by the physician to purely medical problems without irksome legal restrictions.

MAUDSLEY HOSPITAL, DENMARK HILL

A number of courses of instruction for the Diploma in Psychological Medicine have been given at the Maudsley Hospital, the details of the last course being as follows. The course consisted of two parts, Part I being conducted by Sir Frederick Mott, Dr F. Golla, and Dr Henry Devine. Sir Frederick Mott gave eight lectures on the anatomy of the nervous system, followed by practical instruction and demonstrations on methods of staining nervous tissue and preparing it for microscopical examination, microscopic sections were distributed, illustrating the principal diseases of the nervous system for mounting as a permanent collection. Dr Golla gave eight lectures on the physiology of the nervous system, followed by practical instruction and demonstrations on physiological chemistry (including the chemistry of the nervous system, physico-chemical methods, blood and urine analysis and gastric contents analysis) and practical physiology (including the recording of reflexes and tremors in man and the action of drugs on the autonomic system). Similarly, Dr Devine gave eight lectures on psychology, followed by practical instruction and demonstration of psycho-physical methods and memory and intelligence tests. In Part II of the course Sir Frederick Mott gave six lectures on the pathology of mental diseases, including brain syphilis, its symptomatology and treatment. Dr Bernard Hart gave eight lectures on the psychoneuroses. Sir Frederick Mott and Dr F. Golla gave twelve clinical demonstrations in neurology, the first six demonstrations were given by Dr Golla at the Hospital for Paralysis and Epilepsy, Maida Vale. Dr F. C. Shrubsall gave eight lectures on the practical aspect of mental deficiency. Dr W. C. Sullivan, medical superintendent of Broadmoor Asylum, gave six lectures on crime and insanity. Dr C. Hubert Bond and Dr E. Mapother gave a course of lectures on the differential diagnosis and treatment of mental disorders and the legal relationships of insanity. The fee for the whole course (Part I and Part II) was 15 guineas or for each part separately 10 guineas for one single series of lectures in Part I the fee was 4 guineas and in Part II 2 guineas. Inquiries as to lectures, etc., should be addressed to the director of the pathological laboratory, Maudsley Hospital, Denmark Hill, S.E. 5.

BETHLEM ROYAL HOSPITAL

A course will be held at Bethlem Royal Hospital, commencing on September 15th of lectures and practical instruction for the Diploma in Psychological Medicine. It is proposed in future to give two courses each year—an autumn session of intensive character, commencing in September, and completed in early December, and a spring session, commencing in the middle of January and completed in the middle of April. Each course consists of two parts. Part A includes lectures and demonstrations on the anatomy, histology, and physiology of the nervous system, with lectures on psychology and demonstrations in experimental psychology. Part B comprises lectures and clinical demonstrations in psychology, including lectures and demonstrations in the morbid anatomy of the nervous system, a series of lectures, with clinical demonstrations on different branches of psychological medicine, and lectures, with clinical demonstrations, on mental deficiency. Entrants for the course who pay a composition fee of 15 guineas may if due notice is given, attend either Part A or Part B of one course and postpone the other part until the next session. An entrant who wishes to attend one part only pays a fee of 10 guineas. An entrant who takes the complete course can attend the general clinical practice of the hospital on payment of 5 guineas for six months or 10 guineas for one year but an entrant who does not take either part of the course and desires to attend the clinical practice of the hospital must pay a fee of 5 guineas for each three months of attendance. To enable post-graduates to obtain special experience in this branch of medicine clinical assistants are appointed from time to time. Further particulars may be obtained from the physician-superintendent, Bethlem Royal Hospital, S.E. 1.

NATIONAL HOSPITAL FOR THE PARALYSED AND EPILEPTIC, QUEEN SQUARE

A post-graduate course, which fulfilled the requirements of the regulations for the Diploma in Psychological Medicine in regard to instruction in nervous diseases, was held at the National Hospital for the Paralysed and Epileptic, Queen Square, Bloomsbury, W C 1, in May and June, 1924, and other courses will be duly announced Lectures on the pathology of the nervous system and various clinical lectures were delivered and demonstrations were given, and out-patient clinics were held at the hospital on the afternoons of Mondays, Tuesdays, Thursdays, and Fridays An inclusive fee of 9 guineas was charged for the whole course, but any part of the course could be taken separately at a special fee A special arrangement was made for those unable to attend the whole course, and for details applications should be made to the dean of the medical school Similar courses are held three times a year—namely, January, May, and October Special arrangements are made throughout the year for work in the laboratory Fees are payable to the secretary of the hospital on entering for the course

PUBLIC HEALTH SERVICES.

GENERAL CONSIDERATIONS

THE Public Health Service, to use the term in a strict sense, consists of medical officers of health appointed by local public health authorities and holding office under varying conditions of tenure In addition there are county medical officers appointed by the county councils The latter are not, strictly speaking, public health authorities, the duties of their medical officers are somewhat similar to those of other medical officers of health, but, in England, include few executive functions In many of the county boroughs and counties assistant medical officers of health or assistant county medical officers are appointed, and such appointments may afford stepping-stones for promotion to higher offices The service is, however, not unified throughout the country, and there is no regular system of promotion, appointments are to be obtained only by *application to some particular local authority which has* advertised a vacancy

Three other services, also ungraded, have been brought into existence by recent legislation, their members are charged with duties which bring them into more or less direct relation with public health authorities or county councils and their officers They are school medical officers, tuberculosis officers, and venereal disease medical officers Appointments as school medical officer are made by local education authorities, while appointments as tuberculosis officer and venereal disease officer are made by the county councils and the county borough councils

The medical department of the Ministry of Health for England has been organized under the control of a chief medical officer who has the status of an assistant secretary, it contains six sections, with a senior medical officer at the head of each These sections are concerned with general health and epidemiology, maternity and child welfare, tuberculosis and venereal disease, the supervision of food supplies, and sanitary administration in relation to infectious disease There is a separate section concerned with insurance practitioners Lastly, there are medical officers employed in the Poor Law department and several whose services are available for special purposes but who are not "established" officers Medical officers and medical inspectors are also employed by the Ministry or the corresponding Board in Wales and in Scotland Appointments to these posts are not open to public competition, they are made by the Minister of Health in England and Wales and by the corresponding head of the department in Scotland They are civil service appointments, and come under the superannuation scheme of the service

MEDICAL OFFICERS OF HEALTH IN ENGLAND AND WALES

The first appointments of medical officers of health were made for limited periods, the holder of the office having to risk re-election at the expiration of his term of office This pernicious practice, so far as it applies to whole-time officers, owing to the persistent endeavours of the British Medical Association, in co-operation with some other bodies, ceased to exist after April 1st, 1922, as regards medical officers of health appointed prior to May 1st, 1921, it is not in operation as regards those appointed after the latter date The Public Health (Officers) Act, 1921, which was promoted by the British Medical Association, provides that a whole-time medical officer of health shall not be appointed for a limited period, and shall not be removed from his office except with the consent of the Minister of Health This Act came into operation on April 1st, 1922, but an order of the Minister of Health dated April 12th, 1921, makes a similar provision with respect to those officers appointed after May 1st, 1921

A medical officer of health who does not devote his whole time to the duties of his office, and a portion of whose salary is obtained from Exchequer grants, may be appointed without limit of time, in which case he cannot be removed from office without the consent of the Minister of Health If he is appointed for a specified term, say one year, he continues to hold office from year to year unless the Minister consents to his removal or the electing authority gives him three months' notice to resign his office, but the notice must take effect at the same period of the year as that at which the original term of appointment expired Where the electing body pays the whole of the salary of a medical officer of health he may be dismissed from office without reference to the Minister of Health

A considerable number of authorities have now adopted the Local Government and other Officers' Superannuation Act, 1922, including medical officers of health, in the general provision made for their officers The Act is, however, permissive only, and fails to make due allowance by the addition of years in computing service for purposes of superannuation, for the relatively advanced age at which the medical officer of health must enter municipal service In those two respects the position reached under the Act falls short of that for which the British Medical Association has been working during the past twenty years

A medical officer of health of a county or of a district or combination of districts with a population of more than 50,000 persons must hold a diploma in public health This diploma is now generally required from all applicants for whole-time appointments of medical officers of health and assistant medical officers of health, and very frequently in the case of school medical officers, tuberculosis officers, and venereal disease officers A medical man who desires to enter the public health service as a career must as a first step obtain such a diploma

THE POSITION IN SCOTLAND

The above statement applies specially to England In Scotland the position is different in several respects The central authority is a Board of Health which has at present four members, with offices in Edinburgh One of the four is a medical man It is now proposed to reduce the membership to three as existing appointments expire, and to abolish the qualifications of future members, so that not one of the three need be medical [1] The "Board" system is the rule in central government north of the Tweed, there being also Boards of Agriculture, Fisheries, Education, and Control (of lunatics) The Secretary for Scotland, whose chief office is in Whitehall, is over all, and there is a Parliamentary Under Secretary Both of these are members of the Board, the Secretary for Scotland being President, the Under Secretary Vice-President, and one of the Edinburgh members Chairman The Board has a staff of medical officers for insurance work Under the Public Health (Scotland) Act, 1897, no one can be appointed as medical officer of health for any area, burghal or rural, however small, unless he possesses a diploma in public health One result is that small burghs often appoint the county M O H as their officer No medical officer or sanitary inspector can be removed from office except with the sanction of the Board of Health A "proper" salary must be paid, and it is incompetent for the local authority to bring about a resignation by indirect means, such as reducing a salary, or attaching conditions to the appoint-

[1] See BRITISH MEDICAL JOURNAL, August 16th, 1924, p 293

ment The Act says nothing about superannuation, and specifies no retiring age The appointment, however, is not *ad vitam aut culpam* Most counties in Scotland are smaller than in England, and the county medical officer is almost invariably also district medical officer, being therefore both administrative and executive in function A few counties are not divided into districts

The School Medical Service

School medical officers are appointed by local education authorities under schemes of medical inspection of school children which must be approved by the Board of Education Primarily their duty is to detect among the children attending the public elementary schools any physical or mental defect which may retard the education of such children and to inform their parents of its existence But practically their duties vary considerably in different areas This is because most approved schemes of inspection include systems at work which aim at facilitating the task of parents in obtaining for their children the necessary treatment, at checking the results of the latter, and at keeping each defective child under skilled observation both at home and at school until it has passed altogether out of the education authority's hands The general object of all schemes alike is to make the inspection imposed by law of benefit not merely to the individual child but to the community at large, by preventing conditions which lead to the existence of a large proportion of inefficient citizens among the adult population In short, the work is so far related to that of a medical officer of health that in most areas the senior school medical officer fills both appointments, his work, when necessary, being supplemented by that of whole- or part-time assistants Whole-time assistants who have obtained, as they should do, a diploma in public health, receive, in an increasing number of cases, salaries commencing at a minimum of £600 a year The chief attraction of the posts is that they may lead on to appointment as medical officer of health, but we fear that not many actually do reach that position In some counties and county boroughs it is now the practice for the officer to undertake certain minor ameliorative work, notably prescription of glasses when necessary, the removal of adenoids, and treatment in connexion with certain diseases of the skin The added interest thus given to the work appears to make for increased efficiency and also enhances the value of the post Otherwise the monotony of filling up record cards in the absence of any duty or treatment is apt to become intolerable and if no public health functions belong to the post it gives little chance of developing into a health officership

In Scotland, while the statutory authority for the work of the school medical service is different the effect is broadly the same Approval of schemes is vested in the Scottish Board of Health, which consults the Scottish Education Department in so far as that Department has an interest All schemes provide some facilities for treatment though the extent of these varies considerably, the industrial areas having on the whole the more complete service The larger education authorities employ their own whole time staff, though there is close co-operation with the medical officer of health's department In other areas the county medical officer of health may be chief school medical officer with whole time assistants either for all public health services or for school work alone, and in still others all these duties, administrative and executive, may devolve upon a single medical officer A diploma in public health is almost universally required in the school medical service

Tuberculosis Officers

Before sanatorium benefit was transferred to the public health authorities the prescribed duties of tuberculosis officers were to act as advisers to Insurance Committees in connexion with the operation of the National Insurance Act and to take charge of the work of the tuberculosis dispensary, which is the main unit of the Departmental Committee's scheme A tuberculosis officer is a whole-time officer, who should have special training in tuberculosis work, and be of suitable age and attainments to command general confidence In many instances he is now appointed on the staff of the medical officer of health, so that the work of prevention and cure of tuberculosis may be made part of the general health work of the Municipal Council The number of such appointments is still relatively small, and the salary generally attached to them is low, but progress is being made towards the general adoption of the British Medical Association's minimum of £750 a year for responsible officers For assistants the position is much the same as for assistant school medical officers

Tuberculosis officers in Scotland are appointed by public health local authorities or by tuberculosis authorities (that is, county councils acting under Section 91 of the National Insurance Act, 1913) to carry out the work of inspection and diagnosis of tuberculous patients to advise as to treatment, and to take charge of the work of tuberculosis dispensaries where these are in operation Work under tuberculosis schemes is as a rule co-ordinated with the general public health work of local authorities, and the medical officer of health of an area is either appointed as tuberculosis officer or has a special tuberculosis officer on his staff The number of appointments is small and the salary is usually about £500 to £600 a year, with bonus in some cases

Venereal Disease Medical Officers

Schemes for the diagnosis and treatment of venereal disease are administered by county councils and county borough councils A few of these authorities have appointed whole-time medical officers at a salary of £600 to £700 per annum In some cases the officer is an assistant on the staff of the medical officer of health and in others he is an independent official In the latter case the British Medical Association is attempting to secure the general adoption of a minimum salary of £750 per annum Specialized practical experience in the treatment of venereal disease is essential, and it is an advantage if such experience has been obtained in the navy or army His duties usually include not only the diagnosis and treatment of cases of venereal disease at one or more central clinics, but also the instruction and supervision of the treatment by general practitioners attached to local clinics

Diplomas in Public Health

New rules for study and examination for these diplomas came into force on January 1st 1924 Most of the universities and licensing corporations now grant diplomas in public health to candidates who pass the examinations imposed by them Since all such tests must conform to the requirements of the General Medical Council there is considerable similarity in their nature though they differ not a little in their reputed difficulty All of them aim at excluding any candidate who does not appear to have a thorough knowledge of his work in theory and in practice for the regulations of the General Medical Council demand that the granting of a diploma in sanitary science State medicine, or public health shall be proof of the possession of a distinctly high proficiency scientific and practical in all the branches of study which concern the public health" The tests, in short, are supposed to constitute an honours and not a mere pass examination As regards the special tuition required it is now easy to obtain this in practically every centre of medical education, and at almost every medical school of any importance It is desirable to note in this connexion that the chemical and bacteriological examinations for many of the health diplomas are so practical and the time allowed so short, that unless a candidate—even though familiar with the duties of M O H — has a considerable amount of manipulative dexterity only to be acquired by ample work in a laboratory he would not be likely to satisfy the examiners

The steps which examining bodies take to ascertain the candidate's fitness for a diploma are in all cases much the same, though the order in which the subjects are taken is not always identical Every candidate therefore should, when he has settled what diploma or degree in State medicine he wishes to obtain, seek the schedule relating to it from the authority concerned Certain number of the universities grant degrees in the subject as well as diplomas

The rules have applied since January 1st, 1924, and require that not less than two years shall elapse after obtaining a registrable qualification before admission to the Final Examination for a public health diploma The curriculum must extend over not less than twelve calendar

months At least five months must be given to practical laboratory instruction in an approved institution in (*a*) bacteriology and parasitology, including entomology, especially in relation to diseases of man and to those transmissible to man from the lower animals (180 hours), (*b*) chemistry and physics in relation to public health (90 hours), and (*c*) meteorology and climatology (10 hours) Not less than 80 hours' instruction in an approved institution, or by approved teachers, must be given to the following subjects, the approximate hours being as bracketed Principles of public health and sanitation (30), epidemiology and vital statistics (20), sanitary law and administration (20), sanitary construction and planning (10)

There is required three months' attendance—30 daily attendances of not less than two hours in each week—on the clinical practice of a recognized hospital for infectious diseases, with instruction in methods of administration Six months' practical training under a medical officer of health is an important feature of the new scheme, and the time cannot be reduced by attendance on lectures as at present Three hours on each of sixty working days are the minimum, and the instruction is to include maternity and child welfare, the services relating to school life, venereal disease and tuberculosis, industrial hygiene, and food, meat, and milk inspection

The examination will consist of two parts, each lasting for at least two days Part I covers bacteriology, parasitology (with medical entomology), chemistry, physics, meteorology, and climatology Part II includes hygiene and sanitation, epidemiology and infectious diseases, sanitary laws and vital statistics, and public health administration There will be practical examinations in infectious diseases, food inspection, and inspection of premises Neither part can be entered on until the relative courses of instruction (after registration in medicine) have been completed, and Part I must be passed before admission to Part II

A NOTE ON THE NEW D P H REGULATIONS

We find from inquiries which reach us that the new D P H regulations are not always being clearly understood It appears to have been suggested that an interval of not less than two years must elapse between the two parts of the examination That is not the case The whole of Part I must be passed before a candidate is admitted to Part II, but—subject, of course, to the arrangements of the diploma granting body as to dates of examinations, and subject to the full curriculum of study having been completed—a candidate can sit for Part II so soon as he has passed Part I The two years' interval required is between admission to the *Medical Register* and to Part II of the D P H examination This is, in fact, the re enactment of an obligation imposed by the University of Cambridge for its certificates in sanitary science before ever diplomas in public health were recognized by the General Medical Council Until the present year, when the new regulations came into force, no such rule existed for the registrable diploma, but in raising the whole standard of training for that purpose the Council adopted the old Cambridge requirement Its object, as explained in issuing the resolutions and rules, is "to provide opportunity for candidates for the Diploma or Degree in Sanitary Science, Public Health, or State Medicine, to pass from the state of pupilage to that of responsible practitioners, to give mature consideration to the obligations and duties involved in the work of the Public Health Service, and to acquire direct experience of medical work in a responsible capacity either in practice or in hospital or laboratory appointments The Council believe that, in the public interest, the time has arrived to adapt the diploma to candidates who are seriously intending to take up public health work as a career" As regards the curriculum, it should perhaps be made clear that the Council does not require the whole of it to be taken before Part I of the examination The rule on that point is that "candidates may not be admitted to examination for Part I until after they have completed the prescribed courses of instruction in the subjects thereof" An identical rule applies to Part II Also, as already indicated, "a candidate must pass in all the subjects of Part I before being admitted to examination for Part II" Other questions which have been asked relate to possible candidates from the Dominions A candidate would be eligible for the Final Examination for the D P H two years after obtaining in a Dominion a qualification registrable here, but an unregistrable qualification would be of no avail Finally, an important point is whether a duly qualified man could take the D P H curriculum elsewhere than in this country The answer would appear to depend on the facts of the individual case The Diploma in Public Health is intended to qualify for the work of a medical officer of health in this country If the training elsewhere were such as to meet this requirement it seems reasonable to believe that the curriculum would be accepted, but an application would have to be submitted to the General Medical Council Importance would attach to the practicability of obtaining training in the infectious diseases which prevail here It would suppose, for example, that public health work in Toronto or Montreal or Melbourne or Sydney would sufficiently resemble that of Britain to meet the Council's standards, but the safe course would be to make sure by inquiry before beginning the curriculum

THE PUBLIC SERVICES.

THE ARMY, AIR FORCE, AND INDIAN MEDICAL SERVICES

THE Medical Departments of the Royal Navy, of the Army, and the Indian Government normally employed between them before the war some 3,000 medical men, and vacancies in the ranks of these services were filled by offering commissions for competition once or more each year In the abnormal circumstances arising out of the war and the period immediately following it the usual regulations for recruiting the permanent medical staff of these services were, for the most part, in abeyance Now that a return has been made to peace establishments we publish somewhat fuller information than we gave during the war period, for the guidance of those junior members of the profession who think of applying for regular commissions in the Royal Air Force Medical Service and the Royal Army Medical Corps Further details should be sought from the respective medical departments The information formerly given regarding the conditions of service, pay, and prospects in the Medical Department of the Royal Navy has again been omitted for the reasons stated at page 445

ARMY MEDICAL SERVICE

Competitive examinations for commissions into the Royal Army Medical Corps are held twice a year, usually in January and July

The prospects of the newly qualified medical man taking up the army as a career have been improved by changes that have come into force since the war The rates of pay and pension are given in the subjoined tables

Royal Army Medical Corps

Rank	Pay* per Diem	Rations†	Servant	Married: Lodging	Married: Fuel and Light (Average)†	Married: Furniture Allowance	Unmarried: Lodging	Unmarried: Fuel and Light (Average)†	Approximate Yearly Total: Married	Approximate Yearly Total: Unmarried
	£ s d	s d	s d	s d	s d	s d	s d	s d	£	£
Lieutenant	1 0 10	1 8	2 0	3 6	1 8	2 0	2 3	1 4	578	515
Captain	1 5 6	1 8	2 0	4 6	3 4	2 0	3 0	1 10	712	651
Captain after 6 years	1 6 6	1 8	2 0	4 6	3 4	2 0	3 0	1 10	730	669
Captain after 10 years	1 9 4	1 8	2 0	4 6	3 4	2 0	3 0	1 10	782	699
Major	1 13 0	1 8	2 0	4 6	3 4	2 0	4 0	2 7	849	773
Major after 15 years	1 17 10	1 8	2 0	4 6	3 4	2 0	4 0	2 7	937	873
Lieut Colonel	2 7 4	1 8	2 0	4 6	3 4	2 0	4 6	2 7	1110	1050
Lieut Colonel after 20 years	2 9 8	1 8	2 0	4 6	3 4	2 0	4 6	2 7	1153	1105
Lieut Colonel after 25 years	2 12 0	1 8	2 0	4 6	3 4	2 0	4 6	2 7	1195	1145
Colonel	3 2 6	1 8	2 0	5 6	4 7	2 0	5 6	3 1	1410	1360
Major General	4 9 10	1 8	4 0	11 0	5 10	2 0	11 0	4 2	2000	2013

* Pay Warrant rates less 5½ per cent from July 1st 1921 (vide Army Orders 93 and 204 of 1921) The Pay Warrant rates when granted were made subject to revision to an extent not exceeding 20 per cent according to variations in the cost of living The next revision takes place from July 1st 1927

† Rates of Allowance vary from time to time and issues are subject to conditions laid down in the Allowance Regulations

At Home—An officer not above the rank of lieutenant-colonel holding an appointment as specialist receives 2s 6d or 5s a day (according to subject or group of subjects). An officer in charge of a hospital receives charge pay the daily amounts being in excess of 50 beds 2s 6d in excess of 100 5s in excess of 200 7s 6d in excess of 300 10s. An officer in charge of a medical or surgical division of a general hospital with not less than 600 beds receives half the above rates. Senior Medical Officer Royal Arsenal no exceeding 10s a day. Officer in Command of the Depot R A M C 5s daily. Adjutant R A M C Depot 2s daily. Adjutant R A M C (T A) 2s 6d daily. Professors at the Royal Army Medical College receive £200 and assistant professors £60 a year in addition to pay and allowance of their rank.

In India—The specialist pay is 60 rupees a month. Charge pay is from 60 to 240 rupees a month according to the size of hospital.

Retirement

A lieutenant general or major general must retire on attaining the age of 60 years, a colonel at 57 and other officers at 55. A major superseded for promotion retires on the completion of twenty five years service or, if he fails to qualify for promotion on the completion of twenty years service. A captain who fails to pass the examination for promotion to major on a second trial must retire at once with any gratuity for which he may be eligible or if not on completing five years service as a captain. A lieutenant who does not qualify for promotion within three and a half years is required to resign. A candidate who has been specially employed in consequence of a national emergency either as an officer or in a position usually filled by an officer will be allowed to reckon such service towards retired pay and gratuity provided there has not been an interval of more than five years before appointment to a regular commission. The maximum rates of retired pay are as follows:

	£ s
Captain and Subaltern	283 10
Major	425 10
Lieutenant-colonel	567 0
Colonel	756 0
Major General	945 0
Lieutenant General	1134 0

Voluntary retirement on retired pay is not allowed until after twenty years service. Earlier retirement on gratuity is allowed as follows:

Major or Captain	Gratuity
After 8½ years commissioned service as a medical officer	£1,000
3 years service in the rank of major as a medical officer	£1,800
6 years service in the rank of major as a medical officer	£2,500

Seconded Service

An officer may be permitted to accept employment in the Foreign or Colonial Offices when so seconded he is not eligible for pay or allowances from army funds but his service continues to reckon towards promotion and under certain conditions towards increase of pay pension or gratuity. Among the capacities in which R A M C officers may be employed are:

(1) The medical service of the Egyptian Army.
(2) The sanitary service of the Egyptian Government.
(3) The medical services of the various foreign and colonial Governments.

Service on the West Coast of Africa

Officers for service in West Africa are usually taken from a list of volunteers for such service. An officer at present receives while actually serving in West Africa (which service may include ordinary leave not exceeding sixty-one days in a year and any time spent at Madeira or the Canary Islands on sick leave) additional pay at the following daily rates: lieutenant-colonel 12s, major 9s, captain 7s 6d, lieutenant 6s.

The professional work of the corps has received a great impetus through the Directorates of Hygiene and Pathology. Specially selected and trained officers have now been appointed as assistant and deputy assistant directors of hygiene to all commands and garrisons at home and abroad. Junior officers appointed on probation undergo a course of instruction in hygiene at the army school of hygiene where lectures and demonstrations are given on the methods of sanitation, including entomology applicable to the various climates and countries, special attention being paid to *tropical hygiene*.

The Directorate of Pathology offers many attractions to those officers who are desirous of taking up the scientific side of medicine. Officers who show aptitude *in this direction* are encouraged to continue their scientific studies during the whole course of their service. As junior officers the posts of *clinical pathologists* to hospitals at home and abroad are available while, after their first tour of *foreign* service they are given the opportunity of qualifying as specialists in bacteriology and pathology at the Royal Army Medical College, having so qualified they become eligible for the appointments of assistant or deputy assistant director of pathology, posts which carry with them specialist pay or temporary promotion.

Appointments to the staff of the Directorate of Hygiene or Pathology at the War Office are open to officers who have served in these scientific branches—the senior posts carrying the rank of colonel or major general as the case may be. All such staff appointments, either at the War Office or in commands at home, have a fixed tenure of three or four years *should the exigencies* of the service permit.

Arrangements have been made for the appointment of consultants in both medicine and surgery, and the ranks of colonel and major general are now open to such officers. This will encourage officers of outstanding ability in these subjects to continue to devote their attention to medicine and surgery, in which previously there were no openings for officers above the seniority of lieutenant-colonel.

The question of specialists has also undergone revision and a great improvement in the method of training and selection has been effected. Captains undergo a five months' course at the Royal Army Medical College for promotion to major in the subjects of hygiene and pathology together with *general medicine and surgery*. Of *those officers who* pass the Combined Examination in these subjects the first 50 per cent are now eligible to take out a further four months' specialist training, provided that they can prove to have had past experience in a particular subject and to have shown special aptitude for that subject. Results so far achieved by this system have, we are informed, been most encouraging. The training is undertaken by selected teachers of the various London general hospitals, as well as the army professors at the college.

It is recognized that, apart from purely professional work, officers should receive administrative training. Many appointments of an administrative character are open to officers who show zeal and capacity for this side of the army medical officer's duties.

ROYAL AIR FORCE MEDICAL SERVICE

THE Royal Air Force Medical Service offers a career for medical men which should prove both attractive and interesting. The *rates of pay and allowances* are good, and a new field of scientific interest is opened up by the manifold problems which the circumstances of aviation produce. The physical and mental fitness for, and reaction to, the varied conditions under which the flying personnel perform their functions provide much scope for research.

As promotion to the higher ranks of the service is by selection, and as a certain proportion of the higher ranks will be reserved for purely scientific as opposed to administrative appointments, it will be seen that there are excellent prospects for the young medical officer who exhibits ability and energy in scientific research, as well as for those who develop a talent for administration.

Commissions

The establishment will consist partly of permanent and partly of short service officers.

An officer will on first entry be granted a short service commission for a period of two years *on the active list* (which may be extended to four years at the discretion of the Air Council on the recommendation of the Director of Medical Services) and of four years in the Reserve of Air Force Officers. (The periods of service on the active list are under review.) Selections for permanent commissions will be made from officers holding short service commissions and those who are not selected will be transferred to the Reserve at the expiration of their period of service on the active list.

Short service officers who are approved for permanent commissions but for whom there are not vacancies in the Royal Air Force Medical Service, may under certain conditions be considered for transfer to the Royal Army Medical Corps. If transferred, their service in the Royal Air Force Medical Service would count towards increments of pay and towards retired pay in the Royal Army Medical Corps.

Officers who have been selected for permanent commissions may be granted leave for a period not exceeding nine months for post graduate study in general medicine and surgery, *tropical and preventive medicine* and other special subjects. Such leave will be granted during the first six years of permanent service and during such leave officers will receive full pay and allowances.

New entrants into the Royal Air Force Medical Service will be commissioned as Flying Officers (Medical) and will be eligible for promotion to the rank of Flight Lieutenant (Medical) after two years service. Officers selected for permanent commissions will be promoted to the rank of Squadron Leader after ten years total service. Accelerated promotion may be carried out in a limited number of cases of officers who show exceptional ability *after the completion* of eight years service. Promotion within establishment to the

TABLE I.—*An Outline of the Emoluments issuable to Officers of the Medical Branch of the Royal Air Force at present*

Allowances are issued only when accommodation fuel light rations and personal attendance are not available and the rates vary in different countries

	Pay			Allowances (Daily Rate at Home)					Total Allowances at Home				Total Emoluments at Home			
	Daily		Yearly		Fuel and Light (Average)				Daily		Yearly		Daily		Yearly	
	Standard Rate	Rate from July 1 1924	Rate from July 1 1924	Lodging	M	S	Ration	Servant	M	S	M	S	M	S	M	S
	£ s	£ s d	£ s d	s d	s d	s d	s d	s d	s d	s d	£ s d	£ s d	£ s d	£ s d	£ s d	£ s d
Flying Officer	1 4	1 2 8	413 13 4	3 6	1 8	0 10	1 8	2 0	8 10	8 0	161 4 2	146 0 0	1 11 6	1 10 8	574 17 6	559 13 4
Flight Lieutenant	1 6	1 4 6	447 2 6	4 6	3 4	0 10	1 8	2 0	11 6	9 0	209 17 6	164 5 0	1 16 0	1 13 6	657 0 0	611 7 6
Ditto after 2 years service in the substantive rank	1 8	1 6 6	483 12 6	4 6	3 4	0 10	1 8	2 0	11 6	9 0	209 17 6	164 5 0	1 18 0	1 15 6	693 10 0	647 17 6
Ditto after 4 years ditto	1 10	1 8 4	517 1 8	4 6	3 4	0 10	1 8	2 0	11 6	9 0	209 17 6	164 5 0	1 19 10	1 17 4	726 19 2	681 6 8
Squadron Leader	1 14	1 12 2	587 0 10	4 6	3 4	1 6	1 8	2 0	11 6	9 8	209 17 6	176 8 4	2 3 8	2 1 10	796 18 4	763 9 2
Ditto after 2 years service in the substantive rank	1 16	1 14 0	620 10 0	4 6	3 4	1 6	1 8	2 0	11 6	9 8	209 17 6	176 8 4	2 5 6	2 3 8	830 7 6	796 18 4
Ditto after 4 years ditto	1 18	1 15 10	653 19 2	4 6	3 4	1 6	1 8	2 0	11 6	9 8	209 17 6	176 8 4	2 7 4	2 5 6	863 15 8	830 7 6
Ditto after 6 years ditto	2 2	1 19 8	723 18 4	4 6	3 4	1 6	1 8	2 0	11 6	9 8	209 17 6	176 8 4	2 11 2	2 9 4	933 15 10	900 6 8
Wing Commander	2 6	2 3 6	793 17 6	4 6	3 4	2 1	1 8	2 0	11 6	10 3	209 17 6	187 1 3	2 15 0	2 13 9	1003 15 0	930 18 9
Ditto after 2 years service in the substantive rank	2 10	2 7 4	863 16 8	4 6	3 4	2 1	1 8	2 0	11 6	10 3	209 17 6	187 1 3	2 18 10	2 17 7	1073 14 2	1050 17 11
Ditto after 4 years ditto	2 12	2 9 2	897 5 10	4 6	3 4	2 1	1 8	2 0	11 6	10 3	209 17 6	187 1 3	3 0 8	2 19 5	1107 3 4	1084 7 1
Ditto after 6 years ditto	2 14	2 11 0	930 15 0	4 6	3 4	2 1	1 8	2 0	11 6	10 3	209 17 6	187 1 3	3 2 6	3 1 3	1140 12 6	1117 16 3
Group Captain	3 0	2 16 8	1034 3 4	5 6	4 7	3 1	1 8	4 0	15 9	14 3	287 8 9	260 1 3	3 12 5	3 10 11	1321 12 1	1294 4 7
Ditto after 2 years service in the substantive rank	3 4	3 0 6	1104 2 6	5 6	4 7	3 1	1 8	4 0	15 9	14 3	287 8 9	260 1 3	3 16 3	3 14 9	1391 11 3	1364 3 9
Ditto after 4 years ditto	3 8	3 4 4	1174 1 8	5 6	4 7	3 1	1 8	4 0	15 9	14 3	287 8 9	260 1 3	4 0 1	3 13 7	1461 10 5	1434 2 11

M = Married S = Single

rank of Wing Commander will be by selection at any period after sixteen years total service, and to that of Group Captain by selection at any period after twenty two years' service

There will be no competitive examination on entry, candidates must be under 28 years of age, be British subjects, the sons of British subjects, and of pure European descent, be nominated by the dean of a recognized medical school or teaching hospital, and will be interviewed personally by the Director of Medical Services, Royal Air Force, before acceptance Each candidate must produce

1 Birth certificate
2 Medical registration certificate
3 A declaration containing the following information (*a*) Age, and place of birth (*b*) That he is a British subject, the son of British subjects and of pure European descent (*c*) That he is ready to engage for general service at home or abroad as required (*d*) The qualifications he is possessed of and what medical or other appointments he has held (if any) (*e*) That he is willing to fly whenever called upon to do so

Each candidate will be required, before acceptance, to pass a medical examination to ensure that he labours under no constitutional or mental disease or diseases or weakness, nor any imperfection or disability which may interfere with the efficient discharge of the duties of a medical officer in any climate, in peace or war

An officer granted a short service commission who, at the time of application for such commission held or was about to hold a resident appointment in a recognized civil hospital, may be seconded for the period not exceeding one year from the date of the commission during which he shall hold such appointment Whilst seconded he will not receive pay from the Air Ministry funds, but the period of secondment will otherwise count as service in the Royal Air Force, provided that he will be required to serve for a minimum period of two years on the active list from the date on which he ceases to be so seconded

Uniform and Equipment

Medical officers will be required to provide themselves with the uniform of their rank, and with the distinguishing badges of the Royal Air Force Medical Service They will be required to provide themselves with service dress and mess dress The provision of full dress is entirely optional at present An allowance of £50 will be made towards the cost of uniform for officers who have not previously held commissions in the Royal Navy, the Army, the Indian Army, the Royal Marines, or the Royal Air Force or any of the auxiliaries of these forces An allowance of £25 will be made for officers with previous commissioned service in the Royal Navy, the Army, the Indian Army, the Royal Marines, or any of the auxiliaries of these forces, but not in the Royal Air Force or its auxiliaries

Rates of Pay

The rates of pay are given in Table I, and the standard scale of retired pay for Group Captains and lower ranks in Table II

TABLE II.—*The Standard Scale of Retired Pay for Group Captains and Lower Ranks*

Age	Service counting for Retired Pay	Standard Rate of Retired Pay	Addition for each Extra Year of Service*	Reduction for each Deficient Year of Service*	Age	Service counting for Retired Pay	Standard Rate of Retired Pay	Addition for each Extra Year of Service*	Reduction for each Deficient Year of Service*
		£	£	£			£	£	£
55	24	700	22	15	47	20	562	15	15
54	24	765	22	15	46	20	525	15	15
53	23	742	22	15	45	19	487	15	15
52	23	720	22	15	44	19	450	15	15
51	22	697	22	15	43	18	412	15	15
50	22	675	15	15	42	18	375	15	15
49	21	637	15	15	41	17	337	15	15
48	21	600	15	15	40	17	300	15	15

* Limited to five years

The rates of pay (Table I) are liable to revision The standard rates were drawn up in 1919 in the light of the then high cost of living, and 20 per cent of each of the standard rates is regarded as detachable and subject to alteration either upwards or downwards as the cost of living rises or falls The first revision took effect from July 1st 1924, when a reduction of approximately 5½ per cent was made in the standard rates Subsequent revision will be made at intervals of three years

It must, however, be clearly understood that while every consideration will be given to the reasonable and legitimate interests of individuals, it will be competent for the Air Council at any time to modify the regulations under which the emoluments of the Royal Air Force are drawn and no officer will be entitled to claim any pay, gratuity or other advantage conferred by a provision being at any time added to, varied, or cancelled

For the purpose of the issue of allowances a "married officer" is one who is married and has attained the age of 30 or the substantive rank of Squadron Leader, or who irrespective of age and rank was married on or before September 15th, 1919, and was serving in the Royal Air Force on June 8th, 1922

As allowances are given for specific purposes, the cost of which may vary at comparatively short intervals, the rates of allowances are liable to be reviewed as circumstances may require

A colonial allowance is granted in certain commands abroad in aid of the expenses of living in the countries where the cost is higher than in the United Kingdom

For periods of service given under Indian administration and payment officers will come under the rates and conditions authorized from time to time by the Indian Government in so far as these rates and conditions may differ from those in this scheme The Indian rates are at present under review

Group Captains retire at 55—maximum retired pay £900 Wing Commanders retire at 51—maximum retired pay £600 Squadron Leaders retire at 48—maximum retired pay £500 There will be a minimum qualifying period for retired pay of twenty years

The rates of retired pay (Table II) (including the maximum rates) are standard rates which will be subject to revision as follows 20 per cent of each of the standard rates will be regarded as detachable and subject to alteration upwards or downwards as the cost of living rises or falls The first revision took effect from July 1st 1924 when a reduction of approximately 5½ per cent was made subsequent revisions will be made at intervals of three years The revision will apply to all retired pay which is being drawn at the date of revision as well as to subsequent awards

Gratuities—Short service officers will receive gratuities on the scale of £100 for each of the first two complete years of service and £150 for each of the third and fourth complete year The gratuities will not be payable to officers granted permanent commissions but the period of service under the short service commission will count for retired pay Medical officers holding permanent commissions may at the discretion of the Air Council be allowed to withdraw from the service after ten years service with a gratuity of £1 250 or after sixteen years with a gratuity of £2 000 in lieu of retired pay

Allowances—The usual allowances will be payable to medical officers under the same conditions as to officers of other branches of the Royal Air Force

INDIAN MEDICAL SERVICE

THE Indian Medical Service is closed to new admissions, for the present at least, perhaps permanently It is therefore impossible to give any information to men who might otherwise have sought to enter that service

The Lee Commission which visited India last winter to consider and report on the prospects and remuneration of the European services in India issued its report in May As regards the I M S it recommended that the work hitherto carried on by that service so far as it deals with the army and the other European services should be handed over to a special branch of the R A M C to be entitled R.A M C (India) Presumably the members of the I.M.S now serving would be absorbed into this new service which would in future be recruited by men from the R A M C volunteering for service either temporarily or permanently in India the greater part of the civil work at present carried on by the I M S would then be entrusted to provincial civil medical services recruited entirely in India This would cut off most of the civil surgeoncies hitherto held by the I M S probably three-quarters of the whole leaving only a few of the most important stations in each province with I M S civil surgeons the professorships in the Indian medical colleges would be thrown open to the whole profession in India In any case, the recommendations of the Lee Commission if adopted mean the end of the I M S It must be remembered however that so far the report of this Commission consists of recommendations only Its proposals still have to come before and gain the approval of the Indian Legislature the Secretary of State and the House of Commons

THE ROYAL NAVAL MEDICAL SERVICE

IN January 1920, new regulations for retirement of officers came into force in the Royal Navy and new rates of pay were laid down The new regulations inflicted a great injustice upon a considerable number of surgeon commanders who were nearing, or had passed the new retiring age The grievances arose under two heads—age of retirement and rate of pension—and frequent remonstrances were addressed to the Admiralty by the British Medical Association [1]

Very briefly stated, these medical officers, who had entered the service on the understanding that they would be allowed to serve until the age of 55, were compulsorily retired at 50, and their maximum pension was fixed at £600 a year, representing an increase of but 10 per cent on the former retired pay of their rank, it should be particularly observed that officers of other branches got increases of pension varying from 26 to 100 per cent In reply to representations by the British Medical Association the Admiralty admitted the grievance, but declined to remedy it The Council of the Association at length warned the Admiralty that if the question could not be settled satisfactorily it would be obliged to place the facts before the profession, and to advise medical students and young practitioners to consider seriously the disadvantages to which they were liable if they placed their careers in the hands of the Admiralty

The outstanding grievance in the Royal Naval Medical Service is undoubtedly that of the treatment of the senior surgeon commanders In approaching the Admiralty this year on the shortage of candidates for the R N M S the British Medical Association made it quite clear that it would do nothing to help the Admiralty to obtain candidates until this question had been satisfactorily settled On January 29th the Admiralty at last met representatives of the Association and discussed the whole matter At the interview the Admiralty was represented by the Medical Director-General, the Deputy Secretary of the Admiralty, and the D D G, R N M S After an assurance had been given that the senior surgeon commander question would be gone into, certain suggestions for popularizing the service were put forward by the deputation The views of the Association are now under consideration by the Board of Admiralty, and the Council hopes that the Admiralty will shortly be able to make a satisfactory settlement The matter was followed up when the House of Commons was discussing the Navy Estimates, when Dr G F Spero, M P, gave an able exposition of the grievances of the profession in regard to the navy It may be hoped, therefore, that before next year's Educational Number appears the Admiralty will have put itself right in the eyes of the medical profession In that event we shall be able to include once again a statement of the conditions under which commissions are granted in the Medical Department of the Royal Navy and in other ways give encouragement to prospective candidates

PRISON MEDICAL SERVICE

CANDIDATES for the medical staff are approved by the Secretary of State for the Home Office on the recommendation of the Prison Commissioners The Chairman of the Board is M L Waller, Esq C B Application for employment may be made to the Board on a special form, which can be obtained from the Secretary, Prison Commission, Home Office, London, S W 1

In the smaller prisons the medical officer is usually a local practitioner, but in the larger the members of the medical staff are required to devote their whole time to the service In the case of those required to give their whole time to the service the appointment in the first instance is to the post of medical officer Class II, and from the seniors of this rank the medical officers Class I are selected as vacancies occur

In February 1923, the then Home Secretary appointed a committee to report on what changes, if any, should be made in the remuneration or other conditions of service of officers at the prisons and Borstal institutions in England and Scotland and at Broadmoor Criminal Lunatic Asylum Evidence was given on behalf of the British Medical Association by the Medical Secretary who pointed out that the salary offered to Class II medical officers—namely, a basic salary of £300 rising by annual increment—was, even when the allowances and bonus were reckoned in, less than the £500 a year the Association looked upon as the minimum commencing salary which should be given to a whole-time medical man holding such a responsible office The committee issued its report in November, 1923 It recommended that officers of both classes should receive an additional £50 a year and from a communication received from the Prison Commission we understand that the pay of the whole time prison medical staff is Medical officer Class II, £350 rising by annual increments of £20 to £600 medical officer Class I, £650, rising by annual increments of £25 to £800 Unfurnished quarters are provided, or an allowance in lieu is made The Civil Service bonus is paid on the salary There are 14 medical officers Class II, 12 medical officers Class I, and 27 part-time medical officers

The number of vacancies is never large, and promotion is

[1] See BRITISH MEDICAL JOURNAL July 9th 1922, p 52

MEDICAL PRACTICE IN BRITISH DOMINIONS AND FOREIGN COUNTRIES

MEDICAL Acts have now been passed in almost all places forming part of the British Empire beyond the seas, and registers of duly qualified practitioners are consequently maintained. To these registers medical men educated in the United Kingdom are always admissible merely on payment of a registration fee, providing they produce evidence that they are of good repute and are either registered or eligible for registration in the United Kingdom, as the local requirement may be. The only exception to this statement that need be made relates to the Dominion of Canada. Each of its provinces acts in medical matters as an independent State. The result has been that reciprocity of practice has been established between this country and all the provinces of Canada except British Columbia, where certain obstacles still remain to be overcome. We would advise any medical man proposing to practise in Canada first to communicate with the Provincial Registrar, stating what degrees or diplomas he holds, and asking for information as to the precise steps he must take in order to obtain admission to the Provincial Register.

Italy and Japan are the only two foreign States with which complete medical reciprocity has been established, though there are other countries which grant a limited recognition to British qualifications. Generally speaking, in Continental countries (with the exception of the kingdom of Italy) a British medical man desiring to exercise his profession therein must pass practically the same examinations as those imposed on natives of the country. The same observation applies to all foreign States in the South American continent. Each of the United States of North America has its own laws and regulations governing medical practice, some of the States admit any holder of a degree or diploma to their Register, but the majority require a candidate for registration to submit to an examination.

A pamphlet showing the conditions under which medical and dental practitioners legally qualified in their own country may practise abroad can be obtained from the office of the General Medical Council, 44, Hallam Street, Portland Place, London, W.1, price 2s. 6d., or 2s. 9d. post free in the United Kingdom. Practitioners who think of going abroad to practise will find therein much useful information, including the name of the official in each country to whom requests for further particulars should be addressed. The last edition was published in January, 1921.

MEDICAL APPOINTMENTS UNDER THE COLONIAL OFFICE

APPOINTMENTS to the Medical Services of the Colonies and Protectorates under the administrative control of the Colonial Office are made by the Secretary of State for the Colonies. Such appointments are to the service of a given colony or colonies, for there is no unified service directly administered from the Colonial Office. It follows that conditions of service and superannuation are in the main determined by the economic resources and general public health policy of the individual colony and its local Government, and vary almost as widely as do conditions of climate. Moreover, the extent of the control exercised by the Colonial Office varies according to the constitutional status of the particular colony, and the detailed information available centrally is not always complete. The intending candidate, therefore, should make comprehensive inquiries as to local conditions before applying for an appointment, and will do well to supplement official information by reference to the central office of the British Medical Association, where reports obtained from time to time from the local Branches are available. This is the more necessary because facilities for transfer from the Medical Service of one colony or group of colonies to that of another are as yet practically non-existent, except in connexion with a few specialist and senior appointments, this sets strict limits upon the opportunities for promotion.

The bulk of the medical appointments made by the Secretary of State in this country are to the Services in the East and West African Colonies and Protectorates, the Straits Settlements and Malay States, the East Indies, and Fiji and the Western Pacific. In general, candidates for such appointments must be between the ages of 23 and 35, and whilst these limits are not for the moment absolute, an officer over 35 years of age on first appointment may be required to serve on a temporary and non-pensionable footing. Regular appointments are, subject to a varying period of probation, for the most part, nominally at least, permanent and pensionable. There is no entrance examination, but practitioners selected for appointment must obtain a certificate of physical fitness from one of the Medical Advisers of the Colonial Office. In the case of the West African Medical Staff and the East African Services successful candidates are required to undergo an approved course of instruction in tropical medicine.

Colonial Service: The General Outlook

While colonial service offers undoubted attractions to some practitioners it also presents very definite disadvantages, and not the least of these is, at the present time, uncertainty as to the future. Before the war, conditions in several of the Services gave rise to considerable anxiety, the greatly enhanced cost of living during the war resulted in certain more or less inadequate temporary advances in remuneration, but consideration of the radical reforms required was postponed until the succeeding period of reconstruction. In 1919 a departmental committee under the chairmanship of Sir Walter Egerton was appointed to consider the position of the Services generally, the means of securing contentment within them, and the maintenance and increase of the supply of candidates. The committee found that the ideal to be aimed at was the creation of a unified Colonial Service, recruited by competitive examination and represented on the staff of the Colonial Office by a Medical Director-General. As an immediately practicable step in this direction it recommended the assimilation of the Medical Services in neighbouring colonies, and more especially those in the East African and Malayan groups. A permanent increase of salaries with a general minimum of not less than £600 a year on first appointment was recommended, the necessity for study leave was recognized, as was the need for the development of facilities for research, an increase in the number of specialist appointments and adequate provision for promotion by transfer from the service of one colony or group to that of another were other points emphasized.

Progress along the lines laid down by the departmental committee, which correspond broadly to the policy adopted by the British Medical Association, has undoubtedly been made since the report of the committee was issued. With the exception of the West Indian Services, the Fiji and Pacific Colonies, and a few of the smaller dependencies which each offer only one or two medical appointments, the adoption of the £600 minimum or its equivalent in local currency has been achieved. The commencing pay in the West African Medical Staff is £660 a year. For all practical purposes the Services in the Malay Peninsula have been unified, and some steps have been taken towards the assimilation of the East African Services, whilst there has been an appreciable increase in the number of specialist appointments and the facilities for research. In general, conditions of service in West and East Africa may be taken as satisfactory, although in some instances an increase of staff appears desirable. Certain Services, notably those in the West Indies and Fiji, have not yet secured that measure of reform essential to a minimal standard of efficiency.

Moreover, the acute economic depression of the last four years has affected many of the colonies with almost crushing severity. It has in some cases brought about the indefinite postponement of projected reform, and in others it has practically neutralized advances in remuneration that were at

one time thought to be permanent, besides imposing disastrous restrictions on the public health programme in many places, and reductions in the medical personnel of the Services Nor do economic difficulties, radical though they are, stand alone The constitutional status of the colonies is under review Schemes for regrouping and for the concession of greater local autonomy may be temporarily delayed pending economic recovery, but it is not unreasonable to suppose that until such questions are settled there can be little progress towards the unification of the Colonial Medical Service Their adoption, on the other hand, may entail the formulation of a new solution for the admitted difficulties

The condition of the Colonial Medical Services has for some time been a matter of the gravest concern to the British Medical Association, which gave evidence on the subject before the Egerton Committee, and has been in constant communication with the Colonial Office on matters touching their welfare since August, 1921 During this period the Association has, in effect, been recognized as the mouthpiece of the Services, and has received copies of all official documents primarily affecting medical officers, and also the gazettes of the various local Governments It has therefore been possible to supplement the activities of the Overseas Branches by the exercise centrally of unceasing vigilance over all tendencies likely to affect the development of the Colonial Services Present conditions render advance impracticable in certain branches of the Colonial service, and especially is this so in the Windward Islands, where three years of unremitting effort on the part of the British Medical Association, both centrally and locally, ended in 1923 in failure The Representative Body of the Association, after full consideration of the facts of the case, and with a due sense of the responsibility involved in any action tending to hinder the supply of qualified candidates for the Services in these islands passed at Portsmouth a resolution regretting that the Colonial Office had declined to press the claims of the Windward Islands medical officers with regard to their terms and conditions of service, and thoroughly endorsing the action taken by the Council in support of those claims Such a resolution is the best possible commentary upon the opinion expressed in the BRITISH MEDICAL JOURNAL of June 30th, 1923, that no qualified medical practitioner aware of the conditions of service will accept an appointment in these islands The position in this respect has not been bettered by the modification of the local Medical Ordinance to permit the employment of practitioners not qualified for admission to the *Medical Register* of the United Kingdom

Official Sources of Information

All inquiries in connexion with colonial medical appointments made by the Secretary of State for the Colonies should be addressed to the Assistant Private Secretary (Appointments), Colonial Office, Downing Street, London, S W 1 Any vacancies occurring in Iraq, Palestine, and Aden are recruited through the Colonial Office, and information can be obtained at the same address Vacancies also occur, though at rare intervals, in the Sudan, and inquiries as to these should be addressed direct to the Civil Secretary Sudan Government, Khartoum Inquiries about any medical appointments made by the Egyptian Government should be addressed to the Director General, Public Health Department, Cairo

Information as to medical appointments in the self-governing Dominions and their dependencies can be *obtained on* application to the High Commissioners or Agents-General for the Dominions Intending applicants are also recommended to consult the Colonial Office List and the Professional Handbook (price 6d) issued by the Overseas Settlement Office, 6, St James's Square, London, S W 1

There remain a number of medical appointments made by mining companies and other commercial undertakings in various parts of the tropics Much caution should be exercised in accepting such posts, and the form of contract should be subjected to very careful scrutiny Advice in this connexion should always be sought *from* the Medical Secretary's Department of the British Medical Association, 429, Strand, London, W C 2

MEDICAL RADIOLOGY AND ELECTROLOGY

THE CAMBRIDGE DIPLOMA

A DIPLOMA in Medical Radiology and Electrology is granted by the University of Cambridge The primary object is to provide adequate training in a branch of medical work which is becoming increasingly important and difficult, and which is outside the ordinary medical curriculum The Diploma is open only to those who hold a medical qualification and includes a course of lectures and practical work in Physics (*Part I*) *and in Radiology* and Electrology (Part II) Attendance at the necessary courses of lectures in both subjects, and in addition six months' clinical experience in an adequately equipped hospital recognized by the committee, is essential The whole course of study takes six months the lectures practical work, and hospital attendance running concurrently

The courses carried out by the University of Cambridge are at present arranged to begin early in January Three months are spent in Cambridge doing the lectures and practical work in Part I, and attending the systematic lectures in Part II and the practice of Addenbrooke's Hospital, where there is a fully equipped and up-to-date x-ray and electrological department The remaining three months can be completed at any recognized hospital, but special arrangements are made for students to continue their studies in London, where demonstrations at various hospitals are arranged, in order to give a wide experience

In addition, an *independent course is arranged* by the British Institute of Radiology This course is held entirely in London, but is recognized by the University as qualifying for the examination, it begins early in October

Further particulars as to the Cambridge courses can be obtained from F Shillington Scales M A , M D Medical Schools Cambridge and of the London courses from Stanley Melville, M D , at the offices of the British Institute of Radiology, 32, Welbeck Street, London, W 1

MEDICAL MISSIONARIES

Missionary Societies are in constant need of qualified men and women to fill vacancies as they occur in their hospitals, and also to enable them to take advantage of fresh openings To those suitably endowed the mission field offers unique opportunities for interesting work, and the development of native medical schools as training *institutions in connexion with some of the larger mission* hospitals, affords excellent scope for valuable work to medical men and women who are qualified to teach It is not usually expected that medical missionaries should take a position such as would otherwise be occupied by an ordained clergyman or minister, but it is essential that they should be prepared to exert their influence in any hospital to which they may be sent so that a Christian atmosphere may be maintained and the work of evangelization be carried on through the ministry of healing

As for scientific and other qualifications for the work medical missionaries in addition to being physically capable of sustaining a life which makes a great demand upon their strength should be thoroughly well trained physicians and surgeons It is very desirable that they should have held a resident appointment at a general hospital, and have a good knowledge of practical surgery, gynaecology, tropical medicine, and the treatment of eye diseases Useful information can be obtained from the secretaries of the various Missionary Societies, or from Thomas Cochrane, M B , C M , Honorary Secretary, British Advisory Board on Medical Missions, 3, Tudor Street, London, E C 4

Dental Surgery.

UNTIL the passing of the Dentists Act, 1921, the profession of dentistry in this country was regulated by enactments very closely similar to those relating to the practice of medicine—that is to say, there was no direct prohibition of the act of practice, and the Dentists Act of 1878 gave the same degree of protection to legally qualified and registered dentists as was accorded to registered medical practitioners—namely, the reservation of the use of certain titles This Act also provided (1) that no person should take or use the name or title of "dentist" (either alone or in combination with any other word or words) or of "dental practitioner," or any other name, title, or description expressed in words or by letters implying that he was specially qualified to practise dentistry, unless he was registered, under a penalty of £20, and (2) that an unregistered person could not recover any fee or charge in respect of any dental operation, attendance, or advice But, in the case of the practice of medicine by unqualified and unregistered persons, certain deterrent factors came into play—such as the inability to give a death certificate —and these did not operate to the same extent in the case of dentistry, hence, unqualified practice has been far more prevalent in dentistry than in medicine, and this increased after a decision of the House of Lords placing a narrow interpretation upon the words "specially qualified to practise dentistry," by defining the word "qualified" as not referring to competence but to the possession of a recognized diploma

THE DENTISTS ACT, 1921

This unsatisfactory position has now been remedied by the passing into law of the Dentists Act, 1921, its provisions are based largely on the recommendations of a departmental committee appointed in 1917 by the Privy Council "to investigate the extent and gravity of the evils connected with the practice of dentistry and dental surgery by persons not qualified under the Dentists Act" Since November 30th, 1922, no person has been permitted by law to practise or hold himself out, whether directly or by implication, as practising or as being prepared to practise dentistry unless he is on the *Dentists Register* provided for by the Dentists Act, 1878 The practice of dentistry is defined as including "the performance of any such operation and the giving of any such treatment, advice, or attendance, as is usually performed or given by dentists," and the performing of any operation or the giving of any "treatment, advice, or attendance on or to any person as preparatory to or for the purpose of or in connexion with the fitting, insertion, or fixing of artificial teeth" The maximum penalty incurred by an unregistered dentist is £100 for each offence There are, however, certain important exceptions to the requirement of registration A registered medical practitioner may practise dentistry without being on the Dentists Register, and a registered pharmaceutical chemist or chemist and druggist may extract a tooth where the case is urgent and where no doctor or dentist is available, but the operation must be performed without any kind of anæsthetic, further, any person may carry out minor dental work in a public dental service under the personal supervision of a registered dentist provided it is in accordance with conditions approved by the Minister of Health after consultation with the Dental Board

Certain persons other than those qualified by examination were entitled to be registered under the new Act They had to be of good personal character and 23 years of age before July 28th, 1921 (the commencement of the Act), and to have been engaged for five of the seven years preceding that date as their principal means of livelihood in the practice of dentistry in the British Isles or have been admitted to membership of the Incorporated Dental Society not less than one year before the commencement of the Act The passing of "the prescribed examination in Dentistry" within two years of the commencement of the Act is considered as equivalent to practising for five years, and a registered pharmaceutical chemist or a chemist and druggist who immediately before the commencement of the Act had a substantial practice as a dentist including all dental operations, was treated as though he had practised for five years A dental mechanic who for the five years has been carrying on his work as such can be registered provided within ten years of the commencement of the Act he passed the prescribed examination

Dentistry may be carried on by a corporate body provided the majority of the directors and all the operating staff are registered dentists, and that no other business than dentistry or only some business ancillary to dentistry is carried on by the company Companies carrying on the business of dentistry at the present time are permitted to continue to do so with certain restrictions, provided that the names of the directors have been entered in a list kept by the Registrar for that purpose Every director or manager of a company convicted of an offence under the Act will be held to be guilty of the offence unless he proves that the offence was committed without his knowledge, and the court may, in addition to a fine, order that the name of any director convicted shall be removed from the list of directors aforesaid

A subsequent Act passed in 1923 made provision for the registration of persons who were 21 in November, 1921, who had served during the late war in His Majesty's Forces, and were on that date engaged as their principal means of livelihood in the practice of dentistry in the British Isles The Board, however, has now power to consider any further applications under this Act

THE DENTAL BOARD

The Dental Board of the United Kingdom was established for the purpose of administering the new Act The first members of the Board, who held office for three years, were all appointed, but their term has now come to an end The Board consists of the chairman, appointed by the Privy Council, three members appointed by the General Medical Council, who must be members of the Branch Councils for England, Scotland, and Ireland, respectively, three persons who are neither medical practitioners nor dentists, appointed to represent England, Scotland, and Ireland, and six elected members, one of whom represents the qualified dentists in England and Wales, one those in Scotland, and one those in Northern Ireland, and two all the dentists registered under the Acts of 1921 and 1923

On the establishment of the Dental Board in 1921 certain powers and duties of the General Medical Council were transferred to it, including the duty of erasing from the *Dentists Register* any entry which has been incorrectly or fraudulently made An inquiry into the case of a person alleged to be liable to have his name erased from the *Register* will be made by the Board, which will report its findings to the General Medical Council, the order directing the erasure being made, as at present, by the Council A name erased from the *Register* can only be restored by the Council upon a report made by the Board An appeal to the High Court may be made by any person aggrieved either by refusal of the Board to register his name or by the removal of his name from the *Register* The administrative expenses of the Board are defrayed from the registration fees and annual retention fees, but any surplus may be allocated to purposes connected with dental education and research or to any public purpose connected with dentistry The office of the Dental Board is at 44, Hallam Street, London, W 1

The *Dentists Register* for 1924 contains the names of 13,473 persons, of whom less than a half are registered with qualifications, 8,136 names having been registered under the Dentists Acts, 1921 and 1923

DENTAL EDUCATION AND EXAMINATION

The preliminary examination in Arts is the same for medical and dental students, and the early stages of their education embrace much the same subjects[1], and, as the dental student is required to obtain a knowledge of the broad principles of medicine and surgery, it is necessary for him to pursue some portion of his studies at a medical school as well as at a special dental school, the latter not undertaking the teaching of these subjects Registration as a dental student is not in all cases compulsory, though it is to be advised as convenient as affording proof of the commencement of professional education and it is required by most of the licensing bodies, all of whom insist upon a curriculum covering four academic years

Qualifying licences are granted by the Royal Colleges of Surgeons of England and of Edinburgh and of Ireland by the Royal Faculty of Physicians and Surgeons, Glasgow, and by certain of the universities in the United Kingdom

Recognized dental schools are numerous In London there are those connected with the Royal Dental Hospital, Leicester Square,

[1] See the Registrar's Memorandum, printed in the article on this General Medical Council at page 504

the National Dental Hospital (now the University College Hospital Dental School), Great Portland Street, Guy's Hospital; and the London Hospital In the provinces there are the Birmingham Dental Hospital the Royal Infirmary and the General Hospital Bristol, the Dental Hospital and the Public Dispensary, Leeds, the Dental Hospital, Liverpool the Dental Hospital, Manchester the Dental Hospital and School, Newcastle upon Tyne the Royal Hospital, Sheffield. In Scotland there are the Dental Hospital, Dundee, the Incorporated Dental Hospital and School, Edinburgh and the Incorporated Dental Hospital, Glasgow, and in Ireland the Incorporated Dental Hospital of Ireland and the Royal College of Surgeons in Ireland.

Study may also be commenced in the dental department of any university of the United Kingdom The universities mentioned in the current issue of the *Medical Directory* as possessing dental schools or departments are: Birmingham, Leeds, Liverpool, Manchester and Sheffield.

There are considerable variations in the order in which the different licensing bodies require the various subjects of the curriculum to be taken up, and every prospective dental student should study, not only the regulations of the General Medical Council, but also those of the body whose licence he hopes to obtain This is the more important as in the case of some licensing bodies changes in the curriculum, with the view of making it more closely adapted to the needs of the practising dentist, have either already been made or are in contemplation

Recommendations of the General Medical Council

The Dentists Act still leaves to the General Medical Council the duty of controlling the course of study and examinations required for dental qualifications

The following recommendations as to the course of study and examinations to be required of candidates for degrees or licences in dentistry or dental surgery were adopted by the Council on May 27th, 1922

Preliminary Examination and Registration

1 That every dental student shall at the commencement of his studentship be registered in the manner and under the conditions prescribed for medical students

2. That before registration in the *Dental Students Register* every applicant shall be required to have passed in addition to the examination in general education, which shall be the same as that required for medical students an examination in Elementary Physics and Elementary Chemistry conducted or recognized by one of the licensing bodies, which shall also be the same as that required for medical students

3 That before registration as a dental student every applicant shall produce evidence that he has attained the age of 17 years

Professional Study

4 That every candidate for a degree or licence in dentistry or dental surgery shall be required before admission to the final or qualifying examination to produce certificates showing

(i) That he is at least 21 years of age

(ii) That he has been registered as a dental student

(iii) That he has, subsequently to the date of registration as a dental student, been engaged in professional study for at least four years, of which three years at least shall be spent at a school or schools recognized for professional study by one of the licensing bodies

(iv) That, subsequently to the date of registration as a dental student he has attended at a recognized medical school courses of instruction which shall be the same as those required for medical students in the following subjects (*a*) Chemistry, and (*b*) Physics in their application to Medicine, (*c*) Elementary Biology That he has attended at a recognized medical school courses of instruction in the following subjects (*d*) Human Anatomy (with dissections and demonstrations) for three academic terms (*e*) Physiology (with laboratory instruction, including Practical Histology) for two academic terms (*f*) General Pathology (including Bacteriology) for two academic terms (*g*) Medicine for two academic terms (*h*) Surgery for two academic terms (*i*) the practice of a recognized general hospital or hospitals of not less than eighty beds with certified instruction in Clinical Medicine and Clinical Surgery for four academic terms

(v) That he has attended at a recognized dental school courses of instruction in the following special subjects (*a*) Dental Anatomy and Physiology human and comparative The course should comprise a minimum of twenty meetings of the class (*b*) Practical Dental Histology and Morbid Histology The course should comprise a minimum of sixteen meetings of the class (*c*) Dental Pathology and Surgery The course should comprise a minimum of twenty meetings of the class (*d*) Dental Materia Medica and Therapeutics The course should comprise a minimum of sixteen meetings of the class (*e*) Dental Metallurgy (with practical work and demonstration) The course should comprise a minimum of twenty meetings of the class (*f*) Dental Mechanics (with practical work and demonstrations) The course should comprise a minimum of twenty meetings and twenty demonstrations) (*g*) A course of instruction in the use of Anaesthetics general and local employed in Dental Practice (*h*) A course of instruction in Radiology as applied to Dentistry

(vi) That he has for at least twenty four calendar months attended, during the ordinary academic term, the practice of a recognized dental hospital or of the recognized dental department of a general hospital

(vii) That he has received for not less than twenty four calendar months, or for 2 000 hours practical instruction in dental mechanics

Professional Examinations

5 That the examination for a degree or licence in dentistry or dental surgery shall be partly written partly oral and partly practical and shall include the following subjects (*a*) Chemistry Physics and Biology, in their bearing on Medicine and Dentistry (*b*) Human Anatomy and Physiology (*c*) General Pathology including Bacteriology (*d*) Medicine and Surgery (*e*) Dental Anatomy and Physiology, Dental Pathology Dental Surgery (including Orthodontics) Dental Materia Medica and Therapeutics and Dental Mechanics and Dental Metallurgy (*f*) Practical Examination in Dental Surgery (*g*) Practical Examination in Dental Mechanics and Metallurgy (*h*) Anaesthetics, general and local employed in Dental Practice

6 That the prescribed subjects of examination may be combined or distributed at the discretion of the licensing bodies and may be taken at two or more successive stages during the course of professional study, provided that no candidate shall be admitted to any final examination in Dental Surgery and Dental Mechanics until he shall have completed the required four years course of study

VACANCIES

ASHTON UNDER LYNE DISTRICT INFIRMARY AND CHILDREN'S HOSPITAL.—Honorary Medical Officer in the Massage and Electro-Therapeutic Department

BIRMINGHAM GENERAL DISPENSARY.—Medical Officer for Branch Salary £500 per annum

BOOTLE BOROUGH HOSPITAL.—(1) Senior Medical Officer (2) Two Junior Medical Officers. Males. Salary for (1) 150 per annum and for (2) £125 per annum.

BRIGHTON ROYAL ALEXANDRA HOSPITAL FOR SICK CHILDREN.—House-Surgeon (male) Salary £120 per annum

DOVER ROYAL VICTORIA HOSPITAL.—House-Surgeon (unmarried) Salary £150 per annum

EXETER ROYAL DEVON AND EXETER HOSPITAL.—House Physician (male). Salary at the rate of £140 per annum

LEEDS PUBLIC DISPENSARY.—Junior Resident Medical Officer Salary £150 per annum.

MAIDSTONE WEST KENT GENERAL HOSPITAL.—Two House-Surgeons. Salary at the rate of £220 per annum

MANSFIELD AND DISTRICT HOSPITAL.—Junior House Surgeon (male) Salary at the rate of £150 per annum.

NEWCASTLE UPON TYNE ROYAL VICTORIA INFIRMARY.—(1) Four House-Physicians. (2) Six House-Surgeons (3) House-Surgeons—(*a*) Two to Accident Department, (*b*) One each to Throat Nose, Ear and Eye Departments Gynaecological Department Skin and Venereal Department Out patient Dressing Department. Remuneration at the rate of £50 per annum.

NORTHAMPTON COUNTY MENTAL HOSPITAL, Berrywood.—Junior Assistant Medical Officer (male) single. Salary £200 per annum rising to £300

NORTHAMPTON GENERAL HOSPITAL.—Honorary Physician

NORWICH: NORFOLK AND NORWICH HOSPITAL.—Casualty Officer and House-Surgeon. Salary £150 per annum

PRINCE OF WALES'S GENERAL HOSPITAL, Tottenham N.15.—(1) House-Surgeon. (2) Special House-Surgeon. (3) House-Physician. (4) Junior House-Surgeon. (5) Junior House-Physician. Salary for (1) (2) and (3) £150 per annum, and for (4) and (5) £110 per annum

ROMFORD: OLDCHURCH HOSPITAL.—Resident Assistant Medical Officer Salary £250 per annum.

ROYAL NORTHERN HOSPITAL Holloway Road N.—House-Surgeon. Salary at the rate of £75 per annum

ST PETER'S HOSPITAL FOR STONE, Henrietta Street W.C.2.—House-Surgeon. Salary at the rate of £75 per annum.

SCARBOROUGH HOSPITAL AND DISPENSARY.—House-Surgeon (female) Salary £150 per annum.

SHEFFIELD ROYAL HOSPITAL.—Resident Surgical Officer Salary £200 per annum.

SUNDERLAND ROYAL INFIRMARY.—Two House-Surgeons (males) Salary £140 per annum each.

WEST LONDON HOSPITAL Hammersmith Road W.6.—(1) House-Physician (2) Two House-Surgeons. Males. Salary £100 per annum each.

MEDICAL REFEREE UNDER THE WORKMEN'S COMPENSATION ACT 1906 for Rugby and Daventry County Courts (Circuit No 23) Applications to Private Secretary Home Office by September 20th

[*Owing to the pressure on space it is not possible this week to include all the vacancies announced*]

BIRTHS, MARRIAGES AND DEATHS

The charge for inserting announcements of Births Marriages and Deaths is 9s, which sum should be forwarded with the notice not later than the first post on Tuesday morning in order to ensure insertion in the current issue

BIRTH

THOMAS.—On August 28th at Clapham London to Dorothy (Dorothy S Chamberlain M.B B.S Lond.) wife of Cyril J Thomas M.R.C.S L.R.C.P of the County Mental Hospital Lancaster a son.

DEATH

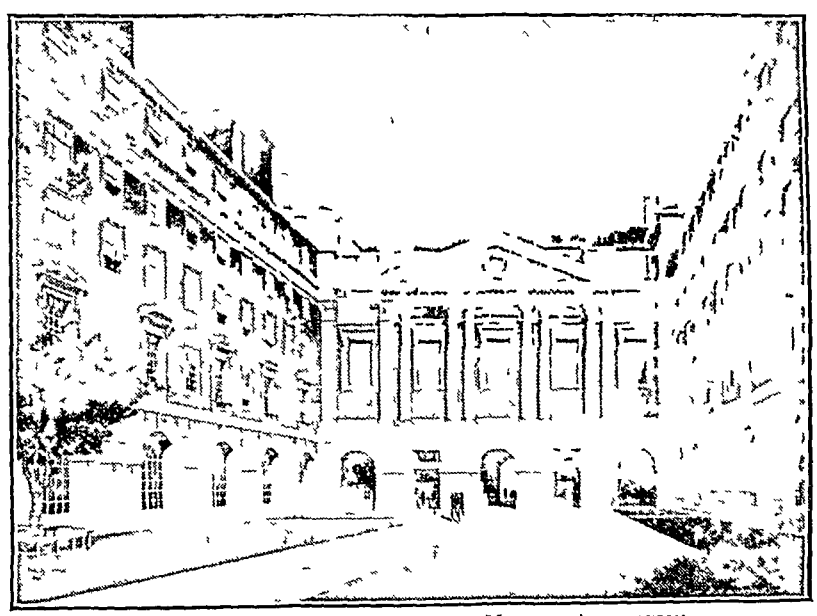
SMITH.—On August 4th at Watford Herts Major F Clarence Smith M.B B.S F.R.C.S I.M.S (ret) eldest son of the late Rev Dr Francis Smith M.A Cantab M.D of Eastbourne Devon of heart failure

[*The present issue being the Annual Educational Number, all current material is held over and neither the Supplement nor the Epitome of Current Medical Literature is published this week*]

The British Medical Association:

ITS AIMS, WORK, AND CONSTITUTION

THE British Medical Association (as briefly stated at the close of our introductory article on the Profession of Medicine) was founded in 1832 to promote the medical and allied sciences, to maintain the honour and interests of the profession, and to foster a feeling of friendship among its members To attain these objects it holds periodical meetings for the discussion both of medical and scientific subjects, and of professional affairs, it publishes the *British Medical Journal*, it maintains a reference and lending library, it has instituted lectures, scholarships, and grants for research It thus concerns itself with every side of medical work—science, clinical medicine, public health, and the material interests of professional life The British Medical Association, with a membership now of more than 28,000, is the oldest, largest, and most powerful British organization devoted to the welfare of the medical profession It has recently acquired a fine building in Tavistock Square, London, for its headquarters, providing ample accommodation for immediate needs and space for future developments, these new premises, designed by Sir Edwin Lutyens, R A , will, it is expected, be ready for occupation next year The remarkable growth in the central work of the Association during recent years has far outstripped the capacity of the present premises at 429, Strand



THE FUTURE HOUSE OF THE BRITISH MEDICAL ASSOCIATION TAVISTOCK SQUARE, LONDON.

Constitution and Administration

The Association has Branches and Divisions throughout Great Britain and Ireland, and also in the Dominions, Colonies, and Dependencies The Divisions are arranged territorially, and number, in all, 281 For certain purposes of administration or of scientific and clinical work, the Divisions are combined into 95 Branches Members of Divisions elect Representatives on the Branch Councils and also a member or members of the Representative Body, which is the governing body of the Association and determines its policy

The Council is the executive of the Association It is elected partly by the Divisions and Branches and partly by the Representative Body, and includes representatives of the Navy, Air Force, Army, and Indian Medical Services elected by the Representative Body The Representative Body and Council elect standing Committees to take charge of different subjects Among these may be mentioned the Science, Medico-Political, Ethical, Hospitals, Public Health, and Naval and Military Committees There are Committees also for the Dominions, Scotland, Ireland, and Wales, and for the working machinery of the Association, such as the Organization, Finance, and Journal Committees The Insurance Acts Committee, elected partly by the Association and partly by insurance medical practitioners, is financed by the Association, it is the recognized executive and mouthpiece of the insurance practitioners of Great Britain

Privileges of Members

A member of the British Medical Association has the right—

1 To attend the annual and other general meetings of the Association and the meetings of the Division and Branch to which he or she belongs

2 To take part by personal vote (or in some Divisions by voting paper) in the election of the representative of his or her Division in the Representative Body, and also in the election of members of the Council

3 To receive by post the *British Medical Journal*, published weekly, which gives a full record, with commentary, of progress in clinical and scientific medicine, and of medico-political affairs throughout the British Empire

4 To receive the help and advice of the central office in any professional difficulty

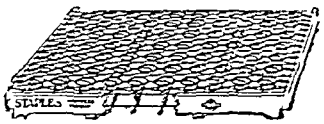
5 To use the library as a reading room, and to borrow current medical or scientific books on payment of postage Besides modern works and periodical medical literature—foreign as well as English—the library contains many books of historic interest

The full benefits of the Association can only be secured by the co-operation of large numbers of the medical profession, who by their annual subscriptions provide the necessary funds The greater the membership and the funds the more efficient and influential the organization The Association during the past ninety-two years has been the direct means of benefiting every class of medical men and medical women In asking for new members it looks not only to the older practitioners but also and especially to those recently qualified To these a generous concession is made as regards subscription, and there is a special claim to their recognition of the work of the British Medical Association in improving the conditions under which they may hold appointments in the public services or in civil life The *Association's work for* the services is well known It considers itself to be in a special sense the guardian of the interests of those members of the profession who by reason of their position are precluded from taking common action At the present time, when nearly all the Imperial services are being cut down both in numbers and in remuneration, it is ordinary prudence for every medical officer to join his professional organization

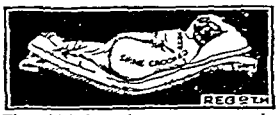
Subscriptions and Applications for Membership

The ordinary subscription to the British Medical Association is 3 guineas a year for members resident in the United Kingdom, but this is subject to various exceptions Thus, newly qualified practitioners elected within two years of registration pay half this sum up to the end of the fourth year after registration, medical officers on the active list of the R N , R A F , R A M C (Regular), and I M S pay 2 guineas, concessions are made also to members (in the British Isles) of forty years' standing, to members of ten years' standing who have retired from practice, to medical married couples residing together, and to whole time teachers and research workers The ordinary subscription for members living abroad is 1½ guineas, but some Branches have special local subscriptions A member elected after June 30th in any year pays for that year one half the current annual subscription

All duly qualified British medical practitioners are eligible for election as members Full particulars can be obtained on application to the Medical Secretary, British Medical Association, 429, Strand, London, W C 2, the Scottish Medical Secretary, 19, Rutland Square, Edinburgh, or the Irish Medical Secretary, 16, South Frederick Street, Dublin



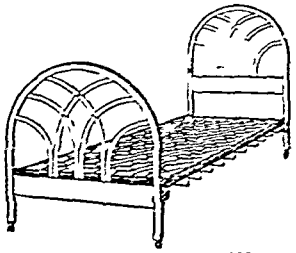
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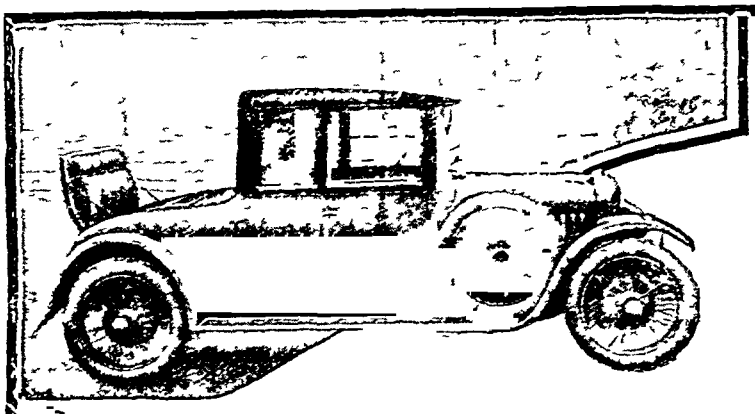
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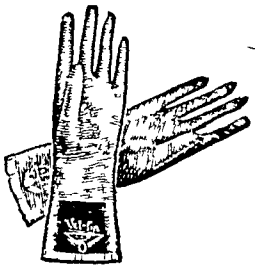
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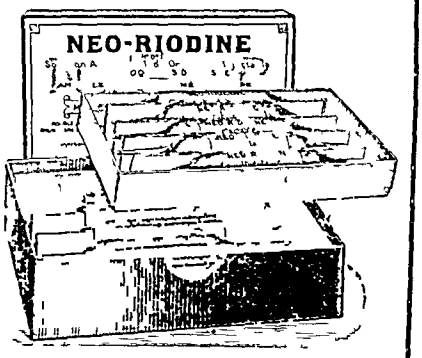


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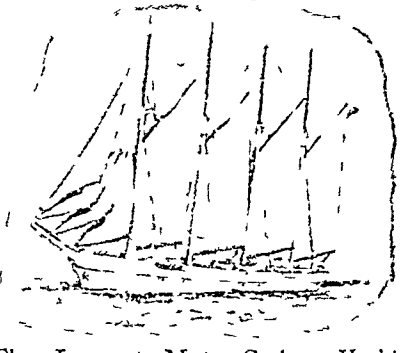
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For further information apply to ARTHUR TOWNSEND M.D. the Medical Superintendent.

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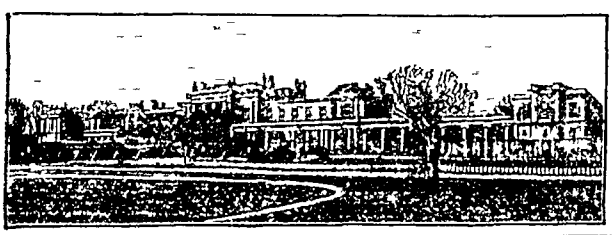
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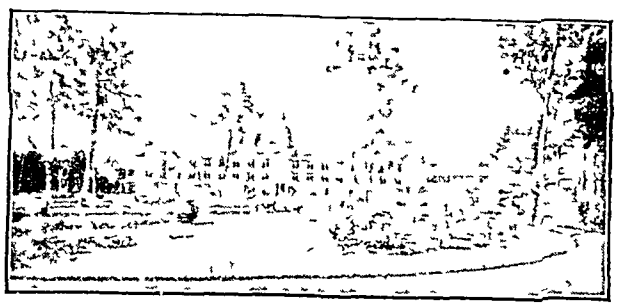
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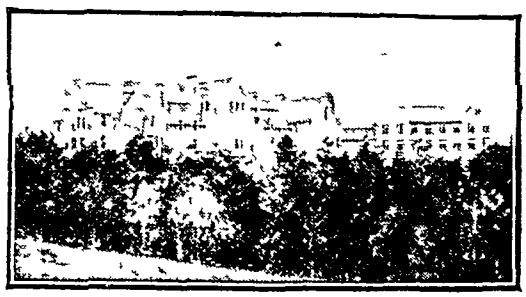
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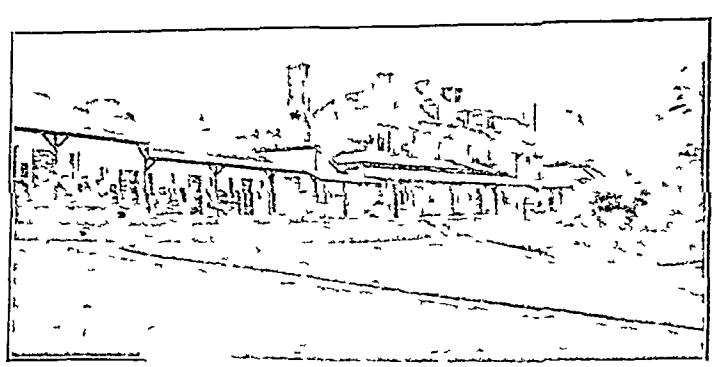
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MEDICAL PRELIMINARY.

The UNIVERSITY EXAMINATION POSTAL INSTITUTION offers postal courses or private tuition at moderate fees for the Medical and Dental Preliminary Arts Examinations It also has postal courses for the Pre Medical Chemistry and Physics Apply to the Principal or the Institution Mr E S WEYMOUTH, M A 17 Red Lion Square London W C 1

LONDON SCHOOL OF HYGIENE & TROPICAL MEDICINE,

Division of Tropical Medicine & Hygiene,

Endsleigh Gardens, N W 1.

Next Session will commence September 2nd 1924

For Prospectus and further particulars apply to The Secretary Endsleigh Gardens N W

University of London

WILLIAM JULIUS MICKLE FELLOWSHIP

Applications are invited for the William Julius Mickle Fellowship which is of the value of about £200 and is awarded by the Senate to the man or woman who being resident in London and a graduate of the University has in the opinion of the Senate done most to advance medical art or science during the preceding five years

Applications must be made before October 1st 1924 Further particulars can be obtained on application to the Academic Registrar University of London, South Kensington S W 7

CITY OF LONDON HOSPITAL FOR DISEASES OF THE HEART AND LUNGS.

VICTORIA PARK, E.2. (No 6 Bus or Tram to Cambridge Heath L&NER)

During the past year 1,131 In Patients have been treated in the wards. The Out Patients treated during 1923 numbered 10,056

SPECIAL DEPARTMENTS.—Surgical, Laryngological, X ray, Electro Cardiographic. Assistants are appointed to the Clinics and a limited number of research workers to the Pathological Department

The In Patient Staff visit generally in the afternoon, and welcome medical practitioners **Out Patients** at 2 p m.

Graduates desiring Assistantships in any department should apply to the head of the department

Physicians to In Patients—E H Colbeck, Clive Riviere, A G Levy, A J Scott Pinchin, F G Chandler, Sir Percy W. Bassett Smith. **Physicians to Out patients**—J B Alexander, J B Christopherson —ELECTRO CARDIOGRAPHIC DEPT. Dr A J. Scott Pinchin—SURGEON W H C Romanis—LARYNGOLOGIST: W. G Howarth—RADIOLOGIST: (Vacant)—PATHOLOGIST: S R Gloyne—ASSISTANT PATHOLOGIST D S Page

Tuberculosis Dispensary (Boroughs of Bethnal Green and part Hackney) Tuberculosis Officers: H. T Howell and F W Hamilton Other information from the Secretary of the Hospital

POST-GRADUATE ASSOCIATION.—Open to Graduates on payment of a fee of One Guinea per annum, which entitles them to attendance at Clinics, Post mortem Demonstrations, Operations, &c Special Demonstration and Lecture Courses are provided, particulars of fees for which can be obtained from the Dean A Club Room is provided —Application for Prospectus, etc, should be made to the Dean

LONDON HOMŒOPATHIC HOSPITAL,

Great Ormond Street and Queen Square, W C 1

Education Facilities for Graduates and Senior Students of Medicine

WINTER SESSION, 1924-25.

HONYMAN-GILLESPIE LECTURESHIP. 16th Year.

A Course of Lectures on **HOMŒOPATHIC MATERIA MEDICA AND THERAPEUTICS**, accompanied with **CLINICAL DEMONSTRATIONS** will be given by CHARLES E WHEELER, M D, B Sc Lond, Physician to the London Homœopathic Hospital, at the Hospital on

Mondays and Thursdays, October to December, 1924, at 5 o'clock—beginning on Monday, October 13th, and ending Thursday, December 18th

On the first Thursday of the month the hour will be 3 30 p m

THE COMPTON-BURNETT LECTURES.

A Course of Ten Lectures on HOMŒOPATHIC PHILOSOPHY AND PRESCRIBING, as illustrated from the writings of the Organon and Modern Developments therefrom, will be given by JOHN WEIR, M B, Ch B Glasg Physician to the London Homœopathic Hospital, on

Fridays, at 5 p m, October to December, 1924—beginning October 10th and ending December 12th

AN INTRODUCTORY LECTURE TO THE WHOLE EDUCATION COURSE will be delivered at the Hospital on Thursday, October 9th, 1924, at 5 p m, by JOHN HENRY CLARKE M D Consulting Physician to the London Homœopathic Hospital

All Medical Men and Women are invited to this Lecture

TUTORIAL CLASS

A Class for individual Study of the Materia Medica by the Repertor and References to Patients will be conducted by DOUGLAS M BORLAND, M B Ch B Glasg, on

Fridays, October to December, 1924, at 6 15 p m

THE SIR HENRY TYLER SCHOLARSHIP COMMITTEE also offer SCHOLARSHIPS of £20 for Medical Men in the Provinces desirous of taking a Post-Graduate Course at the London Homœopathic Hospital during the Ten Compton Burnett Lectures —Apply to Secretary London Homœopathic Hospital Great Ormond St Bloomsbury W C

FEES AND SCHOLARSHIPS

All information as to Fee and Scholarships may be obtained on application to the Dean of the Education Course London Homœopathic Hospital, W C

ST. MARY'S HOSPITAL MEDICAL SCHOOL,

PADDINGTON, W.2.

(University of London).

The WINTER SESSION will begin on WEDNESDAY OCTOBER 1st 1924

The Annual Dinner of Past and Present Students will be held on MONDAY, October 6th, at the Connaught Rooms, Dr B M. CALLENDER, C B E, in the chair

EXCEPTIONAL SITUATION The Hospital is adjacent to a large poor district on the one side, and near to Kensington Gardens and one of the best residential districts in London on the other side thus providing for the Student the unusual possibility of living in close touch with his work

ATHLETIC GROUND A new Ground (10 acres) is now in use at Wembley and can be reached in 20 minutes from the Hospital A pavilion has been erected at a cost of £3 000

COMPLETE CURRICULUM. The entire Curriculum is provided for Medical Degrees and Diplomas and Students may join the School at once on passing a Preliminary Examination in Arts

SPECIAL CLINICAL FACILITIES The formation of Clinical Units and the affiliation of several other hospitals for teaching purposes have largely extended the scope of the clinical teaching 1 000 beds are now available for the clinical instruction of Students Special arrangements have recently been made for the instruction of students in Venereal Diseases at the London Lock Hospital and all students attend a short course at Queen Charlotte's Lying in Hospital

INSTITUTE OF PATHOLOGY The Institute of Pathology and Research is under the personal direction of Sir Almroth Wright F R S and includes seven departments Students receive special training in Pathology and Bacteriology and Clinical Pathology by means of clerkships in these subjects tenable for a period of 3 months 72 of these posts being available in each year

ENTRANCE SCHOLARSHIPS Three Entrance Scholarships of £210 each are awarded by nomination in July Scholarships of £200 each are awarded by nomination almer Scholarship (£20 per annum for two years) is

RESEARCH SCHOLARSHIPS the value of £200 per annum each, are awarded annually for the purpose of enabling newly qualified students to undertake research under the Director of one of the departments included in the Institute of Pathology

TUITION FEES The Composition Fee for the entire curriculum is £200 —The Composition Fee for the Clinical portion of the curriculum is 90 guineas —The Annual Fee is 40 guineas, with an Entrance Fee of 10 guineas

C M WILSON (*M C*) M D F R C P, Dean

*** *The Illustrated Prospectus of the Medical School may be obtained on application to the Secretary*

LONDON (ROYAL FREE HOSPITAL) SCHOOL OF MEDICINE FOR WOMEN

(UNIVERSITY OF LONDON)

Hunter Street, Brunswick Square, W C 1

The WINTER SESSION will begin on Wednesday, October 1st 1924

Full courses for the London M B B S Degrees and the Diplomas of the Royal Colleges of England are arranged, including First Medical and Pre Medical Courses

Special classes for the Primary Fellowship Examination

Dental Classes are arranged in conjunction with the Royal Dental Hospital, Leicester Square

Clinical instruction is given at the Royal Free Hospital and also at the National, Great Ormond Street Children's Cancer Elizabeth Garrett Anderson South London, and Royal Ophthalmic Hospitals

Scholarships Bursaries, and Prizes are awarded annually

Students can reside in the School Chambers

Prospectus and full information can be obtained from the Warden and Secretary Miss L M BROOKS LOUISA B ALDRICH BLAKE M D M S Dean

POST-GRADUATE TEACHING

WEST LONDON HOSPITAL.

Continuous Clinical Work in all Departments—

CLINICAL ASSISTANTSHIPS—

F R C S (FINAL) COURSE

For further particulars apply to Mr H J SIMSON Dean, West London Hospital Hammersmith W 6

DIPLOMA IN PUBLIC HEALTH, etc

THE ROYAL INSTITUTE of PUBLIC HEALTH.

Patron

HIS MAJESTY KING GEORGE V

Principal and Director of the Laboratories: Colonel Sir WILLIAM SMITH, M D, D Sc, LL D, F R S Ed Barrister-at-Law

Assistant Director of Bacteriological Laboratories: L GOODWIN RAWLINSON, M D D P H Oxon.

Assistant Director of Chemical Laboratories ALAN WEST STEWART D Sc A I C, Public Analyst for Windsor Boston, &c

Lecturer on Bacteriology ARTHUR COMPTON M D, D Sc, late of the Institut Pasteur Paris

Lecturers on Public Health, etc ALBERT E THOMAS M A M D Oxon D P H Oxon Barrister-at-Law Medical Officer of Health for the Borough of Finsbury GEOFFREY E OATES M D Lond D P H Camb M R C P Barrister at Law Medical Officer of Health for the Borough of Bethnal Green

The Course of Instruction can be commenced at any time

The Principal will be pleased to interview intending candidates for the purpose of advice

CLINICAL INVESTIGATIONS

The Consulting Rooms and Laboratories of the Institute are available for Medical Practitioners desiring Laboratory Assistance in the investigation and diagnosis of cases under their care

Blood sugar and Insulin sugar tolerance tests and the control examinations of blood sugar and the urine during treatment are also undertaken

Further particulars can be obtained from the Secretary 37 Russell Square W C 1

Telephone MUSEUM 766

THE METROPOLITAN EAR, NOSE, & THROAT HOSPITAL

(1838) (INCORPORATED),

FITZROY SQUARE, LONDON, W.1.

FACILITIES FOR CLINICAL WORK are afforded to Medical Practitioners and Students Fee for one month, 3 Guineas, for three months, 5 Guineas

PRACTICAL DEMONSTRATIONS are given daily (Saturday excepted), at 3 p m, in the manipulation of instruments used in the Diagnosis and Treatment of Diseases of the Ear, Nose, and Throat

CLINICAL ASSISTANTS are appointed as vacancies occur, and have responsible duties

Further particulars may be obtained from the Secretary,

L L PHILLIPS

THE WEST END HOSPITAL FOR NERVOUS DISEASES.

OUT-PATIENT DEPARTMENT (47,000 attendances), WELBECK STREET, W 1
IN PATIENT DEPARTMENT (76 beds), GLOUCESTER GATE, REGENT'S PARK, N W 1

A limited number of appointments as Hon Clinical Assistants are open to Post Graduates

A programme of SPECIAL CLINICAL DEMONSTRATIONS on selected cases is advertised prior to the beginning of each Session these are additional to

The General Practice of the Hospital which is conducted daily (Saturdays excepted)

The Savill Prize (value £15) and Medal is offered annually for the best thesis on a neurological subject submitted by Post Graduates who have attended the Hospital practice on not less than ten occasions

For particulars of the above apply to C WORSTER-DROUGHT, M D, M R C P, Dean, or to the SECRETARY OF THE HOSPITAL, at 73, WELBECK STREET W

BETHLEM ROYAL HOSPITAL,

Lambeth Road, S.E 1.

A COURSE of LECTURES and PRACTICAL INSTRUCTION

FOR THE

DIPLOMA IN PSYCHOLOGICAL MEDICINE

(OF THE UNIVERSITIES OF LONDON, CAMBRIDGE, DURHAM, &c)

WILL BE GIVEN at the above Hospital commencing SEPTEMBER 15TH, 1924

For Syllabus and further particulars apply to the Physician-Superintendent

GUY'S HOSPITAL MEDICAL & DENTAL SCHOOLS.

(University of London.)

ns 626 Beds is situated one m nute s walk from London Bridge Railway St. on
CHEMISTRY PHYSICS an l BIOLOGY for the First M.B Examinat on o the University of Lond'n the Pre Medical Exa ploma and the Preliminary Science Examination for the L.D S Dip oma.
THE WINTER SESSION will start on TUESDAY SEPTEMBER 30TH 1 24

ENTRANCE SCHOLARSHIPS.—MEDICAL.

The following Entrance Scholarships are awarded annually in the month of July —

A.—Open Junior Scholarships.—1 An ARTS SCHOLARSHIP of the value of £100 2 A SCIENCE SCHOLARSHIP of the value of £100 3 A WAR MEMORIAL SCHOLARSHIP of the value of £200 awarded alternately in Arts and Science This Scholarship is open every other year the next award will be made in 1 2

B.—Confined Scholarship in Science.—A JUNIOR SCIENCE SCHOLARSHIP of the value of £100 is offered for competition to Candidates who have attended the Preliminary Science Classes at this school.

The following Entrance Scholarships are awarded annually in the month of September —

C.—Open Senior Science Scholarships.—1 A WAR MEMORIAL SCHOLARSHIP of the value of £80 2 An OPEN SCHOLARSHIP of the value of £80 Subjects Candidates will be examined in two of the following Subjects at their option (1) Anatomy (2) Physiology (3) Organic Chemistry and Pharmacology (4) General Pathology

DENTAL.

Offers Two Open Scholarships in July each year —1 A WAR MEMORIAL SCHOLARSHIP IN ARTS of the annual value of £40 for four years 2 A SCIENCE SCHOLARSHIP of the value of £40 per annum for not more than four years.

Numerous Prize Medals and Scholarships are open for competition during the period of Studentship

For further particulars and for the Prospectus containing information as to the Courses of Study advised the Dental Colleges Fees &c. application should be made personally or by letter to The Dean Guy's Hospital London Bridge S E 1

UNIVERSITY OF LONDON—KING'S COLLEGE

DEPARTMENTS OF PUBLIC HEALTH, BACTERIOLOGY, AND MICROSCOPY.

HYGIENE, &c .. Professor SIMPSON, Professor SOMMERVILLE, Colonel RHYS CHARLES, Dr MALCOLM, Dr LEGGE, Dr NANKIVELL.
PUBLIC HEALTH CHEMISTRY Mr W PARTRIDGE, F I C
BACTERIOLOGY AND PARASITOLOGY Professor HEWLETT and Dr TAYLOR.
MICROSCOPY Mr J E BARNARD, F R S

The Laboratories are open daily from 10 to 5 (Saturdays excepted) for Instruction and Research

Full Courses of Instruction are given for the **DIPLOMA OF PUBLIC HEALTH,** including School Hygiene (Dr Malcolm), and Industrial Hygiene (Dr Legge)

Courses in Bacteriology and Microscopy Evening Classes in the Principles of Hygiene will commence in January

For Particulars apply to the SECRETARY or to Professor HEWLETT

ST. THOMAS'S HOSPITAL MEDICAL SCHOOL,

ALBERT EMBANKMENT, S.E.

(University of London.)

The WINTER SESSION BEGINS on WEDNESDAY, OCTOBER 1st, 1924.

FULL TERM AS USUAL

The PRIMARY F R C S CLASSES will COMMENCE on WEDNESDAY, OCTOBER 1st
The FINAL F R C S COURSE will commence on MONDAY, SEPTEMBER 29th
UNIVERSITY SCHOLARSHIP (Anatomy and Physiology) EXAM, SEPTEMBER 17th, 18th and 19th.
FULL CURRICULUM—University men can attend to work for any part of their M B degree
The SITUATION is central and easily accessible
The HOSPITAL Wards are large and particularly well lighted
SPECIAL TUTORS for OXFORD, CAMBRIDGE and LONDON UNIVERSITY MEN
ALL PARTICULARS FURNISHED BY THE MEDICAL SECRETARY of the MEDICAL SCHOOL, ST THOMAS'S HOSPITAL, Lambeth Palace Road, London, S E 1

THE HOSPITAL FOR SICK CHILDREN,

GREAT ORMOND STREET, W.C. 1.

This Hospital contains 241 beds with an average admission of 3,000 in patients per annum, whilst in the Out patient Department between 25,000 and 30,000 new patients are seen each year The Medical School is recognised by the Universities of Oxford, Cambridge, and London and by the Conjoint Medical Board of England as a teaching institution where two months' clerking and dressing may be carried out by any undergraduate student who is entering for a final qualifying examination In addition, for students who have completed four years of medical study, six months of the fifth year may be spent there in clinical work under recognition from the Conjoint Board Post graduate instruction, open to all qualified medical men and women, is given daily in the wards, out patient department, operating theatre, and *post mortem* room by members of the visiting staff In addition, special lectures are arranged for them throughout the year, announcements of which are made from time to time, and full details of them can be obtained from the Dean or Secretary at the Hospital Clinical clerkships in the wards and clinical assistantships in the out patient department are also available for post graduate students Opportunities for study are also offered in the Ophthalmic, Aural, Dermatology, Dental, Radiographic, and Pathological Departments

Fees for Hospital Attendances—One Month's Ticket, £2 2s Three Months' Ticket, £5 5s Perpetual Ticket, £10 10s. Special reduced fee for Clinical Clerks, Dressers for one month's attendance, £1 1s

Pathological Clerkships—Facilities are afforded for obtaining theoretical and practical instruction in Clinical Pathology and Bacteriology in the Pathological Laboratories Clerks attend for about four hours daily

Fees for one month, £3 3s two months, £5 5s, three months, £6 6s

JAMES McKAY, Secretary WILFRED J PEARSON D S O, M C D M, Dean of the Medical School.

LONDON HOSPITAL MEDICAL COLLEGE AND DENTAL SCHOOL.

The WINTER SESSION will Open on Wednesday, October 1st.

The HOSPITAL is the largest in England. There are 948 beds of which number 840 are in constant use Last year number of in patients, 17,977 out-patients 119 749 attendances 516 169 dental patients, 5,577 major operations, 7,543

The MEDICAL COLLEGE and DENTAL SCHOOL are essentially modern, with large laboratories equipped with the latest and the most approved appliances The STAFF is so large as to permit of individual attention being paid to all Students

MEDICAL UNIT—All Students have the advantage of passing through the Medical Unit before entering the Wards as Clerks. Senior Students preparing for the higher examinations receive special instruction

RESEARCH FUNDS of over £26 000 give unrivalled facilities for Medical Research.

SCHOLARSHIPS and PRIZES amounting to £784 are awarded annually

APPOINTMENTS—Over 160 Appointments are made annually from Students of the College recently qualified

SPECIAL COURSES are held for all the University Examinations for the Primary and Final Fellowship Examination of the Royal College of Surgeons and for the Membership Examination of the Royal College of Physicians

HOSPITAL PRACTICE—Exceptional opportunities are offered to qualified Practitioners wishing to attend the General Practice or the Practice of a Special Department of the Hospital

The SCHORSTEIN MEMORIAL LECTURE will be delivered during the Session by Sir ARTHUR KEITH M D, LL.D F R S

The Old Students' Dinner will be held at the Trocadero Restaurant on WEDNESDAY, OCTOBER 1ST at 7 30 for 8 P M, Professor WILLIAM BULLOCH M D LL D F R S Goldsmiths Company's Professor of Bacteriology and Bacteriologist to the Hospital, will preside

A Clubs Union an Athletic Ground of over 13 acres and a Students Hostel, promote the recreation health, and comfort of the Students

For Prospectus and Particulars apply to the Dean (Professor WILLIAM WRIGHT, M.B., D Sc. F R C S) who will be pleased to make arrangements for anyone wishing to see the Medical College and Dental School

MILE END L

The London School of Dermatology.

ST. JOHN'S HOSPITAL FOR DISEASES OF THE SKIN

LEICESTER SQUARE, W.C.2

SYLLABUS—WINTER SESSION.

The CHESTERFIELD LECTURES constitute a systematic Course in Dermatology will be given at 5 P.M. on Tuesdays and Thursdays from October to March

Date 1924		Subject	Lecturer
Tues	Oct. 7	Introductory	Dr J. H. SEQUEIRA
Thurs	9	Anatomy	Dr J. M. H. MACLEOD
Tues	14	Physiology	Dr S. E. DORE
Thurs	16		Dr J. M. H. MACLEOD
Tues	21		Dr H. W. BARBER
Thurs	23		Dr H. G. ADAMSON
Tues	28		Dr H. W. BARBER
Thurs	30	*Principles of Treatment*—General	Dr W. GRIFFITH
Tues	Nov. 4	Principles of Treatment—Local	Dr KNOWSLEY SIBLEY
Thurs	6	Eruptions due to External Irritants	Dr J. M. H. GRAY
Tues	11	Eruptions due to Physical Causes	Dr KNOWSLEY SIBLEY
Thurs	13	Diseases due to Animal Parasites	Dr H. MACCORMAC
Tues	18	Diseases due to Fungi &c.	Dr A. WHITFIELD
Thurs	20		
Tues	25	Bacterial Affections	Dr A. M. H. GRAY
Thur	27	Seborrhœa, Seborrhœic Dermatitis	Dr HALDIN DAVIS
Tues	Dec. 2	Acne Rosacea	
Thurs	4	Eczema	Dr W. GRIFFITH
Tues	9		
Thurs	11	*Erythemato-Squamous* Eruptions	Dr S. E. DORE
Tues	16	The Keratoses—General View	Dr GRAHAM LITTLE

Date 1925		Subject	Lecturer
Tues	Jan. 13	The Erythemata	Dr M. G. HANNA
Thurs	15	Urticarial Eruptions	
Tues	20	The Erythrodermias	Dr H. W. BARBER
Thurs	22	Lupus Erythematosus	Dr KNOWSLEY SIBLEY
Tues	27	Non-Bullous Herpes	Dr A. M. H. GRAY
Thurs	29	Pemphigus & Allied Eruptions	Dr J. M. H. MACLEOD
Tues	Feb. 3	Lichen Planus	Dr GRAHAM LITTLE
Thurs	5	Pruritus, Prurigo, Lichenification	Dr J. L. BUNCH
Tues	10	Tuberculosis Cutis	Dr J. H. SEQUEIRA
Thurs	12		
Tues	17	Cutaneous Syphilis	Dr WILFRID FOX
Thurs	19		
Tues	24	Alopecia	Dr S. E. DORE
Thurs	26	Leukæmia, Cutis Mycosis Fungoides	Dr HALDIN DAVIS
Tues	Mar. 3	Nævi	Dr WILFRID FOX
Thurs	5	Benign Growths of the Skin	Dr H. G. ADAMSON
Tues	10	Potent Ulcer	
Thur	12	Malignan Growths	D. H. MACCORMAC
Tues	17	Sclerodermia, Neurilemmatosis	Dr M. G. HANNA

An Examination will be held at the end of the Course and the CHESTERFIELD MEDAL will be awarded to the best candidate provided the required standard is reached

CLINICS.—Instruction will be given daily in the out-patient department as follows:—

Monday	5 P.M.	Dr GRIFFITH.	Thursday	2 P.M.	Dr MACCORMAC
	6 P.M.	Dr HANNA		6 P.M.	Dr GRIFFITH.
Tuesday	2 P.M.	Dr BUNCH.	Friday	5 P.M.	Dr HANNA
	6 P.M.	Dr HANNA		6 P.M.	Dr FOX
Wednesday	5 P.M.	Dr SIBLEY	Saturday	5 P.M.	THE MEDICAL REGISTRAR
	6 P.M.	Dr MACCORMAC			

LABORATORY.—Arrangements can be made for clinical instruction or for research work.

Fees are payable for the lectures, hospital practice and laboratory work. For further particulars apply to

M. G. HANNA, M.D., Dean.

ST. BARTHOLOMEW'S HOSPITAL AND COLLEGE

(UNIVERSITY OF LONDON)

WINTER SESSION begins October 1st, 1924.

THE HOSPITAL has **757 Beds** and the **MEDICAL COLLEGE** contains large Lecture Rooms and Laboratories, as well as a Museum and a Library.

Every Special Branch of Medicine and Surgery has a Department.

ENTRANCE SCHOLARSHIPS

Four Entrance Scholarships are awarded in September, of the aggregate **value of £325**.

Other Scholarships and Prizes amount to about **£675**.

PRELIMINARY SCIENCES

BIOLOGY, CHEMISTRY, and PHYSICS are fully taught in the LABORATORIES apportioned to these subjects.

HOSPITAL APPOINTMENTS

Forty House Physicians and House Surgeons are appointed annually from those Students who have passed their final qualifying examination.

Five hundred and sixty Ward Clerkships and Dresserships are open annually to Students before qualification.

STUDENTS' UNION.

The Union possesses a Club Ground of ten acres within easy reach of the Hospital.

HIGHER EXAMINATIONS.

Special Classes are held for **MD, FRCS, DPH.**

For further particulars apply, personally or by letter, to—

THE DEAN OF THE MEDICAL COLLEGE,

ST. BARTHOLOMEW'S HOSPITAL, LONDON, E.C.1

UNIVERSITY COLLEGE HOSPITAL DENTAL SCHOOL.

NATIONAL DENTAL HOSPITAL,

GREAT PORTLAND STREET, W. 1.

LECTURERS.

Dental Anatomy—A BAYFORD G UNDERWOOD, M B, B S Lond, M R C S L R C P, L D S Eng
Thursdays at 5 30 p m October to March

Dental Materia Medica—C H HAMPSHIRE, B Sc Lond, F I C, F C S
Wednesdays at 1 15 p m May to July

Dental Mechanics—S HOLLOWAY OLVER, L D S Eng
Wednesdays at 5 p m October to December

Dental Metallurgy—H TERREY, B Sc
Tuesdays at 5 30 p m at University College, January to March

Dental Surgery and Pathology—J L DUDLEY BUXTON L M S S A, L D S Eng
Tuesdays and Fridays at 12 noon October to December

Dental Histology—A TEMPLAR BARRITT, L D S Eng
Fridays at 5 p m May to July

Bacteriology of the Mouth—SIR KENNETH GOADBY, D P H Camb, L R C P, M R C S, L D S Eng
Wednesdays at 5 p m January to March

Orthodontics—BERTRAM B SAMUEL, L D S Eng
Thursdays at 5 30 May to July

Anæsthetics—C T W HIRSCH, M R C S, L R C P, L S A
Monday at 4 30 May to July

The WINTER SESSION commences OCTOBER 1st, 1924.

This Hospital and School, situated in the centre of a large population, and within a few minutes of *University College* Hospital, has recently been reorganised and equipped on the highest standard of modern requirements, and is admirably adapted for the teaching of students in every branch of the Science and Art of Dental Surgery

The mechanical laboratory, conservation room, and X-rays department are replete with all the latest approved appliances

Students (men and women) enter as students of University College Hospital, and attend classes in anatomy and physiology at *University College*, adjacent to *University College* Hospital

Each student serves as a dresser in the extraction, anæsthetic, conservation, and X-rays departments

Four house surgeons are appointed half yearly

The calendar, containing full information as to lectures, fees, prizes, &c, may be had on application to the Sub Dean or Dental Students, who attends the hospital on Monday mornings, at 10 a m

KING'S COLLEGE HOSPITAL MEDICAL SCHOOL

(UNIVERSITY OF LONDON).

The HOSPITAL was opened in 1913 and is the most modern and one of the best equipped Hospitals in England The importance of specialisation has long been recognised by the Hospital, and it has now sixteen Special Departments, each in charge of a specialist and his staff It was planned for 600 beds, but at present, owing to lack of funds, 200 are not yet available It serves a population of nearly 2,000,000, and the attendances in the Casualty and Out patient Departments during the year 1923 amounted to 208,955

The MEDICAL SCHOOL Buildings, like those of the Hospital, are up to date and exceptionally fine The Laboratory and Pathological Department and the Post mortem Room are especially noteworthy Students of both sexes are admitted

In the Education at the Hospital a special feature has always been the individual attention given to each Student, and each subject is taught by its own specialist There is ample opportunity for any Student who wishes to specialise in a subject to continue his studies with the help of Junior Staff Appointments With a view to ensuring better co ordination of studies, the teaching of each of the subjects of Medicine, Surgery, and Gynæcology has been placed in charge of a member of the Senior Honorary Staff, assisted by Medical, Surgical, Obstetric, and Pathological Tutors Attached to the Gynæcological Department is a Maternity Ward, through which Students can qualify for the requirements in that subject of all the Examining Bodies There is a *Special Course in Radiology for Students working for the Cambridge* Diploma in Medical Radiology and Electrology

The Regius Professors of Oxford and Cambridge nominate yearly to a BURNEY YEO SCHOLARSHIP of £80 from the Students of their respective Universities who have passed the M B Examination in Anatomy and Physiology

SCHOLARSHIPS in ANATOMY and PHYSIOLOGY, and in PATHOLOGY and PHARMACOLOGY, value £50 each, confined to University Students, are also awarded yearly in September

DENTAL SCHOOL When the Hospital was built accommodation was provided for a Dental Department Arrangements have been made for the use of this section, together with additional rooms for Dental Metallurgy, by the Dental School, which was opened in October, 1923, under the direction of Mr A LIVINGSTON, M B, Ch B, Mast Dent Surg

A full course is given in co operation with King's College, and includes arrangements for students who desire to avail themselves of the special provisions of the Dentists' Act

"The PLANTANES," close to the Hospital, with large grounds and tennis courts, is available as a residence for Students

The ATHLETIC GROUND (over six acres in extent) is within ten minutes' walk of the Hospital

The Fee for the advanced studies is 93 guineas The Entrance Fee of 10 guineas includes membership of the Clubs and Societies Union

For Particulars, Calendar of the School, and Appointments to see the School and Hospital, application should be made to the Dean, H WILLOUGHBY LYLE, M D, B S Lond, F R C S, or to the Secretary, S. C RANGER, M A Cantab, King's College Hospital Medical School, Denmark Hill, London, S E 5

UNIVERSITY COLLEGE HOSPITAL MEDICAL SCHOOL.

TELEPHONE—
MUSEUM 7026

(UNIVERSITY OF LONDON).

UNIVERSITY STREET, GOWER STREET, W C 1

MEDICAL AND SURGICAL STAFF

Consulting Physicians—Sir JOHN WILLIAMS Bart G C V O, M D LL D Sir THOMAS BARLOW Bart K C V O M D F R S, F R C P Sir JOHN ROSE BRADFORD K C M G C B C B L M D D Sc, F R S
Physicians—Dr SIDNEY MARTIN F P C P F R S Dr H BATTY SHAW F P C P Dr F J POYNTON F R C P Dr C BOLTON C B E D S F L C P, F R S Prof T R ELLIOTT C B E D S O F R C I F I S Sir T LEWIS C B E D S F R C P F L S
Obstetric Physicians—Dr H R SPENCER F P C P Sir G BLACKER C B E F L C P F R C S
Physician to Skin Department—Dr A M H GIBNEY C B E F L C P F R C S
Physician for Mental Diseases—Dr B HART M P C P
Physician to Neurological Department—Dr P M P WILSHE O B E F P C P
Consulting Surgeons—Sir PICKMAN J GODLEE Bart K C V O M S F R C S Mr BILTON POLLARD B S, F R C S Mr RAYMOND JOHNSON O B E B S F R C S Mr PERCY FLEMMING B S, F P C S (Ophthalmic) Mr H MORRISTON DAVIES M D M C F R C S Mr S SMITH M R C S L D S (Dental)
Surgeons—Mr WILFRED TROTTER M S F R C S Mr GWYNNE WILLIAMS M S F R C S, Prof C C CHOYCE C M G C B E B Sc, F R C S Mr E K MARTIN M S F R C S
Ophthalmic Surgeons—Sir J H PARSONS C B E D Sc B S F R C S F R S Mr HUMPHREY NEAME F R C S
Diseases of the Ear and Throat—Mr HERBERT TILLEY F R C S F P C S Mr RICHARD LAKE F L C S M G SECCOMBE HETT B S, F R C S Mr F A PETERS F R C S Mr H A KISCH B S F R C S Mr J F O'MALLEY F R C S
Dental Surgeon—Mr H J BELPH M R C S L R C P L D S
Radiologist—Dr R W A. SALMOND O B E
Consulting Anæsthetist—Dr DUDLEY W BUXTON M R C P
Anæsthetists—Dr H J SHIPLEY C M G F P C S Dr F S ROOD Dr C W MOPPIS D S HUTCHISON D H L N WEBBER
Pathology—Prof A E BOYCOTT M A D M F P S
Bacteriology—Dr F H TEALE B Sc F R C P Dr M D WRIGHT B A M B Ch B F P C P E and Dr D EMBLETON M B
Clinical Pathology—Dr G W GOODHART M A B Ch
Morbid Anatomy—Mr W G BARNARD M P C S L R C P
Chemical Pathology—Mr C P HARRINGTON B.A. Ph.D

THE WINTER SESSION will commence on the 1st October, 1924

THE SCHOOL IS FOR FINAL STUDIES only

STUDENTS are prepared for the degrees of the Universities of —
OXFORD, CAMBRIDGE, LONDON, and DURHAM, and for the Diplomas of other qualifying bodies.

CLINICAL UNITS in MEDICINE and SURGERY are now in operation—The whole time Directors of the Units are concerned with the organization of the teaching generally, but the honorary staff are responsible for the largest share of the teaching in the wards and Out Patient Department of the Hospital. A Unit in Obstetric Medicine will be established as soon as the new Obstetric Hospital, now in course of construction, is finished.

Director of Medical Unit—Prof T P ELLIOTT F R S
Director of Surgical Unit—Prof C C CHOYCE
Assistants—Dr J W McNEE Dr H K HETZEL, Dr F B VERNEY and Dr P HILTON
Assistants—Mr JULIAN TAYLOR and Mr F J F BARLLIGTON

DENTAL STUDENTS can obtain a complete curriculum at University College, and at University College Hospital Dental School (The National Dental Hospital, Great Portland Street). This Hospital has recently been re-organized and equipped on the highest standard of modern requirements, and is admirably adapted for the teaching of Students in every branch of the science and art of Dental Surgery.

FEES—For the Final Course 112 guineas if paid in one sum, or 115 guineas paid in two instalments of 70 and 45 guineas.

APPOINTMENTS—Forty seven appointments are open during the year to students, and paid appointments to the annual value of over £2000.

SCHOLARSHIPS, EXHIBITIONS, and Prizes, of the value of over £1,000, are awarded annually. Among the most important are —

GRAHAM SCHOLARSHIP in Pathology, £300 per annum.
LESLIE PEARCE GOULD SCHOLARSHIP, awarded every two years, about £200
RADCLIFFE CROCKER TRAVELLING SCHOLARSHIP in Dermatology, awarded every five years, about £250
MAGRATH SCHOLARSHIP in Clinical Medicine, about £100
PERCIVAL ALLEYN PRIZE, about £60
ATCHISON SCHOLARSHIP, about £55 per annum, tenable for two years.
ATKINSON MORLEY SCHOLARSHIP, £45 per annum, tenable for three years.
BUCKNILL SCHOLARSHIP, entitles the holder to the Intermediate Medical Course at University College, and of the Final Course at the Medical School.
GOLDSMID EXHIBITIONS. Two Exhibitions, the subjects of the Examination being Anatomy and Physiology, are awarded annually in July and entitled to count for Final Medical Examination.

All further information and Prospectuses can be obtained from the Secretary, and the Dean can be interviewed at any time by appointment.

Dean—SIR GEORGE BLACKER, C B E. M D F R C P, F R C S.
Vice Dean—GWYNNE WILLIAMS, M.S., F.R.C.S.
Secretary—G E ADAMS, F C I S

Westminster Hospital Medical School.

Telephone No, Victoria 765

UNIVERSITY OF LONDON.

The Hospital is situated opposite Westminster Abbey and the Medical School is only a few minutes' walk from it

The entire teaching of the Hospital and School is devoted to the subjects of the Final Examinations Arrangements are made for the tuition required for Preliminary and Intermediate subjects

The School and Hospital Appointments are open on the same terms and conditions to Men and Women Students

Entrance Scholarships.

Two of £70 each in Anatomy and Physiology in April of each year Open
Two of £70 each in Anatomy and Physiology in September of each year Open

Valuable prizes are offered in addition to Students during their period of Clinical Study Paid appointments as House Physicians, House Surgeons, and Registrars are held by Students when they have passed their final examination

Fees.—Annual Composition fee 35 guineas

The Fees include membership to the Sports Union Club with its various branches, Football, Cricket, Tennis, Boxing, Guthrie Society and Broadway Gazette

For information on all matters relating to the Medical School, Prizes, Scholarships, &c, application should be made to the Medical Secretary at the School, Caxton Street, Westminster, S W 1

The Dean will be glad to have a personal interview with Parents or Guardians of intending Students by appointment

A certain number of Scholarships have been allotted to Universities of England, Wales, and the Colonies, and to Public Shcools These Scholarships are awarded entirely on the nomination of the Principal of the University or School, any Principal of a University or Headmaster of a School who wishes to avail himself of this opportunity is asked to communicate with the Dean

ST. GEORGE'S HOSPITAL MEDICAL SCHOOL

(UNIVERSITY OF LONDON).

HYDE PARK CORNER, S.W.

THE HOSPITAL and MEDICAL SCHOOL occupy the finest site in London, and are readily accessible from all parts of the Metropolis

The entire teaching in the School is devoted to the subjects of the Final Examinations, in other words, **is specially adapted to the interests of men from the Universities who have passed their Examination in Anatomy and Physiology.**

By arrangement with the authorities of King's College in the Strand, St George's students attend at that College for tuition in the Preliminary and Intermediate subjects

FIVE ENTRANCE SCHOLARSHIPS IN ANATOMY AND PHYSIOLOGY, of the value of £120, £94 10s, £80, £70 and £50 respectively, are awarded in July to candidates who have passed the **2nd M B** or corresponding examination In addition, **EXHIBITIONS,** each of the value of £40 and up to **Eight in number,** will be awarded to candidates of approved merit in the Entrance Scholarship Examination

MANY VALUABLE PRIZES ARE AWARDED EACH YEAR, including the following —Allingham Scholarship of the value of £80, Laking Memorial Prize of the value of £65, the Brackenbury Prize in Medicine, the Brackenbury Prize in Surgery and the Webb Prize in Bacteriology, each of the value of £33

HOUSE OFFICE may be held for six, twelve or eighteen months **A Student of ordinary ability should be certain of obtaining House Office and afterwards one of the following Paid Appointments for a short time** Resident Assistant Physician, £350, Resident Assistant Surgeon, £350, Medical Registrar, £200, Surgical Registrar, £200, Assistant Curator of the Museum £100, Resident Anæsthetist, £100, Resident Obstetric Assistant, £50

The **ST GEORGE'S HOSPITAL CLUB** incorporates the **RUGBY FOOTBALL, CRICKET, LAWN TENNIS, BOXING, RIFLE** and other Clubs, and possesses an **ATHLETIC GROUND** within easy reach of the Hospital, and Smoking and Luncheon Rooms on the School premises

Entrance Fee £10 10s 0d Annual Composition Fee, which covers all courses, lectures, etc, in the Hospital and School, £12 Annual Club Subscription, £3 3s 0d

The Winter Session will begin on October 1st, but students can enter at any time

Further information may be obtained from the Dean of the Medical School

J A TORRENS, M D, F R C P
Dean

MIDDLESEX HOSPITAL MEDICAL SCHOOL

University of London.

ENTRANCE SCHOLARSHIP EXAMINATIONS BEGIN SEPTEMBER 15th

The entire Medical Curriculum can be taken at this School There is no accommodation for Women Students Annual value of Scholarships and Prizes £1,000 Large Research Funds

Staff includes 6 University Professors, 1 University Reader, 29 Lecturers, 8 Demonstrators and 4 Tutors

ENTIRE CURRICULUM—The provision whereby ALL THE SUBJECTS OF THE CURRICULUM, INCLUDING CHEMISTRY AND PHYSICS FOR THE PRE MEDICAL EXAMINATION, are taught WITHIN THE PRECINCTS OF THE HOSPITAL AND MEDICAL SCHOOL, and every effort made to encourage co ordination ensures that the student instead of proceeding to the study of the various subjects as if they were isolated and having little or no relation to each other, is taught each subject by Professors and Lecturers, who are instructing medical students only, and are in close touch with all the other departments of the school Under this arrangement not only have students of the Middlesex Hospital obtained the highest honours in examinations, but they have also been admirably equipped to practice their profession and to take the fullest advantage of any new knowledge which research may bring to light The following description of the work of the various departments will show the way in which this co-ordination is carried out Its value to the student and to medicine is obvious, for the teaching of the elementary subjects is closely connected with that of the clinical subjects with which they are related

CHEMISTRY is taught by Professor W B Tuck and the class room and laboratories are in the immediate vicinity of those for anatomy physiology pharmacology pathology and bacteriology This leads to a close association with these departments and the student realizes he is not learning just the chemistry which he requires for his first professional examination but is acquiring knowledge which he will need and have to apply in later years Professor Tuck also gives instructions in Toxicology and in the chemistry required by candidates for the DIPLOMAS IN PUBLIC HEALTH so keeps in touch with students in their final years, and also in their post-graduate studies

THE PHYSICS DEPARTMENT is under the charge of Professor Sidney Russ who is also Physicist to the Hospital and engaged in research work on the measurements and dosage of X ray and Radium emanations He is therefore in close touch with the departments of physiology and pathology, and takes an active part in departments for clinical therapeutics Under his direction the student will realize at once that he is not studying an isolated subject for the purpose of training his mind or simply to comply with regulations and pass an examination but is in touch with a subject which will be of great and increasing importance in the proper understanding of his work in later years

BIOLOGY—The Lecturer on Biology is Mr J H Woodger, who holds a University Readership in this subject His teaching in Biology is characterised by co ordination with other departments and the bearing of the subject on the later stages of the curriculum is emphasized Not only is the subject taught as an introduction to the study of Anatomy and Physiology, but the increasing importance of a knowledge of the lower forms of vegetable life and of the protozoa in the causation of disease and the study of insect carriers of human diseases is emphasized by co-ordination with the Pathological Institute

IN THE DEPARTMENT OF ANATOMY, under the direction of Professor Thomas Yeates with the general scientific study of Anatomy and its wider Biological aspects the relation of structure to function and pathology is not lost sight of Facts of clinical medicine and surgery of pathology biology and physiology are included in the teaching in order to emphasize the significance of anatomical points By classes in Applied Medical and Surgical Anatomy the study of this subject is continued in the later stages of the student's career

THE TEACHING OF PHYSIOLOGY is in the hands of Professor Swale Vincent and the department is in close touch with those for the teaching of both the preliminary and final subjects of the curriculum It is impressed upon the student in this department that he cannot be a good clinician unless he obtains a sound knowledge of Physiology Later in his career the student has continuous opportunities of applying what he has learnt in the physiological department and his physiological knowledge is further extended notably in the study of PHARMACOLOGY and in the CARDIOGRAPHIC DEPARTMENT where he has opportunities of studying the electrical conditions of the heart both in health and disease

IN THE BLAND-SUTTON INSTITUTE OF PATHOLOGY, all the departments of the Medical School are brought in touch Here the student learns the SCIENCE OF DISEASE The teaching of Pathology is in the hands of Professor J McIntosh, and under his tuition the student is made to realize that Pathology and Medicine are one and that a clear knowledge of Pathology and Bacteriology is essential for the prevention, diagnosis and treatment of disease The teaching of pathology is brought into the closest touch with clinical teaching and the student sees the practical application of the sciences in which he has been instructed in the earlier years of the curriculum—chemistry, physics biology anatomy, and physiology

Special attention is given to the teaching of BIO CHEMISTRY which is under the direction of Dr E C Dodds

CLINICAL TEACHING is carried out in the general wards and out patients departments and in the special departments all of which are in close touch with the scientific departments in the School The student has ample opportunities for carrying out the physical examination of patients and with his training on the scientific side combines instruction in the Art of Medicine by constantly being brought in contact with patients and being made to realize the human side of his professional work In order that the student may have ample bedside teaching and opportunities for carrying out the examination of patients himself the number of students allowed at a Clinique is limited

There are ample clinical appointments for all students and Twenty five Resident appointments are open annually to students of the School who have obtained their degrees or diplomas

THE SOCIAL AND ATHLETIC side of the student's life has been arranged for There are large athletic grounds with new Pavilion restaurant and gymnasium Common Room Society Medical Society, Musical Society and various other Clubs

Write for prospectus to the DEAN, A E Webb Johnson, C B E, D S O, F P C S, F A C S, Middlesex Hospital Medical School, Berners Street London W 1

Charing Cross Hospital Medical School

(UNIVERSITY OF LONDON)

with which is affiliated **THE ROYAL WESTMINSTER OPHTHALMIC HOSPITAL** (adjoining)

OPEN to MEN and WOMEN Students. WINTER SESSION commences on WEDNESDAY, OCTOBER 1st.

The **most central** of all the **Colleges** of the **University**

Complete Hospital and School arrangements for all departments of Clinical Work

The Institute of Pathology includes a series of Laboratories fully equipped for student post-graduate, and research work

Students' Club Rooms and **Restaurant** on the School premises

A new Athletic Ground (6½ acres) has recently been acquired at Listcote and is now in use

Four Scholarships each of the value of 40 guineas per annum and tenable for three years are awarded annually to students who have completed the Second Medical Examination of the University of London or Cambridge held in July each year

FEES LOW and INCLUSIVE, NO EXTRAS

For prospectus and full information apply personally or by letter to the Dean W. J. PLATON, M.D., I.R.C.P.

Telephone No. Regent 2208 Charing Cross Hospital Medical School, London, W.C.2

UNIVERSITY OF BRISTOL.

FACULTY OF MEDICINE.

The AUTUMN TERM commences on October 1st, 1924.

The University grants the degrees of Bachelor of Medicine and Surgery (M.B., Ch.B.), Master of Surgery (Ch.M.), Doctor of Medicine (M.D.), Bachelor of Dental Surgery (B.D.S.), and Master of Dental Surgery (M.D.S.), as well as diplomas in Public Health (D.P.H.) and Dental Surgery (L.D.S.).

The lectures and laboratory courses which are given in the University, although primarily designed for the degrees and diplomas of the University, are equally adapted to those of other Universities and Examining Boards, and students preparing for such external degrees and diplomas have equal attention paid to them.

Hospital Practice and Clinical Instruction are provided in the Hospitals and Asylum of the City, associated with the University for this purpose, and students have exceptional opportunities of studying the practice of Medicine from a large variety of cases.

Women are admitted to all classes, lectures and laboratory practice, and attend them with men. The Halls of Residence for Men and for Women Students are situated in Clifton, near the University.

INCLUSIVE FEES—

For the M.B., Ch.B. curriculum (paid in Annual Instalments)	205 guineas
For the B.D.S. curriculum, including Mechanical Laboratory	215 "
Do. excluding Mechanical Laboratory	155 "
For the L.D.S. curriculum, including Mechanical Laboratory	200 "
Do. excluding Mechanical Laboratory	140 "
For Mechanical Laboratory alone	60 "

For additional particulars apply to Professor EDWARD FAWCETT, M.D., F.R.S., Dean.

ROYAL WESTMINSTER OPHTHALMIC HOSPITAL,

KING WILLIAM STREET, STRAND, W.C.2.

(Next door to Charing Cross Hospital)

The Practice at this Hospital is open to all Qualified Medical Men and Women and to Registered Medical Students.

The posts of Clinical Assistant and Refraction Assistant (paid) are open on conditions to be obtained on application to the Dean.

Clinical Instruction is given daily in the Outpatients Department from 1 p.m. Operations are performed daily in the Theatre at 3 p.m.

Classes in all subjects of Ophthalmology are held during each Winter and Summer Session. Next Classes commence on MONDAY OCTOBER 6TH. (These Classes are arranged to meet requirements of D.O.M.S. Eng., Part II.).

For full particulars apply to the DEAN or SECRETARY at the Hospital.

MASSAGE AND MEDICAL ELECTRICITY.

Association of Certificated Blind Masseurs.

President: Sir ROBERT JONES, K.B.E., C.B.

Fully qualified Blind MASSEURS and MASSEUSES can be obtained in London and the Provinces, on application to — THE SECRETARY, 224 Great Portland Street, London, W.1. Telephone LANGHAM 2544.

UNIVERSITY OF DUBLIN

SCHOOL OF PHYSIC.

TRINITY COLLEGE.

The WINTER SESSION will begin on October 1st, 1924.

All information regarding Courses for the Medical and Dental Degrees, for the Diploma in Public Health, and for the Diploma in Gynæcology and Obstetrics may be obtained on application to the REGISTRAR, School of Physic, Trinity College, Dublin.

THE ROYAL DENTAL HOSPITAL OF LONDON

SCHOOL OF DENTAL SURGERY.

(University of London) Leicester Square W.C.2

WINTER SESSION 1924 commences Oct. 1st.

The SCHOOL and CLINIC of the Hospital.

The classes are open to the public.

PRELIMINARY SCIENCE AND PRE-MEDICAL EXAMINATION

These Classes are held during the Winter and Summer Sessions and are open to students who have not yet commenced their Professional study.

DENTAL MECHANICS

The Laboratories occupy an entire floor of the building.

PUPILS may JOIN at the commencement of either the OCTOBER or MAY Sessions for the two years training in Dental Mechanics specified in the Curriculum.

WOMEN are now admitted as Students of the School and are eligible for all appointments and prizes.

Write for further particulars and School Calendar.

THE DEAN as above.

THE UNIVERSITY OF LEEDS

FACULTY OF MEDICINE

SCHOOL of MEDICINE and THE GENERAL INFIRMARY at LEEDS

The First Term begins on OCTOBER 1ST, 1924

The degrees of M B , Ch B , Ch M and M D are conferred, and diplomas in Public Health and Psychological Medicine are granted by the University

The systematic Classes and Lectures are held in the School of Medicine of the University, while the Clinical instruction is given in the General Infirmary The combined courses of study are arranged to meet the University Regulations in the first instance, but they also afford every opportunity for students preparing for the examinations of any licensing body

The instruction in the subjects for the First Examination is given in the Department of Science of the University

The Composition Fee for the Academic Courses and Clinical instruction (excluding the first year) is £174

For further particulars application should be made —

Regarding instruction given at the University to
THE ACADEMIC SUB-DEAN,
School of Medicine,
Leeds

Regarding instruction given at the Infirmary to
THE CLINICAL SUB-DEAN,
General Infirmary,
Leeds.

THE UNIVERSITY OF LEEDS

SCHOOL OF DENTISTRY

The First Term begins on OCTOBER 1ST, 1924

The degrees of B Ch D and M Ch D , as well as a diploma, L D S , are conferred by the University

The systematic Classes and Lectures are held in the School of Medicine of the University, while the clinical instruction is given in the Leeds General Infirmary The combined courses of study are arranged to meet the University Regulations in the first instance, but they also afford every opportunity for study to students preparing for any of the dental examinations

Intending students can enter as pupils in the Dental School and can obtain instruction in the preliminary scientific subjects in the Department of Science of the University

For further particulars application should be made —

Regarding instructions given at the University to
The ACADEMIC SUB DEAN,
School of Medicine,
Leeds

Regarding Clinical instruction
THE WARDEN,
Dental Department,
School of Dentistry Leeds

THE UNIVERSITY OF LIVERPOOL.

FACULTY OF MEDICINE.

THE MEDICAL SCHOOL provides complete courses of instruction for the Examinations of the University of Liverpool, and also meets the requirements of other Universities and Examining Bodies in the United Kingdom

Other Schools of the Faculty are —The School of Dental Surgery, the School of Hygiene, the School of Tropical Medicine and the School of Veterinary Science

DEGREES AND DIPLOMAS IN THE FACULTY OF MEDICINE.

Bachelor of Medicine & Bachelor of Surgery	M B, Ch B	Master of Veterinary Science	M V Sc
Doctor of Medicine	M D	Doctor of Veterinary Science	D V Sc
Master of Surgery	Ch M	Doctorate in Philosophy	Ph D
Master of Hygiene	M H	Licence in Dental Surgery	L D S
Master of Orthopædic Surgery	M Ch Orth	Diploma in Public Health	D P H
Bachelor of Dental Surgery	B D S	Diploma in Tropical Medicine	D T M
Master of Dental Surgery	M D S	Diploma in Veterinary Hygiene	D V H
Bachelor of Veterinary Science	B V Sc	Diploma in Medical Radiology & Electrology	D M R E

Valuable Fellowships, Scholarships, and Prizes are offered for competition each year

THE CLINICAL SCHOOL consists of FOUR GENERAL HOSPITALS The Royal Infirmary, the Royal Southern Hospital, the David Lewis Northern Hospital, and the Stanley Hospital, and of SIX SPECIAL HOSPITALS The Eye and Ear Infirmary, the Hospital for Women, the Royal Liverpool Children's Hospital, the Liverpool Maternity Hospital and Ladies' Charity, St Paul's Eye and Ear Hospital, and St George's Hospital for Skin Diseases

These Hospitals contain in all about 1,134 Beds

The organization of these Hospitals to form one teaching Institution provides the Medical Student and Medical Practitioner with a field for clinical education and study which is unrivalled in extent in the United Kingdom

Infectious Diseases are studied in the City Hospitals, and Mental Diseases at the County Mental Hospital, Rainhill

For information on all matters concerning the curriculum application should be made to the Dean of the Faculty of Medicine, the University, Liverpool

W J DILLING, *Dean*

THE CLINICAL SCHOOL,

UNIVERSITY OF LIVERPOOL.

The following Hospitals are associated for purposes of Clinical Instruction, and form the Clinical School of the University —

THE ROYAL INFIRMARY	THE EYE AND EAR INFIRMARY	THE HOSPITAL FOR WOMEN
THE ROYAL SOUTHERN HOSPITAL	THE INFIRMARY FOR CHILDREN	ST PAUL'S EYE HOSPITAL.
THE DAVID LEWIS NORTHERN HOSPITAL.	LIVERPOOL MATERNITY HOSPITAL	ST GEORGE'S HOSPITAL FOR SKIN DISEASES
THE STANLEY HOSPITAL		

The Staffs of these Hospitals form the Teaching Staff of the Clinical School There are 1,187 beds in the Associated Hospitals, affording a field for Clinical Instruction which is unrivalled in the United Kingdom

Twenty one house physicians and house surgeons are appointed every six months in the General Hospitals, and the majority of these receive salaries ranging from £60 to £100 per annum Five resident medical officers are also appointed at intervals to the Special Hospitals

Information regarding the regulations for Hospital Practice may be obtained from the Secretary of the School,

J O MATTHEWS, M A, M D M R C P 61 RODNEY STREET

UNIVERSITY OF BIRMINGHAM

FACULTY OF MEDICINE

(Associated with the General and Queen's Hospitals for Clinical Teaching).

The following Hospitals are also associated with the University The Department for Midwifery and Diseases of Women at the Dudley Road Hospital (Birmingham Board of Guardians) The City Mental Hospital The City Infectious Diseases Hospital The Birmingham and Midland Eye Hospital The Royal Orthopædic and Spinal Hospital Birmingham The Birmingham and Midland Ear and Throat Hospital The Children's Hospital The Maternity Hospital of the Birmingham Lying-in Charity The Birmingham and Midland Hospital for Women

SCHOOL OF DENTISTRY

The Dental Hospital is situated close to the Medical Faculty Buildings of the University and has a large and varied Clinic

THE WINTER SESSION OPENS OCTOBER 6th, 1924

The University grants Degrees in Medicine Surgery, and Public Health and a Diploma in Public Health also Degrees and a Diploma in Dental Surgery The courses of instruction are also adapted to meet the requirements of other Universities and Licensing Bodies

HOSPITAL APPOINTMENTS

A large number of Resident hospital appointments in Birmingham and District are open to qualified students of the school

PRE-MEDICAL COURSES

The necessary pre Medical Courses of instruction in Chemistry Physics and Biology may be attended in the University

RESIDENCE FOR UNDERGRADUATES AND OTHER STUDENTS

There is a Hostel for men students and one for women students A register of approved lodgings is also kept by the Secretary of the University For Prospectus and further information apply to **WILLIAM F HASLAM F R C S, Dean.**

UNIVERSITY OF MANCHESTER.

FACULTY OF MEDICINE.

The WINTER SESSION commences on OCTOBER 2nd.

The Laboratories and Museums afford every facility to Students and Graduates for Practical Instruction, as well as for Original Research

SCOPE OF INSTRUCTION

Complete Courses of Instruction are offered for the Examinations of the University of Manchester and also for the Examinations of other Examining Bodies in the United Kingdom Post Graduate Courses are held in preparation for the Diploma in Psychological Medicine (Manch) and also in preparation for the Diploma in Medical Radiology and Electrology at Cambridge. In the Dental Department Complete Courses are given preparing for the Degrees and Diploma in Dentistry granted by the University as well as for the Diploma of the Royal College of Surgeons of England, and other Dental Diplomas The Public Health Laboratories are situated at a short distance from the University The fullest opportunities are offered to Graduates and others in preparation for the Diplomas in Bacteriology, in Public Health and Veterinary State Medicine, and for Special Certificates in School Hygiene and Factory Hygiene.

OPPORTUNITIES FOR CLINICAL STUDY ROYAL INFIRMARY AND OTHER HOSPITALS

The Clinical Instruction is given in the new Royal Infirmary opened in 1909 on a site near to the Medical School. It is provided with every modern requirement for the treatment of the sick and the investigation of disease Instruction in Special Subjects is given in other Hospitals associated with the University A large number of beds in the General and in the Special Hospitals are available, thus affording unrivalled opportunities for Clinical Study

1	The Manchester Royal Infirmary	663 beds	
2	The St Mary's Hospitals for Women and Children	229 beds	
3	Manchester Children's Hospital	190 beds	
4	Manchester Royal Eye Hospital	136 beds	
5	Manchester Northern Hospital for Women and Children	70 beds	
6	Fever Hospital for Infectious Diseases	600 beds	
7	Special Hospitals for Diseases of the Ear Throat and Chest Skin and the Christie Cancer Hospital	252 beds	
8	Dental Hospital of Manchester		
9	Ancoats Hospital	120 beds	
10	Salford Royal Hospital	260 beds	

HOSPITAL APPOINTMENTS

In consequence of the large number of Hospitals associated with or in the vicinity of the University exceptional opportunities are offered to Graduates to obtain Resident Hospital Appointments

SCHOLARSHIPS, EXHIBITIONS, AND PRIZES

Two Open Entrance Scholarships each of the value of 160 guineas are offered yearly in July In addition, the Dreschfeld Scholarship of £30 per annum and other Entrance Scholarships of the value of £30 to £40 a year for two or three years are also tenable in the Medical Faculty

Fellowships Scholarships &c. are also offered for competition to Students of the Faculty

RESIDENCE FOR UNDERGRADUATES

There are Halls of Residence both for Men and for Women Students A list of registered lodgings can be obtained. Prospectuses will be forwarded on application to the Internal Registrar

DIPLOMA IN PUBLIC HEALTH.

NEW REGULATIONS

UNIVERSITY OF MANCHESTER.

Department of Bacteriology and Preventive Medicine.

BACTERIOLOGY AND IMMUNITY
Professor of Bacteriology W W C TOPLEY M.A. M D M Sc. F R C P
Lecturer G S WILSON M D M R C P D P H
Demonstrators F R. FERGUSON M D D P H MURIEL M NUTT M A.

COMPARATIVE PATHOLOGY
Lecturer: A. SELLERS M.D D P H

CHEMISTRY
Lecturer H HEAP M Sc

MEDICAL ZOOLOGY
Lecturer R A WARDLE, M Sc

PUBLIC HEALTH ADMINISTRATION
Lecturers A E BRINDLEY M D B Sc D P H J J BUTTERWORTH, M.D., D P H.

EPIDEMIOLOGY
Lecturer Prof W W C TOPLEY

FACTORY HYGIENE.
Lecturer T M LEGGE M.A. M D D.P H.

SCHOOL HYGIENE.
Lecturer MEREDITH YOUNG M.D D P H

VITAL STATISTICS
Lecturer E H SCHOLEFIELD M.B B Ch D P H

SANITARY ENGINEERING
G S COLEMAN D Sc

The curriculum has been re arranged to meet the requirements of candidates under the new regulations Alternative courses are available so that candidates may complete the curriculum in one or two years according to the number of hours of attendance per week The first course under the new regulations will commence in October 1924.

For further particulars apply to THE DIRECTOR, PUBLIC HEALTH LABORATORY York Place Manchester

UNIVERSITY OF MANCHESTER.

DEPARTMENT OF BACTERIOLOGY AND PREVENTIVE MEDICINE.

DIPLOMA IN BACTERIOLOGY.

This Diploma has been instituted to afford a Course of Instruction in Bacteriology for graduates in Medicine or in Science who desire to take up Bacteriological work The Course is designed to give a thorough training in the essentials of Bacteriology, and it is intended that the Diploma shall afford evidence that the holder of it has an adequate knowledge of the theory and practice of the subject The standard of the examination and the scope of the Course will be such as to fulfil this condition

A Course of Instruction in connection with the Diploma will commence in October 1924 The Course is open to graduates in medicine or in science of any approved university, and lasts over one academic year The final examination for the Diploma will be held in June, 1925

Intending candidates should send their names to the DIRECTOR Public Health Laboratory, York Place Manchester from whom further particulars may be obtained

SCHOOL OF MEDICINE
OF
THE ROYAL COLLEGES, EDINBURGH.
(Founded 1505.)

WINTER SESSION, 1924-25,
opens OCTOBER 14th

The Lectures qualify for the English and Scottish Universities and other Medical Examining Boards

One half of the Qualifying Classes required for graduation in the University of Edinburgh may be attended in this School

The School offers a large choice of Teachers upon the various subjects comprised in the Medical Curriculum

The Calendar of the School, giving all necessary information regarding Classes, Fees, and Examinations will be published on September 1st, a copy may be obtained (price 6d) on application to THE DEAN OF THE SCHOOL, 11, Bristo Place, Edinburgh

Royal Infirmary, Edinburgh

In this Hospital (with 921 beds and 12 cots) Clinical Instruction is given by the Honorary Staff to Male and Female Patients in the Medical and Physical Departments and in the Surgical Departments [illegible] the Ear, and the Larynx, and in Dental Surgery Separate Wards are devoted to Venereal Diseases Diseases of Women and Diseases of the Eye the Ear and Throat, and the Skin also to cases of Incidental Delirium or Insanity Post mortem Examinations are conducted in the Anatomical Theatre by the Pathologist who also gives Practical Instruction in Pathological Anatomy and Histology

MEDICAL AND SURGICAL OFFICERS.

MEDICAL DEPARTMENT

Consulting Physicians—Dr Alexander James Sir Byrom Bramwell LL D Emeritus Professor William Russell LL D Dr Graham Brown

Physician Consultant in Tuberculosis—Sir Robert Philip LL D Professor of Tuberculosis Edinburgh University

Physician Consultant in Psychiatry Dr G M Robertson Professor of Psychiatry, Edinburgh University

Physicians—Dr Lovell Gulland C M G Professor of Medicine Edinburgh University Dr R A Fleming Dr Chalmers Watson Senior Lecturers in Clinical Medicine Edinburgh University Dr Edwin Bramwell Professor of Clinical Medicine, Edinburgh University Dr Edwin Matthew Dr W T Ritchie O B E Dr John Dixon Senior Lecturers in Clinical Medicine Edinburgh University Dr Murray Lyon Professor of Therapeutics Edinburgh University

Assistant Physicians—Dr John D Comrie Dr Alex Goodall Dr G D Mathewson Dr Fergus Hewat Dr H L Watson Wemyss Dr C G Lamble M C Dr W D D Small Lecturers in Clinical Medicine Edinburgh University (One vacancy)

SURGICAL DEPARTMENT

Consulting Surgeons—Mr A G Miller Dr C W MacGillivray Sir Montagu Cotterill C M G Mr C W Cathcart C B E Emeritus Professor F M Caird LL D Sir James Hodsdon K B E Sir David Wallace K B E C M G Mr J W Dowden

Surgeons — Mr Alexander Miles Mr A A Scott Skirving C M G Senior Lecturers in Clinical Surgery Sir Harold J Stiles K I [illegible] of Clinical Surgery Edinburgh George Chiene Mr W J Stuart Mr J W Struthers, Senior Lecturers in Clinical Surgery Edinburgh University Mr D P D Wilkie O B E Professor of Surgery Edinburgh University

Assistant Surgeons — Mr Henry Wade C M G D S O Mr J Fraser M C, Mr J M Graham Mr A Pitie Watson O B E, Mr F L Jardine Mr J N J Hartley O B E, Mr W Q Wood Lecturers in Clinical Surgery Edinburgh University (Two vacancies)

GYNÆCOLOGICAL DEPARTMENT

Consulting Gynecologists — Dr A H F Barbour Mr N T Brewis

Gynecologists—Dr J Haig Ferguson Dr William Fordyce Lecturers in Clinical Gynecology Edinburgh University Dr B P Watson Professor of Gynecology Edinburgh University

ROYAL INFIRMARY EDINBURGH—continued

Assistant Gynecologists—Dr R W Johnstone C B E Dr H S Davidson O B E Dr J Young D S O, Lecturers in Clinical Gynecology Edinburgh University

DEPARTMENT FOR DISEASES OF THE SKIN

Extra Physician for Lupus and Sunlight Treatment cases—Sir Norman Walker LL D

Physicians—Dr Fred Gardiner Dr R Cranston Low Lecturers in Dermatology

Assistant Physician—Vacancy

OPHTHALMIC DEPARTMENT

Consulting Surgeons—Sir George A Berry LL D M P, Dr George Mackay Dr W G Sym

Surgeons—Dr J V Paterson Dr A H H Sinclair, Lecturers in Ophthalmology

Assistant Surgeons—Dr H M Traquair Dr E H Cameron

EAR AND THROAT DEPARTMENT

Consulting Surgeons — Dr P M'Bride Dr R Mackenzie Johnston Dr J Malcolm Farquharson, Dr A Logan Turner

Surgeons—Dr John S Fraser Mr John D Fitzgibbon Lecturers in Ear and Throat Diseases

Assistant Surgeons—Dr W T Gardiner M C, Dr G Ewart Martin

VENEREAL DISEASES DEPARTMENT

Clinical Medical Officer—Mr David Lees D S O

Assistant Clinical Medical Officer—Mr R C L Batchelor

DENTAL DEPARTMENT

Consulting Surgeon—Mr William Guy

Surgeon Consultant—Mr J H Gibbs

Surgeon—Mr D L G Radford Assistant Surgeon—Mr R C Scott Dow

ELECTRICAL DEPARTMENT

Extra Medical Electrician (for Radium Cases)—Dr Dawson Turner

Medical Electricians—Dr W Hope Fowler Dr Archibald M Kendrick

PATHOLOGICAL DEPARTMENT

Pathologist—Professor Lorrain Smith

Bacteriologist—Professor T G Mackie

Clinical Pathologist—Dr W R Logan

Assistant Pathologists—Dr W A Alexander Dr J Davidson Dr R D Mackenzie Dr Douglas Kerr Dr A J C Hamilton

Assistant Clinical Pathologists—Dr P MacCallum, M C, Dr George Buchanan

SUPERINTENDENT

Col G St C Thom C B, C M G, C B E, M B, C M

APPOINTMENTS

No fees are charged for any Medical or Surgical Appointments in this Hospital, which are as follows

1 Resident Physicians and Surgeons who must [illegible]

The holders of these offices live in the house free of [illegible] for six months but that period by special [illegible]

2 Non resident House Physicians and Surgeons and Clinical Assistants, who must be registered as [illegible] to all Students and Junior Practitioners holding Hospital Tickets

Assistants in the Pathological Department are appointed by the Pathologist

WILLIAM S C W O B E J P
Treasurer and Clerk

ROYAL COLLEGE of PHYSICIANS of EDINBURGH
ROYAL COLLEGE of SURGEONS of EDINBURGH
ROYAL FACULTY of PHYSICIANS and SURGEONS of GLASGOW.

Copies of REGULATIONS for the TRIPLE QUALIFICATION (L R C P L, L R C S P and L R F P and S G) and the DIPLOMA IN PUBLIC HEALTH containing dates of Professional Examinations for year 1924-1925 Curriculum &c, may be had on application to—

Mr D L LADIE 49 Lauriston Place Edinburgh or to Mr WALTER HURST, 242 St Vincent Street, Glasgow (Inspectors and Treasurers at Edinburgh and Glasgow respectively)

Royal College of Physicians OF EDINBURGH

The EXAMINATIONS for the LICENCE of the College (as a single qualification) for the ensuing year will be held on the *First Wednesday* and the following days of every month (except September and October)

Candidates for the LICENCE (as a single qualification) must send their names to the Secretary one week before the date of the Examination at which they propose to appear

The EXAMINATIONS for the MEMBERSHIP of the College are held on the *Second Tuesday* and the following days of *January April July* and *October*

Candidates for the MEMBERSHIP must submit their applications and testimonials to the Secretary one month before the date at which they wish to appear for Examination

For the Regulations in regard to the various qualifications granted by the College and all other information application may be made to the Secretary

J S LOWLER M A Hon Sec

Royal (Dick) Veterinary COLLEGE Edinburgh

PRINCIPAL O CHARNOCK BRADLEY, M D, D Sc M R C V S

102ND SESSION

COURSES OF INSTRUCTION QUALIFY FOR M R C V S and B Sc Edin

COLLEGE CALENDAR WITH FULL PARTICULARS OF EXAMINATIONS BURSARIES &c may be obtained from—

A C DOULL C A Secretary

(Incorporated 1905)

Royal College of Surgeons of EDINBURGH

COPIES OF REGULATIONS for the FELLOWSHIP LICENCE HIGHER DENTAL DIPLOMA and LICENCE IN DENTAL SURGERY containing dates of Examinations may be had on application to

D L LADIE Clerk of the College
49 Lauriston Place Edinburgh

F R C S. Edin

The TUTORIAL CLASS for the next Examination will commence shortly Correspondence Tuition if desired —For particulars apply FRED GRAY M D F R C S Ed Northfield Liberton Edinburgh

UNIVERSITY OF EDINBURGH.

SESSION 1924-25.

Principal—Sir J ALFRED EWING, K.C.B., M.A., D.Sc., LL.D., F.R.S.

The WINTER SESSION 1924-25 opens on October 7th and closes March 20th. The SUMMER SESSION 1925 opens (provisionally) on April 20th and closes July 31st.

FACULTY OF MEDICINE.

Dean—Professor J LORRAIN SMITH, M.A., M.D., LL.D., F.R.S.

The Faculty embraces 13 Chairs and 60 Lectureships attached to these Chairs there are also 40 Assistants and Demonstrators. Instruction is given in all the main branches of Medical Science, viz.—

Professors.

Chemistry—George Barger D.Sc., F.R.S.
Zoology—J. Cossar Ewart, M.D., F.R.S.
Botany—Wm. Wright Smith, M.A., F.R.S.
Anatomy—Arthur Robinson, M.D.
Physiology—Sir E. Sharpey Schafer, LL.D., F.R.S.
Materia Medica—A. R. Cushny, M.D., LL.D., F.R.S.
Pathology—J. Lorrain Smith, M.D., LL.D., F.R.S.
Bacteriology—Thomas Jones Macafie, M.D.
Forensic Medicine—Harvey Littlejohn, M.B., B.Sc.
Public Health—(Vacant.)
Medicine—Geo. Lovell Gulland, C.M.G., M.D.
Surgery—D. P. D. Wilkie, M.D., Ch.M.
Midwifery and Gynæcology—Ben. Jamin P. Watson, M.D.
Clinical Surgery—Sir H. J. Stiles, K.B.E., M.B., C.M.
Clinical Medicine—Edwin Bramwell, M.D., Geo. Lovell Gulland, C.M.G., M.D.
Tuberculosis—Sir Robert W. Philip, M.D.
Therapeutics—David Murray Lyon, M.D.
Psychiatry—George M. Robertson, M.D.

University Lecturers.

Clinical Surgery—Alexander Miles, M.D., C.M., J. W. Dowden, M.B., C.M., A. A. Scot Skirving, C.M.G., M.B., C.M., Geo. L. Chiene, M.B., C.M., W. J. Stuart, M.B., Ch.B.
Clinical Medicine—R. A. Fleming, M.D., D. Chalmers Watson, M.D., Edwin Matthew, M.D., W. T. Ritchie, M.D., John Eason, M.D.
Clinical Gynæcology—B. P. Watson, M.D., J. Haig Ferguson, M.D., William Fordyce, M.D.
Diseases of the Eye—J. V. Paterson, M.B., C.M., A. H. H. Sinclair, M.D.
Clinical Instruction in Diseases of Children—J. Stewar Fowler, M.D., John Fraser, M.D., Charles McNeil, M.D., [illegible] S. Carmichael, M.B., Ch.B.
Anatomy—E. B. Jamieson, M.D.
[illegible], M.A., D.Sc.
Physiology of the Nervous System—A. Ninian Bruce, M.D., D.Sc.
Experimental Pharmacology—W. C. Sillar, M.D., B.S.
Pathology (Practical)—F. E. Beynon, M.B.
Morbid Anatomy—W. L. Alexander, M.B.
Physics—G. A. Carse, M.A., D.Sc.
Diseases of the Larynx, Ear and Nose—A. Logan Turner, M.D., John S. Fraser, M.B., J. D. Lingow, M.B.
Tropical Diseases—Lt.-Col. L. D. W. Greig, C.I.E., M.D.
Medical Entomology and Parasitology—J. H. Ashworth, D.Sc., F.R.S., W. S. Patton (Major I.M.S.)
Tropical Hygiene—J. B. Young, M.B., D.S. (conjointly with Professor)
Diseases of the Skin—Sir Norman Walker, M.D., Freda Gardiner, M.D.
Clinical Instruction in Infectious Fevers—Alexander James, M.D., Claude B. Ker, M.D.
History of Medicine—J. D. Comrie, M.A., B.Sc., M.D.
Surgical Pathology—J. M. Graham, M.B., Ch.M.
Practical Anæsthetics—J. Stuart Ross, M.B., Ch.B. (Demonstrator.)
Venereal Diseases—David Lees, D.S.O., M.B.
Psychology—James Drever, M.A., B.Sc., D. Phil.

Practical Instruction is afforded under the supervision of the Professors in Laboratories with the necessary apparatus and in Clinical and Practical Classes connected with the above Chairs and opportunities are afforded to student to extend their practical knowledge and engage in original research.

Opportunities for Hospital Practice are afforded in the Royal Infirmary, the Hospital for Sick Children, Maternity Hospital, the City Parish Hospital and the Asylum for the Insane. Upwards of 2,000 beds are available for the Clinical Instruction of Students of the University.

Four Degrees in Medicine and Surgery are conferred by the University of Edinburgh, viz. Bachelor of Medicine (M.B.), Bachelor of Surgery (Ch.B.), Doctor of Medicine (M.D.) and Master of Surgery (Ch.M.).

The minimum Class Fees for M.B. and Ch.B., including Hospital Fees (£12), amount to about £230, and the Matriculation and Examination Fees to £9 7s. An additional Fee of £1 is payable by those who proceed to M.D. and £21 by those who proceed to Ch.M.

The annual value of the Bursaries, Prizes, Scholarships and Fellowships in the Faculty of Medicine amounts to about £3,000, and the Bursaries, &c., tenable by students of Medicine amounts to about £1,200.

[illegible] are given for the Degrees of B.Sc. and D.Sc. in Public Health and for the University Diploma. These Diplomas are open to approved registered practitioners as well as to graduates in, as part in the Courses given under the auspices of the Edinburgh Post-Graduate Courses in Medicine. In the departments of the Faculty of Medicine provision is made for research by students of graduate standing. In the University laboratories facilities will be provided for candidates for the Degree of Ph.D., whose applications to engage in research have been accepted by the Senatus.

A Syllabus and further information as to Matriculation, the Curricula of Study for Degrees, &c., may be obtained from the Dean of the Faculty of Medicine and for Degrees in the Faculties of Arts, Science, Divinity, Law and Music from the Deans of these Faculties or from the Secretary, and full details are given in the University Calendar published by James Thin, 55 South Bridge, Edinburgh. Price, by post 6s.

August 1924. By the authority of the Senatus, WILLIAM WILSON, Secretary.

UNIVERSITY OF ST. ANDREWS.

FACULTY OF MEDICINE.

The SESSION 1924-1925 commences THURSDAY, OCTOBER 2nd, 1924.

The University confers the Degrees of Bachelor of Medicine and Bachelor of Surgery, Doctor of Medicine, and Master of Surgery; a Diploma in Public Health, and a Diploma in Dental Surgery. The whole Curriculum may be taken at Dundee, or the first two years of the Course may be taken in St Andrews and the remaining three years in Dundee. The Medical Buildings and Laboratories both at St. Andrews and Dundee have been recently built and are fully equipped in all departments for teaching and for research.

CLINICAL INSTRUCTION is given at the Dundee Royal Infirmary which has 400 beds, with Special Wards for Maternity Cases, Diseases of Women, Diseases of Children, Diseases of the Eye, Diseases of the Ear, Throat and Nose, Diseases of the Skin, Cancer, and for cases requiring Electrical treatment.

BURSARIES.—At the UNITED COLLEGE, ST ANDREWS, Six Taylour Thomson Entrance Bursaries for Women of the annual value of from £10 to £50 each—tenable for two years—preference to Women Medical Students. One Malcolm Bursary of the value of £25 (tenable by men or women entrants) for five years. Additional Bursaries, six or eight—(for three of which women may compete) ranging, in value from £20 to £15, are open to Entrant Students of Medicine, Arts or Science. Bursaries are competed for annually in June. Schedules of application, subjects of examination, and conditions of tenure may be obtained from the Secretary of the University. The Schedules for the 1925 Competition must be returned before May 12th 1925. Specimen Examination Papers (1/) may be had from the Secretary.

At UNIVERSITY COLLEGE, DUNDEE, twelve Entrance Bursaries of the value of £15 each, and fourteen Second and Third Year's Bursaries of the value of £20 and £15, are open to competition in June. Two Fourth and two Fifth Year's Bursaries of £20 each are open to students who take the Complete Curriculum in Dundee. These are all tenable for one year. Particulars and schedules of application may be obtained from the Secretary of the College. Schedules should be sent in before May 10th 1925. Other Bursaries, of which the patronage is vested in trustees, are available.

FEES.—The Fees for the Complete Course, exclusive of the Examination Fees, amount to £130.

PRELIMINARY EXAMINATION.—The Preliminary Examination in General Education will begin at the United College, St Andrews, on September 5th and on March 6th. Each Candidate must apply to the Secretary of the University for a schedule, to be filled up and returned not later than August 30th or February 16th. The subjects of examination are—English, Latin, Mathematics, Greek, French, German, Dynamics, one of which must be taken under certain restrictions, and the fee is one guinea. Specimen Examination Papers (1/6) may be had from the Secretary or Messrs Henderson, Booksellers, St Andrews.

PRE-REGISTRATION EXAMINATION.—The Pre-Registration Examinations in Physics and Chemistry will take place September 2nd and December 12th, 1924, and on June 10th and 15th, 1925. Schedules to be sent in August 31st, November 15th and May 15th.

Before beginning a course of study for Graduation every student must obtain a certificate showing that he has satisfied the Scottish Universities Entrance Board as to his fitness to enter upon the Curriculum.

For further information apply to the Secretary of the University, St. Andrews, or to Professor CHARTERIS, Dean of the Medical Faculty.

St Andrews University, August, 1924.

Home School for Backward and DELICATE CHILDREN (estab. 1899). Specialists' Patients received. Modern educational methods and handicraft training. Horticulture, garden games and occupations. Entire charge if desired. Elder girls admitted. Terms moderate.—Apply Principal, Hatherley Brake, Cheltenham.

ST MICHAEL'S, BUXTON, BOARDING SCHOOL FOR GIRLS
Graduate Staff. Preparation for University Examinations. Splendid health record. Special attention given to delicate girls. Moderate Fees. Apply Principals.

Small Private Residential SCHOOL, established 1913, for the Physical and Mental Development of ABNORMAL and BACKWARD PUPILS. Special Department. Pupils over school age. Under Medical supervision.—Prospectus Mrs MERRIFIELD, Principal, St Paul's House, Upper Mare Hill, St. Leonards-on-Sea.

INCORPORATED GLASGOW DENTAL HOSPITAL,

158, RENFREW STREET and 15, DALHOUSIE STREET, GLASGOW, C.3.

WINTER SESSION Commences October 7th, 1924.

The School is open to Men and Women Students

Hospital Practice is carried on under the supervision of a large staff of Dental Surgeons and Anæsthetists, who attend daily and give clinical instruction in cases of interest as they occur

Special Demonstrations are given during the Session

Lectures are given on Dental Surgery, Operative Dental Surgery, Orthodontia, Dental Anatomy and Physiology, Pathology, Dental Histology, Radiology, Dental Mechanics, Crown and Bridge work, Dental Metallurgy, Dental Bacteriology, and Anæsthetics

Lectures on general subjects required for Dentistry may be taken at the University, or at one of the extra mural schools, where special provision is made for Dental Students

Fees—Composition fee for two years' Hospital Practice and Lectures special to Dentistry, £50 on entry, or in two instalments of £31 10s and £21, or in three payments of £10 10s, £22 1s and £21

Practical Dental Mechanics—Fee for two years' Training in Laboratory, £63 payable on entry, or in two instalments of £35 and £31 10s, the first on entry, and the second twelve months later

Full information regarding Lectures, &c, may be had on application to the Dean

UNIVERSITY OF ABERDEEN.

ACADEMICAL YEAR, 1924-1925

FACULTY OF MEDICINE.

WINTER SESSION commences on MONDAY 13th OCTOBER 1924, and closes on FRIDAY 20th MARCH, 1925
SUMMER SESSION commences on TUESDAY, 21st APRIL 1925 and closes on FRIDAY 26th JUNE 1925
The Preliminary Examinations will commence on FRIDAY, 5th SEPTEMBER, 1924, and FRIDAY 6th MARCH, 1925
The Faculty of Medicine embraces Twelve Chairs, besides Readerships and Lectureships, and instruction is given in all departments of Medical Science —

PROFESSORS

Botany—WILLIAM G CRAIB M A F L S F R S L
Zoology—J ARTHUR THOMSON M A LL D
Physics—G P THOMSON M A
Chemistry—ALEXANDER FINDLAY M A D Sc, Ph D
Anatomy—R W REID M D F R C S
Physiology—J A MacWILLIAM M D, F R S
Materia Medica—CHAS R MARSHALL M A M D LL D
Pathology—THEODORE SHENNAN M D F R C S E
Forensic Medicine—MATTHEW HAY M D LL D
Surgery—JOHN MARNOCH C V O M A M B C M
Medicine—ASHLEY W MACKINTOSH M A M D F R C P E
Midwifery—ROBERT G McKERRON M A, M D

READERS AND LECTURERS

Bacteriology—JOHN CRUICKSHANK M D (Reader)
Embryology—ALEX LOW M A M D (Reader)
Public Health—J PARLANE KINLOCH M D, D P H DOUGLAS WATTS BLERY M D D P H
Bio Chemistry—EDGAR BEARD B Sc
Parasitology—JOHN RENNIE D Sc
Tropical Medicine—GEO ALEX WILLIAMSON, M A M D
Experimental Physiology—CHARLES REID M A B Sc M B Ch B
Malignant Diseases—JOHN CRUICKSHANK M D
Medical Ethics—GEORGE WILLIAMSON M A, M B C M
Tuberculosis Sanatorium Treatment of—(short course) IAN STRUTHERS STEWART, M D

CLINICAL AND SPECIAL LECTURERS

Royal Infirmary

Clinical Medicine—A W MACKINTOSH M A M D F R C P E THOS FRASER C B E, D S O M A M B, Ch B WM I CROLL M A M D
Clinical Surgery—J MARNOCH C V O M A M B C M FREDK SMITH URGL H COLT M A M B F R C S
Clin McKERRON M A M D
Oph H USHER B A M B B Ch F R C S (Edin)
Diseases of Ear Nose and Throat—HENRY PEARKIN M A M B Ch B
Diseases of the Skin and Venereal Diseases—J I CHRISTIE M A, M B C M M R C P E
Radiology and Medical Electricity—JOHN R LEVACK M B C M
Dental Surgery—J M P CROMBIE M B C M L D S (Lng)
Anæsthetics—ALEX OGSTON, M A M B, C M

Maternity Hospital

Obstetrics and Infantile Clinic—PROFESSOR McKERRON M A M D
Maternity and Child Welfare—JAMES A SILPHEN M A M B Ch B

Ophthalmic Institution

Ophthalmology—A R GALLOWAY O B E M A M B C M

Royal Hospital for Sick Children

Diseases of MITCHELL M A, Ch M, WILLIAM Ch B
Anæsthetics — M D

Royal Mental Hospital

Mental Diseases—R DODSBROWN M D, F R C P L

Dispensary

Vaccination—JOHN BROWN M B Ch B
Diseases of Ear Nose and Throat—HUGH R SOUPER M A M D

City Hospital

Fevers—J PARLANE KINLOCK M D, D P H
Tuberculosis—GEORGE S BANKS M B Ch B D P H WM B'OWN O B E M B, Ch B

Bursaries Scholarships, Fellowships and Prizes to the number of fifty and of the annual value of £1 180 may be held by Students in this Faculty The total cost of the curriculum for the Degrees of M B and Ch B including Class Hospital Matriculation and Degree Fees is approximately £240

The Degrees in Medicine granted by the University are Bachelor of Medicine (M B) Bachelor of Surgery (Ch B) Doctor of Medicine (M D) and Master of Surgery (Ch M) The degree of Doctor of Philosophy (Ph D) is also granted in this Faculty A Diploma in Public Health is granted after a special examination in Public Health to Graduates in Medicine of any University in the United Kingdom

A Prospectus of the Classes, Fees etc may be had on application to the Secretary of the University and full details of the Courses, Degrees Examinations Bursaries, Fellowships, etc will be found in the Aberdeen University Calendar published by the Aberdeen University Press Ltd

The University also grants Degrees in Arts Science (Pure Agriculture and Forestry) Law Divinity, Education and Commerce and Diplomas in Agriculture Forestry and History and Theory of Fine Art particulars of which may be had on application to — H J BUTCHART Secretary

QUEEN'S UNIVERSITY OF BELFAST.

FACULTY OF MEDICINE — SESSION 1924-1925

Midwifery—C G Lowry M D P R C S I
Gynæcology—R J Johnstone M B F R C S Eng
Musgrave Chair of Pathology—W St Clair Symmers M B
Medical Jurisprudence—W St Clair Symmers M B and Thos Houston
Practical Pharmacy—V G L Fielden M D Ph C [B A. M D
Ophthalmology and Otology—James A Craig M B F R C S Eng
Anatomy—V J Wilson B A. D Sc M D D P H.
Physics—William B Morton M A
Zoology—Gregg Wilson M A. Ph D D Sc. M R I A. O B E.
Botany—James Small D Sc
Chemistry—A W Stewart D Sc
Organic Chemistry—H Graham. M Sc
Biochemistry—J A. Milroy M A M D
Vaccination—John McLeish M B B Ch D P H
Pharmacology—E. B C Mayes M D D P H

The Lectures of the WINTER SESSION of 1924-25 will commence on Tuesday October 14th. The Summer Medical Classes will commence on April 15th 1925

The Anatomical rooms are open during the entire day and Students are aided in their dissections by the Professors of Anatomy and the Demonstrators

The Examinations for Medical Scholarships at entrance are held in June

Scholarships will be open for competition at the Professional Examinations in Summer 1925

The Fees for a complete Medical Course (including Hospital Fees) amount to about £150

HOSPITALS IN BELFAST (recognised by the University of Clinical Instruction)

ROYAL VICTORIA HOSPITAL—Clinical Fees Winter Session of six months £7 7s, Summer Session of three months £4 4s Winter and Summer nine months, £9 9s Perpetual Fees payable in two instalments £21 Hospital Fee half a guinea for each Winter or Summer Session

MATER INFIRMORUM HOSPITAL—The Clinical Fees are the same as those of the Royal Victoria Hospital.

BELFAST UNION INFIRMARY and CHILDREN'S HOSPITAL

BELFAST FEVER HOSPITALS (CITY FEVER HOSPITAL Purdysburn, and UNION FEVER HOSPITAL)

BELFAST MATERNITY HOSPITALS

ULSTER HOSPITAL FOR DISEASES OF WOMEN AND CHILDREN and MIDWIFERY DISPENSARY

BELFAST HOSPITAL FOR SICK CHILDREN

BELFAST OPHTHALMIC HOSPITAL AND EYE AND EAR DISPENSARY

BENN ULSTER EYE EAR, AND THROAT HOSPITAL

SAMARITAN HOSPITAL | FORSTER GREEN HOSPITAL FOR DISEASES OF THE CHEST

BELFAST HOSPITAL FOR DISEASES OF SKIN | BELFAST DISTRICT LUNATIC ASYLUM

The Calendar containing full information regarding the new Regulations for Courses Fees Scholarships, &c can be had on application to the Secretary Queen's University Belfast price 2s

By order of the Vice Chancellor J M FINNEGAN Secretary

ROTUNDA HOSPITAL, DUBLIN.

THE Hospital contains 127 beds Upwards of 2,000 maternity cases and 400 gynecological patients are treated during the year Besides the Hospital there is an extern Maternity Department with over 2,000 cases The routine for Students consists of attendance at the Morning Lectures on Midwifery and Gynecology examination of patients in the Gynecological Department, attendance at operations and all abnormal labour in the Hospital Wards and conduction of labour cases in the intern and extern departments

Qualified Students are allowed to assist at the major and perform some minor gynæcological operations

The Hospital Courses are always going on during the year, and Students can join at any time The Class is limited, therefore it is advisable to register in advance Board and lodging can be obtained in the Hospital.

Extra classes in gynecological diagnosis and operative midwifery are conducted by the Assistants to the Master, and, if sufficient candidates, in gynæcological pathology

Fees, one month, £6 6s, months other than the first, £4 4s

The L M certificate is given on examination after six months attendance at the hospital.

Full particulars from GIBBON FITZGIBBON M D Master Rotunda Hospital

MEATH HOSPITAL & CO. DUBLIN INFIRMARY.

SESSION 1924-1925

PHYSICIANS—SIR JOHN MOORE M A. D Sc M D F R C P I EDWARD E LENNON F R C P I WILLIAM BOXWELL M D F R C P I
SURGEONS.—RICHARD LANE JOYNT M D F R C S I OLIVER ST JOHN GOGARTY M D F I C S I. HENRY STOKES M D F R C S I. THOMAS J D LANE M A. M D T C D PAUL CARTON M D (GYNÆCOLOGIST)
ASSISTANT PHYSICIAN—CYRIL MURPHY M D T C D **OPHTHALMOLOGIST**—MILES EUPHAN MAXWELL M D F R C S I.
PATHOLOGIST—THOMAS J D LANE M D

THE CLINICAL PRACTICE OF THE HOSPITAL WILL COMMENCE ON MONDAY OCTOBER 6 AT 9 A.M.

Full Prospectus of the Session, List of Programmes of Clinical Lectures and List of Medals and Prizes can be obtained from D CYRIL MURPHY Hon. Sec. Medical Board

THE FELLOWSHIP OF MEDICINE AND POST-GRADUATE MEDICAL ASSOCIATION

1, Wimpole Street, London, W. 1.

Telephone MAYFAIR 2235

Post Graduate Courses in the Associated General and Special Hospitals are arranged for October and November in the following subjects Diseases of Children Diseases of the Throat etc Electrotherapeutics Practical Medicine Tropical Medicine Urology Intensive Courses in Medicine, Surgery and the Special Departments Dermatology Gynæcology Proctology and Venereal Diseases

Further particulars of these Courses and the *Bulletin* giving information of the clinical opportunities at the London Hospitals may be had from the Secretary HERBERT J PATERSON M C., ARTHUR J WHITING M.D., Hon. Secretaries

University College of North WALES, Bangor

SESSION 1924-5 will open on September 30th

DEPARTMENTS OF PHYSICS, CHEMISTRY, AND BIOLOGY

Physics — Professor E Taylor Jones D Sc; Lecturers—W E Williams, B Sc, P A. Manistone M Sc

Chemistry — Professor K J P Orton, M A Ph D F R S Lecturers—H B Watson, B Sc; F G Soper, M Sc, Ph D

Biology — *Botany* Prof D Thoday, M A, Lecturer—Miss A J Davey M Sc; *Zoology and Physiology* Prof Philip J White, M B, F R S E Assistant Lecturer—Miss L Thorpe, B Sc

The Classes and Laboratory Courses of this College are arranged to suit the requirements of Students of Practical Science, as well as of Students preparing for University and other Examinations The Lectures in Chemistry, Physics, Botany and Zoology, are recognized for the first year of medical study

The Laboratories (Physical, Chemical and Biological) are fully equipped for study and research

Entrance Scholarships and Exhibitions are open for competition in April in each year, and several are awarded at the close of each session on the result of the year's work

For full information as to fees, etc, apply for Prospectus to the Secretary and Registrar

W P WHELDON

University College of South WALES AND MONMOUTHSHIRE

THE WELSH NATIONAL SCHOOL OF MEDICINE

The next Session opens on OCTOBER 7 This School is staffed on the "Unit" system and its Courses of Instruction are open to both Men and Women Students Students can complete the whole of their curriculum in this School and qualify for the Degrees of M B, B Ch, in the University of Wales, and M B, B S in the University of London Students can also qualify for the Diplomas of the Conjoint Board of England Hospital Instruction is given at the Cardiff Royal Infirmary, at the City Lodge Hospital, and at other recognized institutions The Cardiff Royal Infirmary contains between 300 and 400 beds, it is well equipped in all general and special departments, giving facilities for every branch of study Medical Practitioners wishing to prepare for the Diploma in Public Health or for the Tuberculous Diseases Diploma of the University of Wales can attend complete Courses of Instruction in the School Prospectuses can be obtained on application to the Dean of the Faculty of Medicine or to the Secretary, at University College, Cardiff

Cardiff July 1924

Shropshire Orthopædic HOSPITAL, Gobowen, near Oswestry

COUNTRY OPEN AIR WARDS 300 BEDS

GIRL STUDENTS WANTED to learn Orthopædic Work and prepare for the Conjoint Examination of the C S M M G Three years training Salary first year £16 second year £20 all found uniform —Apply Miss HUNT R R O

METROPOLITAN ASYLUMS BOARD

Queen Mary's Hospital for CHILDREN, Carshalton.

APPOINTMENT OF ASSISTANT MEDICAL OFFICER

Applications are invited for the appointment of Junior Assistant Medical Officer at Queen Mary's Hospital for Children Carshalton, Surrey at which a considerable proportion of the cases received are of an orthopædic nature Number of beds 900 Salary £500 per annum The candidate appointed will be required to reside in the Institution and pay for board lodging, and washing at the rate fixed from time to time by the Board At present the rate is £130 per annum

Application to be made not later than 10 a m on Friday, September 19th, 1924, on form obtainable from the Clerk, Metropolitan Asylums Board Victoria Embankment, London E C 4, by forwarding stamped addressed foolscap envelope

G A POWELL Clerk to the Board

Birmingham General DISPENSARY.

MEDICAL OFFICER required for one of the seven Branches of this Institution. Duties to commence at an early date Must be unmarried and registered and possess medical and surgical qualifications

Salary £500 per annum with furnished apartments fire light and attendance

No midwifery cases

Applications together with three recent referees as to professional abilities and moral character and registration certificate should be forwarded to the undersigned from whom any further particulars may be obtained.

E W FORREST Secretary

32 Union Street Birmingham.

ROYAL NAVAL MEDICAL SERVICE.

SHORT SERVICE SCHEME

The Admiralty are prepared to accept applications for entry as SURGEON LIEUTENANTS for Short Service in the Royal Navy

Period of Service—3 years, with option to extend for further twelve months

Pay—25s per diem, or £456 5s per annum

Gratuity on discharge—£8 6s 8d for each completed month of service or £100 per annum.

Equipment allowance—£50, payable on joining

Age of candidates—Not to exceed 30 years

Surgeon Lieutenants on the Short Service Scheme will be considered for transfer to the Permanent Service under certain conditions after six months service.

Regulations for entry and form to be filled up by candidates will be supplied on application to the Medical Director General, 68, Victoria Street, London S W 1

Salford Union Infirmary Hope Pendleton, near Manchester.

THIRD ASSISTANT RESIDENT MEDICAL OFFICER (MALE)

The Guardians of the Salford Union are prepared to receive applications for the above appointment.

Candidates, to be eligible must be unmarried, registered under the Medical Acts and possess a Medical and Surgical qualification. Preference will be given to candidates with experience of Poor Law or General Infirmaries, and possessing experience of X ray and Electrical work

Salary £275 per annum, with furnished apartments, attendance and rations at the Infirmary

The appointment, which will be subject to the approval of the Ministry of Health, will be made in the first instance for a period of six months The Guardians expect the person appointed to remain for this period and to devote his whole time to the duties and also to act as may be directed by the Medical Superintendent as respects the Union Infirmary and other Institutions of the Union

The Infirmary contains about 910 beds is well equipped, and provides excellent all round clinical experience of all classes of surgical, medical and children's diseases, a large proportion of which are of an acute nature.

Applications, stating age, qualifications, and experience and accompanied by copies of not more than three recent testimonials (which will not be returned), should reach me as early as possible but not later than 9 a.m. on Wednesday, Sept 10th, 1924 endorsed "Third Assistant Medical Officer"

Canvassing the Guardians will disqualify

By order, E. H INGHLLY

Clerk to the Guardians

Poor Law Offices Eccles New Road Salford

August 25th 1924.

National Hospital for Diseases OF THE HEART, Westmoreland Street, London W 1

Applications are invited for the post of OUT PATIENT MEDICAL OFFICER (non resident) Male The appointment is for a period of six months but may be renewed for a further period not exceeding six months Salary at the rate of £125 per annum Candidates must be duly registered Medical Practitioners will not be expected to call on the Hon. Medical Staff but should send their applications, with copies of three recent testimonials to the undersigned, not later than September 20th, 1924 He will be required to assist the Hon Medical Staff on five afternoons weekly or four afternoons and one morning as may be arranged

ROBERT G E WHITNEY (Capt)

Secretary

Norfolk & Norwich Hospital, Norwich.

CASUALTY OFFICER and HOUSE SURGEON (with charge of 10 beds) required

Salary £150, with board, residence and laundry

Candidates (Male) who must possess registered qualifications, should forward applications stating age nationality, &c., together with copies of testimonials, to the undersigned not later than the 16th September

FRANK INCH Secretary

September 5th 1924

The Gloucestershire Royal INFIRMARY AND EYE INSTITUTION, Gloucester

There is a vacancy for an ASSISTANT PHYSICIAN and PATHOLOGIST on the Acting Medical Staff of this Institution There are certain emoluments in connection with the above posts particulars of which can be obtained from the undersigned

By the rules of the Hospital the members of the Acting Medical Staff shall be duly registered practitioners

Candidates should send in their applications diplomas and testimonials under cover to the Secretary, on or before Wednesday September 10th.

G HURFORD

Gloucester July 31st 1924. Secretary

Royal Victoria Infirmary Newcastle upon Tyne

RESIDENT APPOINTMENTS

The following Resident Appointments tenable for six months will become vacant from November 1st, 1924:—

4 House Physicians
6 House Surgeons
2 House Surgeons to Accident Department
1 House Surgeon to Throat Nose, Ear and Eye Departments.
1 House Surgeon to Gynæcological Department
1 House Surgeon to Skin & Venereal Department
1 House Surgeon to Out-patient Dressing Department

Candidates must be registered in Medicine and Surgery

Residents are remunerated at the rate of £50 per annum

Before making application, intending candidates are asked to apply to the undermentioned for a copy of the regulations governing the appointments

Applications stating age, experience and qualifications accompanied by copies of two testimonials, should be sent to me not later than Saturday, September 20th 1924

S DUNSTAN,

House Governor and Secretary

September 1st, 1924.

Coventry and Warwickshire HOSPITAL, Coventry (213 Beds)

A vacancy having occurred on the HONORARY SURGICAL STAFF of the above Hospital, applications are invited for the post.

In conformity with the Laws of the Institution, candidates must be Graduates in Surgery of a British or Irish University, or Fellows of the Royal College of Surgeons of England, Edinburgh or Ireland Such qualifications if not held, would have to be obtained within two years of appointment (This clause will be strictly adhered to)

Candidates shall be resident in the City of Coventry, or within six miles thereof, or shall take up their residence within that radius within six months from date of appointment.

Canvassing either directly or indirectly will be deemed a disqualification

Applications with original testimonials and Registration Certificates, must reach the undersigned on or before September 9th, 1924

Candidates will in due course receive notice of their eligibility or otherwise from the Secretary, and after receipt of such notice eligible candidates are at liberty to send through the post printed copies of their application and testimonials to the Governors of the Hospital, a list of whose names and addresses will be furnished by the Secretary

By Order of the Committee

(Miss) R HOOPER

August 27th 1924 Secretary

Oldchurch Hospital, Romford.

RESIDENT ASSISTANT MEDICAL OFFICER.

The Guardians of the Romford Union invite applications for the appointment of a Male Assistant Resident Medical Officer at their Oldchurch Hospital, Romford, with accommodation at present of 300 beds, with further wards in the course of erection

Candidates must be single and preference will be given to one who has held the position of House Surgeon or House Physician in a General Hospital.

The appointment is governed by the regulations laid down in the orders of the Ministry of Health.

The salary will be at the rate of £250 per annum, subject to deductions under the Poor Law Officers' Superannuation Act, 1896 with furnished quarters, maid rations, and laundry.

Forms of application and particulars of duties may be obtained from the undersigned upon receipt of a stamped addressed foolscap envelope, and must be returned not later than Monday, September 8th, 1924

By Order

RAYMOND H MASON,

Clerk to the Guardians.

Union Officers Romford August 29th 1924

Brighton—The Royal ALEXANDRA HOSPITAL FOR SICK CHILDREN (73 Beds)

A HOUSE SURGEON (male) required Salary at the rate of £120 a year, with board, lodging and washing Good experience Time for study No canvassing allowed

Further particulars may be obtained of

A. F GRAVES, Secretary.

August 30th 1924

The Leeds Public Dispensary.

Wanted JUNIOR RESIDENT MEDICAL OFFICER. Salary £150 per annum, with board, residence and laundry Separate sitting room

Applications with copies of three recent testimonials, to be addressed to the Secretary of the Faculty Public Dispensary North Street Leeds

APPOINTMENTS—Important Notice.

(a) British Islands.

Medical Practitioners are requested not to apply for any appointment referred to in the following table without having first communicated with the Medical Secretary of the British Medical Association 429 Strand, London, W.C.2.

CONTRACT PRACTICE.

ENGLAND.

CANNOCK CHASE AND DISTRICT
(Clubs and Friendly Societies Appointments)

MIDDLESBOROUGH
(Medical Aid Associations or Workmen's Clubs.)

SOUTH BANK & ESTON
(Medical Aid Associations or Workmen's Clubs.)

WALES.

ABERTRIDWR GLAMORGAN
Windsor Colliery (Medical Scheme.)

EBBW VALE MON
(Workmen's Medical Society.)

GILFACH GOCH GLAMORGAN
(Workmen's Medical Scheme.)

LLWYNYPIA CLYDACH VALE PENYGRAIG GLAMORGAN
(Workmen's Medical Scheme.)

MARDY GLAMORGAN
(Workmen's Medical Scheme)

OAKDALE MON
(Medical Officer for Medical Aid Association.)

WALES (continued)

OGMORE VALLEY GLAMORGAN
(Workmen's Colliery Medical Aid Society.)
(Workmen's Medical Scheme)

TONDU & ABERKENFIG GLAMORGAN
(Workmen's Medical Scheme.)

PUBLIC HEALTH.

ARGYLLSHIRE EDUCATION AUTHORITY
(Executive School Medical Officer.)

HUNTINGDON AND ISLE OF ELY COUNTY
(Assistant County Medical Officer and Assistant School Medical Officer.)

INVERNESS SHIRE EDUCATION AUTHORITY
(Temporary Assistant School Medical Officer.)

LANARK COUNTY
(Medical Officer of Health.)

LEEDS EDUCATION COMMITTEE
(Assistant School Medical Officer.)

LINCOLN CITY EDUCATION AUTHORITY
(Woman Assistant School Medical Officer.)

PUBLIC HEALTH (continued)

MIDDLESBROUGH EDUCATION COMMITTEE
(Assistant School Medical Officer.)

MIDLOTHIAN EDUCATION AUTHORITY
(School Medical Officer.)

NORTHUMBERLAND COUNTY COUNCIL
(Woman Assistant Medical Officer of Health.)

NOTTINGHAMSHIRE
(County Medical Officer of Health.)

ORKNEY COUNTY
(School Medical Officer. Medical Officer of Health and Tuberculosis Officer for Rural Districts. Medical Officer of Health for Burgh of Kirkwall combined appointment.)

[illegible]
(Assistant School Medical Officer.)

WIGAN COUNTY BOROUGH
(Assistant School Medical Officer.)

YORKSHIRE
NORTH RIDING COUNTY COUNCIL.
(Assistant School Medical Officer.)

(b) Colonial Medical Service.—WINDWARD ISLANDS MEDICAL SERVICE (Grenada with Carriacou, St. Vincent and St. Lucia.)

(c) Overseas Appointments.

Medical Practitioners are requested not to apply to any appointment referred to in the following table without having first communicated with the Honorary Secretary of the Division or Branch named in the second column or with the Medical Secretary of the British Medical Association 429 Strand London, W.C.2.

Town or District.	Hon. Sec. of Division or Branch	Town or District.	Hon. Sec. of Division or Branch	Town or District	Hon. Sec. of Division or Branch
NEW SOUTH WALES (All Friendly Society Appointments.)	Dr. P. H. TODD (Hon. Sec. New South Wales Branch) B.M.A. Building 30-34 Elizabeth Street, Sydney N.S.W.	QUEENSLAND (Brisbane Associated Friendly Societies' Institute.)	Dr. R. MARSHALL ALLAN (Hon. Sec. Queensland Branch) Adelaide Street Brisbane	VICTORIA (All Institute or Medical Dispensaries.)	Dr. FRANK DAVIS (Hon. Sec., Victorian Branch) Medical Society Hall, Melbourne, Victoria.
				WESTERN AUSTRALIA (Contract and Lodge Practices.)	Hon. Sec. Western Australian Branch, Bank of New South Wales Chambers, St. Georges Terrace, Perth.

Address 429 Strand, W.C.2
September 3rd 1924.

By order of the Council of the British Medical Association,
ALFRED COX, Medical Secretary.

Royal Devon and Exeter Hospital, Exeter (400 Beds)

HOUSE PHYSICIAN

Applications are invited for the post of House Physician (Male) at this Hospital vacant on October 1th next. The appointment will be for six months but candidates are eligible for re-election. The candidate appointed will be in charge of the Medical wards, assist in the Casualty Dept. and in giving Anæsthetics.

Salary at the rate of £150 per annum with board, apartments and washing.

Applications giving full particulars as to age, qualification, etc., together with certificate of registration, and copies of recent testimonials should be sent to the undersigned on or before Saturday next 10th inst.

By Order of the Committee,
S. S. COLE,
Secretary.

September 1st 1924.

Royal Northern Hospital, Holloway, London, N.

Applications are invited for the post of HOUSE SURGEON. The appointment is for six months from October 1st. Salary at the rate of £75 per annum with board, residence and laundry.

Applications with copies of testimonials should be sent by September 10th to the undersigned, from whom rules and forms of application can be obtained.

GILBERT G. PANTER,
Secretary.

August 3rd 1924.

Richmond Union, Surrey

ASSISTANT MEDICAL OFFICER

The Guardians invite applications from registered Medical Practitioners for the appointment of Assistant Medical Officer (non-resident and part time) for the Grove Road Institution. The duties of the office are to act in the absence of the Medical Officer on leave of absence or emergency and as Anæsthetist at operations.

The salary will be at the rate of £50 per annum and fees for midwifery vaccination and lunacy cases will be paid in addition.

Applications (by letter) stating age and accompanied by copies of not more than three recent testimonials with a description of the Diplomas, Certificates of Degrees, Licences and other documents held by the candidate must reach me by 10 a.m. on Monday September 15th 1924.

By Order, CHARLES L. FENN,
Clerk to the Guardians.

Guardians Offices,
Parkshot, Richmond, Surrey.
September 1st 1924.

Royal Victoria Hospital, Dover

Wanted HOUSE SURGEON (unmarried) duly qualified and registered, salary £180 a year and board, lodging and washing, which can be supplemented by [illegible].

Applications to be received on or before Sept. 7th by the Hon. Secretary Royal Victoria Hospital Dover on a form to be obtained from him.

West London Hospital, Hammersmith Road, W.

Required one HOUSE PHYSICIAN and one HOUSE SURGEONS (Males). The appointments are tenable for six months from 1st October next.

Salary £100 per annum with board, lodging and washing allowance.

Candidates are required to be registered under the Medical Act to send four copies of their offers of application and four copies of each testimonial submitted, so as to reach me no later than Tuesday September 16th. Selected candidates will be required to be in attendance at a meeting of the Medical Council on Friday September 19th at 4 p.m. and the House Committee meeting at 4 p.m. the same day when the appointments will be made.

H. A. MADGE, Secretary.

The Sheffield Royal Hospital

Applications are invited for the post of RESIDENT SURGICAL OFFICER, salary £200 per annum with board, residence and laundry. Applicants must be registered Medical Practitioners and unmarried. Previous Hospital appointments essential. FRCS qualification and have passed Conjoint Board Primary FRCS examination. The appointment is tenable for one year. The successful candidate will commence duty on October 1st. A previous surgical experience and copies of testimonials to be sent to me not later than September 15th.

The Board's room. JOE W. LOBLEY,
September 1st 1924. Secretary.

Wanted —Doctor or Senior Medical Student, aged 30/40 with experience nervous complaints for Young Man home near Stirling end September, able to travel duration several months, state age, references (which must be first class) and other essential particulars —Address No 4432, BRIT MED JOUR Office 429 Strand, W C

Wanted.—Assistantship by Male, æt 27, Edinburgh qualified, outdoor or indoor (outdoor prof) married, no family, provision made for wife if necessary, splendid practical surgical exp, gd anaesthetist, free immediately, abstainer excellent testimonials —Address No 4404 BRIT MED JOURN Office 429, Strand, W C

Wanted —Assistantship, with view only, by male 34 yrs, M R C S, some capital available preferably in or near London Several House Appointments and good experience. Morist —Address No 4434 BRITISH MEDICAL JOURNAL Office 429 Strand W C 2

Wanted –Assistantship, view early Partnership on easy terms by M B (N U I) ex H S and H P, experienced private and panel practice R C, aged 27 Ample capital few years Motor cyclist Keen medicine and surgery —Add No 4405 B M J Office 429, Strand

Wanted — Indoor Assistant for panel and private Practice South Wales, West Coast Must be experienced in midwifery; very little night work Cyclist. Usual bond, Please state essential parties, send photo, and refs — Address No 4427, B M J Office 429, Strand, W C

Wanted by M.B, B Ch, D P H, aged 33, with seventeen years experience, whole or part time work; would manage branch Locum work Total abstainer —Address, No 4402 BRITISH MEDICAL JOURNAL Office, 429, Strand, W C 2

Wanted —Assistant, indoor, for panel and private practice in agricultural district Young cyclist, willing to dispense and do some midwifery Photo Usual bond — Address No 4423 B M J, 429 Strand W C 2

Wanted —Assistant (lady) for good class Market Town Practice in Yorkshire State age, experience and essential particulars to No 4428 BRITISH MEDICAL JOURNAL Office 429 Strand W C 2

Wanted.—About the beginning of November ASSISTANTSHIP or part time work in London by M B, B S, M R C S, L R C P, aged 34, married, three years' experience general practice —Address, No 4324 BRITISH MEDICAL JOURNAL Office, 429, Strand W C 2

Wanted —An experienced ASSISTANT in a general practice — Address stating all essential particulars No 4501 BRITISH MEDICAL JOURNAL Office, 429, Strand W C 2

Wanted by Woman Graduate M B B Ch (T C D) ASSISTANTSHIP, indoor or out Considerable hospital experience and good references —Address, No 4407 BRITISH MEDICAL JOURNAL Office 429 Strand W C 2

Assistantship or Management of Branch Wanted in England by M B Ch B, Glasg, at present in own Practice in Scotland Æt 30 married abstainer, fond of midwifery, small capital can drive car or motor cycle (own) References medical and lay Free early September Would work on salary and commission if desired. Personal interview —Address No. 4340, BRITISH MEDICAL JOURNAL Office 429, Strand W C 2.

Assistant (Woman, Indoor) required in pleasant London suburb twenty minutes S E of Charing Cross Small salary to commence Permanency if suitable Kindly give full particulars —Address No 4436 BRITISH MEDICAL JOURNAL Office 429 Strand W C 2.

Assistant wanted, Manchester R C (Irishman preferred), single State age height, experience (especially in midwifery) abstainer or otherwise Salary £300, rising to £350 fire light, and apartments — Address No 4425 B M J 429 Strand W C 2

Assistantship or long locum wanted by M B B Ch Aged 30 married Good experience in private and panel practice Excellent testimonials — 'Medico' 1 Burngreave Road Pitsmoor Sheffield

Assistant required to take two Evening Surgeries weekly in North London mixed practice — Address No 4419 BRIT SH MEDICAL JOURNAL Office 429 Strand W C 2

Aberdeen graduate (1921) reading for Fellowship requires EVENING WORK in London Ex H S Experienced G P, —Address No 4403 BRITISH MEDICAL JOURNAL Office 429 Strand W C 2

Death Vacancy —Abertillery, Mon. Colliery Practice Fully qualified MEDICAL PRACTITIONER required — Apply, within fourteen days with qualification, etc, to A J COLEMAN, 5 Earl Street, Abertillery, Mon

Engagement wanted up to two years, General Practice or any branch of Public Health Thoroughly experienced in all, including Sanatorium work Had own practice Highest personal references —Address No 4415, BRITISH MEDICAL JOURNAL Office 429 Strand W C

Evening work in London wanted by M D O M, ex R A M C, ex H S, aged 31 All evenings free —Address No 4440, BRITISH MEDICAL JOURNAL Office 429 Strand W C

Indoor Assistant, salary £300, wanted immediately; mixed panel and private, not much night work Midlands —Address, No 4430 BRITISH MEDICAL JOURNAL Office, 429, Strand W C 2

Lady Chauffeuse —Fully trained Nurse, DESIRES POST, four years driving experience in London Thoroughly experienced in sterilizing care of instruments packing surgeons bags Excellent references —Write, Lucas 35, Devonshire St, London, W 1

SCALE OF CHARGES FOR ADVERTISEMENTS

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An average line contains six words

All remittances by Post Office Orders must be made payable at the General Post Office, London No responsibility will be accepted for any such remittance not being so safeguarded

Advertisements should be delivered, addressed to the Manager, 429, Strand, London, W C 2, not later than first post on Tuesday preceding publication

Note —It is against the Rules of the Post Office to receive *poste restante* letters addressed either in initials or numbers

Medical Officer, fully qualified wanted end of September for the whaling venture to the South Seas of the British whaler 'Sevilla Thomas Sinclair, Commander — Apply OHR SALVESEN & Co Leith

M.D, B S (Lond), of large and varied experience author of several medical and other works requires LITERARY WORK or appointment in London —Address, No. 4320, BRIT MED JOUR. 429, Strand, W C 2

M.B, Ch B (woman), desires ASSISTANTSHIP, Manchester or East Lancashire Present post Casualty and Assistant M O H London expires September 13th —Address, No 4410 BRITISH MEDICAL JOURNAL Office, 429 Strand W C 2

M B, Ch.B.Edin, 1923 (Woman, 23) desires ASSISTANTSHIP Keen energetic experience in midwifery Free Oct 1st Nominal salary in return for good experience.—Address No 4327, BRITISH MEDICAL JOURNAL Office 429 Strand W C 2

M.B., D M R E (Camb.), seeks ASSISTANCY in General Practice (preferably near coast), with scope for electro therapeutic work —Address No 4408, BRITISH MEDICAL JOURNAL Office 429 Strand W C 2

M.R C S, L R C P, 29 (Male) single desires ASSISTANTSHIP in good middle class practice; reasonable distance from London preferred, but not essential Keen, energetic, steady Disengaged middle September —Address No 4438 BRIT MED, JOURN Office, 429, Strand,

Medical Man, debarred from Practice by physical disability could give ASSISTANCE in Dispensing and Bookkeeping Good references —Apply L M S 2, Lambourn, Quest Hills Road Malvern Link, Worcs

Part-time work in London (preferably West End suburb) required by M R C S (Eng), L R C P (Lond) ex H S, H P and Casualty Officer Experienced in General Practice Not mornings —Address No 4406 BRITISH MEDICAL JOURNAL Office 429, Strand, W C

Scotland —Assistantship with view wanted by aged 29 Ex H S an has had one years practice Free mid 4318, BRIT MED JOUR Office 429 Strand W C 2

Scotch graduate, M B, Ch B, Glasgow aged 26 good anæsthetist, 9 months' experience large Mental Hospital wants ASSISTANTSHIP with view Free November 1st or December 1st. Scotland or North of England preferred —Address No 4414 B M J, 429 Strand,

Woman (26 years, Assistant in Newcastle) desirous of experience in ANÆSTHETICS and REFRACTION WORK, would welcome an opportunity of helping a doctor in either of these on free half day No fee —Address No 4429 BRIT MED JOUR Office, 429 Strand W C

Wanted immediately, Lady DISPENSER and BOOK KEEPER — Apply, DR REES 135, York Road Southend on Sea.

Dispenser wanted for East End of London Panel and private Apply by letter giving full particulars including salary required, to Dr F HARRIS WHITE, 17, Tredegar Road E 3

Dispenser, thoroughly experienced in Surgery routine and Book keeping seeks POST in London Excellent references — Address stating salary offered No 4232 BRITISH MEDICAL JOURNAL Office 429 Strand W C 2

Dispenser, lady, qualified, experienced quick and methodical requires POST excellent references —Address No 4304, BRITISH MEDICAL JOURNAL Office 429 Strand W C

Doctors requiring Lady DISPENSERS should write to Mr J L WALDEN Westminster College 112, St George's Road S E 1 (only address) No fees to Doctors 25 years experience Daughters and other relatives of medical men always in training

LOCUM TENENS

PROVIDED

Without fee to Principals

Apply to

Mr. W. S. ATKINS

43, BEDFORD STREET, STRAND, W.C.2.

Telegraphic Address:

'Positions, Westrand, London.

Telephone: Regent 229

Wanted at once, Hospitality LOCUM for one month Very light work Two seater car Beautiful country Bucks near links and five minutes river one hour London Wife is desired —Address No 4422 BRITISH MEDICAL JOURNAL Office, 429 Strand W C 2

M.B, Ch B. (woman), desires LOCUMS or ASSISTANTSHIP Experience in private and panel practice and dispensing Good references Free September 20th —Address, No 4420, BRITISH MEDICAL JOURNAL Office 429 Strand, W C 2

15/- per diem —An experienced Doctor who has had own Practice and just finished 7th locum since Xmas, will UNDERTAKE ENGAGEMENTS of any length, locum or otherwise London pref, not essen Well recom -Add, "Medicus' 58 Talbot Rd Bayswater

FOR LOCUM TENENS APPLY TO Mr. PERCIVAL TURNER.

The Oldest and only Agent who for 10 years has supplied substitutes at short notice without fee to principals

4, ADAM STREET, STRAND, LONDON, W C 2

Teleg: 'Epsomian, London Phone: Gerrard 3[illegible]

Partnership offered —In a Northern University City Old established Practice Average receipts £2 200 Panel 2 0 0 Good house and garden tennis lawn Englishman Scotsman preferred No agents —Add, No 4326 BRITISH MEDICAL JOURNAL Office 429 Strand W C

Partnership on South Coast, one third share between £800 and £900 (increasing) at two years purchase Rent £83 p a —Address No 1441 BRITISH MEDICAL JOURNAL Office 429 Strand, W C 2

A thoroughly sound Putney SHIP is offered to a suitable well qualified man who should have had some experience in a Practice near London Share offered at first £600 to £1 000 two years purchase Applicant should state age qualifications etc and capital available if not at once when Well situated house — Address No 4135 BRITISH MEDICAL JOURNAL Office 429 Strand W C 2

MB, sold own practice, desires PARTNERSHIP about £1 000 a year Bracing district aged 33, keen Leaning towards medicine, midwifery Own car House and garden Ultimate succession—Address No 4413 BRIT MED JOUR. Office 429 Strand W C 2

Wanted by FRCS, aged 33 a PRACTICE or PARTNERSHIP in town in the S or Midlands with coke for surgery Income about £1 000 Now free and can pay cash —P c/o BELSDELL & Co 42 Craven Street Strand W C 2

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Wanted in Country district a General PRACTICE of £1 400 to £1 600 a year House with garden in Southern half of England Applicant is experienced graduate and can buy at once Details received in confidence by 5531, c o Mr PERCIVAL TURNER, 4 Adam Street Strand W C 2

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Death Vacancy —Medical PRACTICE for Sale (West Riding) Panel about 2 000 Receipts for 1921 1923 average £750 For further particulars apply to DR. LING Skip on Road Keighley Yorks

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For Sale (1) Somerset Coast ce £500 House W Spa Practice — — — — topped) Devon Riviera Wanted Western Practs Partnships Resid Pract—WEST TRIP AGENCY Woodfield rd Torquay

For Sale—Promising NUCLEUS best part of City Scope for Eye V D Lie In urance work or Electrical Treatment —Address No 4421 BRITISH MEDICAL JOURNAL Office, 429 Strand W C 2

Medical Practice (Nucleus), Edinburgh along with suitable house.—Full particulars ROBERT FLEMING S S C 21 Hill Street Edinburgh

MD, BS (Lond), 20 years' in tropics wishes to settle at home bout March 1925 Would consider PRACTICE or PARTNERSHIP with early success from probably where Surgery and or Tropical Medicine would be of value. London preferred or country town with chance of Hospital appointment Capital available —Address No 4208 BRIT MED JOUR. 429 Strand W C 2

Manchester Suburb —Old-established Pleasantly situated corner house (specially built) garage &c £90 on lease Receipts £1 050 Great scope for increase 1½ years' purchase part deferred.—MANCHESTER MED & SCHOLASTIC ASSOCIATION LTD. 6 Brown Street

MD (Lond) would like to purchase a Clynon resident and non panel PRACTICE or obtain other suitable appointment —Address No 4439, BRITISH MEDICAL JOURNAL Office 429 Strand W C 2

North Wales —Two excellent openings for single practitioners (a) New PRACTICE worth £400 p a Panel and appointments £200 rapidly increasing and good scope Price £300 or £250 cash (b) Another rear popular resort worth £450 No resid nt opposition. Premium £350 or £300 cash —Address No 4426 BRIT MED JOURNAL Office 429 Strand

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Required at once —Practices and PARTNERSHIPS —Mr W S ATKINS (late of ARNOLD & SON London) has a large number of Clients who are seeking Practices and Partnerships and wish to settle down at once.—Send full particulars in confidence to Mr W S ATKINS Medical Transfer Agency 43 Bedford St Strand London W C 2

Several good Practices for Sale private panel and consultant Town £2 200 and £1 200 p a Country and Industrial £1 500 £1 000 £750 p a. Relative Locums always required —For particulars of practices and appointments apply GRIFFITHS MEDICAL AGENCY Tredegar Chambers Newport Mon.

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Notice is hereby given that

the ANNUAL GENERAL MEETING of the Company will be held at Lincoln House 300 High Holborn, W C 1 on Monday, October 6th 1924 at 4 0 p m precisely, to transact the following—

ORDINARY BUSINESS

1—To receive the Directors Report
2—To elect two Directors
3—To appoint Auditors and fix their remuneration and to transact the other ordinary business of the Company

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Hartlepool Union

ASSISTANT RESIDENT MEDICAL OFFICER

The Guardians invite applications from fully qualified ladies for the appointment of Assistant Medical Officer at Howbeck Infirmary containing 270 patients including 90 imbeciles Salary £250 per annum inclusive, with furnished rooms washing and rations

The appointment is subject to the approval of the Ministry of Health and to the provisions of the Poor law Officers Superannuation Act, 1897 and the lady appointed will be required to devote her whole time to the service of the Guardians undertake to give Lectures in Surgical and Medical Nursing to Probationer Nurses and carry out the instructions of the Medical Officer

Applications stating qualifications age and previous experience should be accompanied by copies of three to timonials, and delivered to the undersigned on or before noon on Thursday, September 11th, 1924

By Order,
Union Offices, N JEFFRIES
Hart Road Clerk to the Guardians
West Hartlepool Sept 2nd 1924

Manchester Education

COMMITTEE

ASSISTANT SCHOOL MEDICAL OFFICER

Applications are invited from fully qualified Medical Men for the post of Assistant School Medical Officer Experience in Refraction and Children's Diseases desirable Salary £600 per annum rising by yearly increments of £25 to a maximum of £750 There is no bonus Yearly travelling expenses of £10 are allowed Application form may be obtained by sending stamped addressed envelope to the undersigned and all applications must be received at these offices not later than Wednesday, September 10th

SPURLEY HEY
Director of Education
Education Offices Deansgate, Manchester

District Infirmary and Children's Hospital, Ashton under Lyne

200 Beds

The Governors propose to appoint, at the end of the year an HONORARY MEDICAL OFFICER to the Massage and Electro Therapeutic Department

Candidates must show evidence of experience in the special work Further particulars of the appointment may be obtained from the undersigned, who will be pleased to hear from intending applicants at once

FRANK OLIVER
General Superintendent and Secretary
August 29th 1924

Chester Royal Infirmary

(201 Beds)

Wanted, ASSISTANT HOUSE SURGEON (Male) to commence duties October 1st 1924 Salary £150 per annum with board lodging and washing Candidates must be doubly qualified and registered Applications, stating age, and accompanied by copies of testimonials to be sent to the undersigned not later than September 17th

J ROWSE MITCHELL
September 2nd 1924 Secretary

Royal Halifax Infirmary

Wanted a THIRD HOUSE SURGEON, Male unmarried Candidates must be doubly qualified and registered Salary £150 per annum with residence board and
will be for six months
1924 Particulars of the
from the undersigned, to whom applications with copies of testimonials should be sent not later than September 10th, 1924

ALFRED MIDGLEY,
Septemb r 1st 1924 Secretary

Royal Free Hospital,

Gray's Inn Road W C 1

male or female
for the post of
period of 15 months
MEDICAL
Duties to commence October 1st 1924 Intending Candidates should submit applications, and copies of three recent testimonials stating age and qualifications to the undersigned on or before September 20th, 1924

R R GARRATT Secretary

The Royal Infirmary,

Sunderland (340 Beds)

Wanted beginning of October, TWO HOUSE SURGEONS (males) Salary each appointment £140 per annum, with board residence, and laundry

State age and qualifications, and submit copies of three recent testimonials by not later than September 12th, 1924 to

S C PRYERS, Secretary

Northampton General Hospital

HONORARY PHYSICIAN

The Board of Management invite applications for the post of Honorary Physician

Candidates must be Doctors of Medicine of one of the Universities of the United Kingdom or Fellows College of Physicians of ded that the Board may a Quarterly or Special as Physician for twelve months and no longer a candidate otherwise qualified who is neither a Doctor of Medicine a Fellow or Member of the Royal College of Physicians of the United Kingdom, and on such candidate undertaking to become a Member of the Royal College of Physicians of the United Kingdom, or a Doctor of Medicine of one of the Universities of the United Kingdom, during the period of his provisional appointment

Full particulars of the appointment can be obtained from the Secretary Superintendent and applications with testimonials, must reach him not later than September 23rd The election will take place on Tuesday, September 30th

C S RISBER
Secretary Superintendent.
August 2nd, 1924

County Borough of Barnsley.

ASSISTANT MEDICAL OFFICER OF HEALTH and ASSISTANT SCHOOL MEDICAL OFFICER

The Barnsley County Borough Council require the services of an Assistant Medical Officer of Health and Assistant School Medical Officer at an inclusive salary of £600 per annum

Candidates must be registered Medical Practitioners of at least six years standing and hold the D P H or equivalent qualification, and also have practical experience in the duties of a Medical Officer of Health

The candidate app
time to the duties
allowed to engage in
Applications upon the prescribed form, which

The appointment will be determinable by three months' notice on either side

Canvassing, either directly or indirectly, will disqualify

A. D MASON
Town Clerk's Office, Barnsley Town Clerk
August 27th 1924

Mansfield & District Hospital

The Board of
the post of SEN
the above Hospl
annum, with bor
Duties to comm
Candidates must have held a previous Hospital Resident appointment There is ample scope for good operative work

Applications accompanied by copies of three recent testimonials, should be sent to the undersigned

Dated this 2nd day of September 1924

A H LIMB Secretary

Scarborough Hospital and DISPENSARY

Wanted, September 22nd HOUSE SURGEON (Female) Duties include hou e visiting Salary £150 per annum with board, residence etc

Applications, stating age with copies of testimonials and essential particulars to be sent to the undersigned by September 9th, 1924, from whom further particulars may be obtained

J DOUGLAS MUNDY, Hon Secretary

Royal National Orthopædic HOSPITAL

234, Great Portland Street, W 1

Applications are invited for the posts of HOUSE SURG October 1st
£150 Applicants
should tered The
appointment is for six months renewable for a further per od of six months on the recommendation of the Medical Board

Applications with copies of testimonials should reach the Secretary at the above address not later than September 15th

Northampton County Mental HOSPITAL Berrywood, Northampton

JUNIOR ASSISTANT MEDICAL OFFICER required Male single Salary £350 rising £20 annually to £450 with board lodging washing and attendance Subject to provisions of the Asylums Officers Superannuation Act

Applications with copies of testimonials (recent) to be sent to the Medical Superintendent no later than September 9th

The Middlesex Hospital and MEDICAL SCHOOL W 1.

One SURGICAL REGISTRARSHIP will become vacant on October 1st 1924 Each Registrar is attached to a Clinical Unit of the Hospital and is responsible for the Clinical notes the carrying out of Clinical and Pathological investigations, and the co-ordination of the work in the Bland Sutton Institute of Pathology with that in the Wards and Operating Theatres

The appointments are for one year but the holders are eligible to apply for re-appointment and may retain office for three consecutive years Salary £300 per annum

Registrars are required to attend at the Hospital daily from 10 a.m to 4 p.m

Further particulars may be obtained from the Secretary Superintendent to whom applications with not more three testimonials must be sent in by Monday September 15th 1924

The Prince of Wales's General HOSPITAL, Tottenham N 15

Applications are invited for the following posts vacant on the 15th October next —

HOUSE SURGEON £150 p.a.
SPECIAL HOUSE SURGEON £150 p.a.
HOUSE PHYSICIAN £150 p.a.
JUNIOR HOUSE SURGEON £110 p.a.
JUNIOR HOUSE PHYSICIAN £110 p.a.

with residence board and laundry

The appointments are held for six months but the holders are eligible for re-appointment for a

e duly qualified and together with copies to be sent to me on or

before the first post on Monday 22nd September next

FREDK W DPEWETT
August 20th 1924 Director

St Peter's Hospital for Stone, etc Henrietta Street Covent Garden W C 2

The office of HOUSE SURGEON will become vacant on October 1st 1924

The office is held for six months at a salary of £75 per annum with board lodging and laundry

Applicants who have held an appointment as House Surgeon in a General Hospital will be preferred

The gentleman selected at the expiration of the

Applications with copy of testimonials should be sent in on or before September 15th 1924

BEECHEY POGEE S Secretary

West Kent General Hospital Maidstone. (161 Beds.)

Applications are invited for the appointment of TWO HOUSE SURGEONS who must be males and of British nationality Salary at the rate of £220 per annum with board apartments and laundry Candidates must possess registered medical and surgical qualifications

Write in first instance to the undersigned for form of application which must be returned on or before Wednesday September 10th 1924

H ST JOHN WOOD Secretary

August 29th 1924

Bootle Borough Hospital (General Hospital (160 Beds)

Salaries £150 per annum Senior Officer £125 per annum each Junior Officer (inclusive of V D work) with board residence and laundry Duties

with tary iver

ST. LUKE'S HOSPITAL.

ESTABLISHED 1 51

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5. SUSSEX COAST TOWN —PARTNER wanted s erp s ium 2

7. SOUTH LONDON —Working-class PRACTICE Receipts about £950 p.a Panel 00 Large house (8 rooms) held on lease, 17 years to run ren £50 Garage sub-let at £ 0
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WEST COUNTRY —Well-established G P panel in favourable town Panel over 1, Income nearly £1,700 Excellent house at rental Premium 1½ years purchase

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PRACTICES AND PARTNERSHIPS FOR SALE.

1 MIDLANDS —COUNTY TOWN —PARTNERSHIP A sixth share to commence with, is offered in a very old established [illegible] verage income £3,758, including [illegible] Fees 3/6 and 5/ upwards Very [illegible] situated house with two reception rooms 5 bedrooms small garden Rent £56 There is a large scope for increase, and a larger share will be sold later on Premium £1 250, payable part cash and balance by instalments

2 PARTNERSHIP —*Growing prosperous Town within 70 miles of* London A one third share, to commence with is for disposal in an old e tablished practice producing an income of nearly £5 000 a year including a panel of about 3 000 Visits 3/6 to 21/ Well s tuate l freeho'd house with garden Price £1 600, part on mortgage Excellent schools sport etc There is a Cottage Hospital, and the *ingoing Partner (who should not be over 30)* will be appointed to the Staff Premium 1½ years purchase

3 SOUTH COAST —LARGE TOWN PARTNERSHIP A quarter or one third share in a middle and *working class Practice Income* r 1,000 Fees 2/6 to 7/6 d very little night work 3o Prem 2 years purch

4 NLWCASTLL UPON TYNE ARLA —Old established non panel PRACTICE held by Vendor many years Steady average income of about £3 350 There is a Hospit l in the town, and a reason able prospect of obtaining an appointment on the Staff Various appointments worth about £150 a year Very little midwifery, but large scope if desired Fees 4/6 to 21/ Well situated house Vendor's freehold, will be let or sold Excellent educational facilities Premium to include drugs, etc , £3 600

5 GROWING COAST TOWN within easy access to London Old established mixed general PRACTI £1 800 Fees mainly 3/6 to 10/6 situated commodious corner house freehold Price £2 150 There is a [illegible] good prospects for a Surgeon. Premium 1½ years purchase

6 BORDLRS OF CO DURHAM AND NORTHUMBERLAND — Old e tablished village PRACTICE Income for last year £715, but there is scope for increase 2 0 panel patients Advice and medicine 2/6, 3/6, and 5/ Visits 3/6 to 10/6 medicine extra Small convenient house Price for house and practice £1 500

7 RESIDENTIAL TOWN, within 100 miles of London Non dispensing chiefly better class PRACTICE, producing an income of about £2 000 a year including small panel of about 600 Fees from 2/6 to 21/ , mainly 7/6 upwards Only a few cases of mid wifery yearly at 2 to 25 guineas Attractive and commodious house (3 reception 7 bedrooms etc , garden) on rental at £100 p a Good society and sport of all kinds Premium 2 years purchase

8 MIDLANDS —In a delightful Town (population over 15 000) amidst beautiful surroundings and within 1 hours run of London, an old-established lucrative PRACTICE worth over £3,000 per annum, including large panel *Good fees The house is well situated* has ample accommodation and can be rented on lease at £100 a year Premium 1½ years purchase, part by instalments Satisfactory reasons for selling Educational facilities and sport of all kinds

9 HOME COUNTY —Ho pital Town within 50 miles of London PARTNERSHIP A one half share in a mixed general practice, held by se[illegible] Panel of 780 from 3/6 [illegible] with ample accommodation and good gar len Price £2,000 of which £1 000 can remain on mortgage There is an up to date *Hospital and an early vacancy on the Staff is probable Good sport*, schools, etc Premium 2 years purchase half by arrangement

10 SOUTH WEST OF ENGLAND —COUNTY TOWN —A ONE *THIRD SHARE* producing £800 (and increasing later) is offered in a good class non panel and non dispensing practice, with a considerable amount of surgical work There is a good Hos pital in the town, and the incoming partner (who must hold the F R C S Eng) will eventually be elected on to the staff. Premium £1,600

11 EASTERN COUNTIES —UNOPPOSED COUNTRY PRACTICE, within 80 miles of London Very old established and easily worked, and situated close to a County Town Average income for the last three years £1 314 including appts , worth about £70, and panel of 788 Advice and medicine 3/6 to 5/ , visits 5/ to 10/6, medicine usually extra Midwifery 30/ upwards 10—15 cases yearly Very attractive residence, standing in its own grounds, containing consulting room surgery (with separate entrance) 3 reception 4 bedrooms, etc garage, stabling, One [illegible] freehold,

12 [illegible] Midland Vendor 10 Average 5 There is large scope for increase in the hands of a young, energetic man Fees, advice, and medicine 4/ cash visits and medicine 5/ to 10/6 Midwifery has been entirely refused for many years There is no house available on rental, but Vendor is willing to financially assist a purchaser to find a suitable house All kinds of sport, and exceptionally good schools for boys and [illegible] of which £300 can be paid out of

13 [illegible] *Large Town* The third share of an [illegible] money making Practice worth, for the last financial year, £3,722, can be acquired by a young unmarried man Panel list of over 1 800, and patients operative class Visits 2/ to 5/ Midwifery 2 to 3 guineas Ingoing partner could reside with Vendor, or unfurnished rooms are available Golf to be had Premium 1½ years purchase

14 CHESHIRE —Twelve months PARTNERSHIP introduction will be given to an old established middle class and panel Practice (1 600 patients on list) worth last year £2 100 Situated in large town (population nearly 100 000), *close to seaside resort* Visits 2/6 to 5/ Midwifery 2 to 3 guineas about 100 cases yearly Car not required Good house with garage, available at end of introduction Premium 1½ years purchase

15 LONDON WEST END —PARTNERSHIP —A quarter share (to commence with), and up to one third in 2 years and one half in 4 or 5 years with ultimate succession if desired is for disposal in a first-class general Practice Income for the immediate past year £3 020 Fees mostly 1 guinea upwards and a few at 10/6 Purchaser should be a Graduate or hold some higher qualification Premium for the quarter share £1 500

16 LONDON, EAST —Old established sound middle and working class PRACTICE *Income over* £1 150 Panel of 1 300 Surgery fees 2/6 visits 3/6 upwards No midwifery Can be much increased if desired Small house, suitable bachelor, on lease Would suit lady doctor Premium £1 750

17 INDIA —ASSISTANTSHIP with view to PARTNERSHIP A single man (about 30 years of age and not over 36 who must be an F R C S Eng of good appearance and a sportsman) is [illegible] agement to commence next March, [illegible] satisfactory at one year's purchase, with increase [illegible] to one third Premium payable out of receipts One of the Par [illegible] and a personal interview dur

18 ASSISTANTSHIP [illegible] O PARTNERSHIP within 2 years —Married University Graduate, about 30 years of age and Scotch preferred is required in a leading practice in a prosperous Seaport Town Salary (to commence) £400 a year with good house rent free and percentage on midwifery (producing nearly £100 in addition) Prospect of Hospital appointmen

19 *NOR* [illegible] Old established no[illegible] [illegible] 3400 per annum at present but there is very large scope for increase by a young well-qualified man Good fees Excellent corner house with 3 reception 6 bed garden Freehold Price for House and Practice £2 500

20 FAR EAST —Wanted in November a young, unmarried ASSISTANT (not over 30 years of age) on a two years agreement with possibility of succession at end of engagement Return passage paid Interview in London essential before ultimate engagement

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Partnership, London —For disposal ONE THIRD SHARE more easier Very old established middle and working-class Practice in populous district Panel about 700 Plenty of scope. Help wanted to increase practice Total income £2 500 a year Personally known.—Apply No 7591.

Exchange of Practices, South West County—Owner of an old established Practice of £1,400 a year in a charming country district in the West Country is open to exchange for a more easily worked Practice in West of London or in a good suburb—Apply in confidence No 7592.

Lancashire —About £585 p a Panel 150 Old-established PRACTICE Very little midwifery scope for increase House with good garden can be rented Premium for cash 1 year's purchase.—Apply No 7589

London, S W —£400 p a Panel 160 Visiting fees 3 6 to 5 Ground floor flat on lease. Rent £60 including rates—Apply No 7588

West of England —Partnership in Country Practice of over £2 600 p a One-third or one half share for sale Small panel and not much midwifery Visiting fees 5 to 21/ Good house with 5 bedrooms large garden tennis court etc to rent or could be purchased.—Apply No 7587

Suffolk —Nearly £1,600 a year Non-dispensing PRACTICE Panel 760 Fees 5 to 10 6 Good detached house large garden Rent £70 Some surgery and ample scope —Apply No 7583

Yorkshire —Average £1,286 Appointments £350 Visiting fees 3 6 to 10 6 Panel nearly 1 000 Few midwifery cases Good house every convenience—Apply No 7581.

North-West County —
establis
guinea
scope—Apply No 7579

Death Vacancy —London, S E About £1,524 per annum Cash and panel PRACTICE Visiting fees 2 6 to 5 Excellent premises on lease Small panel No Sunday or night work—Apply No 7576

London, N —About £450 p a Small non-residential PRACTICE Panel about 200 Fees for visits 2 6 to 7/6 Good premises on lease No appointments or midwifery —Apply No 7574.

Near Manchester —Nearly £2 000 p a. Panel worth about £600 p a Moderate house with separate surgery to rent Premium 1½ years purchase easy terms Good schools near—Apply No 7565

Eastern County Partnership About £2 200 p a Panel about 2 000 and other appointment Fees 3 6 up One-third share for disposal with successor in about 3 years Apply No 7564.

London, S W —Partnership and succession £2,000 a year Half share for disposal immediately Panel 1 000 Old established Good fees Excellent house and large garden Premises purchase—Apply No 7560

Cheshire —Nearly £4,000 a year Old-established Practice HALF SHARE for sale at 1½ years purchase Panel about 1 400 Appointments £45 Good fees Good house and garden to rent—Apply No 7536

South County —Over £1,000 Panel 340 other appointments £120 Practice hy uno posed Excellent house electric light etc Good garden All sorts Exceptional terms can be arranged—Apply No 7535

Midland Town —About £1,100 a year Old established PRACTICE Panel 5 Appointment £10 Very little midwifery Large house and garden Premium £1 600 in lump sum—Apply No 7534.

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Sussex —Partner required for a general practice situated in a good country district Receipts £1 500 Good fees Scope for increase. Premium for two-thirds share 2 years purchase with view to succession.—Folio 886

Staffs —Partner required for a General Practice situated in an industrial district Receipts £2 500 Panel 1,3 0 House at rental Premium for third share 1½ years purchase Option increase to half share Folio 887

S of England —A Coast PRACTICE situated in a charming district Receipts £1,250 Excellent fees Hospital appointment held No panel Non-dispensing Nice house in good position at rental Premium £2 500 —Folio 675

London — City Practice Receipts £1,250 including appts £500 Panel 100 Fees 3 6 upwards Vendor retiring Ample scope Nice house in central position at rental Premium £2,000 —Folio 667

Glam —A General Practice situated in a Coast Town Receipts £2,200 Panel 1 100 Fees 3 6 upwards Shipping fees 21/ upward Ample scope Nice house with 4 bed room etc garden and garage Rent £75 per annum Premium 1 years purchase—Folio 661

Sussex —A General Practice situated in charming district Receipts £1,400 Panel 700 Ample scope Fees 3 upwards Cottage Hospital Nice house containing 6 bedrooms etc Prem 1½ yrs purchase Folio 593

Midlands —An old-established general PRACTICE situated in a small Country Town Receipts £1 200 Fees 3 6 upwards Panel 700 Appointments £100 Scope for increase Vendor retiring Excellent house containing 5 bedrooms etc. Over 2 acres of grounds etc Premium 1½ years purchase—Folio 617

Norfolk —A General PRACTICE situated in a country district Receipts £1,600 Panel nearly 600 Good fees Nice house with excellent garden etc. Rent £35 per annum Premium £2 500 —Folio 600

Yorkshire —An old established PRACTICE situated in an unopposed district near coast Receipts £1,350 Panel over 500 Fees 2 6 upwards Plenty of space Nice house containing 6 bedrooms etc ½ acre of garden etc. Rent £30 per annum Premium 1½ years purchase—Folio 624.

Notts —A Middle and working-class PRACTICE (town and country Receipts £1,200 Fees 3 6 upward Small corner house containing 3 bedrooms etc Rent £60 per annum—Folio 662.

Glam —General Practice in thickly populated district on Coast Receipts £1,700 Fees 3/ upwards Panel 900 Considerable scope House containing 4 bedrooms etc rent £50 p.a. Premium £1,500 Folio 887

London, S W —A General PRACTICE situated in a large Suburb Receipts £500 Panel 200 Fees 2 6 upwards No midwifery Ample scope Vendor retiring Nice corner house containing 5 bedrooms etc Premium for house and practice £1,800 —Folio 663

London, S W —A General PRACTICE situated in a thickly populated district. Receipts £830—£900 Panel 160 Fees 2/ upward Plenty of scope Excellent corner flat containing 5 bedrooms etc Rent and rates £160 p a Premium 1½ years purchase—Folio 671.

Salop —A Partner required for an old-established Practice situated in a Market Town Receipts over £3 500 Panel 900 Cottage hospital in district Incomer could have Surgical experience Nice house available at rental Premium for one third share 3 years purchase—Folio 688

Derbyshire —A General PRACTICE situated in an industrial district Receipts about £800 Panel 500 Good fees Nice house containing 8 bedrooms, &c a rental Premium £1,000 —Folio 603

Purchasers stating their requirements can have details of other Practices not advertised

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Scotland —Unopposed PRACTICE of £8 0 Panel 500 Appointments £100 Good house with well stocked garden Price £1,500 for house and practice £1,000 down

New Zealand —Unopposed PRACTICE of £1,800 in beautiful district Good house Pen £100 Scope for surgery Premium £1,000

Surrey —Partnership in first-class Practice in best residential district Receipts over £7 000 One-sixth share for sale 2 years purchase Excellent house in prominent position to rent

Within 25 miles —Middle and working-class PRACTICE Receipts average £1 700 Panel over 1 000 Vendor retiring House rent £42 Premium 1½ years purchase

East Coast —Steadily increasing PRACTICE in beautiful seaside resort in Yorkshire Receipts average £1,500 Panel 1 500 Excellent house with good garden and garage on lease

Within 80 miles —Old-established PRACTICE of £1 280 in nice town Panel 1 100 Nice house with good garden Rent £70 School Society &c

London, S W —Cash Practice doing about £450 including 60 panel Would suit small man on ground floor Good scope for increase

Northumberland —Old-established
and

Opening —In small Village in beautiful district Receipts about £300 including 100 panel House with nice garden Rent £40 Will be sold cheaply

South Midlands —Partnership Third share of £3 667 Limited PRACTICE in country town with cottage hospital Appointments £800 Panel 1 9 House with nice garden tennis court garage etc Rent £80

Within 80 miles —Practice of £1,380 in country town in beautiful district Nearly half the income from panel and appointments Rent £45

Midlands —Surgeon required as PARTNER for half share of £3 000 Scope for major surgery and vacancy on the staff of hospital Premium £2,100 House on rent

Death Vacancy —Partnership Third share £4 500 Panel practice in open suburb Scope for midwifery Rent £75

South Wales —Practice of £1,400 with great scope in large town Small panel and some shipping work at good fees Practice formerly did £3 000 Rent £52 Premium 1 years purchase

Lancs —Practice of £2,000 in
for Surgery and
Good house re
£1,000 down

London, S W —Middle class PRACTICE of £700 in nice residential district Small panel Scope for increase Nice freehold house can be bought

Near Peak District —Old-established PRACTICE of about £1,000 held by Vendor for about 9 years in beautiful district Panel 90 Appointments £100 Excellent house with large garden rent £75. Premium 1½ years purchase

Midlands —Practice of £1,800 In prosperous town Panel 700 Appointments £110 Great scope for an active gentleman to the practice House with garage Let £50 or lease

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DEATH VACANCY. HOME COUNTY.—(1) O'd- established [illegible] No appointments or p residence (6 bed and dressing rooms) on [illegible] in all directions

EASTERN COUNTIES.—(2) Very old-established unopposed Country PRACTICE averaging £1 650 p a Panel 850 Modern detached house (6 b drooms) in acre ground Rent £80 on lease Premium one and a half years purchase

LONDON, S E.—(3) PARTNERSHIP in old established PRACTICE in outlying Residential Suburban District close to the Crystal Palace No appointments or panel Share worth about £750 p a two years purchase Ample scope

MANCHESTER.—(4) Old-established and increasing middle class PRACTICE averaging £1 550 p a in Suburb with Hospital and opportunities for surgery Small panel Good house (8 bedrooms) in excellent position Rent £90 Premium one and a half years purchase

NURSING HOME, LONDON (Bayswater).—(5) Well-established Home with accommodation for 10 to 14 patients, showing a good profit Fees £8 8s to £21

MIDLANDS.—(6) PARTNERSHIP in sound old-established non dispensing Practice between £7,000 and £8 000 per annum, in first rate Town No appointments or panel Premium on fourth share two years purchase Incoming partner should be aged 30 to 35 and be keen on his work

WILTSHIRE.—(7) Old-established unopposed Country PRACTICE nearly £1 050 p a Panel 650 Excellent detached house (8 bed and dressing rooms) bath &c and about an acre garden, to be sold Climate bracing Premium to effect prompt sale £1 000

WITHIN 50 miles of LONDON.—(8) PRACTICE £1 500 in first rate Residential District Modern detached house (5 bedrooms, in grounds to be sold Excellent educational facilities Premium £2 000

SOUTH AFRICA (CAPE PROVINCE).—(9) PRACTICE about £1 000, in one of the wealthiest Pastoral Districts on line of Railway Ideal equable dry climate Very comfortable house to rent Living very cheap Premium £800 Vendor known to the Association

LONDON, S W.—(10) Sound old-established PRACTICE over £480 p a in well populated District within 3 miles of Charing Cross Panel 3 0 Practically no Midwifery Nice corner house (5 bedrooms) Premium one and a half years purchase Ample scope for Panel and Midwifery

HOME COUNTY.—(11) Well established and increasing mixed class PRACTICE over £1 000 in Residential District Panel about 400 Not much Midwifery Old fashioned detached house (4 bedrooms) in good position Premium £1 500

MANCHESTER.—(12) PARTNERSHIP in old established good class Practice over £4 500 in Residential District Small panel One fourth share would be sold for £2 115 with option to increase up to one half. Partner should be about 30, and preferably M D or F R C S

SPECIAL OPHTHALMIC PRACTICE.—(13) About £1 400, in high class inland Health Resort Operative and acute cases refused for five years Considerable scope for increase Premium £1 400

SOUTH WALES.—(14) Old-established increasing working class PRACTICE over £2,200 in one of the chief Seaports Panel 1 400 Detached house with 4 bedrooms, to rent on lease Premium £2 500 part by instalments or £2 200 cash

FAVOURITE RESIDENTIAL DISTRICT up the Thames.—(15) PARTNERSHIP in better class Practice nearly £2 900 per annum One third share at first at two years purchase

NORTH OF ENGLAND.—(16) Old-established PRACTICE of £1 460 per annum, in Country District Panel 810 Very good house (5 bedrooms) in charming grounds two acres Premium practice house, and grounds £4 000 Mortgage could be had on house

CARDIFF.—(17) Old-established PRACTICE £1,400 p a Small panel No midwifery House on lease Premium £1 500

EASTERN COUNTIES.—(18) Old-established unopposed Country PRACTICE of £826 p a Panel about 900 Very good house in 2 acres of garden to rent or purchase

MIDLANDS.—(19) PARTNERSHIP in very old-established unopposed Practice in Market Town Panel 1 950 House contains 4 bedrooms, &c Rent about £70 Share worth about £1 000 at 3 years purchase Partner should be 30–35

EAST COAST.—(20) PARTNERSHIP in well-established PRACTICE £3 [illegible] House with 1 bedrooms to rent [illegible] 40 and 50 and be a good surgeon Premium two third share two years purchase

NORTH OF ENGLAND.—(21) Unopposed PRACTICE between £700–£800 in an attractive model little village four miles from Cathedral City Panel worth about £240 p a Premium Practice and house £2 700

YORKSHIRE, WEST RIDING.—(22) Well-established mid life and working class PRACTICE over £1 300 (£920 from Panel and appts) in large clean town. Good detached corner house Prem £1 400

EAST COAST.—(23) Increasing PRACTICE over £500 in rapidly developing District Panel about 100 Nearest opponent 4 miles Bungalow residence (5 rooms) Premium £750

EGYPT.—(24) Well-established PRACTICE £700 to £800 mainly among English Residents and Visitors Excellent semi detached residence (5 bedrooms) Premium to include furniture £1 100

MIDLANDS.—(25) PRACTICE over £2,200 in Country Town, near Birmingham Panel 1 800 Charming house (6 bedrooms, large garden Rent £100 Premium one and a half years purchase

SURREY.—(26) PARTNERSHIP in first-rate Practice, £7 000/£8 000 per annum in one of the best Residential Districts House (7 bedrooms) to rent Premium one sixth share two years purchase Partner should be aged over 30 and have held hospital appointments

MIDLAND TOWN.—(27) Old-established PRACTICE about £1 100 per annum in Residential Suburb Panel 600 Good house and large garden Premium £1,500

LONDON, N W.—(28) PRACTICE worth about £450 per annum in working class district Panel 500 increasing No midwifery Double fronted corner house Premium Practice and freehold House £1 500 Great scope for young man

FIRST-RATE RESIDENTIAL DISTRICT up the THAMES.—(29) PARTNERSHIP in good class Practice averaging about £1 550 p a Not much Midwifery Good house with garage, to be sold Premium one half share £1 200 Scope for Surgery

LONDON, E C.—(30) PARTNERSHIP in Special City Practice Excellent opening for gentleman (aged 30–35) specialising in Skin work and experienced in Nervous and Digestive Disorders Share worth about £500, at one and a half years purchase

LONDON, S W.—(31) Rece[illegible] PRACTICE in new and developing of Consulting rooms £40 Prem to include [illegible]

SCOTLAND, NORTHERN HIGHLANDS.—(32) PRACTICE averaging over £1 600 p a, in a Town No panel House (5 bedroom etc) in best residential part Ample scope for midwifery and panel Premium £1 200

WEST MIDLANDS.—(33) PARTNERSHIP in old established Country Town Practice over £3 600 p a Panel 2 183 Rent £60 Partner should be age 30 to 40 with some Surgical experience Well equipped Cottage Hosp Prem one third share one and a half years purchase

LONDON, S W.—(34) Well-established PRACTICE of £600 to £70[illegible] Panel 750 Not much midwifery [illegible] with good garden residence for Sale Ample scope [illegible]

SOUTH OF ENGLAND.—(35) Unopposed Country PRACTICE nearly £500 per annum Panel 420 House (3 bedrooms 3 attics) with well stocked garden Rent £25 Premium £650

SURREY.—(36) PARTNERSHIP in good middle class commuter practice over £2 650 in Residential District easy distance of London Panel 1 200 Two fifths share at first at two years purchase

MIDLANDS.—(37) Unopposed Country PRACTICE over £1 150 in beautiful part Panel about 720 Detached house (4 bedrooms) with half an acre garden Mild climate

SOUTH OF ENGLAND.—(38) PARTNER required in very sound old established Practice in Seaport Town Panel under 3 000 Share worth £700 to £800 at two years purchase Partner must be keen and energetic and not much over 30

HOME COUNTY.—(39) Old-established PRACTICE, over £1 850 p a under 25 miles from London Panel about 650 Excellent detached house (8 bedrooms and dressing rooms) Nearly acre garden Rent £75 on long lease Cottage Hospital near Prem one and a half years purchase

EAST ANGLIA.—(40) PARTNERSHIP in middle and working class Practice averaging about £2 200 p a in picturesque district near popular Seaside Resort Panel nearly 1 900 Choice of houses One third share at first at two years purchase.

SOUTH WALES.—(41) Well-established PRACTICE nearly £1 250 p a in County Town Panel over 500 Fees 5/ to £2 2s Well situated double fronted house (5 bedrooms) with large garden Rent £60 Educational facilities Premium £1 800

YORKSHIRE (WEST RIDING).—(42) PRACTICE over £1 500 p a in thriving Industrial Town Panel 1,000 Good house (5 bedrooms) Rent £80 Premium £2 250

SOUTH COAST.—(43) PARTNERSHIP in Practice, over £4 000 p a in popular Seaside Resort Panel 1 150 Premium one-third share two years purchase Partner must be energetic and not over 30

EASTERN COUNTIES.—(44) Old established PRACTICE £1 855 p a in pleasant Market Town Panel 1 100 No midwifery Excellent detached house (7–8 bedrooms) Very good garden Cottage Hospital Premium one and half years purchase

SOUTH COAST.—(45) Good class PRACTICE of £1,300 per annum Excellent house Premium £1 250

MIDDLESEX.—(46) PARTNER required in very old established and lucrative practice over £1 500 per annum in Industrial district Panel 4 000 Small house (4 bedrooms) Rent £52 Premium one third share two years purchase

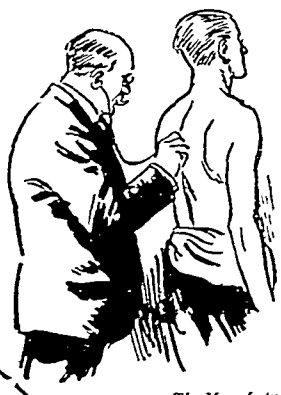
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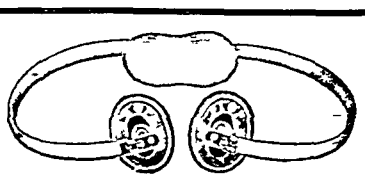
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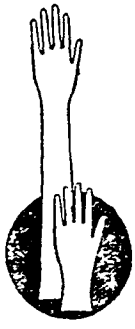
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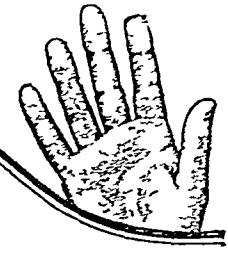
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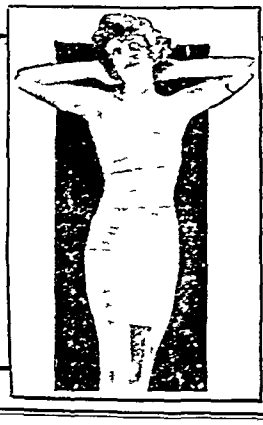
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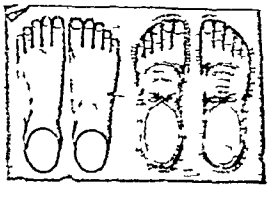
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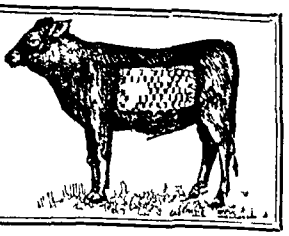
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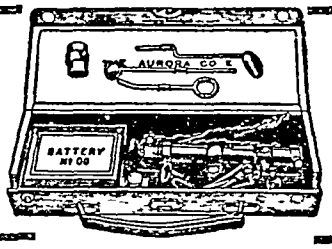
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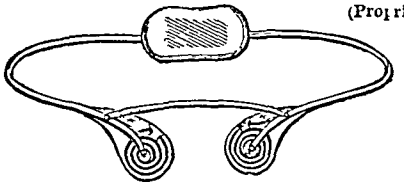
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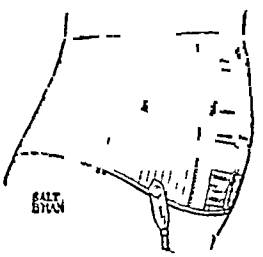
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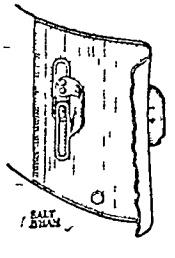
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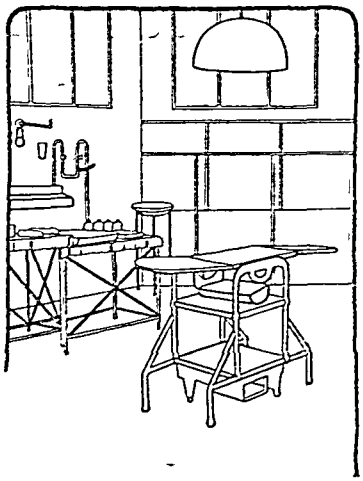
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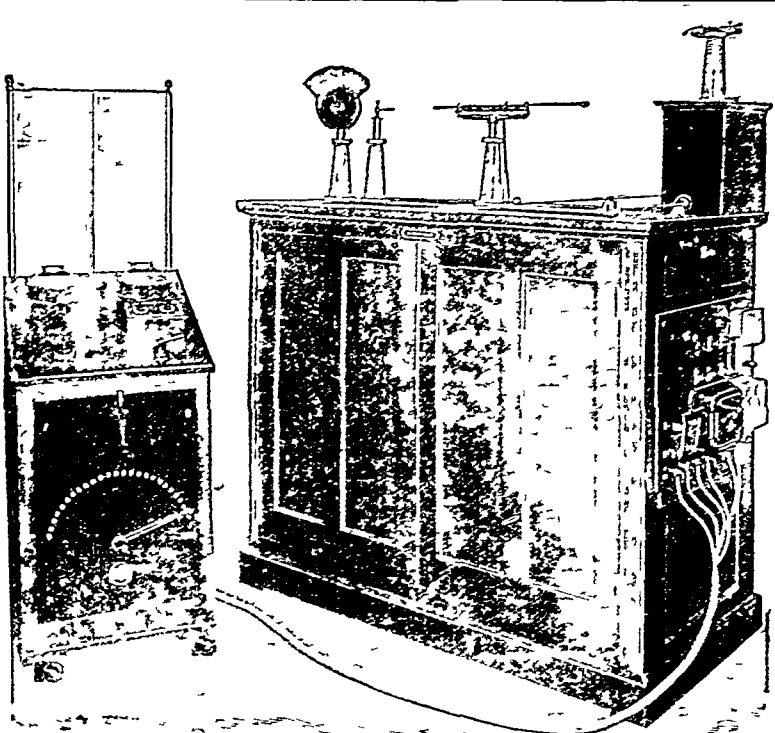
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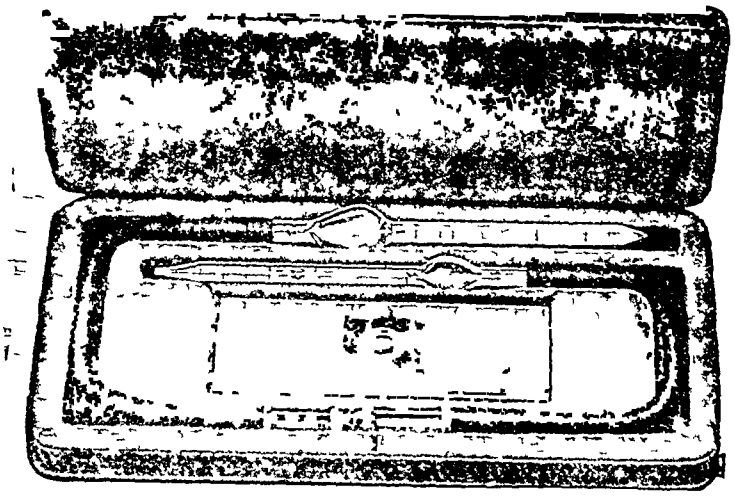
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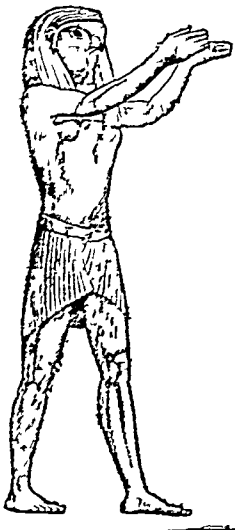
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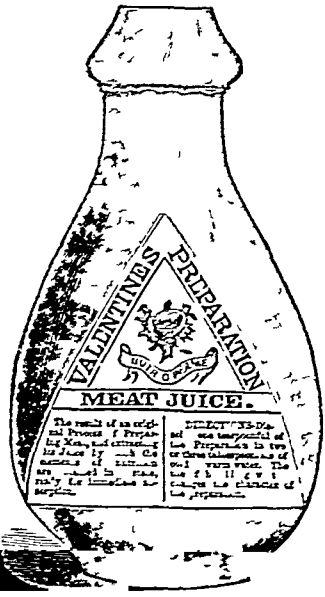
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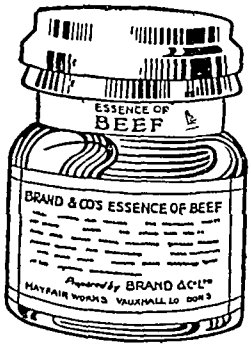
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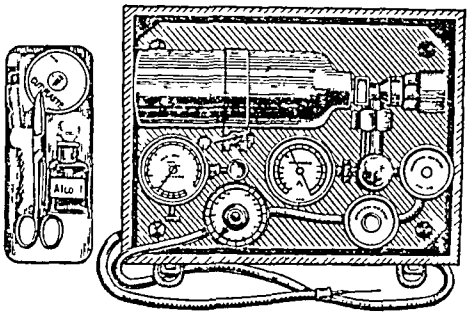
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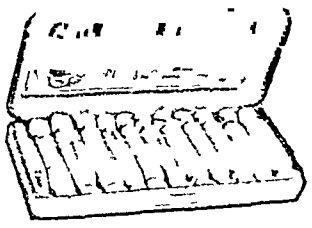
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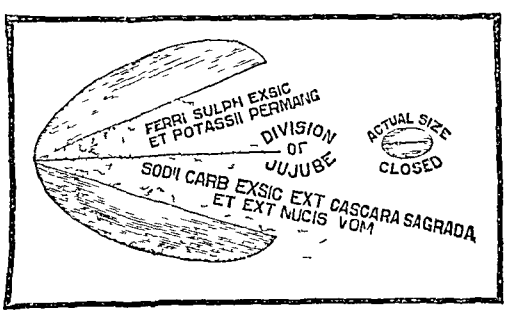
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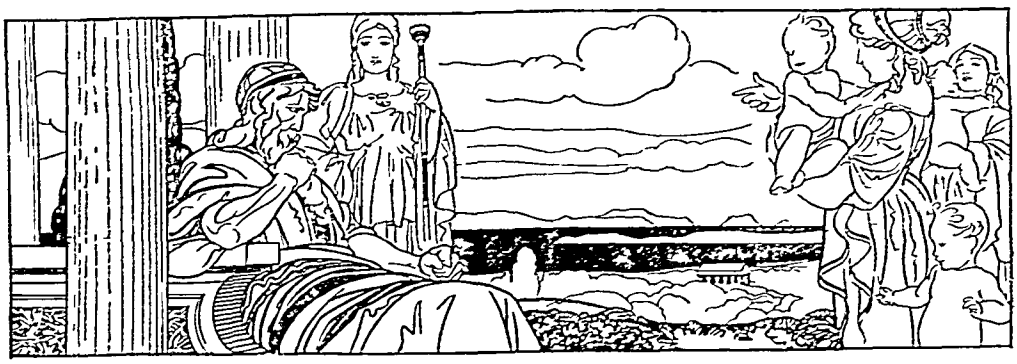
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Water	88 7	87 7	88 25
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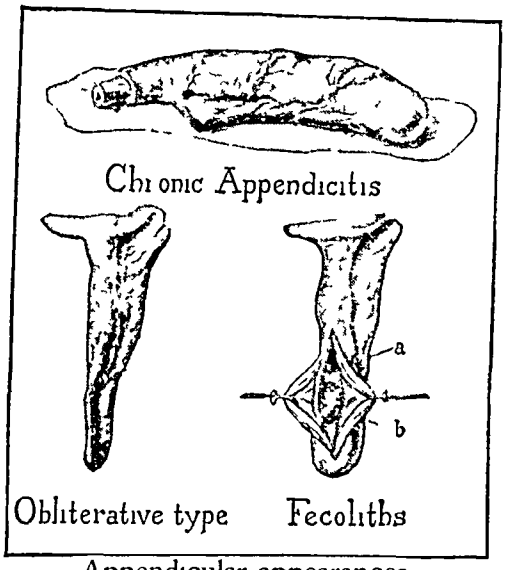
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Appendicular appearances



Chronic appendicitis with adhesions

Lubrication Therapeusis.

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1 *Gangrenous*—chances of recovery by surgical interference problematical

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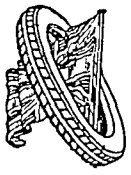
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A British Medical Association Lecture

ON

GALL STONES AND CANCER OF THE GALL BLADDER:

AN EXPERIMENTAL STUDY *

BY

ARCHIBALD LEITCH, M.D.,

DIRECTOR OF THE CANCER HOSPITAL RESEARCH INSTITUTE, LONDON

(*With Special Plate*)

We have succeeded in producing cancer experimentally in animals by the use of various special agents. Fibiger[1] produced it by the nematode *Spiroptera neoplastica*, Bullock and Curtis by another parasite, the *Cysticercus fasciolaris*, and Yamagiwa and Ichikawa by coal tar. In our own laboratory we have produced cancer by coal tar[4] and tar extracts,[5] by pitch,[6] by soot, by arsenic,[7] by shale oil and industrial oils derived from shale,[8] by crude petroleums and lubricating oil, and by a tarry substance prepared from isoprene.[9] Bloch,[10] and, probably before him, Marie, Clunet, and Raulot-Lapointe,[11] induced it by means of x rays. In addition to these cancer producing agents, we have in the human subject others, the relation of which to cancer cannot reasonably be doubted, though they still lack experimental confirmation: the heat of the kangri-pot causing epithelioma of the thighs and abdomen amongst the natives of Kashmir[12], the betel preparation associated with buccal cancer in Asia[13], the bilharzial ova inducing vesical and intestinal cancer in Egypt[14] and Japan, and several others less definitely established.

But these known irritants are responsible for a very small proportion of the cancers that occur. They are all of extrinsic origin and entirely foreign to the economy. They act, presumably, not as simple mechanical agents, but in virtue of some peculiar property they possess. Even if we give full scope to our imagination we cannot inculpate any analogous external irritants in the generality of human or animal cancers. If we are to establish the irritation theory of cancer on a broader and surer basis we must search for possible internal irritants. I have therefore been led to the conclusion that substances capable of producing cancer by their prolonged action on the tissues may be elaborated within the body as the result of other pathological processes. In other words, the main mass of carcinogenic agents are endogenous. How these originate we may sometimes guess of their chemical nature we are at present entirely ignorant. To entertain such a belief as this is legitimate, but to seek to promulgate it without proof is to hinder rather than to help scientific progress. At first I endeavoured to produce cancer by substances which might be considered as intermediate between wholly extrinsic and wholly endogenous. Knowing that cancer of the intestines progressively increases in frequency from the duodenum to the rectum and that putrefactive changes in the bowel contents increase in parallel, I selected at random certain products of intestinal putrefaction, such as skatol, paracresol, tyrosine and methyl-mercaptan, and introduced these into the lower bowel of mice, rats, guinea-pigs and rabbits, thrice weekly for many months, but without producing any signs of tumour formation. Of course, there are numerous other putrefactive products that we might use, and we might be fortunate with some of them. Similar use of a tar extract which proved to be very potent in inducing epithelioma when applied to the skin of mice failed to produce intestinal cancer in any of these four species of animals. There is in the human subject, however, one outstanding cancer, cancer of the gall bladder, which is closely associated with a particular irritant and an irritant moreover, which is entirely endogenous. To this we have directed our investigations.

* Delivered at the Isle of Thanet Division of the British Medical Association on May 20th, 1924.

GALL STONES AND CANCER IN MAN

It is beyond the scope of this paper to discuss the etiology of gall stones. It was formerly believed that gall stones originated in the gall bladder owing to stasis of the bile and acute inflammations of the viscus, but this is now discounted, and it is becoming more generally accepted that the part played by the gall bladder is quite secondary, or even passive, and that in all probability there is no lesion in that organ preceding the formation of the calculi. Possibly in the majority of cases gall stones give rise to no definite symptoms during the life of the person and are only discovered *post mortem*. The statistics as to the frequency with which they are found vary from 1·5 to 25 per cent., according to the age composition of the hospital patients. Schroder,[15] who analysed von Recklinghausen's autopsy records, found that 12 per cent. of all persons had gall stones, they were rare under the age of 30 (3 per cent.), they were found in 10 per cent. of the cases between the ages of 30 and 60, whilst 25 per cent. of people over 60 years of age had gall stones. They are thus quite common. Cancer of the gall bladder is by no means a rare disease. Kaufmann[16] states that according to the Breslau statistics it forms 5 per cent., and to the Basle statistics 5·19 per cent., of all carcinomata coming to autopsy. Now, in cancer of the gall bladder gall stones *are generally present*. In 263 cases collected by Futterer and Haberfeld they were present in 70 per cent., in Musser's series in 69 per cent., according to the figures of St. George's Hospital (Polleston) in 75 per cent., Winton gives 81 per cent., Zenker 85 per cent., Courvoisier 91 per cent., Siegert 95 per cent., and Janowski 100 per cent.[1] As these figures have been compiled from *post-mortem* records we cannot conclude that gall stones were absent unless there was a definite statement to that effect. Musser, however, states that in 3 of his 100 cases calculi could not be found, and several other writers have noted the occasional absence of gall stones. In what proportion of cases of gall stones does cancer of the gall bladder occur? The statistics on the point are surprising. The lowest figure I have found is that given by Candler[17] from asylum practice—namely, 2 in 315—and the highest that by Slade,[18] 30 per cent. Rolleston gives 4·5 per cent., Mayo slightly under 5 per cent., Moynihan 5 per cent., Pridel 7 to 8 per cent., Mayo-Robson 10 per cent., Schroder 14 per cent. Slade's figures (30 per cent.) are certainly much too high: they were based on an exceptional sample, and some of his illustrations would fail to convince a pathologist of the accuracy of the diagnoses. If we put the figure at 5 per cent. we shall probably be safe, but even if we bring it down to Candler's low estimate it will still be a surprisingly high incidence if we consider how low the incidence of cancer is amongst those who are subjected to other cancer-producing irritants. Probably less than 1 in 1,000 of pitch workers, tar distillers, paraffin-oil refiners, and betel chewers, ever develop their peculiar cancer: though, on the other hand, the early x ray operators had an extraordinarily high incidence.

Taking all these facts into consideration—that over 10 per cent. of adults have gall stones, that 5 per cent. of these develop cancer of the gall bladder, and that gall stones are present in practically all cases of gall bladder cancer—we have good grounds for believing that cancer of the gall bladder is the result of the irritation set up by the gall stones. On the other hand, some have maintained that the calculi found in cases of carcinoma are the consequence of the carcinoma and not its cause. Such a view cannot lightly be dismissed. If we accept the vesical origin of gall stones we must admit that such a gross lesion of the epithelium as carcinoma will be likely to induce the formation of calculi, either by reason of some exaggerated or pathological secretion of the malignant cells or by the detachment of tissue fragments that may serve to form nuclei for the deposition of cholesterin from the bile. Gall stones however, are not specially frequent in cases of metastatic nodules in the gall bladder wall. Secondly, gall stones are sometimes absent in gall bladder cancers. To this very important objection it may be replied that in no case can we be sure that gall stones were not present at some previous time, they may have escaped through the bile duct or have

ulcerated into an adherent portion of bowel Mr F K Smith of Aberdeen has been kind enough to supply me with notes of a case of carcinoma of the gall bladder which occurred six years after stones had been removed from that organ Thirdly, simple tumours of the gall bladder are very rare, and, if we bear in mind the frequency with which true malignant tumours are preceded by benign neoplasia in other instances of irritation cancers, we should expect to encounter the preliminary simple tumours much more commonly, especially in *post-mortem* examinations I have seen two specimens of simple tumours of the gall bladder removed by operation, in neither were gall stones present, nor was there any sign or history pointing to their previous presence In the few cases of benign tumours of the gall bladder on record stones were absent in half the number Lastly, we have no convincing examples of cancer being caused by purely mechanical irritations, calculi in other situations, such as the urinary bladder or appendix, are seldom associated with malignant tumour formation It may be, of course, that the action of the gall stones is not purely mechanical, then chemical composition may be the important factor, and my colleague Dr H J B Fry has had some interesting experimental results indicating that the action of a weak tissue irritant, insufficient by itself to initiate tumour formation, may be considerably reinforced by cholesterin

We are thus confronted with a difficulty which cannot be solved by clinical observations and disputations Are the gall stones the cause of cancer of the gall bladder, or does cancer of the gall bladder bring about the formation of the gall stones? The hazard of experimental investigation was peculiarly alluring, for successful results would not only solve this long-debated question, but would encourage us to pursue, in spite of failures, our quest for endogenous causes of cancers But the omens were not wholly favourable

Experiments on Animals

Hitherto we have had no experimental proof that purely mechanical irritation is capable of inducing tumours In my own attempts with such irritants I have failed Bullock and Rohdenburg,[20] in criticizing Fibiger's original experiments, maintained that only excessive hyperplasia of the gastric epithelium had been induced by the mechanical irritation of the spiropterae, and they claimed to have produced similar lesions in the rat's stomach by inserting pieces of sponge into the cavity Their criticism of Fibiger's results, of which they had not fully informed themselves, was unfortunate, but it has always seemed to me that if they had given longer time to their experiments they might have succeeded in producing actual epithelioma Just before my experiments were commenced, Kazama[21] claimed to have induced tumours of hollow viscera in a variety of animals by various mechanical and chemical forms of irritation, such as invaginations of mucosa, insertion of sutures, and injections of lanoline and other substances The English translation of his paper was rather obscure, but one of his tables showed that, amongst other things, he had introduced pebbles into the gall bladder of dogs, rabbits, and guinea-pigs He used 30 guinea-pigs, which survived the operation from 1 to 116 days, and he claimed to have produced in them the following results "papillous growths, 6, heterotopic glandular growths, 10, heterotopic or atypical growths, 3, atypical growths, 5, early adenocarcinoma, 3, adenocarcinoma and metastasis, 4," the latter being in the chest wall in 2, in the intestines in 1, and in the liver in 1 Unfortunately this shows that the number of positive results exceeded the number of animals, and the claim seems the less convincing when we notice that at least one of the animals died within a day or two of operation and none survived for four months In instituting my own experiments I had to face the fact that the gall bladder of mice is much too small for operation, and that rats, which would otherwise have been the animals of choice, do not possess a gall bladder Rabbits were too large to use in sufficient numbers Guinea-pigs, which would be ideal in many respects, are peculiar in that they are not naturally affected with cancer, and that we have always failed to induce tumours in them by any of the various means we have adopted with success in other species of animals It may even be said that they practically never develop any sort of tumour When one remembers that hundreds of thousands of guinea-pigs must have been examined throughout the laboratories of the world and yet the only instance of a tumour being recorded was that mentioned by J A Murray[22]—a transplantable lipoma—the apparent natural immunity of these animals to the causal agent or agents of cancer will appear all the more striking Nevertheless we employed guinea-pigs in our experiments, and the result has been successful beyond our hopes

Author's Experiments on Animals

An area over the lower part of the chest and the upper part of the abdomen was epilated by means of sodium sulphide (10 per cent solution) and rendered aseptic by the application of violet-green solution (0·5 per cent brilliant-green and 0·5 per cent methyl-violet in 50 per cent alcohol) Sterile sheets covering the rest of the animal were clipped on to the edges of the operation area, and the abdomen was opened by an incision running parallel to the lower ribs The very thin-walled, semi-transparent, spherical gall bladder was readily found and steadied by two small forceps half an inch apart, and a small incision, just sufficient to admit the foreign body, was made with fine scissors When this was inserted, the cut edges were united by means of a continuous suture of the finest catgut obtainable threaded on a fine needle, and the two ends of the suture were tied together It will thus be seen that the ridge projecting into the lumen was doubled on its length, and would therefore appear, when viewed from the inside, as more or less of a nodule It is important to bear this in mind when considering the changes that one might be inclined to attribute to the action of foreign bodies, especially as the displacement and irregularity of the mucosal elements, when seen in microscopic section, will be much exaggerated and will provide a histological picture that may tempt the uncritical to conclude that a small tumour, even of a malignant nature, has been produced It seemed to me in reading Kazama's communication, and studying the photomicrographic illustrations that appeared in a subsequent paper by him, that this was the criticism that must be passed on his findings, and, indeed, the examination of the conditions in those animals of mine that died within a short time of the operation supported that judgement

In 25 guinea-pigs I inserted one gall stone, sometimes two, into the gall bladder These gall stones, roughly about the size of lentils, had been removed four years previously from a patient with cholelithiasis and had been kept in a dry state They were not sterilized before use It may be mentioned, in view of Lazarus-Barlow's statement[23] that gall stones associated with gall bladder cancer contain radium while others do not, that I had these calculi examined by our physicist, Mr C E S Phillips—using methods that would be approved by physicists—but they did not contain any perceptible trace of radium In 5 cases small, smooth pebbles, sterilized beforehand, were used as the foreign bodies, in another batch of 5, pilules of pitch were inserted Finally, I injected melted lanoline by means of a hypodermic syringe into the gall bladder of 5 animals, but the puncture wound had to be closed by a stitch To enable us to identify each animal, coloured charts of the markings of all the guinea-pigs were made at the time of operation

The experiments in which lanoline had been injected can be dismissed quite briefly as they yielded no positive results Three of the animals, Nos 36, 39, and 40, died eleven days after operation, and in all three there was complete desquamation of the lining epithelium with absence of the gland tubules save at their deepest parts and more especially at the site of the needle puncture where a stitch had to be inserted Here the displacement and irregularity of the tubular epithelium might give rise to a suspicion of early malignancy, but such an appearance is merely temporary and the normal condition is afterwards restored, as could be seen from an examination of the gall bladder of No 37, which died at the end of five and a half months (Fig 1) The fifth guinea-pig, No 38, is still alive eighteen months



FIG 1 Natural size.

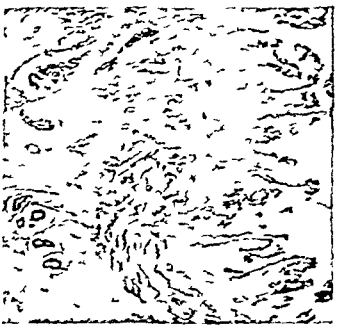


FIG 2 × 30



FIG 3 × 30



FIG 4 Natural size



FIG 5 Natural size



FIG 6 × 30



FIG 8 × 100



FIG 7 Natural size



FIG 9 Natural size.



FIG 10 × 30



FIG 11 Natural size



FIG 12 × 30



FIG 13 Natural size.



FIG 14 × 30



FIG 15 Natural size

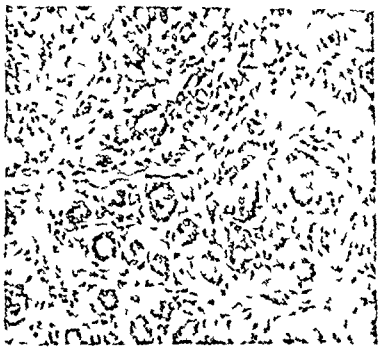


FIG 16 × 100



FIG 17 Natural size



FIG 18 Natural size



FIG 19 × 60

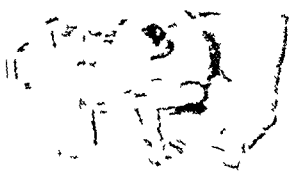


FIG 20 Natural size

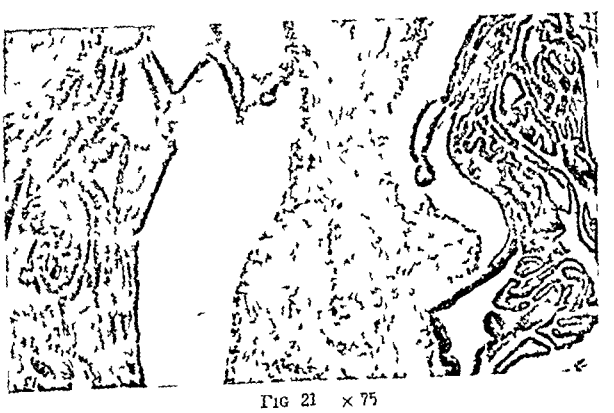


FIG 21 × 75



FIG 22 × 40



FIG 23 × 50

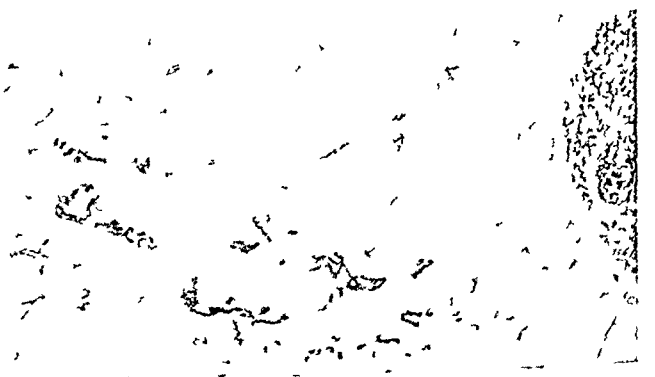


FIG 24 × 75

after operation, and when its gall bladder was inspected by exploratory operation exactly a year after the lanoline had been injected it was found to be perfectly normal

The solid foreign bodies—gall stones, pebbles, and pitch pellets—gave results comparable to each other, and we may consider them together in the order in which the animals died Two guinea-pigs with gall stones, Nos 7 and 9, died within a few days of operation, as the result of tearing out their stitches

[The illustrations of gall bladders with adjacent liver tissue reproduced in the special plate were photographed from the remnants left after providing material for histological purposes, and do not adequately represent the conditions that presented themselves originally to the naked eye For the photographs and photomicrographs I am much indebted to Dr D J Reid]

No 2) Gall stone inserted on January 15th 1923 Died on January 29th (2 weeks) The lining epithelium and the more superficial portions of the tubules were destroyed Displacement and irregularity of the gland epithelium in the vicinity of the ulcers

No 18 Gall stone inserted on January 11th 1923 Died on February 13th (1 month) The gall bladder was contracted and its opaque walls were irregularly thickened to 2 mm or more The superficial and gland epithelium was destroyed leaving the interlobular connective tissue projecting bare into the lumen (Fig 2) Deep in the thickened wall there were well preserved though irregular portions of the gland tubule

No 31 Pellet of pitch inserted on January 17th 1923 Died on May 7th (3½ months) The pitch lay in a small smooth cavity in a thick walled fibrous mass which represented the gall bladder For the most part the lining membrane had been destroyed, but over one third of the circumference of the cavity it had been converted into squamous epithelium and underneath this the muscular layers were intact and there was no trace of tubules At other parts of the thickened wall there was considerable and very irregular proliferation of the glandular epithelium amongst new formed connective tissue, along with disintegration of the muscle bundles (Fig 3)

No 11 Two gall stones inserted on January 9th, 1923 Died on May 5th (4 months) The gall bladder wall was slightly thickened rough and contracted over the calculi The superficial epithelium had been lost but was being regenerated from the deeper parts of the tubules which were actively proliferating

No 24 Two gall stones inserted on January 15th 1923 Died on June 11th (5 months) The gall bladder was enlarged and on section apparently multilocular but the walls were not much thickened except in the loculus containing a stone where they were over 2 mm in thickness (Fig 4) Sections through the latter part showed much hyperplasia of gland epithelium with numerous cysts The condition might be described as *cystadenoma or doubtful* nature A small hard subcutaneous nodule was found in the chest wall opposite the liver but on micro-copic examination this was seen to be composed of fibrous tissue only

No 26 Pebble inserted on January 16th 1923 Died on July 1st (5½ months) The gall bladder was represented by an irregular moderately hard whitish mass adherent to the liver and at one part insensibly blended with it The liver substance contained numerous white irregular areas and on the under surface of the liver there was a subcapsular prolongation from the fundus of the gall bladder (Fig 5) On section the mass was solid save for a central cavity occupied by the pebble on which there was a thin greenish deposit Micro copic preparations showed adenocarcinoma of the gall bladder the appearances being repeated in the subcapsular prolongation and in the white areas in the liver substance (Fig 6)

No 21 Gall stone inserted on January 15th 1923 Died on *July 2nd* (5½ months) There was a small bare area of skin over the lower rib with indefinite thickening underneath it The gall bladder enlarged and hard was *adherent to the chest wall opposite* this area Section through the gall bladder showed it to be thick walled loculated and in direct continuity with a whitish patch underneath the skin Microscopic examination revealed adenocarcinoma of the gall bladder invading the chest wall and eroding and *destroying* the rib cartilages This formed one part of the subcutaneous nodule but the greater part of it was composed of loose fibrous tissue

No 27 Pebble inserted on January 16th 1923 Died on July 2nd (5½ months) The gall bladder wall was thin for the most part but was thickened towards the fundus where the pebble lay Micro copic examination showed an apparently simple hyperplasia of the gland tubules

No 1 Gall stone inserted on January 3rd 1923 Killed on July 3rd (6 months) The thin walled gall bladder was firmly contracted round the calculus and gave no evidence of neoplasia

No 10 Two gall stones inserted on January 11th 1923 Died on July 8th (6 months) The gall bladder was very small and contracted over the stones The wall was thin and translucent

No 9 Gall stone inserted on January 15th 1923 Died on July 14th (6 months) The liver was firmly adherent to the lower ribs and on removing cartilage and on being separated disclosed a mass of fibrous tissue which was in direct continuity with the gall bladder The latter was thick walled and had a central cavity occupied by the calculus and another smaller empty loculus (Fig 7) Microscopic examination of sections showed very great proliferation of tubular epithelium in the wall of the gall bladder and also in the fibrous mass The adenocarcinoma invaded the ribs (Fig 8)

No 14 Gall stone inserted on January 9th 1923 Died on July 15th (6 months) The anterior surface of the liver was adherent to the diaphragm and ribs but these were easily separated and left an extensive white patch on the liver surface The gall bladder continuous below with this patch was represented by a whitish solid mass fading insensibly into liver tissue (Fig 9) Histological examination revealed extensive proliferation of tubular epithelium the walls of the tubules being generally one cell thick infiltrating and destroying the liver parenchyma (Fig 10)

No 32 Pellet of pitch inserted on January 17th 1923 Died on July 17th (6 months) There was a subcutaneous nodule over the lower ribs and on the under surface of the liver there was a large irregular bulging whitish mass merging insensibly into the liver substance (Fig 17) On section this mass was found to be continuous with one end of a shrunken irregular thick walled gall bladder and on the other side with the subcutaneous nodule For the greater part the mass was necrotic but at its margins it was white and glistening and evidently spreading into the liver substance (Fig 18) Micro-copic examination of the necrotic portion showed dense areas of leucocytes surrounding the remains of tubules whilst the white marginal portions exhibited masses of dilated and irregular tubules infiltrating and destroying the liver parenchyma almost to its surface (Fig 19) The subcutaneous nodule was composed of young fibrous tissue in the centre of which were indefinite remains possibly of tubules

No 4 Gall stones inserted on January 9th 1923 Died on August 7th (7 months) The gall bladder was contracted with thick soft pongy walls not sharply delimited from the liver (Fig 11) Microscopic examination showed very irregular proliferation of gland tubules which were not traced into the liver substance but approached very closely to it (Fig 12)

No 22 Two gall stones inserted on January 15th 1923 The guinea pig remained in apparently good health and an exploratory operation was performed on January 15th 1924 (1 year) The animal died two days later from internal haemorrhage resulting from the breaking down of adhesions The duct end of the gall bladder was thin walled and dilated but the fundus was represented by a hard mass buried in the liver substance and containing a single stone the other stone being in a diverticulum of the cystic duct (Fig 13) Micro-copic examination revealed adenocarcinoma of the gall bladder just *beginning to infiltrate* the liver substance (Fig 14)

No 13 Gall stone inserted on January 9th 1923 An exploratory operation was performed on January 9th 1924 when on separating adhesions the gall bladder was found to be small fairly translucent and apparently not thickened The stone was easily palpable A loop of intestine was torn and the animal died of peritonitis on January 18th (1 year 9 days) Section through the liver and adherent gall bladder showed that though the aspect of the bladder seen at operation was no much altered the side adherent to the liver was irregularly thickened and a somewhat haemorrhagic prolongation from it penetrated into the liver substance Growing from this side of the gall bladder was a sessile pedunculated mass of tissue projecting into the cavity and filling it save for the part occupied by the stone (Fig 15) On microscopic examination this tumour mass was seen to be composed of a very cellular stroma embedded in which were narrow irregular tubules (Fig 16) At other parts the tubules were large and irregular and lined with many layers of tall columnar epithelium These structures were traced for some distance into a cirrhotic liver

No 29 Pebble inserted on January 19th 1923 Exploratory operation on January 29th 1924 revealed dense adhesions around a hard mass occupying the position of the gall bladder and on trying to separate these the liver was torn and the animal died from internal haemorrhage next day (1 year 10 days) On subsequent dissection the intestines and omentum were found to be normal adherent to the gall bladder which on the other side was adherent to the body wall The gall bladder itself was a hard mass solid save for the small cavity in which the stone lay and in this mass there were patches of whiter tissue along with haemorrhagic areas (Fig 20) At some parts the wall was three eighths of an inch thick The stone had a thin coating of brown pigment Microscopically the wall of the gall bladder was represented by excessively and irregularly proliferated tubular epithelium set in areas of dense connective tissue (Fig 21) Within this mass areas of liver cells were found (Fig 22) Part of the epithelium lining the small cavity was converted into squamous epithelium (Fig 23) and several of the dilated tubules contained deeply staining concretions The adherent omentum was infiltrated with malignant cells (Fig 24) but the process could not be traced into the muscles of the abdominal wall

In addition to these, 11 with gall stones 2 with pebbles and 2 with pitch pellets were still alive at the end of fifteen months All these have undergone exploratory examinations on the anniversary of their first operation, but it was impossible to say how many of them were malignant owing to the restricted examination permitted by adhesions The two with pebbles had apparently more or less normal gall bladders In one of the pitch cases the condition was doubtful, and in the other the appearances seemed to exclude malignancy Of the 9 with gall stones, 3 were considered to be malignant, 3 doubtful, 3 shrunken without signs of growth, and 2 thin-walled, distended, and probably normal The final reckoning of the success of the experiments must await a later examination of those animals that still remain alive

DISCUSSION OF RESULTS OF EXPERIMENTS

It will be seen from the experiments detailed above that the lesions produced in the gall bladder by the solid foreign bodies gradually increase in severity according to the length of time the animals survived Soon after their introduction there is denudation of the epithelium lining the viscus, followed later by regeneration from the portions of the gland tubules set deeper in the wall The activity of this tubular epithelium, accompanied by activity of the stroma, becomes more and more marked, the constant trauma exerted by the foreign body, perhaps accentuated by efforts at expulsion, producing repeated destruction of the surface epithelium and repeated replacement from the gland epithelium In some cases a state of equilibrium is attained, the wall of the gall bladder either being restored to its normal condition with the calculus lying free in the cavity or, owing to the formation of fibrous tissue, contracting down tightly over the stone, when proliferation ceases In the majority of instances, however, the epithelial activity continues, the tubules growing this way and that through the wall We have no landmarks to guide us, the muscular bundles do not form, even in the normal gall bladder, an unbroken investment over the glandular layer, and in these experiments the muscle fibres are broken up and often wholly destroyed We have, therefore, no means of determining when the heterotopy and irregular growth of the tubular epithelium ceases to be translatable as simple hyperplasia and assumes the definite characters of malignant neoplasia, and the difficulty is increased by the fact that frequently, but not invariably, the lining of the proliferating gland tubules, no matter how irregularly or how far they ramify, remains one cell thick, and the nuclei, at all times poor in chromatin, seldom take a deeper stain It is only when neighbouring tissues are invaded that we have allowed ourselves to consider the process malignant Short of that there is considerable room for difference of opinion It is thus impossible to say in how many of our experiments cancer was produced To my mind, Nos 26, 21, 5, 14, 32, 22, 13, and 30—all of which showed involvement of adjacent structures—are beyond reasonable doubt malignant On the other hand, none of the animals that died within four months presented any lesion that should be regarded as more than regenerative hyperplasia, but the process is so gradual and the dividing line so imperceptible that Kazama's claims regarding his experiments, which at first I was inclined to reject, should not be dismissed as groundless, and doubtless he would have obtained indisputable carcinoma in some cases had his animals lived longer

The feature of these tumours is the invasive character of the growth, and the liver becomes involved by continuity and not by metastatic process The infiltration is generally confined to the lobe to which the gall bladder has adhered or two adjacent lobes between which it has become wedged, and in no case has the process spread to lobes at a distance In histological preparations it is not always possible to distinguish a bile ductule from an invading tubule, but the great irregularity of the proliferation in most cases leaves little room for doubt From the mass in the liver, or more directly from the gall bladder, the diaphragm or abdominal muscles in the vicinity are invaded, and the process in its extension destroys the ribs, forming a perceptible subcutaneous nodule In two such nodules the striking thing was the amount of young fibrous tissue and the absence or scarcity of epithelial cells within it This is possibly due to the necrosis and absorption of the malignant cells owing to the poorly developed vascular supply In No 32 this necrosis is specially evident in the greater part of the mass in the liver, the living and active tissue being at the periphery The involvement of the omental fat shows the true invasive character of the growth, and here the cells have entirely lost their tendency to associate in tubule formation It will be seen that there were no distant metastases in any of the cases The absence of distant metastases and the spread of the process by mere continuity of tissues are quite usual features in carcinoma of the human gall bladder The metaplasia of the lining columnar epithelium into squamous epithelium, a form more suited to withstand mechanical irritations, seen in two of the cases, is a not uncommon finding in chronic cholecystitis and in carcinoma of the gall bladder in the human subject

No difference could be found between the solid foreign bodies in respect of the lesions they produced they were equally effective The fact that pebbles produced the same results as the gall stones shows clearly that the chemical composition of the calculus plays no part in the process. They supply a purely mechanical stimulus to the cells The fact that sterilized pebbles and sterilized pitch pellets brought about the malignant proliferation just as readily as the unsterilized gall stones demonstrates that the effects of the latter were not due to any living virus they contained, and the fact that lanoline, soft and incapable of causing repeated cell trauma, did not induce exuberant proliferation would seem wholly to negative the suggestion that some mysterious cancer-producing agent was unwittingly introduced from without when the foreign bodies were inserted into the gall bladder There still remains the assumption that the action of the solid foreign bodies resulted only in the production of a pathological condition of the tissues of such a nature as to allow of the operation of some other causal agent for the cancer "Cancer"—so the fatuous platitude runs—"never starts in healthy tissues" As in our previous experiments in cancer production so also in this, the evolution of the stages of the lesions is so gradual that it is impossible to find a point at which we could conceive of one causal factor giving place to another of a different order Here we have a species of animal in which neither a carcinoma of the gall bladder nor a carcinoma of any kind has ever been found in nature, and yet, when we expose a certain tissue to a mechanical irritation to which that tissue has never been previously subjected, carcinoma results Are we to imagine that the tissues of the guinea-pig are never subjected to irritations of any kind, and that no condition suitable for the hypothetical agent of cancer is ever produced in them naturally? Are we to imagine that this undiscovered agent lurks in each guinea-pig's body and has never before had an opportunity of producing cancer until we introduced solid foreign bodies into a certain viscus? The simplest explanation, and that which will probably appeal to most of us, is that the constant mechanical irritation of the calculi, operating on a suitable tissue, such as the gall bladder proved to be, alone produced the carcinoma

CONCLUSION

From these experimental results we may conclude that, in the human subject, gall stones are capable of causing cancer of the gall bladder Freely admitting that they do so in a comparatively small proportion of cases, we may premise that in some individuals there is a natural resistance to carcinogenic agents, just as there is a natural resistance to pathogenic organisms, and, learning from our previous experiments that similar tumours may be produced by wholly dissimilar agents, we may account for the carcinomata of the gall bladder which are found in the absence of gall stones as being due to some other causal agent or agents not yet identified

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THE TREATMENT OF PERNICIOUS VOMITING IN PREGNANCY BY GASTRIC LAVAGE AND CARBOHYDRATE RECTAL FEEDING

BY

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Various views have been put forward as to the cause of the morning vomiting of pregnancy, which occurs from the sixth to the fourteenth week, and is more common in primigravidae than in multiparae. It usually occurs in the early morning, and where the condition becomes aggravated it occurs throughout the day. In the severest cases it may become almost continuous.

The views that have been held include as causes toxaemia, hysteria and a reflex type. The view that it is due to a deficiency of glycogen in the maternal liver was put forward by Duncan and Harding in 1918, and the case given below was treated in accordance with it.

Mrs. H., aged 27, eight weeks pregnant, was admitted to the Hull Royal Infirmary on November 4th, 1923. Her last period had been on September 7th. She had been vomiting for three weeks, first after breakfast, then after every meal, then all day, and latterly all night, at short intervals. On the date mentioned she had been vomiting every half hour. The vomit was green, contained mucus, and some specimens digested blood also. The pulse was 88, temperature 99.6°, heart and lungs normal, abdomen rather retracted, nothing abnormal was felt. The tongue was clean. On vaginal examination the os uteri was found soft and enlarged, consistent with two months pregnancy. Urine: specific gravity 1030, acid, no albumin, no blood, no pus, no bile, no diacetic acid or acetone present. The blood was examined by Dr. Adamson, honorary pathologist, for the blood sugar content, which was found to be normal (0.085). The patient was very exhausted and was suffering from lack of sleep, not having slept for two or three nights, owing to the almost continuous vomiting.

Treatment was started at 3 p.m. on November 4th by gastric lavage with sodium bicarborate solution (1 drachm to the pint), one or two pints being used. Rectal salines with half an ounce each of sodium bicarbonate and glucose to the pint were administered 1 pint every four hours. Solution of adrenaline 5 minims hypodermically was ordered every three hours for four doses or until the vomiting ceased. She was not to be awakened for the rectal saline. The end of the bed was raised by putting blocks under the lower end. A hypodermic injection of morphine 1/6 grain was given at 8.15 p.m.

On November 5th she was ordered 5 minims of the adrenaline solution every six hours and rectal salines with no sodium bicarbonate but with glucose every four hours. Water was given by the mouth in small feeds at 10 a.m. gastric lavage with saline solution and sodium bicarbonate 1 drachm to the pint, followed by saline solution only. Water was given at first in 1 drachm feeds every half hour or hour and slowly increased. The rectal salines were continued every four hours with 1 oz. of glucose and 2 drachms of sodium bicarbonate added to the 4 p.m. rectal saline. To the 6 p.m. and 10 p.m. salines 30 grains and 20 grains respectively of potassium bromide were added.

She vomited three times in the night, but the vomit was no longer bile-stained. Gastric lavage was performed at 10 a.m. on November 6th, and feeds of water increased to 2 oz. every two hours. On November 7th she was kept on water 5 oz. every two hours, and rectal injections every six hours with sodium bicarbonate. Glucose was then added to the water by mouth in the proportion of half an ounce to half a pint. On November 8th and 9th the same procedure was followed, and the vomiting stopped. On November 10th jelly was given, and on the 11th thin Benger's food, on the 12th there was slight vomiting after the Benger's food, but not otherwise. On November 13th beef tea and bread crumbs were given as well as weak tea and condensed milk. On the 15th there was a slight quantity of acetone in the urine, but this disappeared on the 16th, and she was put on fish, eggs, etc. On November 20th she was given lactogen as breast milk was deficient, and on the 23rd she was given chicken. The vomiting stopped on November 8th, four days after admission, except on one or two occasions when she had slight vomiting on increasing the diet.

In any case of severe vomiting in a pregnant woman such conditions as gastric ulcer, or other gastric disease, cirrhosis of the liver, cerebral tumour, pernicious anaemia, phthisis, etc., must be excluded. It is possible that there may be a combination of causes, or that the principal cause is aggravated by others. Assuming that the chief cause is lack of glycogen in the liver, due to a short period of starvation which lowers the glycogen content of the liver, vomiting may be accelerated if the patient is of a neurotic type, or if there is a relative toxaemia of the bowel, due to constipation. The treatment of such condition can be carried out by putting the patient on frequent small meals.

Summary of Treatment

The essentials of treatment in cases of pernicious vomiting in pregnancy should be:

1. Rest in bed.
2. Gastric lavage, with solution of sodium bicarbonate 1 drachm to the pint, one or two pints being used.
3. Solution of adrenaline, 5 minims hypodermically every three hours for a few doses until the vomiting ceases, or the adrenaline solution may be given by the mouth in doses of 10 to 20 minims in a little water. It will be found that this drug is very efficient in stopping many kinds of vomiting.
4. The omission of all feeding by the mouth at first, and feeding by rectal salines containing from half an ounce upwards of glucose to the pint, with a small quantity of sodium bicarbonate added if there is any diacetic acid in the urine.
5. The addition to the evening salines of 30 grains of potassium bromide to help sleep and reduce irritability of the nervous system.
6. The gradual increase in feeding by the mouth, beginning with small feeds of water as described above.

In cases of vomiting of pregnancy which are seen by the physician as they are getting more severe it will be found that treatment by administration by the mouth or solution of adrenaline in doses of 10 minims or 1 in 1,000 solution added to 2 drachms of water at three to six hourly intervals, will in many cases be sufficient to stop the vomiting. The diet at the same time should be light and given at short intervals. The above treatment by lavage and rectal salines should be reserved for the more serious cases, or to those which do not respond to treatment by adrenaline.

PNEUMOCOCCAL POLYARTHRITIS

BY

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In view of the grave plight on admission, and for some time after, of the patient whose case is here related, and in view also of the fact that treatment was limited to the subcutaneous injection of antipneumococcal serum, the rapid improvement in the general health and the arrest of the tendency to suppuration of the joints must apparently be credited to the curative effects of the serum. The immediate effect of the treatment was evidently to kill off the colonies of pneumococci originally present in the synovial effusion in such wise that on a second examination of the fluid no pneumococci were present.

On March 5th a [illegible] engineer was sent to the hospital with a [illegible]. He stated that three days after [illegible] he had an attack of diarrhoea which lasted about a fortnight. He had as many as twelve motions in the twenty-four hours; they were scanty and sometimes blood-stained. He lost much weight. Three weeks after cessation of the diarrhoea the left knee began to swell and caused sufficient pain to prevent sleep. That was when he was seen four days before admission.

On admission his left knee was much enlarged, owing apparently to thickening of the periarticular structures. Little or no fluctuation could be made out over the joint. Movement was extremely limited and very painful. The ankle and dorsum of the foot on that side were oedematous. The temperature was 100.8° F., the pulse 130. The heart and lungs were healthy; the spleen was not enlarged. He was thin, but thought he was only incipient had fallen ill. He said he had had a urethral discharge some weeks previously, but on discussing the matter with him there did not appear to be any valid ground for suspecting gonorrhoea. In any case the urethral mucosa was normal in appearance; there was no undue moisture, and no trace of the gonococcus could be discovered on bacteriological examination.

Extension applied to the limb by means of weights afforded the patient great relief. As there was a possibility, however remote, of a gonococcal origin, he was given three injections of a product known as neo-dmegon (an antigonococcal vaccine), whereupon the temperature, which had fallen to normal, rose; the patient had been resting in bed again for a time to 100°.

During the next few days he lost ground. There was atrophy of the thigh muscles, more marked on the left side. He had no

appetite, he complained of night-sweats and was rapidly losing flesh On March 17th the right knee was swollen and soon became greatly distended, and there was pronounced fluctuation The swelling was not accompanied by pain Salicylates, 4 grams a day, had no effect

On March 20th I asked our surgeon, Dr Pelissier, to see the patient with me On his advice the left knee was punctured and some pale yellow fluid withdrawn by aspiration It contained numerous flakes, pointing to the imminence of suppuration Dr Lemaire reported that it contained 95 per cent polynuclear leucocytes, staining well (no karyolysis), and very numerous pneumococci, intra and extra cellular No tubercle bacilli were present The urine, at first faintly acid, later on became neutral, no albumin was present On March 23rd the patient complained of his right elbow, which was beginning to swell It was not thought desirable to perform arthrotomy of the knee joint, Dr Pelissier being of opinion that in suppuration due to the pneumococcus operative measures should be had recourse to as late as possible

In view of the bacteriological report we gave him daily injections of Dr Minet's antipneumococcal vaccine together with 20 c cm of the antipneumococcal vaccine prepared by the Pasteur Institute No vaccine was given on March 25th and 26th, but the daily dose of serum was raised to 40 c cm This was injected under the skin on the outer aspect of the thighs

On March 30th the right knee was again punctured and some fluid withdrawn This time it was quite clear and free from flakes The bacteriological report was to the effect that no pneumococci were present

Between March 27th and April 2nd the patient was given a daily dose of 20 c cm of the serum, but in spite of the administration of calcium chloride and adrenaline he suffered a good deal from serum reaction urticaria, arthralgia in all the joints, especially in the shoulders, hard oedema where the serum had been injected, and so on

At this stage it could be seen that the swelling of the knees was diminishing and the patient's general health improving The appetite was returning, he was in better spirits, and was feeling more comfortable apart from the serum manifestations The temperature had returned to normal and remained there, he was putting on weight, and by the middle of April he was able to get up and walk a little, though he felt very weak on his legs He was ordered massage and passive movements, and the stiffness of the joints gradually lessened

His pulse remained very rapid (130), though the heart sounds and cardiac rhythm were normal Blood pressure 125 maximum, 90 minimum The tachycardia was greatly influenced by tobacco, so that though he only smoked in moderation he was advised to drop it for the time being Thereupon the pulse fell to 90 The feet and legs became very oedematous towards evening He was discharged for the return journey to England on May 22nd

I am sorry it did not occur to me to have recourse to haemoculture, which might have afforded interesting information In another case of the kind I should feel disposed to inject some serum into the inflamed articulations, though in this particular instance no time was lost in consequence of our not having done so, inasmuch as the joint trouble began to improve directly we started injecting the serum Even so, the case presents considerable interest in view of its differentiation from gonorrhoeal arthritis on the one hand and from tuberculous arthritis on the other On a correct diagnosis depended the success of the treatment

Judging from statistics of polyarticular pneumococcal arthritis, the case would in all probability have had a fatal termination but for the bacteriological diagnosis, hence the importance of such examinations in all cases of arthritis not obviously rheumatic in origin—that is to say, cases in which the patient's antecedents are confirmed by the action of the salicylates

Pneumococcal arthritis, though not very common, has been recognized for many years In most instances it is secondary to pneumonia, but it also occurs independently of any other pneumococcal lesion, and arthritis in patients suffering from pneumonia is not necessarily due to the pneumococcus It is met with most frequently in children Dr Gasne[1] reports 52 cases of pneumococcal arthritis—33 during the first twelve months of life, 8 between 1 and 2, 8 between 2 and 7, and 3 between 7 and 15 In 35 the affection was monarticular and in 17 polyarticular, the bigger joints being mostly attacked Death occurred in 16 of the 52 cases

Bulkley[2] collected 173 cases, mostly in children In 70 per cent it was associated with pneumonia Three-quarters of the cases were monarticular (83 times the knee, 41 the shoulder, 23 the hip, 22 the wrist, 20 the ankle, 18 the elbow, and 12 the sterno-clavicular articulation) Suppuration took place in 147 of the cases, while in 15 the effusion was serous

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ACUTE POISONING BY FUMES FROM CELLULOSE ACETATE

BY

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DURING the late war many chemical substances were produced, or brought into industrial use, almost for the first time, as belligerent necessities arose Some were found to possess highly toxic properties which, little suspected at the outset, proved to be the cause of many cases of grave illness, prolonged ill health, and even, in some instances, death Among them I would name trinitrotoluene and cellulose acetate The latter is extensively used as a varnish for aeroplane wings It is a mixture of benzine, acetone, methylated alcohol, and tetrachlorethane, forming a colourless liquid which gives off a heavy pear-like odour

Sir William Willcox first drew attention to the connexion between many cases of serious icteric illness and the use of cellulose acetate in some of the large aeroplane factories, The results of his investigations, both clinical and chemical, were published in 1915 He found that after the early symptoms of headache, vomiting, and debility had become established, jaundice supervened *Post-mortem* examination in fatal cases revealed an acute toxic hepatitis closely resembling acute yellow atrophy With this was associated parenchymatous degeneration of the kidneys He added that the tetrachlorethane alone, in addition to being a tissue poison, is a narcotic 2 8 times as powerful as chloroform

Since the danger has been appreciated fewer cases of cellulose poisoning have occurred, owing to the special precautions now exercised in aeroplane factories But quite recently a communication was published advising the use of this cellulose acetate for making encasing splints for limbs and joints, etc As a result of this publication a doctor in this neighbourhood put up a child's knee in a splint of this construction I am indebted to him for the full particulars given below as regards the serious poisoning which followed I was asked to see the child in consultation about 8 p m , when, I am glad to state, consciousness was slowly returning The patient presented the appearance of just coming round from a general anaesthetic

The patient was a female, aged 3½ years, with disease of the right knee joint On July 7th, 1924, at 11 a m , cellulose acetate (solutions Nos 25 and 26) was applied to the right leg by the technique advised by Dr Fernandez Half an hour later the patient was returned to bed and ate a good dinner The leg was propped up and exposed to the air, the patient lying on her back She was placed in the open air ward At 3 p m she vomited and she continued to vomit every few minutes until 11 30 Shortly after she began to vomit she became cyanosed (lips and cheeks) Pulse 136 feeble, at times hardly perceptible, respirations shallow, average 36, temperature 96°

At 4 o'clock she became unconscious The splint was removed and the cyanosis was replaced by pallor At 1 30 1½ pints of saline with sodium bicarbonate were given by the rectum most of it was retained At 5 o'clock the temperature was 98° the pulse had improved—still rapid, but stronger her colour had improved lips red She was still unconscious, with large equal pupils which did not react to light Her breath smelt strongly of acetone At 6 o'clock the bowels acted—stool normal general condition unchanged At 7 30 consciousness began slowly to return, she complained of headache Temperature 99° pulse 136 respirations 36 At 11 30 the patient appeared to be much better, he vomited slightly and then went to sleep, and slept all night

On July 8th, at 10 a m , the patient appeared to be almost normal temperature 98 4°, pulse 120, respirations 30 The pupils were normal and reacted to light The skin of the leg was red, inflamed, and blistered over the area covered by the cellulose acetate solution, this in spite of the fact that before applying on the skin was covered with a layer of vaseline an eighth of an inch thick, before being covered with layers of wadding, on top of which the solution was applied in layers or bandage At 5 p m examination of the urine showed a sediment of ur tes specific gravity 1020, acid colour normal, no albumin a considerable amount of acetone, no diacetic acid, no sugar, no blood

Fourteen days after the above narrated incident the patient showed no signs of jaundice or other complication But I think it is well that these facts should be brought to the notice of the profession as a warning against the use of this preparation It nearly caused a catastrophe of a particularly distressing nature

British Medical Association

PROCEEDINGS OF SECTIONS AT THE ANNUAL MEETING, BRADFORD, 1924

SECTION OF DERMATOLOGY

J M H MACLEOD, M D, F R C P, President.

PRESIDENT'S OPENING REMARKS

THE PRESIDENT, in opening the proceedings on July 23rd, said I am deeply sensible of the honour conferred upon me by the Council in inviting me to preside over the meeting of this Section, but in accepting it I could not but feel weighed down by the burden of the responsibilities attached to the office To some extent these have been mitigated, as I have received from the head office a memorandum for officers of Sections, in which it is clearly stated that the President of a Section is not expected to give an address—a regulation to which I gladly conform Before opening the proceedings I should like to remind you that the last time there was a Section of Dermatology was at the meeting in Glasgow in 1922, and that since then we are the poorer by the loss of three distinguished colleagues, active members of this Association, and former Presidents of this Section—namely, Sir James Galloway, Dr J J Pringle, and Sir Malcolm Morris, men who spent their lives in the service of their fellows, and who did so much to advance our knowledge of skin diseases and to establish dermatology as an important branch of medicine The programme for this meeting has been drawn up with considerable care by your officers, the subjects chosen for discussion being of special interest at the moment, not only to dermatologists but to the whole profession These discussions the group of interesting papers which we have been fortunate in obtaining, and the demonstration of cases, will fully occupy our time I hope all of you will combine with me in making our meeting a pleasure and a success, and that you will take part in the discussions, not so much in a formal way as in a spirit of friendly criticism and good fellowship

DISCUSSION ON THE CANCEROUS AND PRECANCEROUS CONDITIONS OF THE SKIN

OPENING PAPERS

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THE exact pathology of the malignant growth generally called rodent ulcer, and its relationship to squamous-cell carcinoma, has given rise to a considerable literature and provoked much discussion The majority of dermatologists favour the view that the two forms of growth are distinct and separate varieties of cancer, and, although they may not be in complete agreement as to the mode of origin of each type of neoplasm, the hypothesis most generally accepted is that the one arises from the basal, the other from the prickle-cell, layer of the epidermis

There are many facts to be obtained from the study of these two apparently dissimilar types of new formation which can be used to throw doubt upon the truth of this doctrine and it will be the object of this paper to show that baso-cellular and spino-cellular epitheliomata are identical the rate of growth governing the type of cell formed Or the hypothesis may be expressed in a different way as follows where the growth is slow small cells resembling those of the basal layer are produced and where more rapid, there result large cells with more abundant cytoplasm having an appearance similar to those of the prickle cell group

It should particularly be noted that this statement refers to the common primary carcinomata of the skin, and expressly excludes the similar new growths arising in mucous or semi-mucous membranes, because, as will be pointed out later, the malignancy of mucous membrane growths is relatively much greater It would appear, indeed, that the reputation of the prickle-cell group depends upon the inclusion within it of the carcinomata arising on mucous membranes—a type, indeed, with similar histological features, but differing widely in its clinical course

Jacob,[1] a Dublin surgeon, was the first investigator to call attention to the condition we now name rodent ulcer In his paper he stated that the characteristic features of the disease were its extraordinary slowness of progress, the peculiar character of the surface and edges of the ulcer, the comparatively inconsiderable suffering caused by it, its incurable nature except by extirpation, and the fact that contamination of lymphatic glands was not found He further asserted that it was not a genuine form of cancer The views expressed in this original paper came in time to be commonly accepted as the standard opinion of dermatologists in this country

In seeking to prove the identical nature of the basal- and prickle-cell growths it is not necessary to deal specifically with all the characters adverted to by Jacob Certain of them, with other accepted attributes of this form of disease subsequently added by various observers, demand special consideration These several points may be considered under headings as follow

1 That rodent ulcer is usually confined to the face

This statement will still be accepted in its general form It is of some importance to notice that exceptions are met with on practically every part of the cutaneous covering of the body Their existence disproves theories put forward to explain the origin of the growth in certain embryonic structures or along the distribution of particular nerves

2 That rodent ulcer begins at an earlier age than other forms of cancer

This assertion, made on the authority of Dubreuilh and Auche,[2] would, if it were true, succeed in placing the new growth in a special category, and by this feature separate it from all other forms of cancer The statement is not absolutely true, as the following facts will show Thus in 39 cases of rodent cancer an estimate could be made of the age at which the disease commenced, and this was found to give an average of 53 7 years[3] The average age incidence in a large number of cases of cancer of the breast studied by Beckton was identical—namely, 53 7 years[4] For the cervix 46 15 years was determined (MacCormac[5]), and for the rectum 52 years (Colwell and Woodman[6]) These figures represent the results of statistical investigations based upon material in the cancer department of the Middlesex Hospital, and may be accepted as reasonably accurate They dispose of the assertion of Dubreuilh and Auche, and further show that rodent ulcer in respect of its age incidence corresponds to cancer in general in being a disease of individuals past middle life

If comparison be made with the age of incidence of the rodent or basal and the prickle-cell type of epithelioma when it affects the skin, it will be found that they are in close agreement In 21 cases of the latter the average age of onset was found to be 51 5 years This lies within the range of 53 7 years, the figure arrived at in the series of cases of the rodent type quoted above

3 That in rodent ulcer glandular and visceral metastases do not occur

It is important to examine the exact bearing of this statement on the subject under discussion It is, in the first place, only relatively true, for proved exceptions have been recorded in medical literature The following three may be quoted

C F Peadles's Case[7]

The patient a man aged 46 years presented a rodent ulcer of fifteen years duration affecting the right lower eyelid The margin of the growth was hard and livid partial cicatrization of the central part had taken place The ocular conjunctiva remained healthy A round nodule the size of a hazel nut was found at the anterior edge of the sterno-mastoid muscle on the right side

The primary disease finally began to make rapid progress, and the patient died of septic pneumonia following a haemorrhage from the growth The autopsy showed a large ulcer extending widely into the tissues Under the microscope both primary growth and the cervical nodule presented the appearances typical of rodent ulcer

Fordyce's Case [8]

An example of multiple tumours of the basal cell type arising on psoriatic patches The patient subsequently developed metastases in the mediastinal glands and internal organs and died of carcinosis The tumours were made of small deeply staining cells with scant stroma and numerous foci of degeneration

The following, taken from the Middlesex Hospital, may also be quoted in this connexion The patient, a woman aged 63 years, developed an "ulcer" on the back of the neck, gradually increasing in size during fifteen years and extending both laterally and deeply X rays had been used in treatment during a period of sixteen months At the *post mortem* examination there was found, in addition to the primary growth, a nodule the size of a walnut on the lower surface of the right lobe of the liver Microscopically the growth, both primary and secondary, was of the indeterminate type, one where it is difficult to decide whether the classification should be basal or prickle It was certainly not a variety of x ray cancer, and in its clinical and microscopical features came within the "rodent" group

These cases, or at least the first and second, may be taken as proof that in certain circumstances growths of the rodent type are capable of forming metastases The fact that they rarely do so is, however, no sufficient proof that basal-cell carcinoma is essentially different from the prickle type If we accept the argument that the basal is only a slowly growing, and therefore relatively a less malignant, form of cancer, then we would expect less chance of dissemination, as is in fact the case The basal and prickle can thus be regarded as each occupying positions at the end of a scale between which intermediate stages exist, with corresponding clinical and histological characters Nor, indeed, contrary to the general belief, do prickle-cell cancers of the skin readily form metastases, as an examination of the following series—from which all mucous membrane lesions have been excluded—will demonstrate [9] They consist of 22 cases with a distribution as follows

Cheek	6 cases	Neck	1 case
Eyelid	3 ,,	Thumb	1 ,,
Nose	2 ,,	Finger	1 ,,
Temple	2 ,,	Abdomen	1 ,,
Leg	3 ,,	Vulva	1 ,,
Brow	1 case		

Enlargement of lymphatic glands implying metastases was noted in 6 instances only, in 3 of which microscopic examination was made All were free from malignant deposit, one being tuberculosis Four of these 22 cases arose on patches of lupus vulgaris, and may have been, but were not necessarily, examples of x-ray cancer

E S, aged 64 The growth began on the left lower eyelid, was operated upon and recurred, gradually forming a considerable cavity Microscopically the primary growth was a typical prickle-cell carcinoma At the *post mortem* examination an enlarged lymphatic gland was found in the posterior triangle showing, under the microscope, giant cells and the general structure of tuberculosis There were no metastases

E S, aged 65 A small "wart" formed on the abdomen, growing for seven years, eventually assuming the character of a rather foul ulcer the size of a two shilling piece An enlarged gland was present in the groin The microscope demonstrated that the primary growth was a prickle cell carcinoma, and that the gland was quite free from deposit

P J P, aged 55 An ulcer on right leg for sixteen months, bitterly painful, in the groin there were enlarged glands Microscopically the ulcer was found to be malignant and of the prickle cell type, and the glands quite free from contamination

The series of 22 cases shows that glandular metastasis is by no means common in prickle-cell cancer of the skin It is important to lay some stress upon this, because one of the chief distinctions drawn between basal- and prickle-cell growths is that the one (basal) never involves glands, while the other (prickle) frequently does

Cancer of the skin of the abdomen is fairly often encountered in Kashmir as the result of kangri burns—a condition to which Neve [9] has drawn special attention He states that glandular metastases are seen, especially in ulcerating types, but it is not clear from his accounts that microscopic examinations have been made to exclude inflammatory enlargement, a common source of error There are also the well known examples of x-ray cancer with their tragic results But even these exceptions, if admitted, do not disprove the general truth of the assertion that metastases are rare in both forms of primary cutaneous carcinoma In this connexion it is curious to observe that dermatologists, when writing on the subject, generally illustrate the malignancy and liability to form metastatic deposit in prickle-cell cancer by examples taken from the condition when arising in a mucous membrane, as an examination of almost any textbook will show This high grade of malignancy of the mucous membrane growths is to be explained on the vascularity of the structure in which they arise, the growth being better nourished and better supplied with the means of dissemination In some degree such precancerous conditions as x-ray dermatitis partake of this increased vascularity, which may account for their greater activity

An interesting paper has been contributed on the subject of occupational dermatoses of the paraffin workers of the Scottish shale oil industry by Dr Alexander Scott [10] He says, in treating of epitheliomata, that the lymphatic glands do not become involved until a late stage, but that this varies according to the situation of the original growth No figures, however, are given to prove this assertion or to show what proportion of the enlarged glands are inflammatory Further on a statement is made by the author that, in cases terminating fatally, death is as a rule due to extensive ulceration with exhaustion rather than to metastases—an assertion that is in accord with the views advanced here

It might be expected that this subject would be illuminated by the experimental study of the so called tar cancers in mice, but an examination of the literature on the subject will show that, although metastases are recorded, this aspect of the subject, as regards the relative incidence, is not very fully dealt with, and further, it will be observed that some of the neoplasms classified as carcinomata may be sarcomata, and, in any case where a carcinoma is produced there is a chance of a sarcoma also arising through the same agency From an issue at present so confused no definite conclusions should be drawn

HISTOLOGY OF RODENT ULCER

As the study of the histology of rodent ulcer has taken so prominent a part in the investigation of this disease, it is necessary to consider the subject in some detail Writing in 1910, I classified the types of growth met with as pure rodent ulcers, mixed rodent ulcers, and an indeterminate type

Pure rodent ulcer includes the majority of cases and represents the ordinary conception of the disease In it masses of malignant cells of the small type are seen arranged in islands or trabeculae, sharply demarcated from the neighbouring connective tissue At the edge of the growth there is usually found a row of columnar cells one or two deep Mitotic figures may often be observed in the border, but are rarely met with in the main part of the growth The appearance of a capsule of flattened connective tissue cells is frequent, and occasionally flattened—presumably malignant—cells occur within the boundary formed by the columnar cells Cysts are rare, but may occur within the growth Of 16 cases examined, ill developed cell-nests were observed in 3 In the neighbourhood of the new growth there is present a dense plasma cell infiltration and the sebaceous glands show evidence of activity

Into the indeterminate type fall certain rare growths where great difficulty is experienced in determining whether the neoplasm should be classified with the basal- or prickle cell variety

Mixed Rodent Ulcer.—In this group, a very important one, there are found, side by side and merging into one another, growths of the basal- and prickle cell types This combination was encountered three times out of 16 cases, and is therefore not uncommon In two the basal- and prickle-cell growths seemed to be distinct, but in the third the arrangement was different Sections of this growth showed a surface epithelium, beneath which there was seen a growth of the ordinary rodent type, and then, placed more deeply, a typical prickle-cell carcinoma, in many places it was easy to observe the transition of the one into the other, seemingly direct proof of the single nature of the prickle- and basal-cell groups

The division of rodent ulcer into these groups is of more than academic interest it has a bearing on the subject under discussion and it has also a practical application The practical application lies in its relation to treatment, since we know by experience that the prognosis in rodent ulcer is good, for there the cells have assumed this form because of their slow growth and therefore relatively low degree of malignancy Such cells are naturally more readily influenced by x rays, and even more surely by radium, as compared with the more active and so-called spino cellular type, where such measures may even cause aggravation

In a paper communicated to the Dermatological Section of the Royal Society of Medicine in 1922 on the primary new growths of the skin, Darier classified them under the three following heads (1) spino-cellular group (2) baso-cellular group or rodent ulcer, and (3) metatypic or spino-baso cellular epithelíomata, further subdivided by him into mixed and intermediate forms [11] This classification seems to be similar to that made by me, Darier's metatypic group corresponding to the mixed and indeterminate types

Commenting on the spino cellular growths, Darier observes that they form the most common (50 per cent) and most malignant species, and that they are observed chiefly in the mouth, but also on the face, ears, body generally, and on cicatrices, ulcers, and lupus vulgaris While Darier's facts are undoubtedly right, as he expresses them, they are so because he includes within his group the malignant growths of the mouth But such are not cancer of the skin, and follow an entirely different clinical course Where they are included with cancer of the skin, there is produced a false estimate of the degree of malignancy of the latter

Many dermatologists believe that the presence or absence of epidermic fibrils—those delicate processes seen most characteristically uniting the cells of the rete mucosum—may be used first to distinguish from each other the primary carcinomata of the skin, and secondly, to show, where they are present that the growth has its origin in the prickle cell layer and, when absent, in the basal cell layer

While it is generally asserted that these fibrils are absent from the basal layer in man, it would seem that this assertion is not entirely true Thompson [12] who has paid special attention to the point, concludes from his studies that prickles are found in the basal layer in certain animals although not very distinct under normal conditions He also states that they may be found in the basal cell layer of human skin under conditions of increased cell activity

When investigating this question I examined 14 separate cases of rodent ulcer, staining the sections for fibrils by the Unna-Kromayer method As this process is somewhat uncertain, no conclusions were drawn in any case unless prickles could be seen in the normal portion of the epidermis, thus demonstrating that the stain had acted effectively I found, contrary to the general opinion, that prickles were often clearly seen between the cells of the basal layer in normal skin In only one instance could I detect true fibrillae between the cells of a rodent ulcer growth This was clinically a typical example of rodent ulcer of nine years' duration, situated in the neighbourhood of the left lower eyelid, microscopically it showed the characteristic features of this variety of tumour

It would thus appear that the deductions drawn from the absence or presence of prickles are fallacious, and it is interesting to note in this connexion that Dubreuilh and Auche go so far as to state that prickles are often present in rodent ulcer It should perhaps be pointed out that what has been said above refers to true prickle cells without considering the irregular processes often seen between neighbouring cells, in appearance quite distinct from the genuine sheaves These false prickles may obviously occur as the result of cell shrinkage in the preparation of the specimen

An apparent spontaneous origin characterizes the rodent ulcer type of growth—that is to say, it usually appears on an area of skin where no pre-existing abnormal state has been detected That the prickle cell type can also arise in a similar manner is shown in forms clinically indistinguishable from rodent ulcer It is recognized however, that there are a number of what may be termed precancerous conditions, because they predispose the tissues to a malignant degeneration They include among others, chronic ulcer, lupus vulgaris, keratosis, scars, and x ray dermatitis It is a matter of common observation that the form of growth associated with them generally assumes the prickle-cell type Some have held that a relationship exists between syphilis and cancer of the skin a view that does not appear to have any support in clinical or pathological investigation

Where cancer arises on a mucous membrane, syphilis does appear to have been a direct causal factor, as the following will show Morson and I investigated the history and Wassermann reaction in 137 cases of carcinoma of various regions of the body, and we obtained evidence of previous syphilis in 21 instances, or 15 3 per cent [13]

When these figures were further analysed it was found that the largest proportion of cases occurred in connexion with the mouth region, particularly the tongue Thus, in 23 cases of cancer of the tongue we found evidence of syphilis in 6, in the lip, 1 out of 5, in the floor of the mouth, 2 out of 7, in the fauces 1 in 3 Altogether, out of a total of 46 cases of carcinoma of the mouth region, evidence of previous syphilis was obtained in 10, making a percentage of 21 7 In the case of the tongue alone, as will be seen above the percentage reached 26 08, or more than a quarter of the total number examined A series of 13 cases of carcinoma of the cervix uteri was also examined, of these, in two instances we obtained evidence of previous syphilitic infection, making a total of 15 4 per cent The number is too small to allow of any definite conclusion, but at least it suggests that in this variety of malignant disease specific infection may play some not unimportant part

The study of malignant disease as it affects the mucous membrane of the cervix throws some additional light on the subject under consideration An investigation into all such cases admitted into the general or cancer wards of the Middlesex Hospital during the quinquennium 1904-8 gave the following facts [6] Out of 241 cases a *post mortem* examination had been made in 107 Of this number, in only 48, or 44 85 per cent, was any malignant deposit present in glands or viscera, it should be noted that these findings were confirmed by subsequent microscopic examination It might seem that this has no direct bearing on the subject of rodent cancer, but, as all who have had occasion to examine the microscopic appearances in carcinoma of the cervix will know, there is at times found a distinct resemblance to the basal cell cutaneous growths, and in most cases in some part at least of the section masses of cells of the small rodent form will be met with From what has been said this should indicate a lesser degree of malignancy, *an observation confirmed by the statistical record*

Primary epithelioma may arise in three situations—the skin, the semi mucous membranes, such as the lip, and the true mucous membranes, as the tongue On a semi mucous membrane the degree of malignancy is greater than on the skin, and higher again when the disease originates on, or spreads to, a mucous membrane It is unfortunate, therefore, that in most cases where observations are made, a distinction is not drawn between these various clinical types

An examination of the data recorded above seems to point to the fact that there is but one form of primary carcinoma of the skin, assuming the basal type when growing slowly and the prickle when in a more active phase it is at times, indeed, impossible to distinguish one from the other except by the microscope Nor does the presence or absence of demonstrable prickle cells serve to create two types of growth as has been alleged Perhaps the most convincing evidence of the single nature of the two varieties is to be obtained from an examination of the mixed type, where both can be seen together merging one into the other The clinical aspects of epithelioma, it is asserted, depend more upon their anatomical position than their histological type, and this is true even for the pure cutaneous growths, for there seems to be a clinical distinction between those arising about the scrotum and those elsewhere situated

Two further observations may be made First, that nothing that has been said should be taken as having reference to the melanotic growths Secondly, that, although the terms "prickle" and "basal" have been employed throughout, this is not intended to commit the writer to any opinions as to the nature of the growth these terms are merely returned as being a convenient form of nomenclature

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II.—LOUIS SAVATARD, L.S.A.,

Honorary Physician, Manchester and Salford Skin Hospital

LIKE Dr MacCormac, I, too, had the good fortune in the days of my youth of being brought into intimate contact with cancer research Some five-and-twenty years ago I was appointed clinical assistant to the Manchester Cancer Hospital, and there, under the able guidance of the late Professor Delepine and Professor Wild, I was encouraged in my work from both the pathological and clinical points of view Later, under the stimulating influence of that brilliant dermatologist, the late Dr H A G Brooke, my teacher, colleague, and friend, I learnt to search the scriptures of dermatology and to prove all things

Carcinomata of the skin may be divided into primary and secondary, primary growths arising in the skin itself and secondary growths being metastatic tumours of primary carcinomata elsewhere

Primary growths may on histological and clinical grounds be classified as (1) Squamous (2) Basal (3) Mixed—(*a*) MacCormac-Darier type, (*b*) squamo-basal, (*c*) transitional (4) Naevo-carcinomata

1 *Squamous Cancer*

This may arise (*a*) on apparently normal skin, (*b*) on dermatoses which cannot be considered as precancerous, (*c*) on dermatoses which not infrequently become cancerous and are consequently spoken of as precancerous conditions of the skin

The new growths arising on apparently normal skin may be of interfollicular or of follicular origin They may be slowly or rapidly malignant, their malignancy often being dependent on their situation The early epithelioma, which may be recognized when it is only the size of a small pin's head and of only a few days' duration, cannot with certainty be clinically distinguished from less malignant growths, nor can we foretell at this period how malignant the tumour may become, but the squamous carcinoma of two to three weeks' duration, when it may have attained the size of a pea, should be recognizable clinically It is true that at this stage, and even at a much later stage, the lymphatic glands are not invaded, and this useful guide to differential diagnosis, on which (as Dr MacCormac states, and to which I have elsewhere drawn attention) the textbooks lay far too much emphasis, is of little practical use It is, however, of the utmost importance that medical men if they are to prevent some of their patients suffering untold agony ought to be acquainted, not only with the inoperable cancer so frequently paraded in textbooks, but with the initial lesion, the removal of which should be within the scope of the general medical practitioner

The early epithelioma is the same colour as the skin, raised above the skin's surface, and it has a translucent appearance Small blood vessels may be seen coursing over its edge and its centre is often apparently plugged The tumour at this stage is usually fairly hard and infiltrates the true skin It simulates an early basal-cell carcinoma and is frequently mistaken for one, but this error should not arise when the rate of growth is considered, for an uncomplicated basal-cell growth as a rule takes two years to attain the size of a squamous-cell growth of two weeks (the exceptions I will mention later) It is not possible by ordinary pressure to extrude the "core" of the tumour, and so we can differentiate it from an epithelioma contagiosum The absence of inflammatory signs should prevent its being diagnosed as a boil—a not uncommon mistake With ordinary care we ought to be able to differentiate it from a sebaceous cyst, though its translucency has in some instances led to this error in diagnosis Not infrequently it is stated that the cancer was preceded by a wart, pimple, scab, ulcer, crack wen, blister, or lump As a matter of fact these apparently benign lesions are frequently the initial stages of the new growth and not precursors of the cancer

In dermatological practice the primary squamous-cell carcinoma is most frequently seen on the face, as also is the basal-cell carcinoma, but the epithelioma is not infrequently met with on the extremities and on the genital organs The lower lip and upper lid are frequently invaded by the squamous and rarely by the basal type, the bridge and tip of the nose are relatively more frequently the sites of epithelioma than of the "rodent" ulcer, the scalp is rarely affected by either *With regard to the age incidence of (a) scar epithelioma, (b) basal cell growths, (c) primary squamous-cell growths*—the age being the age of the patient when the tumour was first evident—in one hundred cases of epithelioma of the face, and one thousand cases of basal-cell tumours of the face, the youngest patient in each condition was 17 years old The basal curve reached its maximum at the 45th year, the squamous curve at the 65th year, almost as many basal growths began between 17 and 45 as between 45 and 80, squamous growths were frequently seen in young adults, and the scar cancer was a malignant growth of comparatively early age, was related to the age of the scar, and was independent of the age of the patient I have referred to this precancerous condition here for convenience, but will mention it again later You will see that my conclusions confirm those of the opener, though they are based on a far larger number of cases If I may venture any criticism of Dr MacCormac's statistics, it is that his numbers are rather too few on which to base reliable conclusions We ought, I think, to work with hundreds rather than with dozens

These early lesions were all excised and the diagnosis confirmed histologically Some few years ago I found it difficult to get my clinical diagnosis always accepted when I showed the cases at our local Dermatological Society, and so provided sections Now, however, these early cases are being more often seen because they are more frequently recognized It is, I think, true that we in Manchester and Lancashire see a relatively large number of cases of skin cancer, and I shall endeavour to account for this later In none of these cases were the lymphatic glands affected, and there were no recurrences after excision Dr MacCormac has referred to the comparative benignity of many squamous cancers of the skin I am in entire agreement with him, and for this reason—that dermatologists usually see the earlier lesions, whilst the later lesions with glandular involvement come under the observation of the surgeon In two fairly advanced cases, one showed no evidence of metastases, the other, though clinically not suggestive of any greater malignancy, soon developed malignant invasion of the pre-auricular gland

Visceral metastatic growths are only occasionally met with Nevertheless, I am of the opinion that the squamous cancer should be differentiated from the basal and other mixed forms of cancer, because its potential malignancy can never be foretold

2 *Basal Cancer*

Basal cancer may appear (*a*) on apparently normal skin, (*b*) on dermatoses which cannot be considered as precancerous, (*c*) on dermatoses which may be considered as precancerous They may be solitary or multiple They are most frequently seen on the face and often overlooked on

the trunk though latterly these lesions (for the most part superficial and cicatricial) have been more properly appreciated and more frequently recognized The whole surface of the skin of a patient presenting such a lesion on the face should be systematically examined

The basal cancer has its origin in the basal cells of (*a*) the surface epithelium, (*b*) the hair follicle, (*c*) the sebaceous gland, (*d*) the sweat gland At the present time it is not always possible to state with certainty, by clinical inspection alone, the situation of the cell from which they arise, but in many cases we can, and with further research we may attain greater proficiency Many of the superficial tumours arising from the basal layer of the surface epithelium appear to have a perifollicular origin—that is, they appear to arise *from basal cells of the surface in the* neighbourhood of the hair follicle The deeper and more indurated growths arise from the basal cells of the hair follicle and the scirrhous type from the basal layer of the sebaceous glands I have, however, yet to meet with one which I could definitely state was of sweat gland origin, though such have been described

The basal-cell carcinoma is multiform, clinically we recognize the following types

1 Superficial cicatricial (Jacob's ulcer)
2 Hypertrophic
3 Cystic
4 Nodular and indurated
5 Morphoeiform
6 Pedunculated
7 Scirrhous

A very brief description of these varieties must suffice

1 *Superficial Cicatricial*—This arises as a small, translucent fairly firm nodule with usually a depressed centre, simulating *molluscum contagiosum*, it spreads eccentrically, cicatrizing in parts and leaving scattered nodules within an area (the surface of which often presents a rosaceous tint due to dilated vessels) bounded by a well marked raised gelatinous ridge It is usually very slow growing but may occasionally take on rapid growth, destroying all the soft tissues and invading bone (rodens Thibrans), or it may without extending laterally, produce deep cavitation with little external evidence This variety constitutes the vast majority of basal cancers, and is usually described as a "rodent ulcer" Only to such a basal cancer presenting the clinical picture of a rodent ulcer should this name be applied Many of the following varieties never ulcerate and never present a rodent tendency

2 *Hypertrophic*—The tumour presents a fairly firm mass raised well above the skin's surface with little tendency to infiltrate the true skin or to atrophy Ulceration may not supervene for many years

3 *Cystic*—Cystic formation may take place *de novo*, on the other hand, the cystic masses, with their gelatinous contents, may be the result of degeneration in the cell masses

4 *Nodular and Indurated*—Sometimes the basal cancer (especially when arising from a hair follicle) appears as an indurated mass with much tumour formation, and little ulceration, deeply invading the true skin This variety is often mistaken for a squamous cancer

5 *Morphoeiform*—Simulates a patch of localized scleroderma It has a waxy, ivory like appearance, with dilated capillaries ramifying over its surface It may escape ulceration for many years It is in my experience quite rare, and the majority of the cases I have seen have been on the forehead, though it may appear anywhere

6 *Pedunculated*—This is a still rarer variety In a recent case which presented other varieties of basal cancers elsewhere the patient had what appeared to be a pedunculated fibroma just below the left gluteal fold On examination we found it was a basal cancer

7 *Scirrhous*—The basal cancer of sebaceous gland origin presents a deep hard mass in the skin simulating secondary invasion of squamous carcinoma There is little tendency to ulceration

Much has been written as to the sex incidence in cases of basal cancer My experience is that the sexes are equally prone, whether the growth is solitary or *multiple* For the purpose of this paper I carefully went through my last 300 consecutive cases and found there were 149 women and 151 men There were 18 cases of multiple growths—9 in women and 9 in men Of these 18, 6 had twelve or more tumours, the remainder had only two to six

Metastases—Dr MacCormac has referred to three instances of metastatic growths in basal cancer To these I would add three more (1) one reported recently by Pinnerud of Chicago, (2) a case of my own in which, though the rodent ulcer at the side of a man's nose yielded to treatment and remained soundly healed, there appeared six months later a large indurated mass adherent to the lower jaw which was undoubtedly secondary to the rodent ulcer, and (3) a case recorded by Powell White in a recent demonstration on cancer research in which a metastatic growth was discovered *post mortem* in the liver of a man who had suffered for many years from a large rodent ulcer in the left suborbital region Though typical basal cells formed the mass of the new growths, parts of the sections showed some squamous cells so that, strictly speaking, the growth was of the "mixed" variety It is possible that the basal cancers in which metastases occurred were not pure but mixed growths

3 *Mixed Cancers*

Mixed cancers presenting on histological examination basal and squamous cells in varying proportions are not so rare as was formerly believed Dr MacCormac called attention to them some twelve years ago, and Darier has latterly emphasized this fact I have divided them into three types

(*a*) *MacCormac-Darier Type*—A tumour beneath the left lower lid was of nine months' duration, it was rather too large for a pure basal and not large enough for a pure squamous growth I therefore excised it, and found on examination an excellent example of a mixed cancer

(*b*) The second type I have called *squamo-basal*, and I can best describe what I mean by the following case A middle-aged man presented on the right side of his forehead a fairly large raised tumour, brownish in colour and firm to the touch He stated that he had had a "mole" there for fifteen years, but that within the last few months it had extended considerably I excised it, and found that rather more than half the tumour was composed of basal cells and that the basal growth had been invaded by a secondary squamous growth, from the overlying epidermis, presenting numerous cell nests—hence the cause of the recent extension There were no metastases

(*c*) The third type I have named transitional, it is *represented by old chronic basal cancers* which take on a more malignant rate of growth, and which on examination are found to have acquired a more squamous type of *cell An example of this kind I have already mentioned* in Powell White's case

There is still another variety of mixed tumour it is usually met with on the scalp, and is known as a *cylindroma* In some the basal cells predominate, and in others the squamous element is more manifest, but in all of them the stroma forms curious transparent cylindrical and oval masses of mucous degeneration which are found between the epithelial cells proper

4 *Naevo-cancers*

As the opener has ruled these growths as being beyond the scope of our discussion, I shall content myself with observing that they may arise on apparently normal skin, that they are not necessarily pigmented, and that the tendency of moles to become malignant has been greatly exaggerated

Precancerous Conditions of the Skin

A precancerous condition is one that will inevitably *become cancerous Is there such a condition?* Is one justified in stating that any or the most likely condition will necessarily acquire malignancy? I think not On the other hand, do not cancers apparently arise on practically all conditions of the skin? I have accordingly divided these so-called precancerous conditions into two groups

1. *Dermatoses on which cancers* do rarely arise but which in themselves cannot be considered as conducive to malignancy Under this heading I would include active lesions

of lupus vulgaris, lupus erythematosus, secondary syphilis, and psoriasis I have seen the squamous variety only in cases of lupus vulgaris and lupus erythematosus, but in syphilitic and psoriatic patients I have had both squamous and basal cancers In chronic psoriasis when arsenic has been administered over a prolonged period, it may have been the drug and not the psoriasis lesion which was responsible for the development In one case of psoriasis under my colleague Dr G H Lancashire, there was a carcinoma on an old lesion, but Dr Jenkins, our histologist, reported that the tumour did not appear to be primary in the skin but a secondary growth The patient was not seen again Only last week I saw an old case of psoriasis in which many of the lesions had persisted for years, and some of the so-called psoriasis lesions appeared to be superficial basal cancers I have not yet, however, had the opportunity of making a histological examination Whitfield, many years ago, described the supervention of a rodent ulcer on a psoriasis lesion, and Gray has shown a similar case I have not seen one so arise, but I have seen a few in conjunction with psoriasis I have, however, had one case of a squamous cancer arising on a patch of psoriasis when arsenic had not been administered

2 Dermatoses which not infrequently become cancerous These may be classified into (A) congenital, and (B) acquired

(A) *Congenital*
- (1) Malformations—Naevi
- (2) Dystrophies—Xeroderma pigmentosum

(B) *Acquired*
- I Inflammations
  - (1) Hyperkeratoses (*a*) Seborrhoeic keratosis (*b*) Horns (*c*) Warts
  - (2) Chronic ulcers
- II Physical agents
  - (1) Exposure Sailor's skin (Unna)
  - (2) Actinic rays X rays and sunlight
- III Chemical agents (*occupational*) Tar, arsenic, paraffin, soot, etc
- IV Atrophic lesions Biotripsis (Lenthal Cheatle), senile keratosis
- V Scars of lupus vulgaris, burns, syphilis, and lupus erythematosus
- VI Trauma
- VII Paget's disease (mammary and extramammary)

Time will only allow a very brief reference to the above conditions

Naevi—These growths are so universal and the incidence of squamous or basal cancers so extremely rare as hardly to justify their inclusion in this group I have seen, however, a case of a pedunculated basal cancer arising on a linear naevus (acanthotic naevus)

Xeroderma Pigmentosum—This condition, which is usually congenital though sometimes acquired, is, on the other hand, very prone to malignancy (especially of the squamous variety) I know, however, a case of many years' duration on which no suggestion of a cancer has yet appeared, and other similar cases have come under my observation

Seborrhoeic keratosis is the fruitful source of multiple squamous cancers of the face

Horns frequently show evidence of squamous invasion at their base, but whether the horn is secondary to the cancer or the cancer secondary to the horn I cannot say

Warts—Senile warts on the back of the hands (apart from senile keratosis) should be excised—many apparently benign are the precursors of squamous cancer

Chronic Ulcers—If care is not taken in cutting sections of the edge of a chronic ulcer one may get a picture very suggestive of carcinoma In my experience the incidence of malignancy in simple chronic ulcers is extremely rare

Sailor's Skin—When a man's occupation has necessitated his being exposed over prolonged periods, whether on sea or land, to all sorts of weather, we not infrequently find the supervention of squamous or basal growths on keratosic foci, especially on the face and backs of the hands

X Rays—Unfortunately there is no need for me to emphasize the incidence of squamous cancer in x-ray dermatitis Its frequency in recent years is well known to us all

Sun's Rays—Paul of Sydney states that the majority of rodent ulcers in Australia arise on keratosic lesions produced by the actinic rays of the sun Though one sees such cases occasionally they are not so frequent here Squamous cancers, too, may so arise In a case which I have had under observation for many years the keratosic lesions occurred after the appearance of a basal cancer on the left cheek Basal and squamous cancers developed later on these keratosic foci

Chemical Agents—There is little need for me to allude at length to what might be termed "trade cancers" It is so well recognized that workers with tar, arsenic, and paraffin are subject to "cancerous ulceration" Chimney sweeps' epithelioma of the scrotum is now comparatively rare, but mule-spinners' cancer seems to have taken its place

Atrophic lesions are usually seen in elderly people, and are attributed to senility of the skin—due to natural wear and tear of life Cheatle has well described this condition under the title of "biotripsis" It is a condition which a busy dermatologist must frequently see "Senility" of the skin is not confined to the aged, and many old people have not senile skins On this atrophic skin flat papular lesions may appear, which may be smooth or may be covered with horny scales, and may later assume more marked keratosis, on which squamous or basal cancers not infrequently develop The sites of election are on the temples and backs of the hands

Scars—On the scar tissue of lupus vulgaris squamous cancers are very prevalent, whether the lupus has been treated by x rays or not Some twelve years ago I found that of fifty such cases 50 per cent alone had had radio therapy Now, however, the proportion is much greater I have never seen a basal cancer on scar tissue, though one simulated a rodent ulcer I have referred above to the age incidence of these scar cancers, but before dismissing this sequela I would like to stress the importance of keeping all lupus cases under observation for years after apparent cure, and the necessity for removing any early keratosic papule which might appear on the resulting scar, as it will invariably be found to show malignant change

Squamous cancers on the scars of [illegible] do occasionally occur Rarely one sees [illegible]ing on the scar of a primary syphilitic sore, and not infrequently on secondary syphilitic scars The scars of burns often present, many years later, malignant tumours, and here, as in other scar cancers, the malignancy is not very rapid In a recent case of my colleague's (Dr Gibson) the new growth arose on the scar of a burn on the right elbow The accident happened forty years ago The epithelioma is of seven months' duration and is fairly extensive, but no enlarged axillary glands are palpable

Trauma—A few cases of epithelioma resulting from a single blow have been recorded by competent observers, but such require very thorough investigation One frequently gets the history of injury, but on careful cross-examination it is found that the trauma was subsequent to a pre-existing pimple or that the blow was on the other side of the face

Paget's Disease of the Nipple

Much discussion has taken place with regard to this somewhat rare condition in relation to mammary carcinoma No one would deny the frequency of the association of the two conditions, but to assert that malignant disease of the breast invariably supervenes on Paget's disease is incorrect I have had three cases of long standing which were unassociated with malignancy Powell White, too, in his recent demonstration, recorded a case in which a thorough *post-mortem* examination revealed no evidence of malignant disease

Some cases of duct cancer which have ulcerated through the skin have been mistaken for Paget's disease Many authorities consider this condition to be malignant *ab initio*, but to me its histology does not warrant such a conclusion "Dyskeratosis" acanthosis, and cellular infiltration of the corium are present in many benign lesions, and do not necessarily signify a precancerous or cancerous condition Some contend that the skin lesion is secondary to

cancer of the gland, but recently Lenthal Cheatle has very ably contested this view, and shows on histological findings that there is no such connexion Cheatle however, is of the opinion that Paget's disease and mammary carcinoma are the effects of the same cause If we accept this view then we may look upon Paget's disease as a paracancerous condition

Paget's disease of extramammary location is, I believe, of more frequent occurrence than the literature would lead us to suppose Bowen's precancerous dermatosis is identical with this condition but both require careful differentiation from the superficial basal cancers of the trunk I have dealt with these elsewhere and will not now discuss the matter further

Etiology

I think we are all agreed that the outstanding etiological factor in the production of cancer is *chronic irritation*, whether the irritant be mechanical, chemical or physical Two areas of the face most liable to irritation, the inner canthus and the ala nasi, are the most frequent sites of origin of basal cancers, and the frequent sites of their incidence on the trunk are on areas irritated by seborrhœa or sweat

On histological examination of cancers we are apt to confine our observations to the state and character of the *proliferating epithelium* but the condition of the corium, especially in growths *supervening on previous dermatoses*, show marked degenerative changes It is possible, too, that though the true skin in the cases in which the cancer develops on apparently normal skin may show no such lesions yet the derma may have undergone some change prior to the invasion of the epidermal cells

Manchester is the centre of a vast industrial population Its atmosphere like that of the neighbouring towns, is not free from chemical irritants It is not therefore surprising that we should see a relatively large number of these cases of cancerous and precancerous conditions of the skin

In conclusion I should like to express my thanks for much valuable assistance to Dr Powell White, to Professor Shaw Dunn, and to his laboratory steward Mr Southall (who has cut many of my sections and prepared the microphotographs) and also to my colleague Dr G H Lancashire for allowing me to investigate many of his interesting cases

[Dr Savatard showed a number of microphotographs in the course of his paper]

GENERAL DISCUSSION

The President, Dr J M H MacLeod (*London*) in opening the discussion, said that while he agreed with Dr MacCormac that all stages of transition might be encountered between typical basal celled carcinoma and squamous-celled epithelioma, the extreme ends of the group, it seemed to him to be inadvisable to neglect these distinctions, as they were of the greatest value in indicating the proper line of treatment The basal-celled type was amenable to curetting followed by radium or *x* rays, while the squamous type should be excised He also desired to draw attention to another useful histological indication of the degree of malignancy—namely, the type of cellular infiltration in the *corium* He had found that where the infiltration was of the plasma cell type the malignancy was less than where it was of a more simple inflammatory type The frequency of lupus carcinoma had increased considerably at Charing Cross Hospital since the employment of *x* rays in the treatment of lupus, and lupus epithelioma was really an epithelioma developing on an *x*-ray scar

Sir Norman Walker (Edinburgh) admitted that the name rodent ulcer was not a good one, in the early stages the condition was neither rodent nor an ulcer He held that rodent ulcer began at an earlier age than was stated by some authorities As to the origin of skin cancers, he believed that these carcinomata might arise from any of the epidermic cells He had recently examined the statistics of his department for the last eighteen years and was rather surprised to find that rodent ulcer was almost equally common in the two sexes He had previously supposed that it was commoner in males than in females He had had a deplorable record of carcinoma following lupus in cases treated over twenty years ago by *x* rays, and questioned whether the use of that remedy was justifiable in that disease

Dr S E Dore (London) said that in his opinion a definite distinction should be drawn between what was universally known as rodent ulcer and squamous-celled carcinoma on account of the different clinical courses of the two conditions It was not, however, always possible to distinguish between them without microscopical examination He recalled four cases under his care which were clinically indistinguishable from rodent ulcer in which their failure to respond to radium treatment had necessitated excision of the growths, and these all proved to be prickle celled carcinomata Another case, diagnosed at first a rodent ulcer, perforated the malar bone and was rapidly fatal from extension of the growth He thought that, failing a preliminary microscopical examination, response to radium treatment was an important distinguishing feature

Dr Goodwin Tomkinson (Glasgow) said that some years ago a patient who had suffered from psoriasis came under his care at the Western Infirmary presenting a large psoriasiform lesion on the back A portion of this lesion suggested rodent ulcer, and although no histological examination was made he treated it, in accordance with his usual custom, with radium emanation Presumably the diagnosis was correct, for the condition cleared up It then appeared that some years previously a left mastoidectomy had been performed on this patient for what he said was "cancer" Moreover after a considerable interval since the cure of the dorsal lesion, a typical early rodent ulcer had appeared on the right lower eyelid, which was excised Dr Goodwin Tomkinson considered this to be a particularly interesting case of multiple malignancy He did not think that the initial lesion on the back was necessarily a precancerous condition He pointed out that, happily, although all human beings possessed sweat and sebaceous glands, by no means all developed malignant growths of the skin What therefore, was the cause of the malignant tendency which appeared to exist in some skins? All dermatologists would agree that this malignant tendency was not the monopoly of those in middle and old age Was the cause a congenital one?

Dr Rupert Hallam (Sheffield) said that it was interesting to hear both speakers lay stress on the rare occurrence of *metastases from squamous-celled carcinoma* of the skin This raised an important question—namely, whether these cases should be handed over to the surgeon for excision of the growth and also of the neighbouring glands The speaker had sometimes found it difficult to persuade his surgical colleagues that small growths of merely a few weeks' duration were really epitheliomata and urgently *required excision*

Dr MacCormac, in his reply, said that his intention had been not to overload the terminology, but rather to simplify it The age of onset in the series quoted was taken from the period of the earliest noted lesion, not from the time when the patient came under observation There was admittedly a distinction between the so-called "basal" and "prickle" types, but from what Dr Dore had said it was clear that it was at times impossible to distinguish them by their objective characters It would therefore seem advisable to perform a biopsy before deciding upon the type of treatment Although metastases were relatively uncommon in carcinoma of the skin, never-theless it was proper to deal with the "prickle-cell" type by surgical measures, including the removal of any enlarged glands, reserving radium or *x* rays for the radio-sensitive "basal-cell" type Dr MacCormac added that he did not wish to drop the term "rodent ulcer," but that he was trying to prove that so-called rodent ulcer or basal-celled carcinoma of the skin was more closely allied and had more in common with epithelioma or prickle cell cancer of the skin than was generally supposed.

BAKERS' DERMATITIS

BY

ALLAN C PARSONS, M R C S, L R C P, D P H,

Ministry of Health

UNTIL quite recently little had been heard of bakers' dermatitis in this country, and the textbooks of such authorities as Sequeira, Stelwagon, and Prosser White contained but brief references to this particular trade dermatosis Towards the end of 1921, however, the Amalgamated Union of Operative Bakers became perturbed by the increasing number of their members who were receiving sick benefit on account of "bakers' itch," and asked the Ministry of Health if this disease could be officially investigated Such an investigation was started early in 1922 under the joint auspices of the Ministry of Health and the Home Office Information was sought from two main sources (*a*) from bakers, millers, and caterers, and (*b*) from the dermatological clinics throughout the country Personal investigations were also made in Liverpool, Manchester, South Wales, and other places where the cases were chiefly reported

The contention of the Bakers' Union that bakers' dermatitis became unusually prevalent during the war and after is not supported by the medical evidence, which was not confined to dermatologists attached to hospitals, but was received also from certifying factory surgeons and general practitioners The evidence from the Master Bakers' Association, from high-class catering establishments in London, and from the leading millers throughout the country was also negative Field investigations showed, as several dermatologists had suspected, that the terms "bakers' itch" and "bakers' dermatitis" were loosely used, and probably not more than half the cases of dermatitis reported among bakers were cases of bakers' dermatitis It is interesting to note that the alleged increase in this condition took place during the war, when skin affections generally, and particularly scabies, were unusually prevalent

As regards distribution, most of the cases were reported from Liverpool, South Wales, and Newcastle, the remainder were distributed in Manchester, the West Riding of Yorkshire, Bristol, and Nottingham Very few cases were heard of in London, and it was significant that in this city trade unionism is not nearly so highly developed among bakers as it is in Liverpool and South Wales The majority of patients who were visited lived and worked in the humbler streets of Liverpool, Cardiff, and Newport A more important fact is that in over 60 per cent of the reported cases from all districts the patients at the time of their illness were working in bakeries where the dough was made entirely by hand, while in the great majority of the remaining cases the affected bakers were employed at the dough-mixer With one or two exceptions the cases were confined to males, and most of the patients, when attacked, were approaching middle age

By the union officials and by the affected bakers themselves many hypotheses concerning the exciting causes of bakers' itch have been put forward In Liverpool the indifferent brands of flour used during the war were suspected, in Wales the refining processes used by millers were thought to be responsible, some blamed the yeast and others the powders used in the making of cakes The fact that no cases of dermatitis were reported among millers helps to dispose of the suggestion that either the flour itself or some process used in its refinement was responsible, moreover, cases of bakers' dermatitis continued to be reported by the Bakers' Union after the flour had again become normal in quality

Sugar was certainly a possible contributory cause in a high proportion of cases, and in a few single instances "cream powder" and salt were directly responsible The evidence goes to show, however, that in most bona-fide cases of bakers' itch the eruption is usually caused by the mechanical irritation of the dough Rarely it was found that certain elderly bakers, after a long period of immunity, developed a sensitization to flour protein The eruption is usually seen on both upper limbs, and is limited to those parts which come in contact with the dough—namely, the hands, wrists, forearms, and the elbow regions as far up as the line of rolled shirt-sleeve There may be patches behind the ears, while in severe cases of sensitization the whole body may become involved A preliminary sensation of itching is followed by a vesicular erythema, and in untreated cases a general folliculitis supervenes sooner or later Secondary infection may occur with the formation of suppurative dermatitis In cases of some duration there develop patches of inflamed and furfuraceous skin, resembling certain forms of lichen or even psoriasis The diagnosis, however, should rest chiefly on the history, the localization of the eruption, and the characteristic fact that when the patient gives up his occupation the dermatitis will, in most cases, disappear without further treatment On the assumption that manual contact with dough is the usual cause of bakers' dermatitis, it may be assumed that with the substitution of machinery in bakeries the risks of bakers' dermatitis will correspondingly diminish In the meantime there is a need for far better toilet facilities in those baking establishments from which cases of bakers' dermatitis are most commonly reported

DISCUSSION

DR MACCORMAC only rarely met with examples of bakers' dermatitis In one case where the eruption seemed to be due to the salt used in baking he had advised the patient to wash and then apply olive oil As a result there was marked improvement, although the individual had remained at work

DR DORR had been struck by the relative infrequency of bakers' dermatitis in his department One patient under his observation who was a baker in an infirmary attributed his dermatitis to yeast, but sensitization tests were made and he gave no response He recovered as soon as he was removed from his work, and the condition had not relapsed It was thought that salt might have been the cause in this and other cases

DR H C SEMON referred to a recent case in which legal proceedings were being taken by the plaintiff's union against his employers The patient was a journeyman baker, 29 years of age, and had been baking in other establishments without having any skin trouble to complain of In January, 1921, an irritable dermatitis developed on the hands and forearms His panel doctor attributed it to his work, which he gave up for a week or two, with the result that the lesions cleared up On his return to kneading dough the dermatitis returned, but cleared up again when work was once more abandoned This sequence of events had been repeated on three or four occasions during the last two years Before his last attack his occupation had been changed, for he had been entrusted with the care of an incinerator for the destruction of debris, which was delivered to him in old flour sacks Whether flour was the direct cause in this case or not was open to discussion, but it would appear that the appearance of the dermatitis after his change of occupation was an argument that it was The case resembled that reported by Dr H W Barber, in which the cutaneous sensitization test to wheat protein was positive The speaker thought the investigation of cases from this point of view by dermatologists would certainly be of value in the elucidation of the etiology and prophylaxis of preventable trade dermatoses

DR R A VEALE was impressed by the increase in the number of cases of bakers' itch that had occurred in his hospital clinic during the last two or three years He wondered whether any adulteration of the flour might be a possible cause Common salt was often blamed Treatment was often difficult and prolonged because the skin seemed to be sensitized so as to respond to other forms of irritant besides the original

Memoranda:
MEDICAL, SURGICAL, OBSTETRICAL

SPONTANEOUS RUPTURE OF THE HEART

DR I R GILMORE'S case (August 30th, 1924, p 373) is in several respects similar to three I have seen within the past two years All died suddenly and unexpectedly, in one case only was there even a suspicion of previous disease of the heart

Case I

A retired merchant aged 71 in the effort to get out of bed one morning complained of pain in the head and dizziness His wife then noticed his pallor but before she could get to his bedside he had fallen on to the floor cutting his right forehead, the wound bleeding only slightly I saw him within a few minutes he was dead His wife stated that he had made no previous complaint of illness or pain

Post mortem Examination—A stout big pale-skinned man with pasty appearance of face The pericardium was full of blood this was carefully swabbed out and the heart found to be enlarged and fatty A rough tear in the left ventricle extended downwards for about 1½ inches (about half an inch in the aortic cavity) and at its middle penetrated through into the ventricle There was atheroma of the aorta with roughness of its internal surface there was some thickening of the mitral and aortic cusps near their mural attachments

Case II

A woman aged 63 became sick and fainted while finishing breakfast and quickly collapsed When seen almost immediately she was propped up was practically pulseless with sighing breathing and dilated pupils she died within a few minutes

Post mortem Examination—A spare woman who appeared older than her years The pericardial sac was full of blood and was carefully swabbed out The heart was somewhat enlarged and exceedingly fatty There was a tear in the left ventricle which extended from the wall of the aorta downwards for about 1½ inches and in its lower half penetrated into the ventricle The upper half of the wound was only partially through the wall of the aorta and in it were older clots and some attempt at organization the appearance being suggestive of a wound which had been gaping and at the same time attempting to heal for some days The aortic wall was thickened but there was no palpable sign of disease in the valves

Case III

D C a stout plethoric woman aged 70 fell forwards at the tea table and rolled on to the floor she was found to be dead About half an hour before she had hurried back from a walk on account of sudden abdominal pain and diarrhœa She had complained occasionally of breathlessness on exertion for some months previously but not of pain

Post mortem Examination—The pericardial sac was full of blood This was swabbed out and the heart was found to be enlarged and extremely fatty There was a rough irregular tear in the wall of the left ventricle measuring about 1½ inch and it extended from close to the aorta downwards and penetrated the cavity of the ventricle about the middle of the tear This tear involved on its inner aspect aorta and ventricle The aortic and mitral cusps were thickened and the inner wall of the aorta was thickened and rough—evidently in a condition of fairly advanced atheroma

All three cases showed advanced fatty disease of the heart with sclerotic changes in the aorta, more or less, and had died from the same cause In each the wound was in the same area and ran roughly parallel with the interventricular septum, at an area where the wall was weakest or where it was subject to greatest strain

To my mind the questions which present themselves in considering the above cases are these

1 In rupture of the left ventricle does the tear usually occur from above downwards? In my second case it certainly did

2 Was the exciting cause of the rupture purely mechanical and caused by a sudden temporary rise in blood pressure acting on a diseased ventricle wall?

3 Occurring near the left septal division of the auriculo-ventricular bundle, was it possible that a sudden abrupt commencing of ventricular fibrillation caused a wave sufficiently violent to start a tear?

I feel that the record of these three cases is incomplete each examination was made in the hurry of things and further detail could not easily be got

Rupture of the heart appears to be a commoner mode of death in fatty disease than is generally believed

Bournemouth S WATSON SMITH, M B, Ch B Edin

ECHINOCOCCUS OF THE HEART

I was interested to read the memorandum (August 16th, p 277) on a case of echinococcus of the heart Some years ago in India a gunner, who had recently come up to the hills for short leave, feeling slightly out of sorts after dinner, went for a pony ride to shake it off He was found about an hour later leading the pony and feeling very queer, ten minutes later he was dead

At the *post-mortem* examination the heart felt very tense and on opening the left ventricle its cavity was found to be occupied by a cyst the size of a golf ball, there appeared to be no room for any blood

A microscopical examination could not be made, but the macroscopic appearance of the cyst resembled echinococcus There were smaller cysts in the brain and kidneys, but none in the liver

The most remarkable feature of the case was the fact that the soldier had been playing football a few weeks earlier without distress Probably the extra strain demanded by taking exercise in the hill station, situated at 7,000 ft above sea level caused failure in the heart which had functioned normally in the plains

C M FINNY I P C S,
Major Major R A M C

NEUTRALIZATION OF INSULIN BEFORE INJECTION

INSULIN injected subcutaneously nearly always gives rise to more or less pain of a stinging or smarting character in addition to the slight pain necessarily caused by any subcutaneous injection of fluid In *some* patients the stinging pain is so great that they dread the daily repetition of it

As well as pain some patients have within a few minutes of the injection an erythema or patch with heat and tenderness spreading to two or three inches in diameter lasting for one two or three days and leaving an indurated nodule for quite a long time

Insulin as at present prepared is very unstable except in a distinctly acid solution Dr O'Brien and Dr Trevan of the Wellcome Physiological Research Laboratories suggested that this acidity might be the cause of the stinging pain and erythema Dr Trevan made a series of experiments with insulin the acidity of which had been neutralized at the time of injection by the addition of a sufficient amount of sodium bicarbonate and found that insulin with its acidity neutralized in this way gave identical physiological reactions as similar doses of unneutralized insulin, used at the same time and under the same conditions

He then very kindly supplied me with a 6 per cent solution of sodium bicarbonate with 3 per cent tricresol, sterilized by filtration through a Berkefeld filter, about 0 25 c.cm of which is more than sufficient to neutralize 1 c.cm of the preparation of insulin made by Burroughs Wellcome and Co I have used the preparation thus neutralized daily for three weeks, and find that the smarting and stinging previously complained of have quite ceased, and also that the local erythema is no longer produced in a patient who previously suffered very severely from it The *physiological effect on the cases so treated* has not been checked, but there is no reason to think that the potency of insulin used in this way is at all diminished

It is important not to let the alkaline solution get into the stock insulin bottle, if the contents of that become alkaline the insulin will disappear on standing The insulin should be drawn into the syringe first, then the alkaline solution with a bubble or air, the whole shaken until mixed, when the solution becomes slightly turbid, and the air expelled

Beckenham. GEORGE P STILWELL, M B Lond

TWO CASES OF MUSHROOM POISONING

On account of the rarity of literature on poisoning due to eating *Amanita phalloides* fungi, the two following cases, which came under my observation recently, may be of interest

Two officers ate what they considered to be mushrooms at 12 15 p m At 12 45 they began to feel ill at ease, they

complained of acute abdominal pain in the epigastric region, of pains in the bladder and penis, and a desire to micturate, they sweated profusely

At 1 15 they were seen by me, their symptoms, in addition to those mentioned, were vision extremely blurred, unable to distinguish any features of people around them, profuse cold clammy sweat, extremities quite cold, no pulse to be felt at the wrist, heart beats fast, weak, and very irregular, breathing fast and shallow Both patients had a severe rigor and profuse salivation The mentality remained clear

The treatment consisted of a copious mustard and water emetic In the vomit there were large quantities of the supposed mushrooms, which have since been identified as *Amanita phalloides* fungi Atropine sulphate 1/100 grain was given hypodermically, and this controlled the perspiration and salivation to a certain extent Digitalin 1/100 grain and strychnine sulphate 1/60 grain were then given hypodermically, followed by two ounces of brandy by the mouth

The patients were put to bed in blankets and packed round by hot-water bottles After an hour the vision became clear and the patients gradually improved till after five hours they had quite recovered For about two days they felt slight abdominal pains, but these gradually passed away The temperature remained subnormal throughout the attack

Halton Camp, Bucks F J MURPHY

Reviews.

THE DIAGNOSIS OF NERVOUS DISORDERS

IN the endeavour to keep pace with the continuous advances in neurology, SIR JAMES PURVES-STEWART has made many changes in his well known book on the *Diagnosis of Nervous Diseases*, the sixth edition[1] of which has recently been published Every chapter has been revised, that on the psycho-neuroses has been completely rewritten, and a short chapter on delirium has been inserted Though the book deals comprehensively with its subject, it is not intended to be a textbook It is rather, as its author says, an appendix, approaching the subject from a clinical point of view, and intended to be used in conjunction with other standard works The book is written from an essentially practical standpoint, and by supplying details of the methods of clinical examination, together with indications of the significance to be attached to the various nervous symptoms, it is well suited to the needs, not only of the teacher and specialist, but also of the general practitioner, to whom it will be invaluable as a book of reference

The major portion of the new chapter on the psycho-neuroses is occupied with a clinical description of the protean manifestations of hysteria Though the author discusses the psycho-neuroses from a psychological standpoint, he defines a neurosis in neurological terms as "a molecular abnormality of the nervous system (whether cerebro-spinal or vegetative, or both together) characterized by abnormal reactions to ordinary stimuli" It is a difficult matter to formulate an entirely satisfactory definition of what we now include under the term "neurosis" The author's definition is based upon the view that the boundary between organic diseases and the so-called functional neuroses (a term here used as synonymous with the psycho-neuroses) is wholly imaginary, and that disordered function is impossible without some underlying physical basis Few neurologists would be disposed to deny the existence of some organic difference between the subject of a neurosis and a normal person, but the definition as a whole might be criticized on account of its essentially physiological colouring The neuroses are disorders of personality, and in practice the neurotic has to be approached, described, and treated, not as a nervous system reacting abnormally to simple stimuli, but as a person reacting abnormally to complex situations In a neurosis the functions of the organism are disordered at the highest, most recently evolved, and therefore most sensitive, levels of evolution, and, as Janet urged many years ago, this fundamental clinical fact should be made evident in a definition of the cases which we include under this category

The author gives a few useful diagnostic points of differentiation between the neuroses and psychoses There is still, however, much need for further investigation into this very difficult problem In the early stages of mental disorder it is often hard to distinguish a neurosis from a psychosis, and the whole question is complicated by the fact that an illness showing all the characteristic symptoms of (say) an obsessional neurosis, may change its character and develop pronounced and incurable delusions The fact that a new edition of this work had become necessary abundantly indicates that it meets the needs of the student of clinical neurology, and we have no doubt that the author's hope that the sixth edition may prove more useful than any of its predecessors will be fully realized

[1] *The Diagnosis of Nervous Diseases* By Sir James Purves Stewart K C M G C B M D Edin F R C P London Edward Arnold and Co Sixth edition revised 1924 (Med 8vo, pp viii + 648 285 figures 15s net)

BISMUTH IN SYPHILIS

THE use of bismuth as an alternative treatment of syphilis has been carefully recorded from time to time, so that readers have been able to form their own opinion of its value As usually happens, its first advocates were probably rather too enthusiastic, and it is convenient to have a compact essay[2] by two French clinicians—BRIN and LEGRAIN—clearly setting out the present position, giving an account of the action of bismuth on syphilitic lesions, of incidents in the course of treatment, stating indications for its use, and describing the various preparations employed

Bismuth is usually given by intramuscular injection, but it can also be administered intravenously or subcutaneously. The metal can afterwards be found in the blood and cerebro-spinal fluid, and in almost all the organs and tissues of the body, it is believed, however, that the meninges are impermeable to it Elimination is effected by the kidneys and intestines, in the salivary and mammary glands, and in bile and sweat If the salt administered be insoluble, bismuth appears in the urine in eighteen hours, and may be recovered twenty to thirty days after a course of injections After the soluble salts elimination commences in two hours and reaches its maximum in twelve to fifteen hours A full account is given of the various preparations, and their content of bismuth is stated It would appear that the activity of a preparation depends not only on the amount of metal contained in it, but also on the chemical constitution, ease of disintegration, and facility of absorption The preparations used are arranged in three main groups insoluble preparations in an oily medium, including the tartro-bismuthates, oxides, and iodo-bismuthates, colloidal preparations (neotrepol spirillar, and bicoloid), and soluble preparations, such as luatol, tribisol, and gabismuth The insoluble preparations are the most generally useful, a "course" usually consists of fifteen to twenty injections, and an interval of not less than three weeks is allowed between courses, the dose of each preparation is stated and the method of administration clearly explained it should be followed in detail When toxic results ensue they may be local, "immediate general," or "late general" The last named are the most important, they include stomatitis (of varying severity) and renal complications

Therapeutic results are considered in relation to the various stages of the disease and the Wassermann reaction The indications for the administration of bismuth are classified as absolute and relative the former include cases resistant to arsenic and mercury, of arsenic intolerance, and of chronic visceral syphilis Contraindications are few They include cases where the mouth is in such a bad state that severe stomatitis would almost inevitably follow cachexia, and albuminuria not due to syphilis Bismuth may be associated with arsenic, mercury, and iodine, but preferably with the first named The authors summarize their conclusions as follows

1 Bismuth comes between arsenobenzol and mercury in activity
2 Its administration is simple and practicable
3 It is without danger, no death due to bismuth has been reported

[2] *Le Bismuth dans le traitement de la Syphilis* Par Louis Brin et Pierre Legrain Paris Octave Doin 1924 (Imp 16mo pp 96 fr 6)

4 The insoluble salts especially the oxides and iodobismuthates, have more effect on the Wassermann reaction than the soluble
5 Bismuth is specially useful in cases where arsenobenzol is contraindicated
6 The only serious contraindication is albuminuria
7 Bismuth should be used in association with arsenobenzol because the latter counteracts the effect of the former on the mouth and the two are the most powerful antisyphilitic remedies we have

The final general recommendation is that syphilis should be treated with arsenic and mercury followed by bismuth The book, though small, is a veritable mine of information, and contains most of what is known at the present time regarding the treatment of syphilis by bismuth The various questions that arise are dealt with in sequence and with sufficient fullness to enable anyone who has not previously given a bismuth injection to undertake to do so

PHYSIOLOGY AS THE BASIS OF CLINICAL MEDICINE

It was with considerable interest that we noted the appearance of *Human Physiology A Practical Course*,[3] by Drs C G Douglas and J G Priestley A perusal of its pages has not merely convinced us of the excellence of the material contained therein, but has stressed the importance of the part investigation on man is playing in the elucidation of physiological processes

The book is an account of the practical course in human physiology which has been developed for the Final Honours School of Physiology in Oxford The authors have been at considerable pains in describing in minute detail the methods of investigating the physiology of respiration the respiratory exchange the blood, the gases of the blood the circulation the kidneys and the alimentary canal All reference to the physiology of the central nervous system has been omitted and the authors' reason for so doing—namely, "that this branch of the subject must be dealt with by one who has made a special study of it"—may be taken as indication that the subjects included are treated in a succinct and stimulating manner

We believe the teaching of human physiology is to-day assuming a position of ever-increasing importance in our medical schools, and the reason for this is not far to seek The development of the unit systems in teaching hospitals has created a demand for methods of investigation applicable to man in the pathological state at the very time when such methods initiated and developed largely by the Haldane school of physiologists are bearing such a rich harvest of purely physiological data We are grateful, therefore, that these methods should have been collected into the compass of a single volume by two investigators who have themselves contributed so much to this branch of experimental work

We commend the book whole-heartedly to the teaching staffs of medical schools, and are convinced that those engaged in the medical units will also find much therein of great value and solid worth

A BIBLIOGRAPHY OF EUGENICS

Eugenics, to Mr Chesterton, means "the control of some men over the marriage and unmarriage of others, and probably means the control of the few over the marriage and unmarriage of the many" If it were really as simple as this it would be a cause for astonishment to receive a large volume of 514 pages, containing some 10,000 references, and entitled *A Bibliography of Eugenics*,[4] by S J Holmes If, on the other hand, we agree with its founder that "National eugenics is the study of agencies under social control that may improve or impair the racial qualities of future generations either physically or mentally" our horizon becomes so far-flung that we can be surprised at nothing Our American friends evidently take the broader view, as evidenced by this collection of literature

Mr Holmes rightly points out in an introductory note that, the science of eugenics being still in its childhood, many valuable facts are being daily recorded, the significance of which remains unappreciated until they are brought into proper relation with other facts, and that a great waste of effort is going on owing to a general lack or vagueness of outlook upon racial problems In attempting the gigantic and weary task of sorting the vast amount of rubbish which has been written in the last two decades on eugenics as it appears on the platforms or in the publications of cranks, whose aim is to push some pet scheme for the reform of society from the still more vast amount of useful material which has a direct or indirect bearing upon eugenics in its wider sense the author merits our sympathy The aim of the science in its present stage of development is to attempt to extract from the history of man's failures and successes what are the biological laws which control his development and from the information thus gained to try to predict what line of action are most calculated to favour his healthy physical and mental progress It follows that the researcher into eugenic problems draws his material more from written records than from laboratory experiment, and finds it necessary to ransack the literature dealing with such wide fields as the heredity of human traits and defects, the hereditary factor in crime, vice, and disease, the selective influences of birth and death rates urbanization and emigration, on populations, and the effects of parental age consanguinity race mixture, and environmental factors on the child A bibliography attempting to embrace and classify this mass of writings has therefore, a distinct value, and our only regret would be that the present volume gives no information as to the contents of the writings collected beyond what is contained in their titles Very many of these will be found to be of little value to the student or researcher when he comes to read them and a smaller selection of the best papers with a few lines indicating what is to be found in each would, we think, have been even more useful than the present volume

TANTALUS

Mr Haldane has become responsible for a small family of little books—his *Daedalus* produced *Icarus*, and the two have begotten *Tantalus*, by F C S Schiller, D Sc, a Fellow of Corpus Christi College, Oxford

In his preface Dr Schiller shows himself very anxious not to be taken for a pessimist He believes the human race is degenerating, the herd is rushing down a steep place, but thinks it may be headed off from the final precipice "Mankind can make a fool of itself, as it always could if it does, its blood will be on its own head, for it has knowledge enough to avoid the dangers that threaten it, if it will use its knowledge properly" He claims therefore to be an optimist

Let us see

He begins by giving up any claim for improvement of man's bodily capacity or intellectual capaciousness The Cro-Magnon people thirty thousand years ago or thereabouts had finer bodies and bigger brains This is an *opinion no disciple of Sir Arthur Keith can hastily reject* Early modern man had not acquired immunity to some pathogenic microbes recent man resists, but on the whole the latter's survival "is determined far more by his relations to the social group to which he belongs than by personal efficiency"

The first concession is made when Dr Schiller admits that by the development of speech and its record in writing man has transmitted to his own and succeeding generations knowledge by which he has been able to give permanence to social institutions, and to his conquests over nature, while retaining a degree of plasticity the ant has lost This concession to the idea of progress is immediately neutralized by a really savage attack on the modern professor We do not recognize the science professor of our acquaintance in the portrait drawn, but history warns us

[3] *Human Physiology A Practical Course* By C G Douglas C M G M C D M F R S and J G Priestley M C D M Oxford Clarendon Press 1924 (Demy 8vo pp ix + 252 70 figures 12s 6d net)
[4] *A Bibliography of Eugenics* By Samuel J Holmes Berkeley California University of California Press 1924 (Sup roy 8vo pp 514)

[5] *Tantalus or the Future of Man* By F C S Schiller M A D Sc Fellow and Tutor of Corpus Christi College Oxford London Kegan Paul Trench Trubner and Co Ltd 1924 (Fcap 8vo pp 72 2s 6d net)

that there is truth in the assertion that we cannot "count on our academic institutions to save us from stagnation and decay even in matters of knowledge", still we are inclined to think that Aristotle was right in believing that an inborn craving for knowledge is characteristic of man's nature However, Dr Schiller has no doubt that civilization tends to physical and intellectual degeneration, a tendency made more rapid in its effect by the postponement of marriage, the small families in the aristocratic, professional, and middle classes, and among most classes of skilled labour, and the unwisdom of our rulers in ordaining "that a knowledge of birth control shall be a (fatal) privilege reserved for the intelligent and well-to-do They [our rulers] instruct the police to prevent it from penetrating to the poor and stupid" Matters are made worse by the advance of medicine and hygiene, and even obstetrics is to be blamed for saving "the lives of thousands of women whose physique is such that in former times they would inevitably have died in childbirth"

We are now more than three-fourths of the way through the book and begin to look for the optimism promised in the preface This, after Christian ethics have been dismissed, we find in eugenics and a more business-like study of psychology Man can save himself in this way, but the author does not presume to predict that he will This is rather disappointing Perhaps the next volume of the series will be entitled "Sisyphus"

BIRD MIGRATION

MR TAIT'S *Birds of Portugal*[6] is the only book that has been written in English solely about the birds of that country This may appear at first strange, but is explained by his interesting preface The author states that besides himself there is only one other field naturalist in the whole of Portugal He sadly remembers two others, both doctors, but they died some years ago Mr Tait has hitherto been known to ornithologists for his list of the birds of Portugal, published in the *Ibis* in 1887, and his frequent reports of birds procured in Portugal with migration rings upon their legs

Portugal is, ornithologically, a very important country, from the fact that it is on the high road along which the birds of Western Europe migrate from their northern breeding haunts to their winter quarters in the south Mr Tait has been watching, collecting, and studying the birds of Portugal for many years, and it is indeed fortunate that this important strip of Europe has found such a careful and enthusiastic historian Through his efforts the Portuguese newspapers were induced to publish particulars of any birds that were shot and found to be wearing migration rings on their legs The complete list of such birds is here printed It is headed by the lesser black-backed gull, with 46 specimens, 26 of these had been born and marked in the Faroe Islands, off the coast of Northumberland The author has a good deal to say about bird migration, particularly about the movements of the vast flocks of turtle-doves that pass along the coast in the autumn He records the interesting fact that the Portuguese chiffchaff and the minute fire-crest both winter in Portugal

If Portugal suffers from a lack of bird-lovers or naturalists, it more than makes up for this shortage by a very plethora of sportsmen, or rather gunmen, for when migration is in full swing these slaughterers assemble in numbers all along the coast and blaze away at every bird which passes within shot The result is that many species once numerous are becoming scarce, while some, as the purple water-hen and the bittern, appear to be extinct Mr Tait's book contains a few photographs, we wish he had given more The Latin and the English and Portuguese names of each bird are given, and when a bird is known by a different name in different parts of the country each is mentioned, the chaffinch has as many as twelve different names in Portuguese The book will prove useful both to the field naturalist abroad and the "closet naturalist" at home

[6] *The Birds of Portugal* By William C Tait London H F and G Witherby 1924 (Demy 8vo, pp xii + 260 10 plates 18 net)

NOTES ON BOOKS

THE *System of Radiography, with an Atlas of the Normal*, by the late DR IRONSIDE BRUCE, first appeared in 1906, at a time when the principles of successful radiography had hardly been worked out A second edition[7] has now been edited by MR J MAGNUS REDDING, the senior surgical radiologist to Guy's Hospital The general arrangement is as before, but the illustrations have been entirely renewed and certain modifications due to the advance of *x* ray technique have been made A short description of the methods, by which radiographs of the different parts are obtained in standard positions with the tube correctly centred, is followed by the atlas which constitutes the main portion of the book A photograph of the subject and the tube in position precedes the radiographic results In most instances radiographs of the part at 5 years, 10 years, and 25 years are reproduced side by side Beneath each radiograph is a short statement as to the abnormalities that should be looked for This is a very commendable scheme, and the radiographic illustrations are, on the whole, good Some, however, do not come up to the standard of excellence which modern apparatus has made possible This is the case in many of the reproductions of the spine and the pelvic region, in the majority of which fine bone detail is not shown The short reference to renal work, and the one radiograph reproduced would have better been omitted, as the technique suggested is out of date There is only one radiograph of the thorax, and radiography of the gastro-intestinal tract is apparently considered to be outside the scope of the volume As an introduction to the subject of the radiological appearance of normal bones taken at three ages of life, under standard conditions, however, the book should be of use to the junior student of radiology.

In *Blood Pressure Cause, Effect, and Remedy*,[8] Professor LEWELLYS F BARKER and Dr NORMAN B COLE of the Johns Hopkins University describe in language to be understood of the layman "the information he would like to have," and which may be for his good, inasmuch as a sane presentation of the subject may allay unnecessary panic Hence a book of this kind with its catholic appeal may, as the authors suggest, be in line with the whole trend of preventive medicine It is suggested that if the term "average blood pressure" is employed instead of "normal blood pressure," not only will it be more accurate, but less likely to worry those anxious about their condition Conquering any disinclination to read a book designed for a lay as well as a professional audience, the medical reader will find a sensible and well written presentation of the subject on these lines There is also a short chapter on low blood pressure and a glossary. The rather striking and gaudy paper cover informing the public that "This is an Appleton book" may detract from its popularity.

The work on duodenal intubation,[9] by MM M CHIRAY and J LEBON, which forms the latest contribution to the series of volumes on practical medicine and surgery issued by Masson of Paris, is an excellent introduction to the study of the subject After a short historical survey, in which the credit for the first successful duodenal intubation is rightly attributed to Einhorn of New York, an account is given of the various tubes employed, such as those of Einhorn, Gross, Rehfuss and Palefski, Pisani, and Carnot The application of the method is then described, including the preparation of the patient, the introduction of the tube and the recognition of its entry into the stomach and duodenum, the difficulties and facilities encountered, and the various modes of removal of the duodenal fluid The next four chapters are devoted to a consideration of the physical, chemical, microscopical, and biological characters respectively of the duodenal fluid In the following chapter, which deals with the diagnostic importance of duodenal intubation, the writers discuss its employment in cholecystitis, biliary obstruction, cancer of the bile ducts, diseases of the hepatic parenchyma, pancreas, and duodenum, and acute infections, especially enteric fever The last chapter, which is concerned with the therapeutical uses of duodenal intubation, contains a description of duodenal feeding, duodenal lavage, and the *Meltzer Lyon* method drainage of the bile ducts Bibliographies of French, British and American and German literature are appended

[7] *A System of Radiography with an Atlas of the Normal* (W Ironside Bruce) Second edition edited by J Magnus Redding, F R C S Eng L R C P London H K Lewis and Co Ltd 1924 (Oblong imp 4to pp xii+68 197 plates 30s net)

[8] *Blood Pressure Cause Effect and Remedy* By Lewellys F Barker M D LL D and Norman B Cole M D New York and London D Appleton and Co 1924 (Cr 8vo pp xi+154 5s)

[9] *Le tubage intestinal Ses applications cliniques* Par M Chiray et J Lebon Médecine et chirurgie pratiques Paris Masson et Cie 1924 (Post 8vo pp 218 24 figures 2 plates 1r 10)

PREPARATIONS AND APPLIANCES

Tetraform.

CARBON TETRACHLORIDE has become recognized as a useful drug in the treatment of hookworm and other diseases caused by intestinal parasites. It is well known that commercial processes of manufacture lead to the occurrence of impurities. The dose given is relatively a large one, amounting in full to 60 minims. Some of the impurities which may be present as a result of the process of manufacture are toxic, notably carbon disulphide. It is accordingly important that carbon tetrachloride for medicinal use should have a high degree of purity. We have had submitted to our notice a sample of medicinal carbon tetrachloride manufactured by the British Drug Houses, Ltd., which they supply under the proprietary name of Tetraform. It has been examined by our analyst. He reports that it is a highly refined article. He was unable to detect any of the impurities which are most usually found in commercial samples of carbon tetrachloride. He notes particularly the absence of aldehydes and states with regard to carbon disulphide that a test capable of revealing its presence in a proportion no greater than 5 parts per million gave a negative result.

Dial, Didial, and Dialacetin

We have before us three hypnotics prepared by the Clayton Aniline Company, Ltd., according to the formula of the Society of Chemical Industry in Basle.

Dial or diallylbarbituric acid, is a powerful hypnotic of the veronal group. It has been on the market for some years. Pharmacological experiments have shown that it is about five times as strong as veronal, but the makers claim that it is much more rapidly oxidized in the body and therefore is less liable to produce a cumulative effect. Reports by the makers suggest *that the therapeutic dose has a remarkably wide margin of safety, for the ordinary dose is about 3 grains, and records are given of persons recovering after taking between 20 and 30 grains.*

Didial consists of a mixture of dial with ethylmorphine. This combination is recommended particularly for initiating anaesthesia and inducing twilight sleep.

Dialacetin consists of a mixture of dial and allylparacetamino phenol being a coal tar antipyretic allied to phenacetin. The mixture possesses hypnotic analgesic and antipyretic actions and is said to be indicated as a sedative in febrile conditions associated with headache etc. It is interesting to note that this last mixture has been tried in France as an alternative to bromides in epilepsy.

The makers state that all three drugs are included in the Part I schedule of poisons, but that they do not come under the regulations of the *Dangerous Drugs Acts*.

Parathyroid Gland

Messrs. Burroughs Wellcome and Co. are supplying tabloids of parathyroid gland each representing 2/5 grain of fresh gland equivalent to 1/10 grain of the desiccated gland substance. The firm informs us that the glands are dissected out by trained workers and that a careful inspection checked by microscopic sections is made to ensure the genuineness of the product.

Prunol

Prunol is a laxative jelly made by Prunol Ltd. (4 Pickering Place, St. James's Street, S.W.1). It is stated to be compounded of prunes, Demerara sugar, senna and ginger. This combination has, of course, been well known to the medical profession for the last fifty years. It is said to have been originally introduced by Sir James Paget and has proved itself of great value in cases of chronic constipation *particularly in children*. Prunol is supplied in stoppered jars, price 1s. 10d.

Suprapubic Drainage

Mr. JAMES MACMUNN (London) writes: In my experience all pumps and siphons or allowing the urine to soak into dressings are less satisfactory than the plans here illustrated.

Fig. 1 allows the urine to be absorbed and discharged as fast as it is secreted by means of the large volume of absorbent gauze, beginning at C and ending at C, A is a metal tube over which B a rubber tube is slipped. Over B a rubber ring (D) is placed—a large umbrella ring will do—which introduced into the bladder wound pulls the latter into close contact with the parietes, falling away of the bladder from these is of course one of the causes of leakage. The bladder wound is sutured round the tube. E are two stout strings brought out either through or out side the tube to be tied round A so as to keep D in position; their untying allows the tube to be with drawn, D being left in the bladder and then withdrawn edgeways by one of the strings. F is a rubber tube, preferably an inner cycle tube for lightness, to hut in the gauze. The apparatus can be used as a siphon as well as a drain, or as a siphon alone. The gauze is introduced by a long wire and wetted. Irrigation may be used through A.

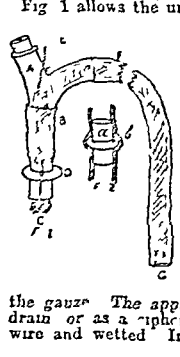


Fig. 2 shows a means I often adopted in connexion with the ordinary drainage tube. A is a metal ferrule the use of which is apparent—that is it also draws the bladder up. This should or may be bell or trumpet shaped instead of ring shaped. The withdrawal of such contrivances however causes a certain strain on the wound which is absent in the use of Fig. 1 but it is not much. The instruments are made from my working model by the Holborn Instrument Company.

I may mention whilst alluding to cycle tubes that extemporized things are often more useful in practice than specially made and expensive things—for example a part of a motor wheel inner tube tied at the lower end and strapped to the thigh makes a most efficient receptacle for urine where a permanent catheter is used. Into the end of the catheter a metal tube is passed round which the upper part of the rubber tube is tightly tied.

THE JAPANESE EARTHQUAKE

NOTES FROM KOBE ON THE MEDICAL HISTORY

BY

FREDERIC BARRETT, M.B., B.S. LOND.,

AND

G. ANDREW BIRD, M.C., M.B., B.S., B.SC. LOND.

IN Japan the term "foreigner" is applied to all races not Japanese, and it is with foreigners only that these notes deal. *The foreign community occupies a somewhat peculiar position, in that, while living in the midst of a civilization equal to that of Europe, it has retained the habit of residing for its health, and its behaviour in this crisis was no exception to the general rule.* The foreign community must be subdivided into Chinese and non-Chinese, for while non-Chinese races work and live together and run their affairs through international committees, the Chinese are self-contained and more apart from Japanese and other foreigners alike.

General Considerations

It will be remembered that the shocks occurred shortly before midday on Saturday, September 1st, 1923, that they covered a large area of country, were followed by fires and high winds, and were worst felt at Yokohama. Certain factors were favourable to a low casualty list. The women, children, and missionary population had not yet returned from the hills, and many residents were away at neighbouring health resorts for the week-end. It was an hour when most Yokohama residents were down in the settlement, and thus able to reach the sea and to avoid the fire. The s.s. *Empress of Australia* was due to leave at midday, and large numbers were down on the dock seeing off friends, and were thus able to go straight on board this vessel. On the other hand, the earthquake itself undoubtedly claimed more victims in the higher, more solid buildings of the settlement than in the wooden residences of the Bluff. None of these considerations affected the Chinese, and these unfortunate people, penned in the low lying China Town, with narrow streets and poor means of egress, were quickly surrounded by flames; their losses were appalling.

In Tokyo the shocks were not so severe, and there were comparatively few foreigners in the city at the time. Such as there were were collected mostly in the Imperial Hotel, and this structure successfully withstood both earthquake and fire. In the outlying districts there were no foreign buildings, and people were, in the large majority of instances, able to escape from houses at the first shock. Except in Tokyo and Yokohama there were no fires to contend with. There were in the harbour at the time ships of various nationalities, and it was in these that most of the refugees escaped. Land communications were for some days paralysed, and few used the roads and railways.

Organization in Kobe

The first news did not reach Kobe until the morning of September 2nd. Communications are frequently interrupted in Japan, and it was not until late in the afternoon that more accurate reports confirmed what was at first thought to be an exaggerated rumour. The extent of the casualties could only be guessed, but it was immediately apparent that the whole brunt of caring for foreign casualties and refugees alike would fall on Kobe, which is twenty-four hours' steaming from Yokohama. Shanghai, the next foreign settlement, is three and a half days by sea.

Facilities for dealing with a crisis of this nature were miserably inadequate Kobe boasted one foreign hospital, the International, and it was soon discovered that this was the only institution of the kind in working order left in Japan The hospital had 14 beds only, and was staffed by three foreign doctors—two British and one German There was also an American doctor practising in Kobe but not on the staff A foreign matron was in charge of the nursing staff, which consisted of Japanese male and female nurses Of stretchers there were only two, and these of the "wheeled" variety, and the usual time for transport of a case from the dock to hospital was three-quarters of an hour The American and German doctors happened to be away in the north of Japan and were unable to get back in time to help in the emergency Under the energetic supervision of the matron, Miss Macfarlane, supplies were collected, three additional Japanese nurses engaged, and the number of beds increased, so that by the morning of September 3rd accommodation for 32 serious cases was in readiness

The Oriental Hotel put its ballroom at the disposal of a rapidly organized relief committee, and by the morning of September 4th accommodation for about 60 walking cases was arranged here under volunteer foreign nurses A private house was fitted up as a four-bedded maternity home

The foreign community held a meeting at 4 p m on September 3rd, subscribed £5,000 within half an hour, delegated subcommittees to deal with special branches, and arranged to send a relief ship the same night to Yokohama with medical supplies and a large quantity of water The last was rightly held to be the most urgent need, and was justified on arrival by the discovery that all water mains had been broken and that a water famine was already in existence The German community, meeting independently, arranged to act in close co-operation, and assumed responsibility for ambulance transport They fitted three motor vans with improvised stretchers, and also provided better parties and drivers The personnel were ex-service men under ex-N C O s, and worked efficiently and without friction under the orders of the British doctors

Confusion on arrival of ships was anticipated by printed labels, "Hospital" and "Hotel," and whenever either of the doctors could be spared ships were met at Wada Point quarantine station and the appropriate labels affixed before the ship came into port

Arrival of Refugees

The first ship to arrive was the s s *West O'Roua*, at 1 a m on September 4th, by the night of September 8th practically all the casualties had arrived Though wireless messages were received reporting large numbers of serious cases, the actual number of stretcher cases dealt with was remarkably small Accurate statistics have not been published, and in fact are not known, but the last official report in the *Osaki Asahi Shimbun* gave the refugees arriving at Kobe by sea as 3,553 Chinese and 1,743 European By our private medical records 132 casualties were received in all—42 serious cases at the International Hospital and 90 walking cases at the Oriental Hotel Hospital

The European refugees were absorbed by the community with difficulty, the greatest problem being the Russians A certain percentage of these people might almost be termed "professional refugees," and unless carefully watched drew their rations and clothing in excess They were finally housed in the Gymnasium, it was surrounded by barbed wire and guards placed at the entrances Several cases of venereal disease were discovered among them, but these had to be isolated as well as possible in their own compound, there being no available hospital accommodation for this class of case Food supplies generally were adequate, but clothing gave rise to more difficulty

The manner in which the Kobe Chinese absorbed their own nationals and generally managed their own problems was worthy of all praise They gave the relief committee very little trouble, and looked after the questions of food and clothing without calling on outside assistance

Hospital Cases

Among the 42 serious cases admitted to the International Hospital the following nationalities were represented

British	14	American	5	Japanese	2
Russian	7	German	4	Polish	1
Chinese	6	French	2	Italian	1

The low proportion of serious cases is partially explained by various considerations The conditions following the earthquake rendered the chances of saving serious cases exceedingly slight In this connexion the heroic work of Misses Dalton and Little, matron and assistant matron of the Yokohama General Hospital, must be mentioned With the assistance of a patient they removed three helpless cases from the falling building, stayed with them all night, having to make frequent changes of position to avoid the flames, and finally succeeded in getting them to Kobe uninjured For this they received the decoration of O B E The casualties among the Yokohama doctors had been high Of the five practising, two had been killed and one sustained a compound fracture The operating theatres had been put out of action, and thus no surgical treatment was possible until Kobe was reached A certain number of deaths occurred at sea in transit

Of these cases, 28 were directly due to the catastrophe The disabilities were as follows

Traumatism	
Fractures	14
Wounds and contusions	9
Burns	3
Dislocations	2
Other Cases	
Diseases of central nervous system	3
Acute mastoiditis	1
Maternity	1
Deaths	
Head injuries	3
Pyo pneumothorax	1
Double fractured femur	1
Burns	1
Ruptured liver	1

The following are notes of some cases of interest

Case 1—R C E His left hand was crushed in the fall of a building, but he was released by the second shock He wore a tourniquet for eight hours above the elbow When admitted on September 4th he had gas gangrene of four fingers and the metacarpus of the hand An elliptical amputation was made through the mid carpus, preserving the thumb Massive septic oedema ensued, which in spite of multiple incisions down to the bone, serum and collosol silver treatment, gradually extended up the arm and finally encroached on the chest wall No pus formed until twenty seven days after the injury, when an abscess appeared in the axilla This was allowed to develop for four days, after its evacuation the temperature subsided and sepsis rapidly cleared up He has now a useful arm, including the thumb

Case 2—T B H, a man aged 65, was admitted on September 4th with commuted fracture of the right tarsus and two compound tibia fibula fractures of the same leg Gas gangrene extended three inches above the ankle Circular amputation at junction of upper and middle thirds of the leg was performed Severe secondary haemorrhage occurred nineteen days after the injury After subsequent removal of 1½ in of the tibia he recovered with a good stump

Case 3—T A a boy aged 12 Fractured pelvis tetanus This patient was of German nationality and was taken over by Professor Hattel, to whose care recovery was due

Case 4—A B a girl aged 6 was admitted on September 4th with rapid pulse, signs of free fluid in the peritoneal cavity and acute anaemia Laparotomy showed a rupture of the liver three inches in extent, plugged by clot and no longer bleeding Death occurred five hours after operation

Case 5—H T gave a history of having fallen with the second floor when the building collapsed Pain in the thigh led to x ray examination which showed a foreign body of pencil shape, of equal density to bone embedded in the mid thigh This proved to be a fragment of a knitting needle and only on being shown this did she remember that she was knitting at the time of the earthquake

Case 6—E L a woman aged 18, had contusion of the liver but recovered without operation Subsequently she developed ulnar nerve paralysis with wasting of the small muscles of the hand Scars of wounds at the elbow were explored but no nerve lesion was discovered Sensation and movement gradually returned There had been severe contusions of the shoulder and elbow, and the case was apparently one of nerve concussion

The three deaths under "head injuries" were cases indistinguishable from "shell shock" as seen in the great

war No lesions were discovered One case lived five days in a condition of complete aphasia with continuous tremors of the extremities His identity was not established 90 light cases were treated at the Oriental Hotel and 4 at the maternity home

Relief units were sent from Shanghai, Manila, Tientsin, and other places, but owing to the distances the first party did not arrive until September 7th From this date medical units poured in in expectation of a large casualty list, and by September 12th a large foreign medical organization was in working order Since casualties had occurred on one day only, work rapidly decreased, and these units, finding the Japanese had their own organization, quickly returned to their bases Medical stores were for the most part left with the Japanese and were gratefully accepted by them By the beginning of January the hospitals were emptied of its earthquake sufferers and the Oriental Hotel ballroom was again fulfilling its usual function By this time, too, overcrowding of houses was less apparent for further earthquakes in Kobe itself had finally decided many to leave the country

INCOME TAX

EXPENSES ALLOWABLE

From inquiries which reach us from time to time it would seem desirable to set out the principles which govern the position with regard to the deduction of expenses from gross receipts in somewhat greater detail than is practicable in a brief answer to a specific inquiry The legal requirement is that assessments to income tax in respect of practitioners' profits shall be made by certain local commissioners who have before them particulars of the taxpayer's declaration of income and of any supplementary information—in the form of accounts, for instance—that he may have furnished In passing it may perhaps be added that the assessment will be made by the "special commissioners" instead of the local commissioners if the taxpayer completes the appropriate blank request on the form of declaration An appeal against an assessment is determined by a different panel of the local commissioners or by the special commissioners if the assessment was made by that body or, if requested, even if it was made by the local commissioners In practice, however the inspector of taxes usually puts an assessment forward for confirmation or amendment by the appropriate commissioners and deals with any objections lodged against it The procedure has been stated because it may to some extent account for differences sometimes alleged to exist inspectors of taxes, being controlled by a central department should achieve uniformity of practice, but it is not clear that this is a necessary or in small matters even a normal, result of the action of independent commissioners, who are the final judges on matters of fact So far as our experience goes however, commissioners very rarely refuse to allow an expense if the inspector of taxes is willing to admit the claim to deduct it, and there appears to be a certain lack of uniformity with regard, at any rate to some of the minor expenses allowed

The great number of taxpayers to be dealt with and the diversity of their incomes make it difficult to secure that a system of taxation of incomes shall be reasonably proof against evasion and yet not press with undue harshness on any particular class The Income Tax Acts seek to do this by dividing all incomes into five classes or schedules, and laying down suitable rules for ascertaining the amount assessable under each schedule, income derived from property, for instance, is assessable according to the rules of Schedule A income from employment under Schedule E, and so on But the most important and also the least easy class of income to deal with is that falling under Schedule D—namely, profits and income not falling under any of the other schedules The questions which most frequently create difficulty are those which arise in connexion with the admissibility of certain deductions to be made in calculating the assessable profit

The Income Tax Acts do not lay down specific categories of expenditure to be deducted, but deal with the question by prohibiting the allowance of certain classes, and the effect of the judgements in a number of leading cases—notably that of Bruce v Ussher, Wiltshire Brewery—is that, while capital and personal expenditure must be excluded, regard may be had to well accepted commercial practice provided that the specific prohibitions are not infringed On this basis the allowable expenditure may be set out as follows

Expenditure Exclusively Professional

Salaries of dispensers including board if provided (less any sum debited to the account rent, maintenance, rates, and cost of cleaning of premises used for professional purposes wholly and partly from the business coal lighting and supplies (including board) of servants of a locum tenet or assistant cost of running a car used for professional purposes (see example) petrol oil tyres repairs and renewals wages (and board) of chauffeur replacement of medical books and instruments subscriptions for medical journals and papers and stationery used for professional accounts

Expenditure Partly from Capital Expenditure

Proportion of rent of house wholly or partly used for professional purposes and similarly for local rates cost of insuring and lighting of decorations and repairs and of attendance where a portion of the cost of these is attributable to the maintenance of the structure from the professional point of view

It is impossible to lay down any rule or formula for determining the appropriate proportions to be treated as deductible it must be fixed rather according to the facts of each individual case and is really a matter of common sense For instance where the motor car is used for private as well as for professional purposes ordinarily the mileage basis would be correct but it would be wrong to divide proportionately the cost of repairing damage caused by an accident when the car was being used definitely for one purpose or the other

The above remarks apply to the assessment of professional *profits* where a salary is concerned the position is somewhat different as allowable expenses are restricted to those incurred wholly exclusively and necessarily in the performance of the duties As an illustration of the difference we may point out that while a subscription to the British Medical Association is allowable in the case of a Schedule D assessment on profits it could be refused—and apparently with good legal justification—in the case of an assessment of a salary unless the employer required the employe to be a member of the Association as a *condition of holding the appointment*

Some time ago a departmental committee was appointed under the chairmanship of Mr Justice Powell, to consider the feasibility of simplifying the income tax forms That committee has reported, but was apparently unable *to recommend any radical simplification so long* as the present system of administration and the existing statutory code remain in force in other words *the present* complexity seems to be in the opinion of the committee, a lamentable result of applying a rigid scheme of taxation to circumstances of almost infinite complexity It is, however, to be presumed that the committee's activities have not been fruitless and that the forms used in future will be found to be more intelligible to the average taxpayer than they have been in previous years It is to be hoped so for if the expectations raised by the appointment of the departmental committee are disappointed there will be a movement towards a radical amendment of the statutes themselves the consequences of which would be more likely to benefit the astute business man than the professional practitioner

We have endeavoured here to indicate some of the general principles by which practitioners should be guided in making their returns in discussing with the inspector any objections he may raise, or in deciding to make an appeal We do not think it is possible to go further, for individual circumstances differ so much that the application of principles may often present considerable difficulties We shall continue to give definite assistance by advice to practitioners who submit specific questions, stating the full facts It would save a great deal of trouble both to inquirers and to this office were this last point kept in mind—namely, that the statement of fact should be full

Nova et Vetera.

ASSYRIAN BOTANY

MR CAMPBELL THOMPSON has long been known to Assyriologists not only as one of the most indefatigable copyists on the staff of the British Museum—for which, indeed, he edited no less than ten out of thirty-seven volumes in the series of 'Cuneiform Texts in the British Museum"—but as a specialist in Babylonian witchcraft and demonology. According to the Babylonians, devils and evil spirits were the causes of headaches, fevers, and all bodily ailments:

> "The evil spirit hath lain in wait in the desert,
> Unto the side of the man hath he drawn nigh,
> The evil ghost for ever is rampant,
> And none can resist him.
> The evil demon goeth furtively in the desert,
> And causeth slaughter among men,
> The evil devil prowleth in the city
> And hath no rest from slaughtering men.
> They smite the hero, they lay low the maiden,
> They tear the children in pieces like a leek,
> They tear out the heart."

And then the patient is described:

> "He cannot lift his limbs nor turn his side,
> He hath no desire to eat food nor drink water.
> His limbs are loosed and his body is filled with pain."[1]

The most obvious way to cure the patient, therefore, was to have recourse to incantations or charms and to sympathetic magic:

> "Fashion a figure of him in dough,
> Put water upon the man and pour forth the water of incantation,
> Bring forth a censer and torch.
> As the water trickleth away from his body may the pestilence in his body trickle away.
> Pour back these waters into a cup and pour them forth in the broad places,
> That the evil influence which hath brought low his strength
> May be carried away into the broad places,
> That the spittle which hath been spit may be poured forth like water,
> That the magic that mingled with the spittle spat forth
> May be turned back."[2]

Having studied these magical texts there is small cause for wonder that Mr. Campbell Thompson, whose father was a doctor, should go on to see to what extent the Babylonians had any real knowledge of medicine and of the medicinal value of drugs. The fruits of the first of these labours were given to the world last year, when he published his collection of *Assyrian Medical Texts, from the Originals in the British Museum*. In a note on this volume published in the BRITISH MEDICAL JOURNAL of March 22nd, 1924 (p. 538), we mentioned that it consisted of 107 plates, reproducing the text of 660 cuneiform medical tablets. Mr. Thompson recently communicated to the Section of the History of Medicine of the Royal Society of Medicine translations of some of the texts, as an example the following may be cited:

> "If a man's head has an itching . . . with oil of cedar shalt thou anoint (it)."

There is even a prescription for darkening prematurely grey hairs, for which a mixture of cypress oil and an incantation is recommended!

The medicinal use of the various herbs known to the Assyrians has been carefully investigated by Mr. Campbell Thompson and published this year in his *Assyrian Herbal*.[3] In this excellent monograph the author has been able to identify some 50 new plants and 120 minerals, and to correct a number of old translations. The sources of which he has been able to make use are primarily—(1) the medical texts, and (2) the botanical lists drawn up by the Assyrian scribes. The latter source has been chiefly of philological value, the former of practical value, for he has often been able to identify a plant from the use to which it was put by Assyrian practitioners. Another means of identification has been found in a comparison of the Assyrian drugs with those found in Greek and Roman, as well as Syrian, writers on similar subjects. In addition to this, the author has the advantage of a thorough acquaintance with the country at first hand, and a good knowledge of the plants now to be found in Mesopotamia.

An example of his method will serve more clearly to show how he arrives at his conclusions. Let us take mustard, the herb described on pages 62 and 63. In the first place, its applications are tabulated: externally, to the eyes, feet, or ears, for swelling and for coughs, used for anointing and to be bound on, especially above the lungs (that is, as poultices); internally, for the stomach, for jaundice, for singing of the ears, and the hand of a ghost! Further, "when a man's inside eats him" it is to be drunk in beer with salt, or alone in beer or water (that is, as an emetic); it also served as a mouth wash, for urinary trouble, for dyspnoea and haemorrhoids, and its root was used in toothache, it was also pounded down. It is also included in the four plants used for staining the hands (as the modern Arabs dye theirs yellow), two of the others being saffron and turmeric. To sum up: it is a common yellow drug, sometimes powdered, drunk alone or in combination with other ingredients in water as an emetic, used as a poultice for complaints of the chest and for the feet, it acts on the saliva, and its root is used for toothache. This, says Mr. Campbell Thompson, is clearly mustard, *probably Sinapis arvensis*, a plant which grows *in abundance round Mosul*. To confirm this identification the author compares the use made of mustard by other races: for example, it was used for *ὑπωπία* of the eyes (Dioscorides), while its root was chewed for toothache (Gerard), by Indians it is swallowed whole as a laxative and is also employed by them in apoplexy, convulsions, insanity, dropsy, cholera, coughs, and toothache, as well as for application as a poultice to the feet. No one will doubt that Mr. Campbell Thompson's rendering of *khaldappânu* as "mustard" is more probable than its former identification as "rhododaphne".

Other plants similarly identified are the ordinary poppy, the opium poppy, the anemone, which the Assyrians called "sheen of silver," camomile, the vetches, the mallow, and so on. Castor oil appears to have been widely used (pp. 190, 191) *for example, for the feet and ears, for swelling*, as a poultice, as a purgative, and in combination *with alkali to* make a sort of soap for washing, especially for washing the head. In Palestine to this day it is interesting to note that olive oil is used with alkali for the same purpose. Pliny, too, speaks of a soap made of tallow and ashes.

At the same time some old identifications are corrected, thus *nurmu* is translated "pomegranate" instead of *armanu*, which becomes "apricot" (pp. 176-179). This identification of *nurmu* as "pomegranate" received curious confirmation long after it had occurred to the author, a late Babylonian contract came into his hands, describing a collarette *with nurmu* ornaments, which were roughly drawn *at the bottom of the tablet by the scribe* and were clearly pomegranates. *The equation of armanu with* "apricot" is confirmed by two facts: (1) in Syriac the cognate word *'armenâyâ* means "apricot," and (2) this word must be *the* origin of the name *Prunus armeniaca*, and not the land of Armenia, for apricots cannot grow on snow-covered hills. Thus philology and botany combine to disprove the error originally made by the Romans, who mistranslated *armanu* as "Armenica".[4] The cherry also has an interesting philological history. Varro and other Roman writers state that it was imported by Lucullus into Rome from Asia Minor from a town called Cerasus, and that it received its name from that town.[5] But Mr. Campbell Thompson has no difficulty in showing (pp. 129-130) that it came from still further east and that it was known to the Assyrians under the name *larshu*, this then, proves that it was not called by the Romans *cerasus from the town of Cerasus*, but from the Assyrian *larshu*[6] further, the town was so called as being the "cherry-town"[7] *par excellence* or centre of

[1] Campbell Thompson, *The Devils and Evil Spirits of Babylonia*, vol. ii., pp. 104-107 (1903).
[2] Ibid., pp. 103-109.
[3] *The Assyrian Herbal*. By R. Campbell Thompson, M.A., F.S.A. Fellow of Merton College, Oxford. London: Luzac and Co. 1924. (Lge. 8vo., pp. xxvii. + 294. 30s.)

[4] Cp. Isidorus (*Etymologiae* XVII. vii. 7): Armeniaca autem dicitur quod primum genus ab Armenia sit advectum.
[5] Id. ib. XVII. vii. 16: *cerasus et Cerasonte urbe Ponti vocata*, but he admits that it was known in Italy before Lucullus, though hard of credible. Pliny (*Historia Naturalis* I. xiii. 30) knew that cherries were found as far east as Persia.
[6] The old derivation from the Greek *κέρας* horn must therefore be given up.
[7] The Greek name Κερασοῦς is adjectival in form and therefore derivative, and not the source of the word *cerasus*; there were two or three towns of this name on the southern shores of the Black Sea.

the cherry trade in Asia Minor Occasionally too light is thrown on obscure passages in the Old Testament Thus the Revised Version translates Leviticus xxiii, 40 "And ye shall take you on the first day the fruit of goodly trees, branches of palm trees and boughs of thick trees, and willows of the brook," etc where the words rendered "goodly trees" are literally "tree of *hadar*" in Hebrew Now the old Jewish scholars translated this "trees of citron" but modern scholars, knowing no word *hadar*, 'citron" in any Semitic language, substituted for the traditional translation 'trees of goodness"—that is, goodly trees—from the well known Hebrew *hadar*, 'splendour," honour," "ornament"—a poetical word hardly applicable to trees Mr Campbell Thompson, however, has established the fact that *adaru* (*u* being only the termination of the nominative case) in Assyrian means 'citron" (p 182), the Hebrew *hadar* is therefore cognate with and must bear the same meaning as the Assyrian *adaru*, the loss of the *h* being due to the absence of the sort *h* from the Assyrian language

Enough has been said to show the author's method, by a careful comparison of all the occurrences of a plant in literature and a study of the uses to which it was put, in conjunction with the philological information to be obtained from the cognate languages Mr Campbell Thompson who is both a scholar and a scientist has been able materially to increase the accuracy of our knowledge of the Assyrian language in a special field Although Assyriologists may occasionally hesitate to agree with his philology—and the interchange of letters in the Semitic languages is a thorny subject—all owe him a deep debt of gratitude for a thorough handling of a number of difficult problems for many years to come it is not too much to say his admirable book will be the standard work on the subject It is only to be regretted that the author could not afford to have his invaluable work printed, but was compelled to have his manuscript lithographed for, as is inevitable in such cases, there are a certain number of places where the text is, for various reasons, nearly if not quite illegible

Oxford G P DRIVER

FUR DERMATITIS

DURING the winter of 1922-3 cases of dermatitis attributed to the wearing of fur collars were observed in London and in other parts of the country In our columns of March 17th, 1923 Dr H C Semon gave an account of the symptoms, based on his experience at the Royal Northern Hospital, London, and suggested that the irritant concerned belonged to the paraphenylendiamine group of textile dyes This possibility had been previously put forward in our issue of July 1st, 1922, when a note was published in the Epitome giving an account of cases reported in the *Ugeskrift for Laeger*, April 13th, 1922, and of the use of this dye in the German fur industry which had appeared in the *Deutsche medizinische Wochenschrift*, 1913, No 49 On February 7th, 1923, Dr J H Sequeira reported to the Chief Medical Officer of the Ministry of Health that a number of patients with dermatitis of the neck and adjacent parts of the face, associated with the wearing of certain furs, were being treated at the London Hospital and at other skin clinics in London, and it was subsequently decided that an inquiry should be made into the matter, to include the investigation of complaints, the verification of the evidence incriminating certain coloured furs, and the estimation, in so far as was possible, of the character and seriousness of the skin disease The inquiry was entrusted to Dr A C Parsons, and his report[1] has now been published by the Ministry of Health

As a first step the Ministry arranged a conference with a subcommittee of the London Fur Trade Association, and communicated with dermatologists throughout the country One of these dermatologists, Dr A C Roxburgh, who was closely associated with the inquiry, contributed a brief review of this dermatitis to our columns of March 24th, 1923 (p 534), in which number, also, Dr W F Cash le described the dyeing process employed in furs Public health officers throughout the country co-operated with the Ministry, evidence was received from private individuals, and examinations of the incriminated furs were made by public analysts, the fur trade, and later, at the request of the Ministry, by Professor A G Perkins, F R S, whose observations are published in an appendix to the report

The results obtained by Dr Parsons are classed under the following headings (1) epidemiological, (2) clinical, (3) the furs in question, (4) the fault in the furs Under the first heading the outbreak of dermatitis in February, 1923, is associated with the shopping season at the preceding Christmas, 1922, and the following new years the total number of cases affected down to July, 1923, when complaints ceased, is given as about 1,000 Dr Roxburgh, in his account in the BRITISH MEDICAL JOURNAL, had indicated the existence of a definite latent period before symptoms developed, possibly due to the gradual development in the patient of a sensitiveness to the irritant Personal idiosyncrasy is stated by Dr Parsons to be certainly a factor in the determination of symptoms, which in some cases seemed to be dependent on the skin of the wearers being greasy In the great majority of cases the rash was localized to the neck and face, but occurred on the wrists when fur cuffs were worn, in rare instance it extended to the chest and arms The dermatitis usually ceased when the furs were discarded, but the cure of some patients was delayed owing apparently to the establishment of a hypersensitive condition of the skin

The furs in question were found to be those known as 'beaver-conies," the pelt for which according to the Fur Trade Association, is supplied by the rabbit In all cases the furs were dyed and it was not suggested that the hair itself was responsible for the irritation except in two cases The association was of the opinion that the furs came from abroad, and in a statement issued to its members it asserted that such furs were the product of American, Belgian French, and German dyers Dr Parsons however states that there seems to be no definite proof that English furriers can be entirely absolved, and that it was quite clear from informal discussions that the association was not prepared to answer for the innocence of British firms not members of their own body In assessing the fault in the furs Dr Parsons gives reasons for believing that the factor of personal idiosyncrasy is not paramount he discusses in detail the various dyes and processes used in the preparation of imitation furs, with special reference to the evidence of Dr W F Castle in the BRITISH MEDICAL JOURNAL, which included a list of the dyes used and the colours produced by them Dr Parsons draws attention to the interesting point that the deeper the shade produced the less likely is that particular dye to cause irritation There is said to be a difference in harmful potentialities of the various dyes and both depth of colour and harmlessness to the human skin increase with each progressive stage in the oxidation of the dye The medium shades of furs were therefore the most likely to cause trouble, and it was found actually that the dark grey and brown furs were those chiefly responsible for the complaint

In his summary and conclusions Dr Parsons points out that there is no history of any previous aggregation of cases comparable with the 1922-3 'epidemic," though sporadic cases of fur dermatitis had been reported To a less extent there was a similar outbreak in the winter 1923-4 No special localization of cases could be detected, and complaints of the same kind were made in France and Germany

Professor A G Perkins, in an appendix to the report, gives his conclusions with reserve, but draws attention to the lack of homogeneity in the colouring matter of these furs much of it was insoluble in the usual solvents, but some portions were soluble in water, some in boiling alcohol, and others in cold dilute hydrochloric acid He considers that this lack of homogeneity may have arisen from a faulty application of the dyeing process, in other words, an incomplete oxidation of the developer to the finished dyestuff The possibility of the mordanting process which results in the deposition of minute crystals of dye being injurious to health is also recognized, finally, Professor Perkins refers to the statement of Dr Castle that the colouring agent appears to dissolve in the fatty acids associated with a greasy skin

[1] Reports on Public Health and Medical Subjects No. 27 Fur Dermatitis. H.M Stationery Office Price 9d. net.

NATIONAL VETERINARY ASSOCIATION

THE National Veterinary Medical Association has met in Aberdeen this week, and some of the papers illustrate the fact that the study of the pathology and even the therapeutics of disease in the domestic mammals can throw light on questions in which the medical profession is closely concerned. We cannot pretend to give an account of all the activities of the meeting, but have picked out a few subjects of medical importance.

ANAEROBIC INFECTIONS IN ANIMALS

Anaerobic infections are not confined to man, and in a paper read during the meeting Gaiger summarized our knowledge of them in the domestic animals. *B chauvaei* is the chief organism responsible for blackquarter in cattle and sheep, but *V septique* and possibly *B oedematiens* are also implicated. The disease (*sometimes called symptomatic anthrax*) attacks especially young stock. There is a local emphysematous lesion—not always on the quarters, however—at the site of inoculation. Death, as a rule, results within forty eight hours. Methods of vaccination against the disease are now in successful use. *V septique* is responsible for equine malignant oedema, most cases of ovine and porcine blackquarter, and probably also for braxy in sheep. Malignant oedema is the equine equivalent of blackquarter in cattle. The disease is not infrequent complication of castration wounds, and is a typical gas gangrene. It may be taken as a general rule that anaerobic infections in cattle are due to *B chauvaei* with an original muscle lesion, while those in sheep are due to *V septique* with an alimentary lesion. Braxy in sheep runs a very rapid course, and death usually occurs within a few hours. It has a peculiar seasonal and geographical distribution which has not yet been satisfactorily explained. Braxy is responsible for a very large mortality in those areas where it is found—it may be as high as 35 per cent among sheep in their first winter. Gaiger reported that by means of a vaccine prepared from *V septique* he had been able to reduce the mortality to a quarter of this figure. *B welchii*, although highly pathogenic on inoculation, has not yet been recorded as the cause of any serious disease in the domestic animals. It was, of course, one of the most serious of the gas gangrene organisms of the war, and Gaiger has found it in ulcers of lamb dysentery, he has found it also occasionally in scrapie in sheep, but he is not yet prepared to state its exact significance in this direction. *B sporogenes* is a very common contamination of anaerobic cultures, and is interesting mainly on account of its therapeutic uses. It is known to veterinarians as the "Reading bacillus," and has been used to some extent in the treatment of sloughing wounds. The effects of *B botulinus* in the domestic animals are by no means fully understood. It has recently been suggested that this organism is responsible for the so called "grass sickness" of horses in this country. This disease is characterized by intestinal troubles, spasm of the throat, and muscular tremors. It is generally fatal. Gaiger holds that *B botulinus* is not the causal organism, that in general this organism is a saprophyte rather than a parasite, and that it can only be accepted as the cause of symptoms when its toxins have been formed outside the body in spoiled food.

CANINE DISTEMPER

Canine distemper is a disease of perennial interest, not only on account of its seriousness in dogs, but also because the solution of its many problems may throw considerable light on analogous diseases in man. The Medical Research Council, with the financial assistance of the *Lucas* Fund, has set on foot an investigation into the etiology of the disease, but the experiments cannot be hurried, and the results will not be available for some time. The only point of importance in the recent report (BRITISH MEDICAL JOURNAL, April 12th, 1924) was what we understood to be an expression of disbelief in the theory that *B bronchisepticus* canis was the causal organism, thus confirming the opinion held by most veterinary clinicians for many years. Meanwhile the opinions expressed by Mr Livesey will be read with interest. He gave a clinical survey of the disease, which he considers is, as of simple distemper plus many complications, the simple disease he said, shows only a rise of temperature associated with a rash on the skin or mucous membranes, a nervous disturbance, and probably a nephritis. As soon as the rash appears the fever declines. Any other symptoms are, he considers, due to secondary infections, as, for instance, by *B bronchisepticus*. Even in the uncomplicated disease convalescence is slow and tedious. He believes that infection is not, as is generally supposed, through the respiratory tract, but through the mouth. His clinical experience is that to keep the mouth of healthy young dogs clean by the use of hydrogen peroxide is the most certain method of prevention. The same treatment applied in the early stages of the disease is also the best method of avoiding complications. On account of the similarity of the symptoms to certain of the other virus diseases (such as foot and mouth disease and variola) he suggests that distemper might be treated preventively by methods similar to those used in these diseases. We understand that certain practitioners claim considerable success in the prevention of canine distemper by the use of ordinary calf lymph such as is used for variola. Livesey considers that if the complaint is diagnosed early, before it becomes complicated with secondary infections, the best treatment consists in swabbing the mouth frequently with hydrogen peroxide, feeding the animal on raw milk, and careful nursing.

NUTRITION AND DISEASE

There is a tendency to assume that disease is always—or nearly always—due to the presence of some noxious substance in the body. In many cases this is so, but Dr Orr, of the Rowett Institute, pointed out, in a paper read on September 10th, that dietetics must also play an important part in sickness and its prevention. He paid particular attention to deficiencies of minerals in diet. Calcium and phosphorus are required in greater amounts by the body than are any other minerals, and deficiency of either may lead to rickets. Iron and iodine are also essential food constituents, and their absence has serious results in the young animal. It has recently been shown that the actual proportion of these elements is important. Too much phosphorus, for example, interferes with the assimilation of calcium. Moreover, the trouble is not always confined to the affected animal, for calcium deficiency before conception may be detrimental to the developing young. Apart from the direct action of these salts, their absence is of importance in the fight between the body and invading micro organisms. In autopsies of experimental animals fed on some deficiency diet gastro intestinal lesions are very commonly found. The connexion between tuberculosis and deficient nutrition has long been recognized, and respiratory diseases are much more common in animals with an ill balanced ration. Direct evidence is tending more and more to support McCollum's dictum that "perfect food affords protection against the ravages of bacteria and other pathogenic organisms as adequately as does segregation or immunization." In the more particular application of the paper to the domestic animals, Orr points out that a growing pig may put on 2 lb of living tissue a day, a cow may secrete 12 lb of solid material daily, and a hen lay 200 eggs in a year. The importance of supplying a well balanced ration in these cases is very obvious—from both an economic and a hygienic point of view. Orr suggests that the prevalence of tuberculosis in cows may in part be due to the failure of the ration to support the enormous milk yield. Under natural conditions animals adjust their diet according to instinct. Domestication prevents this free choice, and the resulting problems of malnutrition must be faced. Information on the optimum diet is still very meagre, and there is urgent need for research to determine the requirements for all the constituents of food which are known to be essential, and the connexion between specific defects and the correlated pathological phenomena.

THE GENETICAL ASPECTS OF STERILITY

In a paper on this subject Dr F. A. E. Crew made reference to the reasons for the sterility of hybrids among the domestic animals. Two of the most interesting cases are those of the mule and the cattalo. The mule is the offspring of a cross between a male ass and a mare, the reciprocal cross of the jennet (or female ass) and the stallion produces a hinny. The hybrid is hardier, more free from disease, and more economical to keep than the parents. Both mule and hinny, however, are sterile, the few reported exception not being above scientific suspicion. The female hybrid exhibits regular oestrous periods and plentiful follicules have been found in the ovaries. In the male, however, seminiferous tubules are absent or much reduced, while there is a complete lack of functional spermatozoa and seminal fluid. It is suggested that this is due to the great difference in chromosome number in the mare and male ass. The mare has 38 chromosomes, while the jack has probably 65, which would result in the inability of the cross to produce functional gametes. The cattalo is the result of the cross between the American bison bull and Hereford or Aberdeen Angus heifer. In every case the pregnancy is complicated by severe hydramnios, and most females abort. Only about 1 in 30 produce a living calf, and among these a male is a rarity. Dr Crew considers that a sex linked lethal factor is involved. By back crossing of the females of the F1 generation with the bison or bull for several generations, hydramnios becomes less and less, and fertile males are ultimately obtained. Dr Crew explained this genetically and contended that in time dystocia, hydramnios, and sterility could be removed. He suggested also that the lethal factors might be endocrinal in nature.

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GALL STONES AND CANCER.

THE constant trauma to which the lining of the gall bladder is subjected by the presence of gall stones in the cavity is, in the opinion of many, the determining cause of carcinoma in that organ. This thesis rests principally on the fact that gall stones are found to be present in the great majority of cases but the mere fact that they are sometimes absent seems to suggest that when present they play a subsidiary or predisposing and not a prime part in the production of the grave lesion. If we are to accept hospital *post mortem* statistics, the liability of a person harbouring gall stones to develop cancer of the gall bladder is by no means negligible and that liability is one of the chief arguments in favour of cholecystectomy rather than cholecystotomy but as gall stones usually give rise to little in the way of symptoms unless inflammations are superadded, the hospital figures may exaggerate the position. There are some authorities who deny to the gall stones any part—even a predisposing part—in the development of the cancer. According to them the reason why cancer of the gall bladder is so often associated with the presence of gall stones is that fragments are apt to be detached from the malignant mass and serve as nuclei around which the cholesterol in the bile deposits to form gall stones.

Much may be and has been said for each of these conflicting views without bringing us any nearer a general agreement but the simple and striking experiments of Dr. Archibald Leitch, recorded in his British Medical Association Lecture published this week (p. 451) not only support strongly the view held by the majority of clinicians as to the inciting part played by gall stones, but constitute a distinct advance in cancer research. That investigators within the last few years have succeeded in producing malignant tumours in mice or rats by some animal parasites or by the frequent application of such substances as tar has been a great step forward, and cannot be dismissed as being merely of academic interest. The results of their experiments revived the irritation theory of cancer genesis. Assiduous as these investigators have been in the exploitation of the experimental method, they have not yet been able to bring forward proofs of the truth of the irritation theory in the case of *the great bulk of human cancers* but when we are presented with cancers experimentally induced by pathological substances wholly elaborated within the human body, such as gall stones, the cogency of the argument is brought home to us, and we can appreciate the interesting developments that may be in store. The previous experiments in cancer production and especially those of Dr. Leitch and his fellow workers at the Cancer Hospital Institute seemed to indicate that the cancer producing substances are not merely mechanical irritants, but must have something special in their chemical constitution some specific stimulating property which affects the cells exposed to its action there are, indeed no very plausible examples of cancers in the human subject due to mechanical irritation. The experiments with gall stones, however, show that constant *mechanical* stimulation in certain instances can induce a malignant neoplastic reaction. The control experiments with pebbles—which we may suppose to be chemically inert, and which proved to be equally effective—conclusively dispel any lingering belief that the chemical composition of the gall stones was a factor in the production of the results.

Further interest attaches to these experiments in that this would appear to be the first time that a carcinoma of the glandular type has been produced, and the first time that a tumour has been produced in the guinea-pig. Till now the various irritants employed have brought about squamous-cell carcinoma or sarcoma, and attempts at inducing cancers of other varieties have failed. *From* this we may gather that only certain tissues of a susceptible animal are responsive to a particular type of cancer producing agent. Yamagiwa, who was *the first* experimenter to use tar, was reported to have induced carcinoma of the mammary glands in rabbits by repeated injections of this substance, but the lesions he obtained seem to have been temporary tumours of the squamous type which underwent spontaneous cure. It is the case that the guinea-pig has never been known to develop carcinoma naturally, and that attempts have invariably been unsuccessful to induce a tumour in it experimentally by the use of other substances *that have been effective* in mice, rats and rabbits, as Dr. Leitch states the results with gall stones are all the more important as they exclude several factors on which stress has been laid by the opponents of the irritation theory. The introduction of some obscure virus from without, the localization by the trauma of some supposed cancer virus *present in the economy* or the precipitation of a general predisposition to cancer would seem to be ruled out of account. On the other hand the very novelty of an induced cancer in a guinea-pig presents certain difficulties as we have no established standard with which to compare it. In man and in other animals experience has led us to associate the quality of malignance with certain characteristics—micro-scopical anatomical and clinical. In Dr. Leitch's experiments, where the evolution of the process from simple hyperplasia to invasive growth has been traced the supreme demonstration of malignancy—namely the formation of distant metastases—is wanting, but the invasion of neighbouring structures such as the liver omentum, and chest wall by the proliferating glandular elements will doubtless be accepted by everybody as sufficient proof of the malignant nature of the tumours produced.

BACTERIOLOGY AND PREVENTION OF SCARLET FEVER

FURTHER information is now available about the diagnostic possibilities in scarlet fever of the special streptococcal filtrate prepared by G. F. Dick and Gladys H. Dick to which we have drawn attention in previous issues. On May 24th (p. 924) we referred briefly to a report by Dr. A. Zingher assistant director of the Bureau of Laboratories in New York. He has now published in the *Journal of the American Medical Association* (August 9th, p. 432) a detailed account of experimental work on the Dick test carried out in normal persons and in acute and convalescent cases of scarlet fever.

The Dick test for scarlet fever is carried out in much the same way as the Schick test for diphtheria. Of a dilution of the soluble toxic filtrate from a culture

of the specific haemolytic streptococcus 0·1 to 0·2 c.cm. is injected intradermically in the right forearm for the test, and a similar amount of the heated toxin in the left forearm for the control. Positive reactions, indicated by a local area of redness, begin to appear in four to six hours, and reach maximum intensity in twenty-four hours after the injection. Thus the positive Dick test is quicker in appearing than the Schick test, which is most pronounced on the fourth day. At the end of forty-eight hours with the scarlet fever test positive reactions have faded considerably, and after a week there may be nothing but a slight pigmentation or fine scaling. When the reaction is negative no change is observed either at the site of the test or the control. The purpose of the control is to avoid confusion arising from hypersensitiveness to the protein constituents of the injected fluid. It is believed that, as with the Schick test for diphtheria, a positive reaction with the filtrate from the specific haemolytic streptococcus betrays absence of antibodies to scarlet fever toxin, and therefore susceptibility to the disease, and that a negative reaction indicates the presence of circulating antibodies, and therefore an immunity to scarlet fever.

The wide application of this test to normal persons has brought to light two considerations of great importance in the control of scarlet fever. When mothers and young infants are tested a great similarity is found in the antitoxic immunity of mother and infant, it is so pronounced as to lead to the conclusion that a definite placental transmission of antitoxic antibodies has occurred such as is known to happen for diphtheria. The infant usually retains its immunity up to the fifth or sixth month of life, and then begins to lose it. Dr. Zingher records the results of the application of the Dick test to more than 4,500 persons classified by age groups. The percentage of positive reactors rose rapidly from 44·8 per cent. in the age group 6 months and under to 70 per cent. for the group 1 to 2 years, and thereafter gradually fell. A second important fact made clear by the application of this test to the population at large is that the number of susceptible individuals is greater in higher social groups than among the less well to do. This has been established by a comparison of the percentage of positive reactors found in different types of schools and other institutions.

Turning from healthy people to acute and convalescent cases of scarlet fever, Dr. Zingher has much to say about the value of this test that will interest both the physician and the pathologist, though we must admit that his interpretation of certain irregular reactions does not clear away all the difficulties. It is possible that in the past we have been classifying more than one infection under the name of scarlet fever, it is also possible that the Dick test has not yet been elaborated to such a nicety that it will give the correct answer every time. The hundred per cent. successful type of test has too often proved a disappointment to physician and pathologist alike. But the unexpected responses to this test, remarkably few in proportion, are a field for future inquiry. They do not many complications, afford good evidence of the value and which he extract from the author's claim that the shows only a little ... Thus, every one of skin or mucous Dick test as an index of susceptibility probably a nephritis later, 7 to 28 days of illness declines. Any other symptoms are, for instance, by *B. bronchial* secondary infections, as, for instance, convalescence is slower, Even in the uncomplicated disease, tedious. He believes that infection is not, as is generally supposed through the respiratory tract but through the mouth. His clinical experience is that to keep the mouth of healthy

The Dick test has two notable practical applications—namely, for detecting susceptibility or immunity to scarlet fever, and for gauging the efficiency of active immunization with scarlet fever toxin. In previous references to this subject we have drawn attention to the value of a test which enables us to discriminate between those likely and those unlikely to contract scarlet fever. If with wider experience its claims are substantiated it will have a future as assured as has the Schick test in the control of diphtheria. The same prominence has not been given to the other practical application of this test, though it may prove useful to the science of preventive medicine. In order to render them immune to scarlet fever Dr. Zingher has injected more than 1,400 persons who gave a positive Dick reaction with scarlatinal haemolytic streptococcus toxin. The dose of this toxin for prophylactic inoculation is standardized in terms of the skin test dose. Thus for adults a quantity of toxin equivalent to 1,000 skin test doses is used for the third and final injection, but for children lesser potencies. The reactions noted have been chiefly local, consisting of redness and swelling at the site of injection, in some cases, however, some general disturbance of health has attended the injections. To avoid such complications inquiries are now being directed towards the production of a purified toxin, or toxoid, such as seems likely to be useful in active immunization against diphtheria. In new work such as this it is natural that methods should be modified repeatedly as experience is gained. The aim of this active immunization with scarlet fever toxin is to render the subject insusceptible to the disease. In practice this means converting a positive into a negative Dick reaction. As judged by these standards Dr. Zingher has achieved a moderate amount of success, for of 274 children immunized with the toxin and recently retested, 167, or 61 per cent., had been converted to the negative group, and, it is assumed, rendered insusceptible to scarlet fever.

These are the immediate practical applications of this test, but they do not by any means exhaust its significance. If such a test as this could be relied on by the clinician for the actual diagnosis of the disease it would be doubly welcome, for the clinical picture of scarlet fever is often incomplete in cases hesitatingly confined to the scarlet fever ward. It may perhaps enable us to decide whether there exists one or more than one type of scarlet fever as judged by the etiological agent, and whether the different types (if they exist) correspond to recognizable clinical varieties of the disease. The new work from which we have been quoting leads to a conception of scarlet fever which ranges it very close to diphtheria. The haemolytic streptococcus which is believed to be the cause of scarlet fever has its home within the naso-pharyngeal mucous membrane, but the presence of this microbe alone does not determine illness any more than does the presence of the diphtheria bacillus in the throat. It is the toxin which is produced by this streptococcus which, being absorbed into the system of the patient, gives rise to the rash and constitutional symptoms. Scarlet fever must be looked upon, therefore, as a combined toxic and bacterial infection. The persistent immunity which follows one attack of the disease is an antitoxic immunity. It may not be accompanied by any considerable antibacterial immunity, for the septic complications of the infection. The disappearance of the rash in scarlet fever and the return to health depend on the neutralization of the strepto-coccus toxin by newly formed antitoxin.

MEMORIAL TO SIR WILLIAM MACEWEN

Shortly after the lamented death of Sir William Macewen a committee was formed at a meeting held in Glasgow to promote a fitting memorial to his life and work. At this preliminary meeting which was attended by representatives of the University of Glasgow, of the British Medical Association by many of Sir William Macewen's old assistants and students, and by numerous members of the medical profession, an executive body representative of different interests was appointed. It has now been decided that the fund should be applied to three main purposes, in the following order: (1) The provision of a bust of Sir William, by a sculptor of eminence, with a replica for Sir William's family, it is intended that the bust shall be placed in the University. (2) The establishment of a memorial lecture, to be known as "The Sir William Macewen Lecture," to be delivered annually or biennially: it is intended that it should be not merely a memorial oration but should deal with any branch or aspect of surgical science. (3) The foundation of a Macewen medal or prize in surgery to be awarded annually, it has not been decided yet whether this shall be assigned to the class of surgery at Glasgow University or shall be given a wider application. The committee aims at obtaining a fund amounting to £3,000, and towards this about £1,000 has already been received. Further subscriptions may be sent to the honorary treasurer Mr James Macfarlane LL.D., Wesleyan Street Glasgow S.E. The chairman of the committee is Dr. A. Freeland Fergus and Dr. Archibald Young is the honorary secretary.

GRADUATION OF GLASSWARE

Some time ago a joint committee on which the British Medical Association was represented by Dr. J. S. Haldane F.R.S. was set up at the instance of the Institute of Chemistry to report on the standardization of scientific glassware. The committee in its first report, issued recently has recommended that the recognized international metric units—the *litre* (l.) and *millilitre* or thousandth part of the litre (ml.) shall be used as the standard units of volume, and that standard volumetric glassware shall be graduated in terms of these units and marked *ml.* instead of *c.c.m.* The committee has been in consultation with the National Physical Laboratory, Teddington, which has issued a revised edition of its pamphlet on tests of volumetric glassware. These tests are done in the metrology department and are of two classes. Class A tests apply to vessels intended to possess *the highest accuracy, and Class B tests to vessels* intended to possess only commercial accuracy. The pamphlet gives full particulars of the nature of the tests and of the charges made. Vessels are also graduated according to the G.W.A. unit. This is a contraction for "grams of water in air," and signifies the volume at 60° F. of a quantity of water which when weighed in air against brass weights has an apparent weight of one gram. Copies of the pamphlet and forms of application for tests to be made can be obtained on application to the Director. The joint committee points out that the success of its work must depend on the action of purchasers, it therefore urges educational authorities when purchasing volumetric glassware to specify that the apparatus must have passed Class A or Class B, or in the case of Class B is guaranteed by the vendor to comply with the National Physical Laboratory regulations. The manufacturers' representatives on the joint committee have *undertaken* to replace any article guaranteed by themselves and found not to fulfil the requirements of the National Physical Laboratory for Class B. The joint committee realizes that for teaching purposes economy in initial outlay on apparatus is a necessity, but feels confident that subject to a satisfactory demand, manufacturers will be able to supply guaranteed Class B apparatus at prices consistent with reasonable economy. The committee believes also that it will be found ultimately more economical for advanced work and research, for which apparatus of doubtful accuracy cannot be tolerated and calibration is essential to purchase tested Class A apparatus rather than to purchase untested apparatus and carry out a calibration after purchase. The committee urges that in no circumstances should orders for volumetric glassware be placed without definite limits of error being specified, as failure to do so tends to encourage the production of *inferior apparatus in which quality and accuracy are unduly* sacrificed to cheapness. Some of the cheaper calibrated apparatus is known to be so inaccurate as to lead to grave errors even in the most simple determinations. The committee believes that the simplest and most satisfactory way of specifying limits will be to refer to the National Physical Laboratory tests as indicated above.

LONDON PARKS AND RECREATION GROUNDS

The far sighted people who, even in the first half of the nineteenth century began to agitate for the preservation and extension of open spaces in London, and the acquisition of new parks and gardens as the town grew, were wise in their generation. They could point to the way in which the string of parks extending from Kensington Gardens through Hyde Park and the Green Park and St. James's Park to the Government offices in Westminster added to the freshness of the air and the amenity of life, they could fight to stop encroachments on Hampstead Heath, *and even successfully for its extension but they did not* despise small things, for much may be done with a graveyard converted into a garden: a graveyard in North Country phrase is the churchyard and the word "garth" meant and means any small enclosure immediately about a house. In addition to what has been done on a large scale many small areas ranging down to triangular pieces only a few yards square between two roads have been secured. The pioneers obtained the appointment of a Select Committee of the House of Commons which led to the passage of the Metropolitan Commons Act in 1866, *prescribing the* procedure under which the commons near London could be permanently secured. In this way Blackheath, Clapham Common, and a number of small open spaces were brought under the management of the Metropolitan Board of Works, but in 1874 the Commons Preservation Society had to fight hard with the Corporation of the City of London before Epping Forest was committed to the charge of the latter body. The London County Council, which succeeded the Metropolitan Board of Works, has obtained further powers and has used them well. It has recently issued a pamphlet one of a series of handbooks on what the Council does for London, describing London parks and open spaces. The biggest areas it manages are Hainault Forest (805 acres), saved through the initiative of the late Mr. Edward North Buxton, and purchased, with the help of the Essex County Council, the Corporation of West Ham, the District Councils of Leyton and Ilford, and private subscriptions, and dedicated to the public in 1906, Hampstead Heath, with its dependencies—Golder's Hill, Ken Wood, acquired by the Ken Wood Preservation Council and presented to the County Council this year, and Parliament Hill, northward there is Finsbury Park (115 acres), and eastward the Hackney Commons, Hackney Marsh (340 acres), and on the riverside facing Greenwich Hospital the picturesque little Island Gardens, of 3 acres, as well as many more. South of the river there is Battersea Park, of nearly 200 acres, one of the best examples of how to lay out a town park we know. It was acquired by the Government when the river

embankment was formed, and was opened in 1858, so that the planting then done is now in its best stage Not all the open spaces are controlled by the County Council, some of the most important, in or just outside the London area, are in the hands of the Corporation of the City of London, including Burnham Beeches (375 acres), Coulsdon Commons (347 acres), Epping Forest (5,560 acres), and West Ham Park (77 acres) A number of small areas are looked after by the councils of metropolitan boroughs, and in considering Greater London we must not forget Richmond Park (2,358 acres), Bushy Park (994 acres), Hampton Court Park and Gardens (820 acres), Kew Gardens (299 acres), as well as the areas quite in London, including Regent's Park and Primrose Hill (472 acres) and the Chelsea Hospital grounds (8 acres) Altogether it may be said that London is not badly off for parks and recreation grounds, and if only as serious efforts were made to cleanse the atmosphere as have been made to save open spaces it would be a reasonably pleasant place to live in It is already statistically very healthy

THE RATIONALE OF RADIATION THERAPY

In an article in the current number of the *Journal of Radiology* (August, p 296) Dr Robert Knox discusses the mode of action of radiation in bringing about the cure of certain diseases, and the nature of their effects upon cancer cells He has a good deal to say about the so-called lethal carcinoma dose, and about the importance of the indirect effects of the rays, particularly upon the blood To illustrate his thesis he uses the blood counts in a typical case of myelogenous (spleno-medullary) leukaemia, on comparing the series of counts it is seen that for a period of nearly two months following the last irradiation of the spleen the blood, on each occasion on which it was examined, definitely showed changes indicating progressive improvement, the red cells steadily increased whilst the whites as steadily diminished These changes are to be attributed not to the direct but to the indirect action of the rays Dr Knox maintains that while it is theoretically possible to administer a lethal dose to a cancer cell or to a group of cancer cells, it is practically impossible, in at any rate the large majority of cases treated clinically, to administer such a lethal dose to all the cells of a large tumour, it is essential, therefore, that the indirect effects of radiation should be studied If we are ever to deal successfully with new growths by means of radiations some other method than that of the single intensive dose must be found The suggestion, therefore, is made that the dose should be spread over a considerable period of time, by intermittent administration, so spaced out as to maintain a fairly continuous biological reaction Research is urgently needed, if the actual biological and biochemical changes induced by radiotherapy were to be discovered, a great step forward would be made towards settling the dose and method of application to achieve the control, if not the cure, of malignant growths

FREE HYDROCHLORIC ACID IN CANCER OF THE STOMACH

Great reliance has been placed on the absence of free hydrochloric acid as a diagnostic sign of carcinoma of the stomach This absence has been noted by different observers in from 77 to 90 per cent of cases, but it is generally recognized that hydrochloric acid may be absent in other conditions, and, on the other hand, that it may be present in excess even in true gastric cancer The sign, therefore, is by no means specific Since the advent of the fractional method of gastric analysis we have had more precise evidence as to the value of the finding Hartman,[1] who examined 551 cases of gastric carcinoma at the Mayo Clinic, noted achlorhydria in about half, hypochlorhydria in 15 per cent, normal acidity in 20 per cent, and hyperchlorhydria in 7 per cent In view of the fact that the histological criteria of malignancy of gastric ulcers which prevail at the Mayo Clinic have not met with uncritical acceptance amongst pathologists elsewhere, confirmation of Hartman's findings was desirable This seems to be supplied by results recently published by Friedenwald and Bryan[2] These observers collected the analyses of 100 cases of carcinoma of the stomach at all stages The localization of the growth was determined either at operation or by autopsy in 42 of these, but as far as could be ascertained the pylorus was involved in 56, the cardia in 7, the body in 21, and the growth was general in 16 Fractional analyses were made in all cases The results showed that 52 had achlorhydria, 16 had hypochlorhydria, 26 were of normal acidity, and 6 had increase of free hydrochloric acid When these figures are compared with those obtained from a single analysis after the Ewald test meal it is evident that the larger figures furnished by the latter are misleading, some free hydrochloric acid may still be present at some period during digestion when the gastric secretion is examined by the fractional method If the authors had been guided by the results of the Ewald test meal alone they would have found achlorhydria in 79 per cent of their cases, but as hardly more than half of their cases had achlorhydria when tested by the more exact method, too much importance should not be attached to the absence of free hydrochloric acid as a necessary sign of gastric carcinoma

INCOMPLETE STATISTICS

It is curious to reflect that of all the diseases that beset mankind there is hardly one on which reliable statistics are available On diphtheria there are, it is true, several carefully collected groups of figures, on syphilis there are isolated sets of figures of considerable value, likewise on malaria, cholera, and dysentery But on cancer, cardiac disease, gastric disease, renal disease, nervous disease, and the great group of non-tuberculous respiratory affections, there are, we imagine, none which a statistician can regard with favour Yet he who is interested in the treatment of tuberculosis is rapidly coming into a position in which he may weigh the value of the various hygienic, surgical, and therapeutic measures he may employ to assist the recovery of his patients This improvement in respect of tuberculosis may be attributed to three main factors In the first place tuberculous patients tend to be segregated into institutions where they can be observed by physicians whose attention is undistracted by other types of disease Secondly, there are sufficient patients in these institutions to allow of the treatment of large numbers along the same lines, and of a comparison of the results with correspondingly large numbers of cases treated along different lines And thirdly, there exists in the best sanatoriums a system of conscientious following up of the after-histories of the patients Now these are very simple reasons, and if things were better ordered there should be no real obstacle in the way of obtaining similar statistics for other diseases This is not done because under the present hospital system patients suffering from any given disease are distributed throughout a variety of institutions, where they are treated by a large number of physicians and surgeons, all working along their own individual lines There is no uniformity of distribution, there is no uniformity of treatment And as to the following up of the after histories of these patients, there has, with one or two exceptions, been

[1] *Amer Journ Med Sci* February 1922
[2] *Journ Amer Med Assoc*, July 26th, 1924 p 265

very little real attempt to touch even the fringe of the problem One remedy for this would be segregation of all cases of one disease into large institutions, where carefully controlled treatment could be applied But to this plan there are so many obvious objections apart from the administrative that there is no need to enumerate them We can see, however, no reason why every hospital should not set about following up the after histories of the patients who have been treated for certain well defined affections by certain fairly definite modes of treatment This is not so large an undertaking that it could not be carried out by a small clerical staff working under competent direction Take, for example, the surgical treatment of cancer of the breast or the stomach or the colon how many surgeons in London or other big medical centres can give reliable estimates of the expectation of life of their patients after operation? In every teaching hospital there will be found monstrous tomes of notes—taken for years and many for scores of years—dealing with the histories of thousands upon thousands of patients There they stand, neatly piled in dusty rows, filling great shelves which groan under their weight but only very rarely is any use made of them They represent potentially valuable material And if only the finishing touch were put to them if only the end results of all those cases were ascertained a mass of information of very real and lasting value would be made available to the inquirer These lugubrious reflections were prompted by the receipt of the twenty sixth annual report of the Loomis Sanatorium, New York—an institution which issues every year figures relating to the patients treated during the previous twelve months The present statistics refer to the year 1923 It is interesting to note that as regards immediate results of treatment there appears to be a correlation between the length of stay and the degree of recovery A calculation shows that whereas those patients who reached the quiescent stage were in residence for an average period of forty-eight weeks those who were discharged as arrested made a stay of sixty seven weeks This is a point of interest as not only has the same observation been made in other sanatoriums but it serves to show the importance of not attempting to hurry unduly the recovery of the patient It would be of considerable value if every sanatorium adopted the practice of publishing an annual report giving quite briefly the figures for the previous year, the number of patients admitted, the groups into which they fall and the immediate results of treatment, and every ten years they might be collected and collated, and published under the supervision of an expert statistician with a full statement of the after-histories This plan is well worthy of serious consideration

CONTROL OF PARATYPHOID EPIDEMICS

COPENHAGEN seems to be almost completely free from typhoid and paratyphoid fever and when small outbreaks occur they are not infrequently traced to the returned holiday maker, who has sought health during the summer months in a resort with bucolic standards of sanitation Tracing the sources of typhoid and paratyphoid epidemics in Copenhagen and Fredriksberg to foci of infection in the rural districts is an occupation into which the sanitary authorities in Denmark evidently enter with zest and skill, to judge from a paper recently published by a Danish medical officer of health, Dr Djorup,[1] whose tale has a moral On September 17th and 18th, 1923 two children were notified as suffering from paratyphoid B in a district in Fredriksberg which had hitherto been immune to this disease The children lived in neighbouring houses, but did not know each other Their milk supply came from the same farm, and on September 22nd a man who had consumed milk from the same source was admitted to hospital suffering from paratyphoid fever A visit of inspection to the farm showed the cowshed to be clean and the forty-five cows to be healthy looking well cared for, and well fed All the inmates of the farm were also found to be healthy But on the other side of the main road there was an insanitary, neglected old house in which the married employees and their children were accommodated by the farmer The latrines and drains were in a bad state, and tucked away in a room under a large quilt were two children who proved to be suffering from paratyphoid fever Altogether six inmates were found to be infected, and one of them was a milkmaid who had felt ill a few weeks earlier, but had continued to milk the cows morning and evening without informing her employer of her illness To make sure that the source of the paratyphoid bacilli was human only Dr Djorup had samples of milk taken from each udder of every cow but in no case could pathogenic germs be found The milking utensils having been sterilized and a new staff of milkers provided, the restrictions on the sale of the milk were withdrawn, and no further cases of paratyphoid fever occurred With this incident as his text Dr Djorup argues that official sanitary supervision of cows and their sheds gives but a partial guarantee that the milk is free from infection, so long as the workers employed in the milk trade and their families are not subjected to periodic medical inspection Of what use," he writes, "is a bi monthly inspection of the farm's stock by a veterinary surgeon so long as the farm's staff remain uncontrolled and may continue at work in spite of a variety of diseases which may be passed on to the consumer of the milk?" He calculates that medical inspection once or twice a week of the personnel on farms supplying milk ought not to add more than 1 ore (approximately a tenth of a penny) to the cost of a litre of milk, and that the benefit accruing would be greater than that following the maintenance of a definite standard for the fat content of milk But why depreciate the value of this standard to emphasize the importance of medical inspection of milkmaids?

[1] *Ugeskrift for Laeger* April 3rd 1924 p 421

THE WELFARE OF THE BLIND

THE annual report of the National Institute for the Blind for the financial year 1923-24 is a most interesting and comprehensive document The institute is the largest institution for the blind in the world Its work embraces the care of the blind of all ages and in every class of society It provides for the infant born blind, and for the old man and woman whose sight has failed them It assists the artisan in learning and getting suitable manual work and also the undergraduate at the university Its activities during the past year may be measured by the sum total of its budget—£193 769 At the end of last year it was faced with a very grave situation owing to a heavy financial deficit on the previous year's work This year the position is greatly bettered by the successful result of an appeal for funds so that with rigid economy it has not needed to cut down or close any of its departments—indeed, it has been able to extend them in two valuable directions A second Sunshine Home for blind babies has been opened at Southport to serve the North of England, and for old blind people a weekly new paper in Moon's type has been established The newspaper is a great boon to these old people whose blindness cuts them off from ordinary literature, and whose age prevents their learning the more difficult and complicated Braille Moon's type, invented by the late Dr Moon, is a simple variation of ordinary roman letters When these letters are embossed on strong paper they can readily be distinguished by the relatively insensitive fingers of calloused old age The large space this type fills makes

it necessary to condense the matter printed, so that little more can be given than the terse items of news that we are accustomed to see jerked out of a tape machine The report gives a reproduction of the first issue of this weekly newspaper, both in Moon's type and in ordinary print Each copy costs sixpence to produce, but is sold at twopence Over 6,000 were issued in the year The College for Blind Girls at Chorley Wood is doing well, it now has thirty pupils, and its finances are on a better footing, of a total cost of £5,000, some £3,000 is met by college fees, £1,000 by donations, and the deficit, about another £1,000, is made up out of the general funds of the institute, but last year the institute had to make up a deficit of over £3,000 This college for girls with little or no sight is the only one of its kind, it gives a first-class public school education to girls of the professional class It deserves to be better known Last year one of its pupils passed Responsions and was admitted to a college in Oxford University H R H Princess Mary (Viscountess Lascelles) is now president of the college The School of Massage is doing excellent work, by arrangement the women students are now able to attend St George's Hospital, and the men the Middlesex Hospital, for practical work Although the head office of the institute (224, Great Portland Street, London) exercises general control, there is such decentralization of activity as prevents loss of the personal touch which local endeavour furnishes, so that we find that there are branch areas and offices in Manchester, Newcastle-on-Tyne, Leeds, Sheffield, Liverpool, Leicester, Birmingham, Cardiff, Oxford, Cambridge, Exeter, Bristol, Brighton, and Southampton The report gives terse accounts of each of the several branches of its activities, together with a statement of the working expenses of each

THE QUEEN ALEXANDRA SANATORIUM FUND

THE Queen Alexandra Sanatorium in Davos was originally founded to provide sanatorium treatment in an alpine climate for persons of the English-speaking nationalities suffering from curable tuberculosis who were unable to afford the ordinary expenses of such treatment The war brought its work to an end in 1915, and in 1922 the sanatorium buildings were sold The sum of money thus realized was invested, and the interest is devoted to assisting a fixed number of selected patients to obtain sanatorium treatment at a cheaper rate during the winter months at the Hotel Frei at Davos Platz On October 14th, 1922 (p 698), we gave details of this new arrangement, which commenced in the autumn of that year The system of grants then adopted was continued in 1923-24, the amount of the grant being based on the supposition that the total weekly expenses of a patient would approximate £5, and that the grant would reduce this to about £2 10s This estimate was found in practice to be fairly accurate The number of grants was limited to twenty-eight, not only by the amount of money available, but also by the capacity of the Hotel Frei Suitable applicants receive a contribution towards the cost of board and lodging, together with the whole cost of medical treatment and nursing, for a period of about six months During this last year it was possible to continue some of the grants during the summer, and on April 30th, 1924, fifteen patients, one just admitted, were still in residence During the summer of 1923 the balconies on the south-east side of the building were covered in and converted to the loggia type, which has increased the possibility of sun-bath treatment, and, together with other improvements, has added to the comfort and convenience of the patients The annual report of the fund, which we have just received, covers the period from October 15th, 1923, when the sanatorium was reopened for the winter, to April 30th, 1924 The average duration of stay of patients was 164 days The winter was a very fine one, with abundant sunshine, offering the best possible conditions for treatment, the snowfall was about 20 feet The daily cost of each patient was approximately 16 francs, of which the patient paid 7½ francs and the fund 8½ francs The honorary secretary of the fund is Mr D Vesey, 3, Camp View, Wimbledon Common, S W 19 The visiting physicians at Davos are Dr A F Bill and Dr Florian Buel

THE LEAGUE OF NATIONS AND THE TRAFFIC IN DANGEROUS DRUGS

THE committee appointed by the Council of the League of Nations to prepare the agenda for the two conferences to be held in November next at Geneva, to which allusion was made in the JOURNAL on February 16th and April 12th, has, we understand, completed its task Last month these programmes were considered by the Advisory Committee on Opium, which will present a report thereon to the Council and Assembly of the League It will be remembered that the objectives of the two conferences to be held in November are the effectuation of Chapter II of the Opium Convention of 1912, which envisaged the gradual and effective suppression of the manufacture of and traffic in "prepared" opium, or opium used for smoking, and the restriction of the production of opium and coca leaves to the requirements for medical and legitimate purposes Some differences of opinion have, it is understood, been disclosed in the course of the deliberations The British, American, Dutch, and French members have viewed the question of restriction of output from somewhat different angles Some would attack the problem at the source—that is, the growth of the poppy and the coca shrub, others would direct attention to manufactured products, or to more effective measures for the control of national and international traffic American opinion is tending towards advocating the entire suppression of heroin, as being a drug especially resorted to in the United States by the criminal classes The attitude of the Indian Government has given rise to further criticism, but from a resolution recently passed by the All-India Congress Committee it would appear that popular opinion is coming round to the view that opium traffic for revenue must be abolished and the production of the drug restricted to medical requirements

THE BRITISH ORTHOPAEDIC ASSOCIATION'S VISIT TO ITALY

FOLLOWING a precedent set last year, when the British Orthopaedic Association held a meeting with Dutch orthopaedic surgeons at Leyden and Amsterdam, its members will visit Bologna this month, on the invitation of Professor Putti, who has arranged a programme of work at the Rizzoli Orthopaedic Institute on September 22nd and 23rd This institute comprises a very complete and extensive orthopaedic hospital, as well as workshops of various kinds Afterwards the members will travel by motor car from Bologna to Cortina di Ampezzo in order to see the Codivilla Institute there and study heliotherapy as there practised A drive among the Dolomite Mountains to Bolzano—better known by its German name of Bozen—will end what promises to be a most interesting and instructive excursion At Bolzano the train will be taken for home

SIR DAVID and LADY FERRIER celebrated their golden wedding on September 3rd Sir David Ferrier has retired from practice, but, as Sir Charles Ballance reminded us a fortnight ago, retains all his old interest in the advancement of medicine by research He is a lively proof of the saying that hard work never did anyone any harm

DR G H SIMMONS,

EDITOR OF THE JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION

DR GEORGE HENRY SIMMONS, who has been for twenty-five years Editor of the *Journal of the American Medical Association*, having entered his 73rd year, has intimated his wish to retire. On June 9th, during the annual meeting of the American Medical Association, he was entertained at a banquet and presented with his portrait. After the banquet a series of speeches was made.[1]

Dr Harvey Cushing

The first was by Dr Harvey Cushing, who spoke about Simmons as editor, publisher, and writer, and incidentally gave some account of Dr Simmons's career. Dr Cushing had his joke about what could be done with an Englishman if he could be caught young; for Dr Simmons was born at Moreton-in-Marsh, Gloucestershire, and went to America at the age of 18. He became a student of the University of Nebraska, and first took a degree from the Hahnemann Medical School but finding that his aspirations would not in this way be satisfied he began over again and graduated from Rush Medical College, Chicago. He practised in Lincoln, Nebraska, founded the *Western Medical Review* there and was secretary of the Medical Society of the State from 1896 to 1899, when he was appointed Editor of the *Journal* and Secretary of the American Medical Association. That Association had been founded in 1847 and its *Journal* had been established by Dr Nathan S. Davis in 1882. But neither the Association nor the *Journal* had been conspicuously successful. After Dr Simmons's appointment there was a great change. The circulation of the *Journal* went up from about 12,000 in 1900 to nearly 90,000 at the present day. It stood, Dr Cushing said, for clean journalism: not only did it begin the crusade to eliminate undesirable advertising, but through precept and example the same issue has been forced on all the other journals of the country. Once and for all it has been shown that a medical publication can be so conducted without the financial support of questionable advertising that there will be a large profit. And this surplus has been turned back into the publishing business which, under Simmons's fostering care, has grown astoundingly. Dr Cushing mentioned the publications of the American Medical Association:

A Spanish edition of the *Journal*; the *Archives of Internal Medicine*; the *American Journal of Diseases of Children*; the *Archives of Neurology and Psychiatry*; the *Archives of Dermatology and Syphilology*; the *Archives of Surgery*—much needed repositories of the more lengthy and serious scientific papers which the general practitioner has little inclination to read. And then there is *Hygeia*, the purpose of which is to disseminate health news in proper guise to the laity in place of the medicine doled out to them in lurid form in the daily press—a magazine deserving of introduction into every household. But the aims are not all. There is the *Quarterly Cumulative Index*; the Section *Transactions*; a series of useful Handbooks for the Practitioner; the publications of the Council on Pharmacy and Chemistry, the publications exposing nostrum and quackery; the publications of the Council on Health and Public Instruction; all the way from the care of the baby to those valuable papers fostered by the Bureau on the Protection of Medical Research; the publications of the Council of Medical Education and Hospitals; and much more, besides that colossal and invaluable volume of 2,500 pages now in its ninth edition—the *American Medical Directory* of over 160,000 physicians.



G. H. SIMMONS
(From a painting by Arvid Nyholm)

Summing up, Dr Cushing said that the American Medical Association has stood for definite reforms relating to the elevation of professional standards such as: (1) the establishing of State examining bodies to act as licensing boards in place of the diploma-giving schools; (2) the improvement of medical education by the raising of preliminary requirements and lengthening of the course; and (3) the regulation of pharmaceutical matters and of "patent" and proprietary medicines.

Dr William S. Thayer

Next Dr William Thayer spoke of Simmons as a man, and described him as a model of industry and persistency and equanimity and modesty and efficiency, in whose heart there lay treasured visions and ideals. Dr Thayer concluded by expressing the hope that the portrait so admirably done by Mr Arvid Nyholm would be a lasting memorial of the admiration and respect for the motives and ideals by which Dr Simmons had been guided, of gratitude for his service, and of pride in his achievement.

Dr William Mayo

Mr Hubert Work, Honorary Secretary of the Interior, followed with an appreciation, and Dr William Mayo then spoke of Dr Simmons's work for medical education. Character, he said, had made the *Journal*, and it had required character of the highest type to maintain its standards against every sort of onslaught. Graduation from a medical college, Dr Mayo said, meant commencement, though to a few members of the profession it meant the ending of scientific medicine and the beginning of a trade. Fortunately the larger number of practitioners were earnest students of medical journals. To-day, the majority of books not ephemeral in character were compilations of an encyclopaedic nature or textbooks for the student with a few highly specialized works useful only to a few. The profession as a whole kept abreast of the times by means of medical periodicals, which must be recognized as the greatest force in medical education. Nor had the education of the public in medical matters been neglected by the American Medical Association. The medical profession had been ultra-conservative and in times gone by had permitted the public to be educated by the charlatan, the quack, the patent medicine vendor, and the almanac. The United States had suffered more than any other country from insidious forms of vicious propaganda, the purpose of which had been to break down the confidence of the people at large in scientific medicine. Through the action on Propaganda for Reform in the *Journal of the American Medical Association*, and through the journal *Hygeia*, which reached the people directly, steps had been taken to restore public confidence. Even greater than these achievements had been the work of the *Journal of the American Medical Association* through its able editor in weeding out the inferior medical schools of earlier days. Such schools had been a reproach to the medical profession, they had been a source of incalculable harm to the people.

[1] Dr Simmons with characteristic self-effacement refused to allow a report of the banquet to be published in the *Journal of the American Medical Association*, and it was only by a *ruse de guerre* that the Editor of the BRITISH MEDICAL JOURNAL, being unable to accept the invitation to be present at the banquet, has been able to obtain an account of the proceedings.

at large, and had done much to cause distrust of the profession Dr Simmons had been the leader in improving medical education in the United States

A speech of personal reminiscences was then made by Mr Will Owen Jones of Lincoln, Nebraska

Dr Simmons's Reply

Dr Simmons, when he came to reply, said that words failed him to express the joy and satisfaction with which he received a gift such as the portrait and a testimonial such as the gathering When he assumed the editorship of the *Journal* the editorial, publishing, and printing departments occupied a single floor The development in these departments had been a normal growth hardly noticeable from year to year, though looming large now He had been fortunate in becoming the Editor of the *Journal* at an opportune moment The end of the nineteenth century saw the end of some of the old theories and methods of treatment and practice and the beginning of scientific medicine based on research and demonstrated facts Definite knowledge regarding the etiology and transmission of disease was taking the place of theory, pharmacology was asserting itself, drug therapy based on controlled clinical experience was taking the place of empirical prescribing The application of newer knowledge revealed by bacteriology and biological chemistry was gradually eliminating guesswork in diagnosis Naturally, the *Journal* reflected this progress

Further, the time had become ripe for reorganization of the Association, which, though originally a delegated body, had lost its representative character The reorganization of 1901 had provided a national business and legislative body—the House of Delegates—large enough to be representative, but sufficiently small to deliberate on the important questions that came before it County societies, definitely connected with the State, were created, dormant societies became active, practitioners realized that the American Medical Association was an active vital force and that they were part of it, and a new professional spirit became apparent

He had always believed and had always acted on the principle that the American Medical Association was primarily a scientific organization, with, for its chief function, the advancement of medical science and practice The reputation of the Association with the public, which was becoming better every year, was due in part to the fact that it had given evidence by its work and by its publications that it was a scientific body, and that all its efforts were for the common good of the profession and the public, and were based on altruistic motives While it was reasonable to boast of what had been done, the task, Dr Simmons said, was never-ending The Council on Medical Education had some unsolved problems, and so also had the Council on Pharmacy and Chemistry Medical legislation, which was still in a state of confusion in the United States, was a vital question The remedy lay in co-operation, and the problem now before the trustees of the Association and the Bureau of Legislation was to bring that about

The Association had resolved to take the post-graduate school to the doctor in the field, and a plan to carry out this had just been adopted It was hoped that in more than one district centre there would be within the next year ambulatory clinics, consisting of clinical and laboratory personnel, with mobile laboratory equipment available for demonstrating modern diagnostic methods and the application of rational therapeutics The funds of the Association could be expended to no better advantage, so far as the individual physician was concerned, than by thus carrying directly to him the most recent advance in the progress of medical science In conclusion, he said that while he had been fortunate in becoming connected with the Association at an opportune time, he had been equally fortunate in his associates and co-workers For twelve years, from 1899 to 1911, he had served as Secretary of the Association, as well as Editor of its *Journal*, and was, therefore, an officer of the House of Delegates During all these years, and since, he had felt that he had had the confidence and sympathy of practically all its members

England and Wales.

A New Vaccination Order

The Ministry of Health has issued a new Vaccination Order, dated August 22nd, 1924 As stated in the covering letter to boards of guardians, "The effect of the Order is to include in Form A the form of statutory declaration of conscientious objection to vaccination" In issuing the Order Mr Wheatley has gone some way to placate the anti-vaccination League, whose deputation waited on him early in the year The league naturally wanted him to go much further Some extremists, indeed, would wish Parliament to prohibit vaccination, most would accept the entire repeal of the Acts, others would be more or less satisfied with repeal of the "compulsory" provisions What he has done is merely to restore to the document issued by local registrars at registration of birth the form of declaration by complying with which exemption can be legally obtained It will be recollected that Mr Neville Chamberlain, when Minister of Health, wisely issued an Order by which the form in question was no longer handed to the parent or guardian as a matter of course at the time of registration, but had to be applied for On that point Mr Wheatley declined to reverse this administrative act of his predecessor until a year's experience had been gained Now that the year is nearly completed he has complied, and incidentally he will save the Anti-vaccination League, which appears to be very hard up, some expenditure in printing and issuing these forms on its own account, which function it adopted when Mr Chamberlain took the action stated We can believe that, as a former convener of the Public Health Committee of Glasgow, doubtless possessing some knowledge of that city's experiences of small-pox and vaccination, Mr Wheatley would feel unable to yield more than he has to the importunities of the leaguers

Since the above was written the organ of the league has published, in its September number, a letter addressed to its secretary by Mr R E Abbott, "an ardent supporter" of the cause in Gloucestershire Under date August 10th he writes

"Last week a divisional summer school of the I L P was held here, and Mr Wheatley came down for the week-end I took an opportunity of tackling him, and told him of our disappointment with the result of the deputation, particularly as he was on a list of M P s favourable to our cause He told me that that was a mistake—he had expressed himself as against vaccination, but that was ten years ago, and since then his experience on the Glasgow City Council had altered his opinion I questioned him about this experience, and all I could get was that whilst their doctors and nurses (vaccinated) never took small pox, several visiting clergymen (unvaccinated) had taken it This, plus the fact that his daughter is a doctor and has assured him that she has studied both sides fully, is all that I could get out of him He admitted to me that if there were no such laws he would require a thousand times as much evidence as he now has before introducing laws, however unanimous the medical profession might be He did not listen to statistics—merely saying that he had had too much experience of statistics not to know that figures can prove anything Further, he admitted that he was not a believer in vaccination for children, but would favour a law for compulsion for everyone in face of an epidemic Altogether I must confess I was very unpressed by his lack of imagination He did tell me that if the society pressed the matter the form would be restored and sent with the other papers"

What Mr Wheatley thinks of the league's publication of this letter, especially of the last sentence of it, at the present juncture we do not know, but if he can find time he—and other Members of Parliament subject to canvassing by the league—might usefully read the opening article in that remarkable American journal the *Saturday Evening Post* of August 23rd The title of the article is "Government by Blackmail" It has reference to political conditions in America, but appears not to be without some application to this country

WELSH BOARD OF HEALTH

In the section of the fifth annual report of the Ministry of Health which deals with Wales, it is stated that there is reason to believe that the notification of tuberculosis is steadily improving though it is still far from satisfactory During the year 1923-24 a circular was issued to every medical practitioner in the Principality, explaining clearly his obligation in this matter The several county and county borough councils have entered into agreements with the Welsh National Memorial Association, which undertakes the treatment of tuberculous persons from a national standpoint and provides also for research work, for an educational campaign, and for close co-operation between the tuberculosis physicians of the association and the local authorities in the preventive aspect of the work The present estimated net expenditure by the association for the year 1923-24 is £136,000, towards which the estimated aggregate contribution from the local authorities is £66,500 During the year residential treatment was provided at twelve hospitals and four sanatoriums, 1,331 beds in all, and dispensary treatment at fourteen central dispensaries and about ninety visiting stations Kensington Hospital (100 beds), at St Bride's Pembrokeshire, was opened during the year for non pulmonary tuberculosis in children, and considerable progress has been made in adapting and equipping a new hospital at Cefn Mably in Monmouthshire The orthopaedic after care of surgical tuberculosis cases is dealt with from three centres—the North Wales Sanatorium, Glan Ely Hospital, and Kensington Hospital, in this way a number of hospital beds are freed for new patients No new centres for the treatment of venereal disease were opened during the year, and the number of approved centres remains at ten The opening of the new out-patient department at the Cardiff Royal Infirmary has improved the facilities for treatment of venereal cases at this centre The infant death rate for Wales for 1922 was 84 per 1,000, as compared with 87 in 1921, but the maternal mortality rate shows a slight tendency to increase The number of maternity and children's welfare centres in existence on March 31st, 1924, was 234, as compared with 222 a year before Of these 13 are provided by voluntary societies and the remainder by local authorities, two of whom have also established their own maternity homes, whilst 13 authorities have arranged for the treatment in private or public institutions of complicated or necessitous maternity cases

ACCIDENT BEDS IN LONDON

As the result of an offer of assistance by King Edward's Hospital Fund for London, fourteen additional beds for accident cases have been opened at King's College Hospital This is the first result of the decision of the King's Fund, announced by H P H the Prince of Wales at the special meeting of the General Council on July 25th, to apply the legacies of the late Mr and Mrs John Wells, estimated at over £200,000, to assisting the hospitals of London with extensions, improvements, and other special needs The proposals which the Distribution Committee has under consideration are as follows

(*a*) [illegible] of additional hospital accommodation [illegible] or accident cases by grants towards capital [illegible] extension or towards the reduction of deficits on schemes of extension that have been completed or towards the opening of beds in extensions that have already been provided but are not yet available for the patients for whom they were intended

(*b*) Assistance towards schemes of improvement as distinct from schemes of extension

(*c*) Increased grants to maintenance, including the maintenance of additional beds

The Prince of Wales pointed out that 1,600 beds had been added to the hospital accommodation of London since 1913, and that the schemes now in hand or proposed amounted to another 1,000 The Wells legacies by themselves would not, he said, enable the Fund to make all the grants it would have wished to make The Distribution Committee would have to select the cases where extra help, given or promised immediately, would have the greatest effect and produce the greatest benefit to the voluntary hospital system in London Efforts made by the hospitals themselves would be taken into account so that the grants may be not only a help but also a stimulus

ILLUMINATION AT WEMBLEY

At a conference on illuminating engineering held at the British Empire Exhibition on August 12th two papers were read on the methods adopted for the illumination of the exhibition The huge amusement area is lighted by gas The similar area in the White City was lighted by high pressure gas with mantles The improvements in the use of gas now make it possible to dispense with high pressure, which is costly Standards fourteen feet high and sixty feet apart are fitted with strong lamps carrying superheaters with sixteen mantles each The nominal candle-power of each standard is 1,600 foot candles, and actual tests gave 1,590 The effect is that the light is of two to three foot-candles over the whole area so that at 10 p.m. when there is no moon it is possible to walk and even to read a newspaper comfortably throughout the area This is important, seeing that after lighting up over 96 per cent of the people in the exhibition are in the amusement area

In the exhibition proper electricity is the sole illuminant The original scheme was for flood lighting of all the fronts of the buildings from the roofs of adjacent buildings, so as to ensure that architectural features would not be distorted by defects arising from illumination from the ground level or sources at low altitude This scheme has been carried through save in some places where conditions necessitated supplementary festoon lighting Such a mode of illumination demands high power lighting and good reflecting surfaces The finest buildings are of concrete, which reflects only 25 per cent of the light, so from two to five foot-candles are required for a good effect Plaster and painted buildings require half the lighting The long distances between the buildings made concentrated beams necessary, and this has been obtained by the use of low-voltage gas-filled tungsten lamps with concentrated filaments and deep short focus parabolic reflectors, directing 76 per cent of the total luminous flux within an angle of less than 5 degrees, the highest concentration yet obtained with filament light Silvered reflectors in air tight cases are used Several thousand of these projectors illuminating facias 300 to 1,000 feet distant are in use The effect is brilliant, yet, according to Mr H T Harrison, who read a paper on the subject, there is no unpleasant glare The beautiful road standards, fashioned like a geographical globe, furnish 1 000 candle power, but since the luminous area exceeds 900 sq in there is no glare The interior lighting of some of the buildings has been effected by gas-filled lamps hung high within enamelled reflectors, these give a floor illumination of three foot-candles

Mr Leon Gaster gave accounts of two recent conferences on industrial lighting held at Geneva A paper read there by Dr Stassen on miners' nystagmus contained frequent reference to the prejudicial effects of inadequate lighting on vision The International Illumination Commission recognized that regulations for industrial lighting should be based primarily on obtaining conditions essential to the health and safety of the workers, and that the present standards should not be enforced by law But recommendations in the interest of efficient production would be welcomed Emphasis was laid upon the need of increased propaganda work

EXTENSIONS IN SURREY HOSPITALS

An extension scheme has been planned in connexion with the Croydon General Hospital, which will cost some £250,000 Sufficient money has already been collected to begin the construction of a new out-patients' department and to enlarge two existing wards this year, other new buildings contemplated include a ward block for 42 beds, reorganization of the administration block, the building of a recreation hall, with a large operating theatre above, a special block to accommodate 20 paying patients, a laboratory, and a laundry During last year 1,496 patients were treated in the wards, and 13,470 as out-patients, over 5,000 casualty cases being dealt with The extension of the Royal Surrey County Hospital, Guildford, is being continued by the enlargement and rearrangement of the existing building on the west side of the hospital to provide extra accommodation for residents, an office for the

mation, and an increase of ward accommodation to the extent of 12 beds A pathological laboratory is to be formed out of two rooms, two other rooms will be converted into isolation wards The opening of the new out-patients' wing by the Duke and Duchess of York in April last was reported in our columns of May 17th (p 880) The cost of the whole scheme, including the provision of additional endowments for maintenance, is £50,000, of which about £32,000 has been subscribed or promised, and legacies amounting to £10,650 have been allotted to this fund These extensions when completed will increase the accommodation to over 80 beds, but later on further expansion will probably be necessary It is proposed to add an additional floor to the Victoria Hospital at Woking, the new floor will comprise two wards, each containing 6 beds, and two single-bed wards A new administration block is to be erected behind the existing building, and will contain anaesthetic and sterilizing rooms, an x-ray room, accommodation for casualty cases, and rooms for the nursing staff The extension was commenced last September and is now well advanced The cost will be about £18,500, of which all but £2,700 has been raised A hospital has been erected at Carshalton, as a war memorial, on a more suitable site than that of the previously existing hospital, which it will replace The accommodation provided consists of a ward of 12 beds for women, one of 6 beds for men, 6 wards for private patients, 3 sun rooms, a maternity ward, an emergency ward, and an x-ray room The total cost of the scheme is in the neighbourhood of £20,000 A new hospital is to be built at Weybridge, with accommodation for 30 beds, at a cost of £32,000, and extensive additions are proposed at the Epsom and Ewell Hospital also

Scotland.

GLASGOW MEMORIAL TO LORD LISTER

THE statue to Lord Lister erected in Kelvingrove Park, Glasgow, will be unveiled on Wednesday next, September 17th, at 3 p m The Lord Provost of Glasgow, chairman of the Lord Lister Memorial Committee, will preside, and the statue will be unveiled by Sir Hector Cameron, C B E, M D, Emeritus Professor of Clinical Surgery in the University of Glasgow

SCOTTISH SANITARY CONGRESS

The fiftieth annual congress of the Incorporated Sanitary Association of Scotland was held last week in Marischal College, Aberdeen, under the presidency of Dr G Matheson Cullen, one of the medical officers of the Scottish Board of Health The president in his address referred to the question of the standardization of disinfectants, which he declared to be an exceedingly difficult one At present the methods employed were, he said, of a chemical nature, and the association wanted another mode of estimation by which certificates could be given as to the real values of different disinfectants in ordinary conditions of life, such as in the home, in the byre, etc Sir Leslie Mackenzie, medical member of the Scottish Board of Health, later delivered a lecture upon the outlook in preventive medicine Thirty years ago, the lecturer said, the term "preventive medicine" meant merely the application of medical ideas to the correction of bad environment This included the provision of good water supplies, good drainage, wholesome sites for houses, sufficient ventilation, clean and healthy food, and attention to the general conditions included in the nuisances section of the Public Health Act The individual, however, was left alone, except when he became a danger to others as well as to himself To-day, however, the aim of the public health movement was not merely to provide a healthy environment but to promote the best individual life The world had become conscious of crowds of expectant mothers looking for skilled direction, and crowds of tender children struggling into life and asking for more room to breathe One of the results of the war had been that in health administration the production of fitness had become an important consideration This was not the mere production of fitness for nothing in particular except to go on keeping fit, but as a working ideal for civil life It had been found by the recruiting boards during the war that out of every nine men of military age three were perfectly fit and healthy, two were on a definitely lower plane of health and strength, three could almost be described as physical wrecks, and the remaining one was a chronic invalid with a precarious hold on life These figures were enough to justify an extended programme of curative and preventive measures for several generations to come The play movement for children, the physical education movement for adolescents, and a reasonable physical care of the body for grown people—all had their proper place

DEADLOCK IN SCOTTISH HOUSING SCHEMES

The Scottish Board of Health has issued to local authorities a circular regarding the cost of houses included in tenders under the Housing Act of 1923 The Board draws attention to the progressive upward tendency of tenders for construction of houses, and suggests that, while the approval of the Board for tenders under this Act has not been necessary, concerted action should be taken to combat the rise in costs, which in its view is not justified It is pointed out that in the spring of 1924 the Board was approving tenders for flats of three apartments costing £300 for each flat, whereas in recent months the cost for similar houses has increased by 45 per cent Proposals for building under the Housing Act of 1924 will have to be approved by the Board of Health, and the Board is prepared to withhold its consent unless satisfied that the costs are reasonable It is likely that the co operation of local authorities will be forthcoming to keep down costs of building, because the State contribution is a fixed one and inflation of expenses will fall upon local authorities or their tenants A deputation from the Middle Ward District Committee of Lanarkshire was recently received by the Board in regard to this matter It was then pointed out that tenders had been received for building additional houses at prices which ranged from £351 for a two-apartment flat and £402 for a three-apartment flat to £490 for a three-apartment cottage, these costs being exclusive of land, roads, sewers, and other necessary incidental expenses The Board was unable to give its consent to the erection of houses at such prices, which in its opinion could not be justified, having regard to prices of material and labour The deputation, on the other hand, pointed out that the need for houses in the area was so great that some drastic steps would have to be taken without delay, and that every effort had been made to obtain the lowest prices for the work required

Ireland.

THE BELFAST MENTAL HOSPITAL

THE resident medical superintendent (Dr S J Graham), in his report on the *Belfast Mental Hospital* for 1923, drops the old title "District Asylum" He reiterates the call that appeared in last year's report for new and up to-date legislation "the existing statutes do not sufficiently guarantee the proper treatment of the mentally afflicted", "the Lunacy Acts require recasting to deal effectively with prevention and the incipient stages of mental diseases", "early treatment in insanity is just as important as in other forms of disease", "it seems pitiable that one of the worst forms of disease should be denied skilled early treatment, and that it is not until the mental symptoms have developed so far as to render the individual unfit to be at large that treatment commences, following certification and its present-day attendant stigma" It is well known that the Government of Northern Ireland has this need under consideration, and may be trusted, with the aid of its chief medical adviser (Dr Dawson), to redeem the lunacy laws from medieval taint To the ordinary reformer, however, and still more to the enthusiast, the parliamentary delays and procrastinations seem unpardonable, but with the distinguished medical men in the local parliament it is felt that advance is in safe hands

MEDICAL ORGANIZATION

Wicklow and Wexford medical practitioners met recently at Woodenbridge to consider the unsatisfactory position and prospects of the profession in the Free State. Dr. Hennessy, Medical Secretary, Irish Medical Committee, spoke on the Government's legislative proposals and the adverse conditions likely to occur if the profession were not immediately organized. A pledge, already adopted in Kildare and Meath, was signed by all present, binding themselves to the resignation of their offices or any other course deemed necessary by the Irish Medical Committee towards securing satisfactory conditions of medical service in Ireland.

Correspondence.

THE VALUE OF FRUIT AS A FOOD

SIR,—It has often been levelled against the profession that more attention is devoted to disease than to the prevention of it, and one has only to pick up the current number of the JOURNAL to see that the accusation is not unjustified.

In the JOURNAL of August 30th there are two examples of this doctrine. A leading article deals with an investigation into the cause of chronic ulcerative colitis. Cultures were made from ulcers found in the intestinal tract, and, as was only to be expected, large numbers of organisms were discovered and found capable of producing the disease in animals. All this is very interesting, and the result will, *of course*, be a vaccine which we shall be advised to inject into our long-suffering patients with the usual unsatisfactory results. At its best, a vaccine can only give increased resistance in a varying degree.

Why not start these investigations at the other end?—for what goes in comes out. Here are the histories of two patients in this practice.

CASE I.

A woman aged 22 was diagnosed to be suffering from ulcerative colitis, probably tuberculous and probably with more than one ulcer. Her mother stated that some time in 1920 she contracted the disease, losing her appetite, losing weight, and passing frequent blood motions. In 1921 she was sent to St. Thomas's Hospital where appendicostomy was performed and she was given irrigations of silver nitrate. Her condition improved and the improvement was maintained for some months with occasional relapses. In the summer of 1922 the appendicostomy wound had closed and the disease returned in its original severity. She became very emaciated and had frequent bloody diarrhœa. A second operation was advised but was refused. Numerous drugs including dimol and kerol were tried without success; her diet was of the usual hospital invalid variety, with slight modifications. Early in 1923 she was put upon a strict diet of raw fruit and vegetables and to-day she is fat and well.

CASE II.

A woman aged 29 had the usual symptoms of *membranous* colitis—pain in the abdomen, vomiting, anorexia and obstinate constipation, passing every few days large membranous casts of the intestines. High irrigations were given, laxatives such as paraffin and antiseptics such as dimol and kerol and drugs such as bismuth and chlorodyne, they produced little or no effect. She was fed upon such pappy foods as she could eat and her bowels were kept open with large doses of aperients. Later she was sent to the London Hospital where she received much the same sort of treatment. Later still she went to the Royal Bath Hospital at Harrogate where she had a course of Plombières treatment; her diet was at first milk, which she loathed and vomited, and it was then changed to tea, toast, eggs, and butter at her own request. During her month in Harrogate she lost 4 lb. in weight and a large quantity of membrane. However, her symptoms were alleviated and she vomited less, but was very weak and ill. On her return she was put upon a diet consisting of brown bread, butter, honey, fruit and fruit juices and began to improve straight away. Vomiting and pain ceased and at the end of the first week he had passed three well-formed motions without the aid of aperients. The membrane gradually disappeared from the motions and she is now regaining her weight.

In both these patients the gums, which were very spongy, have considerably improved since fruit was made the chief article of diet.

Turning to page 354 of the same number of the JOURNAL I read an account of *some* experiments on the effect of diet on the teeth of school children. Glancing at the diets provided, the wonder is, not that the teeth became carious, but that the investigators should spend so much time over what should be a foregone conclusion. No one could reasonably expect a child to be healthy *on* such fare. What chance have the teeth of any child on such a pap of starch and sugar, and, diversified more as a medicine with the cod-liver oil, a quarter of an orange, half a tomato, or two or three drachms of swede juice! It is also stated that the action of ultra-violet light, together with the different diets, is being investigated—why? The teeth were provided for chewing our food, and the action of an apple a day to keep the doctor away is of far more importance than the action of ultra-violet rays—to them.

Such investigations lead to nothing but expense. They start at the wrong end of the subject. Dr. Eric Pritchard, in his *Physiological Feeding of Children* (p. 22), emphasizes the importance of fruit in the diet to supply the mineral deficiencies, and any budding dietitian can see that a diet such as *any* of the three *quoted* is simply asking for trouble.

For some years both in England and on the Continent, I have been interested in child welfare work, and I have tried especially to teach the mothers the benefit of uncooked food on the digestion and teeth. If they remember nothing else they should remember that "God sent the food but the devil sent the cook." Many have a rooted objection to giving children raw fruit, on the plea that it is indigestible and too acid. It is neither if it is ripe and is chewed properly. The act of chewing slightly acid fruit stimulates the flow of saliva and cleanses the teeth and gums.

It is long since the days of Hogarth, but one has only to see his caricatures to realize that gluttony was then at its height. Were they all caricatures, those pimply, ponderous, putrefying people. We eat less in these days, *but what we feed in quantity we make up for in 'quality.'* Our food has become more "scientific." When the simpler forms of starch, sugar and meat disagree with us we call in the analytical chemist and have them predigested and *concentrated, or mixed with a suitable aperient to put* them along. Such food is practically dead to vitamins, but an excellent medium for bacteria and in the intervals of a "cure" we go about like perambulating culture tubes, prodding our windy stomachs. Small wonder that intestinal stasis, with its grisly train, soon comes upon the scene, and that from slimy mouth to protruding piles we are an easy prey.

Having arrived at this state, what do we do? Not content, we stir it up with an aperient and start all over again, perhaps with a little bismuth to cover our outraged lining, usually with milk—a fluid teeming with its own bacteria, a good constipator, and an excellent culture medium.

Raw fruits, and especially lemon juice, are the only efficient and *harmless* intestinal antiseptics and natural aperients.

On page 376 (JOURNAL, August 30th) Sir Arbuthnot Lane is reported to have read a paper on the causation of cancer, in which he urged that cancer was the result of chronic poisoning of the tissues of the body in the vast majority of cases by the poisons absorbed from the gastro-intestinal tract.

One need not be a strict fruitarian, but to the patient with fetid breath, slimy teeth, a large windy belly, epigastric tenderness and pain, and chronic constipation, *part of my advice is to drink before meals, avoid cooked* food as far as possible, eat fruit in increasing quantities until their motions are practically odourless and their bowels act easily at least once a day. The symptoms generally disappear in a few days. Indigestion is due not to the digestive organs but to indigestible food, and the various morbid conditions—constipation, dilatations, kinks, inflammations, and ulcerations—are the natural sequelae of the continued use of such foods.

The usual advice to take plenty of fresh air and exercise and to eat suitable food is not applicable to hospital patients who are confined to the wards and have to put up with the usual hospital diet supplemented by a dose of aperient *omne mane*. That this diet is a constant source of complaints by returned patients is what every general practitioner knows.—I am, etc.,

Stony Stratford, Bucks, Aug. 27th. A. H. HARGOOD

X-RAY INTERPRETATION

SIR,—Many years ago I remember listening to an enlightening and impressive lecture by the late Professor John Chiene of Edinburgh, entitled "Don't Touch" It was a plea for arriving at a diagnosis by means of the eye, a careful weighing of the symptoms, and by the use of scientific methods which involved no unnecessary manipulations of the patient He described "crepitus," as the forlorn hope of the surgeon About this time there were many surgeons who forbade the students to attend demonstrations in the x-ray department, pointing out that they relied upon a diagnosis being made by this method they would develop into mechanicians and would fail to secure that confidence in themselves which was a necessity to their advancement and the well-being of their patients

I have been led to approach you on this subject by a statement made in a letter published in your issue of August 30th, which reads as follows "Personally I am very happy to be quite sure of a simple fracture" Such a statement is, of course, very assuring to the general public, so far as the writer is concerned, but that this cannot be applied even to some of our leading surgeons it is now my intention to prove

During the last month I have seen two patients (women), both under 50 years of age, who are suffering from ununited fracture of the neck of the femur, not recognized, hence these two poor women are doomed to the greatest possible amount of inconvenience and perpetual pain for the remainder of their lives

CASE I

Five years back Mrs M was walking upon a pavement more or less slippery from a recent fall of rain She slipped, fell upon her right hip, and was unable to rise She was lifted into a taxi cab and sent home, where she was put to bed Her ordinary medical practitioner was called in, and after an examination gave it as his opinion that she was suffering only from a bruised hip, ordered her to keep her bed, telling her that she would be all right The pain was so severe during the night that she never closed her eyes, and as this did not abate during the following day the senior surgeon of one of our large hospitals was called in He made a careful examination, told the husband that the pain was due to some of the tissues having been torn, and that she would be all right after a rest in bed No attempt was made to fix the limb, neither was the patient told not to move it, as a consequence she moved it from time to time (as she did not want it to become stiff), despite the pain which ensued The limb became swollen and the pain increased to such an extent that the surgeon was again called in This time, in the night, he administered or ordered a hypodermic injection, telling the patient that the pain would go and that in a few days she would be able to get up The pain did not go although its severity diminished For five years she has been a complete invalid, always in pain, and only able to waddle about with the greatest difficulty A radiograph showed an ununited fracture, with shortening, and a large amount of callus

CASE II

Mrs N two years back slipped in the street, and being unable to rise was sent in an ambulance to the nearest hospital After being examined by several doctors she was told that she would be all right after a few days' rest, and that there was nothing serious the matter with her, she was sent home in an ambulance and put to bed Her panel doctor confirmed the hospital diagnosis No splints were applied, she was told it was better for her to move her leg After seven months in bed she hobbled again to the hospital, was given some medicine, and told to rest as much as she could Later she visited another hospital, was carefully examined, ordered more medicine, and told to have her teeth taken out Present condition ambles along with great difficulty and is never free from pain A radiograph shows ununited fracture of the neck of the femur, with a large amount of callus and some shortening

Notwithstanding the fact that twenty-eight years have elapsed since the discovery of the x rays, that it is an established fact that many fractures can only be diagnosed by their aid, and that in all fractures the necessary treatment can be better applied from the knowledge obtained through them, here are two cases in which neglect to use the most scientific means of diagnosis has resulted in the permanent disablement and condemnation to perpetual pain of two women in the prime of life, who should, had proper and scientific methods been applied, have been cured

A fracture of the neck of the femur can be diagnosed by means of the x rays with absolute certainty This being the case, may I ask what excuse can be offered why they were not used in these two cases? I have met with many cases where surgeons, holding positions which entitle the patients who employ them to consider that they are obtaining the best possible advice, have neglected to avail themselves of the benefits which accrue from the use of the x rays, and on occasion have even gone so far as to tell the patients that such a measure was useless, whilst there was at least a chance that useful knowledge might have been obtained from them Surely it is time that the jealousy engendered in the early days of the x rays should be washed out in the interest of the public —I am, etc,

JOHN HILL-EDWARDS

Birmingham, Aug 31st

SIR,—The kindly criticism of Sir Thomas Horder (BRITISH MEDICAL JOURNAL, August 23rd, p 344) seems to evade the issue, he reasserts that some radiologists give diagnoses which are not justified by the x-ray data I agree, but when he illustrates this bad habit of radiologists by quoting one of my reports I demur, for I have always taken pains to control my x-ray observations by the clinical, surgical, and pathological findings

Dr Geoffrey Fildes (August 30th, p 389) expresses the opinion that a radiologist should give no diagnoses, but merely report his x-ray observations If this is his practice I cannot agree with it Complaint is frequently made by doctors that radiologists issue reports which are too vague to be helpful In my view the radiologist should (1) describe his observations accurately, and (2) give his conclusions definitely If his facts do not lead him to a diagnosis, or do not enable him to decide between two (or more) diagnoses, he should say so definitely —I am, etc,

ALFRED C JORDIN

London, W, Sept 1st

THE PREVENTION OF MENTAL DEFICIENCY

SIR,—The papers and discussion on this subject in the Section of Diseases of Children, as reported in the JOURNAL (August 23rd, pp 316 322), although very interesting in details, do not seem helpful as to main conclusions While the experts expound theories, no doubt very necessary, are we to wait and say that nothing can be done, or is there some path along which we can all advance? I believe to day there is a great need for an authoritative pronouncement by the profession as a whole upon the methods which society should adopt to prevent mental deficiency, and that such a pronouncement would have an immediate response from all authorities concerned in social well-being

I also believe that a very general agreement could be reached upon some points Take one instance—the thorough application of the Mental Deficiency Act Probably every practitioner has known cases in which mentally deficient adolescents have been to some extent treated under this Act and then let loose, to some extent improved, but not really fit to take the responsibility of facing the world by themselves, and the result is sometimes more disastrous than if they had never been treated at all The reason for this seems to be, not that any individual has failed in his duty, but that the point of view of the administration of the Act is not always correct The State has a duty to maintain the quality of its members at as high a level as possible, and this must be done at all costs, though with the utmost care for individuals

There are other urgent matters upon which we need light, such as whether there is a permanent pauper class in our midst, and what relation has it to mental deficiency? What attitude can we adopt and what advice are we to give to people on the subject of birth control? What is the relation of venereal disease to mental deficiency? These and kindred questions are all of the greatest importance to our country at the present time and are points upon which practitioners could throw an immense amount of light —I am, etc,

NORMAN MACFADYEN

Letchworth, Aug 24th

DIET AND DENTAL CARIES

SIR,—The valuable experiments on the effect of diet on caries, recorded in your issue of August 30th, seem to me to deserve considerable attention The fact that a diet containing a small amount of easily fermented carbohydrate is liable to lodge about the teeth gives rise to a correspondingly small average number of teeth per child in which caries has spread is well shown, while where much easily

fermented carbohydrate liable to lodge is in the diet, the average number of teeth in which caries has spread is great, and where the carbohydrate is intermediate in amount, so, too, is the amount of caries This is, of course, exactly what is to be expected if the now well established theory of the cause of caries is correct It is, however, surely regrettable that this simple truth should be obscured by repeated references to calcifying vitamins Dilating on these is only misleading with regard to the experimental evidence brought forward, because, of course, the teeth affected by the different diets referred to were calcified years before the experiments were commenced

With regard to post-eruptive hardening of the enamel by the saliva, this is a physical process, and does not require us to assume the presence of calcifying vitamins Moreover, the saliva does not have the chance of exerting such beneficent action when carbohydrates lodge and ferment under conditions favouring the concentration of acid The more carefully we consider the subject the more difficult it becomes to see how calcifying vitamins can be introduced or "mobilized" through this fermenting material, even with the aid of ultra violet rays —I am, etc,

London, W Sept 6th J SIM WALLACE

PLANNING A DOCTOR'S HOUSE

SIR,—I have just gone into a new house, built under my own and the architect's suggestions for medical practice When beginning, I wished that I could have had access to one or more plans from my own point of view I write to say that, if it may help any doctor who contemplates building, the architect will be willing to submit a copy of the plan

The house has on the ground floor waiting room, dispensary and consulting room, dining and drawing rooms, upstairs four bedrooms, bathroom, w c, linen cupboard with cylinder, and a small dressing room, small lavatory inside the front door, kitchen, larder, pantry, with scullery and coalhouse inside the back door The flat roof would have taken two large bedrooms if I had wanted them

The house is built on one acre of land, two and a half miles from Scarborough —I am, etc,

Newby near Scarborough Sept 1st J P WIGHTMAN

POOR LAW PATIENTS AND FREE CHOICE OF DOCTOR

SIR,—From the letters in the BRITISH MEDICAL JOURNAL of August 30th by Dr M W Renton (p 389) and Dr T Murray (p 392) it would appear that both a slur is to be cast and an attack made on the holders of Poor Law medical appointments Speaking as a district medical officer who has held his appointment for many years, I have never once had a complaint lodged by any patient To a country practitioner such as myself, inadequate as the salary may be, it is none the less an important part of my income In fact, there are country practices where a living could not be made without these appointments What may be possible in such populated districts as Dartford, where men can obtain a much larger number of insured patients to make up for any deficiency of income, cannot or should not be applied to less populated districts Is it proposed to indemnify the present holders of district medical officers' appointments for their loss?—I am, etc,

August 30th NESTOR

IRREDUCIBLE HERNIA IN INFANTS

SIR,—In connexion with the recent correspondence on this subject it is interesting to recall the statement of Mr John Fraser in this JOURNAL (1922, i, p 177)

> I have looked over the records of 3 000 cases of inguinal hernia which have been under treatment in the Edinburgh Children's Hospital and among such a large number there has been no instance of strangulation as we find it in the adult Many of the cases have been irreducible but even in these which have been irreducible for several days strangulation had not resulted

Recently in the Bradford Royal Infirmary in a series of fifteen consecutive emergency cases of strangulated or irreducible inguinal hernia, three were in young children Their ages were 4, 11, and 18 months, and they were thus considerably older than the cases recently commented upon In all the cases irritability and crying were the first signs Vomiting was a late sign In two cases an attempt at reduction by taxis under general anaesthesia had failed All the cases were operated on within twenty four hours of the onset of the acute conditions and were discharged home healed within twelve days It was noted in all that the small bowel in the sac was not unduly congested

I suggest, therefore that in young children irreducible inguinal hernia should not be looked upon as a rarity Although realizing that there is not the same degree of constriction as in adults, it seems advisable that reduction by taxis under anaesthesia should not be attempted, but that the practitioner should arrange for immediate operation to be undertaken —I am, etc,

DAVID L McRAE TOD
Resident Surgical Officer Bradford Royal Infirmary

August 23rd.

CHRONIC ULCERATIVE COLITIS

SIR,—Your interesting article upon the etiology of ulcerative colitis (August 30th, p 378) makes reference to its well known intractability This reference prompts me to offer the suggestion, based on my own experience, that the complaint would prove less intractable, and less liable to result in extensive ulceration, if the value of Dr Wedgwood's mercury and iron mixture (see BRITISH MEDICAL JOURNAL, February 16th, 1924) were more generally recognized

I have before me a letter dated August 27th, 1924, from Dr Chillingworth of Bedford, which illustrates this point He writes to tell me of the complete success of this mixture in a severe case under his care which had been in the Samaritan Hospital, London, then in Charing Cross Hospital, where it was diagnosed as tuberculous ulceration, and "sent home by ambulance to die but who on mercury and iron "at once improved and is now quite well" —I am, etc,

T SYDNEY WILSON,
Consulting Physician Birmingham General Hospital

September 8th.

*** Dr Wedgwood's original note was published in the BRITISH MEDICAL JOURNAL in 1894, vol i (p 1126) Dr Wedgwood there stated that he had been led to use the treatment in typhoid fever on the theoretical ground that the indications might be met and the disease combated by the "internal administration of some astringent preparation of iron combined with small and continued doses of perchloride of mercury During the past two years I have treated twenty-one consecutive cases by giving max doses of tinctura ferri perchloridi with liquor hydrargyri perchloridi 3ss every four hours"

COCAINE SUBSTITUTES

SIR,—I am, of course aware that criticism is a form of flattery Nevertheless I have no intention of replying again to the letter of Mr E Watson-Williams (August 16th, p 298) because those who are interested in the matters at issue will appreciate that all the points he has again raised have been fully dealt with in my paper (BRITISH MEDICAL JOURNAL, July 12th, 1924) or in my letter in your issue of August 2nd

Mr E Watson Williams has added one original observation of his own to the discussion, and this should naturally be the most valuable part of his contribution In his letter of August 2nd Mr E Watson-Williams says "I have been using tutocain in my practice for three months but cannot find any appreciable 'shrinkage'—certainly nothing at all comparable to that produced by cocaine" Other observers, whose names I have given who have had more experience of tutocain than Mr F Watson Williams say "The shrinkage is quite definite, though less than that given by cocaine" and again "The mucous membrane and erectile tissue of the nose shrinks and pales very quickly" —I am, etc,

Pharmacological Laboratory Cambridge Sept 8th A J COPELAND

*** We cannot continue this correspondence

TUBERCULOSIS IMMUNITY

SIR,—Will you permit me to correct an error on the part of Dr Eric Pritchard as reported in the BRITISH MEDICAL JOURNAL of August 30th (p 368) in the discussion on tuberculosis in children? Dr Pritchard is reported to say:

"Dr Nathan Raw had also recently made use of attenuated cultures of the living bacillus"

My immunizing vaccine is prepared from attenuated cultures of *dead* bacilli, and I have never used living bacilli for this purpose My results with this vaccine have been so satisfactory that I have never used the other.—I am, etc,

Loughton, Essex, Sept 3rd NATHAN RAW

TREATMENT OF PUERPERAL SEPSIS

SIR,—We note with surprise that in an article by Dr Canney on the treatment of puerperal sepsis, in your issue of August 30th (p 356), he advocates the use of active exploration of the uterus in all cases as follows

"In a case showing signs of intrauterine sepsis I do not think it matters how complete the placenta, etc, may have been on inspection or to the usual tests, because no one can tell whether minute pieces may not remain Every effort should be made to remove, with the greatest care and with all possible gentleness, any detritus, however small"

We feel most emphatically that such a dangerous procedure can not only do no good but is liable to do an infinity of harm by converting a local uterine infection into a general septicaemia

The great majority of all cases of pyrexia in the puerperium resolve entirely without any treatment beyond the simplest medical measures, while the experience of all of us includes examples of the serious harm caused by unnecessary exploration of the uterus by the finger or curette

In support of our contention we submit the experience of Queen Charlotte's Hospital, illustrated by the following figures Of 3,147 consecutive cases of puerperal temperature above 100°, 2,805 cases (89 2 per cent) subsided within four days

This experience affords very strong evidence that in general it is safer to adopt an expectant attitude and to leave alone the interior of the uterus We believe that it is fundamentally unsound to interfere with Nature's defensive mechanism, particularly as the invading organisms have already penetrated into the uterine wall beyond the reach of the blunt curette In addition, the trauma of the uterine wall serves to disseminate the infection by opening new areas, as shown clinically by the frequent sequence of rigors.—We are, etc,

C HUBERT ROBERTS
J BRIGHT BANISTER
ALECK W BOURNE
TREVOR B DAVIES
LOUIS CARNAC RIVETT
LEONARD PHILLIPS
C S LANE-ROBERTS

Queen Charlotte's Hospital, London,
Sept 9th

The Services.

THE HEALTH OF THE ARMY

THE Report of the Director General Army Medical Services for the year 1921 has just been received, and is the first of its kind published since the first half of 1914 *

Sir William Leishman, in his opening sentence, remarks that the physical standard of the army during the year under review was very much lower than that prior to the war He attributes this decline to the effects of the war on the health of those officers and men who continued to serve after the armistice, and in greater degree to the relatively poor quality of the recruits accepted to fill the places of the men demobilized In so far as comparison has been possible with the preceding year, it appears that a considerable improvement was taking place during 1921, and that a return to the high standard of 1913 was to be expected at no distant date

A statistical report of sickness incidence shows that West Africa had the highest ratio of admissions to hospital, and was followed by India and Iraq Apart from North China, where the military strength was so small as to render the ratio of little value, the death rate was highest in Iraq 10 74 per 1,000, and in India, 7 09 Malaria was responsible for the highest number of admissions, 23,893, no fewer than 18,878 of these occurring in India

In the section devoted to the medical examination of recruits, the Director General contrasts the ratio of rejections on medical examination in 1920 21 (354 01 per 1,000) with that in 1912 13 (202 50) He ascribes this large increase to the poorer physique of those presenting themselves for enlistment, and also to the fact that a large proportion of the recruits had served during the war and presented minor disabilities which, though insufficient to bar them from service in a national emergency, were grounds for rejection in the case of a voluntary army on a peace footing

The reorganization of the hygiene service of the army, planned since 1914, has been devised to link under a directorate of hygiene at the War Office the medical officers with special hygiene duties, to initiate and stimulate research into hygiene problems, thus improving the standard of army hygiene, and by the employment of specialist officers to ensure the prevention of wastage due to disease and physical inefficiency The directorate of hygiene supervises and administers the Army School of Hygiene, maintains close relations with the Hygiene Department of the Royal Army Medical College, and superintends and directs hygiene research Through the assistant directors of hygiene of commands it is kept intimately in touch with hygiene matters in the army, and is in liaison with the civil public health departments All officers R A M C receive instruction in hygiene at the College on entering the service, and again about eight years later, when attending the senior officers' course In war the following units are organized and allotted to armies in the field sanitary sections to supervise technical hygienic measures, mobile hygiene laboratories for special investigations, and trained personnel for mechanical transport water tank companies The formation of non medical "cleansing units" is under consideration

A marked reduction in the incidence of syphilis occurred in 1921 as compared with 1913, this is attributed to measures of education, prophylaxis, both recreational and medical, notification, and treatment A new directorate of pathology was established in June, 1919, and combines under a definite organization the various departments and individuals concerned, and the training of experts in all branches Officers are encouraged to specialize, and facilities are afforded for research work An advisory committee, including both civil and military experts, meets monthly to deal with problems and make recommendations It is calculated that £20,500 was saved during the year by the pathological department of the Royal Army Medical College in connexion with the manufacture and supply of vaccines and serums

In 1921 the dental treatment in the army was put on a permanent basis by the establishment of the Army Dental Corps The preservation of natural teeth is aimed at and the avoidance of the need for artificial substitutes Of the men inspected during the year in all commands 81 47 per cent required dental treatment, and of these 81 per cent received it Lectures on oral hygiene resulted in a marked improvement in the state of the mouths of newly joined recruits who had previously been unaccustomed to daily cleansing of the teeth

DEATHS IN THE SERVICES

Surgeon General Alexander Dudgeon Gulland, Army Medical Staff (ret), died at Cheltenham on September 4th, aged 91 He was born at Falkland, Fife, and educated at Edinburgh, where he graduated as M D in 1857, having previously taken the L R C S in 1854 He entered the army as assistant surgeon on June 23rd, 1854, more than seventy years ago, attained the rank of deputy surgeon general on June 14th, 1883, and retired, with a step of honorary rank, on October 1st, 1883 In the old regimental days he served in the 41st Foot, now the Welsh regiment, on the staff, in the Royal Artillery, and in the 6th Foot, the Warwickshire regiment He was in the Crimea in 1854 56, at the siege of Sevastopol, and the expedition to Kertch, receiving the medal with a clasp, and the Turkish medal, he served also in the second China war in 1860 62 in the actions at Sinho and Tanoku, the capture of the Taku forts, and the Taeping rebellion, and received the medal with clasp, he was on the North West Frontier of India, in the Hazara campaign of 1868 and received the medal with clasp General Gulland's death leaves only one medical survivor of the Crimea still living—Surgeon Major A E T Longhurst

Lieut.-Colonel John Murray, J P, R A M C (ret), died at Aberdeen on September 2nd, aged 81 He was born and educated at Aberdeen, where he graduated M B in 1864 and M D in 1884 He entered the army as assistant surgeon in 1864, and retired with the honorary rank of brigade surgeon in December 1884 He served in the 93rd Foot the Argyll and Sutherland Highlanders, in the 80th Foot, the South Staffordshire regiment, and on the staff, under the regimental system

Surgeon William Sharpe, M D, R A M C (ret), died at Bundoran on June 25th, aged 82 He was educated in the Queen's University, Ireland, where he graduated M D in 1866 and C M in 1868, and entered the army as assistant surgeon on October 1st, 1868, he was placed on half pay, on account of ill health, just ten years later He was the author of several volumes of poetry and on religious subjects *Humanity and the Man*, London 1876 *Humanity and the Serpent of Genesis*, Boston, 1888, *Man, a Special Creation, or the Preordained Evolution of Species* London, 1873 *The Cause of Alcohol, a Factor in Human Progress*, London, 1882, *Colour among Races, and the Evolution of Beauty*, London, 1873 *The Conqueror's Dream, and other Poems*, London, 1878 (third edition 1881)

* Report on the Health of the Army for the year 1921 Vol LVII London H M Stationery Office or to be purchased through any bookseller 1921 3s net

Obituary

SIR WILLIAM BAYLISS, F.R.S.,

Professor of General Physiology, University College, London

THE death, on August 27th, of Sir William Bayliss, at the comparatively early age of 64, which we had the sorrow to announce in our issue of August 30th, has robbed English medical science of a leading physiologist and a great philosopher, and has taken from the scientific world a man whose profound knowledge and kindly nature had won for him universal respect and affection.

William Maddock Bayliss was born in 1860 at Wolverhampton. He was the only son of Moses Bayliss, iron manufacturer, and, being a weakly child, he was educated privately. In 1881 he entered University College as a medical student. There he worked, first under Burdon Sanderson, and later under Schäfer. He followed Burdon Sanderson to Oxford in 1883, and entered at Wadham College. While in Oxford he abandoned medicine and devoted himself to the study of pure physiology. Hence he never took a medical degree, although for the greater part of his life he worked on problems of the greatest importance for medicine. He returned to London and commenced physiological research at University College under Professor Schäfer. For the rest of his life he remained attached to University College, where he devoted the greater portion of his time to research, but where he also held a succession of teaching appointments and did a considerable amount of teaching. He finally became Professor of General Physiology at University College, an appointment that he held until his death.



Elliott & Fry, Ltd. *Maull and Fox, Ltd.*

SIR WILLIAM BAYLISS

In 1890 he commenced his scientific partnership with Professor E. H. Starling and during the ensuing fifteen years that partnership produced a series of researches of fundamental importance. The best known of these was the discovery of "secretin," the hormone produced in the duodenal mucosa, which excites the pancreas to activity. This discovery was of particular importance because it revealed a new mode by which the organs of the body could be controlled—namely, by the transmission in the blood stream of hormones, substances which are produced in one organ and carried by the blood stream to other organs on which their effect is manifested. The clear demonstration of this mechanism really formed a key with which it was possible to make a commencement at solving some of the complex problems of endocrinology. The discovery represents, therefore, one of the most fundamentally important advances in modern physiology.

Many other researches by Bayliss and Starling were of almost equal importance, among them may be mentioned the revealing of the laws governing the peristaltic movements of the intestine, at this period Bayliss also published a number of papers dealing with the mode of action of vaso-dilator nerves.

During the last twenty years of his life Sir William Bayliss devoted himself particularly to the application of physico-chemical principles, to physiological problems, and did much of the early work which established the laws governing the action of enzymes, adsorption, etc. He was particularly interested in the laws governing the behaviour of substances in the colloidal state, for he recognized very early the great importance of this subject to physiology, he was one of the chief English pioneers in the development of these researches.

Bayliss worked out experimentally the laws governing the state known as Donnan equilibrium, that he did independently of Professor Donnan, who proved them by theoretical dynamics. This law shows that when a mixture of colloids and salts is enclosed in a membrane impermeable to the former and permeable to the latter the presence of the colloids causes the concentration of the salt to be different inside and outside of the membrane. Every cell in the living body is an example of such a state, and hence this law proved to be of great and increasing importance in the study of the physical chemistry of cell.

In 1914 he brought out his great textbook *The Principles of General Physiology*. It was not merely a textbook, but rather a treatise giving the personal outlook of a master of profound learning, who had succeeded in mastering the whole of the vast field of knowledge the book covers. It has been called a "textbook for professors," but it has been very widely used by undergraduate students, although perhaps its chief importance has been due to its influence on research students.

Before this work appeared it had been assumed that the days of the great textbooks of physiology had passed since it was thought that the subject had become so vast that no one mind could master more of it than a small fraction. Bayliss's textbook, however, deals with physiology as a whole, and the more closely his work is studied the greater become our respect for the author's depth and breadth of knowledge and clearness of judgement.

During Sir William Bayliss's last illness a group of his friends and disciples under the leadership of Professor A. V. Hill undertook the preparation of a new edition of this book as a tribute to the author. Each contributor took a subject on which he had special knowledge, but even so all were surprised at the difficulty in revising even a small portion of the work, and many for the first time fully realized the extraordinary industry, knowledge, and judgement required of the author who had written the entire volume single-handed. It had been hoped to present Sir William Bayliss with the completed work, but unfortunately the book was still in the printer's hands at the time of his death.

During the war Bayliss made researches of the greatest practical value on the causation and treatment of shock. In association with Professor Cannon he demonstrated that wound shock was due to the production by injured tissues of toxic breakdown products and thus they made clear the lines along which shock might be prevented or minimized. Furthermore he studied the effects of transfusion, and showed that the reason for the inefficacy of saline transfusions in the treatment of shock was that the saline rapidly left the blood vessels. He concluded that the leakage could be minimized by the addition of a colloid of high viscosity, and for this purpose devised his well known gum saline mixture, which consists of normal saline with the addition of 6 per cent. gum arabic. This mixture was used with great success in the latter stages of the war in the treatment of shock.

geniality, and self sacrifice endeared him to a large community, and his son, who follows in his father's foot steps, has been left a difficult task

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The tragic death of Dr ERNEST HENRY LIPSCOMB, at the age of 64, in a boating accident at Tregastel, Brittany, on August 25th, has caused deep sorrow in St Albans, with the public life of which Dr Lipscomb had been prominently associated for many years He was one of a party of five in a boat which capsized, and lost his life in an endeavour to save others He was the son of Dr J T N Lipscomb of St Albans, and was educated at the Grammar School there, at Norwich Grammar School, and at Cambridge and Guy's Hospital, he obtained the diplomas of M R C S L R C P in 1865, graduating M B, B Ch in 1869 Until 1921 he was honorary medical officer of the St Albans and Mid-Hertfordshire Hospital, and subsequently was consulting medical officer In 1893 he succeeded his father as medical officer to St Albans prison, which was taken over in 1915 by the military authorities as a detention barracks, he retained his connexion with it until it was vacated in 1919 His other medical appointments included those of certifying factory surgeon, physician to the Duchess of Marlborough's Charity, and clinical assistant to the East London Hospital for Children and Dispensary for Women He had held the office of president of the South Midland Branch of the British Medical Association For many years he had been a member of the city council, and in 1909 he was elected mayor of St Albans, an office which had been previously held by both his father and grandfather He was a prominent Freemason, a P G Deacon of the Province of Hertfordshire, and a P P Sojourner of the Province of Herts in Royal Arch Masonry In 1912 he married Miss M C Millman, who at that time was matron of the St Albans and Mid Hertfordshire Hospital, and who, with one son, aged 10, survives him

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We regret to record the death of the widow of the distinguished physician, Dr J S Bristowe, F R S, of St Thomas's Hospital Mrs Bristowe's kindness of heart, great charm of manner, and considerable fund of humour had gained for her a large circle of friends, who will ever treasure her memory She possessed also artistic taste, and as an amateur pursued to the last her painting in water-colours, which ranked high in merit Dr Bristowe, who died in 1895, was one of the most eminent and learned physicians of his day, and his best known work, *The Theory and Practice of Medicine*, was one of the leading textbooks in this country and abroad

Universities and Colleges

UNIVERSITY OF CAMBRIDGE

COMMISSIONERS' SCHEME

THE University Commissioners appointed in accordance with the recommendations of the Royal Commission regarding the organization of teaching in the University of Cambridge have, after considering the representations made to them, sent a memorandum to the Vice Chancellor embodying a scheme The document is divided into two part, the first dealing with the temporary steps which will be taken to introduce the faculty system and the second setting out the permanent organization proposed We will deal with the latter first

PERMANENT SCHEME

Faculties

Under the scheme which it is proposed to bring into force on October 1st 1926, there would be faculties, faculty boards and a general board of studies All fees for lectures announced by the general board of studies would be paid to the University

There would be eighteen faculties, arranged in two groups—Arts and Science In the Arts group there would be eleven faculties and in the Science group seven In the latter, however the faculty of Biological Studies would be divided into two departments, the one containing four sections and the other six The departments in the second section of the faculty of Biological Studies would be biochemistry, experimental psychology, human anatomy, parasitology, pathology, and physiology The faculties would be composed of professors, readers, university lecturers, fellows of colleges giving lectures or demonstrations, and a certain proportion of other persons appointed by the Board of the faculty

Medicine would be one of the faculties in the Science group It would consist of teachers who come within one of the classes above mentioned, and give instruction in medicine, surgery, pharmacology, anatomy, biochemistry, physiology, or pathology, or give courses in physics, chemistry, or biology for medical students

The Faculty Boards would consist of the professors, a certain number of members of the faculty elected by it for a period of four years, a certain number of persons nominated by the council of the Senate for a period of two years, a certain number nominated by the Board, and in certain cases representatives of cognate studies

The Faculty Board of Medicine would consist of the Regius Professor of physic, the Downing professor of medicine the professors of anatomy, biochemistry pathology, and physiology, four members of the faculty elected by it, and two persons nominated by the council

General Board of Studies

The suggestion of the commissioners is that the general board of studies should consist of the vice chancellor, four members each of the groups of arts and science faculties respectively, four members of the council of the Senate and two persons not members of the council of the Senate elected by the University for four years It is proposed to transfer the present duties of the General Board in regard to the awarding of the higher degrees to the Board of Post Graduate Studies

University Lectureship

The commissioners make certain regulations for university lectureships (including demonstratorships) Lecturers would be appointed by a standing committee separately constituted for the faculty or department This committee would consist of the vice chancellor the head of the department, three members of the board of the faculty, and two persons nominated by the General Board

Tenure—Appointments would as a rule be made in the first place for three years, but on reappointment tenure would be for so long as the lecturer continued satisfactorily to perform the duties of his office until the retiring age The Faculty Board is to ensure that professors readers and lecturers continue to perform the duties of their office satisfactorily

Work and Salaries—The passage from the report under this head is as follows

> The Commissioners think it will be impossible to ensure absolute equality between the conditions of work and remuneration in the various faculties Their present opinion is that there should be a basic amount of teaching work obligatory upon a University Lecturer—namely not fewer than thirty-two or more than forty-eight hours of lecturing during the year The the initial basic salary in respect of such amount of work be not less than £160 That the General Board should have authority to vary in specific cases the requirements as to the basic amount of teaching work That each Faculty should have a scale of increments in the basic salary to be approved by the General Board and that other payments in addition to the basic salary should be made in consideration of work done in addition to the basic amount of work That Boards of Faculties should have power to make a maximum additional payment of £250 a year to a University Lecturer who is not a Fellow of a College That the payments to be made to University Lecturers in addition to the basic salary should be determined by the Faculty Board concerned and made from Faculty or Departmental Funds The funds will consist of (1) fees for lectures including lectures given by professors and readers (2) contributions from the chest

Retiring Age—The commissioners recommend that the retiring age for all members of the university teaching and administrative staffs shall be 65, but contemplate that the General Board would have power to continue a professor in office for a period not exceeding five years—that is, until he attains the age of 70

Position of Women in Relation to Teaching

The commissioners contemplate that the statutes will be so framed as to render women eligible for professorships, readerships, universities lectureships, and examinerships, subject to the reservations made by the Royal Commission Fellows of women's colleges will be eligible to become members of faculties

TRANSITIONAL ARRANGEMENTS

The University will have to decide at the outset which of the existing lecturers of varying seniority in each faculty it is prepared to take on the permanent university establishment, and will have to make a separate bargain with each such lecturer It is proposed, therefore, that the University should before July 1st, 1926, make appointments to university lectureships in each faculty, to take effect on October 1st, 1926 The council of the senate would nominate an appointing committee for each faculty, which would make its recommendations at the

hospital There is a complete list of the days and times of attendance of the medical and surgical staffs The names of old students are arranged in two lists—the one alphabetical and the other according to locality In the alphabetical list there are given the date of entry the qualifications and distinctions and the address of each individual together with a summary of his scholarships posts held while at the hospital, and present appointments The local list is followed by lists of medical officers of the naval, military, and Indian services, of past and present officers of the hospital and medical school, and of scholars and medallists There is also a record of old students who have died since the last publication of the book The editor, Mr Robert Hopkins is to be congratulated on having produced the best old students list that we have seen

THE next half yearly election for the admission of fatherless children to the Royal Infant Orphanage Wanstead, E 11, will be held in November Children under 7 years of age are eligible, and applications for information and nomination papers should be addressed to the Secretary at the Orphanage at once

THE freedom of the city of Warsaw where she was born and received her early education, has been conferred on Madame Curie

THE King has granted Dr Charles Todd, O B E, technical expert to the Egyptian Department of Public Health permission to wear the insignia of the Second Class of the Order of the Nile conferred upon him by the King of Egypt in recognition of valuable services rendered

THE international congress on industrial hygiene, held at Geneva in July, attracted some thirty doctors and others interested from Europe, America and Japan Professor Leonard Hill's paper on ventilation and the value of the kata thermometer was read by Dr Wyatt owing to the indisposition of the author Other questions considered were fatigue tests, the application of methods of illumination in workshops and miners nystagmus

THE annual general meeting and conference of the Institute of Industrial Welfare Workers will be held at The Hayes Swanwick Derbyshire, from September 26th to 29th The subject of the conference will be The doctor and the psychologist in industry On September 27th Dr C S Myers Director of the Institute of Industrial Psychology will speak on the subject of "What psychology can do for industry and will be followed by Dr W F Dearden honorary secretary of the Association of Certifying Factory Surgeons who will deal with the subject of "What medical science can do for industry In the evening of the same day The psychological and physiological aspects of accident prevention will be discussed by Dr Millais Culpin and Dr H M Vernon Investigator for the Industrial Fatigue Research Board Further information may be obtained from the conference secretary, Miss N J Kessler, West Lynn, Altrincham, Cheshire

THE annual general meeting of the Medical Sickness, Annuity and Life Assurance Society Ltd, will be held at the offices of the company Lincoln House, 300, High Holborn, W C 1, on Monday October 6th at 4 p m

ST LUKE'S INTERNATIONAL HOSPITAL in Tokyo has received 150 000 yen (over £13 000) from the Japanese Home Department to provide additional equipment This money comes from the fund raised by the Japanese Red Cross Society after the earthquake in September last year, and is given in view of the work carried on by the hospital among the necessitous and also in consideration of the fact that the hospital buildings were destroyed at that time

THE annual exhibition of the Royal Photographic Society of Great Britain will be opened at 35 Russell Square, W C 1, to-day (Saturday, September 13th) at 3 p m by the president, Mr J Dudley Johnston The memorial to Henry Fox Talbot will be unveiled by Dr G H Todman The exhibition will remain open until Saturday, October 25th

In *Vital Statistics of Non Native Officials* published by the Crown Agents for the Colonies at 4, Millbank S W 1, price 6d, an account is given of the statistical returns for 1923 The invaliding rate shows a slight improvement on that of the previous year, though an increase in the death rate occurred

THE *Journal of Nervous and Mental Diseases* of New York proposes to celebrate its fiftieth anniversary this year by the publication of an index to its fifty volumes

THE fourth congress of the French Association of Pediatrics will be held in Paris from September 29th to October 1st inclusive, under the presidency of Professor Marfan The subjects to be discussed include the etiology and pathology of rickets, the prophylaxis and treatment of congenital syphilis, and the treatment of purulent pleurisy in infancy

WE regret to learn of the death, on September 9th, of Dr R J Farman, secretary of the London Panel Committee

IN compliance with the resolution adopted by the House of Commons before the adjournment, the Minister of Health has appointed a committee under the chairmanship of Sir Ernest W Moir, M Inst C E, to inquire and report as to new materials or methods of construction of houses for the working classes and to make recommendations as to the organization required for securing the adoption and use of approved new materials or methods by local authorities and other bodies or persons providing such houses The members of the committee include architects and engineers, persons interested in local administration, and representatives of master builders and operatives, as well as of the Ministry of Health and Office of Works

DR J S HALDANE, F R S of Oxford is the new president of the Institute of Mining Engineers and will be in the chair at the annual meeting, which is to begin at Wemble, Exhibition on October 2nd He is director of the mining research laboratory in the University of Birmingham and his researches on the safeguarding of health in mines are well known

DR ETHEL BENHAM has been nominated by the Minister of Health to be a member of the Metropolitan Asylums Board

WE regret to record the death, on September 6th, at the age of 83, of Sir Frederic Needham, who had been associated with lunacy administration all his life and was appointed a member of the Board of Control in 1892 We intend to give some account of his career in our next issue

THE Council of the Royal Sanitary Institute has accepted the invitation of the city of Edinburgh to hold a congress and exhibition there next year (July 20th to 25th)

MR JOSEPH BRIGGS has given £1 000 to the Bradford Royal Infirmary to name a bed in memory of his wife and other deceased members of his family

THE late Mr Frederick Fountain bequeathed to the Miller General Hospital for South East London a house known as Cedar Bank, to be used as a convalescent home, and £12 000 as an endowment for its upkeep Sir James and Lady Carmichael have given £10 000 towards the cost, estimated at £20 000 of erecting the William Shepherd Memorial Wing at the Bolingbroke Hospital Wandsworth Common Under the will of the late Mr Walter John Tillett shipowner of Penarth, the Cardiff Royal Infirmary receives £10 000 the income from which is to be devoted, first to the maintenance of the Elizabeth Tillett bed in memory of his wife, and subject thereto for the general purposes and upkeep of the infirmary

Letters, Notes, and Answers.

THE telephone number of the BRITISH MEDICAL ASSOCIATION and BRITISH MEDICAL JOURNAL is Gerrard 4630 (Internal Exchange) The telegraphic addresses are

EDITOR of the BRITISH MEDICAL JOURNAL *Articulate Westrand, London*

FINANCIAL SECRETARY AND BUSINESS MANAGER (Advertisement etc) *Articulate Westrand London*

MEDICAL SECRETARY *Medisecra Westrand London*

The address of the Irish Office of the British Medical Association is 16 South Frederick Street Dublin (telegrams *Bacillus Dublin* telephone 4457 Dublin and of the Scottish Office 6 Parliament Square Edinburgh (telegrams *Associate, Edinburgh* telephone 4361 Central)

QUERIES AND ANSWERS.

"ANXIOUS" asks for advice in the selection of a battery for zinc ionization in ear cases He has not found dry cells a success and has plenty of room at his command.

MUSHROOM POISONING

DR W B WANCHOLTH (Taunton) writes This morning a patient of mine gathered a large basket of mushrooms which his family divided with the next door neighbour In one case the stalks were removed before cooking and no ill effects followed the meal in the other household the stalks were cut through and part of them were eaten these people (three) suffered from acute vomiting and diarrhœa but all the symptoms passed off in a few hours What is the explanation? Does the stalk of the mushroom contain a poison which is not present in the mushroom itself? I have looked up *Mrs Leeton* and her instructions with regard to the preparation of mushrooms is to peel the top and cut off a *portion* of the stalk" A possible explanation might be found in the cooking

THREADWORMS

DR WILLIAM COBBETT (Worthing) writes in response to J E V's request (August 30th p 391) for suggestions in the treatment of a stubborn case of threadworms Has he by chance tried the effect of garlic which has given me excellent results? I should suggest the nightly injection into the empty bowel through a

end of Lent term, 1926, as to the initial number of university lectureships in each faculty, the persons to be appointed, and the terms of appointment

THE NEW INSTITUTE OF PATHOLOGY

We announced on January 26th (p 163) the acceptance by the Senate of the University of Cambridge of the offer of the Board of Trustees of the Rockefeller Foundation to endow the School of Pathology in the University The trustees offered £100,000 for the building of a pathological institute and its general maintenance, and to contribute £33 000 towards its endowment, the University undertaking to find an equal amount for the completion of the endowment In response to an appeal by the University authorities, Mr Ernest Gates, of Old Buckenham, Norfolk, has now promised to give this sum in memory of his wife Mr Gates is managing director of Salts (Saltaire), Ltd , and a director of other Bradford wool manufacturing firms

UNIVERSITY OF LONDON

Parliamentary Election

THERE is a vacancy in the parliamentary representation of the University, there are three candidates—Sir John Rose Bradford, nominated by the Unionist Association Professor A F Pollard by the Liberal Association, and Dr E Graham Little by the Graduates' Association as a non political candidate The date of the election has not yet been fixed The total number of graduates does not seem to be stated in the *Calendar*, but at a rough estimate it is between 13,000 and 14 000 At the general election in 1922 the total poll was 7,440 and the late Sir Sydney Russell Wells was returned with a majority of 1 663 At the general election in 1923 the total poll was 8 050 the figures being Sir Sydney Russell-Wells (Conservative) 4,037, Professor A F Pollard (Liberal) 2,593, Mr H G Wells (Labour Socialist) 1,420

Every graduate who complies with the conditions prescribed in the Representation of the People Act, 1918, is entitled to be registered as a parliamentary elector on making a claim and paying a fee of £1, which also covers life membership of convocation No further fee is required from graduates who are already life members of convocation

A Departmental Committee

The President of the Board of Education, on August 29th, announced that the reference to the Departmental Committee on the University of London which he has decided to appoint is as follows

"To consider the Final Report of the Royal Commission on University Education in London dated March 27th, 1913, and, having regard to present circumstances and after consultation with the persons and bodies concerned, to indicate what are the principal changes now most needed in the existing constitution of the University of London, and on what basis a statutory commission should be set up to frame new statutes for the University"

The constitution of the Committee was not complete

Medical News.

THE Melbourne Permanent Committee for Post Graduate Work offers a prize of 150 guineas for the best essay on the causes and prevention of maternal morbidity and mortality The essay should include discussion of the following problems the teaching of obstetrics to students, graduates, and nurses, hospital conditions, control, and staffing, the conduct of private obstetric practice, and ante natal supervision Throughout the essay attention should be chiefly given to the prevention of maternal morbidity This competition is open to members of the British Medical Association registered in the Commonwealth of Australia The essays should be typewritten, and must be delivered to the honorary secretaries of the Post Graduate Committee at 12, Collins Street, Melbourne, on or before May 1st, 1925 The prize essay will become the property of the committee, and provided that the committee so approves, it will bear the expense of publication Each essay must have a motto or device placed upon it, and be accompanied by a sealed envelope with the name and address of the author inside, but having on the outside the same motto or device

PROFESSOR PAVLOV'S seventy fifth birthday is to be celebrated at Leningrad on September 27th by the publication of a "Festschrift" in the form of a special number of the *Archiv biologitscheskich Nauck* (Archives of Biological Sciences), which is the official organ of the Institute of Experimental Medicine

THE Lord Mayor of Liverpool on September 4th unveiled at Leasowe Hospital for Crippled Children a tablet to the memory of Mr G P Newbolt, F R C S , first chairman of the hospital It will be remembered that a committee has been formed to establish a memorial to Mr Newbolt at the Royal Southern Hospital, Liverpool to which he was surgeon down to the time of his death Donations may be sent to the treasurer of the Newbolt Fund, Mr Lyon H Maxwell, at the hospital

AT the invitation of the Hong Kong and China Branch of the British Medical Association a joint conference with the China Medical Missionary Association will be held at Hong Kong on January 21st, 1925, and following days Further particulars will be published shortly

THE annual dinner of past and present students of St Mary's Hospital Medical School will take place at the Connaught Rooms, Great Queen Street, W C , on Monday, October 6th, when Dr E M Callender, C B E , will take the chair at 7 30 p m The honorary secretary is Dr Hope Gosse

THE prizes to students at Charing Cross Hospital Medical School will be distributed on Wednesday, October 1st, at 3 30 p m , by Sir Humphry Rolleston, Bt , President of the Royal College of Physicians of London The annual dinner of past and present students will be held on the evening of the same day at Gatti's Restaurant, when the chair will be taken at 7 30 by Mr Charles Gibbs, senior surgeon to the hospital The charge will be 12s 6d , which can be paid at the door or sent in advance to the Dean, Dr W J Tenton

A NEW course of post graduate study will commence at the National Hospital for the Paralysed and Epileptic Queen Square, Bloomsbury, W C 1, on October 1st and continue till November 28th The course will consist of out patient clinics, clinical lectures and demonstrations, and lectures on the pathology of the nervous system A course of lectures on the anatomy and physiology of the nervous system and of clinical demonstrations on methods of examination will also be given if a sufficient number of applications is received Further particulars can be obtained from the dean of the medical school at the hospital

THE Westminster Hospital is giving a two weeks' intensive course from Monday, September 22nd, to Friday, October 3rd, daily, from 10 30 a m to 5 30 p m , including clinical demonstrations, lectures, pathology, orthopaedics, and operations The first lecture will be given by Mr Walter Spencer at 10 30 a m on Monday, September 22nd, on oral sepsis On Saturday, September 27th, at Camberwell House (Peckham Road), Dr F Norman will deal with mental diseases The fee for the course is £3 3s , or £2 2s for either week A three weeks' course in ophthalmology is in progress at the Royal Westminster Ophthalmic Hospital from September 8th to 27th, comprising clinical instruction each afternoon from 2 o clock, special demonstrations three times a week on methods of examination, a fundus class, and clinical demonstrations on common affections of the eye From September 15th to 27th a course in infants' diseases has been arranged at the Infants Hospital, consisting of clinical demonstrations, "round table" consultations, and lectures, from 2 to 5 p m , the fee for the course will be £3 3s Dr Porter Phillips and Dr Thomas Beaton are giving a series of lecture demonstrations in psychological medicine at the Bethlem Royal Hospital from September 8th to October 25th, on Tuesdays and Saturdays at 11 a m , and will deal with the diagnosis and symptomatology of mental diseases, the psychoneuroses, and the medico legal aspect of insanity October courses will be held at the Paddington Green Children's Hospital in conjunction with the Victoria Hospital and Children's Clinic, Central London Throat, Nose, and Ear Hospital, Royal Free Hospital, London School of Hygiene and Tropical Medicine, and St Peter's Hospital Copies of the syllabus of each of the above courses can be obtained from the Secretary of the Fellowship of Medicine at No 1, Wimpole Street, W 1

THE following post graduate courses have been arranged for the near future in Paris a gynaecological course will be held at the Broca Hospital from September 22nd to October 4th, and will be mainly clinical and practical, a course in heart diseases, to include the study of cardiac syndromes of nervous origin, hypertension, and cardiac therapeutics generally, will be given at the Ambroise Paré Hospital from September 29th to October 11th, a practical course on the diseases of early infancy will be held at the Trousseau Hospital from October 6th to 18th

A PRACTICAL course on dermatology and venereal diseases is to be held by the Faculty of Medicine at Strasbourg from September 22nd to November 8th Lectures and demonstrations will be given at the Civil Hospital and the various special clinics concerned, and those attending the course will receive individual instruction in therapeutic methods, including radiotherapy and surgical procedures After each lecture a summary of two or three pages will be furnished to each member of the class The fee for the course is 200 francs, and application should be made to Professor Pautrier at the Faculty of Medicine Help will be given with regard to finding lodgings in Strasbourg during the course

WE have received a copy of the list of old students of St Thomas's Hospital corrected to last June The previous edition was issued in 1922 The book is full of information of interest to old students of the hospital On the title page are the telephone numbers of the various departments of the

hospital There is a complete list of the days and times of attendance of the medical and surgical staffs The names of old students are arranged in two lists—the one alphabetical and the other according to locality In the alphabetical list there are given the date of entry, the qualifications and distinctions and the address of each individual, together with a summary of his scholarships, posts held while at the hospital, and present appointments The local list is followed by lists of medical officers of the naval, military, and Indian services of past and present officers of the hospital and medical school, and of scholars and medallists There is also a record of old students who have died since the last publication of the book The editor, Mr Robert Hopkins, is to be congratulated on having produced the best old students list that we have seen

THE next half yearly election for the admission of fatherless children to the Royal Infant Orphanage, Wanstead, E 11 will be held in November Children under 7 years of age are eligible, and applications for information and nomination papers should be addressed to the Secretary at the Orphanage at once

THE freedom of the city of Warsaw, where she was born and received her early education, has been conferred on Madame Curie

THE King has granted Dr Charles Todd, O B E, technical expert to the Egyptian Department of Public Health, permission to wear the insignia of the Second Class of the Order of the Nile conferred upon him by the King of Egypt in recognition of valuable services rendered

THE international congress on industrial hygiene, held at Geneva in July, attracted some thirty doctors and others interested from Europe, America and Japan Professor Leonard Hill's paper on ventilation and the value of the kata thermometer was read by Dr Wyatt owing to the indisposition of the author Other questions considered were fatigue tests, the application of methods of illumination in workshops and miners nystagmus

THE annual general meeting and conference of the Institute of Industrial Welfare Workers will be held at The Hayes Swanwick, Derbyshire, from September 26th to 29th The subject of the conference will be The doctor and the psychologist in industry On September 27th Dr C S Myers, Director of the Institute of Industrial Psychology, will speak on the subject of 'What psychology can do for industry,' and will be followed by Dr W F Dearden honorary secretary of the Association of Certifying Factory Surgeons, who will deal with the subject of 'What medical science can do for industry' In the evening of the same day "The psychological and physiological aspects of accident prevention will be discussed by Dr Millais Culpin and Dr H M Vernon, Investigator for the Industrial Fatigue Research Board Further information may be obtained from the conference secretary Miss N J Kessler, West Lynn, Altrincham, Cheshire

THE annual general meeting of the Medical Sickness Annuity and Life Assurance Society Ltd will be held at the offices of the company Lincoln House, 300, High Holborn, W C 1 on Monday, October 6 h at 4 p m

ST LUKE'S INTERNATIONAL HOSPITAL in Tokyo has received 150,000 yen (over £13 000) from the Japanese Home Department to provide additional equipment This money comes from the fund raised by the Japanese Red Cross Society after the earthquake in September last year and is given in view of the work carried on by the hospital among the necessitous, and also in consideration of the fact that the hospital buildings were destroyed at that time

THE annual exhibition of the Royal Photographic Society of Great Britain will be opened at 35, Russell Square W C 1, to-day (Saturday, September 13th) at 3 p m by the president, Mr J Dudley Johnston The memorial to Henry Fox Talbot will be unveiled by Dr G H Todman The exhibition will remain open until Saturday October 25th

In *Vital Statistics of Non Native Officials* published by the Crown Agents for the Colonies at 4, Millbank S W 1, price 6d, an account is given of the statistical returns for 1923 The invaliding rate shows a slight improvement on that of the previous year, though an increase in the death rate occurred

THE *Journal of Nervous and Mental Diseases* of New York proposes to celebrate its fiftieth anniversary this year by the publication of an index to its fifty volumes

THE fourth congress of the French Association of Pediatrics will be held in Paris from September 29th to October 1st inclusive, under the presidency of Professor Marfan The subjects to be discussed include the etiology and pathology of rickets the prophylaxis and treatment of congenital syphilis, and the treatment of purulent pleurisy in infancy

WE regret to learn of the death, on September 9 h, of Dr R J Farman, secretary of the London Panel Committee

In compliance with the resolution adopted by the House of Commons before the adjournment, the Minister of Health has appointed a committee under the chairmanship of Sir Ernest W Moir, M Inst C E, to inquire and report as to new material or methods of construction of houses for the working classes and to make recommendations as to the organization required for securing the adoption and use of approved new materials or methods by local authorities and other bodies or persons providing such houses The members of the committee include architects and engineers, persons interested in local administration, and representatives of master builders and operatives, as well as of the Ministry of Health and Office of Works

Dr J S Haldane, F R S of Oxford is the new president of the Institute of Mining Engineers, and will be in the chair at the annual meeting which is to begin at Wembley Exhibition on October 2nd He is director of the mining research laboratory in the University of Birmingham and his researches on the safeguarding of health in mines are well known

Dr Arthur Newsholme has been nominated by the Minister of Health to be a member of the Metropolitan Asylums Board

We regret to record the death, on September 6th, at the age of 88, of Sir Frederick Needham, who had been associated with lunacy administration all his life and was appointed a member of the Board of Control in 1892 We intend to give some account of his career in our next issue

The Council of the Royal Sanitary Institute has accepted the invitation of the city of Edinburgh to hold a congress and exhibition there next year (July 20th to 25th)

Mr Joseph Briggs has given £1 000 to the Bradford Royal Infirmary to name a bed in memory of his wife and other deceased members of his family

The late Mr Frederick Fountain bequeathed to the Miller General Hospital for South East London a house known as Cedar Bank, to be used as a convalescent home, and £12 000 as an endowment for its upkeep Sir James and Lady Carmichael have given £10 000 towards the cost, estimated at £60 000 of erecting the Will am Shepherd Memorial Wing at the Bolingbroke Hospital Wandsworth Common Under the will of the late Mr Walter John Tillett shipowner of Penarth, the Cardiff Royal Infirmary receives £10,000 the income from which is to be devoted first to the maintenance of the Elizabeth Tillett bed in memory of his wife, and subject thereto for the general purposes and upkeep of the infirmary

Letters, Notes, and Answers.

The telephone number of the BRITISH MEDICAL ASSOCIATION and BRITISH MEDICAL JOURNAL is Gerrard 2630 (Internal Exchange) The telegraphic address are

EDITOR of the BRITISH MEDICAL JOURNAL *Attiology Westrand London*

FINANCIAL SECRETARY AND BUSINESS MANAGER (Advertisements etc) *Articulate Westrand London*

MEDICAL SECRETARY *Mysteria Westrand London*

The address of the Irish Office of the British Medical Association is 16 South Frederick Str Dublin (telegram *Bacillus Dublin* telephone 4737 Dublin) and of the Scottish Office 6 Parland Square Edinburgh (telegrams *Association Edinburgh* telephone 436 Central)

QUERIES AND ANSWERS.

AURIS asks for advice in the selection of a battery for zinc ionization in ear cases He has not found dry cells satisfactory and has plenty of room at his command.

MUSHROOM POISONING

DR. W B WADSWORTH (Taunton) writes This morning a patient of mine gathered a large basket of mushrooms which his family divided with the next-door neighbour In one case the stalks were removed before cooking, and no ill effects followed the meal in the other household the stalks were cut through and part of them were eaten these people (three) suffered from acute vomiting and diarrhoea but all the symptoms passed off in a few hours What is the explanation? Does the stalk of the mushroom contain a poison which is not present in the mushroom itself? I have looked up *Mrs Leeton* and her instructions with regard to the preparation of mushrooms is to peel the top and cut off a *portion* of the stalk" A possible explanation might be found in the cooking

THREADWORMS

DR WILLIAM COBBETT (Worthing) writes in response to J E W's request (August 30 h p 391) for suggestions in the treatment of a stubborn case of threadworms Has he by chance tried the effect of garlic which has given me excellent results? I should suggest the nightly injection into the empty bowel through a

soft catheter of xviii–xii of a solution of garlic juice (conveniently prepared with suc allii sativi, Allen and Hanburys) combined with the internal administration of garlic oil capsules m2 If these can be obtained keratin coated so much the better The frequency of the enemata can be reduced as the condition improves, and the usual precautions against auto reinfection are to be strictly observed

DR G A FERRABY (Nottingham) writes Some years ago I successfully treated a case by the simultaneous use of salt enemata and the oral administration of santonin The usual routine of a normal saline enema in the evening followed in half an hour by a smaller enema of strong salt solution was adopted I thought it probable that threadworms in the upper part of the colon were killed by the santonin and in the lower part by the salt

DR G S ARMITAGE BISHOP (Melton Mowbray) writes I had a similar case in a girl aged 12 years After trying all the usual remedies, including massive doses of bismuth, I removed the appendix, which I found full of minute threadworms Bismuth then cleared the condition in a few days, and she has now been free from threadworms for twelve months

DR GEORGE P BLETCHLY (Nailsworth, Gloucestershire) writes that "J E W's" case is similar to one reported in the BRITISH MEDICAL JOURNAL of April 19th, 1924 (p 735) The worms evidently breed in the appendix, and the only cure is to remove that organ

*** We are reminded that Dr Claude Wilson published a paper in this JOURNAL in 1912 (vol i, p 829), pointing out that the appendix is by no means an uncommon nursery for thread worms, and that obstinate cases which resist repeated courses of treatment may often, and perhaps generally, be thus explained He referred to a paper by Mr Burgess published in the same volume (p 415) on five hundred consecutive operations for acute appendicitis, in which it was stated that threadworms were present in several cases Dr G Macdonald of Scarborough, in the same volume (p 485), reported a case in which, in an appendix removed from a woman, aged 34, two distinct collections of threadworms were found towards the base Dr Wilson also quoted from Dr G F Still's book, *Common Disorders and Diseases of Children*, in which the subject was discussed at some length In one hundred necropsies in children between the ages of 2 and 12 years Dr Still found threadworms in 32 per cent, and in two thirds of these they *were in the appendix He added that in some cases the* appendix was the only part in which the threadworms were found Dr Still's conclusion was that the appendix was a common breeding ground for threadworms, and that this made intelligible the extreme obstinacy of some cases to all treatment

HARD WATER AND CALCULI

"C" asks Does "hard water"—that is, lime, etc—tend to produce stone in the kidney or bladder? Is hard water injurious to one who has on several occasions passed a renal calculus?

*** Opinion on these questions is divided Surgeons for the most part speak of "hard water" as an etiological agent in *calculus formation* Physicians are cautious in the expression of their opinions, and shelter themselves with "may" or "it is said" Pathological textbooks do not consider it likely that hard waters favour the formation of renal or vesical calculi Hygiene experts are almost unanimous in boldly declaring that "hard waters" do not predispose to such deposits This diversity of opinion is partly due to the fact that discrimination has not always been made between the two questions asked We would answer the first in the negative, and the second (but with less confidence) *in the affirmative It must be remembered* that stones in the kidney are usually composed of urates, uric acid, oxalates, or a combination of these with phosphates Vesical calculi are commonly phosphatic The hardness of water is due chiefly to carbonates, and to a lesser extent to sulphates and phosphates A calculus consists of a nucleus of mucus, cell debris, or foreign matter in and upon which the urinary salts become deposited, often in concentric layers The formation of a calculus is due to some defect or disease in the organs of excretion, and there seems little reason why we should blame other systems But once the calculus has formed it is possible that the drinking of water rich in calcium salts may be instrumental in furnishing bases for inorganic calculi

INCOME TAX

Sale of Practice and Purchase of Another

"L B C" sold a practice at A and purchased one at B In accounting for his liability in respect of the latter practice h included as cash receipts moneys received but handed over to his predecessor, the inspector of taxes at A ho vever, requires him to pay tax on moneys handed on by his succe sor there, or, as an alternative, to put the assessments there on to the basis of bookings

* There is obviously a difference of practice between the two inspectors, which if carried through would hit our corre spondent unfairly The practice at B has, in our opinion, been dealt with correctly, and we consider the attitude of the inspector at A to be without justification "L B C" might inquire whether *his successor at A* is not adopting the cash receipt basis, whether he is in fact or not it is presumably open to him to do so, provided that he includes *all* the receipts in his computation, and it must surely be obvious that "L B C" cannot be made to include in his returns payments which can correctly be included in the returns of another person The arrangement made at B is tolerably simple and quite common, and the request that "L B C" shall pay on past receipts at A can be correct only if the past assessments have been insufficient The inspector practically admits this in putting the alternative of putting the assessments from 1920–21 onwards on to the gross bookings basis But this would be unfair The earliest of the years providing the 1920–21 average would be 1917, when, owing to the war, the level of book debts was no doubt low "L B C" adhered loyally to the cash basis arrangement when it was against him, and it would be altogether unreasonable to alter it now—and on what ground? That he has sold the practice, which is a fact quite irrelevant to the main question If the arrange ment can be set aside in such a case as this, there seems to be no reason why any inspector at any time should not decide to effect a change and revise four or five years' assessments at once We suggest that "L B C" might put his views to the inspector at A once more, if he does not receive reasonable satisfaction he might point out to the Secretary, Board of Inland Revenue, Somerset House, W C 2, the effect of the difference in practice between the officials for the two districts and ask the central authority to say which view is considered to be correct

Adjustment of Assessment

"A P A" seeks advice in somewhat unusual circumstances Some time ago he purchased a practice from his father for a certain sum, the debt to be liquidated by payment to the father of the annual profits less £600 retained, *until the capital sum* was extinguished "For convenience" the father continued to return the practice profits for assessment to income tax on the basis that he was the proprietor, and that he paid a salary of £600 per annum to the son It may be assumed that by April 5th, 1925, the debt will have been paid off, the son has been refund ing to the father tax at the standard rate on the annual alloca tions to the debt, seeing that these sums represent capital so far as the latter is concerned *How long should this continue?*

*** The arrangement made between the two parties is, of course, entirely innocent, but is equally wrong, and may possibly have affected the total amount of tax paid (one way or the other) in connexion with allowances, such as for earned income and life assurance There is a fallacy involved in speaking of paying tax in 1925 on the 1924 receipts, tax paid on the return for the financial year ending April 5th, 1926, is the tax on the earnings *of that year*, though the amount paid is calculated on the artificial three years' average It seems to us that a simpler adjustment would have been for the son to pay all the income tax liability from the date he took over the practice, *plus* the relief afforded to the father on the assessment If it is desired *not to make any radical* change the son might take over *all* tax in respect of the year commencing April 5th, 1925, and onwards, but the only way of obtaining a really correct adjust ment would appear to be to approach the local inspector of taxes explain the circumstances, and obtain a recalculation of the respective liabilities of father and son

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LETTERS, NOTES, ETC

THE DURATION OF PREGNANCY

DR D A MCCURDY (Londonderry) writes Medical men concerned in the medico legal aspect of the duration of *pregnancy* may be interested in the following figures a woman confined on August 13th, 1921, assured me—and I believed her statement—that up to the time she became pregnant after her previous *confine* ment she had had but one connexion with her husband, which occurred on November 22nd, 1920 The period of gestation would therefore be 265 days, or 38 weeks less 1 day

A WARNING

DR ARTHUR LEE of Bournemouth writes to say that he was *induced* to lend some money to a person who seems to be the same individual as mentioned by Dr W G Niall (Chatham) in our issue of August 23rd (p 348) The money was not repaid by the date promised

VACANCIES

NOTIFICATIONS of offices vacant in universities, medical colleges, and of vacant resident and other appointments at hospitals, will be found at pages 32, 33 35 and 37 of our advertisement columns, and advertisements as to partnerships, assistantships, and locumtenencies at pages 34 and 35

A short summary of vacant posts notified in the advertisement columns appears in the *Supplement* at page 115

EPITOME OF CURRENT MEDICAL LITERATURE.

Medicine

176 Blackwater Fever

O E JACKSON (*South African Med Record*, June 23th, 1924, p 273) considers that blackwater fever should be classified among the malarias, and not as a separate disease Examination of the theories as to its cause points to malaria as supplying the specific organism, and though quinine may precipitate an attack it is not the primary cause Acidosis may be created by a malarial attack, and the same condition may be produced by irregular quinine taking The presence of the malaria parasite, the response to quinine the seasonal prevalence, the geographical distribution, the resulting debility, and the necropsy findings in both diseases point very clearly to malaria being the root cause of blackwater fever Repeated attacks of malaria with a resulting acidosis, which is still further increased by irregular dosing with quinine, in a patient who leads a life of habitual acidaemia afford adequate explanation of the occurrence of haemoglobinuria in an otherwise ordinary malarial attack The prophylaxis of blackwater fever is the prophylaxis of malaria, and with ordinary antimalarial precautions, the regular administration of 5 grains of quinine daily, regulation of the bowels, and care in diet and exercise for the avoidance of acidosis the disease can be prevented and a person who has once suffered need not necessarily be liable to a second attack, even if exposed to predisposing factors During an attack quinine should be given intramuscularly free action of the bowels kidneys, liver and skin obtained, and the acidosis corrected by the administration of sodium bicarbonate During convalescence the patient should take quinine in gradually increasing doses up to 15 grains per diem, but in the event of haemoglobinuria appearing the quinine must be withheld for a day or two, and eliminative treatment adopted it being realized that quinine tends to produce acidosis if the eliminative functions are impeded Further research is needed regarding the use of transfusion, the value of kidney decapsulation for anuria and the production of an auto haemolyser it is suggested that some use might be made of abrin, an antidote for haemolysis caused by poisonous fish

177 A Simple Clinical Test in Sciatica.

E WARBURG (*Ugeskrift for Laeger*, June 12th, 1924, p 465) describes a phenomenon which he has invariably observed in twenty five cases of sciatica investigated during the past year The affected limb is flexed at the thigh while extension is maintained at the knee, the flexion being increased until pain is provoked in the hip or back of the leg This pain ceases when the amount of flexion is reduced a little Pain can again be excited with the limb in this position if pressure is now exerted on the tendon of the biceps in the popliteal region The author argues that this observation is confirmatory of Helweg's teaching that sciatica is not a true neuritis but a myopathy, the result of over exertion of the muscles concerned The objection might be raised that the pain provoked by pressing on the tendon of the biceps muscle was due to pressure exerted on the peroneal nerve, which runs close to the tendon of the biceps But the author has succeeded in isolating the one from the other and in showing that the tendon and muscle, but not the nerve, must be held responsible for the pain provoked Were the pain due to pressure on the peroneal nerve, pressure under the same conditions over the tibial nerve in the middle of the popliteal space should also provoke it, but it does not do so as a rule

178. The Heart in Secondary Syphilis

ODA I SAGGIOPO (*Cuore e circolazione*, April, 1924, p 137) records her observations on the heart in twenty cases of secondary syphilis The patients were almost all young men in whom lesions of the circulatory system due to advanced age and alcoholism could be excluded Pulse tracings in all cases were taken in the supine position Her conclusions are as follows (1) The syphilitic virus acts on the heart in the secondary stage of infection by producing circumscribed areas of myocarditis which are sometimes latent and then can only be discovered by careful examination (2) Patients in this stage of infection may suffer from subjective disturbances of the circulatory system such as extra-systoles which are often felt by the patients themselves, tachycardia, dyspnoea of effort and tachycardia of effort (3) Examination of the cardiac function reveals a myocardium with feeble powers of resistance and often signs of true myocarditis such as increase of the transverse diameter, irregular and small pulse, and dull or impure heart sounds (4) Disturbances of innervation of the circulatory system are frequent, being due to lesions of the myocardium at the point of entrance of the terminal branches of the vagus (5) Extra systoles, tachycardia, palpitation, and a state of vagotonia characterized by exaggeration of the oculocardiac reflex, sometimes accompanied by vomiting and syncope are the manifestations of this disturbance of innervation (6) Examination of the cardiac function is best carried out by careful physical examination, Katzenstein's test (increase of blood pressure on constriction of the femoral artery indicating myocardial efficiency), and ocular compression

179 Rheumatic Polyarthritis following Injury

H ZAGELOW (*Deut med Woch*, June 20th, 1924, p 816) gives an account of seven cases of traumatic rheumatic polyarthritis He notes that the trauma need not be severe in itself, a slight, but continuous, trauma being often the determining factor in the genesis and localization of the disease Such slight but constant injuries are those which deformities of the foot —for example pes planus ex varus—entail In such cases the disease spreads from one joint to another upwards, the course and prognosis of the case differing in no essentials from non traumatic polyarthritis In both the traumatic and the non traumatic forms there is the characteristically erratic involvement of various joints, the endocardium is involved in a certain proportion of cases, and there is the same transition from the acute to the chronic stage The distinction between traumatic and non traumatic cases depends largely on the demonstration of a short interval between the injury and the onset of symptoms in a joint which should be close to, or at the site of, the trauma The author takes for granted that germs play a decisive part in the development of traumatic rheumatic polyarthritis, but he does not venture an opinion on the exact process of infection, merely stating that cocci may already have been circulating in the blood at the time of the trauma, or may have subsequently entered the body and found a *locus minoris resistentiae* created by the trauma

180. Treatment of General Paralysis

A STARCKE (*Nederl Tydschr v Geneesk* April 19th, 1924, p 1751) describes the following method of treatment, which he considers to be as effective as inoculation of malaria and much less dangerous An injection of ordinary boiled milk is given in the morning The milk must not be shaken or else clots will get into the syringe The first dose is 40 c cm The injection is usually followed by a rise of temperature in the evening to between 101 2° and 104° I After the injection the patient should walk about or be massaged for a few minutes to promote absorption of the milk In the evening when the temperature is raised, an intravenous injection of neosalvarsan is given, the dose ranging from 600 to 900 mg with the result that the temperature rises still higher If it reaches 105 8° cold packs should be applied until it falls below 104° This procedure is repeated every week the dose of milk being increased so that the temperature rises at least to 102 2° When the evening temperature has reached the level of 103 6°, a dose of 50 c cm should prove sufficient Large doses of potassium iodide were also given throughout the course of treatment No symptoms of anaphylaxis were observed Improvement may be seen at the end of a month but if it does not occur by then the treatment is continued, a watch being kept upon the urine

181 Granuloma Inguinale.

S B SCHOCHLT (*Surg, Gynecol and Obstet*, June, 1924, p 753) states that granuloma inguinale (chronic infectious granuloma) is not very uncommon although often unrecognized in temperate climates More than sixty cases were reported during the past three years in the United States The etiological part played by the intracellular bodies described by Donovan is uncertain but they should be sought in all chronic ulcerations about the genitals especially when syphilis and tubercle have been excluded as causative factors Diagnosis from epithelioma is made microscopically from lupus vulgaris by the confinement of granuloma inguinale to the pudendal region, by its affecting mucous as well as cutaneous surfaces, and by the absence of giant cells and caseation from syphilis and yaws by the negative Wassermann reaction and the absence of general adenopathy Treatment by intravenous injections of antimony derivatives is successful, but not altogether devoid of danger of antimony poisoning

Surgery.

182 Pulmonary Complications in Gastric Surgery.

R GRÉGOIRE (*Bull et Mem Soc Nat de Chir*, July 12th, 1924, p 830) reminds us that for many years there has been discussion of the best method of the pulmonary conditions which fre[illegible] perations on the alimentary canal Certain conditions seem to increase their incidence, whilst certain subjects to them The author finds that patie[illegible] malignant disease are more liable to their onset, being less resistant in some way The use of general inhalation anaesthesia, either by the cooling of the alveolar air or by its effect on the vagus nerve, encourages pulmonary complications Then there is the lack of movement and active exercise after an operation on the abdomen, whilst the action of the lungs is reduced to a minimum, all these favour local congestion and inflammation The bacteria found in the air passages have been shown to be identical with those found inside the stomach It appears possible, then, that during an operation these organisms may enter the divided vessels and lymphatics and pass to the lungs, where *they form septic emboli* The author considers that if one can diminish the virulence of these organisms, and avoid general anaesthesia and the prone *position* in bed, it is possible to lessen the risk of pulmonary complications He therefore practises gastric lavage, prior to operation, with a watery solution of iodine He uses regional or local anaesthesia, and gets the patients up early after operation By adopting these measures he has reduced the incidence of pulmonary complications *from 21 per cent* to almost *nil*

183 Comparison of Cholecystostomy and Cholecystectomy

J P DEAVER and S P REIMANN (*Journ Amer Med Assoc*, June 28th, 1924, p 2115) describe the relative value of the operations of cholecystostomy and cholecystectomy, and conclude that *the latter is definitely preferable* They maintain that it is as safe as the former operation, the patient does not miss an organ which has for some time been functionless or, at any rate, impaired, and the chances of complete recovery or cure are greater, recurrences being less common and usually less serious than after cholecystostomy Moreover, the vicious circle due to an inflamed gall bladder infecting neighbouring organs and being itself reinfected from *them is abolished by the operation of cholecystectomy* They point out that two questions remain to be answered (1) The gall bladder adds mucus to the bile, does it add anything else? (2) The gall bladder also concentrates the bile by removing what amounts to normal saline solution *from it*, does it remove any other substances of importance? These questions are not very significant, however, since a normal gall bladder is not removed and a diseased gall bladder has ceased to function normally—in extreme cases, at any rate The border line cases between the normal and slight disease require, however, to be considered, but it is doubtful whether any bad results follow the removal of the normal organ Dilatation of the ducts, incontinence of bile, and other sequelæ have *followed removal*, but the authors consider it extremely doubtful whether the general metabolism of the [illegible] as does always occ[illegible] by We would answer the first in the [illegible] body has been affected [illegible]ve It

184 Gastric Myoma

[illegible]se 1924, p 1341), who N KLEIBER (*Zentralbl f Chir*, June 21st, 19[illegible] a tumour was records a case in a woman, aged 62, in whom the [illegible] myoma, successfully removed by Bier, states that gastric tumours which was first described in 1762, is one of the rarest [illegible] mucous of the stomach Virchow distinguished internal or sub[illegible] the myoma from external or subserous myoma, according as the *tumour* projected into the cavity of the stomach or protruded from the wall into the peritoneal cavity Steiner collected 21 cases which had been published up to 1898, and Hake in 1912 collected 36 more, including 3 of his own, to which Kleiber adds another 7, 4 of which were of the external variety and 3 of the internal Females are more frequently affected than males, especially between the ages of 30 and 55 The form and size of gastric myomata vary considerably They may be as small as a millet seed or as large as a man's head They may be smooth, round, or elongated, or nodular in parts, solitary or multiple Their consistence is usually hard An internal myoma only rarely exceeds a hen's egg in size, but is usually much smaller, while an external myoma may be the size of a child's head or larger The most frequent site for the development of the tumour is the greater curvature, from which it *develops* as a sessile or pedunculated growth Its clinical appearance varies according to its situation, size, and form The internal myoma may cause haemorrhage, as in Kleiber's case, or signs of pyloric stenosis when it is situated in the region of the pylorus On the other hand, it may grow to an enormous size without causing any special symptoms Usually, however, the patient complains of dragging pains in the gastric region, nausea and vomiting While myoma is usually a benign tumour, cases have been recorded of its undergoing sarcomatous degeneration In some instances a pure myoma may give rise to metastases, as in a case recorded by Hansemann, in which similar tumours to the gastric growth were found in the pancreas and in the retroperitoneal tissue in the appendix area In none of the recorded cases has the diagnosis of gastric myoma been made before operation

185 Acute Cholecystitis in Children

GRAFF (*Zentralbl f Chir*, June 7th, 1924, p 1239), who records an illustrative case, states that only 25 cases of acute non calculous cholecystitis have been recorded in children 18 occurred in typhoid fever, 1 in *B coli* infection, 1 in paratyphoid fever, 1 after suppurative appendicitis and septicæmia, and 1 after influenza, while in the rest no bacteriological examination was made Ten cases following typhoid fever, which were not operated on, were all fatal, while of eight on whom operation was performed all but one recovered Graff's patient was a boy, aged 5 years, who developed loss of appetite and slight gastro-intestinal disturbance after eating a banana On the third day he complained of abdominal pain, which was *localized in the region of the umbilicus* On the eighth day there was tenderness in the region of the gall bladder, with muscular resistance and dullness on percussion The temperature was 100·4° and the pulse 110 On laparotomy a tense oedematous gall bladder was found containing *thick blackish fluid* The *organ was removed* and subsequent recovery was uneventful The mucous membrane of the gall bladder was much swollen and gangrenous in parts. Unfortunately no bacteriological examination was made

186 Acute Haemorrhage due to Gastric Ulcer

F ERKES (*Zentralbl f Chir*, July 12th, 1924, p 1496) refers to Konigsberger's and Rammstedt's recent papers (*Ibid*, pp 494 and 1048), in which *they recommend* closure of the ulcer by sutures Erkes formerly used Kraft's method, but latterly he has adopted that of Seidel in the treatment of both acute and chronic ulcers of the stomach or duodenum. In all cases of gastro-enterostomy he sutures and inverts the ulcer in order to prevent post operative haemorrhage, where resection is found to be impracticable In 3 cases of chronic ulcers with recurrent bleeding and in 2 cases of acute haemorrhage complete cure followed the operation All five cases have been free from haemorrhage for a period of one to three years In 19 other cases of operation for gastric or duodenal ulcer with occult haemorrhage the operation was successful *in all but one*, in which the sutures gave way In this case there was severe cicatricial pyloric stenosis, but the ulcer appeared to be healed Four days after the operation severe haemorrhage occurred In 3 of these 19 cases a second laparotomy for other conditions *became necessary* a year after the original operation, in every case the site of the raw ulcer was marked by a soft linear greyish white scar Erkes emphasizes the importance of inversion and approximation of the healthy tissues in order to prevent risk of perforation

187 Surgical Tuberculosis in Childhood

S JOHANSSON (*Svenska Lakaresallskapets Handlingar*, June 30th, 1924, p 35) publishes an account of an investigation, conducted under the auspices of the Swedish National Association for Combating Tuberculosis, of the fate of the 407 patients treated for surgical tuberculosis in childhood in the period 1909–23 in Gothenburg It was found that 94 of these children had died, 40 per cent of the deaths being due to tuberculous meningitis and 22 per cent to pulmonary tuberculosis The author does not believe in a wholesale discard ing of *operative treatment* in favour of more conservative measures, and he notes that in 26 out of 24 cases in which para articular foci threatened a joint *the timely operative* removal of these foci was followed by recovery, the mobility of the joints being restored to normal or almost to normal The ratio of cases given conservative treatment to those given [illegible]ative treatment was 242 to 165 Conservative *treatment* op[illegible] was given to 65 cases of Pott's disease, 28 cases of alon[illegible] were operated on according to Albee's method Only whic[illegible] the 80 cases of tuberculous hip disease was operative in 4 of[illegible]t undertaken Conservative *treatment* alone was treatm[illegible] 45 out of 64 cases of tuberculosis of the knee, in the given [illegible] 19 cases an operation was performed Most of the remain[illegible] tuberculosis *of the ankle*, and all the cases of tuber cases [illegible] the ribs, were operated on whereas the treatment culosis [illegible]tten operative as conservative in *the case of* tuber was as[illegible] the elbow The chief lesson of the author's paper culosis [illegible]nservative and operative treatment are *adjuncts* is that [illegible]he other, and not rivals the one o[illegible]h

Radiology and Electrology.

183 Radiography of the Mastoid in Cases of Radical Operation

G FERRERI (*Arch Internat de Laryngol, Otol et Rhinol*, June 1924 p 650) relates a case of a young man who was operated upon in a small provincial town for a long standing otitis media with polypi in the meatus The operation was supposed to have been a complete radical one, but later examination showed that the meatus was much stenosed still contained polypi and pus, and there was a discharging sinus at the lower extremity of the retroauricular scar The patient suffered from pain and headache, and a second exploration was performed It was found that there had been merely an incision of the soft tissues and that the bone had not been interfered with A complete radical mastoid operation was then performed, with an excellent result The author deplores the fact that such procedures are possible and has devised a method for estimating the amount of bone removed by operations behind the ear He found that an *x* ray photograph of the mastoid region was always obscured by the shadows of other parts of the skull, and it was not possible to delimit the extent of the mastoid cavity The idea of instilling a semi solid opaque substance into the meatus was abandoned owing to the difficulty of removing all the substance afterwards The author's method is to soak a length of narrow ribbon gauze in a mixture of barium sulphate, gum arabic and water which has been boiled The gauze previously sterilized is dried slowly and is then ready for use The ear and its cavity are carefully cleaned and the meatus and the mastoid cavity very carefully packed with the gauze Radiograms are then taken in an antero-posterior and in a lateral direction The first radiograph shows the depth of the cavity, the second shows the extent, especially backwards and the size can be accurately gauged from the two views This method is very useful in determining the extent of a prior operation, and distinguishes those cases in which only a Wilde's incision has been performed

189 X ray Treatment of Enlarged Prostate.

C GUILBERT (*Paris med* April 12th, 1924 p 343) states that though there is no other condition in which radiotherapy is more definitely indicated than in prostatic hypertrophy, this treatment has never been so popular as in the case of fibroids or malignant growths The rationale of *x*-ray treatment of enlarged prostate is that the condition is an adenoma frequently associated with more or less marked hyperplasia of the connective tissue Now, according to the law of Bergonie Tribondeau, adenoma both in theory and practice, is very sensitive to *x* rays so that even in adenofibroma the adenomatous tissue is always affected provided sufficient doses of *x* rays are given Failures in the past have been due to inadequate dosage and to the intervals between applications being too long Guilbert condemns the perineal route as being dangerous because the skin of the perineum is much more sensitive than that of other parts, and inadequate because in view of the risk of severe skin reactions sufficiently large doses cannot be employed in all cases He therefore makes use of the method of six windows arranged round the body, systematically avoiding the perineum, with large doses amounting to 95 to 100 per cent of the erythema dose in preference to fractional and repeated doses This method is well supported by old persons and avoids all risk of *x* ray dermatitis Close collaboration between the radiologist and surgeon is required

190 Calcified Hepatic Cyst simulating Biliary Calculi

MASSELOT, BOLQUET and JALBERT DE BEAUJEU (*Journ de Radiol et d Electrol*, May, 1924 p 212) describe a case of erroneous *x* ray diagnosis A man was admitted to the French Hospital at Tunis complaining of pains in the right loin and hepatic region, which were not definitely radiating in character nor was there increased tenderness on palpation The urine was normal, the right kidney was not palpable, and there was no fever jaundice, or splenomegaly, but the patient stated that he had lost a little weight A skiagram of the subhepatic region showed a group of small irregular shadows in front of and below the shadow of the twelfth rib In profile these shadows were anterior to the vertebral column in front of the second lumbar vertebra Several skiagrams were taken at intervals after repeated purgation the appearances were unchanged The skiagrams suggested either (1) a conglomeration of small biliary calculi or (2) a large non homogeneous stone At the operation the gall bladder was found to be quite healthy but on the upper surface of the right lobe of the liver, near its margin at the level of the gall bladder, there was a clear yellow hard mass This was excised and haemorrhage was easily arrested A calcified cavity was found containing a chalky paste in which were very hard masses, no hooklets were found This appeared to be undoubtedly the terminal stage of some parasitic lesion (hydatid or otherwise) The authors refer to the work of Duval, Gatellier and H Beclere, who have described the various sources of error in skiagraphy of this region—for example, renal calculi, calcification of costal cartilages or of mesenteric glands, etc —but calcified hydatid cyst has not been recorded previously, usually it is too large to be mistaken

191 X ray Examination in Genito urinary Disease.

H D PODLASKY (*Urol and Cutan Rev*, June 1924 p 331) states that in incomplete urinary findings in tuberculosis of the genito urinary tract where cystoscopic examinations are in the early stages admittedly indefinite *x* ray examination of the chest will at times reveal acute or chronic tuberculosis long before the condition is shown by microscopical examination of the urine or animal inoculation The *x* ray findings may in some cases be difficult to interpret, but the case with which malignancy can be detected depends upon the form of the metastasis—that is, whether it is of the nodular or infiltrating type Although it is a well known fact that malignant disease of the prostate gives rise to metastases in the chest as well as in the lumbar vertebrae and innominate bones, examination of the chest is frequently neglected Podlasky therefore maintains that routine examination of the chest by *x* rays is as important in urology as the performance of a Wassermann test

Obstetrics and Gynaecology.

192. Acute Ulceration of the Vulva.

J E R MCDONAGH (*Brit Journ Derm and Syph*, July 1924 p 285) describes two clinical forms of acute ulceration of the vulva caused by (1) Doederlein's bacillus, and (2) Vincent's organism Both forms commence with severe constitutional disturbances, and give rise to very painful lesions In five cases due to Doederlein's bacillus the ulceration began with several small crater like ulcers on the inner surfaces of the labia from which the Gram positive bacillus was obtained The ulcers in this form are unaccompanied by discharge and lymphadenitis are not preceded by erosions, do not cause great destruction of tissue, and have no characteristic odour, these points distinguish them from that form of ulceration caused by Vincent's organism, the lesions from which are characterized by the appearance on the inner surfaces of the labia of multiple erosions which coalesce to form ulcers, with rapid destruction of tissue, accompanied by considerable discharge and characteristic smell, the inguinal glands being generally swollen and tender From the lesions a Gram positive fusiform bacillus associated with a Gram negative spirochaete can be obtained The latter (Vincent's) infection is the more severe of the two forms and may cause the greatest destruction of tissue Gram negative micro-organisms, as a rule, set up more severe infections than Gram positive In neither disease is the lesion auto-inoculable and similar lesions have not been produced in animals In one of the cases due to Doederlein's bacillus the lesions healed under treatment with ordinary antiseptic lotions and powder, but relapsed seven months later while in another every kind of local treatment failed until the ulcers were packed with intramine In the form due to Vincent's organism the lesions yield to treatment with hydrogen peroxide lotion locally combined with two arsenobenzene intravenous injections, but relapses may follow further injections pointing to the fact that the treatment acts by stimulating the patient's resistance and not by direct action upon the infecting organism

193 Treatment of Leucorrhœa.

P SALOMON (*Klin Woch*, July 15th 1924, p 1324) remarks that in treating patients complaining of vaginal discharge it is necessary to exclude gross disease of the vulva vagina, uterus, and adnexa constitutional disorders such as diabetes, and extragenital morbid conditions such as pulmonary tuberculosis If such causes are established they require appropriate treatment in their absence the object of treatment should be to restore normal biological conditions within the vagina Healthy vaginal secretion is slightly acid, owing to the presence of from 0 3 to 1 per cent of lactic acid, the acid is secreted chiefly by Doederlein's bacillus This acidity and the presence of this bacillus are necessary for the exclusion of extraneous pathological micro organisms In treating leucorrhœa it is therefore wrong to give antiseptic douches or tampons Daily instillation of lactic acid in 0 5 per cent solution suffices in many cases within three weeks to restore normal chemical and bacteriological conditions in the vaginal secretion The lactose preparation recommended by Loeser,

which contains living lactic acid bacilli in varying amounts, may be used Salomon has had good results from injections of a lactic acid producing colon bacillus, also by the simpler method of instilling in the vagina small amounts of milk which, after standing for some hours, contains the lactic acid bacillus, and often, in addition, organisms microscopically and culturally resembling Doederlein's bacillus

194 Sterilization after Caesarean Section

J B SWIFT (*Journ Amer Med Assoc*, July 19th, 1924, p 175) discusses the obligation of the obstetrician to advise how undue risks may be avoided after Caesarean section has once been necessary He se[illegible] fifty members of the American [illegible] and studied the records of the rep[illegible] which were performed at the Boston Lying in Hospital between the years 1916 and 1922 He correlates these findings and states his conclusions as follows The majority of gynaecologists believe that when a Caesarean section is performed for some reason which would entail grave peril to the life of the patient in a future pregnancy, such a patient should be sterilized at that Caesarean section No patient should be sterilized without the written consent of both herself and her husband, and no woman should be so treated at her first Caesarean section unless there are definite indications other than the possibility of a second Caesarean section As the successive sections increase in number general opinion is in favour of suggesting, and finally urging, sterilization, and Swift believes that the maximum number of sections permissible is four In answer to his inquiries as to the use of contraceptive measures in preference to sterilization, the majority of the replies were against contraception on the ground of its unreliability He considers that a repeated Caesarean section is less risky than the primary one, but insists that it is the duty of the performer of a Caesarean section to consider, not only the indications for the immediate operation, but also the possibility of future pregnancies and the steps to be taken with regard to them

195 Rectal Perforation in Ectopic Gestation.

A SCHWARTZ, P LUBIN, and A AMELINE (*Paris med*, June 21st, 1924, p 581) state that while numerous cases have been reported in which ancient remnants of ectopic pregnancy have been evacuated per rectum (often after suppuration) at the end of several years, acute perforation of the rectum by an early tubal gestation is relatively uncommon In the five cases which they have found recorded, and in a sixth case which they describe, the clinical picture was the same—amenorrhoea, abdominal pain, uterine haemorrhage, and painful defaecation, followed by sudden and profuse rectal haemorrhage Physical signs pointing to ectopic pregnancy have been clearly marked, and, in one instance, depression in the anterior wall of the rectum led to suspicion of the complication Operative approach should be made by the abdomen the rectum should be sutured in several layers, but a colostomy is not usually required

Pathology.

196 Sickle cell Anaemia

IN our columns of December 8th, 1923 (p 1109), we gave a description of sickle-cell anaemia based upon the *Bulletin of the Johns Hopkins Hospital* V P SYDENSTRICKER (*Journ Amer Med Assoc*, July 5th, 1924, p 12) has now collected a series of 80 cases, including ten family groups, and gives a detailed account of this anaemia, which appears to be a familial and hereditary disease, probably confined to negroes irrespective of sex It is present and recognizable at birth, and the author is inclined to attribute it to congenital defect of the spleen and blood forming organs, with a resulting change in the red blood cells which predisposes to haemolysis and phagocytosis Sydenstricker believes that the disease shows itself in two phases, in the latent phase there are few symptoms and physical signs, and blood examination alone establishes the diagnosis This phase is commoner than the active phase in the proportion of nine to one, and the two phases may occur in the same family, active disease being found in the children and grandchildren of patients with the latent phase The symptoms of latent disease are occasional muscle and joint pains, attacks of abdominal pain, sometimes associated with nausea and vomiting, and variable weakness and dyspnoea There may be some greenish yellow sclerotic discoloration, general glandular enlargement, and slight enlargement of the liver, splenic enlargement is rare In the active phase there is the very characteristic blood picture including reduction in the red cell count to the neighbourhood of two million, with proportionate reduction in haemoglobin and marked poikilocytosis in addition to the sickle cells, which occur in large numbers Many normoblasts occur, and many other red cells contain nuclear fragments Marked leukocytosis is present, but otherwise the white cells show few abnormalities, the differential count not being much altered The serum in these cases is a deep yellow and contains bilirubin Necropsies were performed on two cases with active disease, and on three with the latent type In active disease the spleen was very small, the pulp scanty, and Malpighian bodies barely visible, the trabeculae being large and numerous In many of these trabeculae and in the walls of some of the vessels there were collections of greenish plates and brown granules which gave the iron reaction, and there was much dirty brown non free pigment throughout the organ In the latent cases the spleen was characterized by an increased hardness, absence of visible lymphoid nodules, and a very dark red colour of the cut surface On microscopic examination intense engorgement with blood was seen, the Malpighian bodies were small and surrounded by areas of congestion The bone marrow in the acute cases was abundant, bright red, and perhaps thinner in consistency than normal There was marked diminution in the fat and an increase in the leucocytes and red cells, the reticular spaces and the capillaries being filled with sickle shaped and distorted red cells In the chronic phase the appearance of the bone marrow was similar but less striking The author points out the ability of pathological red cells to penetrate the reticular tissues of the bone marrow and the pulp of the spleen In the chronic cases there was no gross change in the liver, though the cell outlines were blurred, and there was a moderate degree of lymphocyte infiltration, together with diffuse iron free pigmentation In the acute cases the liver was very large, its cells were more granular than normal, and poorly defined There was a large amount of non free pigmentation

197 Achlorhydria in Pernicious Anaemia

M E SHAW (*Quart Journ of Med*, July, 1924, p 319) considers that it has been established that absence of free hydrochloric acid from the gastric juice is a constant feature of Addison's (pernicious) anaemia From examinations of the gastric juice in 7 cases of pernicious anaemia, and estimation of the amount of hydrochloric acid required to reach the acid point, the author has been able to measure the degree of achlorhydria In 5 cases of pernicious anaemia dilute hydrochloric acid was administered, made up into a palatable drink with lemon juice, sugar, and water, and the effect determined Theoretical considerations based upon the estimation of the degree of achlorhydria suggested that about 2 drachms of dilute hydrochloric acid (*B P*) would remedy the deficiency Experimental evidence showed that 1/2 to 2½ drachms restored the effective germicidal activity of the gastric juice in pernicious anaemia if given by the "continuous" method A F Hurst considers that the achlorhydria of pernicious anaemia is the primary defect, and that it permits the passage of organisms into the intestinal tract, where the toxins of the disease are formed and absorbed The object of treatment, according to this view, must be to restore the lost germicidal power of the gastric juice by remedying the lack of hydrochloric acid.

198 Mode of Action of Stomachics

A O HANNEBORG (*Norsk Mag f Laegevidenskaben*, June, 1924, p 369) has carried out investigations on healthy medical students given test meals in the morning on an empty stomach The various meals were removed with a stomach tube at short intervals, and the substances tested were plain water, tea, coffee, meat extract (bouillon), tincture aurata, tincture of gentian, and a decoction of condurango Cocoa and chocolate were also given, and were found to remain in the stomach for about three hours—that is, as long as an ordinary light meal—but coffee passed through the stomach in 75 to 100 minutes, and tea in 100 to 140 minutes Bouillon passed through the stomach more rapidly, taking only 70 to 90 minutes to do so Experiments with coffee from which the caffeine had been extracted suggested that it must be the caffeine on which the digestive action of coffee depends With regard to the stage at which the stomach passes on its contents through the pylorus, it would seem that this emptying process is independent of the secretion of hydrochloric acid, which was absent from the stomach of one of the author's test subjects, and yet an ordinary test meal passed through the pylorus as rapidly as in the other cases On the basis of this and other observations the author concludes that the main factor in the normal evacuation of the stomach is peristalsis, and his experiments with bitters such as gentian point to their action depending almost solely on their capacity to stimulate the stomach to contract more forcibly, and thus to expel, not only food, but also an accumulation of gas Probably the role played by the gastric secretions has been much overrated in the past, anatomical obstruction and motor disturbances of nervous origin are of more importance, since either of these may prevent expulsion of the contents of the stomach

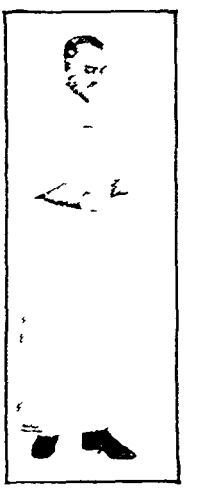
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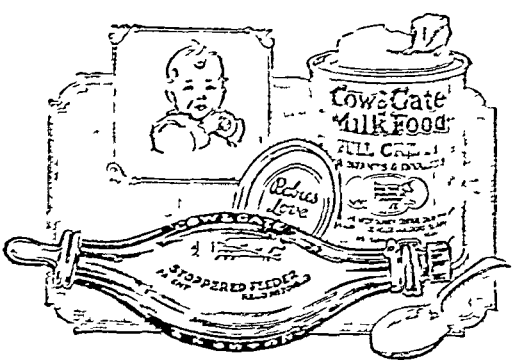
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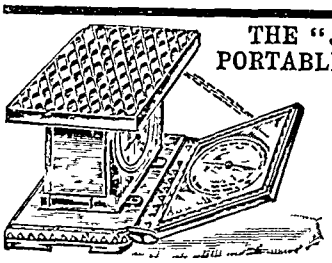
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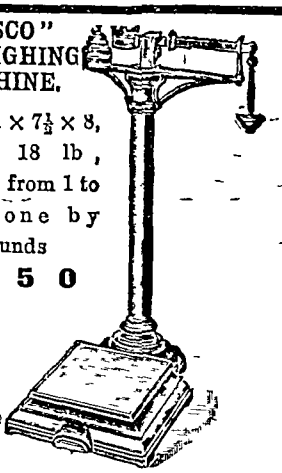
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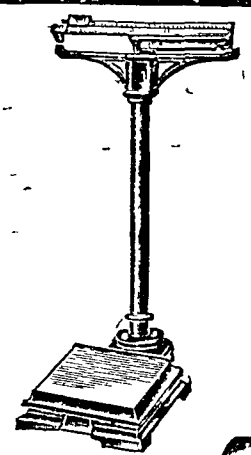
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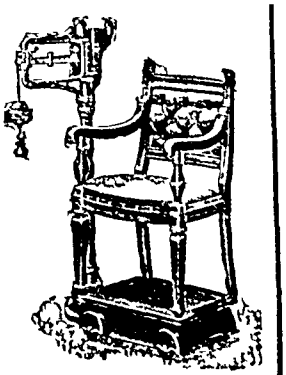
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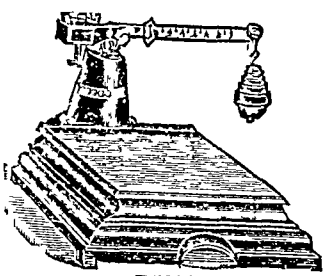
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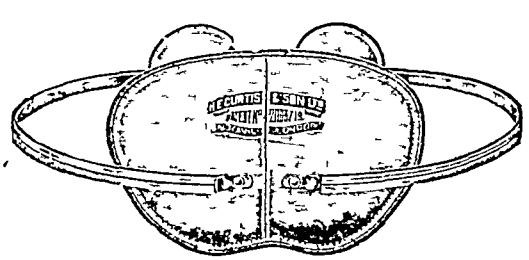
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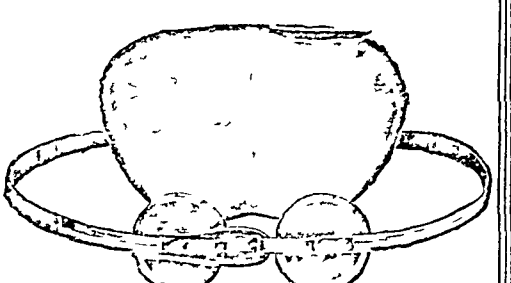
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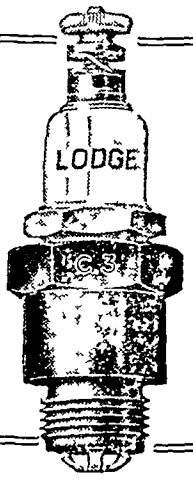
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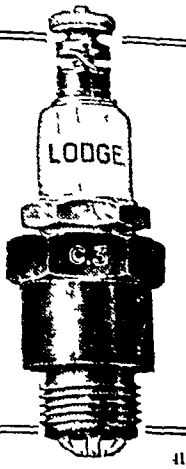
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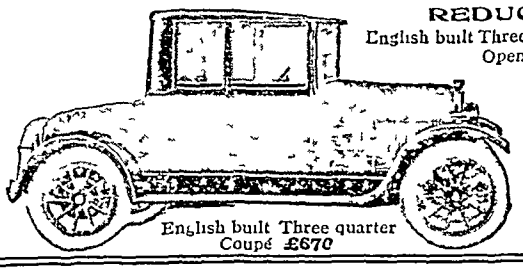
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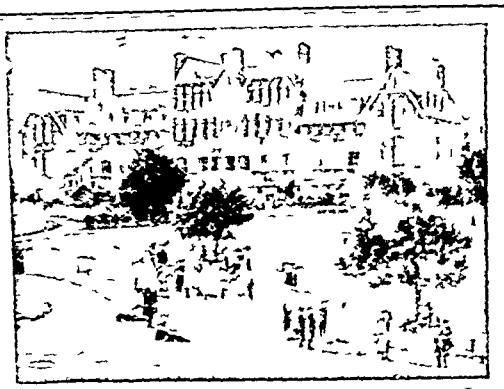
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SCHOLARSHIPS EXHIBITIONS and Prizes of the value of over £1 000 are awarded annually
BUCKNILL SCHOLARSHIP entitles the holder to the Course of Intermediate Medical Studies at University College and for the Final Studies at the Medical School
GOLDSMID EXHIBITIONS —Two Exhibitions the subjects of the examination being Anatomy and Physiology are awarded annually in July and entitle to Course of Final Medical Examinations
RECREATIONS —The Athletic Ground of 22 acres is at Perivale and contains 22 Tennis Courts, Cricket, Football and Hockey Grounds A Gymnasium and Squash Racquet Court are installed in the school, while the Asphalt Tennis Court Lives and Racquet Courts at University College can be used by members of the Students' Medical Society
All further information and prospectus can be obtained from the Secretary and the Dean can be interviewed at any time by appointment
Dean Sir GEORGE BLACKER C B E, M D, F R C I F R C S
Vice Dean GWYNNI WILLIAMS M S F R C S
Secretary G E ADAMS F C I S

University of Cambridge

Diplomas in (a) PUBLIC HEALTH (b) HYGIENE (for foreign graduates) and (c) TROPICAL MEDICINE & HYGIENE

COURSES OF INSTRUCTION in the subjects of the examinations under the New Regulations will commence 10th October 1924 Full particulars to be obtained from Mr I E PURVIS Public Health Chemical Laboratory Medical School Cambridge

The University of Manchester.

COURSE IN MEDICAL RADIOLOGY AND ELECTROLOGY

A COURSE of INSTRUCTION in preparation for the Diploma in Medical Radiology and Electrology of Cambridge will commence in October next and will extend over three terms
Full particulars of the Course can be obtained from the Dean of the Medical School Manchester University

UNIVERSITY EXAMINATION POSTAL INSTITUTION.
17, RED LION SQUARE, LONDON, W.C.1
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Principal Mr E S WEYMOUTH, M.A. (Lond.)
POSTAL OR ORAL PREPARATION FOR ALL MEDICAL EXAMINATIONS
(Forty years' experience in Postal Tuition)

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M.B., B.S. (Lond) *Final* 1906 24 (Completed Exam) **163**
Primary F.R.C.S. (Eng.), 1906 24 - **115**
Final F.R.C.S. (Eng.), 1906 24 **83**
M.R.C.P. (Lond.), 1914 24 - **81**
D.P.H. (Various) 1906 24 - (Complete Exam) **224**
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ORAL CLASSES for M D, M R C P, & F R C S, also for M B, B S, and for Conjoint (Second and Final)
Medical and Surgical Clinics
Museum and Microscope work
For MEDICAL PROSPECTUS (32 pages), List of Tutors and particulars about any Medical Examination apply to the Principal Mr E S WEYMOUTH

The University of Liverpool

A Course of Instruction for the DIPLOMA IN MEDICAL RADIOLOGY AND ELECTROLOGY will commence in October next The Course extends over two terms
Full information as to Classes can be obtained from Mr THURSTAN HOLLAND 43 Rodney Street Liverpool Lecturer in Radiology or the Dean of the Faculty of Medicine, the University of Liverpool EDWARD CARLY Registrar

Tavistock Clinic for Functional
NERVE CASES 51 Tavistock Square W C 1
COURSE OF TEN LECTURES on *Elementary Psychotherapy*, will be given by H CRICHTON MILLER M A, M D, on Mondays at 5 30 beginning Monday, Oct 13th Fee for the Course: Medical Practitioners £2 2s Medical Students £1 1s Tickets in advance from Lecture Secretary at Clinic

Liverpool School of Tropical
MEDICINE.

COURSES OF INSTRUCTION (lasting three months) for the Diploma and also in Veterinary Parasitology commence about SEPTEMBER 15th and JANUARY 7th —Prospectus from the Hon DEAN School of Tropical Medicine, University of Liverpool

UNIVERSITY of LONDON, UNIVERSITY COLLEGE
DIPLOMA IN PUBLIC HEALTH.

Professor —HENRY R KENWOOD O M G, M B, D P H, F R S L Medical Officer and Public Analyst for the Metropolitan Borough of Stoke Newington, etc
Lecturers —A G R FOULERTON F R C S, D P H
F H TEALE M D B Sc F R C P
T M LEGGE C B E, M D, D P H
M GREENWOOD M R C P, M R C S
Assistants —M E DELAFIELD, M B, L R C P, D P H
D EMBLETON, M A, M B, L R C P
Demonstrator —F T MARCHANT, M R San I.

The Laboratories are open daily from 10 to 5 (Saturdays 10 to 1), for Practical Instruction and Research
COURSES begin early in OCTOBER, 1924, and early in JANUARY, 1925
Demonstrations of Sanitary Appliances and Excursions to places of Public Health interest are undertaken
Arrangements are made to suit the convenience of those engaged in practice
A SPECIAL COURSE OF BACTERIOLOGICAL INSTRUCTION is arranged for D P H Candidates
Full arrangements have been made to meet the requirements of the New Regulations for the D P H
Particulars may be obtained on application to—
WALTER W SLION Secretary University College London (Gower Street), W C 1

ROYAL NAVAL MEDICAL SERVICE.
SHORT SERVICE SCHEME

The Admiralty are prepared to accept applications for entry as SURGEON LIEUTENANTS for Short Service in the Royal Navy
Period of Service—3 years with option to extend for further twelve months
Pay—25s per diem, or £456 5s per annum
Gratuity on discharge—£8 6s 8d for each completed month of service or £100 per annum
Equipment allowance—£50, payable on joining
Age of candidates—Not to exceed 30 years
Surgeon Lieutenants on the Short Service Scheme will be considered for transfer to the Permanent Service under certain conditions after six months service
Regulations for entry and form to be filled up by candidates will be supplied on application to the Medical Director General, 68, Victoria Street London S W 1

STAMMERING, SPEECH DEFECTS.
BEHNKE METHOD Estab 1882 Cases non resident treated at 39 Earl's Court Square S W 5, and in residence in the Summer holidays at Miss BEHNKE'S house on the Chilterns

Pre eminent success in the education and treatment of stammering and other speech defects. —*The Times*
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The COLLEGE OF PRECEPTORS holds Preliminary Examinations for Medical and Dental Students in London and at Provincial Centres in March, June September, and December For Regulations apply to the Secretary College of Preceptors Bloomsbury Square London W C 1

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A TUTORIAL CLASS for the next Examination commences shortly
Particulars from CHAS P WHITTAKER F F C S Anatomical Department Surgeons Hall, Edinburgh

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The M.R.C.P. Lond. and Edinburgh.
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Please send me a copy of your Guide to Medical Examinations by return

Name _____

Address _____

Examination in which interested _____

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LONDON HOSPITAL MEDICAL COLLEGE & DENTAL SCHOOL.

THE WINTER SESSION will open on Wednesday October 1st.

THE HOSPITAL is the largest in England. There are 948 beds, of which number 800 are in constant use. Last year In patients 17,767. Out patients, 119,743 (exclusive of 18,129 Dental patients 5,500. Major operations 7,513.

THE MEDICAL COLLEGE AND DENTAL SCHOOL are [illegible]

APPOINTMENT.—Over 100 appointments are made annually from Students of the College recently qualified.

SPECIAL COURSES are held for all the University Examinations for the Primary and Final Fellowship Examinations of the Royal College of Surgeons and for the Membership Examinations of the Royal College of Physicians.

HOSPITAL PRACTICE.—Extensive opportunities are offered to qualified Practitioners wishing to attend the General Practice or the Practice of a Special Department of the Hospital.

Clubs Union Athletic Ground of 13 acres. Students Hostel etc.

For prospectus and particulars apply to the Dean (Professor WILLIAM WRIGHT, M.B. D.Sc. F.R.C.S.) who will be pleased to make arrangements for anyone wishing to see the Medical College and Dental School. Mile End E.1

LONDON HOSPITAL MEDICAL COLLEGE.

PRIMARY FELLOWSHIP EXAMINATION

A COURSE OF INSTRUCTION for the above Examination will begin on Monday Sept. 22nd.

The Fee for the Course is 15 guineas.

Further particulars may be obtained from:—
Professor WILLIAM WRIGHT, M.B. D.Sc. F.R.C.S. Dean
Mile End E.1

DIPLOMA IN
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Short Intensive Postal Lecture Courses in Preparation for these Diplomas.—Apply to the SECRETARY Medical Correspondence College, 19 Welbeck street London W 1

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Continuous Clinical Work in all Departments—
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Headmaster
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The School stands in its own magnificent grounds of 18 acres. Own farm. Beautiful climate healthy situation. Every modern convenience. Electric light.

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The age of the pupil, district preferred and rough idea of fees should be given.

J. & J. PATON Educational Agents 143 Cannon Street London E.C.4 Telephone 5453 Central

LONDON SCHOOL OF HYGIENE & TROPICAL MEDICINE,
Division of Tropical Medicine & Hygiene,
Endsleigh Gardens, N.W.1.

Next Session will commence September 22nd 1924.

For Prospectus and further particulars apply to The Secretary, Endsleigh Gardens, N.W.

SCHOOL FOR THE DEAF.

Also for cure of speech defects in hearing children.
KINGSFIELD HOUSE, Oxhey, Herts.
Principal MISS BULLOCK (Qualified Teacher of the Deaf). Large House and garden. Outdoor life games. Close Bushey & Oxhey Stations, L.M.S.R. & Bakerloo.

Small Private Residential

SCHOOL established 21 yrs. for the Physical and Mental Development of ABNORMAL and BACKWARD PUPILS. Special Department for Pupils over school age. Under Medical supervision.—Prospectus, Mrs. MEREDITH Principal, St. Paul's House, Upper Maze Hill, S. Leonards-on-Sea.

Home School for Backward

and DELICATE CHILDREN (estab. 1909). Special attention to Patients received. Modern educational methods and liberal training. Horticulture, garden games and gymnastics. Entire charge if desired. Entire separate school. Terms moderate.—Apply Principal, Hurstbourne, Bracey Road, Cheltenham.

YOUR SON'S CAREER IN THE MEDICAL PROFESSION.

Parents and Guardians desiring information and advice with regard to the Medical Curriculum should write for full particulars to A. E. WEBB-JOHNSON, C.B.E., D.S.O., F.R.C.S., the Dean,

THE MIDDLESEX HOSPITAL MEDICAL SCHOOL
(University of London)
Berners Street, London, W 1.

The entire Medical Curriculum can be taken at this Medical School.

THE WINTER SESSION
BEGINS
OCTOBER 1st.

Entrance Scholarships Examinations begin September 15th. Applications must be received not later than September 6th.

Annual value of Scholarships and Prizes exceed £1,000.

School Secretary R. A. FOLLY

LONDON (ROYAL FREE HOSPITAL) SCHOOL OF MEDICINE FOR WOMEN
(UNIVERSITY OF LONDON)
Hunter Street, Brunswick Square, W.C.1

The WINTER SESSION will begin on Wednesday October 1st.

Full courses for the London M.B. B.S. Degrees and the Diplomas of the Royal Colleges of Physicians are arranged including First Medical and Pre Medical Courses.

Special classes for the Primary Fellowship Examination.

Dental Classes are arranged in connection with the Royal Dental Hospital, Leicester Square.

Clinical instruction is given at the Royal Free Hospital and also at the National Hospital, Queen Square, Children's, Cancer, Lock, Eastern Counties, Royal Ear, Throat and Nose, Samaritan, South London and Royal Ophthalmic Hospitals.

Scholarships, Bursaries and Prizes are awarded annually.

Students can reside in the School Chambers.

Prospectus from the Warden, LOUISA BRAID.

ST MARY'S HOSPITAL MEDICAL SCHOOL,
PADDINGTON, W 2
(University of London)

The WINTER SESSION will begin on Wednesday October 1st 1924. The Medical School provides courses in Preliminary, Intermediate and Final Subjects and Students can join at once after matriculation.

SITUATION.—Between a large population providing clinical material and one of the best residential districts thus enabling students to live in close proximity to their work.

CLINICAL UNITS IN MEDICINE AND SURGERY.—Certain members of the Medical and Surgical Staff devote their whole time to teaching and research.

NEARLY 1,000 BEDS available for teaching.—additional clinical material being provided by affiliation to the Paddington Hospital and other local ones.

ENTRANCE and RESEARCH SCHOLARSHIPS to the value of £1,200 are awarded annually.

[illegible] apply to the School Secretary.
C. M. WILSON, (M.C.) M.D. F.R.C.P. Dean.

Welbeck Research Laboratories,

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BLOOD CHEMISTRY

All Blood Sugar Estimations prior to & during Insulin Treatment undertaken

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LLANDRINDOD WELLS MEDICAL GOLF CHALLENGE CUP.

(Value Fifty Guineas)

Competition under handicap (restricted to Qualified Medical Practitioners) will take place on

September 17th, 18th, 19th 1924

FIRST PRIZE—£10 10s replica of Cup
SECOND PRIZE—Value £5 5s.

ENTRANCE FEE—5s HANDICAP LIMIT—18

No Green Fees to Competitor

ENTRIES (received up to first post on TUESDAY SEPT 16th), should be sent to—Secretary Golf Club Llandrindod Wells from whom all particulars may be obtained

The University of Liverpool

DERBY CHAIR OF ANATOMY

The Council invite applications for this Chair
The duties of the Professor will begin, and the appointment date from January 1st 1925
Salary £800 per annum
Applications together with the names of at least three referees, and (if the candidate so desires) twelve copies of testimonials should be sent to the Registrar not later than October 1st 1924 from whom further particulars may be obtained

EDWARD CAREY Registrar

Beckett Hospital and DISPENSARY, Barnsley (120 Beds)

Applications are invited from fully qualified male practitioners for the post of HOUSE PHYSICIAN Salary £120 per annum, with board residence and laundry
Applications stating age qualifications and experience to reach the undersigned not later than 17th
Secretary

Borough of Kidwelly, MEDICAL SUPERINTENDENCE COMMITTEE

Wanted MEDICAL PRACTITIONER of considerable experience general practice aged 30-45 years Inworks by Caseworks collieries Present panel about 900 Good private practice which can be extended Vacancy caused by death.
Applications with full particulars by Sept 20th 1924 to the Chairman Sir ALFRED STEPHENS Broomhill Kidwelly

Shanghai Municipal Council

PUBLIC HEALTH DEPARTMENT.

ASSISTANT PATHOLOGIST

Assistant Pathologist of experience required in the Municipal Public Health Laboratory to assist in research, routine laboratory diagnosis preparation of vaccines including small pox vaccine complement fixation tests, and other work incidental to a large and important Public Health Department
Salary Taels 700 a month (equivalent at 3/ exchange to £1 250 a year) under a three years *agreement renewable at a higher salary* in the event of satisfactory service first class passage paid participation in Superannuation Fund one month's annual leave and eight months long leave on full pay with first class passage after every five years service
Candidates must be under 30 years of age must hold the D P H and be University Graduates
Further particulars may be obtained from the Council's Agents
Applications, endorsed "Assistant Pathologist on the cover, with full information concerning qualifications and experience etc and with copies of at least three recent testimonials, should be forwarded to John Rook & Co Agents for the Municipal Council of Shanghai, 68 Fenchurch Street London E C 3
September 1924

UNION OF SOUTH AFRICA

Grey's Hospital, Pietermaritzburg

Vacancy for a MALE HOUSE SURGEON

SALARY.—£400 per annum, plus free board, lodging and washing
ENGAGEMENT.—In first instance on contract for two years with the prospect of re engagement by mutual consent
TRANSPORT.—Free first class ticket from residence to destination and in reverse direction if not re engaged on expiry of the contract Half salary during voyage to South Africa
QUALIFICATIONS.—Applicants must be British subjects single, and not more than 35 years of age Knowledge of English and Dutch will be a recommendation Applications, with copies of testimonials all in duplicate should be lodged with the Secretary, Office of the High Commissioner for the Union of South Africa Trafalgar Square W C 2 (from whom forms of application may be obtained) not later than September 30th 1924

Required for the Department

of PHYSIOLGY in the UNION MEDICAL COLLEGE, PEKING a man with two or three years experience in teaching and research work in Physiology Salary £500 per annum.—Apply to Dr THOMAS COCHRANE Honorary Secretary British Advisory Board on Medical Missions 3, Tudor Street London E C 4

Glamorgan County Council

MEDICAL INSPECTION OF CHILDREN IN SCHOOLS

The Glamorgan Education Committee invite applications for the appointment of a MEDICAL INSPECTOR The appointment is open to both sexes but preference will be given to a woman if

Applicants must hold a diploma in Public Health
The scale of salaries is £600 per annum with increments of £25 per annum to a maximum of £800 (but at the present time this scale is subject to a 5% reduction with travelling expenses)
The person appointed will be required to give his or her whole time to the duties under the control and supervision of the School Medical Officer and to reside where directed by the Committee
The appointment will be terminable by two months notice on either side A knowledge of Welsh is desirable
Applications for appointment stating age and qualifications and a combined, copies of not more than three recent testimonials should be sent to the School Medical Officer Dr E Colston Williams County Hall Cardiff, and should be received by him not later than the first post on the morning of September 30th 1924
Canvassing personal or otherwise, will be a disqualification

T MANSEL FRANKLIN
Secretary of the Education Committee

Cardiff
September 3rd 1924

Liverpool Stanley Hospital

Wanted HOUSE PHYSICIAN and HOUSE SURGEON (males), for October 1st, next Salary £100 per annum each
Applications received up to September 16th, addressed to

FRANK WHITE Hon Secretary

The Hospital for Sick CHILDREN, Great Ormond Street, London, W C 1

A HOUSE SURGEON is required on October 1th 1924
Gentlemen are invited to send in their applications addressed to the Secretary before 12 o'clock on Monday June 2nd 1924 with copies of not more than three testimonials given specially for the purpose having held a

[illegible] months Salary £50 laundry allowance £2 10s, and board and residence in the Hospital
Candidates must be unmarried, and possess a legal qualification to practice
All candidates must be in attendance on Wednesday October 8th, 1924 at 2 p m precisely to appear before the Joint Committee if required
Forms of application and copies of the rules may be obtained from the Secretary
By order of the Board of Management

JAMES McKAY,
Secretary

September 1924

Evelina Hospital for Children, Southwark, S E

The [illegible] requires a HOUSE [illegible] eight months from Oct [illegible] months duty in Casualty and O P Dept) Salary at £120 per annum with board residence, and washing Candidates to send applications giving [illegible] and they must be [illegible] to the Selected Management Committee
Time and place of meeting will be notified by the [illegible]

[illegible]
Secretary

September 9th 1924

Miller General Hospital for SOUTH EAST LONDON, Greenwich Road S E

Required HONORARY MEDICAL OFFICER in charge of the Skin Department Applicants must be either (a) Graduates in Medicine of a recognized University (b) Fellows or Members of the Royal College of Physicians (c) Fellows of the Royal College of Surgeons of England and not engaged in general practice The appointment will be for three years at the expiration of which term the holder will [illegible]
Applications stating [illegible] copies of not more than [illegible] to be sent to the undersigned on or before September 30th 1924

(Signed) J H ROBINSON Chairman

Central London Ophthalmic HOSPITAL Judd Street, St Pancras, W C 1

There is a vacancy for HOUSE SURGEON Salary at the rate of £100 per annum, with board and residence
There is also a vacancy for a HOUSE SURGEON at the Hospital, Lock, which is closed [illegible] Surgeon [illegible] per annum
Applications with testimonials from duly qualified candidates must be sent to the undersigned on or before September 20th Candidates must attend at the Hospital on September 23rd at 4 p m

H R S DRUCE Secretary

Bradford Royal Infirmary.

Two HOUSE SURGEONS one HOUSE PHYSICIAN (Males) *wanted for November 1st* 1924 Candidates must be single and legally qualified Salary in each case £150 per annum with board residence and washing There are 21 beds and six Resident Officers Applications, stating age qualifications and previous experience (if any), with copies of recent testimonials to be received by the undersigned not later than Tuesday, September 23rd 1924

J J BARRON Secretary Supt

Royal National Orthopædic HOSPITAL 234, Great Portland Street W 1

Applications are invited for the posts of HOUSE [illegible] October 1st [illegible] Applications are considered The appointment is for six months renewable for a further period of six months on the recommendation of the Medical Board
Applications with copies of testimonials shall reach the Secretary at the above address not later than September 15th, 1924

APPOINTMENTS—Important Notice.

(a) British Islands.

Medical Practitioners are requested not to apply for any appointment referred to in the following table without having first communicated with the Medical Secretary of the British Medical Association, 429, Strand, London, W.C. 2.

Town or District.	Town or District.	Town or District.
CONTRACT PRACTICE.		
ENGLAND.	**WALES** *(continued)*	**PUBLIC HEALTH** *(continued)*
CANNOCK CHASE AND DISTRICT *(Clubs and Friendly Societies' Appointments)*	OGMORE VALLEY GLAMORGAN *(Llynfi Cwmgarw Medical Aid Society; Workmen's Medical Scheme.)*	LEEDS EDUCATION COMMITTEE *(Assistant School Medical Officer)*
MIDDLESBOROUGH *(Medical Aid Associations or Workmen's Clubs.)*	TONDU & ABERKENFIG GLAMORGAN *(Workmen's Medical Scheme.)*	LIN [illegible]
SOUTH BANK & ESTON *(Medical Aid Associations or Workmen's Clubs.)*	**PUBLIC HEALTH.**	MIDLOTHIAN [illegible] *(School Medical Officer)*
WALES.	ARGYLLSHIRE EDUCATION AUTHORITY *(Executive School Medical Officer)*	NORTHUMBERLAND COUNTY COUNCIL *(Woman Assistant Medical Officer of Health.)*
ABERTRIDWR GLAMORGAN *(Aberdare Colliery Medical Scheme)*	CHELSEA METROPOLITAN BOROUGH *(Part-time Medical Officer of Health.)*	NOTTINGHAMSHIRE *(County Medical Officer of Health.)*
EBBW VALE MON *(Workmen's Medical Society.)*	CHESTER LE-STREET RURAL DISTRICT COUNCIL *(Medical Officer of Health)*	ORKNEY COUNTY *(Senior Medical Officer Medical Officer of [illegible])*
GILFACH GOCH GLAMORGAN *(Workmen's Medical Scheme.)*	FIFE EDUCATION AUTHORITY *(Assistant School Medical Officer)*	SOUTHWARK METROPOLITAN BOROUGH *(Tuberculosis Officer)*
LLWYNYPIA CLYDACH VALE PENYGRAIG GLAMORGAN *(Workmen's Medical Scheme)*	GLASGOW EDUCATION AUTHORITY *(Assistant School Medical Officers)*	STOKE-ON-TRENT EDUCATION COMMITTEE *(Assistant School Medical Officer)*
MARDY GLAMORGAN *(Workmen's Medical Scheme)*	INVERNESS SHIRE EDUCATION AUTHORITY *(Temporary Assistant School Medical Officer)*	WIGAN COUNTY BOROUGH *(Assistant School Medical Officer)*
OAKDALE MON *(Medical Officer for Medical Aid Association.)*	LANARK COUNTY *(Medical Officer of Health)*	

(b) Colonial Medical Service.—WINDWARD ISLANDS MEDICAL SERVICE (Grenada and Carriacou, St. Vincent and St. Lucia)

(c) Overseas Appointments.

Medical Practitioners are requested not to apply to any appointment referred to in the following table without having first communicated with the Honorary Secretary of the Division or Branch named in the second column or with the Medical Secretary of the British Medical Association 429, Strand, London, W.C. 2.

Town or District.	Hon. Sec. of Division or Branch.	Town or District.	Hon. Sec. of Division or Branch.	Town or District.	Hon. Sec. of Division or Branch.
NEW SOUTH WALES. *(All Friendly Society Appointments.)*	Dr. R. H. TODD (Hon. Sec. New South Wales Branch) B.M.A. Building, 30-34 Elizabeth Street, Sydney, N.S.W.	QUEENSLAND *(Brisbane Associated Friendly Societies' Institute.)*	Dr. R. MAPSHALL ALLAN (Hon. Sec. Queensland Branch) Adelaide Street, Brisbane.	VICTORIA *(All Institute or Medical Dispensaries.)*	Dr. FRANK DAVIES (Hon. Sec. Victorian Branch) Medical Society Hall, East Melbourne, Victoria.
				WESTERN AUSTRALIA *(Contract and Lodge Practices.)*	Hon. Sec. Western Australian Branch, No. 6, Block of new South Wales Chambers, St. Georges Terrace, Perth.

Address 429 Strand, W.C. 2.
September 10th, 1924.

By order of the Council of the British Medical Association
ALFRED COX, Medical Secretary.

West London Hospital,
Hammersmith Road, W.6.

Required one HOUSE PHYSICIAN and two HOUSE SURGEONS (Males). These appointments are tenable for six months from 1st October next. Salary £100 per annum with board, lodging, and washing allowance.

Candidates are required to be registered under the Medical Act to send four copies of their letters of application and four copies of each testimonial submitted, so as to reach me not later than Tuesday September 16th. Selected candidates will be required to call upon such members of the Medical Staff as directed to be in attendance at a Meeting of the Medical Council on Friday September 26th at 4 p.m. and the House Committee meeting at 4.45 p.m. the same day when the appointments will be made. H. A. MADGE, Secretary.

Norfolk & Norwich Hospital,
Norwich.

CASUALTY OFFICER and HOUSE SURGEON (with charge of 40 beds) required. Salary £150 with board, residence and laundry.

[illegible]

16th September. FRANK INCH, Secretary.
September 16th 1924.

The Prince of Wales's General
HOSPITAL, Tottenham, N.15.

Applications are invited for the following posts vacant on the 16th October next:—
HOUSE SURGEON £150 p.a.
SPECIAL HOUSE SURGEON £150 p.a.
HOUSE PHYSICIAN £150 p.a.
JUNIOR HOUSE SURGEON £110 p.a.
JUNIOR HOUSE PHYSICIAN £110 p.a.
with residence board and laundry.

The appointments are held for six months but the holders are eligible for re-appointment for a further term.

Candidates (male) must be duly qualified and registered and applications, together with copies of three recent testimonials to be sent to me on or before the first post on Monday 22nd September next.

FREDK. V. DEEWETT,
August 20th 1924. Director.

St. Mary's Hospitals,
Manchester.

[illegible] each for a period of six months. Salaries at the [illegible]

H. RATCLIFFE, Secretary.

St. Peter's Hospital for Stone,
etc., Henrietta Street, Covent Garden, W.C.2.

The office of HOUSE SURGEON will become vacant on October 1st, 1924.

The office is held for six months at a salary of £75 per annum, with board, lodging, and laundry.

Applicants who have held an appointment as House Surgeon in a General Hospital will be preferred.

[illegible]

Medical Staff.

Applications, with copy of testimonials should be sent in on or before September 16th 1924.

BEECHEY ROGERS, Secretary.

St. Marylebone Hospital,
Ladbroke Grove, W.10.

A THIRD ASSISTANT MEDICAL OFFICER (male) required. The Hospital (Poor Law Infirmary) has 700 beds, contains a wide range of clinical material both acute and chronic, at all ages and has a consulting staff of eleven members. A previous hospital appointment a necessity. Quiet quarters. Garden with grass and hard courts. Salary £300 per annum with board, lodging, and washing. Forms of application to be obtained from the Clerk to the Board, Guardians' Offices, 1 Northumberland Street, W.1.

Wanted —Male Assistant for Country Practice Midlands. Must be young single sober energetic and motor cyclist Usual bond —Address particulars experience, photo, etc , to No 4637 BRITISH MEDICAL JOURNAL Office 429 Strand W C 2

Wanted —Indoor Assistant MEDICAL OFFICER in private Mental Ho pital in London (80 beds) State age e c Some Mental experience essential —Address, No 4648, BRIT SH MEDICAL JOURNAL Office 4 9, Strand, W C 2

Wanted —Assistantship in Lond n by woman Graduate M B , B Ch , aged 24 experienced in all branches; en rgetic, keen excellent refs and testimonials, moderate salary —Address No 4617 BRITISH MEDICAL JOURNAL Office 429 Strand W C 2

Wanted –Assistantship with prospects by University Graduate (male) in private or mixed practice æt 27 single R C loyal worker 4 years exper ence gen prac , inclu panel Efficient accoucheur Lond or coast pref not essen Free 20th inst -No 4640 B M J 429 Strand

Wanted — Assistantship by M B Ch B D P H Edin (woman) aged 27 Post graduate experience in Children Eye Ear and Throat and Anæsthetics Keen and energet c Free Octo er 1st —Address No 4638 BRITISH MEDICAL JOURNAL Office 429, Strand W C

Wanted —Assistantship, by ex H P , H S , experience specials Go d anæsthetist cyclist Free now —Address, No 4642, BRITISH MEDICAL JOURNAL Office, 429 Strand, W C 2

Wanted — Assistantship or LOCUM by Woman M B , B Ch , D P H Belfast, aged 25 Some expe ience in Hospital work, and Anæsthetics Cyclist keen Good testi monials —Address No 4639 BRITISH MEDICAL JOURNAL Office 4 9, Strand W C 2

Wanted by Woman Graduate M B , B Ch (T C D), ASSISTANTSHIP, indoor or out Considerable hospital experience and good references —Address, No 4407 BRITISH MEDICAL JOURNAL Office 429 Strand, W C 2

Wanted —Part-time Work in Ba'h Somerset, by experienced medical man Appoin ment as Medical Referee etc , to a Company pref rred —Address No 4610 BRIT SH MEDICAL JOURNAL Office 429 Strand, W C 2

Assistantship wanted by an L R C P & S I , good experience in Private Panel and Post Offi e work Aged 25 Single Excellent testimonia's —Ad ress, No 4631 BRITISH MEDICAL JOURNAL Office, 429 Strand W C 2

Assistantship, with view to Partnership wanted by M B Ch B (com mend Glas ,) H P H S mental work and general practice Drive own car or motor cycle Free in Dec mber —Address No 4615 BRITISH MEDICAL JOURNAL Office 429 Strand W C 2

A Senior Assistant Medical OFFICER is required for a large Private Sanatorium in this country to commence duty on Novemb r 1st A man with tuberculosis experience preferred Applications, with references etc , and other essential particulars should be addressed to No 4603 BRIT MED JOUR , 429 S rand, W C 2

Company operating in India require immediately unmarried MEDICAL OFFICER Preference will be given to one wi h experience of Tropical disea es —Par ic'ars regard ing age and qualifications to be sent to Box 474 SHAW & BLAKE Ltd , Advertising Agents 8 Bell Yard Temple Bar W C 2

Death Vacancy —Abertillery, Mon Colliery Practice Fully qualified MEDICAL PRACTITIONER required — Apply, w thin fourteen days with qualification et , to A J COLEMAN 5 Earl Stre t Abertillery Mon

Doctor (graduate), aged 31, abstainer healthy, English married seeks OPENING or APPOINTMENT (anything) in South Africa or similar good climate —Addres No 4641 BRIT SH MEDICAL JOURNAL Office, 429 S rand W C 2

Engagement wanted up to two years General Practice or any branch of Public Health Thoroughly experienced in all including Sanatorium work Had own practice Highest personal references —Address No 4415 BRITISH MEDICAL JOURNAL Office, 129, Strand W C

M.B , B A., B Sc , ex Service, H S , H P single, desires ASSISTANTSHIP indoor or outdoor Exper enced panel, private, Public Health Sanatorium Excellent accoucheur anæsthetist; minor surgery Strict abstainer, age 33 Drive cycle or car Genuine worker well received Locality and remuneration subsidiary to perma nency —No 4646, B M J 429 Strand W C 2

M.B , Ch B (Edin), etc , aged 31, desires part time ASSISTANT-SHIP or other work in Edinburgh or district Two years Hospital appts and 18 months general prac tice Testimonials etc Interview can be arranged — Address No 4622 B M J Office 429 Strand W C 2

M B , Ch B , D P H , woman, Scotch, wishes ASSISTANTSHIP previous experience moderate salary referenc s —Addre s No 4634 BRITISH MEDICAL JOURNAL Office 429 Strand, W C 2

M.A , M B , D P H , Univ scholar, Honours Graduate ex H P H S, la e Senior Clinical Resident large Maternity Hospital competent anæsthetist ; absta ner highest refer s is free to do PART TIME WORK Lon ton —No 4644 B M J , 429 Strand W C 2

Medical Man, debarred from Practice by physical disability could give ASSISTANCE in Di pensing and Bookkeeping Good references —Apply L M S 2, Lambourn, Quest Hills Road, Malvern Link, Worcs

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Registered Medical Man, British married, no children aged 29 Good testimls Eastern Ho p and Gen Exper Anguist Seeks POSITION with Firm Instit or Comp any capac giv oppor of advan on merit Willing to go abroad —Add No 4628 B M J Office 429 Strand

Scotland –Assistantship, view to PARTNERSHIP Good class Practice country town About £2 000 p a Panel 900 Half share 1½ years purchase — Apply Scottish Medical Bureau, 6 Rutland Square Edinburgh

Woman Graduate, with some exp rience desires ASSISTANTSHIP in General Practice —Address No 4629 BRITISH MEDICAL JOURNAL Office 429 Strand W C 2

Dispenser, lady, qualified, ex- peri nced quick and methodical requires POST excellent references —Address No 4304 BRITISH MEDICAL JOURNAL Office 429 Strand W C

Dispenser and Book-keeper (male) aged 20, desires POST, preferably in London Three years experience Disengaged — Apply VICTOR C BRYANT Burgate Diss Norfolk

Doctors requiring Lady DISPENSERS should write to Mr J L WALDEN Westminster College 112 St. George's Road, S E 1 (only address) No fees to Doctors 20 years experience Daughters and other relatives of medical men always in training

Doctor's Daughter (Hall Certificate) seeks post as DISPENSER BOOK KEEPER Experienced Disengaged middle of October —Address, No 4645 BRITISH MEDICAL JOURNAL Office 429 Strand W C 2

Lady Dispenser-Book-keeper desires POST Qualified experienced — Address No 4613 BRITISH MEDICAL JOURNAL Office 429 Strand W C 2

Lady (young) having convent small flat six winter months Inc best Swiss mountain near Paris wishes domestic services in return for pleasant home as [illegible] all or more give hr t le sons Able speak preferred but no nece sary Permanent if ally suitable Only full replies (with p possible) can be an wered —Address No BRITISH MEDICAL JOURNAL Office 42 Strand

Lady Dispensers supplied qualified experienced and al o trained Bacteriological Laboratories of the LONDON COLLEGE OF PHARMACY FOR LADIES P paration for Examinations Blood sugare before and during Insulin treatment can be c out by those Dispensers recently qualified from College —Secretary 7 Westbourne Park Road W

Qualified Lady Dispenser and Book keeper desires RE ENGAGEMENT experienced Take charge of surgery or h lp household duties or needlework if required Li in or out Please state salary —Address No 4612 BRITISH MEDICAL JOURNAL 429 Strand W C

Young Lady —Dispenser (Hall), requires POST WITH DOCTOR Book keeping Can drive car Live in pre ent Address No 4647 BRITISH MEDICAL JOURNAL Office 429 Strand W C 2

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Woman M B , D P H , aged 29 requires LOCUM or ASSISTANTSHIP Some experience Small salary accepted —Addre No 4623 BRITISH MEDICAL JOURNAL Office Strand, W C 2

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Mr. W. S. ATKINS
43, BEDFORD STREET, STRAND, W C 2
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Telephone Regent 220

Partnership, with view to Succession, desired by M B , D P H aged 30 married at present in Tuberculosis Service ex H P and H S years in general prac lent references Pay Address No 4605 B M J Office, 429 Strand W C

Partnership wanted by Scottish graduate aged 28 Exp rienced private panel and midwifery Well r ceived Capital limited London or S otland preferred but not e sential House to rent es ential Temperate Healthy Really good re erences — Addres 4609 BRIT MED JOURN Office 429 Strand W C 2

Indian Partner wanted for an old established practice in South Lo an Receipts now £1 000 a year Good scop Accom modation available Premium moderate —Apply PEACOCK & HADLEY 19 Craven Stree Strand W C

Wanted —Third Partner in practice in Essex Receipts over £4 000 per annum. One-sixth share for immediate deal 18 months purchase Option of increased share —Address No 4626. BRITISH MEDICAL JOURNAL Office 429 Strand W C.

Wanted —A young, well- qualified and hard working PARTNER, to take a half share in a well-established and old practice in a busy town, within an hour of London Gross income £1,500 p.a. House of late partner available; 1½ years purchase Non-assents.—Address No 4627 BRIT MED JOUR. Office 429 Strand W C

Wanted by M.B, D P H, aged 28 married PARTNERSHIP in sanatorium Assistantship considered —Address No. 4643 BRITISH MEDICAL JOURNAL Office, 429 Strand W C.2.

Doctor, aged 28, married, ex H S and Deputy Sup of Mental Hospital who has had his own practice and is experienced in panel and private work desires a PARTNERSHIP where he could pass out of receipts Good appearance and well recmd —Add. No 4624 B M J., 429 Strand

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Wanted —Practice or PARTNERSHIP Income from £800 with scope) to £2 000 a year Town or country Purchaser can recommence at once as I has ample capital —Apply PEACOCK & HADLEY 19 Craven St. Strand W C.2 (No charge unless sale effected)

Wanted —Channel Islands (S. Hse preferred) PRACTICE of £100 upwards Commodious house required (five or six bedrooms) rent or purchase a valuation capital available —Address No 4619 BRITISH MEDICAL JOURNAL Office 429 Strand, W C.2.

Wanted in Country district a General PRACTICE of £1,400 to £1,600 a year House with garden in Southern half of England. Applicant is experienced Graduate and can buy at once Details received in confidence by 553L, c/o Mr PERCIVAL TURNER, 4 Adam Street Strand W C.2

Wanted —Private and Panel PRACTICE (£1,500—£2,000) in or near London. Capital available now free to negotiate.—Address No 4620 BRITISH MEDICAL JOURNAL Office 429 Strand W C.2

Wanted —Panel Nucleus in suburb of London or large country town in South Small house or flat Premium paid out of receipts Or Assistantship with view to early succession —Address 4611, BRITISH MEDICAL JOURNAL Office 429 Strand W C 2

Wanted by F R C S, aged 35 a PRACTICE or PARTNERSHIP in town in the S or Midlands with scope for surgery Income about £1,000 Now free and can pay cash.—P c/o BLANDELL & Co, 29 Craven Street, Strand W C 2

Wanted by M D, F R C S, Edin aged 30 a single good PRACTICE (or Partnership) London residential within 10 to 12 miles radius preferably with some proportion of surgical post or opportunities for operative work Capital available.—Add. No 4401, B M J 429 Strand W C

Wanted — F PRINCE, 32, Charing Cross London S W 1 always having clients desirous of PURCHASING PRACTICES or PARTNERSHIPS in Town & Country prepared to pay good premiums can usually effect a quick sale Terms without obligation post free

Wanted —West or S W (suburban or district) PPACTICE PARTNERSHIP or SUCCESSION In middle and working class locality with good panel Capital available Expenses grad Non-assents Strictly confidential Interview if required —Add No 4614, B M J 429 Strand

Death Vacancy —Fashionable watering place on West Coast PPACTICE in full working up to late owner's death Receipts £1 100 to £1,200 for last year Panel between 600 and 800 Very little midwifery No appointment —Address No 4602 B M J Office 429 Strand W C

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Glasgow —General Practice Receipts about £1,000 Panel over 1 200 Surgery at mutual valuation and house for sale —Premium £1,500 —Address No 1618 BRITISH MEDICAL JOURNAL Office 429 Strand W C

London, N —Lock-up Surgery Cash and panel. PRACTICE yielding over £100 p.a. Limit of surgery 20s per week Whole house can be had if desired Premium £60 —Apply PEACOCK & HADLEY 19 Craven Street, Strand, W C.2

M D (Lond) would like to meet a Physician resident and non-panel PRACTICE or obtain a locum tenancy or appointment —Address No 1139, BRITISH MEDICAL JOURNAL Office 429 Strand, W C.

Old established Practice on North West Coast convenient house can be purchased separate surgery Receipts about £1,100 panel 40 Premium £1,250 —Apply No 2136 REYNOLDS & BRANSON Ltd 13 Bridge Leeds.

Private and Panel Town and Country PRACTICE for sale in North East of Scotland Average cash receipts for last two years £725 —Address No 4562 BRITISH MEDICAL JOURNAL Office 429 Strand W C 2.

South Wales —General PRACTICE. Owner retiring after 15 years Panel and appointments £700 p.a. Great scope. Easily worked and expenses low £800 cash or nearest offer —Address No 4608 BRITISH MEDICAL JOURNAL Office 429 Strand W C.2

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Yorks —Old established, good house garage £60 on easy Receipts over £2,000 panel 1 140 Excellent scope Vendor on Hospital staff to which buyer can succeed Price £3 000 half down.—MANCHESTER MED & SCHOLASTIC ASSOCIATION Ltd 6 Brown St

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Yorks, W R Industrial Town —PPACTICE for disposal Average cash returns over £900 Panel 1 5 Illness reason for speed Capable doing double Good House Excellent opportunity for young man —H B c/o WHALERAY Ltd 34 Lady Lane Leeds

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West Midlands —Old-estab Town and Country PPACTICE in a County Town Receipts nearly £6 Good (20 beds) Purchase or surgeon Good house and garden —LEE & MARTIN Ltd 71 Temple Row Birmingham

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Required at once —Practices and PARTNERSHIPS —Mr W S ATKINS (late of ARNOLD & SON London) has a large number of Clients who are wanting Practices and Partnerships and wish to come down at once —Send full particulars in confidence to Mr W S ATKINS Medical Trans or Agency, 43 Bedford Street Strand London W C 2.

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Bournemouth — In local Hervey Street CONSULTING ROOMS and use of Waiting Room, to Let Date soon available Suitable for Ladies or Gentlemen Specialists —Address No 4112 BRITISH MEDICAL JOURNAL Office 429 Strand W C 2

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Doctor, spec in diseases of Women and Children will be glad to confer with Dentist willing to let the daily use of SURGERY only Has within easy reach of London Hospitals —Address No 1618, BRITISH MEDICAL JOURNAL Office 429 Strand, W C 2.

Harley St —Whole and part- time CONSULTING ROOMS first floor with and without phone Two consulting rooms Also large light BASEMENT ROOM with dark room suitable work top or laboratory Running water and private lavatory —Address No 4633 BRITISH MEDICAL JOURNAL Office 429 Strand, W C

Isle of Wight —Charming six- roomed HOUSE with grounds adjoining Sea Bathing convenience yachting golf Excellent opening quite near growing district Limited possession £1,300 £60 down repayments rent Room for garage.—GODBY of Tennyson Av South Hampton

Lady offers accommodation on first floor of her house in Dorset Sq W as CONSULTING and RECEPTION ROOMS Furnished or unfurnished as required —Apply Lady Dorset Sq W 1 Telephone Langham [illegible]

Park Crescent, W —Ground floor Suite of FOUR ROOMS also Basement Room newly decorated suitable for one or two doctors or dentists Attendance telephone and two patients —Apply BEDFORD & Co 6 Wigmore Street W

Southport —Two self-con- tained flats TO BE SOLD in centre of town suitable for Doctor or Dentist possession —Apply BALL & PERCIVAL, 9 & 11 Lord Street Southport

Sandbanks, Poole Harbour — Well built Doctor's RESIDENCE 2 reception and fine living room surgery and 7 bedrooms Three quarter acre—frontage to Sandy Beach £3 800 —B Dorchester Chambers, Bournemouth

Wanted —Second-hand case of instruments in first class condition —Address No 4607 BRITISH MEDICAL JOURNAL Office 429 Strand W C 2.

Microscopes — Great Clearance Sale of all makes Post Money saving Prices Send for free Catalogue of hundreds of Bargains post free on application Enormous price reductions now in order to effect immediate clearance of our big and varied stock Cash or easy payment terms approval willingly Your own apparatus accepted in exchange as part or whole payment —THE CITY SALE & EXCHANGE Ltd 1 Aldersgate Street London E C 1

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For Sale—Tinned Copper-lined MILK STERILIZER with water jacket complete with gauge and tap Capacity 16 gallons Practically new What offers?—Secretary, CITY OF LONDON MATERNITY HOSPITAL, City Road E C 1

For Sale—"Radioscope" Adjustable X Ray COUCH, by Medical Supply Association Cost £132 First class condition *As new Accept reasonable offer Seen by appointment*—Address No 4632 BRITISH MEDICAL JOURNAL Office, 429, Strand, W C 2

Consulting-room Couch Wanted Must be first-class condition State length, breadth, height and how upholstered price and where seen—Add No 4630, BRITISH MEDICAL JOURNAL Office, 429 Strand W C 2

Bean Coupé 11 9, 1923 special model, almost new, only 5 000 miles an ideal Doctor's car; must sell illness, £270 or close offer; seen by appointment, worth inspecting—Apply, FREEDMAN, 14, St James St., Walthamstow, E 17.

Wolseley 10h p Coupé, 1922 Dark blue paint and leather Everything in perfect order Mileage under 8 000 Cost £595 Ideal car for medical man £300—Apply CUTHBERT ANDREWS, 47, Red Lion Street, High Holborn, London

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Royal Hampshire County HOSPITAL, Winchester

HOUSE PHYSICIAN required to take up duties on the 1st October Six months appointment. Salary £150 per annum with board, residence, and laundry

Applications stating age and nationality should be sent to the undersigned as soon as possible

HERBERT MASLEN Secretary.

Victoria Hospital for Sick CHILDREN Park Street Hull

HOUSE PHYSICIAN (lady) required, 50 beds Salary £100 per annum Applications (with copies of recent testimonials) stating age qualifications, and other particulars to be sent to the Secretary not later than Thursday September 25th 1924

Oldchurch Hospital, Romford.

RESIDENT ASSISTANT MEDICAL OFFICER

The Guardians of the Romford Union invite applications for the appointment of a Male Assistant Resident Medical Officer at their Oldchurch Hospital Romford with accommodation at present of 350 beds, with further wards in the course of erection

Candidates must be single and preference will be given to one who has held the position of House *Surgeon or House Physician in a General Hospital*

The appointment is governed by the Regulations laid down in the Orders of the Ministry of Health

The salary will be at the rate of £250 per annum, subject to deductions under the Poor Law Officers' Superannuation Act, 1896 with furnished quarters, maid rations and laundry

Forms of application and particulars of duties may be obtained from the undersigned upon receipt of a stamped addressed fool cap envelope, and must be returned not later than Monday September 22nd, 1924

By Order
RAYMOND H MASON,
Clerk to the Guardians

Union Offices Romford. August 20th 1924

South London Hospital for WOMEN South Side, Clapham Common S W 1

The Board of Management invite applications from fully qualified medical women for the under mentioned Resident Appointments —

HOUSE PHYSICIAN For a period of six months from November 1st

THREE HOUSE SURGEONS Each for a period of six months from November 1st

Salary in each case to be at the rate of £50 per annum with board residence and laundry Full particulars may be obtained from the Secretary

Applications with copies of testimonials to reach the Secretary at the Hospital not later than the first post on Tuesday, September 30th

London Lock Hospital, 91, Dean Street, London W 1

The Board of Management invite applications for the post of HOUSE SURGEON at the Male Lock Hospital Candidates must be doubly qualified and duly registered Salary at the rate of £200 per annum with furnished flat, full board and laundry The appointment to be for 6 months duties to commence October 1924.

Applications enclosing copies (only) of three recent testimonials to be sent to the undersigned at the Male Lock Hospital 91 Dean Street W 1, on or before 10 a.m Monday, September, 22nd 1924

By Order of the Board
HY J EASON, Secretary

St. Marylebone General DISPENSARY 30 Marylebone Lane, Cavendish Square W 1

A vacancy having occurred in the office of HONORARY PHYSICIAN to this Charity the Directors are prepared to receive applications for the vacant office Every candidate must be a Graduate in Medicine of one of the Universities of the British Empire, and a Fellow or Member of the Royal College of Physicians, London, and not engaged in the practice of Midwifery or Pharmacy

Applications and testimonials must be forwarded not later than September 27th 1924 and candidates must attend the Medical Committee at the Dispensary on Monday, September 29th, 1924, at 5 30 p m.

FRANK BETHELL
September 5th 1924 Secretary

South Devon & East Cornwall HOSPITAL Plymouth (170 Beds)

HOUSE SURGEON (Male)
HOUSE PHYSICIAN

Salaries at the rate of £100 and £50 per annum respectively with board residence, and laundry The appointments are tenable for a period of six months and are subject to renewal

Candidates must be registered under the Medical Acts Duties to commence October 14th 1924

Applications, stating age and qualifications together with copies of recent testimonials to be addressed to the undersigned without delay

H KINGSLEY PEARCE
September 5th 1924 Secretary

University College Hospital

Applications are invited for the resident post of REGISTRAR at the Royal Ear Hospital Dean Street, Soho The duties are framed to combine those of Registrar and House Surgeon The successful candidate will be elected for six months and will receive an honorarium at the rate of £50 per annum

Applications, accompanied by not more than three testimonials must reach the Secretary, University College Hospital Gower Street W C 1 by noon on Wednesday September 24th 1924

County Borough of Barnsley,

ASSISTANT MEDICAL OFFICER OF HEALTH and *ASSISTANT SCHOOL MEDICAL* OFFICER

se
an
salary of £600 per annum

Candidates must be registered Medical Practitioners of at least six years standing and hold the D P H or equivalent qualification and also have practical experience in the duties of a Medical Officer of Health

The candidate appointed must devote his whole time to the duties of the office, and will not be allowed to engage in private or consulting practice.

Applications upon the prescribed form will be Saturday September 20th, 1924 endorsed "Assistant Medical Officer of Health"

The appointment will be determinable by three months' notice on either side.

Canvassing, either directly or indirectly, will disqualify

A. D MASON
Town Clerk's Office Barnsley Town Clerk
August 27th, 1924

County Borough of BIRKENHEAD Medical Officer's Department

ASSISTANT MEDICAL OFFICER (RESIDENT).

Applications are invited for the above appointment from duly qualified men (unmarried) holding a Diploma in Public Health The appointment carries with it a salary of £150 per annum, residence at the Infectious Diseases Hospital, board and washing

The candidate appointed will be required to carry out the treatment of patients in the Hospital and to assist at the Municipal Venereal Diseases Clinic.

Canvassing members of the Town Council either directly or indirectly will disqualify

Particulars of the appointment and form of application may be obtained from D MORLEY MATHIESON Esq, M A M D, Medical Officer of Health 9 Hamilton Square Birkenhead

Applications must be received not later than September 27th 1924

Town Hall, *EDMUND SPENCER*
Birkenhead. Acting Town Clerk.
September 4th 1924

St Vincent's Hospital, Dublin.

Applications are invited for the following appointments in the Extern *Department*:—

HONORARY PHYSICIANS (three).
HONORARY SURGEON
HONORARY GYNÆCOLOGIST
HONORARY OTO RINOLOGIST
HONORARY OCULIST
HONORARY RADIOLOGIST
HONORARY DENTIST

Applications together with testimonials, to be sent in by October 1st 1924 to the

Honorary Secretary
Medical Board

Nottingham General DISPENSARY Broad Street, Nottingham.

Wanted RESIDENT SURGEON (Male) unmarried Must have Medical and Surgical *qualifications* Salary £250 with £25 increase per year up to £300 Apartments (not board), attendance, light, and fuel This Institution is a non provident one No beds No Midwifery

Applications, stating age and accompanied by recent testimonials, to be sent by September 7th to

R J WILLATT, Secretary

5 Eldon Chambers, Nottingham

Royal Free Hospital, Gray's Inn Road W C 1

Applications are invited from male or female Resident Medical Practitioners for the post of MEDICAL REGISTRAR for a period of 15 months. *Duties to commence* October 1st, 1924 Intending Candidates should submit applications and copies of three recent testimonials stating age and qualifications to the undersigned on or before September 20th, 1924

R R GARRATT Secretary

Hospital for Epilepsy and PARALYSIS Maida Vale W

MEDICAL REGISTRAR Required

Applications are invited for the post of Medical Registrar They should be accompanied by copies of not more than three recent testimonials and should reach the undersigned by September 24th An honorarium of £100 is attached to the appointment which is for one year and further particulars can be obtained on application

H W DURLEIGH Secretary

City of Leeds

APPOINTMENT OF ASSISTANT CLINICAL TUBERCULOSIS OFFICER

Applications are invited for the post of Assistant Clinical Tuberculosis Officer. Applicants should be duly qualified and registered medical practitioners and subsequent to qualifying should have spent at least three years in a quinquennium a general knowledge of medicine and surgery in the wards of a general hospital and a special knowledge of the treatment of tuberculosis in a hospital sanatorium or other institution reserved for such cases. The salary will be £600 per annum.

The person appointed will be required to undertake [illegible] contribute to the [illegible] under the Local Superannuation [illegible] be terminable by [illegible]

Forms of application may be obtained from the Medical Officer of Health 12 Market Buildings Vicar Lane, Leeds.

Applications endorsed Assistant Tuberculosis Officer together with copies of not more than three testimonials must be delivered to me at my office 26 Great George Street not later than Wednesday September 24th 1924.

Canvassing by any member of the Council will disqualify.

ROBERT E. FOX Town Clerk.

September 6th, 1924.

Northampton General Hospital.

HONORARY PHYSICIAN

The Board of Management invite applications for the post of Honorary Physician.

Candidates must be Doctors of Medicine of one of the Universities of the United Kingdom or Fellows or Members of the Royal College of Physicians of the United Kingdom. Provided that the Board may subject to confirmation by a Quarterly or Special Court, appoint provisionally as Physician for twelve months and no longer a candidate otherwise qualified who is neither a Doctor of Medicine a Fellow or Member of the Royal College of Physicians of the United Kingdom and on such candidate undertaking to become a Member of the Royal College of Physicians of the United Kingdom, or a Doctor of Medicine of one of the Universities of the United Kingdom, during the period of his provisional appointment.

Full particulars [illegible] obtained from the [illegible] applications with [illegible] later than September 23rd. The election will take place on Tuesday September 30th.

C. S. ISBEE

August 2nd 1924. Secretary Superintendent.

National Hospital for Diseases

OF THE HEART Westmoreland Street W.1

PHYSICIAN TO OUT PATIENTS

The Committee of Management invite applications for the post of Physician to Out-patients to fill a vacancy on the Honorary Medical Staff caused by the death of Sir Sidney Russell Wells, M.D. M.R.C.P.

Candidates must be Graduates in Medicine of a University of the United Kingdom and Fellows or Members of the Royal College of Physicians of London.

Applications, with ten copies of not more than three recent testimonials should be sent to the undersigned not later than Saturday October 4th 1924.

ROBERT G. E. WHITBY Capt.

Secretary.

National Hospital for Diseases

OF THE HEART Westmoreland Street London, W.1

[illegible]

1924. He will be required to assist the Hon. Medical Staff on five afternoons weekly or four afternoons and one morning as may be arranged.

ROBERT G. E. WHITBY (Capt.)

Secretary.

The Royal Infirmary, Sheffield (voluntary).

The Weekly Board of Management invite applications for the post of RESIDENT SURGICAL OFFICER. The salary attached to the appointment is £200 per annum with board and residence.

Applications with copies of testimonials, to be addressed to the undersigned.

Board Room. JNO. W. BARNES.

August 2nd 1924. Secretary.

Seamen's Hospital Society, Greenwich, S.E.

The Committee invite candidates for the appointment of HOUSE SURGEON at the Albert Dock Hospital Connaught Road E.16. Candidates must be duly qualified practitioners and registered. The elected candidate will be required to take up duty on October 1st 1924.

Salary at the rate of £150 per annum and private practice fees with board residence and washing. The appointment will be for six months.

Applications stating age together with copies of not more than three recent testimonials to be sent in on or before September 24th to the undersigned from whom further particulars can be obtained.

By Order

P. J. MICHELLI, Secretary.

Greenwich, September 1st 1924.

Seamen's Hospital Society, Greenwich, S.E.

The Committee invite candidates for the appointments of HOUSE PHYSICIAN and HOUSE SURGEON at the Dreadnought Hospital Greenwich. Candidates must be duly qualified and registered. The elected candidates will be required to take up duty on October 1st 1924.

Salary at the rate of £150 per annum and a proportion of fees with board residence and washing. The appointment will be for six months.

Applications, stating age together with copies of not more than three recent testimonials to be sent in on or before September 24th to the undersigned from whom further particulars can be obtained.

By Order

P. J. MICHELLI, Secretary.

Greenwich, September 1st 1924.

Telephone Langham 2723.
Telegrams. "Assistance, London."

NURSES

MALE OR FEMALE

TRAINED NURSES FOR MENTAL, MEDICAL, SURGICAL AND FEVER CASES

Nurses reside on the premises and are available for urgent calls, Day or Night.

THE NURSES' ASSOCIATION

(In connection with the MALL CHAMBERS ASSOCIATION)

29, York Street, Baker Street, London, W.1

(Mrs.) MILLICENT HICKS, Superintendent.
W. J. HICKS, Secretary.

ST. LUKE'S HOSPITAL.

ESTABLISHED 1 [illegible]

PRIVATE NURSING STAFF DEPARTMENT

TRAINED NURSES for MENTAL and NERVOUS CASES can be had immediately. Apply to LADY SUPERINTENDENT, 19 Nottingham Place, London, W.1. Telephone: Mayfair [illegible]

NORTHERN BRANCH.—Apply LADY SUPERINTENDENT, 57 Clarendon Rd. Leeds. 'Phone Leeds 2115.

LEE & MARTIN, LTD.,

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TELEGRAMS: "Locum Birmingham." TELEPHONE: 1115 Central, Birm.

Transfers of Practices and Partnerships arranged.

Accounts Investigated. Income-tax Returns prepared.

LOCUMS AND ASSISTANTS SUPPLIED.

THE MANCHESTER MEDICAL AND SCHOLASTIC ASSOCIATION, LTD.,

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TRANSFERS and PARTNERSHIPS arranged, and Investigations Valuations &c. undertaken.
ASSISTANTS & LOCUMS TENENS SUPPLIED.
PRACTICES for sale. Particulars on application.

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Telegrams
INSTRUMENTS, WESDO, LONDON.

LOCUM TENENS provided at short notice

FOR SALE

NEWCASTLE-UPON-TYNE (suburb).—Old established PRACTICE. Good-class house 3 reception 7 bedrooms main rooms with basement consulting rooms. Average income (certified) £1,276. Fees 4 gns. to £1 1s. Midwifery £3 3s. upwards. Premises of High class appointment. Treaty commends. Nominal waiting. Premium £3,000. Valuation of furniture, &c., if required. Surgery.

CITY.—Old established G.P. connection; practice in good position. Fees 5 guineas. Surgery. Visiting Dr. Eye Nose and Throat work. Premium £600.

CATHEDRAL CITY (near London).—Old established G.P. practice in a charming town. Valued over £1,000. Income over £1,160. Private House of bedrooms etc. Large lawned garden. Rent £70 p.a. Premium £2,000.

LONDON, W.—Selected old-established PRACTICE. Income nearly £2,500. Price to cover (freehold) goodwill, fixtures, fittings and stock at valuation. Premium £5,250 or including house, mortgage arranged.

SOUTH COAST.—PARTNERSHIP in old-established G.P. Practice. Income £3,200. Two-fifths share. 2 years purchase. Excellent house.

CHESHIRE.—PARTNERSHIP in old-established G.P. practice in Lancastown Panel nearly 3,000. Income £1,707. Premium 2 years purchase for a third or one-half share.

LONDON, S.W.—Old-established G.P. Practice. Income £1,000. Small house, garden. Low rental. Premium £1,700 to old client's estate.

WEST COUNTRY.—Well-established G.P. practice in fashionable seaside town. Panel over 1,000. Income nearly £1,700. Excellent house at rental. Premium 1 years purchase.

LONDON, N.W.—PARTNERSHIP in old-established G.P. Practice situated within 10 minutes of Tube. Net Income about £3,300. Panel about 1,000. Half share. 2 years purchase.

BIRMINGHAM (near).—Old-established G.P. Good house to rent situated in busy district. Income over £1,700 p.a. Panel over 1,000. Premium 1½ years purchase.

Purchasers, stating their requirements will be sent particulars of other suitable Practices and Partnerships for sale, free of charge.

Please address all communications to the Manager, Mr. W. H. GRANT, Medical Transfer and Insurance Department.

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(Gerrard 2013.) (Estab. 18[illegible])

This Agency (the Oldest in the Kingdom) undertakes the SALE of PRACTICES and PARTNERSHIPS, AUDITS and VALUATIONS and the SUPPLY of LOCUMS and ASSISTANTS.

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Exchange of Practices, South West County.—Owner of an old established Practice of £1 400 a year in a charming country district in the West Country, is open to exchange for a more easily worked Practice in West of London, or in a good suburb.—Apply, in confidence No 7592

Urgent Sale Unusual opportunity £2 200 a year increasing easily worked PRACTICE in a Seaport Town in South Wales Very little night work Fees for visits from 5/ upwards Panel 1 450 Excellent corner house (not large) with garden Every investigation Personally investigated and recommended For a quick sale the low price of one year's purchase will be accepted.—Apply No 7590

London, S W.—£400 p.a. Panel 600 Visiting fees 3/6 to 5/ Ground floor flat on lease Rent £60, including rates.—Apply, No 7588

London, S W.—Partnership About £3,000 a year Panel 1 000 Very old established Practice Midwifery fees 2 to 10 guinea. Visits 3/6 to 7/6 Flat available Premium £2 750.—Apply, No 7585.

Suffolk.—Nearly £1,600 a year Non dispensing PRACTICE Panel 700 Fees 5/ to 10/6 Good detached house large garden Rent £70 Some surgery and ample scope.—Apply, No 7583

Yorkshire.—Average £1,286 Appointments £350 Visiting fees 3 6 to 10/6 Panel nearly 1,300 Few midwifery cases Good house every convenience.—Apply, No 7581.

North-West County.— University Town £1,200 a year Old established Visits 5/ to 10/6 Midwifery 4 to 7 guineas Freehold house standing in own grounds Scope.—Apply No 7579

Death Vacancy.—London, S E About £1 524 per annum. Cash and panel PRACTICE Visiting fees 2/6 to 5/ Excellent premises on lease Small panel No Sunday or night work.—Apply No 7576

Near Manchester.—Nearly £2 000 p.a. Panel worth about £600 p.a. Moderate house with separate surgery to rent Premium 1½ years purchase easy terms Good schools near.—Apply No 7565.

Eastern County Partnership About £2 200 p.a. Panel about 2 000 and other appointments Fees 3 6 up One-third share for disposal with succession in about 3 years Apply No 7564.

London, S W.—Partnership and succession £2 000 a year Half share for disposal immediately Panel 1 800 Old established Good fees Excellent house and large garden Prem 2 yrs purchase.—Apply No 7560

Nottinghamshire.—Over £1 250 a year Middle and working class. Panel 700 rapidly increasing Fees chiefly 3/6 to 7/6 and up to 21/ Small house with garage on lease. All sport and good schools.—Apply, 7549

Cheshire.—Nearly £4,000 a year Old-established Practice HALF SHARE for Sale at 1½ years purchase Panel about 1 400 Appointments £45 Good fees Good house and garden to rent.—Apply No 7536

Midland Town.—About £1,100 a year Old established PRACTICE Panel 750 Appointment £40 Very little midwifery Large house and garden. Prem £1 600 including drugs etc.—Apply No 7534

Home County.—About £800 a year Very old established. Good appointments Small panel Exceptionally good house for sale or midlet.—Apply No 7522.

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Telephone, Regent 229

LOCUM TENENS and ASSISTANTS supplied

FOR DISPOSAL

Sussex.—Partner required for a general practice situated in a good country district Receipts £1,500 Good fees Scope for increase. Premium for two-thirds share 3 years purchase with view to succession.—Folio 886

Staffs.—Partner required for a General Practice situated in an industrial district Receipts £2 500 Panel 1 370 House at rental Premium for third share 1½ years purchase Option increase to half share Folio 887

S. of England.—A Coast PRACTICE situated in a charming district Receipts £1 250 Excellent fees Hospital appointment held No panel. Non-dispensing Nice house in good position at rental Premium £2 500.—Folio 675

London.—City Practice Receipts £1.250 including appts. £500 Panel 100 Fees 3/6 upwards Vendor retiring Ample scope Nice house in central position at rental Premium £2 000.—Folio 667

Glam.—A General Practice situated in a Coast Town Receipts £2,200 Panel 1 400 Fees 3/6 upwards. Shipping fees 21/- upwards Ample scope Nice house with 4 bedrooms, etc garden and garage Rent £75 per annum Premium 1½ years purchase.—Folio 661

Sussex.—A General Practice situated in charming district Receipts £1 400 Panel 500 Ample scope Fees 3/ upwards Cottage Hospital Nice house containing 6 bedrooms etc Prem 1½ yrs purchase Folio 593

Midlands.—An old-established general PRACTICE situated in a small Country Town Receipts £1 200 Fees 3/6 upwards Panel 500 Appointments £100 Scope for increase Vendor retiring Excellent house containing 5 bedrooms etc Over 2 acres of grounds, e c Premium 1½ years purchase.—Folio 617

Norfolk.—A General PRACTICE situated in a country district Receipts £1 600 Panel nearly 900 Good fees Nice house with excellent garden etc Rent £35 per annum Premium £2 500.—Folio 600

Yorkshire.—An old-established PRACTICE situated in an unopposed district near coast. Receipts £1 350 Panel over 500 Fees 2/6 upwards Plenty of sport Nice house containing 6 bedrooms etc, ½ acre of garden, etc Rent £30 per annum Premium 1½ years purchase.—Folio 624

Notts.—A Middle and working class PRACTICE (town and country) Receipts £1,200 Fees 3/6 upwards Small corner house containing 3 bedrooms e c Rent £60 per annum.—Folio 662.

Glam.—General Practice in thickly populated district on Coast. Receipts £1,700 Fees 3/ upwards Panel 600 Considerable scope. House containing 4 bedrooms etc, rent £50 p.a. Premium £1 500 Folio 887

London, S W.—A General PRACTICE situated in a large Suburb Receipts £500 Panel 300 Fees 2/6 upwards No midwifery Ample scope Vendor retiring Nice corner house containing 5 bedrooms etc Premium for house and practice £1 800.—Folio 663

London, S W.—A General PRACTICE situated in a thickly populated district. Receipts £800—£900 Panel 100 Fees 2/ upward Plenty of scope Excellent corner flat containing 5 bedrooms etc Rent and rates £160 p.a. Premium 1½ years' purchase.—Folio 671

Salop.—A Partner required for an old-established Practice situated in a Market Town. Receipts over £3,500 Panel 2 000 Cottage hospital in district. Income should have Surgical experience Nice house available at rental Premium for one-third share 2 years purchase.—Folio 888

Derbyshire.—A General PRACTICE situated in an industrial district. Receipts about £800 Panel 600 Good fees Nice house containing 8 bedrooms, &c. at rental. Premium £1,000.—Folio 653

Purchasers stating their requirements can have details of other Practices not advertised

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LOCUMS SUPPLIED

Home County.—Suitable for two friends Mixed PRACTICE of over £3 000, increasing in small residential town. Panel and appointments £940 Nice house on lease Good schools Golf, etc Small hospital Premium £4,200, £2 500 down

Surrey.—Partnership in growing residential district Third share £1 500, half later Panel 1,600

Notts.—Partnership with Succession Half share of over £1 600 House with nice garden and garage separate entrance to surgery Can be had on lease

Gloucestershire.—Small town with cottage hospital PRACTICE of nearly £1 800 Panel 1 800 Appointments £120 Beautiful house and garden, with tennis court, on lease

Scotland.—Unopposed PRACTICE of £830 Panel 300 Appointments £100 Good house with well stocked garden Price £1 500 for house and practice £1 000 down

New Zealand.—Unopposed PRACTICE of £1 800 in beautiful district. Good house Rent £100 Scope for surgery Premium £1 500

Surrey.—Partnership in first-class Practice in best residential district Receipts over £7 000 One-sixth share for sale at 2 years purchase. Excellent house in prominent position to rent.

Within 25 miles.—Middle and working class PRACTICE. Receipts average £1 700 Panel over 1,100 Vendor retiring House rent £42 Premium 1½ years purchase

East Coast.—Steadily increasing PRACTICE in beautiful seaside resort in Yorkshire Receipts average £1 500 Panel 800 Excellent house with good garden and garage on lease

Within 80 miles.—Old-established PRACTICE of £1,280 in nice town Panel 1,000 Nice house with good garden Rent £70 Schools Society, &c

London, S W.—Cash Practice doing about £450 including 600 panel Worked from small flat on ground floor Great scope for increase

Northumberland.—Old-established non panel PRACTICE in large town Receipts over £3 000 Scope for midwifery and panel Good house can be rented

Opening.—In small Village in beautiful district Receipts about £300 including 150 panel House with nice garden Rent £40 Will be sold cheaply

South Midlands.—Partnership ments £600 Panel 1 9[illegible] House with nice garden, tennis court, garage, etc Rent £80

Within 80 miles.—Practice of £1.380 in country town in beautiful district Nearly half the income from panel and appointments Rent £45

Midlands.—Surgeon required as PARTNER for half share of £3,000 Scope for major surgery and vacancy on the staff of hospital Premium £2,100 House on rent

Death Vacancy.—Partnership Third share of £1 500 Panel practice in open suburb Scope for midwifery Rent £75

Lancs.—Practice of £2,000 in prosperous town Scope for Surgery and vacancy on staff Panel 600 Good house rent £90 Premium only £1,800 £1 000 down

London, S W.—Middle-class PRACTICE of £700 in nice residential district Small panel. Scope for increase Very good house can be bought

Purchasers stating their requirements can have Particulars of other Practices not advertised

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Under the personal direction of Dr J FIELD HALL, and Mr J C NEEDES

An Accountant's certified report is required in respect of every practice or partnership the disposal of which is undertaken by the Agency

The commission chargeable in respect of any practice in Great Britain placed exclusively in the hands of the Agency for transfer has been fixed on an exceptionally favourable scale the maximum chargeable on any transfer being £50 In the case of Foreign and Colonial practices similarly placed the maximum is £75

NO CHARGE IS MADE TO PRINCIPALS FOR THE INTRODUCTION OF LOCUM TENENS OR ASSISTANTS.

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PRACTICES AND PARTNERSHIPS FOR SALE.

1 FAVOURITE INLAND SPA.—PARTNERSHIP A well qualified and experienced man with a good personality is required as Consulting Physician as Partner with ultimate succession The present income is only about £1 000 a year but there is very considerable scope for increase and the new comer would be encouraged to undertake general practice without detriment to the partnership for the fees so obtained There is a choice of houses both on rental and to buy in the residential part of the town At present the rents are a few at 10 6 Premium

2 NEWCASTLE-UPON-TYNE [illegible] he left the Vendor many years. Steady average income of about £3 300 There is a Hospital in the town and a reasonable prospect of obtaining an appointment on the staff There are various appointments worth about £150 a year Very little midwifery but large scope if desired Fees 5/6 to 21/ House is Vendor's freehold it is well-situated and will be let or sold Excellent educational facilities Premium moderate [illegible]

3 P [illegible]

4. [illegible] a small garden There is a large Practice offers very good years purchase

5 B NORTHUMBERLAND — [illegible] Average income £813, but there is scope for increase as panel patients Advice and medicine 2 6 3 6 and 5/ Visits 3 6 to 10 6 medicine extra Small convenient house. Price for house and practice £2,000

6 PRESIDENTIAL [illegible] Non dispensing income of about £2 [illegible] Fees from 2 6 to 21/ mainly 7 6 upwards On a few cases of mid

7 [illegible] including large panel Good fees The house is well situated has ample accommodation and can be rented on lease at £100 a year [illegible]

8 [illegible] with ample accommodation and good garden Price £2,000 of which £1,000 can remain on mortgage There is an up-to-date Hospital and an early vacancy on the staff a probable Coroner ter re 6 re ch an f r

9 S [illegible] the last financial year £3 722, can be acquired by a young unmarried man Panel list of over 1,800 and patients operative class Visits 2/ to 5/ Midwifery 2 to 3 guineas Ingoing partner could reside with Vendor or unfurnished rooms are available Golf to be had Premium 1½ years purchase

11 CHELTENHAM.—Two keenly established PARTNERSHIP practices to be offered to an [illegible] and join [illegible] (1) Private practice (2) Panel practice (3) Midwifery practice Present joint income £2,100 [illegible] Vacancy for a trained qualified man, 1919 [illegible] Visits 2/6 to 5/ Midwifery 2 to 3 guineas Present Partner retires Car necessary Golf [illegible] with garage and stabling Premium 1½ years purchase.

12 LONDON, WEST END.—PARTNERSHIP.—A quarter share (commencing with and up to about 3 years) in a well-established general Practice Income for the year £3 020 Fees £1, 1 guinea and 2 guineas Partnership will be a Graduate [illegible] Premium for the share £1 500

13 LONDON, EAST.—Old established and well [illegible] East MOTOR [illegible] £1,100 Lease [illegible] Fees 2/6 to 5/6 upwards No [illegible] Can be [illegible] if desired [illegible] Premium £1,700

14 WEST CENTRAL.—Short lease easily worked PRACTICE about £710 a year The fees very good and almost entirely [illegible] from 1/1 all the year Rent £5 a week, 10 6 Very convenient flat Lease £58 Premium £1,100

15 LONDON SOUTH.—Old established PRACTICE [illegible] an income of £1 100 a year including [illegible] Panel of [illegible] but this can be largely increased if desired Visits and medicine 3 6 to 7/6 Practice is easy to work No [illegible] Can be [illegible] in good locality Rent £125 Garage can be [illegible] of a £26 or £30 Premium £2 000

16 INDIA.—ASSISTANTSHIP with view to PARTNERSHIP A single man (about 30 years of age) and a [illegible] who will be an F R C S Eng., of good appearance and of [illegible] is required for a two year engagement to start some time next March in a practice [illegible] £1 000 a year Salary 650 Rupees a month plus [illegible] (about £800–£850) A termination of engagement after one year may have will be with satisfactory [illegible] three years purchase with increase of [illegible] up to one third Premium [illegible] out of profits One of the Partners is in England at present and a personal introduction during the next month is essential

17 ASSISTANTSHIP WITH VIEW TO PARTNERSHIP within 2 years.—Married University Graduate about 30 years of age and Scotch preferred is required in a leading practice in a prosperous Seaside Town Salary (to commence) £400 a year with good house rent free and [illegible] on midwifery [illegible] producing nearly £100 in addition Prospect of Hospital appointment Personal application desirable

18 NEW ZEALAND (NORTH ISLAND).—Unique opportunity for PRACTICE in a very beautiful district [illegible] main line about 2 hours from a large city and worth nearly £1,300 a year including easily worked appointment £100 Visits one shilling Midwifery 10 guineas 6 midwifery 5 guineas Good and up-to-date house (built by Vendor's profession) containing surgery reception room 3 bedrooms and a sleeping porch bathroom etc with an acre of ground tennis court etc Lease £120 on long [illegible] Premium £1,000

19 EASTERN COUNTIES.—UNOPPOSED COUNTRY PRACTICE within 50 miles of London Very old established and easily worked as situated on a County Town An engagement for the last three years £1,314 including [illegible] worth about £70 and panel of 600 Advice and medicine 3 6 to 5 Visits 5 to 10 6 medicine usually extra Midwifery 30/ upwards 19–10 cases yearly Very attractive residence standing in its own ground containing consulting room surgery (with separate entrance) 3 reception 4 bedrooms etc garage stabling One acre of garden and two acres of meadowland Price freehold £1,200 part on mortgage Premium £2,000

20 FAR EAST.—Wanted in November a young unmarried ASSISTANT (not over 25 years of age) on a two years agreement with possibility of succession at end of engagement Salary £350 per annum Interview in London essential before ultimate engagement

Profits accruing to Bovril, Limited, from the Agency will be allocated amongst recognized Medical Charities

Full Schedule of Terms and Conditions will be forwarded on application.

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SCHOLASTIC, CLERICAL & MEDICAL ASSOCIATION, LIMITED.

(Formerly at 22 Craven Street, Trafalgar Square, W C)

12, STRATFORD PLACE, OXFORD STREET, W. 1.

Telegraphic Address: "TRIFORM, WESDO, LONDON" *Telephone MAYFAIR 2400*

Practices and Partnerships for Disposal. No charge to Purchasers.

LONDON, S E —(1) Well-established and very lucrative PRACTICE about £3 625 p.a., in Industrial Centre Panel 4 500 Very good no 1 basement house (6 bedrooms) to be sold Would suit two men, Premium £4,000

LONDON (WEST) — (2) Old-established PRACTICE nearly £1 600 in Bayswater Panel about 1,?25 Not much Midwifery House with 3 bedrooms Premium one and a half years purchase

HUNTINGDONSHIRE — (3) Very old-established unopposed Country PRACTICE between £1 100 and £1,200 p.a. Panel 700 (about Small house (3 or 4 bedrooms) Rent £50 (larger house could be purchased) Premium £1 550

HOME COUNTY —(4) Unopposed Country PRACTICE over £770 p.a, within 30 miles of London. Panel 833 Large old fashioned detached house (7 bedrooms) to be sold From for practice £1,164

STAFFORDSHIRE —(5) PARTNER required (after pre- Practice about £2 500 p.a., allable One third share at and good at minor Surgery Cottage Hospital

SOMERSET —(6) Unopposed Country PRACTICE of £1 100 Panel 800 Good well appointed house (9 bedrooms bath room) garden and garage, to be sold

YORKSHIRE —(7) Unopposed Country PRACTICE, between £700 and £800 p.a (£240 of which is panel), in picturesque Growing Village Model detached house with garden garage electric light, bath (h & c), etc, for sale Premium one and a half years purchase

HOME COUNTY —(8) Very old-established PRACTICE doing about £500 p.a, in Residential District under 20 miles from London. Excellent detached house (11 bedrooms) with large garden—suitable for reception of Resident Patients Premium, Practice and House, £4 350 (Property might be let)

DEATH VACANCY HOME COUNTY —(9) Old-established PRACTICE averaging £1 335 p.a in first-rate Town No appointments or panel Well situated modern detached double fronted corner residence (6 bed and dressing rooms) on main road Plenty of scope for increase in all directions

EASTERN COUNTIES — (10) Very old-established unopposed Country PRACTICE averaging £1,650 p.a Panel 850 Modern detached house (6 bedrooms) in acre ground Rent £80 on lease Premium one and a half years purchase

LONDON, S E —(11) PARTNERSHIP in old-established PRACTICE in outlying Residential Suburban District close to the Crystal Palace No appointments or panel Share worth about £750 p.a at two years purchase Ample scope

MANCHESTER —(12) Old-established and increasing middle class PRACTICE averaging £1 550 p.a in Suburb with Hospital and opportunities for surgery Small panel Good house (8 bedrooms) in excellent position Rent £90 Premium one and a half years purchase

NURSING HOME, LONDON (Bayswater) —(13) Well-established Home with accommodation for 10 Patients, showing a good profit Fees £8 8s to £21

WITHIN 50 miles of LONDON —(14) PRACTICE £1,500, in first-rate Residential District Modern detached house (5 bedrooms), in grounds to be sold Excellent educational facilities Premium £2 000

SOUTH AFRICA (CAPE PROVINCE) —(15) PRACTICE about £1 000, in one of the wealthiest Pastoral Districts on line of Railway Ideal equable dry climate Very comfortable house to rent Living very cheap Premium £800 Vendor known to the Association

LONDON, S W —(16) Sound old-established PRACTICE over £480 p.a in well populated District within 3 miles of Charing Cross Panel 300 Practically no Midwifery Nice corner house (5 bedrooms) Prem one and a half years' purchase Ample scope for Panel and Midwifery

HOME COUNTY —(17) Well-established and increasing mixed-class PRACTICE over £1 000 in Residential District Panel about 400 Not much Midwifery Old fashioned detached house (4 bedrooms) in good position. Premium £1 500

MANCHESTER —(18) PARTNERSHIP in old-established good class Practice over £4 500 in Residential District Small panel One fourth share would be sold for £2 115 with option to increase up to one half Partner should be about 30, and preferably M D or F R C S

SPECIAL OPHTHALMIC PRACTICE —(19) About £1 400, in high class inland Health Resort. Operative and acute cases refused of late years Considerable scope for increase Premium £1,400

SOUTH WALES —(20) Old-established increasing working-class PRACTICE over £2 200 in one of the chief Seaports Panel 1 400 Detached house with 4 bedrooms, to rent on lease Premium £2 500 part by instalments or £2 200 cash

FAVOURITE RESIDENTIAL DISTRICT up the Thames —(21) PARTNERSHIP in better class Practice nearly £2,900 per annum One-third share at first at two years purchase

NORTH OF ENGLAND —(22) Old-established PRACTICE of £1 460 per annum in Country District Panel 810 Very good house (9 bedrooms) in charming grounds two acres Premium, practice house, and grounds £4 000 Mortgage could be had on house

EASTERN COUNTIES —(23) Old-established unopposed Country PRACTICE of £826 p.a Panel about 300 Very good house in 2 acres of garden, to rent or purchase

MIDLANDS —(24) PARTNERSHIP in very old established unopposed Practice in Market Town Panel 1 900 House contains 4 bedrooms, &c Rent about £70 Share worth about £1 000, at 2 years purchase Partner should be 30-35.

EAST COAST —(25) PARTNERSHIP in well established PRACTICE £3 800 in rapidly developing Seaside Town House with 4 bedrooms to rent Incoming partner should be aged between 40 and 50, and be a good surgeon Premium two-thirds share two years purchase

YORKSHIRE, WEST RIDING —(26) Well-established middle and working-class PRACTICE over £1,300 (£920 from Panel and appts) in large clean town Good detached corner house Prem £1 100

EAST COAST —(27) Increasing PRACTICE over £500 in rapidly developing District Panel about 100 Nearest opponent 4 miles Bungalow residence (5 rooms) Premium £750

EGYPT —(28) Well-established PRACTICE £700 to £800 mainly among English Residents and Visitors Excellent semi detached residence (5 bedrooms) Premium to include Furniture £1 100

MIDLANDS —(29) PRACTICE over £2,200 in Country Town near Birmingham Panel 1 800 Charming house (6 bedrooms), large garden Rent £100 Premium one and a half years purchase

SURREY — (30) PARTNERSHIP in first-rate Practice, £7 000/£8 000 per annum in one of the best Residential Districts, House (7 bedrooms) to rent. Premium one sixth share two years purchase. Partner should be aged over 30 and have held hospital appointments

MIDLAND TOWN —(31) Old-established PRACTICE about £1 100 per annum in Residential Suburb Panel 700 Good house and large garden. Premium £1 500

LONDON, N W —(32) PRACTICE worth about £150 per annum in working class district. Panel 500 increasing No midwifery Double fronted corner house Premium Practice, and freehold House £1 500 Great scope for young man.

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LONDON, S W —(34) Recently established Lock up PRACTICE, in new and developing outlying Suburban District. Rent of Consulting rooms £40 Prem to include lease furniture, and fittings £250

SCOTLAND, NORTHERN HIGHLANDS —(35) PRACTICE averaging over £1 600 p.a., in a Town No panel House (5 bedrooms etc) in best residential part Ample scope for midwifery and panel Premium £1 200

WEST MIDLANDS —(36) PARTNERSHIP in old established Country Town Practice over £3 600 p.a. Panel 2 183 Rent £60 Partner should be aged 35 to 40 with some Surgical experience Well equipped Cottage Hosp Prem one third share one and a half year's purchase

LONDON, S W —(37) Well-established PRACTICE of £600 to £700 p.a., in favourite Residential Suburb Panel 295. Not much midwifery Excellent detached house (6 bedrooms), with good garden, for Sale Ample scope. Premium one and a half years purchase.

SURREY —(38) PARTNERSHIP in good middle class compact practice over £2 650 in Residential District easy distance of London. Panel 1,200. Two fifths share at first at two years purchase

MIDLANDS —(39) Unopposed Country PRACTICE over £1 150 in beautiful part. Panel about 720 Detached house (4 bed rooms), with half an acre garden Mild climate.

SOUTH OF ENGLAND —(40) PARTNER required in very sound old-established Practice in Seaport Town Panel under 3 000 Share worth £700 to £800 at two years purchase, Partner must be keen and energetic, and not much over 30

HOME COUNTY —(41) Old-established PRACTICE, over £1 850 p.a. under 25 miles from London Panel about 600 Excellent detached house (8 bed and dressing rooms) Nearly acre garden Rent £75 on long lease. Cottage Hospital near Prem one and a half years purchase

SOUTH WALES —(42) Well-established PRACTICE nearly £1,250 p.a in County Town. Panel over 500 Fees 5/ to £2 2s Well-situated double-fronted house (6 bedrooms) with large garden. Rent £60 Educational facilities Premium £1 800

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SOUTH COAST —(44) PARTNERSHIP in Practice, over £4 000 p.a. in popular Seaside Resort Panel 1 150 Premium one third share two years' purchase Partner must be energetic and not over 35

EASTERN COUNTIES —(45) Old-established PRACTICE £1 855 p.a, in pleasant Market Town. Panel 1 100 No midwifery Excellent detached house (7-8 bedrooms) Very good garden. Cottage Hospital. Premium one and half years purchase

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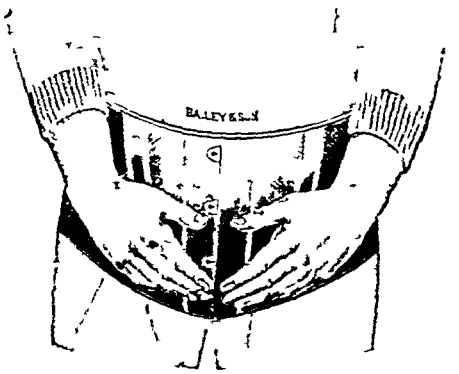
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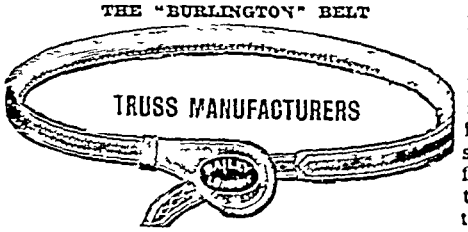
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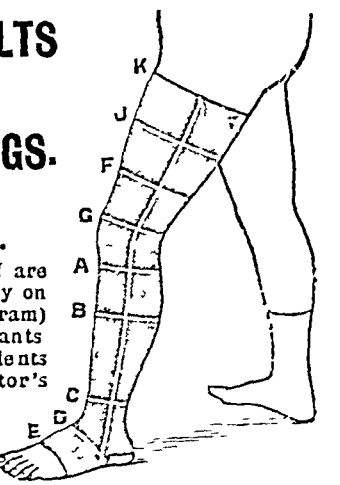


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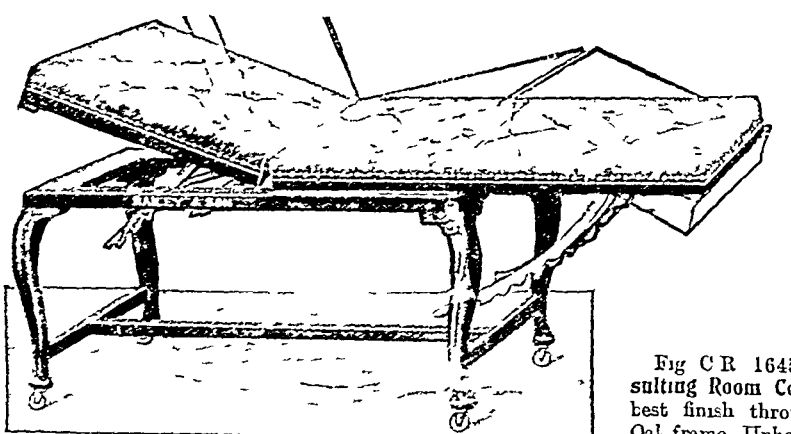
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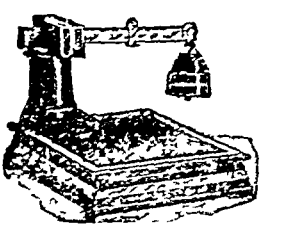
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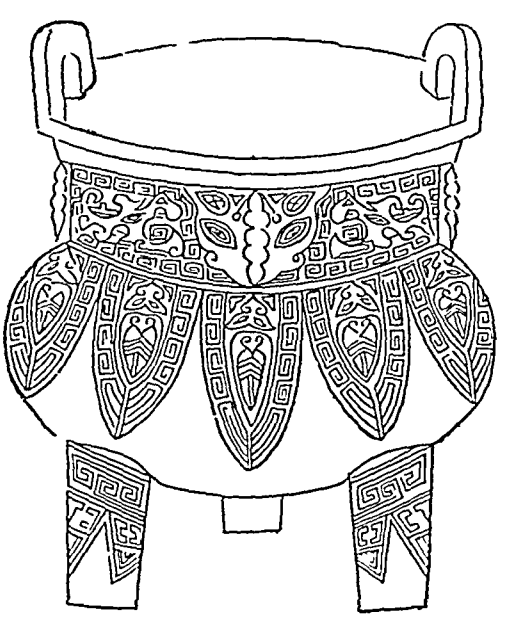
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ETHNOLOGICAL INDICATIONS FROM CHINESE ARCHÆOLOGY.—We know from statues, bas reliefs and wall-paintings what the men and women looked like who pioneered even the very early phases of the ancient civilisations of Egypt Mesopotamia and the Ægear We have so far, no similar representations of the early Chinese pioneers their most ancient pictures of themselves being no older than the second century B C Neither are they depicted in the art of other nations The only contemporary indication we have of their personal appearance is the representation of eyes in the inscriptions and ornamentation found upon bronzes of Shang dynasty (c 1766—1122 B C) Here their Mongolian obliqueness is constantly insisted upon The accompanying illustration on the left shows such a pair of eyes upon a bronze vessel, while those on the right are typical examples of eyes used to form ideographs For whatever purpose the eye is used it is slanting the first is the ideograph for "to look" "to examine closely" the second stands for blind eyes (there is no pupil) the third, a squinting eye, in which little of the pupil is seen, gives the idea of "white," the fourth is an inscription of which the upper part is a pair of eyes It is not known where the Chinese came from originally There has been much fusion throughout their history, between the original Chinese of the Yellow River basin and neighbouring peoples

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SEPTEMBER 20TH, 1924.

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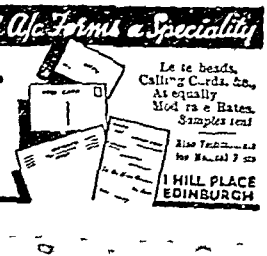
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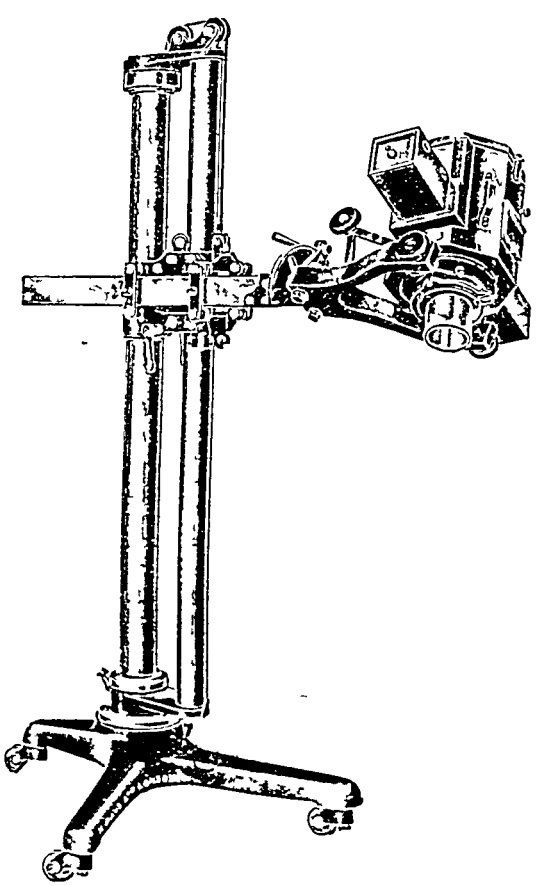
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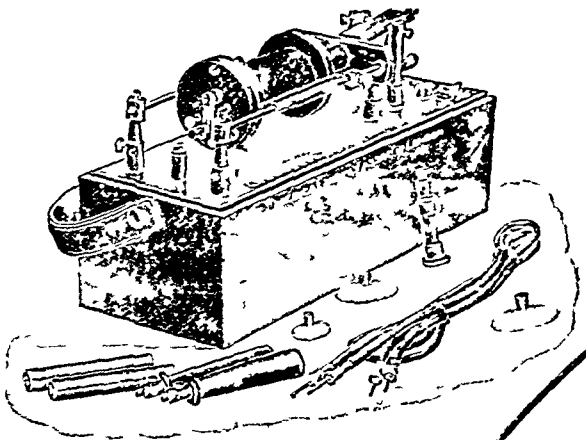
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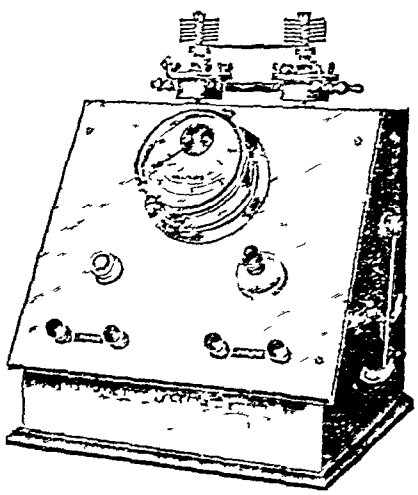
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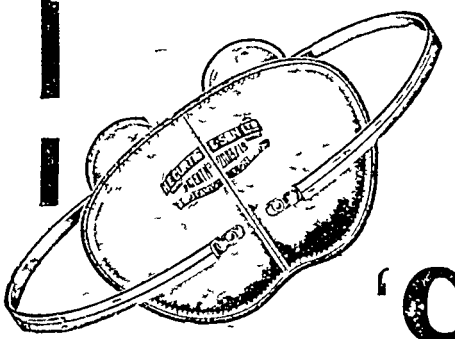
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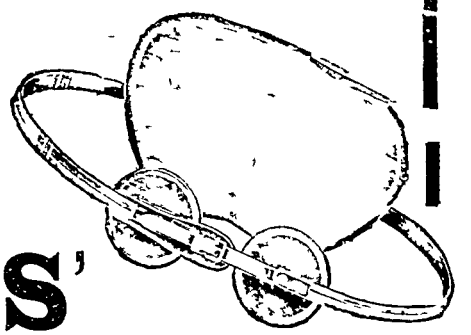
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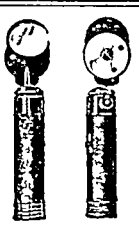
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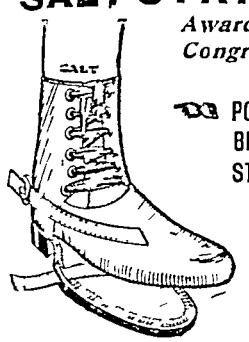
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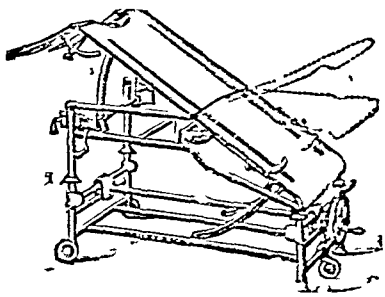
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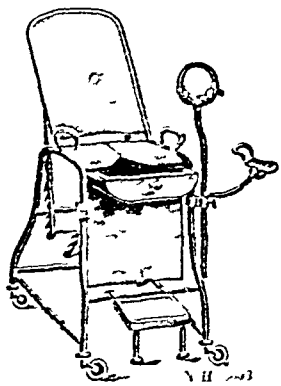
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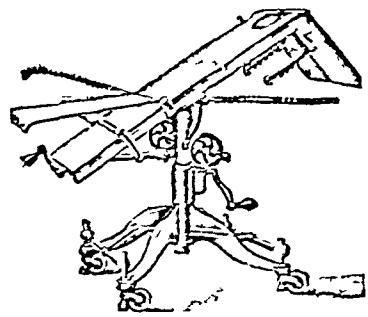
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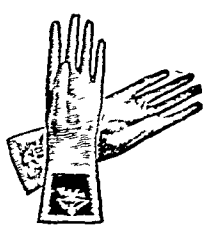
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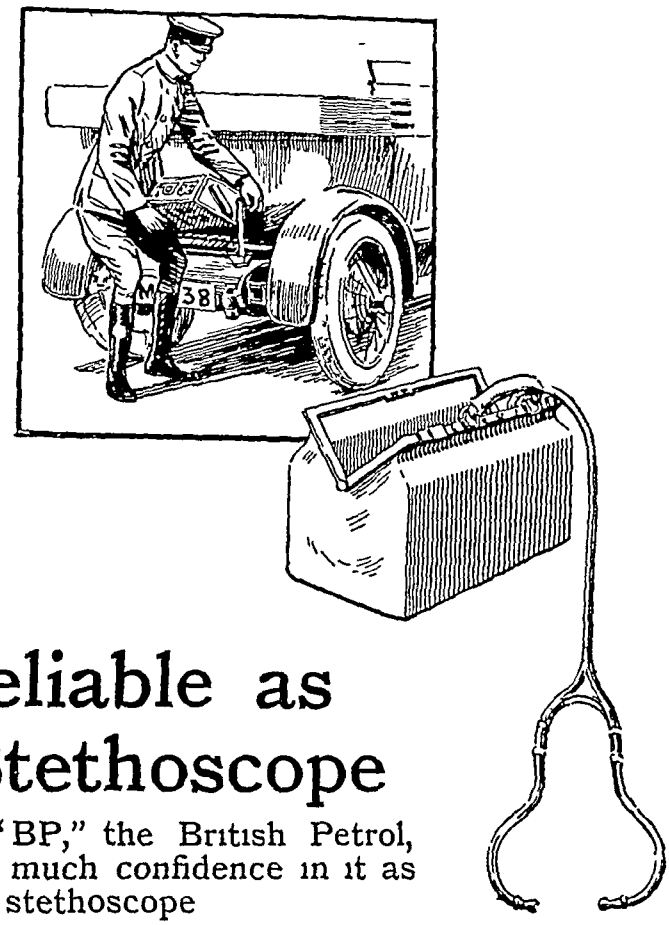
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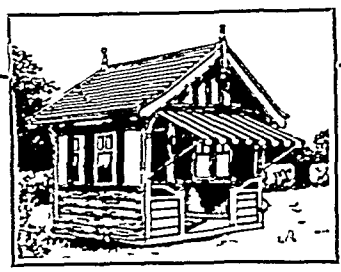
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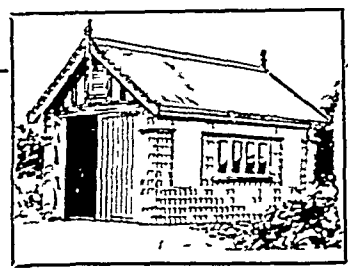
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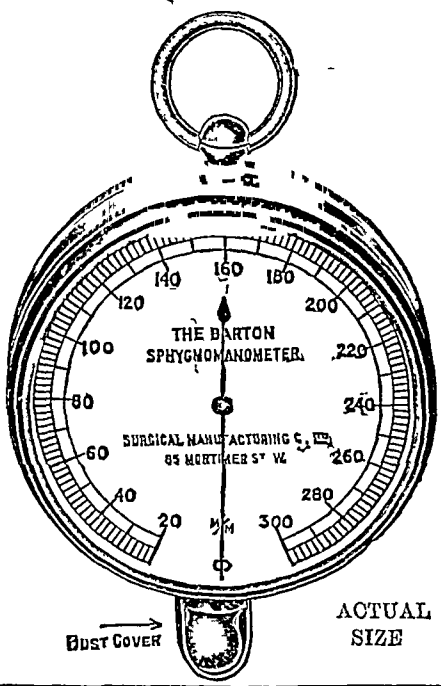
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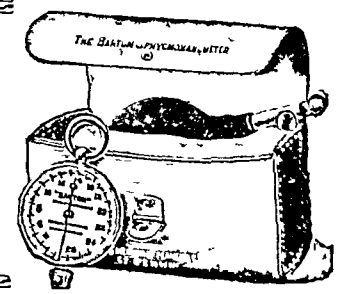
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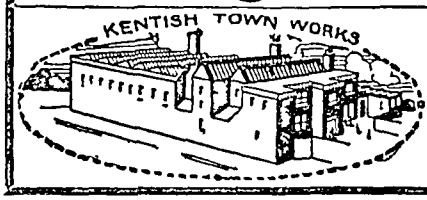
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In the mouth, for instance.

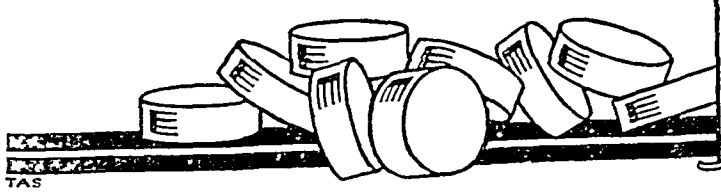
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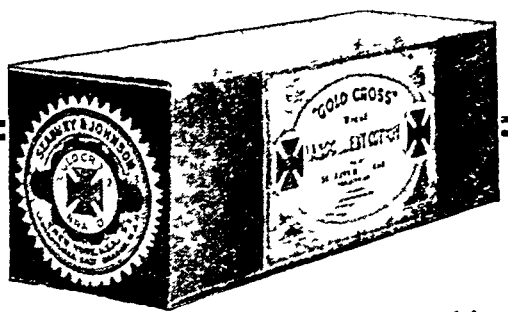
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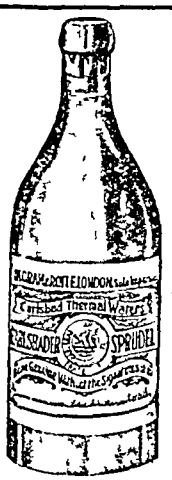
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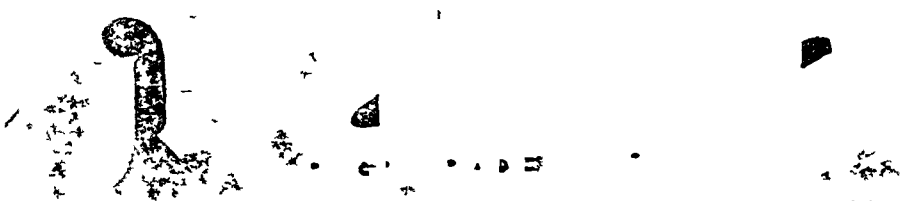
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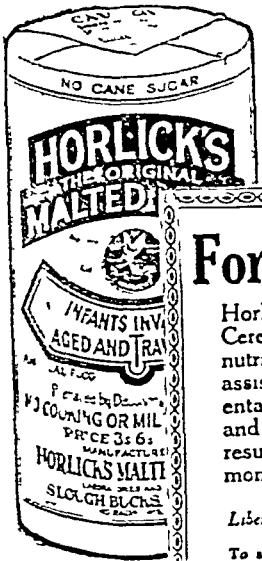
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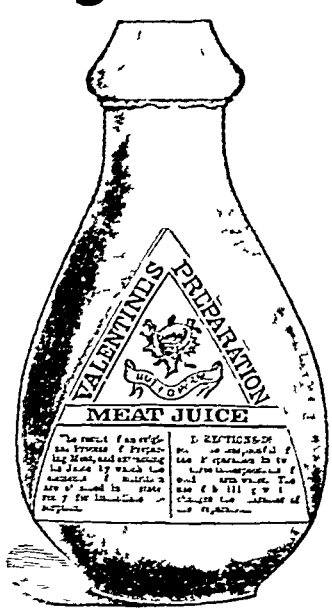
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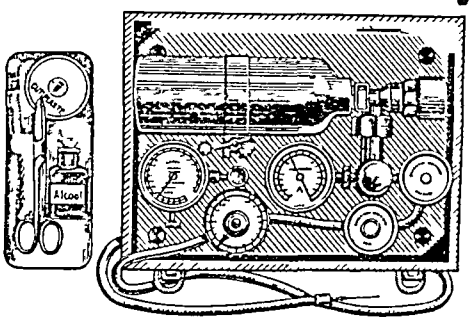
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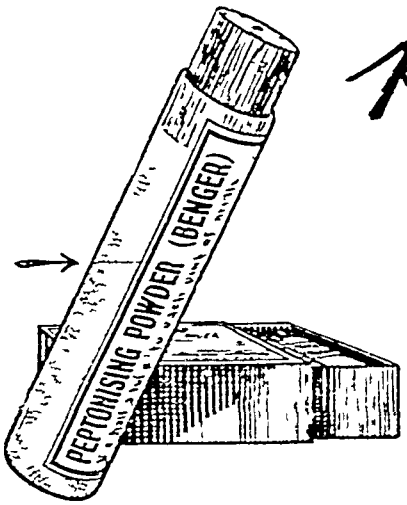
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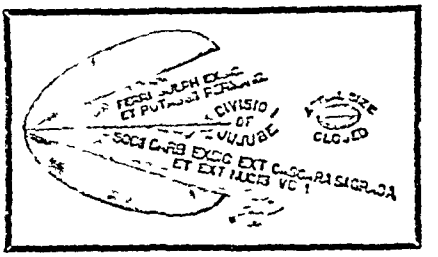
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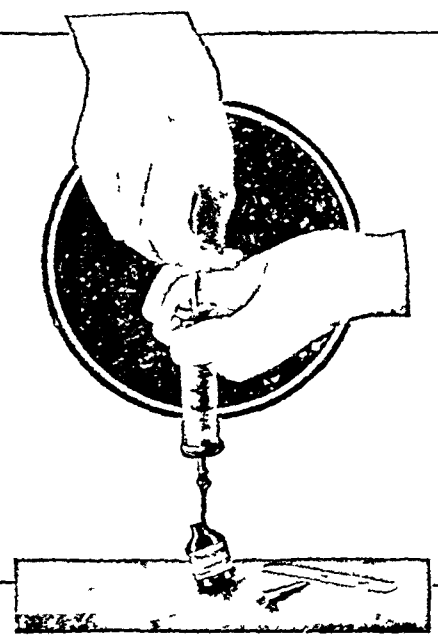
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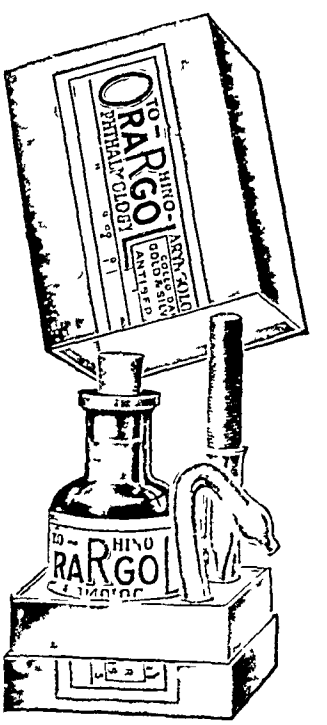
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British Medical Association

PROCEEDINGS OF SECTIONS AT THE ANNUAL MEETING, BRADFORD, 1924

SECTION OF MEDICINE

W LANGDON BROWN, M.D., F.R.C.P., Vice-President, in the chair

DISCUSSION ON JAUNDICE

OPENING PAPERS

I.—J. W. McNEE, D.S.O., M.D., D.Sc., M.P.C.P.,
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INTRODUCTION

THE selection of jaundice as one of the subjects for discussion at this meeting implies that there may be something new to say on a symptom of disease which has always been a favourite clinical study, and, since the time of Virchow, a frequent source of pathological controversy.

About a year ago I published a review of the chief advances which had been made in the study of jaundice during the past ten or fifteen years.[1] The present account must be in some way a repetition of the other, but on this occasion I wish to deal more particularly with the practical application of the new facts to medicine and surgery. It is strange to note when the frequency of jaundice as a symptom of many diseases in this country is considered how little practical attention has been paid here to the recent changes in opinion, and the time seems to have arrived for the teaching on this subject in British medicine to undergo some revision.

As landmarks in the modern literature of icterus in this country I would choose first William Leggo's book on *Bile, Jaundice and Bilious Diseases* published in 1850.[2] Next the experimental work of William Hunter (1901)[3] *on* the relation of the spleen to blood destruction and of blood destruction to jaundice must be noticed, and it is only now that the value of this work in its relation to haemolytic jaundice can be fully appraised. Finally, I would refer to the last edition of Sir Humphry Rolleston's book published in 1912, as one of the best known standard accounts of the views then held on all appertaining to icterus.

There has certainly been no lack of stimulus to the clinical study of jaundice in Britain, and in recent years several quite new clinical varieties have attracted interest. In England during the war icterus, due to poisoning with T.N.T. (trinitrotoluene),[4] and with "dope" for aeroplane wings (tetrachlorethane) (Willcox,[5] Willcox, Spilsbury, and Legge[24]), was at one time troublesome. In France there was an outbreak of spirochaetal jaundice (Stokes and Pyle,[22] Dawson, Hume, and Bedson,[5] McNee[14]) and in the East "campaign jaundice" was at times epidemic (Willcox).[5] Further, from the time of Ehrlich's discovery of salvarsan in 1909 jaundice has always been one of the most frequent and important complications in the treatment of syphilis with arsenobenzol compounds.[6]

In spite of these clinical opportunities, however, it must be admitted that the chief recent advances in our knowledge of the pathology of jaundice have come from America, France, Germany, and Holland, comparatively little having been done in our own country. The work which in recent years has had most influence in developing our knowledge of jaundice may now be briefly outlined.

NEW WORK ON JAUNDICE

The Work of Hijmans van den Bergh

We are, I understand, to be singularly fortunate at this meeting in having with us Professor Hijmans van den Bergh[7][10] of Utrecht, to whom is due undoubtedly one of the most important recent developments. The basis of this advance was simple, but involved the solution of a problem which had long baffled others. It consisted in the development of a delicate method by which small amounts of bilirubin could be detected and measured quantitatively in small amounts of albuminous fluids such as blood serum. Not only that, but by this method, which already fairly well known in this country, qualitative differences in the bilirubin present in the serum in different clinical forms of jaundice were also made out, thus giving an entirely new means of approach to the investigation and subdivision of different forms of jaundice.

It is fair to point out that Professor van den Bergh must only be held responsible for the development of the method itself and for the main results obtained by its use. For many modifications of his original methods, and for theories that have been founded either in whole or in part on observations made by them, others must bear the responsibility. I wish, however, to emphasize one fact—that by means of this reaction for the recognition of bilirubin in serum a fundamental change in our attitude towards jaundice has been brought about. Our attention has been taken away from the mere colour of the skin and mucous membranes and from the presence or absence of bile pigments in the faeces and urine, *to what is occurring in the blood*. This is a fundamental point, and how just the same trend as has been manifested in recent times in the clinical investigation of diabetes mellitus and nephritis. In these we have learned the importance of the "blood sugar" and "blood urea". We may now add, in diseases associated with jaundice the "blood bilirubin".

That is all that is needed by way of introduction of Professor Hijmans van den Bergh's work, since it will be dealt with much better by himself. I wish, however, to bring his observations into the foreground because of their importance, and because reference must so often be made to results obtained by his methods.

The "Reticulo-endothelial System" in Relation to Jaundice

The term "reticulo-endothelial system" is of recent introduction into pathology, and was applied by Aschoff[11] to a system of endothelial cells scattered widely through the body but having very specialized activities in certain situations. So far as jaundice is concerned the cells of this system which chiefly interest us are the endothelial cells lining the sinusoids of the spleen and the endothelial cells of von Kupffer which line along the various capillaries of the liver. Similar cells in the bone marrow are probably also of subsidiary importance. The importance of discussing this system is to enable us to understand recent research work on the metabolism and sites of formation of bile pigment in the body in relation to a reconsideration of the whole question of haemolytic icterus and of the forms of toxic and infective jaundice in which obstruction of the bile ducts is not clinically or pathologically evident. In order to understand the facts that have been made out and a new theory concerning these varieties of jaundice which has been founded on them, it is essential to recall to mind the finer histological structure of the hepatic lobule. Here I wish to point out our great indebtedness (freely acknowledged in all foreign textbooks—for example, Oppel[12]) to Lionel S. Beale of King's College Hospital, whose lectures on the structure of the liver were first published about 1856.[13] My own view of the hepatic lobule is founded partly upon Beale's observations, and also on personal examination of the livers of many animals, birds, and reptiles from the Gardens of the Zoological Society of London, to which society and their pathologist, Dr. N. S. Lucas, my thanks are due for the material provided.

Each lobule can be considered schematically as made up of a series of radiating tubular glands, shaped like a test tube, with the closed end pointing to the centre of the lobule. The polygonal glandular cells lie, as it were, along the wall of the test tube, which may be taken to represent a basement membrane. In the centre of the test tube, surrounded *entirely by the polygonal cells*, lies the bile

* I believe I was the first in this country to call attention to van den Bergh's use of the diazo-reaction and I take this opportunity to correct a small error which slipped into my description. In the first solution for the diazo-reaction the amount of sulphanilic acid (3 g.) is 1 gram per litre and not 1 c.c. as was printed in error. A full account of the technique and of some suggested modifications by others is given in the work already mentioned.

capillary. Reference to the diagram will make this description clear, and it will be seen that the bile capillary begins, near the bottom of the test tube, at a blind end. Between the tubular glands run the wide portal vascular capillaries, passing from the portal tract to join the branch of the hepatic vein in the centre of the lobule. Along the walls of these capillaries lie a number of large endothelial cells (Kupffer cells) which form an important part of Aschoff's "reticulo-endothelial system." These cells of von Kupffer are very abundant in birds and some animals, but are less numerous in man.

The experimental production of icterus in birds (McNee, 1912-13[11]), following blood destruction induced by arseniuretted hydrogen, seemed to show that in these animals the cells concerned in the breaking down of haemoglobin and elaboration of bile pigment were the Kupffer cells of the liver (which in birds are very numerous) and the reticulo-endothelial cells of the spleen, and not the polygonal cells of the liver. In birds in which the liver had been extirpated no real icterus followed the blood destruction, and this was interpreted as being due to removal of the Kupffer cells in the liver, and to the small size and poor development of the spleen in birds. It is of interest that these experiments, which suggested a reconsideration of the question of haemolytic jaundice, began as a repetition of the well known work of Minkowski and Naunyn in 1886[2]. These observers, finding that no jaundice occurred after poisoning with arseniuretted hydrogen and removal of the liver, simply concluded that the liver was essential to the development of icterus, and as a result of the wide acceptance of their experiments the recognition of a true haemolytic jaundice, apart from the liver, was put aside for a whole generation.

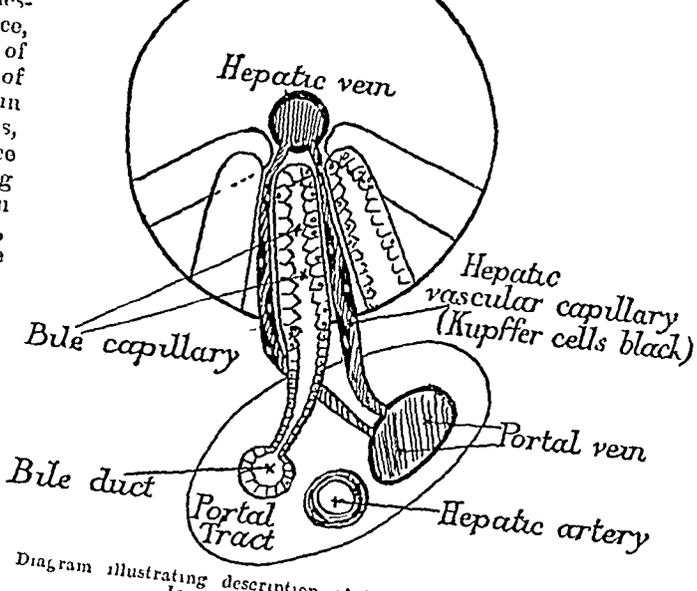


Diagram illustrating description of lobule. (From the *Quarterly Journal of Medicine* by permission.)

The new work suggested a reconsideration of the whole subject, and the view that it is the reticulo-endothelial cells which are concerned in the production of icterus by haemolysis, and not the glandular cells of the liver, has been supported by Lepehne[12] and many others. It was obviously essential, for the furtherance of these views, that equivalent experiments should be done in higher animals, where the spleen is more developed and the liver contains fewer Kupffer cells.

Work of Whipple and Hooper, and others, in America.

The problem seemed solved by the important experiments of Whipple and Hooper[10] in dogs, in which the question of a true haemolytic jaundice, quite apart from the liver, was subjected to very direct experiment. The critical experiments of these writers were in dogs in which only a "head and thorax" circulation remained, all the viscera below the diaphragm, including the liver, being cut off completely from the circulating blood, although left *in situ*. In such animals Whipple and Hooper found that haemoglobin when introduced into the limited circulation of the head and thorax, was changed readily, within a few hours, into bile pigment. Bile pigment was not only recognized in the blood serum, but an actual icterus of the thoracic subcutaneous tissues was observed.

It was obvious that these important experiments, if confirmed, finally put the occurrence of a true haemolytic jaundice outside or and independent of the liver on a firm basis.

An attempt to confirm the experiments has been made within the past two years by Rich,[14] and by McNee and Prusik,[15] but in neither set of experiments could a confirmatory results be obtained, even with the great additional advantage of the van den Bergh reaction for the recognition of bilirubin in blood serum. Rich has made criticisms of the operative technique, while Prusik and McNee were unable to obtain positive results even by following as closely as possible the method described.

Now it seems again as if proof was really forthcoming in the work of Mann and others, of the Mayo Clinic,[16 19 20] part of which has been recently published and part of which is still unpublished. Mann's work on this question formed part of an investigation into the general physiology of the liver, in the course of which he devised a new technique for the total extirpation of the liver in dogs. The operation is a difficult one, carried out in three stages, and the whole experiment, if successful, takes about two months at least before the final operation, at which the liver is completely removed from the body, with less shock to the animal than in all previous methods. In animals from which the liver has been extirpated in this way life may be prolonged for periods up to twenty four hours, provided that glucose be injected to keep the blood sugar at the normal level. This is much longer than any of the higher animals have hitherto been kept alive after total removal of the liver. Mann found that in these animals bile pigment appeared in the blood serum and also in the urine within a few hours after the liver had been removed.

This, then, is the stage which the *direct experimental* proof of a true haemolytic jaundice has reached, and a definite answer may be expected soon.

We may suitably consider here whether there is any *clinical* proof of the occurrence of haemolytic icterus outside the liver. The best evidence that can be offered at present has only shown itself clearly since the introduction of the method of van den Bergh, and depends on the observation of the gradual appearance of bilirubin in haemorrhagic effusions in the various body cavities, and especially in joint cavities. I have myself examined the fluid from an extensive haemorrhage into a previously healthy knee-joint eight days after the injury, and found the indirect van den Bergh reaction positive to the extent of eleven units. Here it seems certain that the liver cells could have had no share in the transformation of haemoglobin into bile pigment, and many examples of a similar kind could be given from the writings of van den Bergh,[17] Lepehne,[12] and others. It must be admitted, however—and this is perhaps a fundamental point—that no general icterus of the skin and subcutaneous tissues develops in these cases, however large the effusion and extent of bilirubin production. It may be, of course, that bilirubin formed in this way does not readily pass out from the serous cavity, but on this point we are not yet well informed.

Other important work having an indirect bearing on the reticulo-endothelial system, especially as contained in the spleen in higher animals, has been carried out in America by Pearce,[21] in association with many colleagues. This work has dealt with the relation of the spleen to blood destruction and to haemolytic jaundice, previously considered by William Hunter (1901), and is dealt with at length in Pearce, Krumbhaar, and Frazier's book, *The Spleen and Anaemia*.[22] Moreover, so well does the new knowledge concerning the activities of the reticulo-endothelial system agree with the clinical pathology of the group of diseases associated with splenomegaly, anaemia, and icterus that

Lippinger, in a recent monograph, includes these diseases under the title *Die hepato lienaler Erkrankungen*, or liver-spleen diseases.

Disordered Hepatic Function (Hepatitis)

The view that jaundice may arise from disordered function of the liver cells, or hepatitis, has been developed chiefly in France (Brule, etc.), and clinically this explanation has been offered to account for the development of jaundice in *toxic and infective states*. *This explanation infers that* although the cells of the reticulo-endothelial system may be chiefly concerned with the metabolism of bile pigment, yet the polygonal glandular cells of the liver must be healthy in order that bilirubin may pass through them and so reach the bile capillaries.

This question of disordered function of liver cells was fully discussed at the Annual Meeting in Glasgow two years ago, and the varieties and extent of the cellular damage defined. It was then pointed out that the injury might vary from cloudy swelling to actual and complete necrosis, and that clinically the hepatic insufficiency associated with jaundice might range from slight and temporary (as in acute specific fevers) up to total and fatal (as in acute yellow atrophy). The French school has also considered, in conjunction with the disordered metabolism of bile pigment, alterations in other hepatic functions, and in this way has arisen their conception of so-called 'dissociated jaundice." In this condition bile pigments may be retained, while the bile acids are excreted normally, or vice versa.

A NEW THEORY OF JAUNDICE

On the view that it is the cells of the reticulo-endothelial system which elaborate bile pigment, and that the polygonal cells of the liver are chiefly concerned with its passage into the bile capillaries, a new theory of jaundice has been developed. As an explanation of the two varieties *of bilirubin* distinguished by the "direct" and the "indirect" van den Bergh reaction, it has also been suggested that the bilirubin in passing through the glandular liver cells is modified in some way.

On the basis of this theory we may now consider in what circumstances icterus could arise. The following conditions may be enumerated:

1. Where bile pigment, formed in the cells of the reticulo-endothelial system, passes through the polygonal cells normally to reach the bile capillaries but is obstructed there and finally reabsorbed into the *blood*.
2. Where, owing to damage to the polygonal cells of the liver, the bile pigment carried to them by the endothelial cells is *unable* to enter them. The bilirubin would therefore pass directly along the hepatic venous radicles into the general circulation. On the other hand, part of the bilirubin might pass through, and part be unable to do so.
3. Where, in excessive blood destruction, too much bilirubin is formed in the reticulo-endothelial system for the polygonal cells to deal with. In such circumstances some pigment might pass normally into the bile capillaries and colour the faeces, while the excess might pass straight through the hepatic cells into the circulation and bring about jaundice.
4. Where, in addition to damage and disordered function of the polygonal cells, there is also obstruction in the bile ducts—for example, cholangitis. In such circumstances some pigment might pass directly through the hepatic cells into the circulation and some through the polygonal cells to be afterwards reabsorbed on account of obstruction.

What might occur in the event of damage to the cells of the reticulo-endothelial system? While we have no clinical diseases which at the moment would appear to be due to the disordered function of the reticulo-endothelial cells, there is experimental evidence from Lepehne that the blocking of this system by means of *innocuous silver compounds* may hinder the development of experimental haemolytic icterus. It seems possible that some of the conditions associated with haemoglobinuria rather than icterus (for example, blackwater *fever*, and some poisons) may later be brought into this category.

THE CLINICAL VARIETIES OF JAUNDICE

Before going on to consider how this new theory agrees with the facts, which after all is the critical test, it seems best for clearness in subsequent argument to give some classification of the different forms of icterus and I [illegible] suggested that in the present state of our knowledge the following is the most suitable and comprehensive arrangement:

(1) Obstructive hepatic jaundice.
(2) Toxic and infective hepatic jaundice.
(3) Haemolytic jaundice.

It will be found that all clinical varieties of jaundice can *readily be made to fit into this classification*, when considered in the light of the theoretical considerations described above, and in the light of the van den Bergh tests. Some clinical forms, it is evident, must be placed in two or three divisions, as, for example, when toxic changes in the liver cells are combined with definite obstruction in the bile passages. The inclusion of the word "hepatic" *in (1) and in (2) is deliberate, and intended to indicate that* the lesion is within the liver itself, either in the polygonal cells or in the bile capillaries. The omission of this word under (3) is equally deliberate, so as to indicate that the reticulo-endothelial system is by no means confined to the liver, but in higher animals is largely developed within the spleen.

The van den Bergh Reaction in the Classification of Jaundice

It will be found that the grouping of jaundice given above agrees well with the results of the van den Bergh reaction.

Hepatic Obstructive Jaundice.—Hijmans van den Bergh showed that bile from the gall bladder gives a prompt direct reaction with the diazo-test, and that the same result is obtained in icterus due to complete obstruction of the bile passages—that is, when bile has passed through the *polygonal cells before obstruction* and absorption occurs (No. 1).

Haemolytic Jaundice.—He showed also that in clinical haemolytic jaundice and in the bile pigment produced in haemorrhagic effusions into serous cavities a delayed or negative reaction is obtained with the diazo-test. It is *suggested on the theory* of jaundice described that this result occurs when bile pigment has not passed through the polygonal hepatic cells (No. 3).

Toxic and Infective Hepatic Jaundice.—In the toxic and infective types of jaundice Feigl and Querner showed that the van den Bergh test gives a biphasic result, which has been interpreted as a combination of the prompt-direct and the delayed-direct reactions. The explanation is offered, on the theory of icterus described, that in such toxic and infective conditions some bilirubin has passed through the hepatic cells normally, while some, owing to the damage of the polygonal cells, has reached the circulation direct from the reticulo-endothelial cells (No. 2).

Combined Forms of Icterus.—As an example, so-called catarrhal jaundice may be taken. In this type of icterus the results of the van den Bergh reaction are very variable at different stages of the disease. Here it is suggested (vide infra) that the mechanism of the jaundice is a combination of functional derangement of the liver cells with obstruction due to cholangitis (No. 4).

How have these New Views and Methods Modified the Old Ones and how have they Improved the Clinical Observation of Icterus?

The clinical use of the van den Bergh reaction has given us much new and valuable information by a study of the bilirubin in the blood. It is possible now to *trace completely* the whole progress of an attack of icterus. We know now that the colour of the skin and mucous membranes is a poor guide, and that much bilirubin may be present in the blood at a time when there is scarcely any general icteric tinge. We have come to recognize also that "green" or "black" jaundice must now be taken merely as a clinical expression of chronicity, and not of the amount of bilirubin retained in the blood. Further, we have learned the importance of "latent" icterus—a condition in which, in the *obstructive variety* there is sufficient bile pigment in the blood to make the patient obviously yellow or to bring about bilinuria. It is now known that in this form of latent icterus at least four van den Bergh "units" must be present in

the serum before the threshold value of the kidney for bile pigment is reached and bilinria results Cirrhosis of the liver may be quoted as an example of latent obstructive jaundice Moreover, diseases not hitherto considered in the light of their icteric nature at all have now, since the introduction of the van den Bergh reaction, been brought into the category of latent haemolytic jaundice The best example of this kind is pernicious anaemia, where a lemon-yellow colour of the skin was always recognized, and in which we now know bilirubin is present in the serum to the extent of two to five van den Bergh units It is a suitable place here to point out that in haemolytic jaundice the threshold value of the kidney for bilirubin is entirely different from that existing in jaundice due to obstruction In all cases where the bilirubin gives an "indirect" reaction (for example, haemolytic icterus), for greater quantities than four units of bilirubin may be present in the serum without a trace of bile pigment being excreted by the kidneys It seems possible that in both varieties of latent jaundice, and in all varieties of overt haemolytic jaundice, the bilirubin is excreted as urobilin, in whole or in part, but this is a matter on which further work is required

As an example of the practical application of our new knowledge of latent icterus, recent investigations by Gerrard[8] in cases of syphilis undergoing treatment with salvarsan are of much interest Jaundice as a complication of salvarsan treatment is well known, and this observer, by routine examination of the blood, has been able to watch the development of latent icterus, in susceptible individuals, and stop the administration of the drug before actual icterus ensued Finally, the van den Bergh reaction gives us a definite method of distinguishing jaundice due to complete obstruction from haemolytic icterus In icterus due to incomplete obstruction, and in the toxic and infective forms, it yields no information of absolute diagnostic value to the clinician

The new view of the activities of the reticulo-endothelial system has greatly influenced our attitude towards the forms of jaundice associated with splenomegaly, conditions which Eppinger has grouped on the basis of this view under the name of "liver-spleen diseases" (*Die hepatolienalen Erkrankungen*) The cure of such diseases by splenectomy—that is, by the removal of the main site of the reticulo-endothelial cells—in man and higher animals is in accord with this theory Further, the theory gives us the most obvious explanation of the two varieties of the van den Bergh reaction, and seems to show reasonably how this reaction enables us to distinguish obstructive from haemolytic jaundice

SUMMARY, AND POINTS FOR DISCUSSION

The term "jaundice" has been used as far as possible in its strict sense, to indicate a disorder of bile-pigment metabolism Reference to changes in other constituents of the bile, and to other hepatic functions, have been omitted as making the discussion too wide

A new theory of jaundice is described, which it is suggested may replace, as a working hypothesis only, the older classical views

A classification is suggested, based on the new theory and on clinical observation of diseases associated with icterus

The observations of Hijmans van den Bergh on the bilirubin in the blood, the activities of the reticulo-endothelial system in bile-pigment metabolism, the results of animal experiments in relation to the occurrence of a true haemolytic jaundice, and the conception of disordered function of the glandular cells of the liver as a cause of jaundice, are all discussed

The following points, among others, seem to invite discussion

1 How far does the theory of jaundice which has been suggested agree with observed clinical facts?

2 How has the reaction of Hijmans van den Bergh modified our clinical attitude towards jaundice, and what is the meaning of the two varieties of bilirubin apparently differentiated by the test?

3 What view is to be taken with regard to "haemolytic jaundice," and to Eppinger's inclusion of certain diseases under the descriptive term "liver-spleen diseases"?

4 What is the exact mechanism of one or the commoner forms of jaundice met with in this country—e.g., "catarrhal jaundice"?

5 How important in clinical medicine may be the recognition of (*a*) latent jaundice, and (*b*) dissociated jaundice?

6 How far do these new views influence medical and surgical treatment?—

(*a*) Jaundice and splenomegaly

(*b*) Differentiation of obstructive from other forms of icterus

(*c*) Protection of the glandular cells of the liver (by glucose, etc.) against toxic and infective agents (chloroform, salvarsan, microbic infections)

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II.—HIJMANS VAN DEN BERGH, M.D.,

Professor of Medicine and Director of the Medical Clinic, Utrecht

I FEEL highly honoured by your invitation to take part in a discussion on jaundice I sincerely hope that you will not regard those words as a mere form of courtesy You are a great nation, and have had at every period in your history a great number of eminent physicians Whenever you invite a colleague from abroad to interchange views you are conferring a great honour on him

As Dr McNee has already pointed out, it is not necessary to go as far back as Budd or Murchison in order to cite authoritative writers in England on diseases of the liver He very justly reminded us of the standard work of Sir Humphry Rolleston in 1912, which expounds the state of our knowledge at that time better than any other work on the subject, and contains numerous important observations of his own Dr McNee also alludes to the classic work of Dr William Hunter, which forms a starting point for every student of pernicious anaemia As a matter of fact his book was the stimulus that induced me to study haemolysis

It was Dr McNee himself who originated a new direction in our views upon the production of jaundice It was he who first pointed out that it is probably the cells of the reticulo-endothelial system that elaborate the bile pigment His views were supported by Eppinger and many others I do not know any clinical observation that would not agree with his theory It is also fully in accord with my own investigations There are, however, a certain number of authors who adhere to the inference of Naunyn and Minkowski, that icterus is impossible without the liver cells We must admit that it is almost impossible to prove this statement with certainty In the human [illegible], we cannot make experiments on the liver, and it is not [illegible] impossible to separate the liver cell from the cells of Kupffer In making experiments on animals we must not forget that they may differ much from man in [illegible] the function of the liver For instance, in the [illegible] threshold of bilirubin is extremely low When [illegible]

mere traces of the pigment in the blood it appears in the urine. In all experiments upon dogs this should be kept in mind.

BILIRUBIN IN EXTRAVASATIONS

Virchow pointed out the resemblance of the haematoidin crystals of apoplectic extravasations with the crystals of bilirubin, and German authors, such as Lange, Hans and Quincke, have demonstrated the presence of bilirubin, or at least of a substance giving the Gmelin test, in haemorrhagic effusions. Particularly credit is due, however, to be given to French authors for their thorough study of the formation of such pigments in haemorrhagic effusions, and above all in this respect we are greatly indebted to Loix and to Jean Troisier. The thesis of the latter gives a full account of his own important work and of the work of other down to 1910. The diazo method permits us to study the process in a quantitative manner. In this we found that whenever there had been an effusion of blood in the tissues or in the serous cavities, it gave rise, in the course of a few days to the formation of bilirubin. This cannot have been absorbed from the blood as some authors have suggested, for the concentration of the bile pigment in the effusion is incomparably greater than in the blood serum. Doubt has also been expressed as to whether the pigment in the haemorrhagic fluids is really identical with true bilirubin. The important investigations of H. Fischer of Munich, however, have placed this beyond doubt and proved the absolute chemical identity. Now what is the reason that in the case of such haemorrhagic effusions a real jaundice never occurs?

In the first place, as Dr. McNee has pointed out, it is very probable that the bilirubin is generally not absorbed by the wall of the cavity or vessels that it does not give rise to an increase of the blood bilirubin sufficient for determinations of the blood bilirubin in such cases have, not, as far as I know, yet been made. In the few cases which have been examined in my laboratory generally no increase of the blood bilirubin was to be found, but in some of them there was a small elevation. In the older literature there are a few observations on record of ruptured extratubular uterine pregnancy (Dicq) where a slight jaundice was noticed, without the presence of bilirubin in the urine. An intense jaundice cannot be expected in such cases. There is, indeed, a fundamental difference between them and cases of obstructive jaundice. In the latter there is a constant overflow of bile into the blood, whereas in the first-mentioned condition the bilirubin is excreted by the undamaged liver cells as soon as the pigment threshold is passed. Finally, it may be that the bilirubin with indirect diazo-reaction has a weaker colouring faculty than the pigment with direct reaction. I commenced making experiments in this direction, but did not continue them. It is noteworthy that the pigment with indirect reaction is not absorbed by the precipitate of protein which forms when alcohol is added to the serum. It is well known that the bilirubin with direct reaction is absorbed in this circumstance to a high degree.

The Diazo Test

In his opening paper Dr. McNee has urged me to say some words about the diazo test. In the first place I want to emphasize the point that I do not consider the quantitative method as worked out in my laboratory to be a very perfect one. We therefore always speak about it not as a quantitative determination, but as an estimation of the bilirubin. But we do not, I think, possess a better one at present. Numerous modifications of the original method have been suggested, and my co-worker, Dr. Muller, has investigated a great many of them thoroughly, hoping to find one of them to be an improvement. He came to the conclusion that the original method generally yielded the most satisfactory results. The main drawback in making the test is that when alcohol is added to the serum the protein precipitate which is being formed carries down a part of the pigment. This, however, applies only in the serum with bilirubin in the direct reaction, the pigment with indirect reaction not being absorbed by the precipitate. The loss of bilirubin in the first case can usually be avoided by diluting the serum (for instance, ten times) with water, before making the reaction. In this way no precipitate is formed, or only a very slight opalescence, which is readily dissolved when adding the diazo fluid. It is only possible to dilute to the necessary extent when there is much bilirubin in the serum. If there is little bilirubin the reaction after dilution of the serum with water would give rise to such a faint coloration that the colorimeter could not be used in a sufficiently accurate reading. Thus we see that it is only in the serum of a true case of jaundice with poor bilirubin content that a certain difficulty in the quantitative reaction arises. In that case I perform the reaction with the undiluted serum, as suggested by Thannhauser and Anderson. The Malmgrad method, which consists in comparing the colour of the serum with a standard fluid, is certainly very simple. It may be used in some cases to advantage, but it is inadequate when the serum contains other pigments besides bilirubin, as is very often the case. This method cannot therefore be used in cases of haemoglobinuria or when artificially methaemoglobin has been introduced into the serum, through destruction of the corpuscles.

HAEMATIN IN BLOOD SERUM

I must refer also to the presence of haematin in the blood serum, which was first described by Schumm of Hamburg, and his co-workers and which is much too intricate to deal with to-day. It is not rare to find it in pronounced amounts, and also in several intoxications and in some infectious ones, such as the puerperal infection, which Schottmuller and Bingold have so clearly described. In the diazo test you will find in the serum a brown ring (for sulphaemoglobin), haematin and bilirubin. Methaemoglobin and sulphaemoglobin are detected through the spectroscope. The bilirubin can only be seen under these circumstances by means of the diazo reaction. It is of consideration should also be given to interference. Generally from these the intense yellow colour of the serum or cord is due to lutein. This pigment has to be to do with bilirubin. It is a lipochrome, which cannot be elaborated by the animal organism. Man and animals absorb it from vegetables, eggs, meat, butter, or fat. We take it when eating vegetables, especially quantities of Green plants especially contain great quantities of lutein. Lipochromes (xanthophyll and carotin), which are always present with the chlorophyll. The quantities of lutein in the human serum, although commonly small are sometimes relatively increased—as for instance, in persons who consume large quantities of vegetables and eggs. At times the amount is so great that the serum takes on a yellow tinge, and I have met with a few cases in which gall-stones had wrongly been diagnosed and the patient been sent to hospital, the xanthosis of the lutein being considered to be a beginning jaundice. It is of value to a clinician that bilirubin and lutein can be distinguished from each other. I am sure that such cases occur more frequently than is generally supposed. It is quite easy to produce artificially a pseudo-jaundice. You have only to make a man eat much green vegetable during a few weeks. We took with us the serum of a diabetic man fed in that way.

LATENT ICTERUS

In his points for discussion Dr. McNee has asked: How important may be the recognition of a latent icterus? In our clinic we look upon this examination as indispensable. Occasionally it enables us to ascertain that a metastatic carcinoma is developing in a lymph gland and compressing the bile ducts. In such a case an increased bilirubin content of the blood may point to the beginning or failure of compensation. It is exceedingly important in making the diagnosis between pernicious or like other anaemias and the so-called secondary anaemias. In pernicious anaemia one finds always, except in the case when the patient is getting better, an increased bilirubin content. Even when the patient is improving we have often found subnormal values. In the secondary anaemias, on the contrary, except in complication, we hardly find bilirubin. This is for instance, in the anaemia caused by tapeworms, by haemorrhages, by worms (I do not propose to discuss the anaemia of bothriocephalic diseases here.) In chronic nephritis there is generally a low bilirubin content, and when finding a high value with diazo reaction, suspicion of

beginning heart failure is, I suppose, justified During an attack of malaria the bilirubin content was found increased with indirect reaction In the paroxysm of haemoglobinuria *a frigore* an increase of the bilirubin in the blood also occurs, a German author, Dr Kaznelson, was able to produce in such cases slight attacks of haemolysis, in which haemoglobinuria had not yet appeared, the bilirubin content of the blood being already high

The Two Varieties of Bilirubin

Finally, I will say a few words concerning the two varieties of bilirubin I think we must neither attach an exaggerated value to it nor deny its importance altogether Two things are certain there exists a difference between the two modifications, and we do not know the cause of it Some authors have laid stress upon the fact that through the action of alkali, or simply by leaving the fluid alone for some time, the one modification can pass into the other This only proves that the direct and the indirect modifications are chemically very nearly related Such slight chemical differences, however, may be the cause of important diversity in biological action To give an example the alpha, beta, and gamma modification of glucose It is true, also, that generally in cases of mechanical jaundice the one modification is found, and in cases of haemolytic anaemia, just as in haemorrhagic effusions, the other It is not justifiable to impute this diversity to the fact that the direct reaction occurs when there is a great quantity of bilirubin and the indirect reaction in the opposite condition, as Brule has suggested Indeed, in almost every case of haemolytic jaundice, even when the bilirubin content of the blood was as high as 10, 14, or 18 units, the reaction was found to be only indirect, whereas we met with patients with obstructive icterus whose serum had a bilirubin content of from 1 to 5 units with a prompt-direct reaction On the other hand, we must not overestimate the theoretical significance, as long as the cause of the difference is unknown to us I wish also to emphasize the fact that we meet from time to time exceptions to the rule, now and then a case of beginning or disappearing obstructive jaundice occurs in which the reaction is direct These exceptions can be partly explained, in accordance with the theory of Dr McNee, by the fact that probably in such cases the liver cells, being damaged, let pass a bilirubin that is not yet completely elaborated Consequently many a time a mixture of both of the bilirubin modifications may be expected to pass into the blood Nevertheless, from time to time—and I wish to lay stress upon this point—we meet with exceptions which we are as yet unable to explain

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III—Sir WILLIAM WILLCOX, K C I E, C B, C M G, M D, F R C P,

Physician to St Mary's Hospital

The most modern views on the theory of jaundice have been very ably expounded by Dr J W McNee, and the medical profession owes him a debt of gratitude for his admirable opening paper and for his critical review of jaundice published in the *Quarterly Journal of Medicine* in July, 1923

In the Lettsomian Lectures on jaundice in 1919 I stated that further advances in our knowledge of jaundice would depend very largely on the discovery of accurate quantitative methods for the estimation of the bile pigments and bile salts in the blood Professor van den Bergh, by his brilliant discovery of the methods of the quantitative estimation of bile pigments in the blood, has opened up a new field of work in the pathology of jaundice, and the advances made during the past five years have been in a great measure due to his research We welcome most heartily his presence among us and the British Medical Association is greatly honoured by his participation in this discussion

Dr McNee has classified jaundice into three groups (1) obstructive hepatic jaundice, (2) toxic and infective hepatic jaundice, and (3) haemolytic jaundice With regard to (1) obstructive hepatic jaundice, there will, I think, be little difference of opinion In reference to (3) haemolytic jaundice, it will, I think, be generally agreed that this type of jaundice undoubtedly occurs, though it is relatively uncommon clinically

The evidence forthcoming from the animal experiments is open to some criticism Take, for example, the experiments on dogs made by Whipple and Hooper, where the vessels below the diaphragm were excluded from the circulation They were said to prove that bile pigment could be formed without the agency of the abdominal viscera when haemoglobin was introduced into the circulation Dr McNee himself, and also Rich and Prusik, failed to confirm these results Quite recently Mann and others of the Mayo Clinic have succeeded in the operation of extirpation of the liver in dogs A preparation lasting three months is required, and then when the operation of extirpation is completed the animal only lives for twenty-four hours as a maximum, and probably much less, life being maintained for this short period by glucose injections Surely the metabolic processes in a moribund dog must be so altered during the few hours of its existence under very abnormal conditions that conclusions drawn from the presence of traces of bile pigments in the circulation can be of little value, especially when these conclusions are applied to the human subject

Then, again, I do not think that importance can be attached to the presence of a van den Bergh reaction in haemorrhagic effusions into a knee-joint, or similar effusions into other body cavities It has been known for years that haematoidin, which is closely allied to, if not identical with, hydrobilirubin, is formed in such effusions, and it would be surprising if the van den Bergh reaction were not given Conditions of this kind are, to my mind, not comparable with jaundice as defined by Osler—namely, "a coloration of the skin, mucous membranes, and fluids of the body by bile pigment"

I think that far the best evidence of the production of true haemolytic jaundice is to be found on the clinical side Acholuric jaundice is one of the best examples In this condition if the spleen be removed the jaundice disappears, which is good evidence that the production of bile pigment in these cases took place in the spleen and not in the liver Histological researches afford strong confirmation of this view

Take, again, the effects of arseniuretted hydrogen on man In this condition great blood destruction occurs and also jaundice, but it has been shown by Dixon Mann and Cleg that in some of these cases so little damage to the liver occurs that the jaundice cannot be hepatic in type, and must be haemolytic

Many of us are familiar with cases of severe anaemia due to intestinal infection where each relapse is associated with an attack of enterocolitis Hunter calls these cases septic anaemia, and the blood picture may be identical with that of pernicious anaemia I have at present under my care a patient who has recurring attacks of enterocolitis due to a haemolytic streptococcal infection Each attack is associated with definite jaundice and marked increase in the anaemia, but no hepatic signs whatever are present In cases of this kind the jaundice must be haemolytic and not hepatic in type

Toxic and Infective Hepatic Jaundice

It matters not whether the jaundice is due to an exogenous poison like salvarsan or the autogenous toxins of bacteria or protozoa This type of jaundice is, I think, far the most important and the commonest The following is a classification of the causation of this type

1 *Chemical poisons*—such as tetrachlorethane, trinitrotoluene, dinitrobenzene, dinitrophenol arsenobenzol derivatives, inorganic arsenic and antimony compounds, phosphorus arseniuretted hydrogen phosphoretted hydrogen, chloroform, phenylhydrazine, toluylenediamine, and many others

2 *Bacterial poisons*—such as the toxins produced in enteric and paratyphoid fevers, typhus fever, influenza, pneumonia, streptococcal infections, etc

3 *Protozoal poisons*—such as the toxins produced in malaria, yellow fever, spirochætosis icterohæmorrhagica, kala azar, amœbic dysentery, malaria etc

4 *Auto-intoxications*—such as the changes in the liver in pernicious anæmia, recurrent vomiting, etc

The explanation of this type of jaundice is, I believe, to be found in the consideration of a function of the liver which has not been sufficiently recognized, though

it is one of the most important. I refer to the 'toxiphylactic function of the liver.' The liver is the organ which is mainly responsible for removing poisons, whether exogenous or endogenous, from the blood stream. It is the main protective organ of the body from poisons of all kinds and in carrying out this function the liver cells may suffer, and indeed irreparable damage may be produced, so that the liver may lay down its life in the defence of the body from its influence. The liver is the first line of defence against absorbed poisons.

This statement is made as the result of a toxicological experience extending over twenty-five years. In cases of arsenical poisoning or poisoning by the heavy metals such as mercury or lead, or of organic poisoning—for example chloroform, phenol, and trinitrotoluene—or of alkaloidal poisoning such as by strychnine, morphine, or hyoscine, the greater part of the poison in fatal cases is found in the liver.

When submitted to toxic influences the liver cells are inevitably affected, commonly cloudy swelling or fatty deposition occurs in them, or they may undergo complete necrosis. In all of these instances the passage of bile to the bile capillaries is interfered with and jaundice of varying degree is produced.

The depth of jaundice is no measure of the severity of the toxic action. In very acute cases such as delayed chloroform poisoning, acute salvarsan poisoning, and phosphorus poisoning, the damage to the liver may be so great that its function is almost completely abrogated (see experiments of Mann on extirpation of the liver), and death occurs before jaundice of the skin and mucous membranes becomes marked, though its presence can be detected if looked for. In less acute cases jaundice may be so marked as to be indistinguishable from obstructive jaundice. The stools are often clay-coloured for a few days and the urine loaded with bile pigment. This was well shown in the cases of jaundice from tetrachlorethane published by me and also in cases of trinitrotoluene poisoning, and many cases of salvarsan jaundice under my care. Cases of this kind are often mistaken for "catarrhal jaundice." The fact that the liver is at fault may always be demonstrated by one of the tests for hepatic deficiency. The most convenient of these is the lævulose test when a marked positive reaction is shown by the blood sugar curve.

It must be remembered that the depth of the jaundice *coloration is not a measure* of the degree of hepatic deficiency. This jaundice may be deep and the hepatic efficiency approximately normal. In toxic jaundice the hepatic deficiency test may be only positive for a few days during the existence of the jaundice, which may extend over a period of weeks.

The Time Factor of Jaundice

It is most interesting to note that after the action of some toxic substance on the liver the time of occurrence of jaundice is most variable. In some cases the onset may be early, within a few days, but in others it may be much delayed. Thus in salvarsan poisoning jaundice may occur weeks or months after the last administration. I have notes of cases in which jaundice came on from ten to sixty-four days after the last administration, and much longer intervals could be quoted.

Two cases of trinitrotoluene poisoning are recorded where the jaundice occurred nine months after exposure to the poison. A probable explanation of delayed jaundice is that the poison sets up a progressive hepatitis which ultimately culminates in jaundice. In delayed salvarsan jaundice an additional explanation might be found in the reabsorption in the liver of arsenic which had become temporarily fixed in the epidermal tissues (skin, hair, etc.).

The fact that a progressive hepatitis does occur after the action of poisons on the liver was well shown by two cases of tetrachlorethane poisoning which I investigated. In these, many weeks after the occurrence of toxic jaundice, symptoms of portal obstruction, such as ascites, developed. Similar results have been observed in the effects of alcohol. Thus a chronic drinker may develop ascites months after he has become a total abstainer.

Protection of the Liver against Poisons

It is now well recognized that the presence of glycogen in the liver cells affords marked protection against toxic substances. The administration of glucose—about two ounces, for instance, by the mouth—is a most valuable protection if given before any toxic substance is administered, whether it is trinitrobenzol compound, chloroform is an anæsthetic or any of the numerous toxic substances—antimony or bismuth compounds, etc.—so commonly used to-day in the treatment of disease.

Catarrhal Jaundice

Dr. Spence has pointed out that in catarrhal jaundice there is for a few days definite evidence of impairment of hepatic function as shown by the lævulose test. I have myself confirmed this in cases of catarrhal jaundice under my care at St. Mary's Hospital. I have no doubt that catarrhal jaundice" as seen in peace time is exactly the same condition as the epidemic catarrhal jaundice" which occurred during the war, and which was described by me in the *Lancet* in 1916 and in the Lettsomian Lectures in 1919. The enlargement of the liver and spleen occurs in both of the conditions and the symptoms are identical. *The jaundice is due to pathological changes in the liver itself, probably arising from a bacterial infection.* The degeneration of the liver cells in catarrhal jaundice may, as in some cases recorded by me, be of such severity as to cause death from autointoxication and atrophy of the liver, this only occurred in about 0·4 per cent. of the cases of epidemic catarrhal jaundice" seen in Mesopotamia in 1917. It would be expected that if catarrhal jaundice is hepatic in type it would show a definite *impairment of hepatic function* and Dr. Spence's confirmation of this is of great value.

The differential diagnosis between catarrhal jaundice and arsenobenzol jaundice can however be clearly made. In arsenobenzol jaundice there is a history of the administration of the drug, splenic enlargement is absent and the enlargement of the liver is not always so uniform as it is in catarrhal jaundice—thus the *right lobe may* be relatively more enlarged than the left in salvarsan jaundice. In both kinds of jaundice *the liver diminishes in size* considerably during the continuance of the jaundice, but *the diminution* is usually more marked in arsenobenzol jaundice. In it the lævulose test for impaired hepatic function remains positive for a longer period while in catarrhal jaundice Dr. Spence has found that the test only remains positive for about three days. The differentiation is absolutely established by the presence of arsenic *in the* urine, the hair, and the nails, in the case of arsenobenzol jaundice. It is important that in the analysis a reliable *method for the detection of arsenic* should be employed, such as the electrolytic Marsh Berzelius test the organic matter being destroyed by treatment with arsenic free sulphuric and nitric acids.

I believe that the view of "catarrhal jaundice" adopted by the French school is correct—namely, that catarrhal jaundice is a hepatic or liver cell degeneration set up by an intestinal infection, the toxins being bacterial in origin.

GENERAL DISCUSSION

The Chairman (Dr. Langlon Brown, Vice President) said that the Section had heard three valuable papers on an interesting chapter in pigment metabolism. *The old* conception of haematogenous jaundice, so long dethroned, was returning in the new guise of *haemolytic jaundice. It* seemed to him that Dr. McNee's classification and Professor van den Bergh's *results could be* compared thus:

Type of Jaundice.	Van den Bergh Reaction
1 Obstructive	Direct
2 *Toxic and infective*	Biphasic
3 Haemolytic	Indirect

One thing had come out clearly—the correctness of the French view that catarrhal jaundice was not due to obstruction of the ducts by mucus but to hepatitis. He instanced cases of catarrhal jaundice in which the van den

Bergh reaction was mainly indirect, while hepatic insufficiency was proved by the laevulose and lipase tests Glucose appeared to be beneficial in these cases Dr McNee's work explained why splenic anaemia might arise from different diseases of the spleen, and why it might go on to Banti's disease Anything which would sufficiently stimulate the haemolytic activities of the reticulo-endothelial system could cause this anaemia, and the spread of the process into the Kupffer cells of the liver, which were part of the same system, was easily comprehensible The new work on latent jaundice threw new light on obscure problems and emphasized again the importance of the threshold of the kidney, which imposed a barrier on the excretion of substances that could be useful to the body Both in cirrhosis and in acholuric jaundice, although the blood might contain bilirubin, there was not sufficient to exceed the kidney threshold, so that it did not escape into the urine

DR H L TIDY (London) referred to the difference in the incidence of jaundice in acholuric jaundice and pernicious anaemia It was generally agreed that both were due to the persistent destruction of red cells in the body Yet in acholuric jaundice the jaundice was common, while in pernicious anaemia any distinct degree was rare He asked if the van den Bergh reaction brought to light any difference between splenic anaemia in adults and the later stages of Banti's disease in childhood, or in the type seen in Egypt He was uncertain about the interpretation of van den Bergh's reaction in certain acute conditions Cases occurred in which it was difficult clinically to make a diagnosis between catarrhal jaundice and gall stones, when he had been in doubt clinically he had also been in doubt with the van den Bergh reaction He asked if others had found a similar difficulty.

SIR BERKELEY MOYNIHAN expressed the view that Banti's disease was merely the termination of a great many conditions of diverse origin, cases of splenic anaemia which he had operated upon had exhibited a great variety of splenic lesions Acholuric jaundice was characterized by the fragility of the red cells, and the fragility persisted after splenectomy He desired to express on behalf of the Section the immense debt they owed to Dr McNee and to Professor van den Bergh for their work on this subject, and he ended with a plea that something might be done by the leaders, both in medicine and surgery, to get the two halves of the profession a little closer together, pointing out that the surgeon was the most formidable weapon of inquiry ever placed in the hands of the physician

DR ROBERT PLATT (Sheffield) pointed out that the fact that the amount of bilirubin in the splenic vein was greater than that in the splenic artery was evidence of the elaboration of bilirubin by the spleen Also there were two methods by which haemolysis might be produced (1) by lowering the osmotic pressure of the fluid in which the cells circulated, (2) by haemolytic agents, such as saponin, which probably acted upon the cell membrane In Bayliss's *Physiology* there was a list of animals arranged according to the fragility of their red cells to low osmotic pressures The list arranged according to fragility to saponin was the exact opposite Now, in acholuric jaundice it was extremely unlikely that the haemolysis was due to a lowered osmotic pressure of the serum, and much more probable that a toxic agent of the other type was at work It was therefore possible that the cells of these people actually developed an *increased resistance* to haemolysis The speaker was undertaking some experiments on these lines, but had not yet reached any conclusions on the subject He also asked how Professor van den Bergh was able to estimate the minute quantities of bilirubin present in normal serum, and the [illegible] haemolytic jaundice with an indirect van den [illegible] reaction always accompanied by increased output of bilirubin in the [illegible]

MR R H PARAMORE [illegible] (Rugby) referred to the blood flow [illegible] with the rise of jaundice through the hepatic capillaries. He would consider the capillary blood flow in the explanation of pathological processes, though Sir James Mackenzie, in a recent letter to the BRITISH MEDICAL JOURNAL,[1] had stated the importance he attached to The point was raised especially in connexion with the so-called toxic or infective hepatic jaundice [illegible] was associated with the degeneration or necrosis of certain cells of the hepatic lobule The central cells were most often affected, those at the periphery escaped Sir Humphry Rolleston, in his paper read before the Section in 1922,[2] had explained the escape of the peripheral cells by supposing that the reputed poison in the portal blood was "prone to be swept on by the arterial blood" to the central cells This was supported by the statement that in streptococcal infection the central cells were also most affected Against it was the statement of Sir William Willcox, made at the 1922 discussion,[3] that "In no cases of delayed arsenobenzol jaundice have amounts of arsenic been found in the liver which could at that time have been causing harm to the liver" Thus opposed the view that the lesions of the central cells of the hepatic lobule were due to the direct action of a poison So did the structure of the hepatic lobule itself The capillaries at the periphery converged on the central vein, and in their progress linked up with each other, the capillary bed narrowing, thus the rate of flow of blood through the capillaries became more rapid as the central vein was reached Thus, if a poison in the blood acted directly on the hepatic cells, we should expect that, in the majority of cases of so-called toxic and infective jaundice, the peripheral rather than the central cells should be first and most disturbed

The speaker was interested in this variety of jaundice because it occasionally occurred in the so-called toxaemias of pregnancy thus it occurred in the pernicious vomiting of pregnancy, which at times led on to the acute yellow atrophy In the *Lancet* of 1922 (vol i) the cause of pernicious vomiting was discussed Two individuals in this country besides the speaker believed that the resulting toxaemic state was caused mechanically, and in his contribution to the discussion[4] the speaker had pointed out how vomiting, by raising suddenly the pressure in the hepatic veins, caused an accession of pressure to appear in the intrahepatic venules, which necessarily impinged on the central cells As the area of capillary bed in the hepatic lobule increased towards the periphery, the effect of this impaction was dissipated as the periphery was reached In support of this idea, he referred to the rarity of jaundice in chronic valvular disease of the heart It was stated by physicians that jaundice in these cases occasionally occurred Fagge and Pye-Smith, more than thirty years ago, had attributed this jaundice to the effect of the back pressure from the right auricle on the hepatic veins—which caused a distension of the hepatic capillaries, and Osler had stated that in hepatic involvement from back pressure in chronic heart cases the central cells of the lobules became atrophied The central cells in this case, just as in pernicious vomiting, felt first and most the effect of the venous impactions In such cases, the jaundice could only be ascribed to an occlusion by compression of the small bile ducts or canaliculi in the periphery of the hepatic lobule by the pressure of the distended adjacent capillaries It was obvious that in individuals with an abdominal tumour, such as the pregnant uterus, frequent impactions appearing at the centre of the lobule could more readily produce similar results

REPLIES

DR J W MCNEE, in replying to the discussion, said he wished to emphasize the fact that what he had described was a theory of jaundice, which agreed with many facts and enabled a rational classification of cases to be made Actual proof of some points was lacking, chiefly because of the difficulty in applying the results of animal experiments to what might happen in man He agreed with Sir William Willcox that the best proof of the occurrence of true haemolytic jaundice was the clinical evidence but hoped that complete experimental evidence would soon be obtained He was glad that everyone seemed now agreed on the mechanism of catarrhal jaundice, which undoubtedly

[illegible]
1 [illegible]
2 [illegible]
3 [illegible]
4 [illegible]

depended on a hepatitis and cholangitis In reply to Dr Tidy, he said that it was true that in the cases of jaundice in which the etiology was most doubtful clinically, the van den Bergh reaction often gave no aid in diagnosis This was because the toxic and infective group of icterus was by far the largest, and in this group the whole range of results of the van den Bergh test might appear at different stages of the one illness He was, of course, much interested in what Sir Berkeley Moynihan and Dr Langdon Brown had said about the help afforded by the new theory of jaundice in the rational explanation of Banti's syndrome and its treatment Finally, Dr McNee said he greatly hoped that Professor Hijmans van den Bergh would be able to give some clue to the explanation of the two different forms of bilirubin distinguished by the diazo test It appeared that no one had yet been able to prove what the difference depended on, but it would be of the utmost importance to do so He asked if Professor van den Bergh could deal with this point in his reply

Professor VAN DEN BERGH said that he had not much to say in reply, because Dr McNee had so well expressed his thoughts He thought they agreed almost completely, but he could not explain their difference with regard to the bilirubin content in the splenic artery and splenic vein Dr McNee did not find any difference, whereas he found, not always, but in the majority of cases of pernicious anaemia and haemolytic jaundice which were splenectomized, and also at necropsy, a difference, and he thought that a mistake in the reaction was hardly possible Naegeli and others—Kazmelson, for instance—had confirmed his observations on this point One speaker had asked why no reaction was found in normal persons in England They also had rarely found so faint a reaction that it was impossible to get a colorimetric reading, but in the majority of normal people it could easily be estimated He could not tell the reason for the difference, he did not think it could be due to any small technical modification, but possibly there was a real difference between the serum content in the two countries As regards catarrhal jaundice it was a curious fact that, contrary to what was the case in England and Germany, cases of this disease in Holland—at least in his clinic—were very rare, so that he had had little experience of it Dr McNee had asked for information about the two kinds of bilirubin distinguished by the diazo test He must confess he had not succeeded in explaining this phenomenon It was not known at the moment whether the difference was due to a very minute difference in chemical structure, or to a loose combination, or to physico-chemical differences in the plasma Dr Platt spoke of urobilin He (the speaker) agreed with Dr McNee that there was at present insufficient information about the formation and production of urobilin, and that further evidence must be sought on this point In speaking of new conceptions of jaundice one must not forget the work of Gilbert and his school who were the first to endeavour to estimate quantitatively the bilirubin in the blood also Troisier, whose work he had already referred to Finally, he wished to thank the Section for its kind approval of what he had said He thought he did not deserve so much, and wondered whether he had *not* increased the confusion concerning jaundice instead of clearing it up He thought that Dr McNee's conception of the mechanism of jaundice gave a better insight into the whole subject, and enabled one to classify cases in a rational way

THE CLINICAL FEATURES OF ANTHRAX

BY

F W EURICH, M D,

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AFTER a brief reference to the work of the late Dr J H Bell of Bradford Dr Eurich summarized the clinical symptoms of pulmonary anthrax ("woolsorters' disease"), pointing out that an unusual constellation of symptoms, such as vomiting and joint pains, might arouse suspicion, but that they knew at present no test—unless it were the estimation of the opsonic index—which would ensure early recognition of the disease Unfortunately an opportunity of applying the test was rarely given, as medical aid, when sought at all, was mostly sought too late In gastro-intestinal anthrax the bacilli were occasionally found only in blood stained vomit

Turning to the diagnosis of cutaneous anthrax Dr Eurich combated the statement that the impression of cutaneous anthrax upon the observer was indelible and that the appearances were typical If the practitioner waited until the characters had become well marked the disease would then have passed the stage in which treatment was most successful It was unfair, both to the patient and to the practitioner to picture cutaneous anthrax as it is in textbooks and atlases now in general use Even in the very early stages in which the "pustule" was nothing more than a patch of erythema resembling a flea bite or perhaps a trifle larger, with a minute vesicle on top, the disease could be recognized with the help of the microscope, provided the examination of the material taken were made promptly Nor, Dr Eurich said, was the appearance of the *fully* developed "pustule" characteristic it was simulated by vaccinia and sometimes by infection of the skin with *Diplococcus pneumoniæ* Dr Eurich held that the "pustule" should be excised only when in the flea bite stage, or a little later The treatment should otherwise consist in rest to the part affected (splints, bandages etc) the application of disinfectant dressings and the injection of anti-anthrax serum (in Bradford Sclavo's serum had been used almost exclusively), and if this should fail or be not obtainable, Ehrlich-Hata and allied products The latter should be especially useful in the tropics Dr W Mitchell *and the reader of this paper* had in turn been briefed by Bradford firms dealing with dangerous wools and hair to examine all suspicious cases The result had been exceptionally early recognition of the disease and a consequent reduction of mortality from 16 to 5 per cent

DISCUSSION

Dr MITCHELL (Bradford) congratulated the Section on having heard the able paper by Dr Eurich Few people outside Bradford knew *anything of the many years of* arduous toil spent by Dr Eurich in the investigation of the sources and prevention of anthrax He (Dr Eurich) had examined many thousands of specimens of wool and hair such as came to Bradford, and had been able to show that wools not previously scheduled as "*dangerous*" were almost as dangerous as any of those so scheduled He had carried on a long and exhaustive series of experiments to find a mode of disinfecting dangerous wool without detriment to their commercial value, and to Dr Eurich more than to anyone else was due the *international steps taken to guard* the lives of the workmen by the institution of sterilizing stations which rendered the wool and hair innocuous at the port of entry to this country So far Dr Eurich had received little or no recognition for this most valuable work, but presumably he *would receive it in the British way*—some years after he was dead

Dr Eurich in his paper had covered the ground so thoroughly that little was left for anyone else to say There was little or no difficulty in diagnosing cutaneous anthrax in its early stages by *anyone examining a patient ad hoc*, a smear on a slide, a stain and a microscope, and it could be done in a few minutes It required no experience, no particular acumen or ability, only opportunity, and if the average practitioner did not recognize it as early as he might it was simply because in the early stage it much resembled an ordinary pimple and he never thought of anthrax If he did so think he could diagnose it as well as anyone else, provided he made a microscopic examination There were no pathogenic organisms in the living subject *likely to be mistaken for the anthrax bacillus* In internal anthrax the diagnosis was much more difficult, and frequently impossible till too late The symptoms were often far from being alarming in the early stages, and even when the patient was suffering from a profound toxaemia he *often felt tolerably well* Dr Mitchell said that he had known of a man dropping down dead when dressing in the morning to go to work Methods such as the *opsonic* index were, he was afraid, too slow

DR ARNOLD RENSHAW (Manchester) desired to suggest to Dr Ehrlich the use of one of the triphenylmethane dyes—auramine—for use in some anthrax cases He and his colleague, Mr Fairbrother, had examined the antiseptic action of a large number of dyestuffs on bacteria, including *B anthracis* Auramine, in a dilution of 1 in 5,000, had prevented the growth and rendered sterile even spore cultures of this organism when inoculated into dye-broth tubes containing this antiseptic

He did not agree with Dr Mitchell in stating that *B anthracis* was the only organism of the kind found in the tissues of man Recently he had seen a patient with a necrotic wound which refused to heal in which was found a similar Gram-positive central spore-forming bacillus resembling anthrax culturally The patient had intervened in a dog fight, and it was uncertain whether a wound in his leg had been caused by a dog bite or by the end of his stick which was broken during the fight Numerous anthrax-like bacilli were found on examination in a deep sinus in the calf of the leg, which had persisted for about a fortnight A similar organism was found upon the hollow ferrule of a walking-stick, and as the lawn had been freshly manured that morning it was obvious that an organism of the Mycoides group was present, and that the wound had been caused by the stick and received soil contamination The wound was packed with auramine solution, the bacilli speedily disappeared, and the wound commenced to clean up and heal Dr Renshaw suggested that auramine could be used instead of formalin to inject into or around the pustule, or to swab the cut surface of the wound after excision of the pustule to destroy any remaining bacilli Auramine was not caustic or irritant to the tissues in the strengths used, and he had given it intravenously to obtain a concentration in the blood stream of 1 in 20,000 In view of the 100 per cent mortality in cases of pulmonary anthrax, he suggested that it might be worth while trying auramine intravenously, although its action against bacteria (but not protozoa) was probably limited to 1 in 10,000

DOMESTIC ESTIMATION OF URINARY SUGAR

A METHOD WHEREBY THE DIABETIC PATIENT CAN MEASURE THE DAILY VARIATIONS IN EXCRETION OF SUGAR

BY

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For the guidance of a doctor who is treating a diabetic in his own home the minimum requirement is a knowledge of the excretion of sugar and how it varies from day to day This is necessary for treatment by dieting, it is indispensable if insulin is employed

The following method, though rough and ready, is one which I have been using for the last four years, and I have found it adequate and reliable Perfect methods are impracticable in the home except very occasionally What the doctor needs to guide treatment is a long and continuous daily record

METHOD

Apparatus Required—(1) Urinometer, reading 1000 to 1040, in a packable form (2) Yeast, fresh every few days, costing a penny (3) Thermos flask (one pint) (4) An engineering students' book of squared paper (2d) Every night at bedtime the patient washes out the thermos flask with very hot water, and then passes his water into it He adds a lump of yeast about the size of a hazel-nut, gives the mixture a good shake, and corks with cotton-wool In a few hours, less than twelve, at blood heat any sugar present will have been destroyed by the growing yeast, chiefly by oxidation into carbonic acid The specific gravity of the urine after fermentation will be reduced to an extent proportional to the amount of sugar originally present This is what we require to know The method is as old as brewing

Charting—The squared copybook is graduated from 1000 to 1040 in its left-hand margin Every half-inch of the upper margin represents a day, and is numbered with the day of the month Every night at bedtime the specific gravity of the warm, freshly passed urine (say 1040) is charted with a black dot, next morning the specific gravity of this *same* warm specimen is again measured, and perhaps has now decreased to 1018 owing to the destruction of the sugar A red dot is placed at 1018 vertically below the black 1040 dot Next day another pair of dots will be placed in the next vertical column, and thus two curves will be spun out which may be connected by a thin line, as in a temperature chart The black curve will show the daily variations of the specific gravity of the urine, and the red curve will show the daily specific gravities after the contained sugar has been destroyed The object is, by diet and insulin, to make the space between the two curves as small as possible For obviously, if the urine never contains sugar, there will be no space between the two curves—that is, they will be superposed

SECTION OF PUBLIC MEDICINE AND INDUSTRIAL DISEASES.

HERBERT JONES, L R C S I, D P H, President

DISCUSSION ON DIET AND THE PUBLIC HEALTH

OPENING PAPERS

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THE IMPORTANCE OF THE MINERAL ELEMENTS IN THE MAINTENANCE OF HEALTH

THAT the nature of the diet has an influence on health has been recognized since the earliest times The old literature contains much sound and suggestive information which shows that our predecessors were neither so unobservant nor so ill informed as some modern writers would have us believe In recent years, however, the elucidation of the fundamental principles of nutrition and the improvement of experimental technique have made possible a more thorough and systematic study of this branch of medicine The information now being obtained enables us to see more clearly the relationship between dietary deficiencies and resulting diseases, and to realize more fully the importance of diet in the preservation of health The results of modern work show that a faulty diet is not only the direct cause of many diseases, but is also a potent predisposing cause of certain infectious diseases Though much is still obscure, there is now sufficient knowledge, and, what is of almost equal importance, sufficient interest, to make dietetics an important factor in preventive medicine

Until a few years ago interest in dietetics centred chiefly in the requirements of the body for energy and protein, and in the supply of them in the food It was usually assumed, at least by writers of textbooks, that any ordinary diet which supplied sufficient energy and protein would afford complete nourishment for the body, including the provision of all the essential inorganic constituents Such an assumption would be generally justified if the diet consisted of foodstuffs in their natural condition Unfortunately, the highly refined foodstuffs of modern civilization are so ill balanced with regard to several essential constituents that a diet composed chiefly of these foodstuffs is liable to be deficient in several respects, even though it yields sufficient energy and provides the necessary protein During the past two or three years there has been a tendency to regard the evil effects of a too exclusive use of certain of these foodstuffs as due, chiefly or entirely, to a deficiency of "vitamins" Recent work, however, has shown that many of the evil effects may be attributed to a lack of correspondence between the mineral content of the diet and the mineral requirements of the body It is now being recognized that the amounts and proportions of the inorganic elements in the diet are of fundamental importance to the maintenance of health The present paper is confined to a consideration of this aspect of the relationship of diet to disease

The Role of Minerals in Nutrition

The fact that the great bulk of the mineral elements in the body is contained in the rigid skeletal structures is apt to give the impression that these so-called inorganic elements play a less important part in the metabolic processes than the organic compounds As a matter of fact, however, mineral elements are present as essential constituents of all the soft tissues of the body Cell life is impossible without them They control, directly or indirectly, all the metabolic processes, and the ultimate problems of physiology are concerned with their chemical and physical reactions

The interesting experiments of Jacques Loeb and others have shown that not only must these elements be present in the soft tissue and fluids of the body, but that, if the normal functioning of the various organs is to be maintained, they must be present in very definite proportions to form a "physiologically balanced" solution Various mechanisms in the body are concerned in preserving this physiological balance, and are normally efficient in doing so, in spite of the irregular supply presented in the food But when the deficiencies or excesses in the diet are greater than these regulating mechanisms can deal with the physiological balance is upset, and the resulting disordered functions of the cells make themselves manifest as disease

Of the fifteen chemical elements which enter into the composition of the body and are recognized as being essential ten are mineral elements, and each of these ten is known to perform functions which cannot be adequately performed by any of the others As all these minerals are continually being lost from the body in the excretions, and all are required as constructive material in growth, it is obvious that the mineral content of the diet is of primary importance for the physiological well being of the body

Mineral Requirements

The amount of any mineral which must be present in the diet depends upon a number of factors which influence either its absorption or its excretion In estimating the mineral requirements these factors must be taken into account Some which are of practical importance are considered here

The mineral may be present in a combination from which it cannot be easily dissociated in the alimentary canal The diet, therefore might contain a sufficient amount, as determined by chemical analysis, but, owing to the difficulty of assimilation, only a very small proportion might pass through the wall of the intestine into the *metabolic field where it could be utilized In the case of* most minerals both absorption from the intestine and excretion by the kidney are influenced by the amounts of other minerals present Bunge[1] showed that the addition of potassium salts to the diet caused an increased excretion of sodium salts in the urine The results of some recent work by Dr Richards, which will be published shortly, indicate that the potassium sodium ratio in the diet is a factor in determining the percentage of ingested calcium and phosphorus which can be assimilated and retained by the growing animal These results confirm the conclusion reached by Zander[2] and others over forty years ago

Hart and Steenbock[3] have shown that excess of magnesium interferes with the utilization of calcium Phosphorus and calcium are mutually dependent upon each other for utilization So also to some extent, are calcium and iron The balance of the base and the acid radicles affects both absorption and excretion These examples of the interdependence of the different mineral elements in assimilation show that the ratios of the mineral constituents of the diet to each other are of as much importance as the absolute amounts

The nature of the organic part of the diet affects the absorption of minerals from the intestine In the case of some diets oil increases the assimilation and retention of calcium and phosphorus The remarkable efficacy of cod-liver oil in this respect is well known On the other hand, excess of oil, under certain conditions, decreases the amount of calcium absorbed from the intestine

All these dietary factors play a part in determining what proportion of each of the minerals in the diet can be assimilated Their importance is well shown by the results of the experiments by Blauberg[4] He found that in infants the percentage assimilation of the mineral of human milk (whole cow's milk diluted cow's milk and an artificial food, was respectively 81 82, 60 70 53 72, and 32 55 The high percentage of assimilation of the mineral constituents of human milk by the infant is due to the fact that the ratios of the minerals to each other, and the balance of all the constituents of the milk are exactly suited to the requirements of the infant It a calf had been used as the experimental animal the percentage assimilation would have been higher on cow's milk than on human milk The high percentage of assimilation of the minerals of milk (60 70) as compared with the artificial food (32 55) is of practical interest Sherman and Hawley have recently brought forward confirmatory evidence of the superiority of milk as a supply of mineral matter

Certain factors not connected with the diet may influence the absorption and retention of minerals The results of the work of the Glasgow school on rickets indicate that good hygienic conditions and exercise favourably influence the retention of calcium and phosphorus in children Recently the influence of the ultra-violet rays has received much attention In some recent experiments carried out at the Rowett Research Institute, Dr Henderson has found that one of the ultimate effects of the ultra-violet rays on a young pig receiving a diet ill balanced with regard to its mineral content is to reduce the excretion of calcium in the faeces and to increase the excretion in the urine The net result is a gain in the *rate of storage of the mineral*

All these factors which affect the absorption and excretion of minerals must be taken *into account in estimating* the amount of any given mineral that must be present in the diet to meet the requirements of the body The problem is not so much to ensure that a definite amount of any given mineral, as determined by chemical analysis, shall be present in the food, as to ensure that the whole diet and attendant conditions are of such a nature that all the essential minerals will be absorbed from the intestine in the amounts and proportions required to maintain the proper physiological balance of the fluids of the body It is impossible, therefore, to make any unqualified statement as to the absolute amount of any mineral which must be present in the diet to meet the requirements of the body The amount required is relative to a multiplicity of conditions

As a guide in dietetics estimates have been made of the requirements of calcium, phosphorus and iron the three mineral constituents believed to be most frequently deficient in the diet Albu and Neuberg,[5] after a review of the literature, came to the conclusion that the diet of an adult should contain 1 to 1 5 grams of CaO— that is, roughly 0 7 to 1 1 grams of calcium a day The more recent estimate of Sherman[6] gives practically the same amount—namely, 1 gram a day The phosphorus requirement is estimated by Forbes,[7] after a consideration of all the available experimental data, at about 1 5 to 1 75 grams of phosphorus (3 4 to 4 grams P_2O_5) a day Estimates of the requirements of iron vary from 60 mg (Albu and Neuberg) to 10 mg (Sherman) a day

In proportion to their weight children require more than adults, owing to their need for constructive material for growth A calculation based on the percentage composition of the body and the average rate of growth shows that a child must store nearly a third of a gram of calcium a day The results of balance experiments, in which the amount retained is found by determining the intake in the food and the output in the excreta, correspond with such a calculation Herbst[8] found by balance experiments that boys between 6 and 14 years of age store 0 2 to 0 4 gram a day

According to Sherman the diet of children should contain 0 23 gram of calcium, 0 43 gram of phosphorus and 0 005 gram of iron for every 1,000 calories These figures are to be taken as minimal quantities for it was found that to get the maximum storage of calcium the food had to

contain three times the amount stored One gram a day, therefore, may be taken as the amount of calcium which should be present in the diet of children

The acid base balance is of more importance in children than in adults A positive base balance of 10 c cm of a decinormal base per kilo per day is required during growth (Shohl[10])

The Supply of Minerals in the Diet

The following table gives an idea of the mineral content of some commonly used foodstuffs As the energy requirement of the body determines the quantity of food eaten, it is convenient to state the amounts of the various minerals contained in the quantity of food required to yield a given number of calories Human milk is included in the table for the purpose of comparison It is in the case of young children that the supply of minerals is of greatest practical importance, and human milk may be taken as representing the ideal standard for them

TABLE I

	Mineral Content per 1 000 Calories						C cm Normal Solution per 1 000 Calories	
	Ca	Mg	K	Na	P	Fe	Excess Acid	Excess Base
Human milk	0 53	0 08	0 77	0 16	0 23	0 011		26 90
Cow's milk	1 74	0 17	2 07	0 74	1 35	0 003		22 75
Wheat	0 13	0 37	1 32	0 11	1 18	0 014	37 08	
Wheat flour	0 06	0 05	0 32	0 17	0 26	0 003	31 43	
Wheat bran	0 38	1 59	3 96	0 60	3 33	0 023	3 74	
Polished rice	0 03	0 10	0 20	0 07	0 28	0 003	26 62	
Maize	0 03	0 30	0 95	0 07	0 73	0 008	25 36	
Cornflour	0 002	0 02	0 07	0 005	0 05	0 001	1 81	
Sugar	—	—	—	—	—	—		
Meat	0 07	0 14	1 97	0 49	1 25	0 017	85 38	
Potatoes	0 17	0 34	5 15	0 25	0 70	0 015		98 75
Cabbage	1 43	0 48	7 83	0 86	0 92	0 032		138 26
Spinach	2 79	1 53	32 28	5 21	2 84	0 150		999 13
Orange	0 88	0 23	3 45	0 23	0 41	0 004		118 77
Egg yolk	3 59	0 42	3 01	1 97	13 73	0 236	888 19	

In general, the carbohydrate-rich foodstuffs—for example, flour, rice, cornflour, and sugar—are poor in mineral matter Most have less than 0 1 gram of calcium per 1,000 calories, as compared with the minimum requirement of 0 25 gram, and less than the minimum requirement of iron, 0 005 gram The cereals are rich in phosphorus but poor in calcium They have also a marked excess of acid radicles The refined cereal products—for example, wheat flour—are poor in mineral matter, most of which is removed in the milling Green vegetables are rich in calcium and iron and have an excess of alkali, but they are relatively deficient in sodium The ratios of the minerals to each other in any individual foodstuff are very different from those found in milk In a combination of cereals and green leaf the ratios approximate more closely to those of milk, but even then there is a shortage of sodium and chlorine The craving for common salt (sodium chloride) on a vegetarian diet is a natural instinct which tends to adjust the mineral balance Of all the foodstuffs cow's milk, as would be expected, approximates most closely to the composition of human milk It has a marked excess of calcium

The dietary of a large part of the population in this country, especially in the cities, consists mainly of cereal products and other carbohydrate-rich foodstuffs, such as potatoes and farinaceous foods, because they are the cheapest sources of energy The most common supplements are meat and butter or margarine The average consumption of milk is only about half a pint per head per day, and in many households green vegetables do not form a regular part of the diet Hence the foods that form the greater part of the diet are those deficient in both calcium and iron It has been estimated that 50 per cent of American dietaries contain less than 0 67 per cent of calcium, which is well below the standard of 1 gram a day In this country the average intake is likely to be even lower, because the average consumption of milk, usually the chief source of calcium in the diet, is twice as high in America as it is in Britain

The mineral content of the diet is of more importance during the period of growth than in adult life The requirements are relatively greater, and the evil effects of deficiencies are more serious During the first six months of life an infant growing at the normal rate should store between 0 2 and 0 3 gram of calcium a day According to Bendix[11] the daily consumption of human milk by the sucking infant during that period is 600 to 1,000 c cm, which contains just about the amount that must be stored Practically the whole of the calcium in the mother's milk must therefore be assimilated and retained It is evident that if the maximum absorption is prevented an absolute shortage will occur Digestive disturbances, with resulting diarrhœa, may hurry the intestinal contents through the alimentary canal before complete absorption has taken place A disturbance of the optimum ratios of the constituents of human milk would, as we have seen, be likely to decrease the percentage assimilation This may occur in supplementary feeding Zander[2] examined the mother's milk in cases where infants on the breast suffered from a form of malnutrition suggesting a shortage of calcium He found that the potassium sodium ratio was much higher than that found in the milk of mothers with healthy infants An abnormally low percentage of calcium in human milk has been suggested as a cause of malnutrition The evidence on the point is, however, not conclusive, although it is known that there are rather wide variations in the percentage of calcium, which may be as low as 0 2 and as high as 0 8 All that can be stated with certainty with regard to the calcium content of human milk is that the amount present in normal milk represents the minimum requirement, and any interference with its complete utilization will result in a shortage There is need for further investigation on the subject of the variation in the percentage composition of the ash of human milk It is probable that an abnormal mineral content of the milk may be the cause of some of the cases of malnutrition occurring in breast-fed infants

Compared with human milk, cow's milk contains rather more than three times the amount of calcium per 1,000 calories, but the utilization is less complete To get the maximum storage the amount of milk taken must contain about three times the amount stored There is, therefore, not such a marked surplus of calcium in cow's milk as might appear from an examination of its chemical composition

In the heating of milk insoluble tricalcium phosphate is formed out of the dissolved phosphorus and calcium salts This is well known in the dairy industry In cheese making the curd does not form as easily with heated milk as with fresh milk The difficulty is got over by adding a soluble lime salt In some experiments at present being carried out by Mr Crichton and the author we find that calves fed on pasteurized milk are liable to suffer from malnutrition But pasteurized milk *plus* either a generous supply of orange juice, or of a soluble lime salt, gives as good results as fresh milk It seems probable that the changes in the combinations produced by the process of heating interferes with the maximum calcium assimilation There is, therefore, a greater danger of calcium shortage with pasteurized milk than with fresh milk

The dilution of the mineral content of cow's milk by the addition of carbohydrates results in a diminished intake of minerals in proportion to the energy-yielding constituents Corry Mann[12] has pointed out that rickets, a disease in which there is failure to assimilate and retain sufficient calcium, is induced by the use of sweetened condensed milk He attributes the evil to the presence of an excessive amount of carbohydrates It is more probably due to deficiency of minerals An amount of sweetened milk, of which he gives an analysis, provides only half of the mineral matter contained in an amount of whole milk of equal calorie value

In the period immediately following weaning there is a danger of calcium deficiency unless the diet consists

almost exclusively of whole fresh cow's milk Unfortunately, at this period it is customary to introduce into the dietary of the child refined cereal products and other carbohydrate-rich foodstuffs Not only is the mineral content of these low, but the percentage utilization of what is present is also low This is the stage in the child's life at which there is the greatest danger of mineral deficiencies

As has been indicated above the minimum iron requirement of children has been estimated at 0 005 gram per 1,000 calories Milk—either cow's milk or human—does not contain more than 0 0035 gram, and the amount appears to be variable, depending on the nature of the diet of the mother According to the analyses of Hess and Unger[13] the milk of stall fed cows contains only about half as much iron as the milk of cows on pasture The child is born with a reserve store of iron sufficient to carry it over the first few months, during which milk is its sole food, but on prolonged feeding with milk unaccompanied by an iron-rich food, there would appear to be a danger of a primary anaemia The refined cereals make no significant contribution to the iron of the diet Many of them contain even less iron per 1 000 calories than milk

The acid base balance is of more importance in children than in adults Milk provides the necessary positive base balance Cereals however, have an excess of acid radicles over bases There is a danger of excessive acidity at weaning unless the diet be supplemented by fruit and vegetable juices which have a marked positive base balance

From the above considerations it appears evident that where refined cereal products form a large part of the dietary there is a real danger of a deficiency of certain minerals unless the diet be supplemented with a generous supply of milk green vegetables, and fruit The danger is greatest in the case of infants and young children, because their requirements are relatively greater and their diet is liable to be less varied It seems probable that the most common defects are shortage of calcium and iron, and an excess of acid over basic radicles

It has been suggested that deficiencies of some of the minerals required in small amounts may be of frequent occurrence On this point however there is very little reliable evidence The one which has attracted most attention is iodine but the amount required, and the amounts present in foodstuffs, are so small that it is difficult to determine by direct experiment whether the commonly used foodstuffs contain sufficient In many foodstuffs the presence of iodine cannot be detected (Forbes[14]) The only foods that yield an appreciable amount are green vegetables and marine products

THE INFLUENCE OF MINERAL DEFECTS IN CAUSING DISEASE

Adults

There is abundant clinical evidence, supported by experimental data, to prove that mineral defects in the ration can cause serious diseases in full grown animals Hay containing an excess of potassium results in malnutrition in cattle and horses (Zuntz[15]) Excess of phosphorus causes bone disease in horses (Ingle[16]) In South Africa deficiency of phosphorus has been found to be the cause of pica in cattle The same deficiency leads to malnutrition in dairy cows in certain parts of India Deficiency of calcium has been held to be responsible for many forms of malnutrition (Hutyra and Marek[1]) It is therefore possible for the full-grown individual to suffer in health from mineral defects in the diet It has been suggested by various writers—for instance, Loew[18]—that diseases due to this cause are not uncommon in human beings The fact that nursing mothers frequently suffer from deficiency of calcium seems to be well established But statements with regard to diseases held to be due to deficiencies of other minerals are not sufficiently supported by clinical evidence and experimental data to make them more than opinions and conjectures There is, however, sufficient evidence to warrant further investigation on this subject

Children

1 *Calcium*.—The evils of mineral deficiencies are very definite during the period of growth The following table gives an idea of the extent to which development may be arrested owing to shortage of calcium The figures refer to an experiment[19] with two groups of young pigs, which were fed on a ration consisting of cereal products, blood meal and potatoes, supplemented with cod liver oil, swede turnips and yeast extract One group had access to a lime-rich salt mixture

TABLE II.—*Influence of Deficiency of Calcium on Rate of Growth*

	Average Initial Weight	Average Gain in Weight in 14 Days
	Pigs.	Pigs.
Ration only ...	11.6	31.3
Ration plus calcium	11.3	60.9

In addition to slow rate of growth, the animals receiving no salt mixture showed signs of malnutrition after about thirty days on this ration There was lack of lustre in the hair, a dry hard skin, decreased appetite some intestinal disturbance, and lameness There was also a marked increase of nervous excitability By the end of the second month the gross clinical signs of rickets appeared The diagnosis of rickets was confirmed by *post mortem* examination

Many earlier workers have noted that arrested development and rickets frequently occur on a diet deficient in calcium A review of the literature is given by Hutyra and Marek[1] Recently Korenchevsky has noted nervous excitability and intestinal disturbances accompanied by diarrhœa in rats on a calcium deficient diet The experiment referred to shows that these evil effects can occur even though cod liver oil be present in the diet

Calcium starvation, of course, is not the sole etiological factor in rickets, though it is undoubtedly an important one McCollum, Simmonds Shipley, and Park[20] have shown that phosphorus is equally important The deposition of lime salts in the bones seems to be dependent upon the concentration of calcium and phosphorus in the circulating fluids, and the main factor in maintaining the essential physiologically balanced solution in the blood is the mineral content of the diet If the diet is such that all the essential minerals pass through the wall of the intestine in the proper amounts and proportions it is very doubtful if rickets can occur Both cod liver oil and ultra-violet rays have a marked therapeutic action in preventing and curing rickets In both cases the beneficial influence seems to be due to the fact that the loss of calcium in the faeces is decreased Henderson finds that under the influence of the ultra-violet rays excretion by the urine is increased Their influence is most marked in cases where the mineral content of the diet is defective It seems probable that these therapeutic agents increase the percentage absorption of the deficient calcium though, owing to the uncertainty as to the extent to which calcium is excreted by the intestine, it is difficult to obtain direct evidence on this point If the diet is otherwise satisfactory, rickets will not occur in the absence of the vitamins of cod liver oil (Zilva and others[21]), and we have brought to maturity from birth, without any sign of malnutrition pigs which have never been under the influence of ultra-violet rays, other than what passed through the glass window of a northern room[19]

The first line of defence against rickets is the adjustment of the mineral content of the diet In imperfect diets cod-liver oil and direct sunlight are very valuable adjuncts In the case of young pigs our experience is that sunlight and exercise are more potent in preventing rickets than cod liver oil

Recent work has called attention to the evil effects on the offspring of calcium deficiency in the diet of the mother (Korenchevsky[11]) In a recent article McCollum[22] says

'Even when the diet contains everything else that is necessary for the normal development of a mammal, but the calcium content falls below the optimum although not to an extent to interfere with growth, the first generation of animals may look fairly normal But will age early Their fertility will be low and infant mortality high and the few young which grow up will exhibit deformities which prevent their reaching the full adult size They are short and stocky, with deformities especially of the ribs and pine The displacement of the viscera downward owing to the contraction of the thorax gives them a pot bellied appearance'

We have seen that calcium deficiency is very liable to occur in infancy and early childhood It is probable that this dietary error may be an important etiological factor in many cases of rickets, intestinal disturbances, nervous excitability, arrested development, and various other diseases which are known to be associated with defective nutrition

2 *Iron*—The effects of an iron deficiency have been studied in pigs by McGowan and Crichton[23] They found that young pigs, whose sole diet was milk from a sow on an iron-deficient ration, suffered from a primary anæmia The haemoglobin was, in some cases, as low as 15 per cent The skin was abnormally pale The animals grew at a normal rate, and were excessively fat, but were little inclined to exercise The mortality was high The condition can be prevented and cured by the administration of inorganic iron to the young pigs The appearance of these anæmic pigs seemed to the writer, who followed the experiments closely, to resemble that of young children who had been kept for a long time on a diet of milk and refined cereal products, which, we have seen, does not supply sufficient iron for growth It is probable, as has been suggested by v Hoslin,[24] that primary anæmia may be not infrequent in children

3 *Iodine*—The possibility of deficiency of iodine is worthy of consideration Ennis Smith[25] found that a high mortality in young pigs in certain districts of the United States could be prevented by feeding small quantities of potassium iodide to the sows They concluded, from chemical analysis of the feeding stuffs, that the malnutrition of the young pigs was due to deficiency of iodine Kelly, who is working at this subject at the Rowett Institute, finds that in marasmic young pigs, fed indoors on a cereal ration, the total amount of iodine in the thyroid is unusually low, in some cases less than half that found in healthy pigs of the same age Whether this signifies deficiency in the diet or is merely a result of the marasmic condition is, however, not yet established In laying hens iodine seems to have an influence on calcium metabolism It may not be without some significance that the seasonal variation in the iodine content of the thyroid as determined in sheep corresponds with the seasonal variation in the incidence of rickets

Balance of Minerals

The evil effects of excess of individual minerals in the diet are due chiefly to their adverse influence either on the absorption or on the excretion of other minerals Reference has already been made to the influence of excess of potassium and magnesium on calcium metabolism Prolonged acidosis causes a loss of minerals from the body, calcium and phosphorus being especially affected[26] The disturbance of mineral metabolism leads to chronic malnutrition The effect of a wrong acid base balance in the diet of young children would seem to be worth keeping in view in studying gastric disturbances of obscure etiology

In considering the practical application of the results of experiments on animals which show the influence of mineral defects in the diet in producing disease, it must be kept in view that it is easier to cure disease which has been experimentally produced under definite and known conditions than to treat successfully diseases with a similar symptomatology but which arise spontaneously There is a danger in drawing too rigid conclusions from laboratory experiments The evidence which has been brought forward is, however, sufficient to warrant the belief that in practice diseases in children due to mineral defects in the diet are comparatively common, and that more attention should be paid by the clinician to the inorganic constituents of the diet, both in the etiology and the therapy of diseases of malnutrition

THE CORRECTION OF MINERAL DEFICIENCIES IN THE DIET

Fortunately mineral deficiencies can be easily corrected by including in the diet foodstuffs the virtues of which are universally recognized Milk, green vegetables, and certain fruits are rich in calcium, milk, egg yolk, and cereals containing sufficient of the embryo and outer part of the grain are rich in phosphorus Green vegetables and egg yolk are rich in iron The only certain sources of iodine are green vegetables and cod-liver oil Fruits and vegetables have an excess of alkali, and thus can correct a diet which is too acid On account of its great wealth of calcium and iron, spinach should be of special value for infants These foodstuffs, which are rich in inorganic constituents liable to be deficient in the modern diet, are also rich in vitamins The author has pointed out elsewhere[27] that in some of the work on vitamins much of the beneficial effect ascribed to hypothetical vitamins is in reality due to the minerals present in the substances given as a source of vitamins These correct the mineral defects in the basal diet In experimental work it has been found by several workers that as the mineral matter of the ration becomes more closely adjusted to the requirements of the body the need for vitamins decreases In practice, therefore, the adjustment of the mineral balance is of more importance than the inclusion in the diet of substances supposed to be rich in vitamins Indeed, in our experiments with pigs, calves, and fowls, we have found that if the diet be properly balanced with regard to minerals there is no likelihood of any deficiency of vitamins occurring This is in agreement with the conclusion reached by McCarrison,[28] who states

"Indeed, if the food be balanced with due regard to the biological value of the proteins, carbohydrates, fats, and salts, it is hardly conceivable that deficiency disease, with the possible exception of scurvy, could arise outside the laboratory In practice, however, it will usually be found that the vitamin content of the food is reduced in proportion to its lack of balance the two factors are intimately correlated"

CONCLUSION

Although in the present paper an attempt has been made to emphasize the importance of the inorganic constituents of the diet for the preservation of health, it is recognized that this is only one aspect of nutrition The diet must be regarded as a whole in relation to all the needs of the body Both the quantity and quality of the protein are important factors, especially in growth Undernutrition due to deficiency of energy-yielding constituents in the food, and overnutrition due to excess, are both factors in producing disease Even the quantity of water ingested is of importance Further factors not connected with the diet—for example, sunlight, exercise, and psychological influences—must be taken into account

The multiplicity of factors in nutrition makes it difficult for the laboratory research worker to assess the practical value of his results Owing to his limited view he is apt to overestimate the importance of the aspect of the subject on which he is working The clinician, on the other hand, is much more likely to give due consideration to all the probable factors, and is better able to see them in their proper perspective In this country, however, the clinician has paid too little attention to the influence of mineral deficiencies in disease If the discussion at this meeting succeeds in creating more interest in the subject, it will have served a useful purpose

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II.—JOHN SINCLAIR MANSON, M.D. EDIN., D.P.H. Camb.,
M.O.H. Runcorn Rural District.

COMMON ERRORS OF DIET IN AN URBAN POPULATION.

DURING the war many practitioners must have been struck, as I was myself, by the healthy, well fed, and generally improved appearance of those men home on leave whom they had known previously in civil life. The men had put on weight, they looked in rude and robust health, and, as they themselves expressed it in the colloquialism of the day, "were in the pink", the same phenomenon showed itself during the rapid demobilization after the armistice.

After the lapse of a year, or even less, it was painful to observe a distinct deterioration in their physical condition. Many had lost their ruddy appearance, all had lost weight, and the civil attire acquired on demobilization hung loosely on their figures.

These general observations are corroborated from a perusal of the army documents of men claiming pensions. In many instances records of weight while in the army have been entered, and in the great majority there has been found a loss of one, two, or even more stones at the time of examination. Without going into a detailed comparison of the conditions of active military life (open air, exercise, excitement) with those of civil life (confined space, routine, monotony) one may assume that the most important factor of all in the changed appearance above described has been that of food.

I think it is generally agreed that in no war has the active service man been so well fed as in the great war. The nearness of the base to the main field of operations, the excellence of the transport, and the wisdom of the authorities in putting into practice the old military maxim — that an army fights on its belly — all contributed to this desirable end.

The deterioration to which I have alluded—if it be admitted, as I think it must—requires explanation, and it is of special significance, for it affects adult males, many of them breadwinners. Now if the breadwinners have deteriorated it may be assumed that families also have proportionately deteriorated, or rather have never reached the physical standard of fitness formerly attained by the breadwinner.

At the Leicester meeting of the Association in 1905, in the Section of Industrial Hygiene, Dr. (now Sir) Dawson Williams opened a discussion on "Physical deterioration, its causes and extent." During that discussion much emphasis was laid on underfeeding, especially during childhood. Dr. William Hall of Leeds laid stress on the superiority of Jewish children in Leeds, living under the same or even worse conditions than Gentile children, and attributed that superiority to better feeding. My own observations and inquiries regarding the diet of workers in an industrial town have led me to the conclusion that errors of diet are common and widespread, and not confined to the poorest class, if there be such a class in these days when the unskilled labourer receives nearly as much pay as the skilled worker. My chief observations have been on the midday meal, and I have been struck by the *absence*—except perhaps on Sundays—of those food substances, such as broths or soups, meat, potatoes, vegetables, which should constitute the ingredients of the most substantial meal of the day. Frequently one sees a meal consisting of two or three small slices of bacon, brawn, or corned beef, pickles, bread, butter or margarine, and tea laid out for the breadwinner. For the rest of the family, perhaps female mill workers, there may be a boiled egg, bread, margarine, sweet cakes, and tea.

On other days this meal may consist of fish and chips hastily purchased from a neighbouring shop, in addition to the inevitable *bread, margarine, and tea*. In one district there is a great demand for "savoury duck" at the week-end. This delicacy consists of the lungs, liver, or kidneys of the sheep or pig, boiled and minced with bacon or meat and baked with the omental fat of the pig. This certainly is a nutritious dish, which could be commended by polyglandular therapists. Unfortunately, owing to the prolonged cooking and preparation, the supply is not equal to the demand. On the other meals—breakfast, tea, and supper—I have made few observations, but inquiries reveal an appalling monotony of tea, bread, margarine or butter, sweet cakes, with the addition, perhaps, of a *little* bacon, sausage, or cheese and bacon. Fresh milk is used very sparingly, but tinned milk is to be seen on almost every table.

The amount of tea consumed varies considerably in families, from 3 to 8 ounces of dry tea per head per week, the amount of tea consumed by the nation is 9 pounds per *head per annum*. Night workers have tea prepared in cans with tinned milk and sugar. This is warmed and drunk during the first meal hour. For the second meal, dry tea and sugar are carried for its preparation.

Compared with institutional dietaries the amount of tea consumed is greatly in excess. My own observations and inquiries have led me to the conclusion that the diet is of the industrial worker is deficient in soups, broths, oatmeal porridge, fresh milk, fresh vegetables, peas, lentils, beans, and in fact of any meal that requires careful and prolonged cooking. Further, that the tendency is growing to a more extensive use of what I have heard described as "angel food"—namely, sweet cakes, tea, cheap jellies, tinned apricots or pineapple served with tinned milk, fish and chips, "snippety" tasty meals instead of substantial meals of such variety as to give a well balanced diet.

Dr. Harry Campbell,[1] in the BRITISH MEDICAL JOURNAL of 1905, wrote a series of articles on the diet of the *Precibiculturists—the primitive races of men who neither* cultivated plants nor animal for food—and showed the wide variety of diet provided by "wild" food. For animal protein, man has eaten anything from a louse to the putrid carcass of a whale, *not excluding* man himself, and for vegetable food he has eaten roots, plants, and nuts of immense variety and range. Instinct and necessity forced him to a varied diet with occasional orgies of gluttony on special occasions, as when the stranded carcass of a dead whale offered opportunity to satisfy the instincts for animal protein and fat. This desire or need for animal protein is commented *on by Bates*[2] *in his book The Naturalist on the River Amazon*. Attributing his poor health while on a voyage up the Tapajos to the lack of flesh food, he killed two large sized spider monkeys and smoke-dried the joints. He describes how at the last he kept an arm hung up in his cabin from which he cut slices from time to time until it was consumed. This was his nearest approach to cannibalism. It would seem that primitive man, or civilized man under primitive conditions, made greater efforts to secure the necessary food for adequate sustenance than does the modern industrial worker with his unlimited tea, bread, and margarine.

In past ages religions guided the people in their dietary. The Mosaic laws still hold good for the Jews, Hindu and Moslem have their proscribed foods, and so also with certain sects of Christianity. In these modern days, when the whole world is a food market to a country like ours, it is not enough to leave the choice of foods to the instinctive desires and tastes of the people, science should take up the duty of directing, guiding, and persuading them to adopt suitable dietaries which will maintain them at a standard pitch of health and vigour.

In conclusion, let me quote from an eminent physiologist, Professor E. Cathcart,[3] who, in his presidential address on "The efficiency of man and the factors which influence it" to the British Association at Hull in 1922, said "One of these factors is nutrition. It may be stated definitely that an insufficient intake of food, or the consumption of poor or inadequate food, is one of the chief sources of general inefficiency. Our resistance to the effects of hard and continual work, just as to the effects of an infection, is largely controlled by our reserves. The capacity of the body to store reserve food material which will meet the daily demands for energy and leave a surplus is another of the vital factors of safety. The body is undoubtedly capable of withstanding complete deprivation of food for comparatively long periods, but with a corresponding depression in its capacity to perform external work. Complete starvation is a state which is rare, and does not affect the question at issue. The much more important problem is, unfortunately, too common, the influence of chronic under-nutrition, a condition which lowers efficiency, not

merely in the actual performance of muscular work, but by increased susceptibility to disease This is a question which has never received the attention which its importance demands, largely on account of the immense difficulties of carrying out the investigation in a practical manner" The position to-day is reflected in the reply to a question in Parliament when Mr Stephen Walsh, Secretary for War, said that in the year 1921-22 the percentage of recruits rejected for physical reasons was 56 per cent, and the percentage for the year 1912-13 was 27 per cent The higher percentage of rejection in the later year was no doubt the effect of war conditions upon the physique of the population, but he was glad to say that the quality of the recruits now coming forward was steadily improving [4]

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III.—WILLIAM G SAVAGE, B Sc, M D Lond,

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DIET CONTROL AS AN INSTRUMENT OF PUBLIC HEALTH PROGRESS

PUBLIC health *concerns itself with all influences which* make for a healthier community Knowledge *more and more emphasizes the great importance of nutritional factors in the well-being of the individuals composing any community* Even as regards purely bacterial diseases *it is evident that the nutritional conditions of the individual* play a *significant and important part affecting the extent to which* that individual is able to avoid falling a victim to infection, or if attacked of putting up a better fight *against the bacillus* While *this applies to every* bacterial infection, it is especially noticeable for the more chronic bacterial diseases, of which tuberculosis is at once the most conspicuous and the most important

Apart, therefore, from its applications to the individual, there would seem to be a wide field for a sustained effort to use diet control as an instrument to improve the public health I do not think anyone will quarrel with such a view, while indeed its importance is *now not* underrated, but I would suggest that *the practical application of this view in public health has lagged behind its appreciation*

As regards certain aspects a good deal has been done We have seen in recent years sustained and very successful efforts to improve the nutrition of nursing and expectant mothers and to feed infants on correct lines From my own experience in Somerset it is evident that the judicious exercise of the power to make milk grants to these classes of cases has been very beneficial Wisely used these grants represent, not doles to supplement the family income, but the scientific application of the principles already enunciated Valuable work is also being done to prevent dental caries, with its train of ill effects, by instructions based upon what I consider to be the proved relationship between defective methods of feeding and dental caries The supply of food adequate as regards vitamins and calcium to the expectant mother is also an important step in this direction There is also a tardy and inadequate application of the importance of good nutrition in connexion with tuberculosis prevention, and something is being done, but so far as I can judge of no great extent, to assist in the nutrition of early tuberculosis cases as a weapon of cure

It should, however, be practicable to extend greatly this field of public health Large sections of the people have to exist on an income which is inadequate, or at the best barely adequate, to provide for the normal nutrition of those who have to subsist upon it It is evident that the money available for food should therefore be spent to the best advantage as regards energy in the food purchased, the correct amounts of each kind of food, and proper preparation to make as much of it as possible assimilable We must all admit that these desirable conditions are not fulfilled and that present-day dietary habits are capable of material improvement

I do not propose to advance arguments to support this view since to do so seems unnecessary A number of scientific investigations bear it out, one of the most valuable being the "Study of the Diet of the Labouring Classes in the City of Glasgow," published in 1913, and carried out by Miss D E Lindsay, B Sc, in connexion with Professor Noel Paton The concluding remarks in this report are still, I *believe, applicable*

> 'These figures show that in the United Kingdom among the labouring classes, urban and rural, the wages are frequently so low that, after providing the barest necessities of life, little or nothing is left for amusements, travel, or other amenities It is to be feared that in the face of old established dietary habits, of ignorance, and of the stultifying influence of the surrounding, any reform in the mode of feeding which might set free a greater proportion of the income will only be slowly achieved as the result of proper teaching and training in the schools'

As Professor Paton puts it, these studies "show that ignorance and bad marketing as well as penury play their part," while he adds, in regard to certain diets found "they encourage the hope that the teaching of the value of different foods and a training in marketing and cooking in schools may have an influence in the future" Any measures to improve these habits should yield a great return in a healthier community

It is easier to point the need than to advance practicable remedies, but I would suggest the following as all desirable

In the first place the local public health authority, including both the public health and education departments, should undertake educational work on food as part of its routine work Something can be done by the issue of suitable and simple leaflets showing the relative value of food in terms of their cost, emphasizing the importance of nutrition in preventing infection from chronic disease, and the value of those subsidiary foods which are often neglected Leaflets are, however, a poor means of instruction, and more is to be expected from verbal instruction

The inadequate time allotted to *the teaching of* health factors, including *the value and use of foods, to our school* children is a standing disgrace to our educational system We turn out children from school with much knowledge which disappears with remarkable rapidity, but we do *not* see that they leave school with a knowledge of the fundamental basal facts of physiology and hygiene, which *would* not be forgotten if adequately taught, and which would be a guiding light for the rest of their lives For this inadequate instruction I feel the Board of Education is *primarily* at fault, since this branch of instruction is not insisted upon as an essential subject, but is merely taught, when taught at all, as odd lessons to fill up class intervals in the school programme I am aware that many teachers are not instructed themselves in *this work*, but that should be remedied, and soon would be if this branch of education received the *fundamental place* which its importance entitles it to receive

Even in our own *profession we learn* a great deal as to diet in relation to disease, but not enough in regard to the diet necessary *for healthy living* The essentials of dietetics should be a primary part of the instruction of health visitors, district nurses, and others who have influence as teachers, in order that amongst their activities should be incorporated instruction in sound *food habits* At the present time it is taught, but to an inadequate extent

Instruction given by such persons would take many forms according as opportunity offered Examples of *what it should* include are information as to the relative value of different foods per unit of cost, the relative cost of tinned and fresh foods, the value of the stew and the stockpot, the cost of cooking and how to reduce it, good and bad cooking methods, avoidance of food waste, the need for vitamins and their sources, the essential qualities and value of milk and the need for clean milk, the proper storage of food, the need for variety in food and how to obtain it, the value of good dietary habits, such as regularity and sound mastication, the importance of a good meal for children in the middle of the day, and much other information which we know to be valuable and essential

The newspapers might be *utilized* in this country much more than they are as instruments to impart useful dietary information At present we have plenty of food stunts but little food education Some of the foods foisted on the public by persistent advertising would never earn the money to pay for the advertisements but for the credulity based on ignorance of food *matters*, which they so cleverly exploit

I have in mind a process of education which has as its ultimate object the eradication of the present faulty notions and the substitution of a sound practical knowledge of how the community should live as regards its diet I believe this is possible although difficult Dietetics is a difficult subject to expound to the uneducated It needs a basis of physiological knowledge to appreciate it That blessed word "calories" is not easy to explain, while difficult to evade For this reason we need teachers who really understand and who are not merely armed with a veneer of technical knowledge over a basis of nothing The lack of adequately trained teachers is probably our greatest difficulty, but one which is not insurmountable

Another serious difficulty is the want of unanimity in the profession as to what are the exact facts we want to teach, a difficulty not lessened by the remarkable advances which are being made as to the factors in nutrition We know enough, however, of ascertained fact to serve as a basis of sound teaching

I believe that it is possible by means of a properly thought out scheme to bring the mass of the people into touch with sound knowledge of food and in a few years to overcome the crusted prejudices of age Our people persist in faulty dietetic practices because no adequate steps are taken to enlighten them The pessimist will declare it is not practicable He said the same over infant feeding and rearing, but it is being done before our eyes, and it can be done—with more difficulty but probably with equal success—for the wider subject of diet control and good food habits I can think of no advance in public health work which is likely to reap a better harvest in the improvement of the health of the community

GENERAL DISCUSSION

Dr H SCURFIELD (Folkestone) believed that the national physique could be greatly improved by a better dietary, and brought forward a few practical points First, they ought to know better what they were buying, the addition of chemicals and preservatives to food should be prohibited in some cases and declared in all Foods should not be sold under misleading names—for example, tinted cornflour as a substitute for eggs Starchy infant foods should be controlled Although there were regulations for dried milk, a skimmed or half-cream dried milk could escape the regulations if 31 per cent starch be added to it In the second place, they should take warning from the politicians, and not tie themselves down with shibboleths, such as natural foods," "no fractionated foods," "only perishable foods are good," etc, but apply the knowledge they possessed to determining the essential goodness of every food used for man For example, cow's milk and hen's eggs were not natural foods, and butter was a useful fractionated food Perishable foods might be treated so as to make them keep—for example, dried milk and eggs His third point was that if their advice was to have weight with the public they should concentrate on their agreements For instance, all vitamin workers said they should consume more milk, vegetables, and fruit Those who were keen on mineral salts found that the same "big three" were the best source of mineral salts The crusaders against constipation recommended fruit and vegetables and were not averse to dairy products The dentists recommended fruit, vegetables, and wholemeal bread for keeping the teeth clean, many of them were convinced of the value of the lime, good fat, and protein of milk for building good teeth The "nut" school recommended a food which gave exercise to the jaws, cleansed the teeth, and was a good source of vitamin B Even those who were against milk did not object to milk products without the water Recent milk conferences had shown that there was not much to choose between the various forms of safe milk in food value, and Dr Scurfield did not think the advocates of ordinary raw milk for children as an immunizer against human tuberculosis would have a big following in view of the 3,000 deaths and corresponding damage rate in this country from milk tuberculosis annually The increased use of all kinds of milk was good for agriculture, and they could surely unite to recommend the greater use of "safe" milk, leaving the public to choose whichever "safe" milk it preferred There was probably general agreement that sucking of sweets and eating biscuits between meal was bad for teeth and stomach, and that three meals a day and nothing in between was a good rule for children Leaflets, similar to those issued by the U S A Board of Agriculture on the various foods and the best way of preparing and cooking them so as to retain their value, would be extremely useful Concentration on the agreed points was very important, most of them agreed in the main as to the better dietary needed

Dr ROBERT HUTCHISON (London) had been asked to deal with the subject under discussion from the point of view of "*the effects of defective feeding during early life on the constitution of the adult*" When he came to look into the matter, however, he found that they really knew almost nothing about it They did know indeed, that prolonged underfeeding in early life might permanently impair physique, as to that there was a good deal of evidence Dr Clement Dukes, for instance, drew attention many years ago to the greater weight and height of public school boys compared with boys of the same age in elementary schools, and similar observations had been made in America It had even been suggested recently that the small stature of some races, such as the Japanese, was due to diet rather than to climate Whether the impairment of physique resulted from an all round calorie deficiency in the diet to poverty in one ingredient such as fat to lack of vitamins or, as Dr Orr had suggested, of mineral constituents did not much matter In order to produce its effects, however, the diet defect must continue over a long time The effects appeared to be most pronounced when it was *operating during the time at which growth was most active* —that is to say, in girls between 12 and 15 and in boys between 14 and 17 Deficiencies during the first year of life did not seem to matter so much He had often been struck by the fact that babies who were badly marasmic during their first year might become quite flourishing children later on this had also been observed in the case of the subjects of congenital pyloric stenosis, even though they were virtually starved for their first five months Physique and health were not synonymous, and their problem was, What was the effect on health of early bad feeding?—assuming of course, that when adult life was reached the diet had become adequate They had here no accurate data to guide them, but on *a priori* grounds, and for the purposes of discussion, he submitted that there was no reason to suppose that the health of the adult was seriously impaired by underfeeding in early life Was there, for example, any reason to suppose that the efficiency of any of the great vital organs could be permanently damaged by malnutrition in childhood? They knew from experiment how resistant the central nervous system was to starvation was the heart likely to be any more affected, or the kidneys? There was more reason, perhaps, to expect some permanent weakening of the digestive organs from early underfeeding, but even this seemed *doubtful* Was there, then, any impairment of general resistance to disease? They did not know, but it did not appear likely *There did not seem to* be any correlation between physique and natural resistance, big and robust subjects being so far as one could judge, just as likely to be attacked by acute infections, and not any better able to overcome them, than the small and "weedy" Perhaps an exception should be made in the case of tuberculosis, but there the seeds might have been sown in the early years while the defective feeding was still operative, although it must be admitted that poor chest development, by hampering the lungs, might favour the development of the disease There remained the question of possible impairment of fertility or longevity, but as to these they had no data at all Although no one ought to be dogmatic about it, he urged, therefore, that with the possible exception of liability to tuberculosis, there was no reason to suppose that defective feeding in the early years —always assuming that it was rectified later—had any bad effect on the health of the adult There was reason to expect, however, that accurate information would be forthcoming in greater measure in future, for during the war the Central European populations were for three years at least badly underfed, and, assuming that their nutrition

had now become normal, they should soon be able to tell whether any permanent injury to the health—in contrast with the physique—of these populations had resulted

DR J B SIMPSON (Golspie, N B), speaking as a general medical practitioner in the Highlands of Scotland, regretted the change of diet that had occurred amongst the population there during the past twenty or thirty years In former times the dietary consisted of oatmeal porridge, mutton broth, eggs, and milk, now it seemed to be mostly tea, jam, and white bread The old stock was extremely good, but the same could hardly be said of the present in comparison There was relatively a large number of cases of tuberculosis on the north-western coast, might not this be due to lessened resistance to infection produced by deficient dietary?

DR A L HOOPS (Principal Civil Medical Officer, Straits Settlements) described at some length the deficiency diseases met with in Malaya, the chief of which was beri-beri It had been the custom to grind rice by manual labour in the gaols—a procedure which provided excellent hard labour for the prisoners and also an excellent article of diet, for so long as they used that imperfectly ground rice they were not troubled with beri-beri It was not so in the labour camps, for the labourers demanded white rice, and it pleased the employers to supply it, as it kept better than the native ground variety The great difficulty they had to contend with was the insistent demand for the over-milled white rice

DR BOYD ORR, in reply, concurred with Dr Scurfield's remarks upon the necessity of informing the public He did not doubt that there were many unknown food factors which in the light of further research would claim a place in the efficient dietary, but for the present it would be well to concentrate on the points of agreement and give the public the benefit of their knowledge He accordingly moved the following resolution, which was seconded by Dr Scurfield, and carried unanimously

> "That it be a recommendation to the Council to appoint a Food Committee, on which there should be representatives of the Society of Medical Officers of Health, for the purpose of
>
> 1 Conducting an investigation into the adequacy and suitability of the dietary of the people of this country,
>
> 2 As the result of the investigation making such recommendations and drawing up such directions as may appear desirable,
>
> 3 Conferring with the Ministry of Health, the Medical Research Council, and other bodies, and
>
> 4 Dealing with food problems as they arise"

SECTION OF DERMATOLOGY

J M H MACLEOD, M D, F R C P, President

DISCUSSION ON RADIOTHERAPEUTICS IN DERMATOLOGY

OPENING PAPER

BY

J H SEQUEIRA, M D, F R C P, F R C S,

Physician to the Skin Department and Lecturer in Dermatology, London Hospital

I HAVE first to offer my grateful thanks for the honour you have done me in asking me to open this discussion, but the council of the Section has imposed upon me a task of great difficulty An address on radiotherapy, which includes all forms of treatment of diseases of the skin by radiations, is an undertaking of great magnitude, and can only be dealt with in broad outline in the time at my disposal

Radiotherapy, including phototherapy, dates back to 1895, and there is no hesitation in saying that the work of Finsen on the one hand, and the discovery of the therapeutic value of the x rays by Schiff and Freund on the other, mark the beginning of an important epoch in the treatment of diseases of the skin Powders, lotions, pastes, ointments, even the curette used in the local treatment, are supplemented by radiations of remarkable variety and undoubted efficiency From the red end of the visible spectrum, through the violet to the ultra-violet, and the series of radiations which we class as x rays, we have undulations of differing therapeutical properties which under our control and which we are able to utilize in the treatment of disease

Those of us who have been privileged to watch the infancy and adolescence of this new therapy cannot help feeling gratified at its progress We have had our periods of extreme optimism succeeded by waves of pessimism, but there has always been progress—here rapid, there slow The solar spectrum and the spectra of various artificial illuminants have been studied, and we are learning the type of radiation best adapted to produce a definite clinical result

In our use of the x rays we passed through a stage of blind working attended with grave danger to both patient and operator The catastrophes of these early days led directly to the invention of instruments of precision by which has been gradually evolved a technique which enables us to determine with considerable accuracy, not only the quantity, but the quality of the radiations used We have learnt how to filter out certain types of ray for special purposes The effects of these radiations on healthy and diseased tissues have been carefully investigated, and experimental work has been carried out in animals by numerous workers I need only refer to the literature on this subject to indicate that the scientific side of the subject is receiving adequate attention To-day, my remarks must be directed to a short survey of the clinical side

ROENTGEN THERAPY

The effects produced by the radiations from an x ray tube on the human organism may be classed as (*a*) *local*, (*b*) general

(*a*) *Local Effects*

The local effects are (1) superficial, (2) deep

(1) *Superficial*—The earliest noticeable effect produced by radiation from an x ray tube is epilation The fall of hair begins about a fortnight after the exposure A slightly greater dose of rays produces an erythema An erythema dose will very likely be followed by permanent loss of hair Still longer exposures will cause vesication, ulceration, and even necrosis Vesication, ulcer, and necrosis due to the Roentgen rays are intensely painful, of long duration, and the graver lesions may never heal Even moderate grades of inflammatory reaction are followed by carcinoma, but this is more commonly the result of repeated exposures Severe burns, leading to deep ulceration, were not infrequent in the early days of radiotherapy, and were then usually due to cumulative dosage That these serious effects may be entirely removed by the use of the direct measurement of the rays by the Sabouraud-Noire pastille is shown by the fact that since their use in all cases treated in my department, 250,000 exposures have been given without causing dermatitis I can only here repeat what I have said elsewhere, that we owe these gratifying results to the careful carrying out of the prescribed technique I personally have less confidence in what may be called the indirect methods of measurement The only severe burns I have seen recently have occurred in the practice of radioscopy

(2) *Deep*—By the use of appropriate screens of aluminium and certain other metals of low specific gravity the rays may be filtered so that the superficially acting radiations which cause burns are cut out and the more penetrating rays only reach the treated area Doses equivalent to 4, 6, 8, and even 10 pastille doses can be given with the certainty of avoiding dermatitis by using aluminium screens in the scale worked out by Mr Blackall and myself These penetrating rays have a pronounced influence on certain glandular organs, on lymphoid tissue, and on some neoplasms, notably the sarcomata In 1901 we cured sarcomata with small gas tubes costing only 12s 6d The effects are similar to those produced by the beta and gamma rays of radium and I have not changed

the opinion I pronounced in Brussels in 1908, that there is very little which radium can do which cannot be done by the *x* rays, although I acknowledge the greater convenience of radium in many cases and the impossibility of applying the *x* rays in others where radium can be used with facility

In Diseases of the Skin

My assistant, Mr Cooper, has classified the skin cases treated in the *x* ray room during the past fourteen years and a summary of his figures shows that in my practice at the London Hospital *x* ray therapy is used for several types of dermatosis

(1) *For the Relief of Itching and in Pruriginous Skin Diseases*.—Pruritus ani and pruritus vulvae in which no local cause can be discovered are frequently relieved by occasional exposures As a rule benefit is manifest after the first sitting, and if there is not speedy relief it is unwise to persist with the rays Eczematous lesions often due to scratching, in these conditions are benefited not only by relieving the pruritus but by the local action of the rays In lichen simplex and other forms of lichenification which may persist for years, the application of the *x* rays, by relieving the itching, breaks a vicious circle and may very often effect a cure, especially if the parts are protected with zinc plaster between the exposures to the rays In all cases I allow an interval of three weeks between successive exposures.

(2) *In Psoriasis and Chronic Seborrhoides*.—Where the eruption in psoriasis is limited an occasional *x* ray treatment is of great value The lesions rapidly disappear but the tendency to relapse is not removed In some cases it has appeared to me that the intervals are lengthened Short exposures to radium act similarly In some forms of seborrhoeic dermatitis the *x* rays have a rapidly beneficial effect moist lesions dry up, scaly lesions disappear When the scalp is badly affected the depilatory action of the rays may be used with advantage the removal of the hair permitting more thorough treatment by topical remedies

Cheilitis Exfoliativa.—This chronic scaly eruption of the lips has always been refractory to treatment, but I have had several striking successes from *x* ray therapy

(3) *In Keratoses*.—Diffuse thickenings of the horny layer of the skin are commonly benefited by exposure to the *x* rays, but in general these conditions are better dealt with by other measures Verrucae, common warts, and seborrhoeic warts of the scalp and trunk, although removable by *x* rays are more conveniently dealt with by radium or by carbon dioxide snow in the majority of cases Flat warts especially those of the beard region in the adult, will sometimes disappear under *x* rays, but there are many failures The plantar wart is almost certainly cured by one or more heavy doses (1½ to 3 pastilles) applied exactly to the lesion If multiple doses are given, an interval of three weeks should elapse between the sittings

Tuberculosis.—The first cutaneous disease treated by the *x* rays was lupus vulgaris, and though no one can deny that the results are beneficial in certain types of case I am strongly of opinion that much harm has been done in others There are essentially two very distinct types of lupus—one in which there is ulceration, and the other in which the lesions are dry throughout In the ulcerative form and in the closely allied condition scrotuloderma due to infection of the skin by the breaking down of tuberculous foci in glands, bones, and joints, the *x* rays are of great service A few applications at intervals produce a rapid healing of the ulceration and the disappearance of gumma-like swellings After the ulcers have healed it is common to find isolated dry nodules in the cicatrix, and these require treatment on the same lines as dry lupus In dry lupus the nodules are yellowish brown spots, or translucent jelly-like appearance, embedded in the skin There may be a thickening of the horny layer over these nodules This type can only be removed by the *x* rays by pushing the treatment to an actual dermatitis, and after treatment pushed to this extreme, or repetition of the *x*-ray applications over several years (a not uncommon thing), we meet with the tragedy of lupus carcinoma I know there are some who will not believe that lupus cancer is often the result of *x*-ray treatment They point out that cancer was well known as a complication of lupus before the *x* rays were discovered I entirely agree, but my clinical experience is that there has been a great increase in these cases For some years past we have been seeing one after case of rapidly advancing carcinoma which can only be attributed to over-treatment by *x* rays I have frequently spoken and written on the subject, and I beg all concerned to avoid prolonged treatment of lupus, or, indeed, of any cutaneous affection, by radiotherapy

Granuloma.—Granuloma (mycosis) fungoides was first treated by the *x* rays by the late Dr Allan Jamieson I do not think there is another condition in which such striking results are obtained Large intractable tumour disappear in a remarkable manner, areas of infiltrated skin become soft and supple, and the intolerable itching is allayed Unfortunately, the improvement is often temporary, the infiltration and tumour formation return, but by repeated treatments the patient's life is prolonged, much suffering is relieved, and we are able to avoid the distress and discomfort produced by septic ulceration of fungating masses, which was usual before the introduction of radiotherapy Kaposi's disease, so-called multiple idiopathic pigment sarcoma, which we now class as a hæmangioma granuloma of the extremities, is also benefited by *x* ray treatment I have a patient who has been kept free from grave discomfort for eleven years by occasional courses of radiotherapy

Leprosy.—In 1901 I treated a case of nodular leprosy by *x* rays, and by repeated short exposures was able to remove the nodules, but, of course, the patient was not cured. I have repeated this treatment in other cases with similar benefit

Keloids, and Hypertrophic scars, such as occur in acne, are amenable to treatment by the *x* rays and by radium Thickening, redness, and subjective symptoms are removed, and a soft, pliable, pale cicatrix is left

Carcinoma of the Skin.—My first experience of radiotherapy was in 1900, when Mr Jonathan Hutchinson sent me a case of rodent ulcer a very extensive case with the request that I would submit it to Imison treatment It was so ulcerated and sore that it was quite obvious the patient could not stand the pressure of the pressure glass, and, remembering Freund and Schiff's results in cases of lupus, I determined to try *x* rays The patient was exposed to the rays for ten minutes every second day, and the result was so striking that it led me to treat a large number of cases Another patient, with a large rodent ulcer in front of the ear, was treated by *x* rays three times a week with the result that an ulcer of twenty-five years' duration was healed I soon found that there were cases in which the resistance of the edge delayed cure, and in these I used the curette freely, removing all the thickened border, converting the whole into an ulcer, and then I applied the *x* rays to the raw surface Many admirable results were thus obtained The earlier diagnosis of rodent ulcer has led to an almost complete disappearance of the grave cases, formerly so common in the clinics Radium has been used in 1,262 cases in my department, and I find that small rodent ulcers not involving bone or cartilage can usually be cleared up by three exposures of two hours' duration to a half strength radium plate Where bone is involved the *x* rays in heavy doses may be used in conjunction with surgery

Squamous carcinoma does not respond to *x* ray or radium treatment, and in no case would I recommend either measure instead of operation The use of the *x* rays as a prophylactic measure after the removal of other forms of cancer, particularly mammary cancer, was dealt with for years in my department, but the exigencies of the work and the introduction of newer methods led to their being transferred to my colleague Dr Gilbert Scott

Appendages of the Skin

Ringworm of the Scalp and Beard.—The depilatory effect of the *x* rays led to their use in tinea I do not propose to enter into details of the *x*-ray treatment of scalp ringworm Thanks to Sabouraud and Noiré's pastille and to the tintometer of Corbett and Dean, and to the exact regulation of distances which we owe to Kienboeck and Adamson, the technique for epilation of the scalp in tinea capitis can

be carried out with precision In my own clinic 7,143 cases have been treated during the past fourteen years In only four cases have I been able to trace a partial alopecia, and this may have been due to idiosyncrasy Incomplete epilation has, of course, occurred in a small proportion of cases I cordially acknowledge the care and attention of the assistants engaged in this particular work, to whom we owe the admirable results recorded above I should like to mention that owing to the fact that we have treated hundreds of children from certain orphanages we have been able to prove that there is no risk whatever to the brain, and that in a large proportion of cases the hair grows stronger and thicker after the epilation I should add that as a rule we treat no children under 4 years of age The results in tinea barbae are equally good It must be quite understood that the rays do not kill the fungus, they merely bring out the infected hair It is, however, interesting to note that eczematoid ringworm of the extremities is often benefited by a short exposure to the rays

Sycosis—I am unable to give so good a report on the x-ray treatment of coccogenic sycosis In a few early cases a cure is obtained, but in many cases epilation produced by the x rays produces only a temporary improvement in the condition Relapses are exceedingly common in the chronic cases In some instances one is obliged to produce a permanent epilation before a cure is effected This is often followed by atrophy and a vulnerability of the skin leading to recurrent inflammation, especially on exposure

Hypertrichosis—Many dermatologists have used the x rays for the removal of superfluous hair, and at one time an improved technique appeared to give most gratifying results Unfortunately, in a certain proportion of cases, the removal of the hair permanently has been followed by the appearance of slight atrophy with ugly telangiectases on the radiated skin and on the mucous membrane of the lips *It is, therefore, a method of treatment which should not be undertaken except in certain grave cases in elderly subjects, to whom the possible disfigurement should be carefully explained*

Hyperidrosis—There is no doubt that x-ray treatment carefully applied, as Howard Pirie first showed, is of service in the relief of certain types of hyperidrosis The rays have a distinct influence on the sweat glands without the production of a reaction sufficient to cause atrophy

Sebaceous Glands—The beneficial effect of x-ray treatment in acne vulgaris would appear to be in part due to its influence on the sebaceous glands There is often some increase in the activity of the inflammatory process as an initial effect of the exposure of the rays, but the subsequent benefit is pronounced

(b) *General Effects*

Influence of X Rays on the Viscera and Blood—It is important for the dermatologist using x rays to be aware of the influence of these radiations on certain organs and on the blood It is generally known that the seminiferous tubes of the testes are exceedingly sensitive, and that sterility, complete or partial, temporary or permanent, may follow exposure of the testes to the rays, especially if repeated It has also been shown that penetrative doses will cause disappearance of Graafian follicles and even complete atrophy of the ovaries, and the treatment of menorrhagia and fibroid of the uterus is based on this observation Radium acts similarly The rays also have an undoubted influence on the thyroid gland, and this fact has been utilized in the treatment of Graves's disease It is claimed that deep radiation applied to the thymus has a curative effect in certain cases of psoriasis *X rays* and radium, especially in cumulative doses, have a marked influence on the blood I believe Senn was the first to show that an enlarged spleen and glands in leukæmia will diminish under x-ray treatment, and the leucocytic count is materially diminished In a few instances it has been found that prolonged exposure to the x rays has great influence on the red cells With the use of more powerful tubes it is impossible to say that the precautions introduced for the protection of the worker when weaker apparatus was used are sufficient The grave effects of overexposure to radium are now well known, the fatalities in radium workers being due to an aplastic anæmia The effect coming on soon after massive doses of x rays applied to large portions of the body in attempts to prevent the dissemination of cancer are usually transient Malaise, anorexia, nausea, vomiting, and collapse are the chief *symptoms, but,* although grave complications are rare, fatalities have been recorded All workers with the x rays should study Sir Humphry Rolleston's admirable and timely address on acute constitutional symptoms due to radiations He concludes that these symptoms are probably due to flooding of the circulation with proteins liberated by the destruction of cells Experimentally it has been shown that they may be due to direct damage to the mucous membrane of the small intestine, and this is supported by clinical evidence, but clinical evidence also shows that destruction of cells in large tumours elsewhere—for example, the neck or mammary region—may be followed by acute constitutional symptoms

PHOTOTHERAPY

Under this term I propose to consider the *treatment* of disease by sunlight (heliotherapy) and by *artificial* illuminants

Like Roentgen therapy, phototherapy has to be considered as to (*a*) local effects, (*b*) general effects We owe to Finsen the first scientific application of light for the treatment of disease He showed by experiment *that the various parts of the spectrum* (visible and invisible) have different properties He demonstrated by simple *experiments that* the so-called sunburn is a reaction of the skin to the actinic rays of light Actinic light has very little penetrative power, and penetration of vascular tissues is very small indeed By experiment Finsen showed that the red colouring matter of the blood is an important factor in preventing this penetration The shorter radiations *penetrate* less than those of longer amplitude For therapeutic purposes the greatest penetration is obtained by *concentrated* sunlight, or, what is more convenient in northern latitudes, concentrated rays from a powerful carbon arc, on a surface rendered anæmic by compression The heat rays of the sun or arc light must be removed by a cooling apparatus, which is in practice combined with the compressor

(a) *Local Effects on the Skin*

About six hours after the exposure of an area to concentrated arc light for an hour an acute erythema occurs This is followed by vesication, and the vesicles may take several days to heal Pigmentation of moderate degree is common after such an exposure Actinic light differs from the x rays in that it has the power to destroy micro organisms, but it is believed that in the case of tubercle bacilli in the skin, as in lupus vulgaris, it is the inflammatory reaction rather than the direct bactericidal action of the rays that kills the bacilli

Lupus Vulgaris—Finsen therapy is the ideal method of dealing with cases of lupus vulgaris of the dry type, *especially* where the lesions are situated, as in the majority of cases, on the face, and it is important to obtain a good cosmetic result, from 60 to 70 per cent of cases of lupus are cured by Finsen therapy—that is, local application of concentrated light alone The use of mercury vapour lamps —for example, that of Kromayer—in the local treatment of lupus, combined with compression to permit penetration, is of service in a number of superficial cases

Phototherapy in other Skin Conditions—In my experience *phototherapy* has very little influence on lupus erythematosus In some cases it is distinctly harmful In the early days of Finsen treatment success was reported in superficial rodent ulcer by Finsen himself and by Morris and Dore, but *x rays and radium are more efficient*

Phototherapy without compression is very largely used and with advantage, in my experience, in a limited number of cases I have seen it beneficial in the relief of pruritus but it is less efficient than the x rays, though certainly safer if treatment is to be prolonged It is of value in the treatment of certain superficial microbic affections, and is of undoubted service in some types of alopecia areata

Dr O'Donovan has recently shown that extensive psoriasis can be removed by prolonged *treatment of this* type

(b) *General Effects of Light*

Like the *x* rays, the sun's rays and the radiations from a powerful artificial illuminant have a marked influence on the human body generally. Fortunately, we have here to record very little but what is good. The exposure of the whole surface of the body to the sun's rays, as shown by Bernhard and Rollier in the Higher Alps and by Gauvain at Alton and Hayling, is of great therapeutic value in certain forms of tuberculosis. In latitudes where the sun's rays are not available powerful carbon arc lamps have proved of nearly equal value, as shown by Reyn. Lamps giving a highly actinic light, such as is produced by incandescent mercury vapour, are also of value. We have used both illuminants during the last two years at the London Hospital.

The exposure of the whole body to light in the light bath produces:

(1) Erythema in the irradiated area. This is usually transitory, and may be followed by desquamation.

(2) Pigmentation. The degree varies with the duration and number of exposures, and with the individual. The source of light also has an influence. The carbon arc causes a deep brown colour, while the mercury vapour lamp produces a greyish brown tint. This, no doubt, depends upon the greater penetration of the rays of the carbon arc.

(3) A moderate increase in the body weight observed in some cases.

(4) A slight increase in the leucocytes was noticed in a few of my patients.

(5) An increase in the bactericidal action of the blood, but in some instances there is no change, and it seems probable that this observation may have a prognostic significance (Colebrook).

(6) Steady improvement and actual healing, without local treatment, of surgical tuberculosis and especially of lupus vulgaris both of the skin and mucous membranes. In lupus the combination of local light treatment (Finsen therapy) with the light bath gives 90 per cent. of cures. Our experience in this respect agrees with that of Reyn and his assistants.

(7) A marked improvement in the general health of the patients, although Dr. Argyll Campbell found no change in the basal metabolism of patients examined in my clinic.

The only untoward result seen in light bath treatment, whether the illuminant is the sun or an artificial source, is the occasional "flare up" of a tuberculous process, especially where there is pyrexia. Such are not uncommon in pulmonary tuberculosis. In a case of hilum phthisis with cutaneous tuberculides treated in my clinic the light bath was certainly of no benefit, and apparently did harm. It is therefore wise to begin the treatment of cases of visceral tuberculosis with very short exposures limited to small areas, and to watch carefully the effect on the temperature and other symptoms. It is generally accepted that the patients whose skin pigments best make the most rapid and complete recoveries. It appears to be doubtful whether the pigmentation itself is more than an index of some chemical change in the blood which produces the improvement in the general and local conditions.

In conclusion, I trust that the somewhat cursory survey I have been able to submit to you shows the importance of the careful study and further investigation of the properties of both the *x* rays and light rays. Finally, I would suggest that, especially with regard to the light bath, extensive observation should be made in other conditions than those mentioned. We know that rickets can be prevented by the light bath, we know also that these measures are of service in convalescence from acute febrile illnesses, especially measles and pertussis. There is reason to hope for benefit in other conditions, and the opening of clinics supplied with the necessary apparatus in various centres leads one to urge that observers should not hesitate to try to extend the scope of usefulness of these valuable therapeutic measures.

[The address was illustrated by numerous lantern slides.]

REFERENCE.

1 British Medical Journal, 1923, i, p. 1.

S. L. DOPE, M.D., F.R.C.P.,

Physician in Charge of the Skin Department at Thomas's Hospital, London.

Dr. DORE said he was glad to have the opportunity of following Dr. Sequeira in this discussion because Dr. Sequeira had been one of the pioneers of the subject, and had not only an extensive experience of all its branches but also the necessary judgement to form a just estimate of its relative value in therapeutics. Dr. Sequeira's experience dated from the year 1900, and at about the same date that the Finsen light treatment was introduced at the London Hospital he (*Dr. Dore*) had observed the results of this particular method of concentrated light treatment in cases of lupus vulgaris in conjunction with the late Sir Malcolm Morris, who installed a Finsen lamp in London. It was, of course, principally for lupus vulgaris that the Finsen light was, and is still, used, a few conditions, such as alopecia areata and rodent ulcer, were found to benefit to a less extent, and other cutaneous affections were treated, but the improvement was not greater than that obtained by other methods. Stress was laid on this point because phototherapy had recently received a fresh impetus from the discovery of its effect on rickets and on surgical and other varieties of tuberculosis and was being discussed now as a new or almost new system of treatment. The speaker had used nearly every form of apparatus emitting ultra-violet rays, and had come to the conclusion that in therapeutic value as regards cutaneous affections they fell very far short of *x* rays in general applicability and in permanence of results. The reason for this might perhaps be found in the fact that the far ultra-violet rays, unlike the near ultra-violet rays although strongly bactericidal, did not penetrate the skin.

Radium, again, was limited in therapeutic value by the small amounts available and the small area treated. From the dermatological standpoint it was chiefly in suitable cases of rodent ulcer, keloid, and some vascular naevi that radium was of special value.

The *x* rays had a much larger field of action, and were useful in a variety of cutaneous diseases on account of the various properties they possessed. The biological effect of *x* rays was still to a large extent unknown, but some sort of classification of their therapeutic properties might be made as follows:

Stimulating action—the effect of small doses as made use of in the treatment of chronic eczema, varicose ulcers and ulcerating lupus. (Experience had shown that prolonged treatment of lupus vulgaris was not only useless but often disastrous.)

Inhibitory and destructive action on young and actively growing cells—for example in carcinoma, sarcoma, mycosis fungoides, psoriasis, etc.

Atrophic or paralytic action on glandular structures—for example in seborrhœa, acne, hyperidrosis, etc.

Purulent or keratolytic action on horny tissues—for example, in warts and corns, senile and other keratoses.

Anæsthetic action on pruritus—for example pruritus ani.

Epilatory action—for example in ringworm, sycosis, and also in hypertrichosis in which however *x* rays should be avoided.

This scheme was not intended to be an exact interpretation of the properties of *x* rays, but only to give an idea of their relative value in treatment.

GENERAL DISCUSSION

The PRESIDENT of the Section (Dr. J. M. H. MACLEOD), speaking of the estimation of the dosage of *x* rays, said that since the introduction of the Coolidge tube it was possible to obtain accurate results from the indirect method, but that it was wise to control the dosage with the pastille, and that it was important only to use pastilles which were properly standardized. Referring to the treatment of hypertrichosis with *x* rays, he said that the procedure was to be deprecated, since it was not possible to depilate permanently without causing more or less serious atrophy of the skin. Mention had been made of the use of radiotherapy in the treatment of leprosy. He desired to emphasize the need of care in treating nodular lesions, as they were liable to slough. Since the problem of leprosy was much the same as the problem of tuberculosis, benefit from open air life was undoubted, and in spite of the fact that

leprosy was most prevalent in countries where sunlight was intense he thought that in cases of leprosy in this country actinotherapy, both general and local, was worthy of trial

SIR NORMAN WALKER thanked Dr Sequeira for his reference to the fact that Dr Allan Jamieson was the first to use x rays in the treatment of mycosis fungoides, a method of treatment which had added years of comfort to scores of persons He congratulated Dr Sequeira on his ringworm statistics 7,000 cases with only four poor results was an achievement anyone might be proud of With regard to the light treatment, he could say after a long experience of lupus that no other treatment had been followed in so short a time by such excellent results, and he thought it would be well to wait a while before deciding that light treatment was harmful in some other forms of tuberculosis On the other hand, he had tried it in psoriasis with disappointing results, and asked Dr Sequeira if he had observed any difference of effects in patients of different complexions The late Professor Nevins Hyde long ago advocated the treatment of this disease by light, and he himself thought that the diaphanous and scanty clothing of the young ladies of the present day had had some influence in diminishing psoriasis on the upper trunk With regard to hypertrichosis, he agreed that in the present state of their knowledge the use of x rays was unjustifiable, but he looked forward to the possibility that some day it might be practicable to ascertain the exact dosage In conclusion Sir Norman Walker once more emphasized the danger of treating lupus with repeated doses of x rays

DR RUPERT HILLAM (*Sheffield*) said that Dr Sequeira had been a pioneer and an enthusiastic advocate of radiotherapy in the treatment of skin diseases, but that those who had listened to his paper would agree that he had not overestimated its value He was interested to hear his remarks on the abuse of x-ray therapy, and particularly desired to refer to the prolonged treatment of lupus by x rays The subject had been already discussed that day and also the previous day, but he did not hesitate to refer to it again, for this method of treatment was still going on Further, he thought that Dr Sequeira would agree that this treatment also caused the most appalling disfigurement owing to atrophy of the skin and subcutaneous tissue This was not the only form of abuse He had recently seen a severe radio-dermatitis of the vulva in an unfortunate patient who had been treated with repeated exposures to x rays for ten months in the hope of curing a pruritus He expected that Dr Sequeira's condemnation would be published in the BRITISH MEDICAL JOURNAL, and he hoped that perhaps it would bear fruit He had been rather surprised that Dr Sequeira had not mentioned the value of small doses of x rays in the treatment of that group of diseases which at one time sheltered under the name of eczema These patients formed a large percentage of those attending the speaker's clinic, and he was confident in stating that the results were most excellent, and that the patients were able to return to work weeks before those who were treated only by ointments and lotions Sycosis was certainly not one of the diseases which responded very satisfactorily to x-ray treatment Many of these patients suffered from blepharitis and had done so since childhood, he was inclined to think that blepharitis was often the original focus of the infection Personally he never epilated a patient with sycosis by means of x rays if the lids were affected

Regarding the treatment of lupus vulgaris by carbon arc baths, it might interest those present to know that for the last nine months he had been using carbon arc light produced by alternating current At first he had been somewhat disappointed with the results, but lately he had come to the conclusion that this form of current, although perhaps not so satisfactory as when the arc was produced by continuous current, was of great use in the treatment of lupus vulgaris It had been suggested that possibly in the future there might be some troublesome after-effects following prolonged light treatment It would be of material interest to hear whether Dr Sequeira had met with an epithelioma occurring on a scar of lupus which had only been treated by Finsen light

DR WILLIAM MITCHELL (Bradford) had abandoned the use of x rays in lupus, and now treated that disease either with ultra-violet rays alone or combined with preliminary curetting, or by diathermy He had treated 1,500 cases of ringworm of the head for the Bradford Education Committee without a failure He used a 12-inch coil, dipper interrupter with tachymeter, "Pilon" tungsten target tube, 2 mm aluminium filter, 0·5 ma current, Benoist scale 10B, interruptions 14,000, London pastille 4/5 B on the Lovibond tintometer He applied "Tabloid" head dressing, and inspected on the fourteenth and twenty-first days after exposure, when the school nurse completed the epilation His average time for cure was 21·3 days, and he had never had a return case He treated rodent ulcer mainly by diathermy coagulation, which he followed up with x rays when necessary If the case were of the hypertrophic variety he often curetted before applying diathermy

DR F HOWARD HUMPHRIS (London) said that Dr Sequeira's admirable exposition and masterly summary of the present-day relationship of radiology to dermatology left little to be added, but it was gratifying to hear his testimony to the value of actinotherapy, since no other man in England had had his experience or could speak with such authority The speaker, however, had not heard him advocate the combined use of x rays and ultra-violet radiation, using one remedy as a complement to the other This method had been brought into notice some time ago, and was of great value in some local treatments Cases of phthisis which flared up under the ultra-violet radiation were those which had several foci of infection, and were quite unsuitable for that form of treatment, even cases of pulmonary phthisis with only one focus must be treated with the greatest caution The use of ultra-violet radiation chiefly lay in the treatment of glandular and bony tuberculosis, apart, of course, from its use in dermatology One of the chief advantages of ultra-violet radiation over heliotherapy lay in its accuracy of dosage If one wished to give a dose of morphine one did not go and take a handful of poppies, make a decoction, and tell the patient to drink a mouthful occasionally, one administered one-sixth of a grain of morphine He suggested that in this country the sunlight was as variable in composition and intensity as a decoction of poppies, and sometimes it did not exist at all At best the patient got a "shot-gun" prescription, quite impossible to measure accurately

He desired to enter an objection to a statement of Dr Dore, who had said that the use of ultra-violet radiation was restricted, and that it had not so wide a range of utility in treatment as x rays The speaker was inclined to think that, so far from this being the case, it would be found that as the study of actinotherapy became more and more general and more and more thorough, ultra-violet radiation would ultimately have a wider range than x rays, not only in dermatology but in general medicine He believed that they were to-day standing on the brink of a great movement in support of treatment by artificial sunlight or accurate actinotherapy

DR J GOODWIN TOMKINSON (Glasgow) said that his experience of x-ray therapy of tinea tonsurans had begun when he was working in Sabouraud's laboratory in 1905, and since then it had been extended in his own clinics, at the Western Infirmary, and under the education authorities of Glasgow and Dumbartonshire Including his experience in private practice he had had only two cases which might be called unsatisfactory In one there had been some slight thinning of the hair on the left parietal region, not, however, enough to cause self-consciousness in the patient, and in the other a small area of baldness had persisted from some time in the same region As the patient disappeared from the clinic it was quite within the range of possibility that ultimately the hair grew again on the patch He attributed this immunity from gross accident to the fact that he never permitted the pastille to be darkened quite to the tint He desired to advise the careful measurement of all apparatus before attempting to epilate He had more than once found that the critical distances prescribed by Sabouraud had not been maintained Although x ray

therapy was the only method to be confidently recommended in the treatment of scalp ringworm, it was always with reluctance that he rendered a child bald for ten weeks, and he hoped that x rays were not the last word in the treatment of tinea tonsurans Unfortunately, x rays were not by any means invariably successful in sycosis, there might be an etiological reason for this In tinea tonsurans they were dealing with an infection from the exterior in sycosis, in many cases, the infection was very probably from within He was able to confirm what had been said about the amenability of tinea barbae to manual epilation and ordinary local medication Referring to Oriental sore, he had treated successfully with x rays six of these cases, one of which had developed in this country about four or five months after return from the East Four of these cases had formed the subject of a communication to the Aberdeen meeting of the Association in 1914 He believed that they were the first to be reported in Scotland

Dr HALDIN DAVIS (London) said that he had treated 700 cases of ringworm of the scalp, in only three of which had there been a small area on which the new hair had been rather thin He had had no case of persistent alopecia at all, and was inclined to ascribe the thinness of the hair in these three cases to fidgeting on the part of the child and the consequent slight overlapping of the doses He agreed with Dr Goodwin Tomkinson on the importance of keeping the tint of the pastille well below the full B tint The speaker never took it further than the 4/5 B tint on the Lovibond tintometer He had used the rays successfully in curing ringworm of the scalp in children as young as 18 months without any untoward result, and also in obstinate cases of infantile eczema In these very young patients he had employed very light anaesthesia, just enough to make them go to sleep

Dr H C SEMON (London) said that in his masterly synopsis Dr Sequeira had referred to the recent treatment of psoriasis by radio stimulation of the thymus gland, a method introduced by Brock of Hamburg in 1920 The speaker had employed it successfully in two cases, and there had been no recurrence of the eruption after two months in one case and three months in the other Both patients were girls of between 9 and 10 years of age The technique of the dosage was important, and care must be taken not to exceed one third of a pastille dose in children and one-half in adults, in both cases through a 2 mm aluminium shield The dose must not be repeated till after a month had elapsed, as, according to Brock, a paralysis of the secreting thymus cells tended to aggravate the condition Dr Semon desired to know if Dr Sequeira still practised occlusion of the tuberculous foci in the total arc-light bath treatment of lupus He had recently seen complete healing and involution of an ultra-destructive case of facial lupus at Polher's clinic at Leysin in six months in which no such precaution had ever been taken Acting on this hint, Dr Semon had now abandoned local shielding as soon as the body pigmentation was complete He had found no marked inflammatory reaction follow locally after the first or second exposure, and his impression was that involution was accelerated considerably by the procedure

Dr J HALL-EDWARDS (Birmingham) said that as one of the earliest workers he must bear the stigma of having been guilty of some of the atrocities mentioned He started treatment when the only instrument of precision used was the amperemeter In the treatment of lupus it must be remembered that the cases first submitted to radiotherapy were the derelicts of the then up to-date methods of treatment Many of these poor sufferers were without noses and ears, and their faces were horribly scarred as the result of numerous scrapings He could recall two cases which had quietened down as the result of x-ray treatment, they were both alive at the present time, and notwithstanding their disfigurement had had no serious return of the trouble During the last fifteen years he had not seen a case of so serious a nature This was evidence itself that modern methods of treatment had been in a measure successful, and in these methods the x rays had played an important part At the present time he only used the rays for lupus occasionally, he preferred the effects produced by radium combined with sunlight In the treatment of ringworm he had used x rays in over a thousand cases, and in no instance had the hair failed to reappear In only one case could he recall leaving a bare patch, and here, luckily he had warned the patient's mother of the possibility He disliked the method of producing epilation in a shorter time than five minutes in rapidly produced epilation the margin of error was so small that it was easy to overstep the safety line He always refused to treat a case which had been previously treated with mercurial ointment until at least three weeks had passed since the ointment had last been used and he always used tubes with a platinum target He was led to adopt this method by finding out that a tube with a tungsten target produced more reaction than one with a platinum target, even when the conditions were the same In the treatment of rodent ulcer he only used the x rays after the ulcer had been apparently healed by the application of radium He then administered a small dose of unfiltered rays once a month three or four applications being given Here again he would like to point to the fact that the cases of rodent ulcer which presented themselves to-day were nothing like so serious as those of twenty years back Whilst their methods of applying x rays were much more scientific and accurate than formerly, they still had much to learn He was not in favour of massive doses

Dr SEQUEIRA replying to the discussion agreed with Dr Dore that the x rays had a wider sphere of usefulness than the ultra-violet light but believed that there were possibilities of extending the use of the actinic rays He appreciated the variations in gas tubes mentioned by the President but preferred those tubes for dermatological work In such fine work as the treatment of tinea he found a rather slow development of the pastille change safer than the very short exposure required with very powerful apparatus Like several speakers, he did not exceed the 4/5 B tint Dr Goodwin Tomkinson was right in insisting on the exact technique, especially with regard to distance and the exact centring of the target of the tube slight divergences frequently caused unsatisfactory results He had not used anaesthesia for the administration of the x-ray treatment of tinea, but he did not apply the rays to children so young as those treated by Dr Haldin Davis With regard to the relative resistance of mature and immature cells, Dr Sequeira pointed out the great difference in the reaction of basal-celled carcinoma and the squamous and intermediate types to both x rays and radium He agreed with Dr Mitchell as to the rapidity with which rodent growths filled up cavities like the antrum, and especially as to the celerity with which cancellous bone was invaded In both conditions cure by x rays or radium was usually impossible With regard to the treatment of psoriasis by x raying the thymus, Dr Sequeira ventured to doubt whether an appreciable quantity of penetrative rays could reach the gland with the short screened exposures which were advocated He was gratified to have such cordial support from Sir Norman Walker, whose experiences with the artificial light bath treatment of lupus, as to both the local and constitutional effects tallied exactly with his own In reply to Dr Hallam's question he had had twenty-four years' experience of Finsen light treatment, and had not seen one case of carcinoma due to phototherapy In conclusion he expressed his satisfaction at the general condemnation of the excessive x ray treatment of lupus vulgaris, and in view of the fact that speakers had mentioned that it was still practised he proposed that a resolution should be sent to the Council of the Association, asking that the attention of the Ministry of Health should be called to the grave risks of carcinoma from the prolonged treatment of lupus vulgaris by the x rays

The PRESIDENT having ruled that such a resolution would be in order, it was moved by Dr SEQUEIRA, seconded by Sir NORMAN WALKER, and passed unanimously

> That the Section of Dermatology at the Annual Meeting of the British Medical Association (Bradford 1924) is of opinion that it would be advisable that the Ministry of Health should issue a warning to their tuberculosis officers of the danger of cancer following the prolonged administration of x rays in the dry type of lupus

ALOPECIA AREATA AND STRABISMUS FAMILIAL GROUPS.

BY

J GOODWIN TOMKINSON, M D,

Professor of Diseases of the Skin, Anderson College of Medicine Glasgow, Dispensary Physician for Diseases of the Skin and Physician in Charge of Skin Electrical Department, Western Infirmary, Glasgow, Dermatologist, Education Authorities of Glasgow and County of Dumbarton etc

AT the Annual Meeting held in Glasgow in July, 1922, I contributed a paper entitled "Alopecia areata and strabismus a family group of cases" Its publication in the JOURNAL educed letters from Dr Charles F Harford of London (September 30th, 1922) and Dr W Inman of Southsea (November 4th, 1922), and a reference in an article by the former gentleman, which appeared in *The Child* of January, 1924, entitled "Squint and the child mind" The following is a brief and partial summary of my first contribution

GROUP "A"

The family consisted of eleven members—father, mother, and nine children I examined seven of them Two children, both adults, were inaccessible, having emigrated to Canada, and the father and one son did not respond to my invitation to appear for examination Dr W Hislop Manson of the Glasgow Eye Infirmary reported strabismus present in six of the seven examined, and stated that the mother said the seventh occasionally squinted Hairs from four of the cases were examined microscopically by Dr G Haswell Wilson of Glasgow University Pathological Department, who also attempted to make cultures on Sabouraud's medium, but failed to discover anything microbic or mycotic by these procedures The mother stated that eight members of the family squinted—confirmed in six of them by Dr Hislop Manson Seven of the eight members, including the mother—a possible hereditary factor—showed at some time or other a pathological condition of the hair, which in six cases was alopecia areata and affected in three instances the whole of the scalp In four of these six cases the disease appeared, according to the mother's statement, in the occipital region The remaining (seventh) case showed only thinness of the hair An eighth child also had thin hair but did not squint There was a distinct neurotic history in the family, the mother having suffered at one time from "no feeling in the hands and head," and five of her children were very nervous, one being a somnambulist All of these squinted and had suffered at one time or other from alopecia areata

Since July, 1922, two familial groups, not so interesting as the preceding, but of sufficient interest and importance to warrant them being recorded, have come under my notice One of these occurred in the practice of Dr John Fotheringham of Motherwell, who, in November of last year, kindly drew my attention to it I visited the family and made the following notes

GROUP "B"

Mr B's father suffered from "intermittent squint" His daughter suffered from squint, and at about the age of 10 years underwent an operation for it at the Berkeley Street Eye Infirmary, Glasgow, with resulting cure It was there stated, according to Mrs B, that it was "hereditary squint" Mr B, aged 41, does not squint, kicked with the left foot when playing football, and is practically ambidextrous He wrote only with the left hand after the right was incapacitated through a war wound

Mr B's brother's daughter, aged 6 years, suffered from double convergent squint, for which she underwent operation

Mrs B, aged 39, has a left divergent squint In the spring of 1918 she had pleuropneumonia, with subsequent general thinning of hair, in April, 1923, pneumonia, with subsequent general thinning of hair again

Son, aged 13 years Right internal squint noticed at 14 months operation performed when about 10 years of age He wears convex glasses for squint At the age of 6 years he suffered from alopecia areata Kicks at football with the left foot rather than with the right

Daughter, aged 10 years Left convergent squint first noticed after fall on back of head at age of 2½ or 3 years Wears glasses for squint Suffered from alopecia areata at about the age of 3 years, contemporaneously with John (then aged about 6 years)

Daughter, aged 4½ years Has a pronounced left internal squint and a less marked right internal squint Slight tonsillar enlargement Small patch of alopecia areata, for which mother sought Dr J Fotheringham's advice At about 1 year of age had convulsions on two occasions, probably of gastro-intestinal origin

Daughter, aged 3 years and 3 months No squint No history of hair disease Slight tonsillar enlargement

Dr W Hislop Manson of the Glasgow Eye Infirmary examined five members of the family and reported as follows

1 Mrs B, aged 39 Strabismus divergens
2 Son, aged 13 Strabismus convergens (right), has been operated on
3 Daughter, aged 10 Strabismus convergens (left)
4 Daughter, aged 4½ Strabismus convergens (left)
5 Daughter, aged 3 No strabismus

Of the four squinters three had suffered at some time or other from alopecia areata The fourth—the mother—never had alopecia areata, but had suffered twice from post febrile alopecia

The other group came under my notice early in January of this year, at my clinic in the Glasgow Western Infirmary

GROUP "C"

Miss C, aged 29 Suffers from right convergent squint At age of 10 years suffered from "bald patches"—that is, alopecia areata, went to Ireland for a change and recovered Wears spectacles for squint and has done so since the age of 9, with an intermission of some years beginning about the age of 13

Mr C, aged 26 No squint He has the masculine type of baldness, which began in 1920 after demobilization He suffered from shell shock in 1919 His skin is of the seborrhoeic type

Mr C, aged 22 Right convergent squint He has suffered from intermittent alopecia areata, which first appeared at the age of 10, and lasted about one and a half years Relapse occurred at about 14 years of age, and hair has grown and come out annually ever since At present extensive alopecia areata exists There has always been an area of thin growth at the back of the head, where the alopecia areata is at present most pronounced

An aunt between 50 and 60 squints, but I failed to discover if she had ever suffered from bald patches

Dr W Hislop Manson reported as follows

1 Miss C, aged 29 Strabismus convergens (right)
2 Mr C, aged 26 No strabismus
3 Mr C, aged 22 Strabismus convergens (right)

Of the two squinters one suffers from alopecia areata, the other has suffered from it

I would add to the preceding reports of these three groups of familial cases of alopecia areata and strabismus one of a singularly suggestive isolated case of these two affections A medical friend who consulted me for alopecia areata gave me, a few weeks ago, the following report of his own case

Dr X, at the age of 14 years fell from a roof, fourteen feet from the ground on to a concrete floor He remained unconscious for one week and was stone blind for three months On recovery of sight left divergent squint was noticed, and about six months afterwards alopecia areata appeared in the upper occipital region At that time he was operated upon, as lateral diplopia existed After operation the diplopia became vertical, which was corrected with plain prisms, each 5 degrees with the left eye inverted—that is, base of prism of left eye uppermost The alopecia areata disappeared and remained absent until about eighteen months ago—that is, for about eighteen years With this relapse there were intense frontal headaches It was then discovered that the prisms were out of alignment This was corrected, and while the alopecia areata still exists the patch, which is situated above the left ear, has diminished in size Prior to the accident he stammered, and at the age of 15 or 16 (that is, subsequent to the accident) underwent a course of speech training to correct the defect It still occasionally recurs He has always kicked with the left foot but is not left handed

In reviewing the preceding cases, one or two points appear to warrant further deliberation Waiving for the moment the consideration of the association of alopecia areata and strabismus, I would briefly refer to the "Inman

hypothesis" or, in other words, the relation of squint to left-handedness and stammering. At the Ophthalmological Congress in London in May 1921, Dr Inman indicated that the association of these symptoms was linked with some emotional stress and that this was the factor of real importance. I am unaware that stammering occur in any of the patients I have mentioned, save in the case of Dr X, and this existed before the accident upon which strabismus followed. With respect to left-handedness, the father in Group "B" is practically ambidextrous and formerly when he played football used to kick with the left foot. His son aged 13 years a squinter, kicks preferably with the left foot when playing football. Dr X also kicks with the left foot, and I believe he has always done so.

Returning to the main thesis—the association of alopecia areata and strabismus—what effect has the correction of strabismus on the associated alopecia areata? It will be recalled that, in the isolated case of Dr X the alopecia areata cleared up after the optical defect had been corrected by operation and the wearing of suitable glasses: it reappeared after the prisms became out of alignment and diminished after their correction.

Heredity appears to play a not insignificant role in Groups "A" and "B". I understand that oculists do not recognize the existence of hereditary squint. It is however an arresting feature of Group "B" that the paternal grandfather a paternal aunt a paternal female cousin and the mother of the three strabismic children all squinted. It would almost appear as if this was heredity and of particularly potent origin in that it was determined by combined similar paternal and maternal influences. In Group "A" there did not exist bilineal influence but the mother squinted was neurotic suffered from alopecia areata and bore eight squinters six of whom suffered from alopecia areata and one had thin hair. Five of these children were very nervous one or them being a somnambulist.

While considering the question of heredity permit me to digress slightly from the cases of associated diseases to state that I have notes of two cases of alopecia areata unassociated, so far as I am aware, with strabismus where also the hereditary factor appears to be at work. One was that of a boy who, at the age of 15 years was brought by his mother to see me on April 24th 1919. She said that on the paternal side his grandmother a great-uncle and a great aunt became absolutely bald on the scalp and elsewhere and that another paternal great aunt had suffered from temporary partial baldness. The other case, that of a girl aged 8 years, whom I saw on September 6th 1921, had on the maternal side according to her mother's statement, a grandfather and aunt who had suffered from alopecia areata.

To return again to our main subject. A common area of origin of alopecia areata exists in several of the cases. In Group "A" four out of six cases began in the occipital region (mother's evidence for three of them). In Group "C" one patient has always had an area of thin growth at the back of the head, and it was there that alopecia areata was most pronounced when he came under my notice. In the case of Dr X alopecia areata first appeared in the occipital area. That is in 50 per cent of these cases the first manifestation was in the occipital region. All of these patients squinted. The visual centre is in the occipital lobe has this any special significance? In two cases—the case of Dr X and that of one of the children in Group "B"—strabismus developed after falls in the case of the child the blow was on the back of the head.

In dealing with these cases, care was taken by microscopic examination and cultural tests or cautious investigation and inquiry to eliminate dermatological diagnostic error while the eye examinations were made by an experienced ophthalmologist. Is there a causative factor in these cases common to the two conditions, strabismus and alopecia areata? It might be advanced that their association is merely coincidental. If so it is, especially in Group "A," and to a less degree in Group "B" co-incidence on an unusually grand scale.

Adverting to epidemic alopecia areata while maintaining a perfectly open mind as to the occurrence of epidemics presenting the macroscopic features of alopecia areata, I have yet after a long experience of skin practice in private hospital and school dermatological clinic to meet with one. I have only records—on two occasions it is memory holds good—suspected a contagious origin.

One of the theories of squint is that the equilibrium between the powers of convergence and accommodation is disturbed. The powers are dependent upon innervation. In my former communication I pointed out that, in Group "A" there was a possible maternal influence at work. Mrs A quinted, had suffered from alopecia areata of the whole scalp, and at one time suffered from "no feeling in the hand and head." She presented no physiognomical suggestion of congenital specific disease but I was unaware of any faulty obstetrical history. Five of her children one of whom was a somnambulist were very nervous, all quinted and had suffered from alopecia areata. In this group, with such evidence, I would be difficult to exclude the hair affection from the picture produced by nerve disturbance. Indeed it is strongly in favour of its inclusion as resulting from involvement of trophic nerve.

In the two additional groups of familial cases and the isolated case of Dr X there appears to be some further evidence in favour of a trophoneurotic origin of alopecia areata.*

THE TREATMENT OF LUPUS ERYTHEMATOSUS BY INUNCTION WITH BACTERIAL TOXINS

BY

WILLIAM DYSON OBE MD

Dermatologist Manchester Royal Infirmary Physician Manchester Hospital for Diseases of the Skin

THE etiology of lupus erythematosus is still undetermined therefore I thought that an attempt to elucidate this problem would be of interest to members of the Section.

Most dermatologists consider it to be a tuberculide some a toxi-tuberculide others a toxi-streptococcal manifestation, and others that it is due to toxins reaching the skin in the blood stream from various sources, and not necessarily to a specific toxin. All are agreed that vasomotor instability is a predisposing cause, and that traumatic atmospheric conditions such as sudden changes from cold to heat, exposure to bright sunlight etc may determine the appearance and localization of the lesions.

The opponents of the tuberculide theory argue that the histological appearances are not those of tuberculous lesions, that inoculation experiments have been inconclusive, that tubercle bacilli have not been demonstrated in the lesions, and, lastly, that injections of tuberculin do not produce either general or local reactions. Against the streptococcal theory is the fact that although in a certain number of cases a chronic septic focus can be found, and the removal of this with subsequent treatment by autogenous vaccines is sometimes successful in the majority of cases this procedure fails to have any influence on the course of the disease.

I do not at present propose to discuss the possibility of a non-specific toxaemia. It does not help us to come any nearer to the cause of the disease or, if the disease be due to more than one causative agent, to classify the type or case clinically.

I think we are all familiar with the local reaction which arises when a patch or lupus vulgaris is treated with tuberculin ointment about a year ago I thought it would be interesting to see if cases of lupus erythematosus would react in a similar manner, arguing that if the very tuberculous or toxi tuberculous lesions of the skin reactions should be obtained. I employed an ointment containing 5 per cent tuberculin (Old B V and Co) in vaseline. The ointment is rubbed into the lesions for a few days, and if no reaction is obtained in a week I place the case as giving a negative result. In a large number of cases a reaction was obtained. Usually about the third day the lesion

* All the patients also suffer from alopecia areata. I had a conference with the exception of Dr X who was not [illegible] distance.

became erythematous, swollen, and in some cases the inflammation was so acute as to cause an actual discharge of serum

Latterly, in cases which showed no reaction to human tuberculin, I have tested them with bovine tuberculin or a streptococcal ointment—10 per cent bovine (T P, Burroughs Wellcome and Co), or 5 per cent streptococcal vaccine, 1 c.cm =100 million (Parke, Davis), both in vaseline In thirty-five cases tested with human tuberculin twenty-one showed a positive reaction = 60 per cent I have tested four cases with bovine tuberculin, three of which had previously been negative to human tuberculin, while the fourth had been positive The first three were positive to bovine tuberculin, the fourth was negative

Lastly, I tested four cases with streptococcal ointment, all of which had previously been negative to human tuberculin, but one of which had shown a positive result to bovine tuberculin One case gave a positive result Thus by the application of these bacterial toxins locally I have obtained reactions in twenty-five out of thirty-five cases =71 5 per cent Of the ten cases in which I obtained no reaction most of them were tested with human tuberculin only, and I have no doubt that if they had also been tested with bovine tuberculin and streptococcal ointment I should have obtained a still higher percentage of positive results

The reaction appears to be specific—that is, those cases which react to human tuberculin do not react to bovine or streptococci, and vice versa The reaction is local, only occurring in the patches to which the ointment has been applied, while the other lesions remain unchanged

Is it possible to make a clinical division between those cases which will react to the specific toxins?

All the cases with one exception which reacted to tuberculin, human or bovine, were chronic in character, mostly of the discoid type showing well marked atrophy, the one exception was of the superficial erythematous type In this patient the lupus erythematosus was associated with well marked tuberculous cervical adenitis

Of the three cases reacting to bovine tuberculin, two were of the nodular type with well marked atrophy, the third was an extensive case affecting practically the whole face, with well marked follicular plugging and pitted atrophy The one case giving a reaction with streptococcal vaccine was of the acute superficial erythematous type The only other acute case I have had the opportunity of examining since I commenced this investigation was a very acute case which looked as though it might become generalized, the face, chest, hands, and feet being all affected, she, however, developed an irregular temperature accompanied with the physical signs of lobular pneumonia She was tested with human tuberculin with negative results It is suggestive that the only case which reacted to streptococci was of the acute superficial erythematous type

Conclusions

If lupus erythematosus is a toxi-dermatitis, then we are justified in assuming that the toxin is carried from the infected focus by the blood stream and is fluid in character, therefore one would not expect any special localization We are all familiar with the fact that the lesions of lupus erythematosus appear more especially in regions which are subject to vasomotor disturbances, therefore it seems to me probable that the inflammatory changes are the results of the local action of bacteria, the localization of the lesions being determined by a condition of capillary instability

If these results are due to a local sensitization to specific toxins I think we are justified in assuming that the toxin producing the reaction is the same as that which produced the local sensitization of the lesion, and that the causative agent producing the lesion is the same as that to which it reacts

In thirty-five cases I have shown that over 70 per cent react to either human or bovine tuberculin, and that 2 8 per cent react to streptococcal vaccine, also that the clinical type of the cases reacting to tuberculin is different from those reacting to streptococcal vaccine The recent work of Dr Jorgen Schaumann of Stockholm may possibly give the explanation why the histological appearances in lupus erythematosus differ from those of other tuberculous lesions of the skin

Since completing this paper I have tested the apparently normal skin of a patient suffering from lupus erythematosus in whom I had obtained a reaction with bovine tuberculin After four daily applications the skin showed a well marked reaction, pointing to the fact that the whole skin was sensitized to a specific toxin This raises the question whether the sensitization is secondary to the lupus erythematosus or the lupus erythematosus is the result of sensitization from another source

I hope to make a supplementary communication on this subject in the near future

Memoranda:

MEDICAL, SURGICAL, OBSTETRICAL.

FATAL HAEMORRHAGE AFTER TRACHEOTOMY

A MALE child, aged 1 year and 9 months, was admitted to the Shieldhall Fever Hospital, Glasgow, on June 12th, suffering from faucial and laryngeal diphtheria Respiratory obstruction was very marked, and tracheotomy was performed on the following day The trachea was entered below the isthmus of the thyroid, and a considerable quantity of diphtheritic membrane was evacuated Some surgical emphysema of the neck and chest followed the operation, but this soon subsided The tracheotomy tube was removed forty-eight hours after the operation The process of healing of the wound was perhaps a little slower than usual, but the general condition of the patient remained satisfactory and everything seemed to point to a good result, when, on June 23rd, a sudden and *fatal* haemorrhage took place The bleeding was so profuse, and death supervened so quickly, that it was impossible to say at the time where it had come from

At the *post-mortem* examination the trachea, larynx, the upper part of the oesophagus, the arch of the aorta, and the great vessels passing up in front of the trachea were removed in one mass On opening the trachea a hole a quarter of an inch in diameter, evidently the result of ulceration, was found on the anterior aspect, about an inch below the tracheotomy wound This ulcerative process had continued through the entire thickness of the tracheal wall and through the wall of the overlying left common carotid artery, thereby causing the haemorrhage

From the position of this lesion it looked as though it had been started by pressure of the lower end of the tracheotomy tube while it remained *in situ* The mucous membrane of the congested, but all signs of diphtheria

Glasgow. ROBERT J PETERS

PICRIC ACID DERMATITIS

IN his classic textbook of pharmacology (1900) Professor Cushny has written

> "Picric acid is an irritant to the skin and mucous membranes, and in large doses causes vomiting and often anuria and strangury Violent convulsions occur sometimes, in other cases collapse An ointment containing it has been applied in some forms of eczema, but it gave rise to poisoning in one of the few cases in which it was employed"

The toxicology of this antiseptic (of the aromatic nitro benzol series) was therefore stressed twenty-four years ago, but its use to-day appears, if my information be correct, to be pretty general both in hospital and private practice

It would be interesting to know who first proposed the use of this gaily coloured poison as a dressing, but I sincerely hope it was not a dermatologist Its therapeutic applications have at any rate been widely promulgated in British medical literature *A Manual of Surgery* (Rose and Carless, p 117) advises "that a solution of picric acid (gr 5 ad oz 1) be applied to the burnt surface which may be left *in situ* for several days," and the excellent

modern *Index of Treatment* by various writers (p 156) directs that "lint soaked in a *saturated* solution should be kept applied to the part for some time"

The supposed "pickling" of the tissues produced by picric acid may have given rise to the belief that it is analgesic, but in a case of severe scald, complicated by picric acid dermatitis, which I saw as recently as August 24th, three days after the drug had been applied, the patient, a man of 32, assured me that the pain had greatly increased and continued from the moment of its application

This is scarcely the place to emphasize its value in this respect, but I have no doubt that 'ambrine" is by far the most soothing preparation, both immediately and for repeated dressings (as it does not adhere to moist wound surfaces) that we possess

Whether picric acid is an efficient means of securing asepsis prior to major surgical procedures must be left to the judgement of the surgeons and bacteriologists but that it may be a cause of severe suffering in a predisposed person is illustrated by the following case

Mrs X has always had a delicate skin so that blisters have followed a single application of tincture of iodine (*B I*) When recently admitted for carcinoma mammae she forgot to tell the ward sister of her idiosyncrasy and the whole side of the chest and axilla was freely painted with a weak solution of picric acid Even before she went to the theatre she experienced burning and itching and on the following day there was a very severe vesicular eruption of the whole area so that the pain of the operation was as nothing compared with that due to the skin affection It is of interest to record that the symptoms continued to spread until the whole upper trunk and arms to the wrists became involved in a severe papulo vesicular dermatitis hardly distinguishable from a case of acute eczema

That such a notable reaction is a rare occurrence I am prepared to admit, but I have seen other cases, and there are occasional examples of it in the literature In my opinion the evidence is sufficient to justify an earnest plea for the abolition in therapeutics and surgery of a dangerous chemical, for which there are so many less toxic and equally efficient substitutes

London W 1. HENRY C SEMON, M D, M R C P

MELAENA NEONATORUM TREATED BY INJECTIONS OF PATERNAL BLOOD RECOVERY

THIS year I have read in the BRITISH MEDICAL JOURNAL of two cases of melaena neonatorum treated by injections of paternal blood so that it may not be out of place to record the following case, which differs somewhat from those reported

A primipara who had been in labour for about sixteen hours was delivered of a healthy female child weighing 8 lb at 9 p m on May 3rd Delivery was normal no instruments were used but an injection of pituitrin (1/2 c cm) was given followed by another injection of the same amount after an interval of three hours when the head was on the perineum The following day (May 4th) the child passed *meconium* and was put to the breast every three hours During the night of the third day she did not sleep well and was restless until 5 a m *meconium* was passed at 7.30 At 10 15 she vomited a large amount of bright red blood and again at 10.30 When I saw her she was cold and clammy and the pulse hardly perceptible I sent for the father and while awaiting his arrival injected 2 oz of normal saline into one buttock and gave iced sterilized water in sips by the mouth the child was kept warm by hot water bottles

At 12.30 p m 5 c cm of the father's blood were withdrawn from the median basilic vein and injected deeply into the left buttock Immediately afterwards the child fell into a peaceful sleep the colour improved and she became warm At 7 15 p m she again became restless and there was a copious discharge of bright red blood from the bowel At 8 o clock 10 c cm of the father's blood were injected the child again became peaceful but vomited (coffee ground) at 10 p m Sips of albumin water were given and the child slept well Small quantities of blood were passed from the bowel until the end of the fourth day after which the motions were tarry and remained so until the end of the sixth day they became normal on the ninth day The child was given the breast again on the morning of the fifth day

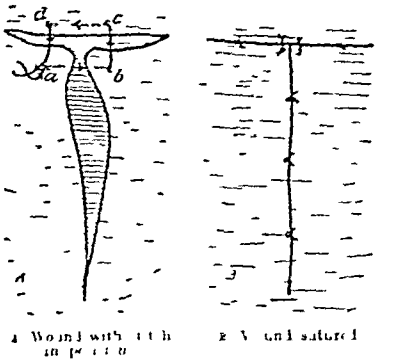
The child's weight on the ninth day was 7 lb 2 oz on the sixteenth day 7 lb 4 oz on the twentieth day 7 lb 6 oz on the twenty third day 7 lb 8 oz and on the twenty-seventh day 7 lb 10 oz The child remained well except for some flatulence and slight looseness of the bowels these soon disappeared

Some time later I learned that the father had at one time been looked upon as a "bleeder", a few months previous to the confinement I performed a minor operation on him and found then no signs of excessive bleeding

Milngavie R J LESLIE FRASER M B, Ch B

"T" SHAPED WOUNDS

THE following procedure was found useful by me when resident casualty officer at the General Infirmary Leeds It is suggested as a ready and simple method of dealing with the wound resulting from the suturing of a divided tendon



A Wound with stitch in position B With sutures tied

A "T" shaped wound is caused by the original cut and the incision necessary in the search for the proximal end After securing the two ends of the tendon any difficulty in the coaptation of the skin edges is overcome by the use of the stitch here described The needle entering at *a*, passes through and emerges at *b* then passes superficially to *c* where it re enters the skin to appear at *d* Sufficient tension is now used to bring the three edges into accurate apposition, when any further sutures necessary are easily inserted

April 1st P BENTWISTLE M B, Ch B

Reports of Societies.

TREATMENT OF UTERINE FIBROIDS

AT a meeting of the Brighton and Sussex Medico-Chirurgical Society, held on September 9th, when Dr E I MAYNARD (President) was in the chair, Mrs LILIAS JEFFRIES, M D, read a paper on the treatment of uterine fibroids

After giving in detail the history of a typical case the symptoms and treatment were shortly discussed The physique of patients with fibroids was often muscular, approaching the masculine type Common symptoms were (1) Menorrhagia beginning early, and often with dysmenorrhoea increasing metrorrhagia and haemorrhage Leucorrhoea, sometimes offensive, preceded intermenstrual haemorrhage (2) Sterility, 30 per cent of fibroid uteri had never been pregnant, sterility followed by repeated abortions was more common If diagnosis could be made, myomectomy was the correct treatment (3) Backache was common, also tenderness when congestion was marked, otherwise it was a symptom of degeneration or infection Pain due to pressure on the sacral nerves was very common, the patient believing she had sciatica, lumbago, or neuritis (4) Dysmenorrhoea due to congestion or efforts at extrusion (5) Bladder symptoms due to pressure on urethra or bladder Frequency of micturition was very common and distension due to retention and cystitis followed (6) Dyspareunia, due to mechanical obstruction or tenderness of tumour (7) Rectal symptoms, due to pressure, developed later

The treatment was as follows (1) Cases without symptoms must be watched, but needed no treatment (2) Medical treatment was palliative only, and seldom sufficient eventually The menopause seldom cured fibroids that had shown symptoms, but atrophy of tumours might occur (3) Curettage was sometimes sufficient, it was more useful for diagnosis (4) Myomectomy was the ideal treatment when practicable, especially to cure sterility, and in patients who could not face the loss of the function (5) X rays might be used by the older Freiburg method the Erlangen method, or the Beclere method, or radium treatment given The treatment was applicable to tumours under four months' pregnancy size if the diagnosis of simple fibroids was certain Permanent amenorrhoea need not result (6) Hysterectomy was the commonest end-treatment in 65 per cent of all cases The results were satisfactory, it ensured complete removal of the disease, with no possibility of recurrence

Reviews.

SURGICAL ESSAYS

ALL who have come into contact with DR JOHN B DEAVER'S lively personality will turn with interest and expectation to his new volume of essays—*Excursions into Surgical Subjects*.[1] Two years ago Dr Deaver went out to the West to deliver a series of lectures in the Extensions Course of the University of Washington at Seattle. Seattle is a typical example of the very rapidly grown and prosperous city, such as the currents of American civilization alone could have produced. It is pre-eminently a business man's town, engrossed in getting on and making good. Its university has no medical school, and these lectures were in the nature of a post-graduate clinic.

The essays on specific surgical subjects (peptic ulcer, jaundice, diseases of the bile passages) are necessarily comprehensive and do not aim at the elucidation of any small point. Rather are they the wide generalizations, backed by timely statistics, of one who has been a most busy and successful practitioner of surgery. Dr Deaver has always been a practical man, and has imbued his students with the need for self-reliance. In this respect he resembles, perhaps, many teachers of the British school. He is not a laboratory man, but, common sense being his watchword, he has a very lively appreciation of the information which the laboratory can give. Very justly he mistrusts too early specialization, and in one of these essays has some wise things to say in favour of part-time as against whole-time professorships. Dr Deaver is able to say of himself that his clinical teaching has always had the first and paramount consideration in the day's work. It is curious how many authors manage to emasculate their style when they commit themselves to paper. Dr Deaver's real medium is the spoken word, by the bedside and in the operating theatre. There he has been unique, forcing his lessons home by a crescendo of questioning, calling up vivid pictures before the eyes of his hearers. Little sign of this vivid personality appears in these essays. Needless to say, they are dogmatic and sound, but they might well have originated from a more tranquil source. He has been assisted on the pathological side of the problems elucidated by DR STANLEY REIMANN (also of the Lankenau Hospital, Philadelphia), whose name appears with Dr Deaver's on the title-page.

CARDIOLOGY

DR NEUHOF tells us that the object at which he has aimed in writing *The Heart: Its Physiology, Pathology, and Clinical Aspects*[2] is to present in one volume the more recent contributions to cardiology and to correlate them with the larger clinical and practical aspects of the subject. The book is intended for practitioners and students, as well as for those specially interested in cardio-vascular diseases.

The subject-matter is discussed in a very systematic manner. Chapters are devoted to the embryology, microscopic anatomy, physiology, and pathology of the heart. Thereafter graphic and electrometric methods of investigation are discussed in considerable detail. The author has attempted to make the facts clear for the practitioner who has not been trained in this branch of the subject, but the main broad issues are often confused by a multiplicity of detail and of illustrations.

We have difficulty in agreeing with the author's interpretation of some of the records printed in the text, and many of them will not be easily understood by anyone who is not already thoroughly familiar with the polygraph or electrocardiograph. The explanation of auricular fibrillation is somewhat confused, for example, the author sums up his subject in the following sentence: "Concisely stated, therefore, auricular fibrillation is essentially due to any influence—toxic, nutritional, reflex, etc.—which breaks up the simple, normal, single, 'circus' wave starting from the pacemaker by interfering with and blocking the propagation of the wave." A chapter deals with the examination of the heart by x rays, and numerous orthodiascopic tracings of the heart are given. Thereafter the various diseases of the heart are treated seriatim, and clinical records of 108 cases of cardio-vascular disease are provided.

There are many advantages in having the various aspects of heart disease combined in the one volume, though there has been a tendency in the past for much of the newer work to be kept in separate textbooks, this tendency is passing away, but it is difficult to combine these two aspects of the subject and make the result suitable at once for the general practitioner and for the specialist. For the former the book must be written in an easy style, and yet it must be sufficiently accurate to enable him to obtain a grasp of the principles. For the latter the matter must be accurate, particularly in detail. Our feeling is that the author of this volume has not made the subject sufficiently simple for the practitioner, nor yet sufficiently accurate in detail to make the book of real value to the specialist.

DISEASES OF THE NOSE, THROAT, AND EAR

THE late DR W G PORTER, who fell in the great war, was the author of a textbook on *Diseases of the Nose, Throat, and Ear*, which commanded such success that about a year ago a third edition, produced under the direction of his colleagues, was exhausted. The present work,[3] still based on the original plan, is dedicated to the memory of Dr Porter by DR LOGAN TURNER and his colleagues engaged in the practice and teaching of otology and laryngology in Edinburgh. Dr Porter succeeded in writing a small book, embracing diseases of the ear, nose, and throat, sufficiently comprehensive for the senior or post-graduate student, and this clearly met the want for a book of reasonable size including the three subjects.

The new volume, under the editorship of Dr Logan Turner, has been expanded into a kind of small system, but it still remains of moderate size and is intended to meet the same requirements as the previous book, though more fully. The first section, on the nose, is the joint production of Dr Logan Turner and Mr W T Gardiner. It is thorough and complete, and, taken along with the next section, on the accessory sinuses, by Dr Logan Turner alone, gives an account of the anatomy, pathology, and surgery of these regions, which compares favourably with that in any of the larger standard books.

The section on the pharynx and naso-pharynx has been written by Mr Douglas Guthrie, and that on the larynx by Mr J D Lithgow. The former, though lacking in nothing essential, is perhaps a little compressed in relation to the scope of the rest of the book, though on the whole the editor has maintained the balance between the various parts admirably. The suggestion might be put forward, however, that these sections might be brought in some way a little more into relation with general medicine.

The fifth section, on peroral endoscopy, by Mr Ewart Martin, provides an account of the direct examination of the larynx, trachea, bronchi, and oesophagus, which gives the reader an excellent idea of what can be accomplished in this way, knowledge which should be possessed by every practitioner. There is rightly no elaborate description of technique, which is beyond the scope of the book.

The last section, on the diseases of the ear, is the work of a master, for in the space of about a hundred and fifty pages Dr J S Fraser has given a most remarkably complete and lucid account. He has not shied at the perplexities of nystagmus and the tests of labyrinthine function, and it would be difficult to find anywhere a more satisfactory concise exposition of this difficult subject.

The editor is to be congratulated on the skill with which these several articles have been welded into one treatise, and on his judgement on the method of expansion of the

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[1] *Excursions into Surgical Subjects*. By John B Deaver, M.D., Sc.D., LL.D., F.A.C.S., and Stanley P Reimann, M.D. Philadelphia and London: W. B. Saunders Company. 1923. (Med. 8vo, pp. vi + 188, 30 figures. 21 net.)

[2] *The Heart: Its Physiology, Pathology, and Clinical Aspects*. By Selian Neuhof, B.S., M.D. Philadelphia: P. Blakiston's Son and Co. London: Stanley Phillips. 1925. (Medium 8vo, pp. xii + 701, 303 illustrations. 10 dollars.)

[3] *Diseases of the Nose, Throat, and Ear for Practitioners and Students*. Edited by W. Logan Turner, M.D., F.R.C.S.Edin. Bristol: John Wright and Sons, Ltd. London: Simpkin Marshall, Hamilton, Kent and Co., Ltd. 1924. (Demy 8vo, pp. xxii + 413, 217 figures, 12 plates. 20s. net.)

original There is a profusion of excellent illustrations which enhance the value of the text, though the coloured plates, as before, are more dazzling than faithful to the tones either of sunlight or of artificial illumination The book as a whole is singularly free from any bias towards the teachings or methods of any particular school, and has been written with such care that only one minor inaccuracy has revealed itself In describing the treatment of facial paralysis the writer evidently intends to refer to the hypoglossal nerve and not to the lingual The new book will well maintain the position which was established by the work of Dr Porter

THE EVOLUTION OF MAN

By assembling in book form three valuable addresses upon the history of man's evolution, Professor ELLIOT SMITH has furnished all interested in this subject with a clear and authoritative statement of the important general principles which have been neglected in most of the larger textbooks dealing with man's pedigree

The volume is entitled *The Evolution of Man*,[1] and the three addresses are those delivered to the British Association, to the British Academy, and at the Royal Institution, and our present knowledge concerning the position of the human family in the order of primates is graphically summarized in a Foreword The reader readily acquires a clear conception of the sequence of events leading to the appearance of *Homo sapiens*, but perhaps the most admirable and valuable feature of the book is the lucid way in which the significant fundamental factors influencing the emergence of intelligence are presented Many common fallacious ideas will be dispelled by a careful perusal of this contribution to our knowledge of the primates and man The facts are marshalled throughout in such a manner that the general reader might almost interpret them for himself, and the main stages in the history of man stand out in such bold relief that the book may be considered an ideal introduction to this fascinating subject No one can fail to appreciate how important in the evolution of man has been the long persistence of primitive traits which permit a greater degree of adaptability, and how disastrous early specialization has proved to any class of animal Students of comparative anatomy have been long aware of this truth, and it is to be hoped that Professor Elliot Smith's emphatic statements upon the subject may enlighten others who still seem unable to appreciate its importance After showing the vital influences of the "arboreal apprenticeship" and the consequent replacement of smell by sight as the dominant sense, the author vividly portrays the evolution of stereoscopic vision and sketches the far reaching effects of its development Readers who have not had the advantage of following the recent investigations of Professor Elliot Smith and his co-workers upon the evolution of stereoscopic vision will welcome greatly this concise section of the book, which presents the most significant results of these researches and their bearing upon the history of man

The volume is clearly and efficiently illustrated and provided with a good index, and readers will await with eager anticipation the appearance of a fuller exposition in the form of a textbook of the evolution of man, which the author promises in the preface

RHUS DERMATITIS

Of all the cutaneous eruptions caused accidentally by plant substances, that produced by the different species of rhus (poison ivy) is probably the most common in America Few people in this country, it may be assumed, are acquainted with the plant or its effects on the human organism, but those who would gain a knowledge of the subject will find JAMES B MCNAIR's book on *Rhus Dermatitis*, not only very interesting, but also a model of its kind It contains a very full account of the subject, so far as published information is concerned, and records the author's own researches, which constitute a substantial addition to our knowledge The plant and its effects were succinctly described by Captain John Smith in 1609

> The poysonous weed being in shape but little different from our English yvie but being touched causeth redness itchinge and lastly blisters the which how soever after a while the partie endure of themselves without further harme, yet be alike for the time they are somewhat painfull, and in a part dangerous it hath gotten itselfe an ill name although questionlesse of noe verie ill nature

The affection has, therefore, to be distinguished from dermatoses caused by other substances, and also from idiopathic eczema The poison is, however, absorbed from the skin to a variable extent, and at times from the intestine, in cases where the plant has been eaten with a view to producing immunity from its effects In such cases the disease wears a somewhat more serious aspect than Captain Smith would have had us believe A definite febrile course results, lasting for about a week, there is a rise in the blood pressure and congestion of the lungs and bronchial tubes, with cough, expectoration, and diffuse congestion of the conjunctivae, tinnitus, and disturbances of vision, epistaxis, sore throat, and sometimes delirium A fatal termination has been recorded in three cases only a boy 6 years old, who died within three weeks, a woman aged 69, who died after two months of severe suffering, and a man who had slept in a wood in which rhus was growing That the disease is refractory to treatment is perhaps best evidenced by the list the author gives of the remedies that have from time to time been recommended they number two hundred and fifty Until further opportunity for experimentation and clinical observation occurs the author recommends Barthe de Sandifort's paraffin treatment of burns as a tentative method for external treatment or, for those who do not care to apply the paraffin method, bathing the entire body with dilute aqueous ferric chloride, this, if efficiently done, will neutralize any poison that has not already penetrated the skin The book contains numerous descriptions or cases of rhus dermatitis, and the following may be cited as an example of the severer forms

> A man in cleaning up his grounds had handled the plant which grew on the place in great abundance A few days later his hands were covered with vesicles and his face and genitals badly swollen The next day the eruption appeared on the arms thighs and abdomen and continued to spread for several days The face and ears were greatly swollen congested and dripping with fluid, the trunk was covered with large patches of papules and vesicles and by most excoriations the genitals were enormously distended by oedema and the scrotum running with serum the arms and legs were in a similar condition The patient suffered tortures from the severe itching and sleep without powerful anodynes was impossible for several nights in succession After the seventh or eighth day the skin rapidly returned to its natural condition

A very extensive bibliography is appended, running into seventy seven pages The work is very thoroughly done, and those parts of it which deal with the subject from a pharmacological standpoint are of particular interest

THE RELATION OF THE SEXES

The Relation of the Sexes[2] is one of the series of reports drawn up for submission to the Conference on Christian Politics, Economics, and Citizenship held in Birmingham last April Among those responsible for the production of this report were the following members of the medical profession Lady Barrett, Mrs Rowntree Gillett, Dr A C E Gray and Dr J A Hadfield The report is divided into four principal chapters, entitled 'Sex," "Love and Purity," "The Revolt against the Christian Ideal" and "Marriage" The communal and personal aspects of such subjects as birth control, prostitution, venereal disease, and divorce are discussed with refreshingly refined restraint There is one note in the report which will antagonize those who strongly favour self-disinfection as a means of preventing the spread of venereal disease On page 113 it is stated that the Church must fight any form of State provision of facilities for self-disinfection

It is mentioned in the foreword that on several of the subjects discussed the members were seriously divided It could hardly be otherwise in dealing with such questions,

[1] *The Evolution of Man* Essays by G Elliot Smith M A M D Litt D D Sc F R C P F R S London H Milford Oxford University Press 1924 (Demy 8vo pp vi + 153 19 figures 8s 6d net)

[2] *Rhus Dermatitis from Rhus toxicodendron radicans and diversiloba (Poison Ivy) Its Pathology and Chemotherapy* By James B McNair (Reprinted from) The University of Chicago Press (Med 8vo pp ix + 497 15 figures 5 dollars.)

[3] *The Relation of the Sexes* COPEC Commission Reports Vol IV London Longmans Green and Co (Cr 8vo pp xii + 215 3s net)

but the spirit animating the whole report is wisely tolerant and definitely educative in its aim It does not claim to represent a final solution of the problems with which it is concerned

THE WORLD'S CHILDREN

FROM official sources Mr EDWARD FULLER has compiled an *International Year Book of Child Care and Protection*,[7] which is published by the Save the Children Fund As Mr Percy Alden says in his introduction to the volume, "the last fifty years have witnessed an immense improvement in the treatment and cure of the child the time seemed ripe for a Year Book of the Child" In general, information is grouped for 350 sovereign states, colonies, and dependencies under various headings, giving brief information on population and accounts of the marriage and divorce laws, child welfare in its quasi-medical sense, and education, employment, delinquency, and legislation as they affect the child Where voluntary societies exist these are listed for each country The whole of the information is summarized in a series of tables, and an index facilitates reference

So far as it has been possible to check the information, the compiler seems to have done his work well and the book will be useful for reference As it seems likely that new editions will appear each year, one or two minor details may, perhaps, be criticized There is no mention of the Junior Red Cross in the section on the United Kingdom, although this society is doing good work in a small way, nor is the Ecole de Puericulture included in the section on France, although this new institution is playing an important part in training child welfare workers Advertisements have crept in between the introduction and the body of the book and again at the end before the tables, and would be better grouped all together The excellent idea of a sort of international "Who's Who" has been incorporated, but this falls short of being complete, and in some respects is out of date

Apart from these minor points, however, the book gives a faithful picture of the 'life and health the education and nurture of the world's children,' and the compiler is to be congratulated on producing such a wealth of information

NOTES ON BOOKS

THE sixth edition of DR HERBERT E CUFF'S *Practical Nursing*[8] has been revised and enlarged by DR W T GORDON PUGH, who collaborated with him in the last editions Not only has the book been increased by nearly two hundred pages, but it has undergone considerable revision, so that nearly three quarters of it is new The work, which formerly consisted only of three parts, devoted to general nursing, medical nursing, and surgical nursing respectively, is now divided into seven parts, preceded by an introduction on the history and ethics of nursing The new parts deal with hygiene and dietetics, bacteriology and immunity, fevers and fever nursing, and gynaecology and midwifery In addition to numerous illustrations several new chapters have been added, such as those on pharmacology and therapeutics, the child in health and disease, and massage, medical exercises, and medical electricity The present edition has been well brought up to date in every respect and will prove valuable to all branches of the nursing profession both in their daily work and in their preparation for examinations

COLONEL MILLNER'S little book on *The Irish Setter*[9] might have been of more value had it been more coherent and its statements as to the origin and breeding of these dogs less problematical The author seems to take too much for granted and seldom gives any reasons and still seldomer any proof of his statements The book contains some 78 pages, and we have hardly a word of the red setter of to day until we reach page 43 The old red and white setter of Ireland, which is that dwelt on in the early part of the work, was, the author admits, a separate variety, and is now probably extinct The author states (pp 44, 45) that the marvellous deep rich red colour of the present type of Irish setter comes from the spaniel, but this colour is exceedingly hard to get in the spaniel of to day, or indeed in any other breed of dog Again, the author (p 45) writes of "semi wild ancestors" without sufficient justification The illustrations are poor and do not give any true idea of the beauty of the Irish setter The book will give the reader little flesh information of a reliable kind The English setter is quite as enduring a dog as his Irish brother, and, unlike him, does not require breaking anew at the beginning of each season

The Handbook of Pharmacology[10] compiled by DR B N GHOSH is intended for the use of Indian students preparing for examination in materia medica In the first part the subjects of pharmacy and dispensing are fully treated, and the art of prescribing is well set forth Drugs are classified by their effects on the various organs of the body The book seems well adapted to fulfil its purpose, and though very condensed appears to include all the information on the subject which a student can require The author dedicates the book to the memory of his father, the late DR Rakhaldas Ghosh, who died in 1902, just after completing a *Treatise on Materia Medica and Therapeutics*, which was seen through the press, after his death, by the late SIR Pardey Lukis, then principal of the Calcutta Medical College The style of the book before us is clear, and the type and general get up is good, the book is of a size handy for the pocket, we have noticed very few misprints

The Pharmacists' Botany[11] is the title of a book by DR GEORGE B RIGG of Washington, U S A On the jacket the information is given that "the author has spent fourteen years actively engaged in the problem [*sic*] of teaching pharmacy botany—eliminating non essentials so often stressed—and seeking ever more practical means of presenting the subject to the best advantage with the least waste This book is the result" Such a statement hardly disguises the sentiment that learning is waste beyond what is needed for a limited purpose Such was not the creed of earlier pharmacists, they were wont to regard botany as a branch of biology to be studied as a science To them the term "pharmacists' botany" would have sounded strange DR Rigg's book leads the reader from the primary elements of the subject to the most recent discoveries in botany at a pace which seems to deny him as a student all opportunity of thought Such intensive treatment can only lead to knowledge without understanding It is true that the text is accurate in what it describes, and for this merit it may be read with profit by students desirous of refreshing their memories of past study Had we been asked to bestow a title on the book we should have chosen "Botanical Notes for Pharmacists", so regarded it is a very helpful volume

The eighth number of the *Bulletin of the Ayer Clinical Laboratory of the Pennsylvania Hospital*[12] contains seven papers, three of which—namely, DR E G DILLON'S report of two cases showing glycosuria following obstruction of the pancreatic ducts, in one by pancreatic calculi, in the other by carcinoma, DR SYDNEY L WRIGHT'S observations on the loss of reducing substances in blood and blood filtrates, and the same author's discussion of the determination of sugar in small quantities of blood—deal with closely allied subjects In their interesting paper on nitrituria in infections of the urinary tract DRS J R PAUL and W E CHAPIN conclude that the presence of nitrites in recently passed urine is most commonly due to nitrate reducing bacteria in the urinary tract, but that negative results are not of any significance, they find that the percentage of positive tests in known urinary infections can be raised by giving potassium nitrate within four to ten hours of carrying out the test DR T. McKEAN DOWNS reports a case of acute mastoid inflammation in which the mastoid cells were in an abnormal situation A case of congenital haemolytic jaundice is commented on by DRS G W MORRIS and F N MACMILLAN, who state that in 1921 splenectomy had been performed in 93 cases, with a mortality of about 5 per cent DR J R PAUL'S account of the Museum of the Pennsylvania Hospital is illustrated by microscopic sections of specimens which had long been in spirit, and provides some historical information about one of the oldest museums in America

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[7] *An International Year Book of Child Care and Protection* Compiled from official sources by Edward Fuller London Longmans, Green and Co 1924 (Cr 8vo, pp xiii + 448 7s 6d net)

[8] *Practical Nursing, including Hygiene and Dietetics* By the late Herbert E Cuff M D, F R C S, and W T Gordon Pugh M D, B S Sixth edition Rewritten and enlarged by W T Gordon Pugh Edin burgh and London William Blackwood and Sons 1924 (Cr 8vo pp ix + 635 82 figures 10s 6d net)

[9] *The Irish Setter Its History and Training* By Colonel J K Millner London H F and G Witherby 1924 (Cr 8vo, pp 78, 8 plates 5s net)

[10] *Handbook of Pharmacology, including Materia Medica* By B N Ghosh F R F P and S Glasg Calcutta Hilton and Co London Simpkin, Marshall, Hamilton, Kent and Co, Ltd 1923 (Fcap 8vo, pp xii + 396 6s 6d net)

[11] *The Pharmacists Botany* By George B Rigg Ph D New York The Macmillan Company 1924 (Demy 8vo pp xvii + 303 45 figures 16s net)

[12] *Bulletin of the Ayer Clinical Laboratory of the Pennsylvania Hospital* No 8 issued May, 1924 Philadelphia, Pa (Med 8vo pp 60 8 illustrations No price given)

PREPARATIONS AND APPLIANCES

Canadian Pasteurized Cheese

We have received a sample of Kraft Canadian pasteurized cheese. This product is made by a new process the cheese is chipped into small fragments and cured cheese is then blended with fresh cheese By means of this blend a standardized product is obtained The packing of the cheese represents an interesting development in the handling of food substances The pulverized cheese is cautiously heated and then weighed out in exact quantities and transferred hot into boxes lined with tinfoil The cover of the box when nailed on acts as a press the box itself being the mould for the cheese The cheese is thus delivered to the consumer in a package which protects it against all extraneous dirt and the mode of preparation is such as to ensure the minimum of handling The product is of good appearance and has a pleasant taste

A Knife Sharpener

An ingenious instrument has been brought to our notice called sphaera medico It is a knife sharpener of the finer sort The principle is the same as that commonly employed for the quick sharpening of dinner knives particularly those of rustless steel where hard steel wheels are fixed in a suitable frame and the knife edge is drawn along the cleft formed between the two overlapping wheel edges In the sphaera medico there is a double-ended forceps the blades are joined in the mid length and the free ends are cup-shaped into each of the four cups is inserted a ball so that the balls face and press against each other a pair at each end One pair of balls is turned from Arkan as oilstone the other pair is of steel For the purpose of putting a good edge on a scalpel the knife is held on the table so that the blade is back downwards and projects from the table edge Then the instrument is held like a pair of forceps the blades firmly together and the knife edge is stroked from heel to point first with the oilstone balls and then with the steel balls. The instrument must be held firmly otherwise the balls slip down over the edge on to the blade and no work is done Also the operator's fingers must be kept clear of the knife We have tried the sharpener on an ordinary scalpel which had been roughly sharpened on a coarse stone the edge was rough and caught the skin. After a dozen strokes first with the oilstone balls and another dozen with the steel ball the edge was smooth and keen The instrument may be boiled but the balls must occasionally be greased with vaseline It is a useful and simple device The agent is B Coryn 67 Holborn Viaduct House London E C.1.

Photographic Desensitizer

The use of a desensitizer in photography is to allow development to be carried out by white light Luppo-Cramer found various dyes of the safranin group to be the best desensitizers in developing x-ray negatives A B MacLean has recently experimented with Grubler's safranin (soluble)[1] The film is treated to a bath of safranin 1 in 5 000 well rinsed and then put into the developing tank It was found that films could be developed under white light if certain conditions were fulfilled With correctly exposed negatives any advantage gained is so slight as to be negligible but with overexposed films better results are obtained than by the usual method It is no suitable for underexposed negatives. Messrs Burroughs Wellcome and Co have put on the market a desensitizer in compressed form A leaflet issued with the preparation mentions the precautions which should be taken The composition of the desensitizer is not stated

Jarring Doors

A door pad has recently been invented for use in hospitals nursing homes and children's nurseries by its use the door can be kept ajar A rubber pad is attached to the inner and outer handles of the door and is stretched over the latch preventing any banging or rattling It may be obtained from Mrs H. E S Rowland The Homestead Crick near Rugby

[1] *Arch Roentg and Electroth* 1923 28 134-6.

DRUG TRAFFIC AND THE LEAGUE OF NATIONS

[FROM OUR CORRESPONDENT AT GENEVA]

THE traffic in opium and other dangerous drugs has again been the subject of considerable discussion at Geneva The Assembly of the League of Nations was, as mentioned in our last issue, preceded by the meeting in August of the Advisory Committee of the League charged with this subject The report of the committee showed that during 1923 six countries ratified the Opium Convention, and three signed the protocol putting the Convention into force In Switzerland, which is one of the most important of the manufacturing countries, a law agreeing to ratification was passed in June by the Council of States Ten more countries have accepted and put into force the import certificate system In order to facilitate the application of this system the committee has decided that it would be legitimate for a diplomatic or consular officer of the importing country stationed in the exporting country to issue these certificates on telegraphic instructions from his Government; this decision meets several objections which have been raised against the certificate system The situation in China was considered by the committee to be very grave, the cultivation of opium in many provinces has increased to an enormous extent An inquiry undertaken by the Chinese Government has yielded no satisfactory results, and the enormous production of opium in China is now hampering the control of the traffic throughout the world The Advisory Committee recommended that Powers having extra-territorial rights in China should make regulations, the breach of which should be punishable by adequate penalties, to control the carrying out by their nationals in China of any trade in the drugs to which the appropriate chapter of the Convention applies

Immediately on the assembly of the League this month the recommendations of the Advisory Committee came before the Fifth Committee which deals with social questions, and were adopted and reported to the Assembly The report on the subject was made by Mlle Bonnevie (Norway), who referred to the two national conferences on opium the Council of the League had decided to call in Geneva next November—the first a conference to deal especially with the Far Eastern territories, and the second a more general conference to which all members of the League and parties to the Convent on of 1912 are to be invited Investigations are to be instituted by the League with regard to the production and use of Indian hemp, and Sir Mahommed Rafique (India) said that the Government of India had already taken the matter up, but that some time must elapse before action by local governments could be co-ordinated

In the ensuing discussion Mr Arthur Henderson said that the experience of the British Government, which he understood was confirmed by that of other Governments, showed that illicit traffic continued to be carried on through many different channels and on a large scale, and that closer control and more international co-operation would be necessary if the objects of the Hague Convention were to be attained M Sarraut (France) said that the French law of 1916 completed by the law of July, 1921, established very complete control over the trade in opium It extended both to persons and building in which drugs were manufactured Very frequent surprise inspections were made Mr Chao-hsin Chu (China) stubbornly defended his country He said that the great evil to-day was the Western consumption of cocaine, morphine, and heroin Even in China itself the use of smuggled morphine was much more serious than the opium addiction The Chinese Government was resolved to fight the drug evil, but its hands were bound by treaties China could not control the opium supply in its own country because many foreign Powers enjoyed extra-territorial rights which put their nationals beyond the jurisdiction of the Chinese authorities

The suggestion was made by the Polish delegate (M Sokal) that the League should fight the drug traffic, not by police measures, but by educational appeal, which was possible under Article 6 of the Hague Convention He urged that the cinematograph and the lecture should be employed in anti drug propaganda The proposal was supported by Mr MacSwiney, delegate for the Irish Free State, and by Mlle Vacaresco for Rumania On the other hand, the Hon R Dandurand (Canada) said that the very best propaganda against the use of noxious drugs was the kind of propaganda for which Canadian legislation provided, this imposed severe penalties on persons selling and purchasing these drugs The Canadian Government had mobilized a whole police force to hunt out the offenders, and had sent over to Europe to trace out the headquarters from which the consignments came No form of propaganda was so effective as to make it a penal offence to sell, purchase, or distribute such drugs A proposal from M Seferiades (Greece) was to institute severe penalties against writers whose books, circulated throughout the world, had the effect of encouraging young people to use these noxious drugs

After a very long discussion, which occupied two sittings of the Fifth Committee, a series of recommendations were carried, which will be considered by the Assembly before it rises These were in harmony with the report of the Advisory Committee already summarized.

Nova et Vetera.

SMALL-POX AND INOCULATION IN THE EIGHTEENTH CENTURY

THE reviewers of the *Diary of a Country Parson*, kept by the Rev James Woodforde, a Somersetshire man, curate of Castle Cary in that county, and afterwards Rector of Weston in Norfolk, have laid stress on his records of the astonishingly copious dinners he gave or shared, and we have already quoted one instance A closer reading of the Diary tends to modify the impression then conveyed He evidently liked a big dinner, and while a Fellow of New College, Oxford, was present at some very big ones, but incidental references show that his own table, though amply furnished, was usually simple enough, and cold meat and hashes recur frequently When on a special occasion he entertained a party of six friends at his rectory he gave them a "dish of mackarel, 3 young Chicken boiled and some Bacon, a neck of Pork roasted, and a Gooseberry Pye hot" This "brought on me the Hickupps with a violent pain in my stomach which lasted till I went to bed" The dinner, it must be remembered, began probably at about 3 in the afternoon He dined once with his wine merchant in Norwich, who for seven people had some "Norfolk Dumplins and a Goose, a very poor dinner for so many of us I think" Geese then must have been small, for on December 23rd Woodforde paid for a fatted goose at 9d a pound, 2s 9d, so that the bird was no bigger than an average chicken of to-day

The squire of Weston kept a more lavish table, and a visit to him might mean two solid meals One day in September, 1778, when the parson left his house at 2 o'clock, he arrived in time for the squire's dinner Four persons, two ladies and two men, sat down to a first course of "some common fish, a leg of mutton rosted, and a baked pudding," and for a second course had "a rost duck, a meat pye, eggs and tarts", for supper they had "a brace of partridges rosted, some cold tongue, potatoes in shells and tarts" Woodforde got home about 10 30, carrying a brace of partridges with him

As the diary belongs to the period 1758-81, and contains day-to-day notes on passing events, it could not fail to make incidental references to small-pox and to small-pox inoculation On December 27th, 1759, "My great Aunt Ann Woodforde died of the small-pox at Bicester this morning" On August 3rd, 1766, "I buried a little maid of Phill Stockman's this evening at C Cary that died in the Small Pox" In 1768, on September 29th "I buried Thos Roach of Bruton, who died in the smallpox there, a poor wild creature he has been I had a black silk hatband and a pr of black gloves sent me for burying him by his good brother, who was at the expense in burying him handsomely" On August 3rd, 1776, he writes, 'George Marton's little boy John came to live with me last thursday He does not sleep in my house as he has not had the small-pox The Boy is about 10 or 11 years of age" On November 22nd, 1776, "My neighbour Downing, Father of the Children that were lately inoculated has got the smallpox in the natural way and likely to have it very bad," so Dr Thorne was sent for and visited, but on November 28th "Poor Neighbour Downing very bad indeed this evening the Small Pox being upon the turn I went to him and saw him, his Pulse was very high owing to drinking some Beer etc to day I ordered them to give him some electuary in warm water, and when I came away he seemed a little better My man Ben I ordered to sit up with him to night" Fortunately he made a good recovery On December 1st "I went and saw Downing after church this morning, and he is brave I thank God for it" On January 21st, 1779, it is recorded "Poor Js Pratt died this afternoon in the small Pox in the natural way He never could be prevailed on to be inoculated He has left a wife just ready to be brought to bed, with 6 more small children Pray God send comfort to the poor widow and Family" On March 19th, 1781, "Sent by my Maid Betty to one Tooley, whose family has got the Small Pox and is very poor, 0 2 6"

The diarist had a brother-in-law, Dr Clarke, who practised inoculation extensively and had a special hospital for the purpose Clarke was a correspondent of, and well acquainted with, the author of a famous work on inoculation, Dr Dimsdale of Hertford, who went to St Petersburg to inoculate the Empress Catherine and her son the Grand Duke Paul The story is well known, and is told in the Diary by the editor, Mr John Beresford The Empress had perfect reliance on Dimsdale, but could not trust her subjects in case of disaster, and to facilitate his escape if necessary, had relays of horses provided from St Petersburg to the extremity of her dominions But all went well, Dr Dimsdale received £10,000 with £2,000 for expenses and an annuity of £500, was made a baron, and the banking firm of Dimsdale carried on the name

Dr Clarke's method of inoculation is not described in the Diary If he copied his friend Dimsdale he did well, as Dimsdale did not practise the severe method, with encouragement of free suppuration, on the theory that it expelled peccant matter from the system, a theory and practice which did much mischief The diarist, however, mentions incidentally that "John Bowles' Wife is under Inoculation, was inoculated by one Drake formerly a sergeant in the Militia He makes a deep incision in both arms and puts a Plaister over," his charge for this badly done operation being "5/3 each," and that was the fee paid by Mr Woodforde for inoculation in his own household

Mr Woodforde in 1768, referring to the burial of two small children who died of small-pox, writes "I must say it is very cruel of Robin Francis not to have had them inoculated" When he removed to Norfolk his family medical attendant was Dr Thorne of Mattishall It was he who inoculated Mr Woodforde's servants, and his method is evidently described in the MS diary, but is not stated in the published volume Dr Thorne wanted Downing, who had been infected by his inoculated children, to let some matter from his eruption be taken for inoculation purposes, but Downing refused There is no mention of matter having been taken from the inoculated patients, either from the arm—the "mother pustule"—or from the resulting eruption, so perhaps Thorne preferred virus for inoculation direct from the eruption of small pox by infection, not by inoculation The editor of the Diary, records, without comment, how inoculation came to be regarded as a public danger owing to the fact that, through lack of precautions, the inoculated were apt to infect others, and the Downing case is a clear example of such occurrence In country districts, where inoculation was not extensively practised, and where small-pox was less prevalent than in towns and cities, the risk due to infection from the inoculated was undoubted But where inoculation was extensively adopted, whether in city or village, so many were protected in this way that much fewer were left under risk of infection, and inoculation on balance probably did much more good than harm The Royal Commission on vaccination devoted a good deal of attention to this point, and concluded that, taking the population, urban and rural, as a whole, the available evidence was insufficient to determine whether the balance was on the side of advantage or disadvantage

A number of other diseases are mentioned incidentally in the volume, there are a good many references to gout and rheumatism, and consequent visits to Bath The diarist himself when 29 was ill for a week with what may have been measles, and immediately after taking the degree of B D in 1735 was "very bad indeed in the influenza," but after dosing himself with brimstone, cream of tartar, and treacle, living "very low" and going to bed early, he rapidly recovered We have found only one reference to ague (the index does not help) The patient was no doubt an under servant

> May 22nd, 1779 My Boy Jack had another touch of the Ague about noon I gave him a dram of gin at the beginning of the fit and pushed him headlong into one of my Ponds and ordered him to bed immediately, and he was better after it and had nothing of the cold fit after, but was very hot

But Woodforde had milder remedies also, he was fond of taking salts himself and giving them to other people, and, like Sydney Smith, was a great believer in rhubarb

British Medical Journal.

SATURDAY, SEPTEMBER 20TH, 1924

NEW LIGHTS ON THE JAUNDICE PROBLEM

We publish this week (p 495) a full report of the discussion on jaundice in the Section of Medicine at the meeting of the British Medical Association at Bradford, under the chairmanship of Dr W Langdon Brown, whose lecture on changing standpoints in metabolic diseases, including diabetes was published recently in our columns (1924, vol i, p 1119) The selection of this subject was well timed, for it is now more than two years since Dr J W McNee drew attention in the JOURNAL (1922, vol i, p 716) to Professor A A Hijmans van den Bergh's test with Ehrlich's diazo reagent for bilirubin the method has since then been widely employed in this country, and a comparison of results might be expected to prove useful There is the perennial question (of more than usual interest at the moment) whether there is a true haemolytic jaundice—that is to say, one produced entirely apart from any activity of the hepatic cells Opinion on this matter must largely be determined on the experimental evidence, derived from animals during the period of survival after complete removal of the liver Many, however might well agree with Sir William Willcox that the clinical evidence in favour of the existence of a true haemolytic jaundice is more convincing than the results obtained in animals after severe operations which produce very abnormal conditions for metabolism, and in fact the results of experimental removal of the liver are as yet somewhat conflicting Minkowski and Naunyn's observation in 1886 that jaundice did not occur in the absence of hepatic activity carried conviction until, in 1913, Whipple and Hooper disturbed opinion and, indeed, made the pendulum swing back to the older conception of jaundice as due to the formation of bile pigment in the circulation without any participation by the liver At the same time (1912 13) Dr J W McNee brought forward evidence in favour of the very important view that bilirubin is manufactured out of haemoglobin by von Kupffer's star like cells now known as the reticulo endothelial system, which occur in the splenic sinuses, along the capillaries in the liver, in the bone marrow, and elsewhere, their distribution in and outside the liver varying in different animals After Whipple and Hooper's publication medical opinion perhaps too suddenly, accepted the experimental evidence, which clinicians certainly were willing to welcome—that jaundice may be due to haemolysis rather than to hepatic disorder But on repeating Whipple and Hooper's experiments, Rich of the Johns Hopkins Hospital (1923) and McNee and Prusik (1924) failed to confirm the new conclusion and Oppenheimer (1924) also of the Johns Hopkins Hospital, did not find any evidence of the formation of bilirubin in isolated limbs Mann of the Mayo Clinic, however, by an elaborate technique, involving less shock to the animal, kept the dogs alive by injections of glucose for twenty four hours after the liver was completely removed and confirmed Whipple and Hooper's observations In these circumstances the clinical evidence in favour of the production of a true haemolytic jaundice, such as the formation of bile pigment in haematomas and intracerous haemorrhages, still has some significance

Dr J W McNee opened the discussion by an extremely able and clear review of the whole problem of jaundice, and most fortunately, was followed by Professor A A Hijmans van den Bergh of Utrecht, whose work has now enabled the investigation of jaundice to be based on estimation of the bilirubin content of the blood, just as that of renal function is based on determinations of the blood urea, and the treatment of diabetes and the significance of glycosuria elucidated by examinations of the blood sugar Van den Bergh's test enables the amount of bilirubin in the blood serum to be estimated quantitatively, and has also shown that there are two forms of bilirubin one is present in the blood serum in the jaundice due to gross mechanical obstruction of the bile passages whereas the other bilirubin is met with in the blood serum when there is jaundice without any obstruction to the exit of bile from the bile capillaries and ducts A diagnosis can thus be made between obstructive and non obstructive jaundice, and from a practical point of view, this is of great importance in its bearing on the question of operative treatment of the bile passages Both forms of bilirubin (the exact difference between them being as yet undetermined) are manufactured by the cells of the reticulo endothelial system, it is believed however that whereas the form which gives the direct reaction with van den Bergh's test is further modified by passage through the polygonal cells of the liver, the form which gives the indirect reaction has not been so influenced by the liver cells This second form of bilirubin is found in cases in which jaundice is, on clinical grounds, thought to be due to the formation of bile pigment outside the liver—namely, in true haemolytic jaundice, it occurs also when, from degenerative changes the liver cells are unable to receive and act on the bilirubin formed by the cells of the reticulo endothelial system In addition it is suggested by Dr McNee that when from excessive haemolysis bilirubin is formed by the reticulo endothelial cells in quantities too large for the polygonal cells of the liver to deal with, some of the bilirubin may escape straight into the radicles of the hepatic veins and so cause jaundice, while the bilirubin acted upon by the polygonal hepatic cells passes into the bile capillaries and so into the duodenum and colours the faeces

Some observers who have employed the van den Bergh test have found that it has not come up to their expectations in providing a cut-and-dried diagnosis, thus, in the discussion, Dr H L Tidy referred to cases of clinical doubt as to a distinction between gall stone obstruction and catarrhal jaundice in which the test did not solve the difficulty Dr McNee clearly pointed out that in jaundice due to incomplete obstruction and in toxic and infective forms of jaundice the test cannot be relied on to give an absolute diagnosis This is due to the fact that in much the largest group of cases of jaundice—the toxic and infective hepatic jaundice—van den Bergh's test often gives a biphasic reaction, because not only is there a toxic disorder of the polygonal hepatic cells (which would produce an indirect ' reaction), but also some cholangitis causing mechanical obstruction and so a direct reaction This combined form of jaundice is well illustrated by so called catarrhal ' jaundice, in which the van den Bergh reactions vary at different stages of the disease, and there is reason to believe that the liver itself is affected rather than that

the lesion is inflammation, or the traditional plug of mucus, limited to the lower end of the common bile duct Sir William Willcox emphasized the hepatic involvement in "catarrhal" jaundice, which he regarded as the same as the "epidemic catarrhal" jaundice of the war, and stated that cases of "catarrhal" jaundice could always be shown to exhibit definite impairment of hepatic function by employing the laevulose test

A very suggestive point was raised, but not pursued very far, by Dr McNee in his inquiry as to what might occur in the event of damage to the cells of the reticulo endothelial system Although there is no clinical evidence on this subject, it is obvious that if, as there is good reason to believe, they manufacture bile pigment, any extensive degeneration affecting them would result in a diminished formation of bile and so modify digestion and metabolism in ways that may require further investigation Occasionally in acute yellow atrophy, more correctly called acute necrosis, of the liver, and in intrahepatic calculi jaundice is absent, and it is conceivable that in such cases—which admittedly are very rare—the reticulo-endothelial system may be at fault, and that thus the old conception of complete cessation of the bile-forming function of the liver may, to some extent at least, be explained

The van den Bergh test is of value, and its importance in this respect will probably be increasingly recognized, in the detection of latent jaundice—in cases, that is to say, in which, although there is no pigmentation of the skin or bile pigment in the urine, the blood, as proved by a quantitative estimation of its bilirubin content, shows a definite increase of this pigment Latent jaundice has thus been shown to occur in pernicious anaemia and in hepatic cirrhosis Quite recently the search by van den Bergh's test for latent jaundice has been put to a very practical use by Surgeon Lieutenant-Commander W I Gerrard,[1] who has found that the detection of latent jaundice in syphilitic patients under treatment by arsenobenzol compounds is a danger signal, and therefore a means of controlling this valuable form of treatment, among the toxic results of which are jaundice of various degrees of severity and even acute necrosis of the liver Professor van den Bergh mentioned that latent jaundice is important in distinguishing pernicious from secondary anaemia, in which it does not occur, and that in a cardiac patient its appearance points to incipient cardiac failure He also instanced as a use of the test the distinction between lutein and bilirubin in the blood serum, and drew attention to the occurrence of pseudo-jaundice in man, due to eating considerable quantities of green vegetables, as by no means a rare event Carotinaemia, or pseudo jaundice due to eating carrots, has been described, and Professor van den Bergh referred to the occurrence of this lutein jaundice in diabetic patients, and even to its presence having aroused a suspicion of cholelithiasis Lastly, the new conception of the bilirubin-forming function of the reticulo endothelial system raises a number of new problems in connexion with the liver-spleen diseases on which Eppinger, Professor Wenckebach's first assistant in Vienna, has written a suggestive monograph[2] Such problems are the possible existence of diseases due to lesions of the reticulo endothelial system, and the relations of haemolytic jaundice, Hanot's biliary cirrhosis, Banti's disease, and splenic anaemia, as was indeed suggested by Sir Berkeley Moynihan, who, in pleading for more close collaboration between the too artificial divisions of the profession, described the surgeon as "the most formidable weapon of inquiry ever placed in the hands of the physician"

[1] BRITISH MEDICAL JOURNAL, 1924 ii p 224
[2] *Die hepato lienalen Erkrankungen* 1920

RELATION OF GOITRE TO THE IODINE INGESTED

WITHIN recent years it has been established that iodine want is an important factor in the causation of thyroid hyperplasia and goitre Knowledge of how this want may be brought about is, however, still vague, although there is good reason to believe that it may be caused by inadequate assimilation as well as by inadequate intake in food and drink The investigation of iodine metabolism, of the part it plays in normal processes, and in particular its relation to the thyroid gland, involves studies in which the chemist, the physiologist, the bacteriologist, and the clinician each has a part to play Among the more notable of recent contributions to this problem is that of Professor J F McClendon of the University of Minnesota and J C Hathaway of Minneapolis[1] These chemists have provided a number of interesting and important facts as to the distribution of iodine in food and water, and although we are inclined to look on their conclusions in regard to the relation between goitre and the iodine content of food and drink as somewhat premature, yet their work is of a kind which has interests apart from the restricted view the authors themselves appear disposed to take

They find, as did Fellenberg in Switzerland, that food and water from goitrous regions in the United States of America contain less iodine than the same articles from non goitrous regions They find, moreover, that wheat is low in iodine content, that the iodine is contained mostly in the coarse parts which are removed in the process of manufacture of white flour, so that the flour itself contains iodine only in insignificant quantities The chief sources of iodine in land products—as distinct from sea foods—are milk, butter, fruits, and leafy vegetables Even sea foods, such as salmon and other fish, appear to be deprived of much of their iodine value by canning, so that tinned salmon contains less iodine even than some leafy vegetables raised in goitrous regions The authors consider that they have proved statistically that both simple and exophthalmic goitre are caused by iodine starvation, and their suggestion seems to be that in the United States of America the distribution of goitre is a matter of the distribution of iodine in the food and drink

If iodine want be an immediate cause of goitre—and we do not doubt that it is—then it is evident that the malady will be more likely to arise in localities where the intake of iodine in the food and drink is low than in others where it is high, but we venture to doubt whether the etiology of goitre is capable of so simple an explanation as this From the results recorded by these observers it would appear that a diet composed mainly of white bread and tinned fish, with a minimum of milk, fresh butter, fruit, and leafy vegetables, is apt to be attended by the development of goitre, whereas a diet into which whole meal, milk products, fruit, and leafy vegetables enter more largely is the less likely to be associated with goitre even in regions where it is endemic Unfortunately there are many in this country whose diet conforms more closely to the former than to the latter class, and whatever maladies

[1] *Journal of the American Medical Association* May 24th p 1668

may be associated with its habitual use goitre cannot be said to be the most prominent among them On the other hand, there are many persons in goitrous districts in other countries than the United States whose diet conforms to the second class and who nevertheless are the subjects of goitre It may be argued that the former have sources of iodine supply not available to the latter, but it would seem that we must go deeper than mere intake of iodine and have regard to factors of mastication, digestion, and assimilation, and of the bacterial flora of the gastro intestinal tract Indeed, the work under review brings the problem of goitre production still more into the gastro intestinal zone, so to say, and raises problems for the solution of which estimation not only of the iodine ingested but also of the iodine assimilated and excreted is necessary The matter does not end even here, for questions arise as to the capacity of the thyroid to make use of the iodine assimilated, or relative deficiency of iodine in respect to other constituents of the food, and of the needs of the tissues, under varying conditions of life, for the active principles of the thyroid gland, of which iodine is but one of the constituents, although a main one Accepting the authors results, and assuming that similar results will be recorded for other goitrous and non goitrous regions, and that iodine want, however brought about, is an immediate cause of goitre, then we think that McClendon and Hathaway may well claim to have fitted into place another piece in the jig saw puzzle of goitre, but there are still many pieces to be fitted before the picture can be said to be complete

We find it very difficult, however, to accept the contention that exophthalmic goitre is caused by iodine starvation, for exophthalmic goitre is rare in such goitrous regions as the Alps and Himalayas Indeed, in the latter it is almost wholly unknown amongst the indigenous inhabitants Were both simple and exophthalmic goitre caused by iodine starvation the one malady should be as common as the other in these regions In any attempt to solve the problem it is absolutely necessary to maintain the widest possible outlook The iodine deficiency theory of simple goitre is attractive at first sight, but there are many matters which cannot be explained on this theory alone For example, how is it that goitre may be more common in one village than in another, in one household than in another, or absent entirely from one village or household when the food and drink are the same? Why is goitre so largely a disease of the female sex and so intimately related to different age periods? Is it that one village, one household, one sex, or one age requires more iodine than another, or is it that factors other than, or in addition to, iodine supply determine the occurrence of the disease?

The observations of McClendon and Hathaway on the distribution of iodine in foods call to mind the distribution of vitamins, and emphasize once more the great importance for nutrition and for the prevention of disease of the habitual use of milk products, fruit, and leafy vegetables and the evil results which may follow the habitual consumption of sophisticated foods It reminds us also of the problems still unanswered with regard to such a disease as beri beri, not long ago it was thought to be caused solely by want of vitamin B, but it is now known that there are other factors in its causation The observations provide also another example of the importance of the study of the conditions of growth of food products and of the relation of soil composition and of manures to the nutritive value of food grains—or the relation, in short, between the chemical composition of the soil and disease production It indicates, too, that soil composition is not without its influence, exercised through food and drink on certain endocrine structures, as these are believed to be intimately concerned with the characteristics of races and of individuals the character of the soil on which different races live may eventually be proved to account in some measure for differences in their make up

We have given a good deal of space to this paper by McClendon and Hathaway because their investigation has brought to light or confirmed important facts, and because the whole argument stimulates thought But we must repeat the warning against accepting the authors' conclusions without careful consideration of all the facts—not only those they record, but also those of other observers and experimenters The statement with which the paper opens, to the effect that they have proved both simple and exophthalmic goitre in the United States to be caused by iodine starvation, is far too dogmatic The results they have obtained must be studied in relation with those reached by other workers who have followed other lines of thought or have attacked the problem from a different angle Eventually all such work must come before the tribunal of clinical experience, which is the final arbitrator in all things medical

CANCER IN THE COTTON TRADE

In the BRITISH MEDICAL JOURNAL of November 18th, 1922 (p 971), two Manchester medical men, Mr A H Southam and Mr S R Wilson, published a paper drawing attention to the prevalence of cancer of the scrotum amongst a certain section of cotton spinners As a result of investigation of cases of scrotal cancer admitted to the Manchester Royal Infirmary during a period of twenty years they had found that 53 per cent of these cases were engaged as mule spinners Another interesting observation was that in 84 per cent the growth was situated on the anterior aspect of the left side of the scrotum As a result of further inquiries and visits to cotton mills round Manchester they expressed the opinion that this could be explained by the conditions under which the spinner works Two factors seemed chiefly to be concerned—chronic irritation from the contact of the scrotum against the faller bar of the machine and the presence of the oil thrown off from the machine, so that the spinner's clothes became saturated with it This paper naturally aroused considerable interest, and caused some alarm in the Lancashire spinning trade Later inquiries, however, served to show that cancer of the scrotum was even more common among mule-spinners than had been suggested, and the disease is now generally known in Lancashire as "spinner's cancer" A further point of interest is that down to the date of the paper not a single case had been notified under the terms of the Factory and Workshop Act, 1901, although mineral oil is definitely mentioned in the Secretary of State's Order of January, 1920, the Home Office had no record of the prevalence of the disease Inquiries showed that medical men had not realized that the disease might be due to the spinner's occupation Since, however, attention was drawn to the condition a large number of cases have been notified to the Home Office, which has collected 145 cases of epithelioma of the skin in mule-spinners Early this year a test case was heard before Judge Mosop at the Ashton-under-Lyne County Court The application was under Schedule 12 of the Industrial Diseases Act, and the applicant, a cotton-spinner, sought compensation on the ground that while following his occupation he had contracted epithelioma of

the scrotum The case was regarded as of the utmost importance to the whole of the Lancashire cotton trade, the issue being whether the disease was due to the nature of the employment The case was largely fought out on the medical evidence Judgement was given in July in favour of the applicant The judge stated that the conclusion appeared to be irresistible that there was a connexion between the employment and the disease It was at first decided to lodge an appeal against this judgement, but on September 8th it was officially notified that the Master Spinners' Federation had intimated to the Operative Spinners' Amalgamation that it had decided not to appeal It appears that this decision was arrived at after taking expert legal advice It was felt that in view of the declaration of Mr Southam and Mr Wilson, who had been pursuing research work in the matter for years, it would be useless to appeal without positive evidence negativing the view that the disease arises from the occupation, and this was not forthcoming There are at present about one hundred cases on the books of the Operative Spinners' Amalgamation, and the question of compensation, which has necessarily been deferred, will now be dealt with It is said that this will amount to a considerable sum each year It seems probable that epithelioma of the scrotum will now be scheduled under the Workmen's Compensation Act so as to apply to spinners Owing to the prevalence of the condition it is to be desired that the characters of the oil used should be carefully investigated, and that precautionary measures shall be taken to reduce the incidence of the disease We understand that the attention of Lancashire members of Parliament has been drawn to the condition, and a further report is to be presented to them later It only remains to add that the decision has caused great satisfaction in Lancashire, and that it is thought to mean a great deal to the future of the industry

TREATMENT OF GLANDERS IN MAN

GLANDERS—or farcy, as the disease is called when the local lesions are found on the skin—is one of the oldest diseases definitely known to medicine It was recognized by Hippocrates in 450 B.C., and by Aristotle a century later Absyrtus, the Greek veterinarian in the army of Constantine the Great, described it with considerable accuracy and recognized its contagiousness Glanders is essentially a disease of the Equidae, in which, as a rule, it runs a more or less chronic course, but it is easily transmitted to man and the Carnivora—especially the Felidae—and in these subjects it is often acute or even peracute In Britain the disease is now very uncommon, although quite recently an outbreak occurred among the large cats in one of the zoological gardens, the outbreak was traced to a chronic case of glanders in one of the horses slaughtered for food Glanders is still common in the less highly civilized parts of the world, and records of the disease occurring in man are still accumulating Various outbreaks have been reported from Russia, but authentic information is still difficult to obtain from that country However, it has been recently reported[1] that Dr Derbeck of the Veterinary School of Berne died from chronic glanders contracted during the *post-mortem* examination of a diseased horse During the autopsy on Dr Derbeck, Dr Sole of the Pathological Institute of Prague also became infected and died, three other deaths have been ascribed to the same horse Even laboratory workers run no inconsiderable risks, as is shown by the death of the acting director of the Government Sero-therapeutic Institute at Prague while investigating glanders from the clinical and serological points of view These reports serve to emphasize the fortunate position in which we in this country find ourselves The almost complete absence of glanders from Britain is of comparatively recent date, and in no small measure due to the activities of the Ministry of Agriculture and the officers of the Royal Army Veterinary Corps In mallein a sure and safe diagnostic agent was found, and by the prompt slaughter of all reactors the disease was soon eliminated, not only from this country, but also from the huge numbers of horses returned from the war areas Mallein is named after the causal organism of the disease—*Bacillus malle*, the old name for glanders, malleus, is to be traced to Aristotle, being derived from μῆλις=bad disease, or epidemic Mallein is comparable to tuberculin, and the test is made in various ways—subcutaneous, ophthalmic, and intradermo-palpebral, the last is the most popular Treatment of the disease is not permitted in this country, reactors must be at once slaughtered and suitable measures of disinfection adopted In man the disease is usually contracted by inoculation of contaminated material, but it is probable that there also exist intestinal infections with a morbid picture very similar to that presented by typhoid fever Although by no means always fatal, glanders in the human subject is always serious, and the possibility of a further advance in its treatment has been suggested by the recent work of Watson and Heath in America These workers were able to show that the horse can be hyper-immunized by repeated inoculations of mallein Several human cases have been treated with this serum in Canada with dramatic results Cases which have been regarded as very serious quickly responded to the treatment, and although the data are still insufficient to allow definite conclusions to be drawn the results obtained indicate that specific serum treatment is probably of considerable value in promoting a cure

[1] *Zeit f Infect*, Part B, vol xxv

VOLUNTARY HOSPITAL FINANCE

IN JANUARY, 1921, the Minister of Health appointed a committee to consider the then existing position of the voluntary hospitals in Great Britain, and one of its recommendations was that assistance should be given from public funds A grant of £500,000 was received from the national exchequer, and the Minister of Health thereupon appointed the Voluntary Hospitals Commission to administer it in accordance with the conditions prescribed In February, 1923, the Commission issued an interim report giving particulars of its work of administration down to December 31st, 1922, and this report was considered in detail in the SUPPLEMENT of March 3rd, 1923 (p 71) The Commission has now issued a second interim report,[2] which deals with the period from January, 1923, to March 31st, 1924, when the distribution of this money was completed The disbursement of the grant proceeded in three stages (1) The first distribution was made in respect of deficits on current maintenance accounts for the year ending December 31st, 1921 (2) A supplementary distribution in respect of accumulated deficits (3) The final distribution of the small balance remaining In the first interim report the amount distributed up to December 31st, 1922, was reported as £372,013, of which £225,000 had been received by London, £145,218 by England and Wales, and £1,795 by Scotland, this allocation was in respect of deficits on the maintenance account for the year ending December 31st, 1921 The distribution of grants in respect of 1921 deficits was completed by March 31st, 1923, the final figures being London, £225,000, England and Wales, £194,242, Scotland, £7,411 A total sum of £426,653 had thus been distributed, and a balance of £73,347 remained in the hands of the Commission This balance was devoted to the assistance of hospitals with serious accumulated deficits, £45,753

[2] *Journ Amer Vet Med Assoc*, lxv, pp 146 153

[3] London H M Stationery Office, or to be purchased directly through any bookseller 1924 6d net

being allotted to England and Wales and £27,589 to Scotland Local committees were required to submit proposals for distributing the sums allocated to their respective areas, and also to raise county funds so that the Treasury condition relating to the collection of additional money should be fulfilled By the latter part of 1923 the sums distributed were England and Wales, £38,937, leaving a balance of £6,821, and Scotland, £17,544, leaving a balance of £10,045 The Commission had thus at its disposal a sum of £16,866 for final distribution Grants were allocated to hospitals with heavy accumulated deficits which had had only scanty assistance from the Commission hitherto, help was also given to some hospitals which had previously had none owing to their inability to comply with the condition laid down by the Treasury, this condition the Treasury now relaxed in exceptionally hard cases The total amount disbursed in this final distribution was £10,046 in England and Wales and £6,820 in Scotland In an appendix to the report a complete detailed list is given of all the grants paid to hospitals outside the London area Details of the grants to the London area were given in the first interim report of the Commission These grants have in many cases prevented the closing of beds and in others have led to their reopening The condition that the Government grant was only payable on a pound for pound basis against new money raised from voluntary sources has had a most invigorating effect on the flow of voluntary subscriptions The report concludes with a suggestion that the voluntary hospitals should now for the most part be able to balance their budgets They are, however, still confronted with the most serious question of the provision of additional accommodation The Commission has now been requested by the Minister of Health to undertake an inquiry into this need and the best means of meeting it A conference of local committees was convened last June by the Commission and a valuable interchange of views was obtained relating to the procedure to be followed in this investigation

THE UNIVERSITY OF PADUA

THE services of the University of Padua to mankind have been so splendid that even her statistical record is of interest to all, not least to the countrymen of Harvey In the current number of *Metron*[1] Subante, Vivarini, and Voghera publish the results of a laborious investigation of the statistics of students in the university from the end of the sixteenth century to the present time Originally a school of civil and canon law, at a very early date a department of arts, covering literature, philosophy, medicine, mathematics, and general science, was instituted, and this division was maintained until 1805, after that date the familiar division into faculties was adopted The registers of students in the arts division—that which, as they include the medical students, particularly interests us—only go back to the academic year 1633-4, when there were 71 students, the numbers increased at first slowly, reaching 312 in 1656-7 and 501 in 1675-6, it was in the period 1610-70, as we shall see, that Padua exercised its greatest attraction upon English medical students The maximum was reached in 1688-9, with 557 students In the eighteenth century the numbers declined to a minimum of 78 in 1769-70, and in the last year of the old classification, 1805-6 there were 186 In 1806-7 the faculty of medicine, surgery, and pharmacy contained 158 students, in 1865-6 there were 359 The recent history of the faculty of medicine and surgery (exclusive of the schools of pharmacy and obstetrics) shows a decline from 1898-9 to the war years, the number was 336 in 1898-9 and 312 in 1913-4 Since the war there has been a considerable increase, the record for 1922-3 gives 630 in the faculty of medicine and surgery, 233 in the school of pharmacy, and 340 in the school of obstetrics The distinction of nationalities is interesting, but, unfortunately, before 1674 the English are not shown separately, but presumably merged under the heading "Natio ultramontana sive Germanorum" The largest number of such students in any one year was 51 in 1648-9 Between 1674 and 1805 'Inglesi" are shown separately, and there are but two—one in 1675-6, one in 1696-7 These figures, however, suggest that the registers used by Subante, Vivarini, and Voghera are incomplete In Munk's *Roll* of the Royal College of Physicians of London there are recorded three Englishmen who certainly and two who probably graduated M D at Padua later than 1674 The famous Richard Mead graduated on August 16th, 1695, John Arnold took his degree on January 17th, 1715, and George Macaulay on April 16th 1739 Sir Richard Blackmore, the minor poet, and Thomas Palmer were also Paduan graduates of a date later than 1676 Possibly Mead is the Englishman of 1695-7 and Blackmore the student of 1675-6 The number of English medical graduates in the seventeenth century was large—we find from Munk's *Roll* 65, the greatest proportion was in and about 1640-70 From 1680 to the end of the century there were only four, or five reckoning Mead, who comes into the College *Roll* after 1700 Macaulay in 1739 seems to have been the last Of these graduates Harvey is, of course, without a peer, he graduated on April 25th, 1602 Next to him in fame, if longo intervallo, was Sir George Ent, eight times President of the College and an original Fellow of the Royal Society Ent was five years in Padua and graduated on April 28th, 1636 Before the seventeenth century only seven Fellows or Licentiates of the College of Physicians are recorded to have graduated at Padua, but one of them was the great Caius, who became M D on May 13th, 1541, and the founder, Linacre was another Leyden is the only other foreign university having so many alumni in the *Roll* of the London College

[1] *Metron* 1924 1 p 154

STANDARDIZATION OF DYSENTERY SERUM

AT the request of the Health Committee of the League of Nations, Dr Kiyoshi Shiga and other workers at the Kitasato Institute for Infectious Diseases, Tokyo, have begun an inquiry into the methods of standardization of dysentery (Shiga) serum, and a preliminary report[1] has been published It embodies the results of a series of experiments extending over a year and a half and the inquiry seems likely to point the way to more accurate methods of producing antidysentery serum The methods of preparation and standardization of serum for the treatment of diphtheria and tetanus are reliable and accurate Units of toxin and units of antitoxin can be measured with precision, and a consistent supply of trustworthy serum can be maintained by an efficient laboratory But the preparation of serum for the treatment of dysentery has always presented difficulties because of the absence of precise methods of standardization It would be a substantial advance if a standard antidysentery serum of the same stability as antidiphtheria serum could be produced The report of the Japanese workers is concerned with the study of the conditions under which the dysentery bacillus produces toxin, and with the preparation of immune serum It was found by experiment that the toxicity of a bouillon culture of Shiga's bacillus is highest after two weeks growth, and that the optimum alkalinity for toxin-

[1] League of Nations Health Organization *The Standardization of Dysentery Serum* First Report by Kiyoshi Shiga, H. Kawashima, T. Uchiyama, Geneva 1924.

tion was at a *p*H of 8·0 to 8·4. When the bacillus is inoculated into neutral broth some slight degree of acidity is produced, and reaches its maximum in two to three hours. After one to two days the slight acidity disappears, and the reaction gradually becomes alkaline. The alkalinity increases till *p*H 8·6 is reached, where it remains for a long time. It was found that as the reaction swings to the alkaline side of neutrality the toxicity of the broth culture steadily increases, keeping pace with the increasing alkalinity till the toxicity also reaches a maximum. Unless the medium develops an alkalinity above *p*H 8·0 a powerful toxin cannot be obtained. Concerning the preparation of immune serum this interesting and important observation was made—a filtered toxin of a broth culture was found to be unsuitable for immunization of animals, but heated bacteria grown on agar medium or the autolysed bacteria were very effective. Immunization with dysentery bacilli led to a higher degree of immunity, and was less harmful to the animals than injections with broth cultures or filtered toxins. It appears that the neutralization of the dysentery toxin by antitoxin follows the law of multiple proportions fairly closely. The efficiency of an immune serum may be gauged with some degree of accuracy, using a lethal dose of toxin as the standard. These are the main conclusions of the first report, and it seems likely (judging from a sentence in the preface) that in the further report which is promised we may expect equally clear and definite advances.

ELECTRONIC REACTIONS OF ABRAMS

THE committee appointed by the *Scientific American* to investigate the "E R A" cult has made the following final report after a year's work [1]:

"OUR VERDICT

"This Committee finds that the claims advanced on behalf of the Electronic Reactions of Abrams, and of electronic practice in general, are not substantiated, and it is our belief that they have no basis in fact. In our opinion the so-called electronic reactions do not occur, and the so-called electronic treatments are without value."

This is signed by the members of the committee—Dr. William H. Park, director of the Bureau of Laboratories, New York Health Department, Dr. Walter C. Alvarez, associate professor of research medicine in the University of California, Mr. Robert C. Post, a civil engineer, Mr. J. Malcolm Bird, associate editor and "psychic investigator" to the *Scientific American*, and Mr. Austin C. Lescarboura, the managing editor of that periodical. The report itself calls for no comment or amplification, since it is an absolutely unqualified condemnation of the works and pretensions of the E R A cult, but certain points connected with the investigation deserve attention. The *Scientific American* is a monthly journal of international repute which gives general information on the progress of science. For many years it has conducted investigations into psychic phenomena and other subjects on the borderland of science, and it has gained a high reputation for the careful and impartial manner in which it has conducted such investigations, in particular it has always been ready to admit the fact when it has encountered phenomena which apparently cannot be explained by known scientific laws. It can therefore claim to be completely impartial in the dispute between medicine and the E R A cult, and to have special experience in conducting investigations dealing with apparently inexplicable phenomena. The *Scientific American*, when it commenced its investigation last year, was generally held to be biased, if anything, in favour of the electronists, and since the investigation received the hearty endorsement of the electronists, headed by Dr. Abrams himself, they offered to put all facilities and services at the disposal of the committee. The progress of the investigation has been reported in the *Scientific American* from month to month during the past year, and it does not seem to have been the fault of the committee that the monthly articles have largely consisted of accounts of the various devices by which the electronists have evaded any impartial investigation of their claims. Every investigation made resulted in complete failure. The only thing that has never failed has been a crop of explanations to account for the failures. The medical profession in this country has been criticized for its unwillingness to investigate the E R A claims, and therefore it is worth while to point out what such an investigation involves. The investigation just concluded started with every advantage. It was conducted by an impartial authority, it was endorsed by the electronists, and it was conducted in America, the home of the recognized leaders of the cult. In spite of these favourable circumstances, the committee had the utmost difficulty in arranging any tests, and the investigation took twelve months when it might have been anticipated that conclusive results could have been obtained in as many days. Mr. Lescarboura, the secretary of the committee, gives a very interesting summary of the history of the investigation, and also of the history of the E R A cult. Anyone interested in the subject may be strongly advised to read this article. The publication of this report places the electronist practitioners in the following position. They are earning a living by diagnosing and treating sick people with certain expensive machines. The principles on which these machines are supposed to work violate the known laws of physics and medicine. Their claims have been investigated by a strong committee, appointed by a journal which has a high repute and can claim complete impartiality, this committee has worked for a year and has offered opportunities to all the recognized leaders of the cult in America to display their powers. The finding of the committee is not that the electronists have failed to prove their full case, but that they have failed to prove any case whatever, and that the whole business is at best an illusion.

[1] *Scientific American*, September, 1924.

LONDON SCHOOL OF MEDICINE FOR WOMEN

As already announced, the London (Royal Free Hospital) School of Medicine for Women (University of London) will celebrate its jubilee in October. The school was opened through the initiative of Sophia Jex-Blake on October 30th, 1874. Thirteen students then began their medical studies. The first council of the school included some of the most distinguished men and women of the day, the Earl of Shaftesbury, Charles Darwin, Professor Huxley, the Dowager Lady Stanley of Alderley, and Dr. Elizabeth Garrett Anderson being of the number. Since the foundation over one thousand women have qualified from the school. The jubilee celebrations will include a service of thanksgiving for the opportunities of training, work, and service opened to women in the last fifty years, at St. Paul's Cathedral, on Saturday, October 25th, at 2.30 p.m., a dinner at the Guildhall on Friday, October 24th, at 7.30 p.m., and an evening party at the medical school on Saturday, October 25th, from 8 to 12. In connexion with the jubilee it is hoped to raise an endowment fund of £60,000 to provide chairs in anatomy, physiology, and pathology, to bear the names of three women pioneers in medicine —Elizabeth Blackwell, Elizabeth Garrett Anderson, and Sophia Jex-Blake. Of the sum needed £22,000 has already been given and promised. Her Majesty the Queen has graciously made a donation to the fund. The honorary treasurer is Sir Alan Garrett Anderson, K.B.E., 5, Fenchurch Avenue, E.C.4, and the organizing secretary of the endowment fund is Miss K. Balfour Duffus, at the Medical School, Hunter Street, Brunswick Square, W.C.1.

A MEDICAL REVIEW OF SOVIET RUSSIA

III—SCIENTIFIC WORK

BY

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SOVIET ATTITUDE

WHILE the Soviet Government has attempted to make its institutions proletarian, it has at the same time endeavoured to foster science within its borders, and it has not entirely failed to accomplish its purpose in either of these respects Although laboratories and schools are much poorer than formerly, and although scientists as well as others have undergone severe privations science in Soviet Russia has kept up to its former high standard, and, paradoxically, has even prospered

There are many who will take the view that scientific progress has been made in spite of the Bolsheviki, that they have hindered rather than furthered its advancement, and that all the progress has been due to the zeal of the Russian scientists Of their zeal there is no doubt However, from my contact with various Communist officials in different parts of Russia I believe that they are fully aware of the importance of science, not only to humanity and materialistic achievement, but to the success of their government, and I found that nearly all of them took a genuine interest and pride in the scientific institutions of Russia I have been impressed many times with the wholehearted support and sympathy which they give to these places I do not mean that the scientists have not worked under enormous economical disadvantages But my feeling is that the Soviet authorities have done what they could with their limited means to keep science alive and to encourage its growth when this has not conflicted with their political principles The elevation of science, I might say its deification, is more or less part and parcel of their political philosophy, for the deification of natural science fits in well with the materialistic theories of Marxism The present Government also desires particularly to increase the domain of applied science in Russia

Like most other things in Russia all scientific institutions are supported entirely by the State In the process of "nationalization" they lost their former sources of income, and receive rations, salaries, fuel, etc, from the State

As I was not in Russia before the revolution I am unable to give a first-hand comparison of the condition of science in Czarist Russia The present actual financial resources are less than formerly, but certain new expeditions have been financed by the Soviet Government and researches in many domains have been undertaken A few of the professors have been sent abroad for study or conference—for example, Pavlov and his son were given £350 for their trip abroad last summer Being unfamiliar with conditions in Russia under the Czar, I shall give my impressions of the attitude of the Soviet Government towards science rather than an accurate comparison

RECENT SCIENTIFIC PROGRESS

In the following account I shall mention some of the lines along which science has made progress in Russia, and go into some details regarding the work of Pavlov the greatest of all Russian scientists on trophic nerves and on the sympathetic system but before going into these scientific medical accomplishments it may not be out of place to mention briefly some of the scientific work being done in other fields

Physics—In physics Professor Pojdestwensky Leningrad working by means of spectral analysis on the construction of the atom, has reported the discovery of the construction of the atom of lithium

Hydrology—A polar expedition of thirty two scientific explorers set out in August 1921, and spent six weeks in cruising in the Arctic and making hydrological and biological observations Cod and other fish were found in latitude 69 deg longitude 57 deg This locality was formerly supposed to be too far east and north for the codfish Marine temperatures and other observations of this nature were made, and found to differ from previous record

Archaeology—An archaeological expedition went to Mongolia, to last three years, started in 1923 under the explorer P K Kozlov Many objects of art statues, paintings, and 2,000 MSS have already been brought back into Russia from Kharo shote, they are memorials of a desert culture now extinct

M Pokrovsky, assistant commissar of education, says of this expedition

> In calling to life the sleeping consciousness of the people of the East Tartars Turks etc the October revolution has created a number of new interests in ethnographical and historical spheres And now with the money of the Tartar Republic born after the revolution are being organized archaeological expeditions to the ruins of the capital of the Turco-Tartar empire In the ruins of these capitals we find a picture which destroys the common notion of the savage nomad capable only of plunder Now the history of Central Asia will have to be written according to a new plan

Wireless—Progress has also been reported in wireless telegraphy M Pokrovsky, *in his book on science in Russia* for the last five years says *In general the development of the electrical industry of Russia is progressing speedily, it is as yet the only industrial sphere in which industry has risen 50 per cent higher than it was before the war"*

Vaccines—In the preparation of all medical equipment and pharmaceutical supplies Russia has always been far behind other civilized countries *Small pox cholera and* other vaccines and diphtheria antitoxin are, *however* being manufactured on a large scale in Moscow and Leningrad The quality of these was inferior to those manufactured in other European countries In connexion with this the work of Belanotsky at the State *Medical Institute* is of interest Working along the same lines as Fourneau at the Pasteur Institute in Paris he has perfected the preparation of a cholera and typhoid vaccine to be given by mouth in pill form I hear from Dr Belanotsky that this *form has been tried in several thousand cases in the Red* Army, and found to be as efficacious as the subcutaneous method of vaccination

THE WORK OF PAVLOV AND HIS COLLABORATORS

The greatest progress has been made in physiology by Pavlov and his pupils (chiefly Orbeli, Foorsikov, Savitch, Volborth, and Studenkoff) in Leningrad

CONDITIONED REFLEXES

The recent work of this school on "conditioned" reflexes, sleep, and heredity have already received attention in the BRITISH MEDICAL JOURNAL[1] Most of this work on the conditioned reflexes has been proceeding during the last twenty years, but, until last summer, when Professor Pavlov attended conferences in Europe and America it did not receive general attention abroad owing to Pavlov's reluctance to submit for publication work which he does not consider completely or thoroughly verified His other important work on the trophic nerves and sympathetic innervation is generally unknown outside Russia*

The information concerning the work of Pavlov's laboratories has been obtained from the following sources (1) Bi-weekly visits to the Pavlov laboratories during eight months of my stay in Leningrad in 1922 and 1923, (2) frequent conversations with Professor Pavlov in his laboratories and in his home, (3) a reprint of Professor L A Orbeli's work on sympathetic nerves and a copy of a lecture by Professor Pavlov received from him in April 1924 in response to my request to him for details of his work on these subjects, (4) frequent conversations in May, June, and July, 1924, with Dr Babkin at University College, London, who worked in Pavlov's laboratories for ten years, to him I am indebted also for help in the translation of Pavlov's papers (5) conversations in June and July, 1924, with one of Pavlov's pupils direct from Leningrad I am indebted to Dr J W McNee for various suggestions as selection of the material which I have collected

* In evidence of Professor Pavlov's interest and leadership in this work he told the writer that he had given a course of lectures two years ago summarizing his thirty years of experimental work on the nervous system Many were not available at the time and later should be subjected to the brutal criticism that he felt that if it had been written he would find it necessary to change the whole presentation desirable

[1] BRITISH MEDICAL JOURNAL, 1923, ii, 1169.

SYMPATHETIC INNERVATION

Langley and other physiologists had taught that the sympathetic system controlled only the viscera and involuntary muscles The work of Orbeli, Babkin, and others of Pavlov's pupils has shown that the sympathetic has other important functions, Orbeli has demonstrated the sympathetic innervation of striped muscle, and Babkin the effect of the sympathetic on glandular secretion Pavlov has recently come to the conclusion that all organs and tissues are under the control of special trophic nerves which are independent of the vasomotors

Two years ago it was pointed out by Professor Orbeli, who is chief of the physiological laboratory of the Leningrad (formerly Petrograd) Medical Institute, that there was a direct relation between striped muscle and the sympathetic nervous system, and that striped and cardiac muscle were related functionally, the chief difference being quantitative The sympathetic nervous system produces the same effect on skeletal as on heart muscle—namely, inotropic, dromotropic, bathmotropic, and tonotropic results* In heart muscle the sympathetic nervous system produces physical and chemical changes which express themselves in an alteration of the properties of the muscle—increase in irritability and of the strength and height of contraction, increased excitability and conduction, a shortening of the period of refractibility, etc It is necessary to explain the effect of the sympathetic on increased heat production and also on the chemistry and function of the muscle Although the task of finding answers to these questions has not been completed, Ginetsinsky, working under Orbeli, has furnished a tentative solution which Orbeli considers correct The following account is the summary of a paper received recently from Orbeli on this subject [4 5]

The Effect of the Sympathetic on the Function of Muscles

Ginetsinsky[6] used the isolated gastrocnemius of the frog, after depriving it of blood without destroying the nervous connexions He recorded the effect of stimulation of the roots of the eighth and ninth spinal nerves, and at certain intervals he tried the effect of stimulation of the neighbouring fibres of the sympathetic at the level of the seventh ganglion At the beginning of the work only threshold stimulation of the motor nerves on unfatigued muscle was employed, and the results were uncertain, but later better results were obtained by stimulating the sympathetic while fatigue was beginning to develop or had fully developed as a result of the stimulation of the motor nerve He concludes that the function of greatly fatigued and contracted muscle is gradually restored by this sympathetic stimulation The effect begins after a long period of latency, increases gradually, and reaches a maximum soon after the cessation of the stimulation of the sympathetic, and lasts a long time, in fact, in many cases the period of revived muscle ability continues longer than the initial period before fatigue When fatigue has developed through the occurrence of several contractions, and has manifested itself by alternating, strong, and failing contractions, the sympathetic has a compensatory effect and causes both the disappearance of arrhythmia and uniform contractions of average strength Equally impressive results were obtained regarding the isometric ability of the muscle

In a series of control experiments he showed that when isometric tetani lasting five seconds with intervals of fifty-five seconds were repeated there occurred invariably with each contraction a diminution of the muscle tension If, however, after the second or third tetanic contraction the sympathetic nerve was stimulated, during this stimulation, and for a long time afterward, there was either very slight diminution of tension, none at all, or even a greater tension than that shown in the earlier tetanic contractions, in addition, every contraction was characterized by greater stability In other words, under the influence of the sympathetic the muscle develops contractions which are greater in both intensity and duration

This furnishes a complete analogy to the heart muscle In both the heart and striped muscle sympathetic stimulation produces an increase in amplitude and intensity of contraction, an acceleration of the act of contraction, and a compensation of the dissociation between the rhythm of the irritation and that of the reacting contraction—that is, all the data necessary to the proof of inotropic, bathmotropic, and dromotropic effects In both cases there is a long latent period, a gradual development, and a long after effect, and in both the effect is weak in the fresh healthy organ, but is very marked in the hypodynamic tissue, and the strength of sympathetic stimulation, which is essential for restoration, is about the same in both Summing up, Orbeli says

> "The direct influence of the sympathetic nerves on the skeletal muscle is fixed beyond doubt, the universal significance of the sympathetic innervation is proved, the relation of the autonomous nervous system to the generalized muscular formation is shown, and the ability of the autonomous fibres to alter the condition of the muscle and its contents become transferred from a small organ, the heart, to the whole skeletal muscle, thus fulfilling the prophecy of the 'chemical tonus' of E Pfluger and of the 'trophic innervation' of Pavlov The sympathetic system, which guides all the vital properties of the muscles and secures for them the greatest use of their reserve strength, *must also affect their tone and metabolism*"[4]

PAVLOV'S VIEWS ON TROPHIC NERVES

Although the experiences of clinicians, and especially of surgeons, have for a long time tended toward a belief in trophic nerves, physiology has been unable to demonstrate their existence The surgeon often sees such evidence of trophic disturbances, but physiology has lagged behind in the explanation of these phenomena All that physiology could say was that these conditions were produced by changes in the blood supply effected through the vasomotor fibres Pavlov has, however, leaned toward the view of the clinicians for many years, although he could not explain it in the laboratory, and recently he has demonstrated the existence of independent trophic nerves to several organs and tissues

Long ago both Gaskell and Pavlov showed that in the heart, besides the vasomotor nerves and the pair of accelerator and inhibitory nerves, there is another pair of trophic nerves After years of observation, both clinically and in the laboratory, and his recent laboratory work, he now advances the view that there exists for other organs and tissues three classes of nerves, not only functional and vasomotor nerves, but a third class—the trophic nerves, which control the amount of material used in each organ of the body

In Pavlov's own words—

"The medical observations of life have an extensive horizon, whereas the physiologists, having to go only by the figures that they find in the laboratory, have a much more restricted outlook Hence the nonconformability between all that empiric medicine knows, sees, and makes use of and that which physiology can reproduce and explain Here can be placed shock and trophic nervous phenomena No explanation of shock is universally recognized, and trophic phenomena cannot be observed in the conditions of exact experiment

"In my laboratory, though not experimentally, but clinically, I leaned toward the views of the clinicians about the existence of special trophic nerves In the course of many years, while operating on the digestive tracts of animals, I often unexpectedly observed strange symptoms in the animals that lived I noted trophic disturbances, tetany, paresis, ascending paresis, and shock which had two issues—either death or temporary lethargy

"These observations confirmed my opinion that these symptoms could be explained as the reflexes from abnormally stimulated centripetal nerves of the alimentary tract to inhibitory nerves to different tissues It was assumed that the metabolism of every tissue was regulated by special centrifugal nerves by two opposing principles One set of nerves augments, the other diminishes its vitality, and if extremely irritated destroys altogether the resistance of the tissue"

Pavlov states that the manifestations of shock in his experimental animals substantiate this claim[3] Over a course of many years in his laboratory he noted that frequently after gastro-intestinal operations the animals

* These terms were introduced by Engelmann to designate the processes of strength conductivity, irritability, and tone respectively of

developed either one of two things—shock or trophic disturbances, such as tetany or paresis Pavlov and Rosenthal have lately repeated these experiments in order to find out the cause of the phenomena of shock or trophic disorder In their operations they produced the same tension as was produced before in the nerves by transplanting and fixing different parts of the alimentary tract, without, however, breaking its continuity In this way gastro-intestinal secretions which were lost in the previous operations, were retained, and thus the possible effect of loss of secretion on trophic disorder was eliminated Under these conditions identical symptoms of shock or trophic lesions (for example, in the skin and oral mucous membrane) occurred Pavlov explains these two sets of occurrences (shock and trophic) as reflexes, the abnormally stimulated alimentary nerves constitute the afferent arc, and the trophic (inhibitory) nerves to different tissues the efferent arc He says 'The reflex irritation when it acts quickly on the inhibitory nerves produces the symptoms of shock, when this reflex irritation acts more weakly over a long period it produces chronic pathological changes (trophic) in the tissues'"

Heart

Forty years ago physiologists proved that besides the inhibitory (vagus) and accelerator (sympathetic) nerves to the heart there is another pair of cardiac nerves, also antagonistic, which act on the vital activity of the cardiac muscle One of these nerves makes the cardiac beat stronger by increasing the irritability, removing dissociation, and quickening systole, the other acts in a diametrically opposed way These nerves cannot be vasomotors, because the action is seen if the heart is excised and, therefore, bloodless, the conclusion is that they are trophic nerves

Salivary Glands

The existence of a trophic nerve to the salivary glands, which was first proved by Heidenhain many years ago, has been recently confirmed by the work of one of Pavlov's pupils (Professor B P Babkin) [10] These workers found that there were two kinds of nerves to the salivary glands one excites its general excretory activity, and the other (trophic) affects the organic content of the saliva In the salivary glands the trophic nerves act only to augment the organic content of the saliva, and there *is no antagonistic* or inhibitory nerve here

Clinical Evidence

Professor Pavlov says that clinical medicine offers many examples of trophic disturbances which *physiology cannot* at present explain, but which in all probability will be shown to depend upon the existence of *trophic nerves* He explains the following as reflexes through the trophic nerves *skin eruptions* produced, especially in children, by alimentary disturbances, and, vice versa, the *production* of internal lesions of the pleura, lungs, kidney, etc, by certain skin injuries, softening of bones noted by Pavlov in his dogs when damp cold is continually applied to the skin, the favourable internal results from warm compresses, mustard plasters, cupping, the coating of the tongue from indigestion the favourable balance of metabolism in the heart and brain and their preservation from wasting during starvation He goes on to say

> All the above mentioned would be understandable *in their* mechanism if we admitted an antagonistic pair of trophic nerves which either augmented or diminished the metabolism of the tissues Then those would be cases of reflex irritation of such nerves when the inhibitory trophic nerve is excessively irritated the vitality of the tissue is lowered and disease results when the positive trophic nerves are stimulated the vitality of the tissue is increased so that it may overthrow the pathological agent "

In regard to the furring of the tongue he writes

> There is not always an uninterrupted pathologic process from the stomach to the mouth A disorder of the stomach or the alimentary tract may create an irritator for a reflex for the inhibitor-trophic nerve of the mucous membrane of the mouth especially of the tongue whereby it is put into an abnormal state which leads by degrees to loss of taste Loss of taste leads to abstention from food which gives a rest to the alimentary tract and *constitutes* the chief therapeutical measure against such a disorder Thus there might be here a self healing process on behalf of the organism

> In starvation It may be supposed that in the heart and brain *by means of the necessary reflexes* upon their positive trophic nerve the normal energy of the vital chemical processes is kept up while in all the other organs it is hindered and certain which lead to their rapid atrophy From this point of view a pair of trophic nerves would be the last direct distributor of the nutritive resources of the organism to its different parts

The we would suppose that every organ has under a triple nervous control (1) functional nerves which may be inhibitors or excitors—for example those nerves which produce contraction of muscle or the secretion of a gland or inhibition of both of these functions (2) vasomotor nerves which regulate the blood carriage of *chemical* materials and the tissue-aware of reflex augmenting or diminishing the flow of blood to the organ (3) trophic nerves which determine in the interior of the organism as a whole the exact quantity of material utilized by every organ Such triple control we can conceive proved in the heart "

BABKIN'S WORK ON THE SALIVARY GLANDS AND DIGESTIVE TRACT

The work of B P Babkin (now of Washington University Medical School, St Louis) on the salivary glands and digestive tract brings out some interesting facts *about* the sympathetic system This work was carried on for ten years in Leningrad (Petrograd) under Pavlov Babkin has worked out the meaning of double innervation of glands, the effect of sympathetic stimulation on secretion, and the idea of a relativity of function applied to physiological organs *

As a result of his experiments on the innervation of the salivary glands, Babkin came to the conclusion that 'trophic *impulses pass to the submaxillary gland or a dog through* the sympathetic nerve as well as through the parasympathetic, showing that different impulses may pass through one and the same nerve Normal amounts of the organic substances have been found in the saliva after extirpation of the *superior cervical ganglion* This led him and his co-workers to investigate the meaning of the sympathetic innervation of the salivary glands They found that for the work of the sympathetic nerve special conditions must be brought about in the gland The effect *produced by stimulation of the sympathetic is at its* maximum when the gland has already been put in a state of excitation (by various methods such as cutting the chorda tympani, stimulating other nerves, or using pilocarpin)

What causes the gland to work more actively under sympathetic stimulation during a state of excitation? It is probable that this is due to a change in the surrounding medium (blood or lymph) of the gland cells, produced by the 'excitation" of the cells In fact, he has shown this by injecting acid and alkali into the blood, under these conditions the secretion of the gland after sympathetic stimulation is different from what it would be if the blood had not been altered Also peristalsis of the gastro-intestinal tract depends not only on the mechanical or chemical stimulus but on the condition of the blood, *this Babkin demonstrated by injecting acid or alkali into* the blood By "relativity of function" he means that the function of an organ depends not only on the stimulus applied to it, but on the condition of the organ, and this condition depends in turn upon the composition of the surrounding medium "Since in normal conditions (and especially in pathologic cases) changes of the surrounding medium occur, the idea of a relativity of function may be of use in physiology as well as in pathology "[11]

IONIC THEORY OF STIMULATION

Somewhat related to this work is the ionic theory of stimulation worked out by Professor P Lazareff of the University of Moscow This theory is based on the observations of Jacques and Nernst, made about twenty years ago Working independently they found that "in the nerve and in the muscle the change from the state of rest to that of excitation is brought about by changes in the ionic concentration of the medium" Lazareff has demonstrated that in all organs, under all conditions, excitation is possible only as a consequence of changes in the ionic concentration of the medium Whenever these changes are not present, excitation is not possible

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For the statements in regard to this work I am indebted to Dr Babkin for his extreme kindness in giving me access to an unpublished paper summarizing his entire work and his personal explanations of certain parts of this work Full details will be given later in his publications to appear shortly

From these facts a general law of excitation for the threshold of irritability was formulated He says

"Calculating in every case the possible changes in ionic concentration, we were able to explain the laws of Pfluger, to develop further a theory of nervous excitation, to formulate a theory of muscular excitation, a theory of vision, a theory of hearing and of taste, and very recently to develop laws of the function of the central nervous system (of the brain)"[17]

FATIGUE OF THE EYE

In his work on vision Lasareff found that in fatigue of the eye by stimulation there was no fatigue of the brain centres This was tested directly by stimulation of the optic nerve electrically after the eye had been exposed to stimulation by light, and a second time when the eye had been left in darkness for some time and therefore at rest, the results were the same This led him to the conclusion that the brain centres are indefatigable, and that in the absence of stimulation the organism will not become fatigued, although it may fall into a state of sleep from the prolonged absence of stimulation This indefatigability of the centres bears an intimate relation to the periodicity of the function of the centres This periodicity is caused by periodic chemical reactions taking place in the nerve centres, which give rise to periodic electromotive forces[20]

GASTRO-INTESTINAL TRACT

Snotinin, working in Pavlov's laboratory, has shown that subcutaneous injections of adrenaline have a marked effect on Heidenhain's pouch in the dog, the HCl content is greatly increased Folborth, in Pavlov's laboratory at the Military Medical Academy, has also recently demonstrated that the sympathetic nerve has a direct secretory action on the gastric glands, by electric stimulation of the splanchnic nerve (cut five or seven days previously in order that the vaso-constrictors might have time to degenerate) in a dog with a Pavlov's pouch Clinical results of adrenaline in cases of achylia gastrica were being tried out in the hospitals of Leningrad, but they had not borne out the physiological work at the time that I left (July, 1923)[16]

METABOLISM OF CHOLESTEROL

During the past fifteen years a considerable amount of work has been done by Anitschkov and S S Chalatov of the Leningrad Medical Institute on the metabolism of cholesterol (in addition to what has been done in this country by Gardner, Dore, Ellis, McNee, and others) Chalatov showed that when the yolk of egg, brains, or pure cholesterol dissolved in sun-flower oil, is given to rabbits by the mouth anisotropic fat is deposited in various tissues, but principally in the intima of the aorta In these animals the presence of anisotropic fat induces later pathological changes, such as hepatic cirrhosis and fibrosis of the spleen Professor Chalatov found that these deposits did not occur in omnivorous animals (rats) unless there was some other toxic agent acting at the same time[29] Later investigations of Chalatov, since 1922, in human beings, using his new method of estimating the blood cholesterol, have shown that the cholesterol diathesis in man appears especially under the influence of syphilis[30] The conditions formerly described as atheromatosis is explained by Chalatov as due to deposits of anisotropic fats in the arteries, to which he applies the term "xanthomatosis"[31]*

COLOUR VISION

Another work which may be of great value to psychology and brain physiology is that being done by Krasnogorsky, a former pupil of Pavlov During the spring of this year (1924) he showed that in hypnotized children real colours and suggested colours are blended to form the complementary colour The experiments have been carried out in the following way an uneducated child, knowing nothing of the laws of physics, is hypnotized and shown a certain colour—for example, yellow It is asked to name the colour before it This it does correctly Then it is told that it has answered wrong, that the colour is not yellow but blue In a few moments it is asked again to name the colour that it has been shown It names neither the real colour nor the suggested colour, but the complementary colour of the two The work has been verified several times and brought to the attention of Pavlov, who, I hear, suggests that it may eventually be shown that the same chemical neural process is set up in the brain by the mental suggestion of the fictitious colour as is set up by the real colour through the optic nerve[18]

CONCLUSION

In these remarks about science in Russia I have given my impression of the official attitude of the Soviet Government toward science and cited some representative facts of scientific accomplishments, particularly in the field of medical science A complete review of medical science has not been attempted Also nothing has been said of the position of the scientists themselves, which will be discussed in a later article

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* Dr Chalatov has very kindly sent me a summary of his latest unpublished work, which I received during August, 1924

ROYAL MEDICAL BENEVOLENT FUND

At the last meeting of the committee thirty-five cases were considered and £507 10s voted to thirty-four applicants The following is a summary of some of the new cases relieved

Daughter, aged 60, of M R C S Eng who died in 1869 Has had no regular work since 1923 and is now considered too old for the posts she applies for From 1915 to 1923 was nurse at a rescue maternity home but lost her post owing to reorganization of the staff Applicant has one month's temporary work in view at 15s a week Voted £6 in twelve instalments

Widow, aged 72, of M D who died in 1894 An annuity of £40 from Liverpool Merchants' Guild is her only income apart from money received for knitting She lives with two unmarried sisters who are not well off Voted £26 in twelve instalments

Daughter, aged 37, of L R C P Edin who died in 1911 Suffers from epilepsy and is looked after by a sister whose only income is £17 10 a year, the same as the applicant's Applicant is only able to do temporary light clerical work at times, and the last twelve months only earned £8 10s Voted £15

Daughter, aged 82, of M R C S Eng who died in 1892 Applicant opened a home of rest for young women and carried it on until 1922 when her health broke down She now lives in one room in her sister's house and all she has to depend on is the old age pension 8s a week and interest on £100 War Bond Voted £10

Subscriptions may be sent to the Honorary Treasurer, Sir Charters Symonds, K B E, C B, M S, at 11, Chandos Street Cavendish Square, London, W 1

THE MODERN APPLICATION OF THE ROMAN SYSTEM OF HEATING BUILDINGS

If there is one thing certain about the life of the Romans, both in their own country and in this, it is that they heated their houses and the water for their baths The recent uncovering of a Roman dwelling at Folkestone in which the hypocaust is well preserved has reminded us of the pains the Romans took to warm the *floors* of their houses by the products of the combustion of a furnace passing continuously below them But they did more than that, for they warmed the walls by means of hot air passed through hollow bricks built into the interior The floor of a *Roman house, in fact,* was not laid on the ground, but on the top of a large number of low pillars composed of tiles—flat bricks—or stones, around and between which the hot air circulated The more perfectly the villa is preserved the more certain are we to find the hypocaust The walls were evidently heated by *means of ducts or flues* formed by hollow rectangular bricks, of which excellent examples are to be found at the baths of Caracalla at Rome and at Bath in this country

The heating of a house is not nearly so simple a problem as might be supposed nor do we nowadays consider that we have solved it merely by lighting a coal fire in an open grate

Some of the conditions to be fulnlled are as *follows*

1 The temperature of the air furthest from the fire should be about 65° F

2 This air should be neither too moist nor too dry

3 The air should be capable of being changed with*out creating a draught*

4 Dust should not be introduced into the incoming air and should not reach it from the source of heat

The wastefulness of the ordinary old fashioned, wholly metal grate placed vertically below a wide chimney is painful to contemplate, for about 90 per cent of its heat goes up the chimney By bringing the fire box well out on to the hearthstone, by having the fire-brick sloping so as to *reflect heat out into the* room, and by other modifications, about 60 per cent of the radiant heat may be induced to enter the room The two problems of heating and ventilating though they have to be solved together, are as problems in physics, quite distinct, for we can heat without ventilating and ventilate without heating We heat without ventilating in practically every system which makes no provision for the ingress of pure air and the egress of used air Nearly all so-called "central" heating systems come under this description, the exception being the system in which incoming air, having been washed, is thereafter heated on its way to the rooms We ventilate without heating when we open the door and windows and have perflation, and we ventilate *without* much heating when we have an open fire burning

To heat air which is not being changed is to create "stuffiness," which is the smell of volatilized organic matter It is this stuffiness that the typical Briton objects to so much, and of which he complains in houses heated by any process which does not also provide for ventilation

People object to the odour of hot stagnant air, not really to its warmth, but it is always the heat which is blamed, whereas the fault lies in the volatilized dust in the air, the air is being heated but is not being changed Thus people forget that a cold, damp room with its stagnant air can have stuffiness latent in it It is a very common fallacy to assume that because a room is warm its air must be impure, and that if cold it must be pure Hence the British traveller in Canada and the United States condemns at first sight the radiators in the houses and hotels as being unpleasant and unhealthy What he really means is not that the temperature attained is unhealthy, but that the hot water or steam pipes are installed in apartments in which no provision is made for the changing of the air, which in consequence rapidly becomes 'stuffy"

As far as Canada is concerned this condemnation applies to the ordinary citizen's dwelling and to a great many hotels and public buildings There are, it should be mentioned, several *notable* exceptions, such as the Chateau Laurier Hotel, Ottawa, where the system of ventilation is practically perfect, and the absence of the slightest trace of stuffiness, of the smell of cooking or of tobacco smoke is remarkable

In a few Canadian houses some of the rooms are provided with open fires as well as with radiators the former sufficing to ventilate the rooms In some large English houses also the two systems are combined, but in these days of difficulty in regard to domestic service the multiplication of coal fires is not a popular institution Gas fires, when in communication with efficient flues can advantageously take the place of coal fires In all countries with cold winters ventilation cannot be attained by opening the windows, for the incoming cold air freezes the water in the "radiators"—as many a rash Englishman has discovered

British architects have rightly never favoured the Continental and American system of central heating, largely because it leaves the more difficult problem of ventilation completely unsolved But merely as a heating system it has several grave defects—it heats by convection, which is not economical, for it tends to cause the heated air to ascend first—that is, it leaves the floors comparatively cold it drives dust upward, and so discolours wallpapers and other objects, and it occupies floor space

The Roman system of heating by hypocaust gives us the principle to be adopted—namely, to heat the floors and walls, so that these large surfaces may become themselves sources of radiant heat Everyone knows that if our feet are warm our whole body is full of comfort, and if they are cold we are uncomfortable all over

As a matter of fact, some architects have already rediscovered the Roman method and have adapted it to certain present-day buildings Mr Gilbert Scott, the architect of the Liverpool Cathedral who took part in a recent discussion on heating at the Royal Institute of British Architects, said 'At Liverpool I am adopting the system of heating the floors by channels through which hot air circulates It has the great advantage of using marble or stone flooring without I hope, causing people to complain of a feeling of coldness in their feet It is a reversion to the Roman idea of heating" The heating of floors is being tried in schools erected by the education authority in Derbyshire Mr Widdows, the architect there, believes that the chief thing to aim at is to have the feet warm and to allow cool tonic air to have access to the upper parts of the bodies of the scholars Cold feet or any bodily discomfort make for inattention on the part of the children

To the engineers who are experts on heating systems must be left the decision as to the exact method by which the floors and walls shall be heated A room whose floors and walls are sufficently heated we can afford to ventilate with much greater freedom than with any "central" system In this—the true radiation method—we can endure around our heads air at a very much lower temperature than with a convection system, where, since the distribution of heat is by means of air currents, these may not be too lavishly carried off

Where floors and walls have to be heated architects prefer at the present day a system known as the 'panel," in which the heat is derived from water circulating in coils of jointless piping enclosed in the structure of the building The temperature of the water varies from 90° to 130° F, which is found to give at the floor just the right temperature for comfort The circulation in the coils is, of course under the control of the occupants of the room It has been calculated that the saving in fuel effected by this system as compared with the 'radiator" is as much as 20 per cent Of course, where there is access to a cheap source the electric current itself can be used instead of hot water to heat the floor No floor or wall space is occupied by the piping, which is all hidden, and there is no staining of the walls or ceilings by dust driven up by

the convection currents Further, the panel system does not interfere with any structural peculiarity in the building, nor with any of its characteristically decorative or æsthetic features

Australia House in the Strand and the operating theatres of King's College Hospital may be mentioned as heated by the panel system

D FRASER HARRIS

SOME MORE VOSGES SPAS

THE correspondent from whom we have already had two notes has supplied us with some further information about the spas which he has recently visited in the north-east of France It appears, for practical purposes, that they may be classified according either to the principal use to which their waters are put, or to the degree to which in their present state of development they are most likely to meet the needs of patients from the British Isles

At all the spas the waters are both given internally and administered in the shape of baths and douches, but at some the natural temperature of the water has resulted in their external use predominating This is the case at Luxeuil, Bains-les-Bains, and Plombieres, at all of which the waters are hot The first named of these three prides itself more particularly on the treatment of gynæcological disorders, considering itself entitled to do so because its waters can be, and are, utilized for prolonged vaginal irrigation without any previous exposure to the air and exactly as they issue from the rock Hence they retain all such remedial virtue as hot natural water containing various mineral constituents and of radio-active power, and issuing straight from the bowels of the earth, may be esteemed to possess Bains-les-Bains, the second of the group, claims to be particularly successful in the treatment of unduly high blood pressure and arterial diseases in general, while Plombieres, among several claims for its waters, includes more particularly a sedative effect on the nervous system

The other group consists of Contrexeville, Martigny, and Vittel, at which the waters are cold At all three of these the waters contain a certain amount of lithium and calcium sulphate, as well as other minerals, and cases of gravel, gout, sciatica, and arthritis probably predominate among their patients

All the six spas mentioned lie within about thirty miles of one another, at an elevation of from 1,200 to 1,400 feet, and all have hilly, picturesque, well watered and well wooded surroundings All, too, must overlie very porous subsoil, since rain, however heavy, leaves no trace after a very short time But they differ considerably in the matter of the environment in which the patients live, in the extent of their development and frequentation, and in the length of time for which they have been used In respect of relatively modern hydrology Contrexeville appears to be the oldest, since it was officially inaugurated as a health resort by the Government of the time in the year 1760 But Luxeuil runs it close in this respect, since it received similar recognition only some six years later In addition, it may possibly be the case that this spa is the oldest still in existence anywhere, for there is direct evidence that a bath house on the site of one of those now in use was repaired (not newly built) by order of Julius Caesar at a date shortly after his first subduction of the Gauls of this area As they stand at present, all the places from which these various spas derive their names contain, out of the season, not more than 1,000 or 1,500 inhabitants The exception is Luxeuil, which has an existence independent of its mineral water possessions, since, like Bath, it is a county town as well as a health resort

Plombieres, too, differs somewhat from the rest in respect of its precise situation This is half-way down a gorge so steep, deep, and narrow that the little town fills it from side to side, and might easily be overlooked altogether from a short distance It consists almost entirely of hotels and lodging houses, and recalls some of the older parts of residential Brighton

In respect of their therapeutic development, the arrangements at Martigny, Bains-les-Bains, and Luxeuil, though adequate, are comparatively simple in character Their places of amusement are also unassuming, but at all three there is good accommodation in the matter of hotels At Plombieres the general and specific arrangements are more elaborate, for there are three types of balneological establishments which cater for invalids of varying means

Vittel and Contrexeville are in a somewhat different class Both have earthy or calcareous waters, and at both the mineralization of the springs is low Both, but especially Contrexeville, have a considerable reputation for the treatment of affections of the urinary organs, including uric acid, gravel, and gouty oxaluria The medical arrangements at Vittel are good It has well designed and well managed facilities for modern spa treatment, and provides electro-therapy of all kinds, including light baths Its situation is beautiful, and since its origination some twenty five years ago the company owning the springs has developed it on double lines The principal hotels are built in palatial style and the amusements provided, including polo and racing, attract many fashionable visitors

Contrexeville, on the other hand, despite the fact that it lies only three or four miles away, has not allowed itself to be disturbed by the achievements in the latter respect of its youthful compeer Though it provides first-class hotels and a great many agreeable pastimes for its visitors, including golf, tennis, and theatrical performances, it has steadily adhered to its original purpose, and subordinates all its aims to those of effective treatment Its establishment was entirely rebuilt a year or two before the war, and in its present form it is as elaborately conceived and constructed a medical hydrological undertaking as can well be imagined Among other structural features it has a broad portico some 200 yards in length, up and down which patients saunter while drinking their allotted dose of water, in addition to rooms for the application of every sort of bath and douche that has ever been invented, there is a complete electro-therapeutic department in charge of an expert There is a well appointed clinical laboratory working in two departments the one is chiefly concerned with the analysis of urines, in the other blood examinations and the like are done for the doctors of the spa Indeed, Contrexeville as it now stands may be regarded as the present last word in the branch of therapy to which it belongs, and a pleasant, cheery resort even for the thoroughly healthy

All the spas mentioned report that they have completely recovered from the war, in respect of the number of their visitors These are cosmopolitan at the three more elaborately developed spas, but at the others visitors from the British Isles seem comparatively rare This is a circumstance which in the case of some invalids would be considered an added attraction They are all in varying degree very accessible—that is to say, they can all be reached within ten hours from Paris, while in the case of Vittel and Contrexeville the time occupied is less than six hours

The expenditure of a visitor varies naturally according to the character of the hotel chosen, but so long as the exchange rate of the franc remains anywhere near as low as at present, the expense of reaching a Vosges spa and remaining there for the usual period of three weeks must be relatively small A common kind of figure for board and lodging at good hotels appears to be 45 francs a day, and this at present works out at less than four guineas a week

In conclusion it may be noted that details in regard to the mineral contents of the springs of these various spas, and a great deal of practical information in regard to the treatment they provide, the pathological conditions which they are considered best able to combat, and their general arrangements, can be found in a book issued under the ægis of Professor Robin of the University of Paris, under the title of *The Spas of France* It is published in France at the price of 20 francs, and a new English edition will shortly, we understand, be obtainable gratis by duly qualified medical men, on application to the Office Français de Tourisme, 56, Haymarket, London, S W 1

Ireland

DOCTORS AND THE POOR LAW IN NORTHERN IRELAND

A MEETING of medical delegates of the Northern Parliamentary area of Ireland, arranged by Dr Morrison, M P (Blackhill, Coleraine co Derry), was held on September 10th in the Medical Institute, Belfast Dr John Campbell, M P (Belfast), presided On the motion of Dr Lyle (Newtownstewart), seconded by Dr Henry (Comber), a resolution was adopted to the effect that the administration of the Poor Law should be in the hands of the county, rural and urban councils, with local supervising committees and that as vacancies occurred, dispensaries should be rearranged and improved, modern diagnostic appliances being provided Another resolution, moved by Dr Mowbray (Castlederg) and seconded by Dr Osborne (Belfast), was carried to the effect that the minimum salary of a dispensary doctor should start at £300 per annum, and rise to £400, apart from other emoluments, such as vaccination, registration and public health offices that there should be an optional age limit of retirement with a sufficient retiring allowance and a 65 age limit with pensions on civil service scale and that county hospitals should be in the centre of the county with a surgeon with special knowledge in charge On the proposition of Dr Katherine Robertson (Limavady co Derry), seconded by Dr Mowbray, it was decided to recommend that workhouses should be abolished and the infirmary converted into a district hospital, a central workhouse being retained for the old and infirm in each county, children being boarded out, and a home provided for vagrants and unmarried mothers, for whom suitable work should be found Dr Burns (Belfast) moved, and Dr Jamison (Newtownards) seconded a proposal that salaries should be on a uniform scale and fixed by a joint committee of county and rural councillors and medical practitioners On the motion of Dr Fergus (Blackwater), seconded by Dr Duncan (Ballymena) it was agreed that the State contribution for grants-in aid fixed at the standard year of 1897 was wholly inadequate and should be equal to the amount raised by the local authority and that many matters, such as the prevention of disease, should be a national and not a local expense Dr Burns (Belfast) proposed, and Dr Henry (Comber) seconded, the appointment of a committee to act with the local Medico-Political Committee of the Ulster Medical Society and the Ulster Branch of the British Medical Association It was decided that a committee of twenty two from these bodies should collect evidence for submission to the Poor Law Commission

TUBERCULOSIS IN BELFAST

The chief tuberculosis officer of Belfast (Dr A Trimble) in his annual report shows a just pride in the fact that the death rate from pulmonary tuberculosis has fallen for five years in succession and now stands at 1 3 per 1,000, a reduction of 51 per cent as compared with 1918, and of 72 per cent as compared with 1890, when the rate was 4 7 per 1,000, a slight fall has occurred also in the rate due to the non pulmonary forms The Central Tuberculosis Institute was only opened in 1918 The number of examinations has increased by 227 this Dr Trimble considers was due in all probability to the trade depression, which compelled poorer patients to forsake their own doctors and avail themselves of the institute he modestly does not suggest that the increasing reputation of the institute may be a cause The usual charts and tables of statistics of the incidence, of occupations, of contacts, and the question of infection, of localities, pregnancies, of the work of the x ray and dental departments, of Graymount Hospital, and of the Insurance Committee, are instructive reading In a re survey of the old cases under domiciliary treatment the disease was found to be either quiescent or apparently cured in almost 50 per cent Unfortunately no census was taken in 1921, so that statistics based on population are mere estimates and it is well known that at the end of a decennium such estimates are often much out, there is however, the reassuring fact that the actual number of death from tuberculosis (571) in 1923 in Belfast was the lowest on record since 1880 when the population was only half what it is to-day There seems to be no doubt that pulmonary tuberculosis is steadily, and even rapidly, yielding in Belfast

Scotland.

COLONIAL SUPPORT FOR SCOTTISH HOSPITALS

A DONATION of £100 has been forwarded by the Selangor (Malay States) St Andrew's Society for distribution among deserving and necessitous Scottish hospitals and similar institutions Part of the sum is earmarked for St Dunstan's Home for Blinded Soldiers and for the National Institute for Scottish Blinded Soldiers and Sailors, while the distribution of the balance is left to the discretion of the editor of the *Scotsman* newspaper While the sums received by individual hospitals are small in amount, the fact that interest is maintained in home institutions by Scotsmen in distant parts of the world is one of great importance and worthy of imitation

EDUCATION OF VETERINARY STUDENTS

At the annual congress of the National Veterinary Medical Association of Great Britain and Ireland, of which we gave some account in our last issue, Principal O Charnock Bradley, of the Royal (Dick) Veterinary College, Edinburgh, dealt with the subject of veterinary education, and urged that in forming regulations for a course care should be taken that students were furnished with the broadest, soundest and most homogeneous preparation possible for their future duties Special lines of work ought to be left to post-graduate courses, and should not occupy undue time in a curriculum already sufficiently crowded Dealing with the proposal to extend the course to five years, he said that if it could be shown that the general veterinary practitioner might expect a reasonable return on the extra outlay, and if the number of students prepared to undergo this prolonged course of study would be sufficient to supply the country with an adequate number of veterinary advisers then the main objections to an extended curriculum would be met The essential for a perfect curriculum was to produce an educational fabric of even texture and lasting quality for the public use

India

THE LEE REPORT

AFTER three days' debate in the Indian Legislative Assembly at Simla the Government resolution embodying the adoption of the Lee Report was rejected by 68 votes to 46 Sir Alexander Muddiman, the Home Member, who moved this resolution on September 10th pointed out that of 3,000 appointments on the all India basis of the report, only 1 300 would be British filled including not only the military medical reserve but all other medical posts The recommendations of the report which related to medical reorganization had been deferred by the Government in view of their complexity and were therefore not involved directly in the discussion Lieut Colonel H A J Gidney, the nominee of the Anglo-Indian community, advocated the separation of the military from the civil medical service, both he and a succeeding speaker Sir Narasimha Sarma, maintained that the medical service however reorganized, would need for some time the strengthening and stimulation of a British element On September 16th the Government resolution approving the report was carried without a division in the Council of State

BOMBAY BACTERIOLOGICAL LABORATORY

A handbook has been prepared at the Bombay Bacteriological Laboratory for the use of those concerned with the campaign against plague in India the prophylaxis of rabies, or the diagnosis and treatment of disease by means of pathological research A detailed account, in simple language, is given of the various procedures adopted in dealing with plague, including a comprehensive description of the Haffkine vaccine, its mode of preparation, instructions for its use, and a report of the results already obtained Rabies and antirabic treatment are dealt with

very practically, and there is a diagrammatic scheme for distinguishing poisonous snakes The handbook is profusely illustrated and is of considerable general interest It gives an excellent idea of the valuable services that are being rendered by this laboratory since its establishment in 1896, through the efforts of Professor Haffkine, C I E

THE PREVENTION OF LEPROSY

Mr Oldrieve, secretary of the British Empire Leprosy Relief Association, who was for six years secretary for India of the Mission to Lepers, has written a book, *India's Lepers*,[1] to draw attention to the work of these societies, and to maintain that it is possible to extirpate leprosy from India The census of 1921 showed 102,523 lepers in India, in a population of 320 million But all with experience of Indian administration agree that this is an underestimate, the figures probably include advanced cases only Many lepers in early stages of the disease are unaware of its existence Many, especially women, are deliberately concealed The author reckons the number as about 250,000 Dr L Muir, whose experience is unequalled, estimated it at from half to one million At the last census Bengal, the United Provinces, and Bihar showed a decrease, Burma a considerable increase For these lepers there are 73 asylums, in nine provinces, with 7,311 inmates Native states contribute about 16 more asylums, with less than a thousand inmates Leprosy is a contagious disease, especially in its tubercular or nodular form, the anaesthetic form is little if at all contagious It is not hereditary, the children of lepers are born free from the disease, but are very liable to contagion Mr Oldrieve therefore advocates that all infants born in asylums should be removed from their parents and brought up in separate houses, the parents being allowed to visit them Experience shows that in such circumstances the children generally escape infection Many methods of treating leprosy have been tried, and most have effected improvement in some cases, nastin in particular gave hopes of success, but none have survived prolonged trial The method of treatment with salts of fatty acids, introduced by Sir Leonard Rogers, has given favourable results and holds out hopes of permanent success Mr Oldrieve advises that all wandering or begging lepers should be compulsorily segregated in farm colonies, the asylums being utilized for treatment of those coming voluntarily for treatment, which they now do in numbers beyond the present capacity of these institutions

INDIAN RED CROSS SOCIETY

A short notice was given in our columns of August 16th (p 294) of the third annual report of the Indian Red Cross Society A gratifying increase in the society's membership has occurred during the past year, the numbers rising from 428 to 2,107 As the result of the very successful Red Cross week held in Bombay in December, 1922, a special Red Cross lecturer was appointed to tour throughout the Presidency The results in increased membership and activity by the society were so considerable that the Bombay committee has notified the lecturer to continue to tour, and proposes now to accept the services of another lecturer, who has volunteered Several of the Indian States in the Bombay Presidency have recently started Red Cross branches On the closure of the Red Cross depot at Bombay at the end of 1922 the stores were transferred to Lahore, which is now the central supply depot of the society During the year requisitions have been received from all over India, and the railway authorities allow the society to dispatch Red Cross stores free of freight to all parts of India A large consignment of stores supplied from London by the British Red Cross Society enabled the Indian depot to help provincial branches very considerably Many military hospitals have been helped by the society during the twelve months The educational work of the society has made a great advance, twenty different pamphlets and leaflets have been published, dealing with the elements of health, the causes of the commoner diseases, and simple methods of treatment Twenty-one large posters have been prepared to illustrate some of the subjects Seven different sets of lantern slides for public health lecturers are also being prepared, and a considerable amount of miscellaneous material is available for educational purposes Over 250,000 pamphlets have been distributed in response to requests received, and the demand for lantern slides has been very great Consultation is taking place between the society and the Lady Chelmsford League for Maternity and Child Welfare, with a view to the organization of a concerted plan of action with regard to this educational literature

THE COUNTESS OF DUFFERIN'S FUND

The thirty-ninth annual report of the National Association for Supplying Medical Aid to Women in India has been issued During the year (1923) the governing bodies of the different funds for the physical welfare of women in India, of all of which the wife of the Viceroy is president, were co-ordinated under one administration The financial position of each of these different funds improved somewhat in 1923 The Women's Medical School at Agra was reorganized as a self-contained institution, staffed entirely by women The Women's Medical Service increased in numbers by four, one having resigned, and five new members having been appointed on probation It is now 41 strong, besides 13 in the junior medical service A list is given of the qualified medical women in India, of whom there are 369 An excellent map shows all the hospitals for women in India, the different grades of hospital being distinguished by different colours

AGRA MEDICAL CONFERENCE

The nineteenth All-India Medical Licentiates Conference will be held at Agra during the second week in December In conjunction with it an exhibition is being organized, it will comprise various exhibits and appliances relative to medicine, surgery, hygiene, maternity, and child welfare Certificates of merit with gold, silver, and bronze medals will be awarded for exhibits The first exhibition of this kind was held at Madras in 1916

Correspondence.

GALL STONES AND CANCER

SIR,—The British Medical Association Lecture of Dr Archibald Leitch on "Gall stones and cancer of the gall bladder" is of intense interest This is heightened by the deductions of the medical correspondent of the *Times* in the issue of September 13th, which are worth repeating He states

(*a*) This is the first time a carcinoma has ever been produced in a guinea-pig and that animal has never been known to develop any kind of carcinoma naturally

(*b*) It is the first demonstration that a mechanical irritant *can* produce a cancer

(*c*) It is the first time a cancer of the glandular type has ever been produced experimentally

(*d*) Above all it is the first demonstration that a pathological substance developed wholly within the living body—that is, a gall stone—can produce cancer by prolonged irritation or injury

A few remarks upon the paper and these deductions may not be amiss For the sake of clearness and reference I number them

1 Apparently the choice of the guinea-pig for these experiments was a peculiarly happy one

2 Forty guinea-pigs were used, 25 had one or more gall stones, 5 had smooth pebbles, 5 had pilules of pitch, and 5 had melted lanoline introduced into their gall bladders

3 Almost certainly, 8 out of the 40 guinea-pigs used developed a form of carcinoma—that is, a malignant neoplasm of an epithelial type This is 20 per cent, a very high percentage all will allow, and peculiarly high in guinea-pigs

4 Of the 8 which developed carcinoma, 5 had had one or more gall stones, 2 had had a pebble, and 1 had had a pilule of pitch introduced into the gall bladder before the onset of the growth of the neoplasm

5 This indicates that three quite different types of foreign bodies placed in the gall bladder of a guinea-pig can be *a* factor in the production of a carcinoma

[1] *India's Lepers How to rid India of Leprosy* By Frank Oldrieve London Edinburgh New York Marshall Brothers, Limited 1924 (8vo pp 144 2s 6d)

6 The gall stones are stated to have been four years outside a human gall bladder and were dry They were not sterilized before insertion It would have been interesting and instructive if half had been sterilized, if this had been possible, before introduction as a control If any remain of these gall stones which have not been used it would be helpful to have them even now examined bacteriologically Further, although the approximate size of the gall stones is mentioned, it is not stated whether they were smooth or more or less rough on the surface

7 The pebbles when introduced were presumably sterile, and they had a smooth surface

8 The pitch and lanoline were probably both sterile

9 The contents of the gall bladder, if any are not indicated in any of the cases in which carcinoma developed Was there any bile or mucus present

10 There is no record of any bacteriological examination of the interior of the gall bladder, either at the time of the insertion of the foreign body or at the time of the discovery of the carcinoma The presence or not of bacteria may have an important influence upon the incidence of a new growth

11 It is quite possible that a 'foreign" body like a gall stone may "irritate" so as to produce a malignant neoplasm, but it is probable that a foreign body *plus* the presence of some micro-organism, vegetable or animal, is more potent in such a production

12 Many of us have been teaching rightly or wrongly, that the formation of gall stones is largely dependent upon infection of the gall bladder, and that gall stones present in the gall bladder may be followed by carcinoma thereof

13 Hence the ultimate cause of the neoplasm in these cases may be stated to be infection

14 So that carcinoma, although itself not specifically due to a parasite, may need the action of a parasite introduced from without the tissue, together with some other irritation to cause its incidence

Thus we have the value of Dr Leitch's illuminating work and may consider the deductions in the *Times* fairly accurate and sound —I am, etc,

London W 1, Sept 14th W McADAM ECCLES

SIR —I am much obliged to you for showing me the courteous and interesting letter of Mr McAdam Eccles Using his numbers

6 The gall stones were not examined bacteriologically and the particular sample has not been preserved The stones were all smooth

7 The pebbles were sterilized, and served as controls

9 In most cases the cavity was obliterated In two there was a small amount of flaky fluid—probably cholesterin in suspension In microscopic sections there were deposits of degenerated mucus in some of the spaces, but the epithelial cells seldom took up the mucin stain

10 The bile was not examined bacteriologically As most of the animals were found dead such an examination would have been useless At any rate the tumour masses, liver, gall bladder, etc, were fixed in formalin before dissection

12 The observations of Chauffard, Rovsing, and Peyton Rous—to mention a few—are against the idea

11, 13, and 14 If a micro-organism played the part of a cancer producer it could only bring about its effects on the fixed tissue cells in one of two ways either by purely mechanical stimulation or by some toxic substance it produced In other words, it would be an irritant exactly on all fours with gall stones, tar, soot, paraffin oils, etc So why premise a second irritant, especially when we have no evidence of it —I am, etc,

London S W Sept 16th ARCHIBALD LEITCH

TREATMENT OF PUERPERAL SEPSIS

SIR,—We have read with considerable interest the letter written by the obstetric surgeons of Queen Charlotte's Hospital published in your issue of September 13th (p 488)

We quite agree that the method advocated by Dr Canney in his article on the treatment of puerperal sepsis (BRITISH MEDICAL JOURNAL, August 30th, p 356)—namely, the exploration and curettage of a septic uterus for retained products—is to be strongly condemned

We are of the opinion, however, that all cases, at the first sign of fever in the puerperium, should be subjected to a mild form of surgical treatment By a mild form of surgical treatment we mean intrauterine drainage and irrigation Daily visual examination of the cervix enables us to see whether there are any pieces of placenta or membranes presenting at the external os, which can be easily removed

Our experience shows that septic uteri, treated by drainage, involute rapidly and completely, whilst in those left alone involution is often slow with a tendency to chronic subinvolution They are also far less likely to be subject to recurrent attacks of pelvic peritonitis The methods of intrauterine drainage are fully described in the *Proceedings* of the Royal Society of Medicine, Section of Obstetrics and Gynaecology, vol 17 pp 73-85 *

In short, although we are strongly against exploring the uterus either with the finger or a curette at the first onset of fever in the puerperium, yet experience has shown us that it is better to employ intrauterine drainage immediately, rather than to adopt a 'wait and see" attitude —We are, etc,

REMINGTON HOBBS
ARTHUR D MORRIS
MICHAEL J O'BRIEN
MONTAGUE H RENALL
J A LUMSDEN COOK

St Mary Abbots Hospital Kensington S W 5, Sept 14th

SIR —It was with no surprise that I read the "round-robin" from most of the acting staff of Queen Charlotte's Hospital In what still remains a very controversial subject there are bound to be many who disagree with active exploration of the uterus This I knew

Treatment has ranged between what I take to be the two extremes—"the simplest medical methods" on the one hand and *sharp* curettage of the infected endometrium, followed by the application of strong antiseptics, on the other I have tried a middle course Being well aware of the danger of disseminating the infection by opening new areas, "I have always insisted that any active exploration of the uterus should be undertaken with the greatest care and with all possible gentleness" It seems that the chief bone of contention is my advocacy of the blunt flushing curette I can, however, assure the writers that the endometrium is "gently stroked," and, in fact, the curette is used more as an irrigator than anything else Since this paper was written I have on more than one occasion used a soft rubber tube instead

Of great interest and value are the statistics quoted—namely, subsidence of fever within four days in 89 2 per cent of cases of puerperal temperature" above 100° One may nevertheless assume that in quite a fair proportion of these patients the sepsis was not intrauterine, unless definite information to the contrary is forthcoming —I am, etc,

Cambridge Sept 15th J R CAMPBELL CANNEY

X-RAY INTERPRETATION

SIR,—The letter by Dr Hall-Edwards (BRITISH MEDICAL JOURNAL, September 13th, p 486), emphasizing the danger of the neglect of x-ray examination in cases of doubtful fracture, is a necessary and useful warning But in making the statement "a fracture of the neck of the femur can be diagnosed by means of the x rays with absolute certainty," it would have been better, I think, if he had added "by an experienced radiologist"

In 1918 I was medical officer in charge of electrical treatment at a command depot and sent one of my patients to the local military hospital for a skiagram of the hip-joint The skiagram was taken by a lady, who was a fairly capable radiographer but unfortunately she had a habit of writing reports also The skiagram was sent to the senior medical officer and thence to the comparatively medical officer concerned, and it was also casually seen by two other medical officers before it reached me, a report

* An abstract of the paper was given in our issue of the 4th published on April 14th 1923 (p 665)

later Not one of these medical officers questioned the accompanying report "No injury to bone," yet any radiologist could have seen at a glance that there was an impacted fracture of the neck of the femur This is only one of many similar experiences that I could mention It should be realized that where there is an x-ray department lacking the services of an experienced radiologist, a certain number of fractures will be missed—I believe 5 to 10 per cent

I would not on this account discourage the provision of x-ray departments in those hospitals so situated that the services of an expert are unobtainable, as the work of unqualified radiographers is on the whole more useful than harmful, but it should be realized that, with the exception of medical degrees and the great experience some nurses have had, the only useful qualification for work in an x-ray department is the membership of the Society of Radiographers, and that the possession of a title (which according to the lay press is a hall-mark of knowledge and skill in x-ray work), or the degree of M A , B A , B Sc , or any non-medical degree, does not imply that the possessor has any experience of radiography or medical radiology —I am, etc ,

WILFRID GARTON,
Radiologist, St Bartholomew's Hospital, Rochester

September 14th

LATENT JAUNDICE DURING TREATMENT WITH ARSENOBENZOL COMPOUNDS

SIR,—I have read with much interest Lieutenant-Commander Gerrard's article in the JOURNAL of August 9th (p 224) on the recognition of latent jaundice during treatment with arsenobenzol compounds He states that it was formerly the custom at Haslar to dissolve each 0 45 gram of novarsenobenzol in 4 c cm of distilled water, but that, owing to the frequency of jaundice, it is now the rule to dissolve each 0 45 gram in 10 c cm

During the past six years I have given each dose, irrespective of strength, dissolved in 2 c cm , which I inject into the ampoule containing the novarsenobenzol I have given some 4,600 injections in this manner and have never yet had a case of jaundice

My usual routine is to give eight injections for a course (two 0 45 gram, two 0 6 gram, and four 0 75 gram) at weekly intervals I would suggest that the cause of the frequency of jaundice at Haslar is, not the concentration of the solution, but the intensity of the course—every three days in primary syphilis and every four days in latent syphilis —I am, etc ,

A M STUART,
Surgeon in charge V D Clinic, Walsall Hospital

September 13th

CHRONIC ULCERATIVE COLITIS

SIR —In a letter last week, referring to the interesting leading article on chronic ulcerative colitis appearing in the BRITISH MEDICAL JOURNAL of August 30th, Dr Stacey Wilson made the suggestion that the mercury and iron perchloride mixture of Dr Wedgwood should be given a fair trial in the treatment of this intractable complaint Dr Wilson affirmed that he had had a good measure of success with this form of therapy From my own experience I feel that this old combination of drugs is worth reviving in the treatment of such colon infections as ulcerative colitis and chronic bacterial dysentery

Further, I believe that the severity of the illness in many cases of rheumatism in childhood can be reduced by the iron and mercury perchloride mixture In about twenty recent cases of this complaint in children I have found that measures directed towards the colon have been successful where salicylates have been disappointing Though I must admit that salicylates and treatment of the teeth and tonsils are sufficient for most cases, there remains a good percentage which will benefit from some form of treatment of the intestine, and high among the remedies I would place the iron and mercury mixture originally introduced by Dr Wedgwood —I am, etc ,

CHARLES J LEWIS, M D , M R C P ,
Acting Medical Registrar Westminster Hospital

London, W 2 Sept 14th

THE VALUE OF FRUIT AS A FOOD

SIR,—It may be agreed that Dr Habgood and others, who write so persuasively and forcibly on this subject, have sound scientific justification, but one often wishes that they would go into a little more detail in the matter, with due regard for financial, climatic, and other practical considerations Could Dr Habgood, for instance, set forth his idea of a complete diet table for a week in winter, suitable for a growing boy or a panel patient in a large town, indicating how, and to what extent, the usual porridge, meat, milk puddings, and so forth, are to be replaced, adequately and economically, by the "uncooked foods, fresh fruit, and green vegetables" so much, but so vaguely, talked about?

One does not wonder that many mothers, anxious to do the best for their families, but sometimes hard put to it to provide them with any sort of nutritious and palatable diet at all, ask for exact instructions on this subject If "an apple a day" is literal it must be supplemented, and if it is symbolic it must be interpreted, and advice which goes no further than "as far as possible" or "in increasing quantities" is hardly good enough, in view of the practical difficulties confronting an attempt to alter the dietetic habits of ordinary people —I am, etc ,

S J T

September 15th

THE HOURS OF MEDICAL WORK

SIR,—As a doctor who during a considerable part of his career went through the usual drudgery of general practitioner work, I wish to give a few words of advice to the younger members of the profession The older ones are hardened and mentally blinded, and will not change

First, be it observed that the working man works now forty-eight hours a week, and what is good enough for a "working" man should be good enough for an "educated" man If the doctor is on duty from 9 a m till 7 p m surely he has done enough for one day Let the *evening* consulting hour be from 6 to 7 p m , or, if that be not enough, from 5 to 7 p m The working man stops his work on Saturday, usually, at noon, is there any sense in a doctor consulting on a Saturday night, and making his life one ceaseless grind? Change, therefore, the evening hour on Saturday night to one on Saturday afternoon, say 2 to 3 o'clock, and have a few hours for recreation

The public have no mercy on their doctors, and I am sorry to say I have known many good, well meaning, but weak-kneed doctors die, in my opinion, fifteen to twenty years sooner than they ought, worn out mentally and physically, from the delusion that they could not be spared

It is most essential that the following notice be put up in the surgery

All messages for visits (except emergency calls) must be left here not later than 10 a m
Emergency calls only attended at any hour, day or night

When that rule is not attended to an extra fee on the visit must be charged Having practised these rules successfully I commend them to my younger professional brethren Only by having a few comparatively quiet hours daily is it possible for a doctor to study his profession and be in a position to "deliver the goods"—I am, etc ,

JOHN T MACLACHLAN

Harrogate, Aug 29th

THE ROLE OF THE GENERAL PRACTITIONER IN PREVENTIVE MEDICINE

SIR,—While the opening speeches upon this subject at the Bradford meeting (JOURNAL, August 9th, p 227 et seq) contain much admirable matter, the subsequent discussion inclined to degenerate into mere criticism of the whole time assistant medical officer

That local authorities should be in the habit of appointing recently qualified men and women to these posts is regrettable The situation seems to have arisen through the supply exceeding the demand, and it would be best met by practitioners taking a more lively interest in the appointments made in their districts and supporting the policy of the British Medical Association

After the war there was a glut of graduates, many of whom were unable to obtain junior hospital appointments

as a stepping stone to practice For want of something to do many of these young doctors took the Diploma in Public Health, assured by the teachers that it would be a useful "tag" to their names in any case Having obtained the diploma, it was only natural that they should have been tempted to accept the low-paid posts offered by local authorities in preference to the still lower paid assistantships offered by general practitioners, without, of course, any careful consideration of the merits of either The local authorities, on their part, were delighted to be able to get such cheap labour, which labour many of them fondly regard as satisfactory

A large number of laymen still think that one doctor is as good as another, except when such doctor is employed to deal with their own individual ailments It never enters the head of some lay committees that their medical officer must, if he is to do any good, enter into close co-operation with the general practitioner So long as they have obtained the services of a man with a registrable qualification they are satisfied The clinical officer (venereal disease, tuberculosis, or child welfare), as well as the medical officer of health, must have experience, administrative ability, and business capacity In addition he must have a good general knowledge of medicine if he professes a special subject These qualifications imply the expenditure of time and money, yet when men or women who have had perhaps a dozen years of general experience, and who have worked with this end in view, come to take up the career, they find themselves in competition with those who qualified but yesterday, and who are—unfortunately and foolishly—only too willing to sell their services at any price The appointing authorities do not seem to place enough value on mature experience, yet surely they realize that no practitioner in their district is likely to accept advice from a boy

To some extent it would appear that the school medical service has proved a red herring across the track of public health policy by diverting lay opinion into error Without wishing in any way to belittle the medical inspection of school children, one feels that this work, as carried on at present in many parts of the country could be done by quite junior medical men and women Much of it is simply routine, there is usually the guidance of a senior administrative officer (who may be the medical officer of health), and part-time specialists are freely employed for certain purposes A tuberculosis, venereal disease, or child welfare officer is, or should be, *ipso facto*, a specialist, and stands or falls on his specialized knowledge But lay committees seem unable to perceive the difference either in qualifications or salary, and gladly appoint young graduates to any of these responsibilities or even to a combination of the lot, provided they can be got cheap enough The fault lies in want of knowledge on the part of the public and medical practitioners can do much to remedy the defect

I cannot agree with the opinion expressed at the Bradford meeting that most clinical public health work can be done as well or better by general practitioners working part time Much of the work requires an independence which the practitioner cannot attain Nor is this work suitable for 'men wishing to ease off from the stress and strain of general medical practice" We want neither tired nor retired men in the public health service The sentiment betrays the acceptance of a common false doctrine—namely, that public health officials are people with a great deal of authority and very little to do In actual fact medical officers of health are very much the servants of the Legislature and of the local authorities, and spend worried, responsible lives, often thankless and too frequently poorly remunerated

It is odd that diametrically opposite opinions should have been expressed at two different points in the Bradford meeting with regard to part-time work The Section of Public Medicine and Industrial Diseases seems to have favoured general practitioners (presumably fully occupied) doing part-time public health work, whereas the report of the Public Health Committee of the Council (SUPPLEMENT, August 2nd, p 74) discountenanced whole-time public health officers doing part-time practice in the shape of consulting This sounds uncommonly like the behaviour of the dog in the manger While one agrees with the Public Health Committee in theory, it seems that local authorities must either find larger salaries or permit consulting work if there is to be a living let alone a future, for the public clinical officer Otherwise we shall all have to be content with the appointment of the inexperienced juniors who are the subject of criticism, and who will throw up the posts as soon as they realize their blind alley nature Local authorities can only find larger salaries by combining their areas (a policy which is anathema to most of them), or by obtaining larger Government grants, and, with the grants, more direct Government control

Some of the more immediate ways in which general practitioners can contribute to the success of preventive medicine were mentioned at the meeting I might stress the importance of timely, legible, and accurate notification of infectious disease, particularly tuberculosis But there is much that may be done by leading and educating public opinion and especially by supporting the general policy of the British Medical Association in the matter of public health appointment —I am, etc,

August 21st WHOLE TIME

WHOLE-TIME SPECIALIST CLINICAL OFFICERS

SIR,—In the discussion at Bradford on the role of the general practitioner in preventive medicine the heavy artillery of the public health service was well represented by senior medical officers of county councils and municipalities To one who has been engaged for many years as a specialist clinical officer the attitude of mind revealed by some of the speakers shows a lack of generosity and appreciation of the work of their staffs that fills me with dismay and indignation

Professor Harold Kerr, M O H Newcastle speaks of the multiplication of minor whole-time clinical appointments, and goes on to say that such specialist posts prove in most cases a mere cul de sac offering no prospect of professional or material advancement to the holder and if not soon relinquished it results only too often in a narrow and cramped outlook with blighting disappointment If this statement is sometimes true who is responsible?

The Public Health Acts created medical officers of health later statutes and orders brought the school medical officer, tuberculosis officer, venereal diseases officer, etc The study of tuberculosis or venereal diseases is the work of a lifetime, and many medical men carrying on this work have the complete confidence and esteem of the general practitioner Their work is of the highest importance to the profession and the community They ought to have the remuneration and prestige of specialist officers, and there should be no talk of their work being blind alleys It this work does not offer material advancement that is due to the neglect of the medical officer of health who usually advises his council to secure a man at the lowest salary possible and refuses him the recognition and advancement due to good and efficient service

Dr James P Kaye, M O H West Riding County Council, spoke of his thirty-eight whole-time assistants Why does he not call them colleagues, which they are? They act independently in clinical work, and have direct relations with general practitioners They are the school medical officers, tuberculosis officers, etc, in a very real sense I have an impression that a large administrative authority in Britain advertised recently for a chief clinical tuberculosis officer at £750 That is the remuneration offered a medical man acting as a consultant for the diagnosis and treatment of tuberculosis for a population of a million and a half

Let us have fair play all round We specialist clinical officers have never got it —I am, etc,

September 1st TUBERCULOSIS PHYSICIAN.

MEDICAL OFFICERS AND CONSULTING FEES

SIR,—On my return from the fourth conference of the International Union against Tuberculosis, I read with amazement the recommendation made by the Representative Body at Bradford regarding the acceptance of fees for consultations by so-called "whole-time" medical officers engaged in public health work

The "whole-time" officers concerned are the specialists, who are not medical officers of health, but whose status is that of salaried consultants—such as sanatorium medical officers, tuberculosis officers, school ophthalmologists, and V D officers The idea that these medical men should refuse consultations with general practitioners in cases of individuals who prefer to pay for services rendered is so illogical as to be amazing

Since my appointment to my present office in December, 1918, I have accepted fees for consultations with (or at the request of) private practitioners, made outside my office hours So far from bringing myself "into possible conflict with the general practitioners," I flatter myself that I have been of some little service to them, and believe that if the general practitioners in my district are consulted they will resent, as much as I do, any interference with my liberty of action in this respect

I would ask my fellow medical officers in public health employ not to be misled by specious arguments about the danger of an attempt to reduce salaries if fees are taken for consultations, and to remember that there is such a thing as selling one's birthright for a mess of pottage It is essential that appointments such as ours should not become "blind alleys," that a high professional standard be maintained, and that some room should be left for honest effort and skill to achieve due recognition If the recommendation of the Representative Body is accepted, can anybody doubt that the inevitable result will be to lower the standard to one of hopeless mediocrity, and to hand over these appointments to the journeymen of the profession?

The danger is a real one, and we should make every effort to have the unfortunate Bradford recommendation reversed before our position is seriously prejudiced —I am, etc,

September 12th TUBERCULOSIS OFFICER

*** The resolution as adopted was as follows "That the Representative Body is of opinion that it is not advisable that whole-time medical officers engaged in public health work should accept fees for private consultations"

POOR LAW PATIENTS AND FREE CHOICE OF DOCTOR

SIR,—I have no intention of entering into a controversy on the merits and demerits of this question, the Representative Body at Bradford having unanimously accepted the principle, and the practitioners—including district medical officers—in the Dartford Division having decided, if given the opportunity, to apply the principle in their area, in the belief that it is a progressive step towards placing Poor Law on the same footing as private and national insurance work

I write to assure "Nestor" that, during the discussions, no slur was cast upon, no attack was made on, the holders of Poor Law appointments There was a determination and hope to obtain better remuneration for Poor Law work, the records showing that in some cases the average has reached the low figure of 4d and 6d per attendance, including mileage and drugs Would it be unreasonable under such conditions for a practitioner engaged in Poor Law work, six miles from a patient, to be delighted to be relieved of the call by a practitioner living just across the way from such a patient, to say nothing of the patient's satisfaction at being allowed to call in this doctor—very likely the old family doctor—instead of sending six miles for the district medical officer?

No alteration from the existing system could be considered which ignored the indemnifying of the district medical officers regarding tenure of office and superannuation, but this ought not to present a serious problem, enormous sums must have accrued from superannuation contributions, as against the trifling amounts enjoyed as pensions by the few survivors There have been three deaths amongst Poor Law medical officers during the past three years in the Dartford Union, no Poor Law medical officer in this area has ever been known to enjoy a pension Free choice of doctor will make little disturbance in the less "populated" or rural districts, absolutely none in the unopposed practices

"Nestor" would be no "warrior" if he did not have a tilt at practices in "populated" areas having large panels Incidentally practices in such industrial areas have little else to depend on now, the population from birth to age 16 years and mothers being provided for over the heads of the general practitioner by ante-natal, child welfare, and maternity clinics, certified midwives, school, tuberculosis, and other clinics and hospitals, which have not yet cut so deeply into the purely rural practice When they do, let us hope the rural practitioner will be given the opportunity of carrying on the work in such clinics —I am, etc,

September 16th M W RENTON, Representative Dartford Division, British Medical Association

SIR,—I ask leave to endorse the letter of "Nestor" (September 13th, p 487) I hold a Poor Law appointment at £120 per annum, less deductions for pension In addition, I receive 12s for each successful vaccination I frequently cover forty miles in performing the vaccination and making the inspection Were I to lose this appointment my position would become untenable

"Nestor" gets to the root of the matter when he says that it should only be applied in densely populated districts I do not wish to imply that the fees are inadequate Indeed, they are fair I think there must be many others who, like myself, are enabled to exist on this money, but who, deprived of it, would starve —I am, etc,

September 15th S O.

THE MOTOR SHOW AT OLYMPIA

SIR,—It will be remembered that last winter the Medical Insurance Agency decided to add to the service which it already offered to members of the medical profession by providing them with expert assistance in everything appertaining to the purchase, use, and sale of motor cars, as well as expert guidance in the intricate matters relating to life and other assurances

With regard to motor cars I have received from the managing director of our consulting engineers the following letter relating to the forthcoming Motor Show

Olympia Exhibition

I have pleasure in advising you that our stand at the forthcoming exhibition (from October 17th to 25th inclusive) will be Stand No 202 in the Coachwork Section

As consulting engineers to the Medical Insurance Agency we have arranged for a number of representatives from our various departments to be at the service of all medical men calling at the exhibition with a view to advising them on any business, technical, or financial matters on which they require assistance Any communications addressed to us at our stand, or any appointments made to meet our representatives at any other stand, will receive immediate attention

Our special deferred payment terms for medical men (involving a 2½ per cent interest charge only) will, of course, be at the service of all your members

On our stand we shall have a very special type of bodywork suitable for doctors, which we think will be of great interest to them

Yours faithfully,
For Mann, Egerton and Co, Ltd,
G N C MANN
Managing Director

The advantage of an independent expert opinion when considering the purchase of a car is obvious, and it is hoped that every member of the Association attending the Motor Show of 1924 will take advantage of the service offered by the Medical Insurance Agency —I am, etc,

423, Strand London, W C 2, Sept 10th L FERRIS-SCOTT, Secretary Medical Insurance Agency

The Services.

ARMY MEDICAL SERVICE

In the article on the Army Medical Service published in the Educational Number of the JOURNAL (September 6th, p 443), the table of retired pay was correctly reproduced from the Royal Warrant as amended by A O 4 of January 31st, 1924, showing the maximum rates of retired pay It is there stated that in the case of a captain or subaltern it was £285 10s This statement in our columns was however immediately qualified by the further statement that voluntary retirement on retired pay is not allowed in the R A M C until after twenty years service Officers retiring before that receive the gratuities set out

Obituary

SIR FREDERICK NEEDHAM, M D St Andrews,

Commissioner in Lunacy and Member of the Board of Control

We had last week to announce with very great regret the death at Bournemouth on September 6th of Sir Frederick Needham, who had been medical superintendent of two important mental hospitals before, in 1892, he became a Commissioner in Lunacy He continued to hold that post and subsequently that of member of the Board of Control for twenty-seven years His professional life covered a period of rapid development in the study and treatment of mental disorders, and he had no small share in bringing about the numerous improvements that have been effected during the past three-quarters of a century in the conditions under which insane patients are housed and treated

Frederick Needham was born in York eighty eight years ago He was the son of Dr James P Needham, a physician in that city, and received his early education at St Peter's School, York He then entered St Bartholomew's Hospital, and took the diploma of M R C S in 1858, he became M P C P Edin in 1865 and L S A in 1866, he graduated M D St Andrews in 1862 In the year he qualified he was appointed medical superintendent of the York Hospital for the Insane (Bootham Park), and he was delighted to return to the city where he had passed his boyhood and where he had been educated in the shadow of the Minster he always maintained an abiding affection for his native county and its associations



Sir Frederick Needham.

When Needham received his first appointment an active campaign was still being conducted by the most enlightened of the physicians in mental disorders against the systematic use of mechanical restraint and other allied forms of treatment which, happily, in this country have long ago been discarded Of all these devices Needham was always a stern opponent even as respects forced alimentation by the nasal or oesophageal tube, salutary and life saving as he admitted them to be when properly and judiciously used, he urged that there were not a few cases in which rectal feeding was kinder safer and as efficacious In this connexion, and to anticipate for a moment his work as a Commissioner, it is of interest to know that it was he who, on behalf of the Board, drew up not only the regulations made under the section under the Lunacy Act dealing with mechanical restraint, but also the definition of 'seclusion'—the steady enforcement of both of which has left so deep a mark in the better treatment of the insane Much good work was done by Needham at Bootham Park, and when he left in August, 1874, to take up the post of superintendent or Barnwood House, Gloucester another well known hospital for the insane, it was in no uncertain terms that the committee of governors testified to the energy, zeal, ability, and success with which he had discharged very onerous duties during a period of sixteen years

By a somewhat curious coincidence it was for a nearly identical period that he was destined to preside at Barnwood This hospital already enjoyed a high reputation, but Needham, with his now matured experience and foresight, and with the support and good will of the committee, was able to effect various developments and adaptations, all of which materially added to the comfort of the patients and the efficiency of their treatment, and have stood the test of time When he left, the hospital occupied a still more honourable and important position

Dr Needham was offered and accepted the post of Commissioner in Lunacy in succession to Sir Clifford Allbutt, who relinquished the office upon being called to Cambridge as Regius Professor of Physic Needham filled the position, to which he was called in April, 1892, with conspicuous distinction until his retirement in June, 1919, it was naturally in this capacity that his influence was most widely felt Tall, dignified in appearance, and fearlessly outspoken he was by some held somewhat in awe, especially in his early days as a Commissioner, but whatever austerity of manner there may have been—and he could, indeed be stern when occasion demanded it—closely beneath was a kindliness of heart, a uniformly good temper, and a full measure of that spirit of helpfulness which has been said to give the profession of medicine its value to humanity Broad minded, tolerant of opposition and ready to consider and weigh the views of others, a most patient listener to conflicting claims, and endowed with a keen sense of justice, his judgement opinion, and advice were of immense value and weight to the Board of Control, and it is no wonder that when he decided to retire his colleagues, by each and all of whom he was revered, felt his loss to be irreparable He had a vitality, mental and physical, which enabled him, right up to his retirement and despite his advanced age, to do his full share of travelling and official visits

It is characteristic of his attitude towards his position he sought it can safely be said that over and above the inspectorial and advisory duties of the Board, he always considered that any question affecting personal liberty and the propriety of remaining under certificate was of paramount concern, and that it was of vital importance to maintain a close and individual touch between the Commissioners and the patients, to whom the officials should at all times either at visits or through the post lend a sympathetic ear His so often reiterated question—How will this affect the patients?"—might indeed be quoted as the motto of his life's work That a large section of the patients were conscious of the friend they had in Sir Frederick Needham is testified by their numerous inquiries addressed to his former colleagues as to his welfare

In disposition somewhat reserving, Sir Frederick was always accessible and helpful, and ever ready to take his share of the public work that came his way He was an active member of the Royal Commission on the Care and Control of the Feeble-minded (1904-8), and as indicative of the esteem in which his professional brethren have always held him, it may be mentioned that he was president of the York Medical Society, of the Gloucestershire Medical and Surgical Association, in 1887 of the Medico-Psychological Association of Great Britain and Ireland—whose members later conferred on him the rank of honorary member—and in 1890 of the Psychological Section of the British Medical Association, of which he was a member for forty-four years He contributed a number of thoughtful and valuable papers to medical literature, in which

connexion it may be recalled, as characteristic of his loyalty, that while in his 1890 presidential address he strenuously deprecated, among other matters, the function of a magistrate in the making of reception orders as being likely to delay and hamper treatment in early stages of mental illness, he was as a Commissioner inflexible in seeing that the provisions of the Lunacy Acts and, later, of the Mental Deficiency Act were duly carried out No servant of the public has better deserved the honour of knighthood, which was conferred upon him in 1915

While at York Needham married Charlotte, the daughter of the Rev J Shooter, vicar of Bishop Wilton in Yorkshire, whose wisdom and the influence of whose personality were of signal help to her husband in his work at Burnwood, when they left a graceful tribute to her voluntary assistance was paid by the governors of the hospital She died in 1907, and a stained glass window to her memory was placed in the chapel of the hospital In 1914 Sir Frederick Needham remarried, his second wife, by whom he is survived, being Helen, daughter of Mr W L Newman of York In the sorrow of her bereavement Lady Needham has the consolation of knowing that, as all her late husband's more intimate friends know, she brought great happiness and comfort to him in his latter years

The interment—at which, besides his widow, relatives, and friends, three of his old colleagues, representing the legal and medical sides of the Commission, were present—took place on September 9th in Bournemouth Cemetery, after the first part of the service had been held in St John's Church, Boscombe

SIR ANDREW J HORNE, F R C P I,

Dublin

We regret to record the death of Sir Andrew John Horne, F R C P I, on September 5th at his residence in Dublin, at the age of 68 He was the son of Mr Junius Horne of Ballinasloe, co Galway, and was educated at Clongowes College and in Dublin He took the diploma of L R C S I in 1877 In 1881 he became a Member and in 1885 a Fellow of the Royal College of Physicians of Ireland He was assistant master of the Rotunda Hospital from 1880 to 1883, and assistant secretary to the Vaccine Department of the Local Government Board from 1884 to 1900 From 1894 to 1896 he was Vice-President of the Royal College of Physicians, and was President from 1908 to 1910 On the foundation of the National Maternity Hospital, Holles Street, in 1894, he was elected master, a position which he held for thirty years Sir Andrew held several other important positions, being President of the Obstetrical Section of the Royal Academy of Medicine from 1902 to 1904, and again from 1911 to 1913 He was also Vice-President of the Obstetrical Section at the Annual Meeting of the British Medical Association at Swansea in 1903 He leaves two daughters and two sons, one of whom, Dr A J Horne, is assistant master of the National Maternity Hospital



Photo by [*Chancellor Dublin*

SIR ANDREW J HORNE

Sir Andrew Horne filled the various high positions which he occupied with the greatest distinction, and his death removes one of the most respected figures of the medical profession in Dublin He was possessed of a kind and generous nature, and in all movements of a philanthropic character took a prominent part His death will be deeply regretted by all who knew him, and the sympathy of a wide circle of friends will be extended to his family in their bereavement

The funeral took place from St Andrew's Church, Westland Row, for Glasnevin, on September 9th

WILLIAM BROMFIELD PATERSON, F R C S Eng, L D S Eng,

Late Senior Dental Surgeon, St Bartholomew's Hospital, London

It is with much regret that we announce the sudden death, on September 2nd, whilst on holiday at Buncrana, co Donegal, of Mr W B Paterson, at the age of 63 A month previously he had attended the seventeenth annual meeting of the International Dental Federation, held in the city of Luxemburg, and delivered a speech as the representative of Great Britain

He was educated at St Bartholomew's and the Royal Dental Hospitals, and took the diplomas of L D S Eng in 1883 and F R C S Eng in 1886 His ability as a student was recognized, and he was advised by his teachers to give up dentistry for general surgery He preferred, however, to keep to the specialty and became possessed of considerable experience and skill, as must fall to the lot of any man holding for many years appointments at both a general (St Bartholomew's) and a dental hospital (the Royal), and having in addition a large private practice His high position amongst his brethren may be shown by naming the offices he filled President of the British Dental Association and also of its representative board, president of the Odontological Section of the Royal Society of Medicine, dental surgeon and lecturer on dental surgery and pathology, Royal Dental Hospital, examiner for the L D S diploma of the Royal College of Surgeons of England and for the Dental Board of the United Kingdom He wrote numerous papers in the dental and medical journals, and re-edited the article on teeth in *Kirke's Handbook of Physiology* The profession loses a great personality and one of its most distinguished members There were few men better known, or more respected, in the dental world

We offer the widow and only child, a son in India, our sincere and deep sympathy in their bereavement

We are indebted to Mr W A Miggs, L R C P, M R C S, L D S, consulting dental surgeon to Guy's Hospital, for a tribute to Mr Paterson

Having enjoyed the close friendship of William Bromfield Paterson for about forty years, and deploring his early and sudden death, I feel constrained to add a tribute to his memory Mankind being divided into three groups—namely, "light givers," "light reflectors," and "light absorbers"—there would be no hesitation in placing Paterson in the first group His straightforward look and cheery smile betokened the man—honest and kind hearted "Patty," as he was familiarly called by his intimate friends, had a lovable character, and one could confide freely and safely in him, as was my happy experience He was educated at the City of London School—the school

of Sir Frederick Treve, Sir Frederick Hewit, and other eminent members of the medical profession—and he kept up to some extent his knowledge of the celebrities, and showed his interest in the school by attending the annual dinners. He was what is called "good company," being chatty, humorous, and possessed of a fund of anecdote, and having travelled through many lands his conversation was interesting and full of life, embracing many subjects outside dentistry and medicine. We served together upon several dental examination boards, and I found him a painstaking and conscientious examiner and a delightful colleague. He always laid stress upon the practical part of an examination, indeed, his usual question was, 'Is the candidate safe to be let loose upon the public?' His generous and thoughtful nature was evidenced to me by his numerous gifts in kind to needy friends, and I greatly admired this aspect of his character. As an example of his kindness it may be mentioned that he gave up for the whole period of the great war a consulting room in his house in Manchester Square for the exclusive use of a Belgian refugee dental surgeon. He was a man of simple habits, a non-smoker, and almost a total abstainer. His chief recreation was shooting, and he had looked forward to retiring from practice at no distant date and living in his dearly loved native county, Devonshire, and devoting himself to farming and sport. Alas! it had been ordained otherwise, but those who knew him will ever have a kindly thought for his memory. Farewell.

ALBERT HAWORTH, M.Sc., M.B., CH.B. MANCH.,

Assistant Lecturer on Chemical Pathology, Manchester.

It is with great regret that we record the death, on September 6th, of Dr. Albert Haworth at the early age of 30. His death was due to pneumonia succeeding septicæmia caused by a scratch received while carrying out a *post-mortem* examination at the Manchester Royal Infirmary.

Dr. Haworth had been associated with Manchester University for almost the whole of his interesting career as a student and graduate. He took the degree of B.Sc. in chemistry with first-class honours in 1910, and after graduating M.Sc. in 1911 entered the Medical School. His course was interrupted by a long period of service in France during the war, but he graduated M.B., Ch.B. in 1920. After some post-graduate experience at St. Thomas's Hospital, Dr. Haworth was appointed assistant lecturer in chemical pathology at his old school. During the few years he held this appointment he proved himself to be a most successful and efficient teacher, and exhibited great promise as a research worker. He had recently been appointed lecturer in chemical pathology at Leeds, and should have commenced his duties there at the beginning of the session. He was buried at Great Harwood on September 10th, and the large attendance of colleagues and students bore witness to his popularity and the great respect which was accorded to him.

It is a very serious matter, both to the cause of science and to the medical profession, to lose so sincere and earnest a worker. Dr. Haworth leaves a widow, who is also a member of the medical profession, and we tender our heartfelt sympathy to her and to his parents in their tragic loss.

THE LATE DR. T. SYDNEY SHORT

G. H. M. sends the following appreciation of Dr. Short, of whom we published an obituary notice last week (p. 490):

As one who knew Dr. T. Sydney Short for many years (we took the M.B. together in 1885 and I was resident medical officer at the old Birmingham General Hospital when he was resident at the suburban branch) perhaps you will allow me to emphasize a characteristic or two in his personality—and he had a very distinct mentality.

Thoroughness and un-paring pains in its practice were markedly his. He diligently attended the psychology lectures many of us much enjoyed that were recently given at the Birmingham University. Faced with a patient with a possible repression and obsessed with a fear of railway travelling he said at the end of his consultation something of this kind—"Now I shall be free after 4 o'clock, and at 5.15 we will meet at Snow Hill Station when you will go with me to Brierley Hill. I shall then see how a train and travelling in one really does affect you." He had some secret personal anxiety but the research was to be carried through. Or again a patient was recommended to Davos for a cure. He would tell him just when was the best time to start the most suitable place to stay at and that if he wrote early to so and so the manager he might perhaps secure such and such a room with just the most favourable aspect and so on. No detail too trivial that might be helpful or save the distressed patient anxiety. He had made the intimate knowledge of the resorts his holiday recreation.

When years ago his hospital nurses were taught massage, he himself attended and learnt the art practically and personally. He was indeed thorough and kindly painstaking for anyone worthy and in need.

The medical profession, and more particularly that part engaged in national health insurance work, is the poorer for the death, on September 10th, at the age of 55, of Dr. ROBERT J. FARMAN. In him the London Panel Committee has lost a most able and valued secretary, and its members individually an honoured and a trusty friend. Well equipped with a wide experience of general practice, Dr. Farman from the first took a great interest in the new conditions which arose on the introduction of the National Insurance Act. He served on the London Panel Committee from its inception and on the non-statutory committee which preceded it, and his opinions, which were always moderate and sound, were listened to with great respect. But it was probably as secretary to the London Panel Committee, to which post he succeeded on the resignation of Dr. Richmond in 1920, that he did his best work, and his value to the Committee, to the insurance practitioners of London, and, indeed, to the insurance service generally, can hardly be overrated. He was a master of all the intricate regulations which govern the service, and he was of the greatest help to all who came to him for advice and assistance. A man of considerable force of character, he was downright and outspoken in his opinions, and did not hesitate to express his views frankly, whether palatable or not, to his audience. He was for many years a representative of the London Panel Committee at the Annual Conference of Local Medical and Panel Committees and a member of the Distribution Committee and of the Allocation Subcommittee of the London Insurance Committee, on all of which he did valuable work. With those who had the privilege of his acquaintance he was popular, a staunch friend, and a charming companion. His death leaves a gap which it will be difficult to fill. He took the diploma of L.S.A. in 1894 (L.M.S.S.A. Lond., 1907), and practised at Swansea until 1910, when he settled in Kensington. The funeral, which took place at Golders Green Crematorium on September 15th, was attended by many friends and by representatives of the Panel Committee, the British Medical Association, the Insurance Committee for London, the Pharmaceutical Society, and other bodies.

Dr. WILLIAM NORMAN EVANS died suddenly of angina at his home in Hampstead on August 31st. He had spent the morning seeing patients and making the final arrangements for a fishing holiday, which he was to have commenced on the following day. He was 59 years of age and was the son of Herbert Norman Evans, M.B. Oxon., and succeeded his father in practice in Hampstead on his marriage in 1893. He was educated at Highgate School and St. Bartholomew's Hospital, and took the diplomas of M.R.C.S. Eng., L.R.C.P. Lond. in 1887. His family had been associated with medical practice in Hampstead for about 150 years, he being the sixth member in uninterrupted succession to practise there. He was for some years surgeon-captain of the 19th Middlesex R.V., and commanded the 5th London Volunteer Infantry Brigade Bearer Company. He was also medical officer of the Cripples' and Incurables' Home for Children at Hampstead. At the time of his death he was senior medical officer of the Hampstead Provident Dispensary. He married in 1893 Evelyn Walford, fourth daughter of the Rev. W. A. Cutting, vicar of Gayton, near King's Lynn, Norfolk, and leaves a widow and two married daughters. A man of great kindliness and charm of manner, he was much beloved by his patients and friends.

DR FRITIOI NORMAN MCFARLANE, who died at King's College Hospital, London, on August 17th, was the son of the late DR SEWELL MCFARLANE, who for some years was superintendent of the London Mission Hospital, Tientsin, North China, and was later in charge of the London Medical Mission in Endell Street. DR NORMAN MCFARLANE, who was born in China in 1896, was brought to England at an early age, and was educated at Croydon, and later at Edinburgh University. He left the medical school in the first year of the war, and served as a lieutenant in the Royal Field Artillery, he rendered distinguished service in Mesopotamia and other Eastern fields of the war. In 1919 he resumed his medical studies at Edinburgh, and graduated M.B., Ch.B. in 1922. He then went to the Radcliffe Infirmary, Oxford, where he held in succession the posts of resident accoucheur, casualty house-surgeon, and house-physician. He was very popular as a student in Edinburgh, and again at Oxford he was respected and admired by those for whom and with whom he worked. A most upright gentleman, a sincere friend, altogether a man of the highest ideals and full of promise in his profession, his country, and Oxford in particular, loses most sadly by his early death.

DR WILLIAM AUGUSTUS MAYBURY, who died last month at his residence in Colchester, aged 77, was the son of the late DR W. G. MAYBURY of Frimley, Surrey. He was educated at St. Thomas's Hospital, London. In 1870 he obtained the diploma of M.R.C.S., and in 1871 that of L.S.A., in this latter year he graduated M.D.R.U.I. After holding resident appointments in St. Thomas's Hospital and Newark Hospital he started practice in Colchester, where he held the appointment of medical officer to the Colchester Union from 1876 until his resignation ten days before his death. He was the borough police surgeon for over forty years, and churchwarden of St. Martin's Church for nearly fifty years. Two of his brothers who died previously were in the medical profession, and two surviving brothers are also medical practitioners.

DR RICHARD THOMAS JONES, who died on August 1st at Harlech, was born in 1854 and educated at Owen's College, Manchester, and Guy's Hospital, London. In 1879 he received the diplomas L.R.F.P.S.Glasg. and L.S.A.Lond. From 1879 to 1924 he practised in Harlech and was the medical officer and public vaccinator of the Festiniog Union, medical referee to various insurance companies, lecturer and examiner of the St. John Ambulance Association, and medical officer to the Post Office and the infant welfare clinic. He had been chairman of the South Carnarvon and Merioneth Division of the British Medical Association. For thirty-five years he was a justice of the peace for Merionethshire and chairman of the local bench. He was the first county councillor for Harlech, and took great interest in agriculture. He was latterly in partnership with his youngest son.

DR VERNON FRANCIS ALLEN died on August 30th in a nursing home in Swaffham, Norfolk, at the age of 58. He was educated at Queen's College, Cork, and Edinburgh University, and in 1891 received the diplomas of L.R.C.P., L.R.C.S.Edin., and L.R.F.P.S.Glasg. He was surgeon to the Swaffham Cottage Hospital and medical officer and public vaccinator for the district. He was a member of the urban council from 1898 to 1910, and a prominent member of the Swaffham and other coursing clubs. He was injured in a motor accident a few months ago and had since been unable to continue his practice. He leaves a widow, a daughter, and a son.

DR HENRY CRAIG WALLACE was killed on September 6th in a collision between his motor bicycle and a motor van at Rawdon, near Bradford. He was educated at Glasgow, where he graduated as M.B., Ch.B. in October, 1923. He was in practice at Rawdon, acting as assistant to DR H. B. SPROAT, and was a member of the British Medical Association.

The well known surgeon, PROFESSOR EDOARDO BASSINI of Padua died recently, at the age of 80.

Medical News.

ON September 13th the Duke of Connaught opened the new open air ward of the War Memorial Children's Hospital at Swanage. This hospital was founded in 1919 by the Dorset Red Cross Society for children under 12 years, the children of Dorset ex-service men receiving priority. The new ward, which cost about £1,000, accommodates children with surgical tuberculosis. The Duke of Connaught, in his speech, referred to the gratifying fact that the hospital was entirely free from debt, and paid special tribute to the voluntary work of the medical staff and to the help given in the education of the children in hospital by the members of the county Voluntary Aid Detachment.

THE prizes at St. George's Hospital Medical School will be distributed on Wednesday, October 1st, at 3 p.m., by SIR ISAMBARD OWEN, M.D., who will also preside at the annual school dinner at the Hotel Metropole on the same evening.

A THREE months' course of lectures and demonstrations in hospital administration, complying with the revised regulations of the General Medical Council, will be given at the North Western Hospital by DR E. W. GOODALL, Medical Superintendent, beginning on Thursday, October 2nd. Full particulars can be obtained from the Clerk to the Metropolitan Asylums Board, Victoria Embankment, E.C.4.

A COURSE in mental diseases for secretaries of associations for mental welfare and other experienced social workers will be given at the Maudsley Hospital by the Medical Superintendent, DR EDWARD MAPOTHER, beginning on October 27th. The course has been arranged by the Central Association for Mental Welfare. Full particulars can be obtained from its honorary secretary, Miss Evelyn Fox, at 24, Buckingham Palace Road, London, S.W.1.

A COURSE of lectures on infant care, for health visitors and others interested in like work, has been arranged by the National Association for the Prevention of Infant Mortality. The lecturers are DR ERIC PRITCHARD and DR H. C. CAMERON. The lectures will be given on Mondays from 6 to 7 p.m., beginning on September 29th. The same association has arranged a course of elementary lectures for creche nurses and probationers by DR LINA POTTER, the first will be given on October 2nd. Both courses will be given at Carnegie House, 117, Piccadilly, London, W.1, full particulars can be obtained from the association mentioned at this address.

AN intensive course in general medicine and surgery, and in the various special departments at the Westminster Hospital, begins on Monday, September 22nd, at 10.30 a.m. The second week, advertised to begin on the 22nd inst., of the special course in infants' diseases, is no longer open for new entries, as the Infants Hospital has already received the full number of entrants. The third week of the course in the Royal Westminster Ophthalmic Hospital, commencing on September 22nd, includes every afternoon at 2 o'clock, and special demonstrations three times a week. A course of lecture demonstrations in psychological medicine begins at the Bethlem Royal Hospital on September 30th, they will be given at 11 a.m. each Tuesday and Saturday. Full particulars and syllabuses of these courses may be obtained from the secretary of the Fellowship of Medicine, 1, Wimpole Street, W.1.

THE second dinner of the Queen's University (Belfast) Club, London, will be held in the Hotel Belgravia, Grosvenor Gardens, S.W. (opposite Victoria Station), on Thursday, October 9th, at 8 p.m. It will be open to members and to Queen's students and graduates desirous of becoming members. The charge for the dinner will be collected on the occasion. Those intending to be present are requested to notify, not later than October 6th, the honorary secretaries at 17, Wimpole Street, W.1. The annual meeting will be held before the dinner (7.15).

A CONFERENCE on how to reduce the maternal mortality rate by the co-operation of all the health services concerned will be held at the Royal Society of Arts, Adelphi, on October 6th. The chair will be taken by DR. LAMBAIRN at 5.30 p.m. Among the speakers will be MR. ALECK W. BOURNE, F.R.C.S., who will deal with ante-natal care, DR. J. W. WAYTE, whose subject will be the general practitioner and the midwife, DR. E. F. PALGRAVE, who will speak on the local supervising authority, and MR. E. W. G. MASTERMAN, F.R.C.S., who will discuss the provision for expectant and lying-in mothers under the Poor Law. MRS. BRUCE RICHMOND and MISS LIDDIARD will also take part in the discussion.

THE Society of Public Analysts will hold its first meeting for the session in the rooms of the Chemical Society, Burlington House, on Wednesday, October 1st, at 8 p.m.

THE jubilee of the Yorkshire College and the coming of age of its successor, the University of Leeds, is to be celebrated during December It is expected that delegates of other universities and of learned societies will attend and will present congratulatory addresses on Tuesday, December 16th

THE Sir Malcolm Morris Memorial Fund now amounts to £476 Among recent subscribers are Professor Winifred Cullis, D Sc , the Girls Boarding School Company, the National Association for the Prevention of Tuberculosis Sir Herbert Thompson, Mrs Catherine Thursby, and Dr Bertram Watson Further subscriptions may be sent to the Honorary Treasurers, "Sir Malcolm Morris Memorial Fund, ' 12, Stratford Place, London, W 1

IT is stated by the *Liverpool Daily Post* that a movement has been started in Liverpool to establish a hospital for diseases of the heart

AN inquest on the body of a child named Nellie Burnham, aged 10 who died on August 10th, was concluded on September 12th at Gloucester Dr W R Hadwen, who attended the child between August 1st and 9th, stated in the course of his evidence that there was no clinical symptom or sign of diphtheria in the deceased from first to last Dr E S Ellis who was called in on August 9th, diagnosed the case as one of diphtheria and pneumonia Dr W Washbourn, who made a *post mortem* examination in the presence of Dr J A Bell (Deputy Coroner) on August 12th, described the pathological findings and expressed the opinion that death was due to diphtheria and pneumonia The jury, after a retirement of three quarters of an hour, handed in a written verdict, which the foreman said was the verdict of nine of the twelve jurymen, that "the child died from diphtheria and pneumonia and that Dr Hadwen failed to show competent skill and special attention, in consequence of which failure the child died" The City Coroner (Mr G T Wellington) said that this in law was a verdict of manslaughter and committed Dr Hadwen to take his trial at the next assizes, bail was allowed On September 13th Dr Hadwen was charged before the Gloucester City Bench of magistrates (of which he is a member) with manslaughter The proceedings were formal and on the application of the police he was remanded until September 19th, bail being allowed

A SUM of 55 000 francs has been received by the Brussels University Library from the Professor Léon Stienon Commemoration Fund The income will be devoted to the purchase of the principal medical periodicals

ON September 1st a monument was unveiled at Charlton, Massachusetts, in memory of Dr W T G Morton who, on October 16th, 1846 first publicly administered ether for a surgical operation at the Massachusetts General Hospital

THE fourth international congress for combating the use of tobacco was held at Graz in July, when papers were read on damage to women s health by smoking (by Dr P Hofstätter of Vienna), on women and the vice of smoking (by Professor M Hartmann of Leipzig), and on tobacco and weakness of will (by Professor Hamburger of Graz) Professor Polland and Dr Peuter of Graz, who read papers on syphilis and smoking and damage to the heart and vessels by tobacco, stated that the bad effects of tobacco were much greater than was supposed especially as it was often associated with alcoholism and syphilis

MESSRS H K LEWIS announce for early publication a *Synopsis of Special Subjects Dermatology* by Dr H Semon *Obstetrics and Gynaecology*, by Mr M Donaldson, F I C S *Ear Nose and Throat*, by Mr A Pyland, F P C S , and *Eye*, by Mr J F Cunningham F P C S

THE twenty fourth congress of the French Association of Urology will be held in Paris at the Faculty of Medicine on October 8th, and the next congress of the Society of Orthopaedics on October 10th in the same place

THE August number of *La Chirurgia degli Organi di Movimento* contains a sympathetic memoir by Professor V Putti of Bologna of Dr P W Lovett Professor of Orthopaedic Surgery at Harvard, who died at Liverpool on July 2nd, and of whom we published a biography in our issue of July 12th Professor Putti appends to his memoir a bibliography of Professor Lovett s principal works

MESSRS WILLIAM HEINEMANN (Medical Books), Ltd , will shortly publish a volume on *Ultra violet Rays in the Treatment and Cure of Disease* by Mr Percy Hall, M R C S , L R C P with introductions by Sir Henry Gauvain, M D , and Dr Leonard E Hill, F R S

THE late Mr Albert George Keen of Edgbaston left £2 000 to the Birmingham and Midland Free Hospital for Sick Children, £1 000 to the Convalescent Hospital for Children, Moseley Hall, and £1,000 to the Convalescent Home for Children, Bromsgrove

JAPAN, which had no medical women thirty years ago has now more than 1,200 qualified women The Tokyo Medical College for girls, which was established in 1889, admits about 130 students annually.

Letters, Notes, and Answers.

ORIGINAL ARTICLES and LETTERS *forwarded for publication are understood to be offered to the* BRITISH MEDICAL JOURNAL *alone unless the contrary be stated* Authors desiring reprints of their articles published in the BRITISH MEDICAL JOURNAL are requested to communicate with the Financial Secretary and Business Manager 429 Strand W C 2 on receipt of proof

Communications intended for the current issue should be posted so as to arrive by the first post on Monday, or at latest be received not later than Tuesday morning

ALL communications with reference to advertisements as well as orders for copies of the JOURNAL should be addressed to the Financial Secretary and Business Manager 429 Strand London, W C 2. Attention to this request will avoid delay Communications with reference to editorial business should be addressed to the Editor BRITISH MEDICAL JOURNAL 429 Strand W C 2

CORRESPONDENTS who wish notice to be taken of their communications *should authenticate them with their names*—not necessarily for publication

THE telephone number of the BRITISH MEDICAL ASSOCIATION and BRITISH MEDICAL JOURNAL is Gerrard 2930 (Internal Exchange) The telegraphic addresses are

EDITOR of the BRITISH MEDICAL JOURNAL, *Attolico, Westrand, London*

FINANCIAL SECRETARY AND BUSINESS MANAGER (Advertisements etc) *Articulate Westrand London*

MEDICAL SECRETARY *Mictucra Westrand London*

The address of the Irish Office of the British Medical Association is 16 South Frederick Street Dublin (telegrams *Bacillus Dublin* telephone 737 Dublin) and of the Scottish Office 6 Putland Square Edinburgh (telegrams *Associate, Edinburgh* telephone 371 Central)

QUERIES AND ANSWERS.

"K" asks for advice in the treatment of an obstinate case of lupus erythematosus in a married woman aged 30 with two children She menstruates about once every three months but her general health is otherwise good except that she is slightly neurasthenic K has tried calcium lactate sodium hypophosphite applications, and the measures usually advocated

EXTRAGENITAL SYPHILIS

"B K"—(1) Theoretically it may be considered possible that the disease might be transmitted by a patient with syphilis of the throat coughing into the face of another but it is unlikely Patients sometimes imagine they have been infected in this manner but there is no demonstrable evidence that syphilis can be spread by coughing (2) It is again theoretically possible that a needle which had pierced a patient through a syphilitic secondary papule and had immediately been used another person could carry infection So far as we can ascertain there is no evidence that this has ever occurred and the eventuality need not be considered as a practical question (3) It is true that any small abrasion of the skin even though unsuspected may furnish a surface for inoculation but the reported cases among medical men have all been examples of infection of a cut or puncture

BATTERY FOR IONIZATION

DR. W BLACK JONES (Builth Wells) writes In reply to Anxious" the General Electric Company Ltd supply a Leclanche cell which has given me satisfaction for some years I recommend the Carsak pattern quart size The zinc element is a semicircular plate but I prefer to replace it by two zinc rods the advantage is that if one terminal is corroded the other rod keeps the cell going they are also easier to remove Sal ammoniac pellets should be used after the battery has been charged it is only necessary to add about six, two or three times a year

INCOME TAX

Succession to Partnership

"W B" has recently succeeded to the whole practice and his liability for the first subsequent year is being assessed on the basis of the income of that year in place of the three years average. The inspector claims that the income should be calculated on the basis of gross bookings less 5 per cent

*** 'W B' does not say whether the amount of cash receipts he mentions includes those resulting from his former partner's share of the practice Probably it does not, if however it does include those receipts we consider that he can reasonably claim to have his liability assessed on the (gross) amount or alternatively to rely on the figures as showing that the 5 per cent for bad debts is altogether insufficient adducing as proof the wide divergence between the bookings and receipts of the year in question I must be admitted however as for such a purpose as the displacement of the three years average of exceptional on the gross bookings less allowance for bad debts give the correct basis, but 5 per cent may be inadequate for the allowance on this point W B can no doubt produce some evidence from the records of bookings and receipts for previous years

Retiring Partner

"LEEDS" is selling his share in a practice, but will continue to receive his share of the book debts earned before but paid after leaving the practice How is the income tax to be arranged for the coming three years?

*** As from the date of leaving the practice "Leeds" will not be liable to assessment in respect of that source of income—for example, if the date is October 5th his share of the firm's gross assessment to April 5th, 1925, will be only one half of what it would otherwise have been, the incoming partner, on the other hand, will have to shoulder liability on the other portion—that is, on the one half share for the six months to April 5th, 1925 The difficulty anticipated really comes into operation for 1925-26 and future years, because for the purpose of the assessments for those years it is necessary to calculate the firm's profits for the year 1924—that is the year in which the change in the partnership takes place The new firm will have the choice of two alternatives either it can calculate its profits by reference to the value of gross *bookings*, or it may adhere to the cash basis, but in the latter case it must bring in all receipts whether handed on to "Leeds," paid to him direct, or received and retained by the new firm If "Leeds's" receipts are not included, the final average result will represent something less than the full earnings of the practice, and the partners' liability, it should be remembered, is their respective shares of the assessment on the earnings *of the practice*

"A T T's" partner left the firm at the end of 1923 and "A T T" succeeded to the whole practice The inspector of taxes agrees to deal with his liability on the earnings for the year, but says that the return for assessment should be made on the usual three years' average

*** This is correct The point is that though "A T T," the successor to the former firm, is assessable on the three years' average notwithstanding the change in proprietorship, he can apply at the end of the year of assessment to have the assessment reduced to the amount of the profits of the year, provided he can show that the profits have fallen short from some specific cause since or by reason of the change It should be remembered that the minimum liability is the year's profits *of the practice*, whether realized in cash or not, this amount is, strictly, the value of the gross bookings less expenses, but it is possible that the inspector may be prepared to accept the cash payments in the twelve months in respect of practice debts in substitution for bookings

Whole time Officer

'J B McC," a resident medical officer (Poor Law), inquires as to the basis of the return to be made for 1924-25 The answers to the specific questions put are as follows

*** (1) The return should be made on the amount expected for the year to April 5th, 1925, the war bonus may affect the total amount, and, if favourably, the revenue authorities will presumably raise the assessment, if adversely, "J B McC" should apply in April for a reduction of the assessment to be effected as against the second instalment of tax due in July (2) An allowance is due for the superannuation deduction (3) The actual out of pocket cost of necessary locomotion can be claimed, but not the original (that is, capital) cost of the cycle or other means of locomotion (4) The same applies to books and instruments, assuming that the necessary equipment is not provided by the employing authority No other allowances occur to us as due, apart, of course, from the usual personal allowances

LETTERS NOTES, ETC.

DERMATITIS DUE TO CATERPILLARS

SURGEON COMMANDER FREDERICK COCK, R N, writes In the communication on dermatitis caused by hairy caterpillars, by Dr Charles B Rossiter (August 23rd), he states from his own experience as follows—"In a few days the hairs are gradually cast off from the skin and irritation then stops Until I made this observation I had imagined (like others) that the irritation was caused by some chemical emanation" This observation does not exclude the possibility of there being a chemical poison on the hairs of the caterpillars Children are often seen to handle hairy caterpillars without harm, but sometimes irritation of the skin follows This seems to be fully accounted for in Fabre's *Life of the Caterpillar* Briefly, the virus (common to all Lepidoptera) is a waste product which is expelled in the caterpillars' droppings, and from which the author obtained an extract the energy of which rivalled that of cantharides, if not exceeding it It is only those caterpillars that dwell in nests and have their hairs smeared by the droppings that, on handling, cause skin irritation, those that live in isolation are not contaminated by the excretions, and are harmless As regards relieving skin irritation, the juice of any tender foliage is recommended, also parsley and purslane, the latter giving relief almost immediately The fact of the virus having been extracted from the droppings by means of a solvent, and the nature of the remedies employed, seems to leave no doubt as to the nature of the irritant The above notes are taken from the chapter "The Pine Processionary The Stinging Power" in the above named book

MATERNAL MORBIDITY

DR HELEN BOYLE (Brighton) writes to point out some of the inaccuracies in the report of her remarks on maternal Women's International Association last July The suggestion with regard to the notification of symptoms in early cases of disease occurring during the puerperium should have been ascribed to Dame Janet Dr Boyle, and her statement with regard to should have been that she had rarely seen this condition in a woman who was nursing her child at the time The cases quoted by her of filtre four women who, though febrile during the puerperium, had been allowed to suckle their children was quoted from our columns, it was not quite correct to say that the children did perfectly well, though in every case but one a transitory loss of weight was the only adverse occurrence

DR SYLVIA G CHAPMAN (New Zealand) writes to correct an error in the account of her speech on maternal morbidity at the meeting of the Medical Women's International Association which was reported in our columns of August 2nd (p 201) She did not say that private maternity hospitals in New Zealand were supported by the State This is not the case

A JENNER RELIC

WE have received from Messrs Anderson and Virgo, an old established firm of chemists in Worcester, an interesting and well executed set of photographs relating to the question of the horns of Jenner's first cow, as to which there has evidently been some confusion In the pathological department of St George's Hospital there is a cowhide inscribed "The skin of the cow from which the first vaccine matter was taken by Dr Jenner Presented by his son, 1857" This cowhide has horns, but it turns out that they are of wood, and it appears that the original horns were absent when the hide was received at the hospital At the Royal College of Physicians there is a single horn, bearing on a silver plate the inscription "The horn of a cow given by the benefactor of man, Dr Jenner to his friend Sir John Fisher, and presented to this institution in 1813" But the inscription does not state that this horn was from the first cow from *which* Jenner obtained vaccine And now Mr G A Turner, *the principal* of Messrs Anderson and Virgo, has purchased and mounted on a mahogany shield a pair of horns, one of which bears a scr pt, not quite entire, but sufficient for the purpose, stating that these are the horns of the cow from which the matter was first taken by Dr Jenner The inscription is signed with what seems unquestionably the signature of Stephen Jenner, son of Henry Jenner who was a nephew of, and medical apprentice to Dr Edward Jenner In connexion with the photograph good evidence is submitted that the signature is that of Stephen Jenner, that he disposed of the horns to a furniture dealer is borne witness to by the dealer's son

HERPES AND VARICELLA

DR D REES ROBERTS (New Tredegar, Mon) sends the following note illustrating the apparent relation between herpes and varicella On August 16th last a boy, aged 4½ years, came home after a holiday of ten days with well marked herpes zoster on the right side On August 30th his sister, aged 11 months, developed well marked varicella The mother of these two children developed facial herpes on August 30th, her age was 33

WAR YEAR COPIES OF THE "BRITISH MEDICAL JOURNAL"

MR B M HLADICAR, honorary secretary of the Universities' Library for Central Europe (London School of Economics, Houghton Street, Aldwych, London, W C 2), writes From time to time, through the kindness of some of your readers, we are able to send used copies of your valuable JOURNAL to various universities and scientific societies in Central Europe We have just received a note from the Leipzig University Library deploring that they are seldom able to secure issues published during the war years If any of your readers have such copies which they would care to present to the institution in question I shall be glad to receive them for dispatch to Leipzig

POOR LAW PATIENTS AND FREE CHOICE OF DOCTOR

IN our issue of August 30th (p 392) we published a resolution on this subject which, we were informed, had been adopted by the Chesterfield Rural District Council The clerk to that council writes to state that the resolution was passed, not by the rural district council, but by the Chesterfield Board of Guardians

VACANCIES

NOTIFICATIONS of offices vacant in universities, medical colleges, and of vacant resident and other appointments at hospitals, will be found at pages 30, 31, 34 35, and 36 of our advertisement columns, and advertisements as to partnerships, assistantships, and locumtenencies at pages 32 and 33

A short summary of vacant posts notified in the advertisement columns appears in the *Supplement* at page *120*

EPITOME OF CURRENT MEDICAL LITERATURE

Medicine

199 On the Use of Immune Serums

H B CUSHING (*Canadian Med Asso Journ*, June 1924 p 477) observes that the "spectacular success of Behring's discovery (1894) of diphtheria antitoxin led to the hope of overcoming all infections by immune serums We now realize the limitations of this method of treatment and are gradually overcoming its difficulties Estimation of the value of treatment in these cases is always uncertain, since all acute infections are self limited, and other points have to be considered—*for example* the beneficial effects of any foreign protein reaction Thirty years experience has brought to light certain underlying principles and limitations (1) The need of a very large dosage to obtain results The 5 000 unit dose of diphtheria antitoxin required in an average case in a child is actually enough to neutralize an amount of toxin which could kill a hundred children but the high dose is required owing apparently, to the difficulty of bringing toxin and antitoxin together in the body For prophylaxis much smaller doses—*for example* 500 units—suffice (2) Concentrated serums should be used (3) Antitoxins require time to produce their full effect In diphtheria the maximum concentration of antitoxin does not occur for three days when it has been given subcutaneously and when given intramuscularly two days, repeated small doses are therefore contraindicated The intraperitoneal method is safe and easy, but the most efficient method is the intravenous, which produces greater concentration than any other and is practically instantaneous It is especially useful in tetanus and meningitis and would replace all others but for the mechanical difficulties in young children, and the risk of alarming rigors and other foreign protein reactions which may occur immediately (4) It is impossible to neutralize toxins which are fixed in the tissues no serum or special method of administration can prevent their later effects on heart kidneys or nervous system Tetanus antitoxin given after the appearance of clinical symptoms rarely saves a patient (5) Antibodies artificially introduced are rapidly eliminated from the system some soldiers developed tetanus after the effect of an initial prophylactic dose of serum had passed away (6) Monovalent serums may fail (especially in meningitis and pneumonia) because the disease is due to another strain of micrococcus than that from which the serum was derived Cushing has never seen a death from anaphylaxis in fifteen years experience he regards the danger as negligible Serum sickness he adds is not dangerous, and may be relieved by hypodermic injection of adrenaline All serums deteriorate in storage but less rapidly when kept in a dark, cold place Many samples on the market are quite inert

200 Epilepsy due to Osteitis of the Inner Table

A LÉRI and P COTTENOT (*Bull Soc Franc de Derm et de Syph*, May, 1924 p 243) recommend that in all cases of epilepsy in which signs of syphilis are absent and serum reactions are negative skiagrams of the cranial vault should be taken They report three cases which showed the three classic varieties of syphilitic osteitis *Case 1*—A girl aged 19 had had nocturnal attacks of Jacksonian epilepsy for three or four months, sometimes occurring twice or thrice in one week She had no sign of syphilis and the Wassermann reaction was negative but her mother had had several miscarriages A skiagram of the cranial vault showed a nodule on the inner table at the vertex just to the right of the middle line—that is over the cortical centre for the left leg the limb in which the premonitory symptoms commenced This was recognized as a gumma which disappeared save for a slight thickening of the inner table, after a series of bismuth injections The patient had one slight attack fifteen days after commencement of treatment no further attacks occurred during eight months *Case 2*—A woman aged 33 had had attacks of vertigo tinnitus and amblyopia with transient hemianopsia and coloured scintillating scotomata The fundi were normal The patient had had two healthy children there were no signs of syphilis and the Wassermann reaction was negative Bismuth injections were given and all symptoms disappeared rapidly After some time there was a relapse and a transient paresis of the left leg which suggested a cortical lesion Skiagrams showed extensive destruction of the inner table and of the diploë, especially over the right motor area In front of the bregma there was a long projecting irregular hyperostosis *Case 3*—A woman, aged 34 had an attack of Jacksonian epilepsy at the age of 12 Subsequent attacks continued for four years and then ceased until the age of 25 During the last four years they had been much more frequent The patient had no signs of syphilis, the Wassermann reaction was negative, and the cerebrospinal fluid contained 2 8 lymphocytes per cubic millimetre A skiagram showed a large exostosis 5 to 6 cm in length in the frontal region irregularly nodular, projecting 1 5 cm in yards The authors observe that bony lesions of these three types—(*a*) gumma (*b*) necrosis, and (*c*) exostosis—are found in both acquired and hereditary syphilis

201 Gangrene following Subcutaneous Injection of Saline Solution

E EICH (*Deut Zeit f Chir*, May 1924, p 410) states that unlike transfusion of blood, which has a very old history, injection of saline solution is of comparatively recent date It was chiefly during the great epidemics of cholera that visited Europe in the nineteenth century that it occurred to many physicians that fresh fluid might be introduced into the dehydrated system by a parenteral route Intravenous injection of saline solution was recorded by *Hermann* in Germany in 1830 and by Latta in Scotland in 1832, but the method gradually became forgotten, and it was not until about fifty years later that it became popular as the result of the investigations of Worm Müller, Cohnheim, Goltz and von Ott In 1883 after successful experiments in animals, von Ott performed the first subcutaneous injection of saline solution in a man who was suffering from cholera nostras In the cholera epidemic at Hamburg in 1892 subcutaneous injections of saline were extensively employed *Müller* in 1920 collected from German literature 13 cases of severe damages to the tissues following this method, and Eich has added 4 more including two of his own, so that the total amounts to 17 The chief factors in the damage to the skin following injection of saline solution appear to be anaemia of the tissues, circulatory weakness pressure exercised by the injected fluid and most of all, the addition of adrenaline, which should therefore not be used at all or be given intravenously or by mouth

202 Glycerin as a Vehicle for Bismuth Injections

S LOMHOLT (*Uge f rigt for Læger*, July 24th, 1924, p 569) finds that with the growing popularity of intramuscular injections of bismuth in the treatment of syphilis a better vehicle than oil is desirable Most bismuth preparations for intramuscular injection at present on the market are oily emulsions which though more readily absorbed than liquid paraffin, are yet slowly assimilated He found that the following formula gave excellent results precipitated bismuth hydroxide 2½ drachms, glycerin 1½ drachms, distilled water to 1½ drachms From 16 to 24 or 32 minims should be given every week and the syringe be cleaned frequently, since the bismuth is apt to make the piston stick in the syringe The needles also must be cleaned directly, after use, or they will be blocked The emulsion should be well shaken up immediately before use and as it is only slightly hypertonic the injections are practically painless Though he has already given several hundred injections the author has not yet had a case in which pain led the patient to discontinue treatment It is however, inevitable that this glycerin emulsion must cause a little more pain than an oil emulsion, for the former is absorbed several times more rapidly than the latter There is little risk of a glycerin emulsion giving rise to a depot of bismuth at the site of injection the action of the glycerin emulsion is much more rapid and powerful than that of an oil emulsion

203 Renal Diabetes

M LABBÉ (*Paris méd*, May 3rd, 1924 p 417) who records four personal cases, states that excessive permeability of the kidney to glucose was first described in 1895 by Lepine, who, from observations of the association of marked glycosuria with only a slight hyperglycaemia, came to the conclusion that there was a renal factor in the mechanism of glycosuria The following year Klemperer gave the name of "renal diabetes" to cases of glycosuria due to hyperpermeability of the kidney without hyperglycaemia Renal diabetes, though not frequent, is not extremely rare Salomon, indeed, who proposed the term "diabetes innocens, regards it as very common, and H John found it in 13 8 per cent of all cases of glycosuria The amount of sugar in the urine is usually moderate, ranging from 10 to 20 grams a day but is sometimes as low as 3 grams or as high as 79 or 100 grams Renal diabetes is not accompanied by symptoms of hyperglycaemia, such as polydipsia, polyuria, gingivitis, or a tendency to

suppuration, as in true diabetes It is generally persistent, but sometimes it is absent in the fasting state and appears only after meals An important characteristic is that diet has no effect upon the glycosuria, as in true diabetes Hyperpermeability of the kidney is not the only disturbance of kidney function in renal diabetes In a large number of cases albuminuria is present, as well as impermeability of the kidney to phenolsulphonephthalein Disturbance of hepatic function is also frequently associated with renal diabetes, as is shown by the occurrence of acidosis and urobilinuria In rare cases renal diabetes is associated with true diabetes Renal diabetes is occasionally found in several members of the same family, like alkaptonuria and cystinuria In cases reported by Cammidge and by Graham the father and daughter were affected In ten of Salomon's cases five belonged to two families Salomon has also seen renal diabetes in a brother and sister, and Labbé has seen it in two brothers.

Surgery.

204 Traumatic Cyst of the Pancreas

M H ROUVILLOIS (*Bull et Mem Soc Nat de Chir*, June 28th, 1924, p 728) records an interesting case of a traumatic cyst of the pancreas It occurred in a patient aged 21, following a violent kick in the epigastrium while playing football The cyst formed in the lesser sac of the peritoneum and the foramen of Winslow was obliterated. The stomach lay above and the transverse colon below the cyst The clinical features at the time of the injury did not indicate any visceral lesion, and the symptoms were simply those of a severe contusion without complications There persisted, however, a rigidity of the rectus muscle in its upper quadrant for a week after the accident this sign has been noted in a number of cases It was only after an interval of a month that the local and general signs showed the presence of the cyst, following these signs the cyst underwent spontaneous rupture, but later refilled and became even larger than before At the subsequent operation the cyst was exposed and punctured, it contained a yellowish opalescent fluid The cyst was sutured to the abdominal wall and drained The discharge from the wound was at first sterile, but later became infected with staphylococci The diagnosis in this case depended on the history of injury, the situation of the pain, and the abdominal rigidity, whilst radiographic examination was of some assistance The mode of approach through the gastro colic omentum appears the best and most favourable for drainage The convalescence was satisfactory except for the development of a pancreatic fistula for a time, which is common in these cases It was noted that the quantity of fluid secreted from the fistula was greater during the night than by day.

205 Sarcoma of the Rectum

L DURANTE (*Il Policlinico*, Sez Chir, June 15th, 1924, p 311), who states that the ano rectal localization of sarcoma is extremely rare, has collected 66 examples of melanotic sarcoma and 32 of non pigmented sarcoma, including a personal case The average age of the patients was 52 years, the youngest case was that of a boy, aged 10, with the non pigmented form, and the oldest that of a man of 90 with melanotic sarcoma Both sexes are equally affected In the great majority of cases the melanotic form arises in the anal portion of the rectum and the non pigmented form in the segment of the rectum above it The walls of the ano rectal segment are affected in the following order of frequency posterior wall 18 cases, anterior wall 3 cases, lateral wall 10 cases (Chumann) Sarcoma of the rectum is manifested clinically as a single, well circumscribed mass, with a nodular surface, varying in size from a hazel nut to an orange In 30 per cent of the melanotic cases and 70 per cent of the non pigmented cases it is sessile, while, on the other hand, it is pedunculated in 70 per cent of the melanotic cases and 30 per cent of the non pigmented cases In only a few instances does it first appear as a nodule beneath the intact mucous membrane, as in most cases the mucous membrane is already ulcerated when the growth is first seen The following forms have been described (1) Pedunculated form, to which Quenu and Hartmann have given the name of "malignant polypi" (2) Nodular form (3) Diffuse form, which is very rare, if it exists at all Histologically sarcoma of the rectum shows the same structure as that of sarcoma in other organs, the incidence of the different varieties being as follows round celled 40 per cent, spindle celled 33 per cent, mixed celled 20 per cent, giant celled 1 per cent, lympho sarcoma 4 per cent, myosarcoma 2 per cent Contrary to what is seen in epithelial new growths, sarcoma of the rectum is hardly ever associated with an appreciable diminution of the calibre of the intestine There is, on the contrary, often an increase in the size of the intestinal calibre due to paresis of the muscle tone It is only in the later stage that sarcoma shows any tendency to invade the neighbouring organs, such as the bladder, vesiculae seminales, uterus, and vagina There is a considerable difference in the clinical course of melanotic and non pigmented sarcoma The former shows a rapid growth with a tendency to invade early the lymphatic system, while the latter never invades the lymphatic system, except possibly at a late stage, and its growth is usually slow The prognosis of the non pigmented form is consequently less sombre than that of melanotic sarcoma The methods and indications for operation are the same in sarcoma as in carcinoma of the rectum.

206. Echinococcus Disease of the Lung

H VERGER, F PIÉCHAUD, and E AUBERTIN (*Paris med*, June 14th, 1924, p 551) describe the following varieties of echinococcus disease of the lung (1) The pseudo tuberculous form, in which the auscultation signs are localized congestion, paroxysmal cough, fever, emaciation, asthenia, and early or late haemoptysis (2) The pseudo pleuritic form, simulating sero fibrinous pleurisy, in which the cysts are situated in the cortex of the lung (3) The pleuritic form, due to rupture of the cyst into the pleura, or more frequently due to a pleural effusion caused by irritation of the pleura by the cyst (4) The type of intrathoracic tumour, in which the cyst projects from the thorax owing to the rib covering it being pushed forwards. (5) The suppurating cyst, in this form the symptoms are those of pulmonary abscess If the suppuration is secondary to the expulsion of clear fluid and fragments of membrane the diagnosis is easy, but if suppuration is the first sign the diagnosis is difficult unless characteristic hooklets and fragments of membrane are found in the pus If an operation is not performed cachexia develops The authors, who record a case of this kind in a woman aged 30, which was successfully treated by operation, emphasize the importance of the early use of *x* rays, as the radiological picture of this condition is characteristic

207. Surgical Treatment of Goitre.

A S JACKSON (*Annals of Surgery*, June, 1924, p 840) records conclusions based on a study of 4,000 cases of goitre Colloid goitres appearing at puberty are seen in 60 per cent of girls between the ages of 16 and 20 in the goitre district of the Middle West of America Factors in the etiology are deficiency of iodine, excessive demand on the thyroid glands, and undue mental and physical strain Colloid goitre may be prevented by administering 10 mg of sodium iodide once a week during school life Iodine gave good results in the ordinary type Adenomas tend to develop in neglected cases, they rarely cause symptoms before 25 years of age One in every four becomes toxic before 50 years of age, and the symptoms cause permanent and serious damage to the heart and kidneys Thyroidectomy is indicated in the majority of cases Carcinoma occurred four times in a hundred cases The mortality, when clinically diagnosed, was 100 per cent Malignancy does not occur in exophthalmic cases Jackson maintains that an adenoma is a neoplasm and a precursor of cancer, and so should be removed Exophthalmic goitre is more common in youth and has an acute onset Loss in weight may be rapid, and muscular asthenia is most marked in the quadriceps muscles The average basal metabolic rate is +54 per cent Before operation the vocal cords should be examined in all adenoma cases partial paresis is present in one in every fifteen cases, and if one cord is paralysed care must be taken not to injure the nerve supply of the other cord Local anaesthesia was used in 90 per cent of cases All haemorrhage must be carefully controlled at the operation, and, where better exposure is required, the sterno hyoid and sterno thyroid muscles may be divided Fluids and digitalin are useful after the operation X rays are only used in exophthalmic cases, prolonged treatment is necessary and the results are variable

208 Suprarenal Tumours with Cerebral Symptoms

A DEVIC and J DECHAUME (*Journ de Méd de Lyon*, July 5th, 1924, p 397) record two interesting cases of suprarenal tumours giving rise to cerebral symptoms The first occurred in a patient 59 years of age, the second patient was 35 years of age From a review of the few recorded cases it appears that these primary tumours arise in the cortex of the suprarenal and in young subjects Before the tumour itself attains any great size metastases appear in the viscera and the central nervous system Clinically the tumours give no localizing signs of their presence, and being small cause no pressure effects on neighbouring organs The absence of signs of disturbance of the internal secretion of the organ is always striking Even though the growth may cause a complete change in the structure of the suprarenal, signs of acute insufficiency of the secretion are absent There was no evidence of Addison's syndrome in their cases Even the marked asthenia, rapid cachexia, and lumbar pain were

not noted In such cases the disease is first recognized by the presence of the secondary deposits Frequently metastases in the lungs are the earliest discovered Following on this the cerebral symptoms may be attributed to a tumer culoma secondary to a lung infection to which it bears some resemblance Finally the cervical glands may become enlarged, and examination of one of these shows the nature of the growth In one of their recorded cases there was a definite Jacksonian syndrome In the second case there were only general signs of cerebral involvement with papilloedema, headache, vertigo, and vomiting It appears, therefore that the diagnosis of this condition is practically impossible

Dermatology.

209 **Osteosis Cutis**

S W BECKER (*Arch Derm and Syph*, August, 1924, p 162) reports a case in which a hard resilient plaque containing osseous tissue developed in the scalp of a woman aged 32 The condition had been present for fourteen years, during which time mechanical irritation had given rise repeatedly to ulceration and the formation of crusts, the patient said that bone like bodies had come out from time to time There was no history of injury By microscopical examination ovoid and irregular islands of true bone with a lamellar configuration were discovered in the corium A membrane resembling the periosteum was present, there were marrow cavities with endosteum, lacunae, and irregular and transversely radiating canaliculae No other calcified tissue and no cartilage were present The simultaneous occurrence in the patient of a mild generalized hypertrichosis a keratosic naevus of the sole of the foot, and a naevus pigmentosus of the finger suggested that the osteosis might have been a naevus formation The author provides a bibliography of ossification in the skin

210 **Hexamine Dermatitis.**

H J CROTTY (*Journ Amer Med Assoc*, July 26th, 1924 p 250) reports the poisoning by hexamine of sixty employees in a rubber factory acute dermatitis of the exposed surface being the principal symptom Hexamine was used in the vulcanization of rubber, an ounce or two being introduced into the average bath of 100 lb or more rubber stock The first symptoms were redness of the face and exposed parts of the arms followed by the development of vesicles and later of oedema Extreme itching was the chief symptom complained of, but many of the patients later developed deep infections which resisted treatment At first sodium bicarbonate and glycerin washes were found useful in the less severe cases but later a protective zinc ointment containing 25 per cent crude coal tar was found to be more effective, combined with the internal administration of bromides The disease recurred when the patients returned to work, and after various preventive measures had proved unsuccessful the hexamine process was given up

211 **Impetigo treated by Staphylococci**

FONTEYNE (*Le Scalpel*, June 7th, 1924, p 673) has been treating with success cases of impetigo by the external application of a culture of staphylococcus The number of cases treated was small, but they were selected for their obstinacy, and chronicity the eruption was on the head in every case The head was washed each day with soap, and no antiseptic was used At first the culture was applied as a moist dressing, but this became so foul in a short time that the method was abandoned and the affected parts simply washed with the medium three times a day and left open

Obstetrics and Gynaecology.

212. **Puerperal Insanity**

A W BOURNE (*Brit Journ of Obstet and Gynaecol*, Summer Number, 1924, p 251) has analysed the history of 61 cases of puerperal insanity, collating the clinical notes made in lying in homes and later in infirmaries and asylums In nine of the cases no evidence was obtained either of predisposition to mental disease or of physical puerperal disease Of these patients five were single so that it was possible that the worry of illegitimate pregnancy might be of etiological moment—a view which was borne out by the finding that no fewer than 36 per cent of the whole series were unmarried Of the 61 patients, 18 showed evidence of uterine infection and 9 had eclampsia Primiparae formed 59 per cent of the total In 27 per cent predisposition to mental disease was indicated by the family or personal history The mortality in the series was 22 per cent, 6 patients died of the effects of infection 2 of cardiac failure, and 2 by suicide Of the survivors who were traced, 75 per cent were eventually discharged from asylums as recovered The 6 patients with eclampsia that were traced had all recovered, but of 13 cases of uterine infection 6 died The time before recovery varied from two weeks to three years, the average time being six and a half months Bourne concludes that there is evidence that puerperal organic disease particularly sepsis and eclampsia, is capable of inducing insanity in those who have not shown previous indications of mental unsoundness and who family history in this connexion is good The prognosis he says, depends primarily on the severity of the coincident organic disease if any eclampsia produces only a brief period of insanity but half the patients who died were victims of infection and of the traced cases of infection the same proportion was fatal

213. **Sarcoma and Adenocarcinoma in the same Uterus**

T S MOISE (*Surg, Gynecol and Obstet*, July, 1924 p 83) reports a case of the occurrence of sarcoma and carcinoma in the uterus of a patient aged 60, who was admitted to hospital with vaginal haemorrhage She had married at the age of 19, and had given birth to four children She had had no miscarriages The menopause occurred at the age of 50 two years later she had a fall after which she complained of a heavy sensation in the pelvis and noticed that the uterus was prolapsed Eighteen months later her health became poor, she lost weight, and the haemorrhage commenced A diagnosis of carcinoma of the cervix was made and the uterus was removed, no metastases being detected For three or four weeks after the operation the patient was quite comfortable, then hard lumps developed between the operation incision, there was severe pain in the back, and difficulty in defaecation She became steadily weaker and developed a cough with blood stained sputum, tightness in the chest and difficulty in breathing Death followed a week or two later The pathological examination of the uterus brought to light typical round celled sarcoma of the body of the uterus associated with an adenocarcinoma, which was atypical being spread in the form of small papillae over the endometrium There was widespread invasion of the uterine wall by nests of carcinomatous cells Moise discusses this condition at length and refers to Herxheimer's researches and conclusions with regard to its origin He adds that the majority of authors appear to believe that the sarcoma is the older growth and that the carcinoma develops as the result of epithelial proliferation over the sarcoma

214 **Uterine Haemorrhage after the Menopause.**

P MONTLONGUET POLERIS (*Gynecol et Obstet*, 1924, ix 6, p 493), without combating the accepted view that metrorrhagia appearing several years after a well established menopause is in a large percentage of cases symptomatic of carcinoma of the corpus uteri, points out that it may be due in other instances to senile metritis, polypi tertiary syphilis or to neoplasms, or cysts of the ovary Of post menopausal haemorrhage due to the last named cause he cites 52 cases, of which 26 had not hitherto been published Uterine haemorrhage is by no means an invariable accompaniment of ovarian tumours or cysts developing after the menopause, but was found in one fourth of a series of 74 cases The bleeding is not usually acute or so severe as to produce a notable degree of secondary anaemia, possibly because the patient as a rule seeks treatment on a comparatively early date There is not infrequently a considerable amount of leucorrhoea Painful uterine contractions, such as occur in cancer, are not noted Physical examination may or may not lead to detection of an adnexal swelling this may be very small The ovarian tumour is not in the majority of cases malignant, the series of cases reported included mucous, Wolffian, serous and vegetating cysts, fibromata, and all varieties of solid malignant growths On examining the uterus in these cases the author has generally found evidence of endometrial hyperplasia which may go on to polyp formation but without any formation of decidua like cells Clinical diagnosis of these cases is difficult especially when the ovarian tumour is small it is usually to be made after surgical intervention for suspected carcinoma of the uterine body The author regards the endometrial changes as a rejuvenescence probably under the influence of stimulation of the juxtaovarian and broad ligament nerve fibres

215. **Hyperemesis Gravidarum**

S BRINDEAU and P LAMBOUL (*Paris méd* June 21st 1924, p 587) remark that the results of empirical treatment of hyperemesis gravidarum are neither better nor worse than those of treatments based on pathological investigations Diagnosis of the condition is less simple than is thought by obstetricians In fatal cases the diagnosis is not certain save after autopsy, intractable vomiting in pregnant subjects has wrongly been regarded as hyperemesis gravidarum when in reality due to tabes, cerebellar granuloma, choroid plexus

tumours, or to cystic or gliomatous cerebral tumours. According to the usual statements hyperemesis gravidarum is most nearly simulated by nervous or hysterical vomiting, which is susceptible of cure by suggestion. Hysterical vomiting is not rare in those who previously have shown no neuropathic taint, and it is to be noted that the morbid conditions which it may secondarily induce—dehydration, acidosis, etc—will naturally not respond to suggestion, and may be of extreme gravity. Patients with almost continuous vomiting, wasting, tachycardia, icterus, and salivation may be so ill that therapeutic abortion is regarded as essential, and yet they may be cured by the suggestion that they are not pregnant, or by other simple psychotherapeutic treatment. It is probable that in some such cases death has ensued. The authors believe, with others, that there is no clinical symptom which suffices to distinguish hysterical vomiting from true intractable or "toxaemic" vomiting of pregnancy. The therapeutic test is less simple than at first it seems, hysterical vomiting should yield to suggestion, but, although vomiting which does so yield is without doubt hysterical, vomiting which does not is still possibly hysterical. Suggestion varies in potency when employed by different practitioners, and is frequently useless unless the patient is absolutely isolated from her previous surroundings and friends, it is powerless against secondary morbid organic conditions following hysterical vomiting. Turning to the question, Is there such a condition as grave intractable vomiting, organic and not hysterical, due to pregnancy? the authors hesitate to state a negative, but believe that the immense majority, if not all, of these cases are of hysterical origin. They point out that grave cases are almost unknown in patients who have had skilled advice from the beginning of their symptoms, that striking cures follow the most diverse treatments and are of remarkable rapidity, that death of the foetus *in utero* and spontaneous abortion are uncommon, and that grave hysterical vomiting is far from rare in the absence of pregnancy and also in males. The authors attach the greatest importance to the institution of treatment by isolation and suggestion at the earliest possible date.

Pathology.

216 Laboratory Tests for Syphilis

M. H. EBERT and J. H. MITCHELL (*Arch. Dermatol. and Syphilol.*, July, 1924, p. 36), from a comparative study of the Herrold precipitation test and the Wassermann test, conclude that the precipitation reaction is specific for syphilis, agreeing with the Wassermann reaction in untreated secondary and congenital syphilis, but becoming positive later than the Wassermann in untreated primary syphilis, it is less sensitive in treated cases and later in the disease. In syphilis of the central nervous system the precipitation test is unsatisfactory, as the reaction was negative in a relatively large number of cases which gave a strongly positive Wassermann reaction. Although in a small number of cases in which the Wassermann reaction is negative the precipitation test gives a positive result, it is a valuable routine control on the Wassermann test, and it is useful clinically if carefully carried out. It is unsatisfactory with lipaemic serums. A total of 2,025 tests were made, 1,075 being in syphilitic cases, 885 in non-syphilitic cases, and 65 in cases in which no history was available.

217 Pulmonary Fats and the Fixation of Calcium.

FOLLOWING on their demonstration of the presence of vitamin A in the fat contained in the lungs, and of its beneficial effect on growth, H. ROGER, L. BINET, and M. VAGLIANO (*C. R. Soc. de Biologie*, July 11th, 1924, p. 357) have now succeeded in showing that this fat contains also an antirachitic vitamin which is able to assist in the fixation of calcium by the body. Young rats, one month old, were placed on a dietary (Pappenheimer's 85) consisting of wheat flour, egg albumen, butter, and a mixture of various salts, and were kept in the dark. After a fortnight they were found to be suffering from rickets, as was shown by a macroscopical and microscopical examination of one of them, and they were then divided into three groups. Group 1, which was kept on the same diet, was killed off at the end of another fortnight, and the animals composing it were submitted to a histological study. On the inner side, particularly, of the ribs at the costo-chondrial junctions there were marked nodosities, which microscopically showed the usual lesions of experimental rickets. The animals of Group 2 were put on to a dietary in which the butter was replaced by 2 per cent. of fats extracted from the lungs of the dog by means of alcohol and ether. They were killed after a fortnight, no appreciable lesions were found at autopsy, and microscopical examination of the costo-chondrial junctions showed the picture of healed rickets. The animals of Group 3 had their butter replaced by 3 per cent. of extract of lung fat, and were killed after ten days. They too showed evidence of healed rickets. The beneficial act of this fatty extract of lung could be ascribed either to its existence in it of an antirachitic vitamin or to its phosphorus content. Analysis, however, showed that the amount of phosphorus was only 1 per cent.—an amount which is insufficient to prevent or to cure rickets on this particular dietary. They therefore conclude that the fats of the lung contain over and above a vitamin requisite for growth, an antirachitic vitamin which enables the animal body to fix calcium.

218. Serology of the Streptococcus scarlatinae.

F. A. STEVENS and A. R. DOCHEZ (*Journ. Exper. Med.*, August, 1924, p. 253) have carried out an examination of the serological properties of the streptococci isolated from cases of scarlet fever. A number of strains were collected from diverse sources, with one exception they were all isolated from throat cultures, the single exception was a strain obtained from milk incriminated in an outbreak of scarlatina. Six control strains of pyogenic streptococci from infected wounds, and two others isolated from throat cultures of patients suffering from epidemic sore throat of non-scarlatinal nature were studied at the same time. Agglutinating serums were prepared to fifteen of the twenty-one scarlatinal strains by injecting rabbits first with heat-killed broth cultures, and later with living broth cultures, care being taken to exclude all animals which had natural agglutinins to streptococci in their serum. Direct agglutination tests were performed by putting up each of the immune serums obtained against both the scarlatinal and the control strains. The results showed quite clearly that with a few exceptions all the scarlatinal strains were agglutinated by all the serums, whereas the control strains were left unaffected. The serum prepared against the streptococcus isolated from milk agglutinated the scarlatinal strains as satisfactorily as did the serums prepared from strains isolated from throat cultures. Absorption tests were then performed with five of the serums, using those strains which were agglutinated with the greatest rapidity. These tests were on the whole fairly satisfactory, showing that the scarlatinal strains were able to remove the homologous agglutinins from the serums, the control strains generally succeeded in reducing the titre to a [illegible] but were never able to remove all the [illegible]. From these observations they conclude that streptococci isolated from scarlet fever are haemolytic streptococci coming from other sources, and distinct from streptococci isolated from [illegible] as that they can be identified by agglutination tests.

219 B. putrificus and Gas Gangrene

THE part played by *B. putrificus* in the production of foul smelling infections has not been fully ascertained. This anaerobe has been recovered from dental caries, intestinal inflammation, and infected wounds, but attempts to reproduce these infections experimentally have not been successful hitherto. M. WEINBERG and B. GINSBOURG (*C. R. Soc. de Biologie*, July 5th, 1924, p. 339), noting that this organism only occurs in wounds associated with aerobic and anaerobic bacteria, have endeavoured to reproduce this condition experimentally by combining the organism with such organisms as *B. perfringens*, *B. sporogenes*, *B. proteus*, *B. coli*, and the bacillus of malignant oedema. The strain of *B. putrificus* employed had proved to be non-pathogenic in pure culture. When associated with *B. putrificus* or *B. perfringens*, however, and to a lesser extent with *B. sporogenes*, a very marked effect resulted from its intramuscular inoculation into guinea-pigs. The ensuing lesions were, however, nearly always limited to the skin, and only rarely did degenerative changes appear in the muscles. Partial breaking up of the muscles occurred with a mixture of *B. putrificus* and *B. histolyticus*. When other organisms were employed mixed with *B. putrificus* the lesions were less marked, more transient, and always localized in the skin. The authors suggest that these facts indicate a certain affinity of *B. putrificus* for the skin. When *B. putrificus* was associated with another proteolytic organism, such as *B. sporogenes*, marked lesions occurred, but these were very transient and the animal recovered in two to four days. When a mixture of *B. putrificus* and *B. coli* was employed the anaerobe disappeared rapidly from the wound, but *B. coli* persisted and multiplied rapidly, death followed, and the animal showed a haemorrhagic gelatinous oedema of the subcutaneous tissue over the whole abdominal wall, the viscera, especially the suprarenals, being swollen and very congested. This experiment indicates, not only the antagonism between these two microbes, which had been previously demonstrated by Bienstock, but also that this mixture increases considerably the virulence of *B. coli*. Similar results were observed in the association of *B. putrificus* with *B. proteus*. *B. putrificus* is not so strongly proteolytic as *B. sporogenes*, and breaks up protein matter slowly. It seems to play an important part in the more chronic forms of inflammation—as, for example, in wounds and in infections of the intestine.

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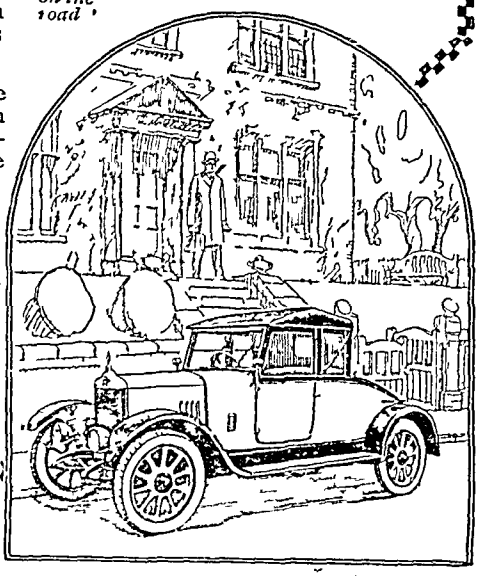
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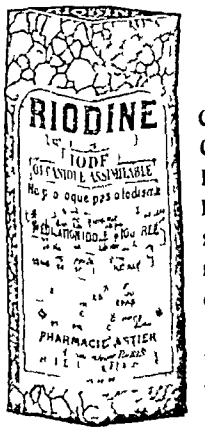
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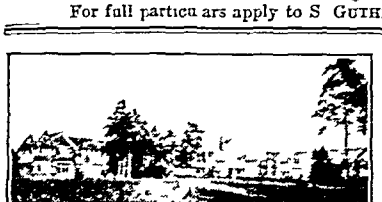
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The Course will be conducted by Mr P H WESTMACOTT C B E. F R C S Honorary Aurist and Laryngologist Manchester Royal Infirmary

Applications to join the Course should be submitted not later than Tuesday September 30th 1924

FRANK G HAZELL, September 12th, 1924 Gen Supt & Secretary

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The Degrees in Medicine, Surgery, Hygiene and Dentistry, the Diploma in Public Health, the Diploma in Psychiatry, and the Licence in Dental Surgery of the University of Durham are open to men and women

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Practical Midwifery can be studied at the Princess Mary Maternity Hospital, which contains 65 beds, with an annual In Door and Out-Door attendance on 3,000 cases Lectures are given on Pyschological Medicine in the College of Medicine, and Clinical instruction at the Mental Hospital, Newcastle Special Courses of Instruction in Out Door Sanitary Practice and in the Hospital for Infectious Diseases are given by the City Medical Officer of Health

Particulars may be obtained from Professor HOWDEN, Registrar at the College

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History of Medicine —C SINGER, M D, D Litt, F R C P, Lecturer
Hygiene and Public Health —H R KENWOOD C M G M B, D P H F C S F R S E Chadwick Professor
Pharmacology —A J CLARK, M D, F R C P Professor (Dean)
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The SESSION 1924
SEPTEMBER 29th
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July 30th, 1924

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Courses in Bacteriology and Microscopy — Evening Classes in the Principles of Hygiene will commence in January

For Particulars apply to the SECRETARY or to Professor HEWLETT

DIPLOMA IN PUBLIC HEALTH.

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Demonstrators F L PEVTON M D D I H MURIEL M NUTT M A

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Lecturer A SELLER M D, D P H

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Lecturer H HEAP M Sc

ZOOLOGY
Lecturer R A WARDLE, M Sc

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The curriculum has been re arranged to meet the requirements of candidates under the new regulations Alternative courses are available so that candidates may complete the curriculum in one or two years according to the number of hours of attendance per week The first course under the new regulations will commence in October 1924

For further particulars apply to THE DIRECTOR PUBLIC HEALTH LABORATORY York Place Manchester

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LONDON HOSPITAL MEDICAL COLLEGE.

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A COURSE OF INSTRUCTION for the above Examination will begin on Monday Sept 22nd The Fee for the Course is 15 guineas Further particulars may be obtained from — Professor WILLIAM WRIGHT M.B D Sc F R C S Dean Mile End E.1

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LONDON SCHOOL OF HYGIENE & TROPICAL MEDICINE,

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Endsleigh Gardens, N W.1.

Next Session will commence September 22nd 1924

For Prospectus and further particulars apply to The Secretary Endsleigh Gardens N W

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SHORT SERVICE SCHEME

The Admiralty are prepared to accept applications for entry as SURGEON LIEUTENANTS for Short Service in the Royal Navy

Period of Service—3 years with option to extend for further twelve months

Pay—25s per diem or £456 5s per annum

Gratuity on discharge—£8 6s 8d for each completed month of service or £100 p r annum

Equipment allowance—£50, payable on joining

Age of candidates—Not to exceed 30 years

Surgeon Lieutenants on the Short Service Scheme will be considered for transfer to the Permanent Service under certain conditions after six months service

Regulations for entry and form to be filled up by candidates will be supplied on application to the Medical Director General, 68 Victoria Street London S W 1

University of Durham

POST GRADUATE INSTRUCTION

A General Course, comprising Clinical Medicine Clinical Surgery, and Pathology will be held on each Thursday from 2 to 5 30 p m from October 2nd to December 11th The Classes will be held in the Royal Victoria Infirmary, Newcastle upon Tyne Fee £3 3s Od

Special Courses meeting once weekly will be held in the following subjects Obstetrics and Gynæcology, Diseases of the Eye including Refraction Diseases of the Throat Nose and Ear Diseases of the Skin Diseases of Infancy Neurology Fee for each Special Course £2 2s Od

Entries must be received by September 25th

A detailed syllabus will be sent on application to Professor R HOWDEN, College of Medicine Newcastle upon Tyne

University of Cambridge

DIPLOMA IN MEDICAL RADIOLOGY AND ELECTROLOGY

Six Months Courses of LECTURES and PRACTICAL INSTRUCTION in Part I (Physics and Electro technics) and in Part II (Radiology and Electrology) will be given in London beginning October 1st, 1924 and in Cambridge and London, beginning January 7th, 1925, for Examination at the end of the Courses

For further particulars of the London Courses, apply to STANLEY MELVILLE M D British Institute of Radiology, 32 Welbeck Street, London W and of the Cambridge Courses to F SHILLINGTON SCALES M A M D Medical Schools Cambridge

University of London

WILLIAM JULIUS MICKLE FELLOWSHIP

Applications are invited for the William Julius Mickle Fellowship which is of the value of at least Senate to the man or in London and a as, in the opinion of the Senate done most to advance medical art or science during the preceding five years

Applications must be made before October 1st, 1924 Further particulars can be obtained on application to the Academic Registrar, University of London South Kensington S W 7

The Anderson College of MEDICINE, DUMBARTON ROAD, GLASGOW

The Governors invite applications for the CHAIR OF SURGERY at the College

Each Candidate must lodge, not later than Monday, 29th September curt, twenty two copies of his application, with testimonials (which need not exceed four in number) with the Subscriber, from whom further particulars may be obtained

A LAWRIE BROWN
Writer 83, Bath Street, Glasgow, C 2
Secretary of the College

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SCHOOL OF MEDICINE

Whole time LECTURER IN CHEMISTRY Pay £L 500 a year in the grade £L 240–600 Contract for three years

Applications are invited from Egyptians only for this vacant post

The holder of this post is expected to devote his whole time to teaching and research

Application must be accompanied by qualifications details of research work former teaching posts, and testimonials and be addressed to the Director School of Medicine, Cairo, Egypt They should reach him before October 10th 1924

Shanghai Municipal Council

PUBLIC HEALTH DEPARTMENT

ASSISTANT PATHOLOGIST

Assistant Pathologist of experience required in the Municipal Public Health Laboratory to assist in research routine laboratory diagnosis preparation of vaccines including small pox vaccine complement fixation tests and other work incidental to a large and important Public Health Department

Salary Taels 700 a month (equivalent at 3/ exchange to £1 250 a year) under a three years agreement renewable at a higher salary in the event of satisfactory service first class passage paid participation in Superannuation Fund one month s annual leave and eight months fourth leave on full pay with first class passage, after every five years service

Candidates must be under 30 years of age must hold the D P H and be University Graduates

Further particulars may be obtained from the Council s Agents

Applications endorsed "Assistant Pathologist on the cover, with full information concerning qualifications and experience etc and with copies of at least three recent testimonials, should be forwarded to John Pook & Co Agents for the Municipal Council of Shanghai, 68, Fenchurch Street London E C 3

September 1924

Altrincham General Hospital, Cheshire

HOUSE SURGEON required Male or Female Candidates must be fully qualified and registered Salary £125 per annum with board, residence and laundry Duties to commence on or about November 8th, 1924

Applications, stating age and experience together with copies of recent testimonials to be sent in not later than Wednesday October 1st, 1924 to William Moody Secretary, 61, Market Street, Altrincham, Cheshire

UNION OF SOUTH AFRICA

Grey's Hospital, Pietermaritzburg

Vacancy for a MALE HOUSE SURGEON

SALARY —£400 per annum, plus free lodging, and washing

ENGAGEMENT —In first instance on contract two years with the prospect of re engagement by mutual consent

TRANSPORT —Free first class ticket from residence to destination and in reverse direction if re engaged on expiry of the contract or salary during voyage to South Africa.

QUALIFICATIONS — Applicants must be British subjects single, and not more than thirty years of age Knowledge of English and Dutch a recommendation Applications with copies of testimonials, all in duplicate should be lodged with the Secretary Office of the High Commissioner for the Union of South Africa Trafalgar Square W C 2 (from whom further application may be obtained) not later than September 30th 1924

Required for the Department of PHYSIOLOGY in the UNION MEDICAL COLLEGE, PEKING, a man with two or three years experience in teaching and research work in Physiology Salary £500 per annum —Apply Dr THOMAS COCHRANE Honorary Secretary British Advisory Board on Medical Missions Tudor Street London E C 4

Bethnal Green Board of GUARDIANS

ASSISTANT MEDICAL OFFICER

The Guardians invite applications for the appointment of an Assistant Medical Officer at the Hospital in Cambridge Road Bethnal Green at an inclusive salary of £400 per annum and furnished apartments, board and washing.

The Hospital is a recognised training school for nurses with accommodation for 664 patients and possesses an X ray apparatus and a fully equipped laboratory The medical staff consists of six gentlemen

Candidates must possess both a medical and the whole of his time to the duties of his office

Applications must be made upon forms to be obtained from the undersigned, and sent to me as soon as possible

C FAULKNER JONES
Clerk to the Guardians.
Guardians Administrative Offices,
Bishop s Road
Bethnal Green E 2 September 19th 1924

The Hospital for Sick Children

Great Ormond Street London, W C 1

A HOUSE PHYSICIAN AND ASSISTANT CASUALTY OFFICER is required on October 14th 1924

purposes and also evidence of their having held a responsible hospital appointment

The appointment is made for six months Salary £50 laundry allowance £2 10s, and board and residence in the Hospital

Candidates must be unmarried and possess a legal qualification to practice

All candidates must be in attendance on Wednesday October 8th 1924 at 5 p m prepared to appear before the Joint Committee if required

Forms of application and copies of the rules may be obtained from the Secretary

By order of the Board of Management
JAMES McKAY
September 1924 Secretary

The Hospital for Sick CHILDREN, Great Ormond Street, London W C 1

A HOUSE SURGEON is required on October 14th 1924

Gentlemen are invited to send in their applications addressed to the Secretary before 10 o'clock on Monday June 2nd, 1924 with copies of not more than three testimonials given specially for the purpose and also evidence of their having held a responsible hospital appointment

The appointment is made for six months Salary £50 laundry allowance £2 10s, and board and residence in the Hospital

Candidates must be unmarried, and possess a legal qualification to practice

All candidates must be in attendance on Wednesday, October 8th, 1924 at 5 p m prepared to appear before the Joint Committee if required

Forms of application and copies of the rules may be obtained from the Secretary

By order of the Board of Management
JAMES McKAY
September, 1924 Secretary

Glamorgan County Council

MEDICAL INSPECTION OF CHILDREN IN SCHOOLS

The Glamorgan Education Committee invite applications for the appointment of a MEDICAL INSPECTOR. The appointment is open to both

The scale of salaries is £600 per annum with

his

and supervision of the School Medical Officer and to reside where directed by the Committee

The appointment will be terminable by two months notice on either side. A knowledge of Welsh is desirable.

Applications for appointment stating age and qualifications and accompanied by copies of no more than three recent testimonials should be sent to the School Medical Officer, Dr. E. Colson Williams, County Hall, Cardiff, and should be received by him not later than the first post on the *morning of September* 30th 1924.

Canvassing personally or otherwise will be a disqualification.

T. MANSEL FRANKLIN
Secretary of the Education Committee

Cardiff
September 3rd, 1924.

County Borough of Burton-upon-Trent

ASSISTANT MEDICAL OFFICER.

The Council invite applications from Candidates for the appointment of Assistant Medical Officer of Health, Assistant School Medical Officer, and Assistant Tuberculosis Officer.

Salary £600 per annum.

The appointment will be terminable by one calendar month's notice on either side.

The person appointed must have a diploma in Public Health and must have had not less than

and will be

time to the

the direction

Applications stating age, experience and qualifications

Canvassing any member of the Council will disqualify.

JOHN B. CHAPMAN
Town Clerk.

Town Hall, Burton-on-Trent
September 10th, 1924.

County Borough of Birkenhead

Medical Officer's Department.

ASSISTANT MEDICAL OFFICER (RESIDENT).

Applications are invited for the above appointment from duly qualified men (unmarried) holding a Diploma in Public Health. The appointment carries with it a salary of £450 per annum, residence at the Infectious Diseases Hospital, board, and washing.

The candidate appointed will be required to carry out the treatment of patients in the Hospital, and to assist at the Municipal Venereal Diseases Clinic.

Canvassing members of the Town Council either directly or indirectly will disqualify.

Particulars of the appointment and form of application may be obtained from D. MORLEY MATHESON, Esq., M.A., M.D., Medical Officer of Health, 9, Hamilton Square, Birkenhead.

Applications must be received not later than September 27th, 1924.

EDMUND SPENCER
Acting Town Clerk.

Town Hall,
Birkenhead.
September 4th, 1924.

Hospital for Epilepsy and Paralysis, Maida Vale, W.

MEDICAL REGISTRAR Required

reach the undersigned by September 27th. An honorarium of £100 is attached to this appointment which is for one year, and further particulars can be obtained on application.

H. W. BURLEIGH, Secretary.

Leicester Royal Infirmary

There will shortly be a vacancy for a HOUSE SURGEON; appointment for six months, salary at the rate of £150 per annum, with board, apartments and laundry.

Applications with copies of recent testimonials to be made by September 26th, 1924, to the House Governor and Secretary at the Infirmary.

Devonshire Hospital, Buxton, Derbyshire (60 Beds)

ASSISTANT HOUSE PHYSICIAN.

The Committee invite applications for this post. To commence duties about September 30th, 1924. The successful candidate will be engaged for a period of not less than six months. The appointment is not open to adult Salary commencing *£150 per annum, rising to £175* after three months' service, with furnished apartments, board (excepting stimulants), and laundry.

Application, with copies of three recent testimonials, endorsed "Assistant House Physician," to be sent in at once

Laboratory and X-Ray Department.

Canvassing will disqualify.

By Order,
TOM B. HARRISON, General Supt. & Sec.

City of Bradford

ASSISTANT BACTERIOLOGIST.

Applications are invited for the post of Assistant Bacteriologist, salary £800 rising to £700 per annum.

The applicant appointed will be required to devote his whole time to the duties of the office which include work in the Public Health Laboratories of the

men should be able to show experience of Bacteriological and Pathological routine work. Facilities will be given for research work.

Further details and forms of application may be obtained from the Medical Officer of Health, Town Hall, Bradford, and should be returned to him not later than September 26th, 1924.

S. L. FLEMING,
Town Clerk.

Town Hall, Bradford.
September 8th, 1924.

Seamen's Hospital Society, Greenwich, S.E.

The Committee invite candidates for the appointment of HOUSE SURGEON at the Albert Dock Hospital, Connaught Road, E.16. Candidates must be male, double qualified, and registered. The elected candidate will be required to take up duty on October 1st, 1924.

Salary at the rate of £150 per annum and a proportion of fees, with board, residence, and washing. The appointment will be for six months.

Applications stating age, together with copies of not more than three recent testimonials to be sent in on or before September 24th, to the undersigned, from whom further particulars can be obtained.

By Order,
P. J. MICHELLI, Secretary.

Greenwich, Sept. 2nd, 1924.

Seamen's Hospital Society, Greenwich, S.E.

The Committee invite candidates for the appointments of HOUSE PHYSICIAN and HOUSE SURGEON at the "Dreadnought" Hospital, Greenwich. Candidates must be male, doubly qualified, and registered. The elected candidates will be required to take up duty on October 1st, 1924.

Salary at the rate of £150 per annum and a proportion of fees, with board, residence and washing. The appointments will be for six months.

Applications stating age, together with copies of not more than three recent testimonials to be sent in on or before September 24th, to the undersigned, from whom further particulars can be obtained.

By Order,
P. J. MICHELLI, Secretary.

Greenwich, Sept. 2nd, 1924.

Borough of Kidwelly, MEDICAL SELECTION COMMITTEE.

Wanted MEDICAL PRACTITIONER of considerable experience, general practice, aged 30 to 40 years. Tinworks, brickworks, collieries. Present panel about 600. Good private practice which can be extended. Vacancy caused by death.

Private practice no interference from committee after selection.

Applications with full particulars by September 24th, 1924, to the Chairman, Sir ALFRED STEPHENS, Broomhill, Kidwelly.

Bradford Royal Infirmary

Two HOUSE SURGEONS, one HOUSE PHYSICIAN (Male) wanted for November 1st next. Candidates must be single and legally qualified. Salary in each case £150 per annum with board, residence and washing. There are also six Resident Officers. Applications stating age, qualifications and previous experience (if any), with copies of recent testimonials to be received by the undersigned not later than Tuesday, September 23rd, 1924.

J. J. BARRON, Secretary Supt.

South London Hospital for Women, South Side, Clapham Common, S.W.4

The Board of Management invite applications from fully qualified Medical Women for the appointment of CLINICAL ASSISTANT in connection with the Department under the Public Health (Venereal Diseases) Regulations Act, 1916, to attend on Tuesday evenings and Wednesday mornings at the Out-Patient Department, commencing Oct. 1st next.

The appointment to be for a period of 12 months from October 1st. Honorarium £1 1s. per attendance. Applications with copies of testimonials to reach the Secretary at the Hospital, South Side, Clapham Common, S.W.4, not later than the first post on Tuesday, September 30th.

South London Hospital for Women, South Side, Clapham Common, S.W.4

The Board of Management invite applications from fully qualified Medical Women for the undermentioned Resident Assistant Appointments:—

HOUSE PHYSICIAN. For a period of six months from November 1st.

THREE HOUSE SURGEONS. Each for a period of six months from November 1st.

Salary in each case to be at the rate of £70 per annum, with board, residence and laundry. Full particulars may be obtained from the Secretary.

Applications with copies of testimonials to reach the Secretary at the Hospital not later than the first post on Tuesday, September 30th.

Miller General Hospital for SOUTH EAST LONDON, Greenwich Road, S.E.

Required HONORARY MEDICAL OFFICER in charge of the Skin Department. Applicants must be either (a) Graduates in Medicine of a recognised University, (b) Fellows or Members of the Royal College of Physicians, (c) Fellows of the Royal College of Surgeons of England and now engaged in general practice. The appointment will be for three years, at the expiration of which term the honorary will be eligible for re-election.

Applications stating age, and qualifications, with copies of not more than three recent testimonials, to be sent to the undersigned on or before September 30th, 1924.

(Signed) J. H. ROBINSON, Chairman.

West End Hospital for NERVOUS DISEASES, Pembridge Place, W.2

The Committee of Management invite applications for the following posts:

HOUSE PHYSICIAN for In-patients, to start duty October 4th, 1924. Salary £150 with board, residence and laundry. Candidates (Male) preferably with some neurological experience. Appointment in first instance for six months.

Applications with three recent testimonials, should be received by the undersigned by the first post on Tuesday, September 30th, 1924.

Candidates must be prepared to attend here on Wednesday, October 1st, 1924, at 4 p.m., to be interviewed by the Select on Committee.

J. P. WHITEHALL, B.A., Secretary.

77, Welbeck Street, W.1.

South Devon & East Cornwall Hospital, Plymouth (150 Beds)

HOUSE SURGEON (Male).
HOUSE PHYSICIAN.
ASSISTANT HOUSE SURGEON.

Salaries at the rate of £100, £50 and £50 per annum respectively, with board, residence and laundry. The appointments are tenable for a period of six months and are subject to renewal.

Candidates must be registered under the Medical Acts. Duties to commence October 11th, 1924.

Applications stating age and qualifications together with copies of recent testimonials to be addressed to the undersigned, without delay.

H. ARMSLEY PEARCE,
Secretary.

September 4th, 1924.

Westminster Hospital, S.W.1.

The Committee are about to appoint an HONORARY ASSISTANT ADMINISTRATOR OF ANÆSTHETICS. The appointment is for one year and subject to annual re-election thereafter.

Candidates who must be fully qualified and registered Medical Practitioners are invited to send their applications together with 12 copies of recent testimonials, by October 7th, to the undersigned.

By Order of the House Committee,
CHARLES M. POYSER, Secretary.

West Norfolk and Kings Lynn Hospital, Kings Lynn.

ASSISTANT RESIDENT MEDICAL OFFICER (either sex) required immediately. Must be qualified anæsthetist. Salary £150 per annum.

Applications to the Secretary.

Wanted — Well-qualified ASSISTANT with view to Partnership Old established practice, over £4 000 p a (private and panel) Exceptionally nice town, with good educational facilities within an hour and a half of London Splendid opportunity for energetic man with necessary capital —Address stating full particulars enclosing references and copies of testimonials, No 4732 B M J Office 429 Strand W C 2

Wanted — Permanent ASSISTANT Glamorgan Colliery Practice £350 rooms, light and attendance Early rise to suitable man Usual Bond —Address No 4755 BRITISH MEDICAL JOURNAL, 429 Strand W C 2

Wanted, early in October, an experienced outdoor ASSISTANT in Colliery General and Panel Practice in Glamorgan Usual bond —Address with references stating age qualifications experience nationality and other essential particulars No 4738 BRITISH MEDICAL JOURNAL Office 429 Strand W C 2

Wanted —Assistantship or LOCUMS by Univ Grad (male) in private or mixed practice single keen worker some experience gen prac includ ng panel L x H S Efficient accoucheur L M (Hons) Man Leeds or London pref but no objection, free Oct 18th —Add 4729 B M J

Wanted -October, Assistant, male single, abstainer R C Help principal at home and Branch Surgery London Salary £25 monthly indoor Commission to loyal worker later permanency if suitable —Address No 4717 BRIT MED JOUR Office 429 Strand, W C 2

Wanted —Assistant, with view to Partnership, in country practice, Eastern counties Ex H S or H P, single gentleman English or Scotch some experience gen prac preferred Usual bond —Address with particulars No 4725 BRIT MED JOUR Office 429 Strand W C

Wanted —Assistant, male, unmarried for a Country residential practice, near Leeds Hospital experience preferred State essential particulars —Apply, DR SPROAT, Rawdon Leeds

Wanted by M R C S (Eng.), L R C P (Lond) B A (Camb) ASSISTANTSHIP or PARTNERSHIP in Electro therapeutics in London Two years experience at leading hospital —Address No 4706 BRITISH MEDICAL JOURNAL Office 429 Strand W C 2

Wanted by Woman Graduate M B B Ch (T C D) ASSISTANTSHIP Indoor or out Considerable hospital experience and good references —Address No 4407 BRITISH MEDICAL JOURNAL Office 429 Strand, W C 2

Wanted —Assistant, with view to PARTNERSHIP North Wales Large Panel Industrial area —Address No 4704, BRITISH MEDICAL JOURNAL 429 Strand W C 2

Assistant wanted to live in £350 half night fees car Under thirty must have had surgical training since qualifying Major surgery in a good theatre Not a mining area Preference given to one desirous of settling and joining the firm later on —Address No 4726 BRITISH MEDICAL JOURNAL Office 429 Strand W C

Assistantship wanted by Scotch graduate (lady) with or without view to Partnership L x H S Experienced general practice, gynecology anæsthetics dispensing etc energetic excellent testimonials —Address No 4731 BRIT MED JOURN Office, 429, Strand, W C

Assistantship wanted by Male M B, B Ch (N U I) aged 25 strict t t Lx per ence in practice panel private midwifery dispensing Free October open to locum Excellent references, etc.—Address No 4713 BRITISH MEDICAL JOURNAL Office 429 Strand W C 2

Assistantship or Locums, wanted by M B, Ch B D P H woman Experience in general practice and hospital Keen on Midwifery Able to drive car or motor cycle Free middle of October — Address No 4714 BRITISH MEDICAL JOURNAL Office 429, Strand W C

Assistant (woman) required for permanent position in practice in London Hospitality during training and salary and commission afterwards Please state full particulars of experience qualifications height weight age etc —Address No 4742 B M J Office 429 Strand W C

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Wanted—Practice, Partner- SHIP or succession in large town preferably (not essential) Leeds or Bradford with good panel Experienced graduate Address in strict confidence to No 4737 BRITISH MEDICAL JOURNAL Office 429 Strand W C 2

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Parish of Portsmouth.

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The appointment will be made for a period not exceeding two years, and will be subject to one month's notice on either side Salary £250 per annum with furnished apartments rations and all other allowances

The appointment will be subject to the provisions of the Poor Law Officers Superannuation Act, for which purpose the value of the emoluments has been fixed at £125 per annum

Candidates must be single gentlemen, duly registered and possessing the qualifications required by the orders of the Ministry of Health, and preference will be given to candidates having a knowledge of the treatment of Mental Diseases

A Resident Medical Superintendent is in attendance

Applications to be made on printed forms, which may be obtained at the Guardians Offices, St Michael's Road Portsmouth and must be returned to me accompanied by not more than three recent testimonials and description of diplomas certificates of degrees, licences and other instruments held by the candidate, by 10 a m on Tuesday, September 30th, 1924

Selected candidates will have notice to attend and third-class railway fare and reasonable personal expenses will be allowed

By Order
Sept 16th, 1924 H C MORRELL, Clerk

Ministry of Health.

The Minister of Health invites applications from registered Medical Practitioners (Men) for three vacant appointments as MEDICAL OFFICER on the staff of the Ministry

The salary commences at £600 per annum and rises by yearly increments of £25 to £900 and then by yearly increments of £50 to £1 100 per annum In addition to the salary a bonus which

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[illegible] than 10 years standing and be experienced in public health or preventive medicine work

A Medical Officer is required to devote his whole time to the Public Service and must be prepared to work in any part of England or Wales if required to do so

Canvassing Members of Parliament or Officers of the Ministry will render a candidate liable to disqualification

Forms of application with further particulars of the appointments may be obtained from the
Director of Establishments
Ministry of Health Whitehall, S W

No application can be considered unless received on the prescribed form, not later than the 13th October 1924

Northampton General HOSPITAL.

HONORARY PHYSICIAN

The Board of Management invite applications for the post of Honorary Physician

Candidates must be Doctors of Medicine of one of

[illegible] field who is neither a Doctor of Medicine a Fellow or Member of the Royal College of Physicians of the United Kingdom, and on such candidate undertaking to become a Member of the Royal College of Physicians of the United Kingdom or a Doctor of Medicine of one of the Universities of the United Kingdom during the period of his provisional appointment

Full particulars of the appointment can be obtained from the Secretary Superintendent and applications with testimonials must reach him not later than September 23rd The election will take place on Tuesday, September 30th

C S RISBEE
August 2nd, 1924 Secretary Superintendent

North Ormesby Hospital, Middlesbrough.

Applications are invited for the post of ASSISTANT HOUSE SURGEON (male) duties to commence on October 15th Salary £150 a year, with quarters, board and washing

Applications stating age, qualifications previous experience (if any) with copies of not more than three recent testimonials should reach the undersigned not later than September 30th

H CUTHBERT HOPKYNS, Secretary

Nottingham General DISPENSARY Broad Street, Nottingham

Wanted RESIDENT SURGEON (Male) unmarried Must have Medical and Surgical qualifications Salary £250 with £25 increase per year up to £300 Apartments (not board), attendance, light and fuel This Institution is a non provident one No beds No Midwifery

Applications, stating age and accompanied by recent testimonials, to be sent by September 27th to

R J WILLATT, Secretary
5 Eldon Chambers, Nottingham

Royal Free Hospital, Gray's Inn Road W C 1

Applications are invited from male or female Resident Medical Practitioners for the post of MEDICAL REGISTRAR for a period of 15 months Duties to commence October 1st 1924 Intending Candidates should submit applications, and copies of three recent testimonials stating age and qualifications to the undersigned, on or before September 23rd, 1924

R R GARRATT, Secretary

Western Ophthalmic HOSPITAL, Marylebone Road, N W 1

Applications are invited for the posts of SENIOR and JUNIOR NON RESIDENT HOUSE SURGEONS The salaries are at the rate of £150 and £100 per annum respectively and the appointments are for six months The selected candidates will be required to take up duty early in October

Applications, accompanied by copies of three testimonials, should reach me by September 29th, 1924

H W BURLEIGH, Honorary Secretary

County Council of Durham.

MATERNITY AND CHILD WELFARE

ASSISTANT WELFARE MEDICAL OFFICER.

The County Health Committee invite applications for the appointment of Assistant Welfare Medical Officer (woman) at a commencing salary of £600, £25 to £650 per [illegible] ll be paid by the [illegible] Medical Practitioners not exceeding forty five years of age with special experience in Maternity and Child Welfare work and its organization The person appointed will be required to reside in Durham City or other approved centre and devote her whole time to the duties of the office and will be debarred from engaging in private practice

The appointment will be terminable by three months notice on either side

A deduction of 5 per cent will be made from the salary in accordance with the provisions of the Local Government and other Officers Superannuation Act 1922 which has been adopted by the Council, and the appointment will be subject to passing the County Council's medical examination in connection therewith

[illegible] fare Medical [illegible] than three [illegible] the County Medical Officer Shire Hall, Durham, not later than October 6th 1924

HAROLD JEVONS,
Clerk of the County Council
Shire Hall Durham September 15th 1924

London Lock Hospital, 91, Dean Street London W 1

The Board [illegible]
the post of [illegible]
Hospital C
duly registered Salary at the rate of £200 per annum with furnished flat, full board and laundry The appointment to be for 6 months duties to commence October 1924

Applications enclosing copies (only) of three recent testimonials to be sent to the undersigned at the Male Lock Hospital 91 Dean Street W 1, on or before 10 a m Monday, September 22nd, 1924

By Order of the Board
HY J EASON, Secretary

City of Liverpool

APPOINTMENT OF MEDICAL OFFICER OF HEALTH

Pursuant to the provisions of Article 8 (3) of the Sanitary Officers Order 1922 notice is hereby given that at a meeting of the Council of the City of Liverpool to be held on Wednesday, the 1st day of October, 1924, a Medical Officer of Health will be appointed for the District of the said City and that it is proposed to assign to such office the salary of £1 800 per annum

Town Clerk's Office, WALTER MOON
Liverpool Town Clerk
September 17th, 1924

University College Hospital, Gower Street W C 1

Applications are invited for the post of RESIDENT MEDICAL OFFICER Salary £150 per annum with board and residence The appointment carries with it certain additional emolument, amounting to about £50 per annum, in connection with the National Health Insurance Act

Applications accompanied by such evidence of fitness for the post as the candidate may desire to furnish must reach the Secretary by noon on Wednesday October 1st, 1924

University College Hospital

Applications are invited for the resident post of REGISTRAR at the Royal Ear Hospital Dean Street Soho The duties are framed to combine those of Registrar and House Surgeon The successful candidate will be elected for six months and will receive an honorarium at the rate of £50 per annum

Applications, accompanied by not more than three testimonials must reach the Secretary, University College Hospital Gower Street W C 1, by noon on Wednesday September 24th 1924

Royal Hospital, Richmond, Surrey

Applications are invited for the post of ASSISTANT HOUSE SURGEON (Male) to this Hospital. Remuneration £100 per annum with board furnished apartments and washing The successful applicant will be required to commence duties on October 1st 1924 Candidates must be fully qualified and registered. Applications stating age and experience with copies of three recent testimonials should be forwarded to the undersigned as soon as possible

RICHARD ALLEN Secretary

APPOINTMENTS—Important Notice.

(a) British Islands.

Medical Practitioners are requested not to apply for any appointment referred to in the following table without having first communicated with the Medical Secretary of the British Medical Association, 429, Strand, London, W.C. 2.

Town or District	Town or District	Town or District
CONTRACT PRACTICE.		
ENGLAND.	**WALES** *(continued)*	**PUBLIC HEALTH** *(continued)*
CANNOCK CHASE AND DISTRICT *(Clubs and Friendly Societies Appointments)*	OGMORE VALLEY GLAMORGAN *(Wyndham Colliery Medical Aid Society)* *(Workmen's Medical Scheme.)*	LANARK COUNTY *(Medical Officer of Health)*
MIDDLESBOROUGH *(Medical Aid Association of Workmen's Clubs.)*	TONDU & ABERKENFIG GLAMORGAN *(Workmen's Medical Scheme.)*	LEEDS EDUCATION COMMITTEE *(Chief Assistant School Medical Officer)*
SOUTH BANK & ESTON *(Medical Aid Associations or Workmen's Clubs.)*	**PUBLIC HEALTH.**	LINCOLN CITY EDUCATION AUTHORITY. *(Woman Assistant School Medical Officer)*
WALES.	ARGYLLSHIRE EDUCATION AUTHORITY *(Executive School Medical Officer)*	MIDLOTHIAN EDUCATION AUTHORITY *(School Medical Officer)*
ABERTRIDWR GLAMORGAN *(Workmen's Medical Scheme.)*	CHELSEA METROPOLITAN BOROUGH *(Assistant Medical Officer of Health)*	NORTHUMBERLAND COUNTY COUNCIL *(Woman Assistant Medical Officer of Health)*
EBBW VALE MON *(Workmen's Medical Society)*	CHESTER LE STREET RURAL DISTRICT COUNCIL *(Medical Officer of Health)*	NOTTINGHAMSHIRE *(County Medical Officer of Health)*
GILFACH GOCH GLAMORGAN *(Workmen's Medical Scheme.)*	FIFE EDUCATION AUTHORITY *(Assistant School Medical Officer)*	ORKNEY COUNTY *(School Medical Officer. Medical Officer of Health and Tuberculosis Officer for County and Medical Officer of Health for Burgh of Kirkwall combined appointment)*
LLWYNYPIA CLYDACH VALE PENYGRAIG GLAMORGAN *(Workmen's Medical Scheme)*	GLASGOW EDUCATION AUTHORITY *(Assistant School Medical Officers)*	SOUTHWARK METROPOLITAN BOROUGH *(Tuberculosis Officer)*
MARDY GLAMORGAN *(Workmen's Medical Scheme)*	INVERNESS-SHIRE EDUCATION AUTHORITY *(Temporary Assistant School Medical Officer)*	WIGAN COUNTY BOROUGH *(Assistant School Medical Officer)*
OAKDALE MON *(Medical Officer for Medical Aid Association)*		

(b) Colonial Medical Service.—WINDWARD ISLANDS MEDICAL SERVICE (Grenada with Carriacou & Prince Rupert and St. Lucia)

(c) Overseas Appointments.

Medical Practitioners are requested not to apply to any appointment referred to in the following table without having first communicated with the Honorary Secretary of the Division or Branch named in the second column or with the Medical Secretary of the British Medical Association 429 Strand, London, W.C. 2

Town or District	Hon. Sec. of Division or Branch	Town or District	Hon. Sec. of Division or Branch	Town or District	Hon. Sec. of Division or Branch
NEW SOUTH WALES *(All Friendly Society Appointments)*	Dr. P. H. TODD (Hon. Sec. New South Wales Branch) B.M.A. Building 30-34 Elizabeth Street Sydney N.S.W.	QUEENSLAND *(Brisbane Associated Friendly Societies' Institute.)*	Dr. R. MARSHALL ALLAN (Hon. Sec. Queensland Branch) Adelaide Street Brisbane	VICTORIA *(All Institute or Medical Dispensaries)*	Dr. FRANK DAVIES (Hon. Sec. Victorian Branch) Medical Society Hall E. Melbourne Victoria.
				WESTERN AUSTRALIA *(Contract and Lodge Practices.)*	Hon. Sec. Western Australian Branch No. 6 Bank of New South Wales Chambers St. George's Terrace Perth

Address 429 Strand W.C. 2
September 17th 1924.

By order of the Council of the British Medical Association
ALFRED COX, Medical Secretary

City of Leeds

APPOINTMENT OF ASSISTANT CLINICAL TUBERCULOSIS OFFICER

[illegible] a general knowledge [illegible]

[illegible] £600 [illegible]

The person appointed will be required to undergo [illegible] and to contribute to the [illegible] under the Local Superannuation [illegible] be terminable by [illegible]

Forms of application may be obtained from the Medical Officer of Health, 1 Marlborough Buildings, Vicar Lane, Leeds.

Application endorsed "Assistant Tuberculosis Officer" together with copies of not more than three recent testimonials must be delivered at my office, 23 Great George Street, not later than Wednesday, September 24th, 1924.

Canvassing, any member of the Council will disqualify.

ROBERT E. FOX, Town Clerk.

September 6th, 1924.

National Hospital for Diseases of the Heart, Westmoreland Street, W.1

PHYSICIAN TO OUT-PATIENTS

The Committee of Management invite applications for the post of Physician to Out-patients to fill a vacancy on the Honorary Medical Staff caused by the death of Sir Sidney Russell Wells, M.D., F.R.C.P.

Candidates must be Graduates in Medicine of a University of the United Kingdom and Fellows or Members of the Royal College of Physicians of London.

Applications, with ten copies of not more than three recent testimonials, should be sent to the undersigned not later than Saturday, October 4th, 1924.

ROBERT G. E. WHITAKER, Capt., Secretary.

St. Mary's Hospitals, Manchester.

Two HOUSE SURGEONS for the Whitworth Street West Hospital (Maternity) and two for the High Street Hospital (Gynæcological and Children) each for a period of six months. Salaries at the rate of £50 per annum with board and residence.

Applications, with copies of three testimonials, to be sent to the undersigned not later than Monday, September 22nd, 1924.

R. RATCLIFFE, Secretary.

The Prince of Wales's General Hospital, Tottenham, N.15.

[illegible] post [illegible]

with resident [illegible]

The appointments are held for six months, but the holders are eligible for re-appointment for a further term.

Candidates (male) must be duly qualified and registered, and applications, together with copies of three recent testimonials, to be sent to me on or before the first post on Monday, 22nd September next.

FREDK. W. DREWETT, Director.

August 26th, 1924.

The Royal Infirmary, Sheffield (330 Beds).

The Weekly Board of Management invite applications for the post of RESIDENT SURGICAL OFFICER. The salary attached to the appointment is £200 per annum with board and residence.

Applications, with copies of testimonials, to be addressed to the undersigned, endorsed Board Room.

JNO. W. BARNES, Secretary.

August 30th, 1924.

The Queen's Hospital for CHILDREN

Hackney Road Bethnal Green, E 2 (Telephones 304 and 534 Dalston)

The Committee invite applications for the post of PHYSICIAN IN CHARGE of the Skin Department Candidates, who must be Fellows or Members of the Royal College of Physicians of London should send in their applications with copies of testimonials, on or before October 15th, 1924 and should be prepared to take up the duties immediately after appointment

Information re duties and times of attendance on application

T GLENTON KERR, Secretary

September 15th, 1924

The Queen's Hospital for CHILDREN,

Hackney Road Bethnal Green, E 2 (Telephones 304 and 534 Dalston)

Medical Residents required as follows: Two HOUSE PHYSICIANS November 1st, 1924 One CASUALTY HOUSE SURGEON, November 7th, 1924 Six months appointments

Salary £100 per annum, with board, residence, and washing

Candidates should be doubly qualified

Applications which must be made on forms to be obtained from the Secretary, must be sent in with testimonials by October 11th 1924

T GLENTON KERR Secretary

Queen's Hospital for Children,

Hackney Road London E 2

HOUSE SURGEON required on October 7th Six months appointment Salary £100 per annum with board residence and laundry

Candidates should be doubly qualified and preference will be given to those who have had previous experience

Applications, with testimonials should be sent by the 27th inst and must be made on forms which will be supplied by the undersigned

T GLENTON KERR Secretary

September 8th 1924

West Riding Mental HOSPITAL, WAKEFIELD

Vacancy for JUNIOR ASSISTANT MEDICAL OFFICER (Male) Experience not necessary, but Post-graduate Medical or Surgical experience desirable Junior Officers who decide to specialize in Mental Diseases receive complete training for the Diploma in Psychological Medicine of the University of Leeds and on gaining this are eligible for promotion to senior rank Salary £400 rising by £25 per annum to £500 (and on promotion to £600), together with apartments board washing, and attendance Pensionable under the Asylum Officers Superannuation Act 1909

Applications to be sent immediately to the Medical Director

Belgrave Hospital for CHILDREN

(Incorporated) 1, Clapham Road S W 9

The Committee of Management invite applications for the posts of HOUSE PHYSICIAN and HOUSE SURGEON, which will become vacant on October 31st, 1924

Applicants (men) must be fully qualified and registered The appointments are for six months with board and residence and washing provided. Salary at the rate of £100 per annum in each case

Applications, with copies of testimonials to be forwarded on or before September 30th 1924, to the undersigned from whom further particulars may be obtained By order

THOMAS CLAPHAM Secretary

Royal Chest Hospital,

City Road, E C (Royal Northern Group of Hospitals)

A vacancy occurs for a PHYSICIAN with charge of Out-patients Candidates must possess the degree of M D or M B, obtained by examination at a British University and be Fellows or Members of the Royal College of Physicians of London

Applications should be sent to the undersigned, from whom particulars of the office and details with regard to the submission of testimonials etc, may be obtained

GILBERT G PANTER Secretary

Royal Northern Hospital, Holloway N

City of London Hospital for DISEASES OF THE HEART AND LUNGS

Victoria Park E 2

The Committee of Management are desirous of appointing a PHYSICIAN to Out patients. Candidates must be Fellows or Members of the Royal College of Physicians of London An honorarium is attached to the post

Applications accompanied by copies of testimonials, should reach the Secretary at the Hospital not later than Monday October 6th 1924

GEORGE WATTS, Secretary

ATKINS

MEDICAL TRANSFER AGENCY.

Partners

W S ATKINS (Late of ARNOLD & SONS London)
J R LOWNDS (B A Cantab L R C P)

43, BEDFORD STREET, STRAND, W.C.2.

(A few doors from "The Lancet" Office)

Telegrams "Positions Westrand, London"
Telephone Regent 229

LOCUM TENENS and ASSISTANTS supplied

FOR DISPOSAL

London, S W —A General PRACTICE situated in a good residential suburb Receipts £650 panel nearly 300 Fees 2/6 upwards Ample scope for young man. Vendor retiring Excellent corner house with 6 bedrooms, etc Premium for practice 1½ years purchase Premium for house £2,500, part can remain on mortgage—Folio 623

Midlands —An old-established general PRACTICE situated in a small Country Town Receipts £1 200 Fees 3/6 upwards Panel 500 Appointments £100 Scope for increase Vendor retiring Excellent house containing 5 bedrooms etc Over 2 acres of grounds, etc Premium 1½ years purchase —Folio 617

Norfolk —A General PRACTICE situated in a country district Receipts £1 600 Panel nearly 900 Good fees Nice house with excellent garden etc Rent £35 per annum. Premium £2 500 —Folio 600

Notts — A Middle and working class PRACTICE (town and country) Receipts £1,200 Fees 3/6 upwards Small corner house containing 3 bedrooms etc Rent £60 per annum —Folio 662

London — City Practice Receipts £1 250, including appts £500 Panel 100 Fees 3/6 upwards Vendor retiring Ample scope Nice house in central position at rental Premium £2 000 —Folio 667

Salop —A Partner required for an old established Practice situated in a Market Town Receipts over £3,500 Panel 2 000 Incomer should have house at rental Premium purchase —Folio 888

Purchasers stating their requirements can have details of other Practices not advertised

Telephone Langham 2728
Telegrams "Assistamo, London"

NURSES

MALE OR FEMALE.

TRAINED NURSES FOR MENTAL, MEDICAL, SURGICAL AND FEVER CASES

Nurses reside on the premises and are available for urgent calls Day or Night.

THE NURSES' ASSOCIATION

(In conjunction with the MALE NURSES ASSOCIATION)

29, York Street, Baker Street, London, W 1

(Mrs) MILLICENT HICKS *Superintendent*
W J HICKS *Secretary*

ST. LUKE'S HOSPITAL.

ESTABLISHED 1751

PRIVATE NURSING STAFF DEPARTMENT

TRAINED NURSES for **MENTAL** and **NERVOUS CASES** can be had immediately

Apply to LADY SUPERINTENDENT, 19, Nottingham Place London W 1 Telephone Mayfair 5120

NORTHERN BRANCH —Apply, LADY SUPERINTENDENT, 57 Clarendon Rd Leeds Phone Leeds 21165

York Road (General Lying-IN HOSPITAL)

Lambeth S E —Established 1703 Patrons H M THE QUEEN and H M QUEEN ALEXANDRA Medical Students and Qualified Practitioners admitted to the Practice of this Hospital Telephone 794 Central For rules, fees etc apply ROSE E WHYTE, Secretary

ARNOLD & SONS,

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50, 50A, 52, WIGMORE STREET, LONDON, W.1.

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Telegrams:
"INSTRUMENTS, WESDO, LONDON,"

LOCUM TENENS provided at short notice.

FOR SALE.

LONDON W —Old established Suburban PRACTICE *Panel over 1 600 Income over £1 700* p a House to rent Premium 2 years purchase

S WALES —Well established PRACTICE Panel 150 Income £600 Small house to rent Premium £700 (Assistantship with view entertained)

SOUTH COAST —PARTNERSHIP in old established G P Panel over 1,000 Income over £4 000 p a No midwifery or night work. Premium for one third share, 2 years' purchase

NEWCASTLE UPON TYNE (near) —Old established non panel PRACTICE Good sized house 3 reception 5 bedrooms maid's room, waiting room 3 income (certified) £ 1s Mid wifery £ Hospital appointment Three appointments No night work Premium £3 000 Vendor retiring Good introduction Scope for Surgery

CATHEDRAL CITY (near London) —Old established G P, situated in a charming town. Panel over 1,500 Income over £1 460 p a. House of 6 bedrooms etc Large old world garden Rent £70 p a Premium £2 000

SOUTH COAST —PARTNERSHIP in old established G P Panel 3,000 Income £3 200 Two fifths share at 2 years purchase Excellent house

CHESHIRE —PARTNERSHIP in old established G P situated in large town Panel nearly 2,000 Income £1 707 Premium 2 years purchase for one third or one half share

LONDON S W Old established G P Panel 800 Income £1 000 Small house garden etc. Low rental Premium £1 700 to include lease.

WEST COUNTRY —Well established G P situated in fashionable town Panel over 1 500 Income nearly £1 700 Excellent house at rental. Premium 1½ years purchase

LONDON, S W —PARTNERSHIP in old established Practice situated within 10 minutes of West End Income about £3 300 Panel about 1 000 Half share 2 years purchase

Purchasers, stating their requirements will be sent particulars of other suitable Practices and Partnerships for sale free of charge

Please address all communications to the Manager, Mr W H. GRANT, Medical Transfer and Insurance Department.

LEE & MARTIN, LTD.,

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TELEGRAMS	TELEPHONE
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Transfers of Practices and Partnerships arranged

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Telephone 5932 City

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THE OLDEST AND LEADING MEDICAL AGENT

MR. PERCIVAL TURNER, LTD.

(Established over 40 years)

4 & 5, ADAM STREET, STRAND, W.C.2

Telegrams "EPSOMIAN, LONDON"
Telephone GERRARD 389

Printed Prospectus of Terms, etc. post free on application.

Exchange of Practices, *South West County*—Owner of an old estab a charming is open to tiee in Wes of London or in a good suburb—Apply in confidence No 7592.

Urgent Sale Unusual opportunity £2 200 a year increasing easily worked PRACTICE in a Seaport Town in South Wales. Very little night work Fees for visits from 5/ upwards Panel 1,450 Excellent corner house (not large) with garden Every investigation Personally investigated and recommended. For a quick sale the low price of one year's purchase will be accepted—Apply No 7590

London, W—About £1,700 a year First-class PRACTICE non dispensing No panel Fees 21 - upwards Excellent house on lease Purchaser must be a graduate middle-aged and well qualified, with ample means—Apply No 7595

London, S W—Partnership About £3 000 a year Panel 1 000 Very old-established Practice Midwifery fees 2 to 10 guinea Visits 3 6 to 7/6. Flat available. Premium £2,750—Apply No 7585

Suffolk—Nearly £1,600 a year Non-dispensing PRACTICE Panel 700 Fees 5 to 10 6 Good detached house large garden Rent £70 Some surgery and ample scope—Apply No 7583

Yorkshire—Average £1,286 Visiting fees 3 6 to Few midwifery cases se—Apply No 7581

North-West County—University Town. £1,200 a year Old established Visits 5/ to 10 6 Midwifery 4 to 7 guinea Freehold house standing in own grounds Scope.—Apply No 7579

Death Vacancy—London, S E About £1,524 per annum Cash and panel PRACTICE Visiting fees 2/6 to 5/ Excellent premises on lease Small panel No Sunday or night work—Apply No 7576

Near Manchester—Nearly £2 000 p.a. Panel worth about £800 p.a Moderate house with separate surgery to rent Premium 1½ years purchase easy terms Good schools near—Apply No 7565

Eastern County Partnership About £2 200 p.a. Panel about 2 000 and other appointment. Fees 3 6 up One-third share for disposal with succession in about 3 years Apply No 7564.

London, S W—Partnership and succession £2 000 a year Half share for disposal immediately Panel 1 500 Old established Good fees. Excellent house and large garden Prem 2 yrs. purchase—Apply No 7560

Nottinghamshire—Over £1 250 a year Middle and working class. Panel 700 rapidly increasing Fees chiefly 3 6 to 7 6 and up to 21. Small house with garage on lease All sport and good school—Apply 7549

Cheshire—Nearly £4,000 a year Old-established Practice. HALF SHARE for Sale at 1½ years purchase. Panel about 1 400 Appointments £45 Good fees Good house and garden to rent.—Apply No 7536

Midland Town—About £1,100 a year Old-established PRACTICE Panel 350 Appointment £40 Very little midwifery Large house and garden Prem £1,800 including drugs etc.—Apply No. 7534.

Home County—About £800 a year Very old established Good appointments Small panel Exceptionally good house for sale or might let—Apply No 7522

MR. HERBERT NEEDES,

31, BEDFORD ST., STRAND W C 2.

(Gerrard 3 3) —— (Estab 1 0)

This Agency (the Oldest in the kingdom) undertakes the SALE of PRACTICES and PARTNERSHIPS AUDITS and VALUATIONS and the SUPPLY of LOCUMS and ASSISTANTS

No Charge to Purchasers. All Business receives Mr NEEDES personal attention.

1 SEAPORT TOWN (N W Coast)—Old-established PRACTICE of about £1 500 a year Panel 1 100 and appointments Little midwifery Convenient residence with garage and small garden on lease at £100 Premium £2 300

2 WITHIN EASY REACH of the Market Town panel PRACTICE of about £1,200 a year Freehold Easy sale Vendor going abroad. Fees good House on long lease and moderate rent Price for quick sale £1 400

3 NORTH OF ENGLAND—PRACTICE of £1,400 a year in good business centre Panel £ 50 Fees from 3 6 Good corner house to sale. Vendor retiring Price for goodwill £2 000

4 LONDON (Central)—General PRACTICE of about £1 250 for Sale Good appts £550 Small panel No midwifery House on long lease at £125. Price £1 500

5 LONDON (S E.)—Old-established PRACTICE conducted mainly as a Local up Surgery Receipts £1,300 No panel Expenses light Efficient introduction assured Terms moderate

6 REQUIRED—Country or Country Town PRACTICE of £1,500-£2,000 a year anywhere South of Oxford Will buy house if essential

7 REQUIRED—PRACTICE or PARTNERSHIP producing £1 000-£1,200 a year in or near London by Graduate with experience and capital

8 REQUIRED—PRACTICE of £500-£800 anywhere in pleasant country district within 100 miles

Mr Needes will receive details in strict confidence

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MEDICAL TRANSFER AGENCY,

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Telephone Central 1112

tion No charge made unless a sale be effected. LOCUM TENENS and ASSISTANTS supplied

FOR SALE.

1 NORTHERN SEAPORT TOWN—General PRACTICE returning £3,300 a year Good fees No midwifery Scope for panel now age

2 PRACTICE panel gar

3 dille fel t ing about £700 a year Scope for increase House will be Let or Sold Offers invited.

4 SOUTH WALES—Working-class PRACTICE Receipts £700 (£400 from appointments nearly £300 from panel) Small house Rent £22. Premium £700 on terms

5 MIDLANDS—Pleasant residential Town. Middle-class PRACTICE Receipts £1,300 a year Panel 400 Fees good Corner house with surgery attached Rent £60 long lease Prem um 1½ years' purchase.

6 LIVERPOOL (Suburb)—Well-established good class private PRACTICE non panel Receipts £1 200 p.a Visiting fees 5/ to 10 6. Good detached house Freehold price £1,250 Premium for Practice £2,000

7 SUSSEX COAST TOWN—PARTNER wanted for middle and working-class Practice. Receipts

8

9 Rent of surgery 25 per week. Whole house can be had if desired. Premium £800

No charge to purchasers or for inquiries.

BLUNDELL & CO.,

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Late of Walter House, 418, Strand, W C.

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LOCUMS SUPPLIED

Liverpool—Middle and working-class PRACTICE of £700 with great scope, for sale owing to illness. Panel 400 Very little midwifery Premium only £800 for quick sale. Convenient house can be bought cheaply

North London.—Practice of £1,600 Panel 1 100 Appointments £420 House with side entrance to surgery and small garden Rent £63.

Cornwall—Unopposed PRACTICE of £1,500 in beautiful district near the sea. Panel worth £550 Appointments £60 House with surgery garage etc. Rent £40 on lease. Premium 1½ years purchase

Within 100 Miles—Country PRACTICE of £1,000 in good hunting district Panel and Appointments £200 No resident opponent Good house with stables and 1½ acres Rent £80 Prem. £1,500

Notts—Partnership with Success on Half share of over £1,600 House with nice garden and garage a private entrance to surgery Can be had on lease.

Gloucestershire—Small town with a large hospital PRACTICE of nearly £1,800 Panel 400 Appointments £120 Beautiful house and garden with tennis court on lease

Scotland—Unopposed PRACTICE of £8 0 Panel 300 Appointments £100 Good house with well-set garden Price £1,500 for house and practice £1 000 down

New Zealand—Unopposed PRACTICE of £1,800 in beautiful district. Good house Rent £100 Scope for surgery Premium £1,500

Surrey—Partnership in first-class Practice in best residential district Receipts over £7 000 One-sixth share for sale a 2 years purchase. Excellent house in permanent position to rent

Within 25 miles—Middle and working-class PRACTICE. Receipts average £1 700 Panel over 1 000 Vendor retiring House to rent £42. Premium 1½ years purchase.

East Coast—Steadily increasing PRACTICE in beautiful seaside resort in Yorkshire Present average £1,500 Panel 1 000 Excellent house with good garden and garage on lease

Within 80 miles—Old-established PRACTICE of £1 280 in nice town Panel 1 000 Nice house with good garden. Rent £70 School, scope for

London, S W—Cash Practice doing about £450 including panel Well-fitted room small flat on ground floor Great scope for increase.

Northumberland—Old-estab-lished non panel PRACTICE in large town Receipts over £3 000 Scope for midwifery and panel Good house can be rented

Opening—In small Village in beautiful district Receipts about £300 including 100 panel House with nice garden Rent £40 Will be sold cheaply

Within 80 miles—Practice of £1 380 in country town in beautiful district Nearly half the income from panel and appointments Rent £45

Midlands—Surgeon required as PARTNER for half share of £3,000 Scope for many surgery and vacancy on staff of hospital Premium £2,100 Highest reference

Death Vacancy—Partnership Third share of £4 500 Panel practice in open suburb Scope for midwifery Rent £75.

Lancs—Practice of £2,000 in prosperous town Scope for Surgery and vacancy on staff Panel 700 Good house rent £90 Premium only £1,800 £1,000 down.

Purchasers finding their requirements not met Particulars of other Practices now advertised

BOVRIL MEDICAL AGENCY, Ltd.

ALDINE HOUSE,

10-13, BEDFORD STREET, STRAND, LONDON, W.C.2.

Telegrams BOVMEDICAL, WESTRAND LONDON *Telephone* GERRARD 3543 (3 Lines).

Established by Bovril, Limited, to provide an efficient and reliable transfer service for the Profession at minimum charges

Under the personal direction of Dr J. FIELD HALL, and Mr J. C. NEEDES.

An Accountant's certified report is required in respect of every practice or partnership the disposal of which is undertaken by the Agency

The commission chargeable in respect of any practice in Great Britain placed exclusively in the hands of the Agency for transfer has been fixed on an exceptionally favourable scale, the maximum chargeable on any transfer being £50 In the case of Foreign and Colonial practices similarly placed the maximum is £75

NO CHARGE IS MADE TO PRINCIPALS FOR THE INTRODUCTION OF LOCUM TENENS OR ASSISTANTS

Accountancy and Legal services furnished by the Agency, where desired, at moderate inclusive charges.

PRACTICES AND PARTNERSHIPS FOR SALE.

1 MIDLANDS —COUNTRY TOWN within two hours of London Old established mixed general PRACTICE with a steady average income of £1 400, including £100 from appointments, probably transferable Panel of about 800 Fees 2/6 to 10/6 About 50 midwiferies a year at 2 to 6 guineas There is an up to date Cottage Hospital and the purchaser would be on the Staff House contains, in addition to professional rooms dining room, drawing room 4 bedrooms, dressing room, bathroom etc electric light garage, small garden. Held on lease, with over 10 years to run at a rental of £44 per annum Prem £2 100

2 FAVOURITE INLAND SPA —PARTNERSHIP A well qualified and experienced man, with a good personality, is desired by a Consulting Physician as Partner with ultimate succession The present income is only about £1,500 a year, but there is very considerable scope for increase and the newcomer would be encouraged to undertake general practice without accounting to the partnership for the fees so obtained There is a choice of houses both on rental and to buy in the residential part of the town At present the fees are mainly 1 and 2 guineas but there are a few at 10/6 Premium for the half share £1 500

3 LANCASHIRE [illegible] very old established PRACTI [illegible] in a delightful agricultural and [illegible] ver 5 000) close to the sea Cas[illegible] average about £2 350 per annum including appointments worth £150 and panel of 800 Held 8 years Nearest opposition 3 miles Railway station 2 miles Visits 2/6 to 21/ Midwifery 2 to 10 guineas about 50 cases yearly Pleasant house containing waiting and consulting rooms reception 6 bedrooms, bathroom (h & c) Good garden garage etc Rent £45 on lease Premium £3 500 £2,000 down Satisfactory reasons for selling

4 NORTH WALES —DEATH VACANCY —Village PRACTICE Situated in the centre of a quarrying district and there are about 500 panel patients in addition to the ordinary patients The slate industry is doing well and the prospects for a young, energetic man are good There is also a Parish Appointment Income about £500 Locum in charge Reasonable offer accepted

5 NEWCASTLE UPON TYNE AREA —Old established PRACTICE held by Vendor many years Steady average income of about £3 350 There is a Hospital in the town and a reasonable prospect of obtaining an appointment on the Staff There are various appointments worth about £150 a year Very little midwifery but large scope if desired Fees 4/6 to 21/ House is Vendor's freehold it is well situated, and will be let or sold Excellent educational facilities. Premium, to include drugs, etc, only £3 000 payable £2 000 down

6 GROWING COAST TOWN within easy access of London Old established very sound mixed general PRACTICE Average income over £1 800 Fees mainly 3/6 to 10/6 Very little midwifery Very good corner house with small garden There is a Cottage Hospital in the place and the Practice offers very good prospects to a Surgeon. Premium 1½ years purchase

7. BORDERS OF CO DURHAM AND NORTHUMBERLAND — Old established village PRACTICE Average income £813, but there is scope for increase 300 panel patients Advice and medicine 2/6 3/6, and 5/ Visits 3/6 to 10/6 medicine extra Small convenient house Price for house and practice £2 000

8 MIDLANDS —In a delightful Town (population over 15 000) amidst beautiful surroundings and within 4 hours run of London an old established lucrative PRACTICE worth over £3,300 per annum, including large panel Good fees The house is well situated, has ample accommodation and can be rented on lease at £100 a year Premium £3 000 cash and £2 000 by instalments Satisfactory reasons for selling Educational facilities and sport of all kinds

9 RESIDENTIAL TOWN within 100 miles of London. Non dispensing chiefly better class PRACTICE, producing an income of about £2 000 a year including small panel of about 600 Fees from 2/6 to 21/, mainly 7/6 upwards Only a few cases of midwifery yearly at 2 to 25 guineas Attractive and commodious house (3 reception 7 bedrooms etc garden) on rental at £100 p a Good society and sport of all kinds Premium £4 000, payable £2 000 cash, and £2,000 by instalments

10 HOME COUNTY —Hospital Town, within 50 miles of London PARTNERSHIP A one half share in a mixed general practice, held by senior partner 20 years Average income over £2 000 Panel of 780 Advice and medicine from 2/6 Visits and medicine from 3/6 Very little midwifery Detached double fronted house, with ample accommodation and good garden Price £2,000 of which £1 000 can remain *on mortgage* *There is an up to date* Hospital, and an early vacancy on the Staff is probable Good sport, schools etc Premium 2 years purchase half by arrangement

11 SOUTH COAST —LARGE TOWN PARTNERSHIP A quarter or one third share in a middle and working class Practice Income over £4 000, with scope Panel of over 4,000 Fees 2/6 to 7/6 chiefly 3/6 to 5/ No midwifery, and very little night work Purchaser should preferably be not over 30 From 2 years purch

12 PARTNERSHIP —LANCS Large Town The third share of an old established lucrative and money making Practice worth, for the last financial year, £3,722, can be acquired by a young unmarried man Panel list of over 1 800, and patients operative class Visits 2/ to 5/ Midwifery 2 to 3 guineas Ingoing partner could reside with Vendor or unfurnished rooms are available Golf to be had Premium 1½ years purchase

13 CHESHIRE —Twelve months PARTNERSHIP introduction will [illegible] middle class and panel Practice [illegible] at year £2 100 Situated in a large [illegible] 0) close to seaside resort Visits [illegible] guineas, about 100 cases yearly Car not required Good house, with garage, available at end of introduction Premium 1½ years purchase

14. WEST CENTRAL —Sound easily worked PRACTICE of about £770 a year There is very good scope as the Vendor has suffered from ill health since the war Fees mostly 10/6 Very convenient flat Rent £58 Premium £1 100

15 LONDON NORTH —Old established PRACTICE, producing an income of £1 400 a year including appointments worth £320 Panel of 320 but this can be largely increased if desired Visits and medicine 3/6 to 7/6 Practice is easily worked with no conveyance Nice house in good decorative repair with fair garden Rent £125 Garage can be let off at £26 or £54. Premium £2 000

16 NEW ZEALAND (NORTH ISLAND) —Unopposed and increasing PRACTICE, in a very beautiful district on main line, about 30 miles [illegible] y £1 300 a year, including Visits into Township 10/, [illegible] and up to date house (built [illegible] surgery, 2 reception rooms, 3 bedrooms and sleeping porch bathroom etc with an acre of ground tennis court, etc Rent £120 on lease Premium £1 000

17 EASTERN COUNTIES —Within 4 hours run of London Practically unopposed PRACTICE old established and situated in very pretty Country Town with beautiful surroundings Receipts nearly £1 800 per annum including appointment of £50 and panel of 900 Visits up to 21/ Very little midwifery Car optional Railway station Charming residence (with ample accommodation) in its own grounds of ¾ of an acre Price £2 900 all of which can remain on mortgage at 5 per cent Premium for Practice £2 500 Excellent prospects Tennis, golf hunting shooting etc

18 YORKSHIRE —Large clean town Well established middle and working-class PRACTICE Income £1,300 including £580 from panel, and £350 from appointments Advice and medicine from 2 6 visits and medicine 3/6 upwards Very little midwifery, lowest fee 2 guineas Good detached freehold house, with small garden Electric light Garage Price £2 500 of which £1 500 could remain on mortgage Premium £1 400 cash

19 NORTH EAST COAST —FAVOURITE RESORT Old established non-dispensing PRACTICE Income only about £400 per annum at present but there is very large scope for increase by a young well-qualified man Good fees Excellent corner house with 3 reception 6 bed garden Freehold Price for House and Practice £2 500

20 FAR EAST —Wanted in November a young unmarried ASSISTANT (not over 30 years of age) on a two years agreement, with possibility of succession at end of engagement Return passage paid Interview in London essential before ultimate engagement

Profits accruing to Bovril, Limited, from the Agency will be allocated amongst recognized Medical Charities.

Full Schedule of Terms and Conditions will be forwarded on application.

THE

SCHOLASTIC, CLERICAL & MEDICAL ASSOCIATION,

(Formerly at 22 Craven Street, Trafalgar Square W.C.) LIMITED.

12, STRATFORD PLACE, OXFORD STREET, W.1.

Telegraphic Address TRIFORM, WESDO LONDON" *Telephone* MAYFAIR 2400

Practices and Partnerships for Disposal. No charge to Purchasers

SURREY—(1) PARTNERSHIP Practice in most desirable Residential district; house could be obtained if necessary; Bart's or London University; aged 40 to [illegible] Hospital in Town. Share worth about £1,000 p.a. at first. DISTRICT up the class Practice averaging about [illegible] with garage to be sold [illegible]

MIDDLESEX—(3) PARTNER required in very old-established and lucrative practice of over £4,500 per annum in industrial district. Panel 4,000. Small house (4 bedrooms). Rent £52. Premium one third share two years purchase.

LONDON S.E.—(4) Well established and very lucrative PRACTICE about £3,625 p.a. in Industrial Centre. Panel 4,500. Very good house and basement House (9 bedrooms) to be sold. Would suit two men. Premium £4,000.

LONDON (WEST)—(5) Old established PRACTICE nearly £1,600 in Bayswater. Panel about 1,500. Not much Midwifery. House with 3 bedrooms. Premium one and a half years purchase.

HUNTINGDONSHIRE—(6) Very old established unopposed Country PRACTICE between £1,100 and £1,200 p.a. Panel 700 (about). Small house (3 or 4 bedrooms). Rent £50 (larger house could be purchased). Premium £1,550.

HOME COUNTY—(7) Unopposed Country PRACTICE over £770 p.a. within 30 miles of London. Panel 531. Large old-fashioned detached house (9 bedrooms) to be sold. Price for practice £1,164.

SOMERSET—(8) [illegible] TICE of £1,100. Panel 600. [illegible] with bath room. Garden and garage. £00

YORKSHIRE—(9) Unopposed Country PRACTICE, between £700 and £800 p.a. (£240 of which is panel). In picturesque Growing Village. Model detached house with garden, garage, electric light, bath (h. & c.) etc. for sale. Premium one and a half years purchase.

HOME COUNTY—(10) Very old established PRACTICE [illegible] dom. about £900 p.a. in Residential District under 20 miles from London. Excellent detached house (11 bedrooms) with large garden—suitable for reception of Resident Patients. Moderate premium. [illegible]

EASTERN COUNTIES—(12) Very old established unopposed Country PRACTICE averaging £1,650 p.a. Panel 850. Modern detached house (6 bedrooms) in acre ground. Rent £80 on lease. Premium one and a half years purchase.

LONDON, S.E.—(13) PARTNERSHIP in old established PRACTICE in outlying Residential Suburban District close to the Crystal Palace. No appointments or panel. Share worth about £750 p.a. after two years purchase. Ample scope.

NURSING HOME LONDON (Bayswater)—(14) Well established Home with accommodation for 10 Patients showing a good profit. Fees £8 8s. to £21.

WITHIN 50 miles of LONDON—(15) PRACTICE £1,500, in first rate Residential District. Modern detached house to be let in rooms, in grounds to be sold. Excellent educational facilities. *Premium £2,000.*

SOUTH AFRICA (CAPE PROVINCE)—(16) PRACTICE *about £1,000 in one of the wealthiest Pastoral Districts on line of* Railway. Ideal equable dry climate. Very comfortable house to rent. Living very cheap. Premium £800. Vendor known to the Association.

LONDON, S.W.—(17) Sound old established PRACTICE over £480 p.a. in well populated District within 3 miles of Charing Cross. Panel 300. Practically no Midwifery. Nice corner house (9 bedrooms). Rent 90 and a half years purchase. Ample scope for Panel and Midwifery.

HOME COUNTY—(18) Well established and increasing, mixed-class PRACTICE over £1,000 in Residential District. Panel about 400. Not much Midwifery. Old-fashioned detached house (4 bedrooms) in good position. Premium £1,500.

[illegible] established. *Small panel* [illegible] increase up to one half. Partner should be about 35 and preferably M.D. or F.R.C.S.

SPECIAL OPHTHALMIC PRACTICE—(20) About £1,400 in high class inland Health Resort. Operative and acute cases refused or last few years. Considerable scope for increase. *Premium £1,400.*

SOUTH WALES—(21) Old established increasing working-class PRACTICE over £2,200 in one of the chief Seaports. Panel 1,400. Detached house with 4 bedroom to rent on lease. Premium £2,500 part by instalments or £2,200 cash.

FAVOURITE RESIDENTIAL DISTRICT up the Thames—(22) PARTNERSHIP in better class Practice nearly £2,900 per annum. One third share at first at two years' purchase.

NORTH OF ENGLAND—(23) Old established PRACTICE of £1,160 per annum in Country District. Panel 810. Very good house (5 bedrooms) in charming ground two acres. Premium practice house *and ground* £1,000. Mortgage could be had on house.

EASTERN COUNTIES—(24) Old established unopposed Country PRACTICE of £826 p.a. Panel about 400. Very good house in 2 acres of garden to rent or purchase.

EAST COAST—(25) PARTNERSHIP in well established PRACTICE £3,800 in rapidly level pleasant Seaside Town. House with 4 bedrooms to rent. Incoming partner shall [illegible] between 40 and 50 and be a good organiser. Premium two-thirds share to two years purchase.

YORKSHIRE WESTRIDING—(26) Well established mixed and working class PRACTICE over £1,300 (£920 from Panel and Appts.) in large clean town. Good detached corner house. Premium £1,400.

EAST COAST—(27) Increasing PRACTICE over £500 in rapidly developing District. Panel about 140. Nearest opponent 4 miles. Bungalow residence (5 rooms). Premium £750.

EGYPT—(28) Well established PRACTICE £700 to £800 mainly amongst English Residents and Visitors. Excellent semi-detached residence (5 bedrooms). Premium to include Furniture £1,100.

M[illegible] £200 in Country [illegible] house (6 bedrooms) to be sold. Large [illegible] purchase.

SURREY—(30) PARTNERSHIP in first-rate Practice, £7,000/£8,000 per annum in one of the best residential Districts. House (9 bedrooms) to rent. Premium one sixth share two years purchase. Partner should be aged over 30 and have had hospital appointment.

MIDLAND TOWN—(31) Old established PRACTICE about £1,100 per annum in Residential Suburb. Panel 400. Good house and large garden. Premium £1,500.

LONDON, N.W.—(32) PRACTICE worth about £450 per annum in working-class district. Panel 500 increasing. No midwifery. Double-fronted corner house. Premium Practice and freehold House £1,500. Great scope for young man.

LONDON, E.C.—(33) PARTNERSHIP in Special City Practice. Excellent opening for gentleman (aged 30–35) specialising in Skin work and experienced in Nervous and Digestive Disorders. Share worth about £500 at one and a half years purchase.

LONDON, S.W.—(34) Recently established Look-up PRACTICE in new and developing outlying Suburban District. Rent of Consulting rooms £40. Premium to include lease, furniture and fittings, £250.

SCOTLAND, NORTHERN HIGHLANDS—(35) PRACTICE averaging over £1,600 p.a. In a Town. No panel. House (9 bedrooms etc.) in best residential part. Ample scope for midwifery and panel. Premium £1,200.

W[illegible] PARTNERSHIP in old established over £3,600 p.a. Panel 1,[illegible]. Rent £60 with some Surgical experience. Well equipped Cottage Hospital. Premium one-third share one and a half years purchase.

LONDON, S.W.—(37) Well established PRACTICE of £600 to £700 p.a. in favourite Residential Suburb. Panel 490. No much midwifery. Excellent detached house (9 bedrooms) with good garden for Sale. Ample scope. Premium one and a half years purchase.

SURREY—(38) PARTNERSHIP in *good middle class* compact practice over £2,650 in Residential District easy distance of London. Panel 120. Two-fifths share at first at two years purchase.

MIDLANDS—(39) Unopposed Country PRACTICE over £1,150 in beautiful part. Panel about 700. Detached house (4 bedrooms) with half an acre garden. Will estimate.

SOUTH OF ENGLAND—(40) PARTNER required in very sound old established Practice in Seaport Town. Panel under 3,000. Share worth £700 to £800 a two years purchase. Partner must be keen and energetic and not much over 30.

HOME COUNTY—(41) Old established PRACTICE over £1,850 p.a. under 20 miles from London. Panel about 900. Excellent detached house (5 bedrooms), dressing rooms. Near racegarden. Rent £75 on long lease. Cottage Hospital near. Premium one and a half years purchase.

SOUTH WALES—(42) Well established PRACTICE nearly £1,250 p.a. in County Town. Panel over 900. Fees 5 to £2 2s. Well situated double fronted house (9 bedrooms) with large garden. Let at £80. Educational facilities. Premium £1,800.

YORKSHIRE (WEST RIDING)—(43) PRACTICE over £1,500 p.a. in thriving Industrial Town. Panel 1,200. Good house (9 bedrooms). Rent £80. Premium £2,250.

SOUTH COAST—(44) PARTNERSHIP in Practice over £4,000 p.a. in popular Seaside resort. Panel 1,400. Premium one-third share two years purchase. Partner must be energetic and not under 30.

EASTERN COUNTIES—(45) Old established PRACTICE £1,855 p.a. in pleasant Market Town. Panel 1,100. No midwifery. Excellent detached house (7–8 bedrooms). Very good garden. Cottage Hospital. *Premium one and half years purchase.*

SOUTH COAST—(46) Good class PRACTICE of £1,350 per annum. Excellent house. Premium £1,250.

ASSISTANTS AND LOCUM TENENS SUPPLIED **RESIDENT PATIENTS INTRODUCED**

Schools and Tutors in all parts of the Country and Abroad recommended for Boys and Girls

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Association price 13/9 All enquiries to be addressed to Mr. A. V. STOREY, *General Manager.*

THE SYMBOL OF LIFE
REGISTERED TRADE MARK

PRUNOL LIMITED.

REGISTERED OFFICES

PRUNOL LTD. 4, PICKERING PLACE, ST. JAMES'S STREET, LONDON, S W

DIRECTORS
J LEGGE
J MIDDLETON
H M ALLEYN

Proprietors of Prunol etc.

REPORT OF THE STATUTORY MEETING.

The Statutory Meeting of Prunol Limited was held at 12 o'clock noon on Tuesday, September 2nd, 1924, at the Registered Offices of the Company, 4, Pickering Place, St James's Street, London, S W 1

The SECRETARY, having read the notice convening the Meeting, the Chairman, Mr H M ALLEYN, said —

This Company was registered as a Private Limited Liability Company on July 8th, and the Statutory Meeting to day is held to comply with the requirements of the Companies Acts

Although there is no official business to transact, may I take this opportunity of welcoming you, gentlemen, to these very charming and old world quarters in which we have the good fortune to be housed No 4, Pickering Place, dates from the 17th century, or earlier, and is said to have been at one time the residence of Nelson's Lady Hamilton This is perhaps in keeping with the somewhat romantic origin of this Company, as Prunol Limited was formed to supply, for the benefit of the public, an old-world remedy, which has been more than favourably known to the Medical Profession for over half a century as a home-made family preparation of the greatest value, a remedy to which my little son is indebted for his present good health, and probably for his life

An interesting feature about this Company, gentlemen, to which I may refer, is the fact that our Shareholders, with two exceptions, are entirely Ceylon men As in the old days, the Rubber Plantation Industry was started and financed with Ceylon money, so to-day we have in a small way another example of the Colonial spirit of enterprise to which we owe so much in this country

Prunol Limited was registered with an initial capital of £5,000, of which a limited number of shares are still available for those who may care to join in this, our adventure

Our programme is a clearly defined one We intend to advertise the Company's products and to build up the finances of the Company out of profits, and not out of capital My own personal experience a few years ago, when introducing the Domes of Silence, showed that on a capital of £250 it was possible to realize a net profit of over £3,200 on the first year's trading, after meeting an advertising expenditure of over £15,000 during the year

We may agree, gentlemen, that Prunol Limited is a speculative investment, but, in my opinion, we stand less risk of failure than many of the best known engineering and manufacturing businesses of the present day Our market conditions are not affected by any political or communistic conditions The question of import and export duties or rates of exchange does not worry us We are, to all intents and purposes, immune from strikes, a recognized trade mark, a recognized branded name, and a remedy that humanity needs, does not suffer from competition once it is known to and appreciated by the public Such competition as there may be later on can be readily met in various ways, and, instead of reducing, should be utilized to increase the profits and to improve the goodwill of the Company

Although the Board of the Company is a small one, it has, in my opinion, the necessary qualifications that make for the successful conduct of any business—namely, experience and common sense

Mr Middleton is a Director and adviser, on the accountancy side, to a well-known Company, whose posters you see on every hoarding Captain Legge, R N R, who represents the majority of our Ceylon subscribers, is a gentleman who was well known in Ceylon, and a successful administrator of an important departmental position in the Island My personal experience of that most costly, difficult, and yet most remunerative branch of business, Advertising, has been, as you probably know, undoubtedly successful, so that as a Board, we hope we are, in your opinion, reasonably well equipped to meet whatever changes and chances the future may bring

As a Company we possess an outstanding advantage in our trade mark, "The Symbol of Life" A trade mark which will, we hope, be made familiar throughout the world in the course of a very few years as the sign manual of the Prunol Preparations Our trade mark will be found to attract unconsciously the eye of every reader of a periodical or newspaper in which an advertisement of ours is inserted This effect may be noted in to-day's issue of the *Daily Mail*, so that for an expenditure of £1 in a small advertising space

Printed and published by the British Medical Association at their Office No 429 Strand, in the Parish of St Martin in the Fields, in the County of London

we obtain the value of from £3 to £4 of space publicity Multiply these figures by 1,000, or by as many thousands as the Company may in the course of years to come expend, and you will appreciate the concrete monetary value of our trade mark in building up by means of publicity, a goodwill for the Company's products at a minimum expense

In addition to the most valuable Recipe of Prunes Demerara Sugar, Senna and Ginger, which we are marketing as a branded and proprietary line, the policy of the Company will be to introduce other equally satisfactory remedies The value of ginger for indigestion has been known to the Chinese for centuries It is an aromatic and stomachic cordial and in its proper form is an almost certain cure for most of the evils of indigestion Yet its efficacy depends on the form in which it is administered when prescribed in medical prescriptions as pulverised or dried ginger it is usually more detrimental than beneficial The new preparation will be placed on the market under the name of Prunol Syrup of Ginger," and will be prepared for us, as in the case of our Prune Jelly, by a manufacturing firm of the very highest repute in Great Britain

It is early yet to talk of these and other developments which we may have in mind, but we trust in time to place on the market various branded recipes of proven value for the safe treatment of most of the minor ills of modern life to which so many of the major ills owe their origin In other words, we trust to furnish the family medicine chest with standard and approved remedies that can be relied upon with confidence for use from the dawn of childhood to the sunset of life You may consider our programme an ambitious one, but it does not follow that we propose to run before we can walk It is the intention of this Board to use that great quality Patience to a much greater extent than Capital in securing the necessary approval and support of the public for our goods

We have been fortunate enough, through the enterprise and goodwill of our Advertising Agents, to arrange a contract with the *Daily Mail* for the insertion of an advertisement twice weekly on what we consider the most suitable page of the paper In my opinion, each ten copies of the *Mail* are read by at least fifteen people On this basis our expenditure per reader of the *Mail* during the period of an entire year will slightly exceed one farthing per reader In return for the expenditure by us of one farthing per reader, each reader of the *Mail* will have before him twice each week, or 104 times during the year a well-worded advertisement pointing out the advantages of our products I am personally a great believer in steady and persistent publicity, addressed to the same people week in and week out It only a very small percentage of readers become buyers it places this Company in a position of exceptional financial strength and profit earning capacity for direct sales involve the stocking of our goods in reasonable quantity by all chemists and druggists Thus if only one in ten of every reader of the *Mail* purchases one of our branded specialities once a year the profit income of this Company should be from four to five times as much as its total authorized capital, yet every reader of the *Mail* will have our preparations placed before him not once, but 104 times during the course of each year

We do not claim to cure cancer or consumption or any of the other great scourges of the human race but we do claim that our remedies will in many cases do much to prevent and hinder their genesis and growth

Before concluding, gentlemen I should like to mention the further developments we have in mind as regards our Colonial Dependencies the great overseas markets of the world and the continent of Europe It is proposed to form almost immediately, a separate Company, in which this Company will take an interest to place the Prunol Preparations on the French, German, Italian and other markets of Europe Each country will be dealt with separately and in sequence When a success is made of one country, and local capital has been arranged for, the Prunol Specialties will then be introduced to another and different market In other words, in introducing Prunol we shall adopt the Roman method of breaking a bundle of rods, by dealing with each country separately and in sequence Full particulars of the capitalization of the new Company and all other details may be obtained on application to the Secretary, at this address by those who may desire to take a financial interest with us in what should prove to be a sound, and, we hope, and exceptionally remunerative venture

In conclusion, gentlemen, I should like to personally thank you for your support, and to congratulate you on the enterprise you have shown, an enterprise which will, I feel sure, prove as successful as even the most optimistic among us may desire

A resolution appointing Messrs Middleton and Hawkins, Incorporated Accountants as Auditors to the Company having been duly proposed and seconded, was carried unanimously

The Meeting concluded with a vote of thanks to the Chairman

This form may be cut out and posted to the Secretary, Prunol Ltd , 4, Pickering Place, St. James's St , London, S W 1

SIR —I am interested in the Report of your Company's Statutory Meeting, and I shall be obliged for any further particulars you may be prepared to supply

PLEASE WRITE LEGIBLY

Name

Address

Fine products—each the original and standard in its own field—from the celebrated laboratories of E. SCHERING.

ATOPHAN

TRADE MARK

The *original* preparation which has the property of stimulating the excretion and arresting the formation of uric acid to a degree hitherto unknown

A large volume of evidence shows the value of Atophan in the treatment of **acute and chronic gout, rheumatism, and all affections associated with the uric acid diathesis**

Atophan is a powerful analgetic, antipyretic, and antiphlogistic, and, in addition, it exercises an astoundingly rapid stimulating action on the hepatic functions

ATOPHAN COMBINATIONS

ICTEROSAN — Specific in cholæmic jaundice where no mechanical obstruction is present One injection is usually sufficient to produce an immediate flow of bile In ampoules of 5 c cm

ARCANOL — A combination of Atophan and Acid Acetyl Sal, which has proved of great value in influenza and all diseases associated with chill In tablets of 15 grs

ATOPHANYL — **For injection.** The parenteral administration of Atophan in this form is especially indicated in rheumatism, sciatica, neuralgia, neuritis, etc The action is prompt and extremely vigorous In ampoules of 5 c cm

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20/21, Lal Bazaar, CALCUTTA

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The

British Medical Journal



THE JOURNAL OF THE BRITISH MEDICAL ASSOCIATION

Including an Epitome of Current Medical Literature

WITH SUPPLEMENT.

No 3326 SATURDAY, SEPTEMBER 27, 1924. Price 1/3

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Parathyroid Gland Tablets
(P D & Co)
Each containing either 1/20 grain (3·2 mgm) or 1/10 grain (6·5 mgm.) of desiccated substance
In bottles of 25 or 100 tablets

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Each containing 1/40 grain (1·6 mgm.) of desiccated parathyroid gland and 5 grains (325 mgm) of calcium lactate
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Calcium Lactate Tablets
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Each containing 5 grains (325 mgm.) or 10 grains (650 mgm.)
In bottles of 100 or 1000 tablets

FURTHER reports of the success attending the administration of parathyroid and calcium in the treatment of Sprue are given in the *British Medical Journal*, August 23rd, 1924. In such cases it is obviously essential that only genuine parathyroid preparations should be used. The precautions taken by Parke, Davis & Co in the manufacture of Parathyroid Tablets enable them to guarantee that at least 90 per cent of the desiccated substance employed is parathyroid tissue

Parathyroid medication is also indicated in —

CHRONIC ULCERATIO (varicose, gastric duodenal)
DISEASES OF THE NERVOUS SYSTEM (chorea epilepsy, tetany)
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DISTURBED ENDOCRINE FUNCTIO (osteomalacia hyperthyroidism)

Our booklet—"Parathyroid Therapy"—will be sent post free to any medical practitioner on request.

PARKE DAVIS & Co., 50-54 BEAK STREET, REGENT STREET, LONDON W 1

Telephone PEGENT 3 0 (six lines) *Telegrams CASCARA LO DO I*

OCTOBER, 1924

SPECIAL NUMBER

OF

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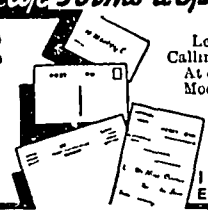
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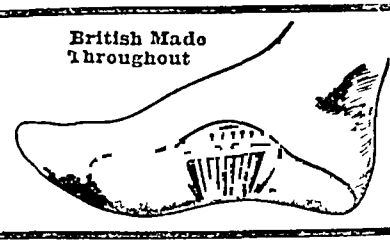
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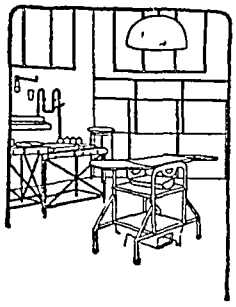
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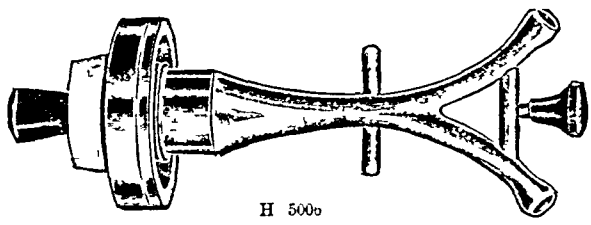
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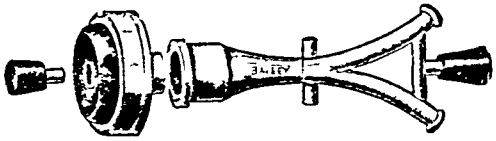
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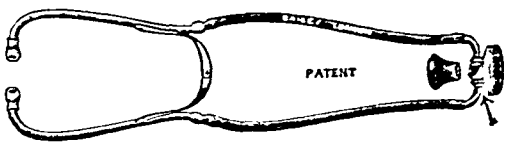
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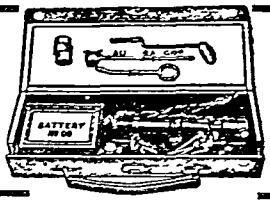


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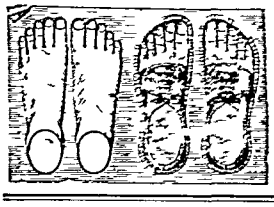
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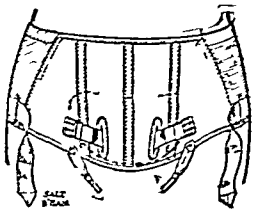
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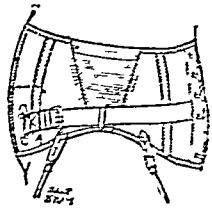
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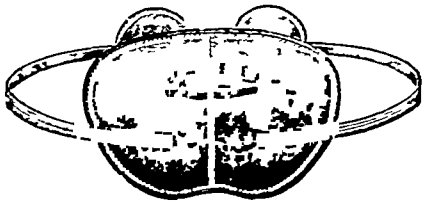
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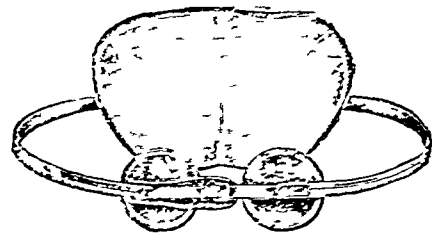
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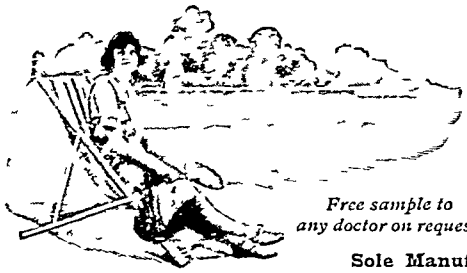
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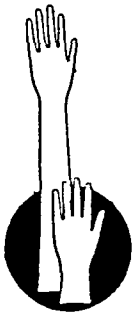
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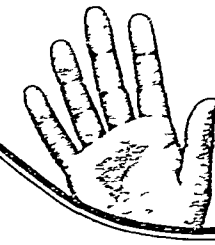


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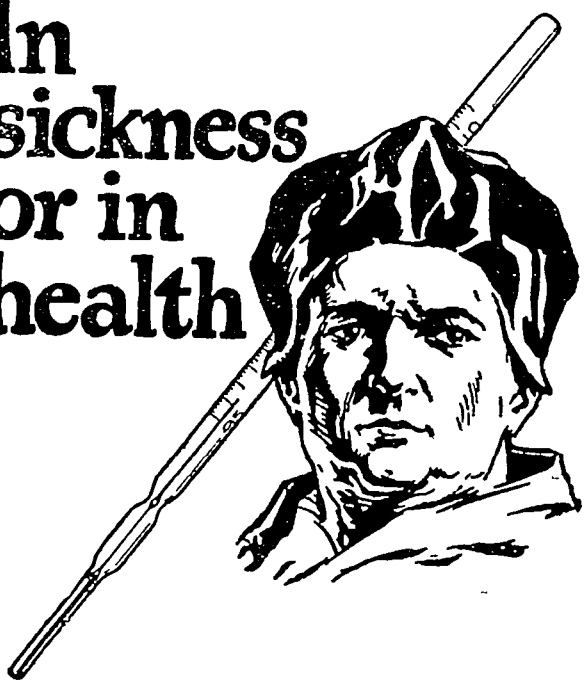
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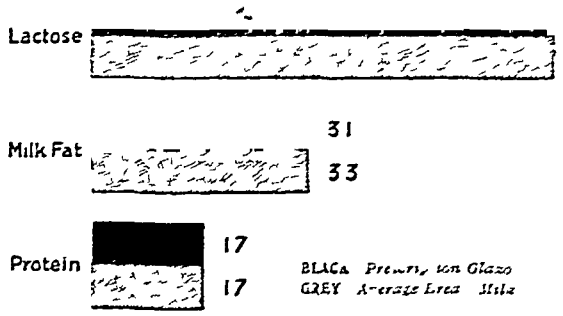
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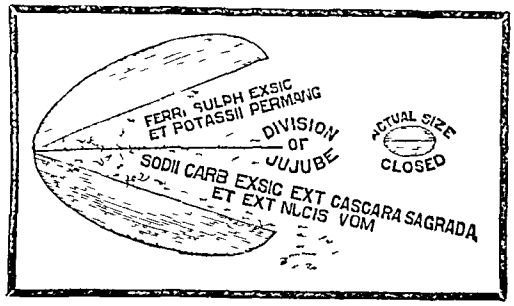




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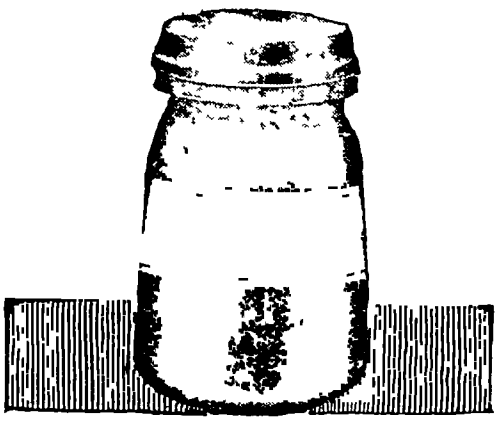
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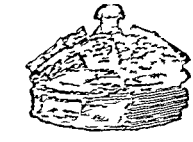


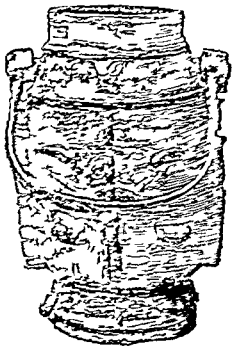
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DATE The bronze c. 1750 B C Pioneers were in China probably before 2000 B.C.

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"THE LANCET," 1923, i, 697

1 Now known by the convenient name "Dimol"
2 "The Lancet," 1921, i, 758

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EARLY MENTAL DISEASE TREATED IN A GENERAL HOSPITAL

AN ANALYSIS OF FIVE HUNDRED CASES

BY

JOHN D COMRIE, M.A., B.Sc., M.D., F.R.C.P.EDIN.,

SENIOR ASSISTANT PHYSICIAN ROYAL INFIRMARY EDINBURGH PHYSICIAN, DEACONESS HOSPITAL EDINBURGH LATELY CONSULTING PHYSICIAN TO THE FORCES IN NORTH RUSSIA

THE following account gives an analysis of and commentary on one year's work from May, 1923, to May, 1924, in connexion with the wards in the Royal Infirmary of Edinburgh reserved for cases of early mental disease and incidental delirium. A period of fifty-four weeks has been taken to allow for a small number of cases not mentally affected, which were admitted to the wards and which are not included in the analysis for this reason. This has the further advantage of making the number exactly 500, which is convenient for calculating percentages. Of the cases admitted some are sent in by private practitioners for observation, a certain number consist of cases transferred from ordinary medical or surgical wards because of the development of mental changes which render their retention in these wards unsuitable, and a considerable number are brought by the police, or other outside authority, for observation. Many of the cases make a good recovery without incurring the trouble and stigma of certification as insane, but practically all present, on admission, considerable difficulty either in diagnosis or in treatment if it were to be conducted outside an institution. In order of frequency cases fall into the following groups, although it must be understood that this grouping is not suggested as a method of classification:

1. Alcoholic cases 133 (26 per cent.)
2. Melancholia 87 cases (17 per cent.)
3. Confusional states 80 cases (16 per cent.)
4. States of dementia 52 cases (10 per cent.)
5. Psycho-neuroses 35 cases (7 per cent.)
6. Post-epileptic states 29 cases (6 per cent.)
7. Cardiac delirium 22 cases (4 per cent.)
8. Mania, 20 cases (4 per cent.)
9. Gross cerebral lesions 16 cases (3 per cent.)
10. Fixed delusional states 17 cases (3 per cent.)
11. Primary mental defect, 9 cases (2 per cent.)

The general principle followed with regard to disposal of the cases was that patients were put to bed for a period of one or two weeks' rest. By the end of three weeks it was generally quite possible to determine whether the case was likely to recover under treatment so far as to be able to proceed for a period of convalescence in the country or to return home. If the case appeared likely to recover to this extent under hospital conditions treatment was continued, but if at the end of about three weeks no improvement was discernible the patient was, in most cases, passed on to a mental hospital, either after certification, or in some cases as a voluntary admission.

The proportion of cases discharged sufficiently well to return home was 72 per cent. of the total (or, if the alcoholic cases be left out of account, it was 64 per cent.). The proportion of the cases passed on to mental hospitals was 17 per cent. of the total (or, excluding the alcoholic cases from consideration, it was 22 per cent.). Five cases only entered mental hospitals as voluntary patients, but these would probably have been more numerous if this method of disposal had been available for pauper patients. The deaths from all causes amounted to 7 per cent. of the total admissions, including a considerable number of the attempted suicides. Transfers to other (non-mental) hospitals, chiefly a Poor Law hospital, accounted for 3 per cent.

ALCOHOLIC CASES

There were in all, 133 cases definitely due to alcoholic excess. Most of these were brought in by the police as cases of doubtful diagnosis for observation. Of these, 102 cases (74 male and 28 female) were in a stuporous state, in which they continued for periods varying from some hours up to several days. The number of cases of delirium tremens was 14 (13 male, 1 female), and 5 cases were admitted suffering from chronic alcoholic insanity (3 male, 2 female). In cases that showed delusions, the type associated with the Korsakoff syndrome, involving loss of sense of time and place, was very marked. Thus one patient who was able to give a good account of novels he had read, when asked suddenly where he was, gave the name of a public-house, and when asked how he explained the presence of the bed in which he lay, laughingly said he supposed it had been put there to pass away the time. It was found that 26 per cent. of all the cases admitted were directly due to alcoholic excess. It is interesting to compare this figure with the corresponding state ten years ago. In the year 1913, 42 per cent. of the patients admitted suffered from alcoholic excess and the number of cases of delirium tremens was four times as great as in the year now under review. The age of persons suffering from alcoholic excess presents a feature of interest, the average age of the male alcoholics being 47, and that of the women 45 years, while only two men and one woman were under 30 years of age. From the fact that the average age of these persons in 1914, at the commencement of the war, was 37, it is obvious that they could have taken no very active part in the war, and that war conditions have had, therefore, practically no influence in the production of alcoholism, so far as the group of Edinburgh Hospital cases is concerned. Further, excessive drinking among the young would appear to have diminished almost to a vanishing point. In addition to the cases which are directly due to alcoholic excess, the question of alcoholism enters as a partial cause, into the histories of a number of other patients suffering from psycho-neuroses and other mental states so that it would be quite safe to say that alcoholism still enters in some degree into the causation of at least 30 per cent. of all these cases of slight mental deterioration among persons of middle life and over.

Some cases were admitted suffering from the effects of drinking methylated spirit. In general, the resulting intoxication was more violent in effect, but more transitory in duration, than that produced by whisky only. After drinking methylated spirit, excretion by the kidney was very rapid, and clear, almost colourless, urine was passed which in two cases had a specific gravity less than that of distilled water.

MELANCHOLIA AND DEPRESSION

Of the 87 cases admitted for depressed or melancholic states 58 were cases in which suicide had been attempted. The most prevalent method of suicide employed was by cutting the throat (17 cases), lysol came next in order of popularity (13 cases), coal-gas inhalation was responsible for 7 cases, and drowning had been attempted in 6 cases. In considerably smaller numbers the means used were ammonia (3 cases), paraldehyde (3 cases), morphine (2 cases), oxalic acid (1 case), hydrochloric acid (1 case), creosote (1 case), arsenic (1 case), tincture of belladonna (1 case), opening of blood vessels (1 case), and falling in front of a railway train (1 case). Simple melancholia without delusion characterized 75 per cent. of the depressed cases, and it is important to note that most of the attempts at suicide were made by persons suffering from simple melancholia without delusions.

With regard to the cause of melancholia and depression, a bad family history was found in this type of mental disease more frequently than in any other. 26 per cent. of the cases having had from one to four immediate relations definitely insane. In the great majority of the cases it was impossible to attribute the cause to any one factor, a complex, consisting in part of poor physical development, overwork and difficulty of adaptation to surrounding, being usually present. In addition a number of cases showed some definite physical toxic influence which might be regarded as a precipitating cause of the attack for which the patient was admitted. These included a septic condition of the mouth, general alimentary disorder with constipation, thyroid gland disorders, and various preceding febrile conditions. A definite toxic process could be traced in 45 per cent. of these cases, although it was sometimes difficult to say whether the toxic condition should be regarded as the cause or as one of the results of the general physical and mental debility. In 60 per cent. of the cases evidence of

prolonged mental strain arising from the patient's circumstances was elicited—for example, the worry of a drunken husband, of financial conditions, disappointment in some matter upon which the patient had long been counting, loss of relatives, and very frequently idleness consequent upon being out of work. The onset was usually gradual, and in many depressed cases symptoms or recurrences had been noticed for several months or years. The largely temperamental nature of this type of mental disorder was evident from the fact that one-third of the cases were recurrent. Simple melancholia was found to be much commoner in females than in males (85 per cent. and 15 per cent. respectively), but suicide was attempted more frequently in male melancholics (3 males to 2 females). Among the elderly female cases the depression began definitely, in one-third of the cases, in association with the onset of the climacteric. The general plan of treatment included rest in bed, attainment of sleep, if necessary by hypnotics, removal of the toxic or other physical cause, and the provision of light useful work as soon as the patient could take an interest in it. The result of hospital treatment was very satisfactory in melancholic cases, over 60 per cent. being discharged cured, or at least sufficiently well to return home, after about three weeks' detention. Less than 40 per cent. passed on to mental hospitals as more chronic cases.

Confusional States

The 80 cases showing a definite confusional condition included 17 post-operative cases (most of which were associated with sepsis), 4 puerperal cases which were also septic, 16 cases of concussion, 7 nephritics with albuminuria, 13 toxic cases following febrile conditions, especially influenza, 13 cases of pneumonia, 3 cases of diabetes, 2 cases of pernicious anaemia, 1 case of tuberculous kidney, 1 case of haematemesis, 1 case of malignant tumour, 1 case of acute lymphatic leukaemia, and 1 case of pellagra. Most of the confusional cases had delusions of a mild character and very varied type, and 2 cases showed complete transitory loss of memory. Leaving out the cases of concussion, toxic and exhaustive elements were very obvious in the great majority, and such cases were very amenable to treatment, the chief conditions required for treatment being complete rest in bed for a period of two or three weeks, with removal of the septic focus, or treatment of the general septic condition.

No characteristic type of delirium was noted in these conditions, except that in the pneumonia cases, when collapse was impending, the weakness and mental obfuscation produced by the toxic state induced signs resembling those described by Mistress Quickly in the end of Falstaff. "After I saw him fumble with the sheets and play with flowers and smile upon his fingers' ends, I knew there was but one way, for his nose was as sharp as a pen, and 'a babbled of green fields" (*King Henry V*, II, iii, 14). In several other cases associated with cardiac dilatation, the delirium partook of the cardiac type. A patient with pernicious anaemia showed delirium of a very striking character. During the day the patient, who had been doing his work as a railway guard up to two days before admission, was perfectly clear, but every evening he developed a state of wild excitement, imagining that preparations were being made to burn him at the stake, tied to a woman. There were evidently two elements in this complex—one was the element of cardiac excitement, the other, apparently, was some repressed memory stirred up by reflection on the unknown cause of his serious disease. As the anaemia and cardiac dilatation improved the nightly recurrences of the delirium became less terrifying till they disappeared completely.

Cardiac Delirium

Cases with heart lesions who had lapsed into a state of delirium numbered 22. Of these, in 40 per cent. myocarditis with feeble cardiac action was present, in 40 per cent. mitral disease (of which one-half showed auricular fibrillation), and in 20 per cent. aortic incompetence. None of the cases of cardiac delirium was younger than 41, and the average age was 59 years. A correspondence has taken place recently in the BRITISH MEDICAL JOURNAL (July, 1924) as to the type of delirium present in cardiac cases. In my experience the special feature of cardiac delirium is restlessness or excitement, proceeding to anxiety or apprehension in 90 per cent. of the cases—

> "Like one that on a lonesome road
> Doth walk in fear and dread,
> And, having once turned round, walks on
> And turns no more his head,
> Because he knows a frightful fiend
> Doth close behind him tread."

The mechanism appears to be a sense of the necessity for muscular effort, coupled in severe cases with a sense of impending dissolution. The disorientation *as to place*, if present, is merely incidental to restlessness. If the patient imagines himself to be at his place of business this is merely because of the activity and anxiety associated therewith. Another special characteristic of cardiac delirium is that it tends to appear especially towards night, and may pass away completely every morning as the vital tide returns. One patient imagined regularly every evening that "a man with a gun took up his position outside the window" intending to shoot him, and this was associated with great restlessness and anxiety. Another remembered clearly, on the morning of admission, having struggled in the night with his daughter for possession of a knife which he wanted because he thought "his life had to come to an end." Still another was greatly distressed because he had "to rush for the train to business in Edinburgh." The delusion of cardiac delirium thus differs greatly from the delusion of the alcoholic case, which very definitely involves time and place, and is often of a pleasant, sensuous, or amusing nature. The degree of excitement in cardiac cases offers considerable help in assessing the amount of impairment in the function of the heart for the time being.

States of Dementia

This type included 13 cases of adolescence between the ages of 10 and 30 years, in whom the occurrence of such symptoms as katatonia, impulsiveness, bizarre delusions, negativism, and general mental aberration warranted a provisional diagnosis of dementia praecox. A few improved sufficiently to go home, but most of these cases were transferred to mental hospitals. Senile dementia (20 cases) was, in general, associated with arterio-sclerosis and other signs of physical senescence. The most interesting group of cases showing dementia were those associated with syphilitic infection. Two cases of confusion, so profound as to give the impression of dull stupid dementia, occurred at an early stage of this disease, and were presumably due to syphilitic cerebral endarteritis. The mental symptoms in both disappeared after treatment by novarsenobenzol, and these patients became fit to return to their work. These cases are important as showing the great value of early diagnosis and prompt commencement of treatment in patients with cerebral syphilis who are otherwise apt to lapse into permanent dementia. The cases of dementia paralytica numbered 13 (12 men and 1 woman), and the average age of onset was 40 years. All these cases were undiagnosed before admission. The symptoms presented are therefore of interest in regard to diagnosis of general paralysis at an early stage. Only 6 of the cases showed any delusions, and of these 2 only had grandiose ideas. Difficulty of articulation was present in 4 cases. In 2 cases blindness, due to optic atrophy, had existed for several years before mental change supervened. The condition of the reflexes varied much, the knee and ankle jerks being exaggerated in some, absent in others, and in still others exaggerated on one side and diminished on the other. The plantar reflex was extensor or varied from time to time in a few cases, but was flexor in the majority. The signs common to all were failure or diminution of the pupillary reflexes to light, weakness of power of judgement, physical weakness, tremulousness, and strongly positive Wassermann reaction in the blood and cerebro-spinal fluid. The colloidal gold reaction, in those of the cases where it was carried out, conformed to the finding of the Wassermann reaction. All the cases, with one exception, were unaffected by antisyphilitic treatment, and were transferred to mental hospitals. With regard to one case with well marked delusions, who lost all mental symptoms under treatment, the Wassermann reaction in blood and spinal fluid, and the colloidal gold reaction, nevertheless remained strongly positive, although the patient had received 18 grams of novarsenobenzol in six months.

PSYCHO-NEUROSES

This group included 27 cases of hysteria and 8 of neurasthenia With regard to cause definite physical pelvic abnormalities, such as ovarian tumour, uterine prolapse, hysterectomy, etc, were found in 50 per cent of the hysterical cases, thus justifying the ancient Greek name of the condition In this group a previous sexual trauma in the Freudian sense was found to be especially prevalent, and the method of psycho-analysis was more applicable than in any other type of mental aberration In my opinion, however, the employment of this procedure, while very useful in elucidating the vagaries of the patient, is more apt, considered as a therapeutic agent, to be followed by increased mental unrest and distress than by improvement One case in every four had delusions or hallucinations, most commonly of hearing All the cases were improved after an average stay in hospital of three weeks, and one only passed on to a mental hospital as a voluntary patient One neurasthenic was a morphine habitué, and in addition had had laparotomy performed several times, apparently to no purpose This was the only case of drug addiction, which seems to be a much less frequent habit in Scotland than among more southern peoples

POST EPILEPTIC STATES

The number of cases admitted to hospital because of some abnormal state following on epileptic seizure was 29 Of these, 12 per cent were maniacal or homicidal, 25 per cent confused with a tendency to automatic behaviour, 25 per cent had definite delusions 25 per cent were greatly depressed, and 13 per cent, after a period of stupor lasting from a few hours to several days became quite normal The average age of the epileptics treated was 37 years, and one-half of them were mental defectives in a marked degree

MANIA AND MANIC-DEPRESSIVE INSANITY

The number of maniacal cases was 20, of which 3 were recurrent A very close connexion with previous debilitating factors was evident in 80 per cent of the cases These factors included typhoid fever exhausting journeys, the strain of nursing a relative through a long illness, the puerperium, and in a few elderly cases the climacteric The average age of cases was 45 years This type of insanity was not so suitable for treatment in a general hospital as were simple melancholic cases, and, while 40 per cent recovered sufficiently to go home, 60 per cent passed on to mental hospitals

GROSS CEREBRAL LESIONS

These included cerebral thrombosis or embolism (6 cases), cerebral tumour (2 cases), meningitis (3 cases), encephalitis lethargica (4 cases), and lead encephalopathy (1 case) The mental changes in these cases were of the confusional type, passing later into dementia or death

FIXED DELUSIONAL STATES

Cases with fixed delusions numbered 17, including 3 cases diagnosed as paraphrenia and 1 as paranoia These cases, with two exceptions, failed to respond to treatment, and were transferred to mental hospitals after a period of two or three weeks' observation

CONCLUSIONS

1 The chief deduction to be made from this analysis is the great usefulness of a general hospital in treating slighter or undiagnosed cases of mental disorder of these 64 per cent could be treated successfully without transfer to a mental hospital This especially concerned melancholic cases

2 Mental disorder produced by alcohol appears to have greatly decreased and to be confined now chiefly to elderly persons

3 Physical conditions (infective, exhaustive or reflex) as partial causes were discovered in the majority of the cases of melancholia, mania, confusional insanity, and psychoneuroses

4 Types of disorientation and delirium, that are to a considerable degree characteristic, can be recognized in association with different causes of mental disorder

I desire to acknowledge my indebtedness for much help to Dr W McAlister, deputy superintendent of the Royal Edinburgh Mental Hospital to Dr David Slight assistant in the department of psychology, Edinburgh University, and to Dr Helen Young.

THE PATHOLOGY AND SURGICAL TREATMENT OF ANGINA PECTORIS

BY

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I DEFINITION

SOME writers on angina pectoris include under this heading syndromes which have no connexion whatever with the condition Many cardiac diseases are accompanied by precordial symptoms similar to those of angina, but this name should be restricted to a sensori-motor syndrome of the myocardium, sudden in onset, sometimes ending in death, and not depending on dilatation of the heart Acute pulmonary oedema, the angine de poitrine de decubitus of French writers, ought not to be classified as angina, since it is a syndrome arising from an acute dilatation of the left ventricle, it should be included in the asystole group A fundamental difference exists, moreover between angina pectoris and the phenomena of cardiac dilatation, anginal attacks only occurring when the myocardium is healthy and acting well, they diminish or disappear as soon as the heart becomes weak and dilated Aortic pain must similarly be removed from the category of angina, since this condition results from the distension of a diseased aorta by a sudden increase of intra aortic pressure The precordial pain in this case is like that of angina, and the aortic distension necessarily gives rise also to cardio-vascular reflexes, but the condition is related exclusively to the aorta, and is probably never the cause of death An additional difficulty in distinguishing clinically between angina and aortic disease is that the same factor—for example sudden exertion—may bring on at the same time two phenomena the anginal spasm referable to the myocardium and aortic pain originating in the aortic wall But when the mechanism of their production is considered a sharp distinction must be drawn between these two pain syndromes, and it must be emphatically denied that an attack of angina pectoris can ever be produced by aortic distension

II PATHOLOGY

I cannot give assent to the aortic hypothesis put forward by Clifford Allbutt Smith, Wenckebach and Vaquez, according to which angina pectoris is exclusively due to aortic distension It is impossible to imagine such a distension occurring without there being an increase in the intra-aortic pressure, and yet those very writers who uphold the theory of aortitis admit that the blood pressure is not invariably increased during an anginal attack Then, again, it is difficult to account for the occurrence of death if there is nothing more than a simple distension of the aorta The reflex inhibition due to stimulation of the vagus, which Clifford Allbutt cites as the cause of death, ought to be accompanied more often by cardiac phenomena referable to the parasympathetic system, in particular by slowing of the heart beat Yet very often the beat is quickened during an attack and death supervenes on a condition of marked tachycardia or arrhythmia Mackenzie suggests as the cause the onset of myocardial exhaustion but in none of his publications apparently does he distinguish between this condition and that which other writers recognize as myocardial insufficiency leading to dilatation Opposed to this hypothesis of Mackenzie is the fact that in the anginal patient his attacks occur only while the myocardium is acting well so soon as it becomes weak, and dilatation occurs the attacks diminish and cease Coronary disease can no longer be advanced as a hypothetical cause of angina pectoris Cases of disease of the coronary arteries without anginal symptoms are known to occur and also cases of angina pectoris in the absence of coronary disease It appears advisable, therefore, to replace the anatomical idea of coronary disease by the physiological conception of an inadequate coronary circulation Angina pectoris cannot be described as an inflammation of the coronary arteries, since either may exist in the absence of the other It is possible, however, to say that all angina pectoris is the result of an inadequate coronary circulation, which may occur when

the arteries are healthy, but is more likely when they are in a state of sclerosis This suggestion will account for the frequency of coronary disease in angina, anginal symptoms may, nevertheless, originate in a heart in which the coronary arteries are healthy, or be absent even when there is extensive sclerotic change

The explanation appears to be as follows The anginal attack arises from a disturbance of the balance between the work of the myocardium and its blood supply through the coronary arteries This disturbance may occur in the case of a healthy heart, but is more common if the coronary arteries are somewhat obstructed It is conceivable that even healthy coronary arteries, faced by an excessive demand, may be unable to respond sufficiently to provide an adequate myocardial blood supply, and consequently it is not out of the question that such a disturbance of balance may occur in a perfectly healthy heart In this way can be explained anginal attacks occurring in young subjects following the rapid ascent of a mountain, or after cycling, or some other strained effort, when no coronary

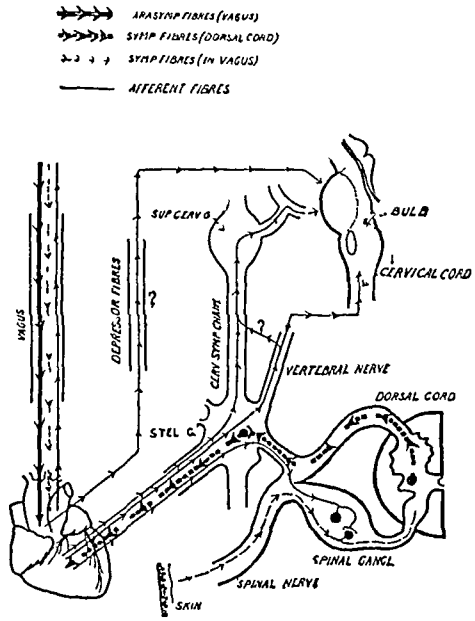


FIG 1—Efferent and afferent cardio aortic nerves in man The greater number of the accelerator fibres travel through the stellate ganglion and the inferior cervical ganglion a small number pass by the vagus *Moderator* fibres (parasympathetic) are present in the vagus and sympathetic and parasympathetic fibres make up the efferent cardio aortic nerves The afferent (sensory) nerves are composed of the ascending and lateral groups The path of the ascending group is not finally established but it is thought that its fibres are scattered in the cervical sympathetic and its cardiac branches in the vertebral nerve in the vagus and its cardiac branches and in the nerve of Hofer It is necessary to cut as many of these sensory nerves as possible in angina It is proposed therefore to divide the cervical sympathetic above the inferior cervical ganglion, the branches which leaving the cervical sympathetic cord run towards the neck and also the nerve of Hofer when present The ascending group contains two groups of fibres which are named pressor and depressor, according to their relationship with the cardiac and vascular centres and in accordance with the results obtained by stimulating their central ends It is not established which nerves of the cervical region contain the pressor fibres and which the depressor fibres but in view of the fact that the reflexes which appear in angina are mainly pressor in type it is the more necessary that all the ascending sensory fibres should be cut A note of interrogation has been introduced into the diagram at the side of the depressor fibres not to indicate doubt as to their existence but because it is just possible that there exists a separate nerve exclusively depressor The lateral group consists of fibres which traverse both the stellate and the inferior cervical ganglia and travel in the posterior roots Their trophic centre is placed in the spinal ganglion and they meet here (or in the cord, according to some writers) with the sensory cutaneous fibres

disease was found at the necropsy Moreover, this suggestion explains those cases of coronary disease without anginal symptoms, where the slowness of growth of obstruction in the coronary arteries has permitted the development of anastomotic channels, and the provision of a good blood supply When an anginal attack occurs in a healthy heart after overexertion, there is present a condition of coronary insufficiency without coronary disease, in the case of extensive coronary obstruction without anginal attacks there is present coronary disease without coronary insufficiency Furthermore, in cases of angina without coronary disease, but with subsigmoid aortitis only, the coronary orifice is often involved Even when this is not so the loss of aortic elasticity leads to interference with the free functioning of the coronary orifice during systole Whilst the hypothesis of coronary inflammation only explains a single class of cases, that of coronary insufficiency is applicable to all When an anginal attack is precipitated by strain the failure of adjustment between the work to be done by the heart and the cardiac vascular supply is brought about by the increase in the work of the heart (quickened action with or without increase of arterial blood pressure) associated with an unaltered coronary circulation When the attack comes on during rest the loss of balance is the result of a sharp diminution in the blood supply (brought about by coronary spasm), the heart's action remaining unchanged

What, then, is the nature of the process which results in anginal attacks? I believe that the starting-point of angina is in the myocardium more precisely in the left side of the heart, and I suggest that the process is analogous to that which is concerned in the fatigue of voluntary muscle If a voluntary muscle is to continue working without ever tiring, its blood supply must be sufficiently good to remove all the toxic products of activity If the blood supply is inadequate (as in the case of an increase in muscular work associated with an unchanged vascular supply, or, again, a decrease in the blood supply with no change in the work), the muscle after each contraction is incompletely emptied of the resulting toxic substances The consequent intoxication produces muscle

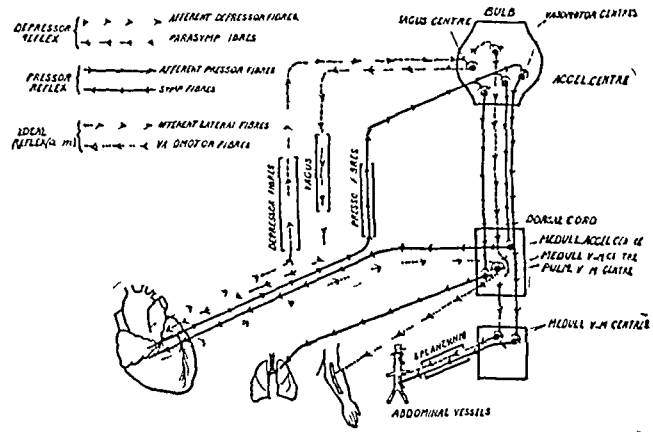


FIG 2—Plan of the pressor and depressor reflexes Stimulation of the sensory nerve endings in the heart and aorta gives rise to two kinds of vascular reflexes—general and local The general reflexes are of two kinds—depressor and pressor The depressor reflex slows the heart and diminishes the force of its contraction by stimulating the nucleus of the vagus it lowers the blood pressure by stimulating the vaso dilator centre and bringing about abdominal vaso dilatation The pressor reflex quickens the heart and increases the force of its contraction by stimulating the accelerator centres it raises the blood pressure by stimulating the vaso constrictor centres, producing a vaso constriction especially in the abdomen In angina the pressor reflexes predominate the more important local vascular reflexes are those which occur in connexion with the vessels of the arms, and especially of the left arm

fatigue, evidenced by sensory symptoms (feelings of fatigue and pain) and motor symptoms (temporary paralysis) The sensory symptoms are due to the stimulation of sensory nerve endings, the motor to changes in the motor nerve endings, brought about by toxic substances accumulating in the muscle It is likely that an analogous condition exists in the case of the anginal spasm The inadequacy of the coronary blood supply, arising from one or other of the contingencies just mentioned, leads to myocardial poisoning and cardiac fatigue by a process analogous to that admittedly obtaining in the case of voluntary muscle From this there result sensory symptoms (distress and anginal pain), and also motor phenomena (tachycardia, extra-systoles, alternating beats, etc), which may end in the heart ceasing to beat The former are due to the stimulation of sensory nerve endings in the myocardium, the latter to a change in the motor endings, which are very much more complex in the myocardium than in voluntary muscle, because of the presence of nerve ganglia in the heart muscle

The sensory nerves of the heart and aorta play an important part in the development of anginal attacks The depressor nerve is not usually taken into consideration as being one of these nerves, which is a great mistake.

Depressor fibres make up only a small part of the nerve tracts passing to these organs These nerve tracts are numerous, but their exact course in man has not been finally determined Several experiments on animals and some tentative surgery in the case of anginal patients support the following explanation, which will undergo radical modification later on with greater knowledge of anatomy and physiology

Two groups of sensory fibres appear to exist, termed, in accordance with their direction the "ascending" and the "lateral" group (Fig 1) The ascending group is composed of fibres which travel upwards in various cervical nerves—the sympathetic chain the vertebral nerve, and the vagus Occasionally, moreover, a special nerve passes out of the thorax to end in the trunk of the vagus and the superior laryngeal nerve this has been named the 'depressor nerve" by Hofer, who has not however, produced proof of its nature It is also quite likely that some sensory nerve fibres of the heart and aorta travel in the cardiac nerves, which leave the cervical part of the sympathetic chain and the vagus nerve The lateral group consists of fibres travelling in the rami communicantes, which unite the first thoracic and the last cervical ganglia with spinal nerves (eighth cervical and the four upper dorsal) and reach the corresponding spinal ganglia through the posterior roots of those pairs of nerves According to some writers these fibres terminate in the spinal ganglia, according to others they enter the cord becoming associated with the neurone of cutaneous sensation Thus after a certain point, visceral sensation has no separate path of its own, but is conducted by the channels of cutaneous sensation In health the cardio-aortic sensory nerves conduct reflexes only in conditions of disease, such as in angina pectoris in addition to these reflexes, the stimuli give rise to anginal symptoms—pain spasm, palpitation, etc

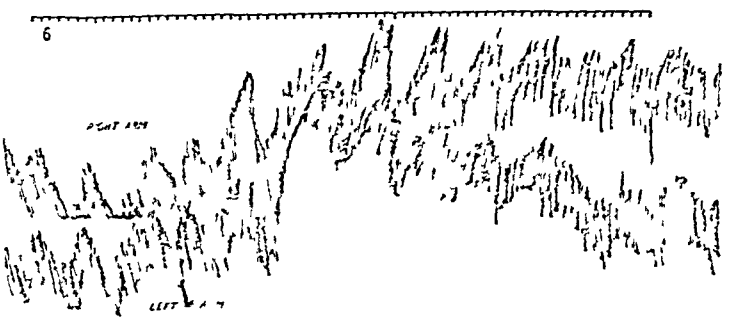


FIG 3—Plethysmograph tracings of the right arm and of the left arm taken during an anginal attack in a patient who had had very many such attacks The vasomotor oscillations are much more marked in the left than in the right arm

The most important reflexes which arise in the heart and aorta in the case of an anginal attack are the vascular ones—the general reflexes are depressor and pressor Depressor reflexes arise in connexion with the sensory depressor nerve fibres, which in man take the place of the nerve of Cyon, the bulb, and, as a centrifugal path, the parasympathetic The pressor reflexes find their way along the numerous sensory pressor fibres in the cervical nerves the bulb and, as a centrifugal path, the sympathetic The depressor group slows the heart, diminishes the force of myocardial contractions, and lowers the arterial tension, whilst the pressor group accelerates the heart strengthens its contraction and raises the arterial tension (Fig 2) Various physiological experiments have shown that visceral stimuli unleash at once two antagonistic kinds of reflexes—pressor and depressor—but that sometimes the depressor effects (parasympathetic) predominate sometimes the pressor effects (sympathetic) This rule has been frequently established in the case of the sympathetic nervous system The increase of arterial tension, as also the quickened heart beat which often accompany an anginal attack, lead to the belief that during the anginal attack the pressor reflex is predominant With reference to local reflexes during anginal attacks, the plethysmograph has brought to light marked vasomotor oscillations in the arms, particularly in the left arm (Fig 3), and an increased sensitiveness of the vessels of the left side to such drugs as amyl nitrite (Fig 4), which act on blood vessels Furthermore Mackenzie describes contractions of pectoral muscles, which he classes as a 'visceromotor reflex," but which would be better termed a "visceromyotonic reflex" Although general reflexes travel mainly along the ascending tract, these local reflexes pass in the lateral tract

Apart from the reflexes the sensory nerves carry the anginal sensation, particularly pain, and the feeling of anguish The pain is referred to the skin, and can only be conducted along those sensory visceral filaments which are in anatomical relationship with the sensory cutaneous fibres In man it is primarily the lateral group which enters the thoracic cord but recollecting that stimulation of the central end of the nerve of Cyon produces pain it must be inferred that there exist also ascending fibres which can conduct pain sensations, and which are to be found with the depressor and pressor fibrils in the nerves of the cervical region These pain fibrils must come in connexion with the cervical cord, which perhaps explains the occurrence of pain in the neck and jaw With regard to *the feeling of anguish, the palpitation, and sense of* oppression which sometimes accompany it, these have been shown to be felt in the heart itself and to be transmitted along the ascending tracts Vascular reflexes play an important part in the production of angina pectoris The surgical investigations of Coffey and Brown of Eppinger and Hofer have shown that section of the sensory ascending filaments (which, according to the first two authorities, pass by the chain of the sympathetic, and according to the latter, by a separate nerve) prevents anginal attacks from occurring From these facts very important conclusions are deducible with reference to the pathogenesis of angina These results, which have the value attachable to actual physiological experiments, show that the cutting of these nerve fibres which have no anatomical connexion with the skin areas to which the anginal pain is referred (chest, back left arm) prevents an anginal attack from occurring With this knowledge to guide us the following may be set out as the explanation or the development of an anginal attack

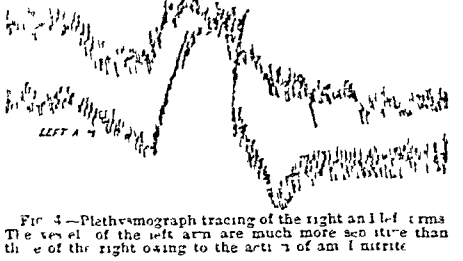


FIG 4—Plethysmograph tracing of the right and left arms The vessels of the left arm are much more sensitive than those of the right owing to the action of amyl nitrite

After the disturbance of the balance between the work of the heart and the coronary circulation there develops as described above, an actual poisoning of the myocardium Toxic substances accumulate and irritate the sensory nerve fibres in the myocardium So long as the irritation is feeble no pain results, but only reflexes which undoubtedly pass along the two classes of nerve fibres pressor and depressor The fact that during an anginal attack the heart's action is usually quickened and the blood tension raised proves that it is the pressor reflexes which are predominating This class of reflex can only intensify the myocardial poisoning for it increases the work of the heart A vicious circle is thus set up which stimulates increasingly the sensory nerve endings in the heart when the stimulation is sufficiently acute, pain makes its appearance Motor phenomena also appear (irregularities of beat stopping of the heart), which are due to changes in the motor elements in the myocardium To prevent the

formation of this vicious circle it would be necessary to close those sensory channels which conduct the reflexes, and this matter is dealt with later

III WHY ANGINAL PAIN SPREADS MAINLY OVER THE LEFT SIDE

The fine research work of Mackenzie on the anatomical relationship of the visceral and cutaneous nerve fibres affords an explanation of the reference of anginal pain to the skin But this relationship exists on the right side as on the left Why, then, does the spread of pain occur mainly over the left side? The explanation is that in angina the sensory nerves on the left side are more strongly stimulated With regard to the centrifugal fibres (sympathetic and parasympathetic), it is known that the nerves on the left side pass to the left cavities, the nerves on the right to the right cavities A similar arrangement must exist for the sensory nerves The anginal pain is located mainly in the left side, and radiates over it because the cavities of the left side are being compelled to perform an excessive amount of work during the attack It is the left ventricle, moreover, which shows the most extensive coronary lesions, and so the sensory nerve endings in the myocardium are rendered hypersensitive

IV SURGICAL TREATMENT OF ANGINA PECTORIS

The surgical treatment of this condition has had hitherto a "bad press" because it has for the most part been employed empirically Moreover, our ignorance of the precise path of the cardio-aortic sensory nerve fibres, and of the part they play in angina, prevents us from doing more than theorize There are, however, some well established physiological data which must be taken into account when considering the surgical treatment of angina It is known, for example, as a definite fact that the synapse of nearly all the sympathetic nerve fibres of the heart is situated in the stellate ganglion We must therefore consider the results of removing this ganglion in a patient suffering from angina, whose myocardium is the site of extensive lesions, and whose left ventricle is being subjected to heavy work owing to the arterial hypertension accompanying this condition Here will be found the explanation of many of the fatalities following extirpation of these ganglia in the operation of cervico-thoracic sympathectomy practised by T Jonnesco, who, in his published reports, shows that this operation has been followed by death in three out of six cases Another fatal case occurred recently, and Hofer in Vienna has reported a fifth, bringing the death rate to over 60 per cent Death results, as I have shown in previous publications, from failure of the left ventricle, and, above all, from acute pulmonary oedema, Cervico-thoracic sympathectomy has been disastrous from the therapeutic point of view, but it has at any rate made it clear that removal of the stellate ganglion in angina is incompatible with life

This operation must, then, be definitely abandoned, but the idea of surgical treatment of angina need not be given up, there is, indeed, reason to believe that it is the right line I have suggested section of the cervical sympathetic chain Coffey and Brown have practised this operation below the superior cervical ganglion combined with section of the first cardiac sympathetic nerve, and some benefit has resulted therefrom Eppinger and Hofer have cut a nerve which takes its anatomical origin by two roots, one from the vagus, the other from the superior laryngeal nerve, and which passes towards the thorax They term this a depressor nerve, but the physiological tests, which alone can establish such an implied function, are omitted from their investigations On the contrary, the very definite improvement obtained in their cases by no means indeed be likely that the closing nerve, and it would constituted by the depressor nerve, of the safety-valve, coronal attacks by increasing the would aggravate the angina probable that this work of the heart It appears that and that nerve contains a certain number of pressor fibres, only thus can there be an explanation of the benefit brought about in angina by the method of Eppinger and Hofer In another quarter Stoechelin and Hotz have had good results from cutting the first cardiac branch of the vagus.

So it appears that the section of quite different nerves brings about the same result—namely, a distinct improvement in angina pectoris This proves three things (1) that all these nerves contain sensory cardiac nerve fibres, (2) that cutting some of the ascending fibres, without putting them all out of action, is sufficient benefit anginæ, (3) that the abolition of the ascending nerve fibres, having no possible relationship with the latter group, which alone explains the localization of the pain, can, nevertheless, prevent the occurrence of the pain syndrome of angina These are the facts which suggest that there should be assigned to the ascending sensory group an important part in the originating of the anginal spasm, the reflexes, particularly of the pressor type, which they conduct, set up a vicious circle, which increases the irritation of the sensory nerve endings, giving rise eventually to pain It is this vicious circle that must be prevented from developing, and this can only be done by cutting the ascending sensory nerve fibres through which the pressor reflex is produced The primary factor is still operative, but the pressor reflexes being no longer produced, the sensory and the motor phenomena are scarcely apparent, and do not reach the point of causing pain, cardiac irregularity, or cessation of the heart action Unfortunately, however, the ascending sensory fibres, pressor and depressor, are scattered through the nerves of the cervical region Physiological experiments and operation results show that they are present in the cervical part of the sympathetic chain, the vertebral nerve, in the so-called depressor nerve of Hofer, in the vagus, including, perhaps, its cardiac branches, and in the cervical cardiac branches of the sympathetic There is only one neighbourhood where they can be easily reached—the inferior cervical and first thoracic ganglia, through which pass nearly all the sensory nerve tracts of the heart and aorta Experience has proved that in angina it is impossible to touch these ganglia without risk of killing the patient Coffey and Brown, Eppinger and Hofer, Stoechelin and Hotz, have performed an admittedly incomplete section of the ascending fibres from which some improvement resulted, but is this benefit permanent? It is true that most definite results were obtained by cutting the nerve of Hofer, but in one case the anginal attacks were only decreased in intensity, and in another the attacks returned after a few months This shows that the operation may be inadequate, which may be attributed to the fact that too small a number of sensory nerve fibres were cut It is necessary to sever as many as possible of these ascending fibres, and such an operation is quite practicable Of all the nerves which may contain these fibrils the vagus is the only one which must not be touched The cervical sympathetic chain and the vertebral nerve can be cut above the inferior ganglion without any danger The few cardiac accelerator fibres in the vertebral nerve, which come from the cervical cord, are of little importance compared with the large group of fibrils which leave the thoracic cord and pass through the stellate ganglion Similarly, there is no danger in cutting the nerves which emerge from the cervical sympathetic cord above the inferior cervical ganglion and pass to the heart, containing perhaps some sensory fibres It is further necessary to cut the special nerve described by Hofer, if present, which arises from the vagus and superior laryngeal nerve jointly and travels into the thorax

To sum up, it is suggested that in angina pectoris there should be cut the cervical sympathetic cord, and the vertebral nerve above the inferior cervical ganglion, the nerve of Hofer, or any corresponding nerves present, and the nerves which spring from the cervical sympathetic cord above the superior cervical ganglion and pass to the heart Thus, whilst preserving the important centrifugal nerves which are essential to the action of the heart, we are cutting the greater number of ascending sensory fibres to which is assigned an important part in the launching of the anginal attack Only by this operation as detailed above can permanent benefit be obtained The lateral sensory group which enters the thoracic cord is certainly left intact, but, as previously shown, this group is of only secondary importance Since the principal site of the anginal attack is the left side of the heart, and it is the sensory nerves of the left side which are mainly affected, the operation must be

performed on the left side in the first place Is it necessary to complete it on the right side? It would be difficult to give any categorical answer, but it is more than likely that in the majority of cases the operation on the left side would be sufficient None of the surgical methods suggested can yet be considered the ideal, it is certain that cervico-thoracic sympathectomy must be absolutely abandoned, whilst each of the other methods has as yet done no more than establish a right to be considered in therapeutics In the present state of our knowledge regarding the innervation of the heart and aorta in man it is only possible to outline a hypothesis, but research is proceeding It is unnecessary to add that the hypothesis can be modified or even abandoned in the face of fresh facts if they show that it is faulty, but at the present moment the line of reasoning set out above is the only one that seems legitimate

PROLONGED REST IN THE HORIZONTAL POSITION A FERTILE CAUSE OF PUERPERAL SEPSIS

BY

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In the BRITISH MEDICAL JOURNAL of August 16th I read a leading article on ante-natal care in private practice, in which the following statement occurs "Indeed, it is only too true that with the exception of the advances rendered possible by the advent of anaesthesia and of Listerism (chiefly in Caesarean section) there has been little progress in obstetrics during the last fifty years" This is a very strong indictment with regard to an important branch of medical science But with regard to the preventive treatment of puerperal sepsis I am afraid it is only the absolute truth No doubt antiseptics have proved to be excellent preventives, the records of the New York Maternity Hospital showing that since their introduction in that institution the mortality from puerperal sepsis has been reduced to nearly one fifth of what it had been previously But much still remains to be done to save innumerable valuable lives Two things struck me forcibly when I was one of the visiting physicians to the Cork Maternity One was the thorough contempt the patients in the lanes exhibited for the teachings of medical science with regard to the amount of rest that should be taken after a confinement The other important fact was that puerperal sepsis was almost unknown among these women, though they lived in the midst of squalid poverty and in surroundings which were the reverse of sanitary Since then, many times I have asked myself whether it may not have been a case of cause and effect Did the early sitting up indulged in by these patients and their rising from bed at an early date to do their work all tend to prevent lodgement of the lochia in the uterus and vagina, and thus render them less susceptible to sepsis? When I was a student the teaching would almost imply absolute immobility in bed for the puerperal woman Now things are more liberal, as it is considered quite orthodox for the patient to sit up when micturating But I see one modern author would not allow his patients to leave their beds till between the tenth and fourteenth days whilst others would keep them lying down till the eighteenth day Whether this lengthened rest is necessary, or on the other hand injurious, is a problem still awaiting solution

As I was anxious to know whether the poor in the slums of the city were still adopting the same methods as they did when I was a visiting physician to the Maternity, I questioned the present matron, who is a trained obstetric nurse, and as such had a good practice of her own prior to obtaining her present appointment nearly ten years ago I elicited from her some very interesting and important information She tells me that the average time extern patients remain in bed is four or five days and she gave me the history of sixteen of these patients who were still under the care of the nurses when she was speaking to me Five of them remained in bed till the fifth day only, but the other eleven considered that time too long and they got up the third day On the third day when the nurses called to attend the eleven they found one of them washing a tub of clothes, another was scrubbing the floor, and another was gone to town, probably to bring home the marketing And yet amongst the extern patients there was only one case of sepsis during the nearly ten years the matron has been connected with the Maternity On the other hand, within the same period amongst the intern patients, who are much fewer in number, there were three cases of puerperal sepsis All three were halt sitting up during micturition and defaecation One of the three sat up fully the third and every day afterwards, and she recovered The other two did not sit up fully any day, and both died Had the prone position nothing to say to the development and continuation of the sepsis in these cases? I will have more to say on the subject presently but here I may mention that some years ago in a work on midwifery I read that the author had a case of puerperal sepsis and the patient, contrary to his instructions, got out to the night-chair, and within a very short time there was quite a considerable drop in the temperature, probably due to the drainage of the uterus

Before considering whether sitting up in bed at stated intervals may be an advantage or disadvantage for the puerperal patient, and before discussing whether prolonged rest may or may not be beneficial, we had better first study Nature's methods of defending the organism against bacterial invasion First of all we have the vaginal bacillus, an efficient sentinel ready to attack any pathogenic bacteria that may have gained entrance through the ostium vaginae But it is during labour that the most energetic forces are brought into play At the end of the first stage the rush of the liquor amnii tends to flush out all bacteria that may be present During the second stage the downward passage of the child's body tends to firmly brush them out The expulsion of the secundines produces a similar result, and then the after bleeding helps to complete the work

Here, now, are some of the arguments that have been used against getting the patient at stated times to sit up in bed and against her rising early We are told that she might get pulmonary embolism But it is now asserted that pulmonary embolism except in the presence of some complication such as sepsis, cannot occur later than six or eight hours after labour Be that so or not, much would depend on the suddenness with which the alteration in position had been made Again, though undoubtedly a formidable complaint, at least here in Cork it is of very unusual occurrence I can recollect seeing only two cases One died within about ten minutes, as a matter of fact I did not actually see her in the attack at all The other was alcoholically inclined, and when I was resuscitating the child she suddenly sat up in bed and said we were paying all attention to the child and none to her The attack came on at once, but she recovered, and I remember part of the treatment was the application of leeches to the precordium

Another argument which has been used is that owing to the supporting ligaments of the uterus being soft and their lengthening remaining and also owing to the uterus being heavy prior to involution taking place, prolapse would be likely to occur I must own that even after starting this paper that seemed a puzzle for me, but I reflected that if things were as represented any number of the denizens of the lanes of the city should be victims of prolapsus uteri, and I asked myself, are the poorer women attending the gynaecological department of the Maternity more frequently suffering from this complication than the well-to-do patients coming to my study? I must say in this regard that I am inclined to think there is very little difference between these two classes of women If the puerperal woman were left to her own devices surely she would wholly or partially sit up when micturating or giving the breast to the child, and I asked myself, Could Dame Nature, so careful in other respects, be so negligent or the puerperal patient as constantly to subject her to the risk of becoming a chronic invalid solely because she had fulfilled the high function of propagating the species? Further thinking led me to a solution of the problem Here it is the first day of the puerperium the walls of the uterus are nearly two

inches thick, and the fundus is five inches above the symphysis pubis Consequently at this time we are dealing with a very bulky organ which is resting on the false pelvis and on the brim of the true pelvis Even on the ninth day, the day on which many ladies get up, it is so comparatively large that the fundus is still an inch above the symphysis, and even when the uterus becomes a pelvic organ it must for some time be getting surrounding support Clearly, then, during a very great part of the puerperal period there is no need for the suspensory ligaments to exercise their normal functions, and they can well afford to wait till they will have contracted sufficiently to enable them to do their work efficiently

So after all Dame Nature is not the blind goddess some obstetricians would represent her to be, and I am afraid that we must dismiss as a figment of the imagination the oft-repeated statement that much sitting up in bed or the early rising of the puerperal woman gravely endangers her suffering from uterine prolapse

In this connexion I may point out that it is known that certain uterine displacements are prolific causes of abortions, and if early sitting up in bed and early rising during the puerperium readily lend themselves to the production of these displacements, then we ought to have any number of abortions amongst the extern patients of the Cork Maternity But what are the facts? Statistics indicate that something like 10 to 20 per cent of all pregnancies terminate in abortions, and yet the records of the Maternity show that amongst the extern cases attended the number of abortions was a little less than 3 per cent of the pregnancies I recently questioned a gentleman who had been a prominent Government official in the Transvaal, as to the habits of Kafir women with regard to their confinements, and he told me that after the confinement they would be out working hard that very day in the fields, and he added that Kafir women are a healthy race In answer to further inquiries, he said he never heard of a Kafir woman having puerperal fever, but he had heard of Europeans suffering from the disease

I have now mentioned some facts that would tend to indicate that women who rise, perhaps, in some instances, too soon are less liable to be attacked by sepsis than women who remain lying down for a considerable time, and I think we might with advantage investigate this subject further Judging from the energetic measures taken by Nature during and soon after labour to get rid of any noxious bacteria that may have found entrance into the genital tract, we may assume that an important function of the lochia is to wash out any debris that may have remained in the uterus after labour is ended, and we know that a piece of the membranes might be left behind unnoticed and, even though small, large enough to form pabulum for a whole colony of bacteria and a suitable nidus from which they could lay siege to the adjoining tissues It would be almost an insult to intelligence to ask whether the bit of membrane would be more readily removed by the lochia when the patient is sitting up or in the prone position Another function of the lochia is to flood out any pathogenic bacteria which may have gained entrance into the vagina or uterus, and the same remarks with regard to position apply to this But that is not all The dorsal decubitus causes the lochia to stagnate in pools in both the uterus and vagina thus forming veritable forcing beds for the breeding of noxious bacteria Furthermore, the lochia retained in the uterus, acting as a foreign body, interferes with adequate involution, leaving the cavity larger with freer entrance for the bacteria, owing to this subinvolution the uterine vessels and lymphatics are not adequately compressed by the muscular fibres, and the bacteria or their toxins can all the more readily get into the general circulation Once puerperal sepsis develops this state of affairs tends to accentuate matters For some years past I have been instructing my patients to sit up at stated intervals in bed, with, as I believe, good practical results

Out of the mouths of babes comes wisdom, and poor women residing in the slums of Cork, who through force of circumstances felt compelled to ignore medical advice, have taught me what I consider a very valuable lesson

British Medical Association.

PROCEEDINGS OF SECTIONS AT THE ANNUAL MEETING, BRADFORD, 1924

SECTION OF OBSTETRICS AND GYNAECOLOGY.

JOHN S FAIRBAIRN, M B, F R C P, F R C S, President

DISCUSSION ON DYSMENORRHOEA IN YOUNG WOMEN ITS INCIDENCE, PREVENTION, AND TREATMENT

OPENING PAPERS

I —ALICE E SANDERSON CLOW, B Sc, M D, B S, Cheltenham

"DYSMENORRHOEA" is a word to which so many definitions have been given that it is necessary to state in what sense one is using the term This entails an understanding as to what we mean by "normal menstruation" Experience has taught me that menstruation is a function which, when normal, has no symptoms If there were not external evidence of it a large proportion of women would not know when it was taking place This is the normal state of affairs Suffering of any kind associated with the menstrual period is abnormal, and is included in the meaning of the word "dysmenorrhoea" as used in this paper

INCIDENCE

In support of the above statement with regard to normal menstruation I have obtained, during the last eleven years, the following figures, as the result of questioning over 2,000 healthy girls whose ages range approximately from 12 to 22 years The information was elicited at the first interview after the onset of the catamenia Of these girls, 1,830 were at a secondary school (in which the majority of the pupils were boarders), and were seen in the course of the annual medical inspection, the remaining 220 were students at a training college for teachers, at which I have been one of the medical officers for the last five years

Having decided from the first that there can be only one line of demarcation between normal menstruation and dysmenorrhoea, I divided the cases into two main groups In the first group (normal) I put those who stated that they had no pain or discomfort whatever during the period, or as they usually expressed it, "felt just ordinary", also those who had, on very rare occasions, experienced some discomfort In the second group (dysmenorrhoea) I placed all those who owned to any pain, however slight, or any feeling of malaise, such as headache or nausea, associated as a general rule with the menstrual period This group I further subdivided under three headings according as the symptoms were "slight," "subacute," or "disabling"

The result was as follows

Number of girls questioned, 2,050			78%
Group I	Normal	17%	
Group II	Dysmenorrhoea—	2%	22%
	Slight	3%	
	Subacute		
	Disabling		

Of the type of dysmenorrhoea known as "spasmodic" I have only recorded five cases It is remarkable how rare it is for any pain or discomfort to be experienced during the first two or three menstrual periods Only three girls stated that this was the case

The percentage of cases of dysmenorrhoea from my own investigations is much lower than that obtained from schoolgirls by the two observers quoted by Dr Blair Bell at the Congress of Obstetrics and Gynaecology last year These figures (53 and 42 per cent) were obtained from 268 and 500 girls by Dr Mario Jacobi and Dr Catherine Chisholm respectively

Now the figure I obtained with the first 734 girls interviewed, as recorded below, was 46 7 per cent, which is about midway between the two percentages quoted above

The reason for the marked reduction in my total numbers will be apparent later Suffice it to say now that with the change in the school regimen with regard to exercise there has been a steady decrease in the incidence of dysmenorrhoea, even among those questioned on the subject for the first time Also the average age of entrance to the school has been considerably lower during the last five years, so that the influence of the school customs with regard to the menstrual period starts, in many cases, at puberty

I hope it may soon be recognized that it is quite unnecessary for as many as 22 per cent of schoolgirls to be subject to a monthly recurrence of pain or discomfort A study of the textbooks on gynaecology would certainly not lead one to the conclusion that menstruation is normally a painless process I have not found one which does not give the impression that suffering must be expected to occur during the menstrual period

It is difficult to see how gynaecological surgeons can acquire a first-hand knowledge of the normal menstrual process, when their time is occupied in dealing with pathological conditions I would suggest that the only reliable statistics on the menstrual function can be obtained by medical women who have access to a large number of healthy girls and women in schools and colleges and industrial institutions The importance of right teaching on the subject to medical students can hardly be overestimated, because on it depends the advice given to the mothers of the next generation So long as the family doctor teaches that the menstrual period should be regarded as a time of semi invalidism, so long will dysmenorrhoea continue to be a common complaint

I notice that some gynaecologists do not consider menstrual pain worthy of the name of dysmenorrhoea, nor of treatment, unless it is so severe that a woman is incapacitated thereby It is agreed by all that the disabling forms are rare compared with the less serious types of the complaint The latter, therefore, are of greater importance from the national and industrial point of view Surely any pain or discomfort endured during working hours must detract from the value of the work done, therefore apart from any desire to alleviate the suffering of the individual, it is important that dysmenorrhoea, however slight should not be disregarded, but should be cured if possible

PREVENTION

Since my girlhood I have known that normal menstruation is a painless function, and that not only can baths and exercise be continued with impunity throughout the normal period, but that dysmenorrhoea is usually thereby relieved, if not dispelled

During my first year of medical inspection at the school which supplies me with my data, the rule, as in other boarding schools, was that games and gymnastics and baths were discontinued during the first three days of the period Those who felt so inclined were allowed to go out for a walk, the alternative form of recreation was to lie down and read a novel In some of the boarding houses the latter became the more popular procedure, with the result that an increasing number of girls did not feel well enough to continue the ordinary routine of school life In many instances girls were kept in bed one or two days during menstruation, at the request of the parent or home doctor This still occurs in a few cases I was quite sure that these practices not only incurred a waste of time but were a source of future preventable suffering I therefore questioned each girl, who had arrived at the age of puberty, as to her feelings and habits at the menstrual period and explained my views with regard to the hygiene of the period, instructing her to obtain consent from home before putting my advice into practice The advice given corresponds with that recommended by the Council of the Medical Officers of Schools Association, which has been issued in leaflet form for distribution by headmistresses It is as follows

Advice to Girls concerning the Monthly Period *

1 The monthly period is not a malady but a natural function you ought therefore, at these times to feel quite well and to be free from pain or any unpleasant sensations

2. The ordinary rules of cleanliness and hygiene should be observed as at other times There is no risk in the use of soap and water, in spite of the usual prejudice against it a warm bath should, if possible be taken every day throughout the period if this is not possible, you should wash the whole body, including the feet with soap and water There should be a daily action of the bowels, as at other times

3 In order to grow up strong and well, it is necessary that you should have some exercise every day in the open air such as a brisk walk or games It is important that you should continue this exercise, as usual throughout the period, as, by so doing you will probably prevent the one or more days of discomfort and pains later on If you are troubled with slight headache or backache or a sense of fatigue or light pain during the period you should take a brisk walk or play games, or do some work in the house or garden involving bending movements of the body If you give up all exercise, more especially if you lie down, your aches and pains will be *prolonged and increased in severity*

4 If you feel ill at the period and are not able to carry on your usual occupation your doctor should be consulted Any ailments associated with the period are more easily cured while you are young than after they have been established for years

The following table gives a summary of the results obtained at the inquiry at the school and at the training college

	School		Training College	
	Years 1919-1920 734 Girls	Years 1920-1921 612 Girls	220 Students	
	First Interview	Last Interview	First Interview	Last Interview
Dysmenorrhoea—	Per cent	Per cent	Per cent	Per cent
Slight	20.0	10.2	8.6	3.6
Subacute	1.5	0.5	7.2	1.8
Disabling	5.1	0.1	3.0	0.4
Occasional	Not recorded	7.6	2.3	3.5
Rest during period	20.3	4.0	4.0	0.4
Baths during period	11.9	74.3	11.5	32.2
Games etc during period	2.7	61.1	69.5	82.2
Constipation during period	7.0	3.3	2.2	0.9

The method of grouping in this table, which is not based entirely on the girl's own description of her feelings, requires some explanation

Slight Dysmenorrhoea—In this group are placed all those who complain of slight pain or discomfort at the period which is not severe enough to interfere with their work or games It includes also some who describe their pain as dreadful but who, on being asked if it would deter them from playing hockey or going to a dance, say, Oh, *no* It is not bad enough for that

Subacute Dysmenorrhoea—In this class are grouped all those whose suffering at the period is enough to be apparent to others or to interfere with any pleasurable pursuit though they are not incapacitated by it

Disabling Dysmenorrhoea—Under this heading are grouped those who, on account of pain, headache or sickness are unable to keep about even if they have to retire only for half an hour It does not include those who lie down against their own inclinations

Occasional Dysmenorrhoea—In some dysmenorrhoea is experienced occasionally, perhaps once in six or nine months In some cases there is no apparent reason, in others it is associated with illness or temporary change of circumstances such as travelling which usually entails lack of exercise General state that they only experience pain in exceptionally cold weather In many cases dysmenorrhoea occurs only in the holidays when rest is insisted upon during the period These are potentially normal and are not included in this group

Bath during the Period—By this is meant an ordinary warm bath not a cold douche or swimming The unwholesome belief that it is dangerous to wash below the neck at these times is still prevalent Twenty five per cent of the schoolgirls have not followed the advice given in this respect, the reason, in most cases being that the doctor at home has not given his consent

Games etc, during the Period—This means the voluntary continuance of games such as hockey, lacrosse, cricket, tennis,

* This leaflet is issued by authority of the Council of the Medical Officers of Schools Association.

whether practice or in matches, also drilling, gymnastics, riding, cycling, or dancing It is very striking that among the school children the desire to continue their games as usual is almost universal, yet a *considerable proportion are still prevented from doing* so by restrictions from home Many have discovered before I see them that unless they get some exercise on the first day of the period pain is liable to occur

Constipation is not common among these girls, but is more frequent during the period than at other times

The first column of figures in the table is derived from questioning the schoolgirls during the first five years of the investigation, *and were obtained at the first interview, before they* had received any teaching or direct influence from me Most of the girls had already been menstruating for two or three years

The second column of figures was obtained during the last four years, at the last interview, of girls who had all previously received my usual advice *with regard to the hygiene* of the menstrual period The majority of these were over 18 years of age We thus get the longest time test available for comparison

The second pair of columns of figures were obtained from 220 training college students The number is too small to allow definite conclusions to be drawn, but is, I think, sufficient to be of some interest The students stay only two years in the college, *and the sets of figures were obtained from questioning* them on their arrival and departure respectively

The facts which are brought out by these two independent sets of figures are

1 That the incidence of dysmenorrhoea has been reduced in each case, the total reduction being approximately 75 per cent

2 That there has been a decrease in the number of those who lie down during the period, and a marked increase in the number who have warm baths and take their exercise as usual

3 It will be noted that the total incidence of dysmenorrhoea is less among the students than in the case of the schoolgirls, *in spite of the fact* that the former are all over the age of 18, when dysmenorrhoea is more common than in earlier girlhood The explanation of this is, I think, to be found in the fact that the practice of resting during the period when at home was less common, and the continuance of exercise was much more usual than among the schoolgirls The students, as a whole, come from humbler homes, where it is not so customary to interfere *with the natural activity of children* during their menstrual period

4 There is a decrease in the number of cases of constipation

I am sure it is the practice of suddenly stopping all activity during the period, together with the associated idea of invalidism which it inculcates, that is responsible for the relatively high proportion of cases of dysmenorrhoea among women of the educated class Notwithstanding the fact that its incidence has, I believe, been overestimated, I do not think there is any one factor which mitigates against the success of unmarried women in their various callings so much as this preventable source of monthly disability

Although I do not know of any figures which confirm mine in this country, support of the practice I advocate is to be found on the basis of experience in America Dr Florence Meredith, in her article on "Functional menstrual disturbances,"[2] writes

"A physician who examined a large number of college girls ten years ago found that 75 per cent had dysmenorrhoea quite regularly At the present time out of 749 girls only 17 per cent were troubled at all by pain at the menstrual period and only about half of these regularly The reason for the decrease I believe to be first, an improved attitude in the minds of the girls towards the menstrual function For the most part they now consider it, as they should a normal function, one which should not give them pain and not be anticipated as a time of invalidism The second reason for the improvement is, I think that girls are now indulging in a much greater degree of general activity during the period"

She also writes

"I have never seen a single girl harmed by any activity which she would normally take or any kind of baths to which she was habituated, even cold ones when taken straight through the period"

I can certainly corroborate this statement

There is no doubt that the best means of reducing the incidence of dysmenorrhoea throughout the country would be to teach every schoolgirl the simple rules of hygiene of the menstrual period If the medical profession, when the headmistresses are asking for guidance in the matter, were to follow the lead of the Council of the Medical Officers of Schools Association in its attempt to bring this about, I believe that, in one generation, there would be a marked reduction in the number of cases of dysmenorrhoea I would suggest that the "Advice Leaflet" quoted above be distributed also among girls working in factories and other industrial institutions

If dysmenorrhoea came to be looked upon as a disqualifying complaint in a woman worker, many of the cases which could be cured by exercise would disappear, and the others, instead of suffering in silence, would seek treatment from their doctors Though some individual hardship would be entailed, the amount of suffering throughout the land would be very much reduced, and, with it, would be removed the chief source of the inefficiency of the unmarried woman worker compared with the man

There is one suggestion I would make both with regard to schools and factories, and that is that private lavatory accommodation, with facilities for washing, should be accessible to girls and women during the period The chafing and dragging caused by wearing the same sanitary towel too long often leads to abrasion of the skin with intense pain I am sure that the sum total of suffering from this cause far exceeds that from dysmenorrhoea It is a cause of absence from work and social engagements of women who have to spend many consecutive hours away from home, and deters schoolgirls from their games and drilling, and gives rise to the impression that menstrual disability of a more serious nature is commoner than is really the case

TREATMENT OF DYSMENORRHOEA

The treatment of dysmenorrhoea described in all text books, and faithfully adhered to by most general practitioners, is rest in the recumbent position, with a hot-water bottle to the abdomen, and drugs If by this means the pain is not kept below the point of toleration by the patient, an operation for dilatation, or incision, of the cervix is performed

My own experience is that not only is exercise prophylactic against dysmenorrhoea, but that most cases already developed in young women can be cured by the same means In my opinion operation should not be performed, nor even suggested to the patient, until a course of treatment by baths and exercise, with a judicious administration of drugs, has been tried for at least six months and found useless Patients have to be taught that the treatment of dysmenorrhoea does not consist in relieving the pain after it has begun, but depends very largely on the regulation of the health by daily exercise in the open air—the exercise to be continued throughout the period I have found that the first essential in the treatment of a case of dysmenorrhoea is to eradicate any previous notions that menstruation is an ailment which requires nursing In the case of young girls attention has to be paid chiefly to correcting the views of the mother, and often considerable time and patience have to be expended before this very important preliminary process is completed There is no difficulty in convincing the children

Having ascertained by routine examination that there is no evidence of disease or structural abnormality, I advise the patient to take a bath, when possible, at the beginning of the period, hot enough to flush the skin, and to continue this daily throughout the period, even after the onset of pain I know of nothing which gives relief so promptly It is far more efficacious than the hot-water bottle, as is only to be expected The daily exercise, which should involve bending and swaying movements of the body, should be begun some days before and continued throughout the period The exercise should, if possible, take the form of work, or games, or sport, so that the patient's mind may be diverted from her condition For a woman who is engaged in sedentary work all day, exercises done in the bedroom in the early morning will generally suffice, but in all cases it must be vigorous enough to promote a healthy glow or even gentle sweating For nervous women I generally prescribe some mild analgesic for the first three periods, but often find it is discarded after the first

It is exceptional to come across a girl whose dysmenorrhoea is not cured, or much relieved, by these means. Having once experienced the desired result no more encouragement, or treatment, is usually required. The patient keeps herself well. The failures have been in those cases where the patient cannot be persuaded to try what she considers too drastic remedies. The following is an illustration of this type of case:

A lady complained that two of her maids both nearly 30 had to be sent to bed for at least a day every month. They had been troubled with dysmenorrhoea for many years and in spite of every care the pains were increasing in severity. The girls were persuaded to face the risks of the hot bath which gave them temporary relief, but efforts to make them take exercise failed entirely. I was assured that any attempt to keep about at all on the first day of the period turned them green. Drugs had no effect whatever. Treatment was therefore stopped and the resigned themselves to their suffering.

About two years later, during the second year of the war, they came to me for advice, saying that they were anxious to take up farm work in a neighbouring village, but that the condition of service was that no leave of absence was granted for any monthly disability. I encouraged them to go and heard nothing more of them until they appeared after the armistice on account of an outbreak of scabies among their fellow workers. They had been free of all menstrual trouble. One of them had felt nervous at the beginning of her first period when she was engaged for three hours throwing up large trusses of hay on to wagons with a pitchfork. To her surprise the usual pains did not develop, and she felt quite well. She had not had any return of the pain since. Her companion spent the first day of her period removing manure by means of a wheelbarrow from one part of the farm to another. The result was equally happy in her case. They said that none of the band of twenty women who were engaged by the same farmer had any time off on account of menstrual disability.

Another case of unexpected self-cure was that of a lady wintering abroad who on the first day of her period received an urgent summon home. She had therefore to rise from her bed and pack a large trunk (excellent exercise). This she found stopped her pain which usually lasted for two days and she travelled in comfort.

To show that active, outdoor life is not always prophylactic against dysmenorrhoea unless the activity is continued during the period, I will refer to one other case.

Nine years ago a lady farmer brought one of her pupils, a girl of 19, to me on account of dysmenorrhoea which rendered her incapable of work for nearly three days. A dull aching pain began on the day preceding the period. The menstrual flow for the first three hours was very scanty and during this time the pain was agonizing and was accompanied by vomiting. When a freer flow was established the character of the pain returned to that of a dull ache. I gave the usual advice as to baths and exercise. The lady farmer informed me this spring that after three months of the treatment the patient had no trouble whatever, and she has never been able to detect since that time when the girl is having her periods.

I have no collective results of the treatment of the severer cases of dysmenorrhoea among the schoolgirls I inspect, as a few cases only have come under my own care. In the ordinary routine I refer cases requiring treatment to the medical men in charge of the boarding-house. In my private practice I find it difficult to keep complete records. Patients fail to report progress, especially when there is no further trouble and they know that the remedy lies in their own hands. No doubt, as a general practitioner, I am consulted by a larger proportion of women suffering from the milder types of dysmenorrhoea than probably is the case with the consultant gynaecologist.

In a hundred consecutive cases of dysmenorrhoea in nulliparous women with no organic disease of whom I have had subsequent reports, the following results were obtained from treatment by baths and exercise:

Fifty-nine were cured. Thirty of these had in addition some drug treatment for the first three months.

Thirty-two were relieved of the pain but were conscious of some discomfort. Of these twenty-two were helped by drugs.

Nine were no better. Six of these did not give the treatment a trial. Three of them were relieved after the backward displacement of the uterus was rectified.

One, on whom I did a dilatation of the cervix nine years ago, was temporarily relieved, but after eight years the incapacitating pain recurred. The patient has lately been treated by diathermy, which has relieved the pain as completely as did the operation.

The drug most usually prescribed has been ammonol. I have not prescribed extracts of ductless glands for dysmenorrhoea itself, apart from abnormal periodicity, or flow, or other symptoms indicating disorder of endocrine secretion. In eleven of the successful cases I prescribed small doses of thyroid extract, and in three cases a poly-glandular preparation.

In most cases the pelvic examination was made per rectum without an anæsthetic. I have therefore no record of the frequency of pinhole os, cochleate uterus, or any minor deviation from the normal which might be found on vaginal examination.

Some observers have found that dysmenorrhoea occurs in 50 per cent. of all women, and that the commonest cause is under-development of the genital organs.[1] It would be interesting to know if any case so diagnosed has subsequently given birth to a full-term child. There is so much variety in the normal that I know not by what standard such a diagnosis is made. I presume that in the case of the ovaries it is based entirely on symptoms, and in the case of the uterus on physical examination. I have not recognized this condition except in the extreme cases, such as the infantile uterus, but these are rare and, in my experience, have been associated with amenorrhoea more often than with dysmenorrhoea. How is it that Nature is found to fall short so frequently in the all-important genital organs in the female, who is otherwise well developed, and that there is no corresponding failure on the part of Nature in the male?

If the effect of treatment may be taken as an indication of the cause of the pain, it would seem that the cases cured by hot baths, exercise, or diathermy are due to congestion, since all of these measures have a stimulating effect on the circulation.

Exercise, the most easily obtained and effectual of the remedies, by giving employment to mind and body, helps also to eliminate the psychological factor.

The type known as "spasmodic dysmenorrhoea" is not so successfully dealt with by voluntary effort, especially when the case is of long standing, though there are several instances of complete cure. But the fact that no case, to my knowledge, has developed among the school or college girls who have continued their games throughout the period, suggests that the prevention of congestion during the early years of menstrual life is prophylactic also against spasmodic dysmenorrhoea.

The treatment of dysmenorrhoea, as it occurs to-day among industrial workers, is a subject well worth careful consideration.

In the *Journal of Industrial Hygiene* published in February last year, Dr. Samuel Meeker wrote a preliminary note on "Dysmenorrhoea as an industrial problem."[4] His opening statement is, "Dysmenorrhoea is the commonest of all female ailments." According to his findings there is an enormous loss of work from this cause in America. He puts in a strong plea for the more general keeping of menstrual records in industrial concerns and adequate treatment of sufferers. The records would be most valuable, but if the method of treatment he advocates were realized we should probably find that the incidence of dysmenorrhoea among workers would increase rather than diminish. The "necessary arrangements" he suggests are a room with beds, a tactful nurse, a physician to be available for those who wish to see him, hot-water bottles or electric heating-pads, malted milk, etc., for hot drinks, and a selection of suitable drugs. Those things may be very comforting to a girl actually in pain, for whom I would provide a hot bath and a couch, but I would replace the hospital ward by an empty room or, better still, a court in the open air, where the girls are encouraged to go through a short course of exercises daily, the exercises not to be missed during the period. By some such means, prefaced by some teaching on the subject by a medical woman, I believe we should do away with the majority of the cases of dysmenorrhoea.

If all employers of female labour were to follow the example of the Gloucestershire farmer referred to above, in refusing leave or absence for menstrual disability, I am inclined to think that the extra hardship endured by the few would be well compensated for by the benefit conferred on the many.

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II.—LEONARD PHILLIPS, M.S., B.Sc. LOND., F.R.C.S. ENG.,
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I MUST congratulate Dr. Clow on her very excellent paper, a valuable contribution to a subject the pathology of which is but little understood.

I agree with much of what she says. For some years I have been treating patients along similar lines with very gratifying results. However, I would not go so far as to say that most cases of dysmenorrhoea without physical signs are curable by exercises and hot baths continued throughout the period. Unfortunately we find only too often that the pain persists in spite of careful hygienic treatment, and I can recall cases of intractible dysmenorrhoea in women athletes of the highest order. Sometimes hygienic treatment, drugs, and operation are all tried in turn and fail, and the patient is obliged to endure a constantly recurring and distressing ailment, or submit to a major operation such as hysterectomy.

There is no royal road to the successful treatment of all *dysmenorrhoea cases. It is true that there is a definite* clinical type of dysmenorrhoea dependent on faulty hygiene and curable by hygienic treatment, but there are other clinical types due to various causes, some of which are very imperfectly understood and which, in my experience, are not curable by hygienic methods of treatment, sometimes not curable by any method of treatment short of stopping the periods completely.

In a paper read before the Royal Society of Medicine last year I analysed the results of treatment in one hundred consecutive cases in my out-patient department, pointing out that various clinical types of dysmenorrhoea exist, each demanding its own particular treatment. With regard to the "hygienic type" it was stated:

"Dysmenorrhoea is frequently a disease of faulty hygiene and living. A large proportion of patients conform to a definite clinical type. They are thin, anaemic, poorly developed, hypotonic, with weak abdominal muscles, absent abdominal breathing, and faulty posture. They are frequently constipated, have visceroptosis or a bad circulation, and lead indoor lives with little exercise and less fresh air. Naturally the uterus is sometimes arrested in its full development and possesses a feeble musculature, easily exhausted if compelled to do much expulsive work.

"An exhausted muscle forced to continue its contractions gives rise to cramp and severe spasmodic pain, true alike of the heart, the gastrocnemius, or the uterus. *Constipation has a bad influence,* for a mass of faeces in the pelvis may act as a pelvic tumour pressing on the veins and aggravating the congestion and menstrual pain. Often complete relief can be obtained by improving the faulty conditions above outlined, in the following manner:

"'1. *Establish the Correct Mental Attitude.*—The patient must be made to realize that the period is a *natural function,* she is not ill, and must bathe and take exercise as usual.

'2. *Correct Clothing.*—No constricting garments should be worn which are likely to impede the pelvic circulation, if corsets are adopted they must not do the work of the abdominal muscles.

'3. *Correction of Constipation.*—Plenty of water should be drunk and fruit eaten. Overeating is bad, but enough food should be taken to give bulk to the intestinal content. *exercise in the fresh air,* abdominal kneading night and morning, and a regular attempt to empty the bowels at the same time every morning should be insisted upon. Purgatives should be used temporarily only, and paraffin chiefly relied on, if possible, while a regular daily reflex is being established.

'4. *Exercise and Exercises.*—Walking, light Indian clubs, tennis, and hockey are recommended. The object is to increase the tone of the musculature of the abdominal wall, bowel, and uterus, to improve the general and local circulation, and so to produce improved nutrition and muscular development. Many patients do not realize that the abdominal wall contains muscle. They allow their corsets to do the work of the recti and obliqui inducing viscero ptosis, constipation and defective abdominal breathing. They must be taught—to produce hardening of the abdominal wall at will—breathing exercises night and morning before a mirror standing in the correct attitude, and exercises to develop the abdominal muscles such as lying flat on the back, then raising themselves into the sitting posture, keeping the legs and heels in contact with the bed or couch. Leisure must not be spent in emotional recreation such as the theatre, cinema, or novel reading, but in walking or exercising in the fresh air.

It is much less common to see robust women suffering from *dysmenorrhoea. Make the patient healthy and strong and often* you will cure the dysmenorrhoea. Too much emphasis cannot be laid upon the importance of faulty upbringing, surroundings, and development as a causative factor in dysmenorrhoea, and the need of improving these as a first step in treatment.'

For some years now I have been interested in dysmenorrhoea without physical signs, and have kept careful notes of about four hundred cases. All these women had very definite and disabling pain, and most were sent to me privately or to hospital by their medical attendants after an unsuccessful trial of medical treatment. In my hospital out-patient department such dysmenorrhoea cases constitute between 10 and 15 per cent. of the total number of women seeking relief.

In the short time at my disposal I think it would be best to mention briefly some of the more important and less appreciated facts which have impressed me after an analysis of these cases.

1. *Hygiene.*—The majority of the patients lead inactive or indoor lives, "nurse," "typist," "clerk," "machinist," "leather-worker," are found constantly in the notes under occupation. In one-half of the cases constipation constituted a definite complaint. One-third of the patients were poorly developed, with weak abdominal musculature, faulty posture and breathing, anaemia and visceroptosis—the class so much improved by hygienic treatment.

2. *Clinical Types.*—Little attempt has been made in the past to divide cases into groups founded upon constantly recurring clinical similarities. The variations in the site, time, duration, and character of the pain are very great, and, together with varied general conditions and local findings, suggest the possibility of several causative factors in dysmenorrhoea, even though gross pelvic physical signs are usually absent.

3. *Physiological Dysmenorrhoea.*—It is so often stated that intrinsic dysmenorrhoea begins at puberty and recurs at each subsequent menstruation. Some cases do, but a greater number establish menstruation painlessly, the dysmenorrhoea developing several years later, and for no apparent reason. Moreover, many women have painless periods alternating at intervals with painful ones. The importance of recognizing this fact is obvious, for in such cases an organic or developmental *fault cannot be adduced* as the cause. If it were so we would expect the pain to start with the first menstruation and to continue with each subsequent period.

4. *Functional Dysmenorrhoea.*—I am convinced that there is a strong psychical element in *some cases.* I can recall a case of dysmenorrhoea in which operation had been advised, but it was found impossible to pass a sound or even a probe into the uterus, so the operation was abandoned. The patient was not informed of the fact, her dysmenorrhoea, however, ceased from that time.

Many articles are written in support of various methods of treating dysmenorrhoea, but the originator of the treatment is usually more successful than his followers. This is often because so much depends upon the personality of the doctor, and on the fact that he is interested in his subject, so taking pains and exercising patience, while confidently assuring his patient of the success of his treatment. It is never wise to *mention operative* treatment until other methods have been tried. The results of operations for dysmenorrhoea leave much to be desired, and *cases in which* dilatation, curettage, or anterior hysterotomy have failed, can sometimes be subsequently cured or improved by non-operative treatment.

5. *Obstructive Dysmenorrhoea.*—This is the oldest theory and the one most constantly decried at the present time. *Yet there is* an accumulation of facts suggesting the existence of an obstructive factor in some types of dysmenorrhoea. *To illustrate the possibility* of such a condition I would like to refer to two cases which came under my care. Both of these *patients were* married women suffering from leucorrhoea due to a badly lacerated cervix. Neither of them had ever *suffered from pain* at the periods. Amputation of the vaginal cervix was *performed* for the leucorrhoea. Subsequently severe colicky dysmenorrhoea, exactly similar to so-called spasmodic dysmenorrhoea, developed. In both cases it was found that some true acquired stenosis of the cervix had developed as a result of the amputation, and it was difficult to pass a *probe into the* uterus. Anterior hysterotomy was done in each case, and the dysmenorrhoea then ceased.

6. *The Relation of Age to Cure.*—The younger the patient when first brought under treatment the better the results, from 16 to 20 years of age the percentage of successes is high. Severe cases over 25 years of age are more difficult

to cure, and cases over 30 are usually intractable and constitute the bulk of the failures. Recently I was consulted by a woman in her thirties who had been told when she was quite a young woman that nothing could be done for the menstrual pain, which she must endure throughout her life; after treatment her pain is now negligible. Often, however, this result cannot be secured in cases left so long untreated. It is important to treat cases early, to persist in the treatment, and not to abandon the patient to her pain. There are few other pelvic conditions in which patients are so grateful for an alleviation of their pain.

7 *The Question of Pelvic Hypoplasia in Cases of Dysmenorrhoea and the Uses of Ductless Gland Extracts.*—I think it is important to obtain a consensus of opinion on this subject, since individual and combined extracts of ductless glands are so frequently prescribed on the assumption that a moderate degree of pelvic hypoplasia exists.

I agree that it is difficult to make out a proved scientific case in favour of this theory, concerning which great diversity of opinion exists. It is maintained against it: (1) That it is difficult to estimate accurately the size and degree of development of the uterus by ordinary methods of bimanual examination. (2) That in cases of so-called incompletely developed uterus the sound usually passes the normal distance. (3) That these uteri, when inspected through an abdominal incision, do not appear to be as small as one would expect from the bimanual examination. (4) That all uteri are not made to one constant pattern, and that variations within limits are possible in the normal case.

On the other hand, gynaecologists with out-patient departments are familiar with a common type of case in which the cervix is very small, the anterior lip almost absent, the anterior vaginal wall short, the fornices less roomy than the vaginal introitus, the uterus less bulky than in most nulliparous women, or else retroverted or acutely anteflexed. These cases are often associated with amenorrhoea or with long and irregular intermenstrual intervals. Dysmenorrhoea and sterility are commonly present and combined. The male type of pelvis and pubic hair may also be noticed. Personally I believe that a moderate degree of arrested development is fairly commonly met with amongst gynaecological out-patients, though how frequently it occurs outside hospitals in apparently normal women I do not know.

In four hundred of my cases of bad dysmenorrhoea one-third occurred in married women, and practically all were *sterile over periods varying from* three to seventeen years. There are two very suggestive facts in favour of an endocrine basis in some dysmenorrhoea cases: (1) the well known association of dysmenorrhoea with sterility, a fact emphasized many years ago by Matthews Duncan, (2) the remarkable success of organotherapy in some cases.

Though often disappointing, the administration of extracts of ductless glands is sometimes extremely encouraging. In some cases remarkable results are produced in a most dramatic manner, and patients are deeply grateful for the relief. I have some who remain free from pain while they take thyroid extract just prior to the period. *Cases with long and irregular intermenstrual periods and scanty flow sometimes derive much relief from combined extracts of ductless glands*, especially thyroid, ovary, and pituitary. Again and again in such cases (associated as they often are with small uteri) the administration of polyglandular extracts is followed by regulation and stabilization of the periods, and ultimately by pregnancy and childbirth, with its frequent cure of the dysmenorrhoea.

8 *Operative Treatment of Dysmenorrhoea.*—It is important to realize that drug treatment as practised at present is palliative only, requiring repetition at each painful period. On the other hand operative treatment may be curative and permanent, though the percentage of permanent cures is not high. In an analysis of two hundred cases subjected to operation I found that 25 per cent. were cured, 25 per cent. improved, and 50 per cent. were unaffected or made worse. It is important, therefore, not to guarantee a cure when recommending operation in cases of dysmenorrhoea. The operations performed were: (1) dilatation alone, (2) dilatation with insertion of a hollow glass stem for varying periods, (3) dilatation and curettage, (4) anterior hysterotomy.

Dilatation gave the best results when performed in young women with central suprapubic spasmodic pain only, and when divulsion rather than dilatation was performed.

Curettage gave the best results in married women, especially when menorrhagia was present or casts expelled.

Hysterotomy proved valuable in acutely anteflexed undersized uteri, especially when the clinical picture suggested an obstructive causal element. At first I was encouraged by the results of this operation, but I now regard it as of no greater value than curettage, except in the special type of case mentioned above. Moreover, it is an extremely difficult operation to perform. The cervix as a rule can only be pulled down very little, and the operation is done through a narrow virgin vagina. It involves division of the vaginal mucous membrane in the anterior fornix, upward displacement and retraction of the bladder, and bold incision of the cervix right up through the internal os. In some of my own cases I applied the well known operation of pyloroplasty to the cervix uteri, dividing the muscle with a knife or cautery and leaving the mucous membrane intact.

9 *Drug Treatment in Dysmenorrhoea.*—The following drugs were tried:

1 Guaiacum resin in a 10-grain pill tids for seven days before the period with antispasmodic during the period.
2 Pill tannate of cannabin ¼ grain tid for seven days before the period with exercise, phenacetin repeated frequently during the pain if it develops.
3 Pituitary preparation plus caffeine gr. iv or each suspected menstrual attack hourly up to six doses. This gives very great relief and is especially valuable in cases of spasmodic recurrent attacks of acute pain spread over one day.
4 Atropine sulphate 1/120 grain tids in cases of intermittent colicky pain extending over a period of two days.
5 Bismuth benzoate (Martindale).
6 Liquor sedans (Parke Davis).
7 Tincture of apiol 3 to 6 minims in solution or in capsule in cases of cannot flow.
8 Potassium bromide gr. x and sodium salicylate gr. x tids before the period with luminal 1/2 gr. during the pain repeated judiciously up to one pair of drowsiness especially in cases allied to migraine.
9 Tincture of pulsatilla mitium x extract of caulophyllum liq. minims xv tids during the period.

The best results were obtained by the use of coal tar antispasmodics with atropine, liquor sedans being sometimes added with great advantage. In many cases of recurrent acute pain of short duration full active treatment is essential, because hygiene, organotherapy, exercises and baths do not prevent the onset of pain, and exercises during the pain are not tolerated.

10 *Radium Treatment as an Alternative to Hysterectomy in Severe and Intractable Cases.*—Women in the thirties suffering from severe and intractable dysmenorrhoea have often in the past been treated by hysterectomy when other and less severe measures have failed. I believe that the insertion of radium into the uterus, with a consequent cessation of the periods, provides a simpler, safer, and yet equally effective alternative. An insertion of 100 to 150 mg. of radium for twenty-four hours is usually sufficient. It acts locally by producing fibrosis of the stroma and atrophy of the glands of the endometrium—facts proved by histological examinations of uteri removed subsequent to radium insertion. It is not, in my experience, followed by obscure distressing symptoms or an artificial menopause or by any reduction of the sexual sense. In some cases the menstrual loss has subsequently returned with little or no pain. I have tried this treatment in a limited number of private cases, but this number is naturally too small to form a basis for a general recommendation.

Hysterectomy is a major operation with a definite mortality and certain risks. With radium treatment the mortality is negligible apart from the risk of the anaesthetic. There is an increased risk of subsequent sterility which should be explained to the patient, but it must be remembered that in any case bad dysmenorrhoea is commonly associated with sterility, and that women requiring radium treatment are mostly at an age when the chances, possibilities and desires for childbirth are diminishing.

In conclusion, I would like to emphasize that dysmenorrhoea has not one cause, nor yet one golden road of successful treatment. Every case requires careful investigation in order to discover the underlying causal conditions, and to evolve from these a rational treatment.

GENERAL DISCUSSION

Mr E B TURNER (London) spoke as one who had been through the mill in regard to the treatment of dysmenorrhoea In the course of his long practice he had been accustomed to see about twenty-five women patients to every one man He had been taught as a student the regimen of the couch, drugs, and so on—the bath in those days was unthinkable Then about thirty years ago he had known a lady who was a great cyclist, he was surprised to find that her period made no difference to her activities This made him think of the many women he knew who had to go to bed during that time Then he became connected with an institution, and found that athletic girls went through the whole course of their training without any trouble One very active girl started pain and flooding when she stopped games and exercise on taking up a sedentary occupation Resumption of exercise led to immediate improvement For years now he had advocated baths and exercise He looked after a large girls' school and a hostel for young women, and he had been striving to set aside the prejudices of mothers regarding this point, in consequence dysmenorrhoea in these establishments had decidedly diminished He was certain that if the doctrine of healthy exercise could be spread among all girls dysmenorrhoea would almost disappear, especially if they were taught young One of the chief reasons why in Government departments the pay of women was not equal to that of the men was on account of the number of days they lost owing to menstrual trouble The exercises recommended must be sensible and in accordance with the girl's individual strength His experience was that girls who suffered from dysmenorrhoea generally had a bad time at their confinements Ordinary games did a girl no harm, either at the time of the monthly period or in subsequent pregnancy

Dr CATHERINE CHISHOLM (Manchester) congratulated Dr Clow on her paper and the conclusions, which, as regards evidence and prophylaxis particularly, were practically the same as she herself had published in her thesis in 1912 All who had studied dysmenorrhoea among normal girls rather than in the consulting room were in agreement that dysmenorrhoea even of slight character occurred only in a minority of cases In her opinion it was found among delicate and weak girls rather than among strong ones, it was apt to develop when and if the normal health deteriorated, and to improve with the improvement of the general vigour The practice of games and outdoor activities, bathing, and all hygienic exercises was therefore naturally of advantage In her original figures of 500, gathered at a high school in a big town, the number disclaiming any disability of any kind at the monthly time was 58 6 Lately she had collected a further 500 figures In the interval a generation had grown up which had been advised on the lines which Dr Clow had described the cure had improved to 66 78 Among the senior students who excelled in games as well as in mental work the original figure was 70 4 Among the anaemic and debilitated—that is, girls with less than 80 per cent of haemoglobin on the Tallqvist scale—only 47 5 were free from menstrual disturbances In cases with a tendency to menorrhagia as obtained occasionally in the adolescent, but not as frequently as one expected, the amount of dysmenorrhoea was comparatively high Among 437 training students picked in health, and practising games as a general rule, the figure was 89 per cent of freedom from dysmenorrhoea and even slight pain In the case of another high school where games were a much more regular and integral part of school life than in the Manchester school the freedom was well over 90 per cent on careful questioning A large proportion of these girls were very young

Of 100 adult cases collected for comparison in 1912, and consisting of a very mixed set of women, teachers, doctors, nurses, etc, the freedom from dysmenorrhoea was only 23 per cent On investigating the manner in which pain began in these cases many confessed that as school children they had little if any pain Thus apparently a large amount of pain developed during menstrual life, and if the cause of this development were to be discovered much suffering might be relieved by prophylactic treatment The adult women she had questioned in many cases volunteered the information that with exercise they were much better The frequency with which varicose veins and piles were found in women following sedentary occupations would lead to the assumption that in the pelvis a similar passive congestion took place, which would be particularly full as the monthly cycle culminated Another factor in the production of pain was apparently mental strain

In dealing with dysmenorrhoea they had, then, two types (1) That which occurred with the onset of menstrual life, which was comparatively rare, it might be due to developmental defects or malpositions, which had to be treated accordingly (2) That which developed later and which was a symptom of something wrong in the general health Once it occurred it was liable to persist unless treated Dysmenorrhoea formed a vicious circle it exhausted the already tired individual, and the psychical suggestion that it was to be expected each month did the rest Prophylactically, then, they should encourage the young and healthy girl to carry on her normal activities, having first ascertained that the amount she was called upon to do mentally and physically was well within her power This was important for the school medical officer, and she had very different problems to deal with in the boarding-school, the town secondary school, and in industrial life Exercises, etc, were most important aids to healthy life, but they must not add them on as an extra strain to the already overburdened life of the schoolgirl, with her train journeys, her musical practice, and her social duties in the home Some adjustment must be made, nor must they encourage school authorities or school medical officers to force all girls to play during the monthly time when they did not feel fit Dysmenorrhoea was pathological, and exercises ordered for it must be graded according to the extent and cause of the disorder, or a worse condition would follow with the swing of the pendulum towards the compulsory practice of games Girls with profuse menstruation must not play till their flow was regulated Girls anaemic and exhausted must first be treated intermenstrually with tonics, given light work, and little if any exercise at the monthly times till their muscular and nervous tone had recovered Girls with severe pain must be given analgesics for a time during the beginning of treatment, the suggestion being constantly held before them that they would within three months lead a normal life Irregularity must be treated with endocrine therapy where other indications justified this The important thing was to persuade mothers and family doctors to regard even slight degrees of dysmenorrhoea as worth serious attention and careful treatment, since in this way much useless physical suffering could be avoided

Dr RHODA ADAMSON (Leeds) said that her experience of dysmenorrhoea and its prevention fell under three headings (1) the treatment of cases of dysmenorrhoea already established in patients of her own private practice, (2) the observation of students taking a four years' university course—of these there were sixty new admissions yearly, and (3) working women who undertook work in connexion with an engineering factory during the war—about four thousand The patients in Classes (1) and (2) in many cases had lived in unhealthy life and had frequently followed the course described by the opener In most cases the dysmenorrhoea ceased or was alleviated by regular baths, exercise, and attention to bowels In a very small proportion it had persisted, and had called for further treatment by tonics to improve the general health, and analgesics, especially coffee and immonol The small fraction of all cases who continued unrelieved by these means had come to operation—either dilatation and curetting or treatment by diathermy Of the two she personally had a preference for diathermy Class (3) only exceptionally suffered from dysmenorrhoea and very rarely required drug treatment, though there might be need to advise a little more personal cleanliness, etc Dr Adamson had had the opportunity in many cases of persuading the mothers of several girls in a family to alter completely their routine care of the younger ones with the onset of menstruation In each case the younger girls had been better in health, and the mothers had been convinced of the advantage of the continuation of daily baths and regular exercise The next generation should suffer less than girls had done in the past.

Dr MINNIE L C MACGREGOR (General Post Office, London) said that in the Post Office there were over ten thousand women of ages varying from 14 to 60 employed on different kinds of work with varying times and under different conditions. She was not able to give the exact amount of time lost on account of dysmenorrhoea but the average amount of time lost from all causes, minor accidents and illness was under two days per officer per year. She thought that a very generous estimate of time lost on account of dysmenorrhoea would be one and a half days per officer per year, apart from the loss of a whole day they had to reckon with a certain amount of time spent in the sick bay—from an hour at a time up to half a day. The total average time so spent worked out at two hours per head per year. She had kept a record of the occurrence of dysmenorrhoea in girl probationers when they were examined on entrance to the service between the ages of 14 and 15. The results of this she had set out in the following table:

Examination on Entrance (14 or 15 Years Old)

Group	Total	Menstruation not Started	No Pain	Pain but no Rest Required	Pain requiring Occasional Rest	Pain requiring Frequent Rest	Totally Incapacitated
A	423	13·6	60·5	27·5 (91·0)	4·0	1·3	0·3 (1 case)
B†	506	23·2	82·4	14·0 (96·4)	3·9	0·3	Nil
C	1123	40·8	81·0	13·2 (94·2)	3·4	0·7	0·2
D‡	807	27·0	70·7	17·0 (93·7)	2·9	0·5	Nil

Same Girls Re-examined One to Two Years Later

A	362	0·3	65·3	26·7 (92·0)	6·5	0·9	Nil
B	346	4·6	65·8	26·7 (93·5)	6·1	0·3	Nil
C	525	6·8	67·0	26·8 (93·8)	5·9	2·0	Nil
D	589	2·4	68·5	24·9 (93·4)	5·6	1·0	Nil

* Pre war † First two years of war ‡ Since 1920 Second two years of war

From this table they would see there were only two cases of total incapacity on account of dysmenorrhoea among three thousand girls. In regard to treatment she would say very little as it was not the subject on which she had been asked to speak but she had found that a course of iron was the best curative, the course to be spread over from six to twelve months. Their sheet-anchor palliative had been a mixture containing spirits of chloroform and red lavender. She thought that the greater proportion of suffering from dysmenorrhoea occurred between the ages of 20 and 30.

The PRESIDENT, inviting other speakers to take part in the discussion, expressed his gratitude to the medical women officers of institutions for the very valuable statistics they had so carefully compiled. He thought that Bradford, which was a very large centre of the textile industry, was a particularly good locality for the discussion of the subject they had before them as with the employment of so many women in industry there should be useful data to be obtained in the neighbourhood.

Dr M E WESTON (Leicester) gave figures collected at school inspections. She had found that the average age for the onset of menstruation was 13 years and 8 months. There did not appear to be any difference in regard to dysmenorrhoea between those starting early and those starting late. Two girls who had started at the age named were no worse than others who started at the normal age of 10 [illegible]

In her records only 3·5 per cent. suffered from pain or discomfort, and 40 per cent. of those had constipation, 4 per cent. of the total number had profuse menstruation, and 3·5 per cent. suffered from really severe pain. The time covered by her investigation was three and a half years. In the days before medical inspection was started the general rule had been no baths, no gymnasium, no games during the first two days of the period. Many mothers had stopped their daughters from bathing one week before the onset so as to be on the safe side. One mother had even complained of her daughter having to wash her hands in cold water when she was menstruating. Since medical inspection the general rule was not half for all boarders, one school allowed a hot bath at any time of the day to any girl who complained of severe pain. As regards exercises, she had barred gymnastics, hockey and net-ball, all other kinds being permitted. She thought that perhaps a little restriction like that would give to parents more confidence that the medical officer was competent to give advice on this subject. In the elementary schools absence on account of dysmenorrhoea had been negligible until recently, when the age for leaving school had been raised. It was found now that a large number of mothers kept their girls at home while they were menstruating, not on account of illness, but from a feeling of *modesty, they did not think it right for their girls to mix with others at such a time.*

Dr W A POTTS (Birmingham) thanked Dr Clow for her valuable paper, and asked whether she made any rules about sea bathing, also if she found the mentality was affected during menstruation. In those cases where hygiene and physical treatment failed he would like to put in a plea for psychological treatment, properly carried out by a psychologist, and continued for a sufficient length of time. Of course, all necessary physical treatment must be carried out first, but when that had been done it should be realized what a serious step it was to operate when pain was the only symptom.

Mr ALECK BOURNE (London) paid a cordial tribute to Dr Clow's paper and to the important and valuable work of medical women in this branch of gynaecology, only since dysmenorrhoea had been investigated on these lines had they obtained rational ideas of the conduct of this function. Two broad classes of dysmenorrhoea were met with in practice: first, the large class of artificial menstrual invalids, the result of the teaching of wrong ideas in adolescence, and secondly, the small group of real pathological dysmenorrhoea. The first group were difficult to treat, according to the age of the patient—difficult over 25 and almost hopeless over 30. The second group should be regarded from the pathological point of view and treated according to requirements. Polyglandular extracts were of real value when hypoplasia was present.

Dr J J HOLLAND (Western Australia) was under the impression that the bulk of menstrual pain was ovarian in origin. Where he lived they had very few women doctors, so that no statistics had been collected comparable with those which had been laid before them. He had asked bank managers and business men who employed both men and women how the women compared with the men as workers, and had been told that as a rule the women were better workers, but that they were a nuisance about the time of the monthly period. As to time of onset his experience had been that dysmenorrhoea did not come on till girls gave up active school life. He thought that this had some bearing on the figures which had been put before them that day. He could not understand why curetting should be done in the absence of definite symptoms since the pain was not uterine but ovarian. He would like to [illegible] Clow had questioned her girls on the pain was [illegible] Did improvement in pain and subject of regularity and in hand? There was no doubt greater regularity go [illegible] menstrual pain was relieved by that in many women [illegible] who were unrelieved often marriage, and that those remained sterile.

Sir MALCOLM WATSON (Federated Malay States) spoke, not as a consultant, but as a general practitioner in the tropics. He claimed to be a general practitioner in the widest sense his practice had been amongst numbers of

Europeans and thousands of natives He had found that white women nearly always developed severe flooding in tropical climates He had been in the habit of treating this by rest and continued doses of ergot and nux vomica From what he had heard that day he was evidently on the wrong lines, and when he went back he would try to persuade these white women to take more exercise It was well recognized in the tropics that men who took violent exercise were fitter, and kept fitter, than those who did not In regard to Asiatics, he was concerned with plantations where boys and girls began work about the age of 10 He had often wondered how much silent suffering was going on among these workers, especially in the women at their periods He was glad to hear that it was probably a good thing for these women to work as they had been doing

The PRESIDENT welcomed the very great help they had received from the women doctors in making them look at the subject of menstruation with a greater sense of proportion At a recent meeting he had attended he had been asked to believe that two thirds of all women had their pelvic organs misplaced and suffered dysmenorrhoea in consequence He thought that specialists did not gain a proper view of this subject, as they saw the pathological cases only The teaching of hygienic methods was extremely important It was odd that he had never yet come across a woman who both passed a membrane and suffered from dysmenorrhoea at the same time He had met with women who passed membranes and women who had dysmenorrhoea, but never the two combined in the same patient It was idle to speculate whether the pain was uterine or ovarian it might be part of a general metabolic disturbance, and it was on this theory that endocrine preparations were tried He thought that the difficulty in the treatment of dysmenorrhoea in older women was that they had had so many recurrent painful impressions that it was extremely difficult to eradicate them

Dr A E SANDERSON CLOW, replying to the questions submitted by Dr Potts, said that for aesthetic reasons sea bathing must be vetoed during menstruation The actual bath would do no harm, a cold bath did no harm She had been told of chills coming on after bathing being followed by prolonged amenorrhoea, but thought that there must be some other contributing factor in these cases, since she had come across women who had accidentally bathed as menstruation was coming on with no bad results at all She said that the girl's mentality certainly might be affected during her period Mistresses had told her that some girls became very depressed and others became very irritable She was quite sure that exercise and psychological treatment combined would cure a large number of cases She agreed with Mr Bourne that it was much more difficult to convince the mothers than the girls themselves She had been very interested in what Sir Malcolm Watson had told them, she supposed it must be very difficult to get women to take exercise in the tropics

IMPERFECT URINARY CONTROL FOLLOWING CHILDBIRTH, AND ITS SURGICAL TREATMENT

BY

B P WATSON, M D, I R C S E,

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A VERY considerable number of women who have borne children suffer from more or less marked inability to control the urine under physical strain The condition is most often found in association with cystocele, but may be present when there is little or no sagging of the bladder It is a symptom which is very often not mentioned, and is only elicited on direct questioning of the patient My attention was called to it some five years ago, and, since then, every gynaecological patient coming under my care has been specifically questioned on the point In a series of 63 cases of cystocele operated on by me in the Toronto General Hospital incontinence of urine on straining, laughing, or coughing was mentioned in only 19 of the histories, but on sending a questionary to the patients eighteen months ago it was found that 22 others had suffered in the same way prior to operation, making a total of 41 In 21 private cases 18 had incontinence of urine, and in 99 cases operated on in the Royal Infirmary, Edinburgh, in the last eighteen months 61 suffered from lack of urinary control Thus in a total of 183 cases of cystocele, incontinence of urine was present in 120, or 66 1 per cent I believe that the percentage is still higher, for a number of our histories were proved to be incomplete and a number of the patients did not reply to the questionary

It seems strange that a symptom so distressing should not always be voluntarily mentioned when it is present, for the least extra physical exertion, such as lifting a weight, making a sudden movement, stepping up on or getting down from a tramcar, coughing or laughing, may result in the uncontrolled escape of a few drops or of quite a stream of urine The same lack of sphincteric control is occasionally present in nulliparous women, but it is very much rarer in them than in those who have borne children I gave a preliminary communication on this subject to the Obstetrical and Gynaecological Congress in Edinburgh in April, 1923 that communication was not published in full In the autumn number of the *Journal of Obstetrics and Gynaecology of the British Empire*, vol 30, No 3, Victor Bonney contributed a most valuable article on diurnal incontinence of urine in women His article concluded with a paragraph in which he stated that, from the short epitome of my paper which he had seen, he believed that our views regarding the condition were identical To show that this belief was justified let me quote verbatim from what I wrote at that time

"In all patients presenting this symptom I have found that there is a marked sagging of the neck of the bladder away from its proper situation behind the pubes—very often there is a marked sagging of the whole of the anterior vaginal wall and bladder in the form of a cystocele In many, however, the cystocele may not be pronounced, or absent In some cases of complete procidentia where both vaginal walls are completely everted control may be perfect, in such it will be found that the neck of the bladder remains braced up in its normal situation The sagging of the neck of the bladder away from the back and under aspect of the symphysis is very easily demonstrated by introducing a catheter or sound into the bladder on exerting a little pressure the lower end of the anterior vaginal wall can be made to bulge at the vaginal orifice, and a small stream of urine will often escape alongside the instrument I believe that it is this sagging of the neck of the bladder with its surrounding sphincter away from its normal attachment, rather than damage to the sphincter itself, which is the cause of the incontinence The sphincter has lost its *point d'appui*, and so fails to act efficiently" With this explanation Bonney is in agreement

The reason for this sagging of the lower end of the anterior vaginal wall and of the neck of the bladder is that there is a weakening of the musculo-fascial sheet which normally supports the base and neck of the bladder The anatomy of this fascia has been very fully described by Bonney in the paper already quoted Blair Bell in the discussion of my preliminary communication objected to the term "fascia" being applied to this sheet, because, as he pointed out, and as I have since verified by examination of a piece of the tissue, it consists to a large extent of non-striped muscle But when dissected out in the way I am about to describe it has all the characteristics, including extreme strength, which we associate with fascial structure I can therefore see no reason why we should not call it fascia It is not easy to demonstrate in the dissecting room, but in the operating theatre it can be demonstrated with the greatest ease as a strong musculo-fascial sheet passing from the back of the pubes to the lateral aspects of the cervix, intervening between the bladder and the anterior vaginal wall, and attached to both, but more firmly to the latter It is continued backwards alongside the cervix to become continuous with the rectal fascia the vesico-cervical part of it is the chief support of The pul-

the bladder, and any weakening of it will result in cystocele, just as weakening of its posterior part will in the absence also of levator support, result in rectocele. If the levator ani muscles and their fascia are damaged no rectocele follows, provided the rectal fascia remains intact as it very frequently does. It sometimes happens that the *pubo-vesico-cervical fascia is weakened only* in that part which supports the neck of the bladder. No cystocele in the ordinary sense of the word results from this, but the neck of the bladder is permitted to sag away from its normal situation and attachment to the back of the pubes. In such cases there is *incontinence* of urine under strain although no cystocele is present. In other cases the fascia retains its tension in the region of the neck, but is weakened over the rest of the bladder, so that we meet with cases of cystocele with perfect urinary control.

Before taking up the operative treatment a note may be interposed regarding what I believe to be the causes of the condition and its prophylaxis. When the head comes down on the pelvic floor the posterior segment of the latter resists, driving the head forward against the anterior vaginal wall. The more resistant the perineum the more strain is thrown on the anterior segment and on the fascial support of the bladder. An overstretching or tearing occurs from which recovery may not take place and a permanent relaxation results. This strain is further aggravated by the attempts of the obstetrician to "save the perineum" by restraining the sinciput and pushing the whole head forward before the occiput has come right underneath the pubic arch. I believe that in this way the perineum may be 'saved' but it is frequently at the expense of a damaged bladder fascia, which will be evidenced later by a cystocele. For that reason I never hesitate, in cases where the pelvic floor is unduly resistant, to perform an episiotomy. This I also do as a routine in all cases of breech delivery in primiparae as not only does it save the anterior pelvic supports but facilitates in the most marked way the delivery of the after-coming head. Another causative factor is the pushing down of the anterior lip of the cervix by the head of the child. This is most often seen in multiparae, but may occur in a primipara. If it occurs the fascia is as it were stripped off the bladder. Whenever it is noticed the cervix should be pushed up over the head during the pains. If these two factors are kept in mind, and the above mentioned simple treatment carried out, there will be fewer cases of cystocele and loss of bladder control.

Believing, as I do, that the cause of the lack of control is to be found in the relaxation of the fascia supporting the neck of the bladder and not in damage to the sphincter itself, my treatment has consisted in restoring the tension of the fascia in the region of the neck of the bladder so that the latter is braced up to its normal position behind the pubes.

In operating on cases of cystocele I always dissect out the pubo-cervical layer of the pelvic fascia. It is a very strong musculo-fascial sheet, and can be easily traced in its continuity from pubes to cervix. I have found that the easiest way to demonstrate it is to make first a transverse incision at the junction of cervix with anterior vaginal wall, then blunt-pointed scissors are pushed upwards for a short distance between the vaginal wall and bladder in the middle line towards the urethra (Fig. 1). The scissors are opened out withdrawn and the vaginal wall incised for a short distance along the line of separation so effected. This is the method of incision described by Eden and Lockyer. The scissors are again introduced and now the points are kept closer to the under aspect of the vaginal wall. If this is done the scissors will pass *between the fascia* and the vaginal wall so that when the latter is divided the fascia will be plainly seen. This mid-line incision is continued to within 1 cm. of the urethral orifice. Each edge of the incision in the anterior vaginal wall is grasped with forceps and with the handle of the knife the fascia is completely separated from the under aspects of the two flaps (Fig. 2). The bladder is pushed up from the supra-vaginal portion of the cervix and the fascia is united over it by sutures which grasp it firmly and which cause it to overlap (Fig. 3). In the region of the neck of the bladder a firm bite of the fascia is taken with the needle well up towards the pubis a similar bite on the opposite side and the sutures tied. Two sutures placed in this way tuck the neck of the bladder up under the pubis and if a sound be now introduced into the bladder, it can no longer be made to sag away from this situation. In the region of the cervix the sutures which unite the fascia pass through the front of the supra-vaginal portion (the bladder being held up while the needle is passed), and so the bladder is prevented from slipping down on the cervix again. The redundant vaginal wall is cut away and the edges united with

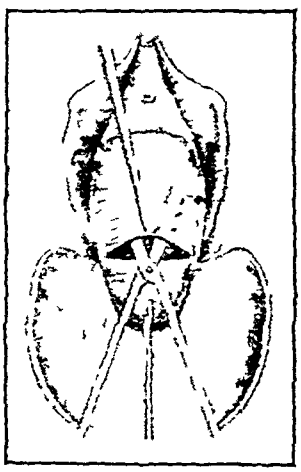


FIG. 1.—Cervix pulled down. Transverse incision at junction of cervix and vagina. Blunt scissors in section of anterior vaginal wall from bladder.

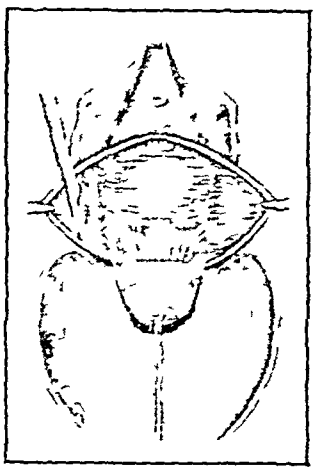


FIG. 2.—Anterior vaginal wall incised up mid-line. Fascia lifted from under surface with handle of knife.

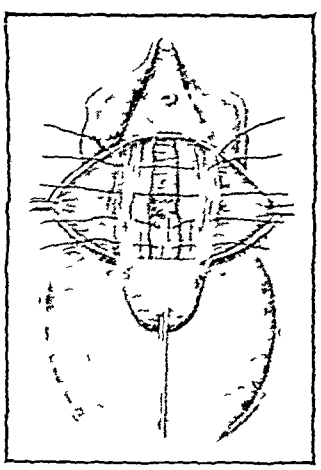


FIG. 3.—Fascia separated. Bladder pushed up. Overlapping sutures of catgut in fascia inserted. Note the deep grip of the upper suture. A second similar one is inserted but not shown.

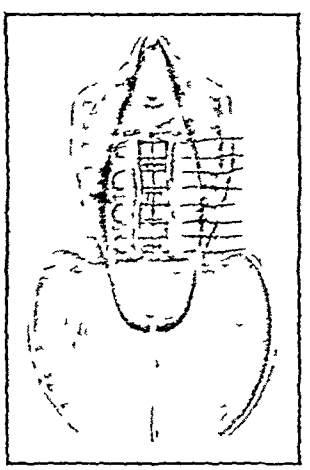


FIG. 4.—Fascial sutures tied. Excess of vaginal walls cut away and mattress sutures inserted.

mattress sutures and a superficial continuous one (Fig 4) Repair of the posterior pelvic floor is then performed

So far as the incontinence of urine is concerned, the important sutures are those which overlap the fascia at the neck of the bladder and so restore it to its normal position If these are *not* properly inserted the incontinence may persist in spite of the cystocele being cured If cystocele is *not* present it is not necessary to incise the whole length of the anterior vaginal wall The incision may be made in the mid-line over the neck of the bladder, and the fascia isolated and tightened by sutures

After such operations the patient almost invariably requires catheterization for some days, and it is often eight or ten days before she can urinate voluntarily Lately I have inserted a self-retaining catheter in all cases, leaving it in for four or five days

In none of the patients so operated on was there any return of the incontinence during their stay in hospital, but we cannot possibly judge the efficacy of the operation from that I accordingly sent a questionary to all the patients with urinary incontinence on whom I had operated up till six months ago The more recent cases were excluded as not affording a fair test The following questions were asked (1) Have you any frequency of passing water? (2) Have you any difficulty in holding the urine? (3) Does it come away when you cough or strain? (4) Are you better in this respect than before the operation? I received replies from 105 patients, with the following result

Perfect control	69 =	65 70%
Control not perfect but better than before	23 =	21 90%
No improvement	13 =	12 40%
	105 =	100 00%

The results are thus by no means perfect, but they are encouraging, and I feel can be improved by greater care in inserting the upper two sutures of which I have spoken The self-retaining catheter, I think, is also likely to do less immediate damage to the repaired structures than frequent catheterization, besides taking all strain off the sutures by preventing any accumulation of urine The results are better than I have got by any other means The upward displacement of the urethral orifice, twisting of the urethra, and similar operations do not get at the cause Kelly six years ago advocated a somewhat similar procedure which is described and modified by Graves The neck of the bladder is exposed and "several interrupted sutures of fine linen are then passed, picking up the ragged tissues on each side of the urethra at the level of its entrance into the bladder" Doubtless in that operation some of the fascia is grasped by the sutures, but much greater certainty in the results is got by freely exposing and defining the fascia in the way I have described The suture material I use throughout is catgut

DISCUSSION

The PRESIDENT regarded the subject of Professor Watson's paper as most important, especially as it was almost entirely neglected in the books His Cockney patients expressed their trouble vividly when they came up to hospital and complained that they 'jerked their urine" Members of the Section had all, no doubt, with a certain degree of success, but in a haphazard way, attempted to cure this condition, but Professor Watson had shown them how the pubo-cervical musculo-tendinous layer could be isolated and securely sutured

Mr MILES H PHILLIPS (Sheffield) could endorse all Professor Watson's statements The results of operative treatment on the lines laid down were extremely satisfactory, but there would always be a number of failures in those few patients in whom the fibro-muscular tissue had "perished" and would not hold sutures He agreed with the statement that want of full control was frequently associated with ordinary vaginal prolapse, although the patient did not always mention the fact unless confronted with the routine question, "Have you any difficulty in passing or holding water?" As regards prophylaxis, episiotomy was probably of value

Dr R W JOHNSTONE (Edinburgh) said that he had several times watched Professor Watson doing the operation which he described and had himself practised it It was a much easier thing than the description would perhaps lead one to think to isolate the pubo-cervical fascial layer which Professor Watson had described Like most gynaecologists, the speaker had usually been content to tighten up the neck of the bladder by means of a purse-string suture, but he was inclined to think that the technique which had been described was more anatomically correct and ought to lead to more uniform success in the treatment of the imperfect urinary control He entirely agreed with the writer of the paper as to the prophylactic value of episiotomy, particularly in primiparous breech cases in whom the perineum would otherwise always be torn An episiotomy incision obviated a great deal of difficulty in many cases and enabled a much more accurate coaptation of the cut edges to be made than in a ragged tear, with, as a consequence, a cleaner and stronger healing

THE INVESTIGATION, PATHOLOGY, AND TREATMENT OF UTERINE HAEMORRHAGE ABOUT THE TIME OF THE CLIMACTERIC

BY

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THE three points which I desire to emphasize are (1) that *as regards pathology, in about* 25 *per cent of cases abnormal* bleeding is associated with malignant disease, (2) that as regards investigation, it is very desirable that the whole extent of the patient's complaints should be investigated, and (3) that as regards treatment, the endeavour should be to restore the patient to normal health and comfort

Pathology

I have analysed a series of 292 consecutive cases of women at or after the 40th year whom I have had in home or hospital on account of uterine haemorrhage, and I find *that* 61 of these were suffering from malignant disease *If* to these had been added the cases I had seen during the same period (1919 23) suffering from cancer so advanced that nothing could be done for them, the proportion of malignant cases would be not less than 25 per cent *In addition to the* 61 cases proved to be malignant, there were 50 cases in which the condition of the cervix was such as to make me advise that it should be microscoped For, of course, while it is not difficult to diagnose an advanced case of cervical cancer, there are many cervices, especially in early adenocarcinoma, where the masses of growth are in the substance of the cervix and little or no ulceration of its vaginal surface has occurred, in which a certain diagnosis by sight and touch is hardly possible during the early stage, when alone there is a reasonable prospect of radical cure If cancer of the cervix can be difficult to diagnose in its early stage, malignant disease of the body is still more difficult The trio of symptoms—bleeding, discharge, and pain—produced by uterine cancer are also present in most other abnormal uterine conditions, and at an operable stage the diagnosis of cancer of the body will almost inevitably depend upon the examination of curettings Just as difficult it is to diagnose early malignant changes in a fibroid

It is worthy of note how frequently myomata, which presumably have been present for a decade or more without giving rise to any symptoms of moment, will set up serious trouble about the period of the menopause This may be the result of—(1) change of position, (2) degeneration, or (3) malignant changes

1 *Change of position* —For example—

> Mrs G, aged 47, had had nine children the youngest 7 years old Menses quite normal until the age of 44, then menorrhagia commenced A fibroid was diagnosed, but an operation was declined until to the bleeding was added severe bearing down pain A tumour was found protruding through the well dilated cervix and was removed per vaginam It was a fibroid and weighed 14 lb

This patient recovered, but in two out of five cases of partially extruded fibroids sloughing and sepsis resulted in the death of the patient

2 *Degeneration* —The various non-malignant degenerative changes—cystic, necrobiotic, etc —are associated with reduced blood supply which makes the tumour more liable to infection, with consequent fever and pain

3 *Malignant Changes*.—Degenerative changes, both simple and malignant, are very likely to take place without giving rise to definite symptoms. Out of 94 hysterectomies for fibroids, malignant changes were found by the pathologist in five cases. In two of these the growth had invaded the bowel, necessitating enterectomy, and the bowel symptoms were the prominent ones. In two others the appearance of the tumour on section was the first indication that the growth was probably malignant. In one case only was a provisional diagnosis of probable malignancy made on account of pain and rapid increase in size.

In a sentence, then, malignant disease was present in 25 per cent. of cases of abnormal bleeding about the climacteric, and while still in an operable condition its diagnosis is frequently very difficult and often impossible without some operative procedure such as curettage.

Investigation

This should be begun by an endeavour to obtain a clear account of the patient's symptoms and the extent of her disability, in fact, an attempt should be made to arrive at an approximate diagnosis before beginning the physical examination of the patient. My first two questions are—(1) How long have you been ill? and (2) What was the first thing you noticed wrong? Then the patient is encouraged to give a consecutive account of her illness, irrelevancies being cut out as tactfully as possible and leading questions avoided.

It will be found in most cases that the bleeding is not the only symptom, commonly discomfort or pain also exists, the character and extent of which must be known if we are to be in a position to "cure" the patient. It is only in a minority of the cases that stopping the bleeding will alone suffice to make the patient a healthy comfortable woman.

I do not think any useful purpose would be served by discussing at length the details of a diagnostic bimanual examination. In all cases where the diagnosis is doubtful I wish to plead that instead of adopting the policy of "wait and see," the danger of incipient cancer should be explained to the patient, and some surgical procedure advised, either a diagnostic curettage, or the excision of the uterus, or of some part of it.

Treatment

The conclusion to which I have rather reluctantly been driven after twenty-four years' experience—the first ten years as a general practitioner, the remainder as an operating surgeon—is that hysterectomy is the safest treatment for a majority of the cases of menopausal haemorrhage, and also the one most likely to restore the patient to comfort and health.

I have indicated the difficulties in diagnosing cancer in its early stages, and could quote case after case in which the most experienced observers have been in doubt. At the very last meeting of the North of England Gynaecological Society, Mr. Miles Phillips showed a specimen of adenocarcinoma of the cervix where the diagnosis was uncertain before the excised uterus had been examined microscopically. Last year I saw a woman dying of a cervical cancer invading the vagina and involving bowel and bladder, who had been examined eighteen months previously by a well known gynaecologist and had been assured that she had then no sign of cancer.

In 1914 Dr. Eurich began a systematic examination for me of my hysterectomy specimens—an investigation which was interrupted by the war—and in two of these he found tiny nodules of cancer in the wall of the body of the uterus visible to the naked eye but which, had a diagnostic curettage been done, were so small that they might have escaped the curette or been too much broken up by it to permit a microscopic diagnosis to be made. This is what appears to have happened in one of my cases:

> Mr. T., aged 56, had by teretectomy performed and cancer of the body was found. Two years before curettage had been done by another surgeon and the curettings were reported to be innocent.

My first reason, then, for suggesting radical treatment in cases of menopause bleeding is that many of them are potential cancer cases, and that removal of a useless and unhealthy organ will relieve the patient from the menace of a painful illness and a miserable death.

There is a further reason for advising hysterectomy in a large proportion of these patients, which is that they are suffering from symptoms which nothing short of radical treatment is likely to cure. Function and not anatomy is the important consideration. The question to be decided is what is the least extensive and risky procedure likely to make the patient as functionally normal as possible. The operation required may be as simple as a curettage or the removal of a cervical polypus. An eroded or pulpy cervix may be cauterized (in my experience much more effective than curette and caustic) or excised, and where prolapse is present a colpo-perineorrhaphy may be done.

Yet, as will be seen from the table of cases I have performed hysterectomy in 201 of my 292 patients. In a considerable proportion of these there was no reason to suspect cancer, and the radical operation was suggested to the patient because it was thought that a less complete operation was not likely to "cure" her. Frequently there was old tubo-ovarian disease, or a more or less disabling degree of pain was associated with the dragging of a heavy and often tender uterus. For example—

> Mrs. C., aged 42, the widow of a civil servant, had since his death attempted to keep herself and her two children by taking in boarders. She suffered from menorrhagia, backache, and bearing-down pains which by treatment each day almost incapacitated her. She consulted a physician who referred her to me. I removed a heavy uterus of the so-called metritic type. Within four months of the operation she was able to take a post as matron of a home at a boys' preparatory school and reported herself as being better than she had been for years and quite free from the old backache and pain.

In cases such as this the menorrhagia is only part, and perhaps a minor part of the disability; treatment, such as by radium, which may control the bleeding will not thereby make the patient a useful, happy member of society. We have no radium available at Bradford Royal Infirmary. Had we had a radium department I think perhaps at most twenty-five of my cases (those where bleeding was the essential symptom) might have got quite well without radical operation, but in the others there was either cancer (actual or potential) or a condition other than the bleeding sufficient to produce some degree of invalidity.

Three years ago I operated on a lady who suffered from prolapse and menorrhagia, doing a perineorrhaphy and excising a considerable wedge from a heavy metritic uterus. The prolapse is cured and the menses are no longer excessive, but the patient who is well over 50 years of age still has considerable malaise with each period, and is sometimes an invalid for two or three days each month. Had I performed hysterectomy three years ago I think she would long ago have become an entirely healthy woman.

Dr. Fletcher Shaw, after quoting Henry Bennett's description of the women suffering from chronic uterine inflammatory disease, most of whom would, if their disease were only discovered and cured, eventually recover their health, spirit, and powers of locomotion, writes: "A very large proportion of them give a long history of symptoms, generally dating from a pregnancy, but it is often only after years of medical treatment and when nearing the menopause, that these symptoms become so severe as to necessitate an operation." Such a patient is likely to wish beyond all else that what is done shall if possible be final; the notion that women have a strong inherent sentimental objection to losing the womb has not been borne out in my experience. Given the choice of a minor operation which possibly may relieve her and a hysterectomy which is very likely to cure her and will certainly rid her of an unhealthy pain-producing organ, the almost invariable reply I get is:

> I want to be made well and please don't leave anything which isn't healthy behind."

All of us who specialize tend to become obsessed by our specialism and to look for more. Fortunately for our patients perhaps it is the general practitioner whose advice is sought and who decides which specialist shall be asked to deal with the case. The general practitioner will try a new method or treatment for a time, but will only continue to advocate it if the results are good; he has opportunities to note its success or failure over long periods. I can only refer to the lot of the specialist. It was my own experience in general practice which disappointed me with the results of [illegible] bleeding. I am [illegible] partial opera[illegible]

encouraged to continue hysterectomy by the fact that the family doctors—including some who refer work of other kinds to other surgeons—continue to send patients to me for hysterectomy, not infrequently expressing in their letters the hope that I will "make a clean sweep"

ANALYSIS OF 292 CONSECUTIVE CASES

Fibroids 102
- Curettage 1
- Removal per vaginam of partially extruded fibroids 5 (2 died)
- Removal per vaginam of malignant fibroid 1 (died)
- Hysterectomy 94 (of these 5 were malignant and 6 were reported to be "degenerating") (1 died)
- Exploratory laparotomy (malignant—inoperable) 1

Degenerative changes in uterus (for example, chronic metritis, fibrosis, glandular endometritis) 57
- Removal of adnexa only (ovario salpingitis) 4
- Hysterectomy 53 (2 deaths) (2 cases were associated with adherent ovarian dermoid, 4 with cystic disease of the cervix, 21 with chronic adnexal disease)

Cervix suggesting commencing cancer 50
- Local excision 4
- Local excision with colpo perineorrhaphy 16
- Hysterectomy with colpo perineorrhaphy 3
- Hysterectomy (where suspicious cervix was associated with some other pathological condition—for example, pyometra, adnexal disease, tender and painful fundus) 27 (1 died)

Cancer of body (hysterectomy) 5

Cancer of cervix 49
- Hysterectomy 13 (? died)
- Local treatment of inoperable growth 34
- Referred to radiotherapeutist 2

Polypi presenting at os uteri 21
- Local excision 15
- Hysterectomy 6

Subinvolution, endometritis, etc (curettage) 5

Declined operation 3

DISCUSSION

DR J J BELL (Bradford) acknowledged that what Mr Phillips had said was based upon the results of his own personal experience He himself, in the course of his work, had found that many of these cases could be cured without the necessity of a severe major operation The profound exhaustion of many of these patients after prolonged bleeding could be markedly improved by rest in bed He confined his remarks to those cases of menorrhagia and metrorrhagia which presented no obvious gross lesions requiring drastic treatment They had a small amount of radium at the Samaritan Hospital, and ten to twelve hours' application of radium would completely cure all cases of excessive haemorrhage which presented no gross pathological growth He felt certain that conservation of the uterus was a comfort to the patient Radium would completely cure bleeding in cases of uterine fibrosis where repeated curettings would not He had known of complete recovery with radium treatment in cases where recurrence in the vaginal vault had followed panhysterectomy for cancer

DR J J HOLLAND (Western Australia) referred to the alarming increase in the incidence of cancer in Australia, and stated that a recent conference of experts in Melbourne had condemned radium treatment outright Patients had been known to clear up after exposure to radium, and then to come back in a few months' time in a worse condition than before He would like to ask how long expectant treatment ought to be followed A very small growth in the cervix might have extensive intraperitoneal deposits which could only be discovered by opening the abdomen Curetting was probably useless He strongly condemned delay in the radical treatment of unnatural haemorrhages and advocated complete hysterectomy, as it could do no harm and made the patient much more comfortable

Professor B P WATSON had difficulty in arguing for or against hysterectomy in cases of climacteric haemorrhage, because treatment must be based on accurate diagnosis Such a diagnosis should be obtainable with the patient under an anaesthetic, when, on careful bimanual examination, it ought to be possible to determine the size, shape, and consistency of the uterus, and any abnormality in the appendages If, on such an examination, the uterus was found to be of normal size or only slightly enlarged, the appendages normal, and the results of the curetting negative for malignant disease, radium should offer the best and safest line of treatment On the other hand, if there was a badly lacerated, hypertrophied, and catarrhal cervix, if the uterus was very heavy, metritic, and displaced backwards and downwards, or if there was disease of the appendages, the patient's symptoms might not be relieved by mere stopping of menstruation In such cases he would certainly advocate hysterectomy, and did so constantly in cases of marked prolapse with a uterus as described If vaginal hysterectomy was performed and the operation completed according to the Mayo technique, an extensive pelvic floor repair being done, the results were, in his experience, much better than those obtained by any other means

MR MILES H PHILLIPS also stressed the absolute importance of diagnosis as the only sound guide to treatment Cases of simple "chronic metritis," or chronic subinvolution, could be certainly cured with radium if used in sufficient quantity (2,000 milligram-hours) Apart from these cases his bias was, with Mr James Phillips, strongly in favour of total hysterectomy, especially when the cervix was lacerated or chronically inflamed If there was vaginal prolapse this could be cured at the same time by the modern plastic operation after removing the uterus by the vaginal route

MR GORDON LUKER agreed with the previous speaker as to the importance of accurate diagnosis of the cause of the bleeding before deciding on the treatment suitable to the case He was satisfied that curettage, if properly carried out, could be relied upon to produce evidence of malignant disease where such existed He always used a tent before curettage, if possible, in order that the cervix might be dilated sufficiently to allow digital exploration and a thorough scraping of the uterine cavity If carcinoma of the body and cervix was excluded, he placed his cases for treatment in three classes—mild, moderate, and severe If the bleeding were only mild he found that some were cured by curettage followed by the administration of pituitary extract and calcium lactate In cases of moderate severity he found radium almost a specific, using 100 mg for twenty-four hours In severe cases where much anaemia was present he thought that hysterectomy was the best treatment This was also indicated when the uterus was much enlarged by chronic metritis or by one or more small fibroid tumours, when severe chronic cervicitis was present, or when there was coexisting disease of the adnexa He was doubtful whether it was necessary to remove all the pelvic organs in young women suffering from adenomyoma of the uterus or one ovary He was not familiar with cases of recurrence of the condition after the primary focus had been removed Seeing that the disease was not malignant he had up to the present made a practice of conservative methods when operating

MR W W KING (Sheffield) thought that cases of menorrhagia without gross pathological changes could be readily cured by radium, although he had experienced a few failures, bleeding returning after the first application In cases of metrorrhagia—excluding such simple pathological changes as polypi—it was far better to remove the uterus rather than to delay, waiting for a pathological report It was a matter of very great difficulty to determine malignant changes in curettings, and, knowing this, the pathologist would always tend to err on the side of safety When the report had been received the patient might refuse a second operation, and the fallacious impression was left that curetting could cure cancer

THE PRESIDENT thought that the "investigation" part of Mr Phillips's paper was the part which had been least emphasized in the discussion Undoubtedly the first thing to do in all these cases was to examine them very thoroughly, whenever possible inserting the gloved finger inside the uterine cavity He agreed that it was difficult to be certain whether cancer was present or not in curettings He would like to utter a word of warning against the use of terms like "precancerous" or "potential cancer", they were bringing trouble upon themselves

in using them There was no doubt that radium had done an enormous lot to cure cases where nothing obviously surgical had been discovered, but he thought they were still rather vague about the question of dosage He used 100 m_g exposure for twenty-four hours, or 50 m_g exposure for forty-eight hours, in cases of cancer Radium employed before operation enormously diminished the chances of implantation recurrence taking place

THE ADVISABILITY OF A ROUTINE PELVIC EXAMINATION DURING THE PUERPERIUM

BY

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ANTE-NATAL examination is nowadays, and quite rightly, attracting much attention, this is in accordance with the modern desire to promote preventive medicine With the same object in view it is very desirable that a thorough pelvic examination of the mother should be made during the puerperium—before she is permitted to return to ordinary life In this way many of the diseases which occupy the gynaecologist's attention, and which result from the wear and tear of parturition, may be caught in their earliest stages, when they are so much more amenable to treatment

Twenty years ago I commenced to make a routine examination on the twelfth day of the women who had been confined in the Jessop Hospital, Sheffield, ever since then I have paid special attention to this examination and have become more and more impressed with its value During the same period, in both consulting and hospital practice, I have met with a very large number of patients who would have greatly benefited had such an examination been made

On inquiry I have found that very few family practitioners make such an examination They generally say that they were not taught to do so Some think the patients might resent it, there, I believe, they are wrong The practice appeals to women as a very sensible one, and I have *never known a patient demur On the other hand*, I have often found it difficult to explain away the fact that an examination had not been made before Well trained nurses nowadays also realize its value, and prepare the patient's mind by pointing out the advantages of knowing whether or not everything is all right

The best time to make the examination is, I think, about the twelfth or thirteenth day, this is a day or two before the hospital patient goes home, or just before most of us allow our private patients to walk about the bedroom Should anything abnormal be found demanding more rest and care the patient is thus saved the disappointment of being ordered back to bed Originally I was more or less compelled to choose this time by the exigencies of hospital practice Later I realized that the state of the lochia, the size of the uterus, and condition of the cervical canal render it the most suitable time

The examination should be a thorough one of inspection and palpation—not simply a perfunctory search for the presence or absence of retroversion of the uterus, which is by no means the most frequent or important departure from the normal The bladder and lower bowel having been emptied, the patient is carefully placed in a correct Sims's posture with the buttocks opposite a good light The doctor's hands and the patient's vulva are prepared as if for an examination during labour *The perineum and vulva* are first inspected Then a Sims's speculum of suitable size is chosen and inserted, and the nature of any discharge and condition of the vaginal walls and of the cervix is investigated As will be seen later, certain abnormal states will require treatment which can be carried out at once The speculum is now removed and digital palpation of the vagina, pelvic floor, and cervix is made the patency of the cervical canal is also ascertained Normally by the twelfth day the internal os will not admit the forefinger, occasionally it will do so and then with the assistance of the left hand on the lower abdomen it is possible to explore the cavity of the uterus Finally, the position and size of the uterine body can be ascertained by bimanual examination, and inflammatory or other extrauterine swellings sought for

Amongst the most common lesions to be discovered are incompletely healed lacerations It is obviously a simple duty to inspect a repaired perineum or vaginal outlet to see if it has completely healed Tears may, however, also occur, and even in unassisted labours, in the upper vagina often these are not immediately found and sutured They heal by second intention, not seldom with the formation of granulation tissue, which may proliferate to form granulation polypi of considerable size These, when found, can be painlessly snipped down with scissors and destroyed with pure carbolic acid If neglected they may produce a discharge for which I have known patients to be fruitlessly douched for many weeks Such granulations are, however, more commonly seen in the angles of a lacerated cervix, here they may be sessile or polypoidal They cause discharge and readily bleed, they may persist for years, but are readily and painlessly cured with a pair of curved scissors and a strong caustic—the earlier the better If neglected they help to form the chronically inflamed ectropion of the cervix, which is the result of an infected cervical laceration This is a very common and troublesome disease, generally not seen by the gynaecologist until many months have elapsed The cervix may then be beyond recovery and have to be amputated more or less completely In the puerperium the condition may be cured by the simple measures I have already indicated In this connexion I must refer to those tragic cases of rapidly growing carcinoma of the cervix occurring soon after parturition I have seen them advanced and inoperable within so few months of the last labour that there seemed to be no doubt that the disease must have been present and recognizable during the puerperium Unfortunately, the bleeding and discharge produced by the growth had been thought to be of no special importance so soon after labour

Delayed involution of the vaginal walls and pelvic floor will be recognized easily by one who, accustomed to these examinations, is aware of the variation in the rate of involution of these structures It is the only way in which he can obtain a normal standard by which to judge suitable treatment in these early days will lessen the incidence of vaginal prolapse The degree of involution of the uterus is estimated on bimanual examination and is conveniently standardized by comparison with the size of the pregnant organ On the twelfth to fourteenth day it is usually slightly larger than the uterus at two months In a number of cases where the uterus is larger than it should be one will find the cervical canal patulous, the internal os easily admitting the forefinger The cavity of the uterus can at once be explored, the left hand being used to press the fundus and body of the uterus downwards towards the exploring finger In this way the uterus has occasionally been found to contain one or more rounded nodules lightly adherent to the lining membrane These it is usually easy to separate with the finger and occasionally one can hook the piece with the finger through the cervical canal Usually, however it is necessary and better to wash or scoop them out by means of a large flushing scoop and a stream of hot lotion For this the patient should preferably be put in the lithotomy position Very rarely is any more than slight bleeding so caused It is only in the case of a very nervous woman that anaesthesia is required at this stage of the puerperium whereas later on an anaesthetic is necessitated by the need for instrumental dilatation of the cervix Microscopical examination of these nodules has usually shown decidual tissue only, surmounted by *organizing blood clot* they might be described as "decidual" rather than 'placental polypi' In any case they are to be distinguished from masses of retained placenta which usually cause serious haemorrhage and other symptoms at an earlier date

Lochiometra and Endometritis—In some cases lochia will be found to be pent up in the uterus it is then useless for the organ to be unduly anteflexed, though it may be retroverted In either case it should be straightened by suitable pressure with the fingers, this will result in a gush of fluid from the uterus—either turbid serum or muco-pus—an indication that drainage from the uterus is defective The uterine cavity should in these cases be irrigated with a suitable antiseptic solution, and this may have to be repeated on more than one occasion, sometimes

it is an advantage to introduce a drainage tube, or the cavity may be swabbed out with suitable antiseptics Such retained lochia may be found to contain pathogenic organisms, and I suspect that this is an early stage in the development of that form of chronic metritis which leads to chronic subinvolution—a far too common gynaecological disease A rise of temperature, often only slight and not above 99° F, not infrequently accompanies this condition of lochiometra In not a few of these cases the offending organism is the gonococcus, which is prone to spread from the cervix to the uterine cavity after parturition Prompt and thorough treatment at this stage should prevent the onset of salpingitis and pelvic peritonitis, as well as of chronic metritis

Retroversion.—Retroversion of the uterus will be found in a small percentage of these women at this stage, the uterus should be fully replaced and held so by a pessary—preferably a broad Hodge In primiparae there is a considerable chance of permanently curing the displacement in the course of the following three or four months, during which involution of the uterine supports appears to continue As involution of the vagina progresses it is usually necessary to lessen the size of the pessary once or twice before the test of leaving it out is made Retroversion may, however, not occur until the third or fourth week—I have never known it do so later—and knowledge of this has led me to make a second examination of my private patients towards the end of the fourth week, some day I hope this will also be practicable for hospital patients These statements about retroversion will be of interest only to those who recognize that retroversion may cause much pelvic discomfort, and in some patients is a cause of sterility, in others of repeated abortions Having convinced myself that this is so, I strongly advocate making the attempt to cure the condition by simple pessary treatment

Such are my chief reasons for advising a routine examination during the puerperium One other has been omitted which is not the least important—the satisfaction of those fortunate patients to whom one is able to announce that "everything is all right"

DISCUSSION

DR MCGREGOR YOUNG (Leeds) stated that a routine examination was made of all patients at the Leeds Maternity Hospital at the time of their discharge from the hospital, usually from the twelfth to fourteenth day after delivery Notes were taken as to malposition of the uterus, and of 1,000 consecutive cases retroversion was found in 50 cases—that is, 5 per cent Previously it had been the practice where such malposition was found to insert a pessary, but it was determined to try what the result was without any support In this 1,000 cases nothing was done, and the patients were discharged without remark—that is, no suggestion was made to the patient that anything abnormal had been found Most of these women attended at intervals later At the end of six months these 50 cases were asked to attend, and 32 came for re-examination Of these 32 retroversions 30 were found to be normal and anteverted—that is, 93·7 per cent, only 2 remained retroverted—one from a cause not apparent, the other in consequence of several fibroids in the posterior wall of the uterus

The above observations were made prior to January 1st, 1924, and reported to an obstetrical society Since that time similar notes had been taken in 748 cases more Among these, 42 cases of retroversion were found—that is, 5·6 per cent Only 14 of these had completed a six months' interval from delivery, and of these 14 only 8 responded for re-examination, 7 were found normal and one persisted in the retroverted position This latter was a 12-para, and had probably suffered from retroversion before her pregnancy

A careful search was made for the possible causes of the retroversions in these 1,748 cases, especially for any lesion which might lead to subinvolution, which was considered the probable antecedent to the retroversion, such as sapraemia, pelvic inflammation, pelvic tumours, excessive haemorrhage, prolonged labour, and retained portions of placenta The results were as follows: of the 92 patients with retroversion, in 60 patients there was a perfectly normal puerperium 14 showed a mild sapraemia, 4 had placenta praevia with haemorrhage, and 2 had undue haemorrhage The remainder had prolonged labour or malpresentations, or required manipulative interference

This report was thought of interest in view of the facts that it was a common routine in most maternity hospitals to insert pessaries for retroversion, and it was the common teaching in most textbooks that such treatment is the correct procedure

DR R W JOHNSTONE (Edinburgh) said that the title of Professor Miles Phillips's paper had not led him to expect the description of such an elaborate method of examination as the writer appeared to practise In the Edinburgh Maternity Hospital then practice was to examine all patients before they were discharged, generally about the tenth or twelfth day, but in private practice he preferred to postpone the examination until about the end of the third week The routine examination involved merely inspection of the perineum, bimanual examination to detect cervical tears, and the position of the uterus The speculum was never used unless there was some definite indication for it, and he confessed that he felt considerable doubt about the wisdom of introducing the finger into the uterine cavity as Professor Phillips had described With regard to retroversion of the uterus, it had been his practice, if he discovered a retroversion at the end of the third week, to leave the condition alone for another three weeks or a month, asking the patient to return at that time In a large number of the cases the displacement was found to have been spontaneously rectified at the end of six weeks, as had just been described On the other hand, a retroversion was occasionally found to be present in patients at the end of six weeks which had not been present at the end of three weeks Rectification and the introduction of a pessary at the end of six weeks still held out good hope of cure, since the impetus to involution had not yet exhausted itself

PROFESSOR B P WATSON (Edinburgh) agreed *cordially* with all that Professor Miles Phillips had said It had been his practice for a good many years to carry out a routine examination on his puerperal patients on the twelfth day, and again four weeks after delivery He had frequently found that a uterus in normal position on the twelfth day was retroverted at the end of the fourth week At whatever time he discovered the retroversion he replaced it and inserted a pessary In one or two cases he had replaced without inserting the pessary, and found that they remained in good position He would not have the courage to do this, however, unless he were to have an opportunity of seeing the patient at frequent intervals As a routine he believed that it was better to replace and put in a pessary in all cases His examination had not gone so far as that of Professor Phillips in that he had been content with an inspection of the perineum and a careful bimanual examination Unless there were special indications, such as Professor Phillips had mentioned, he did not make a routine examination with the speculum He had said elsewhere that, as ante-natal care was preventive midwifery, so post-natal care was preventive gynaecology Now that the value of ante-natal care was fully recognized he thought that the importance of post-natal care must be impressed upon the profession also

MISS FRANCES IVENS (Liverpool) supported Professor Phillips in his plea for routine pelvic examination in the puerperium The out-patient departments were crowded with the results of the untreated traumata of labour Not only would a retroversion be found in a certain number of cases, but frequently also a laceration of the cervix, even where there had been no instrumental delivery Latent unrecognized gonorrhoea was also responsible for a certain number of puerperal infections With a routine post-natal examination this would be discovered before the patient got up, and acute exacerbations might be averted Miss Ivens did not herself employ such a detailed technique as Professor Miles Phillips advocated

PROFESSOR MILES PHILLIPS, replying, said he did not attach importance to statistics in such matters If was the

individual patient who wished to be cured of her retroversion, by simple means if possible. It was not known which cases would cure themselves spontaneously. With regard to digital exploration of the puerperal uterus, the special indication was a patulous condition of the internal os on the twelfth day. With proper precautions he had found it free from any danger. He was glad to hear that Miss Ivens agreed with him in starting treatment for gonorrhoeal cervicitis and endometritis at this early stage in the puerperium. He hoped that teachers would find it possible to give practical instruction to medical students in this special form of examination.

THE CLINICAL SYMPTOMS OF PELVIC ADENOMYOMATA

BY

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SINCE the first *detailed account of adenomyoma, which was* published by *von Recklinghausen in* 1893, *numerous* cases have been recorded. Most important additions to our knowledge of the pathology of these strange neoplasms have been contributed by Cullen, Loeb'er, and Sampson, but their clinical aspect has not received so much attention. They are, essentially, tumours composed of glandular tissue which has the histological characteristics of the epithelium lining of the uterine cavity. These glandular elements are surrounded by a varying amount of non-striped muscle which in some cases forms the greater part of the tumour, while in others it is scanty or entirely absent.

When fully developed and unmodified by growth the glands and stroma are not only identical with those of the endometrium, but have the same physiological powers. Theodore Doderlein has recorded a remarkable instance of pregnancy within the cavity of an adenomyoma which chanced to be connected with the uterine cavity by a narrow isthmus. This is a pathological curiosity, but menstruation and a decidual reaction during pregnancy regularly take place within these tumours. The symptoms of pain and vomiting are dependent upon the congestion and tension set up by the effusion of menstrual blood *into the endo*metrical islets, each of which thus becomes a miniature haematometra.

Most fascinating theories have been evolved to account for the presence of *functionally* active endometrium in such diverse and remote situations as the uterine wall, the ovary, the rectum, and the stomach. These growths may arise from some developmental error, or from a downgrowth of the peritoneum, or, as Sampson has suggested, from the accidental implantation of epithelium from the tubes. The interest of these etiological questions is so intriguing that attention has been focused upon them rather than upon the actual manifestations of the disease, in other words, the problem has been an interesting by-path to the pathologist, but somewhat of a *terra incognita* to the clinician. There are, however, *recognizable symptoms* upon which a preoperative diagnosis can be made, and within the abdomen the appearances are often very characteristic, though sometimes easily missed if not carefully looked for.

The facts upon which this paper is based have been extracted from a detailed analysis of 122 cases upon which I have operated. One patient had two operations (the first a simple excision and the second a hysterectomy), so that there were in all 123 operations. All the cases have been proved to be adenomyoma by histological examination, with the exception of six of the earlier specimens of advanced growths in the recto-vaginal space, *which* were so typical that sections were not cut. I may here express my indebtedness to Professor J. S. C. Douglas and his staff in the pathological laboratory for their examination of the large amount of material which I have submitted to them during the years which have been covered by this investigation.

An intelligible classification based on the anatomical position of the tumours has been a matter of some little difficulty owing to the fact that they are often multiple and that they frequently invade *one or more* adjacent organs. In order, therefore, to avoid a confusing list of subdivisions the grouping has been formulated according to what appears to have been the main or primary lesion. Upon this basis the growths and their frequency may be classified as follows:

Recto-vaginal space	52 cases
Peritoneum	26
Ovary	23
Uterus	17
Tube	4

CLINICAL SYMPTOMS

There were no apparent symptoms in just over 16 per cent. of the cases, including one (aged 64) who was past the climacteric. The growths in these cases were found at *operations undertaken for other* condition.

Age.—Endometrial new growths may be found at any age, the youngest patient of this series was 20 years of age, and the oldest 64. The climacteric may be delayed, but, when it is established, the growths atrophy like the uterus.

Sterility.—Patients who suffer from adenomyoma appear to be specially prone to be sterile. Many patients of this series had never been pregnant, and others had not borne a child for eight to ten years.

Abdominal Pain.—This was the most common complaint and was recorded as being present in 63 per cent. of the patients who had symptoms. It was generally described as a "shooting," "gripping" or "aching" pain situated in the lower abdomen, but in a few rather misleading cases the pain was entirely confined to the epigastric region. Most, but not all of the patients complained that it was worse during menstruation, so that this association may form a useful clue in the investigation of *abdominal* pain of uncertain origin. The onset of the pain was often acute and accompanied by vomiting and had thus not uncommonly simulated appendicitis, renal colic, or gall stones, and operations had been advised or undertaken for these conditions. Generally speaking, however, the pain was described as being more or less continuous, though liable to exacerbations.

Vomiting.—Nausea or vomiting very frequently accompanied menstruation, but 26 per cent. of the patients also complained of these symptoms between the periods. The vomiting appeared to have *no relationship* to the intake of food.

Dysmenorrhoea.—Dysmenorrhoea is one of the classical symptoms of adenomyoma, and, in the series, it was recorded as being "very severe" in nearly half the case. On the other hand 25 per cent. of the patients had either no pain or but slight discomfort during menstruation. The records as to the details of the pain are unfortunately, rather incomplete, but it was generally of the spasmodic type. Nausea and vomiting were present in 17 out of the 58 patients concerning whom there is positive information (29.3 per cent.)—*it is noteworthy* that in 8 out of the 17 the growths were in the ovary. Similarly 15 out of 40 (37.5 per cent.) complained of rectal pain during the period, and of these 15 patients 10 had growths in the recto-vaginal septum. These figures suggest that vomiting is a symptom of ovarian growths and rectal pain of those in the recto-vaginal space, but the figures are not large enough to warrant such a deduction. The most striking feature of the dysmenorrhoea is its sudden onset in a patient who has previously been free from pain. This feature is so characteristic that when present it at once suggests the diagnosis of adenomyoma, and the clinical picture is almost complete if there is rectal pain or vomiting. The absence of these symptoms does not, of course, exclude adenomyoma for, as has been stated above, quite a considerable proportion have a negligible amount of pain during menstruation.

Menorrhagia.—It is difficult to say to what extent adenomyoma is a cause of menorrhagia. It was present in 52 per cent. of the patients with adenomyoma of the uterus, and, in the absence of any other apparent cause the haemorrhage may be presumed to be a result of the new growth. Twenty-five per cent. of the patients with extrauterine adenomyoma also had an increased menstrual loss without any gross pathological change to account for it. But in view of the numerous causes of menorrhagia with an apparently normal uterus, these figures do not justify the assumption that there is of necessity any causal relation-

ship between the two The occasional occurrence of metrorrhagia may be regarded, likewise, as perhaps due to some unknown functional cause

Dyspareunia —There is only an actual record of dyspareunia in just over 8 per cent of the cases, but there can be no doubt that it would have been much more frequently recorded if it had been desirable to make routine inquiries concerning it The growths in the recto-vaginal space were especially prone to cause this symptom

Rectal Pain —Intermenstrual pain in the rectum was complained of by 15 per cent of the patients, most of whom had growths in the recto-vaginal space The pain was sometimes shooting or spasmodic and somewhat of the type common in an anal fissure The pain was more severe during defaecation, and was occasionally only felt during this act There appeared to be a tendency to increasing constipation in some instances, but in no case was there any actual obstruction

The Physical Signs

The physical signs of adenomyoma are only characteristic when the growth is in, or adjacent to, the recto-vaginal space Adenomyoma of the corpus uteri, if large enough to be palpated, is indistinguishable from a myoma The physical signs of a tubal growth are equally equivocal Firmity and extreme tenderness of an ovary will at times help to confirm a diagnosis already suggested by the history, but tumours in more remote positions do not give palpable evidence of their presence Tumours in the region of the recto-vaginal space, on the other hand, do cause very typical physical signs In this situation the commonest and most diagnostic sign is a tender retrocervical thickening A palpable swelling was found in this position in 63 per cent of the recto-vaginal growths There may be a localized nodule, but more commonly there is a bar or ridge which can be felt through the posterior fornix traversing the cellular space bounded by the peritoneum, the rectum, and the posterior vaginal wall Sometimes the ridge is wedge-shaped with the base up, and closely resembles the finger flexed at the first interphalangeal joint In some cases actual blood cysts may be seen through the mucosa of the posterior vaginal fornix, or, in some rare cases, actual adenomatous polypi, identical with the so-called mucous polypi of the uterus, may project through the fornix into the vagina

Thickening and tenderness of the utero-sacral ligaments is a most valuable sign, which is best elicited by rectal examination These ligaments are, of course, often thickened in parametritis, but the sensitiveness to pressure is not so acute, and, in any case, in inflammatory effusion can be readily improved by a course of suitable treatment, but this will not influence an adenomyoma The only other common cause of induration of the utero-sacral ligaments is a malignant growth of the cervix or rectum The former can be recognized without difficulty, but the latter may be easily confused with adenomyoma, which quite commonly invades the rectal wall In this series the rectum was involved to some extent in 24 out of the 52 cases of adenomyoma of the recto-vaginal space (that is, 46 per cent) The extent of the invasion of the rectum is shown by the fact that its lumen was opened in 11 out of the 24 cases Sometimes large areas of the anterior rectal wall had to be excised, and in one case so extensive was the growth that three inches of the rectum was removed and an end-to-end anastomosis performed Rectal examination in a well advanced case discloses a hard, tender, craggy mass in the anterior wall The physical signs are therefore similar to those of carcinoma of the rectum, with the exception that the rectal mucosa remains intact Ulceration of the mucous membrane over the growth may occasionally take place, but it was not noted in any of the cases covered by this review

A tender adherent retroversion was found in 21 per cent of the cases, so that the presence of this sign warrants a careful consideration of the whole position before operation is undertaken, lest a major operation may have to be performed upon a patient who has not been warned of any such possibility This unpleasant predicament occurred several times in this series, so that a warning to others may not be out of place

Morbid Anatomy

Recto-vaginal Space —In this situation the growths may vary in size from that of a pea up to large masses which obliterate the pouch of Douglas They often appear to grow from the back of the supravaginal cervix, and from thence to spread out laterally into the utero-sacral and the broad ligaments, and backwards into the rectum Very frequently the bowel is characteristically puckered on to the posterior uterine wall, and thereby the uterus is retroverted The growth in the bowel tends to be situated in the anterior wall, and very often by careful dissection it may be excised without opening the lumen of the bowel, for it does not involve the mucous membrane

Peritoneum —In these cases laparotomy disclosed a varying number of black or dark blue cysts occurring singly, or more commonly in groups scattered over the pelvic peritoneum Individual cysts may vary in size from that of a pin's head up to that of a millet seed, they can often be most easily recognized by palpation, and are very prone to lie on the back of the broad ligament under cover of the ovary Stellate scar-like areas are also seen, which probably represent adenomyomatous implants which have healed owing to the destruction of their lining epithelium from intracystic pressure Occasionally clear, firm cysts, with tiny projecting horns, may be noted, and more rarely the peritoneum is thickened so as to present a sort of pig-skin appearance

Ovary —Ovarian adenomyomata are most easily recognized when they contain cysts filled with chocolate-like fluid These may be tiny black cysts on the surface of one or both ovaries, or they may form large "chocolate" cysts which completely fill the pelvis The ovary may appear to be normal, except that it is adherent to the back of the broad ligament or to the floor of the pelvis, but on separating it the typical chocolate-like fluid escapes In some cases no macroscopic change may be found, and in these the diagnosis can only be made on histological examination

Uterus —Adenomyomata of the uterus closely resemble fibroids, but they are not encapsulated, and are frequently situated near the cornu

Tube —Tubal adenomyomata occur as definite localized tumours projecting from the tube, and are generally situated in the region of the isthmus

Results

Four out of the total cases died as a result of the operation—a mortality of 3·2 per cent

In order to obtain a fair conception of the operative results, only those patients have been written to who were operated upon prior to 1924, and from these 103 patients 86 replies have been received It is only necessary here to give the general conclusions brought to light by the replies These may be summarized as follows

1 Hysterectomy with removal of the ovaries cured all but one of the 57 patients who replied

2 Hysterectomy without removal of the ovaries cured all the 7 patients who replied But in one instance I have had to remove painful ovaries left after vaginal hysterectomy, which, after removal, were found to contain adenomyomatous blood cysts, so that it is probable that these figures would be modified in a larger series of cases

3 Excision of the growth without hysterectomy does not give such good results Only 13 out of the 22 patients who replied recorded a complete cure

The small *localized* adenomyomata can be successfully treated by conservative measures, but the more extensive growths require hysterectomy irrespective of the age of the patient

The Relationship of Adenomyoma to other Conditions

Inflammation —In so far as inflammation may have a bearing upon the causes of the disease, it is interesting to note that *39·7 per cent of the patients* had a history with physical signs of some inflammatory process The cause of the inflammation, as nearly as can be ascertained, were as follows

Tuberculous	11·9 per cent
Gonococcal	11·6 "
Pelvic abscess or septic confinement	13·2 "

Myomata.—These tumours were present in 22 per cent of the cases

Malignant Growths.—As a contribution to fact and without drawing any conclusions, I may record the following cases in which a malignant growth was associated with adenomyoma

1 Two patients had carcinoma of the cervix
2 Three patients had adenocarcinoma of the endometrium
3 One patient had carcinoma of the sigmoid
4 One patient is reported to have died of carcinoma of the *rectum four years after* I had performed a hysterectomy for adenomyoma of the uterus

DISCUSSION

Professor B P Watson said he did not think many could have had such an extensive experience of adenomyoma of the pelvis as Dr King, who had brought out very clearly the important clinical features of these cases What had struck him most as a symptom in such patients was the development of dysmenorrhoea in a woman who had hitherto had painless menstruation and in whom very little could be found in the pelvis to account for it in such circumstances the first thing to be thought of was an endometrioma

Dr Gordon Lukep (London) said that his experience had been confined to adenomyomata of the uterus until the previous week, when he had a case involving one ovary in a woman of 30 who had complained of dysmenorrhoea and menorrhagia He had conserved the healthy ovary as he did not recognize the risk of adenomyoma occurring elsewhere

Dr R W Johnstone (Edinburgh) said that he had had relatively a very small experience compared with Dr King having operated only in a few cases of adenomyoma of the uterus as well as in a number of cases of so-called chocolate cysts of the ovary He had doubtless overlooked many cases in which there were tiny pucl ered scars of the pelvic peritoneum which Dr King regarded as of pathological importance He agreed with Professor Watson that the most suggestive symptoms were the onset of dysmenorrhoea in later sexual life combined with menorrhagia dyspareunia, and in many cases sterility He would like to ask Dr King whether he had any idea as to the likelihood of the tiny peritoneal adenomyomata which he had described undergoing spontaneous cure even in the absence of such radical treatment as he was disposed to recommend

Dr King, in his reply, said that he had intentionally kept off the subject of the pathology of these tumours. In spite of the fascination of Sampson's theory, it would not cover all cases. *He thought the typical endometrial* stroma was quite a late development, and with not much stroma there would be very little menstruation

Memoranda:

MEDICAL, SURGICAL, OBSTETRICAL

A MODIFICATION OF THE PEPTONE TREATMENT IN CERTAIN CASES

For *some time I have* been treating certain resistant cases of asthma, urticaria, etc, with a new peptone *method* which is used after the ordinary peptone method has not succeeded

It is known that in such the blood becomes inspissated by a poison This blood is now removed and immediately poured into a 10 per cent solution of Armour's peptone (No 2), pure and freshly prepared except for the sodium necessary to make it faintly alkaline It is well shaken up, about 3 to 4 parts blood to 1 part peptone, allowed to coagulate, and is put into an *incubator* at 37° C It blood persists with the serum, it is allowed to remain In five to six hours if examined, it will be found that a new substance, anaphylatoxin, has been added to the peptone-serum This entire mass is now carefully removed, and the lot is made sterile with 0 5 per cent phenol It is injected into the vein, beginning with 1/2 c cm and going up to 2 to 3 c cm

London W 1 A G Auld M D D P H

THE PHYSIOLOGY OF DEFECATION

Dr Spicer Wilson's memorandum (August 9th, p 237) on the curative action that the sphincter ani may exert on piles raises the question of the proper technique of defecation This process require more time than we are disposed to give it At least two minutes must be allowed for the recovery of the slight prolapse of mucous membrane and the proper closing of the anal door If we do too hurry, the peristaltic downward action of the last inch of rectum will often expel a small residual motion If we hurry this is not only retained but under mucous membrane gives a pain that it resents

If patients are advised to pause to *initiate* deliberately the sudden voluntary closure of the sphincter for a minute or two and to clench with fist and cold water great benefit will accrue It is surprising how clean a cleansing is really necessary if this is done I have cured my own piles on the line, and many patients have done the same

Carlisle David Price

BLOOD GROUPS AMONG SAMOANS

Of recent years attempts have been made to establish racial affinities by means of characteristic blood groupings The following observations unfortunately limited to a small number of persons, are offered as a contribution to this study

The work was done at the Apia Hospital Western Samoa towards the end of 1923 and, after excluding all cases with a known or suspected admixture of European or Chinese blood, there remained 51 cases, presumably pure Samoans, the Samoan being a typical member of the Polynesian race The first step was to separate the various groups for this purpose blood was taken from 17 individuals, and the serum from each blood was agglutinated against the cells from the other bloods also the cells of each blood were agglutinated against the other serum Samoans and Chinese were included in the 17 individuals with the result that all the bloods fell into four well marked groups with one exception, which will be referred to later

Through the courtesy of Dr Colmour pathologist to the Auckland Hospital we obtained type sera belonging to Groups 2 and 3 (Moss) and in this way identified our group We then tested an additional number of cases, giving us a total of 51 Samoans The number of cases in each group and the percentages of the total are given in the following table

Samoans

Group	No of Cases	Incidence
1	4	7 8
2	19	37.3
3	7	13 7
4	21	41 1

This may be compared with Moss's original table as quoted by Rendle Short (*New Physiology in Surgical and General Practice*, p 23)

Group	Incidence
1	5
2	40
3	10
4	45

In addition to these Samoan cases we typed the bloods from 12 Chinese coolies, with the following result

Chinese

Group	No of Cases	Incidence
1	1	8.3
2	1	8.3
3	5	41 6
4	5	41 6

The anomalous case already mentioned was a Samoan. The corpuscles from this specimen or blood were not agglutinated by any of the other (16) serums, the serum from this case failed to agglutinate corpuscles from two cases belonging to Group 2, while it agglutinated the corpuscles of cases belonging to Groups 1 and 3 It did not agglutinate corpuscles of Group 4 It would therefore appear to be an anomalous form of Group 4

J S Armstrong, M B, Ch B, D T M and H Farquhar Matheson, M B, Ch B

Reviews.

AMERICA IN THE WAR.

Hospitals

THE fifth volume of the history of *The Medical Department of the United States Army in the World War*[1] contains an account of hospitalization work in home territories As in some other volumes of the same history to which we have already drawn attention, treatment of the subject is characterized by logical arrangement of the material, a wealth of well documented detail, and an adequate supply of diagrams and other illustrations whenever needed Only about a quarter, however, of the eight hundred pages of text relate to the subject as a whole, the rest being given up to accounts of individual institutions and their doings Consequently much of the volume may be regarded as of domestic rather than of general interest The same is true of the illustrations, those of technical interest, such as detailed ground plans and the like, being relatively few

The hospital problem as it presented itself to the United States authorities was not quite on all-fours with that facing either Great Britain or France Though France in principle delimited a war zone of its own, the greater part of the country was in effect and of necessity a military base for all purposes For hospitalization work Great Britain likewise was a base, since there were frequently times when the hospitals in the British war zone in France, whatever their nominal status, all had in practice to do the work of casualty clearing stations Consequently in Great Britain provision had to be made and to be maintained for sometimes vast numbers of men arriving almost straight from the field of battle But apart from this it was a general principle in France, though not always observed, to evacuate to England at a relatively early date all cases likely to require prolonged treatment, unless they belonged to certain limited categories In view of the huge casualties liable to occur in conditions of modern warfare, this procedure was inevitable since the British war zone in France was nowhere of any great depth, barely fifty miles of country stood between most of its coastal towns and the enemy trenches, and there was thus a very distinct limit to the possibility of arranging suitable sites for the innumerable stores, camps of all kinds, and hospitals required The number of hospital beds habitually maintained was always greater than was pleasing to the High Command on account of the increased strain thrown on the transport and supply services, and it must have been a source of anxiety to the D G M S himself at critical moments brought about by enemy successes

The United States Army, on the other hand, with its disembarkation ports on the Atlantic coast, could spread itself pretty much as it pleased over Western and South-Western France, *and it was early decided to adopt the* principle of not sending home any case likely to require less than six months' treatment In short, for the United States soldier relatively few wounds spelt "Blighty" in the true sense of that word, although as a matter of fact, as shown in the first volume of our own *Medical History of the War*, some 13,000 sick and wounded from the American forces were taken to England between March and December of 1918

Consequently in the United States itself the chief demand for accommodation would seem to have been in respect of cases of sickness and injury arising at the pre-war military posts and in new training camps, of which thirty-two were in use or in process of formation at the date of the armistice, also for similar cases among troops under orders for France and awaiting shipment at embarkation ports But general hospitals were also provided for the treatment of special cases of all kinds and for the final treatment of any patients sent back from France For the temporary reception of the latter prior to redistribution sundry debarkation hospitals were established in the neighbourhood of New York, for the treatment of cases of tuberculosis arrangements were made in suitable areas

A further *outcome of the relative limitation* of the problem was that it does not seem to have been found necessary to provide more than about 120 000 beds, or, in other words, about one-third of the number habitually maintained in the United Kingdom, that of these 120,000 beds fewer than two-thirds were actually occupied at the date of the armistice Nevertheless, with a view to future possibilities, plans were being made at that date for 60,000 more beds

On the declaration of war the Medical Department received numerous offers of buildings for use as hospitals, it accepted many and transformed them as circumstances required, but the greater number of hospitals were specially built As a rule they seem to have been single story buildings, but the size of the ward units and their distribution differed considerably Wards containing from 50 to 100 beds were considered most convenient for administrative purposes, and no objection to them on other grounds seems to have been experienced In view of their special purpose it was anticipated from the beginning that the provision for sitting-up cases would have to be large, and in the event it was found that the proportion of men able to take their meals at the common table, and requiring more or less active exercise, was often 75 per cent, and even as high as 95 per cent, among cases sent back from France A large number of the hospitals seem to have gone in for teaching their patients various trades, and some were definitely charged with reconstruction work

Whenever possible every hospital was placed for administrative purposes under the command of an officer belonging to the Medical Service of the standing United States Army His staff was formed of ordinary medical officers specially selected and trained for the purpose On the professional side the work was divided into three services—*medical*, surgical, and laboratory—each working under a chief The standard permanent staff for a 1,000-bed hospital was one colonel or lieutenant-colonel, four majors, twelve captains, and thirteen lieutenants, of the Medical Corps, two officers of the Sanitary Corps, two of the Dental Corps, one captain of the Quartermasters' Corps, one trained nurse for every ten patients, and two enlisted men for every five beds In addition most of the hospitals had supplied to them a "dietetic specialist"—that is, a woman specially trained in sick-room cookery—and the chiefs of laboratories could increase their staffs by employing civilian assistants

Perhaps one of the most striking features of the whole account is the great importance that was attached to administrative work in hospitals, and the number of medical officers set aside for this purpose Another is the elaborate character of the arrangements made for the instruction of medical officers in military medicine and surgery, and for *the bringing up* to standard those whose general medical knowledge was deemed to be subnormal

Incidentally the volume reveals that it was the intention of the United States Government to land in France by the middle of the year 1919 a total of 3,360,000 men, and to maintain in the home territory a reserve of a further 1,400,000 The volume, like the others to which we have drawn attention, is supplied with an exhaustive index, and gives, too, a sketch of the evolution of military hospitals in general Credit for the first conception of the pavilion type of hospital is given to Stonehouse (Plymouth), where a naval hospital on this plan was built about the year 1754

DIAGNOSIS AND TREATMENT OF NEPHRITIS

THE first edition of Professor HUGH MACLEAN'S *Modern Methods in the Diagnosis and Treatment of Renal Disease* has, as anticipated in our review (1922, i, p 146), met a distinct want, for there have been two fresh impressions, and a second edition,[2] somewhat enlarged and with some

[1] *The Medical Department of the United States Army in the World War* Volume V Military Hospitals in the United States Prepared under the direction of Major General M W Ireland by Lieut Colonel Frank W Weed Washington Government Printing Office 1923 (Sup roy 8vo, pp 857 201 figure 2.50 dollars)

[2] *Modern Methods in the Diagnosis and Treatment of Renal Disease* By Hugh Maclean M D D Sc Second edition revised and enlarged London Constable and Co Ltd 1924 (Demy 8vo pp xii + 417 4 plate 4 figures 2 charts 124 net)

additions, has now appeared On the basis of functional disturbance as determined by chemical tests chronic nephritis is divided into two forms—the azotaemic, characterized by retention of nitrogenous products and corresponding to chronic interstitial nephritis and the hydraemic form with retention of sodium chloride and oedema, the much less frequent parenchymatous nephritis The chapter on this subject is enlarged by the addition of four successful coloured plates illustrating the histological changes, which have been provided by Dr S C Dyke, pathologist to the Clinical Units at St Thomas's Hospital These plates show the complete absence of inflammation in hydraemic nephritis, and that when as generally happens, the hydraemic form progresses into the azotaemic there is always in addition to considerable degeneration of the renal cells more or less well marked inflammation, as shown by definite proliferation of the interstitial fibrous tissue of the kidney Occasionally the degenerative change responsible for the hydraemic form undergoes cure and the further lesion does not supervene It is suggested that the toxin causing pure degeneration of the renal cells is not the same as that responsible for this degeneration when associated with interstitial inflammation on this point, however further information is necessary The plate showing the micro copic appearances of a primary chronic interstitial (azotaemic) nephritis is much the same as that in progressive hydraemic nephritis

Another addition in this edition is in the section dealing with the high concentration of urea in the blood There is a want of correspondence between the apparent clinical condition of patients with progressive hydraemic nephritis and the amount of blood urea for the oedema may disappear and they may cease to vomit and yet have a steadily rising blood urea—a danger signal with a hopeless prognosis These cases are comparable to those of subacute bacterial endocarditis with apyrexial periods where recovery appears probable though a fatal termination always ensues The discussion of high blood urea with healthy kidneys brings out possible pitfalls and fallacies, such as the danger of concluding that the combination of high blood urea and albuminuria justifies a diagnosis of uraemia, for this may be due to an abdominal abscess or empyema, when the percentage of urea in the urine will be fairly high—from 2 5 to 3 5 per cent or even more In doubtful cases, therefore, the percentage of urea in the urine should also be estimated, for in the presence of 2 per cent of urea in the urine the existence of uraemia can be safely excluded

In conclusion, this condensed but clear account of the modern conception of renal disease should be in the hands of every general practitioner who has not recently revised his knowledge of the subject, so as to enable him to deal in a competent and up to-date manner with his patients

ANAESTHESIA LOCAL AND GENERAL

In the preface to his book *The Science and Art of Anaesthesia*[1] Colonel WEBSTER, M D, who is professor of anaesthesiology in the University of Manitoba Medical School, states that he has written it in order to place before the medical student and general practitioner a small manual, concise in form, but not so brief as to leave matters imperfectly explained

A short chapter on the history of anaesthesia is followed by a discussion of the physiology of the subject, which is well written, and though condensed should suffice for the average needs of the student Each anaesthetic is then considered in turn, and there follows a chapter on local and spinal anaesthesia Anaesthetic mixtures and sequences are next discussed, after which follow chapters on the selection of the anaesthetic, the nature of the operation, the heating of the gases, preliminary medication, and pre-operative and post-operative treatment The effect of temperature and moisture on post-operative conditions is then described and separate chapters are devoted to surgical shock, post anaesthetic acidosis the patient's viewpoint, the art of anaesthesia, statistics, anaesthesia records, and the medico-legal aspect of anaesthesia The English student may find that the apparatus described is not all of a pattern with which he is familiar, but the illustrations, which are not too numerous, are quite satisfactory, and there is a commendable absence of misprints

The second edition of the American translation of Professor Braun's book bears the title *Local Anesthesia Its Scientific Basis and Practical Use*[2] It is ten years since the first edition appeared, and in the meantime much has been written on the subject as the result of the great war This second edition retains all the merits of the first There are sixteen chapters the first ten are devoted to general considerations, the last six to descriptions of the operations on the various parts of the body The first chapter is on the history of local anaesthesia up to the discovery of cocaine, and is followed by others on sensation and pain, anaesthesia and anaesthetic methods, on the pain relieving action of nerve compression and anaemia, on anaesthesia by means of cold, on the influence of the osmotic tension of watery solutions injected for purposes of local anaesthesia, on absorption, and so on Local anaesthetic agents are then described, and the physiological and toxic properties of each fully discussed Then follows a chapter on further aids to local anaesthesia, including such manœuvres as ligation of limb, the chilling of tissues, and the action of adrenaline Methods of using the drugs are next described, and the value, indications for, and general technique or local anaesthesia discussed, the instruments used, the solutions recommended, and the general technique of infiltration and conduction anaesthesia are fully explained The illustrations of which there is a sufficient number, are clear and well chosen One point Professor Braun insists upon—the unsuitability of the modern operating table for the practice of local anaesthesia—should be emphasized The modern table, while very convenient for the surgeon, is most uncomfortable for a conscious patient A mattress covered with sterilized rubber sheeting should always be provided for a patient who is to undergo a long operation under local anaesthesia

The book is a very fair presentation of the relative merits of local and general anaesthesia, for the author does not let enthusiasm for his subject outrun discretion

ELECTROTHERAPEUTICS AND DIATHERMY

THE first nine chapters of *Practical Electrotherapeutics and Diathermy*,[3] by Dr MASSEY, deal with the various currents used in medical electricity, and occupy rather less than a third of the book The nature of these currents, the machines which produce them, the methods of applying them, and their actions on the body, are described The remainder of the book deals with the electrical treatment of disease

In Chapter X, which is entitled "Electricity in General Surgery," are described electrical methods of treating aneurysm, cystic goitre, tuberculous glands, etc, and an account is given of a method of performing tracheotomy with a cautery knife Chapter XI is entitled "Electricity in Industrial and Reconstructive Surgery" but, apart from a short section on the removal of lead and mercury from the tissues deals entirely with electro-diagnosis and the testing of the reactions of muscle and nerve "Electricity in Oncology" is the title of Chapter XII the longest in the book (92 pages) In the remaining chapters (XIII to XIX) the electrical treatment of diseases of various regions and systems of the body is described

The chapter which will arouse most interest among English readers is that on the treatment of malignant growths by zinc ions The author has made a special study of this method for many years, and his results,

[1] *The Science and Art of Anaesthesia* By Colonel William Webster D S O M D C M London Henry Kimpton 1924 (Med 8vo pp 214 2s net)

[2] *Local Anesthesia Its Scientific Basis and Practical Use* By Professor Dr Heinrich Braun Translated and edited by Major Im L Harris M D Second American from the sixth revised German edition London Henry Kimpton 1924 (Roy 8vo pp x—411 231 figures £2 net)

[3] *Practical Electrotherapeutics and Diathermy* By G Betton Massey M D London J and A Church ill 1924 (Med 8vo pp xvi—617 157 figures 21s net)

judging by the illustrations and descriptions, seem to be excellent. The patients have been kept under observation for not less than two years. His method is described in full detail. Usually multipolar electrodes are used, and constant unidirectional currents of 2,000 or even 3,000 milliamperes are concentrated in and around the growth. With currents of this intensity heat is also developed, and a temperature sufficient to coagulate the proteins is reached. The method is therefore one of diathermic coagulation combined with chemical cauterization. It might be thought that risk would attend the use of currents of this kind and strength, even though the electrodes are confined to the site of the growth, but no misadventure is reported.

The author's observations on the treatment of tuberculous glands and cystic goitre by germicidal and cauterizing ions will be read with interest. He has devised special methods which, in his hands, seem to have produced good results.

In the account of the testing of electrical reactions attention is paid chiefly to the original method, in which the faradic and galvanic currents are used. The account of the condenser method and the description of the recommended by Lapicque are taken from the writings of other authors. A wrong impression is given of the meaning of the term "chronaxie." The definitions given on page 41 confuse ionization with cataphoresis. Such expressions as "the soapy ions of sodium and hydrogen," "the cations of water" (p. 41), and the statement that 2 per cent is usually the strength at which the molecules of a substance are most fully ionized by water" are unscientific and inaccurate. There are certain other mistakes and inaccurate expressions in different parts of the book. Thus we read on page 133 that "ozone and nitrous oxide will appear in great abundance at the surface of the positive pole, while the negative polar surface will receive a similar blast of nitrogen".

The book is more suitable for the advanced reader than the beginner. Those who are experienced in electrotherapeutics will find much that will interest them, especially in the chapter on the destruction of new growths.

AN ATLAS OF ANATOMY

THE *Hand-Atlas of Human Anatomy*,[1] by Professor SPALTEHOLZ, has entered its seventh German and its fourth English editions, and may, we think, be said to be without any serious competitor in its own particular field. The illustrations have now reached the formidable total of 994—a considerable advance on the number in the previous English edition, the increase is largely attributable to the addition of figures illustrating the development of bones, made from specimens prepared by a method of Professor Spalteholz's own invention. With this large number of figures it has been possible to ensure that every part of the body is adequately illustrated in various stages of dissection and from almost every conceivable point of view. The dissections have been made with great skill and ingenuity, the standard of reproduction is consistently high, whether judged from the point of view of accuracy, clearness, or artistic merit, the artists are particularly successful in their manipulation of light and shade, an important feature in anatomical drawings. While most of these drawings are faithful representations of dissections, with sufficient discriminative arrangement and selection to emphasize the relationships which it is desired to show, the author does not hesitate at times to introduce figures of a diagrammatic type, certain of these, in connexion with the anatomy of the central nervous system, are particularly successful and commendable. At times, too, figures are included of parts as seen with low magnification. Perhaps some idea of the completeness of the work may be obtained from noting that no fewer than forty figures are assigned to the origin of sight and forty-three to that of hearing. At the foot of each figure is a compendious legend, so that in a sense the Atlas partakes of the nature of a textbook. The work is singularly accurate, although very occasionally minor faults can be detected in labelling or in colour registering. The Atlas is so complete and perfect as to present a very strong temptation to the student to substitute it for his own dissections, but perhaps the price of the book and the influence of his teachers will constitute adequate safeguards. It is as a work of reference that it will be of most assistance and utility.

[1] *Hand-Atlas of Human Anatomy*. By Werner Spalteholz. Professor of Anatomy in the University of Leipzig. Edited and translated from the seventh German edition by Lewellys F. Barker, Professor Emeritus of Medicine, Johns Hopkins University. Fourth English edition. Three volumes. Philadelphia and London: J. B. Lippincott Company. 19-3. (Sup. roy. 8vo, pp. 602, illustrated. 70s. net the set of three volumes.)

WHITE MEN IN THE TROPICS

THOUGH the interest of the home country in the effect of white races of residence in hot countries may have been diminished by recent political tendencies, the question involved is of great and even growing importance for certain of the dominions, and in particular for Australia in respect of Queensland. We therefore draw attention to an extremely pessimistic essay published in a small volume by a French author, whose sex and status are not indicated on the title-page. Sundry passages in the text, however, justify the conclusion that it is from the pen of a medical man of long experience in the colonial service of the French Government. His statements relate solely to the assumed effects of long exposure to heat, those of the diseases more or less endemic in tropical zones are excluded from consideration.

He does not believe that there is ever any true acclimatization of white folk, and he does believe that long before the attainment of any condition that could reasonably be given that name most individuals would have seriously degenerated both physically and psychically. Among the physical degenerations are marked prominence of the abdomen, atrophy of voluntary muscles, displacement of various abdominal organs, baldness, or premature whiteness of the hair, and a relatively early onset of old age. The phenomena, he says, are so common and so often combined that when accompanied by a bronzed skin the individual, often coupled with arterial sclerosis. The first three he declines, looks like a frog, and wherever met can at once be recognized as a "colonial," by which term the French seem always to mean a Government or commercial employee in a hot country. The individual looks like a frog because a sunk chest and a large stomach are supported on a thin pair of legs and balanced by attenuated arms, by the precise tone of the face colour, in spite can even tell from what particular marsh this human batrachian hails. Seemingly those who attain this appearance are rather to be congratulated than otherwise, since only the sickly remain thin. It is asserted, too, that individuals who after having become nominally acclimatized return to live at home generally get killed off by influenza or some congener in a very short time. Doubtless this is a subject of regret to their friends, but if our author's statements are to be taken at their face value it must from the general standpoint be considered rather a good thing. For if the physical results of long subjection to heat are unmixing, the psychical results would seem to be still more unhappy. The length of service of a white resident in the tropics can, our author says, be told by the degree of his conceit and self-assurance, of his scorn of medical knowledge, and of other kinds of culture which he does not possess, and of his readiness to rush into print. If some piece of work of his, such as the building of a bridge, fails it is never his fault but somebody else's, and as he grows older he tends to become extremely pompous and to use none but sententious language. At all stages he is ready to quarrel about nothing, to indulge in alcoholic drinks to try all sorts of evil narcotics to get so physically lax as to be unwilling to walk even a few yards, to lose all moral sense, and, especially if his work lies among the bush native, to become a veritable satrap, meanwhile he is lucky if he

Les Blancs en Pays chauds: their acclimatization and degeneration. By Dr. Jaubert-Aubery. Paris: J. Malvoine et Fils. 1924. (Cr. 8vo, pp. 160. 6 fr.)

does not develop a phobia of some kind or lose all will power A further effect of the sun is said to be heightening of the imagination which leads the victim, if engaged in conversation to swamp his companions by his volubility and tireless disregard for truth The effect on white women residents is of a corresponding kind, and when not engaged in dress competitions they endeavour, morally speaking to wear their husbands' trousers

Most of us are acquainted with many individual who after spending most of their lives in hot countries remain of good physique and couple with a broad experience of life a mentality fully equal to that of such of their cousins as have remained at home The statements of our author will therefore be received with distrust both in France and in this country Hence it should be added that he concludes his volume with a number of much more acceptable statements Summed up, they are to the effect that both the French Government and French commercial houses should reject for employment in hot countries home failures, and should choose none but men of the very highest types they can get The age limit should be *not* less than 25 on first appointment and at the age of 50 they should be retired Meanwhile they should be sent on long leave at the lapse of every two years, and all forms of physical activity among them should be encouraged Subordinate posts should be filled solely by natives and the recent tendency in France to regard its tropical possessions as suitable places for ordinary domestic life including the raising of families should be discouraged The author also holds that the English practice of living isolated from native society is sound, and that the French readiness to welcome in France men of colour of all kinds, and to treat them as equals is to be regretted There can be no true acclimatization he holds, either of white folk in tropical zones or of coloured races in Europe in countries and sooner or later, if current tendencies continue the French race, as a race may suffer accordingly

THE UNADJUSTED GIRL

THE fourth Criminal Science Monograph published as a supplement to the *Journal* of the American Institute of Criminal Law and Criminology is entitled *The Unadjusted Girl*[1] and is edited by WILLIAM I THOMAS with a foreword by Mrs W F Dummer A quotation from the preface will show the motive inspiring this book

Modern psychology is throwing so much light upon human behaviour that, concerning delinquency one cannot do better than follow the teaching of Spinoza 'Neither condemn nor ridicule, but try to understand'" Such an attitude led to the widespread sociological study of delinquency, and later to the establishment of the first mental clinic in connexion with a court A great number of case histories are reported at length in the book, and from these psychological arguments are deduced The editor remarks, however, that—

> Statistics in themselves are nothing more than the symptoms of unknown causal processes A social institution can be understood and modified only if we do not limit ourselves to the study of its formal organization but analyse the way in which it appears in the personal experience of various members of the group and follow the influence it has on their lives

Mrs Dummer quotes from James Hinton the English surgeon, who said just after the American civil war "Prostitution will pass as has slavery when it becomes too great a burden for humanity to carry" Prostitution and promiscuity she considers, will be eliminated not by force, but through sublimation

The editor interprets to-day's unrest as a period of individualization following and preceding periods of socialization, and emphasizes the present opportunity to reorganize the administration of justice

The titles of the chapters sufficiently indicate the scope of the book — 'The Wishes' "The Regulation of the Wishes" "The Individualization of Behaviour" "The Demoralization of Girl," "Social Agencies," and 'The Measurement of Social Influence" Each chapter is amplified by full notes from many cases

NOTES ON BOOKS

THE issue of the fifth edition of the useful handbook *Anaesthetics in Dental Surgery*[1] follows close on the death of its originator Dr J D LUFF The editor of the new edition, Mr J Stuart Poss, pays a tribute to him in the opening lines of his preface Though the book has been entirely rewritten and has materially gained thereby, the impress of its first author remains In particular the chapters on gas and oxygen and on local anaesthesia (rewritten by Major W T Finlayson) have been greatly improved The replacement of an index by a synopsis and cross references we do not consider an improvement even in a small book As an example, the only reference to acide is we can find is in the very interesting chapter on ethyl chloride, and it is noted in connexion with children only the conduit on is of importance in all cases of general anaesthesia and at all ages, and an index would quickly have revealed the author's position In the chapter on chloroform the author fights well the battle of "safety first," and, while admitting that there are cases where chloroform *must* be given for dental extraction, strongly advises against its general use We note in the chapter on nitrous oxide and oxygen the statement that analgesia is a stage reached before the loss of consciousness, and that even live pulps can be extirpated painlessly, during this stage We venture to ask the author whether here be any such stage during 'gas (or "gas" and oxygen) administration Our experience is that pain is more acutely felt at the moment of losing or regaining consciousness There are a few lapses from English pure and undefiled as at the bottom of page 136 and in the tautology of the second paragraph of page 189 which are worth a caution in a book so pleasantly written Both for its contents and its diction we recommend it to those for whom it is specially intended —the dentist and those medical practitioners who would understand *what the dentist requires of the anaesthetist*

Dr HEWLETT'S work on infection and resistance, of which the third edition has recently been published[2] is, as its subtitle states, an exposition of the biological phenomena underlying the occurrence of infection and the recovery of the animal body from infectious diseases with a consideration of the principles underlying specific disease and therapeutic measures The opening chapters deal with the problem of virulence, the varieties of bacterial poisons, and the question of immunity, and are followed by a discussion of toxin and antitoxin, the bactericidal properties of blood serum cytolysis and sensitization, and the complement and its practical applications The phenomena of agglutination, precipitation, phagocytosis, and chemotaxis, are described, and several chapters are given to anaphylaxis, serum sickness and the allied subjects of food and drug idiosyncrasy and hay fever The concluding chapters deal with active and passive immunization and protein therapy

We have received the first two publications[3] of the Ravetllat Pla Institute of Barcelona in which a new conception of the bacteriology and pathogenesis of tuberculosis is set forth The first publication is a lecture delivered in June, 1922 by Dr I PLA Y ARMENGOL, and the second is the conjoint work of the late veterinary surgeon J RAVETLLAT and Dr PLA Y ARMENGOL The writers maintain that the organism of tuberculosis may appear in three different forms, each of which may be transformed into the other—namely, a diplococcus or diplo-streptococcus, which they call the attacking bacterium an intermediate or transitional form, and Koch's bacillus The attacking bacterium, which is always found in the active lesions and the internal organs, especially the spleen, possesses great vitality Under unfavourable conditions it loses part of its vitality and becomes converted into the intermediate bacterium in the form of granules which represents the first phase of resistance and is chiefly found in the pus Under still more unfavourable conditions the organism assumes the form of Koch's bacillus, which represents the phase of maximum resistance and is most frequently found in the tubercles

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[1] *The Unadjusted Girl* By William I Thomas Criminal Science Monograph No 4 London George Routledge and Sons Ltd 1924 (Demy 8vo pp xviii + 261 15 net)

[1] *Anaesthetics in Dental Surgery* By the late Thomas D Luff LDS FRCS Edin Edited by J Stuart Poss LDS FRCS Edin Fifth edition London William Heinemann 1924 (Crown 8vo pp x + 83 30 figures 10s 6d net)

[2] *Infection and Resistance* By Harry Zinsser MD Third edition New York The Macmillan Company 1923 (Medium 8vo pp 1 illustrated 25s net)

[3] *Conferencia Clinica sobre la Tuberculosis y guia para los enfermos que se retiran de Puigcerdá* By Dr P Pla y Armengol 1922 *La Lucha contra la Tuberculosis* By J Ravetllat and P Pla y Armengol 1922

Nova et Vetera.

DR JOHN BASTWICK

Munk's *Roll of the London College of Physicians* is perhaps more often used as a source of instruction than amusement, although it contains many good stories Munk's virtues are not very attractive to most people, and his failings are, we suspect, repellent to the youth of this generation Munk loved a scholar and a gentleman of the old school, he thought it was a point in a physician's favour to be able to write good Latin, and he had very little sympathy with rough, quarrelsome folk who did not behave like gentlemen and scholars With a subject like Sir George Baker, Munk was at his best, but he was a little unhappy about and puzzled by Sydenham's neglect to become in F R C P , and he could see no redeeming features in the career of Dr John Bastwick

Bastwick was indeed no gentleman—in the Munkian sense To begin with, although he was entered at Cambridge, he never took a degree there Then, "apparently not satisfied with his progress in the profession," says our annalist, "and being a man of strong zeal and warm imagination, he applied himself to writing, more particularly against Popery" This rude behaviour led to a fine of £1,000, excommunication, prison and removal from the list of Licentiates Even this did not crush the rebel "His violent temper," says Munk, "would not permit him to be quiet" He became even ruder than before, and in 1637, after arraignment in the Star Chamber, when, is Munk says he expressed himself in 'extraordinary terms,' he lost his ears and was packed off first to Launceston and then to the Scilly Isles to await the time when the proceedings against him were reviewed in the House of Commons—possibly in extraordinary terms—and in the college

D Presidens et Censores judicabant D Bastwick in locum quem habuit in Collegio et ad libertatem praxios restituendum, et omori superiorum censura pro restituto habendum, et accipiendum apud omnes Socios Candidatos et Licentiatos

This was in 1640 He was to have had money compensation from the estates of the Archbishop of Canterbury but it does not appear that he ever received it, his affairs were still under discussion in Parliament in 1648

What became of him after that is not known It is generally thought that he returned to Colchester He died apparently in London Smith records his burial on the 6th October, 1654

Such was the career of Bastwick according to Munk The facts are no doubt correct, but there seems something wanting in the interpretation It seems incredible that a man, however violent his temper would think that attacks on the best people would be a professional recommendation in 1633 Bastwick was a college physician, not in empire So it is easier to believe that violent temper rather than fewness of patients was the motive, and charitable to think that some courage went with the violence of temper

An examination of the proceedings against Bastwick, Burton, and Prynne for several libels, in the *State Trials*, bears out this view Bastwick was certainly "no gentleman," but some of the extraordinary terms" not quoted by Munk suggest that in addition to a violent temper he had both courage and wit For instance we find this dialogue

Lord Keeper 'What say you Mr Doctor are you guilty or not guilty?' Answer Yea or no you needed not to have troubled yourself so much about so large an Answer

Dr Bastwick 'I know none of your Honours have read my Book and can you with the Justice of the Court condemn me before you know what is written in my Books?'

This was a ficer, because the court had certainly not read them (they seem to have been rather long), so the doctor was asked about an extract which had been read in court, and replied

My Lord he that read it did so murder the sense of it that had I not known, what I had written, I could not tell what to have made of it,

After a few more exchanges, Lord Arundel moved the court to take the case *pro confesso*, which was allowed, whereupon Bastwick said

"My noble Lord of Arundel, I know you are a noble prince in Israel and a great Peer of this Realm, there are some honourable Lords in this Court that have been forced out as Combatants in a single Duel, it is between the Prelates and us at this time as between two that have appointed the Field The one being a Coward goes to the Magistrate and by Virtue of his Authority disarms the other of his Weapons and gives him a Bullrush, and then challenges him to fight It this be not base Cowardice, I know not what belongs to a Soldier This is the Case between the Prelates and us, they take away our Weapons (our Answers) by virtue of your Authority, by which we should defend ourselves and yet they bid us fight My Lord, doth not this savour of a base cowardly Spirit? I know, my Lord, there is a Decree gone forth, (for my Sentence was passed long since) to cut off our Ears," (for my Sentence was passed long since) to cut off our

The Lord Keeper was much shocked by this insinuation and asked, "Do you prophesy of yourselves?" It was at least an accurate prognosis Dr Bastwick's speech before torture is not so fully reported as that of his more famous fellow sufferer Prynne, and is, for the most part, in common form, but there is a touch of rough humour in his addition to a criticism by Prynne of the writings of one Heylin

"There is another book of his licensed,' said the doctor, "wherein he rails against us three at his pleasure, and against the Martyrs that suffered in Queen Mary's days, calling them Schismatical Heretics and there is another book of Pocklington's licensed they be as full of Lyes as Dogs be full of Fleas, but were the Presses as open to us as they are to them, we would pay them, and then great Master that upholds them, and charges them with notorious Blasphemy"

The piety of Bastwick won in the end, and the foreshortening of historical perspective leads us to underestimate the courage needed to be on the winning side before it was the winning side King and Archbishop lost their heads—and it is worse to lose one's head than one's ears. But it is not pleasant to lose one's ears, and the violent-tempered doctor deserved a kindlier epitaph than he received from Munk

PUBLIC EDUCATION IN HEALTH

Sir George Newman's Memorandum

Public education in health is the subject of a memorandum by Sir George Newman addressed to the Minister of Health and published by H M Stationery Office at the price of sixpence It is a pamphlet of only thirty-five pages, but in that brief space its author succeeds in presenting a remarkably comprehensive survey of the whole subject with which he deals

In a prefatory note Sir George Newman holds that the time has come when, notwithstanding the scope and character of the voluntary health movement in this country, the responsibility of central and local authorities for education of the public in respect of health should be more fully appreciated, "particularly in view of the fact that our national health organization has not kept pace with our advance in the science and art of preventive medicine" In the first section of the memorandum he insists that this advance in knowledge can do nothing of itself to safeguard health 'unless it be *understood*, *accepted*, *and practised*," and he quotes the late Professor Sir Henry Jones of Glasgow as declaring that—

> the best State is that which both does most for the individual and enables him to do most for himself I do not doubt for a moment who our ruler is about to be in State and city *It is public opinion* the State is not safe unless public opinion is enlightened opinion and the task of converting public opinion into educated opinion is so vast as to require the best powers of us all

It is in that spirit and from that point of view that the Minister of Health's chief medical officer addresses him

Going on to deal with the personal aspect of preventive medicine, he illustrates his views of the importance of individual appreciation of health in relation to sanitation, disease of the respiratory tract, digestive disturbance, dental decay, infectious diseases, maternal mortality,

infant mortality, rickets, cancer, and nervous and mental troubles, and he urges the importance of periodical physical examination—a subject which, it may be mentioned in passing, was pressed on the attention of the Royal Commission on the Poor Law, but without any success

Central Authorities' Work

Turning next to the educational work of the Ministry of Health and Board of Education, he remarks that the former body acts mainly indirectly, through the local authorities, and by inspections, interviews, correspondence, annual reports, special reports, circulars, and other documents Also it subsidizes local authorities in portions of their services which may include educational and propagandist work It furnishes public health news in answers to questions in Parliament, in communications to the press, and in replies to inquiries The Board of Education has direct educative duties, instruction in hygiene and physical training being within the school curriculum The Board has issued also a series of syllabuses on the subject of health, and for these there has been a good demand 'There is no subject in the school curriculum which has a more romantic story behind it than the triumphs of the progress of hygiene during recent years Such instruction should be given in the simplest language and should be woven into the geography and history of the world or associated with the great discoverers of modern times—Harvey, Jenner, Simpson, Pasteur, Koch, Lister, Manson" Besides medical inspection and treatment of school children, the Board has encouraged schools for mothers, which have been remarkably successful

Local Authorities' Work

Leaving the central authorities, the educational work of local authorities is next commented on Reference is made to regulations relating to tuberculosis, venereal disease, maternity and child welfare, and the Rats and Mice (Destruction) Act It is urged that the law should be made clear as to the powers of local authorities to spend money on health propaganda Insurance committees are clearly endowed with such a duty and responsibility, and some have performed it, but of far more importance than any statutory sanction "is the educational work naturally and properly performed by the insurance practitioner in the ordinary discharge of his duty to the patient" Much excellent teaching has been done by medical officers of health in their annual reports, whilst some county and borough councils (London, Marylebone, Blackburn, and others) have been very helpful in various directions—the issue of pamphlets and leaflets, the promoting of baby weeks, health weeks, rat weeks, the delivery of lectures, the holding of exhibitions, and by education through local journals

Voluntary Work

Leaving central and local authorities, the educational work of voluntary bodies is next dealt with These are in many ways able to permeate the minds of the people with new knowledge of practical value, to lead public opinion in support of government and the best ways of progress, and to inform official bodies of their experiences among the people Voluntary societies are now surprisingly numerous The memorandum gives a list of twenty-three, and briefly indicates their special objects The first was the British Red Cross Society, founded in 1870 and the most recent mentioned is the Central Council for Infant and Child Welfare of 1919 Sir George Newman is of opinion that—

> we are gradually coming to that stage of enlightenment at which public opinion is able to sort out the good from the bad to discriminate between those measures that are for the public well being and protection and those that are merely to serve passing political advocacy particular classes of society or the ends of vested interests Hence the co-ordination between the various voluntary health organizations on the one hand and the authorities responsible for local and central government on the other is of increasing importance and necessity

"Public health education in other countries" is the title of the next section of the memorandum The United States takes first place here The Federal Public Health Service provides a scientific basis in periodic and special reports, lectures articles, cinema films, and broadcasted messages The department distributes information, but does not conduct propaganda In most of the individual States and larger cities there is a propaganda division in the Department of Health providing press articles, lectures, pamphlets, and leaflets The methods pursued in Pennsylvania include a quarterly *Journal of Public Health*, a fly campaign every springtime a campaign for periodic medical examination of individuals, health lessons, information to newspapers, weekly health talks" by a large number of prominent physicians, motion pictures, lantern slides, etc, and comprehensive distribution of literature, charts exhibition materials, leaflets, and so forth Other States act similarly, and a great life insurance company has trained its agents in popular health instruction as well as employing visiting nurses, issuing literature, and arranging for lectures Canada acts on the same lines, also New Zealand, and the subject is being considered in South Africa and Australia Much educational work is being done in France, Germany, Serbia, and Jugo-Slavia, but much less in Soviet Russia, where very little money is available for public health activities," though the authorities are concentrating on propaganda

Observations and Conclusions

The final part of the memorandum is entitled "Some general observations and conclusions" As regards the present position in England and Wales, it is pointed out that the policies and administration of different countries are not comparable, and there should be no slavish imitation The local authorities and their officers and the voluntary societies do much educational work, though instruction relevant in one area may be superfluous in another The work of the local authorities is likely to be better in kind and degree and more timely, while that of the voluntary societies may be more stimulative and even critical, and may possess a missionary zeal and public spirit lacking in the routine of the health authority Now that the comprehensive sanitary system and relatively advanced health service are generally accepted and settled there is need for discrimination and differentiation of function Some voluntary work has tended to be sporadic, perfunctory, and inexpert Overlapping has not been without advantage, but technique leaves something to be desired, and leaflets, posters, etc, have not always been attractive or persuasive, though the pamphlets of the League of Red Cross Societies are admirable There are two objects first, to arouse enthusiasm and awaken a health conscience, in other words to stimulate, and secondly, to disseminate knowledge—to instruct The teaching should suit the requirements of the taught, and careful attention should be given to the distinction between the objects—to interest, to instruct, and to secure that the instruction be acted on

The forms of public education in health require full and careful consideration—lectures, leaflets films baby weeks, food exhibitions may or may not be suitable or timely and may or may not harmonize with local collateral services or facilities Misplaced propagandism may be very harmful, and much may be lost by unwitting misrepresentation of facts and remedies both as to value and practicability There are two chief forms of public education in health "(1) the regular process of education inherent in the effective discharge of the public health services, (2) exceptional advocacy, propagandism or supplementary teaching by other means" Sir George Newman holds that the former of these is the better, and illustrates this by depicting a population of 100 000 with its 16,000 children or school age its 35,000 insured, its 2,000 expectant mothers yearly its 1,000 tuberculosis cases all duly looked after He says that there are, however, three reasons why the State organization needs supplementing by other methods These are very briefly, that the statutory system cannot exercise control or personal health and habit that it requires impulse from the people as a whole to make it effective and that the people "require instruction in understanding, using and putting into operation the public provision made on their behalf" The methods for providing supplementary teaching by local authorities or voluntary societies are manifold and varied, and the choice must depend on circumstances, conditions, persons, means, and resources

The conclusions with which the memorandum finishes are such that they cannot satisfactorily be condensed and are therefore quoted in full.

CONCLUSIONS

In summary, it must be said that there is *great and exceptional* need for public education in health First, there has been a growth of knowledge in the science and art of medicine and its application to many morbid conditions now known to be preventable, secondly, there has been a rapid development of the whole system of sanitary governance and public medical services—*and public opinion has not kept pace with the e two profound changes* Yet without an enlightened public opinion the measure and value of scientific and legislative advance is impaired It is true that attempts have been made—all of them public spirited, many of them gallant, and a few of them even heroic—by the voluntary service of persons or societies to meet this situation and fill the breach On the whole these efforts have met with encouraging, and sometimes enduring, success But such enterprise is in need of guidance and support, and is liable to some degree of misdirection It lacks unity, tends to become chaotic, is without adequate supervision, and is, all too often, insufficiently related to the new knowledge and the expanding organization

My submission is that the educational functions of local authorities and voluntary societies require, at the present juncture, fuller and more careful consideration and more effectual organization

(*a*) All local authorities are indirectly engaged in educational work inseparable from the effective discharge of their statutory duties under the Public Health Acts, and this aspect of their services is paramount It is on the whole the most important and universal form of public education in health

(*b*) Some local authorities, in addition, are undertaking supplementary educational work of a more direct nature, though others are, or deem themselves to be, debarred or at least restricted in this more direct sphere of education It seems to me desirable that any ambiguity on this point, or in the law itself, should be removed as soon as possible, so that upon all local authorities there should be *imposed a power or a* duty of direct educational work

(*c*) Then I think the time will have come for the Government to consider whether such educational work is of sufficient importance and value to be assisted financially by in Exchequer grant under the Ministry of Health, which would naturally take the form of a provision available to local authorities for certain approved types of educational work in hygiene

(*d*) Lastly, these two steps in re defining the powers under which educational work is undertaken by a local authority, and encouraging its development, will inevitably raise the question of the extent to which and the terms on which, voluntary societies should also officially participate in the more direct form or such instruction (as distinct from the indirect educational work inherent in an efficient sanitary service) On this subject it would not be appropriate for me here to say more than that in my opinion it is the local authorities who must be directly responsible for undertaking educational health work direct as well as indirect, suitable to their own district, circumstances and needs with such supplementary special assistance as the voluntary societies concerned may find themselves able to afford

THE HEALTH ORGANIZATION OF THE LEAGUE OF NATIONS

[FROM OUR CORRESPONDENT AT GENEVA]

AT the meeting of the Assembly of the League of Nations at Geneva on September 20th, Dr R V Caballero, the delegate for Paraguay made a statement on the Health Organization of the League

He stated that under the auspices of the League training courses in epidemiology and sanitary practice had been established during the past year in certain towns of Eastern Europe (Warsaw, Kharkov, and Moscow) an inquiry had been conducted in Russia into the efficacy of vaccination per os against cholera, dysentery, and typhoid fever, and a mass campaign in favour of vaccination had been carried out in Greece at the request of the Greek Government A service of epidemiological information had been created, and was now in regular correspondence with the sanitary administrations of 26 European states, 13 American republics, 16 African colonies, 12 countries in Asia, and with Australia and New Zealand Epidemiological and statistical researches of a more special nature regarding notification of cerebro spinal meningitis, the incidence of scarlet fever and diphtheria, the area of extension of Asiatic cholera, rhinoscleroma, leprosy, tuberculosis, and cancer were at present being undertaken

Special attention had been given by the Health Organization of the League to the problems, both prophylactic and therapeutic, connected with sleeping sickness in Central Africa A committee of experts had been appointed to study these problems, and this committee would present recommendations intended to serve as a basis for agreements to be concluded between the British, Belgian, French, and Portuguese colonies, which would provide means of effectively combating this terrible scourge A special committee had also been appointed under Professor Léon Bernard of Paris, to study the question of instruction in health and social medicine in Europe, America, and Japan The activities of the Organization had not been confined to epidemic diseases It had also studied, on a large scale and from its international aspect, the question of the campaign against malaria A committee on malaria, comprising specialists of various countries, including two—Germany and Russia—which were not members of the League, had been constituted for the purpose of studying the best prophylactic and therapeutic methods This committee was to carry on investigations in the countries most subject to malaria It had already visited this year the Serb Croat Slovene State, Greece, Rumania, Bulgaria, Russia, and Italy It was thus able to form an idea on the spot of the difficulties experienced by the various local administrations in combating malaria An allied question was that of the production of quinine, the co operation of four experts belonging to different countries had been secured, and they had undertaken the task of examining problems connected with the manufacture and supply of this drug and the other cinchona alkaloids An international conference on quinine was to be held as soon as sufficient scientific data had been collected

In speaking of the international exchange of sanitary personnel and specialists, Dr Caballero said that in 1924 the number of officers taking part was 99, and they belonged to twenty nationalities The number of general annual interchanges had been fixed at four, for a duration of about seven weeks, each interchange to comprise a maximum of twenty persons Two special interchanges (malaria, tuberculosis, *school hygiene*, and statistics) had also been arranged for annually, with a maximum of ten persons for each interchange

The Health Organization had also begun to examine the extremely delicate problem of drafting Health Conventions on problems which extended beyond national limits and became questions of international *public health* A proposal was at present being considered from the Netherlands Government, relating to *libre pratique*—that is, the exemption of vessels which have received health certificates in a properly equipped port from further sanitary inspection when they touch *other ports* The proposal is being studied, but the *feeling is that* the time is premature for a general application of such a *procedure* A model health convention regulating traffic on waterways of international concern was now under consideration The final diplomatic signatures were now being exchanged for the ratification of the Health Convention concluded between Austria and the Serb Croat Slovene State (This Convention is the last of a series of seven drafted as the result of the Sanitary Conference held in Warsaw in 1922, and intended to act as a "sanitary barrier" in Eastern Europe) The important work on the standardization of serums and biological products* had been continued

In conclusion he pointed out how undesirable it would be to curtail the estimates for the health work of the League, and stated that in the committee which had been considering the subject the British, French, Italian, Brazilian, and Japanese delegates had all supported the proposal to continue the international exchange of sanitary personnel and *specialists*

After a brief discussion the Assembly passed unanimously a series of resolutions These approved the work generally, especially of the service of epidemiological intelligence and public health statistics, and the results obtained from the carrying out of the system of interchanges The Assembly considered that the most valuable results might be anticipated from an inquiry which has been undertaken into mortality from cancer, and praised the work of the Malaria Committee

Further resolutions which were carried approved the establishment of a bureau of epidemiological intelligence in the Far East, requested the Health Organization to take into consideration the study of the problem of physical education and to investigate the means for its general extension on rational principles, and further requested the Organization to undertake an inquiry into the value of preventive measures against tuberculosis This last proposal was on the initiative of Professor Pitamic, delegate for the Serb-Croat-Slovene State, and his idea was to have an inquiry similar to that already undertaken in respect of malaria and other diseases

* We hope to publish a more detailed account of this prolonged and complicated work in a future issue

British Medical Journal.

SATURDAY, SEPTEMBER 27TH, 1924

THE SURGICAL TREATMENT OF ANGINA PECTORIS

During the last twenty years excision of the cervical sympathetic has been advocated for a number of diverse diseases. Although the results in a large proportion of the conditions for which the operation has been performed have proved useless or disappointing the brilliant work of Jonnesco and others has demanded increasing attention. The numerous important publications of Jonnesco and the recent lecture delivered by Professor Wenckebach[1] have awakened great interest and introduced the profession to the possibilities of surgical relief for the distressing symptoms of angina pectoris. The wide interest which has been aroused may in some measure be estimated by the appearance in current literature of a number of important contributions to our knowledge regarding the structure and function of the sympathetic nervous system, and by the publication of numerous articles upon the surgical technique in the operation of sympathectomy. We publish to-day (p. 553) a contribution by Professor Danielopolu of Bucarest in which he discusses the physiology and pathology of the production of anginal symptoms. He adduces arguments in favour of the surgical procedure of section of the sympathetic chain and opposes cervical sympathectomy.

Recently, however, A. E. Halstead and F. Christopher of the University of Illinois Medical School have reported[2] a case of angina pectoris relieved by partial cervical sympathectomy, and have placed on record a modification of the approach recommended by Jonnesco. In order to reach the cervical sympathetic they prefer to make an incision along the anterior instead of the posterior border of the sterno-mastoid, and then retract the muscle and the carotid sheath with its contents posteriorly rather than anteriorly. On anatomical grounds this procedure appears to present distinct advantages because the approach to the cervico-thoracic ganglion is rendered more direct and greater freedom for manipulation is permitted. As it is this stage of the operation which offers the most formidable difficulties, any advantage at this point is of the greatest value. Apart from this modification, Halstead and Christopher performed a partial cervical sympathectomy, the middle ganglion alone being removed by avulsion. Although a number of surgeons have now reported successful results after excision of one ganglion or even division of the sympathetic cord, Jonnesco in a recent monograph expresses disapproval of the limited procedures and states that total resection of the cervico-thoracic sympathetic is the only intervention really indicated. This decision was probably arrived at owing to the complex arrangement of the branches of the sympathetic, and to our incomplete knowledge of the nervous pathways involved in the manifestations of angina pectoris.

In addition to indicating some of the difficulties at present confronting us with regard to the surgical treatment of angina pectoris the question must also be raised of the serious sequelae which may follow such an extensive excision. Several deaths have followed complete sympathectomy, and it is clear that a more conservative operation is to be preferred. To make sure of interrupting a sufficient number of the afferent cardiac fibres by total removal of the cervical sympathetic very widespread and profound consequences must be risked, and Wenckebach has stated that the ideal operation would be to divide the afferent fibres from the heart and aorta and leave the efferent intact. With this end in view what is thought to be the depressor nerve in man has been divided on several occasions with beneficial results. Unfortunately, further experience has proved that this nerve is extremely variable in man, and quite frequently recognition of it has been impossible.

The irregularity and inconstancy of this nerve render impracticable what theoretically appears to be the ideal operation, and until anatomical and physiological researches are more advanced we are forced back, at any rate temporarily, to a consideration of the more drastic procedure of cervico-thoracic sympathectomy. In this operation, after retraction of the sterno-mastoid and carotid sheath, Jonnesco exposes the large superior cervical ganglion resting on the deep aponeurosis, and when its connexions have been divided, turns it down and traces the sympathetic cord to the middle ganglion, which is much smaller and less easily located. The prominent anterior tubercle of the sixth cervical vertebra and the inferior thyroid artery offer useful landmarks for finding the middle ganglion. When this has been freed, the sympathetic cord is followed to the cervico-thoracic ganglion, which is to be discovered between the transverse process of the seventh cervical vertebra and the neck of the first rib on the inner side of the superior intercostal branch of the subclavian artery. The inaccessible position of the inferior cervical ganglion and the variations in its connexions and extent of fusion with the first dorsal ganglion render this part of the operation extremely difficult.

The publication of cases relieved from the most urgent symptoms of angina pectoris by excision of the cervical sympathetic is likely to tempt many surgeons to consider the operation, and this temptation is likely to be increased by the impression created by some of the advocates of the operation that it is quite a simple procedure. Reference to a dissection of the neck is sufficient to convince most that the later stages of the operation are exceedingly complicated and delicate, and a study of the variations in the distribution and connexions of the cervical sympathetic will at least indicate some of the difficulties to be surmounted in addition to those obtaining in the mode of approach. It is clear from the writings of the pioneers in this important field of surgery that considerable research upon the structure and function of the cervical sympathetic and the nervous pathways to and from the heart and aorta has yet to be completed before a surgical treatment of angina pectoris can be devised which may be practised widely with any degree of certain success. It is to be hoped that the inspiring work already done will not be discredited by impatience. Contributions such as the recent one by Halstead and Christopher help to demonstrate and simplify some of the difficulties of surgical technique, but the anatomist, physiologist and pathologist have urgent duties to perform towards the solution of the fundamental problems which have been raised by the pioneers in this branch of surgery.

[1] BRITISH MEDICAL JOURNAL, May 10th, 1924, p. 849.
[2] Journ. Amer. Med. Assoc., May 24th, 1924, p. 1661.

THE ROYAL COMMISSION ON NATIONAL HEALTH INSURANCE

THE indifference shown by the public, even by the educated and interested public, on the announcement of the composition of the Royal Commission on National Health Insurance is remarkable and significant. At the time when the profession secured from the late Minister of Health the promise to appoint a Royal Commission to investigate and report on the whole system established under the National Health Insurance Acts a considerable amount of public interest was shown, and not only the medical profession, but politicians and many others concerned with social welfare and local administration welcomed the Minister's action as calculated to ensure an authoritative and judicial inquiry into a subject of great national importance and promise. Later, the terms of reference to the Commission, as settled by the present Minister of Health, were accepted by the medical profession and recognized by organs of public opinion as allowing of the wide and momentous inquiry expected.

There were those who thought, or seemed to think, that the best kind of Royal Commission to conduct such an inquiry was one composed of representatives of the various classes of persons who had been hitherto concerned with National Health Insurance administration or work. This view was combated by the Insurance Acts Committee and the Council of the British Medical Association, and was not accepted by the late Minister of Health. It was definitely understood that the Royal Commission to be appointed should be small, authoritative, and impartial. The need for making these requirements is clear. A large Commission would be most unlikely to result in the unanimity of report and recommendation which is almost essential if, three years hence, there is to be any practical advance on the present state of affairs. Such a report, even if unanimous, would have the impetus of public opinion behind it only if it were recognized by the public from the beginning that those who signed it were men and women whose opinions could be accepted as having undoubted weight and authority, and who had entered upon and pursued their inquiry in an unprejudiced fashion, uninfluenced by previous public utterances or professional pronouncements which they were concerned to defend.

The evident disappointment of the profession and indifference of the public when the actual appointment of the Commission was announced is probably a reflection of the feeling that the present Minister of Health has taken, not a wide, but a narrow view of the essential purpose of the Commission or that the actual composition of the Commission is such as is not likely to lead to a satisfactory, authoritative, and fairly unanimous conclusion—or perhaps of both these feelings.

We have no wish to speak in the least disparagingly of any member of the Royal Commission. Several are eminently suitable in every respect and we have no doubt that all are entirely worthy persons who will devote their thoughts and energies wholeheartedly to the work which they have undertaken. It is, however, obvious that certain things may be said, and we think should be said, of the Commission as a body. It is remarkable among Royal Commissions in not containing a single person trained and experienced in cross examination and skilled in the particular kind of investigation to be undertaken. It contains a number of persons entirely unknown to the general public and even to the public which concerns itself particularly with the matters to be inquired into. It is, of course, quite possible that these individuals may prove to be among the best members of the Commission in the actual investigation, but they clearly detract from the weight which the conclusions of the inquiry will carry in the public estimation. Several of the members of the Commission have been concerned at a recent date in the work of administration under the National Insurance Acts, or have committed themselves emphatically and publicly to particular views on fundamental points connected therewith. There seems, too, to be a disproportionate number of members with a particular bias in the view they take of social questions. There is one member—Sir Alfred Watson—who has, from the beginning, been professionally responsible for the actuarial calculations and financial estimates and data on which the whole Health Insurance system is based, and whose opinions, delivered from the position of unparalleled and unchallengeable authority which he occupies in the Government service, have from time to time been the cause of considerable difficulty or controversy. It is possible that all he has said may be right, or at least quite justifiable in the circumstances of the time, but there may have been some occasions on which he was not so happily inspired. It will be one of the tasks of the Commission to pass under review the work and functions of the bodies—central as well as local—which have been concerned in administering the existing scheme, and it is improper that individuals who have been professionally responsible for, or even prominently concerned in, this work should have a place upon the Commission itself. Their presence must almost of necessity create difficulties in the investigation, and to some extent vitiate the conclusions that may ultimately be arrived at. Their proper place should surely be as essential and invaluable witnesses, and not on the judgement seat. Faced with the difficulties of personnel we have enumerated, it will indeed be a personal triumph for the chairman if he should produce any report which will command general consent. We sincerely hope that the disadvantages will be overcome, but they should never have been created.

The real question with which the Royal Commission should be concerned is the *relation of a national* insurance scheme to the public health. The scheme established by the Act of 1911, and adjusted by succeeding Acts and Regulations, is admittedly tentative, limited, and imperfect, but the Conference of Local Medical and Panel Committees and the Representative Body of the British Medical Association have alike declared "that the measure of success which has attended the experiment of providing medical benefit has been sufficient to justify the profession in uniting to ensure the continuance and improvement of an insurance system." Opinion outside the profession seems also to be almost unanimous in a similar general sense. The relation of any amended or extended insurance system to the other services relating to public health, especially to hospitals and to those clinical services under the auspices of public authorities which have developed hugely since 1911, is one of the vital questions which *affect national life* and professional tradition and activity. Yet we have direct evidence that this fundamental aspect of the matter has never been considered, or even conceived, by the present Minister of Health. It seems not to have been in his mind at all in selecting the members of the Commission. The smaller, even trivial, aspects of the matter, such as possible conflicts of opinion between

officials of approved societies and insurance practitioners appear to occupy his mind to the exclusion of wider and more important questions. Not only has he failed to grasp a great opportunity, but he appears not to have realized that any such opportunity presented itself. Yet this was obvious to all who were anxious to promote the public health in their several spheres, and many persons not only in the medical profession but in approved society and insurance circles, and among members of public health and education authorities had looked forward to it with the hope of fruitful and important results.

Whatever may be the opinion of some approved societies officials about some aspects of medical benefit, and whatever may be the opinions of many doctors about approved society administration as presented to them by their patients, it would not be surprising to find a considerable agreement on essential matters between the evidence that will be presented to the Commission by approved societies and that given on behalf of the profession. At any rate in spite of disappointments and although minor points will not be overlooked the evidence which is being prepared for the Commission and will be given by the Insurance Acts Committee and the Association will be concerned primarily with these fundamental and vital questions, and it is still to be hoped that the Commission itself and the general public will realize both their importance and the urgent need for their determination.

TREATMENT OF MENTAL DISORDER

VARYING opinions have been expressed as to how far it is feasible or useful to devote special wards in general hospitals to mental cases, and we publish this week at page 551 an important contribution to this problem by Dr John D. Comrie in which he gives an analysis of 500 cases of mental disorder treated in the Edinburgh Royal Infirmary. Though these mental wards have been in existence for some years this fact is probably not generally known, and Dr. Comrie has done a distinct service to psychiatry by giving it prominence. So important a development deserves wide publicity, because the large number of cases admitted in a year indicate that it meets a very real need, and also because the results of their treatment make it abundantly evident that the general hospital has a wide sphere of usefulness in regard to milder or undiagnosed cases of mental disorder.

It is hardly possible to conceive of a more effective method of bridging the gulf which exists between psychiatry and general medicine than that which aims to treat mental cases in a hospital dealing also with surgical and medical cases. Under such conditions the student will obtain an entirely different impression of the psychoses from that gleaned during a few demonstrations in an asylum, though naturally these should be included in his curriculum. In a hospital in which mental diseases are treated the student will meet daily with these conditions side by side with physical diseases, as he will most certainly do as he passes from one house to another in his practice hereafter he will, moreover, discover that the psychoses demand the same methods of biological examination as he is taught to apply to physical diseases and need similar methods of treatment. It may be that he will learn, too, from his daily study of personality in the subjects of mental disorder that the subject of physical disorder also has a personality as well as a body, and that the attitude of the physician, by encouraging or discouraging hopefulness may exert an influence on the course of disease. If, however, the student is only acquainted with the psychoses as met with in the mental hospital especially if (as is the usual practice) he only spends a few hours of his whole medical course in this institution he must tend to gain an erroneous impression of the psychoses as a whole, and to imagine that these conditions are usually associated with chronicity, deterioration, custody, and legal procedures, losing sight of the fact that in many cases are curable and in no sense needing legal detention. We believe also that the association of mental cases with the general hospital will tend to advance our knowledge of the causes of the psychoses and increase our ability to treat them. The services of specialists in all branches of medicine will be available to aid in the investigation of these cases, and it is quite certain that the psychiatrist cannot unaided solve the problems which his patients present.

Already the investigations at the Edinburgh Royal Infirmary have been fruitful and suggestive, and apart from the paper published this week we recall to mind the stimulating work of Dr. Chalmers Watson on the part played by auto-intoxication or auto-infection in mental disorders, the results of which were presented in a paper read before the Medico-Psychological Association in July 1922.[1] It is interesting to observe that Dr. Comrie discovered physical conditions—infective, exhaustive, or reflex—as partial causes in the majority of cases of melancholia, mania, confusional insanity, and psychoneuroses. This may be due in part to the fact that in a general hospital more emphasis would be given to physical factors, and the opportunities for a complete physical examination by the various specialists would be greater than in the mental hospital, but a survey of his clinical material shows that a type of case was treated which is seldom seen in the asylum. Thus a large proportion of his confusional cases were post-operative or associated with definite physical disease. The fact that the cases differ in a large measure from those present to mental hospitals is in itself significant and thoroughly justifies the use of wards for mental cases in general hospitals. Dr. Comrie observes that many of the patients made a good recovery without incurring the trouble and stigma of certification as insane, but that practically all presented on admission, considerable difficulty either in diagnosis or in treatment if that had to be conducted outside an institution. Many cases were obviously treated in an early stage of the disorder, and we think it is justifiable to take the view that if they had not been so treated many of them would have drifted into more intractable and in some cases incurable, forms of insanity. Particularly interesting and important are the patients suffering from simple melancholia many of whom had made suicidal attempts, which were treated in the hospital. It is noteworthy that these suicidal patients appear to have exhibited demonstrable psychotic symptoms, and it would be interesting to know something of their subsequent history. Many of these cases are uncertifiable, and it is probable that if there were greater facilities for the treatment of early cases such as is provided by open hospital wards, a large number of suicides, which cause great distress to their families, would be prevented.

We are of the opinion that the general hospital may in the future play an important part in research, teaching, and treatment in respect to the psychoses. But such functions will be limited in their scope until the lunacy laws in this country are amended, and

[1] *Journal of Mental Science*, January 1923.

it is to be hoped that this very urgent change will soon be carried out Clinics for uncertified cases will still be necessary, since only the milder types of case, and even those for only a relatively short period, can be treated in general hospitals It is most desirable, however, that in the future every general hospital should make some provision for the treatment of mental cases, for the reasons which have been suggested in these comments on Dr Comrie's paper

PSYCHOLOGICAL TESTS IN EDUCATION

INTELLIGENCE tests rank among the most remarkable achievements of modern experimental psychology Their value is being increasingly recognized, though in all probability their possibilities have not yet been fully developed It is claimed that they afford a more objective, systematic, and trustworthy means of discovering the existence of inborn intelligence and educable capacity in pupils than the ordinary oral and written examinations Although, so far, no definition of intelligence has found general favour, yet it is agreed that temperament and character are not comprised in it, and that acquired attainments and limited talent available for only one type of intellectual work must be excluded What these tests of intelligence measure, however, is an inborn and all-round intellectual ability, including both practical and theoretical activities, but excluding processes of emotion and qualities of character We recently gave a preliminary account (July 26th, p 157) of the inquiry into these tests conducted by the Board of Education It is by no means certain that all the tests considered in its published report on *Psychological Tests of Educable Capacity*[1] fall strictly under these headings—for example, the use of the method of "word association" as a test is surely open to the objection that emotional complications are not excluded Generally speaking, however, it is claimed that these tests render it possible to predict from the examination of a quite young child what will probably be his intellectual level when grown up, since the mental factors so investigated are thought to remain more or less constant throughout life It is believed that the ratio between the child's mental and chronological ages ("mental ratio" or intelligence quotient) remains unchanged during the years of growth, thus furnishing a guide to the degree of education that is possible, and indicating the form of teaching which will be most fruitful The nature of the investigations on which the Consultative Committee of the Board of Education based the conclusions contained in the report was described in our previous notice of the volume, which contains an historical sketch of the development of psychological tests, prepared at the request of the Committee by Dr Cyril Burt The Binet-Simon scale and its modifications are considered critically and in detail, and standardized tests of scholastic attainment, tests of vocational aptitude, and of temperament and character, receive attention The various types of psychological tests in connexion with examinations intended primarily to estimate ability are set forth and the use of these tests in elementary, junior technical, central, and secondary schools is considered The value of standardized scholastic (educational) tests, physical tests, tests of memory, perception, and attention, and temperamental tests, are discussed in their bearing on educable capacity Provision of facilities for the instruction of school teachers in experimental psychology is recommended, with special reference to the theory and practice of these tests, and it is considered desirable to take steps to co-ordinate and organize research, and to distribute information bearing on the application of psychological and statistical methods to education A central committee or clearing house, analogous to the National Physical Laboratory, is advocated to arrange for continuous investigation in various fields over a number of years The refinement and standardization of these tests can, it is thought, only be effected by the combined effort of a large body of co-operating investigators Dr James Drever, Combe Lecturer in Psychology in the University of Edinburgh, suggested that mental testing should be undertaken as a supplement to the medical inspection of school children, and that each educational area should have its own psychological clinic in close connexion with the schools, employment bureaux, and appointments committees These clinics would also be in touch with the psychological departments of universities and with the National Institute of Industrial Psychology Details of the tests employed in various countries and the views of several psychologists on the factors involved in "general" ability, and the need for testing for "special" and "group" abilities, are given in appendices The classified list of recent publications on psychology and psychological tests in Appendix VII, prepared by Dr Cyril Burt, deserves special mention as providing valuable guidance for those who wish to study these matters further

[1] London HM Stationery Office 1924 Price 2s. net

HOSPITAL ACCOUNTS

ADMINISTRATORS of hospitals are under a debt to Mr Joseph E Stone, the accountant to St Thomas's Hospital, London, for his book on *Hospital Accounts and Financial Control*[1] As Sir Arthur Stanley writes in a foreword "The increasing complexity of modern hospital administration and the necessity of obtaining the utmost value out of every penny of income has brought the subject of hospital accounting and financial control very much to the front during the past few years It is now generally recognized that accounting is an integral part of hospital administration, and I can vouch from personal experience to the immense value of up-to-date scientific accounting in the administration of a hospital The book rightly emphasizes the importance of internal financial control, and it outlines methods necessary to be adopted if efficient control is to be exercised at all times and in all departments and activities of the hospital" Sir Basil E Mayhew, a distinguished chartered accountant, in an introduction, points out that to a large extent the "Revised Uniform System of Accounts" (established for the purposes of the King Edward's Hospital Fund, and valuable in its way), is responsible for the stagnation in hospital accountancy The system has been supposed to meet all needs, whereas it was based upon the simpler conditions of yesterday The basis of the system advocated by Mr Stone is that known as "costing" It is one well known in every large commercial business The larger and more complex the business the more necessary becomes this system, otherwise leaks that may occur in individual departments may bring the whole structure to the ground Costing means that for each department there is kept a statement of accounts to which there is debited every expenditure incurred by that department, with its share of the general overhead charges By that means the profit or loss accruing from that department is known, and the need for the reform or elimination of that department ascertained Since in hospital working there is no profit to be made it may be objected that such a system is out of place, but the principle holds good for all that, since unless there is this definite knowledge of the separate costs of each department it cannot be ascertained whether each is keeping within the limits set by the total income of the hospital It may be that one department is

[1] *Hospital Accounts and Financial Control* By Joseph E Stone Incorporated Accountant London Sir Isaac Pitman and Sons Ltd 1924 (Sup roy 8vo, pp xiv + 156 21s net)

absorbing so much of the vital financial energy of the whole that it acts in effect like a malignant growth upon the body of the patient, whereby so much of the essential vitality is diverted as to bring about death. Mr. Stone has given detailed statements of how this costing system may be carried out, and without unnecessarily cramping the freedom of the members of the organism he shows how it may be adapted to the great hospitals, and how to the smaller cottage hospitals. His claim is a challenge to every hospital administration. It is one that cannot be ignored, and must be taken up and investigated by each hospital, and either approved and adopted or cause shown why the administration declines to do so. It is certain that without some such system as this the board of a hospital is not master in its own house, for without it the board cannot know what is being done in its name. Besides, there is valuable information upon such matters as income tax, but in this Mr. Stone might have been a little more up to date, for he gives no information upon the means whereby tax paid by benefactors may be recovered for the benefit of the hospital.

YOUTH IN MEDICINE.

IT has become a habit since the war to laud the superiority of youth, and to minimize the advantage of judgement, which was formerly supposed to be acquired by the experience of age. In response to this attitude the *Weekly Westminster* is publishing a series of articles on "What the younger generation is doing," and has followed up disquisitions by Mr. Nigel Playfair on dramatists, and Mr. Humbert Wolfe on poets, by producing (in its issue for September 20th) the views of Dr. Harry Roberts on the younger doctor. Dr. Roberts begins by asking three questions. "Is there, in the medical profession to-day, a spirit differing in essence from that of thirty years ago?" Do the men who have received their medical diplomas within the last decade differ essentially in outlook or technical equipment from their fathers and uncles who followed the same career?" "Among these younger men, are there any outstanding individuals who, by reason of inspiration or special insight, are in a position to lead their seniors?" Dr. Roberts finds difficulty in answering his own questions, because Medicine is a term which covers a science, a philosophy, and a craft; but he finds little reason to believe that in craftsmanship the best surgeons of to-day are superior to the best surgeons of a century ago. In science Dr. Roberts states that the true inspirers of the new physiology and the new psychology are stout, grey bearded gentlemen in no way products of the last decade. As for philosophy, the majority of medical students and doctors neither hunt for nor recognize readily general principles, in fact, philosophy is to them a closed book. The majority varies little from generation to generation. "The average fine old-fashioned doctor and the average smart young medico, with his mouth full of psychoanalysis and endocrinology, are cerebrally indistinguishable." These views must seem depressing to the younger men who won the war which has been attributed by some to the folly of the greybeards. Dr. Roberts, however, has faith in minorities, especially in a minority which he thinks has grown rapidly in the last fifteen years—a minority of "competent and intelligent practitioners who seriously regard their work ... are ever eager to understand the rationale of their technique ... and are intelligently critical of traditional postulates and dogmas." These men, he says, now form a much bigger proportion of the whole, and in a very short time he thinks they will no longer be a minority—they are "the heirs of all that revolutionary knowledge which the last twenty years have given us." Dr. Harry Roberts does not seem to us to have answered his three questions, but he ends with the optimistic opinion that, in spite of all the practical limitations and the still long distance from the goal, "the science and art of medicine, as represented by their responsible exponents, stand higher to-day than they have stood for two thousand years." It may be doubted whether any useful purpose is served by attempts to separate into categories the different ages of man, notwithstanding the precedent set by the melancholy Jaques. The procedure is, perhaps, especially dubious when adopted by a medical man, who knows well enough that in the development and decay of the individual human mind no such hard and fast lines can be drawn, while from history it is clear that the present generation can hardly claim to be superior in intelligence to all their forerunners through the ages. Dr. Roberts's article has one merit, in that he appears to recognize to some extent that what is talked about as "progress" is not necessarily progress of the human mind but often is merely progress in the invention of instruments to help human activities. The main difference between the medical graduate of the last decade and his uncle is probably to be found in his technical equipment.

THE HEALTH BUDGET OF THE LEAGUE OF NATIONS

ELSEWHERE (p. 582) we give a report from a Geneva correspondent of the speech to the Assembly in which Dr. Caballero commended to the delegates the work of the Health Organization of the League of Nations. What the League has done and proposes to do in the promotion of international health was approved without dissent, but the discussion on Saturday last did not touch the all important question known as "credits," which has still to be considered, at the moment of writing, by the Assembly. The League of Nations includes a body called the Supervisory Commission, of which all the departments stand in awe. This body is concerned with the finance of the League, and as regards the health activities with a careful and calculating eye. It is disturbed because these activities bulk more largely in each annual budget, and it thinks the time has come to decide on a maximum sum beyond which the Health Section must not go. This sum it has put down as 750,000 Swiss francs, equal at the present rate of exchange to about £32,000, and it is to be left to the officials to distribute the amount as they see fit among the various health activities to which the League is committed. The Supervisory Commission points out, in a semi apology for the relative smallness of the sum, that the health work of the League is not a temporary measure which like the work on behalf of refugees, for example, may be expected to diminish in extent, but that it is a permanent commitment, and whatever is voted must be looked upon as an annual charge. The Commission has examined certain proposals which would have had the effect of adding 50 per cent. to the health expenditure, and two of them appeared to be so desirable that in spite of the economical considerations already advanced the Commission felt constrained to recommend them to the Assembly for adoption. One of these is to raise the annual amount spent on sanitary notifications and notifications in the case of epidemics from 10,000 to 15,000 francs. The other is to increase the sum allocated to the interchange of public health personnel in connexion with the system or liaison between the various national public health services from 75,000 francs, at which it has stood hitherto, to 150 000 francs. Other proposals which were made but which did not commend themselves to the Commission, were an increased allocation for special investigations on health matters, and a new departure in the shape of technical health conferences, on which it was proposed to spend 50 000 francs a year. The Assembly, which will last some days longer, has the deciding voice on these proposals, but it is not likely to cut across its Supervisory Commission.

TUBERCULOSIS IN DOGS AND CATS

TUBERCULOSIS in the domestic animals is always of interest to the medical man In the larger mammals and in milk and meat its possibilities are obvious and the necessary precautions can be taken In the domestic carnivores, however, the danger is more insidious and in some ways more acute Although in the cat tuberculosis is most commonly of the bovine variety—from its milk diet—the disease in the dog is often contracted from human sources The dog is by nature a scavenger, and frequently has access to tuberculous expectorates and other infective material He is often allowed every opportunity of conveying the disease thus acquired to man, and especially children It was at one time thought that tuberculosis was uncommon in dogs, but modern research has shown that this is far from being the case Verge has recently given a comprehensive review of this subject[1] Clinical diagnosis is far from easy suspicious symptoms are numerous—progressive emaciation, accelerated respirations, dyspnoea, and so on, but the differential diagnosis presents real difficulties The tuberculin test—so useful in the larger animals—is very uncertain in dogs and cats The only certain methods of diagnosis are experimental The demonstration of the bacillus in excreted products is sometimes easy, more often very difficult Verge points out that experimental inoculation of guinea-pigs and rabbits is the best way, the latter animal is peculiarly adapted for demonstrating tubercle bacilli of canine or feline origin[2] Deviation of complement has also given good results While diagnosis is difficult and often unsatisfactory, it is well to recognize the risk which is run from infected domestic animals Bacilli are excreted in many ways—in the saliva and sputum, in the bile, faeces, and urine, and even by the skin—and such dogs and cats constitute a grave danger, for there is no doubt that animals contracting the disease from man are capable of reinfecting man This is a source of contagion at least as important as milk and other more obvious methods, if only from its insidiousness and the extreme licence which is given to pet dogs and cats, even in otherwise hygienic homes

THE PROPHYLAXIS OF DIPHTHERIA

THE Health Organization of the League of Nations has recently published a document entitled *The Prophylaxis of Diphtheria*,[3] written by Dr Louis van Boeckel, director of the laboratory of the Belgian Public Health Department Judging from the list of subjects which have been dealt with previously by this organization, it would seem that its object is to select problems of international importance, to collect information of experience gained in different countries, and to issue short monographs incorporating new knowledge which may be supposed not yet to have found its way into textbooks The document relating to diphtheria certainly deserves to be called international, as witness the 340 references of the bibliography English readers will find no novel matter in this monograph the volume on diphtheria issued recently by the Medical Research Council has even more to say on this subject We may therefore content ourselves by calling attention to what it contains Its first part deals with the determination by the Schick test of the susceptibility of individuals to diphtheria, and contains an excellent account of the method for carrying out the test and of what may be expected from it For readers unfamiliar with the test some illustrations of the different types of reaction would have made the text more easily understandable The second part is concerned with active artificial antidiphtheria immunization, particularly with the toxin-antitoxin mixture, and gives concise directions for this prophylactic treatment For the third part the author has wisely chosen the question of the popularization of these new methods This is a problem still to be faced by all countries We are watching with great interest the extensive campaign which has been inaugurated by Park and his fellow workers in New York Park introduced the system of antidiphtherial immunization first of all in the New York schools The attention of the headmasters was drawn to the value of the method by the Director of Education, and a doctor from the health service furnished the headmaster with full details An official circular pointing out the dangers of diphtheria, describing the advantages of immunization, and requesting the parents to allow their children's susceptibility to diphtheria to be tested and immunization undertaken, was distributed to one million children attending the schools It is said that most susceptible school children in New York have now been vaccinated, and that Park's method has been adopted, not only in New York, but also in most of the great centres of the United States But the Health Organization of the League of Nations does well to remember that methods of propaganda suitable to one country may not be so successful in another This thought seems to have been in the mind of the author of this report, who concludes in the following words "However much we may admire the enthusiasm with which the campaign has been initiated and carried on in the United States, we fear that the older continent of Europe may be loth to accept a campaign in favour of antidiphtherial vaccination carried on with the same vigour as that witnessed in America Let us first of all enlighten the medical profession, and then the public, as to the advantages of the new system of antidiphtherial prophylaxis, and let us apply this system wherever a careful study of the epidemiological situation convinces us *that it* may be resorted to with advantage"

WE have to announce with much regret the sudden death on September 22nd of Dr Sidney Martin, F R S, senior physician to University College Hospital and professor of clinical medicine at University College Hospital Medical School

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THE service of thanksgiving, forming part of the jubilee celebrations of the London (Royal Free Hospital) School of Medicine for Women, will be held at St Paul's Cathedral at 2 30 p m on Saturday, October 25th On the previous evening a festival dinner will be held in the Guildhall

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SIR ROBERT BLAIR, although he has retired from the post of education officer of the London County Council, still maintains his active interest in education He is one of the candidates for the chairmanship of Convocation of London University, and he appears to be very strongly supported His election would bring to Convocation and the University a wealth of educational knowledge and experience, and from the valuable support he gave to the medical staff in the service of the London schools it may be assumed that he would serve well the interests of medical education and medical graduates

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THE nomination of candidates for the parliamentary by-election for the University of London has been fixed for Wednesday, October 1st at 11 a m at the University, and polling will take place from Monday, October 13th, to Friday, October 17th The voting is by voting-papers sent to all graduates on the parliamentary register by the Vice-Chancellor

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[1] *Rec Med Vet* August 1 1924 p 529
[2] *Comp Rend Soc Biol* 1924 p 531
[3] *The Prophylaxis of Diphtheria* By Dr Louis van Boeckel League of Nations Health Organization 1924, 2 6d

MOTOR NOTES FOR MEDICAL MEN

By H MASSAC BUIST

Eve of the Motor Shows

The yearly International Paris Automobile Salon opens in the Grand Palais, off the Avenue Champs Elysees, on Thursday next, October 2nd Apart from members of the French industry, there will be an aggregate of thirty foreign exhibitors, of whom four only are of British origin —namely, Austin, Morgan, Morris, and Rolls-Royce the actual Morgan exhibited being a machine built abroad under licence from the British originator

The eighteenth Annual International Motor Car Show promoted by the Society of Motor Manufacturers and Traders at Olympia will open under the patronage of the King on October 17th The public will have access to it daily, Sunday excluded, until the 25th By contrast with the Paris Exhibition, the London one will retain the distinction of being beyond challenge the most thoroughly representative of the world's motor car manufacturing industry, nothing approximating to such an absolutely representative international character being organized elsewhere Thus there will be no fewer than 128 exhibitors of cars, 25 exhibitors of tyres, and 284 exhibitors of accessories and components, apart from which no fewer than 57 carriage builders have been allotted space in the enlarged building By reason of our Free Trade policy, which is singular among the nations possessing motor car building industries this country is the motor mart of the world, America, with her high tariff wall having aimed always at keeping out foreign products In effect, the best examples of motor car design and manufacture in the world are on our market and will be represented at Olympia, together with several examples of the undesirable Therefore, no medical man need consider it necessary for him to journey to Paris next week in order to inform himself concerning the new style motor cars introduced for the 1925 season

Notable Developments of the Year

While it is still possible to add accessory to accessory in the equipment of a car there is no gainsaying that some standardized machines have become overloaded, though under this head the owner will necessarily follow his own inclination It is impossible to offer any useful expert advice beyond suggesting that every user should put to himself the question "Is it essential that I should have this gadget, or that, and, if I must have one, or both, what, if any, power will they absorb in the way of current from the batteries, and so forth?" Electric screen wipers, cigar lighters, signal horns, and so forth are very convenient, but how many owners are aware that a signal horn, for example uses more current in ordinary car service than is absorbed from the battery when starting the engine? Perchance under this head the average medical practitioner's use would be different from that of the ordinary member of the public in that generally, the family doctor has to make short journeys on commencing each of which he has to start his engine by mechanical means But in adding an electrical accessory to a car one should always have in mind the current it will necessarily use and especially the need for inspecting the wiring at frequent intervals in that the slightest leak may lead to a costly bill on account of repairing or replacing the battery

Much experiment has been devoted this year to continuing the investigation of four notable problems—the application of brakes to front wheels, the furtherance of fabric bodies of light weight, the standardization of low pressure, large section pneumatic tyres and the possibilities of forced induction, generally called supercharging with a view to obtaining more power from an engine, primarily for aircraft service, to enable the 'ceiling" to be raised The last named development does not concern the medical man at the moment beyond his noting that, in the case of the first British engineering house to give attention to the use of supercharging mechanism experimentally, a very important stage of progress has been arrived at which may render it possible presently for the supercharger to be of service to the user of a standard car Briefly, last year foreigners used supercharging for the French series of Grand Prix race and other first-class tests of the kind, employing gear that is not only complicated, expensive, and extremely unreliable but which is also required to run in some cases at 20 000 revolutions a minute In short, this is scarcely commercial practice

Last Saturday's Supercharging Demonstration

But in engaging in this year's Grand Prix race Sunbeam has experimented with a supercharger wherein a Roots type of blower is used which is run no faster than crankshaft speed The results obtained not only enabled the manufacturer to achieve the fastest circuit, but also the fastest speed over the measured course, each by two different Sunbeam machines, in the course of the first International 500 miles Grand Prix of Europe road race The accessory, besides, adds 33 per cent to the power output of the engine when it is running at high crankshaft revolutions and it adds no less than 50 per cent at lower crankshaft revolutions Moreover, no trouble was experienced by the firm with this sort of supercharger in that race nor when Mr Louis Coatalen, the chief engineer, applied it to the small 1 500 c.c. 4-cylinder engined Darracqs run in the Junior Car Club's 200 miles race on the track at Weybridge on Saturday last, wherein that make broke world's record the three machines covering the distances at over 102 miles an hour mean speed, each with power plant that would be rated at 10 to 12 horse power for Treasury taxation purposes In this connexion it is interesting to note that the weight of the blower used on these engines was 35 lb only Thus we have arrived at the point at which it is possible to apply a supercharger to an engine (1) of a weight that is commercially practicable, (2) which functions at a normal speed because it does not turn any faster than the crankshaft of an engine, (3) which can be designed to increase the horse power developed by an engine to a greater extent when the crankshaft is running slowly than when it is running fast, and (4) the cost of which is practicable commercially Being interpreted, this means that a given power plant so equipped is able to get a car away either from a stand or from a traffic slow-down, with unprecedented efficiency It we are to deal with the long-standing problem of the gearbox, and to enjoy a chance of eliminating it, plainly we must increase enormously the flexibility of the engine In particular, it must be possible for it to develop very much more power when the crankshaft is turning slowly This is what this form of supercharger renders possible At the moment, however, the matter is to be regarded as still in the experimental stages merely We must not expect the gearbox to be eliminated right away by this means, though there will be early and immature attempts in this direction almost assuredly in face of the Sunbeam and Darracq successes An automobile engineering house of such repute, however, would not proceed in this direct on until it had years of further experience of the problem

Balloon Types in Service

The fabric-covered body is a development which was described in these columns in detail last year It has been taken up since by a large number of manufacturers here as on the Continent, and some American car builders are also standardizing the scheme, though none of these particular examples is likely to be placed on the British market this year In any case, the only point to mention in this connexion on the present occasion is that a large number of chassis builders will be showing such bodies manufactured under licence, and designed specially for their particular vehicles at the forthcoming Olympia show

There, too, it will be found that a number of car builders in this country, as on the Continent and in America, are standardizing what are variously styled "low pressure," "balloon," or "comfort" tyres Necessarily the medical man is interested in this matter, since anything that makes for enhanced comfort of riding is of importance to him as saving fatigue, and, notably, giving his hands the best opportunity for being in a sensitive, as distinct from a numbed, condition, in which latter state they are apt to get

as a result of driving cars that are coarse It would be correct to state that millions of words have been written and printed for and against so-called "balloon" tyres Practically all that has appeared is concerned with what the various writers believe to be the theory of the proposition In point of fact the medical man need not bother about such theories because balloon tyres exist to-day as practical appliances, in defiance of many theories on which the pneumatic tyre industry has been working for thirty years past Alike manufacturers and users of balloon tyres are at the present moment divided into two schools at least, each advocating a different principle of construction Many of the things which, we are told by theorists, concern the conduct of chassis so equipped do not in fact occur in practice, or, if they do, it is found that the given characteristics are manifest to a degree that is negligible At the moment one has to record the mere fact that, while a number of car models are standardized with low pressure tyres of large section, nevertheless the automobile engineers of the world accept the proposition with many reserves

Characteristics for the Road

As to the practical application of the principle as concerns European manufacturers to date, it is observable that builders of small cars have standardized comfort tyres for 1925, notably Morris, Rover, Citroen, Renault, and such like, with a number of others The comfort tyre is by no means so much in evidence, however, in connexion with middle size and large cars, though there are exceptions One of the most popular engine sizes for 1925 cars is 3 litres, or 183 cubic inches, which in the best European practice is really a big car class now, whereas in American practice it still represents merely the middle-size car because transatlantic engines do not develop as much power as European ones But the weights of the vehicles are much about the same, and this class of chassis generally represents a full scale four- to five-seat car I have made a point of driving both a British car of world-wide repute and the very latest American six-cylinder car coming within this category, both equipped with comfort tyres—the English one of the wired-on type and the American one of the straight sided sort With the English car, which has absolutely true pivotal steering, a remarkably good suspension system, and so forth, the tyre pressure was about 45 lb to the square inch whereas for this type of machine with its speed capabilities the rear wheels would be pumped to at least 70 lb, and the front ones to 65 lb, with ordinary tyres With the comfort tyre I found the steering so light as to be absolutely unaffected But there is no gainsaying that, in taking corners or bends at speeds well within the compass of the car, it lurched to a degree that was inconvenient to the passengers As far as the American car was concerned it was quite as heavy a vehicle yet the manufacturers of the straight-sided tyre recommended 28 lb pressure only for the front wheels and 32 lb for the back wheels Of course, the American springing system was not equal to that of the British machine because the American car is a type of vehicle designed for service all over the world, therefore it has to be capable of withstanding more severe shocks In the matter of steering, sometimes it answered easily and at other times it wanted the use of both hands to make a right-angle turn One had to employ a deal of physical effort on a gradient which describes a half-circle and which I use for discovering how the gear ratios of different cars work out in practice, therefore I never approach it on my machine at first at twenty miles an hour In this particular case I approached it eighteen miles an hour and found that the American engine and gear ratio enabled this machine to continue easily up the rise, accelerating on top gear, although I did not ever let the car exceed twenty-seven miles an hour

Dragging on Curves and Corners

But in negotiating the given curve with the engine behaving so easily I not only needed great physical effort to steer the car round, I also blamed the company's machine because the back wheels dragged loudly Afterwards we examined them and found that during the negotiation of the curve in question we must have been riding on the upper half of the tyres—that is, on the side, and distinct from the tread proper Apparently the tyres of the front wheels were not deflected to a like degree Throughout the speed was well within the compass of quiet motoring with ordinary tyres With them on such a chassis one could have taken that hill with safety at thirty-five miles an hour In the case of all the big cars that I have tried this year—and I have tested most of the leading designs—I have found that luxurious suspension is obtained without the use of comfort tyres But most of the small cars I have tried during the twelvemonth could be made to ride better

In this connexion the use of the low pressure tyre is certainly interesting and is to be recommended as a cheap solution if the problem is understood properly For one thing, most medical men will appreciate that when the first of the post-war series of small cars was put on the market, whenever a manufacturer or agent wanted to demonstrate his arrived with the ordinary tyres then fitted inflated to low pressures only, of course, this enabled his machine to ride better and therefore to give a more favourable impression But, as was pointed out in these columns at the time, the practice is fundamentally wrong, is unsafe, and is uneconomical of tyres By contrast the properly designed low pressure tyre is intended to be run at the pressures

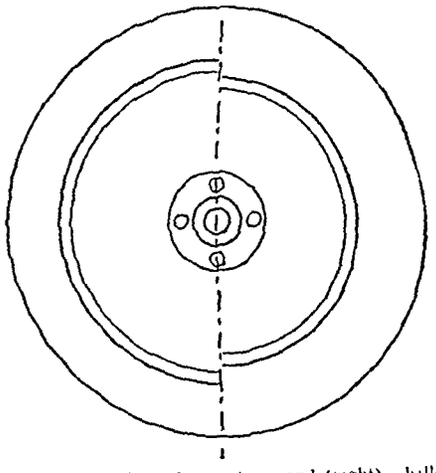


FIG 1—Illustrating (left) ordinary tyre, and (right) balloon tyre

indicated by the tyre maker for the given weight, and is not being used under the wrong conditions at those relatively low pressures which, however, would be entirely wrong if applied to an ordinary tyre For one thing the low pressure tyre must have a wheel rim designed especially for it, because low pressure tyres cannot be effectively fitted to ordinary tyre rims That would upset entirely the gear ratios and, even if one succeeded in fitting such a tyre in such a fashion, one would find it constantly tending to pull off the rim, which is a source of danger Therefore all systems of low pressure tyres at present on the market are designed to require a width of wheel rim proportionate to their retaining section In other words, balloon tyres are not oversized tyres placed on ordinary rims neither are they pneumatic tyres made out of proportion On the contrary, they are designed and made to be entirely in proportion, therefore, for a given car the circumference of a balloon tyre that should be fitted is exactly the size of circumference of an ordinary section tyre but in the case of the comfort tyre a wheel rim is required proportionately smaller in diameter but of greater width than the rim used for an ordinary tyre (see Fig 1)

Contact Area and Speed

A very considerable amount of quite unnecessary confusion is being occasioned in the minds of inquiring car users by the implication that the comfort tyre must take a good deal off the speed of a car and must interfere with the steering because it must be flat by reason of its low pressure In point of fact the alleged flatness of the

discernible to the eye in practice in the case of a comfort tyre inflated as it should be, despite the fact that users of comfort tyres are to be seen driving about the country with these proportionately gigantic pneumatics looking flabby *and presenting quite a flat contact on the road* That, however, is a condition for which the user is alone responsible, it has nothing to do with the right application of *the principle as such, nor do the tyre makers recommend it* Sundry examples of the right way to use comfort tyres are available all over the country to-day, merely by observing how small cars of the types mentioned above are presented on the road In these proportionately much larger tyres on such little cars one does not notice that there is any 'flatness" *where the tyre makes contact with the road* Of course, a much better road grip is obtained by the use of a comfort tyre, whether of the beaded edge, the wired-on, or of the straight-sided types, than with ordinary size pneumatics, this being one of the great claims advanced on behalf of the new type Properly to appreciate the matter however, it should be noted that there is not great *length* of contact with the road on the part of the comfort tyre by comparison with an ordinary one rather is it a case of a

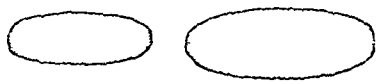


FIG 2—Illustrating relative area of tyre tread contact with the road in the case of a given car fitted with ordinary size pneumatic tyres (the smaller area) and with a low pressure tyre (the larger area) The depth of section represents the direction of travel and the width of section represents the width of grip on the road

greater proportionate area of road grip being obtained (see Fig 2) That makes for safety and efficiency as regards enabling a car to hold the road in circumstance in which, otherwise, it might tend to slip sideways, forwards, or backwards, while the lower pressure gives the suspension system less work to do, so that the car can ride over obstructions, such as stones or bricks, without bouncing *off them* into the air In other words, with the comfort tyre it is *possible, for a given system* of suspension weight, and car speed, to maintain continuous contact with the *road in a* vast variety of circumstances in which an ordinary car would lose contact with the surface, and therefore lose driving efficiency waste petrol, and sustain scraped tyre surface each time the driven wheel came back on to the ground But *the larger area of contact* achieved by the use of the comfort tyre, being particularly appreciable in regard to the width of the road *grip (see Fig 2)*, dictates

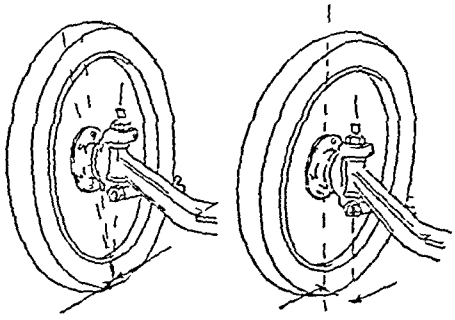


FIG 3—Illustrating (left) true centre point steering and (*right*) non pivotal steering

that the steering must be designed on true centre-point principles unless the driver is to exercise *much effort*, which is undesirable not only as far as he is concerned, but also because it means that the tyre tread is being scraped whenever the course of the car is being deflected *that makes* for wear (*Fig 3*)

"Bogie" Points Banished by Practice

Some imagine that the use of comfort tyres must necessarily take something off the speed of the car They would have a very strong argument if *medical men* had to drive their cars at speeds at which experimental machines are designed to run for records (such as the Darracq performance which set up a fresh standard last week) by which to judge car engine efficiency But at the speeds at which the medical man *requires to drive* his car the difference between the use of comfort and of the ordinary section pneumatic tyre is negligible It is not easy to define the *matter more closely than in that, for this reason among others* road surfaces differ all over the country If you drive on those of the billiard table variety, under the heading of mere maximum speed attainable you would achieve better results with an ordinary tyre inflated to its higher pressure than you would with a comfort tyre, which should be inflated to a lower pressure *But if you chance to go over a* road of bad surface, then at such speeds as an ordinary car is capable of you would rather stand to gain than to lose by using a "comfort" tyre, because the "balloon" tyre would itself absorb by its air cushioning action a vast number of the bumps which are occasioned by passing over the irregularities of the road surface Therefore the driving wheels would maintain practically continuous contact with the road surface, and the horse power developed by the engine would not be wasted, as it is the moment a harder inflated, smaller section, ordinary pneumatic tyre receives a jar from an irregularity of the road surface, or from a loose stone, and therefore starts to bump off the road surface into the air where the power of the engine is spun away instead of being harnessed to useful driving effort

In regard to acceleration, as when starting a car on its journey, the momentary existing of an additional load on the back wheels would have no adverse effect by making a low-pressure tyre present a larger area of surface in contact with the road than does a higher pressure, smaller section tyre We should be mindful not to be governed by theory, but rather by practice, for (as has been observed above) the low pressure tyre is a practical proposition to the extent achieved to-day solely and wholly in defiance of principles on which the pneumatic tyre industry has been working all these years

In the matter of cost, there is no reason why bills should be heavier with the use of low pressure than with high-pressure tyres It is too early to determine whether, in the hands of the ordinary motorist, one actually saves money on the tyre bill by using low pressure tyres There is one reason that offers a material prospect of gain by using balloon tyres The whole fabric, being under lower pressure, is stressed to a vastly less extent, which is very important as regards the strain on the cover, which has to be kept inflated not merely when the car is in use during *actual travelling* along the road, but also all the time it stands in the garage, year in, year out There is, besides, one certain economy of wear and tear to be achieved by the use of "comfort" tyres fitted properly and maintained at the correct pressures in the case of cars possessed of true centre-point steering the shackle bolts of the springs, and the springs themselves, are saved wear to a quite extraordinary degree because they are protected by the low pressure, large section pneumatic from a much greater proportion of jars received when traversing irregularities of road surfaces, and those received are cushioned to a remarkable extent

Some Car Builders' Criticisms

The fact that a large number of motor car manufacturers believe in the use of balloon tyres does not mean necessarily that, in the present stage of development, that type has definitely superseded the ordinary section pneumatic On the *contrary, of the builders* who have standardized "balloon" tyres, a goodly proportion provide relatively defective springing and use the "comfort" tyre to disguise that Formerly small car manufacturers, in particular, were wont to demonstrate their machines with ordinary section tyres inflated at pressures below those recommended by the tyre manufacturers

The difficulties experienced in connexion with the use of "balloon" tyres of various sorts include (*a*) the failure of the side walls, which, however, *constitutes a problem* that has been largely solved through the proportionately

wide rim base required by all makers who have standardized this type of tyre for the current year, as indicated above, (b) side roll occasioned by the use of such tyres, which, as I have shown, has not been overcome yet in the case of larger constructions, (c) harder steering, to which the same remark applies, and (d) greater noise As to the last point, one is in the to-day that, where motorists use steel-studded, non-skid ordinary section tyres, the passage of a tredded tyre of good gripping, anti-skid section is used car creates much greater noise than when the all-rubber I have, however, often observed that the use of the balloon type of tyre on middle size and on large cars does create a degree that is noticeable when taking corners, or noise to a in circumstances in which, with ordinary section curves, tyres on the same types of cars, the passage of the tyre would be quite undetected by the human ear

In general, it this stage one's advice to medical men is that, if a manufacturer standardizes his car in any of the smaller categories with "balloon" tyres, it is advisable to run such a vehicle in that condition once one is satisfied that lightness of steering is not prejudiced As regards fitting cars already owned with balloon tyres, one must have in mind the cost involved in fitting different wheels from those standardized for the use of tyres of normal section Therefore, in most cases, it is scarcely worth doing

There remains the case of the medical man who, because he is a specialist, or has a country practice covering a very large area, needs a really efficient middle size, or an actual big, car because he requires to put it to good speed performance on occasion At the moment, one would suggest that it were better to allow manufacturers to go ahead gaining experience with the use of balloon tyres for these constructions than that the medical man should himself make the experiment For one thing, these more powerful, larger scale cars are usually designed with very excellent springing systems, therefore, with the use of ordinary tyres of ordinary section and ordinary pressures, there arises no question of rough and ready riding Unquestionably, much experience will be obtained with balloon tyres during the next twelve months, alike by the tyre industry, by motor car manufacturers, and by the public Doubtless the average medical man will conclude that the first two can more usefully conduct this work than himself

Dunlop's Distinctive Policy

Such a firm as the Dunlop Rubber Company holds that the whole proposition of the "balloon" tyre has been rushed in America Be that as may be, in the issue it has decided to employ a different rim and tube section from those favoured by most manufacturers With its thirty years' experience of both beaded-edge and wired-on types of tyres, its technical staff were of quite an open mind and discussed its technical requirements, the final decision being that a tyre designed to be run at relatively with manufacturers their technical low pressures should be independent of the inflation pressure for its retention on the rim This theory was tested exhaustively, and it proved completely sound in practice, hence the Dunlop balloon tyre is a wired-on type, and, unlike beaded-edge tyres, which are essentially inflation held, it is retained on the rim by its inextensible wire edges being smaller in circumference than the lips of the given rim In this respect this Dunlop type tyre is identical with the straight sided type of tyre, the adoption of which in this country has been delayed chiefly because of its higher initial cost, albeit the straight-sided type is widely favoured in America In balloon tyre practice this difficulty of initial cost can be obviated, and a tyre constructed on straight-sided principles and offered for the first time at a price no higher than that of the beaded-edge tyre of the same nominal size and capacity Incidentally, the Dunlop balloon tyre is used in conjunction with a rim made in a single piece in which the necessary strength can be provided by a relatively much lighter construction, this achieves a simple means of fitting and detaching the tyre, and allows the valve to come through the side of the rim Of balloon tyres in general it should be observed that the use of the corded type of cover construction, being by far the stronger, is general, and, of course, is to be recommended Satisfactory service can be looked for only by maintaining balloon tyres at the pressures the manufacturers recommend for the given size pneumatic

FRONT WHEEL BRAKES

Of front wheel brakes it may be recorded that there is a vast increase in the number of manufacturers who will be standardizing this accessory, particularly in regard to middle sized cars—for instance, Austin, Rover, and Star No one system of construction is accepted universally Front wheel brakes have been evolved to the practical point, but are still merely in the earlier stages of development There is as much difference between the merits of systems used as there is between the engines of the different cars on the market I regret that I can form no other opinion than that the majority of front wheel braking schemes are being supplied to day solely to meet pleadings of the salesmen who realize that the public has been educated to demand such accessories Thoroughly sound and safe front wheel braking schemes are employed in the minority of cases only When a really safe system is fitted an absolutely new standard of motoring safety is achieved by the introduction of front wheel brakes But when a braking system is not satisfactory, at least to the extent to which it is possible to make one in the light of knowledge acquired to date, then it is safer not to have front wheel brakes If any reader doubts this, let him have in mind the fact that in America insurance rates on cars fitted with front wheel brakes have been put up

Apart from one's instinctive objection to doing so in connexion with a development which is really only in the initial stages, it must be said that the whole problem is vastly too intricate at the moment to lay down any hard and fast rules Suffice it for illustration's sake that the front wheel braking system of the expanding shoe type, wherein six sets of brakes are applicable to a given car, as in Sunbeam practice, provides an absolutely new standard of safety in regard to motoring, whereas in regard to certain other cars that shall be nameless, front wheel brakes are designed of smaller diameter than the rear wheel sets, are fitted at lower shoe pressure where shoes are used—say, 7½ lb front to 30 or 40 lb behind—and the front wheel brakes come into operation at an appreciable interval of time after the brakes on the rear wheels By these and other signs they may be recognized as brakes made by firms who realize just enough to be aware of the fact that they do not understand the subject, therefore they wish to take no chances Of course, so little power could be absorbed by a front wheel brake built on the scheme just mentioned that practically no embarrassment would be caused to the freedom of the steering, or what not, if anything did go wrong with the system, in short, this school of motor constructors simply mesmerizes the car owner into the belief that he has an effective front wheel brake

Some Helpful Points

Again, there are systems of brakes by contracting bands, instead of by expanding shoes, which when operating successfully furnish to the given car more efficient brakes than those particular vehicle types have had hitherto, albeit the degree of efficiency in question is, at the most, no more than the efficiency achieved in a car with ordinarily efficient expanding shoe back wheel brakes and none on the front wheels at all When it is wet, the unprotected exterior band type of front wheel brake is undesirable because dirt, grit, and so forth can get into it and, sometimes, the lining becomes saturated Thus when one applies such brakes in rain one discovers that one slides a hundred yards, or more, while yellow grease is being squeezed out of the linings, and that after that they "bite" suddenly In the circumstances it is difficult to lay down hard and fast rules, but serviceable points to have in mind include the following

(a) If a manufacturer offers front wheel brakes at option, buy his car without such brakes, evidently he himself has not sufficient faith in them to put his whole reputation behind them

(*b*) Where a car builder fits front wheel brakes observe whether he has redesigned his front axle to take the twisting strain involved by their application for whereas the I section front axle is the best possible for achieving lightness in combination with sufficient strength for one that has to deal solely with a rolling wheel nevertheless it is about the worst section possible to resist the twisting strain of brake application hence such constructors as Fiat, Sunbeam Lanchester Daimler, Rover, and so forth use either solid circular or tubular section front axles the only point that is material in this connexion being that such sections should be available from the spring pads outwards to the wheels in that it does not matter what section the axle takes between the two springs

(*c*) Test whether the steering is affected in any way by the use of front wheel brakes uphill, downhill on the flat on the camber at fast speeds, legal limit and traffic crawls

(*d*) Do not be bluffed into the belief that, merely because a car has brakes to all four wheels it is necessarily more efficient in that connexion than one that has them to the two rear wheels only, because the former may have small diameter or low pressure or narrow section or otherwise inefficient brakes on all four wheels whereas the latter may have wide deep diameter really effective brakes to the back wheels only and be, in fact, much more efficiently braked

(*e*) Remember that the fitting of front wheel brakes adds to the weight and complication of the car's mechanism

No Universally Adopted System Yet

My own opinion is that front wheel brakes will be universal practice in a few years But it is nineteen years since I had my first experience of front wheel brakes and I realized then, by exciting 'incidents" experienced on greasy surfaces, how much one has to learn before a front wheel brake can be fitted which will prove safe in all circumstances of use That is the problem It is doubtful if the average owner could adjust satisfactorily most front wheel brake schemes That is not so easy as it looks even though the wing nuts be accessible—as, in some cases, beside the very wheel hubs themselves One adjustment for all four brakes is, of course, the best as in Lanchester, Rover and Sunbeam practice Schemes vary vastly in merit, as do methods of control The entirely mechanically controlled Lanchester method is a splendidly sound arrangement Again the compensating scheme adopted by Vauxhall is as excellently effective as it is simple Servo mechanism, which some firms do not fit is nevertheless a great gain in regard to assisting lightness of control and ensuring safety Some firms, such a Sunbeam and Rover use Servo control for the front wheel brakes only and not for the rear set, which, incidentally, is one means by which they conform with the now twenty year-old law that requires that a car should be capable of being held on either of two independent sets of brakes operating on the rear wheels when the vehicle is at a stand on a hill Where Servo mechanism is applied to all four wheels when the car comes to a stand that system of brakes will not hold it Hence the application of Servo mechanism to the front wheel brakes only by certain manufacturers and designers

Rover's New Programme for Medical Men

Than the Rover Company, no British enterprise has succeeded in providing lower-priced more durable, refined, economical running cars that have proved uncommonly dependable and satisfactory over a period of years In one district in the provinces no fewer than eighty five medical men own the 12-h p type of machine who cannot be induced to buy anything of later design because they are so satisfied with the performance The Rover Company, however is making a radical change in its programme of car design and production for the 1925 season which, tests convince me, will be successful in causing the at present contented medical man who can afford it to become dissatisfied with what Rover he has and acquire one of these new style models Briefly the firm will supersede the well known 12-h p —lately revised at 14-h p —side-valve engined three speed car by a four cylinder overhead valve four-speed nominal 14/45-h p car of approximately the same engine capacity (2,132 c c m), but of extraordinarily different performance, the whole power plant and chassis being the design of Mr P A Poppe, who has been working on it with the Rover Company since Christmas last But he had actually this type of chassis in mind from the time of the armistice He designed and built the original power plant and gearsets for Morris-Oxford cars and is a remarkable mathematician The present aim is to produce a Rover car which itself should be at anything ahead of its time This machine which will be introduced to the public at Olympia on October 17th, will be listed at little more than the price of this years 14 h p side valve engined car, and will scarcely scale more than one hundredweight extra including the weight of the balloon tyres standardized It is a very much more ambitious car, alike as to performance and accommodation, than the type it supersedes, the tax being nevertheless only £14 a year Though the overhead valves are on opposite sides of the cylinders only one overhead camshaft is employed Moreover it is set on one side of the engine, being driven by a vertical shaft from the crankshaft A truly hemispherical combustion chamber is achieved, and the sparking plugs are set vertically in the top of each cylinder, in the dead centre—the most efficient position Pressure lubrication is furnished to every engine bearing The lubrication design marks an innovation in among other things, the quantity of oil carried in the sump—about three gallons—which is schemed specially to cool it The lubricant is circulated by a gear pump at the foot of the vertical shaft which drives the overhead camshaft The oil is forced (*a*) up the vertical shaft into the inlet rocker chamber, across the head into the exhaust rocker chamber, thence back into the sump by way of the steering box, and (*b*) along passages in the crankshaft and crankcase to each big end bearing, to each of the three mainshaft bearings, and, from the big ends, upwards through the hollow connecting rods to the gudgeon pin bearings, whence a spray is directed on to the inner side of the piston crown The clutch and gearbox also receive their supply of lubricant from the engine sump, a constant level being maintained in the gearbox Any overflow finds its way into the clutch chamber where it is picked up by the flywheel and discharged through passages back into the crankcase Should water get into the lubrication system by any chance it is rejected by special filters, and falls to a trap below It will be observed that the steering box, which in ordinary cars is generally neglected, is in this case lubricated positively and automatically Four speeds are provided and an extraordinary degree of quiet running is achieved by the introduction of gearwheels with tooth profiles of a form unlike any I know, a consequence being that one does not hesitate to change speed, so quiet is the running on the indirect drives It is possible for a driver familiar with this car to change gear without withdrawing the clutch—a point mentioned to show the extraordinary ease with which the gears can be changed by one who can judge his engine speed accurately

Notable Points of Original Practice

The unit construction of engine and gearbox has been achieved without the disadvantage of inaccessibility ordinarily involved A more accessible chassis I have not seen yet The controls are on the right hand An uncommon feature is that the gear lever itself is adjustable for position, while the hand brake lever design breaks fresh ground The strength of the frame without involving heaviness, is quite beyond the common Four wheel brakes of no less than 13 in shoe diameter, enclosed completely, are furnished on the Perrot patent principle as regards the control of the front sets Exceptional features of Mr Poppe's design of the braking installation include the means of lubricating the cross-shafts, and the manner of allowing for the difference of axle and spring position when the front wheel brakes are in active operation, equal braking efficiency being transmitted to each of the four wheel brakes during that period only Again, the hand-controlled brakes operate on all four wheels in synchronism, as do the foot-controlled brakes Yet both sets are entirely separate, and each set is so designed that, if the front wheel brakes were to fail, the back ones would hold In effect there are four completely efficient sets of brakes, so that three sets could fail and still the driver would have efficient braking on two wheels of the chassis This interesting device will be one of the notable new things to be studied at the Show The steering gear is adjustable in every direction The steering joint, and the front wheel

brakes control gear joints, are mud- and grit-proof without leather covers The propeller shaft is enclosed, the drive being taken by a clutch consisting of a bronze disc between two steel plates, through the gearbox to a propeller shaft enclosed in a torque tube that has a bearing for the shaft about midway—thus eliminating drumming, which would occur through shaft whip when this length is unsupported—to the back axle driven by silent spiral bevel gear The car does a petrol consumption of about twenty-five miles per gallon at touring speeds, has a wheelbase of 10 feet, a track of 4 feet 6 inches, a ground clearance of 8 inches, and a speed of over a mile a minute, the engine being an uncommonly efficient one, designed for a mean effective pressure of no less than 105 lb per square inch at 2,000 crankshaft revolutions a minute, and capable of acceleration up to 4,000 crankshaft revolutions a minute Therefore, though rated at 14/45 h p, this power plant gives very much more power than the higher figure Yet it can be run for the cost of the now superseded 14-h p Rover car It will be available alike with Weymann and with coach-built bodies

For the medical man the Rover Company will also introduce at Olympia the new 9/20 h p 1,074 c.c. overhead valve water-cooled four-cylinder engined £9 tax type, which is available with two-seat body and with four-seat "chummy" body, also with a three-door body in a *de luxe* edition, all with Dunlop balloon tyres, the petrol consumption varying between forty and fifty miles per gallon The speed possibilities are in excess of fifty miles an hour—I obtained fifty-three miles an hour in test—and the equipment includes an all-weather hood, and so forth, this being a machine that will be marketed at less than £200 in the ordinary version, and a very little more in the *de luxe* version, which latter has 5 inches longer wheelbase Rover is one of the notable 1925 recruits to the overhead valve system These two chassis types, together with the continuation of the 8-h p air-cooled two-cylinder engined machine that sells at £160, complete the firm's manufacturing programme for the 1924-25 season

GLASGOW MEMORIAL TO LORD LISTER

Unveiling Ceremony

So far back as February, 1912, an influential committee was appointed in Glasgow to promote the establishment of a memorial to the immortal memory of Lord Lister Owing to the war the activities of this committee were for a time suspended Later, following various suggestions as to the most suitable form such a memorial might take, it was resolved to erect a statue in bronze to be placed in the Kelvingrove Park A suitable site was obtained near the statue of Lord Kelvin, his illustrious contemporary and colleague in the Senate of Glasgow University To Mr G H Paulin, A R S A, was entrusted the preparation of the statue, which is a striking figure in bronze and is mounted on a granite base Lister is represented seated, with head uncovered, and wearing his academic robes The sculptor has depicted him in a strikingly alert attitude and as he was while still in the full vigour of his professional career

The unveiling ceremony took place on September 17th, in the presence of a large and distinguished company The Lord Provost, Mr Matthew W Montgomery, presided and called upon Sir Hector C Cameron, a former dresser, house-surgeon, and assistant of Lord Lister, to unveil the statue Sir Hector, before unveiling the statue, delivered an oration which we give *in extenso*

Sir Hector Cameron's Address

I esteem it a very high honour indeed to have been invited to unveil the statue commemorative of Lord Lister, beside which we are now assembled I am well aware that I owe this honour to the fact—the accidental fact—that I am the sole survivor of those who served under him as house surgeons in Glasgow and one of the very few still alive who listened to his lectures and witnessed his work in the old College and the old Royal Infirmary in the High Street I formed a still closer connexion with him after my house surgeonship was completed, when he invited me to be his assistant in private practice Above all, it was "he for whose applause I strove, I had such reverence for his blame," and he honoured me with an affectionate friendship to the end of his long life Such considerations make me feel that, however much I could have wished that some eminent man of science had been invited to occupy the place in which I now find myself, I may console myself with the reflection that I shall at least fulfil, however imperfectly, what I may well regard as a pious duty

Mr Joseph Lister became a candidate for the chair of surgery in the University of Glasgow on the death of Professor Lawrie in November, 1859, and his appointment was announced on January 28th, 1860 He was then in his thirty third year He had been resident in Edinburgh for some years previously, where, latterly, he had held the post of assistant surgeon to the Royal Infirmary and was an extra mural lecturer on surgery The appointment to the chair in Glasgow did not at that time carry with it the succession to hospital wards, and for the first fifteen months of his professorship he had no opportunity of illustrating by his practice the theoretical teaching which he communicated to his students in his university classroom. He was, however, appointed surgeon to the Royal Infirmary in August, 1861, and began his work there when the winter session opened

From the time he began his professorial duties he commanded the enthusiastic admiration of his students At the end of his first winter session they adopted the very unusual course of presenting him with an address in which they expressed their high appreciation of the lectures to which they had listened and the valuable instruction which had been communicated to them. It is interesting to recall that the member of the class chosen by his fellows to read and present this address to the professor was J B Russell, afterwards the first whole time medical officer of health of Glasgow, a most able public servant of his city, and a pioneer of world wide reputation in the then nascent science of preventive medicine

The enthusiasm thus excited in the students of his first class was fully maintained in succeeding years I became a member of the class in 1862 One of my fellow students was Friedrich Trendelenburg, a son of a professor of the University of Berlin, who had been a friend of Professor Allen Thomson of Glasgow University from then youthful days Young Trendelenburg had in consequence been sent for two years' study to Glasgow under Professor Allen Thomson, Lister, and William Thomson, afterwards Lord Kelvin In later years he made for himself a great reputation as professor of surgery in the University of Leipzig, and introduced valuable improvements in the practice of certain departments of the surgical art With these improvements his name will always be associated Some years ago, in a letter which I received from him, he observed that, while we all regarded Professor Lister with great respect and admiration, none of us could foresee that he would one day "change surgery from the very bottom" This was a just remark All of us, indeed, felt conscious that we were listening to new and valuable lessons not yet in print, but little realized how great their value was or what unspeakable blessings were to flow from their development in the new future It was not, however, until 1865 that Lister began to develop his antiseptic system of wound treatment

It is not possible on such an occasion as this to explain the details of Lister's method of wound treatment, but in the words of a celebrated French surgeon now deceased, writing in 1902, "it produced in the evolution of our science such a revolution that we ought to judge it as though centuries had passed" "Have we not seen," he asks, "in twenty five years such a progress as centuries never made?" The progress thus made has now largely extended And the principles he taught as the foundation of his system are now universally received and acknowledged by surgeons the whole world over, although in many ways the mode of applying them has become modified He wedded surgery and science in a manner unattempted before, with the effect, as has been well said, that surgery, and especially operative surgery, has been so changed as to become "a safe and soundly based science," instead of being, as it was formerly, "a hazardous lottery," The result has been the saving of human lives in number beyond all calculation

Those achievements, you will believe, were not accomplished without indomitable perseverance, and a marvellous patience in the face of great opposition from the majority of the leaders of his profession, especially in his own country From the very first he was under no illusion in regard to the inevitable and hostile criticism which his doctrines must evoke, especially from those who were prejudiced by a life long familiarity with the older teaching and the former methods of practice

In an interesting letter which I some years ago received from Dr Collins Warren of Boston, a distinguished surgeon of America, he told me of a visit which he had paid to Lister's wards in the Royal Infirmary of Glasgow in the summer of

1869 After graduating at Harvard, he had just finished three years of study at various medical schools in Europe, and had returned to London, on his way back to America before realizing that he had learnt all of up-to-date surgery which could be learned. He attended a meeting one evening of the Pathological Society of London where he heard of a surgeon in Glasgow who claimed to be able to prevent the occurrence of suppuration in wounds, but whose claims were received with much incredulity and no little sneering. He determined at once to spend the last week at his disposal in visiting Glasgow and seeing Lister's practice. He did so, and was immensely impressed by everything he saw. One day, after an interesting discussion on the cases of some of the patients in the wards Lister addressed his students and visitors, who were for the most part young men, in such words as these:

> I do not expect my colleagues and contemporaries to adopt my views and to follow such practice as I desire to found upon them. I look to you the men of the future to do this.

Quite a generation passed indeed before his views were adopted and the guiding principles of his practice modified (no doubt in detail, universally followed, as is now happily the case. His nephew and biographer, Sir Pickman Godlee, refers to another occasion on which he expressed similar sentiments. They were uttered when he was an old man and when his scientific views had been acquiesced in and the practice founded on them imitated in some form all over the world. In November, 1902, he was awarded the Copley Medal by the Royal Society, one of the highest honours which a scientific man can receive. At the anniversary dinner of the society in the evening he returned thanks on behalf of the medallists and ended his speech by saying that he had often thought that if he did deserve any credit at all it was at the time when perfectly convinced of the truth of the principle on which he acted and persuaded also of the enormous importance to mankind of being able to carry out that principle in practice, he worked for years together with exceedingly little encouragement from his professional brethren. There were two great exceptions, however—his father-in-law and his students. His biographer adds, He was thinking, no doubt, of the early Glasgow days, before his fame had spread into foreign countries.



Photograph by] [Carl Ewald

THE LISTER MEMORIAL, GLASGOW.

His father-in-law was the great surgeon Professor Syme of Edinburgh. Lister remarked to me more than once after he had become an old man that, in looking back, he felt it was a fortunate circumstance that at the particular stage of his career which had arrived in 1860 he was called to an independent position in Glasgow. He then became his own master and was free to work out his own ideas. He frequently visited Mr. Syme at Millbank, his residence near Edinburgh, talked to him fully of the work he was doing in Glasgow and received from him from first to last, nothing but the greatest encouragement and approval.

My Lord Provost, I think we ought to feel very grateful to the municipal authorities of this city for having granted us this excellent site. A very little reflection makes me feel how eminently suitable it is. Lister, when he was engaged in thinking out some difficult problem or in composing some important paper, preferred to do this if the season and weather permitted in the open air and preferably during an hour or more before breakfast. For this purpose this park was his favourite resort. Very soon after he settled in Glasgow at 17, Woodside Place, when speaking in a letter to his father of an article which he was writing for publication, he says:

> I find this a very nice place for working at. The Park being an excellent Academia for peripatetic study, and most of what I have written has been composed there and written there in a little pocket-notebook. His favourite walk was under a row of tall elms which ran along just inside the railing in front of Royal Terrace, and sheltered in their branches a colony of rooks, which have long ago disappeared. Then the monument of his colleague Lord Kelvin is only distant from his late place. In your time colleague, when Lister entered the Senate of the University in 1869, and a fast friendship existed between them until the death of Lord Kelvin in 1907. In their later years the two were often fellow-workers together in the Royal Society, and on the demission of the presidency of the society in 1895 by Lord Kelvin he was succeeded by Lord Lister. The site, moreover, is in the immediate vicinity of the modern home of the ancient University upon which both have shed such bright and lasting lustre.

I have heard the remark made frequently of late that we might have commemorated Lister by some better and more useful means than by the statue. His fame as such person, his real monument and it will outlast your bronze. This may be true, but no stone now stands upon another of the old College in the High Street or of the old Infirmary in which he laboured, and surely it is not unfitting that we should raise some visible symbol of expression of our gratitude to one of the greatest benefactors of the human race—expressive too of our pride in the fact that the principles of antiseptic surgery were first discovered, enunciated and carried to a successful practical issue while he still occupied the chair of surgery in our University.

Principal Sir Donald MacAlister proposed a vote of thanks to Sir Hector Cameron in felicitous terms. He said that as a pupil, an assistant, a disciple, a friend, and an able and inspiring interpreter of Lord Lister, none could have been more fittingly chosen to grace the ceremony and none could have explained its significance to them in happier terms than Sir Hector Cameron. He congratulated the sculptor on his successful presentation of the features and bearing of Lord Lister. Finally he expressed thanks to the Memorial Committee and to the executive who collaborated not only in providing this statue for Glasgow, but in contributing substantially to the international fund for the provision of a Lister Prize and Lectureship for the memorial in Westminster Abbey, and for the due display and preservation of the Lister Collection in the Glasgow Royal Infirmary. Professor John H. Teacher on behalf of the committee, asked the Lord Provost to accept the statue as a symbol of their homage to Lord Lister.

Prior to the unveiling ceremony a company was entertained to lunch in the City Chambers by the Lord Provost and members of the Lord Lister Committee. The guests included Mr. J. J. Lister, F.R.S., of Cambridge, a nephew of Lord Lister. The "Undying Memory" of Lord Lister was toasted in silence by the company. The Lord Provost of Edinburgh, Sir William Sleigh, proposed the Glasgow Lord Lister Memorial Committee and in so doing emphasized the happy relations existing between Glasgow, where Lord Lister carried out his great work, and Edinburgh, to which he came on leaving Glasgow. Mr. A. E. Maylard, M.B., B.S., proposed the health of the chairman, and Sir Donald MacAlister gave the toast of the Lister family, with which he coupled the name of Mr. J. J. Lister. The latter, in his reply, gave some very interesting personal reminiscences of his uncle Lord Lister, illustrative of his enthusiasm as a worker and his lovableness as a man.

England and Wales.

SMALL-POX IN ENGLAND AND WALES

THE Ministry of Health has supplied the following statement for publication

At the present time small-pox is prevalent in the county borough of Middlesbrough, the borough of Chesterfield, and the urban district of Hucknall, in all of which districts the disease has continued to be present since the autumn of 1923 Other sanitary districts now mainly affected are the county borough of Derby, the rural district of Chesterfield, the borough of Mansfield, and the urban districts of Mansfield Woodhouse, Ashington, Melton Mowbray, and Gainsborough Within the last four weeks sporadic cases have occurred in twenty-one other sanitary districts, including the metropolitan borough of St Pancras, the county boroughs of Barnsley, Leeds, Leicester, Sheffield, and Oxford On three separate occasions this year a single case of the disease has been notified from different metropolitan boroughs There is no evidence of the presence of small-pox in London at the present time In 1924, up to the end of the second week in September, small-pox has appeared in ninety-one sanitary districts in England and Wales, including four port sanitary districts The total number of cases is approximately 2,750, as compared with 1,840 in the corresponding period of 1923 The county most heavily invaded is Derby, with a total of approximately 1,080 cases in sixteen sanitary districts, the next in point of number is the contiguous county of Nottingham, with 434 cases in ten sanitary districts 386 cases have occurred in Yorkshire (mainly in Middlesbrough), and 306 in Northumberland (mainly in Ashington) Of the Derbyshire cases more than one-half have occurred in the borough and rural district of Chesterfield Although generally the type of disease continues to be mild, severe cases occur from time to time in the Willesden urban district in June and July there were 10 cases with 3 deaths

ORDER OF ST JOHN OF JERUSALEM PRIORY FOR WALES

Sir Herbert D W Lewis, K B E, Commissioner for Wales of the Order of the Hospital of St John of Jerusalem, in his report for the year ending December 31st, 1923, is able to point to a steady progress in the work of the ambulance and nursing divisions in the Principality, which is of happy augury for the future The numerical strength of the brigade is, roughly, 6,000 men and women Ambulance arrangements have been made to cope with accidents at collieries, factories, football matches, race meetings, and all public functions First-aid tents have been pitched at holiday resorts, and very many cases of accidents and disease have received attention during the year In addition to training adults in ambulance and nursing work, the Priory has also inaugurated a scheme for the training of boys and girls, which has been adopted in many Welsh towns and villages The affiliation of the ambulance teaching of the older boys in the Scout movement to the St John Ambulance Brigade has benefited both organizations alike The ambulance department, comprising the teaching of first aid, home nursing, home sanitation, home hygiene, and allied subjects, has issued 7,890 certificates and awards in 1923, as compared with 5,466 in 1922, and 3,207 in 1921 Thirteen medals awarded on the completion of fifteen years' service in the brigade were presented during the year In 1922 the ambulance work of the Great Western Railway was affiliated to the St John Ambulance Brigade, with very successful results, and on January 1st, 1924, the corresponding training in the London, Midland and Scottish Railway was similarly affiliated The motor ambulance transport service, which is the second largest in England and Wales, carried during 1923, 2,294 patients, involving a mileage of over 40,000 Provision is made for every colliery, factory, and householder to have the right to summon an ambulance car at any time of the day or night in return for a small annual subscription The stores department at headquarters has dealt with a large demand for first-aid manuals, appliances, uniforms, and apparatus during the year, and, through the medical comforts depots scheme, any medical requisite may be borrowed at a nominal cost in cases of sickness or accident The Priory for Wales is now represented on the Welsh Committee of the Central Joint Voluntary Aid Detachment Council, and has taken steps to enrol its quota of members throughout the Principality, in accordance with the new scheme for voluntary aid detachments The work at the Swansea Orthopaedic Clinic for Ex-service Men, and at the spa treatment establishment at Llandrindod Wells, has made considerable progress during the year, and large numbers of people have been benefited

A NEW LIVERPOOL HOSPITAL

Realizing the importance of prevention of disease as one of the objectives of modern medical science, to which so much attention was drawn at the recent Congress of the Royal Sanitary Institute, held at Liverpool last July, a movement to found a special hospital for the treatment of diseases of the heart has been initiated At the inaugural meeting Professor Caton, Pro-Chancellor of the University and Emeritus Professor of Physiology, who, while physician to the Royal Infirmary, devoted special attention to these diseases, urged strongly the desirability of establishing such a hospital, since prolonged rest, therapeutic measures, and remedial exercises were essential in many cases of rheumatic fever if valvular heart disease was to be prevented It was pointed out that the general hospitals, with beds limited to cases of acute illness, did not provide for cases of heart disease requiring long-continued rest A special hospital adapted for modern methods of treatment would meet a real want, and a promise of substantial financial aid for the scheme was announced Professor J Martin Beattie supported the movement, and a general committee was formed with Sir James Paton as chairman It is hoped that, with the funds in hand, the new hospital will be opened in two months' time Accommodation for in-patients will be provided to the extent of ten to thirty beds An out-patient department will also be established for those cases that do not require prolonged rest, but rather remedial exercises and appropriate therapeutic treatment

MEDICAL OFFICER OF HEALTH FOR LIVERPOOL

Dr Arthur A Mussen, assistant medical officer of health for the City of Liverpool since 1900, has been selected by a special subcommittee for recommendation to the Health Committee and the City Council for the post of medical officer of health for the city Twenty-nine candidates had sent in applications, and six of these were interviewed The esteem in which Dr Mussen is held by the medical profession in Liverpool called forth the following resolution of the Liverpool Division of the British Medical Association in July last

This meeting of the Liverpool Division of the British Medical Association hearing that Dr A A Mussen is a candidate for the post of medical officer of health of Liverpool, desires to record the fact that during the twenty four years he has been in collaboration with the members of the medical profession in Liverpool on the many problems of infectious disease and public health, he has gained their complete confidence and respect

MANCHESTER ROYAL INFIRMARY

A course of post graduate lectures and demonstrations at Manchester Royal Infirmary commences on September 30th with a lecture by Mr J Howson Ray on carcinoma of the rectum, operable and inoperable On the following Tuesday the Lloyd Roberts lecture will be delivered by Sir John Bland-Sutton, President of the Royal College of Surgeons of England, who will speak on the subject of "Attic salt for gall stones" The post-graduate lectures will be continued on successive Tuesdays until December 16th Short courses of lectures on special subjects explaining recent scientific research work will be given on Fridays, commencing on Friday, October 3rd, when Professor H S Raper will give the first of two lectures on fat metabolism and some of its disorders All these lectures will commence at 4 15 p m , no fee is charged The titles of the succeeding lectures will be found in our Diary columns during the coming weeks The honorary secretary for post-graduate courses is Dr E Bosdin Leech

Ireland.

Appointment of Poor Law Medical Officers (Free State)

For more than a year the management of the Dublin Union has been in the hands of commissioners or vice-guardians who were appointed by the Ministry of Local Government and Public Health when it dissolved the local board of guardians. The commissioners possess all the powers of a board of guardians with regard to the filling of medical vacancies, is significant and has given much satisfaction to the medical profession in Ireland as a step towards a proper system of making medical appointments on merits alone. In connexion with the appointment of four dispensary medical officers for the Dublin Union a letter was read at the last meeting of the commissioners, from the Ministry of Local Government, stating that the Minister considered it would be greatly in the public interests if the commissioners could establish a special Selection Board to appraise the merits, qualifications, and experience of the applicants. The commissioners decided to write to the registrars of the medical schools of University College, Trinity College, and the Conjoint Board of the Royal Colleges of Physicians and Surgeons asking them to appoint a representative each to act as a Selection Board, the chairman of the Dublin County Council to be asked to act as chairman. It is understood that the commissioners are prepared to elect the persons selected by such board to the present vacancies.

Medical Assistance at Operations in Workhouse Hospitals

The Ballymoney board of guardians (County Antrim) recently demanded from Dr. McClelland, medical officer of the workhouse, an explanation of why, instead of summoning medical assistance himself, he did not comply with the regulations and have such assistance provided by the master of the workhouse. In his reply Dr. McClelland stated that he was forced to make the arrangement himself in the interests of the patient, who was suffering from an appendicular abscess. To carry out the regulations would have meant such a delay as to imperil his patient's life. In the circumstances he arranged with the nearest available doctors, and he (Dr. McClelland) had never yet seen a major operation undertaken without the presence of three doctors. One of the guardians stated that the doctor's explanation was not really very satisfactory, and the board decided ultimately to forward Dr. McClelland's letter to the Ministry of Home Affairs (Northern Parliament). At a meeting of the Omagh guardians a letter was read from the Ministry of Home Affairs, stating that the board should pay a fee of £21, claimed by Dr. E. Thompson, F.P.C.S.I., surgeon to the Tyrone County Hospital, for performing a serious surgical operation, provided the patient was properly admitted to the workhouse hospital and that Dr. Thompson was requisitioned in accordance with the workhouse regulations. The guardians decided to pay the fee to Dr. Thompson.

Presentation to Dr. P. Grace Kilkenny

On his promotion to the post of superintendent of the Marvborough Mental Hospital, Queen's County, Dr. Pierce Grace has been presented with a handsome case of cutlery subscribed by the officers and staff of the Kilkenny Mental Hospital, where Dr. Grace has acted for many years as assistant medical officer. Dr. Pierce Grace was for several years a very efficient secretary of the South-Eastern of Ireland Branch of the British Medical Association. The Marvborough Mental Hospital, which serves as the district asylum for King's and Queen's Counties, is an institution of 623 beds and was established ninety years ago.

Correspondence.

HERPES ZOSTER IN HODGKIN'S DISEASE, AND ARSENICAL TREATMENT

SIR,—It was, I believe, Sir Jonathan Hutchinson who first drew attention to the occasional development of herpes zoster in patients undergoing arsenical treatment, and in the epidemic of chronic arsenical poisoning among beer-drinkers in England, in 1900 it was the occurrence of herpes zoster in some of the victims that led F. S. Reynolds to the discovery of the real cause of the symptoms.

I have met with a few cases of Hodgkin's disease (lymphogranulomatosis maligna) in which an attack of herpes zoster constituted a temporary complication, but there were cases which were being treated with arsenic. As far as I can remember I have never seen herpes zoster in patients with Hodgkin disease apart from arsenical therapy.

Recently, however, Professor H. K. Pancoast and Dr. E. P. Pendergrass have written a paper on the occurrence of herpes zoster in Hodgkin's disease[1] in which four cases of the disease complicated with herpes zoster are summarized. Arsenical therapy is so frequently employed as part of the treatment for Hodgkin's disease that as it is not definitely stated that the patients were given no arsenic one is to my mind almost justified in assuming that the herpes zoster in all the four cases was "arsenical" in origin rather than due to the Hodgkin disease itself.

It seems that arsenical therapy sometimes predisposes patients to an attack of herpes zoster, and that an attack of herpes zoster during arsenical therapy, though a warning sign, does not necessarily signify that arsenic is being given in excess. In fact it appears that herpes zoster occurring during treatment with arsenic is to be regarded not as a direct toxic effect but rather as an attack of ordinary herpes zoster to which the arsenic in some unknown way has rendered the patient liable. But here one is on uncertain speculative ground. Does an attack of so-called "arsenical herpes zoster" shield the individual from subsequent attacks of (ordinary) herpes zoster? Has anyone seen herpes zoster in a patient who is known to have suffered previously from "arsenical" herpes zoster? Has anyone seen herpes zoster in Hodgkin's disease when arsenic could be definitely excluded as a factor in the causation?—I am, etc.,

F. PARKES WEBER, M.D., F.R.C.P.

London, W.1, March.

GALL STONES AND CANCER

SIR,—Like Mr. McAdam Eccles I was much interested in Dr. Archibald Leitch's lecture on "Gall stones and cancer of the gall bladder."

I introduced one or more gall stones into the gall bladders of dogs under aseptic conditions. The results were published in this JOURNAL in 1905. The stones disappeared in every instance within two months. The late Vaughan Harley had previously performed similar experiments. He kept the dogs alive for twelve months after each experiment, and at the *post-mortem* examinations the stones had completely vanished. I concluded from my experiments that in dogs the normal bile will dissolve any medium-sized stone. The results in guinea-pigs seem to be entirely different.

My object in writing this note is to suggest that it would be unwise to draw deductions from experiments upon guinea-pigs in relation to the incidence of cancer in cholelithiasis in the human subject.—I am, etc.,

WILLIAM BAIN.

Harrogate, Sept. 21st.

SIR,—Now that Dr. Archibald Leitch's brilliant experiments have demonstrated that cancer can indubitably be caused by simple mechanical irritation, it only remains "to be shown *how* mechanical irritation can produce cancer," and the tale will be told.

The conditions found in one after another of his guinea-pigs reveal very clearly a struggle for existence on the part

[1] *Amer. Journ. Med. Sci.* Philadelphia, 1922, clxiii, 1–26.

of the epithelial cells lining the gall bladder, comparable, surely, to the struggle for existence of any species of unicellular organism faced with a new and menacing addition to its environment The existing generation of cells is beaten down, almost exterminated, but from the depths of the glands new generations of cells arise, push up to the surface, and are destroyed in their turn The qualities that count in this struggle are the capacity for rude growth and rapid reproduction, and by a process of natural selection among the cells these qualities become the distinguishing characteristics of the succeeding generations It is really a process of reversion to type—reversion of the highly specialized tissue cell under the stress of hard times towards the primitive protozoal ancestor of all cells, just as highly specialized plants and domestic animals devolve backwards towards rude ancestral types when removed from their artificial environment and forced to breed wild The tissue cell has an inherent respect for boundaries, and many stages on the road of reversion must be passed before the riotously growing product of the process pierces the limiting membrane of its normal habitat and invades its orderly neighbours These must inevitably yield before the uncivilized hordes, as the Romans before the Gauls, and so the whole picture of cancer develops

All this has been laughed at before as "fanciful" and "pure theory" But obsession with experimental methods should not altogether exclude the philosopher's armchair excogitations The theory fits the facts, and no one has ever been able to show me where the analogy breaks down Its kernel lies in the ability to visualize the cells of the animal body as individuals having, in addition to their own responsibilities, a life of their own, their own infinitesimal variations of structure and quality, and an obedience to the laws of growth and reproduction and the origin of species which we believe to operate throughout the living world —I am, etc,

J V FIDDIAN

Ashton under Lyne Sept 15th

TREATMENT OF PUERPERAL SEPSIS

SIR,—We do not see why the staff of Queen Charlotte's Hospital should be surprised that Dr Cuimey should advocate exploration of the uterus in septic cases

We have both had a large obstetric practice extending over many years, and have always carried out this treatment in cases of definite infection of the uterus where the temperature has remained up for over twenty-four hours and have never seen it cause general septicæmia In almost all these cases small pieces of placenta or membranes have been found and removed, and the patients have nearly all of them shown immediate benefit Those cases where septicæmia has developed have been those where exploration has not been carried out early enough owing to a doubt as to whether the trouble was definitely uterine

We quite agree with Dr Cuimey that it is impossible to say without exploration whether the placenta is complete or not, for in many cases of post partum haemorrhage small pieces are found which it is impossible to fit into the recently expressed placenta

It has been our practice at the East End Mothers' Home to explore and douche, with the result that during the last ten years, out of over twenty thousand deliveries, there has not been a death from sepsis, so that in our opinion the danger feared by the staff of Queen Charlotte's Hospital is more than counterbalanced by the good done, and until other hospitals can show statistics which compare favourably with these we think that practitioners would do well to continue the old method, laying stress on Dr Cuimey's advice, "with the greatest care and all possible gentleness"—We are, etc,

M CURSHAM CORNER, M D
W H F OAKEY

London, E1, Sept 16th

SIR,—I was very interested in the letter of the staff of Queen Charlotte's Hospital (September 13th, p 488), and am glad to see that they discourage "meddlesome midwifery" I am all the more interested because I was called in to a case of puerperal septicæmia a few weeks ago The woman was confined on August 5th, and on the morning of August 9th I saw her with a pulse of 140 and a temperature of 104 6° The lochia were very offensive I obtained some antistreptococcus serum (multivalent) of the Lister Institute, and I gave 10 c.cm subcutaneously in the loin that same evening She had one perchloride douche, and afterwards two lysol douches a day for three days, finishing up with one a day for a few days longer The day after the injection of the serum the temperature fell to 99° and the pulse to 86 A slight rise of temperature took place on August 13th, but on August 17th the temperature was normal and continued so The patient made a good recovery

I have been very fortunate not to have had a single case of puerperal septicæmia in about 1,500 midwifery cases whom I was engaged to attend —I am, etc,

PHILIP LAMBERT BENSON, M A, M D

Steeple Claydon Bucks, Sept 16th

SUGAR AND MIGRAINE

SIR,—Migraine has been ascribed to so many causes, and the treatment is so diversified, that it is justifiable to conclude that the etiology is imperfectly understood It is said that attacks usually cease after the age of 50 or 60 I have not noticed that in excess of sugar in the blood has been mentioned as a cause I believe it to be, however, a potent factor in migraine, and that many persons who now regularly suffer from migraine will find the attacks disappear entirely if sugar be eliminated from the diet The drawback to this deprivation of sugar is that these individuals, who have been depending on sugar for much of their nervous and muscular energy, may find that they cannot bear muscular exertion so well, and that the heart's action is not so strong and steady

Experiments appear to warrant the conclusion that the effect of emotional excitement—of stimulation of the sympathetic nervous system—is a call-up of the sugar supplies, shall we say a flooding of sugar into the blood? The issue, then, will be Can this extra amount of sugar be properly dealt with?

The sugar has to be oxidized into carbonic acid and water The exact chemical changes are unknown Professors Bainbridge and Menzies suggest that lactic acid and pyruvic acid are intermediate products Some persons respond readily to emotional stimuli, their sympathetic nervous system is strongly active, and if there be already a surcharge of sugar in the system, the additional mobilization may be such that the chemical changes, including oxidation, are defective, and there may be, as in diabetes, a toxic acidosis May not migraine be a toxic acidosis? To those who are liable to it, I would suggest that they cut down their supplies of sugar, particularly at times of mental stress, and though as a rule, sugar and carbohydrates should be taken sufficiently to produce fuel for muscular energy, fresh air and deep breathing will be necessary to bring about oxidation of the sugar in the blood, and also bodily exercise to work off any sugar excess

One main reason why migraine diminishes in frequency and severity after middle age may be that the individual, having taken to heart the lessons of the past, is more nonchalant, more indifferent to results So many things which previously were emotional stimuli no longer excite, or excite in diminished degree, the sympathetic nervous system —I am, etc,

G N W THOMAS

Devizes, Aug 23rd

MINERAL ELEMENTS OF FOOD IN RELATION TO HEALTH

SIR,—It is to be regretted that Dr John Boyd Orr, in his very instructive paper you report in your columns (September 20th, p 504), does not include in his remedial measures to meet the deficiency of mineral salts in the average diet the use of whole wheat flour as opposed to white flour

It is evident, from the figures in Table I of his paper, that, while white flour is very deficient in mineral salts, whole wheat—and especially the bran constituent—is comparatively rich in these substances and compares favourably in this respect with milk, which in this particular he takes for his standard

Of the importance of training children to eat whole wheat bread there can be no doubt whatever If there be individuals whose digestive powers cannot deal with it —and this is doubtful—they are already the subjects of disease and disorder of the alimentary tract The healthy child can digest it, and no other kind should ever be offered to children Instead of the patent cereal foods whole wheat flour should be used as soon as the child is weaned Later it should be given the crusts of the whole wheat loaf to cut its teeth on, and in the nursery and in the schools the growing boy and girl should see no other loaf, nor be given any opportunity to develop the vitiated taste for white bread —I am, etc ,

London W Sept 22nd. S HENNING BELFRAGE

WHOLEMEAL BREAD

SIR,—About two decades ago a brown bread campaign was brought prominently before us by Sir Prescott Hewitt, and although it was without the scientific information which we possess to-day, yet the profession was in accord with its supporters The difficulty of its preparation was the crux of the serviceableness of this diet to the general public To overcome the roughness of the grain meal by the miller's stones demanded fine trituration The millers were not prepared to supply offhand the coarse, medium, and fine meal, the additional cost was no little consideration The Thanet wheat of Kent was boomed as a fine cereal growth, and I believe Sir Prescott Hewitt advocated the Riverden Mills in Ramsgate as possessing a special plant for the process Bread was prepared from this celebrated Thanet wheat, and it was also put up in the form of shortbread with added milk But it was found to be too heavy and not easily leavened by yeast fermentation. Thus, as a dietetic article it was only sparingly consumed by a few people Crushed cereals under varying proprietary ownership have to some extent replaced wholemeal bread The question has yet to be solved whether the stickiness of these food preparations taken in the form of porridge, is to the best advantage of human dentition Nevertheless we should be in a position to advise our patients what is the best substitute for the present unsatisfactory white loaf —I am, etc ,

Cheltenham, Sept. 15 h. JOHN FRED BRISCOE

PICRIC ACID DERMATITIS

SIR,—Having read with interest Dr Semon's memorandum in last week's issue of the BRITISH MEDICAL JOURNAL (p 520) under the above heading, I wish to endorse all that he says on the subject

In our textbooks which refer at all to this particular drug eruption the description of the rash is dismissed by saying it is like measles or scarlet fever A case which I was asked to see recently presented the following appearances The skin of the limbs at the site of the dressing and near it was inflamed, with here and there a bulla, as though a mustard plaster had been applied and left on too long On the trunk it was blotchy and of a pale pink colour Several of the blotches were slightly oedematous, with well defined margins, not unlike those seen in erythema multiforme Some of these when pressed upon showed a faint purpuric staining —I am, etc ,

ALFRED EDDOWES, M D , M R C P

London W 1 Sept 21st

TREATMENT OF PNEUMONIA IN AN OXYGEN ATMOSPHERE

SIR,—I herewith enclose the record of two experiments made during an attack of pneumonia contracted by two of my chimpanzees I thought it might perhaps interest some of your readers to know the details of the beneficial results obtained by the administration of oxygen in such unusually large doses

Two chimpanzees, used in my laboratory for antituberculosis tests accidentally developed symptoms of acute mucopurulent infection of the air passages accompanied by severe constitutional symptoms Dr Stephani and Dr Trechsel both diagnosed pneumonia This opinion was confirmed by microscopical examination

CASE I

Chimpanzee Alice female 2½ years old

April 5th Cough anorexia lassitude Treatment 6 drops of turpentine twice a day, in milk and half a spoonful of Famel's syrup To stimulate the appetite one drop of arrhenal and one third of a teaspoonful of granulated condurango and kola were given morning and night

April 7th Cough sputum purulent nasal discharge anorexia prostration breathing very fast and short (60 respirations a minute) pulse uncountable Rectal temperature could not be taken as the animal was getting very upset at each attempt to use the thermometer Microscopical examination showed the presence of a very large number of pneumococci with occasional bacilli of Friedlander in sputum and nasal discharge

April 8th Animal much worse extremely weak, 70 respirations a minute condition of collapse, long and violent attacks of cough rales perceptible without the stethoscope Codeine syrup was then given repeatedly also spiritus ammonii anisatus By this time dyspnoea had become very severe and massive doses of oxygen were then administered To obtain the full benefit of the oxygen the animal was placed four times a day (morning, afternoon, evening, night), for three-quarters of an hour each time in a little box just large enough to contain the ape the box was then closed completely and oxygen introduced by means of two pipes, one at the bottom and one at the top while a small ventilating hole was made at the opposite side Thus 400 litres of oxygen were passed through the box each three-quarters of an hour during which time the chimpanzee was breathing pure oxygen her exhalations being constantly driven out by the current of oxygen The improvement was remarkable and very rapid, and is attributed to the massive doses of oxygen, which were continued in gradually decreasing doses for a fortnight while the general treatment (turpentine Famel's syrup arrhenal kola) lasted three weeks

CASE II

Chimpanzee Vera female 3½ years old

April 10th, 1924 Cough, anorexia prostration The animal remained quiet in a corner refusing to move or eat Treatment the same as for previous animal (turpentine Famel's syrup arrhenal condurango codeine, spiritus ammonii anisatus)

April 12th Violent and frequent attacks of cough much sputum, abundant nasal discharge complete anorexia except for some sugar water with a little milk containing the remedies pulse and temperature could not be taken breathing short and of a whistling type 60 respirations a minute not only at times but all day long condition of collapse Large number of pneumococci and a few bacilli of Friedlander in sputum and nasal discharge Massive doses of oxygen were then administered as described above and within forty-eight hours the animal showed such an improvement that it could be considered out of danger although the sputum and nasal discharge containing the above named micro-organisms lasted during several more days

The two chimpanzees made a complete recovery and are now in perfect health In both cases the symptoms of pneumonia seem to have been most rapidly and favourably influenced by means of the large quantities of oxygen given daily The facts—(1) that pneumonia is usually fatal in chimpanzees, (2) that all acute symptoms disappeared before the usual time of a normal crisis, (3) that the improvement was very great and most rapid as soon as the oxygen was administered—seem to indicate that the oxygen *given in massive doses* had a remarkably beneficial effect —I am, etc ,

H SPAHLINGER

Institut Bacteriotherapique Carouge Geneve Sept 14th

THE "ERA" CULT

SIR,—A short while ago you had an article on ERA advising those practising it to give it up on the grounds that they did not know what they were doing Were this applied all round the bulk of medical practice would cease forthwith In the practice of ERA work as carried out by some of us, we can make a claim that cannot, I think, be quite paralleled in any other branch of work—that is, we can give a minute test dose or series of test doses to our subject till we hit on the right dosage for our patient The original 10 rate distribution unit has had fitted to it by our consulting electrician, Mr Yeo, an intermediate 10 rate We find that after a short period of vibration the organisms affecting the patient alter, and that to abolish the reflex caused by them we have to use say in the case of streptococcus, a 2 1 rate in place of 2, a week later we have to use 2 2 Other organisms vary but do not appear to require such rapid changes of rate as the streptococcus

The change of rate necessary to abolish the reflex is got by holding an electrode attached to a treatment unit about two feet from the subject Personally I test the reaction with the finger, and consider the reflex abolished only when a silky smoothness takes the place of the gritty feel got when the reflex is present The fact that a change is necessary shows we are affecting the organism we are dealing

with This change may well be due to an attempt on the part of the micro-organism to change into something not affected by the vibrations Past failure to deal with the streptococcus is probably due to its capabilities of change, or possibly may be due to the presence of a number of allied species, all of which have to be dealt with As all organisms I have treated seem to do the same thing, it is more likely that they all undergo a metamorphosis E R A is a progressive business, and every month brings some fresh discovery As now arranged by the advice of our electrician, Mr Yeo, we are getting vibrations which can be heard with an audiphone two feet from the patient's body and felt easily on contact with the patient As far as one can judge from a short experience, these more powerful vibrations produce more rapid effects I am now thinking the whole matter stands or falls by the diagnosis, according to most general practitioners and the public the one matter of importance is results I claim that the results are good, but can be vastly improved by the physician and electrician working together Scarcely a month passes without some improvement in technique being found Fresh wave rates are being worked out for certain organisms which, if present rates represent the trough, the new rates will represent the crest of the wave

As a means of diagnosis Abrams's instruments give opportunities afforded by no other means Without puncture of the skin or other structures it is possible to prove the presence of organisms and their character in any position in the body It is because one can ascertain the cause of various troubles that one can often relieve cases which have baffled a long series of medical men for years To cease investigation and treatment on these lines would be to put back the clock This will not happen in England, we may be slow and conservative, but we hang on I believe I am right in saying that the cure of a certain class of nerve cases is only possible in a reasonable number of months by E R A methods All I need say about diagnosis now is this Since the guide for my treatment of the case is the measured vibration from my oscilloclast, which will abolish the reflex caused by the organism I am treating, it does not matter what the name of the organism is For example, I get a patient who has suffered from headache and nerve symptoms, I find from the spleen and certain positions on the head a large number of units of rate 57, taking the personal rate I find rate from the oscilloclast, 3 abolishes the reflex, and later 3 or its decimals relieves the condition Am I, because there is scientific doubt as to the diagnosis, to cease using the oscilloclast?

While we are relieving pain we are also in a humble way adding to human knowledge E R A work honestly done is not rule-of-thumb but a matter of adjusting rates of vibration and duration of treatment to the needs of each particular case It has infinite possibilities, and deserves the support of the profession

The effects of vibration from organisms are so permanent that they will remain for weeks and months, perhaps years, unless disturbed by magnetic waves When the *Scientific American* observers abstracted blood from the dynamizer and were amused that the operator got the same result whether the specimen was present or not, they had struck an interesting fact unwittingly, but instead of seeking the cause they jeered at the observer I have repeated the experiment while my subject was not looking and find the vibrations remain the same in character To remove these the use of a magnet is necessary My partner, Dr Hessey, pinned a carcinoma blood on the wall for practice in testing, the spot where it had been gave a carcinoma reaction three weeks afterwards While results remain good and there are a world of interesting phenomena to investigate, to drop E R A would be cowardly folly—

I am, etc,

W G RICHARDS, M B,
Major I M S (ret)

St Leonards on Sea, Aug 15th

MEDICAL OFFICERS AND CONSULTING FEES

SIR,—In the JOURNAL of September 20th appears a short letter from "Tuberculosis Officer" on this subject It is singular that he has not signed his name, and it has been my custom in the past to reply to remarks only from those who so sign, but upon this occasion I will do otherwise

This correspondent appears terribly aggrieved at the recommendation of the Representative Body at Bradford, which he says he reads with amazement—that is, that "whole-time" medical officers should not accept fees for private consultations as he has already done I trust he has had the sanction of his council When these gentle men are worth consulting let them by all means be consulted in the ordinary course of their duties as a whole time official, but "Tuberculosis Officer" appears to regard his fee as the essential part of a consultation, which is a poor ideal

I agree entirely with the recommendation of the Representative Body at the Bradford meeting The profession must be disappointed with the results of this special treatment of tuberculosis

I venture to suggest that those gentlemen who act as tuberculosis officers are, many of them, not well selected Many of them have never even been a house physician, much less one in a chest hospital, and often receive their appointments as a step up the ladder after being an assistant school medical officer Many of them are quite juniors with no previous special training in chest diseases Their salaries are good, and in many cases too high for the work they do in comparison with the work done and hours of duty and income of a general practitioner after he has deducted his expenses, which the tuberculosis officer has found for him

These whole-time medical officers are not necessarily specialists in the sense understood by those who desire expert advice, and it is a title that they have wrongly assumed for themselves, the profession, moreover, as a whole does not recognize them as such, and all their efforts will not reverse the recommendation referred to, as "Tuberculosis Officer" suggests—I am, etc,

ARTHUR M BARFORD

Chichester, Sept 20th

THE GENERAL PRACTITIONER AND PREVENTIVE MEDICINE

SIR,—I wish strongly to deprecate the differentiation attempted by "Whole Time" (September 20th, p 543) between, on the one hand, the tuberculosis, venereal disease, and child welfare officers, who are, or should be, specialists, and on the other the assistant school medical officer, who need only be a junior man or woman Surely the assistant school medical officer is, or should be, a physician with a broad outlook on children and their diseases, and a special leaning towards preventive medicine He should be able to give a reasonably sound opinion on a child's chest and write an intelligent report on his or her mental condition His professional status should be such as to command the confidence of the parents, the teachers, and the general practitioners of his area, to whom he refers certain cases for treatment He can hardly be expected, in addition, to estimate errors of refraction and to enucleate tonsils with proper efficiency Such work is appropriately given to others, whether part time or otherwise

Although I have been qualified nearly ten years, I do not find the inspection of school children, in my area at any rate, either easy or merely routine—I am, etc,

M A, M D, D P H

September 20th

EARTHENWARE OR ENAMEL?

SIR,—Within a few months I have been called upon to attend two young women with buttock wounds, in both cases the wounds were the result of the breaking of a "chamber" when in use During thirty odd years of practice I have had to deal with this accident not a few times, and no doubt my experience in this respect is a common one in the work of most practitioners and hospital house-surgeons

It seems to me that in these days when enamelled ware of all kinds is turned out so elegantly there should be no difficulty in replacing the earthenware utensil now in general use by something which would entirely eliminate the risk of such accidents

In my opinion this is a desirable reform which the women doctors of the country might well advocate, and I believe most lay women would be ready to adopt it—I am, etc,

FRANK C FORD

London, S W 19, Aug 24th

The Services

THE HEALTH OF THE NAVY

The report for 1921 of the Director-General of the Medical Department of the Navy is the first issued since that for 1915 the preparation of the statistical reports for the years 1916-20 inclusive having been cancelled by order.[1] Since there are therefore no figures for any of these years available for comparison with the 1921 figures it has been found necessary for this purpose to make use of the figures for 1909-13. An improvement in the general health of the fleet in 1921 is discernible as compared with the five years period there being a relative decrease of 56·76 per 1,000 in the total number of cases of disease and injury entered on the sick list. For the total force the average per man was 0·52 as compared with 0·64 in 1913 the number of such entries on the different stations being East Indies 1·22 China 0·91 Mediterranean 0·60 North America and West Indies 0·61 Africa 0·61 Home Station 0·56 Irregular List 0·50 and Atlantic Fleet 0·48. Moreover the average loss of service for each individual in 1921 compares favourably with the five years ratio and also with that for 1913. The ratio of final invaliding out of the service was 23·22 per 1,000 as compared with 15·46 in the five years period. The death ratio in 1921 was 3·58 per 1,000 as compared with 3·21 of the total number of deaths (337) injury was the cause in 168 and disease in 229.

A statistical account of the various diseases and injuries reported from the different stations is provided. There was an increase of influenza cases of 17·24 per 1,000 as compared with the five years average but the disease was of a very mild type and the death ratio in 1920 was the same as the average. A relative decrease in incidence occurred in pneumococcal infections of the lungs and rheumatic fever a slight increase in nerve diseases and a fractional increase in tuberculosis. In the case of venereal diseases there was an increase of 3·37 per 1,000 in the incidence ratio as compared with the five years average the highest case ratio (30·04) being given by the China Station and the lowest (21·93) by the Home Station.

DEATHS IN THE SERVICES

Surgeon General William Richard Brown C.I.E. Madras Medical Service (ret.) died at La Soldanelle, Pougerert, Switzerland on September 16th aged 74. He was born on May 23rd 1850 educated at Queen's College Belfast and at the Carmichael School Dublin and graduated as M.D. and M.Ch. in the Queen's University Ireland in 1871. He entered the I.M.S. as assistant surgeon on April 1st 1873 and was promoted to surgeon three years later when the rank of assistant surgeon was abolished. After ten years service in military duty and as a district surgeon he was posted to the Madras Medical College in 1883 a professor of pathology and resident surgeon of the college hospital and spent just twenty years at the college during which time he held successively several chairs ending up as principal and professor of medicine. He was promoted to colonel on May 15th 1903 and reverted to military duty as principal medical officer (what would now be called A.D.M.S.) of the Madras district. Eighteen months later he was elected for the post of surgeon-general Madras and head of the Madras service on October 11th 1904 when he succeeded Surgeon-General Sinclair. He retired on April 1st 1908. He received the C.I.E. on January 1st 1906 and a good service pension on March 25th 1907. His only war service was the Pumpa rebellion of 1879-80.

Colonel George Henry Barefoot C.B. C.M.G. Army Medical Staff (ret.) died suddenly in London on September 13th after playing bridge at the East India United Service Club. He was born a Tripasur South India on December 23rd 1864 educated at University College London and after taking the Scott Exhibition triple qualification in 1885 entered the army as surgeon on July 28th 1886. He was gazetted colonel in the long promotion list of March 1st 1915 and retired on October 7th 1919. He served in the Hazara campaign on the North West frontier of India in 1888 when he was mentioned in dispatches and received the frontier medal with a clasp. As a lieutenant-colonel he held the posts of senior medical officer at Dinapore in Bengal and at St. Lucia in the West Indies and the command of the military hospital at Winchester. During the recent war he served as a D.D.M.S. was thrice mentioned in dispatches—in the *London Gazette* of October 19th 1914 January 1st 1916 and January 4th 1917—and received the C.M.G. in 1915 and the C.B. in 1917.

Lieut.-Colonel John Armstrong P.A.M.C. (ret.) died at Old Charlton Kent on August 31st aged 69. He received his medical education in the school of the Royal College of Surgeons Ireland and took the L.R.C.S.I. in 1875 and the L.K.Q.C.P. in 1876. Entering the army as surgeon on August 5th 1877 he became lieutenant-colonel after twenty years service and retired in July 1903. He served in the South African war from 1899 to 1902 when he was P.M.O. to the 2nd Division Natal Field Force under General Sir Redvers Buller V.C. and was present at the actions of Vaal Kranz and Peters Hill the operations on the Tugela Heights and in the relief of Ladysmith. He received the Queen's and King's medals with three and two clasps respectively.

Major Ferdinand Clarence Smith Madras Medical Service (ret.) died suddenly of heart failure at Watford Herts on August 7th aged 69. He was the son of the Rev. Dr. Francis Smith M.A. M.D. Cantab. of Parkstone Dorset for several years a regular chaplain in Burma. Mary and a brother of Deputy Surgeon-General Clarence Cooper I.M.S. who at the age of 94 has been for the past year the senior officer on the retired list of the Indian Medical Service. Major Smith was educated at University College London and took the M.R.C.S. the L.R.C.P. London and the L.S.A. in 1877 and the F.R.C.S. Edin. and the M.P. and M.S. Durh. in 1883. He entered the I.M.S. as surgeon on March 30th 1878 became surgeon-major after twelve years service and retired on July 1 1899. While in the I.M.S. he held the important posts of surgeon to the Madras General Hospital and of civil surgeon of Tanjore and superintendent of the Prince of Wales medical school at that station. After his retirement he remained in Madras where he had a large practice for twenty years till 1915 when he came to England to offer his services in the war. After serving for two years at base hospitals in France he was appointed in 1917 surgical specialist to the Indian War Hospital at Karachi but was invalided in the following year, suffering from rheumatic fever originally contracted in France which affected his heart and from the effects of which he never fully recovered. After eighteen months severe illness he was able to begin practice at Watford where he was held in great affection by his numerous patients.

[1] *Statistical Report of the Health of the Navy for the year 1921.* London: H.M. Stationery Office: or to be purchased through any bookseller. 1/2. 6s. 6d. net.

Universities and Colleges

UNIVERSITY OF LONDON

UNIVERSITY COLLEGE

On Friday October 3rd at 5.30 p.m. Professor T. Percy Nunn will lecture on the scientific investigation of nature. This lecture is introductory to the new course for the M.Sc. on the principles history, and method of science. Professor Ernest Starling will be in the chair. The lecture is open to the public without fee or ticket.

Obituary

THE LATE MR. BROMFIELD PATERSON.—We are indebted to Mr. J. G. Turner, L.R.C.S., for the following personal appreciation of Mr. W. B. Paterson, formerly dental surgeon to St. Bartholomew's Hospital, London, of whom an obituary notice was published last week.

The death of William Bromfield Paterson comes to me as one of my dearest friends, and I cannot but believe that many others who knew him personally better than I did—and he glad to read even a halting tribute to such—I may write. The many knew him as an eminent professional man; few knew him as a happy, simple, unpretentious, and charming optimist. Such I the character I shall remember as out of a long friendship. I was to be best in London and all was arranged—as could be with the war cloud threatening. We consulted and Willie Paterson's solution of the difficulty was a couple of days' outing to calm our nerves—and two memorable days I spent with Paterson and many parts of the Devonshire coast—the Devonshire roll under hatched with the Devonshire kerb and the Devonshire crawl to approach your fish. One other thing can I say—we caught no fish. But we were happy, and it was characteristic of the man that all around were cheerful through his splendid example of higher things and in England's worth.

DR. MICHAEL WILLIAM KELLY, who died on August 24th, aged 45, was the son of the late Mr. Michael Kelly of Wexford, and was educated at the Catholic Medical School in Dublin. In 1904 he received the diplomas of L.R.C.P.I., L.R.C.S.I., and L.M. After filling the posts of house-surgeon to the Mater Misericordiae Hospital, Dublin, and assistant master of the National Maternity Hospital, Dublin, he also held appointments at the Portrane Asylum, Donabate and the Royal Victoria Hospital Bournemouth. He was appointed, in 1907, medical officer to the Killanne Dispensary District. He took part in the framing of the regulations which established the Irish Board of Health, and was one of the medical representatives on the Board. During the second Dail he was a district court judge, and until some months ago was chairman of the North Wexford Sinn Fein executive. He had been a member of the British Medical Association since commencing practice. He leaves a widow and three children.

DR. GRALL, the Inspector-General of the French Colonial Health Service, who died recently at Nice, spent most of his life in Guiana, New Caledonia, Indo-China, and, during the war, in the Near East. His numerous publications included studies on leprosy, malaria and yellow fever; he collaborated also in the production of a treatise on tropical pathology.

OPENING OF THE WINTER SESSION

LONDON MEDICAL SCHOOLS

THE following arrangements have been announced in connexion with the opening of the new winter session at the various medical schools in London

The St Bartholomew's old students' dinner will be held on Wednesday, October 1st, in the Great Hall of the Hospital at 7 for 7 30 p m , with Dr J H Drysdale in the chair

The prizes to students at Charing Cross Hospital Medical School will be distributed on Wednesday, October 1st, at 3 30 p m , by Sir Humphry Rolleston, Bt , President of the Royal College of Physicians of London The annual dinner of past and present students will be held on the evening of the same day at Gatti's Restaurant, when the chair will be taken at 7 30 by Mr Charles Gibbs, senior surgeon to the hospital

The prizes at St George's Hospital Medical School will be distributed on Wednesday, October 1st, at 3 p m , by Sir Isambard Owen, M D , who will also preside at the annual school dinner at the Hotel Metropole on the same evening

At the opening of the new session at King's College Hospital Medical School, Denmark Hill, on Wednesday, October 1st, at 2 30 p m , the introductory address will be delivered by Sir David Ferrier, M D , F R S , Emeritus Professor of Neuropathology and Fellow of King's College The chairman of the hospital, Viscount Hambleden, will preside

The annual old students' dinner of the London Hospital Medical College will be held on Wednesday, October 1st, at the Trocadero Restaurant, under the chairmanship of Professor William Bulloch, F R S

The annual dinner of past and present students of St Mary's Hospital Medical School will be held at the Connaught Rooms, Great Queen Street, W C , on Monday, October 6th, when Dr E M Callender, C B E , will take the chair at 7 30 p m

The winter session of the Middlesex Hospital Medical School will open on Wednesday, October 1st, Dr Charles Porter will deliver an introductory address at 3 p m at the Queen's Hall on some aspects of preventive medicine, and the prizes will be distributed by Lord Birkenhead The annual dinner will be held the same evening at 7 30 at the Hotel Cecil, when Mr G Gordon Taylor will preside

The annual dinner of past and present students of St Thomas's Hospital will be held on Friday October 24th, at Prince's Restaurant, Piccadilly, W , under the chairmanship of Dr Seymour Taylor

Owing to the sudden death of Dr Sidney Martin, senior physician to University College Hospital, the dinner of the past and present students which was to have been held at the Hotel Cecil on October 3rd has been postponed to some date to be arranged in December

At the University of London, University College, on September 29th and 30th from 10 a m to 1 p m , first year students of the Faculty of Medical Sciences will be received by the Provost, the Dean of the Faculty, and the Subdean On September 29th, from 2 15 to 4 p m , students of the Faculty of Medical Sciences other than first year will be received, on the same day at 3 15 p m candidates for the Diploma of Public Health will be received by Professor Kenwood The new buildings for anatomy, anthropology, embryology, histology, and physiology, provided from the gift of the Rockefeller Foundation, are now completely equipped

At the Westminster Hospital Medical School the new session will begin on Thursday, October 2nd, and the inaugural address will be delivered in the board room of the hospital at 3 p m by Mr H J Waring, on 'The medical man of the future'

At the opening of the eighty third session of the Pharmaceutical Society of Great Britain the President, Mr F Pilkington Sargeant, will deliver the inaugural sessional address and present the Perera medal on Wednesday, October 1st, at 3 p m

NEWCASTLE

In connexion with the opening of the winter session 1924 25 at the University of Durham College of Medicine, Newcastle upon Tyne, an introductory address will be given by Sir Thomas J Horder, Bt , M D , physician to St Bartholomew's Hospital, in the Examination Hall of the College, on Monday, October 6th, at 4 p m

Medical News.

THE Royal Society of Medicine will hold its first social evening of the session at 1, Wimpole Street, London, W 1, on Thursday, October 16th, at 8 30, when Fellows and guests will be received by the new President, Sir StClair Thomson At 9 30 p m Dr Grenfell of Labrador will give a brief discourse on "Medicine in a corner of the Empire," with lantern illustrations

THE annual dinner of the Chelsea Clinical Society will be held at the Cafe Royal, Regent Street, W , on Tuesday, October 21st, at 7 for 7 30 p m

THE second week of the course in general medicine and surgery at the Westminster Hospital begins on Monday next, September 29th , entries can still be accepted On the 30th a four weeks' course of lecture demonstrations will be started at the Bethlem Royal Hospital The lectures are given on Tuesdays and Saturdays at 11 a m by Dr Porter Phillips and Dr Thomas Beaton, and the fee for the course is one guinea Commencing on October 6th, a course on tropical medicine at the London School of Hygiene and Tropical Medicine comprises a series of eight clinical demonstrations, and extends over four consecutive weeks A series of four lecture demonstrations on treatment by electro therapy will be given by Dr C B Heald at the Royal Free Hospital, beginning on October 7th Syllabuses of all these courses may be obtained from the Secretary of the Fellowship of Medicine, 1, Wimpole Street, W 1

A COURSE of instruction for health visitors and child welfare workers commences at the Royal Sanitary Institute, Buckingham Palace Road, London S W , on September 29th, as a preparation for the health visitors' examination of the Institute The subjects to be dealt with include vital statistics, health legislation, duties of health visitors, ante natal and infant hygiene, house sanitation, and home visiting In connexion with the course visits will be paid to welfare centres, clinics, and schools for mothers A course of practical training for meat and food inspectors will be held at the Institute from October 3rd onwards

AT a meeting of the Medical Officers of Schools Association to be held on Wednesday afternoon, October 8th, at 11, Chandos Street, Cavendish Square, W 1, Dr Robert Hutchison will open a discussion on the relative values of stone milled and other flours and breads in relation to the nutrition of the growing child There will be an illustrative exhibit of stone milled flours, breads, and other wheaten foods, etc Tea will be served at 4 30, and the discussion will continue from 5 to 7 o'clock

THE thirteenth annual general meeting of the British Commercial Gas Association will be held at Liverpool on Monday, Tuesday, and Wednesday of next week The programme includes a lecture by Dr C W Saleeby on "Light and Life," and an address by the Bishop of Liverpool on "The Worker and his Work"

AN epidemic of bacillary dysentery has recently broken out in Pomerania

THE Ministry of Health announces that the statements in a recent issue of the *Daily Express* as to the stamping out of tuberculosis within the next ten years, and as to the Spahlinger treatment for tuberculosis, are incorrect and unauthorized The most recent official statements as to the decline in tuberculosis and the Spahlinger treatment are contained in the Annual Report of the Ministry for 1923-24 and the Report of the Chief Medical Officer for 1923

THE second number of the *Junior Red Cross Journal*, just published by the British Red Cross Society, contains an account of the work and methods of the Junior Red Cross in health education A description is given of the Star and Garter Home for Disabled Sailors and Soldiers at Richmond and the special work performed by the Red Cross in connexion with the Scout Jamboree at Wembley The number is well illustrated and should interest, as well as instruct, the children to whom it is addressed

DR F J WALDO, at the Southwark coroner's court, on September 19th, referred to the new regulation of the London County Council disallowing fees to medical officers of Poor Law institutions for making necropsies In his other jurisdiction in the City of London he still continues to pay the Poor Law and prison medical officers their statutory fee of 1 guinea for performing a necropsy, and 1 guinea for giving evidence when called upon by himself as City coroner Dr Waldo said he had always been in favour of a fee of 2 guineas being paid for a complete *post mortem* examination performed on a coroner's order, as was the practice in Australia, together with a fee of 1 guinea a day for giving evidence, this being payable to all registered medical practitioners without distinction

THE sixteenth report of the Norwood Sanatorium for the Treatment of Alcoholism and other Drug Habits (The Mansion, Beckenham Park, Kent) covers the three years 1921, 1922, and 1923. During the first of these years 201 patients were admitted, and during each of the second and third 214 patients. The report includes clinical notes by the medical superintendent, Dr Francis Hare, and an account of the treatment adopted.

THE Tokyo death rate has increased 100 per cent., as compared with the period before the earthquake last year. This is largely due to the prevalence of infectious diseases, including typhoid fever. It is officially reported, however, that contagious diseases are rare among those living in improvised dwellings owing to the precautionary measures in force. On July 10th a medical examination was made of 22 284 persons out of the 43 774 so accommodated with the result that no case of infection was detected, there being brought to light only three cases of sunstroke, seventeen of influenza, and sixty four of intestinal catarrh.

DR M JEAN CAMUS professor of physiology at the Paris Medical School, has been elected a member of the French Academy of Medicine.

THE following congresses of Italian societies have been arranged. The thirteenth Congress of Stomatology will be held at Naples from October 13th to 17th, when the following subjects will be discussed: rearrangement of odontological studies, introduced by Professor V. Beretta of Bologna; pathogenesis of dental caries, introduced by Professor G. Mamcardi of Modena; odonto-facial neuralgia introduced by Dr G. Grandi of Trieste. The Congress of Pediatrics will be held at Milan from October 22nd to 25th, when C. Pestalozza and C. Doria will introduce the subject of the determination of the food ration in the child; G. Berghinz the subject of diathesis and constitution in infancy; whilst "parascholastic" institutions and their hygienic and social importance will be discussed by M. Raspi. The Congress of Surgery will meet at Milan from October 26th to 28th: a discussion on sympathectomy will be introduced by G. Uffreduzzi and another on indications for operation in splenomegaly by F. Micheli and Cappelli. The Congress of Internal Medicine will follow the Congress of Surgery at Milan from October 28th to 31st, and deal with the following subjects: suprarenal syndromes, introduced by M. Pende and C. Piazza, and progress in the diagnosis of nephritis introduced by L. Ferranini: the members will unite with those of the Congress of Surgery in the discussion of operation in splenomegaly. The Italian Society of Urology will hold its annual meeting at Milan on October 28th, when G. Lasio will speak on diverticula of the bladder, and C. Bruni and S. Colombino will discuss fulguration of the vesical mucosa. The twenty first congress of the Italian Society of Dermatology and Syphiligraphy will be held at Padua in the second fortnight of December, when the subjects to be discussed will be experimental cutaneous cancer, introduced by Professor E. Bizzozero of Turin, and the cure of syphilis, introduced by Professor L. Tommasi of Florence.

THE eleventh French Congress of Hygiene will be held in Paris from October 20th to 24th, when the following papers will be read: Instruction in hygiene in France by MM. Dequidt and Rochaix: preliminary report on instruction in hygiene abroad, by M. Léon Bernard, instruction in hygiene in secondary schools, by M. Pacaut and Mlle T. Robert, instruction in hygiene in technical institutes, by M. Iras, experimental hygiene and laboratory research, by M. Dujarric de la Rivière, general hygiene and social hygiene, by M. Briau, cleansing of used water, by M. Dienert, role of sunlight in the growth of the child and the physiological equilibrium of the adult, by M. Armand Delille. Admission to the congress is free. Further information can be obtained from M. Bossus, 142, Boulevard Montparnasse, Paris.

THE third International Congress of Military Medicine and Pharmacy will be held in Paris from April 20th to 25th, 1925. An executive committee has been formed, consisting of Inspector General Vincent as president, Drs. Achard, Dopter, Faure, Hartmann, Lejars, Nobecourt, Teissier, and others.

THE tenth French Congress of Legal Medicine will be held at Lille from May 18th to 20th, 1925, under the presidency of Dr J. Leclercq of Lille, when the following subjects will be discussed: (1) Death from "inhibition," introduced by Dr Duvoir of Paris. (2) Trauma and malignant growths, introduced by Drs. Cordonnier and Mullen of Lille. (3) The criminality of persons with skull wounds, introduced by Dr Porot of Algiers.

THE French Society of Ophthalmology at the invitation of the corresponding Belgian Society, will hold its thirty eighth congress in Brussels next year, commencing on May 11th.

A BUST of the celebrated sixteenth century physiologist, Santorio Santorio, was recently unveiled at Capodistria at the termination of the Italian Congress of Hydrology.

Letters, Notes, and Answers.

ORIGINAL ARTICLES and LETTERS *forwarded for publication are understood to be offered to the* BRITISH MEDICAL JOURNAL *alone unless the contrary be stated.* Authors desiring reprints of their articles publish d in the BRITISH MEDICAL JOURNAL are requested to communicat with the Financial Secretary and Business Manager 429 Strand W C 2 on receipt of proof.

ALL communications with reference to advertisements as well as orders for copies of the JOURNAL should be addressed to the Financial Secretary and Business Manager 429 Strand London, W C 2. Attention to this request will avoid delay. Communications with reference to editorial business should be addressed to the Editor BRITISH MEDICAL JOURNAL 429 Strand W C 2.

CORRESPONDENTS who wish notice to be taken of their communications should authenticate them with their names—not necessarily for publication.

THE telephone number of the BRITISH MEDICAL ASSOCIATION and BRITISH MEDICAL JOURNAL is Gerrard 2630 (Internal Exchange). The telegraphic addresses are:

EDITOR of the BRITISH MEDICAL JOURNAL: *Articulate Westrand, London.*

FINANCIAL SECRETARY AND BUSINESS MANAGER (Advertisements etc.): *Articulate Westrand London.*

MEDICAL SECRETARY: *Meliorate Westrand London.*

The address of the Irish Office of the British Medical Association is 16 South Frederick Street Dublin (telegrams *Bacillus Dublin* telephone 4737 Dublin) and of the Scottish Office 6 Rutland Square Edinburgh (telegrams *Associate, Edinburgh* telephone 4361 Central).

QUERIES AND ANSWERS.

"A P" (Pretoria) desires to find a paper by Hutchinson which deals with the aspects of colonies of bacilli as seen in micro copic sections. Schubert (*Centralbl f. Bakt.* Originale 1920) refers to it but omits to say where it was published. Efforts to trace the paper in South Africa have proved fruitless. A letter addressed to Dr Schubert has not been answered.

TREATMENT OF ALOPECIA.

"MEDICO" asks for suggestions for the treatment of a case of alopecia (non syphilitic) in a patient who so far has resisted the usual washing with Hebra's soap spirit and ordinary hair tonics.

CONSTRUCTION AND EQUIPMENT OF ANTE NATAL, TUBERCULOSIS, AND OTHER CENTRES.

"SANITAS" would like to know of a book dealing specially with the public health services in relation to ante natal work, maternity centres, tuberculosis and venereal disease dispensaries and treating of the size, equipment, etc. of such centres for rural and urban areas, small towns and large cities.

*** We have made inquiries but have failed to hear of any work of the kind.

INCOME TAX.

"W J D" has a practice in Malaya but is residing temporarily in this country. He receives monthly remittances of the profits of his practice after payment of the fees of his locumtenent. How should the income be assessed?

* Our correspondent should consider the facts of the case and decide whether he is in fact still conducting the practice through his locumtenent or whether he has for the time being given up control of the practice. In the former case he would be able to claim the earned relief but might be held liable to account for tax on the net unremitted profits (if any) in the latter case he could return the income as derived from a "foreign possession" liable on the basis of the actual sums remitted. On that footing his liability works out as follows for 1924–25:

Income from practice in Malaya		£3 0	
Income from investments in Malaya		£270	
			£6 0
Deduct—Personal allowance (married)		£72 5	
Children allowance (2)		£0 3	
			£33
Income liable to tax			£42
Of which £225 is chargeable at 2s. 6d.		£25 6 3	
£117 4s. 6d.		£25 6 6	
			£51 12 9

No deductions are due in respect of the purchase of the car in this country or the expense of attending post graduate classes, such expenditure is in the nature of capital outlay and in any case is not incurred in the earning of the income now received from Malaya.

"D G C" inquires whether he is liable to pay local rates in respect of a house which has been standing empty but for which he has been paying rent.

*** If the house was empty—that is not containing furniture—there was no beneficial occupation and the rates are not legally enforceable.

LETTERS, NOTES, ETC

HERPES AND VARICELLA

DR FREDERICK MACSORLEY (Belfast) writes The following case, which recently came under my notice, serves to prove that a casual connexion exists between herpes zoster and varicella A girl, aged 5, developed chicken pox She lived in the down stairs portion of a house with her father and mother The upper portion of the house was inhabited by a man and his wife About twelve days after the rash appeared in the child a herpetic eruption developed in the father, in the right fourth to seventh intercostal spaces Simultaneously, the woman in the flat above developed well marked herpes zoster supraorbitalis Mere coincidence does not explain satisfactorily the occurrence of two cases of herpes in a house where varicella exists

DERMATITIS DUE TO HAIRY CATERPILLAR

DR C B ROSSITER (London, E C) writes Surgeon Commander Cock's note in your issue of September 20th (p 550) with reference to my observation on caterpillar dermatitis is very interesting I merely desired to record the peculiar fact that the insect seems to be able to expel its fine hairs like porcupine quills or arrows, and it now appears that these are analogous to poisoned arrows Still it is curious that while each hair sticking in the epidermis is surrounded by a ring of hyperaemia the intervening spaces, unless altered by scratching, are clear and normal, whereas if the irritant produces its effects by mere contact or smearing, as suggested by Fabre, one would expect the hyperaemic areas to be patchy or continuous—for example, as they would be, say, if painted with acetum cantharidis Those familiar with the prickly pear know that if an attempt is made to pluck the fruit with the naked hand one is rewarded with a shower of fine hairs which shoot out of the fruit and stick into the fingers, etc , setting up most intense irritation Possibly these hairs are also covered with some chemical irritant, but it seems hardly necessary to assume that more than the mere penetration of the hair into the epidermis is required to produce what in my opinion is a very analogous condition Another instance I might quote is the irritant effect of cowhage [the stinging hairs of *Mucuna pruriens*] in its usual dry commercial condition A little scattered and lightly rubbed on the hand produces an almost identical effect to the above, and if a lens is used the hairs can be seen sticking out erect from the epidermis, each with its hyperaemic ring A curious fact also is that while these caterpillars are covered with both very long and very short hairs it is only the short variety which is seen on the skin, and these hairs would be sheltered by the long ones from the irritant "droppings" Possibly an explanation is that only caterpillars that "dwell in nests" have the power of expelling their hairs, but here my knowledge of entomology fails me

POISONING BY MUSHROOMS

DR J S PEARSE (Plymouth) writes Dr W B Winckworth's note of cases of poisoning by mushrooms (September 13th, p 493) is of interest As he suggests, a possible explanation of the poisoning may be in the cooking One fact that should be kept in mind is that mushrooms should never be cooked twice If they form part of a stew, and the stew be left to cool and then reheated, the mushrooms are liable to become poisonous To take whisky, brandy, or gin with mushrooms is dangerous, and asking for trouble Having eaten the stalks as well as the tops of many a mushroom without any ill effects, I am sceptical as to any poison being contained in the stalk Of course, if any extraneous matter adheres to the stalk one can well believe some ill effects may arise from the eating of it It is therefore advisable to cut off the end of the stalk and to peel the top Mushrooms are a valuable food, containing, as they do, some 3½ to 4 per cent of protein

PAPILLOMATA OF THE LARYNX OF CHILDREN

DR CHARLES J HILL AITKEN (Kilnhurst, near Rotherham) writes In his book, *Diseases of the Nose and Throat*, Mr Tilley tells of three children who, because of their symptoms, were diagnosed as suffering from diphtheria with laryngeal obstruction and treated accordingly, later the correct diagnosis of papillomata was made Fortunately I had read this, otherwise I might have been misled when I was called to a child, aged 4 years, with marked laryngeal obstruction I advised tracheotomy, which was performed, and a few weeks later papillomata were removed from the larynx This attack of dyspnoea was the worst the child had suffered I was lucky to have seen the patient in the attack, as others had attended the child on previous occasions, but the parents had decided that, as the croupy cough complained of disappeared under treatment with a simple cough mixture, they did not need to take the child to see the doctors again

ACUTE PUERPERAL INVERSION OF THE UTERUS

DR J R C STEPHENS (M O West African Medical Staff, Ilorin, Northern Nigeria) writes that he was interested to read in the BRITISH MEDICAL JOURNAL of July 12th, which arrived by the last mail, the notes on inversion of the uterus (p 88) He sends the following record of a case he saw recently "Early one morning I was asked to see a native woman, but did not know what troubled her I went to her house and found her on the mud floor (all women are delivered here in the sitting position) with a fine female child, the placenta being on the ground but not separated The woman herself was sitting in a pool of blood, faeces, and urine, the fundus of the inverted uterus nearly touching the ground She was quite cheerful, with good pulse, and complained of being hungry I took a pad of cotton wool and gently replaced the uterus, and left her to be cleaned I had no conveniences for any treatment at the time I saw her again in the afternoon, and she was perfectly well, two days later she walked to my out-patient department with the babe on her back Since then she has made no further appearance at the hospital, and I often see her carrying the child, which is doing well"

NEOLITHIC MAN IN MALTA

DR T ZAMMIT, C M G , Rector of the University of Malta and Dr Charles Singer have contributed a joint paper to the *Journal of the Royal Anthropological Institute* (vol liv) on neolithic representations of the human form from the islands of Malta and Gozo The figures were found in what were no doubt temples usually built in pairs In the instance of which a diagram is given one of the pair is much larger than the other The figures are of both sexes, but their peculiarities are most striking in those representing women They have enormous buttocks, fat bellies, and pendulous breasts, but small hands, feet, and heads The artist must have possessed considerable skill, for some of the faces are so specialized that, as the authors say, they were almost certainly portraits In showing figures of extreme fatness the artist would seem to have been working in compliance with some convention, probably religious, which, as is suggested, may have had something to do with fertility, the fat images being conducive to fat crops, but the result, especially the back view, is distinctly comical The portrait models are probably of an offertory character The date of the temples and statues does not appear to be known, but they seem to have been erected before metal reached the islands

A HOUSE OF REST

DR D W SAMWAYS (Knowle, Clyst St George, Devon) writes, There is in Mentone a "house of rest" provided for professional men with restricted means who are temporarily in need of rest or change An inclusive charge of 30s weekly is made The home opens on November 1st It may, on occasion, be useful to members of the profession or to some of their patients Particulars can be obtained by writing to the Matron (Miss Goldie), House of Rest, Quartier Carnoles, Menton, Alpes Maritimes, France Dr Stanley Rendall and I act as honorary physicians

A JENNER RELIC

DR C HOWARD JACKMAN (Heworth Green, York) writes In the BRITISH MEDICAL JOURNAL of September 20th it is stated that Mr G A Turner of Worcester has the horns of the first cow from which the late Dr Jenner procured his vaccine lymph owing to an inscription written on them by his great-nephew, which proves nothing I maintain that the horns of the first cow are in my possession, they were given by the late Dr Jenner to my great grandmother, Mrs Crome, whose children he vaccinated

NIGHT ASSISTANCE FOR MOTORISTS

THE Automobile Association informs us that it has a number of road service outfits patrolling roads widely used by motorists after dark With the arrival of "winter time," the A A patrols doing day duty on cycles, motor cycles, and road service outfits are now on the roads from 9 a m until lighting up time—that is, one hour after sunset The night road service outfits and A A roadside fuel stations work from lighting up time to midnight, so that, in many cases, the A A road organization works continuously from 9 a m until 12 midnight This A A night service, instituted at Easter, is greatly appreciated by members In addition to carrying "spares" and an equipment of light tools, the A A patrols in charge of these outfits procure assistance, or tyres, etc , from garages, when breakdowns are of a serious nature

IN view of the number of unbranded motor spirits at present selling as No 1 without any guarantee as to quality, the British Petroleum Company, Ltd , has decided to drop the numerical designations in connexion with its three grades of petrol, and these in future will be known as "'BP' Aviation," "BP" (for cars and motor cycles), and "'BP' Commercial" for heavy vehicle use

A WARNING

THE individual referred to by Dr W G Niall of Chatham (August 23rd p 348) and by Dr Arthur Lee of Bournemouth (September 13th, p 494) seems recently to have been visiting the neighbourhood of Birmingham and Leamington

VACANCIES

NOTIFICATIONS of offices vacant in universities, medical colleges, and of vacant resident and other appointments at hospitals, will be found at pages 34, 35, 38, and 39 of our advertisement columns, and advertisements as to partnerships, assistantships, and locumtenencies at pages 36 and 37

A short summary of vacant posts notified in the advertisement columns appears in the *Supplement* at page *134*

EPITOME OF CURRENT MEDICAL LITERATURE.

Medicine.

220 Insulin in Slight Pancreatic Insufficiency

W REDISCH (*Klin Woch*, August 12th, 1924, p 1478) discusses the question whether the milder forms of pancreatic insufficiency should be treated with insulin There are two objections to the use of insulin its high price and its danger The author maintains that the danger is less in mild cases because smaller doses of insulin are usually required and such doses in non diabetic individuals cause no bad effects He thinks that the administration of the deficient hormones may stimulate the existing islet tissue of the pancreas to increased activity Six cases of mild diabetes are recorded in which insulin treatment was given The blood sugar diminished, and in all cases an increased food tolerance was obtained which enabled the patient to be placed on a diet corresponding in calories to the needs of the body, whilst the urine remained free from sugar and ketone bodies The increased tolerance continued in undiminished degree for three months after the insulin treatment had been discontinued The blood sugar also remained at the low level reached during the insulin treatment The author believes that these results indicate the restoration of the function of the pancreas

221 Treatment of Chronic Ulcerative Colitis

B B CROHN and H ROSENBERG (*Journ Amer Med Assoc*, August 2nd, 1924, p 236) discuss the medical treatment of chronic ulcerative colitis based on their observation of twenty nine cases during the last three years They find rest in bed essential in all acute forms of the disease, and in all chronic cases in which there is recrudescence of symptoms They obtained no success from restricting the diet, and see no disadvantage in a general and rather full diet provided that fruits and vegetables with high cellulose contents are removed The application of heat in the form of hot packs or baking by means of electric light appliances over the colon gives some symptomatic relief Large doses of bismuth subcarbonate gave relief from the diarrhoea, but they prefer for this purpose opium in small doses by the mouth or by suppository Local treatment of the colon is strongly recommended, and silver salts, potassium permanganate zinc sulphate, and iodine have all been found useful During the last two years, however, they have been using an aqueous solution of neutral acriflavine with most satisfactory results They start with a dilution of 1 in 4,000 aqueous or saline solution, and they find that the best results are obtained by beginning with an enema of 20 to 30 oz of the solution twice a day, the enema being retained each time for ten to twenty minutes The symptoms usually abate within the first or second week, the authors then reduce the treatment to once daily, increasing the strength of the solution to 1 in 3 500, and a few days later to 1 in 3,000, which is found to be the greatest strength required The treatment is continued until the temperature is normal and the diarrhoea has ceased They administer the acriflavine subsequently on alternate days using a 0 5 per cent solution of sodium bicarbonate on the intervening days to intensify the antiseptic action of the acriflavine

222 Disturbance of Cystin Metabolism in Children

G O E LIGNAC (*Nederl Tydschr v Geneesk* June 28th, 1924, p 2987) who records two personal cases in children aged 3 and 2 years respectively, has found only one similar case of disturbance of cystin metabolism reported by Kaufmann in a child of 21 months, and in all three extensive deposits of cystin were found in the organs after death, cystin crystals being present in the lungs, spleen, liver, kidneys, mesenteric glands and choroid plexus Control examination of the organs of nine children who had died of various diseases did not reveal any trace of cystin The most striking features in the three cases were the defective physical development, which in Lignac's two patients had been present since birth, and was in contrast with their completely normal mental development The first of his two patients showed considerable improvement of the general condition under treatment by insulin, although the weight remained the same the insulin having apparently no effect on the cystin All three children died of progressive atrophy which in one case was accompanied by disturbance of the carbohydrate metabolism, and in the other by signs of severe infection such as pyelitis, nephritis, and otitis media

223. Autogenous Coli Vaccines in Mucous Colitis

S WENT (*Deut med Woch* May 16th 1924 p 632) contrasts the pessimism usually shown concerning the prognosis for mucous colitis with his own optimism, which is the outcome of treating nine cases with vaccines made from cultures of coliform bacilli cultivated from the stools In every case complete recovery was effected, although the duration of treatment was only about a week In five of the nine cases streptococci were also found in the stools, but as they were not pathogenic to certain animals, and as they could still be found after complete recovery had been effected not disappearing entirely till several days, or even weeks, later, it is doubtful if these germs—Gunther's bacteria—play any important part in the disease The vaccine given by the author was prepared from a two days old culture killed at a temperature of 56°, a suspension in saline solution being made, of which 0 5 c cm was injected subcutaneously on the first occasion Two days later 1 c cm and after another two days 2 c cm were injected The symptoms disappeared completely after the second injection, but the reaction was very severe From four to five hours after the second injection there was a rise of temperature to 102° F and even to 104°, the fever being accompanied by headache and loss of appetite, and the site of the injection becoming hyperaemic, oedematous and painful Rigors were also common and it was not till two or three days after the third injection that the patients recovered from this violent reaction

224. Treatment of Myeloid Leukaemia with Thorium X

E J FEILCHENFELD and A PETERS (*Klin Woch*, August 5th, 1924, p 1449) record a case of myeloid leukaemia in which the symptoms and blood changes disappeared under treatment with thorium *x* The case must be regarded as either an instance of the curative action of thorium *x*, or a very remarkable coincidence of a spontaneous remission of the disease with a course of treatment The patient, a woman aged 30, had well marked myeloid leukaemia and was under observation for nine months The spleen extended down to the iliac crest, and the blood changes were typical After a short course of treatment with arsenic without result, thorium *x* was given in the form of intravenous injections, commencing with 50 electrostatic units and increasing the amount The blood condition soon became normal, and the treatment was discontinued A relapse occurred, and the thorium *x* was then given in larger quantities, and continued periodically During the nine months treatment 8 000 electrostatic units were given The general condition improved, the blood became normal, and the enlargement of the spleen disappeared The authors add that the dose of thorium *x* must be found experimentally in each case—the blood condition is an indication of the amount required, toxic effects are thus avoided Prolonged observation is necessary

225. Contraindications of Digitalis

E BORDET and J YACOEL (*Arch Mal du Coeur, des Vaisseaux et du Sang*, June, 1924, p 335) observe that in some cases of heart disease digitalis may cease to relieve the patient and may even become dangerous They report three cases *Case 1* —A male, aged 49, with serious cardiac dilatation and frequent crises of angina pectoris There was a history of syphilis at the age of 20, for which he had received three courses of grey oil and one of arsenobenzol, the Wassermann reaction was positive He was very pale and dyspnoeic, complained of retrosternal pain on slight effort, and of many severe anginal attacks on lying down There was a loud double aortic bruit, and the systolic blood pressure was 175 mm Hg There was some hypostatic congestion, the liver was palpable and painful, and the urine was abundant, containing a trace of albumin The heart, especially the left ventricle, was much hypertrophied and dilated After bleeding and purgation he received daily intravenous injections of ouabaine after the second the anginal attacks improved and disappeared later, but returned twenty days subsequently Digitalis was then administered, but the patient's condition was definitely made worse The anginal attacks became more frequent and severe dyspnoea increased, and sphygmograms showed an extension of the dilatation On substituting ouabaine for digitalis the patient's condition improved immediately but he relapsed when digitalis was given again *Case 2* —Male, aged 57, with dyspnoea, precordial pain, left amblyopia due to numerous retinal haemorrhages and a positive Wassermann reaction The systolic blood pressure was 280 mm,

the diastolic 150 mm Hg The aortic sound was loud and clanging and there were signs of cardiac dilatation He received intravenous injections of ouabaine which gave speedy relief, after three months digitalis was given in conjunction with ouabaine, this was well tolerated at first, but later its administration was followed by precordial pain and distress *Case 3*—Male, aged 40, suffered from anginal crises on slight effort, dyspnœa, and occipital headache The Wassermann test was positive, the systolic blood pressure was 240 mm and the diastolic 130 mm Hg There was slight albuminuria The symptoms were immediately relieved by ouabaine (as in the preceding cases), but they were aggravated by digitalis Bordet and Yacoel agree with Vaquez that "ouabaine is a systolic remedy, digitalis is a diastolic one"—that is, the former acts especially during systole, stimulating the stretched weakened muscle fibres, while the latter, by increasing the length of diastole in slowing the rhythm, accentuates the features of the diastolic phase, and gives rise to an increased distension of all the cavities of the heart

Surgery.

226 Ileo colic Volvulus due to Congenital Malformation

KARL BRAEUNIG (*Deut Zeit f Chir*, July, 1924, p 284) describes in detail a very unusual condition found at operation A previously healthy man, aged 21, had had acute strangulation for two days An immediate laparotomy revealed a volvulus of the greater part of the small intestine and of the ascending colon, which had rotated clockwise through 360 degrees The transverse colon lay behind the duodenum, the cæcum and ascending colon were gangrenous and were resected The patient died twenty four hours after the operation The stomach was small and both curvatures were unusually shallow, the pylorus and duodenum were attached to the vertebral column by a short, thick mesentery, behind which the transverse colon lay The splenic flexure and descending colon formed a series of U shaped loops, but were otherwise normal Braeunig discusses the mechanism of this unusual abnormality, he believes that it is due to displacement of the ileum and cæcum, produced by persistence of the omphalo enteric duct, which retards the normal development and descent of the ileum, this in turn producing a backward rotation of the cæcum and ascending colon

227 Duodenal Ileus

M A BRECHOT (*Bull et Mem Soc Nat de Chir*, July 5th, 1924, p 769), reporting two cases observed by M A Charnier, draws attention to duodenal ileus due to compression of the mesentery Such cases are comparatively rare, and the condition has been recognized as somewhat akin to the acute dilatation of the stomach and duodenum sometimes seen after operation In his cases the compression was caused by the mesenteric vessels, and resulted in the symptoms of sub acute duodenal dilatation In the first case symptoms had been present for a long time, with indefinite epigastric and umbilical pain and pain in the right iliac fossa In the second case there were attacks of acute abdominal pain and vomiting, with intervals of complete absence of symptoms The typical case may show attacks of periumbilical pain and profuse bilious vomiting, often there is epigastric distension, and peristaltic movements can be detected in this region There may be no pain between the attacks It is said that duodeno jejunostomy is the operation of choice for this condition, gastro enterostomy does not appear to act satisfactorily with the dilated duodenum The duodeno jejunostomy may be done through the mesocolon, and some add a jejuno jejunostomy in the loop that is anastomosed Most surgeons appear to have performed the anastomosis below the mesocolon Brechot points out that this is not enough in all cases, for in the second of his two cases the symptoms of duodenal distension recurred, and the patient was again operated upon a few days later, when it was found that the anastomotic opening was compressed by an abnormally mobile colon The transverse colon was fixed, and the result has been satisfactory

228 Treatment of Sprains and Dislocations

A SCHWARTZ (*Paris méd*, May 31st, 1924, p 506) maintains that sprains are the type of lesion in which immediate or almost immediate treatment by mobilization is required in order to prevent stiffness of the joint and atrophy of the muscles In the case of the tibio tarsal joint, if the sprain is of moderate intensity a very hot foot bath should be given daily for twenty minutes immediately after the injury, or, if the sprain is very severe, after a few days' rest, it should be followed by massage and mobilization of the joint, and lastly the application of a rather tight Velpeau's bandage The patient should then be allowed to walk in moderation The usual result of this "ambulatory" treatment is that a sprain of the ankle is rapidly and completely cured In the case of traumatic hydrarthrosis of the knee wool and bandage should be applied for about a week to cause absorption of the fluid, but at the same time, from the very first, acute contraction of the muscles of the lower limb, and especially of the quadriceps, should be effected by making the patient extend the limb twice a day for ten or fifteen minutes at a time with a weight attached to his foot At first the patient has difficulty in lifting four or even two pounds, but as soon as he can lift a given weight easily another two pounds should be added At the end of a week the synovial fluid is usually almost completely absorbed In the second week the wool and bandage are omitted unless there is still too much fluid left, and the patient continues the active movements and is allowed to walk a little without bending the knee At the end of a fortnight the same movements of extension are continued, but normal walking is allowed, and as a rule traumatic hydrarthrosis is cured in three weeks In simple traumatic hæmarthrosis similar treatment is employed, but the blood contained in the synovial sac is evacuated by a trocar or by a small incision with the bistoury under the most stringent asepsis Dislocations as a rule should be treated on the same lines, but Schwartz does not recommend immediate mobilization Absolute rest should be enforced, though only for a short time, three days being sufficient to relieve the pain, and mobilization should then be started This is best carried out by the patient himself, first alone and then against a certain resistance, so as to make the muscles work Massage is often injurious and may be the cause of periostosis and hyperostosis

229 Treatment of Elephantiasis

G SAMORINI (*Il Policlinico*, July 14th, 1924, p 904) records a case of elephantiasis of the left leg in a young woman, aged 25, successfully treated by surgical measures The leg first began to swell when the patient was 16 years old, no apparent cause could be found, and it had steadily increased in size The patient married and had one healthy child On admission the greatest difference in circumference between the two limbs was 5½ in, a year after the operation this was reduced to 4/5 in The procedure adopted was to remove at successive intervals of about a week four elliptical lines of skin and subcutaneous tissue from all four aspects of the leg, opening up the aponeurotic fascia in each case so as to allow free drainage of the lymph, the skin being sewn up without drainage The author refers briefly to various theories (mostly unsatisfactory) as to the cause of elephantiasis, and the different methods of surgical treatment adopted

230 Treatment of Phlebitis

A SCHWARTZ (*Paris méd*, May 10th, 1924, p 445) maintains that, though phlebitis in a limb requires an absolute and prolonged immobilization, the immobilization has an injurious effect on the limb, especially on the joints, which become stiff, and on the muscles, which undergo atrophy Mobilization is therefore needed as soon as possible It is usually taught that this may begin four weeks after the fall of the temperature, but it is important that the treatment should not begin until four weeks after the temperature has permanently settled Before allowing the patient to get up gentle and progressive mobilization of the joints should be carried out for ten days by a competent masseur or by the practitioner himself Neglect to carry out this treatment before sending the patient away to a health resort is likely to have disastrous results

231 Fat Embolism following Fractures

R H DAHL (*Tidsskrift f d Norske Laegeforening*, July 1st, 1924, p 610) notes that, according to Backer Grondahl's monograph on the subject, fat embolism of the lungs can almost invariably be demonstrated *post mortem* in cases of fractures of the bones According to the same monograph it is very rare for fat emboli to cause clinical symptoms, and when this is the case death is the usual sequel The author records three cases which occurred within three months of each other, and which were remarkable for the fact that, though there were definite and severe cerebral symptoms, complete recovery was effected The clinical picture was remarkably uniform The patients were men with fractures of the lower limbs, but without injuries to the head Soon after the accidents these patients became drowsy and then comatose, the coma being associated after some time with great restlessness At the same time the pulse and respirations became quicker for a few days, but there was no cyanosis or dyspnœa No relationship could be established between the severity of the injury and the seriousness of the cardiac, pulmonary, and cerebral symptoms, indeed

the patient with the simplest fracture of the thigh showed the greatest pulmonary and cardiac embarrassment and the slightest cerebral symptoms On the other hand, a patient with a severe compound fracture below the knee showed slight cardiac and pulmonary symptoms and severe cerebral symptoms

Anaesthetics

232. Anaesthesia at the Mayo Clinic

W R MEEKER and MARY HINES (*Brit Journ Anaesthesia* July, 1924, p 13) review the progress of anaesthesia during the past ten years, calling attention to the closer co-operation between physician and surgeon, and the preoperative and post operative care with the resulting improvement in operative prognosis and lessened anaesthesia risk When prolonged anaesthesia with relaxation and unconsciousness is desired ether administered by the semi open drop method is the standard anaesthesia at the Mayo Clinic on account of its reliability and general applicability the patient being kept in the best condition for the surgeon with the use of a minimal amount of ether, there being less likelihood of acapnia and very little loss of body heat For short anaesthesias, extra abdominal operations, and where severe shock is anticipated or where there is marked sepsis nitrous oxide and oxygen is useful The present limited experience of the use of ethylene and oxygen points to certain advantages over other gas anaesthetics but, as there is generally some amount of muscular rigidity the addition of ether is necessary to secure relaxation in abdominal operations Local anaesthesia may be indicated in isolated areas where the nerve trunks are easily accessible, in operations about the neck and cranium and in hernias and pelvic operations, but its usefulness varies very much with the operation and the personality and predilection of the patient and surgeon Much that was hoped from it has not materialized, so that it becomes questionable whether for all conditions requiring an anaesthetic other methods are not safer and more efficient In the Mayo Clinic it is used principally in amputations and extensive operations upon the lower extremities in cases in which a general anaesthetic is contraindicated

233 Sacral Anaesthesia in Urology

J KOLISCHER A E JONES and O G SCHNETZER (*Urol and Cut Rev* July 1924 p 384) state that sacral anaesthesia was introduced in 1900 by Cathelin who employed a 2 per cent solution of cocaine Novocain was used in sacral anaesthesia by Stoeckel in 1912 with success in many plastic and perineal operations and by Lawen and Gross in the same year in pelvic operations The present authors from observations on 1 800 cases, most of which were made in the urological clinic of Illyes at Budapest, have come to the conclusion that sacral anaesthesia is a safe method and confers complete analgesia the few failures which they observed were due to defects in technique The only fatalities which have occurred have been in those cases in which the epidural sac was entered The advantages of sacral anaesthesia are that the complications of spinal anaesthesia, such as prolonged headache, vertigo septic meningitis temporary paralysis of the bladder and rectum, and even death are avoided The method produces anaesthesia for two hours which is sufficient for the performance of any urological operation The low dosage of the alkaloid required while sufficient for anaesthetic purposes eliminates the dangers of general intoxication especially when cocaine, novocain, or procain is given with suprarenin

234 Ethylene as an Anaesthetic.

THE comparative value of ethylene as an anaesthetic is discussed by J S LUNDY (*Journ Amer Med Assoc*, August 2nd 1924, p 350) with abstracts and anaesthesia records of illustrative cases He finds that analgesia and anaesthesia with relaxation may be produced very quickly and usually without cyanosis More oxygen can be given with ethylene than with nitrous oxide since ethylene is the more potent of the two it is relatively safe so long as the patient's skin and blood remain pink The chief disadvantage of ethylene anaesthesia is the inflammability of the anaesthetic agent, which is probably no greater than that of ether The odour may be improved by adding a scent to the gas in the mixing chamber The author adds that the after effects are not marked headache nausea and vomiting are usually mild and of short duration The poor relaxation given by ethylene and oxygen in acute peritonitis can be overcome by the addition of a small amount of ether to the mixture Up to May 6th ethylene had been given to two thousand patients at the Mayo Clinic with very satisfactory results A full bibliography is appended

Obstetrics and Gynaecology

235. Inoperable Uterine Cancer

P P COTE (*Brit Journ Radiol* July 1924 p 253) discusses the treatment of inoperable cancer of the uterus by the cold cautery method and with radium Since recurrences after radical operation almost always appear locally in the vaginal vault only 5 per cent developing metastases death in the remaining 55 per cent results from the effects of what is really a local lesion The cold cautery method is stated to destroy cancerous tissue peripherally without destroying normal tissue a temperature of 110 F penetrating throughout the whole mass is sufficient to destroy cancer cells at the periphery of the infiltration A subumbilical incision is made the pelvis being shut off from the abdomen by moist pads The internal iliac artery ovarian vessels, and round ligaments are ligated and then with the patient in the lithotomy position a water cooled vaginal speculum is inserted Through this a cautery, the heat of which is regulated by a rheostat is passed through the cervix until it is felt at the fundus by an assistant's hand grasping the uterus through the abdominal wound When in position a gentle sizzling sound should be audible while the assistant watches the position of the cautery and the amount of heat induced in the portion of tissue under treatment This should be such as to be just bearable by the gloved hand The fundus, cervix and outlying areas in the broad ligaments are dealt with in turn When the vessels cannot be tied the cautery is contraindicated and should be replaced by radium implantation since without ligatures the danger of secondary haemorrhage is considerable Radium treatment is indicated in cases unsuitable for the cold cautery operation when there is risk of fistula formation when recurrence in the vaginal vault has followed a radical operation or when the cervix left after a supravaginal hysterectomy has become involved When possible a tube of 50 mg enclosed in a 1 mm silver filter is placed in the cervical canal and from six to ten radium needles containing 7 or 8 mg enclosed in a 1/2 mm platinum filter, are plunged into the surrounding growth the time of exposure varying from eighteen to twenty four hours, according to dosage Patients so treated have had life prolonged and improved in economic value they were freed until shortly before death from the distressing accompaniments of advanced inoperable uterine cancer

236. Serum Treatment of Puerperal Sepsis.

H BAILEY (*Amer Journ Obstet and Gynecol*, June, 1924, p 638 and July 1924 p 7) recommends the administration of large doses of polyvalent anti streptococcus serum to patients suffering from severe puerperal sepsis Of six patients so treated who had positive intrauterine cultures of *Streptococcus haemolyticus* one died in two of these blood cultures were sterile Of seven patients in whom blood culture was negative and intrauterine culture either negative or not done, one died Allusion is also made to four patients with haemolytic streptococci in the blood following abortion, similarly treated by Williams they all recovered Before the injections the patients were examined for hypersensitiveness and if necessary desensitized by small increasing injections of one drop of 1 c cm during the course of an hour Serum sickness appeared in three fourths of the patients The dose was limited to 100 c cm in twenty four hours The regular occurrence of parametritis after the injections gave the impression that the treatment tended to localize the septic process No local treatment was employed and the patients were kept on an open air balcony The mortality of roughly 15 per cent in this series is compared with that of 60 per cent in a series with proved bacteraemia recently reported by Rosensohn from an adjacent source

237 Pregnancy and the Growth of Malignant Tumours

L LEDEFF (*Zentralbl f Gynak* June 14th p 1289) cites several cases to show that pregnancy has a malign effect on tumour growths In one case symptoms pointing to intracerebral tumour appeared during the latter half of pregnancy The patient grew rapidly worse and when in a moribund condition was delivered by Caesarean section of a living child the necropsy showed a sarcoma of the dura mater invading both cerebral and osseous tissue The case is of special interest because the patient was known to have had the tumour for a considerable time Two years previously a palliative operation had been done and this had been followed by radiotherapy resulting in an apparent cure During the first half of the pregnancy there were no signs of recurrence Another case was that of a woman from whose breast a small carcinomatous lump was excised She refused further operation and was treated by x rays She then became pregnant, but abortion was induced and no recurrence has taken place during a period of six years He quotes

Lindstedt's monograph *Does Pregnancy Predispose to Cancer Growth?* and emphasizes this author's statement that only during the years of fertility are women more liable to cancer than men of the same age He cites another case in which a melanotic sarcoma was removed Eighteen months later the patient became pregnant, and this was followed by rapid and fatal dissemination On the other hand, he quotes several writers to show that pregnancy improves the prognosis in cases of uterine carcinoma He relates the case of a woman in whom a columnar carcinoma was diagnosed in the seventh month of pregnancy with involvement of the vulva and vagina As a palliative measure the uterus was removed, but the entire parametrium was left behind An examination of the pelvic cavity a few weeks later showed that although there had been further spread in the vulva and vagina the parametrium was free from metastasis, and there were no enlarged glands in spite of the fact that the cervix had been entirely replaced by cancer growth The reason why there should be during pregnancy this relatively good prognosis in cases of uterine carcinoma when there is such a bad one in carcinoma of other organs is obscure The analogy between the blood in cancer and in pregnancy (Abderhalden), the increase in antitryptic content in maternal blood (Griefenberg), the weakening of the general system in pregnancy on the one hand and the degree of immunity which it confers on the other, are factors insufficient in themselves to solve this problem Finally, the question arises whether it is justifiable to interrupt pregnancy in cases where a previous operation for cancer has not entirely removed the likelihood of recurrence In the opinion of the author the answer to this is in the affirmative

Pathology.

238 Changes in the Rabic Virus during Adaptation to a Different Host

C LEVADITI, S NICOLAU, and R SCHOEN (*C R Soc de Biologie*, July 18th, 1924, p 423) have made a study of the changes which the rabic virus undergoes in passing from the "street virus" to the "fixed virus" This transformation is consequent on a change of host from the dog to the rabbit These two viruses differ considerably, for instance, the "fixed virus" has a far greater affinity for the nervous system of the rabbit than has the "street virus," and is able to give rise to strictly cellular lesions, moreover, it has lost the capacity to form Negri corpuscles If either of the two viruses be inoculated on to the scarified skin of the rabbit, each of them gives rise to rabies, but if they be injected into the subcutaneous tissue the "street virus" alone is able to give rise to rabies, the other is very much less virulent This appears to be due to the fact that the "fixed virus," by frequent passage through the rabbit, has acquired such a neurotropic tendency that it will no longer grow in tissue of mesoblastic origin Now, if the two viruses be mixed and injected intracerebrially in rabbits, the animals die in eight or nine days, on examination it is found that there is a complete absence of Negri corpuscles in the brain, even though they are present in abundance in control rabbits inoculated with the "street virus" only The explanation of this, they consider, is that the "fixed virus," having a greater neurotropic tendency than the "street virus,' takes possession of the nerve cells and so prevents the "street virus" from multiplying There is, in fact, an antagonism between the two Now, how does the transition—or "mutation," as they call it—take place? By studying seven different strains of "street virus," they found that the tendency to go through the pansporoblastic stage, terminating in the production of the Negri corpuscle, varied in individual cases In some it was very strong, in others it was less developed As these strains were passed through rabbit after rabbit, this tendency to give rise to Negri bodies gradually diminished till it was ultimately lost, and the "street virus" became completely changed into the "fixed virus" The rapidity with which this change took place was greater in those strains which in the first place showed the least tendency towards the formation of Negri bodies It likewise depended on the susceptibility of the rabbit, the greater this was and the more rapidly the disease proved fatal, the sooner did the change occur

239 Tuberculin and the Sedimentation Rate

TEGTMEIER (*Deut med Woch*, July 18th, 1924, p 990) believes that the rate of sedimentation of the erythrocytes after a diagnostic injection of tuberculin often throws valuable light on the patient's reaction to tuberculosis He finds that if an injection of tuberculin is followed in a day by a definite change in the rate of sedimentation, it is most probable that the patient is suffering from active tuberculosis changes of only 2 to 3 mm in the rate of sedimentation are not great enough to warrant this conclusion The test should not be undertaken three or four days before or after menstruation, which may change the rate of sedimentation by as much as 10 mm Other factors likely to alter this rate, such as *x* ray treatment, should also be avoided for fear of misleading findings The change in the rate of sedimentation does not, as a rule, occur on the day after an injection of tuberculin, but on the third and fourth days A series of injections of *increasing doses of tuberculin* in the same patient may be very instructive if controlled by the sedimentation test, which shows whether the patient is getting better or worse, according as the rate of sedimentation becomes slower or faster He considers the sedimentation test a remarkably reliable guide to the dosage of tuberculin, even in the absence of a general and febrile reaction, an increased rate of sedimentation may show that the optimum dose of tuberculin has been exceeded If this warning is ignored, and the injections are continued, they are likely to be harmful Since taking the sedimentation test as a guide to tuberculin dosage, the author has had no injurious focal reactions The sedimentation test also serves the useful purpose of showing the physician when he may rapidly increase the dosage of tuberculin

240 A New Organism in Pulmonary Disease

H R WAHL and R L HADEN (*Journ Amer Med Assoc*, June 28th, 1924, p 1924) publish a preliminary note on an unusual organism occurring in chronic pulmonary disease, which they have detected in four cases by studying fresh unstained preparations of the sputum and by macerating in a strong solution of potassium hydroxide pulmonary lesions detected at necropsy This organism apparently belongs to the Arthrosporiae—a suborder of fungi, which includes the trichophyton family Its shape is pyriform or club shape, it appears to be beaded or divided by septa, and it has a diffuse brown pigmentation It is occasionally found associated with *a small round unpigmented body, with* a roughened surface covered with flattened spurs No mycelium network was detected, the organism only being found in the spore form It probably represents a secondary infection only Localized lesions were produced in rabbits after inoculation with the spores, and histological examination of these lesions showed a granulomatous reaction rather similar to that in actinomycosis

241 The Pulmonary Form of Plague

C NICOLLE and E GOBERT (*Archiv de l'Inst Pasteur de Tunis*, 1924, 13, p 212) have made some observations on the epidemiology of plague which confirm those of previous authors During the years 1907–22 there were several sporadic cases of plague in Tunis, all of which were of the usual bubonic type, associated with plague in rats In 1921 Southern Tunis, which had hitherto been free from the disease, was invaded, and three small outbreaks, all of the bubonic type, occurred in different localities In 1923 the pulmonary form of plague appeared, and during that and the following year a number of foci of the disease were recorded A study of these foci revealed a very marked difference in the epidemiology of the pulmonary form from that of the bubonic form Whereas the latter was constantly associated with the presence of plague in rats and was non contagious, the former was independent of the presence of plague in rats, was highly contagious from patient to patient, and had an extremely high mortality—generally 100 per cent From bacteriological investigations there was no doubt that the causative organism, *B pestis*, was the same in each case, and the question was why in some outbreaks it gave rise to buboes and in others to pneumonia Norman White has suggested that *B pestis* is able to give rise to pneumonia only when it is associated with some other organism, an organism, incidentally, which is non pathogenic to rodents Following up this idea the authors put forward the hypothesis that this other organism is the filtrable virus of influenza Their conception is that when influenza attacks people who are chronic carriers of plague it so lowers their resistance that *B pestis*, which has hitherto lain dormant, finds itself able to invade the lung and give rise to pneumonia This hypothesis presupposes the existence of at least two premisses (1) that chronic carriers of plague do exist, and (2) that epidemics of pulmonary plague occur in close connexion with those of influenza With regard to the first premiss it has been shown quite clearly that healthy men may carry *B pestis* in their inguinal glands With regard to the second, an examination of the records shows that during the years 1923 and 1924 in the Regency of Tunis there was a close correspondence between the presence of pulmonary plague and that of influenza Before influenza broke out there were no cases of pneumonic plague, and as soon as it ceased the cases of plague likewise ceased to occur

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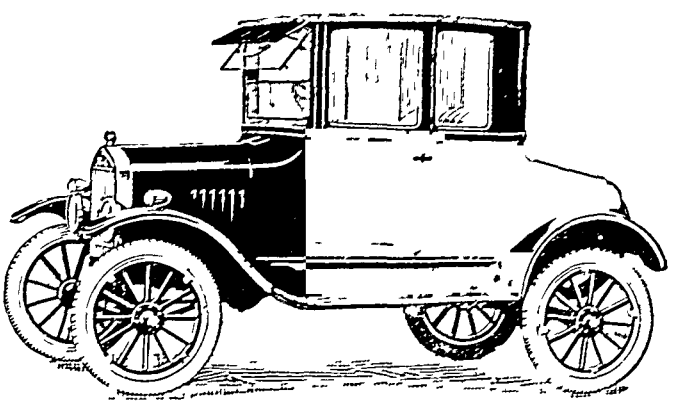
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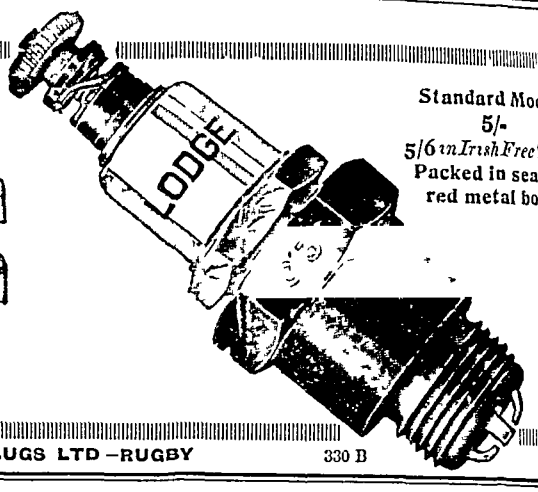
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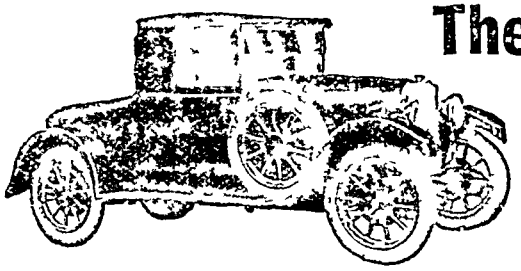
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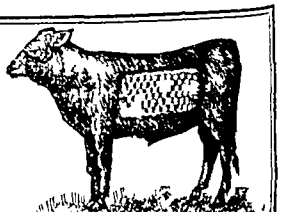
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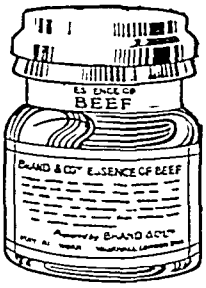
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ESTABLISHED 1804

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For terms and further particulars apply to the Medical Superintendent *Telegrams* Fox Brislington. *Telephone* "No 2 Brislington."

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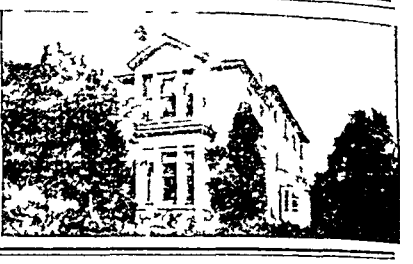
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TELEPHONE No. 56

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BARNWOOD near GLOUCESTER

Telephone No 7 Barnwood

Exclusively for PRIVATE PATIENTS of the UPPER AND MIDDLE CLASSES

This Institution is devoted to the care and treatment of persons of both sexes at moderate rates of payment

Voluntary boarders not under certificates are admitted

Under special circumstances the rates of payment may be reduced by the Committee

The MANOR HOUSE for Ladies only which is entirely separate from the Hospital and standing in its own grounds is utilised exclusively for voluntary patients

For further information apply to ARTHUR TOWNSEND M D the Medical Superintendent

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Established 1816 For the TREATMENT of a few LADIES suffering from NERVOUS and MENTAL DISORDERS Voluntary patients received

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Large grand 400ft above sea HOME for LADIES Mentally Afflicted Voluntary Boarders received Stations Brentwood 1 mile Shenfield 1 mile Liverpool Street, 26 minutes —Apply Dr HAYNES

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The work hitherto carried on at ELTON has been transferred to the

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Private Nursing Home for Cases of Neurasthenia and allied Functional Nervous Disorders, for General Convalescent Cases and those requiring Electrical Treatment

The Home a Georgian mansion 11 miles from Nottingham and 6 miles from Derby, is for both sexes In addition to the methods of general medicine associated with occupational treatment physical exercises and massage treatment by Psycho-Therapy adapted to the type of case is available for cases requiring it Electrical Treatment, Radiant Heat etc, is available.

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Terms from 4 guineas weekly Patients sent for

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A PRIVATE HOME for the care and treatment of persons with mental and nervous disorders

TERMS from 3½ guineas a week according to requirements Voluntary Boarders received

Mansion on outskirts of Bath with 20 acres of grounds (see MEDICAL DIRECTORY page 2176)

Apply to NORMAN LAVERS M D Resident Physician Telephone No Bath 49

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SPECIAL ACCOMMODATION FOR CONTRIBUTING PATIENTS **£3 3s 0d** per week

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For CHILDREN of WELL-EDUCATED PEOPLE OF VERY LIMITED MEANS

Charge 10/- a week for each Child

This fee is subject to addition or deduction according to Parents' means.

100 Beds Boys, ages 4 to 12. Girls, ages 4 to 14

The usual stay is four weeks but convalescents are received for shorter cases requiring special treatment and in these a lengthened stay may be granted and the age limit raised to 15 for Boys and 16 for Girls

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PARTICULARS CAN BE OBTAINED FROM THE SECRETARY 116 VICTORIA STREET WESTMINSTER, LONDON S W 1.

The work hitherto carried on at

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has been transferred to

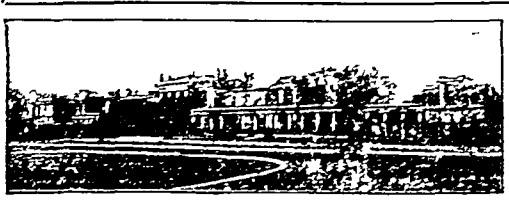
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TELEPHONE 51

A PRIVATE HOSPITAL FOR THE CARE AND TREATMENT OF THOSE OF BOTH SEXES SUFFERING FROM MENTAL DISORDERS

Extensive Grounds Detached Villas. Chapel Garden and Dairy Produce from own Farm.

Terms very moderate. *Illustrated Brochure on application to The Secretary.*

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FOR THE OPEN-AIR TREATMENT OF

PULMONARY TUBERCULOSIS and ALLIED DISEASES

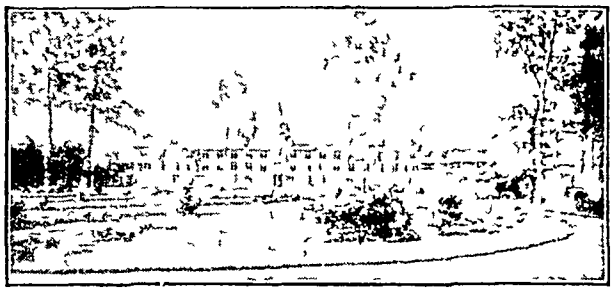
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Special Treatment by artificial **Pneumothorax** (with X-ray control), the various **Tuberculins,** and Autogenous **Vaccines** etc is available without extra charge



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For particulars, apply SECRETARY



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AT MURTLE, ABERDEENSHIRE.

Senior Physician Dr J M JOHNSTON

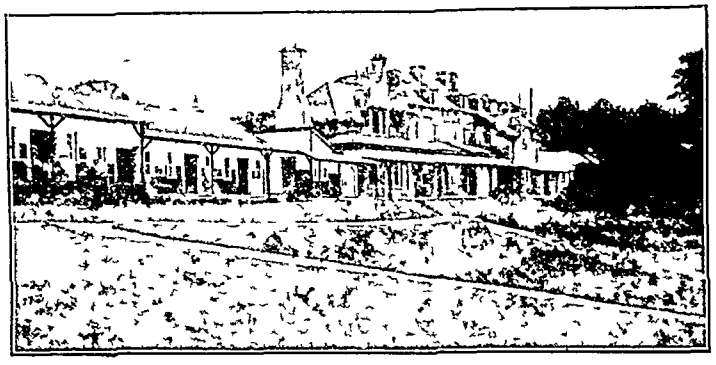
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Full day and night Nursing Staff

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Specially built, facing south 300 acres of Sanatorium grounds—meadow and woodland, sheltered pine avenues Altitude 850 ft Magnificent view for miles south, hot water radiators and electric light in each room and chalet

All forms of treatment, including X ray, Vaccines, and Pneumothorax in suitable cases Trained Nurses Individual attention

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For particulars apply to the Secretary

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Trained nursing staff day and night X Ray apparatus. Treatment by Artificial Pneumothorax in suitable cases. Electric lighting in every room. Heating by Radiators

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For full particulars, apply to the Lady Superintendent, Farmwood, Ascot

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Accommodation for 100 Patients.

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FOR THE TREATMENT OF TUBERCULOSIS

OPENED IN JANUARY 1899

This SANATORIUM was the first to be established in England for carrying out treatment on Nordrach lines Patients are received for open air inoculation or operative treatment, the latter under X ray control. Full Nursing Staff. The Sanatorium stands in gardens and private grounds of 65 acres at an elevation of 862 feet above sea-level surrounded by woods and moorland, the rooms are heated by hot water pipes and lighted by electricity ROWLAND THURNAM, M D, DANIEL KENNEDY L.R.C.S L.R.C.P

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Bracing situation 620 feet above sea level sheltered from north and east

All forms of recognized Treatment including Artificial Pneumo-thorax available

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OPEN-AIR WARDS.

PRIVATE WARD 5 Gns per week exclusive of Surgeon's fees but inclusive of X rays splints

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BOURNEMOUTH HYDRO.

With finest Sun lounge and Marine Balcony on the South Coast.

Every kind of Bath. Plombières Lavage.
Every kind of Massage.
Every kind of Electricity
Every kind of Diet.
Carlsbad and Vichy Waters &c.
High Frequency Electric Light.

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Resident Physician —W JOHNSON SMYTH M D

BEN RHYDDING HYDRO,

on the Yorkshire Moors, near ILKLEY

Ideal for Neurasthenia, Convalescence and Rheumatic Affections The most modern Electrical Treatment and Massage

For terms apply MANAGER.

Resident Physician G COOPER, M.D

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Beautifully situated 700 feet above sea level. Facing South completely sheltered from North and East 2½ miles from Edinburgh

All modern Baths, Douches, Massage and Electrical treatments. Resident Physician L. R. C. P. ELLIS HALLOWS B A. M B. B.C H B A O

IDEAL HEALTH RESORT

Electric Light Central Heating Electric Lift three Billiard Tables Ball Room Winter Garden Swimming Bath Hard and Grass Tennis Courts Croquet Lawn, Golf Course.

Prospectus from Manager

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MATLOCK [*Established* 1853

LARGEST AND MOST COMPLETE.

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Coton Hill Mental Hospital, near STAFFORD—Chairman of the Committee of Management, The RIGHT HONOURABLE THE EARL OF DARTMOUTH—This Hospital, which is beautifully situated in a high and healthy position, with extensive grounds, cricket field lawn tennis courts, golf links &c is devoted to the care and treatment of the mentally afflicted of the upper and middle classes Terms on application Private rooms with special attendants in the Hospital, or semi detached villas in the grounds can be arranged —For further particulars apply to the Medical Superintendent *Telephone Stafford 14*

A list of Comfortable Homes in Town, Country or Seaside with Doctors, Nurses and Private Families sent FREE on application All cases—Mental, Medical, Maternity, Delicate Children —Mrs ABBEY'S Nursing Agency 37 Berners Street W (Opp the Middlesex Hosp)

Wanted, to place male Patient, æt 46 not certifiable, with retired Medical man, not in Hampshire — Address, No 4810 BRITISH MEDICAL JOURNAL Office, 429, Strand W C 2

To Convalescents —A warm comfortable House Ideal position splendid Sea View Pure and bracing air Special diet if desired Electric light Gas fires in bedrooms Terms from £3 3s Od —THE PRINCES HOTEL, Cliftonville, Margate

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KING'S COLLEGE HOSPITAL MEDICAL SCHOOL.

(UNIVERSITY OF LONDON)
DENMARK HILL, S E 5

OPENING OF WINTER SESSION, OCTOBER 1ST, 1924

Introductory Address at 2 30 p m by SIR DAVID FERRIER M D, LL D D Sc, F R C P F R S, Emeritus Professor of Neuropathology Fellow of King's College London, the R T HON THE VISCOUNT HAMBLEDEN will preside

The Past and Present Students DINNER will be held the same evening at 7 for 7 30 at the Connaught Rooms Great Queen Street W C 2 CHARLES P CHILDE Esq B A F R C S, in the Chair The Secretaries to the Dinner Committee are Dr ERNEST PLAYFAIR and Dr G DE BEC TURTLE

The Calendar of the School (including that of the School of Dental Surgery) giving information as to Prizes Entrance and other Scholarships etc may be obtained on application to the Dean H WILLOUGHBY LYLE M D B S Lond F R C S, or to S C RANNER, M A Cantab the Secretary of the Medical School

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A COURSE OF OPERATIVE SURGERY, suitable for Candidates for Final Fellowship and others will commence during the first week in October Fee Ten Guineas; those wishing to join the class should communicate with the Acting Dean

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(University Centre for Medical Sciences)

FACULTY OF MEDICAL SCIENCES

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Chemistry—J NORMAN COLLIE, Ph D, LL D, D Sc, F R S Professor (Organic) F G DONNAN, C B E, M A, Ph D, D Sc, F R S, Professor (General)
History of Medicine—C SINGER, M D, D Litt., F R C P, Lecturer
Hygiene and Public Health—H R KENWOOD, C M G, M B, D P H, F C S, F R S E, Chadwick Professor
Pharmacology—A J CLARK, M D, F R C P, Professor (Dean.)
Physics—A W PORTER C Sc, F R S
Physiology—A V HILL, M A, Sc D, F R S, Jodrell Professor
Zoology and Comparative Anatomy—D M S WATSON, M Sc, F R S, Jodrell Professor

The SESSION 1924-25 will begin on MONDAY, SEPTEMBER 29th THE NEW ANATOMY BUILDING and the EXTENSION OF THE PHYSIOLOGY AND PHARMACOLOGY BUILDINGS provided by the Gift of the Rockefeller Foundation of New York and opened by H M The King in May 1923 are now in use

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M.R.C.P. (Lond.), 1914 24		**81**
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EDWIN DELLER, Academic Registrar

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Special Two Weeks' Post-Graduate Course in Cardiology—October 20th to 31th, 1924

2ST WEEK. MORNING		
ate.	10 0—11 0 a.m	11 15—12.30 p m
Mon 20 Oct.	The Anatomy of the Heart Dr B. T PARSONS-SMITH	The Use of the Polygraph Dr JOHN PARKINSON
ues. Oct	The Physiology of the Circulation Dr J STRICKLAND GOODALL	The Use of the Polygraph Dr JOHN PARKINSON
Wed. 1 Oct.	Aortic Disease Dr F W PRICE	The Electrocardiograph Dr J STRICKLAND GOODALL
hur 1 Oct.	Rheumatic Carditis Dr JOHN PARKINSON	The Electrocardiograph Dr J STRICKLAND GOODALL
Fri 3 Oct	Functional Disturbances of the Circulation Dr R. O MOORE	Sphygmomanometers Dr B T PARSONS-SMITH

RST WEEK. AFTERNOON		
)ate.	2.0—3.0 p.m	3.0—4 p m.
Mon h Oct.	Ward Demonstration Dr R. O MOORE	Out-patients Dr J STRICKLAND GOODALL
Tues it Oct.	Ward Demonstration. Dr F W PRICE.	Clinical Demonstration Dr R. O MOORE
Wed d Oct.	Pathological Demonstration Dr H. B WEIR.	Out patients Dr R. O MOORE
Thur d Oct.	Ward Demonstration Dr B T PARSONS-SMITH.	Out patients Dr F W PRICE.
Fri. h Oct.	Ward Demonstration Dr J STRICKLAND GOODALL.	Out-patients Dr JOHN PARKINSON

SECOND WEEK. MORNING		
Date	10 0—11 0 a.m.	11 15—12 30 p.m.
Mon. 27th Oct.	Infective Endocarditis Dr B. T PARSONS-SMITH	The Electrocardiogram and Orthodiagram Dr F W PRICE
Tues. 28th Oct.	Aneurysm of the Aorta Dr B. T PARSONS-SMITH	Angina Pectoris Dr R. O MOORE
Wed 29th Oct.	Diseases of the Arteries Dr F W PRICE.	Circulatory Failure Dr J S STRICKLAND GOODALL
Thur 30th Oct	Mitral Stenosis Dr R O MOORE	Treatment of Heart Failure Dr JOHN PARKINSON
Fri. 31st Oct	Progress in Heart Disease Dr R. O MOORE	The Diagnosis and significance of Abnormal Cardiac Rhythms Dr F W PRICE.

SECOND WEEK. AFTERNOON		
Date.	2.0—3 p.m.	3—4 p.m.
Mon 27th Oct.	Ward Demonstration Dr R. O MOORE	Out-patients Dr J STRICKLAND GOODALL
Tues. 28th Oct.	Ward Demonstration Dr JOHN PARKINSON	Clinical Demonstration Dr B T PARSONS-SMITH.
Wed 29th Oct.	Pathological Demonstration Dr H B WEIR.	Out-patients Dr R. O MOORE
Thur 30th Oct	Ward Demonstration Dr B T PARSONS-SMITH	Out-patients Dr F W PRICE.
Fri. 31st Oct.	Ward Demonstration Dr J STRICKLAND GOODALL.	Out-patients Dr JOHN PARKINSON

A selection of Museum Specimens Slides etc will be arranged in the Laboratory and changed daily throughout the Course

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The Course will be conducted by Mr T H WESTMACOTT C B E F R C S Honorary Aurist and Laryngologist, Manchester Royal Infirmary

Applications to join the Course should be submitted not later than Tuesday September 30th 1924

FRANK G HAZELL

September 12th 1924 Gen Supt & Secretary

Manchester Royal Infirmary

POST GRADUATE LECTURES will be given by Members of the Honorary Staff and the Honorary Advisory Staff on Medical, Surgical and Special Subjects each week on Tuesdays and Fridays from Tuesday September 30th to Friday, December 19th The Friday lectures will be especially devoted to the explanation of recent scientific work All the lectures begin at 4 15 p m and are free

Details may be obtained from the Secretary for the Post Graduate Lectures On Tuesday October 7th, Sir JOHN BLAND SUTTON President of the Royal College of Surgeons will deliver the Lloyd Roberts Lecture This will take the place of the usual Lecture

Royal College of Physicians OF LONDON

The next PROFESSIONAL EXAMINATION for the MEMBERSHIP will commence on Tuesday October 21st

Candidates are required to give fourteen days notice in writing to the Registrar of the College with whom all certificates required by the By laws are to be left at the same time

J A ORMEROD M D Registrar

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COURSE OF TEN LECTURES on *Modern Psychotherapy*, will be given by H CRICHTON MILLER M A M D on Mondays at 5 30 beginning Monday Oct 13th Fee for the Course Medical Practitioners £2 2s , Medical Students £1 1s Tickets in advance from Lecture Secretary at Clinic

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Pay—25s per diem, or £456 5s per annum

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Age of candidates—Not to exceed 30 years

Surgeon Lieutenants on the Short Service Scheme will be considered for transfer to the Permanent Service under certain conditions after six months service

form to be filled up by on application to the [illegible] 68, Victoria Street London S W 1

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Plague A research into the harbouring of Plague by wild rodents and the specific prophylaxis and therapy of the disease in man is being undertaken by the S A Institute for Medical Research. The work will be largely carried out in a mobile laboratory on the veld The present staff will be augmented by a **Bacteriologist** (preferably a medical man and with special experience in Plague) and an **Entomologist** (not necessarily medical but preferably with special experience in the study of the ectoparasites of rodents) Appointments will be primarily for one year and will be renewable thereafter by mutual consent. First class passage, and allowances when absent from headquarters on duty, in addition to salary

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Assistant Pathologist of experience required in the Municipal Public Health Laboratory to assist in research routine laboratory diagnosis preparation of vaccines including, small pox vaccine, complement fixation tests and other work incidental to a large and important Public Health Department

Salary Taels 700 a month (equivalent at 3/ exchange to £1 250 a year) under a three years agreement renewable at a higher salary in the event of satisfactory service first class passage paid participation in Superannuation Fund one month's annual leave and eight months long leave on full pay with first class passage, after every five years service

Candidates must be under 35 years of age must hold the D P H and be University Graduates.

Further particulars may be obtained from the Council s Agents

Applications endorsed "Assistant Pathologist on the cover, with full information concerning qualifications and experience etc and with copies of at least three recent testimonials should be forwarded to John Pook & Co Agents for the Municipal Council of Shanghai, 68 Fenchurch Street London E C 3

September 1924

UNION OF SOUTH AFRICA

Grey's Hospital, Pietermaritzburg

Vacancy for a MALE HOUSE SURGEON

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ENGAGEMENT —In first instance on contract for two years with the prospect of re engagement by mutual consent

TRANSPORT —I ree first class ticket from residence to destination and in reverse direction if not re engaged on expiry of the contract Half salary during voyage to South Africa

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The holder of this post is expected to devote his whole time to teaching and research

Applications must be accompanied by full particulars and testimonials and be addressed to the Director School of Medicine, Cairo, Egypt They should reach him before October 10th 1924

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HOUSE PHYSICIAN (Male) required (Resident Medical and Surgical Staff four) Salary £125 per annum with board lodging and laundry Applications, stating age, nationality qualifications and experience, accompanied by not more than three recent testimonials, to be sent as soon as possible to the Secretary

APPOINTMENTS—Important Notice.

(a) British Islands.

Medical Practitioners are requested not to apply for any appointment referred to in the following table without having first communicated with the Medical Secretary of the British Medical Association, 429, Strand, London, W C 2

Town or District	Town or District	Town or District
CONTRACT PRACTICE.		
ENGLAND	**WALES** *(continued)*	**PUBLIC HEALTH** *(continued)*
CANNOCK CHASE AND DISTRICT *(Clubs and Friendly Societies Appointments)*	OGMORE VALLEY GLAMORGAN *(Wyndham Colliery Medical Aid Society) (Workmen's Medical Scheme.)*	LANARK COUNTY *(Medical Officer of Health)*
MIDDLESBOROUGH *(Medical Aid Associations or Workmen's Clubs.)*	TONDU & ABERKENFIG GLAMORGAN *(Workmen's Medical Scheme.)*	LEEDS EDUCATION COMMITTEE *(Assistant School Medical Officer)*
SOUTH BANK & ESTON *(Medical Aid Associations or Workmen's Clubs)*	**PUBLIC HEALTH**	LINCOLN CITY EDUCATION AUTHORITY *(Woman Assistant Medical Officer)*
WALES.	ARGYLLSHIRE EDUCATION AUTHORITY *(Assistant School Medical Officer)*	MIDLOTHIAN EDUCATION AUTHORITY *(Senior Medical Officer)*
ABERTRIDWR GLAMORGAN *Windsor Colliery (Medical Scheme.)*	CHELSEA METROPOLITAN BOROUGH *(Part time Medical Officer of Health)*	NORTHUMBERLAND COUNTY COUNCIL *(Woman Assistant Medical Officer of Health)*
EBBW VALE MON *(Workmen's Medical Society)*	CHESTER LE STREET RURAL DISTRICT COUNCIL *(Medical Officer of Health)*	NOTTINGHAMSHIRE *(County Medical Officer of Health)*
GILFACH GOCH GLAMORGAN *(Workmen's Medical Scheme.)*	FIFE EDUCATION AUTHORITY *(Assistant School Medical Officer)*	ORKNEY COUNTY *(School Medical Officer and Medical Officer of Health for Education Authority for County and Medical Officer of Health for Burgh of Kirkwall combined appointment)*
LLWYNYPIA CLYDACH VALE PENYGRAIG GLAMORGAN *(Workmen's Medical Scheme)*	GLASGOW EDUCATION AUTHORITY *(Assistant School Medical Officers)*	SOUTHWARK METROPOLITAN BOROUGH *(Tuberculosis Officer)*
MARDY GLAMORGAN *(Workmen's Medical Scheme)*	INVERNESS SHIRE EDUCATION AUTHORITY *(Temporary Assistant School Medical Officer)*	WIGAN COUNTY BOROUGH *(Assistant School Medical Officer)*
OAKDALE MON *(Medical Officer for Medical Aid Association)*		

(b) Colonial Medical Service.—WINDWARD ISLANDS MEDICAL SERVICE (Grenada with Carriacou and Vincent and St Lucia)

(c) Overseas Appointments.

Medical Practitioners are requested not to apply to any appointment referred to in the following table without having first communicated with the Honorary Secretary of the Division or Branch named in the second column or with the Medical Secretary of the British Medical Association, 429 Strand, London, W C 2

Town or District.	Hon Sec of Division or Branch	Town or District.	Hon Sec of Division or Branch.	Town or District.	Hon. Sec of Division or Branch
NEW SOUTH WALES. *(All Friendly Society Appointments.)*	Dr R H TODD (Hon. Sec New South Wales Branch) B M A. Building 30-34, Elizabeth Street, Sydney N S W	QUEENSLAND *(Brisbane Associated Friendly Societies' Institute.)*	Dr R. MARSHALL ALLAN (Hon Sec., Queensland Branch) Adelaide Street Brisbane	VICTORIA *(All Institute or Medical Dispensaries.)*	Dr FRANK DAVIES (Hon Sec., Victorian Branch) Medical Society Hall, E Melbourne, Victoria.
				WESTERN AUSTRALIA. *(Contract and Lodge Practices.)*	Hon Sec., Western Australian Branch, No 6 Bank of New South Wales Chambers, St George's Terrace, Perth

Address 429 Strand, W C 2.
September 24th 1924.

By order of the Council of the British Medical Association.
ALFRED COX, Medical Secretary

National Hospital for Diseases OF THE HEART Westmoreland Street W 1

PHYSICIAN TO OUT PATIENTS

The Committee of Management invite applications for the post of Physician to Out-patients to fill a vacancy on the Honorary Medical Staff caused by the death of Sir Sidney Russell Wells M.P M D F.R.C.P

Candidates must be Graduates in Medicine of a University of the United Kingdom and Fellows or Members of the Royal College of Physicians of London

Applications with ten copies of not more than three recent testimonials, should be sent to the undersigned no later than Saturday October 4th, 1924

ROBERT G E WHITNEY Capt Secretary

Western Ophthalmic HOSPITAL, Marylebone Road N W 1

Applications are invited for the posts of SENIOR and JUNIOR NON-RESIDENT HOUSE SURGEONS The salaries are at the rate of £150 and £100 per annum respectively and the appointments are for six months. The selected candidates will be required to take up duty early in October

Applications accompanied by copies of three testimonials should reach me by September 29th, 1924

H W BURLEIGH Honorary Secretary

Belgrave Hospital for CHILDREN (Incorporated) 1 Clapham Road S W 9

The Committee of Management invite applications for the posts of HOUSE PHYSICIAN and HOUSE SURGEON which will become vacant on October 31st 1924

Applicants (men) must be fully qualified and registered. The appointments are for six months with board and residence and washing provided. Salary at the rate of £100 per annum in each case

Applications, with copies of testimonials to be forwarded on or before September 30th 1924 to the undersigned, from whom further particulars may be obtained By order

THOMAS CLAPHAM Secretary

Royal Chest Hospital, City Road E C (Royal Northern Group of Hospitals)

A vacancy occurs for a PHYSICIAN with charge of Out-patients. Candidates must possess the degree of M D or M.B. obtained by examination at a British University and be Fellows or Members of the Royal College of Physicians of London

Applications should be sent to the undersigned, from whom particulars of the office and details with regard to the submission of testimonials etc. may be obtained

GILBERT G PANTER Secretary

Royal Northern Hospital Holloway N

The Queen's Hospital for CHILDREN Hackney Road, Bethnal Green, E.2 (Telephones 504 and 934 Dalston)

The Committee invite applications for the post of PHYSICIAN IN-CHARGE of the Skin Department. Candidates who must be Fellows or Members of the Royal College of Physicians of London should send in their applications with copies of testimonials on or before October 15th 1924, and should be prepared to take up the duties immediately after appointment

Information re duties and times of attendance on application

T GLENTON KERR Secretary

September 15th 1924.

The Queen's Hospital for CHILDREN Hackney Road, Bethnal Green, E.2 (Telephones 504 and 934 Dalston)

Medical Residents required as follows Two HOUSE PHYSICIANS November 1st, 1924 One CASUALTY HOUSE SURGEON November 7th, 1924 Six months appointments

Salary £100 per annum, with board residence, and washing

Candidates should be duly qualified Preference will be given to those who have had previous experience.

Applications which must be made on forms to be obtained from the Secretary must be sent in with testimonials by October 11th 1924

T GLENTON KERR Secretary

Wanted, Nov 1st, Assistant (out) Univ city West, for old estab easily worked practice young keen abstainer energetic, cyclist or motor bike Scot or Engl H S profd, with spec exper Gyn, and Dis Child £250 p a + good house and rate (=£75) + ½ private fees at branch + ½ mids and ½ night fees Good panel and clerk dispenser Rise proport effort and accept ability Sign for a year, if approved Usual bond Good opportun —Add, essent particls, with photo, testimos (copy), to No 4812, B M J, 429 Strand

Wanted —For 1st November well qualified and experienced ASSISTANT to take charge of branch practice in country and assist Principal in town Good opportunity for Surgery Salary £400 per annum all found Must be able to drive car Send photo and testimonials —Address No 4842. BRITISH MEDICAL JOURNAL Office 429, Strand W C 2

Wanted –Assistant, over 30, energetic reliable man for large Practice, panel and private, in Northern County Consideration shown to one who is keen on midwifery and who has had experience in this and women's diseases Address stating age, height, references etc —No 4844 B M J Office 429 Strand, W C 2

Wanted — Assistantship or *HOSPITAL APPOINTMENT* by (woman) L R C P & S Edin, aged 38 6 years experience in General Practice 6 years in Sanatoria and 1 oor Law Hospital, good Anæsthetist Free now —Address No 4850 BRIT MED JOURN 429, Strand, W C 2

Wanted — Assistantship, or Locums by Univ Grad (male) single aged 25 T T, Scotch R C, Ex H S and H P experience of private and panel midwifery and anæsthetics Can drive car or motor cycle Energetic Excel tests — Add No 4846 B M J 429 Strand

Wanted –Assistant for mixed Practice in large East Coast town Recent University Graduate preferred State age height, and essential particulars Salary £200 indoors —Address No 4845 BRITISH MEDICAL JOURNAL Office 429, Strand W C 2

Wanted —Assistant, male, unmarried; indoor in a town practice in Lancashire State full particulars —Address No 4843 BRITISH MEDICAL JOURNAL Office 429 Strand W C 2

Wanted in London, indoor, single male ASSISTANT in panel and private practice Some afternoons and mornings for hospital Time for reading No night work Usual bond Mod remuneration State essential particulars.—No 4848 B M J 429 Strand W C 2

Wanted, in large West Riding Town on October 1st MALE ASSISTANT single, large panel and private practice £350 per annum all found usual bond —Apply BISTOURY, REYNOLDS & BRANSON LTD, Whole sale Chemists Leeds

Wanted — Young qualified ASSISTANT Colliery and panel practice South Wales British Usual bond Please state essential particulars and references —Address No 4821 BRITISH MEDICAL JOURNAL Office 429 Strand W C 2

Assistantship wanted by Scotch graduate (lady), with or without view to Partnership L x H S Experienced general practice, gynecology anæsthetics dispensing, etc; energetic excellent testimonials —Address, No 4731 BRIT MED JOURN Office 429, Strand, W C

Assistantship wanted by M B (T C D) One and a half years experience of general practice (private and panel) Have done own dispensing Excellent testimonial Free beginning of October Full particulars on application —Add No 4807 B M J Office 429 Strand W C 2

Assistantship wanted, in or near London by M B B S Lond M R C S, L R C P (woman) 3 years hospital experience 1 een on midwifery; good anæsthetist —Address, No 4 831 BRITISH MEDICAL JOURNAL Office, 129 Strand W C 2

Assistantship, view Partner- ship eventually Succession wanted in London by L R C P, male 30, married 3½ years R A M C Clinical Assist Tuberculosis and Children Post grad and some G P exper Good addres and refs some capital —Add No 4839 B M J Strand

Assistant wanted, one month, and through winter if mutually agreeable Aged 30 35 Very light work now Indoor single or wife only Experienced private panel dispensing, etc Lovely country one hour London —Address, No 4849, BRIT MED JOUR Office, 129, Strand W C 2

Assistant (indoor) woman, wanted to assist Doctor Please give full essential particulars Protestant. Practical experience in Midwifery necessary — Address, No 4834 BRITISH MEDICAL JOURNAL Office, 429, Strand W C 2

A Certificated Mental Nurse required as MATRON in a small home near London for cases of Mental Derangement (Neurasthenia etc.) Some experience of Institutional management necessary — Address No 4822 BRITISH MEDICAL JOURNAL Office, 429, Strand, W C

Company operating in India require immediately unmarried MEDICAL OFFICER Preference will be given to one with experience of Tropical diseases —Particulars regarding age and qualifications to be sent to Box 474, SHAW & BLAKE Ltd, Advertising Agents, 8, Bell Yard, Temple Bar W C 2.

Edinburgh M B., Ch B, wishes ASSISTANTSHIP in good practice Aged 27; height 6 feet Good knowledge of midwifery, V D, anæsthetics etc Excellent references —Address No 4838 BRITISH MEDICAL JOURNAL Office, 429, Strand W C 2

Engagement wanted up to two years, General Practice or any branch of Public Health Thoroughly experienced in all, including Sanatorium work. Had own practice Highest personal references.—Address No 4415, BRITISH MEDICAL JOURNAL Office, 429, Strand W C

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Note.—It is against the Rules of the Post Office to receive *poste restante* letters addressed either in initials or numbers

Lancashire —Wanted, ASSISTANT, with view to early Partnership, in good town Should have held Hospital appointments and had some experience of practice but the latter not so essential as the former Good prospects for suitable man Will probably be appointed to local Hospital staff Share of £800 at first —Add, No 4801 B M J 429 Strand W C

M B, Ch B.Edin (woman) desires ASSISTANTSHIP or LOCUMS; excellent experience midwifery Scotch, cyclist keen and energetic residing in London, free now —Address No 4 826 BRITISH MEDICAL JOURNAL Office 429 Strand, W C 2

Lady M B, Ch B, aged 25, R C energetic desirous of experience for general practice requires ASSISTANTSHIP in October —Address No 4828 BRITISH MEDICAL JOURNAL Office, 129, Strand, W C 2

M B., Ch B (Belf), aged 24, desires ASSISTANSHIP or LOCUM for a few months Excellent testimonials etc, on application —Address, No 4806 BRITISH MEDICAL JOURNAL Office, 429, Strand, W C 2

M B, Ch B, D P H, woman, Scotch, wishes ASSISTANTSHIP previous experience, moderate salary references —Address No 4634, BRITISH MEDICAL JOURNAL, 429 Strand

M B, F R C S Eng, desires ASSISTANTSHIP live out at £500 per annum —Address No 4813 BRITISH MEDICAL JOURNAL Office, 429, Strand W C 2

M B, Ch B, attending Post Graduate Course, desires EVENING WORK now till December 2 or 3 evenings per week Some panel and private experience excellent references London S W preferred —Address No 4 818 BRIT MED JOURN Office 429 Strand W C

M B, Ch B (Honours), M A, B Sc L x H S free to do EVENING SURGERIES in London Good refs —Address No 4,816 BRIT MED JOURN Office 429, Strand, W C

Scotland –Assistantship with view, wanted by M B Ch B Glasgow aged 29 single 1½ years war service ex H P and H S, and 1 year Assistant in panel and private practice Good references Free now —Address No 4 851 BRITISH MEDICAL JOURNAL Office 429, Strand, W C

Trained Nursing Sister Wanted, for Hospital in Spanish speaking country Knowledge of the l ng ge Experience in Age 25 to 30 required to DA 30 3, 0 Cannon Street London E C 4

Traveller, with connection, required by well known House to call on Surgical Instrument Dealers Chemists and Opticians Small set of light samples Expenses, salary and commiss on London or Provinces —No 4841 BRIT MED, JOURNAL Office 429, Strand

University Graduate, 26, seeks ASSISTANTSHIP, London or provinces Steady, reliable abstainer experienced. Not afraid of work Excellent references. Small salary —Address No 4817 BRITISH MEDICAL JOURNAL Office, 429 Strand, W C 2

Woman M B, Ch B, would like to hear of a patient who WISHES TO TRAVEL or TAKE A VOYAGE. Medical services in return for small salary and expenses Three years experience in hospitals and general practice.—Address No 4829 B M J Office 429 Strand W C.

Young Practitioner experienced in panel and private Practice desires ASSISTANTSHIP in London Well recommended and not afraid of work Keen on midwifery Address, No 4809 BRITISH MEDICAL JOURNAL Office, 429, Strand, W C 2

Wanted —October, Qualified DISPENSER DRESSER knowledge Welsh Colliery practice preferred Panel Look after cards records etc No man not moderate and reliable considered young Address with full particulars terms recent refs, etc No 4805 B M J, 429 Strand

Wanted, a lady Dispenser Write stating age, experience salary required living out or in —Address, No 4838 BRITISH MEDICAL JOURNAL Office 429 Strand, W

Dispenser, Hall qualification (lady, 23 years), wants APPOINTMENT with Doctor, full time, three and a half years experience —Address No 4,815 BRITISH MEDICAL JOURNAL Office 429, Strand W C 2.

Doctors requiring Lad DISPENSERS should write to Mr J WALDEN Westminster College 113, St George Road S E 1 (only address) No fees to Doctors 25 years experience Daughters and other relatives of medical men always in training

Doctor's daughter (Hall Certificate) seeks post as DISPENSER BOOK KEEPER (In or near London) Experience Free end of October —Address No 4847 BRITISH MEDICAL JOURNAL Office 429 Strand W C 2

Doctor recommends his Lad HOUSEKEEPER—good cook organiser very reliable extremely good knowledge of Medical work and the running of a Doctor's household bright and active—to one or two Doctors 7 years with him —Address No 4827 B M J, 429, Strand

Gentlewoman requires Post with Doctor Oculist, good knowledge optical books, typewriting and receptionist.—DANIELS, 38 Leander Road Brixton Hill S W 2

Lady Dispensers supplied, qualified experienced, and also trained in Bacteriological Laboratories of the LONDON COLLEGE OF PHARMACY FOR LADIES Preparation for Examinations. Blood sugar estimation before and during Insulin treatment can be carried out by those Dispensers recently qualified from the College —Secretary 7 Westbourne Park Road W 2

Lady, aged 23, Hall certificate, 3 years experience the last year with a doctor as his DISPENSER and book keeper desires a similar post whole or part-time — Miss LAY, 'Lugano,' Croydon Road, Beddington, near Croydon, Surrey

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Telephone Regent 429

Wanted by M B, D P M, LOCUM TENENCY in MENTAL HOSPITAL. Free until January General and Mental Hospital experience. Excellent references Address, No 4836 BRITISH MEDICAL JOURNAL Office 429 Strand, W C.2.

Locum —Doctor retired from own Practice desires further engagements in London preferred. Terms from 5 guineas p w Disengaged from Oct 1st to 21st, and after November 1 Does some 10 locums annually —Address "Medicus" 53 Talbot Road Bayswater W

Locum Tenency or Assistancy wanted at once by an experienced and reliable man (Englishman) Conscientious worker and well received by patients Moderate fees if work heavy Excellent references —Address No 4832, BRIT MED JOUR Office 429 Strand W C.2.

Wanted —Partnership or PRACTICE by Graduate aged 30 single Private own practice out of receipts Middle aged full particulars confidence No 4814 B M J Office Strand, W C

Wanted by M B, D P H, 34, ex H S H P Sanatorium Fevers, V D experienced in general practice PARTNERSHIP South of England preferably on coast in good class non-dispensing Practice where knowledge of ties work of use —Address No 4711, BRITISH MEDICAL JOURNAL Office 429 Strand, W C 2

Partner wanted —Short Preliminary Assistantship Must be capable Surgeon, preferably F R C S South coast town preferred.—Address full details to No 4723, BRITISH MEDICAL JOURNAL Office 429 Strand W C.2

Partnership for £50 p a Purchasers expenses £2 p w average inc each £440 House being repaired Fifteen minutes Piccadilly —Address, No 4,803 BRITISH MEDICAL JOURNAL Office 429 Strand W C.2

Partnership offered in industrial practice in the Midlands Good opportunity for young man without capital.—Address No 4830 BRITISH MEDICAL JOURNAL Office 429 Strand W C.2

Partnership in General Practice in good educational centre starting £500—£700 share at two years' purchase Capital essential —Address No 4,833, BRITISH MEDICAL JOURNAL Office 429 Strand, W C 2

Urgent —Partnership wanted, preferably within 40 miles of London by well qualified, experienced graduate aged 33 married abstainer ample capital Excellent testimonials free now —Address No 4840 BRITISH MEDICAL JOURNAL Office 429 Strand, W C

Wanted in Country district a General PRACTICE of £1 400 to £1,600 a year House with garden in Southern half of England Applicant is experienced Graduate and can buy at once. Details received in confidence by 5531, c o Mr PERCIVAL TURNER, 4, Adam street Strand W C.2

Wanted —General Practice, including panel in London or any large town Receipts from £1,000 to £3 000 a year —Apply PEACOCK & HADLEY 19 Craven Street, Strand W C 2 (No charge unless sale effected.)

Wanted —A sound Practice or PARTNERSHIP by medical man age 37 very strong and active Income £500 to £1 000 a Panel work not objected to Good house containing at least five bedrooms essential.—Address No 4,804. BRIT MED JOURN 429 Strand W C 2

Wanted — Practice or PARTNERSHIP Income from £800 with scope to £2 000 a year Town or country Purchaser has ample capital —Apply PEACOCK & HADLEY 19 Craven Street Strand W C.2 (No charge unless sale effected)

Wanted by F R C S, aged 35 a PRACTICE or PARTNERSHIP in town in the S or Midlands, with scope for surgery Income about £1,000 Now free and can pay cash.—F c o BLUNDELL & Co, 29 Craven Street Strand W C 2.

Wanted. — F PRINCE, 32, Charing Cross London, S W 1 always having clients desirous of PURCHASING PRACTICES or PARTNERSHIPS in Town & Country prepared to pay good premiums, can usually effect a quick sale. Terms without obligation post free

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Bristol, wanted to purchase by Medical man with own practice a small additional PRACTICE or branch Surgery with panel about 600 State full particulars in strict confidence —Address No 4823 BRITISH MEDICAL JOURNAL Office, 429 Strand W C 2.

Death Vacancy —Fashionable watering place on West Coast. PRACTICE in full working up to late owner's death Receipts £1 100 to £1,200 first year Panel between 600 and 700 Very little midwifery No appointments.—Address No 4722, B M J Office 429 Strand W C

For Sale —Country Practice, unusually good opening for medical man willing to purchase an excellent house long associated with a high-class connection No premium for introduction —Address No 4702. BRITISH MEDICAL JOURNAL Office 429 Strand W C 2

For Sale —Practice in Central Scotland Panel &c Excellent prospects Good house with ground garage &c Price around £3 500 total one-third left on Bond if necessary —Apply A NICOL BRUCE W S 10 Coates Gardens Edinburgh

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For Disposal —A good Prac- TICE is not always to be had direct by but Mr PERCIVAL TURNER can generally offer applicants something suitable Nearly all the best Practices are sold by him with us being advertised —Full *information free on application at* 4 Adam St. W C.2

Lancs Seaside Resort — PRACTICE for sale in centre Crown Gd house rent £70 Receipts about £350 with great scope for increase especially in panel Price £450 —MANCHESTER MED & SCHOLASTIC ASSOCIATION *Ltd 6 Brown Street*

Liverpool —Wanted a PRACTICE Income £1,500 to £2 500, panel and private Ample capital available Would consider exchange of practices with adjustment —Address No 4825 BRITISH MEDICAL JOURNAL Office 429 Strand W C.2

Medical Practice (old- established) Northumberland with good house average cash receipts £2,150 suitable introduction ROBERT FLEMING S S C 21 Hill Street Edinburgh

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Midlands —Small Industrial Town PRACTICE returning about £2,500 p a Panel 1 600 Convenient residence with garden garage &c Rent £40 Premium £3,500 *or near offer* —Apply *PEACOCK & HADLEY* 19 Craven Street Strand W C.2.

Middle-aged practitioner, with large experience in hospital and private practice would like to hear of a good PRACTICE with Partnership introduction in the neighbourhood of Hampstead or Hendon No Agents.—Address No 4718 BRIT MED JOURN Office 429 Strand W C

Notts —Good and Middle- class PRACTICE. Excellent corner house garage, &c. £60 Receipts over £1,200 Good panel Great scope Price 1½ years purchase, part of which may be deferred.—MANCHESTER MEDICAL & SCHOLASTIC ASSOCIATION Ltd. 6 Brown Street.

Nucleus Practice, £400 p a, (£90 panel) with great scope (midwifery and surgery not undertaken) and good corner house on main road with garage Growing district South Manchester Price £1 500 cash or near offer for quick sale.—Address No 4811, B M J 429 Strand.

South London —Long estab- lished General PRACTICE, held 10 years by Vendor Receipts £1 100 p.a. panel about 650 House contains 10 rooms kitchens and bathroom Rent £74. Premium 1½ years' purchase.—Apply, PEACOCK & HADLEY 19 Craven Street Strand, W C

Scotland —Country (Village) PRACTICE Receipts including panel and appointments £700 £800 House to be sold with practice Any reasonable offer entertained Good reasons for disposal.—Address, No 4710 BRITISH MEDICAL JOURNAL Office, 429 Strand, W C.2

Midlands —Pleasant County Borough Old-established industrial and middle-class PRACTICE Average receipts £2 548. Panel 2 222 Appointments probably transferable. Good house Preliminary Partnership or Assistantship —LEE & MARTIN Ltd 71 Temple Row Birmingham.

West Midlands —Old-estab Town and Country PRACTICE in a County Town Receipts £1,574. Appointments. Panel nearly 400 Good fees Extensive small Hospital (20 beds) Purchaser would be appointed Physician or Surgeon. Good house and garden.—LEE & MARTIN Ltd 71 Temple Row Birmingham

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North of England —Old- established County Town PRACTICE Average receipts £1,460 Good panel. Extensive small Good house garden tennis lawn and orchard —LEE & MARTIN Ltd 1 Temple Row Birmingham

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Staffordshire —Old-estab Town and Country PRACTICE Receipts £1,100 Panel over 600 Appointments Scope Freehold House on lease. Ample accommodation good garden —LEE & MARTIN Ltd. 1 Temple Row Birmingham

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Required at once —Practices and PARTNERSHIPS —Mr W S ATKINS (late of ARNOLD & SONS London) has a large number of Clients who are seeking Practices and Partnerships and wish to settle down at once.—Send full particulars in confidence to Mr W S ATKINS Medical Transfer Agency, 4? Bedford Street Strand London W C 2

South Coast —For disposal, good-class PRACTICE returning over £1,000 p a to panel or dispensing Visiting fees 7 to 21 Appointments about £180 Midwifery 5 to 12 guineas Dispensing and electric light, etc to rent Great scope for increase panel etc Good school —Apply No 7594, c o Mr PERCIVAL TURNER 4 Adam Street Strand W C.2.

To Purchasers —Do not Buy [illegible] with 40 years experience in advise in all cases. 4 Adam Street Strand W C 2 Telephone Gerrard 5? Telegrams "[illegible]m London."

Yorkshire —Death Vacancy Middle and working class Country PRACTICE yielding about £700 a year Scope for increase. House will be Let or Sold. Offers invited —Apply PEACOCK & HADLEY 19 Craven Street Strand W C.2

Bournemouth —In local Harley Street CONSULTING ROOM and use of Waiting Room to Let. Dark Room small table Suitable for Radiologist or Ear Specialist.—Address No 4824 BRITISH MEDICAL JOURNAL Office 429 Strand W C.2

Bed sitting room available Doctors' House close to Harley Street Reduced terms to Medical man.—Address No 4808 BRITISH MED CAL JOURNAL Office 429 Strand W C.2

Consulting and Waiting ROOMS (Ground floor) unfurnished, to Let off Bryanston Square. Service by arrangement.—Phone Paddington 1604 or write No 4837 BRITISH MEDICAL JOURNAL Office 429 Strand W C

Consulting Rooms, furnished or unfurnished with Waiting Room and attendance whole or part time Large and light —Miss STEAR, 8 New Cavendish Street W 1

Grosvenor Street (near) — Part time use of CONSULTING and WAITING ROOM suit Specialists from £100 —Write G 16 c o WILLINGS 43 Knightsbridge

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Harley Street —Large, light CONSULTING ROOM Newly decorated. Beautifully and completely furnished. First floor back. Part-time with or without phone —Address No 4819 BRITISH MEDICAL JOURNAL Office, 429 Strand, W C.2.

Lady offers accommodation on first floor of her house in Dorset Sq. W., as CONSULTING and RECEPTION ROOMS Furnished or unfurnished as desired.—Apply L 47 Dorset Sq W 1 Telephone Langham 2 2?

Park Crescent, W —Excellent ground floor Suite of FOUR ROOMS also Basement Room newly decorated suitable for Doctor or Dentist. Attendance, telephone and two patients.—Apply BEDFORD & Co 9 Wigmore Street W

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New West End Nursing Home —MODERN THEATRE is available for doctor and friends to establish as Private Company Excellent opportunity —Address in confidence No 4802 BRITISH MEDICAL JOURNAL Office 429 Strand W C 2

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1 1 9 Calcott Coupé, 1921-22, Double dickey dynamo lighting clock speedometer grid, Bedford Cord worn otherwise condition excellent Cost £600 What offers?—Apply OWNER Shirley Cottage Beaconsfield Bucks

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Altrincham General Hospital, Cheshire

HOUSE SURGEON required Male or Female Candidates must be fully qualified and registered Salary £125 per annum with board residence and laundry Duties to commence on or about November 8th 1924

Applications stating age and experience together with copies of recent testimonials to be sent in not later than Wednesday October 1st 1924 to William Moody Secretary 31, Market Street, Altrincham, Cheshire

Manchester Royal Eye HOSPITAL

JUNIOR HOUSE SURGEON required Salary £120 with residence, board etc Applications (with copies of testimonials) endorsed 'House Surgeon' to be addressed to the Chairman of the Board of Management not later than Oct 3rd 1924
W S PROPHET, Secretary

Ministry of Health

The Minister of Health invites applications from registered Medical Practitioners (Men) for three vacant appointments as MEDICAL OFFICER on the staff of the Ministry

The salary commences at £600 per annum and rises by yearly increments of £25 to £900 and then by yearly increments of £50 to £1 100 per annum In addition to the salary a bonus, which varies with the cost of living is payable

The appointment will carry the usual Civil Service conditions as to pension, holidays etc

Candidates must be medical men of not less than 10 years standing, and be experienced in public health or preventive medicine work

A Medical Officer is required to devote his whole time to the Public Service and must be prepared to work in any part of England or Wales if required to do so

Canvassing Members of Parliament or Officers of the Ministry will render a candidate liable to disqualification

Forms of application with further particulars of the appointments may be obtained from the
Director of Establishments
Ministry of Health Whitehall, S W

No application can be considered unless received on the prescribed form not later than the 13th October 1924

County Borough of Burton-UPON TRENT

ASSISTANT MEDICAL OFFICER

The Council invite applications from Candidates for the appointment of Assistant Medical Officer of Health Assistant School Medical Officer, and Assistant Tuberculosis Officer

Salary £600 per annum

The appointment will be terminable by one calendar month's notice on either side

The person appointed must have a diploma in Public Health and must have had not less than three years post graduate experience and will be required to devote the whole of his time to the duties of the office and to act under the direction of the Medical Officer of Health

Applications stating age experience and qualifications, and endorsed 'Assistant Medical Officer, to be delivered to me with copies of not more than 3 recent testimonials, not later than Wednesday October 1st, 1924

A list of the duties can be obtained on application

Canvassing any member of the Council will disqualify

JOHN B CHAPMAN,
Town Hall, Burton-on Trent Town Clerk
September 10th 1924

Salford Royal Hospital

(260 Beds)

Applications are invited for the appointment of DISTRICT MEDICAL OFFICER for the Salford and Broughton areas

Candidates must be registered under the Medical Acts

Applications, stating age and qualifications, together with Registration Certificate and by not more than six testimonials, to be forwarded without delay

Particulars of duties etc, may be obtained on application to the undersigned.

By Order of the Board
GEORGE RUDDLE
General Superintendent & Secretary
September 23rd, 1924

The King Edward VII Welsh NATIONAL MEMORIAL ASSOCIATION

Applications are invited from duly registered Medical Practitioners (Male) for the post of FIRST ASSISTANT RESIDENT MEDICAL OFFICER at the South Wales Sanatorium Talgarth Breconshire Salary £375 per annum plus maintenance, rising by annual increments of £25 to £450 per annum

Applications giving qualifications and experience and accompanied by three recent testimonials should reach the undersigned by October 1st 1924

Memorial Offices WILLIAM MILES
Westgate Street Cardiff Secretary

Royal Victoria Infirmary, Newcastle upon Tyne

The Committee invite applications for the post of RESIDENT MEDICAL OFFICER (Male)

Candidates must be registered Medical Practitioners and Graduates of a recognised British University, or Fellows or Members of one of the Royal Colleges of Physicians and Surgeons of Great Britain or Ireland

The appointment is for one year and the salary is at the rate of £350 per annum

Full information can be obtained by application to the undersigned to whom applications stating age qualifications and experience accompanied by not more than three recent testimonials should be sent on or before Monday October 6th, 1924

S DUNSTAN,
House Governor and Secretary
September 23rd, 1924

Rhondda Urban District COUNCIL

The above Council invite applications from qualified medical practitioners to act as whole time ASSISTANT SCHOOL MEDICAL OFFICER and MEDICAL OFFICER OF HEALTH under direction supervision and control of the Council Medical Officer at a salary of £600 per annum together with travelling expenses necessarily incurred in the performance of the duties

The duties will pertain to both the Public Health and School Medical Services and are detailed in the form of application obtainable from the Medical Officer of Health.

The officer appointed will be subject to three calendar months notice and will be required to reside within the Rhondda Urban District

Canvassing by or on behalf of candidates will be considered to be a disqualification

Applications, endorsed 'Assistant Medical Officer and accompanied by copies of not more than three recent testimonials, must reach the undersigned not later than Tuesday October 7th, 1924

The Council Offices, WALTER NICHOLAS
Pontre Rhondda Clerk of the Council
September 16th 1924

City of Birmingham EDUCATION COMMITTEE

APPOINTMENT OF OPHTHALMIC SURGEON.

The Committee require an Ophthalmic Surgeon in connection with the School Medical Service. The officer appointed will be required to devote to his duties two sessions per week during school terms Each session will be of 2½ hours duration. Salary £265 per annum which is the equivalent of £3 3s per session

Forms of application which should be returned not later than first post on Thursday October 9th, 1924, together with further information, may be obtained from the undersigned

Education Office P D INNES
Council House Chief Education Officer
Margaret Street
Birmingham

Manchester Royal Infirmary

(Central Branch), Roby Street, Manchester (94 Surgical Beds New Casualties about 30 daily.)

ASSISTANT RESIDENT MEDICAL OFFICER (LADY) to commence duty November 1st 1924

The Board of Management of the Manchester Royal Infirmary invite applications for the above appointment which is tenable for six months subject to the provision of the Bye laws as to notice Remuneration is at the rate of £200 per annum, with allowance for washing

Applicants must state age, and send twelve copies of their application and testimonials to the undersigned by Friday, October 24th, 1924

FRANK G HAZELL,
September 16th, 1924 Gen Supt. & Secretary

Hospital for Consumption and DISEASES OF THE CHEST, Brompton S W

The Committee of Management invite applications for the post of HOUSE PHYSICIAN (for which there are two vacancies) The duties include work in the Out-patient Department as well as in the Wards and one of the selected candidates will also be appointed Assistant to the Tuberculosis Officer for the local Tuberculosis Dispensary at the Hospital. Applications with testimonials must be sent in not later than Tuesday, October 14th, 1924 addressed to the Secretary The appointment is for six months, commencing on November 1st, with an honorarium of £50

Brompton FREDERICK WOOD,
September 1924 Secretary

Paddington Green Children's HOSPITAL London W 2

HOUSE SURGEON

The appointment of House Surgeon will become vacant on November 1st 1924 Gentlemen are invited to send in their applications, with copies of three testimonials addressed to the undersigned not later than October 10th 1924

The appointment is held for a period of six months at a salary of £150 per annum with board and residence Candidates who have held a responsible Resident Hospital appointment are preferred

JAMES A HAMLIN Secretary

The Warneford, Leamington AND SOUTH WARWICKSHIRE GENERAL HOSPITAL Leamington Spa require on the 13th October 1924 a RESIDENT HOUSE SURGEON, fully qualified and registered male, who will assist in the Surgical Ward Maternity and Ophthalmic Departments and laundry ence with th sent to

Sept 22nd 19

St Marylebone Hospital,
London W 10

VISITING CONSULTANT FOR THE NOSE EAR AND THROAT DEPARTMENT

... more junior ...

For further particulars and conditions of appointment apply to the Clerk to the Guardians enclosing a stamped addressed envelope

By Order
EDWARD A FRITH
Clerk to the Guardians
Guardians Offices Northumberland Street W 1

King's College Hospital

Applications are invited before October 1th 1924 for the following appointments —

CLINICAL ASSISTANTS in the Medical Surgical Gynæcological Children's Neurological Cardiological Aural Laryngological Ophthalmic Skin Urological Orthopædic Pathological Radiological and Dental Departments

MEDICAL AND SURGICAL OUT PATIENT OFFICERS

SAMBROOKE MEDICAL SURGICAL AND OBSTETRIC REGISTRARS

Particulars of the above may be obtained from the House Governor King's College Hospital Denmark Hill S E 5

The Staffordshire General
INFIRMARY Stafford

Applications are invited for the post of HOUSE PHYSICIAN (Male) Salary at the rate of £150 per annum, with board lodging etc Candidates must be duly qualified and registered under the Medical Acts

The appointment to be held for at least six months commencing October 16th The duties include work in the Out Patients Department as well as in the Wards and the administration of anæsthetics

Applications stating age accompanied by copies of three recent testimonials should reach me by Wednesday October at 10 4

A E COLLINS
Stafford, Secretary
October 22nd 1924

University College Hospital,
Gower Street W C 1

Applications are invited for the post of RESIDENT MEDICAL OFFICER. Salary £150 per annum with board and residence The appointment carries with it certain additional emoluments amounting to about £50 per annum in connection with the National Health Insurance Acts

Applications accompanied by such evidence of fitness for the post as the candidate may desire to furnish must reach the Secretary by noon on Wednesday October 1st 1924

Napsbury Mental Hospital,
near St Albans Herts

COUNTY COUNCIL OF MIDDLESEX.

FOURTH ASSISTANT MEDICAL OFFICER required Commencing gross salary £526 10s Od per annum of which £151 10s Od is War Bonus and is variable with the rise and fall of the Civil Service cost of living index figure Present charge for board lodging washing and attendance for Medical Officer living in is £120 per annum Appointment is subject to the Asylum Officers Superannuation Act 1909 Applications to the Medical Superintendent

City of London Hospital for
DISEASES OF THE HEART AND LUNGS
Victoria Park E 2

The Committee of Management are desirous of appointing a PHYSICIAN to Out patients Candidates must be Fellows or Members of the Royal College of Physicians of London An honorarium is attached to the post

Applications accompanied by copies of testimonials should reach the Secretary at the Hospital no later than Monday October 6th 1924

GEORGE WATTS Secretary

The Royal Infirmary,
Sheffield (383 Beds.)

The Weekly Board of Management invite applications for the post of RESIDENT SURGICAL OFFICER. The salary attached to the appointment is £200 per annum with board and residence

Applications, with copies of testimonials to be addressed to the undersigned

JNO W BARNES
Board Room Secretary
August 20th 1924.

County Council of Durham

MATERNITY AND CHILD WELFARE

ASSISTANT WELFARE MEDICAL OFFICER

The County Health Committee invite applications for the appointment of Assistant Welfare Medical Officer (woman) at a commencing salary of £600 rising by annual increments of £25 to £650 per annum Travelling expenses will be paid by the County Council according to scale

Applicants must be registered Medical Practitioners not exceeding forty five years of age with special experience in Maternity and Child Welfare work and its organization The person appointed will be required to reside in Durham City or other approved centre and devote his whole time to the ... be debarred from engaging in ... terminable by three months' ...

A deduction of 5 per cent will be made from the salary in accordance with the provisions of the Local Government and other Officers Superannuation Act 1922 which has been adopted by the County Council and the appointment will be subject to passing the County Council's medical examination in connection therewith.

... married Assistant Welfare Medical ...

October 6th 1924.

HAROLD JEVONS
Clerk of the County Council
Shire Hall Durham September 10th 1924

The Hospital for Sick Children
Great Ormond Street London W C 1

A HOUSE PHYSICIAN AND ASSISTANT CASUALTY OFFICER is required on October 14th 1924

Gentlemen are invited to send in their applications addressed to the Secretary before 10 o'clock on Monday October 6th 1924 with copies of not more than three testimonials given specially for the purpose and also evidence of their having held a responsible hospital appointment.

The appointment is made for six months. Salary £50 laundry allowance £2 10s and board and residence in the Hospital

Candidates must be unmarried and possess a legal qualification to practice

... Candidates must be in attendance on ...

... be obtained from the Secretary
By order of the Board of Management
JAMES McKAY
September 1 24 Secretary

The Hospital for Sick
CHILDREN Great Ormond Street London W C 1

A HOUSE SURGEON is required on October 1 th 1924

Gentlemen are invited to send in their applications addressed to the Secretary before 12 o'clock on Monday October 6th with copies of not more than three testimonials given especially for the purpose and also evidence of their having held a responsible hospital appointment

The appointment is made for six months Salary £50 laundry allowance £2 10s and board and residence in the Hospital

Candidates must be unmarried and possess a legal qualification to practice

All candidates must be in attendance on Wednesday October 8th 1924 at 2 p m precisely to appear before the Joint Committee if required

Forms of application and copies of the rules may be obtained from the Secretary

By order of the Board of Management
JAMES McKAY
September 1924 Secretary

ST. LUKE'S HOSPITAL.
ESTABLISHED 1 51

PRIVATE NURSING STAFF DEPARTMENT

TRAINED NURSES for MENTAL and NERVOUS CASES can be had immediately Apply to LADY SUPERINTENDENT 19 Nottingham Place London W 1 Telephone Mayfair 3129

NORTHERN BRANCH —Apply LADY SUPERINTENDENT, 57 Clarendon Rd Leeds 'Phone Leeds 2 65

THE
NEW MENTAL NURSES CO-OPERATION,
139, Edgware Road, Marble Arch, W

Specially trained Nurses for Mental and Nerve cases (All Nurses are insured under the Employers Liability Act 1906.) Apply the SUPERINTENDENT

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Psyconurse Paddi London." No 2165 Paddington.

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Partners
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J R LOWNDS (B A Cantab L R C P)
43, BEDFORD STREET, STRAND W C 2
(1 Doors off from *The Lancet" Office)*
Telegrams Practitioner West rand London."
Telephone Regent 229

LOCUM TENENS and ASSISTANTS supplied

FOR DISPOSAL

London, S W —A General PRACTICE situated in a good residential suburb Receipts £900 panel nearly 300 Fees 2 6 upwards Ample scope for young man Vendor retiring Excellent corner house with 6 bedroom etc Premium for practice 1 year purchase Premium for house £2 500 Part can remain on mortgage —Folio 623

Midlands —An old-established GENERAL PRACTICE situated in a small Country Town Receipts £1 200 Fees 3 6 upwards Panel 600 Appointments £100 Scope for increase Vendor retiring Excellent house containing 8 rooms etc Over acres of ground etc Premium 1 year purchase —Folio 617

Norfolk —A General PRACTICE situated in a country district Receipts £1 600 Panel nearly 900 Good fees Nice house with excellent garden etc Rent £35 per annum Premium £2 500 —Folio 600

Notts — A Middle and ...

London — City Practice Receipts £1 250 including appts £300 Panel 1 60 Fees 3 6 upwards Vendor retiring Ample scope Nice house in central position at rental Premium £2 000 —Folio 667

Salop —A Partner required for an old established Practice situated in a Market Town Receipts over £3 500 Panel 700 Cottage Hospital in district. Income should have Surgical experience Nice house at rental Premium for one third share 14 years purchase —Folio 888

Purchasers stating their requirements can have details of other Practices not advertised

ESTABLISHED 1868

PEACOCK & HADLEY,
(Mr A HADLEY)
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W J HICKS *Secretary*

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South Wales—About £600 p.a. Panel 150. Appointments £200. Visiting fees 3/6 up. Small house and garden, separate surgery, low rent. Premium £700.—Apply No 7599

London, W—About £1,700 a year. First-class PRACTICE non dispensing. No panel. Fees 21/- upwards. Excellent house on lease. Purchaser must be a graduate, middle aged and well qualified, with ample means.—Apply, No 7595

Lincoln—Country Town, about £1 850 p.a. Very old established Panel over 1 000. Visits 3/6 up. Appointments about £70. Good detached house, tennis garden ½ of an acre. Long introduction.—Apply, No 7593

Exchange of Practices, South West County.—Owner of an old established Practice of £1 400 a year in a charming country district in the West Country is open to exchange for a more easily worked Practice in West of London, or in a good suburb.—Apply, in confidence No 7592

Urgent Sale. Unusual opportunity £2 200 a year increasing easily worked PRACTICE in a Seaport Town in South Wales. Very little night work. Fees for visits from 5/ upwards. Panel 1 450. Excellent corner house (not large) with garden. Every investigation. Personally investigated and recommended. For a quick sale the low price of one year's purchase will be accepted.—Apply No 7590

London, S.W—Partnership. About £3 000 a year. Panel 1 000. Very old established Practice. Midwifery fees 2 to 10 guineas. Visits 3/6 to 7/6. Flat available. Premium £2 750.—Apply No 7585

Suffolk.—Nearly £1,600 a year. Non-dispensing PRACTICE. Panel 700. Fees 5/ to 10/6. Good detached house, large garden. Rent £70. Some surgery and ample scope.—Apply, No 7583

Yorkshire—Average £1,286. Appointments £350. Visiting fees 3/6 to 10/6. Panel nearly 1,300. Few midwifery cases. Good house, every convenience.—Apply No 7581

North-West County—£ a year. Old established midwifery 4 to 7 guinea[illegible] own grounds. Scope.—Apply No 7579

Death Vacancy—London, S.E. About £1 524 per annum. Cash and panel PRACTICE. Visiting fees 2/6 to 5/. Excellent premises on lease. Small panel. No Sunday or night work.—Apply No 7576

Monmouthshire—Over £1 600 a year. Established 20 years. Panel over 1,100. Visits 5/ up. Appointments about £940 p.a. Good house, garden and garage to rent.—Apply No 7570

Near Manchester—Nearly £2 000 p.a. Panel worth about £600 p.a. Moderate house with separate surgery to rent. Premium 1½ years purchase, easy terms. Good schools near.—Apply No 7565

Eastern County. Partnership. About £2 200 p.a. Panel about 2 000 and other appointments. Fees 3/6 up. One-third share for disposal with succession in about 3 years. Apply No 7564

London, S.W—Partnership and succession £2 000 a year. Half share for disposal immediately. Panel 1 800. Old established. Good fees. Excellent house and large garden. Prem 2½ yrs purchase.—Apply No 7560

Nottinghamshire—Over £1 250 a year. Middle and working class. Panel 700, rapidly increasing. Fees chiefly 3/6 to 7/6 and up to 21/. Small house with garage on lease. All sport and good schools.—Apply 7549

Cheshire—Nearly £4,000 a year. Old established Practice. HALF SHARE for Sale at 1½ years purchase. Panel about 1 400. Appointments £45. Good fees. Good house and garden to rent.—Apply, No 7536

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BIRMINGHAM (near).—Well established G.P. Good house to rent, situated in busy district. Income over £1 700 p.a. Panel over 2 000. Premium £2,750.

YORKS (W.R.).—Old established G.P. Nice house, panel nearly 1 300. Two appointments. Premium £3 000 to include house. Part can remain.

YORKS (E.R.).—Busy industrial practice. Panel over 1 120. Income £2 050 p.a. Scope for Surgery. Premium 1½ years purchase. Part can remain.

CITY.—Old established G.P. Non panel. Good position. Fees 5/ upwards. Scope for V.D. Ear Eye Nose and Throat work. Premium £3 400.

SOUTH COAST.—PARTNERSHIP in old-established G.P. Panel over 4 000. Income over £4 000 p.a. No midwifery or night work. Premium for one third share 2 years' purchase.

NEWCASTLE UPON TYNE (nr.).—Old established non panel PRACTICE. Good sized house, 2 reception, 5 bedrooms, maids room, waiting room, 2 consulting rooms. Average income (certified) £4 276. Fees 4s 6d to £1 1s. Midwifery £3 3s upwards. Prospect of Hospital appointment. Three appointments. No night work. Premium £3 000. Vendor retiring. Good introduction. Scope for Surgery.

SOUTH COAST.—PARTNERSHIP in old-established G.P. Panel 3 000. Income £3 200. Two-fifths share at 2 years purchase. Excellent house.

CHESHIRE.—PARTNERSHIP in old established G.P. situated in large town. Panel nearly 2,000. Income £1 707. Premium 2 years purchase for one-third or one half share.

LONDON, S.W.—Old established G.P. Panel 800. Income £1 000. Small house, garden etc. Low rental. Premium £1 700 to include lease.

LONDON, S.W.—PARTNERSHIP in old established Practice situated within 10 minutes of West End. Income about £3 300. Panel about 1 000. Half share. 2 years purchase.

Purchasers stating their requirements will be sent particulars of other suitable Practices and Partnerships for sale free of charge.

Please address all communications to the Manager Mr W H GRANT, Medical Transfer and Insurance Department.

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TELEGRAMS: Locum, Birmingham.
TELEPHONE: 1116 Central Birm

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Accounts Investigated & Income tax Returns prepared
LOCUMS AND ASSISTANTS SUPPLIED

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LOCUMS SUPPLIED

Death Vacancy—Middle class PRACTICE in open suburb. Receipts about £3 000. Panel 1 500. Good house and nice garden, rent £90.

Midlands—Unopposed PRACTICE of £1,000 in nice district near two good towns. Scope for increase. Appts. £100. Panel 500. Station. House has 2 sitting rooms, 4 bedrooms, garage, garden, rent £40 or could be bought for £750. Prem. only £750.

West Riding—Practice of £1,500. Panel 1 050. Opposition slight. Good house, rent £80. Premium £2,000.

Midlands—Town and country PRACTICE of £1 200. Panel 600. Good corner house with garage, rent £60.

Midlands—Good money making PRACTICE of £1 800 with great scope. Panel 2 250. Appointments £110. Rent £50. Premium £2 750. £1,500 down.

Liverpool—Middle and working class PRACTICE of £700 with great scope, for sale owing to illness. Panel 1 0. Very little midwifery. Premium only £800 for quick sale. Convenient house can be bought cheaply.

North London—Practice of £1,600. Panel 1 100. Appointments £420. House, with side entrance to surgery, and small garden. Rent £63.

Cornwall—Unopposed PRACTICE of £1 500 in beautiful district near the sea. Panel worth £550. Appointments £80. House with surgery garage etc. Rent £40 on lease. Premium 1½ years purchase.

Within 100 Miles—Country PRACTICE of £1 000 in good hunting district. Panel and Appointments £200. No resident opponent. Good house with tennis court and 1½ acres. Rent £80. Prem. £1,500.

Notts—Partnership with Succession. Half share of over £1 600. House with nice garden and garage, separate entrance to surgery. Can be had on lease.

Gloucestershire—Small town with cottage hospital. PRACTICE of nearly £1 800. Panel 1 800. Appointments £120. Beautiful house and garden with tennis court, on lease.

Scotland—Unopposed PRACTICE of £800. Panel 300. Appointments £100. Good house with well stocked garden. Price £1 500 for house and practice. £1 000 down.

New Zealand—Unopposed PRACTICE of £1 800 in beautiful district. Good house. Rent £100. *Scope for surgery.* Premium £1 500.

Surrey—Partnership in first-class Practice in best residential district. Receipts over £7 000. One-sixth share for sale at 2 years purchase. *Excellent house in* prominent position to rent.

East Coast—Steadily increasing PRACTICE in beautiful seaside resort in Yorkshire. Receipts average £1 500. Panel 850. Excellent house with good garden and garage, on lease.

Northumberland—Old-established non panel PRACTICE in large town. Receipts over £3 000. Scope for midwifery and panel. Good house can be rented.

Opening—In small Village in beautiful district. Receipts about £300, including 150 panel. House with nice garden. Rent £40. Will be sold cheaply.

Within 80 miles—Practice of £1 380 in country town in beautiful district. Nearly half the income from panel and appointments. Rent £15.

Midlands—Surgeon required is PARTNER for half share of £3 000. Scope for major surgery and vacancy on the staff of hospital. Premium £2,100. House on rent.

Purchasers stating their requirements can have Particulars of other Practices not advertised.

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Established by Bovril, Limited, to provide an efficient and reliable transfer service for the Profession at minimum charges.

Under the personal direction of Dr J FIELD HALL, and Mr J C NEEDES

An Accountant's certified report is required in respect of every practice or partnership the disposal of which is undertaken by the Agency

The commission chargeable in respect of any practice in Great Britain placed exclusively in the hands of the Agency for transfer has been fixed on an exceptionally favourable scale, the maximum chargeable on any transfer being £50 In the case of Foreign and Colonial practices similarly placed the maximum is £75

NO CHARGE IS MADE TO PRINCIPALS FOR THE INTRODUCTION OF LOCUM TENENS OR ASSISTANTS.

Accountancy and Legal services furnished by the Agency, where desired, at moderate inclusive charges.

PRACTICES AND PARTNERSHIPS FOR SALE.

1. EASTERN COUNTIES —Within 4 hours run of London Practically unopposed PRACTICE old-established and situated in very pretty Country Town with beautiful surroundings Receipts nearly £1,800 per annum, including appointmen of £50 and panel of 700 Visits up to 21/ Very little midwifery Car optional Railway station Charming residence (with ample accommodation) in its own grounds of ¾ of an acre Price £2,900 all of which can remain on mortgage at 5 per cent Premium for Practice £2 500 Excellent prospects Tennis golf hunting shooting etc.

2 MIDLANDS —COUNTRY TOWN within two hours of London Old-established mixed general PRACTICE with a steady average income of £1,400 including £100 from appointments probably transferable Panel of about 700 Fees 2 6 to 10 6 About 50 midwifery cases a year at 2 to 5 guineas The house is an up-to-date Cottage Hospital, and the purchaser would be on the Staff House contains in addition to professional rooms dining room drawing room, 4 bedrooms dressing room bathroom and electric light garage small garden Held on lease with over 10 years to

3. LANCASHIRE
lished PRA

consulting rooms reception 6 bedrooms bathroom (h & c) Good garden, garage etc Rent £45 on lease Premium £3 500 £2,000 down Satisfactory reasons for selling

4. RESIDENTIAL TOWN within 100 miles of London Non-dispensing cash only better-class PRACTICE producing an income of about £2,000 a year including small panel of about 600 Fees from 2 6 to 21/ mainly 7 6 upwards Only a few cases of midwifery yearly Age 2 to 25 guineas Attractive and commodious house (3 reception 7 bedrooms etc. garden) on rental at £100 p.a. Good society and sport of all kinds Premium £4,000 payable £2,000 cash and £2 000 by instalments

5 NEAR LIVERPOOL —In a large town (population nearly 100 000) close to seaside resort, an old-established, flourishing and increasing PRACTICE worth last year £2,100 including 1 000 panel patients Visits 2 6 to 5 Midwifery 2 to 4 guineas about 100 cases yearly Good house with garage available Vendor's property will be let to Successor at £100 a year or can be purchased Prem 1½ yrs purchase Efficient introduction given

6 YORKSHIRE —IMMEDIATE —In a large town (population over 70 000) an old-established PRACTICE is for disposal in consequence of the continued ill health of Vendor The receipts which were formerly much larger are now about £800 p.a. including panel of 700 and several appts Visits 2 6 upwards and medicine extra. Midwifery 2 guineas House recently redecorated and situated in best residential district will be let on

7

an experienced man with a good personality is desired by a Consulting Physician as Partner with ultimate succession The present income is only about £1 500 a year but there is very considerable scope for increase and the newcomer would be encouraged to undertake general practice without accounting to the partnership for the fees so obtained There is a choice of houses both on rental and to buy in the residential part of the town At present the fees are mainly 1 and 2 guineas but there are a few at 10 6 Premium for the half share £1 500

8. NEWCASTLE-UPON TYNE AREA.—Old-established PRACTICE held by Vendor many years Steady average income of about £3 350 There is a Hospital in the town and a reasonable prospect of obtaining an appointment on the Staff. There are various appointments worth about £150 a year Very little midwifery but large scope if desired. Fees 4,6 to 21/ House is Vendor's freehold It is well-situated and will be let or sold. Excellent educational facilities. Premium to include drugs, etc. only £3 000 payable £2 000 down.

9 GROWING COAST TOWN within easy access of London Old-established very sound mixed general PRACTICE Average income over £1,800 Fees mainly 3 6 to 10 6 Very little midwifery Very good corner house with small garden There is a Cottage Hospital in the place and the Practice offers very good prospects to a Surgeon Premium 1½ years purchase

10 MIDLANDS —In delightful Town (population over 10 000) amidst beautiful surroundings and within 4 hours run of London, an old established lucrative PRACTICE worth over £3 300 per annum including large panel Good fees. The house is well situated has ample accommodation, and can be rented on lease at £100 a year Premium £3 000 cash and £2,000 by instalments Sanitary reasons for selling Educational facilities and sport of all kinds

11 HOME COUNTY —Hospital Town, within 30 miles of London PARTNERSHIP A one-half share in a mixed general practice held by senior partner 20 years Average income over £2,000 Panel of 900 Advice and medicine fees 2 6. Visits and mileage from 3 6 Very little midwifery Detached double-fronted house with ample accommodation and good garden Price £2,000 of which £1,000 can remain on mortgage There is an up-to-date Hospital and an early vacancy on the staff is probable Good sport schools etc Premium 2 years purchase half by arrangement

12 SOUTH COAST —LARGE TOWN PARTNERSHIP A quarter or one-third share in a middle and working-class Practice. Income over £4 000 with scope Panel of over 4,000 Fees 2 6 to 7 6 chiefly 3,6 to 5 10 midwifery and very little night work Purchaser should preferably be non-resident Prem 2 years purch.

13 BORDERS OF CO DURHAM AND NORTHUMBERLAND —Old-established village PRACTICE Average income £813 but there is scope for increase 600 panel at present Advice and medicine 2 6 3 6 and 5 Visits 3 6 to 10 6 medicine extra. Small converted house Price of house and practice £2,000

WANTED TO PURCHASE.

1. PARTNERSHIP in or near Birmingham, or residential area of any good town Income £1,000 upwards Capital available up to £4,000 Good house desired.

2 PARTNERSHIP in or within easy access of London Better-class middle-class Income about £1,000 Small house, with garden and garage on rental. Ample capital.

3 LONDON preferably West but any good locality considered. Small house preferably to rent Income from £1,500 Capital £3 000

4. HOME COUNTIES or SOUTH OF ENGLAND —PARTNERSHIP in better-class Practice share producing £1,000 p.a. Small house on rental Capital £2,000

5 LONDON N or N W —(Particularly Tottenham, Hornsey or Islington) cash and panel PRACTICE of £1,500 upwards Panel of about 2 000 House will be bought if necessary Capital £3 000

6 HOME COUNTIES —Country Town with Hospital Better-class PRACTICE of £2 000 or thereabouts Fair-sized house with garden. Ample capital.

7 WITHIN 30 to 50 MILES OF LONDON —Country or semi-country district Preferably non panel PRACTICE producing about £1,500 Must be good house Capital £2 000

8 SOMERSET or adjacent County —Surgical PARTNERSHIP Share to produce not less than £1,500 Suitable house will be purchased.

9. LONDON S W or S E —Cash and Panel PRACTICE, producing £2,000 a year or less with scope. House on rental preferred.

REQUIRED as soon as possible an INDOOR ASSISTANT (aged about 25 to 40) for a middle and better-class Practice in Wiltshire Edinburgh Graduate preferred single and experienced in Surgery Salary £250 per annum Possibility of partnership later

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Full Schedule of Terms and Conditions will be forwarded on application.

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Practices and Partnerships for Disposal. No charge to Purchasers.

EASTERN COUNTIES —(1) PARTNERSHIP in very old-established Practice in a Detached house (4 bedrooms) Share worth about £1,100 p a Panel 1 600 for Surgeon urchase

LONDON, S W —(2) Well-established PRACTICE of between £1 100 and £1 200 p a Panel about 1,600 House containing 5 bedrooms &c Rent £55 p a on lease Good scope Premium £2,000

WEST OF ENGLAND —(3) ASSISTANTSHIP with view to partnership in mixed practice of over £2,800 p a in Country Town Panel 850 One fourth or one third share at two years purchase Applicant should be keen on surgery Hospital in town

STAFFORDSHIRE —(4) PARTNER required (after preliminary Assistantship) in old established Practice about £2 500 p a in Manufacturing Town Panel 2 600 House available One third share at first Partner should be aged 30 35, experienced and good at minor Surgery Cottage Hospital

SOUTH OF ENGLAND —(5) PARTNERSHIP in good-class non panel practice of about £2 500 p a in beautifully situated country town Applicants should be Oxford or Cambridge Graduate not over 30 and preferably F R C S Eng

SURREY —(6) PARTNERSHIP in good-class non-dispensing Practice, in most desirable Residential Country Town No panel Suitable house could be obtained Partner must be graduate of Oxford Cambridge or London University, aged 40/45, and preferably experienced in X ray work Share worth about £1,000 p a at first Hospital in Town

FIRST-RATE RESIDENTIAL DISTRICT up the THAMES —(7) PARTNERSHIP in good class Practice averaging about £1 550 p a Not much Midwifery Good house, with garage, to be sold Premium one half share £1,200 Scope for Surgery

LONDON, E —(8) Well-established and very lucrative PRACTICE, about £3 625 p.a. in Industrial Centre Panel 4 500 Very good non basement house (6 bedrooms) to be sold Would suit two men Premium £4 000

HUNTINGDONSHIRE — (9) Very old-established unopposed Country PRACTICE between £1 100 and £1 200 p a Panel 700 (about Small house (3 or 4 bedrooms) Rent £50 (larger house could be purchased) Premium £1 550

HOME COUNTY —(10) Unopposed Country PRACTICE over £770 p a within 30 miles of London. Panel 835 Large old fashioned detached house (7 bedrooms) Would be let Premium £1,164

SOMERSET —(11) Unopposed Country PRACTICE of £1 100 Panel 800 Good well appointed 12 roomed house with bath room Garden and garage Educational facilities Premium £1,400

YORKSHIRE —(12) Unopposed Country PRACTICE, between £700 and £800 p.a. £240 of which is panel), in picturesque Growing Village Model detached house with garden, garage electric light bath (h & c) etc for sale Premium one and a half years purchase

HOME COUNTY —(13) Very old-established PRACTICE averaging £444 p a, in Residential District under 20 miles from London Excellent detached house (11 bedrooms) with large garden—suitable for reception of Resident Patients Moderate premium,

DEATH VACANCY, SURREY —(14) Old-established PRACTICE averaging £1 335 p a in populous Suburb No appointments or panel Well situated modern detached double-fronted corner residence (6 bed and dressing rooms) on main road Plenty of scope for increase in all directions

EASTERN COUNTIES — (15) Very old-established unopposed Country PRACTICE averaging £1 650 p a Panel 850 Modern detached house (6 bedrooms) in acre ground Rent £80 on lease Premium one and a half years purchase

LONDON, S E —(16) PARTNERSHIP in old-established PRACTICE in outlying Residential Suburban District close to the Crystal Palace No appointments or panel Share worth about £750 p a at two years purchase Ample scope

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SOUTH AFRICA (CAPE PROVINCE) —(19) PRACTICE about £1 000, in one of the wealthiest Pastoral Districts on line of Railway Ideal equable dry climate Very comfortable house to rent Living very cheap Premium £800 Vendor known to the Association

HOME COUNTY —(20) Well-established and increasing mixed class PRACTICE, of exceptional merit Residential District Panel about 400 Not much Midwifery Old fashioned detached house (4 bedrooms) in good position. Premium £1,500

MANCHESTER —(21) PARTNERSHIP in old-established good class Practice over £4 500 in Residential District Small panel One fourth share would be sold for £2 115 with option to increase up to one half Partner should be about 30, and preferably M D or F R C S

SPECIAL OPHTHALMIC PRACTICE —(22) Abo £1 400, in high class inland Health Resort Operative and acute cas refused of late years Considerable scope for increase Premium £1,400

SOUTH WALES —(23) Old-established increas working-class PRACTICE over £2,200 in one of the chief sea Panel 1 400 Detached house with 4 bedrooms, to rent on lease Pre £2,500 part by instalments or £2 200 cash

NORTH OF ENGLAND —(24) Old-established PRACTICE of £1 460 per annum in Country District Panel 810 Very house (5 bedrooms) in charming grounds two acres Premium, practice, h and grounds £4 000 Mortgage could be had on hou e.

EAST COAST —(25) PARTNERSHIP in well establish PRACTICE £3 800 in rapidly developing, Seaside Town Hou 1 bedrooms to rent Incoming partner should be aged between 40 and 50 be a good surgeon Premium two-thirds share two years purchase

YORKSHIRE, WESTRIDING —(26) Well establish middle and working class PRACTICE over £1,300 (£920 from Pa and appts) in large clean town Good detached corner house Prem. £1,400

EAST COAST —(27) Increasing PRACTICE over £500 in rapidly developing District Panel about 100 Nearest opponent miles Bungalow residence (5 rooms) Premium £750

EGYPT —(28) Well-established PRACTICE £700 to £800 mainly among English Residents and Visitors Excellent semi-detached residence (5 bedrooms) Premium to include Furniture £1,100

MIDLANDS —(29) PRACTICE over £2,200 in Country Town, near Birmingham Panel 1 800 Charming house (6 bedrooms) large garden Rent £100 Premium one and a half years purchase.

SURREY — (30) PARTNERSHIP in first-rate Practice £7 000/£8 000 per annum in one of the best Residential Districts House (7 bedrooms) to rent. Premium one sixth share two years purchase Partner should be aged over 30 and have held hospital appointments

MIDLAND TOWN —(31) Old-established PRACTICE about £1,100 per annum in Residential Suburb Panel 700 Good house and large garden. Premium £1,500

LONDON, N W —(32) PRACTICE worth about £450 per annum in working-class district. Panel 500 increasing No midwifery Double fronted corner house Premium, Practice, and freehold House £1 500 Great scope for young man.

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LONDON, S W —(37) Well-established PRACTICE of £600 to £700 p a in favourite Residential Suburb Panel 295 No much midwifery Excellent detached house (6 bedrooms), with good garden for Sale Ample scope. Premium one and a half years purchase.

SURREY —(38) PARTNERSHIP in good middle class compact practice over £2,650 in Residential District, easy distance of London. Panel 1,200. Two fifths share at first at two years purchase

MIDLANDS —(39) Unopposed Country PRACTICE over £1 150 in beautiful part Panel about 720 Detached house (4 bedrooms), with half an acre garden Mild climate

SOUTH OF ENGLAND —(40) PARTNER required in very sound old established Practice in Seaport Town Panel under 3 000 Share worth £700 to £800 at two years purchase Partner must be keen and energetic and not much over 30

SOUTH WALES —(41) Well-established PRACTICE nearly £1 250 p a in County Town Panel over 500 Fees 5/ to £2 2s Well situated double fronted house (6 bedrooms) with large garden. Rent £60. Educational facilities Premium £1 800

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SOUTH COAST —(43) PARTNERSHIP in Practice, over £4 000 p a, in popular Seaside Resort Panel 1 150 Premium one-third share two years purchase Partner must be energetic and not over 35

EASTERN COUNTIES —(44) Old-established PRACTICE £1 855 p.a. in pleasant Market Town Panel 1 100 No midwifery Excellent detached house (7–8 bedrooms) Very good garden Cottage Hospital Premium one and half years purchase

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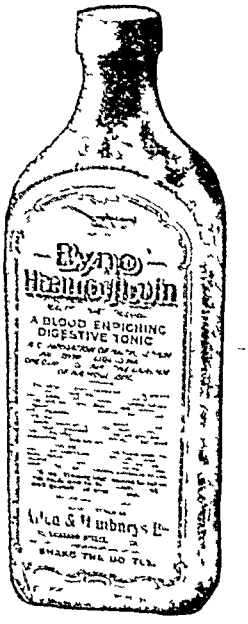
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British Medical Journal

OCTOBER 4TH, 1924

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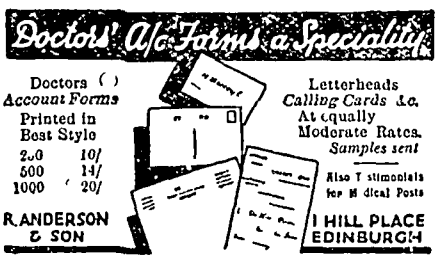
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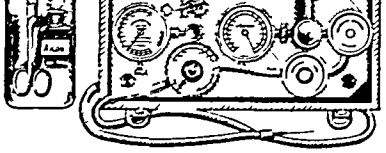
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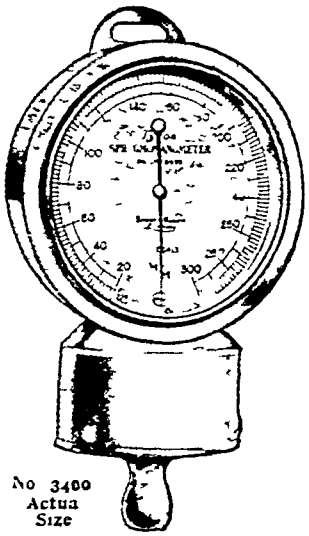
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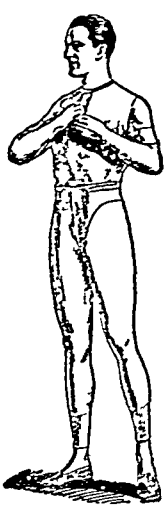
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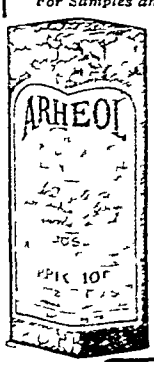
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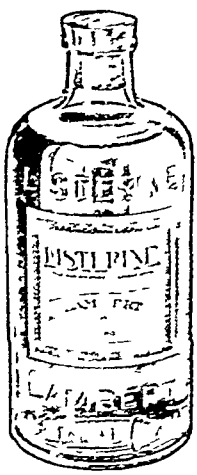
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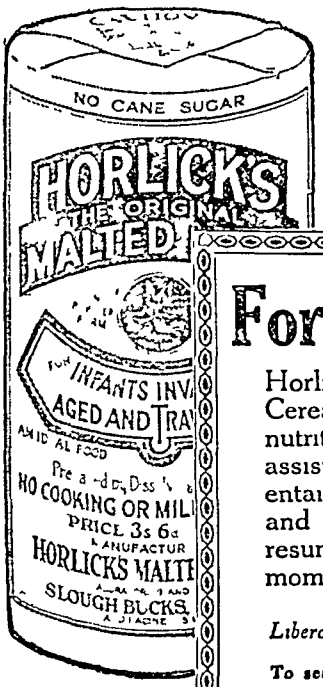
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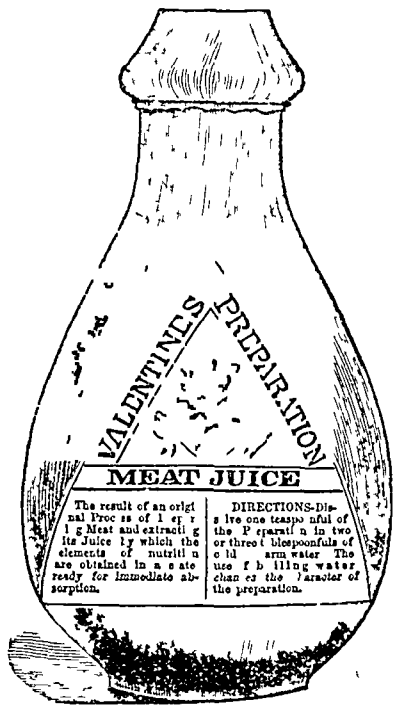
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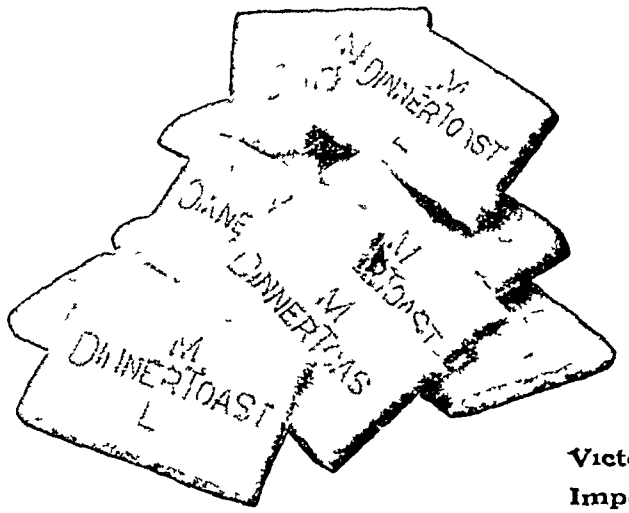
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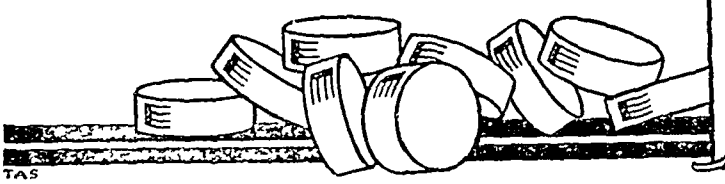
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SECTION OF SURGERY

Sir Cuthbert Wallace, K.C.M.G., C.B., F.R.C.S., President

DISCUSSION ON ACUTE OSTEOMYELITIS

OPENING PAPER

BY

JOHN FRASER, M.D., F.R.C.S.Edin.,

Surgeon Royal Hospital for Sick Children, Edinburgh; Assistant Surgeon Royal Infirmary, Edinburgh

The subject of osteomyelitis is a large one, and I have been somewhat at a loss to know how best to present the various aspects of the problem. I may review the literature presented up to date, stating the views of others and recounting their results, or I may relate personal experiences and beliefs. I have decided to choose the latter course. In a paper of this description, short as it must necessarily be, it is impossible completely to survey the published works of others, and if a review cannot be complete it is better left unsaid. But a stronger influence has been the desire that one's personal views should meet with criticism and analysis. There is an old Scots saying that "Every crow thinks its ain bairn the blackest," and the belief is by no means confined to the order of Passeres. We suffer from it as badly as do the crows, but, as the hot breath of corn winnows the chaff from the wheat, if you will refine my errors and correct my mistakes I shall value your honest criticism.

First let me present the understanding which we have of the place nomenclature of the average bone, for the terms are alluded to in the subsequent text. We recognize the shaft of the bone or the *diaphysis*, at one or both extremities the *epiphysis* is distinctive as long as there is growth in length, and it is separated from the related diaphysis by the plate of the *epiphyseal cartilage*. That portion of the diaphysis which is adjacent to the epiphyseal cartilage has such distinctive and important characteristics that it is worthy of a special name, and, since the researches of Lexer, it has been termed the *metaphysis*. Diaphysis, epiphysis, epiphyseal cartilage, and metaphysis are therefore the place names to which allusion will constantly be made, and of the four the metaphysis is pre-eminently the most important as far as the pathology of inflammation is concerned.

The reasons for its importance are apparent. Existing as it does between the epiphyseal cartilage and the diaphysis, it is the site during the years of growth of the most intense cell activity, and as a natural corollary it is the most vascular area of the bone. Three out of four of the independent sources of blood supply to the growing bone open by direct routes into the zone of the metaphysis, and the blood stream of the fourth source is indirectly related to it. There is, I believe, a consensus of agreement that the metaphysis is the site of origin of most or the inflammatory diseases of bone and of acute osteomyelitis in common with others.

The Origin of the Disease

In its beginnings the disease is essentially an infective process of the interior of the bone, the endosteum and the marrow are the sites of the disorder, and if we are to be etymologically correct *endosteomyelitis* is the proper and descriptive nomenclature. A primary periostitis is the rarest possible event, it may occur as the result of a spread by contiguity from a neighbouring focus in the maxillae and the ribs, but where primary bone infections are concerned it is invariably secondary to a medullary infection. It is perhaps unnecessary to have alluded to this point, for any error which may have existed has probably been dissipated long ago, but in the operative treatment of osteomyelitis the tragedy of incomplete intervention is traceable to an erroneous conception of the sequence of events.

Acute osteomyelitis is the result of an acute pyogenic infection localized in its early stage to the metaphysis of the bone, it is a disease of youth, an affection of the age of growth. An inquirer will naturally follow this statement by three questions:

(1) How does the infecting organism gain entrance to the metaphysis?

(2) What are the influences which localize the infection to a certain locality?

(3) What are the organisms responsible for the disease?

1. *The Route of Infection*

The vast majority of the cases are examples of a blood-borne infection. This statement is one which we believe to have been established beyond any question or doubt, there is the most convincing clinical evidence, and the sequence of events has been reproduced experimentally by the researches of Schüller, Krause, Muller and particularly by Salvia. In a few exceptional cases the infection enters the bone from a neighbouring focus of inflammatory disease, and examples of this occurrence are met with in the instances of osteomyelitis which follow infection of neighbouring joints. In this event the spread is by the perivascular lymphatics, in a few cases possibly by direct spread, and the epiphysis is more liable to the infection than the metaphysis.

Believing, therefore, that acute osteomyelitis is a blood-borne disease, we must assume that a pre-existing blood infection exists. The septicaemia (for it is none else) is of a peculiarly mild type, for it is correct to say that in the case history of the average osteomyelitis it is unusual to find evidence of a pre-existing blood infection. If we are to accredit the recently published work of Lip chiz we must recast our conception of the incidence of blood infection in children, for, according to this author, "the occurrence is the rule rather than the exception." I confess I have been impressed by the results which he has produced and I believe that we must give the possibility of the event a fuller consideration than it has been accorded in the past. There is something reasonable in the view that in the early years of life, before any degree of artificial immunity has been acquired and while the child has to rely on the extent of its natural immunity, contact with even the minor infections may result in a blood infection. The event has an obvious bearing on the development of osteomyelitis.

What are the sources from which the infection comes? The septic tooth, the infected tonsil, inflammation of the sinuses, furunculosis of the skin are well recognized points of entrance; pneumonia and the exanthemata are less frequently responsible. But there is another source the importance of which I am convinced is not yet appreciated in surgical work—I allude to umbilical sepsis. I have recently collected the records of some thirty cases of umbilical sepsis in newborn babies complicated by a pyaemic process and metastatic foci of osteomyelitis. The collection is derived from the observations of the last four years; the cases have been the most serious examples of the disease—a fatal result would appear to be almost inevitable—and though this may be the most serious aspect of the question I have a suspicion that in a considerable number of cases umbilical sepsis is the medium through which a blood infection is induced. You may be inclined to question the possibility of a blood infection incurred at birth existing until the years or later childhood but I know of no evidence which would discredit it. This question of umbilical sepsis is of considerable practical importance. I make no claim to any knowledge of obstetrics but from inquiries which I have instituted I am informed that the highly absorptive area of the divided umbilical cord in close proximity to, and in direct communication with, the viral abdominal organs, is often treated with indifference to either aseptic or antiseptic measures. I put umbilical sepsis as a very potent factor in the production of the blood infection of infants, and therefore I look upon it as closely related to the development of osteomyelitis at a later age.

2 *The Influences which Localize the Infection*

The evidence of large numbers of statistics has shown that certain localities of the osseous system are particularly liable to be affected by the disease Our experience has been that the upper end of the tibia, the lower end of the femur, the lower end of the tibia, and the upper end of the humerus are the common sites, occurring in the order stated Influences must exist which control this distribution, and, though the matter may only be of academic importance, it is of interest to surmise what these influences are

Trauma is the first to suggest itself, and it is generally accepted as an influence of great importance The experiments of Pietrikowski support it from an experimental point of view It explains the high proportion of incidence in boys, the frequency with which the lower limbs are affected, and particularly those situations which are most exposed to injury The trauma is slight in degree, and the influence which it exerts results in the production of a small metaphyseal haemorrhage, which, though minor in extent, is sufficient to arrest the circulating organism and so localize the disease

The surface extent of the metaphysis is the second influence The larger the extent of the metaphyseal surface the greater must be the proportion of the blood supply, and the more intense the cellular activity of the region —two factors which, in combination with others, predispose to the development of inflammatory disease Kellogg Speed has discussed the influence of the nutrient vessels upon the localization of the disease The direction of the nutrient vessels from the knee and towards the elbow is a stable anatomical condition, and it was long ago suggested that the disease tended to be most common at the bone extremity towards which the nutrient artery was directed If our statistics are to be trusted, the very reverse is the case, for the osseous relations around the knee are the sites of election

Mathers has suggested that, where an individual bone is concerned, the epiphysis which is latest in uniting indicates the locality which the disease is most liable to affect, and in this way he explains the frequency with which the bones around the knee are involved

I am doubtful, however, whether the direction of the nutrient vessels or the time influence of the epiphyseal cartilage has any bearing upon the locality of the disease The devitalizing effects of cold and trauma, and the predisposing influences of the surface extent of the metaphysis, are the factors of which we have any real knowledge

3 *The Organisms Responsible for the Disease*

This aspect of the question may be dismissed in a few words I have analysed the results of the bacteriological examination in 400 cases to which I have had access, and the statistics are as follows

Organisms present	Percentage
Staphylococcus aureus	78
Staphylococcus albus	2
Streptococcus pyogenes	6
Pneumococcus	14
B coli communis	1 case
B typhosus	3 cases

The proportion of incidence of the individual infections is very similar to that recorded in various statistical collections The percentage of pneumococcal infection may be considered unusually high, but this group has been very carefully controlled, and, as will presently be shown, we attach considerable importance to this class of the disease

Influence of Age and Sex

The disease is more common in boys than in girls in a proportion of six to one We have plotted out the age incidence, and we have found a reading similar to that recorded by so many others, that a period from the eighth to the twelfth year is that in which the disease most frequently occurs These are subsidiary facts in the etiological picture which indicate the influence of trauma in the occurrence of the disease.

The Pathology of the Disease

It is not my intention to reiterate the well recognized general facts of the pathology of the disease, these paths have been well trodden I would rather present one or two special aspects of the picture

I have already indicated the belief that where osteomyelitis of the long bones is concerned the vast majority of the cases begin as a metaphysitis Diaphysitis is secondary to a metaphysitis, and I have yet to see the case of acute osteomyelitis which began in the centre of the diaphysis

It is sometimes stated that the epiphysis may be the primary site of the disease as far as the bone is concerned This is true, but in actual fact the epiphysitis is invariably secondary to pre-existing infection of its related joint It is apparent that these points are of great practical importance where operative interference is concerned

I find it helpful to correlate the pathology of the disease with its clinical features There is the primary intense infection of the medulla, inflammatory products and exudates are under extreme tension, and because of this dynamic feature local symptoms are intense and absorption of toxins or organisms most manifest It is the primary stage of acute osteomyelitis, and from a prognostic point of view the most dangerous stage, because it is that in which septicaemia is most likely to occur It is impossible to detail in a paper of this description the various stages in the progress of the endosteomyelitis, but I would recall the interesting observation of the late Sir William Macewen that within a few hours of the onset of an acute medullary infection the osteoblasts of the interior have migrated *en masse* to the deeper layers of the periosteum—a striking demonstration of the antichemiotactic response on the part of that highly specialized and most sensitive cell Pus formation in the medulla of the bone is the natural sequence of this primary and central phase of the disease

The second stage is evidenced by a spread of the infection from the interior into the subperiosteal area The vessels and spaces of the Haversian canals are the routes along which the migration occurs, and a serous subperiosteal effusion is the precursor of a purulent one Relief of tension is the characteristic of the second stage, the urgency of the symptoms abates and the prognosis improves, because the risks of a massive invasion of the blood stream are now lessened The earlier the second stage appears in the progress of the case the better is the prognosis, and the most fatal examples of the disease are those in which the second stage has failed to develop

Because the existence of the Haversian canal is the factor upon which the appearance of the second stage depends, it would seem that the proportion of these canals in different bones may have an influence upon the progress of the disease I find that fifty years ago August Schiller, in a thesis which he presented to the University of Freiburg, estimated for physiological reasons the relative number of Haversian canals in different bones He found that of the various long bones the femur is the one in which the proportion of Haversian canals is least, as estimated by the number of Haversian canals the humerus and the tibia are three times more porous than the femur We have nothing to do with the physiological problem which Schiller discussed, but from our point of view the work has this interesting application—that the more porous the bone the earlier is the appearance of the second stage of pathology and the better is the prognosis

We associate the third stage of pathology with the phenomenon of reaction Relief has been achieved through the medium of operation or by a spontaneous rupture of the infection through the periosteum and the overlying soft tissues Congestion has activated the osteoblasts in the deeper layers of the periosteum, and Macewen has shown how their numbers are reinforced at the commencement of the disease The result of this activity is seen in the involucrum which now begins to be deposited around the periphery of the original shaft It is unnecessary to detail the further phases of this stage—the persistence of medullary infection and its relief through the cloacae of the involucrum, the appearance of granulation tissue in the

interior of the bone, its active phagocytic influence upon the necrotic bone, so that the latter is either entirely removed or is separated from the living tissue as a sequestrum, and a final stage, when a new shaft is remodelled and the involucrum removed through the medium of the osteoclast

As I am anxious to speak of the treatment of the disease, and as my remarks have already occupied more space than is permitted to me, I shall dismiss the various aspects of clinical features, diagnosis, and prognosis in a few words

Clinical Features

The clinical features are intense and distinctive There is the agonizing pain of the early stage while the infection is still locked up under tension in the interior of the bone It is during this stage that the signs of toxaemia—the high temperature, the delirium, the poisoned appearance—are greatest It is at this stage that a massive invasion of the blood stream may inaugurate a septicaemia which by its intensity overshadows the local signs

With the relief of tension which characterizes the stage of subperiosteal effusion there is an immediate abatement of signs and symptoms—the pain diminishes, the temperature falls, the general appearance improves There is an element of danger in this stage because the sudden relief in symptoms may raise doubts as to the veracity of the diagnosis Thereafter, in the absence of relief treatment, the signs and symptoms are re-established as the tension again rises, and the features are those of local septic infection

Diagnosis

The diagnosis is usually established without much difficulty The intensity of the local symptoms and the evidence of an unusual degree of toxic absorption are the characteristic features of the disease Local difficulties arise under certain peculiarities of position and depth from the surface For example, acute osteomyelitis of the ilium may simulate either acute abdominal disease or acute infection of the hip-joint because of its proximity to these two regions Osteomyelitis of the femur may be difficult to recognize because of the depth at which the bone lies from the surface

As far as the differential diagnosis is concerned, acute rheumatism and cellulitis are the conditions in which mistakes may arise The confusion of osteomyelitis with acute rheumatism should not occur, because the distinctions between the two conditions are perfectly well defined, in the event of difficulty arising a blood count may be of value, because the white cell count is so much higher in osteomyelitis than in rheumatism The possibility of confusion with cellulitis appears when the soft tissue infection overlies a bone, the intense degree of general illness in osteomyelitis is then a distinguishing feature of great value

Prognosis

The prognosis may be said to be controlled by one or two special features The general rule may be formulated that the more distal the focus of infection the more favourable is the prognosis The infection of bones which lie in proximity to vital organs (as, for example, the skull bones and the pelvis) is necessarily a serious development The more porous the bone and the earlier the appearance of the subperiosteal effusion, the more favourable is the outlook The real danger lies in the septicaemia which may develop during the first stage of the disease

Our experience is that age has comparatively little influence upon the prognosis unless it be that the younger the child the greater is the tendency to septicaemia

The Treatment of Osteomyelitis

It is both natural and convenient that our considerations of treatment should fall into two groups—local and general

Local Treatment

I wish to introduce this portion of the discussion with a question which may appear somewhat heterodox The question is as follows Is there any variety or type of acute osteomyelitis in which immediate operation is inadvisable? We are in universal agreement regarding the necessity for surgical operation in the great majority of cases in general we concur with Warbasse when he wrote Without surgery osteomyelitis is a serious disease even in its mildest form, and with surgery it is hopeful in its worst stages," but are we to accept the universality of surgical interference? I think not I confess I make the reservation with some hesitation, but I believe in its importance The pathologist recognizes a serous or albuminous type of osteomyelitis From observations which we have made we believe that the bacteriology of this type is almost invariably pneumococcal, and our clinical experience has been that a considerable proportion of these cases subside without operative interference In fact, I go so far as to say that in this class of case operation in the early stages is actually harmful, for it may result in dissemination of the disease, and it certainly is followed by soft tissue suppuration and sequestrum formation

Certain peculiarities indicate this special variety or case It affects babies and young children, the temperature is rarely as high as in the ordinary suppurative osteomyelitis, the evidences of toxaemia are slight in degree, and the joint which is associated with the affected bone is usually the site of a serous effusion Under these conditions we suspect that the infection is of the serous and pneumococcal type, a blood count is therefore taken, and it demonstrates a degree of leucocytosis which is very much less than that which appears in the suppurative variety

In this type of case we delay operation, extension is applied to the limb fixation splints are employed, hot local applications are used, and the pain is relieved by the administration of chloral and bromide In a considerable proportion of cases the temperature falls the pain disappears and the child regains his general health Occasionally suppuration may ensue, but it is *local* in its extent, its presence is suspected if the temperature rises after a preliminary *fall*, if pain persists or if *local* redness or oedema appears, and the development of the focus is followed by repeated *x*-ray examination With the establishment of a definite focus of suppuration relief is obtained by a single trephine opening

We have been repeatedly impressed by the value of the recognition of this special type of the disease

The Local Treatment in the Ordinary Case —The ordinary case permits or no delay, because it is by the relief of the medullary tension in the early stages of the disease that the infection is arrested, the risks of septicaemia reduced, and the extent of sequestrum formation minimized The marrow cavity is exposed in such a way that efficient drainage is established, and in accomplishing this we follow a routine method The affected segment of bone is exposed through an appropriate incision and, recognizing that the metaphysis is the original site of the disease, the incision is planned so as to expose it After separation of the periosteum the cortical bone overlying the affected metaphysis is perforated with a trephine or large burr, and from the opening so made a quantity of infected fluid escapes A series of openings is made along the line of the shaft at intervals of about three-quarters of an inch, and the openings are continued until red and apparently non-infected marrow is exposed The series is now converted into a common opening by removing the intervening segments of bone with a chisel We make it a rule never to interfere with the underlying marrow One often feels tempted to curette it with a sharp spoon but I am convinced that this is a mistake for it disseminates the infection and increases the degree or necrosis in the cortex of the bone We have found that treatment of the infected marrow by the Carrel-Dakin method is a most excellent procedure The wound is left open throughout its length a number of perforated capillary tubes are passed into the interior of the infected medullary cavity, and through these an intermittent irrigation with eusol or Carrel-Dakin solution is arranged At the end of a variable period (usually about three weeks) the disinfection of the interior is such that partial closure of the wound by secondary suture can be attempted We have occasionally applied the method of microbic count in estimating the time at which

secondary suture can be carried out, but I cannot say that we have found the method of any real value

The Method of Resection of the Affected Bone.—From a theoretical point of view there is something attractive about the idea that one should subperiosteally resect in its entirety the affected segment of bone. It would seem that one might thereby remove at any rate the bulk of the infection, and that, as there would be comparatively little opportunity for necrosis to occur, the period of the illness would be materially shortened. The idea has been put in active practice, and it is the method which some surgeons at present employ. We have tried the resection operation, but we have abandoned it. In our hands at least it presented serious disadvantages. We found that the local infection was not materially affected, in fact, in several cases we had evidence that it was actually disseminated, that the epiphysis became infected, and that the cut end of the bone was attacked by the disease. In one or two cases we believed that a general blood infection was induced by the manœuvre, and in more than one instance we had the unpleasant experience of finding that the regeneration of subperiosteal bone, upon which the success of the method essentially depends, failed to develop. We have therefore abandoned the method except under one condition—when there has been such an extensive infection, both subperiosteally and in the medulla, that the complete diaphysis is a sequestrum. In this event we practise the operation of diaphysectomy, because the bone is already necrotic from epiphysis to epiphysis.

The Treatment of the General Condition

This is a most important division of the treatment, and I have the feeling that in the past we have given it less attention than it deserves. The child who develops osteomyelitis must have been to some extent the subject of a septicæmia, and subsequent to the local infection a further degree of blood infection inevitably occurs. Therefore in every case of osteomyelitis consideration must be given to the treatment of the general infection. The lines which we follow in attempting to counteract the septicæmia may be grouped under the headings of vaccines, serums, special drugs, blood transfusion, and leucogenic stimulants.

Vaccines.—It is a rule in our practice that as soon as a case of osteomyelitis of the ordinary staphylococcal type comes under observation vaccine treatment is begun. Until an autogenous vaccine is available, which will be in four or five days, a stock staphylococcal vaccine is used. An initial dose of 200 million is given, on the third day a dose of 400 million is used, and this is repeated on the fifth day, thereafter the autogenous vaccine is brought into use, and it is given every fourth or fifth day. As far as possible an attempt is made to arrange that the vaccine is given at the lowest points of the pulse and temperature curves. The only exception which we recognize to this routine of vaccine treatment is the intensely acute septicæmic variety of the disease, in this class of case remedies which give a more immediate response are required.

Serums.—In the especially acute septicæmic type of case and in the case which has not responded to vaccine treatment we recommend and employ serum therapy. After a preliminary sensitization test we administer large doses of either a stock serum, a specially immunized serum, or, if neither of these is available, the ordinary horse serum. The drug is given daily in increasing doses, beginning with 10 c.cm. and reaching 100 c.cm.

Blood Transfusion.—The conditions which call for serum treatment we consider equally suitable for blood transfusion, and in young children particularly we favour this method. The value of blood transfusion in this connexion is enhanced if it is modified by the combination of exsanguination with the transfusion. The most striking demonstration of the value of the method is seen in those cases of osteomyelitic septicæmia which persist in spite of the ordinary lines of treatment.

Special Drugs.—You are probably aware of the recent experimental work which has shown the specific antibacterial influence of certain metals, particularly tin and manganese, upon the staphylococcal group. It is becoming a routine measure to employ these drugs, chiefly in their colloidal forms, in the treatment of acute osteomyelitis. We have accepted the routine in our work.

Leucogenic Stimulants.—I believe it was Professor Foucault who first advised the use of yeast and nucleic acid in osteomyelitis, because of the stimulating effect which these substances possess upon the white cell count. We have not employed this method of treatment, and therefore I can pass no comment upon it, but, in view of the seriousness of the septicæmic picture in osteomyelitis, it would seem to be worthy of a trial.

I would like to have said something of the local considerations of acute osteomyelitis, as shown in the iliac bone, the trigone of the femur, and the skull, but already I have overstepped by a large measure the amount of time and space which has been allotted to me; perhaps others will deal with these most interesting aspects of the problem.

GENERAL DISCUSSION

Mr. B. C. MAYBURY (London) congratulated Mr. Fraser on his opening paper. He had covered a wide field and had put many new ideas before them. Mr. Fraser had referred to acute osteomyelitis as a septicæmia, and Mr. Maybury dealt with this aspect of the disease—namely, acute osteomyelitis considered as a general systemic infection with local bone lesions.

In the very early stage of acute osteomyelitis it was not uncommon to find very transient local pain and tenderness in several of the bones. As a rule the pain and tenderness rapidly disappeared from all except the one bone which was affected with osteomyelitis. Cases which exhibited these features were most likely to be mistaken for cases of acute rheumatism. Fraenkel had pointed out many years ago that micro-organisms, either those which caused the primary disease or those which were responsible for a secondary infection, were frequently found in the marrow of the vertebræ, and less commonly of the ribs, of patients who had died from diseases such as erysipelas, pneumonia, diphtheria, general peritonitis, scarlet fever, etc. He had also indicated that the definite histological changes in the marrow showed that the entry of the organisms must have occurred during life and not *post mortem*. Inasmuch as the organisms in acute osteomyelitis must be conveyed to the bone by the blood stream from some primary focus such as a patch of impetigo, a septic cut, a carious tooth, or an infected tonsil, etc., it was a fair assumption that these early transient pains were due to a blood-borne infection of the bone marrow in many parts of the body, but that, before suppuration could occur, the infection was overcome by the patient's natural powers of resistance. If the infection in any given bone or bones was too severe, or if the patient's general or local resistance was too weak, the latter being often lowered by some apparently trivial trauma, then an acute osteomyelitis occurred. This afforded an explanation of those comparatively uncommon cases of multiple osteomyelitis in which two or more bones or ends of bones were affected simultaneously with the disease.

A generalized blood infection was thus an essential part of acute osteomyelitis, and the severity of the former bore a relationship to that of the latter. In very mild cases the clinical manifestations of the local bone lesion were slight, while those of the general infection were frequently overlooked or diagnosed as growing pains, influenza, etc. In very severe cases often the patient died from the general infection before the local bone lesion manifested itself clinically. While the common conception was undoubtedly true in certain instances that pyæmia was secondary to the osteomyelitis, it was much more probable that the osteomyelitis was simply a local "fixation abscess" occurring in the course of a general septicæmia or pyæmia. Thus, however early local operative treatment was undertaken in a fulminating case, it could have little effect on the course of the general systemic infection, and the mortality, therefore, always remained high.

To explain the occurrence of subacute, chronic, or

recurring osteomyelitis in which constitutional symptoms were absent or slight was not difficult. They knew that organisms might remain dormant in the tissues for a very long time, and it was probable that an attack of osteomyelitis of a subacute or chronic type was due to the awakening into activity of bacteria that had remained for months or years in a quiet state in the marrow, to which they had been conveyed by the blood stream at some previous date during the course of some undiagnosed febrile attack. The best example of this was the typhoid bone abscess. It was possible that the lodgement of bacteria in the marrow was of much more frequent occurrence than was supposed, and that it was only when the body failed to deal with the infection that osteomyelitis occurred.

A sign which might be of considerable value in the diagnosis of the disease was the delay in appreciation by the patient of tenderness produced by pressure on the shaft of the affected bone. If firm, steady pressure was applied to a part of the shaft which was free from swelling and remote from the spot of greatest tenderness, the patient would cry out with pain but only after the lapse of an appreciable interval of time.

The local treatment of a typical case of acute osteomyelitis was undoubtedly operation. But in many of the sometimes undiagnosed mild cases, in which there was little local pain and only slight fever, operative treatment was not necessary. Acute pyogenic infection of any tissue in the body might be suppurative or non-suppurative; the dividing line was not clearly defined, and depended upon the presence or absence of pus visible to the naked eye. For the former condition they operated, the latter they watched, and frequently the process subsided. A patient whose general condition was good, whose temperature was 99° to 100°, and who had some pain and a local tender spot, might be considered to have a mild infection. Such a patient should be treated by rest and heat applied locally. Frequently in twenty-four or forty-eight hours the symptoms would abate, the indications for operation were increased or, or persisting, pain and fever. Sometimes after amelioration of the symptoms recrudescence took place from time to time and pointed to the existence of a local bone abscess.

To summarize, acute osteomyelitis was a disease in which there was a general systemic infection with a local manifestation in one or more of the bones, it was comparable to pneumonia in which the lung was, as a rule, the site of the local lesion. It was capable of undergoing spontaneous abortion or cure. For a severe infection operation on the local lesion was urgently called for, but the treatment of the general septicaemia must not be ignored, for a mild infection expectant treatment should be adopted.

[Slides were shown of skiagrams of a humerus from a case of multiple osteomyelitis which demonstrated the formation of a Brodie's abscess from its earliest stage. The case, which illustrated certain of the above mentioned points, was that of a boy aged 15, who was admitted to hospital with a six days' history of acute osteomyelitis of the twelfth dorsal vertebra and upper part of the femur, he was also suffering from furunculosis. Symptoms of disease in the humerus appeared ten days after the onset of the illness. All three foci were treated expectantly, and all the symptoms subsided without operative treatment. At the present time, eight months later, the boy is quite well. He has had no recurrence of symptoms referable to the vertebral focus but has had two attacks of pain in the femur with slight fever lasting a few days, and occasional pain in the humerus. The skiagram of the femur showed a moderate degree of periosteal thickening and that of the humerus a central bone abscess.]

MR VICTOR DAVIS (London) said that his main point of disagreement was on the subject of operation since he was strongly in favour of subperiosteal resection of the shaft. He had collected a series of cases operated on at St Bartholomew's Hospital during the years 1909-13 inclusive and 1921-22-23. A total of 45 cases was operated on by gutter, the mortality being 17. In the cripple schools in London there were 77 cases of osteomyelitis, 15 amputations, and 13 with open sinuses. The results of diaphysectomy were better. In 7 cases of his own the mortality was 1 in 7 cases at St Bartholomew's Hospital the mortality was also 1. [Some charts were shown indicating the fall of pulse and temperature and a series of skiagrams illustrating the regeneration of bone.] He preferred diaphysectomy because of its rapidity, completeness, and absence of subsequent excavation of the bone. The main objection was failure of alignment but immediate attention was paid to extension that should be avoided.

MR A. MITCHELL (Aberdeen) was glad that Mr Fraser had drawn attention to two elementary but important points—namely that the disease always began at the end of the diaphysis, and that a simple periosteal abscess was practically never met with. He wished to confine his remarks to the question of treatment. From what he had seen of the work of others and from his own cases the results of the type of operation advocated by Mr Fraser had not in many cases impressed him very favourably and had led him to employ the method of subperiosteal resection to a much greater extent than he thought Mr Fraser did. He was well aware that this method had many critics but he ventured to think that some of its bad results had been due to too much being expected from it in bad cases and to insufficient attention to the details of after-treatment in suitable cases. It had to be admitted that simple drainage, by removal or a piece of bone cortex had often resulted in apparently insufficient removal of infection, fresh necrosis with repeated removal of equestra followed with persistent infection of the soft tissues, and fixation of joints or severe secondary haemorrhage might take place. In some cases amputation might have to be resorted to after many weeks of suffering on the part of the patient. By subperiosteal resection of the whole thickness of the affected bone one did much to avoid the sequelae and to ensure an easier convalescence. He had seen only one case in a child in which absolutely no regeneration took place, the periosteum had evidently been completely destroyed. This case would almost surely have resulted in amputation if treated by conservative methods, but by resection and subsequent grafting a fairly good leg was obtained. Mr Fraser had said that subperiosteal resection might be followed by increased signs of septicaemia and by death, and so might limited removal of bone; there were some cases in which the patient's condition was so grave that no local treatment could possibly help him. While he advocated resection in certain cases, neither he nor any advocate of resection, so far as he knew, had suggested that as a universal treatment. It was a little difficult to put on paper a description of the case suited for resection but he thought the cases seen in practice might be divided into three groups:

1. Manifestly mild cases where the general condition was good although the local condition had been present for an unusually long time, where the swelling was limited to the end of the bone and was not spreading. Here drilling the bone was usually sufficient.

2. Certain cases seen very early where although the pulse and temperature were high there was no swelling but only very severe tenderness strictly localized to one part. The periosteum was usually not much elevated but was readily separable over a small area only. Local operation was satisfactory if done early.

3. Most cases of acute osteomyelitis sent to hospital had a history of a few days' illness. There was abundant pus of local infection and pus was found under the periosteum, which was extensively separated. This was the commonest type and in it he had found that resection gave the best results. The shaft of the bone was divided by a Gigli saw, and only that part where the periosteum was firmly adherent was left in place. Usually in the tibia one removed the whole shaft.

He thought by this plan that the infection was more likely to be cut short. The bone removed was no likely to play a very important part in regeneration. Its presence would not help the periosteum which had been separated

from it and had adherent to its under surface osteogenetic cells, which were ready to produce new bone After removal of the bone the cavity was packed with gauze and the limb extended in a Thomas splint In two or three days the pack was removed and suture of the periosteum and of the skin was performed, combined with the insertion of tubes for Carrel-Dakin treatment The limb was kept in extension, but, at the same time, the patient was taught to perform voluntary contraction of the muscles at regular intervals, this was very important in stimulating the formation of new bone Extension and voluntary movement were persisted in until firm bone had been formed When the patient first began to walk a walking calliper splint was employed to prevent undue strain

The after-treatment of these cases demanded a good deal of care, but the results were well worth it It was often said that this method resulted in a great deal of shortening He had found that this was, if anything, less than after incomplete operation In support of this he might mention that he had recently seen a case which over six years ago had had resection of the lower half of one femur performed At the same time a trephine operation was done on the lower end of the other, which was now over one inch shorter than the side on which the resection was done As to general treatment, he had found both serums and vaccines helpful, but he had not yet seen any lasting good from blood transfusion in severe septic cases His experience of this had not been extensive and had, perhaps, been unfortunate

[Lantern slides and photographs were shown illustrating the various stages of regeneration of bone in children and the possibility of reconstruction by bone-grafting in adults]

Mr F J S HEANEY (Liverpool) had had within the previous two months examples of most of the varieties of osteomyelitis already mentioned, including one fatal case of staphylococcal osteomyelitis of the upper end of the humerus—a fulminating case with acute pleurisy which indicated a general infection He had also had four cases of osteomyelitis which came after suffering for a week In all of them the whole thickness of the tibia and a good part of its length were affected, and in all the indication for subperiosteal resection was clear In these cases the patient had in the course of a week, and by his own vaccines, overcome the general infection, and the relief of the local condition was immediate his experience was that the ultimate results were good In one case—a Brodie's abscess with acute extension to the soft parts—he drained and trephined, when the shell of the humerus had become thick enough so that one side of it could bear the weight of the limb, then gathering and muscle-grafting were performed Under his care at that moment was a case of multiple mild osteomyelitic lesion, which he hoped would clear up under treatment by an autogenous vaccine

Professor G E GASK (London) congratulated Mr Fraser on his paper He agreed that the disease was the result of a generalized infection, the infecting organism entering by some lesion the nature of which varied considerably He wished that the old nomenclature, so confusing to students, might express more clearly the pathology As regards treatment, he said that he had never performed subperiosteal resection, and he concluded after listening and studying the results, that the most important thing was the individual care of the surgeon

Mr C JOLL (London) did not feel satisfied that Mr Fraser and Mr Maybury had made out a case for non-operative treatment of certain mild cases (especially pneumococcal), but rather that such cases would do well with very limited operation He pointed out that in the case treated by expectant methods referred to by Mr Maybury the patient still had a chronic abscess of the humerus after eight months' illness, and that had operative treatment been carried out at an early stage the result could hardly have been less favourable Mr Joll also criticized Mr Acton Davis's and Mr Mitchell's operation of sequestrectomy on the ground that in the skiagrams shown the resection did not include that portion of the bone—namely, the metaphysis—which was generally admitted to be the site of the primary infective process

Mr GILES TURNER (Newcastle-upon-Tyne) drew attention to the persistence of infection and its recrudescence often after many years in those cases of bone disease, and suggested that one of the important problems was the possible effect of the primary method of treatment on the ultimate after-history It had been his misfortune to see some of the bad results of removal of the whole diaphysis, but he was greatly impressed by what had been said concerning it by the previous speakers, and especially by the cases so ably demonstrated by Mr Mitchell Shortening of the convalescence seemed to be one of the great points in its favour He himself thought that there was a great deal in what Professor Gask had said concerning the individual attention given to this class of case, and he agreed that it was probable that just as good results would be secured by the older methods if as much attention were paid to all the details connected with them treatment as was devoted to the newer methods

Mr ERNEST FINCH (Sheffield) said that in the diagnosis of acute osteomyelitis in the early stages too much stress must not be laid on the early findings In these early stages, and it might be in the most acute stage, there was no change in the skiagrams of the bone The consequence of this was that treatment of the bone condition was often delayed until some outstanding complication had developed Treatment must be begun as soon as the clinical signs indicated that the bone was affected The treatment by diaphysectomy was not any more successful than the gutter operation In the latter operation it was rare to have to remove any sequestrum if the operation was thoroughly done It might be that there were some small superficial flakes of bone exfoliated, but there was, as a general rule, no large mass of dead bone to be removed In the adult, diaphysectomy might give rise to great trouble in the after-treatment, new bone did not form, and bone-grafting would have to be done Bone-grafting into a septic cavity might be most difficult and the time spent in the after-treatment would be longer than after the gutter operation

Mr T JASON WOOD (Bradford) reported a virulent fatal case of staphylococcal infection proceeding apparently from an ordinary boil which had disappeared at the time of operation Two cases were cited of elderly men, aged between 65 and 70, who developed acute septic arthritis of the knee as the result of persistent osteomyelitis contracted in childhood

Mr LIPSCOMB (Sydney) remarked that the disease was of less frequent occurrence in Australia than in Great Britain, this might be due to the warmer climate and the fact that the general resistance of the people was greater He insisted that early interference in acute bone conditions would in most cases clear up the disease, and that only in few cases would the condition progress and necessitate more drastic surgical interference The infection was generally staphylococcal, since the staphylococcus was essentially a skin organism The lessened occurrence of the disease in Australia might perhaps be due to the fact that in warmer climates swimming and bathing were indulged in much more freely than in colder climates

Sir CUTHBERT WALLACE (President of the Section) said that osteomyelitis was a dirt disease and was seldom seen among those in whom personal cleanliness was easy It was a disease that was getting rarer and milder For the proper treatment one must determine whether the disease was really a septicaemia with local manifestations or primarily a local disease that became systemic As regards operation, it should be confined to the more marked cases, the milder local lesions were capable of curing themselves

SURGICAL TREATMENT IN AURICULAR FIBRILLATION OCCURRING IN TOXIC GOITRE

(*With Special Plate*)

BY

T. P. DUNHILL, C.M.G., M.D.

Assistant Director Surgical Professorial Unit and Assistant Surgeon to St. Bartholomew's Hospital

THIS paper is complementary to a paper read by my colleague Professor Fraser at the annual meeting of the Association of Physicians in 1923 and published in the *Quarterly Journal of Medicine*, July, 1924, which dealt with the physiological and pharmacological aspects of the subject drawn from cases under our care.

Between 1907 and 1919, among cases of exophthalmic goitre operated upon by me there were a number who had irregular heart action. I had reason to believe that hyperthyroidism (feeling of heat, restlessness, tremor) was present, and on that account the condition was being aggravated, and therefore it seemed rational to prevent further visceral damage by reducing the amount of the secreting gland. Cases of this type were reported by me in various publications from 1907 to 1917. The degree of improvement varied. Some were more comfortable, some were able to return to work after having been bedridden.[1]

In 1917 a man (Case 1) greatly emaciated with rapid irregular heart action previously regarded as suffering from sprue was seen by Sir Hector (then Dr.) Mackenzie and correctly diagnosed by him as a case of exophthalmic goitre. Subsequent to partial thyroidectomy his heart became regular.

In 1919 in Australia I saw a patient (Case 2) with irregular heart action. In this patient the goitre was an adenoma completely intrathoracic. After this was enucleated the heart became and has remained regular.

Up to this time it had not been possible for me to have basal metabolic rates measured, nor electrocardiographic record made so that I had to judge by clinical evidence whether hyperthyroidism was still present and damage still being wrought; no permanent records of the auricular fibrillation were made. Also the pathology of the resected gland tissue was not completely recorded. Subsequently, working with the professorial unit at St. Bartholomew's Hospital it became possible to have graphic records made of such cases and the sequence of events established. The pathology could also be studied.

The first case after this time was a woman (Case 3) who had been under medical treatment by one of my colleagues. There was a two-months' history of serious illness. She had oedema of the legs. There was a loud systolic murmur at the apex.

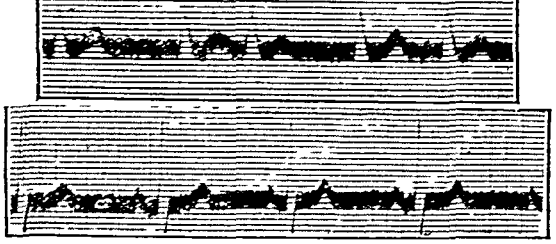


FIG. 1.—Case 3. The upper tracing shows auricular fibrillation. The lower one normal rhythm.

The pulse was irregular in force and frequency. On September 27th, 1920, the right lobe and isthmus of the thyroid gland were removed under local anaesthesia. Three weeks later two thirds of the left lobe were removed. She went to a convalescent home and on her return visited the hospital to show herself. Her pulse rate was 72 and the rhythm regular. In this case the heart became regular spontaneously without other aid than the removal of sufficient of the toxic cause and has remained so. There is no oedema. The woman is working hard. She manages swimming baths in the summer in addition to doing her household work.

(Electrocardiogram before and after operation and photomicrograph of gland shown. No. 3.)

During this time Professor Fraser had been working at the problem of auricular fibrillation and we had been together such cases as came into our respective wards. In the next patient surgical and medical co-operation was required to cause the return of the heart action to normal rhythm.

A naval rating (Case 4) had been sent to me to St. Bartholomew's Hospital from Sydney in 1922 after the right lobe of his thyroid had been removed there. He had had exophthalmic goitre for five years. The pulse had been irregular for at least two years. Being a sailor he was sent by the Ministry of Pensions to the Heart Hospital on arrival in England where he came under the care of Dr. Strickland Goodall. Electrocardiographic records were taken, and he was finally transferred to me. Two thirds of his remaining lobe were removed under local anaesthesia. His heart did not become spontaneously regular but after four doses of quinidine sulphate (5 grains each) the heart became regular and there has been no auricular fibrillation since.

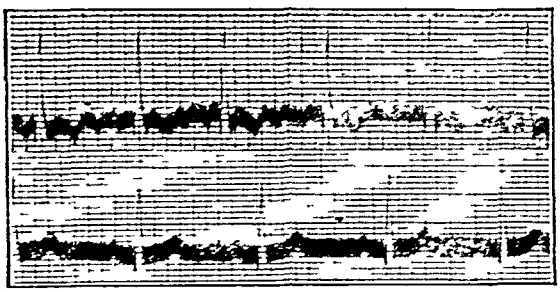


FIG. 2.—Case 4. The upper tracing shows auricular fibrillation. The lower one normal rhythm.

(Tracings, basal metabolic rate, and pathological sections shown. No. 4.)

The next two cases of auricular fibrillation became regular spontaneously after a sufficiency of the thyroid gland had been removed. They differed strikingly in several ways.

One (Case 5) was a typical case of exophthalmic goitre—a woman about 29, who had tremors and characteristic eyesigns but also with a systolic blood pressure of 200. She was watched for a month before operation could be risked. Removal of one lobe made no difference to the fibrillation and she remained very ill. After removal of two thirds of the second lobe (June, 1922) the heart became regular and has remained regular. This woman is very active and states that she walks six miles at a time. Both operations were performed under local anaesthesia.

(Photomicrograph of gland shown. No. 5.)

The other case (Case 6) had been ill for a long time. Eight years before the time when I saw her with Sir Hector Mackenzie she had been in bed for six weeks on account of her heart symptoms. She had not improved during those eight years. Two years before her operation her feet and legs had become oedematous while she was in bed. When I saw her in 1922 her heart was fast and very irregular; her face and legs were swollen and she had been in bed for eight weeks. The thyroid gland was very large and symmetrical but she had not quite the look of a case of Graves's disease in that there was not the usual mental restlessness. A venous pulse was visible in the neck, and distended veins were present over the chest. In this case the absence of mental restlessness made it safe to remove all of one lobe and two thirds of the other at one operation under local anaesthesia. It was six months before the irregularity completely disappeared. The pulse has remained regular (rate 72 to 84) for the last two years and the oedema has disappeared.

Of the next two cases the goitre in one (Case 7) consisted of multiple adenomata. He had had goitre all his life. His heart had long been irregular. It became regular spontaneously after removal of most of the goitre in March, 1922, but fibrillated for a short time two months afterwards. He was given a few doses of quinidine in Edinburgh and his heart has remained regular for two years subsequently. Part of the goitre was so deep in the thorax that a lower extremity could not be reached by the forefinger. It was gradually drawn up by a finger on each side of it

The other one (Case 8), aged 49, was an extremely bad case of exophthalmic goitre I believe his heart had fibrillated for eight years The rate was uncountable on account of its rapidity and its irregularity Removal of the first lobe made no difference After removal of two thirds of the second lobe in January, 1923, he was given quinidine On the tenth day

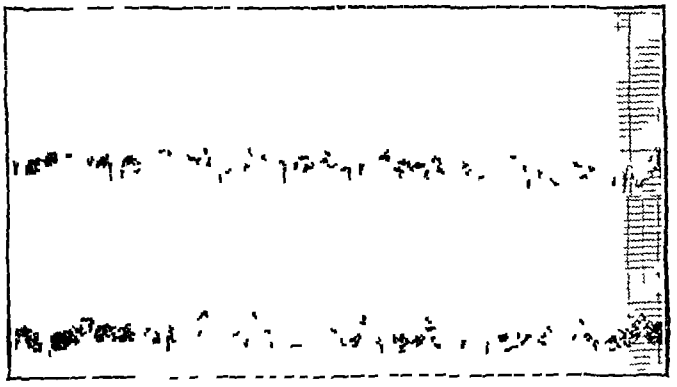


Fig 3—Case 8 The upper tracing shows auricular fibrillation The lower one normal rhythm

after this the heart became regular Possibly the length of time during which his heart had fibrillated accounted for the amount of quinidine required In this case premature contractions now occur, but no auricular fibrillation

(Electrocardiogram before and after operation, and photomicrograph of gland, shown No 8)

In two cases of true Graves's disease (Cases 9 and 10) with auricular fibrillation the heart's action has become regular spontaneously after removal of one lobe and two thirds of the second lobe of the thyroid gland (without administration of quinidine) In Case 10 the heart became regular after ligation of the superior thyroid arteries Auricular fibrillation recurred on exertion It disappeared after a sufficient partial thyroidectomy

(S H Electrocardiogram before and after operation, and photomicrograph of gland, shown No 10)

There are two patients (Cases 11 and 12) in whom I have removed only one lobe, and in neither of these has the heart become regular In one case the heart can be held regular with quinidine, but under stress it fibrillates again The other one, a comparatively young man, has had no quinidine, but his heart could I feel sure be made regular by the removal of two thirds of the remaining lobe He feels well enough to do the work he wants to do in his present condition The photomicrographs (Nos 11 and 12) show how active the glands are in each of these two cases It is not reasonable to expect that the fibrillation will stop while so much extremely active gland remains

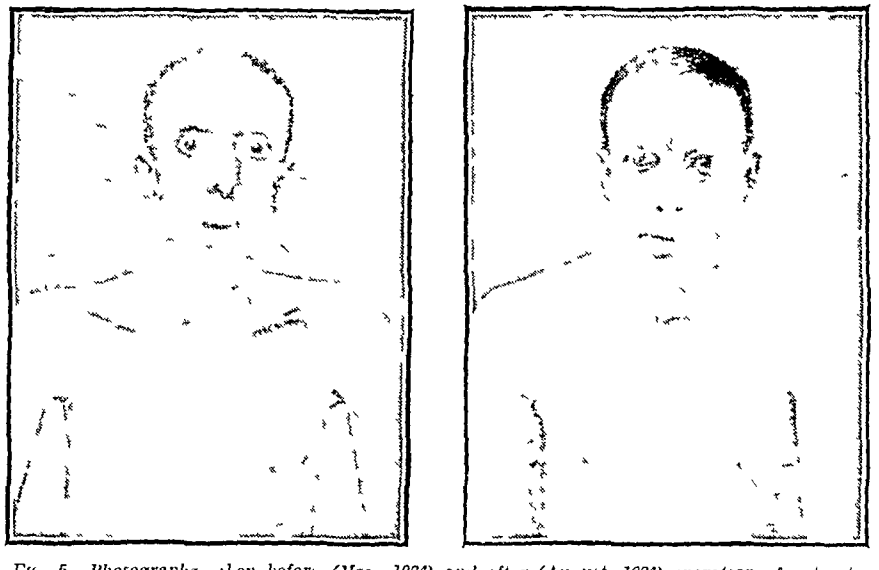


Fig 5—Photographs taken before (May 1924) and after (August, 1924) operation of patient No 15 in the appended table

One patient has died, possibly as the result of the administration of quinidine, though this is doubtful The electrocardiogram showed that it was not a pure case of auricular fibrillation, some degree of heart-block being also present, and quinidine was being given tentatively One patient —*very ill—died subsequent to operation She was too ill* a person to have been operated upon

Patients are not infrequently seen who have auricular fibrillation associated with goitre, but in *whom the goitre* is not the cause of the auricular fibrillation It is necessary to be alert to this type of case A diastolic murmur or a history of rheumatic fever may put one on guard, and the condition is not just that of a thyrotoxic person On the other hand, there are many cases in which it is obvious that thyroid toxæmia is present The rapidity of the pulse rate, the moist heat of the skin, the staring, restless eyes, show a hyperactive condition of the thyroid This can be confirmed by taking the basal metabolic rate Further subsequent proof of the activity of the thyroid is given by

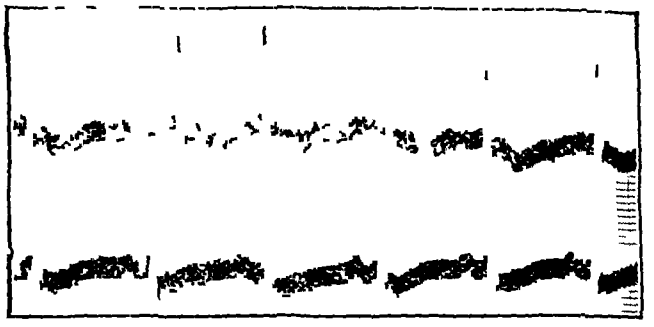


Fig 4—Case 10 The upper tracing shows auricular fibrillation The lower one normal rhythm

the microscopical examination of the gland, and the final evidence of the goitre factor, for the patient, is the disappearance of the auricular fibrillation One patient, whose fibrillation had lasted for at least several years, writes "Words cannot give any adequate idea of the quiet peacefulness that has replaced the restless breathless efforts of the last few years"

Since writing the above the *Medical Journal of Australia for March 1st, 1924, has come to hand, in which* Turnbull makes the statement that in two cases operated upon by me before I left Australia, auricular fibrillation, which was present before operation and still evident three weeks later, *had* disappeared when the patient returned after three months

The photographs (Fig 5) show the difference in the appearance of the individual before and after the operation

The microphotographs repay careful study At a first glance, huge spaces are seen filled with colloid —often *with flat*tened epithelium (See No 10, to the right of the middle of the field) It might be said that they are not pictures of exophthalmic goitre at all, but it is to be remembered that these patients have been ill with Graves's disease a long time, and that the gland has gone through the pathological stages so well described by Marine,[2] but there are seen to be in all of them areas of *extreme activity and high columnar epithelium* It is the secretion from these areas which is damaging the heart

Summary

Auricular fibrillation is one not infrequent result of thyroid toxæmia It may result from toxic adenoma or from Graves's disease

In toxic adenoma it may disappear when the *adenoma* or adenomatous masses have been removed

In Graves's disease it may disappear temporarily when vessels are ligated, or when one lobe has been removed When it has done so, in our experience, it has recurred under stress When sufficient of the second lobe has been

No 10—Mr H Diseases duration eight months Electrocardiographic records complete Localised papilliferous formation with columnar epithelium × 400

No 17—Miss P Goitre fifteen years, heart irregular for seven years Electrocardiographic record × 66

No 9—Mr C W Graves's disease fifteen years fibrillation eight years Electrocardiographic records complete Columnar epithelium × 400

No 13—Miss G U × 400

No 4—Mr R Graves's disease five years fibrillation two years Electrocardiographic records complete

No 12—Miss G Graves's disease seven years Operation two attempt incomplete (only one lobe removed) Note high columnar epithelium × 400

No 5—Miss S Electrocardiographic records complete Note high columnar epithelium × 72

No 11—Mrs A One lobe only removed Extremely active heart, still fibrillating × 66



Fig. A



Fig. B

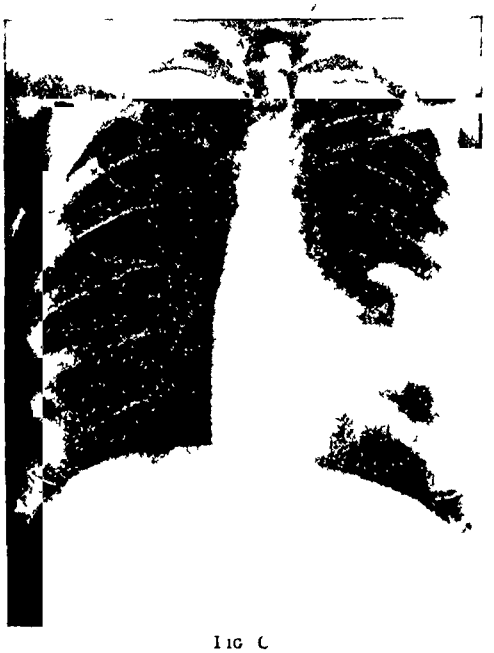


Fig. C



Fig. D

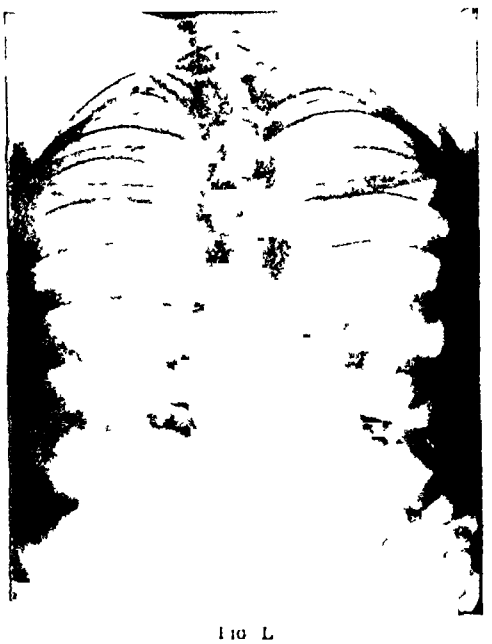


Fig. L



Fig. E

removed it may disappear spontaneously and permanently, or it may require the administration of some quinidine before this occurs

When one lobe alone has been removed in a case of Graves's disease, quinidine has not been capable of holding the heart regular

In two cases in which auricular fibrillation has disappeared occasional premature contractions occur

The dangers of quinidine must be appreciated before it is given In this series the administration of quinidine has been controlled by Professor Fraser

The causation of Graves's disease, or its treatment, does not come within the scope of this paper It is a record of our experience in dealing with one late manifestation

I am indebted to Dr Arnold Stott and Dr Strickland Goodall for the electrocardiographic records, and to Mr G L Keynes and Miss Vaughan, of the Surgical Professorial Unit of St Bartholomew's Hospital, for the photomicrographs

Case No.	Age	Length of History of Disease	Electrocardiographic Records	Basal Metabolic Rate: Before	Basal Metabolic Rate: After	Amount Removed	Auricular Fibrillation Disappeared: Spontaneously	Auricular Fibrillation Disappeared: With Quinidine
1	—	2 yrs	—	—	—	1½ lobes	Yes	—
2	—	Some years	—	—	—	Adenoma	Yes	—
3	45	1 yr	Yes	—	—	1½ lobes	Yes	—
4	40	5 yrs	Yes	+ 9 %	+ 4 %	1½ lobes	—	Yes
5	29	1 yr	—	—	—	1½ lobes	Yes	—
6	38	8 yrs	—	—	—	1 lobe	Yes	—
7	37	Many years	Yes	—	—	1½ lobes	—	Yes
8	39	15 yrs	Yes	—	—	1½ lobes	—	Yes
9	43	Many years	—	—	—	1½ lobes	Yes	—
10	40	1½ yrs	Yes	+ 23 %	+ 2 %	1½ lobes	Yes	—
11	37	7 yrs	—	—	—	1 lobe only	No	No
12	40	7 yrs	Yes	+ 11 %	+ 25 %	1 lobe only	Disappears but recurs	
13	60	3 yrs	Yes	+ 53 %	+ 47 %	1½ lobes	No	No
14	21	7 yrs	—	+ 64 %	+ 10 %	1½ lobes	Yes	—
15	40	2 yrs	Yes	+ 49 %	+ 15 %	1¾ lobes	Yes	—
16	39	1½ yrs	Yes	—	—	—	Yes	—
17	43	15 yrs	Yes	—	—	1¾ lobes	Yes	—
18	This patient died							

Note.—All the cases were of the type of Graves's disease and 7 were of the multiple toxic adenoma type. Case 7 had recurrent contractions and 8 have now (3 is the patient who died three months later and one other case (*vide supra*) died after operation.

PERIPHERY

[1] BRITISH MEDICAL JOURNAL, May 22nd 1920. *Cleveland Medical Journal*, March 1923.

DISCUSSION

Mr C A JOLL (London) pointed out that Dr Strickland Goodall, working with clinical material provided by Mr Joll, had shown that auricular fibrillation was the commonest cause of irregularity of the heart in Graves's disease, and occurred in approximately 10 per cent of cases Dr Goodall had taken electrocardiographic records of all cases before and after operation and while in a considerable percentage the auricular fibrillation rapidly cleared up after the operation in a small number auricular fibrillation was actually developed after operation in patients previously free from that condition, and might be fatal He added a warning not to expect to cure invariably auricular fibrillation in Graves's disease by operation

Mr DUNHILL, in reply said that Mr Joll had stated that it was rather optimistic to claim that 100 per cent cases of old standing auricular fibrillation recovered normal rhythm after operation and that the experience of other operators did not quite bear out the statement The claim was not made that 100 per cent recovered Two in this series, for one reason or another, had died, and in two others—due to insufficient removal of gland—the heart still was fibrillating These two possibly supplied the answer to Mr Joll's statement Mr Dunhill believed that when two-thirds of the remaining lobe had been removed the rhythm would become normal for it was true that in all the other cases (fourteen in number) the auricular fibrillation, old-standing in every case had disappeared These cases and their records were available for examination

BLOOD DONORS

BY

GEOFFREY KEYNES, F R C S ENG,
First Assistant Surgical Professorial Unit St Bartholomew's Hospital

BLOOD transfusion has now become a more or less standardized procedure Many practitioners are familiar with the technique, and the operation can usually be carried out with some degree of precision both as regards method and results On these points there is not much that is new to be said This short communication will deal therefore with a side of the problem which is usually not sufficiently considered—namely, the question of how to obtain a supply of blood when and where it is needed The performance of a blood transfusion postulates the presence of at least one willing and suitable blood donor and in hospital practice at any rate the provision of this important individual is too often left to Providence—a source of supply which is notoriously uncertain in its operations This prevailing uncertainty as to how or where to obtain a blood donor often results in the postponement of the decision to transfuse until the patient has passed from the category of hopeful to that of hopeless prognosis and the operation is in the end forestalled by death This position was recently illustrated in a very tragic manner which was exploited by the daily press to its full extent A member of our own profession was at death's door with typhoid fever, and as a last hope a request for a volunteer as blood donor was broadcasted by wireless A number of generous individuals who had recently recovered from typhoid, of course, responded only to be told that the patient had already passed beyond the reach of aid Better organization might have avoided the publicity, though the problem was not a usual one The time when a transfusion carried out in civilian practice was matter for a sensational headline in the newspaper has now almost passed, but there still lingers a popular disposition to regard a blood donor as a "hero" who has endangered his own life to save that of another It should now be widely known however, that acting as a blood donor does not entail any suffering, and only a very temporary disability Extensive experience has taught me that a healthy young man can part with 750 c.cm. of blood or even more without any immediate effect, such as faintness, and that after a short rest he can perform an ordinary day's work as efficiently as if nothing had happened If fainting does occur, it bears a direct relation to the psychological state of the donor at the time If he approach the operation without apprehension there will be no ill effects If on the other hand, the donor be imbued with a conscious heroism a painful or unpleasant process is anticipated fear and faintness are then the natural consequences Against this may be set the fact that several donors have told me a few days after giving blood, that they felt definitely better and more vigorous after than before the operation Nobody supposes that phlebotomy, so extensively practised by our forefathers was based entirely on superstition An American writer has shown that a large proportion of blood donors experience not only a feeling of well-being but also an increase in weight after the operation It has also been found that a loss of 500 c.cm. of blood can be made good in less than a week

In considering how donors are to be obtained it is necessary to be clear as to what kind of individual is most suitable for the purpose

1 *Sex*.—In the first place men are more suitable than women Equanimity, as already explained, is an important asset in a donor Large and readily accessible veins such as are more often found in men than in women are also of considerable importance A case of subcutaneous

fat may render the introduction of a large-bore needle into a vein a matter of some difficulty, and it is of the first importance that the drawing of the blood should be carried out with precision and without causing pain or injury to the donor It should never be necessary to expose and ligature the donor's vein It has also been shown that acting as donor is liable to produce in women a slight degree of anæmia This very seldom happens in men

2 *Age*—A donor should be young, but not too young Again, the psychological factor is affected by age Furthermore, a rapid and complete physiological accommodation should follow the withdrawal of circulating fluid, if after-effects are to be avoided The donor should therefore be not younger than 20, but not older than 40

3 *Health*—Emphasis need scarcely at this date be laid upon the necessity for employing a healthy donor Transfusion has on several recorded occasions been responsible for the transmission of syphilis, malaria, and even of measles If it is intended to use any given donor for more than one transfusion as occasion offers, it is an additional advantage for the operator to have some personal knowledge of the donor's circumstances and habits His Wassermann reaction must be tested before he is used for the first time, and, if a long interval elapse, it should perhaps be tested again before he is used a second time But personal acquaintance may make the repetition of the test unnecessary

4 *Blood Group*—As regards the blood group of a prospective donor, it has been customary to refer to individuals belonging to Group IV of Moss as "universal blood donors," on the supposition that the blood of a Group IV donor may be given to any and every recipient I believe this statement to be only an approximation to the truth, and I am sure that it is safer to give some patients the blood of their own group rather than that of Group IV This is especially important in treating blood diseases, such as pernicious anæmia, but I cannot discuss this in any detail at the present time The inference is that it is better to have donors of all groups available rather than members of Group IV only

In private practice I have not found it difficult to arrange for a regular supply of suitable individuals who will be ready to give their blood at any time in return for an adequate reward They soon become thoroughly accustomed to the procedure, and it is sometimes convenient to have a donor who can himself render active assistance when his blood has been taken I always have more donors of Group IV available than of other groups, as there will probably be no opportunity for selecting in an emergency, and these individuals are fortunately not difficult to find It is scarcely possible for a man to be a "professional donor" to the extent of making this his only means of livelihood, and it is likely to remain a part-time profession at the present market rate for blood It is, however, remarkable how frequently a healthy donor can part with blood without experiencing any ill effects It is recorded that one individual has given blood at an average interval of once in six weeks for a period of more than four years Another has given eleven donations in eight months, an average of one every three weeks

A more difficult problem is the organization of an adequate supply of blood donors for hospitals, and in discussing this I shall assume that no blood donor will receive any payment

Here, again, there will always be the two types of cases to be treated (1) the emergency, such as traumatic haemorrhage or severe haemorrhage from a gastric or duodenal ulcer, and (2) the medical case, such as pernicious anæmia, where the necessity for transfusion can be foreseen and arrangements made at leisure

I will take *in succession* the various possible sources of blood donors and indicate which appear to me to be the most suitable for general use

1 Relations of the patients may occasionally be used, but more often than not no suitable relation can be found, and sometimes they are unwilling It is now generally realized that consanguinity is no guarantee of compatibility of bloods, so that relations often have to be rejected on this ground alone Relations are very often *not available in an emergency*, so that this source of supply could not in any case be regarded as a source upon which dependence could be placed

2 Volunteers in the wards can often be found, and this is a source of supply which I have very frequently used in an emergency A young man, who has come into hospital for an operation for hernia or other condition which is unaccompanied by any constitutional disease, is usually willing to act as blood donor when it is made plain to him that his own recovery will not be in any way prejudiced, but that he may be instrumental thereby in saving someone else's life But, again, this source of supply is uncertain There may be no suitable patients, or suitable patients may be unwilling or may belong to the wrong blood group

3 "The unemployed" have been used at one metropolitan hospital, but clearly donors from this source cannot be expected to volunteer, and the question of payment lies somewhat outside the scope of this communication

4 The police force has been suggested as a source of supply, and has, I believe, been used for this purpose, but it is obviously impossible for a chief constable to permit his men to be taken off duty at any moment in order to supply blood when required The policeman's lot is said not to be a happy one, and it would be putting a rather severe strain on his already almost superhuman benevolence to expect him to give his blood to all who need it

5 Members of the nursing staff of a hospital or hospital attendants should certainly not be used as blood donors The hard work and exacting conditions of life in hospital are not productive of robust health, and the principle of using these individuals, when once established, would introduce a feeling of moral obligation to give blood, which must be carefully avoided

6 The use of medical students as donors is to be deprecated for the same reasons Students are used extensively in some American hospitals, but they are given a considerable sum of money whenever they do so, and volunteering is placed thereby on an entirely different basis Where a fee is accepted, the sense of moral obligation will not be induced

7 A properly organized supply of volunteer blood donors must therefore be found outside the hospital among healthy individuals who will not be subjected to any undue moral suasion I would suggest that the various organizations of Red Cross workers throughout the country may perhaps afford one of the best solutions of the problem These organizations consist of individuals of the highest character and of good physique, who are anxious to give personal service Their training also gives them some insight into surgical procedures, so that they will regard the operation of transfusion with equanimity If their interests are safeguarded by a careful preliminary examination and by a correct technique in performing transfusions, donors enough for the needs of all hospitals could probably be provided in this way

DISCUSSION

Mr H P WINSBURY WHITE (London) asked what Mr Keynes's technique was, and whether any alteration from the technique as practised *during the war had taken place*

Mr F J S HARNEY (Liverpool) said that in Liverpool a register was kept of blood donors, who were paid for their services and were available for neighbouring hospitals

Mr COLIN MACKENZIE (Bradford) said that Mr Keynes's paper was of great importance at the present juncture The system at *Bradford* was to keep a register of Group IV donors whose Wassermann reaction was negative, and to pay £10 for their blood Immuno-transfusion was likely to increase A case of septic gunshot wound of the knee-joint was successfully treated by him in France by a transfusion of blood from a donor previously vaccinated with a vaccine prepared from the knee-joint

Mr GEOFFREY KEYNES said that his communication was directed chiefly to the question of obtaining *unpaid* blood donors It was not difficult to obtain donors by advertising a reward of £5 or £10, but it was not so simple to obtain in this way individuals whose Wassermann reaction was

likely to remain permanently negative The authorities of many hospitals did not favour the idea of paying blood donors when it was brought up for discussion, and other arrangements had to be made With regard to technique, he thought that the method of using citrated blood gave the most certain results in general use The chief recent advance was the process of immuno-transfusion, introduced by Sir Almroth Wright and his co-workers, in which defibrinated blood was used The efficacy of this method for patients suffering from severe infections was still *sub judice* Other methods, such as the Kimpton Brown tube or multiple syringes were used with success by some operators, but these were less suitable for general use than citrated blood, which gave perfectly satisfactory results in all surgical cases No further advances of importance had yet been recorded

TWO PROBLEMS IN THE TREATMENT OF CLEFT PALATE

BY

FRANCIS WILLOUGHBY GOYDER MB FRCS,

Surgeon Bradford Royal Infirmary

(*a*) *The Problem of the Prominent Premaxillary Segment in Tripartite Palate*

THE beak-like protuberance of the intermaxillary segment in cases of complete double hare-lip and cleft palate is so pronounced and the strain put upon the sutured edges of the double hare-lip, by suture of both sides simultaneously, is so great that surgeons formerly removed the premaxilla, to abolish tension

The loss of the incisor teeth, and the tightness and flatness of the new upper lip, as compared with the lower, produced such deformity that removal of the premaxilla has been abandoned Wedge-shaped excision of part of the nasal septum, accompanied by pressing back the prominent premaxilla, facilitates suture of the lip, and is frequently practised This inevitably results in tilting of the incisor-bearing segment, and the upper incisors when they erupt will be directed backwards and when the mouth is closed, will lie behind the lower ones instead of just in front as they should

A sliding operation on the septum, though feasible and though allowing no malposition of the upper incisors in relation to the lower, means unnecessary and perhaps harmful interference with the vascular and nerve supply of the premaxillary segment

It is not necessary to close both sides of the lip simultaneously Closure of one side in the first few weeks of life and of the other about two months later, can be performed without undue tension on the suture lines This procedure results in normal relation of the upper to the lower incisor teeth owing to the backward pressure of the united lip Hence no operation on the central segment of the palate is required for in about two years' time the premaxillo-maxillary cleft is abolished on both sides, and the remainder of the cleft can be treated at the time judged most suitable

(*b*) *The Problem of Speech after Cleft Palate Operations*

In my experience good speech after operations for cleft palate is rare Closure of the cleft though difficult, is an easier problem to solve than is that of producing clear articulation

I firmly believe that the short soft palate almost inevitable with our recognized methods of closure, is the cause of our failures, and that progress will not be made until we recognize and deal with this difficulty

I think the cleft soft palate is too small at birth and that it is made still shorter by paring and suture Unless the newly formed palate is long enough to shut off at will, the nasal from the oral cavity, articulation must be defective except for the sounds *m n* and *ng* To make such closure possible the surgeon must diminish the gap between the posterior end of the soft palate and the posterior pharyngeal wall To do this he must either make a longer soft palate or increase the forward prominence of the posterior pharyngeal wall, or do both

The latter procedure has been advised and performed by Spitzy and Gratz, who injected paraffin A rat graft would be preferable, but as up to now it would be difficult Neither method appears likely to come into general use, and hence one's efforts must be directed towards making a soft palate of sufficient length This can be done only at the expense of the tissues of the hard palate If much hard palate has to be used to make good the deficiency in the soft, the gap in the hard palate cannot be closed by operation But, as Mr Gillies has shown, that defect can easily be made good by prosthetic apparatus

In short, to my mind, the adoption of methods based on the principles recently enunciated by Mr Gillies means a real prospect of improvement in our results as far as speech is concerned, the surgical triumph of complete closure of the palate is an empty one if the patient cannot speak clearly

DISCUSSION

Mr C A JOLL (London) agreed with Mr Goyder in deprecating the removal of the premaxilla, but favoured the paring down of the prominence with a sharp knife This, he claimed, enabled the double hare-lip to be closed in one stage as a rule—a point of importance since the cosmetic result was in his opinion, better when both sides of the lip could be dealt with together He had completed a series of 100 operations for cleft palate without a death by the Langenbeck or Smith method The result of the operation on the speech was not in Mr Joll's opinion so unsatisfactory as Mr Goyder suggested though, admittedly, perfect speech was not often achieved He was not sure whether Mr Gillies's method would really give improved speech as he had only practised it recently, but up to now he was not favourably impressed

X-RAY EXAMINATION IN RELATION TO SOME ASPECTS OF PULMONARY TUBERCULOSIS

BY

J H MATHEP, MB, ChB, DMRE,

HONORARY RADIOLOGIST ROYAL SOUTHERN HOSPITAL RADIOLOGIST ASSISTANT TO PENSIONS HOSPITAL KNOTTY ASH LIVERPOOL

(*With Special Plate*)

WHILE the value of the *x*-ray examination of the chest in cases of tuberculous or of suspected tuberculous disease of the lungs is now well recognized by the majority of clinicians scrutiny of the records of several thousand radiological examinations of the chest shows that the majority of the cases are sent to the *x*-ray department merely for confirmation of the clinical findings When the radiologist is able to confirm the clinical diagnosis of tubercle, the special value of the radiograph lies in the fact that he extent of the lesion is accurately delineated Prognosis may be markedly influenced by a knowledge of the exact position and extent of cavities and it is frequently possible to differentiate between the "woolly" mottling indicative of active disease and the characteristic appearance of the quiescent or healed lesion, showing fibrosis or calcification, or both

It is evident that the radiologist may thus be able to amend the diagnosis and influence the prognosis in cases already labelled positive Cases tentatively labelled negative and confirmed as such by *x* rays call for no comment

It is in the remaining portion of the cases under review that the radiologist's activities become more than supplementary to those of the clinician. Here the radiograph is of paramount importance Reference to some of the cases detailed below make it clear at once that an *x*-ray examination may be of such supreme value that a radiologist's report should be obtained wherever there is a shadow of doubt as to the presence of tubercle I shall endeavour to prove that this is essential in cases where the evidence gleaned from the physical examination of the chest is not sufficient to account for the symptoms

The group may be subdivided into five types, and I propose to describe these in the order of the frequency with which they appear in the *x*-ray department

Type I

In this type the *x*-ray picture is that of extensive mottling of both lungs, symmetrical in character, with restricted movement of both diaphragms Such cases may be sent to the department with the request "*x*-ray of chest for cause of pain below left clavicle," or "*x*-ray stomach and duodenum for suspected duodenal ulcer," no mention being made of suspected tuberculous disease of the lungs The following three cases are illustrative

Case I

A male, aged 27, was sent to the *x* ray department on November 15th, 1921, for *x* ray examination of stomach and duodenum for suspected duodenal ulcer The patient complained of pain in the stomach half an hour to an hour after food marked loss of weight, and slight cough and expectoration The family history was good He had always been healthy up to two years before examination when he commenced to have pain after food He had never vomited and the pain did not tend to become more severe He stated that he had been examined altogether by *over twenty doctors, the majority of whom had examined his* chest and told him that there was no evidence of disease He had been treated during these two years for duodenal ulcer (light diet, etc), but as he was gradually getting worse he was referred for *x* ray examination to confirm the diagnosis He was extremely emaciated and could only stand for a short period

On examination of the stomach and duodenum after the test meal nothing abnormal could be detected and it was evident that no sufficient lesion existed in this region to account for the patient's condition In the endeavour to find some cause for his cachexia a screen examination of the chest was made Extensive mottling of both lungs was seen symmetrical in character with restricted movement of both diaphragms The radiograph (Fig A) confirmed the screen findings, and the report was made that the *x* ray appearances of the chest were typical of extensive tuberculous disease of both lungs The sputum was then examined and found to be positive The *x* ray diagnosis was fully confirmed at the *post mortem* examination seven weeks later

Case II

A male aged 56, had always been a great athlete and had been in perfect health up to two years before being examined, when he had a severe attack of "influenza" and was in bed for several weeks On getting up he found he was very short of breath and could not play more than five or six holes at golf instead of his former thirty six His doctor repeatedly examined his chest, but could detect nothing abnormal Eighteen months after the "influenza" his voice became husky, and he was seen by an eminent physician, who told him his chest was as sound as a bell' He therefore consulted a laryngologist The latter found on laryngeal examination that there was double abductor paresis and that both vocal cords were suspicious of ulceration He therefore referred the patient to me for radiographic examination of the chest for either aneurysm, new growth, or tuberculous disease of the lungs

The patient complained of difficulty in breathing hoarseness, loss of weight, slight cough and expectoration, and pain below the left shoulder blade On *x* ray examination of the chest extensive symmetrical mottling of both lungs was seen with very little movement of the diaphragm The radiograph (Fig B) is typical of extensive tuberculous disease of both lungs, and a report was sent to this effect The sputum was then examined and found to be positive

Case III

A male, aged 52 was sent to the *x* ray department for examination of the gastro intestinal tract *with the diagnosis of* ' gastritis" He complained of vomiting and retching in the morning, cough with slight expectoration pain in the left side of the chest and abdomen and shortness of breath

He had been quite healthy up to four years before examination, when he began to suffer from a troublesome cough and noticed he was short of breath There was retching in the mornings with occasional vomiting His doctor diagnosed "gastritis and told him that his lungs were normal He was treated for gastritis for two years, but was gradually getting weaker and losing weight During this time his chest had been frequently examined and always pronounced normal

The radiological examination of the gastro intestinal tract proved negative and I therefore examined the chest I found mottling of both lungs and reported that the *x* ray appearance of the chest pointed to extensive tuberculous disease of the lungs The sputum was subsequently examined and found to be positive

I would draw attention in this type to the equal distribution of the disease in both lungs—that is, the symmetrical nature of the lesion Melville,[1] in a paper on "*Pulmonary tubercular disease as shown by x rays* but without physical signs," suggests that his cases were not diagnosed clinically because (1) "the presence of slight emphysema tends to mask physical signs, and emphysema was present in certain of my cases," and (2) "abnormalities in the percussion note and in the breath sounds are not readily detectable at a greater depth than about 4 mm from the lung surface where the area of infiltrated lung is small in extent"

Now in the three cases above quoted there was no evidence to suggest the presence of emphysema, and certainly the lesions were not small in extent, we must therefore look for some other cause to account for the failure to detect these cases clinically I would suggest that this failure to diagnose cases of symmetrical disease is due to the lack of a basis for comparison between the two lungs On physical examination the expansion, though diminished, is equal on both sides, the percussion note and breath sounds are similar, vocal fremitus and crepitus are equal, for these reasons the chest is passed as being normal and some other cause is looked for to account for the patient's cachexia

Type II

My next type is that in which the patient is sent for radiographic examination of the chest to confirm a clinical diagnosis of a tuberculous lesion at one apex The *x* ray examination reveals extensive mottled shadowing of the whole of both sides of the chest with the exception of one apex—the unsuspected one

Case IV

A female, aged 17, was sent to the *x* ray department on March 8th, 1924, with the diagnosis "suspected tuberculous disease right apex" She complained of cough expectoration, night sweats, loss of weight, and shortness of breath The family history was excellent She stated that she had been quite well up to six weeks before examination

Screening demonstrated mottling of both sides of the chest with the exception of the extreme left apex, as shown in the radiograph (Fig C) The sputum was examined and found to be positive

Case V

A male, aged 36 was sent for *x* ray examination of (1) the chest for suspected tuberculous disease of the left apex, and (2) the gastro intestinal tract for suspected gastric ulcer He complained of slight cough and expectoration and pain in the epigastrium after food There was no family history of phthisis The patient had always been healthy up to four years before examination when he had had a slight morning cough and expectoration There was no history of haemoptysis During the last three months he had lost weight and become very weak

The radiographic examination revealed extensive mottling of both lungs except at the right extreme apex Movements of the diaphragm on both sides were restricted owing to the presence of adhesions The examination of the gastro intestinal tract after a test meal revealed only simple gastroptosis and enteroptosis

I have mentioned the examination of the gastro intestinal tract because the patient's doctor considered this to be the important lesion He was extremely surprised to learn that I considered that the radiological findings pointed to advanced tuberculous disease of both lungs with the exception of the right apex, and sent the patient to a private sanatorium for confirmation The findings were confirmed, but the case was considered too advanced for sanatorium treatment The sputum was found to be positive, and the patient died three months later

I submit that the lesion is diagnosed at one apex because here there is a basis of comparison on clinical examination The affected apex shows diminished expansion, dullness on percussion, increased vocal fremitus and resonance, and probably some adventitious sounds The condition in the remainder of the lungs is missed for the reasons stated under Type I

Type III

This type is frequently met with in insurance cases The patient, usually a male, wishes to take out a life insurance policy Although the physician who examines him can detect no physical signs, he hesitates to give a clean bill of health as possibly the patient has been in a sanatorium for a few months years previously The radiographic examination in these cases frequently reveals calcareous patches, usually in the region of the apices, pointing to an old healed lesion The following case illustrates this type

Case VI

A male, aged 42, was referred for *x* ray examination of the chest for "any evidence of tuberculous disease of the lungs" The patient looked the picture of health and weighed 203 lb He stated that seven years before he had been "off colour" for some little time and *had spent four months in a sanatorium* He wished to take out a life insurance policy, and the doctor who had examined him stated that he could find no clinical evidence of any tuberculous lesion

On radiographic examination, however, definite opaque shadows were present at the right extreme apex (Fig D), pointing to calcification having taken place in a healed tuberculous lesion

Types IV and V are in an entirely different category.

TYPE IV

The patient is sent to the x ray department for examination of the chest for suspected tuberculous lesion at one apex. The radiograph on the suspected side shows a cervical rib of the type which as a rule joins the first true rib near its sternal end, but the lung itself gives no suggestion of tuberculous disease. One case will illustrate this type.

CASE VII

A female aged 25 was sent for radiological examination of the chest with the diagnosis phthisis right apex. She complained of pain in the right side of the chest for loss of weight slight cough and expectoration following influenza eighteen months before. The sputum was negative.

The radiograph (Fig. E) showed the presence of a cervical rib on the right side which almost joins the first true rib in front. There was no suggestion radiologically of tuberculous disease of the lung.

In this type of case the cervical rib, the presence of which is unsuspected, gives rise to some lagging at the apex, slight dullness on percussion and rather distant breath sound, thus simulating an apical tuberculous lesion.

TYPE V

A chest in which there is a marked degree of scoliosis combined with kyphosis gives rise to considerable difficulty to the physician, especially when he is required to make a negative diagnosis of tuberculous disease.

CASE VIII

A female aged 20 was sent to the x ray department for examination for suspected tuberculous disease of the lungs. She complained of a troublesome cough, slight loss of weight, shortness of breath and pains in the back. The sputum was negative.

The radiograph (Fig. F) shows a marked degree of scoliosis combined with kyphosis, the latter suggesting tuberculous phthisis.

In this type, therefore, the radiographic examination is of supreme value whether negative or positive.

CONCLUSION

I would emphasize the following points:

I. The importance of the co-ordination of the clinical with the x ray findings, for in many cases it is by this means alone that we can arrive at a definite and reliable diagnosis and prognosis.

II. The radiological examination should preferably be carried out by a trained radiologist, and it is essential that the x-ray findings and report should be made by him. Only too frequently one finds that in the smaller hospitals, and especially in tuberculosis centres, the x ray department is left in charge of the house-surgeon or tuberculosis officer, with no training in radiology, who tend to rely on the screen examination or on indifferent radiographs and to make the x ray appearances coincide with their clinical findings.

III. I would lay stress on the importance of taking a "diagnostic" radiograph in addition to carrying out the routine screen examination, for the negative x ray film will show details which even the practised eye under the most favourable conditions fails to detect on the screen. Further, one has a permanent record of the condition so that if, at any future date the patient returns for another examination the previous radiograph can be produced and the two compared.

REFERENCE

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THE INDICATIONS AND CONTRAINDICATIONS FOR ARTIFICIAL PNEUMOTHORAX

BY

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THERE has recently appeared an article[1] on artificial pneumothorax in which the writer advocates the treatment for cases of early pulmonary tuberculosis, and in which the following sentence occurs:

> I now come to my great point and it is this: that I think in the future we shall not postpone the induction of artificial pneumothorax until other methods have been given a trial but we shall carry it out at the earliest possible moment after the discovery even of early consumption. If the patient refuses the treatment and prefers to try the effect of sanatorium methods or high altitudes first that must be his affair. As doctors I think we should advocate the induction of artificial pneumothorax on the affected lung at once and then encourage the patient to stay in a sanatorium or at a high altitude if there is any suspicion that the other lung is affected.

This opinion raises a highly controversial issue and demands in my opinion a challenge.

Dr. Clive Riviere, who was a pioneer in this subject in this country, and one of its strongest advocates when the treatment was looked upon with indifference or mild amusement, writes as follows:

> A qualification even more important in the writer's opinion than that afforded by bilateral disease exists in the presence of early phthisis. The application of pneumothorax treatment to these cases can be shown on many grounds to be contraindicated. In the first place it is unnecessary since early phthisis is a disease readily curable by other methods; in the second place it is inexpedient since it brings with it risks and the chance of serious complications out of all proportion to the benefits it can confer. Pleural shock and gas embolism are perhaps but infinitesimal risks where modern methods are properly applied but they cannot be altogether eliminated. Furthermore pleural effusion and the deformities which may follow it are complications which cannot in any way be avoided. Such effusions occur altogether in nearly 50 per cent. of cases and though the shorter treatment required for slight disease would reduce this percentage yet effusions must occur in many and lung expansion fail or be incomplete in a few. Moreover on re-expansion the pleural layers may become adherent and the patient be thereby deprived of this treatment at a later stage when it may be full indicated. In some cases perhaps the production of a pneumothorax at an unusually early stage may be justified on economic grounds where time must be shortened in the case of a patient who is obliged to return to his occupation.



FIG. 1.—Before treatment by artificial pneumothorax.



FIG. 2.—After pneumothorax well established.

Falkberg of New York in his classic work on pulmonary tuberculosis writes thus:

> There are some who believe that even in incipient cases one ought to treat with pneumothorax. Among those may be mentioned Murphy, Lees, Bullock and Trudeau, Graham, Forlanini, von Adelung, Pierson and some others. Murphy and Kretschmer say: Is it well to wait until the condition is so desperate? Is the lung collapse such a desperate operation as to be used only as a last resort? With this I am not in agreement. It the treatment is related only a certain and limited time. The patient could be informed of the details and given the choice. But we are not as yet in a position to give the patient definite information as to the probable duration of collapse treatment and a large proportion of these cases recover under the old and tried methods. I would not subject mild incipient cases to the dangers, complications and duration of pneumothorax.

This, I must confess, is my own faith, and I know that if I had an early tuberculous lesion in the lung I should not have an artificial pneumothorax performed upon myself, but I would have treatment on strict sanatorium lines, whereas if I had a progressive lesion I should, without hesitation, accept pneumothorax treatment

There is little doubt that the immense value of artificial pneumothorax in selected cases lacks appreciation in this country, but its cause is not likely to be furthered by exuberant advocacy So many cases of early phthisis show a tendency to spontaneous cure, so many cases of a fibrotic type of pulmonary tuberculosis display such chronicity and detract so comparatively little from the general health and activity of the individual, that many a false remedy gains a reputation for healing in this disease Artificial pneumothorax has not hitherto been employed in such cases to any extent in this country, the test has therefore been severe, it has stood the test, and all those experienced in this treatment are convinced of its value

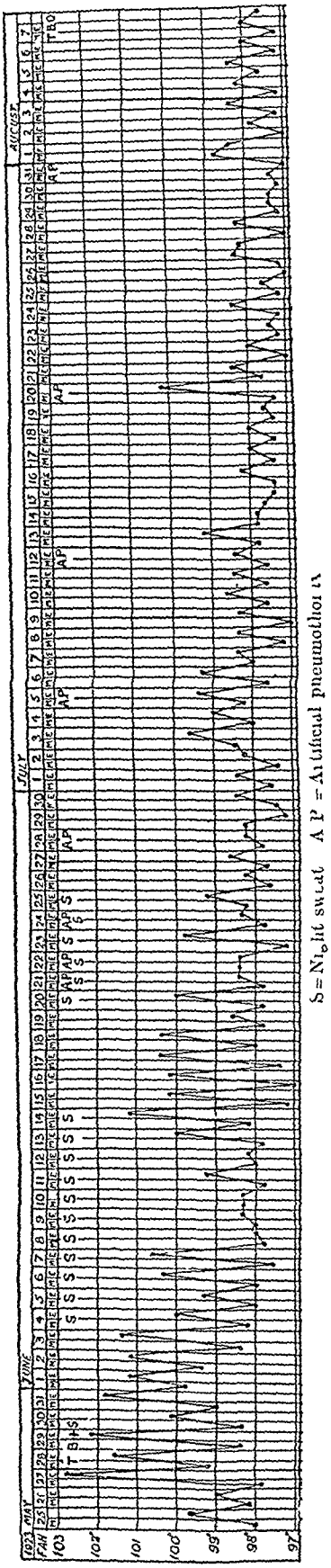
As an example of what artificial pneumothorax can do in phthisis, and of what I consider an ideal case from the point of view of suitability, response to treatment, result, and convincingness, I will quote the following

A woman, aged 29 was admitted to Victoria Park Chest Hospital on May 25th 1923 complaining of cough, expectoration, loss of weight, and night sweats She had had so called "influenza" at Christmas, 1921, and had not been well since, suffering from cough, weakness, palpitation, and expectoration A few months before admission tubercle bacilli had been found in the sputum On admission she was wasted, with high fever and night sweats The physical signs of disease were very marked on the left side and the heart was considerably displaced to the left The accompanying radiograph shows the extent of the disease, the temperature chart the degree of its activity

Artificial pneumothorax treatment was begun on June 21st It might be thought from the displacement of the heart and the apparent fibrosis that collapse of the lung would be unlikely Excellent though not absolutely complete, collapse, however, came about without any difficulty There can be little doubt that without the treatment the patient would have gone steadily downhill

From the chart it can be seen that the temperature soon fell the sweats ceased the sputum became negligible then absent tubercle bacilli disappeared and soon the patient was able to get up She is now doing her household duties and is a cheerful and comparatively healthy woman She has kept a temperature chart regularly ever since and there has never been a rise of temperature She comes up for refills once a month

I am well aware that one case proves nothing, but this is only one of many similar cases Many a patient with a fibrotic type of the disease may present physical signs as extensive and give an X-ray picture as bad as that shown here, and yet have few symptoms of active tuberculosis and live a fairly unrestricted life for many years But this case, though indeed fibrotic, evidence of which can be seen by the displacement of the heart to the left, leaving the intervertebral discs uncovered, showed every sign of marked activity and downward progression She was cyanosed and wasted, breathless and toxic there were sweats almost nightly and high fever



In such a case, I take it, there can be no two questions about the desirability of treatment by artificial pneumothorax

Indications

In my opinion the following are the indications for this treatment First, pulmonary tuberculosis of one of the following types

1 The disease has been recognized, let us say, fairly early after the onset of definite symptoms There are physical signs on one side The patient is given absolute rest under good conditions, but the disease spreads The temperature will not become normal, or rises immediately any exertion is made, the sputum perhaps does not decrease, nor does it become free from tubercle bacilli

Such a case would cause great anxiety The physical signs seem to be confined entirely to one side Two or three months have passed by and still there is activity, which implies spread of the disease It is now that artificial pneumothorax should be thought of, and the chest should be X-rayed to exclude as far as possible an unexpected or deep-seated disease on the other side This radiographic examination is essential Without it we cannot form an opinion of value Without it we are only justified in embarking on artificial pneumothorax treatment in exceptional circumstances There may be much deep-seated disease, which is not and cannot be detected by physical signs I am not referring to the hilum shadows and striation so often stigmatized as tuberculous by the radiologists, but definite stippling, mottling, and opaque shadows away from the hilum, which are undoubtedly pathological If after this examination the lung which appeared sound by clinical observation appears sound or nearly so by X-ray examination then artificial pneumothorax treatment can be started

2 The second type is a case where the diagnosis has been missed, or the patient has ignored his symptoms and has not sought medical advice The disease is advanced There is cough and much expectoration, wasting, and weakness, perhaps an occasional slight haemoptysis or a night sweat There are marked physical signs, but almost entirely on one side, perhaps one or more cavities can be detected In such a case, if there were not marked and definite improvement after a month's complete rest, artificial pneumothorax would be indicated

3 For the third type I would instance more chronic case There may be cavitation or much fibrosis, but the disease is still practically unilateral, of this the case described above is an example If after rest there are still symptoms—fever, sputum, haemoptysis—or the patient can live only a hopelessly restricted life, then artificial pneumothorax is indicated

Other indications are, in my opinion, as I have expressed elsewhere,[4] the following

(*a*) In a case of pleural effusion, if there is evidence of active tuberculosis in the lung of the same side, such as the presence of tubercle bacilli in the sputum or history of haemoptysis, etc, and the other lung is clear or fairly clear, in such a case I should first replace the fluid by oxygen or air, and then maintain the pneumothorax

(*b*) Recurrent chronic pleural effusion

(*c*) Certain cases of bronchiectasis

(*d*) Cases of foreign body in the bronchus that cannot be

removed through the bronchoscope, in this case I feel that it is the only possible treatment that can give relief, short of a very grave surgical operation

(*e*) Certain cases of foreign body in the lung

(*f*) For diagnostic purposes for revealing tumours and their attachments by radio copy and thoraco copy

(*g*) In certain cases of abscess of the lung

(*h*) As a preliminary to operation in certain cases

(*i*) To control haemoptysis

Contraindications

The following contraindicate resort to the production of artificial pneumothorax

1 Active disease in both lungs This rule, however, must not be applied too rigidly, for many cases have been successful in which there was some disease on the other side

2 Early phthisis which is becoming arrested by strict treatment on ordinary lines Far greater efforts must be made generally towards diagnosing the disease when it is really early Many cases called early are in reality advanced

3 Emphysema or asthma are said to be contraindications and if severe would obviously be so, but I have induced a pneumothorax in an asthmatical subject with no apparent ill effects

4 Extensive tuberculous disease elsewhere

5 Reluctance, undue timidity, lack of patience or of confidence on the part of the patient

In writing thus I have intended to express an opinion not to lay down the law It would be beyond the intended scope of this paper to discuss what is early pulmonary tuberculosis, and yet it is a question intimately associated with the problems of pneumothorax treatment

I take it that all will agree that, given symptoms of toxaemia (lassitude, evening fever loss of weight) and tubercle bacilli in the sputum with no physical signs either clinical or radiographical, or only slight signs the case may be regarded as one of early phthisis, whereas if the signs indicate the involvement of an appreciable amount of lung tissue it can no longer be so regarded

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LARGE ABSCESS OF LUNG DRAINAGE BY POSTURE RECOVERY WITHOUT OPERATION

BY

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THE following case is interesting because it shows that a large abscess of the lung may disappear completely and fairly rapidly when the patient can discover a posture which enables him to cough up its contents

A B, a carter aged 36, consulted Dr Fraser of Chaetown in September, 1923 on account of epilepsy, from which he had suffered for many years Dr Fraser on that occasion remarked on the extremely septic and offensive state of the patient's teeth, and pointed out the necessity of having them extracted

Before the man could make any arrangements to follow this advice he was taken suddenly ill and Dr Fraser found him suffering from a very acute and extensive pneumonia On September 24th the fourth day of the illness, the sputum became dark brown, copious, and very offensive

On September 27th I saw him in consultation with Dr Fraser and agreed that the physical signs pointed to pneumonic consolidation of the right lung complicated by gangrene or abscess I was unable to strike pus with an exploring needle The patient's general condition was so bad that I felt there was little hope of recovery The slightest movement caused great distress and cyanosis, and to move him from his humble home to hospital was out of the question

I made an autogenous vaccine from pneumococci and streptococci from his sputum he was given a dose the following day and afterwards at intervals of five days For the next five weeks he continued to expectorate a quantity



FIG 1—On admission to hospital showing abscess cavity half full of pus

of putrid purulent sputum The temperature, which was irregular seldom exceeded 103° F He became pale and emaciated and the fingers became slightly clubbed on the whole however, he seemed to have developed some immunity, and the signs of consolidation gradually cleared from the upper lobe so that on November 7th seven weeks after the commencement of his illness he for the first time was considered fit to be moved and was transferred to Queen's Hospital for x ray examination and possibly operation

The radiograph (Fig 1) taken on November 8th showed a cavity half full of pus in the lower half of the right lung The sputum was offensive but not very abundant

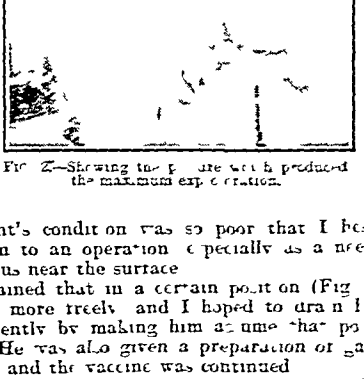


FIG 2—Showing the position which produced the maximum expectoration

The patient's condition was so poor that I hesitated to submit him to an operation especially as a needle failed to locate pus near the surface

I ascertained that in a certain position (Fig 2) he expectorated more freely and I hoped to drain his abscess more efficiently by making him assume that position frequently He was also given a preparation of garlic every four hours and the vaccine was continued

Thereafter his progress was most satisfactory, the sputum lost its foul odour and became rapidly less in quantity, the pyrexia ceased completely, his appetite improved and he gained a stone in weight during the next month Gradually his extremely bad teeth were removed

A radiograph taken about a month after admission showed a great diminution in the size of the abscess He was discharged two months after admission, free from all symptoms of abscess and displaying no physical signs beyond some impairment of resonance over the right lower lobe and some diminution of breath sounds in the same region When next seen, two months later, he was in good health and back at work All abnormal physical



FIG 3—Four months after admission—no trace of abscess Lung fields normal

signs had then completely disappeared, and an a-ray examination (Fig 3) failed to show any trace of his former lesion

My object in publishing this case is to call attention to the striking and immediate benefit which followed the efficient draining of the abscess by the assumption of a suitable posture by the patient, there is nothing new in that

INCUBATIONAL CHANGES IN THE RED CELL COUNT IN INOCULATED MALARIA

(Preliminary Note)

BY

ADRIANUS PIJPER, MD, CONSULTING PATHOLOGIST AND BETH DILL RUSSELL, MRCS LRCP, DPH, ASSISTANT PHYSICIAN, PRETORIA MENTAL HOSPITAL

We have taken up Sir Ronald Ross's suggestion[1] that the treatment of general paralysis with malaria should also serve as an opportunity for studying the incubational period of malaria This note deals only with changes in the red cell count

Our nine patients were all European male inmates of the Pretoria Mental Hospital, most of them of long standing, but still in fairly good condition when the work was started We have used one case of dementia præcox as a control All patients were treated with one and the same strain of benign tertian malaria

Method Employed

Quantities of blood, varying between 0 5 and 10 c cm, were taken from the vein of a patient with malarial fever, under aseptic precautions, but with no regard to the stage of his fever This quantity was then immediately injected under the skin of the new patient, divided over as large an area as the needle could reach, and well rubbed in

A drop of blood from the finger was diluted 200 times with the usual pipette, and counts were made with a Thoma-Zeiss counting chamber From every pipette two drops were counted separately, and a hundred small squares were counted every time

In a few cases morning and evening counts were made on the same patient In the absence of fever there was hardly any discrepancy, but an intervening rigor always lowered the count In such cases the mean was taken The routine procedure, however, was one daily count performed at approximately identical hours for every patient In every case counting was started a few days before the injection so as to obtain the average count

Results

Sir Ronald Ross[1] mentioned that S Ben-Hariel saw the red cells diminish, in canaries inoculated with Proteosoma, as early as the day after inoculation, and this decline was progressive day after day, until from 0 5 to 2 million had disappeared from the original normal count of 4 5 to 5 million We have found the exact opposite, as shown in the table In it we have included other details about our patients which might be thought to have a bearing on the phenomena observed, although the connexion is none too obvious

TABLE

Case Number	Dose Injected	Incubation Period (days)	Average Cell Count before Injection (millions per c mm)	Highest Count Reached (millions per c mm)	Lowest Count Reached (millions per c mm)	Malaria in Patient's History	Duration of Fever (days)	Fever stopped by—
	c cm							
1	3	12	4 7	6 4	3 1	?	33	Itself
2	2	9	4 7	6 7	3 2	?	30	Neosalvarsan
3	4	9	5 6	6 7	3 2	?	17	Neosalvarsan
4	5	6	5 4	6 25	3 5	?	19	Neosalvarsan
5	1	12	4 8	6 2	2 9	had	58	Neosalvarsan
6	0 5	17	4 7	6 5	3 65	?	47	Neosalvarsan
7	1 5	18	5 9	6 4	5 2	had	15	Itself
8	2	9	6 8	7 9	6 5	?	12	Death
9	10	14	5 9	6 8	5 3	had	5	Itself

At the altitude of Pretoria a red blood count of nearly 6 million may be regarded as normal From the table it is seen that many of our patients were anæmic before the injection of malarial blood The high count reached by all of them after the injection is all the more remarkable The very low count following on this is the usual malarial anæmia But neither the rise nor the fall seems to stand in any fixed relation to the other features to previous malarial history, to the dose of blood injected, and to whether we used neosalvarsan to stop the fever or it ceased of itself

From our observations it is clear that an injection of malarial blood is followed by a rapid and marked increase in the number of red cells This increase is followed by a decrease, and this decrease coincides more or less with the outbreak of fever, or possibly with the appearance of malaria parasites in the peripheral blood stream Since all the cases injected with malarial blood showed this increase in cell count, and the one case injected with malaria free blood showed no change at all, we may safely hold the malaria parasites responsible for the increase This view is further supported by an observation in another patient who had received an injection of malarial blood but for some reason never got as far as a rigor He just showed an irregular slight rise of temperature for a couple of days, after which the fever died out entirely In this case a rise in the number of red cells was recorded from 5 04 to 5 78 million

Conclusions

A subcutaneous injection of from 0 5 to 10 c cm of blood containing benign malarial parasites is quickly followed by a rise in the red cell count amounting to somewhere between 10 and 30 per cent This rise lasts several days, with minor daily variations, and is followed by a fall, which constitutes the malaria anæmia

As an injection of malarial blood cannot very well lengthen the life of red blood corpuscles, the rise can only be explained

as in the production of red blood cells Normal blood has no such effect

An injection of malarial blood is a direct stimulus for the red bone marrow toward increased activity This stimulus might be applied for therapeutical purposes (forms of anæmia, especially chlorosis) The outbreak of tertian always be prevented by an injection of a small amount a the increase in red cells is well established The whole process could then be repeated

We wish to thank the public health authorities of Natal for assisting us in obtaining the strain of malaria Dr Grimmer Verulam for his very kind and courteous co-operation in the matter Dr J T Dunston Chief Medical Officer for Mental Hygiene of the Union of South Africa for giving us every assistance while making these investigations and Dr Swift Acting Chief Commissioner for Mental Hygiene for his kind permission to publish this note

REFERENCE

1 Ronald Ross British Medical Journal January 14th 1911

SMALL-POX AN UNRECOGNIZED OUTBREAK

BY

T A SHAPPE M D B S LOND D P H LEEDS

MED CAL OFFICER OF HEALTH PRESTON

THE following history illustrates the behaviour of unrecognized small pox in a community where the only control was the previous partial vaccination of the contacts and the fact that it occurred in institutions under discipline and observation The facts are related as they came to my knowledge in order better to convey the method by which the outbreak was discovered

On Saturday, February 10th I was asked by the medical attendant to see a girl resident in an institution for female adolescents which is supported partly by voluntary contributions and partly by laundry work I gave it as my opinion that the patient was suffering from chicken-pox and very much relieved the administration by offering to remove the case to the Preston Isolation Hospital This offer was accepted, and the patient was removed to an isolation ward in the diphtheria block at the isolation hospital

During the week-end I became suspicious of my original diagnosis, and asked Dr Fisher of the Lancashire County Council staff to see the case He diagnosed the case as one of small pox the points being

1 The rash was preceded by a definite illness on February 6th—headache pains in the back and sickness

2 The rash first appeared on the face and forehead on February 13th

3 When the rash was fully developed (February 16th) it tended to affect the extremities rather than the centre of the body and the exposed rather than protected surfaces Thus the back of the hand and the arm the front of the leg and the forehead were affected whereas the abdomen the groin and the front of the neck were free

4 The rash appeared in one crop upon the face and appeared successively at different sites lower down the body affecting the feet last thus the rash on the face was much older than that upon the feet and all the spots upon the feet were of the same age

5 The spots were circular and deeply seated in the skin

6 The vaccinal condition was definitely negative

7 Re-vaccination was not successful

The diagnosis was agreed to by my assistant and the original medical attendant of the case and by the medical officer of the small-pox hospital to which the patient was removed on that day She made a good recovery but was somewhat scarred There were no subsequent cases

The usual inquiries as to the source of infection revealed the fact that the laundry was regularly receiving parcels of laundry work from an adjoining institution for boys This home is managed by a religious brotherhood and receives fifty resident boys on behalf of the Home Office At this home on December 25th there occurred an illness in one of the boys A rash appeared on December 29th I saw the case on December 31st in consultation with the medical officer and diagnosed the illness as chicken-pox Bearing this case in mind I at once inquired as to the subsequent history and found that fourteen additional cases had occurred as shown in the table

Case	Date of Onset	Vaccinal Condition	Case	Date of Onset	Vaccinal Condition
1	Dec 29th	Old	9	Jan 14th	Negative
2	Jan 4th	Negative	10		Negative
3		Negative	11	Jan 16th	Negative
4	Jan 6th	"	12	"	"
5	"	Negative	13	Jan 17th	"
6		Old	14	Jan 18th	Negative
7	"	Negative	15	" "	Negative
8	Jan 11th	Negative			

The cases all suffered from an illness similar to that of the first boy The rash was limited to the face neck arms and back and did not in any instance affect the palms or soles The rash appeared first on the face and forehead and rapidly developed into an eruption of discrete vesicles and pustules by the date of the visit (February 16th) all the boys were in bed and running fever with the exception of the cases The pustules on the hands knees and feet were deeply seated in the skin and showed characteristic umbilication Individual attacks also indicative

An examination of the remaining boys showed that with one exception all had been vaccinated either in infancy or subsequently Most of the vaccinations had been performed by the medical officer of the institution who had arranged for the vaccination of the whole of the boys who had been previously vaccinated In view of the age of the attempt to vaccinate was unsuccessful born on February 1st and February 15th In one case which in its attack had only a single spot and no scar the vaccination was successful The seven of the fifteen cases in the table were unsuccessfully re-vaccinated on February 20th

In view of the fact that the usual experience of public vaccination, using Government lymph is 99 per cent of success and a slightly lower figure for infection succeeding the unsuccessful attempts to vaccinate these unvaccinated boys was the subject of correspondence between the public vaccinator and the Government lymph establishment to which my attention was called by the Minister of Health early in March

Summarizing, I found that an epidemic illness resembling small-pox had occurred and that it had (1) infected all but one of those eight boys not protected by previous vaccination (2) infected seven boys protected by previous vaccination (3) failed to infect forty-nine boys and staff protected by previous vaccination (4) rendered these infected immune to vaccination

On January 22th the nurse who had attended to the sick boys took her uniform to the laundry at the girls' institution The case in the latter home occurred on February 8th—seven days later

Several interesting points arise The attack rate was as follows

Institution	Period of Exposure	Previously Vaccinated	No of Cases	Percentage	Unvaccinated	No of Cases	Percentage
Boys Home	Unlimited	46	7	15.5	5	3	3.3
Girls Home	3 days	14	—	—	6	1	16.6
Isolation Hospital	2½ days	43	—	—	4	—	—

The total contacts at the time of the outbreak numbered 118 of whom 111 had been previously vaccinated and 15 were unvaccinated All with 10 exceptions (seven army vaccinations 3 refusals 2) were submitted to vaccination in connection with the small pox outbreak

The case incidence in the previously vaccinated was 7 in 68, or 21.5 per cent

In the 14 who had never been vaccinated or successfully in all but one case

Detailed charts sent with this paper have been omitted owing to want of space

An examination of the dates of attack in the boys' home shows that Case 1 infected the remaining cases, and that the removal of the subsequent cases to a separate dormitory without any special precautions was sufficient to check any further spread of the disease Although the unprotected were with one exception attacked, yet they were not, as one might expect, attacked first Cases 7, 8, 9, and 10, who were previously vaccinated, became infected before Cases 11, 12, 13, 14, and 15, who were not All the cases were of the mild type, and there was no practical difference in severity between the cases arising among the protected and the unprotected In the girls' home secondary cases were looked for with some assurance Their immunity was perhaps due to the fact that each girl had a separate bedroom The boys' home is planned on the dormitory system

THE LIFE-HISTORY OF A CASE OF MYXOEDEMA

BY

HUGH M RAVEN, M R C S, L R C P,

BROADSTAIRS

This case of myxoedema was reported in the Journals of January 6th, 1894, and July 31st, 1897, by my father, and is, I think, an unusually long record of a patient continually under observation

Mrs S was born in May, 1829, therefore when she died in January, 1924, she was over 94 years of age The



Fig 1 Original condition, aged 41



Fig 2—After five weeks treatment

symptoms of myxoedema began in about 1870, and were untreated for twenty years, by which time she was bedridden and imbecile, and her appearance is to be seen in photograph 1 After five weeks' treatment with thyroid

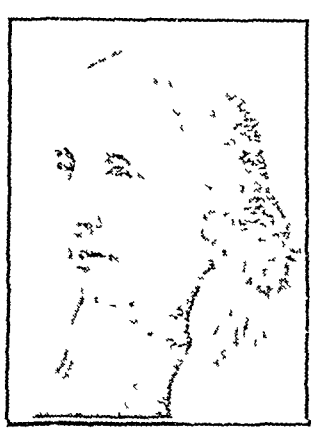


Fig 3—After fifteen months treatment



Fig 4—At age 94 after over thirty years treatment

tablets her mental condition had much improved, and the condition of the skin generally was clearing up (photograph 2) After fifteen months' treatment she was practically normal again (photograph 3), the regrowth of the hair is to be noted Within a year or two she was well enough to nurse her daughter through an attack of typhoid, and lived to a ripe old age—happy, healthy, and mentally active

It was noted during the early years after her recovery that she appeared mentally younger than a woman of her age, and it was suggested that the twenty years of myxoedema had given her twenty years of rest, from which she benefited in the long run

As far as my information tells me, she had five grains of extract of thyroid twice a week at the commencement of the treatment, and after recovery she had one grain twice a day for the rest of her life I have little doubt that during all these years the thyroid was not always taken regularly, but there was never any recurrence of the symptoms The thyroid gland remained impalpable

The fourth photograph shows her shortly before her death, which was caused by bronchitis

ABSCESS OF FRONTAL LOBE OPERATION RECOVERY

BY

S W SWINDELLS, M B, Ch B,

AND

A H RANKIN, D C M, M B, Ch B,

GRIMSBY

The following case appears to be of interest on account of the unusual path of infection—namely, from the frontal sinus—and is confirming certain mental symptoms in lesions of the frontal lobe

G R aged 23 dock fireman was first seen by A H R on October 27th, 1923 He complained of pain in the lower jaw on the left side and headache which had lasted for six days Two days previously he had vomited once

There were found oedema of the left upper and lower eyelid, and tenderness over the left maxillary region There was also an area of extreme hyperalgesia of 1 inch radius situated 2 inches to the left of the mid line, and 2½ inches above the orbital ridge The pupils were equal and reacted to light The fundi appeared normal on ophthalmoscopic examination Transillumination tests showed dullness in the left antrum of Highmore and the left frontal sinus also appeared relatively dull The temperature was 103° F and the pulse 50

In the course of a few days these symptoms abated, but on November 7th the oedema of the eyelids returned and the headache increased The temperature varied from 99·5° to 101° F, and the pulse from 66 to 90

Operations

On November 9th he was removed to the Grimsby Union Infirmary, and the wash out test having given a positive result on the left side the left antrum of Highmore was drained through the canine fossa a large quantity of fluid pus being liberated On the following day (November 10th) the left frontal sinus was opened by the direct route It was found to contain glairy inspissated pus No backward track could be detected Both operations were performed by S W S

The temperature again became normal and the patient felt much better generally so that it at first seemed that the whole condition might have been due to the sinus disease only During this period the temperature never rose above 99° F, and the pulse varied from 62 to 100

Mental Disturbance Third Operation

On November 19th the headache once again became severe, the left eyelids oedematous, and the left pupil slightly dilated The patient refused to allow his dressings to be touched, or his mouth to be cleansed Though up to this point his behaviour had been exemplary, he now refused all food and became violent and abusive towards his nurses It was difficult to obtain answers to questions, and these were given slowly after an interval of a few seconds He became very weak, and nutrient saline was commenced

On November 27th the fundi were again examined and found normal Both handgrips were very weak, but that of the right hand weaker than the left In spite of his now semi-comatose condition pressure on the scalp in the region defined above caused the patient to wince On this date the pulse was 48

On November 28th a third operation was performed by A H R A vertical incision was made 3/4 inch to the left of the middle line extending for 2½ inches upwards from the orbital ridge The skull was trephined above and to the left of the frontal sinus The trephine used was 1 inch in diameter The dura mater bulged into the opening and there was no pulsation At a point corresponding to the upper limit of the left frontal sinus there was a marked granulated area This was believed to represent the track of the causal organisms The membranes and cortex were incised and pus was found at a depth of 3/4 inch Five ounces of pus were collected, the patient being turned face downwards to facilitate

its escape A gauze drain was left in the sinus which measured 2½ inches in length

Next day the patient's disposition was found to be entirely different He was again quite tractable and answered questions with less difficulty Twelve days after the operation he had two epileptiform seizures and for a fortnight he had several similar attacks On January 6th 1924 all packing was removed and after a fortnight later the wound was allowed to close completely The patient was discharged well on February 6th having been free from symptoms for six weeks

Mr D S Campbell M B who was associated with us in the treatment of the case undertook a bacteriological examination of the pus and reported that it showed a mixed infection micrococci predominating with numerous groups of staphylococci

As is usual in such cases the patient is unable to recall any of the events of his illness prior to the relief of the intracranial pressure—for instance he does not remember ever having been visited at home or having been removed to hospital

Memoranda:

MEDICAL, SURGICAL, OBSTETRICAL

PUERPERAL FEVER AND ATROPHIC RHINITIS

In parts of June and July 1923 a number of patients at the Portsmouth Municipal Maternity Hospital exhibited temperatures above normal without any obvious cause without physical signs and without symptoms apart from mild malaise which was present in a few instances While investigations were still proceeding complaints were made regarding a faint unpleasant odour alleged to be attendant upon a certain recently enrolled pupil midwife and she was examined with a view to ascertaining its cause It was just previous to this that it had been noted that the patients under observation had all been attended in some way or other by the same pupil midwife Advanced atrophic rhinitis with extensive crust formation was found and she was requested to return home and place herself under treatment This she did and the temperatures referred to all became normal almost at once

Nearly three months later she submitted a medical certificate and was allowed to return Almost immediately however, the temperatures of those patients with whom she came into contact began to rise but more markedly than before She submitted to re-examination and the condition was found to be very little changed from that noted at the previous inspection A culture taken from the nose showed haemolytic streptococci The opinion of Mr C A Scott Ridout M S F R C S, was obtained and on his advice she again retired for treatment As before, the temperatures immediately subsided

TABLE I.—*Temperatures June 12th to July 9th*

	Temperatures	Duration
Case 1	99	First to fifth evenings
Case 2	99	Fifth to tenth evenings
Case 3	99	Three evenings
Case 4	99·6	Evening of the first week
Case 5	99	Evening of the first week.
Case 6	99	Every evening
	100	Eleventh evening

TABLE II.—*Temperatures October 8th to 23rd*

	Temperatures	Duration
Case 1	99–100·6	First to fifth evenings
Case 2	99	Fifth to seventh evenings
Case 3	100	Evenings of the first week
	101·8	Fourth evening
Case 4	99–100	First to tenth evenings
	103·2	Tenth evening

It will be noted that nearly all of the cases in Table II should have been notified It should also be mentioned that of all these cases in both tables, this pupil midwife was present at the delivery of three only and even then she was too junior to do more than look on

Since the temperatures subsided on the removal of the "carrier" from attendance, it is justifiable to assume that the cause of the rise was not result bacterial, though almost certainly bacterial in origin No theory is submitted as to the mechanism by which the reaction was produced, but it may be emphasized that the carrier suffered from a *chronic* infection

Darlington P KELSON FOLD, M B, B S

TREATMENT OF SPRUE BY CALCIUM AND PARATHYROID

THE following short notes on two cases of sprue treated by calcium lactate and parathyroid extract are submitted in reference to the article by Dr H H Scott in the BRITISH MEDICAL JOURNAL of August 23rd (p 305)

CASE I

A B male aged 22 single spent a year on the Indian frontier with six months home leave in 1921 He came home in 1923 He had had bilious diarrhœa

In October 1923 the symptoms of sprue began copious early morning stools flatulence of abdomen and sore tongue He was seen in consultation on March 5th 1924 when there was anæmic tinge on the conjunctivæ an atrophic tongue and a tumid abdomen with a palpable liver The teeth were characteristic of sprue No abnormalities were detected in any other system The patient was ill and very irritable He was put on a suitable diet and given parathyroid extract (Armour) 1/10 grain twice a day with calcium lactate Seen again on March 27th there was no soreness of the tongue the stools (three daily) were pale not frothy nor abnormally large Slight tenderness of the colon persisted but the colour and the general outlook were good On June 13th the parathyroid dosage was cut down to once daily The general condition was extremely satisfactory and there was no recurrence of untoward symptoms At the present time he can play golf and lead an active normal existence both mentally and physically He is having no treatment but drugs and can digest any food but he has been advised still to exercise care in his diet

CASE II

C D female aged 40 married no children went to India in 1910 had several short holidays in England and a long furlough from May 1914 till November 1916 She returned home finally in 1921

She had a sore tongue before leaving India in 1921 which had on the voyage home She had been in fair health till six months ago when she was subject to much worry since then she has had a sore tongue flatulence and copious pale offensive frothy stools She gave a history of retrosternal burning on taking food and of sudden vomiting without nausea at night When seen on June 14th 1924 she was very ill and confined to bed She was extremely emaciated with a cachectic skin The characteristic sprue tongue was present with denuded epithelium and ulceration The abdomen was tumid but there were no other abnormal physical signs in chest or abdomen and no disease of the central nervous system The diet were normal but pale She was put on (two-hourly feeds of milk peptonized milk and whey and meat juice Parathyroid extract (Armour) 1/20 grain was given twice a day with calcium lactate The dose was gradually increased the symptoms subsided When last seen on August 20th the stools and tongue were normal there was no sickness the weight had increased the colour was good and she felt well The diet was practically normal but taxing was still restricted The parathyroid extract was stopped

VINCENT COSTE, M C, M D

Physician Royal Mineral Water Hospital Bath

EXPULSION OF WHOLE PLACENTA PRÆVIA

THE following case must be of great rarity and seems of sufficient interest to record

On May 15th I was called to a confinement at 5 a m The patient was a multipara (ten previous pregnancies and there was a history of several miscarriages and premature births On arrival I was surprised to see the entire placenta lying on the bed and naturally concluded that the child was born but on inquiry I found that this was not the case There was no haemorrhage

I made an examination and found there was a transverse lie with impaction of the shoulder Chloroform was administered version performed and the child (or coccyx lead) was delivered without any further trouble The puerperium was uneventful

I think there is no doubt that the condition had been one of central placenta prævia and that as labour had progressed the attachments of the placenta had been loosened and it had been expelled whole

I learned that there had been a sudden gush of blood when the "after birth" was born but this had quickly subsided and there had been no further haemorrhage

To my mind the remarkable features of the case are first that expulsion of the entire placenta could take place without its being ruptured and secondly that there was no serious haemorrhage throughout the case

H C OWEN PEACH M B Ch B

Summerbridge near Harrogate

Reviews.

CHRONIC EPIDEMIC ENCEPHALITIS LETHARGICA

It is now some six years since lethargic encephalitis began to attract the attention of the medical profession in England. During March and April, 1918, a large number of cases of an obscure disease were reported in England. Owing to the frequent occurrence of ocular paralysis it was at first suggested that it might be botulism, and later that it was the cerebral form of acute poliomyelitis (Heine-Medin disease). But it was soon recognized that it corresponded in its clinical symptoms, signs, and pathology with a disease of which three cases described by von Economo and von Wiesner had occurred in Vienna in 1917. The evidence now available seems to establish that it is not a new disease, for epidemics in which lethargy was a characteristic symptom have occurred in various places in Europe during the last three centuries.

Recently a serious recrudescence has been noted in various parts of this country. The cases notified during the first five months of this year numbered 2,473, whereas the annual average for the previous four years was 839. Consequently when Professor Wimmer of Copenhagen asked me to write a preface to his work on *Chronic Epidemic Encephalitis*[1] I replied that I would consider it an honour to do so. Having read the book I felt it was a work which would be of service to the medical profession in England, for it deals with the subject in a masterly manner.

Professor Wimmer produces evidence that a large proportion of cases of encephalitis lethargica—not only the severe ones, but even the mild ambulatory cases—may develop within a few months or a couple of years signs of chronic progressive disorder of the central nervous system. The Ministry of Health has issued several important reports since 1918. Reference may in particular be made to the Annual Report of the Chief Medical Officer of the Ministry for 1922, and to the important memorandum (British Medical Journal, June 14th, 1924, p. 1062) issued this year by the Ministry, in which these late effects are considered to be sequelae. Professor Wimmer and many Continental authorities are of opinion that the encephalitis may remain active for years as an intermittent or recurrent process, but that it is in by far the majority of cases progressive. The symptoms are not sequelae, but due to the active virus. Professor Wimmer quotes Netter's statement to the effect that the encephalitis may be continued for several months, even for several years. The virus, according to Netter, can continue to live in the nervous centres like that of syphilis.

The memorandum above referred to states that in the second quarter of 1924 there were 1,715 cases of lethargic encephalitis in England and Wales. Unfortunately, publications which are issued by the Stationery Office do not seem to obtain the wide circulation documents of so much importance deserve, and Professor Wimmer does not allude to the report in his monograph. It is really astonishing to find how seldom reports published by the Stationery Office obtain recognition in foreign countries. Only the other day I was asked by an eminent scientist who gave most valuable evidence before the Royal Commission on Venereal Disease, where he could obtain a report of the findings of the Commission and the evidence. *The Action of Alcohol on the Human Organism* is another example of a valuable publication buried by the Stationery Office.

Professor Wimmer deals almost exclusively with chronic epidemic encephalitis, although in a short introduction the subject of encephalitis generally is considered. He gives an account of the symptomatology and a description of the psychotic and general nervous disturbances. Recently the Board of Control issued an inquiry to superintendents of mental hospitals relating to patients admitted with mental symptoms occasioned by this disease. Although a considerable number of cases had occurred in Birmingham and district, and the names of the cases noted were sent to the superintendents of Rubery Hill and Hollymoor, not only one of the patients whose names had been notified as suffering from this disease could be identified with patients admitted to these institutions. Professor Wimmer is of opinion that psychic disturbances are likely to be found in children and young adults, who are very liable to exhibit changes of character and morals in consequence of this disease. Of the 271 cases in which sequelæ were noted in the Ministry of Health's report (Report No. 11) quite a number exhibited psychic disturbances, and in the Ministry's memorandum it is pointed out that

> "the after effects in all probability are dependent upon lesions of the cortex of the brain. Irritability, maniacal outburst, lebetude, complete change in moral character and self control, sexual perversions, lying and theft, may appear for the first time in the conduct of the victims of encephalitis lethargica, as well as grosser mental defects including even homicidal mania, and other disorders of conduct which result in the patient's transference to a mental institution. These symptoms are of all grades of severity, and may be associated with nervous lesions."

Dr. Wimmer's experience coincides with this, he states that of twenty-five children who had been treated in 1918-22 in the hospital for epidemic diseases in Copenhagen, eleven died, two could not be traced, and the remaining twelve all displayed to a more or less pronounced degree psychic disturbances affecting especially moral character. We must therefore look for these children in children's courts and institutions for mental defectives.

Professor Wimmer divides the chronic forms of encephalitis into three main groups: chronic encephalitic Parkinsonianism, intermediary types, and extrapyramidal hyperkinesia. He discusses these types very fully, and with copious reference to the experience of other authorities. His own cases are fully described and illustrated by photographs and photomicrographs. The differential diagnosis is discussed in a very full and comprehensive manner, and illustrated by cases. Dr. Wimmer notes that an extremely persistent and painful symptom met with in chronic encephalitis, in children as well as in adults, is insomnia or dyssomnia. He attaches some importance to the examination of the spinal fluid of cases of chronic encephalitis, especially as a means of distinguishing them from pure neurasthenic or hysterical conditions, for the functional neurosis may, of course, be combined with the organic affection. He discusses the value of an increase of sugar in the cerebro-spinal fluid, although in eight chronic cases the results were quite negative. "Theoretically, an increase of the sugar content in the blood and cerebro-spinal fluid should be very interesting, seeing that it might be due to a lesion of the central sympathetic centres in the hypothalamic region." He relates a number of experiments carried out in collaboration with Dr. Jensen, but states the results tentatively, I am, indeed, inclined to think that the evidence of successful inoculation of rabbits is at present insufficient. The results of an exhaustive histological examination of the brain in non-experimented domestic rabbits at the Rockefeller Institute, in which lesions were found similar to those observed in animals that had been inoculated, tend to throw doubt upon the morbid changes seen in rabbits' brains and attributed to the inoculation. Professor Wimmer does not refer to the important experimental investigations by Mackintosh, for the reason previously stated, but he mentions those of Levaditi and Doerr, who by inoculation of virus obtained from human cases provoked in rabbits and monkeys brain lesions indistinguishable from those characteristic of lethargic encephalitis.

The histological changes in the cases which came under his own observation and died in hospital are fully described and illustrated by the author. The morbid changes are found especially to involve the basal ganglia and the mesencephalon, but any part of the central nervous system may be the seat of the inflammatory process. It resembles poliomyelitis in its epidemiology, low degree of infectivity, and prodromal symptoms, but in one important respect it differs—namely, only rarely is the spinal cord affected.

It is difficult to understand why the virus should select the mesencephalon, unless it be due to some special relation between the lymphatics that pass up along the vertebral arteries to supply the base of the brain and the localization of the virus in the naso-pharynx. A study of the course

[1] *Chronic Epidemic Encephalitis.* By August Wimmer, M.D. With Preface by Sir F. W. Mott, K.B.E., LL.D.Edin., M.D., F.R.C.P.Lond., F.R.S. London: William Heinemann (Medical Books), Ltd. 1924. (Super roy. 8vo, pp. 335, 85 figures, 1 plate. 21s. net.)

and relations of the lymphatics of the naso pharynx and the brain would be of interest It seems that the perivascular lymphatics of the short terminal perforating arteries that spring from the basilar artery and the circle of Willis are special seats of the activity of the virus, causing a peri vascular lymphocyte infiltration and congestion of the vessels so that to the naked eye an appearance of punctiform haemorrhages in the brain stem is seen, and is almost pathognomonic of the disease A similar perivascular infiltration is observed in the encephalitis of sleeping sickness due to the trypanosome invasion of the central nervous system So far no organism has been found in lethargic encephalitis, it is probably a filter passer

Unlike syphilitic and tuberculous brain affections there is little or no meningitis The absence of affection of the meninges probably accounts for the relatively fewer cells in the cerebro-spinal fluid in lethargic encephalitis

The pathogenesis of the disease is dealt with in a very interesting chapter, in which the author refers to the opinions expressed by a number of authorities The chapter on patho-physiological mechanisms is very instructive as it help to explain the various characteristic symptoms—for example the Parkinsonian syndrome the choreiform and athetoid movements, and the myoclonias—which occur in the chronic form of lethargic encephalitis Very extensive references are made to German and French authors and the book, both on account of the experience and knowledge of the disease displayed by the author and his familiarity with the important contributions to the subject by authorities on the European continent should ensure its wide circulation among English speaking people It is written in excellent English, and admirably illustrated by numbers of photographs and photomicrographs

FREDERICK W MOTT

POPULAR WORKS ON DIABETES

It is well known that the American public is more interested in health and the prevention of disease than is the British and one result of this interest is the existence in America of a large amount of good popular health literature written by responsible persons This fact is illustrated by the appearance on our table for review of no fewer than five short books on diabetes published recently in the United States written not only for the use of physicians but also for the instruction of nurses and patients

Diabetes is a disease which has caught the imagination of the American public Its incidence has increased considerably in recent years, it attacks the well-to-do more frequently than the poor—the popular vices of overeating and lack of exercise are believed to be important contributory causes and finally, the discovery of insulin was the most dramatic advance made by medicine in this century These facts, together with the existence of a diabetic club in America numbering a million members, have apparently created an extensive demand for popular literature on diabetes

The third edition of *Diabetic Manual for the Mutual Use of Doctor and Patient*,[1] by Dr ELLIOTT P JOSLIN, Clinical Professor of Medicine at Harvard Medical School, is a volume of just over 200 pages, which can be recommended with confidence to both of the classes for which it is intended It is written in a remarkably pleasant and interesting style and presents all the salient facts about the treatment of diabetes with clearness and precision Full instructions as to the selection of diets are given, the fundamental principles of food values are explained, and a large number of diabetic recipes and menus are given The main principles regarding the administration of insulin and the dose to be used are also outlined One word of caution is needed regarding the use in this country of the tables given in the book the American pint contains only sixteen fluid ounces, and therefore is only four-fifths of the English pint This difference might lead to error, although the chances of such an error occurring are reduced because most of the tables are given in the metric system This caution also applies to the other four books under review

As regards prevention of diabetes, Professor Joslin emphasizes the necessity of moderate eating and regular exercise He points out that the onset of diabetes is closely associated with obesity, and consider that 'no other condition rivals obesity in importance as a forerunner of diabetes" Various pieces of evidence in support of this thesis are quoted, but perhaps the most significant is that the mortality from diabetes fell about 50 per cent in Germany during the later years of the war when undernutrition became prevalent

Management of Diabetes,[2] by Dr GEORGE A HARROP JR is a manual for physicians and nurses based upon a course of instruction given at the Presbyterian Hospital, New York The generosity of John D Rockefeller made it possible to demonstrate the use of insulin to nearly six hundred physicians at this hospital and the book under review was prepared as a manual of reference for the use of the physicians after completion of the course The manual contains less than 200 pages, but gives in simple and concise language full instructions as to the treatment of diabetes by dietary management and insulin The book is intended primarily for physicians and nurses but it is written so clearly and simply that much of it could be read with profit by intelligent patients

The second edition of *Diabetes A Handbook for Physicians and their Patients*[4] by Dr PHILIP HOPOVITZ is another short book containing about 200 pages and covering much the same ground as the two others already mentioned It gives all the essential facts regarding diabetic treatment but we did not find it quite so easy to read as the others and we doubt whether patients would find it as clear as the books previously mentioned

Diabetes Its Treatment by Insulin and Diet[5] by Dr ORLANDO H PETTY Professor of Diseases of Metabolism of the Graduate School of Medicine University of Pennsylvania is a volume of 100 pages and is written with the idea of assisting the physician by giving his patient a working knowledge of the treatment of diabetes The author explains in very simple and clear language the nature of diabetes and the elementary principles of food composition and of the selection of a diabetic diet He gives also a short account of how to test urine for sugar and how to administer insulin

Food for the Diabetic[6] by Mrs M P HUDDLESON described as a consulting dietitian, has an introduction by Dr N B FOSTER Assistant Professor of Medicine at Cornell University Medical School, it gives full directions to the diabetic on how to plan a menu and how to measure out and cook the food The volume only contains 75 pages, but gives the diabetic just the information needed for the selection and preparation of meals

Taken as a whole these five volumes represent an interesting attempt to get health knowledge of a particular type across from the profession to the public and it is interesting to note that distinguished physicians do not think that it is beneath their dignity to do such work This attitude is not confined to the special instance of diabetes for there is in existence in America a mass of popular health literature written by authoritative persons which has little counterpart in this country

Such literature must be of great service in helping to create an informed public opinion concerning the science of medicine, and thus combating the quacks and various 'anti" faddists that are the natural opponents of science in general and of medical science in particular Dr Joslin for example takes particular care to emphasize in his books the personal obligation of every diabetic to scientific experiments conducted on living animals

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[1] *Diabetic Manual for the Mutual Use of Doctor and Patient* By Elliott P Joslin M D Third edition Philadelphia and New York Lea and Febiger 1924 (Post 8vo pp viii + 211 18 figures 1 coloured plate 2 dollars)

[2] *Management of Diabetes Treatment by Dietary Regulation and the Use of Insulin* A Manual for Physicians and Nurses based upon the Course of Instruction given at the Presbyterian Hospital New York By George A Harrop Jr M D New York Paul B Hoeber Inc 1924 (8½ × 5½ pp xiii + 196 2 figures 2 dollars net)

[4] *Diabetes A Handbook for Physicians and their Patients* By Philip Hopovitz M D Second edition New York Paul B Hoeber Inc 1924 (Cr 8vo pp viii + 219 figure 2 dollars net)

[5] *Diabetes Its Treatment by Insulin and Diet* By Orlando H Petty B S A M M D F A C P Philadelphia F A Davis Company 1924 (Cr 8vo pp 169 8 figures 1 coloured plate 1 50 dollar net)

[6] *Food for the Diabetic What to Eat and How to Make It from Common Household Measures* By Mary P Huddleson With an Introduction by Nellis B Foster M D New York The Macmillan Company 1923 (Cr 8vo pp xiii + 75 2 figures 1 50 dollar)

PLANT ALKALOIDS

THE appearance of the second edition of *The Plant Alkaloids*,[7] by Dr T A HENRY, the director of the Wellcome Chemical Research Laboratories, is an event of importance for all interested in this branch of chemistry The first edition, which appeared in 1914, is the standard English work on this subject, since that date a large amount of progress has been made, and hence the new edition has been largely rewritten

The chemistry of the alkaloids is a complex and difficult branch of organic chemistry, there is indeed no clear definition of the term "alkaloid," and no one has yet devised a satisfactory classification for these substances The author defines the term "alkaloid" "as meaning a relatively complex basic substance occurring naturally and possessing some physiological action," and for the purpose of the textbook he divides alkaloids into nine groups, according to the nature of their nucleus, with a tenth group for alkaloids of unknown constitution, this arrangement, he says, is "convenient but unnatural"

Many hundreds of alkaloids are described, and in the case of the more important the following points are dealt with natural sources, sources of commercial supply, chemical and physical properties, tests for identification, structural formulæ, methods of synthesis, methods of preparing alkaloidal derivatives, and pharmacological action From this summary the wide range of the book may be gathered It is primarily a work of reference for organic chemists and for those dealing with alkaloids in commerce

Much of the information given is of a kind that would be very difficult to find elsewhere—for example, the author describes the commercial sources of many of the most important alkaloids The cocaine traffic has roused so much public interest of late that it is interesting to note what is said about the supply of this drug There are four chief sources—Bolivia, Peru, Ceylon, and Java The leaves of the first three contain cocaine as their chief alkaloid, the Java leaf contains chiefly cinnamylcocaine, but little or no cocaine The alkaloids from the Java leaves require chemical treatment to convert them into cocaine, the process is carried out chiefly in Germany This does not seem to exhaust the possible source of supply of cocaine, for the genus Erythroxylon, which yields cocaine alkaloids, comprises about eighty species, which are indigenous in four continents, and of all these only four or five have been completely examined as regards alkaloidal contents The commercial supply comes from at least three distinct species These facts indicate that the suggested control of the cocaine trade by means of the restriction of the production of coca leaves may prove a good deal more difficult than would appear at first sight

The author has devoted especial attention in the new edition to the evidence available correlating the chemical constitution of alkaloids with their pharmacological action, but he is forced to conclude that in spite of the large amount of work that has been done on this subject the results are very meagre The work done on the mydriatic and local anæsthetic properties of the tropeines (cocaine, atropine, and their allies) is described at some length This group has been studied with more care than almost any other, but the general conclusion is disappointing—"no generalization as to the relation between the mydriatic action and chemical constitution of the tropeines can be made at present which will explain the observed facts"

In conclusion it may be mentioned that the book has been brought completely up to date, and contains information concerning such recent discoveries as the nature and action of the quinine derivatives discovered by Morgenroth (optochin, vuzin, etc), and the ergot alkaloid ergotamine prepared by Spiro and Stoll

Enough has been said to indicate the large amount of information contained in this volume, much of it has been derived from very widely scattered sources and would be difficult to find in a concise form anywhere else The book will be found invaluable by all whose work involves the study or preparation of alkaloids

[7] *The Plant Alkaloids* By T A Henry, D Sc Second edition London J and A Churchill 1924 (Demy 8vo, pp viii + 456 8 plates 28s net)

THE COLLECTED WORKS OF PASTEUR

THE third volume[8] of the collected works of Pasteur has been issued in Paris The edition is beautifully printed on large paper, and the illustrations are well reproduced It is edited by Pasteur's grandson, Dr VALLERY-RADOT, physician to the Paris hospitals, and is a model of what such a collected edition should be Pasteur's own text has been followed, except that obvious printer's errors have been corrected, and bibliographical references have been verified and emended if necessary When Pasteur published a similar paper in several periodicals variations are indicated in footnotes, or where this has not been found expedient each different version is given This third volume is entirely concerned with vinegar and wine, researches in the course of which Pasteur laid the foundations which presently led him on to the study of disease in man and animals As Dr Vallery-Radot remarks in his preface, this volume displays at once the precision of Pasteur's scientific investigations and his readiness to point out their practical application

NOTES ON BOOKS

DR JOHN L KANTOR'S handbook on *The Treatment of the Common Disorders of Digestion*[9] is somewhat out of the common, and contains a great deal of very practical simple advice as regards the general management of a class of cases with which every medical man has constantly to deal The chief subjects discussed are the general management of functional digestive disorders, ptosis, gastric irritation, ulcer, constipation and diarrhœa, achylia gastrica, and gall bladder disease—all conditions which require careful and sane handling In his introductory chapter Dr Kantor discusses prophylaxis, and traces much of the dyspepsia of adults to faulty dieting during childhood He is not obsessed with the value of drugs, and considers that such things as appetizers, tonics, predigested foods, and intestinal antiseptics can be almost entirely dispensed with He uses only a few simple drugs, and relies in the main upon diet, physical therapy, and hydrotherapy He suggests, however, that many of the good effects of spa treatment are due as much to the wetness as to any other quality of the waters consumed The chapter on ptosis and the asthenic state contains a very lucid account of the treatment recommended The author is opposed to operative procedures, and is of opinion that asthenics as such should not be operated on The book contains a number of illustrations, most of them radiographic, they are very good and beautifully produced They dramatically set out the value of radiography in the exact diagnosis of conditions the nature of which, before the radiographic era, was almost entirely conjectural The conclusion is that the rational treatment of gastric disorders cannot be carried out in the absence of an *x* ray examination

DR PAUL KAMMERER'S little book on *Rejuvenation*[10] is a popular exposition of the Steinach operation on men and animals The indications and limitations of the method are set forth, and several photographs are given of men and animals before and after the operation The cases in which successful results have been obtained are classified in six groups according as physical strength has been improved, mental activity restored, the activity of the senses regained or improved, arterio-sclerotic conditions and high blood pressure alleviated, premature old age or actual senility deferred, and mental depression relieved A short bibliography is appended.

PROFESSOR G H ROGER'S work on medical biology[11] consists of seven lectures delivered in the course of an official visit to the medical faculties of Brazil, the Argentine, Chile, and Uruguay The subjects discussed are the internal functions of the lung and its action on fats, the normal and pathological physiology of the lung, the cardio-vascular action of certain organic extracts, experiments on the suprarenals, the action

[8] *Œuvres de Pasteur* Tome III Collected by Dr Pasteur Vallery Radot Médecin des Hôpitaux de Paris Paris Masson et Cie 1924 (Imp 8vo, pp viii + 519 57 illustrations Fr 100)

[9] *The Treatment of the Common Disorders of Digestion* By John L Kantor Ph D M D London Henry Kimpton 1924 (Med 8vo, pp 253 63 figures 24s net)

[10] *Rejuvenation and the Prolongation of Human Efficiency* By Dr Paul Kammerer With an introduction by Dr Harry Benjamin London Methuen and Co, Ltd 1924 (Post 8vo, pp xix + 252, illustrated 8s 6d net)

[11] *Questions actuelles de biologie médicale* Par G H Roger Paris Masson et Cie 1924 (Med 8vo, pp 194 49 figures Fr 16)

of the liver on poisons, the action of ferments and the functions of the bile. The book, which contains an account of experiments carried out by Professor Roger and his pupils, will be of interest to both the physiologist and the clinician.

PREPARATIONS AND APPLIANCES

Kaolin

Kaolin possesses marked powers of adsorption. It has been used medicinally in Central Europe for the treatment of intestinal complaints for many years, attention has been directed to its value more particularly in recent years. It appears to exert a power of selective adsorption on certain toxins, particularly those of cholera and dysentery. Its mechanical action on the surfaces is stated to be favourable. Since the adsorptive power is a function of the surface of its particles, its activity depends on the degree of fineness. Osmo kaolin, which is manufactured by Messrs. Allen and Hanburys, consists of the finest particles separable from china clay; it is prepared by electric treatment of an aqueous suspension of the clay. A sample submitted to analysis has been found to possess a very high degree of fineness, yielding with water a permanent suspension; its adsorptive property is indicated by the power of wholly decolorizing a solution of methylene blue when only 5 grams is shaken with 25 c.cm. of an aqueous solution containing 0·25 per cent. of the dye. The sample contained no organic or mineral impurity. It appears that kaolin may frequently prove useful in disease attended by diarrhœa.

THE MEDICAL DEFENCE UNION

ANNUAL MEETING

Report of Council and Solicitors' Report

THE Medical Defence Union, Limited, held its annual general meeting on September 25th at Brighton. Steps have been taken to extend the benefits of membership to practitioners in the Irish Free State, Northern Ireland, the Channel Islands and the Isle of Man. The standing joint committee, consisting of four representatives of the Union and four of the London and Counties Medical Protection Society, has continued to co-ordinate the work of the two bodies although each body retains its entire independence. Considerations arising out of the astounding damages awarded in the first instance in the Harnett case led the two societies to decide to afford their members unlimited cover in respect of damages or costs of the other side. The report gives some examples of the variety of cases which come before the council for advice or further action. In one case a local inspector of taxes sought to assess a member upon the rateable value of a house which he occupied rent free in virtue of his office as medical superintendent of one of the hospitals of the Metropolitan Asylums Board. An appeal was lodged by the council against the assessment and the decision of the special commissioners was to the effect that the beneficial occupation of a house in such circumstances was not an emolument within the meaning of the Finance Acts, and accordingly the assessment was discharged. The report points out that this decision does not affect the liability of resident medical officers in certain of the hospitals to be assessed for income tax upon any monetary allowance they may receive specifically in lieu of quarters. The council has appealed against the refusal of an inspector of taxes to allow a deduction for subscription to medical societies in a case in which the assessment is under Schedule E, when the assessment is under Schedule D this deduction is usually allowed. The report states that an unusually large number of cases of unqualified practice have been investigated during the year, but in the majority it was impossible to obtain sufficient evidence to justify proceedings. In one case a conviction was obtained and the maximum penalty imposed; another case was dealt with under the Probation of Offenders Act, and in a third case the summons was withdrawn on part payment of costs and an undertaking not to repeat the offence.

The solicitors to the Union (Messrs. Hempson) in a report which is appended to that of the council refer to the frequency with which the failure of a practitioner to have an x-ray photograph taken in a case of fracture or dislocation has been raised in an allegation of negligence. They urge that any member of the profession who advice is rejected should take steps to place on record that the advice was given and disregarded; there should at least be no difficulty in writing a letter to the patient repeating the advice given, and retaining a copy or the letter. Comments are made upon the informal character of inquiries before Medical Service Subcommittees, where rules of evidence are not observed and hearsay evidence is accepted without hesitation. The insurance regulations do not permit a practitioner to be represented at such inquiries, but the council can advise members on the preparation of their case. The solicitors furnish some interesting figures, showing among other things the average cost to the Union of the defence of its members in seventy-three of the heavier cases occurring during the last fifteen years. The total cost of these seventy-three cases was £17,034, an average of £234.

President's Address in Radiology on Injuries to the Limbs

The chair was taken at the meeting by the President, Mr. Walter G. Spencer, O.B.E., F.R.C.S., who in moving the adoption of the annual report congratulated the members upon the satisfactory position occupied by the Union. Already the number of new members elected in the nine months of the current year (over 1,200) exceeded that of the whole of any previous year, and the roll of members *now reached a total of over 11,200. Recent events had led the council after consultation with the London and* Counties Medical Protection Society to provide members with unlimited indemnity against damages and costs of the other side on the same conditions as had previously prevailed and without any increase in the annual subscription to the Union. Unfortunately quite a number of medical practitioners within the area covered by the Union were still completely unprotected against the attacks of unscrupulous persons. Even in Brighton less than 50 per cent. of the registered medical practitioners had joined the Medical Defence Union. Membership of the Union ensured that the great majority of frivolous attacks against medical practitioners were at once arrested, always provided that the member did not rashly commit himself by act, speech or letter in the first instance but at once applied to the Union for advice and help. It was necessary to emphasize and repeat the warning so frequently given that an x-ray photograph should be taken as soon as it could be done after any accident in which there was a possibility, however remote, that a fracture or dislocation might have occurred. When, for any reason, some delay was unavoidable in arranging for the photograph a record should be made in writing, for the signature of the patient or his representative. Mr. Spencer referred in feeling terms to the death of Sir John Tweedy, a former president and Dr. J. Poche Lynch and Dr. A. C. Pope, former members of the council and also to the loss which the Union had sustained through the retirement of Dr. M. Hallwright from the council owing to ill health. He congratulated the Union on the efficient services rendered to the Union by the General Secretary and his clerical staff.

The annual report of the council and the financial statement for the year 1923 were adopted unanimously. Sir Charles Ballance, K.C.M.G., C.B., M.V.O., Dr. E. C. Greenwood and Dr. W. S. A. Griffith were unanimously re-elected members of the council.

EXTRAORDINARY GENERAL MEETING

At the conclusion of the annual general meeting an extraordinary general meeting was held when proposals submitted by the council for alteration of the Articles of Association were unanimously adopted. Some objection was raised by Dr. I. Feldman, who pointed on behalf of several members to the proposed new Article 33a which provided that the council should have an absolute discretion as to the giving or withholding of the indemnity against damages and costs of the other side in unsuccessful actions, and empowered the council to provide such complete or partial indemnity as the council should in its discretion think fit. After hearing explanations from Dr. Feldman and several members of the council Dr. Feldman expressed himself as completely satisfied that the proposed new Article was suggested in the best interests of the members, and accordingly voted for its adoption.

British Medical Journal.

SATURDAY, OCTOBER 4TH, 1924

CANCER OF THE BREAST AND ITS SURGICAL TREATMENT

Last May the Departmental Committee of the Ministry of Health dealing with cancer issued a memorandum on the results of operation for cancer of the breast [1] Such a statement of the position was needed from the public point of view, but the excellent results claimed occasioned some surprise amongst not a few medical men, and may even have been met with a certain amount of incredulity The Committee has now issued a very full report [2] on the subject, containing an analysis of the data on which the memorandum was founded, and a critical survey of this report ought to convince even the most sceptical that the effectiveness of operation is considerable An immense amount of labour has been spent on its preparation by the author, Dr Janet E Lane Claypon, who has been guided in the statistical investigations by Dr Major Greenwood Close on 20,000 cases have been analysed, culled from numerous articles published in practically every country in Europe, including this country, and also in America It is believed that no important paper containing series of operated cases was missed Owing to the want of uniformity in the systems of grouping of cases by the original authors much careful study was necessary in order to place a large number of cases on a similar basis for purposes of comparison, for until this was done no reliable statement could be made regarding the increased expectation of life following operation

The duration of life after operation depends on several factors, the most important being the stage of the disease at the time of operation and the method employed by the surgeon Dr Lane Claypon traces the development of the operative treatment, which has increased in complexity and effectiveness in correspondence with the improvements in surgical technique and knowledge of the modes of dissemination she shows how the operation mortality, which stood at about 15 per cent forty years ago, is now practically negligible For the purposes of analyses of published results the operations were grouped as "complete" and "incomplete"—the former including such methods as ensured removal of the whole breast, axillary contents, and pectoral muscles, with varying degrees of skin and fascia, and the latter those in which the organ and axillary contents, and, at most, some fibres of the pectoral muscle, were removed Very advanced procedures, such as the operations of Halsted and others, mostly reserved for late cases, did not in the mass show any improvement over the less complete The author states that it is generally admitted that operative procedures have reached their limit and cannot be advantageously extended, so that until some other method of cure is discovered efforts must be directed towards securing operation at as early a stage as possible It is well, then, to have as accurate an estimate as may be possible of the results of our present operative methods

In the consideration of the material furnished by the reports of surgeons those cases were excluded entirely which failed to be traced for the full period after operation, as were also those cases in which it was known in advance that complete removal of the growth was impossible, whilst all those dying before the expiry of the time, whether from operation, accident, or other disease, were reckoned as having died of cancer On that basis it can be justly maintained that the statistical method adopted underestimates the real claims There is no general agreement as to the length of time which should elapse before a patient may be regarded as cured, and for that reason the term "cure" has been omitted those who died were regarded as having succumbed to the risk of death, and those who lived for the allotted period were regarded as having survived the risk independently of their physical state at the conclusion of the period of risk This must not be taken to imply, as some have done, that the patient has no signs of recurrence at the end of the period As most of the original authors have reported their cases at the end of a three years' period, this has been the time chosen to arrive at a basis of average results Naturally, the longer the period the more the difficulty in tracing patients and the greater the losses from recurrence must be The figures, then, show that following the older or "incomplete" operation, out of a net total of 7,029 patients, 2,956, or 29 2 per cent, were alive at the end of three years after operation, and that after the modern or "complete" operation, out of a net total of 8,921 patients, 3,857, or 43 2 per cent, were alive This by itself is sufficient evidence of the greater value of the complete operation, but there is the further consideration that under modern methods many more cases in an advanced stage come within the scope of operation than formerly, for the risk of death from operation, even with the most extensive operative procedures, is negligible the results of complete operations are thus heavily weighted with the deaths due to the inclusion of this category An examination of the available material did not lend any support to the opinion that the end results among private patients surpassed those of the hospital class

The more recent writers have chosen a five years' period as a better index of the worth of an operative measure, but the numbers of cases so reported are perhaps too small as yet to give us exact indications It was found that there were great variations in the end results reported, and no adequate explanation of this variation could be given, although it is evident that the inclusion of only a few very advanced cases would seriously affect the percentages, taking the average of all the cases analysed (numbering 2,441), 33 1 per cent survived the five years' test Beyond this time the amount of material was too scanty to allow of reliable statistics Attention is, however, drawn to unpublished statistics by Dr Wyard of the Cancer Hospital, who traced the fate of 278 cases which had been operated upon there more than nine years previously, he found that 42 (or 16 9 per cent) were alive and well This is too severe a test, however, as many might have been expected to succumb from risks other than cancer As Dr Lane Claypon mentions, there is a belief held by some surgeons that metastases as a post operative cause of death are increasing under the modern methods, while local recurrences are decreasing, and a fear has been expressed by a few that the extensive operations practised are responsible for the metastases There seems, however, to be little foundation for these suspicions The statistics show that under the incomplete opera-

[1] British Medical Journal, May 24th 1924, p 924

[2] *Cancer of the Breast and its Surgical Treatment A Review of the Literature* By Janet E Lane Claypon, M D, D Sc Ministry of Health Report 28 H M Stationery Office or through any bookseller Price 2s 6d net

tion 92 95 per cent of recurrences took place within the five years of operation is contrasted with 87 8 per cent under the complete operation Taking into account the fact that the cases submitted to operation now days are more serious than formerly it is evident that there is a not inconsiderable prolongation of life due to modern operations At the present time the majority of the patients ultimately dying pass the first year of operation whereas only about one in three did so formerly The percentages of the various countries showed a remarkable agreement on the point Whilst the available evidence does not imply that there has been any increase in the actual formation of metastases it probably denotes that owing to the reduction in recurrences and the consequent prolongation of life more time is available for a greater development of metastases than formerly An attempt to correlate the prognosis after operation with the histological variety of the carcinoma did not give information of any value and the classification of types of carcinoma adopted by certain surgeons and by descriptive pathologists of the older school is now generally abandoned

The stage of the disease when operation is performed is of supreme importance in determining the result and it is the careful analysis of papers from this point of view which makes this report so valuable It was found possible to group the cases into three classes according to Steinthal's classification—namely (1) where the tumour was small and not adherent to the skin and not more than one or two axillary glands were found infected at operation (2) where the skin was adherent to a moderate sized growth and the axillary glands were palpable and (3) where most of the mammary gland was involved and the tumour was adherent to skin and deep fascia whilst the supraclavicular glands were often involved When they were thus grouped it was found that after the complete operation the percentage of survivors at three or more years was from 65 to 80 when the disease was still local in the second group the percentage was about 30 and in the third group only some 8 or 9 per cent survived as long as three years after operation Thus if a patient be operated upon at the early stage by modern methods her chances are 12 in 15 if she waits until the disease has spread her chances by complete operation fall to 5 in 15 and by incomplete to less than 3 in 15 whilst in the later stages the chances are about 1 5 in 15 for either kind of operation When the supraclavicular glands are involved 7 7 per cent survive three years and 3 per cent for five years

A chapter is devoted to the very vexed question of precancerous conditions the liability of benign growths to become malignant the relation of chronic mastitis to true cancer and the dangers supposed to arise from exploratory operations but the statements are mainly quotations from American authors and are not in general accepted The author's summing up that it can hardly be doubted that operation in the precancerous stage would rob cancer of the breast of most of its dangers and the percentage of cures would be greatly increased is not on the same high level as the other conclusions built on more solid data However we may repeat for what it is worth the estimate of McCarty made on his experience at the Mayo Clinic to the effect that if all clinical operation be performed on clinically doubtful cases 1 in 20 breast will be removed unnecessarily whilst if they are dealt with as benign 1 in 10 fails to be removed when it should be

A consideration of reported cases revealed nothing more clear suggestive from the point of view of etiology, but the accurate information obtained on several points should dispel numerous errors that have gained wide currency The social status of the patients has no influence on the average age of onset of the disease there is no inherently greater malignancy in cancer among young persons than amongst the older married women are not more prone to cancer of the breast than single (in fact the single have a slightly higher risk) neither child bearing nor faults of lactation have any evident bearing on its incidence there is no appreciable difference between the two breasts as regards the frequency with which they are affected by cancer These conclusions and several others are amply supported by the statistics given

There is an interesting chapter on the expectation of life after operation which is stimulating and suggestive and may be commended as a study in what might be called speculative statistics Left without operation a patient say at the age of 50 has an expectation of 3½ years of life from the date of the first sign of the disease if she is subjected to complete operation without distinction of the stages of the disease her expectation is increased to 6 years and 8 months but if the operation be performed early this expectation is almost doubled A table is given admittedly based on slender data showing the average number that may be expected to survive up to ten years after operation

Such a brief summary as this gives a feeble indication of the amount of evidence collected and ably analysed by Dr Lane Claypon and we can be sure that her thorough work will be appreciated not only by surgeons but by all medical men who read her exhaustive report

TECHNICALISM

A WRITER in a recent issue of one of the big monthlies exercised about some unfortunate words—words that is badly constructed or improperly applied—was point enough to admit that a good deal of pains has been taken to form new medical words with due regard to etymological propriety He went on however to imply that too many new medical terms were invented and even to insinuate that they were devised to mystify the public by a suggestion of knowledge more profound than we really possess or with the deliberate intention of concealing the truth from the layman There is just enough basis for the second allegation to make it impossible to deny it altogether A doctor is not on his oath always to tell the whole truth to every one who consults him He has to treat the patient as well as the disease there are occasions when it is wiser to speak of blood poisoning than to blurt out syphilis Sometimes a patient or his friends while professing a desire to know the truth dread in their hearts to be told the whole There is a story of two fashionable physicians of the last century who met in consultation on a distinguished patient in a late stage of Bright's disease the first physician in talking with the wife avoided naming the disease or giving a prognosis The wife appealed to the consultant

Now she said you will tell me the truth I shall know what is really the matter with him

Madam was the reply your husband is suffering from cachexia and the liars are satisfied She was read to catch at straws and a straw was held out to her

But the suggestions that new medical terms beyond necessity are accepted in medical literature or that there is a secret language of disease, are fallacies

urges that all works published by scientific journals should be preceded by abstracts, drafted for preference by the authors themselves, in conformity with precise rules The abstracts should indicate briefly the conclusions of the article, the results obtained, and statistics of general importance, including everything which may be of use in drawing up a manual or table of constants Experience has shown that the proper length of an abstract is from 4 to 8 per cent of the length of the article It is also urged that the publications of learned societies, if in a language other than one of the principal European languages, should contain summaries in one of the more widely spoken tongues Another task which has been undertaken is the compilation of a list of the most important books printed throughout the world This list is to be at the disposal of a public of average culture which has hitherto been unable, by force of circumstances, to obtain information concerning intellectual production in foreign lands Recommendations have also been made to the several States with regard to the interchange of professors and the granting of travelling facilities and scholarships to groups of students and professors and men of letters going abroad for some specific scientific purpose The Spanish Government has made proposals with regard to the equivalence of degrees and the co-ordination of studies in the universities this project is favoured by the committee, but the difficulties in its way are considerable The committee proposes to publish information concerning the methods of teaching in the various countries All these proposals were approved by the Assembly, but a more contentious matter was raised by an offer of the French Government to found an Institute of Intellectual Co-operation in Paris the institute to be absolutely international in its programme and choice of staff, and its administration to be entrusted to the League Delegates from Poland and elsewhere warmly acclaimed the French offer and the Belgian delegate emphasized the historic contribution of France to the ideals of intellectual co-operation, which were found embodied in the *Nouvelle Atlantide* of Condorcet as far back as 1793 Some voices, however, were raised against the proposal, on the ground that an institute in Paris would suggest that France had a monopoly of culture, and that it would be undignified for the League to include in institute which depended for its existence upon credits voted by one particular parliament An Australian representative strongly urged that an institute of the kind should be founded in Geneva and supported by appropriations from the funds of the League In the end, however, the offer of the French Government was accepted with something like unanimity It may be added that the whole work of the Institute of Intellectual Co-operation involves a contribution from the people of Great Britain, France, and the other countries which furnish the principal financial support to the League, amounting to about one half-penny per head of population per century

WORKMEN'S COMPENSATION IN FRANCE

LEGISLATION with regard to workmen's compensation has followed a different course in France from that in this country Prior to the law of 1898 a workman in France who sought compensation for an injury had to bring an action, and had to prove not only the existence of the disablement, but also that the employer was at fault, as this was held to be the sole ground upon which the latter could be held responsible In arriving at a decision the court was mainly concerned in looking for a fault on the part of the employer, and the sphere of the medical man was strictly limited The old law was productive of much hardship, and led to discontent on both sides The law of 1898 laid down a new principle—that the claim to indemnification flows from the professional risk and not from the fault of the employer As a corollary it followed that part of the risk properly falls on the workman, and total indemnification, such as was awarded prior to 1898, was abolished An examination into the statistics of accidents showed that their causes could be classified under five headings (1) the fault of the employer, (2) the fault of the workman, (3) mischance (bursting of boiler, etc.), (4) *force majeure* (floods, storms, etc.), and (5) unknown It was further ascertained that of a hundred accidents one-quarter were due to the fault of the employer, one quarter to the fault of the workman, and one half to the three other causes It was decided, therefore, that in order to distribute the burden equitably the employer should be held responsible, on the average, only for those accidents which were due to his fault and one half of those for which neither he nor the workman could be blamed—that is, the employer was made responsible for 50 per cent of the total Taking its stand on these principles, the French Legislature has accorded the disabled workman pecuniary reparation corresponding to one-half of the disablement suffered in the case of partial incapacity, and to two-thirds in the case of total incapacity The actual amount payable is calculated simply by comparing the salary before the accident with that obtainable after it Litigation tends to centre, not round the fault of the employer, but round such questions as estimation of the gravity of the accident and the nature and degree of incapacity resulting from it—questions of a medical character Professors Forgue and Jeanbrau have recently published a book[1] to assist medical men in the performance of their duties under the French law, the authors have not only explained the formalities to be followed, but have written a complete system of the pathology of accidents, which will be of service to medical men of whatever nationality

MENTALLY DEFECTIVE CHILDREN

THE Board of Education has issued a circular (1331, September 12th, 1924) to local education authorities regarding the care of mentally defective children The Mental Deficiency Act of 1913 and the Elementary Education (Defective and Epileptic Children) Act of 1914, following on the permissive Act of 1899, contemplated that local education authorities would obtain particulars of all the mentally defective children in their areas and make arrangements with a view to the selection of children suitable for education in special schools and the notification of those judged non-educable to the mental deficiency committee of the county or county borough council The war and consequent difficulties of finance and building prevented the establishment of sufficient special schools to meet the need The Board has therefore been in consultation with the principal associations of authorities, officials, teachers, and voluntary workers with a view to devising methods of dealing with these children under existing conditions Local authorities are urged to ascertain without delay the extent of the need in each area Children in attendance at special schools should be passed periodically under review in order that suitable cases may either be returned to the ordinary school or notified to the mental deficiency committee in accordance with the Mental Deficiency (Notification of Children) Regulations, 1914 In the case of mentally defective children who are suitable for admission to special schools, but for whom at the moment no such school is available, and especially for those who are in no school at all, the local authorities' arrangements should include the supervision of the children by means of home visits, whether by school nurses, care

[1] *Guide pratique du Médecin dans les Accidents du Travail* Suivi Médicales et Judiciaires Par E Forgue et E Jeanbrau Quatrième édition refondue avec la collaboration, pour la partie médicolégale, de O Crouzon Médecin de la Salpêtrière Paris Masson et Cie 1924 (Imp 16mo, pp xxiv + 840 Fr 40)

committee members, paid welfare workers or voluntary workers. The main objects of such supervision are to give advice to parents on the care of these children, and to provide means by which all cases are reviewed from time to time with a view to the notification of suitable cases to the mental deficiency committee. In this connexion special attention should be given to the cases of boys and girls of the ages of 14 and 15 years in order that the provisions of Article 5 of the Notification Regulations 1914 may be utilized in proper cases. Before making such a notification the local authority should obtain a report from the medical officer on the physical and mental condition of the child, also from the teacher on his progress and behaviour in school, and from the care committee on his home conditions. In the absence of special school provision it is considered that some of the higher grade mentally defective children may be accommodated in the classes held in ordinary schools for mentally retarded children. It is urged, however, that this should be regarded as a temporary arrangement, for there is risk to the mentally retarded that they may be deprived of their proper places in these classes, and it is impossible to continue the mentally defective in these classes after the age of 14 years. Constant and close co-operation between the local education authority and the mental deficiency committee is advised, and methods are suggested whereby this may be obtained. In some areas the chairmen of the special schools subcommittee and the mental deficiency committee are one and the same person; in some the education authority's certifying officer is also medical adviser to the mental deficiency committee; in others the co-ordinating influence is the local branch of the central association for mental welfare.

ROYAL COMMISSION ON LUNACY AND MENTAL DISORDER

THE first meetings of the Royal Commission on *Lunacy Law and Administration and Mental Disorder* will be held at the Royal Commission House, 5 Old Palace Yard, Westminster, S.W., on Tuesday, October 7th, and Wednesday, October 8th. On October 7th evidence will be given by the Board of Control and on October 8th by the Ministry of Health and the Lord Chancellor's Department. The Commission is instructed "(1) to inquire, as regards England and Wales, into the existing law and administrative machinery in connexion with the certification, detention and care of persons who are or are alleged to be of unsound mind; (2) to consider, as regards England and Wales, the extent to which provision is or should be made for the treatment without certification of persons suffering from mental disorder, and to make recommendations." The Commission is constituted as follows: The Right Hon. H. P. Macmillan, K.C., standing counsel to the Convention of Royal Burghs, Scotland (Chairman), Earl Russell, Lord Eustace Percy, M.P., Sir Thomas Hutchison, Bt., Director of the Commercial Bank of Scotland, and Lord Provost of Edinburgh 1921-23; Sir Humphry Rolleston, Bt., K.C.B., M.D., President of the Royal College of Physicians of London; Sir Ernest Hiley, K.B.E., at one time town clerk of Birmingham, and formerly M.P. for the Duddeston Division of that city; Sir David Drummond, C.B.E., M.D., Pro-Vice Chancellor of the University of Durham, and formerly President of the British Medical Association; Mr. W. A. Jowitt, K.C., M.P.; Mr. F. D. MacKinnon, K.C.; Mr. H. Snell, M.P., a member of the executive committee of the Fabian Society and formerly a lecturer for that society; Mrs. C. J. Matthew and Miss Madeline J. Symons of the Women's Section of the National Union of General Workers; with Mr. P. Baxter of the Ministry of Health, as secretary. All communications regarding the Commission should be addressed to "The Secretary, Royal Commission on Lunacy and Mental Disorder, Ministry of Health, Whitehall, S.W. 1."

WEST INDIA RED CROSS SOCIETY

THE West India Red Cross Society and the West India Committee are associated with the present Mansion House appeal for help for the sufferers in the Leeward Islands, which were recently devastated by a hurricane. At a meeting of the committee of the former society, held in London at the end of July, the honorary secretary, Dr. C. B. Mason, reported on the progress that was being made in establishing the society and in fulfilling its two objectives of reducing the high rate of infant mortality in the British West Indies, and of furthering the welfare of the local population. British West Indian labour, he said, had been extensively used in the construction of the Panama Canal, and 90 per cent. of the labourers had sent back their savings to the West Indies. The present high infantile mortality was destroying an undoubtedly valuable asset of the empire, and the society was therefore addressing itself to the task of remedying this. It is proposed to appeal next year to the British public for £10,000, the income of which will be used to help the societies working in the Windward and Leeward Islands. More British doctors are urgently needed, and also administrative improvements in the medical services of the various islands. In Barbados the prevention of such diseases as typhoid fever and tuberculosis is a serious problem, to be tackled by drainage reforms, improvements in housing, and the provision of better food. The activity of Sir Eustace Fiennes, the Governor of the Leeward Islands, in providing a new water reservoir in Antigua should have most beneficial results. Sir Eustace Fiennes referred to the urgent need for financial help, and paid a high tribute to the character of the planters and the West Indian inhabitants generally. The grant made by the West India Red Cross Society to the Antigua creche had been of great value. The Rockefeller Foundation also had provided for the services of two doctors in the Leeward Islands to combat the prevalent diseases, and generous help had been forthcoming from the people of the British Isles.

MEDICAL SOCIETY OF LONDON

THE Medical Society of London is now entering upon its 152nd year, and the syllabus for the first half of the session was issued this week. An attractive programme has been arranged. The annual general meeting will be held on Monday, October 13th, at 8 p.m., and immediately afterwards the new president, Dr. Eustace M. Callender, C.B.E., will give an address on "Medical memories." The meeting on October 27th will be a clinical evening. On November 10th a discussion on encephalitis lethargica will be opened by D. E. Farquhar Buzzard, who will be followed by Drs. A. J. Hall, J. McIntosh, and A. S. MacNalty. On November 19th, as already announced, Dr. Herbert Spencer will deliver his Lloyd Roberts Lecture on "The renaissance of midwifery." On November 24th a discussion on the treatment of senile gangrene will be introduced by Sir Anthony Bowlby, Bt., who will be followed by Dr. H. des Voeux and Mr. Sampson Handley. On December 8th Dr. George Graham and Professor H. Maclean will open a discussion on the present position of the treatment of diabetes by insulin. During February and March 1925, Sir Bernard Spilsbury will give the Lettsomian Lectures, on "Wounds and other injuries", the annual oration will be delivered in May by Sir William Hale-White, on "The medical career of John Keats."

THE Harveian Oration before the Royal College of Physicians of London will be delivered by Sir Archibald E. Garrod, K.C.M.G., M.D., F.R.S., Regius Professor of Medicine in the University of Oxford, on Saturday, October 18th, at 4 o'clock. Invitation cards may be had from the secretary of the College, Pall Mall East, S.W. 1.

BRITISH ORTHOPAEDIC ASSOCIATION'S VISIT TO BOLOGNA.

In the spring of last year the British Orthopaedic Association held a meeting at Leyden by the invitation of their corresponding member, Dr Mark Jansen, and afterwards at Amsterdam in conjunction with the Dutch Orthopaedic Association. The opportunities of professional study and enlightenment thus afforded, and the noble hospitality of our Dutch confreres, were so highly appreciated by the members that it was arranged this year to accept the invitation of Professor Putti of the Instituto Ortopedico Rizzoli of Bologna to hold a meeting in that city. Some fifty-one members and ladies and other guests attended the meeting, which took place on September 22nd and following days.

The institute, which was founded by the benevolence of Francesco Rizzoli, a surgeon of Bologna, after whom a street in the city has since been named, is splendidly housed in an old monastery situated in S. Michele in Bosco on a wooded spur of the Apennines just outside the city. This monastery has a long and interesting history. Founded in the twelfth century, it was afterwards used as a fortress, but from the fourteenth century it was a religious house of the Olivetan Fathers. Most of the present buildings, however, date from the sixteenth century. With the coming of the Republican French into Italy in 1797 and under the Napoleonic kingdom of Italy the monasteries were swept away, and since that time the buildings have not been used for monastic purposes, but in 1860 they were occupied as a villa by King Victor Emmanuel the Second.

The present institution was organized between the years 1897 and 1893. The buildings are of magnificent proportions, and many of the rooms are superbly decorated with frescoes. The long vaulted corridor on to which many of the monks' cells opened (they are now used as wards) is almost, if not quite, unrivalled in a building of this sort, for it is 526 feet in length and of great height and width, and from its windows splendid views are obtainable over the city of Bologna with its many towers, and of the Emilian plain. The church of the monastery has some fine frescoes, and is still used by the staff and ambulant patients and the inhabitants of the neighbourhood on Sundays and weekdays.

In the Aula Maggiore of the convent is a remarkably large and comprehensive collection of orthopaedic and other medical and surgical works. This room, of which a coloured print was presented to every visitor by Professor Putti, is a gem of Romanesque architecture, profusely decorated with frescoes whose wealth of colour is a delight to the eye. Besides the frescoes the buildings of the convent contain a number of oil-paintings and are also decorated with sculptures. For a full account of all the art treasures readers are referred to *The Story of Bologna*, by Alathea Wiel (London: J. M. Dent and Sons), a copy of which also was *presented by Professor Putti to each of the visitors*.

Congenital Dislocation of the Hip

On Monday, September 22nd, the members were conducted in special trams to the institute, where, after Professor Putti had cordially welcomed them, he read a report on the treatment of congenital dislocation of the hip. This deformity occurs with remarkable frequency in Northern Italy, as is shown by the fact that 450 cases were treated by Professor Putti and his assistants in the space of twelve months, while at Milan Professor Gallezzi treats at least 500 cases in a year. Very little is known of the causes of the deformity and no theory on the subject has yet been generally accepted. The usual disproportion in the sex incidence of the disease is noticeable in Italy as well as elsewhere. Professor Putti operates very early, under the age of two years if possible, by simple flexion and abduction and fixation in plaster, which always includes the knee and upper part of the leg. Open operation is reserved for cases in which the soft parts obstinately resist abduction and in which manipulation alone fails. Very interesting lantern slides of cases before treatment and after some years were exhibited, showing that although in almost every case a considerable restoration of the iliac roof of the acetabulum took place, it varied very greatly in degree and in very few cases was it anatomically complete, despite the excellent functional results. The statistics of results as recorded by the Italian Orthopaedic Association show 84 per cent. of cure in unilateral cases and 45 per cent. in double cases. Professor Putti demonstrated his method of reduction, which is extremely simple, on three cases, one of which was bilateral. The two unilateral cases were easily and quickly reduced, but one hip of the bilateral case could not be replaced, and Professor Putti stated that further attempts would be made after preliminary manipulations and massage, failing which he should probably perform an open operation. Special and ingenious tables were used for reduction and also for the application of plaster, and the quickness of the whole procedure, together with the excellent team work, much impressed the visitors.

After the demonstration in the operating theatre the wards were visited, where a number of children with corrected hips, whose first plaster had been removed, were seen exercising the joints themselves by means of a simple apparatus of cords and pulleys, each under the supervision of a nurse. This proceeding is, of course, intended to hasten the development of the joint while increasing its mobility, and at the same time it affords some exercise for the muscles of the upper extremities. After seeing other interesting cases the party had lunch as the guests of the Director in the charming garden of the Institute.

The Workshops of the Institute

After lunch a visit was made to the extensive workshops of the Institute, where every kind of instrument and appliance needed in orthopaedic surgery is manufactured, including a most ingenious table for the treatment of fractures and dislocations. Complicated and elaborate as this instrument appears to be, it had its primitive ancestor in the scamnum of Hippocrates, a specimen of which was only recently discovered by Mr. Thomson of the Wellcome Medical Museum, also in Northern Italy (see BRITISH MEDICAL JOURNAL, February 23rd, 1924). The product of these workshops are supplied to surgeons and hospitals throughout Italy, and to facilitate this a very complete and well illustrated catalogue is issued. The workmanship and the quality of the materials used appeared to be excellent.

Dinner

In the evening the official dinner of the association was held in the Hotel Baglioni, under the genial chairmanship of the president, Sir Robert Jones, when speeches and toasts were not so lengthy as to interfere with pleasant social intercourse.

On Tuesday, September 23rd, the theatre of the Institute was again visited, and the members had the great advantage of seeing Professor Putti perform three typical operations—namely, an arthroplasty of the knee for ankylosis, a tendon transfer for partial palsy of the foot and ankle muscles, and an open operation for obstinate congenital dislocation of the hip.

The operation of arthroplasty, with which Professor Putti's name is so closely connected, is already well known to surgeons, for it was described and illustrated in *La Chirurgia degli Organi di Movimento*, and also by him at the meeting of the International Society of Surgery in London last year, when some excellent results were shown; but the details of the technique can only be thoroughly appreciated by seeing the actual operation. The opportunity offered was much appreciated by the members, who had great pleasure in seeing such a real surgical artist at work. The technique and team work were of the first class.

Professor Putti tells us that he has operated on 200 cases, 60 of which were operations for stiff knees and the remainder for ankylosis of the lower jaw, the elbow, hip, ankle, and the smaller joints of the foot and of the fingers. Very great care is exercised in the selection of cases, only those cases of stiff knee in which a movable joint is really

necessity being submitted to operation The cases which were exhibited showed excellent results several years after the dates of operation The open operation for congenital dislocation of the hip was characterized by the impossibility (so important if shock is to be avoided) and perfection of technique which distinguished the operation of arthroplasty

THE UNIVERSITY OF BOLOGNA AND ITS MEDICAL SCHOOL

On the afternoon of the first day Professor Putti gave an address in the beautiful old anatomical theatre of the University building, the Archiginnasio, and described the origin of the University and of its medical school The theatre is panelled and ceiled in cedar and adorned with modern statues of famous teachers including Tagliacozzi, whose well known operation is typified by the fact that he holds a nose in his hand The professorial rostrum has a canopy supported by finely carved eighteenth century wooden anatomical figures of life size representing with great accuracy all the superficial muscles of the body as if the skin and fascia had been removed

Professor Putti said that the University of Bologna was the oldest in the world Although there was no precise information about its origin it was known that it began about the tenth century as a rhetorical and grammatical school Before the fifteenth century the University was known as the Studio and was at first a school of law which owing to the fame of its professors continued to be of international importance The students from each country were gathered together into nations each with its statutes number every country was under a deep obligation to those of its citizens who after studying at Bologna took home with them the light of learning that burnt there so brightly From very early days it was divided into two distinct bodies—the University of the Ultramontani consisting of students from land other than Italy (beyond the mountains) and the University of the Citramontani composed entirely of Italians Each had its own rector and was divided into many nations In the thirteenth century there were fourteen (Gaul Picardy Burgundy Poitou Touraine and Maine Normandy Catalonia Hungary Poland Germany Spain Provence England and Gascony) in the fourteenth century there were sixteen Among the masters of the law school was Irnerio whose disciple Vaccario is said to have been the first to carry into England a knowledge of Roman law He taught at Oxford and so sowed the seed out of which the University of Oxford sprang Francesco Accursio who at the end of the thirteenth century was invited by Edward I to go to Oxford was a son of a disciple of Azzone, another famous Bolognese teacher

The study of medicine seems to have arisen in Bologna out of the privilege accorded by the city to a famous Tuscan doctor Taddeo d'Alderotto about 1288 But it was only about 1316 that the university of medicine was recognized by the governing bodies both of the town and the Studio and allowed to nominate its own rector The most important chair of the medical school was then that of anatomy in which was included surgery The first to give lustre to this chair was Mondino dei Liuzzi who was teaching between the end of the thirteenth and the beginning of the fourteenth century He wrote a treatise on anatomy, which was the first of its kind and served as a textbook all over the world for at least two centuries Mondino's great merit was his insistence that anatomy should be studied not from the books of Avicenna or Galen as had been done for so many centuries but on the cadaver a method which since the school of Alexandria—1 600 years earlier—had not been followed Other names of Bolognese teachers to be recalled were those of Berengario da Carpi who wrote a famous commentary on the treatise of Mondino of Guglielmo da Saliceto who might be called the father of the surgical renaissance and later on in the sixteenth century those of Giulio Cesare Aranzi of Costanzo Varolio and of Gaspare Tagliacozzi who originated the method of plastic reconstruction of the nose by means of skin flap which had since been known as the Italian method Andrea Vesalio before going to Padua where he taught anatomy for seven years occupied the chair in Bologna In the eighteenth century there were the famous names of Anton Maria Valsalva Morgagni's master and of Luigi Galvani the immortal discoverer of animal electricity

It was not known where during the early centuries the school of medicine and law had their seats The scholars of the different nations had special places of meeting as also their own chapels in the churches The English scholars had very early a chapel in the Church of S Salvatore it was erected to the memory of S Thomas a Becket archbishop of Canterbury who had been a scholar in the Studio of Bologna. The old chapel was destroyed about the middle of the sixteenth century but two things belonging to it were preserved—an old altarpiece by Vitale da Bologna showing the Virgin with John the Baptist S Thomas a Becket and an English scholar and the famous pivial of Pope Innocent IV now in the Civic Museum representing the martyrdom of Thomas a Becket in silk and gold As in those times it was difficult to procure the rooms and books necessary for studying so it was almost impossible for the students of medicine to procure bodies for anatomical study Not infrequently students or masters snatched corpses by night from the cemeteries carrying them by stealth to their own house But by degrees the condition of the Studio became better and the anatomical theatre was finished in 1720

The anatomy lecture generally consisted of three parts the theoretical lecture the discussion the inspection of the cadaver The professor at first sat in his chair reading the textbook of Avicenna or Galen or of Mondino and with a long stick pointed out to the assistant (better known as the sector) where to cut the cadaver By degrees the lessons in anatomy acquired so much importance that they were frequented not only by the students of medicine but by large numbers of persons curious to know something of the structure of the human body The archives of the State contained a very important collection of miniatures in which are represented some of the most important lectures or anatomy given in the hall one of which has remained famous in history for having been given by a woman Laura Bassi a great philosopher and anatomist

To-day Professor Putti concluded this old anatomical theatre in which we are now assembled proposes in its past glory The lectures are now given in a big anatomical theatre which forms part of the modern and rich Institute of Anatomy Here remain flattering the spirits of the great masters who once made the name of Bologna glorious in the world

The visitors then inspected the magnificent library consisting of a vast collection of books in all languages housed in a series of splendidly proportioned rooms with which only such great libraries as the Kings in the British Museum are to be compared The cathedral was then visited after which such members as were energetic enough to disregard the heat paid visits to other objects of interest In the evening all were the guests of Professor Putti at dinner in the Hotel Stella d'Italia

THE MOUNTAIN HELIOTHERAPEUTIC INSTITUTE

On the following morning (September 24th) the party left at 6 o'clock by train to Mestre en route for Cortina d'Ampezzo in the Dolomite region, to visit the heliotherapeutic Instituto Codivilla for surgical tuberculosis, which is called after Professor Putti's predecessor in the directorate of the Institute Pizzoli At Mestre motor cars were in waiting to complete the journey by road Passing through picturesque old towns such as Treviso, with its watercourses and Vittorio-Veneto the scene of the final capitulation of the Austrians, into the hill country, the occasional ruins of buildings showed that the war zone had been entered The latter part of the journey lay among mountain scenery until Cortina d'Ampezzo was reached lying at the foot of the great Tofano peaks Here the relics of warfare consisted of huts and tunnels high up among the peaks This was the scene of that extraordinary mountain warfare on and around the summit of which graphic accounts appeared at the time in the English newspapers For two years this district was occupied by large Italian forces and cable transport was largely used to supply the guns and troops with ammunition and food Professor Putti described the great difficulties experienced and the heavy mortality which occurred owing to such accidents as lightning and avalanches The bare rocks of the Dolomite range are very susceptible to the destructive effects of the weather and fall of rock and stones are frequent

The Codivilla Institute was visited on Thursday morning The building in which the hospital is lodged was an Austrian hotel before the war but it is well adapted to its present use It is situated little over a mile north of Cortina in a favourable situation looking due south and with high mountains to the north those on the east and west not being near enough to prevent the sun's rays from reaching the front of the building for the whole of the winter and the greater part of the summer days It contains 100 beds 50 of which have been occupied since January last The rainfall is heavy as is usual in such high altitudes (or nearly 5 000 feet) but rainy days are comparatively few when the barometer occur the mercury vapour

quartz lamp is used The methods followed are much the same as those in Leysin Careful meteorological observations are made and recorded, and it is hoped in time to find scientific explanations for some parts of treatment which are at present only empirical One problem which Professor Putti referred to as needing solution is the question why some cases of tuberculosis do better at the seaside than in high altitudes and some worse Much patient investigation will be needed to explain this puzzling fact

In the winter, bedridden cases are exposed to sunshine in the open air as long as the temperature does not fall below 46° F, but ambulant cases are allowed to run about naked in the snow and in the sunshine down to a temperature of 14° F, or 18 degrees of frost

The results have been good, but as cases should preferably be kept here for two or three years, it is obvious that only a very few of the tuberculous children of Northern Italy can be treated at present

In the afternoon an excursion was made through a most picturesque part of the region to Misurina and its small lake, by a circuitous north-about route The return was to have been made by the more direct pass of the Tre Croci, but a bridge on this road having disappeared in the night the outward journey had perforce to be retraced, except by those active persons who chose to walk some nine miles, and were well repaid for their exertions

On September 26th, the last day of the tour, the association bade farewell to Professor Putti with many expressions of gratitude and regard, and started in motors on the great Dolomite road by the passes of Falzarego, Pordoi, and Costalunga to Bolzano (Bozen) Those who had not travelled this way before could not fail to be struck by the wild grandeur of the scenery, the design and execution of the extraordinary zigzag road, and the skill and coolness of the drivers of the huge charabancs which run regularly along it At the summit of the passes, such as Pordoi, over 7,000 feet above the sea, the air was felt to be very chilly, in marked contrast to the heat of Bologna three days earlier

Some stupendous relics of the war were seen, such as a three-storied barrack just below the summit of a ridge over 10,000 feet high, and various other fortress-like buildings The remains of two front-line trenches, which formerly crossed the road, were still very obvious During the final run down into Bolzano, through beautiful wooded ravines and glens and among waterfalls and sawmills, the weather broke and heavy rain fell With this exception the climate had been extremely kind to the tourists

Opening of the Medical Schools.

KING'S COLLEGE HOSPITAL

ADDRESS BY SIR DAVID FERRIER

ON

FIFTY YEARS OF MEDICINE

It is now fifty years this day since I last had the honour of giving the introductory address at the opening of the session of the King's College Medical School All my colleagues on the Board at that time have passed away, and there are but few here to-day who were present on that occasion It is not improbable, however, that I may have among my audience the sons or daughters of some of those who were then commencing their medical studies

Half a century is a long period in one's professional life to look back upon, yet I often find it difficult to realize that so many years have elapsed It is one of the proclivities—or perhaps infirmities—of age to like to revert to the past, and if I may indulge in this respect for a few minutes, it is not as a *laudator temporis acti*, but in order to draw some lessons which may have a useful bearing on the present and the future

I need scarcely say that within the last fifty years there have been many remarkable changes in the world in general, and in the world of medicine in particular At the time of which I am speaking—namely, 1874—Listerism was only in its infancy, and but slowly making way against great inertia, as well as much active opposition For although in 1867 Lister had been successfully applying to surgery Pasteur's doctrines as to the germ theory of fermentation, his views had not yet been generally accepted, or extensively put in practice Surgical operations were relatively limited in range, and followed by frightful mortality, surgical wards often reeked of suppuration and sepsis, and many surgeons were still operating with instruments, and in garments, swarming with putrefactive germs

As late as 1880—three years after the advent of Lister to this hospital—when my late colleague, Professor Gerald Yeo, and I, at a meeting of the British Medical Association, showed that, with antiseptic precautions, the most formidable operations could be made on the brain without risk of the otherwise fatal meningo-encephalitis, there were not wanting eminent surgeons and others who shook their heads incredulously, or expressed their entire disbelief in the germ theory of sepsis

It is difficult for those of you of the present generation to realize the state of affairs not only in surgery, but in other departments of medicine fifty years ago Bacteriology was then practically non-existent We knew nothing of the germs, or methods of culture, of tubercle, cholera, anthrax, malaria, diphtheria, tetanus, syphilis, and a host of others

With the exception of the Jennerian vaccine—the prototype of all others—we had no other vaccines, and no prophylactic or curative serums, such as those which have practically robbed hydrophobia, diphtheria, and tetanus of their terrors Internal secretions and vitamins, with their marvellous influence on development, growth, and nutrition, were mysteries entirely unrevealed Biochemical tests, such as those of Widal and Wassermann, had not been dreamt of Instruments of precision were few and simple Except the stethoscope, ophthalmoscope, laryngoscope, and clinical thermometer—the last only then coming into general use—there were practically no other aids to clinical investigation There were no x rays to enable us to illuminate and explore the innermost recesses of the body, and no electro-cardiographs to register every phase of the heart's action

All these methods, and the transformation of medicine which has been the result of their application, have been invented, or discovered, within the last fifty years—many of them within the recollection of the youngest of you

Our remedies were for the most part purely empirical The science of pharmacology was only in its infancy, and we could give little or no reason for our prescriptions beyond the fact that they had been found useful by our predecessors I could go on adding to the catalogue of things which we did *not* know half a century ago—things which form the very basis of modern medicine—until I fancy I might hear some of you exclaim, "Then what *did* you know?"

Yet it should never be forgotten that, so far as pure observation could carry them, unaided by other than the most simple instruments of precision, the physicians of old have never been surpassed in their delineation of the symptoms and natural history of disease, and skill in prognosis The names of Sydenham, Heberden, Bright, Matthew Baillie, and many others among our own countrymen, will compare favourably with any of those of the present day If their theories as to etiology and pathology were often founded on what we can now smile at as crude assumptions, we need not pride ourselves unduly on our superior knowledge

Considering the transformation or revolution, that is taking place at the present day in our conceptions of life, matter, and energy, it is not unlikely that someone of my audience, reviewing the progress of medicine fifty years hence may have to comment in a similar manner on the primitive character of our present day notions on many problems of health and disease. Still when all is said, I think, as regards scientific medicine we may take the motto of Tydeus, reasonably boast that we are much superior to our fathers."

Now what has been the principal cause of this superiority? Unquestionably, in my opinion, it has been obedience to the illustrious Harvey's injunction to the College of Physicians to search out the secrets of Nature by way of experiment." It is by the application of the experimental method to the elucidation of vital problems that within the last half-century medicine has been so transformed that its progress has with truth been characterized as a veritable romance. As the late Lord Fletcher Moulton, in his evidence before the Royal Commission on Vivisection, has said:

> No man who knows anything of science has any doubt whatever that the right way to advance knowledge is by experiment. When we are reduced to observation science crawls. When and in proportion as you can use experiment the science advances rapidly. The more complex the subject is the more factors there are at work the more essential the experimental method is and the most complex of all phenomena are those that relate to human being. (Royal Commission on Vivisection.)

Since the experimental demonstration of the circulation by Harvey three hundred years ago almost everything that we know with any degree of certainty with respect to the functions of the body—the brain and nervous system, respiration, digestion, assimilation and nutrition, internal secretion, the action of drugs, morbific agents, and the like—has been gained by experiments on animals, the accidental experiments or injuries on man, or the intentional experiments of inquirers on themselves.

By the discovery of the germs, and their modes of transmission, of malaria, yellow fever and sleeping sickness, regions of the earth formerly uninhabitable have been made accessible to civilization and human enterprise. It has been abundantly demonstrated that animals as well as man can be protected against such diseases as anthrax, tetanus, and glanders, and many other infectious diseases can be prevented, and might be altogether suppressed if intelligent co-operation could be made to take the place of the dense ignorance and stupid, not to say criminally fostered, prejudices, which so commonly prevail among mankind.

As to those diseases which, so far as we know, do not owe their origin to infectious germs, what can be considered *more marvellous than the powers recently conferred* on medicine by physiological experiment on the ductless glands and their secretions? As the late Sir William Osler has picturesquely expressed it:

> No such miracles have ever been wrought by physicians as those which we see in connexion with the internal secretion of the thyroid gland. The myth of bringing the dead to life has been associated with the names of many great healers, since the incident of Empedocles and Pantheia, but nowadays the dead in mind and deformed in body may be restored by the magic wand of science. The study of the interaction of the internal secretions, their influence on development upon mental powers, and upon disorders of metabolism is likely to prove in the future of as benefit not less remarkable than that which we have traced in the infectious diseases. (*The Evolution of Modern Medicine.*)

Osler's prediction has been amply verified within the few short years since his lamented death by that most recent triumph of experimental medicine—the discovery of insulin—the "elixir vitae" to thousands of sufferers living precarious lives with fatal coma like the sword of Damocles threatening to descend on them at any moment. How this appears to unprofessional eyes may thus be described in the words of Lord Knutsford in the recent debate in the House of Lords on the Dogs' Protection Bill:

> You see a patient come into hospital with large eyes, sunken face, and stooping figure. He is given insulin. It is not a conjuring trick. It is a miracle. In quite a short time the man is bright and happy and smiling again, and his disease is forgotten.

But while we can boast of triumphs such as these, we cannot afford to rest and be thankful. The problems that demand solution are many and urgent. Though we know a good deal as to the characters, mode of growth, and dissemination of many of the infective germs, we as yet know little or nothing of others—the so-called filter-passing germs—and still less any satisfactory method of combating their ravages. Our knowledge of cause unfortunately outruns our ability to prevent or cure. The tubercle bacillus was discovered over forty years ago, and yet, in spite of all our efforts, it slays its thousands every year, and this same has to be said of other diseases of men and animals which cause incalculable loss of health, wealth, and life. The state of affairs is still worse in regard to diseases of which we know neither the cause nor the cure, such as disseminated sclerosis, progressive muscular atrophy, paralysis agitans, and the like.

Most prominent of all in the eyes of the world at the present moment is the problem of cancer, which unhappily seems to increase as civilization advances. The urgent need for more light, and the triumph already achieved by scientific research in regard to the infective diseases, has led to a world-wide campaign against malignant disease in the hope that combined effort will succeed where individual effort has hitherto failed. Our hopes were recently raised high that here again Toronto had achieved another magnificent triumph, only, however, to be shattered by further examination. We need not however despair, only we must guard against being over-sanguine as to the results of investigations of a purely *ad hoc* character. These will no doubt narrow the approach and pave the way to the ultimate solution, but it is quite possible that the key to the mystery will after all be given by some research undertaken for its own sake, or without any obvious bearing on the problem in hand.

Many such instances might be quoted. It would, for example, seem a far cry from a jelly-fish to a human being, yet as Lewis has recently shown Romanes's experiments on the bell of the Medusa have furnished the explanation of that most dangerous state of the human heart—auricular fibrillation—and the rationale of its treatment. The history of science affords abundant illustration of the fact that the most important and far-reaching consequences may flow from apparently insignificant beginnings. There is not a single addition to natural knowledge, physical, chemical, or biological, which does not find its appropriate place in the grand edifice of science and the powers it confers on mankind. The conquest of ignorance is our only sure defence against the diseases and other evils with which we are constantly threatened and assailed.

Yet, though pure science receives much lip-homage it receives but little general support and medico-biological research, in particular not only little support but much ignorant opposition, unless it gives immediate protection against disease, or promises absolution from the consequences of sins against the laws of health and indulgence for future transgressions. One is constantly met with the question, "What is the *practical* object of your proposed research?" If you cannot make this sufficiently plain to the unenlightened you are apt to be regarded as a visionary out of touch with the realities and needs of the world. This attitude is unfortunately not confined to the laity, but is all too frequently found even in our own profession.

While there is no branch of science which does not bear directly or indirectly upon practical medicine, that which above all others most intimately concerns you in your study of disease is physiology—appropriately termed the Institute of Medicine. It is only by an intimate knowledge of the functions of the various tissues and organs of the body and their interrelations practically applied in the clinical ward and pathological theatre that you can appreciate the true nature of disease and the meaning of its symptoms. And it is this alone that can furnish a sound basis for independent judgement, and secure freedom from any slavish adhesion to any system or blind obedience to the word of any master.

The practical application of the results of scientific research in all its forms—physical, chemical, or biological—towards the prevention and cure of disease is the duty of our profession. You will see therefore how your responsibilities are great, and that in the relatively short period of the medical curriculum you will have no time to waste if you

are to acquire the requisite knowledge to qualify you for your work Though it is impossible at the present day to be an expert in every branch of science, general practitioners and specialists alike, besides learning the essentials of medical and surgical practice, must gain such acquaintance with the principles and methods of special scientific research as to know how and when they may be made available for the benefit of those entrusted to their care

Most of you will no doubt engage in general practice at home or abroad, and thus form what has been rightly termed the backbone of the medical profession Others —probably many of you—will become specialists in one or other of the various departments into which medicine in the natural course of evolution has become necessarily divided And I need scarcely say that nowhere better than in this highly equipped hospital and school can you be fitted for any specialty that you may choose Some of you—I hope not a few—will become so enamoured of one or other of the strictly scientific bases of medicine that you will devote yourselves to research, like so many who have attained eminence in science proper, but who began their career as medical students

It would, I think, be a great misfortune if the increased facilities with which scientific methods have provided us for the diagnosis of disease, such as the *x* rays, electrocardiograph, biochemical, and other tests, should lead to atrophy of the *tactus eruditus*, and other trained faculties of the skilled practitioners of old, or to neglect of the simple or unaided methods of diagnosis, such as percussion, auscultation, and the like It would not be well if a surgeon were unable to diagnose the existence of a fracture or dislocation without the aid of a radiogram, or for a physician to be dependent on similar aid for the recognition of a consolidation of the lung, or the existence of a tumour in the brain Some indications, however, have been noted by our examiners of a tendency on the part of the younger generation to neglect the simpler methods, and to rely too exclusively on aids which may not be available at the critical moment Delicate physical and chemical apparatus are necessary in the clinical laboratory, but the results must be incorporated with those of other methods, and capable of application by the practitioner in the ordinary course of his work The various methods should supplement but not supplant each other, and as we see clearly only what we are prepared to see, clinical vision should be sharpened rather than dulled by the light of science

Scientific pharmacology does not necessitate the abandonment of purely empirical methods which long experience has proved to be of value in the relief of suffering The theories on which they have been based may appear to us fanciful, and we may not be able to give a rational explanation of their *modus operandi*, but it would be foolish to discard them There are many remedies, now out of fashion, which are still relied on, and apparently on good grounds, by physicians of ripe experience and sound judgement Nor should the study of the scientific bases of medicine ever be divorced from the most thorough-going study at the bedside The human body is a much more complex organism than that of the lower animals, and infinitely more so than any mere physical or chemical compound The agents employed in the treatment of disease do not necessarily act *in vivo* only as they do in the test tube The living body is, as has been said (Dale), in many ways an essential partner in its own cure And, more particularly, the psychical side of man—the impulses and emotions by which he is swayed—constitutes a factor which highly complicates the action of all the remedies of the *Pharmacopoeia*

Ideas and emotions are not mere subjective states of the organ of mind, but at the same time corporeal influences which thrill to the tips of our fingers, and manifest themselves not only in outward expression, but also in modification of the activity of all the vital functions Though much valuable work has been and is being done in this direction (Lange, Pavlov, Cannon, etc), we as yet know comparatively little as to the mode of origin, and channels of transmission, of those corporeal influences but it is certain that the pleasurable emotions, such as faith and hope, *exalt*, while the depressing emotions, such as fear, doubt, and anxiety, *depress* all the vital functions How to promote the one and combat the other is often more a mark of therapeutic skill than a judicious selection from the *Pharmacopoeia* This has long been implicitly recognized and acted on in daily life Prescriptions, apart from any intrinsic value they may possess, are also largely vehicles of suggestion Everyone knows that a prescription by the eminent physician, Sir A B of Harley Street, may have a very different therapeutic value from exactly the same prescription given by Mr C D of Little Pedlington And there is a grain of truth in the remark by Petronius Arbiter, the cynical courtier to the Emperor Nero, that a physician is "only a satisfaction to the mind"

The influence of suggestion, familiar to physicians from time immemorial, has in recent times been raised to the dignity of a cult or religion, under different names, and following different methods, rites, or ceremonials, and remarkable successes have been claimed by their respective votaries I have no intention of critically examining the respective merits or demerits of these various methods, but would merely remark that suggestion, however induced, should be kept in its proper place No amount or kind of suggestion will, for instance, reduce a dislocation or remove a tumour from the brain Apart, however, from special methods of suggestion, however commendable some may be in certain circumstances, it must ever be the endeavour of the physician to mobilize all the defences of the organism, psychical as well as physical, against the attacks of disease, and for the restoration of health

It is related of a famous painter, when asked how he mixed his colours in order to produce such brilliant effects, that he replied, "I mix my colours with my brain" Medical practitioners, to be successful, must do likewise with their prescriptions How to do so is an art—the true *ars medendi*—and, like all arts essentially individualistic, difficult to define, difficult to analyse, and difficult to communicate But there is one factor within reach of you all—surpassing all others in importance—and that is *a thorough knowledge of your work* This by itself can outweigh a multitude of defects, and will constitute the best, and most solid, basis of that self-confidence and decision which are so necessary to inspire faith and trust on the part of those with whom you have to deal This knowledge you can all certainly acquire here if you duly avail yourselves of the splendid opportunities provided for you in this great hospital and medical school

CHARING CROSS HOSPITAL

SIR HUMPHRY ROLLESTON'S ADDRESS ON REASONS FOR ENTERING THE MEDICAL PROFESSION

THE introductory address to the students of Charing Cross Hospital was given on October 1st by Sir Humphry Rolleston, Bt, K C B, M D, President of the Royal College of Physicians of London

After a few words of congratulation to the prize winners and of encouragement to those who on this occasion had not gained the palm Sir Humphry Rolleston remarked on the advantage in competing for prizes quite apart from the place obtained in the list

It is (Sir Humphry said) a preliminary canter, and part of the training for the compulsory examinations that await the student at another place, it provides practice in clear expression and marshalling of knowledge in the written paper, and accustoms the candidate to the trial of a viva voce examination when a question on an almost unexpected subject suddenly impinges on an anxious strained brain and demands an accurate answer

Discussing next the reasons for entering the medical profession, he said

Although we have all committed ourselves to the profession of medicine it is not a mere act of curiosity to mention the reasons that may lead up to such a decision

for although the Rubicon is passed there are many provinces of medicine open from which to choose the particular line of work likely to be most congenial The reasons attracting men and women to our profession may decide in advance what form of practice or activity they will ultimately adopt, and to these brief reference will be made, but usually the advice not to specialize early has been unconsciously followed

While one, and certainly the commonest reason for entering a profession is, of course, to gain the wherewithal to live this can be much more easily and successfully attained by going in for business or trade, strictly so called, than for medicine, which has been described as a noble profession but a decidedly bad trade Still undoubtedly many choose medicine with this aim in view, for, at any rate in the past, more members of the healing art gained a living of a sort than is the case among the followers of the Law or the Church it is true that the prizes are few and the income often small—sometimes, indeed, barely a living wage, or, as it has been called, a "starveling" before the war it was, I believe, estimated that the average income of the members of the profession as a whole was about £300 a year—though it must have been difficult to arrive at any sum and then approximately only Now, with the rise in the cost of living it must be much higher, possibly £500 to £600 a year But just at the present moment there is considerable reason to believe that the medical profession is overstocked by those recently qualified, last year the number of new practitioners registered was 2 482, the highest on record and the number of medical men is increasing more rapidly than the population so that the rate is approaching one medical man to 1 000 of the population As the result of the rush into the profession after the war, the universities and examining boards are now at the crest of the wave as regards candidates for the final examination—for example at the final Conjoint Board examination in July last there were more than 500 candidates up it is true that they did not all get through but that the recently qualified are finding it hard to obtain resident posts there is I fear no doubt At the Victoria Hospital for Children Chelsea, there were for the two posts of house physician and house surgeon vacant last July, 83 applicants of whom 23 or 27 7 per cent were men, and 60 or 72 3 per cent women and I have heard of sixty candidates for one house appointment elsewhere

This temporary condition must of necessity right itself in accordance with the laws of demand and supply and, indeed this corrective process may have begun already Last year the entry into the medical profession dropped from 2 000 in the two previous years and 3 500 in 1919, to 545 which is little more than a third of that (1 500) in the first year of the century It is interesting to note that in the United States of America there was no evidence of a fall in the 1923 entries the total—17 808—being nearly 900 more than in 1922 In spite of the limitation of students and the higher entrance requirements enforced at the most efficient medical schools in the United States, the total entries since 1919 have increased at the rate of approximately 1 000 students each year[1] The contrast between the 1923 entries in the United States on the one hand and Great Britain on the other hand calls for some explanation Between 1904 and 1919 probably as a result of Abraham Flexner's drastic report on the medical schools in North America (1910) the number of schools fell from 160 to 85 and the number of students from 28 142 to 13 052 so that this event renders the conditions different from those in this country further poor students are encouraged and financed by scholarships and loan funds much more than in England and the American colleges expend from 500 to 1 000 dollars annually on each student in excess of their fees[2]

Possibly the phenomenal fall in the British entries in 1923 may have been due to more than one cause but apparently the most important factor is that under the new Regulations of the General Medical Council the student must now postpone registration until, in addition to his examination in general education, he has passed a recognized examination in elementary chemistry and physics, this year's figures will show more truly the state of the entry into the profession Further economic conditions—namely, the higher cost of medical education and the accompanying fall in fixed incomes, though neither of these were special to 1923—may by accumulated effect have begun to exert an influence deterrent to entrance into a profession which is not pre-eminent as a method of getting rich quick There is also a very considerable fall in the entry of women into the profession whatever the cause there is no question that 1923 saw a very distinct drop which contrasts with the war and post-war rise in the number of female medical students The evidence of overcrowding among the qualified women and realization of the difficulty of obtaining posts when a degree or diploma has been obtained may have warned parents not to encourage their offspring especially their daughters to enter our profession

A not uncommon reason for entering our profession is the accident so to speak of environment or heredity When the father is a medical man the home atmosphere often prepares the son to follow in the paternal footstep as a normal course of evolution, especially as there may be a practice waiting for him, so without any special ambition or inclination for another walk of life he regards it as a natural family succession I know of a family with seven generations in succession This is perhaps a survival or an unconscious imitation of ancient custom, for in very remote times the art of healing was hereditary from generation to generation in the sacerdotal caste In Ireland until a comparatively recent period the profession of physic passed from father to son just as did the practice of other arts and crafts and was the relic of the time when a medical practitioner was attached to the clan or house of a chieftain (Kirkpatrick) On the other hand, a boy or girl may early decide on the physic line and keep to this resolution the impulse may date from some accidental experience such as injury or illness and the resulting contact with the striking personality of a medical attendant Sir William Bowman is said to have been led to take this step by his interest in the treatment of a wound in his hand sustained when experimenting with gunpowder Sydenham was attracted to the profession he so greatly adorned by the influence of Dr Thomas Coxe who was attending his brother Colonel William Sydenham, in 1646 An allied but apparently curiously infrequent reason is the desire to be in a position to look after one's own disabilities Elisha Kent Kane (1820-1857) surgeon in the United States Navy who went on the two American expeditions (1850-51 1853-55) financed by Henry Grinnell in search of Sir John Franklin originally intended to be a civil engineer but after an attack of rheumatic endocarditis he was advised by his friends to take up medicine on the ground that he would be happier if he understood and so could manage his own case Interest may suddenly be awakened by the accident of reading a medical book or article as in the case of Dr Tertius Lydgate in George Eliot's *Middlemarch* a portrait known to have been drawn in part at least from life Among those who like William Hunter the elder brother of the more famous John have started life with the intention of entering the Church but have abandoned it to practise for the cure of our ills bodies was Sir William Osler who is believed to have been partly influenced in this step by reading Sir Thomas Browne's *Religio Medici*

A few men paradoxical as it may at first sight appear, take a medical degree without any intention of ever practising this is not as sometimes happens in the case of the Bar from a belief that it is a liberal education to belong to a learned profession but because they have already decided on devoting their lives to investigation of teaching in one of the sciences such as physiology biochemistry or morphology or pathology which are so closely bound up with medicine Such men rightly recognize that their outlook is greatly broadened by

[1] Colwell N P *Journal of the American Medical Association* Chicago 1924 lxxxii 839

[2] Myer B D *Proceedings* of the Thirty-fourth Annual Meeting of the Association of American Medical Colleges February 23th 25th and March 1st 1924 p 71

passing through the whole of the medical curriculum, that as research workers they are better placed to understand the bearing of problems to be solved, and that as teachers of medical students they are thus in a much more advantageous position to deal sympathetically and for the best with future practitioners In short, the experience gained by passing through the medical curriculum tends to alter the outlook of the teacher of the preliminary biological sciences Let us contrast the extremes of the groups of teachers—those who know their science only with those who in addition have been through the curriculum—and think for a moment of the difference in the attitude that may be adopted by the two categories of teachers, no doubt much could be said for both, a teacher of the first group may say in his enthusiasm that his function is to teach and examine on the science, whereas one of the other class will consider that his business is to ground future medical men in what he conceives to be necessary to ensure their efficiency

In the days that were earlier, men sometimes entered the medical profession because of their ambition to be in one of the fighting forces, for when prevented by mental or bodily defect from gaining admission to the executive branch, they fell back on the Royal Naval Medical Service, the Royal Army Medical Corps, or the Colonial Service Love of travel and of adventure, which can be gratified in the services, is another possible incentive, and there is in addition the material attraction of a pension to fall back on But the shortage of entries into the services at the present time shows that these factors are no longer operative Similarly, the number of medical men who now enter the mission field is so small that a desire to be a medical missionary accounts for very few entries into our profession But how many take up medical work from feelings of real devotion to their fellows, and quietly carry through this high ideal in the ordinary rough-and-tumble of life, it is impossible to guess

A somewhat unusual reason—at least, there are few such confessions—for adopting the medical, though it is far from unknown in the nursing, profession is disappointment in love James Macartney, the distinguished professor of anatomy and surgery at Trinity College, Dublin (1813-37), when refused by Miss Mary Ekenhead, "determined to adopt the profession of Surgeon in order to harden his heart", but the course of his love affairs soon turned into smooth waters, and after marrying Miss Mary he became a demonstrator of anatomy to Abernethy

The factors responsible for taking up medicine may determine the line of practice—general, consultant, specialist, or in the several services of the State—that is eventually adopted Heredity, in the form of a family practice, is an obvious example of a reason for becoming a general practitioner early marriage and the need of money, or love of country life, may have the same effect A bent for research and seeking out "the secrets of nature by way of experiment" of course provides whole-time pathologists, physiologists, and biochemists Ambition, backed by a certain degree of ability and patience of no small degree, is responsible for most of those who attempt consulting practice, but even when the decision has been made so far, the choice of medicine, surgery, or obstetrics and gynaecology may be determined by opportunity or accident—that is, the contemporary prospects in these departments of practice at the medical school to which the individual is attached Thus, at one hospital two who had started as general physicians and another who was well known as a pathologist eventually became gynaecologists, and careful calculation as to probable vacancies has been known to settle the choice between medicine and surgery Interest and technical skill are the natural reasons for adopting one of the special branches, such as ophthalmology, laryngology, otology, orthopaedics, urology, anaesthetics, or dermatology, and there is the mundane advantage that the wait during what has been called the mere bread stage, before butter, much less jam, can be afforded from the rewards, is not so prolonged as in the case of the general consulting physician

Scotland.

St Mungo Chair of Surgery in Glasgow

The curators of the St Mungo Chair of Surgery at the University of Glasgow have appointed as St Mungo Professor Mr Peter Paterson, M B, C M, F R F P S G, in succession to the late Dr Robert Kennedy This chair was established in 1911 in place of the former chair of clinical surgery, and is carried out in association with the Glasgow Royal Infirmary Mr Paterson received his medical education at Glasgow University, where he graduated M B, C M in 1891 He later pursued his studies in London, where he obtained the M R C S After a period of work in various Continental centres, where he devoted his attention to surgery and kindred subjects, he became assistant to the Regius Professor of Surgery in Glasgow University, Sir William Macewen He was also appointed to the staff of the Royal Infirmary, where in 1906 he became visiting surgeon For some years he held the post of professor of surgery in St Mungo's College, Glasgow He has gained distinction for research work, having held the Foulis Memorial Scholarship for eminence in pathology, and he was awarded a Weber-Parkes medal for a memoir on immunity in connexion with tuberculous infection He has contributed many papers on surgical subjects to various journals, and has for many years been recognized as one of the leading operating surgeons and teachers of surgery in Glasgow

Edinburgh School of Medicine Calendar

The annual calendar of the School of Medicine of the Royal Colleges at Edinburgh has just been issued for the session 1924-25 This school of medicine is of considerably greater antiquity than that connected with the University, its lectures being traceable back to the year 1505, when the Surgeon-Barbers obtained their charter The annual average of students who attend classes in this school numbers 900 Of these the greater number are students proceeding to the University degree in Edinburgh, but a considerable number are engaged in studying for one or other of the conjoint qualifications of the Royal Colleges Students intending to graduate at one of the Scottish universities may, by the Ordinances of the University Commissioners, attend at this school one half of the classes required for graduation in medicine, and many of the students at Edinburgh University avail themselves of this privilege The present number of the lecturers is forty two, of whom most deliver courses qualifying for graduation, while some give lectures upon special subjects of medical science The dean of the school is Dr John Orr

Opening of the Sanderson Hospital, Galashiels

The new hospital for infectious diseases, which has been presented to Galashiels by the trustees of the late Mr Robert Sanderson, a pioneer in the local tweed industry, who died in 1915, was formally opened on September 22nd The hospital is situated on the edge of the town, the grounds occupying an area of three and a half acres The hospital buildings include an administration block of two stories with a basement, a detached pavilion of scarlet fever wards, another pavilion for observation wards, and a third comprising outhouses, laundry, mortuary, heating chamber, and motor house In the scarlet fever block there are four beds in the men's ward, six in the female ward, and two private wards, each containing one bed In the observation block there are four wards with two beds in each In the event of an epidemic extra bed accommodation can be arranged With the approval of the trustees cases of infectious diseases from the county and burgh of Selkirk will be accommodated in the hospital, and included in the hospital equipment is a motor ambulance In addition to the title deeds for the hospital the trustees have arranged a feu charter providing for a public right of access between the Selkirk and Tweed roads Certificates are also included providing for the recovery of the feu duties in perpetuity for the ground on which the hospital buildings have been erected

The Right Hon William Adamson, M P, Secretary for Scotland, who was present at the opening ceremony, drew attention to the new departure, in that a family doctor was thus entrusted with a town had voluntarily come forward to make a most generous provision for a service which the town council had the power, and, indeed the duty, of providing at the cost of the ratepayer He hoped that this precedent—namely, that people of influence should deliberately make a provision to benefit the whole of the ratepayers of the area in which they were interested—would be followed elsewhere not only making it possible for the ratepayers to have modern hospital facilities, but also relieving them of a large part of the cost of such provision Such an undertaking was a move in the right direction, since the development of modern medicine rendered it easier to maintain an efficient service in a fairly large unit than in a number of small hospitals

Conference of Scottish Insurance Committees

The twelfth annual conference of the Scottish Association of Insurance Committees, held in the Town Hall, St Andrews, was attended by about 200 delegates, under the chairmanship of Mr George Cumming (Forfar), president of the association In his presidential address the Chairman stated that they might well be content that the question of the remuneration of panel doctors was now settled for some time to come He deprecated the fact that the friendly societies had no representative on the Royal Commission appointed to inquire into the working of the National Health Insurance Act A resolution was later submitted to the meeting and carried unanimously, that medical service should include at least nursing, specialist and consultant services A further motion, to the effect that dental and optical benefits should also be provided for the insured, was carried by a large majority A considerable amount of discussion took place in regard to a scheme which had been drawn up by the clerk to the Ayr County Insurance Committee for the co-ordination of medical services It was proposed by this scheme that a new authority should be constituted in each burgh and county, which would be elected in the same way as the education authority, and would receive and administer all Government grants and other sums paid under the Insurance Act for medical benefit A vote of thanks was passed to the originator of the scheme which, however, was *not adopted*

Glasgow Western Infirmary

The managers have appointed Mr J Mill Renton, M B Ch B, F R C S Edin a visiting surgeon to the Glasgow Western Infirmary The vacancy was caused by the promotion of Mr Archibald Young to the Regius Chair of Surgery

England and Wales.

The Manchester Medical Society

The Manchester Medical Society has published a syllabus of the meetings to be held during the session 1924-25 At the first meeting, on October 8th, at 8 p m, Dr A I Hurst will give an address on the sphincters of the alimentary canal and their clinical importance On November 5th a discussion on jaundice has been arranged and on December 3rd a discussion on chronic backache in women The January meetings will consider the radiography of the heart, the surgery of the astragalus and the use and abuse of digitalis On February 4th the president, Professor G R Murray, will speak on things in health and disease Further information may be obtained from the honorary secretary, Dr A Hillyard Hehir 26, St John Street, Manchester

Post Graduate Courses

The South West London Post-Graduate Association has arranged a series of lectures demonstrations at St James's Hospital, Balham, from October to December The first two lectures will be given by Sir James Barr on October 16th and 17th, and will deal with the work of Albert Abrams's methods of diagnosis and treatment Other subjects treated during the course include the use and artificial light treatment by Sir Henry Gauvain, the diagnosis of tumours, by Mr Pearce Gould, medical examination for life insurance, by Dr F G Chandler, and the prevention of early recognition of trouble during childbearing, by Dr J S Fairbairn A full syllabus of the course may be obtained from Dr P J Saunders *10 Lord Road Wandsworth Common* A course of two lectures will be given at the Hospital for Sick Children, Great Ormond Street, on Thursdays from October 9th to December 11th inclusive with the exception of October 23rd These lectures are free to medical practitioners and the subjects considered include daily work in connection with the interpretation of blood sugar curves and acute infections of the nervous system in children A course of ten lectures on elementary psychotherapy will be given at the Tavistock Clinic W C, by Dr H Crichton Miller, on Mondays, at 5 30 p m commencing on *October 13th* The first lecture deals with psycho-physical interaction and the second with persuasion and suggestion At St Mary's Hospital Medical School a special three-days post graduate course will be held on October 4th 5th and 6th The subjects include chronic arthritis and allied disorders the common cardiac irregularities diagnosis and diseases the surgical treatment of gastric ulcer and the medical treatment of colonic anæmia The hospitals comprising the clinical school of the University of Liverpool have arranged again to hold lecture demonstrations for practitioners during the university term, the programme being so planned that on each day a demonstration is given by only one hospital The demonstrations commence at 3 30 p m and are largely clinical in character The first one, at the Children's Hospital, on *October 6th*, will deal with hare-lip and cleft palate A short intensive course for post-graduates will be held at the City of London Hospital for Diseases of the Heart and Lungs from October 13th to 17th The subjects to be dealt with include diabetes and tuberculous pneumothorax, electrocardiograph mediastinal tumours, and the complement fixation test Fuller details of all these courses will be found in the Diary

Tuberculosis in Birmingham

The annual report for 1923 of the chief tuberculosis officer for Birmingham shows that there has been an increase during the year in the number of tuberculous patients who have been treated The increase is more marked relatively in the case of non pulmonary tuberculosis, largely in consequence of an increase in the provision or arrangements for treatment The death rate in the case of both pulmonary and non-pulmonary disease has been practically stationary during the last four years but whereas the figure for non-pulmonary disease has been appreciably below the corresponding figure for England and Wales the Birmingham death rate for pulmonary tuberculosis has been above the average Unsatisfactory conditions as regards employment and housing have militated against preventive work though considerable help has been available for deserving persons For the treatment or isolation of cases of pulmonary tuberculosis sanatorium or hospital accommodation is provided for 670 patients in addition to 140 beds for children suffering from non-pulmonary tuberculosis and a variable number of beds in hospitals amounting probably to ten or fifteen at any one time Fifteen trained nurses are employed, and over 50 000 domiciliary visits were paid during the year Notifications to sanatorium numbered 1 831 and there were 31 635 attendances at the municipal anti-tuberculosis centres of which 17 853 were for treatment alone 2 613 new examinations were made representing an increase on the previous year In connexion with the examination of sputum at the municipal anti-tuberculosis centre the Dawson concentration method was applied to 850 specimens which were previously examined by the usual method Of these after the concentration, 140 were shown to be positive and after the second concentration 5 more positive results being reported after subsequent concentration In connexion with the Yardley Wood Sanatorium the sedimentation method devised by Lilleman and Erlandsen was used From 1 016 specimens

shown to be positive by this examination after a negative result had been obtained by other methods, 625 positive results were obtained after the first concentration, 330 after the second, 35 after the third, and 26 after the fourth With reference to the question of the value of pasteurization of milk, it is pointed out that for some time past 85 per cent of the milk sold in Birmingham has been treated either by sterilization or by flash-point pasteurization, and the evidence obtained from the local infant welfare centres goes to show that such milk has not caused harm to young infants Pasteurization, it is claimed, has been of great value in preventing the spread of scarlet fever and other septic infections as well as tuberculosis

SOCIAL HYGIENE CONGRESS AT WEMBLEY

A report of the Social Hygiene Congress, held at the British Empire Exhibition, Wembley, last May, was published in our columns of May 17th (p 875) The National Council for Combating Venereal Diseases, which organized this congress, has now published the papers there delivered, and the volume contains a mass of information which would be of still greater value to those interested in social hygiene if a detailed index had been provided In his article Sir George Newman gives an account of the action now taken by the Ministry of Health in combating venereal disease, he describes the history of the public organization of the treatment of venereal diseases and the establishment of various schemes, bringing forward statistical evidence in support of his belief that there is a definite and progressive decline of these diseases in this country After a brief consideration of the three difficult questions of compulsory notification, compulsory treatment, and prophylaxis he summarizes the principles of prevention Education of the public as to the incidence and dangers of venereal diseases he considers is of prime importance Secondly, the sources of infection should be reduced by the provision of prompt and skilled advice, and adds "It is not practicable for Government or any high contracting party to usurp the position of the private medical man in his relation to his patient" Sir George Newman's third principle is the essential importance of avoiding the separation of treatment and prevention in other words, "every treatment clinic has direct preventive work to do" Sir Leslie Mackenzie has an article dealing with the administrative control of the venereal diseases in Scotland, with special reference to the formulation and administration of official regulations, he concludes that the primary commandment "Thou shalt not kill" has many corollaries, one of which is "Thou shalt not spread disease" Dame Rachel Crowdy gives an account of the international position with regard to prostitution and the suppression of the traffic in women and children She believes that there is a gradual and definite growth of an international conviction that the white slave traffic must be suppressed at all costs Some reports received in reply to an inquiry addressed to various nations which had a system of regulation of licensed houses are included in her contribution She considers that it has been established that the evidence of the effects of such systems are fairly easily obtainable, and that in a short time definite conclusions will be deducible The section devoted to imperial questions contains reports about the problem of social hygiene in the Dominions received from Canada, Australia, India, Natal, Kenya, Nigeria, and British Guiana One section is devoted to the discussion of the place that the general practitioner should occupy in the campaign against venereal diseases, and includes papers by Dr C E S Flemming, Dr Madeline Archibald, and Dr Alfred Cox, Medical Secretary of the British Medical Association The educational section contains two papers of outstanding interest from a practical point of view—one by Sir Frederick Mott on the psychology of adolescence, and the other by Professor J Arthur Thomson on education and social hygiene

The congress was organized as a step in the co-ordination of the social problems of the Empire The Minister of Health was the honorary president, and papers were contributed by representatives of Government departments at home and overseas, delegates from local authorities, and representatives of social welfare organizations and professional bodies

Correspondence.

THE SURGICAL TREATMENT OF ANGINA PECTORIS

SIR,—As you point out in a leading article of your last issue (p 583), several different forms of surgical intervention have been undertaken with a view to relieving the major symptoms of angina pectoris It is not my purpose, in writing this letter, to discuss the pathology of this grave and painful disorder, but I think it will be clear that we are as yet very far from understanding the manner in which anginal pain is produced or the precise nerve channels involved In these circumstances surgical interference remains in large part still empirical

My purpose is to point out that from case reports so far published it is often, I do not say always, impossible to be sure that the surgical destruction of this nerve path or that has had anything to do with the relief of pain experienced In other words, sufficient data for the empirical conclusion are often lacking If a patient suffering from angina pectoris is put to bed and is adequately nursed for a period of weeks or months, common experience tells us that often great relief will follow, and this relief may last for long periods of time after the patient resumes his daily occupations Rest of this kind is part and parcel of the treatment which a patient receives when he comes under the surgeon's hands, and its influence upon the subsequent history of the anginal pain is scarcely considered in most of the reports hitherto published of patients submitted to operation I do not say that rest is the reason why the pain has disappeared in the cases in which relief has been recorded, but if the influence of rest cannot be excluded *by statements contained in a given case report*—and that is often how the matter stands—then that case report becomes valueless as evidence that surgical interference has played its part successfully The point is simple and obvious enough, and it might be thought that the exclusion of the effects of rest might be taken for granted Experience tells us, however, that we should be rash to take anything for granted in such matters, the wish is too often the father of the conclusion where this and other forms of new treatment are concerned The point is especially deserving of emphasis in the present connexion, not only because of the remarkable relief which rest alone brings to anginal patients, but because the case reports in question so often conspicuously fail to convey a hint that this factor of rest has been taken seriously into account

It is not my desire to bring forward the point in the form of destructive criticism, but in the hope that future reports of the kind may provide evidence of a conclusive kind bearing on the rest factor —I am, etc,

THOMAS LEWIS,
University College Hospital Medical School

September 28th

OBSTETRICS AND LOCAL HEALTH AUTHORITIES

SIR,—Owing to the great advances which have taken place in obstetrics in recent years the present system of administration by the local health authority demands careful consideration The towns, and by degrees the rural districts, are being supplied by midwives who are highly trained and kept informed as to modern methods by intensive courses of post-graduate lectures delivered each year in various centres

As a result, a highly skilled body of specialists is gradually emerging On the other hand, the clinical training of most medical undergraduates is lamentably deficient, nor can the hard-worked general practitioner afford time for post-graduate study of what is, after all, only a branch of his daily work, and in many instances a harassing and unremunerative one Few facilities for practical work in midwifery are available in British hospitals for qualified practitioners The difficulties are accentuated by the importance and rapid growth of ante-natal precautions requiring specialized knowledge and involving fresh responsibilities At present over half of the confinements are attended by midwives, a fact which proves a due appreciation of their services It remains to be seen whether this

proportion will not increase if the obstetrical training of the medical student is not improved and the rank and file of the profession do not advance with the times

The inspectors of midwives are under the direction of the medical officer of health for the supervision of midwifery nursing in their respective districts but take no part in nursing confinements The regulations of the Midwifery Board prescribe that in abnormal cases the midwife must call in a medical practitioner and in necessitous cases his fee is paid by the local health authority There is no provision ensuring that the doctor engaged shall have any special knowledge of the subject nor is he under any official obligation to furnish a detailed report of his treatment and the medical officer of health has no power to criticize

I suggest (1) That in the event of new appointment taking place for qualified medical inspectors of midwives those candidates who have had special training in practical obstetrics should be appointed and that their services should be obtainable for cases of abnormal labour or complications in the puerperium these practitioners would be under the direction of the medical officer of health and their scope immensely widened (2) That the whole-time officers should also supervise the ante natal work which should be a branch undertaken by the obstetrician rather than the child welfare medical officer (3) That in difficult cases except in those of urgent necessity the midwife should be required to invoke the assistance of (*a*) the medical inspector or (*b*) a practitioner ascertained by some competent authority to be a reliable obstetrician (4) That in every centre, when possible the services or advice of an experienced specialist should be available for serious complicated cases

The importance of the question is manifest Each year 700,000 children are born in this country It is difficult, even for the medical profession to realize the terrible legacies of ill health for mother and child due to unskilful or impatient midwifery At present the public have no idea of the facts but they are learning and it is the duty of those responsible to revise their methods —I am etc

A LOUISE MCILROY M D D Sc

Royal Free Hospital Sept 20th

TREATMENT OF GOITRE

SIR —The editorial article upon the iodine conditions in enlarged thyroid (September 20th p 528) is very interesting In general practice here in Hockley Birmingham I have been struck by the fact that the thyroid enlargement has at once regressed under treatment by sodium salicylate Iodine as potassium iodide sodium iodide syrup ferri iodidi may have been given by the mouth linimentum iodi fort and unguentum iodi denigriscens may have been used also but sodium salicylate has always been followed by a lessening of the goitre Bromide may be given occasionally Especially since National Health Insurance has come in has the good effect of a salicylate mixture been noted

The mistura sodii salicylatis of the Health Insurance Formulary Group "I" on continuous administration has always been followed by improvement, and usually by cure unless I am mistaken Patients are told they must come for over a year and the mistura sod sal is prescribed at once Some do not continue but those that do show the great benefit of the treatment The prescription is

Sod salicyl	gr x
Sod bicarb	gr xx
Ammon carb	gr iij
Mist menth pip	ʒ s

Sig t d s

If this is given with success where is the iodine? How is its lack made up Is there always a real lack of iodine — I am, etc

Hockley Birmingham Sept 2nd JOHN W DUNCAN

IODINE AND FOOD

SIR —The work of McClendon and Hathaway to which you devoted a leading article in the JOURNAL of September 20th (p 528) is of very great interest It is useful to know what vegetables and fruits contain most iodine, and in what parts of them it is stored Our standard bread and wholemeal enthusiasts will be stimulated to renewed efforts when they know that the part of the grain which contains a high trace of iodine is the part we give to the pigs

In districts however which are far from the seaboard, or in valleys lying at right angles to the prevailing moist wind to depend on so selected food as a means of preventing goitre will be trusting to a broken reed When the soil, and the water which irrigates it, is devoid of iodine the vegetation which it produces and the animal life which feeds on that vegetation, will suffer from iodine deficiency The soil cannot give what it has not got and in these places iodine must be supplied from other sources

You say The iodine deficiency theory is attractive at first sight, but there are many matters which cannot be explained on this theory alone" It is true we have still much to learn but we do not know everything about anything and in the sentence I have quoted I intended to suggest that no practical use ought to be made of the knowledge we possess until all the microscopic facts in the iodine deficiency theory have been explained away We may for a very long time have to wait and watch thousands upon thousands of our girls blooming into womanhood with this neck disfigurement and its associated disability In some schools in Derbyshire one girl in every five has a goitrous neck The evidence we possess that iodine is a safe and certain preventive of goitre is sufficient to satisfy any reasonable mind The verdict of America is That of all diseases goitre is the most easy to prevent," and the experience of Switzerland confirms it

It will be a lasting disgrace to the medical profession if goitre continues to flourish in our midst Here in Derbyshire a determined campaign is about to be inaugurated having for its object the total disappearance of simple goitre Iodized salt both for table and household use, is now on the market Iodized tablets will probably be given in selected schools at weekly intervals and possibly in some cases the public water supply may be treated

The claim made by the American investigators that exophthalmic goitre is also due to iodine deficiency contains only a small element of truth In simple goitre the enlargement is the response of the organ to natural stimulation Iodine plays several parts in the chemistry of life It has metabolic reproductive germicidal and toxin destroying uses and each department so to speak in ever-varying degrees draws on the thyroid for its requirements When the combined demand reduces the store of iodine in the gland below a certain level enlargement takes place In exophthalmic goitre however the stimulant is abnormal and bears no relation to the physiological need Moreover some of the other endocrine glands are whipped up in a similar way and also increase in size We can have Graves disease without any enlargement of the neck and there is reason to believe that in the early stage of the complaint if the supply of iodine is plentiful or if it is administered medically the gland will remain normal in size I do know that in recent cases the goitre does disappear sometimes be made to drop out of the picture by large iodine Of course the real disease remains The explanation appears to be that in these acute cases of Graves disease the abundance of iodine enables the gland to respond to the abnormal stimulation without losing its enlargement While in Graves disease iodine may stop the appearance of one of its many manifestations I know of no evidence that would justify its description as a preventive —I am etc,

Clifton Bristol Sept 22nd J A GOODCHILD

ALOPECIA AREATA AND STAPHISMUS FAMILIAL GROUPS

SIR —Professor Tomkinson has made a most valuable contribution to a problem in which many are interested in his paper on the above subject in your issue of September 20th 1924 continuing the special investigations recorded in the JOURNAL of September 16th 1922 It is becoming increasingly clear that the correlation of a series of defects or peculiarities which have been noticed by various workers acting independently, is more than accidental, and that these

may look for some common causative element which may explain the association

This second paper with its careful description of two new groups of cases is of special significance because it takes account of what I have called the "Inman hypothesis" There is, however, little evidence of left-handedness and stammering Perhaps Professor Tomkinson has not realized that to obtain the association between these factors to which Inman has drawn our attention the family history needs to be more closely investigated In my paper which he quotes on "Squint and the child mind" (*The Child*, January, 1924) he will see in the tables that left-handedness is much more common in grandparents, uncles and aunts, than in nearer relatives, and that it is not common in the squinters themselves The object of that paper was to point out that squint in particular was usually associated with some temperamental trait which it was important to recognize, and thus that a valuable clue may be obtained as to the existence of mind disturbances which it is important to correct

Those who are interested should read Inman's article (*Lancet*, August 2nd, 1924), entitled "An enquiry into the origin of squint, left-handedness, and stammer" They will find there a number of instances of the relation of these conditions to emotional causes When, however, this term is used it should be realized that any kind of mental trauma, such as that described in the case of Dr X in Professor Tomkinson's article, may be sufficient to produce a squint Inman refers to the element of fear and deals with this in connexion with whooping-cough, I would couple with this measles, which more than any other disease is connected by mothers with the origin of squint

"Hereditary squint" is a term which may have more than one meaning but in my view it is the temperament which is transmitted which indirectly may predispose to squint or other allied conditions The association of alopecia areata with squint, left-handedness, and stammering, if, as we believe, it is linked with all three, is not so easy to explain as the interrelation of the other conditions, which may all be regarded as habit reactions

A hint may perhaps be obtained from the first group of Professor Tomkinson in which the mother of the family had suffered from 'anaesthesia" An anesthetic patches are a common symptom in certain conditions usually called hysteria, and it may be that the bald patches are due to corresponding interference with the trophic nerve elements of the skin

It is greatly to be hoped that other observers will follow out the line of inquiry suggested by Professor Tomkinson's paper —I am, etc

London E C 2 Sept 26th CHARLES F HARFORD

TREATMENT OF PUERPERAL SEPSIS

SIR,—I have read with great interest the correspondence on the above subject, and would like to state the methods I adopt when dealing with this alarming complication

In the first place, I strongly condemn the use of either a sharp or a blunt curette If it is certain that the uterine cavity is the focus of infection, I have the patient anæsthetized and placed in the lithotomy position I then thoroughly examine, so as to exclude the presence of a pyosalpinx I then insert a speculum and thoroughly cleanse the vagina with plain water I then take an intrauterine swab, for examination and autogenous vaccines I then examine the uterine cavity without damaging the wall, and with the gloved finger alone, removing any purulent debris (such as pieces of membrane and blood clot) which may be present I then give a large intrauterine douche (lysol) I then seize the cervix with a vulsellum and thoroughly swab the whole of the interior of the uterus with pure tincture of iodine Lastly, I swab the vagina and perineum with iodine and give an intramuscular injection of pituitary extract The patient is then returned to bed and, as soon as possible, placed in as upright a position as is compatible with comfort

I have had excellent results with this method, and am placing it before your readers either as a help or for comment If the condition does not rapidly improve I give subcutaneous injections of streptococcal polyvalent serum—25 c.cm every twelve hours for three doses—and then, if necessary, the autogenous vaccines made from the swab —I am, etc,

Dunstable, Sept 20th D A BROUN

CELLULOSE ACETATE

SIR,—An article headed "Acute poisoning by fumes from cellulose acetate," by Dr Godfrey Carter, in your issue of September 13th (p 456), has no doubt given rise to considerable misconception in the minds of those readers who are not intimate with the properties of cellulose acetate

First, cellulose acetate is a solid substance resembling ground cocoa-nut in appearance, and under ordinary atmospheric conditions cannot possibly "fume"

Secondly, cellulose acetate is a definite chemical substance made by combining cellulose (cotton) and acetic acid, it is most certainly not a mixture of the various organic liquids mentioned It is not poisonous, and therefore cannot have caused the symptoms described

Thirdly, to put the matter in its true perspective it should be explained that cellulose acetate, like collodion or resin, can be dissolved by certain volatile liquids like acetone, and such a solution, if spread out and allowed to evaporate, will leave a transparent harmless film of cellulose acetate Sometimes, however, in order to cheapen the solutions, organic diluents such as methyl alcohol or benzine are added, also, to ensure clear films under all atmospheric conditions, it is customary to add small quantities of "heavy" solvent Originally tetrachlorethane was used for this purpose in aeroplane dopes (that is, solutions of cellulose acetate used for tautening and waterproofing aeroplane wings), but its use was prohibited by the Home Office in 1916, following the cases described by your correspondent Tetrachlorethane was replaced by benzyl alcohol, another "heavy" solvent for cellulose acetate, having incidentally local anæsthetic and antiseptic properties Since then aeroplane dopes have been quite safe

In the particular case under discussion it is therefore clear that cellulose acetate was not the poisonous ingredient of the solution Tetrachlorethane may possibly have been present The acetone found in the urine was probably absorbed as such by the system, but was not necessarily connected with the cyanosis If benzine or methyl alcohol or both were present as diluents they may have been contributory factors —I am, etc,

SIDNEY A WELCH, B Sc, A I C

Spondon near Derby, Sept 22nd

SIR,—Dr Godfrey Carter's article contains several inaccuracies He attributes to cellulose acetate noxious properties of which that body is entirely innocent Cellulose acetate is non-poisonous, very stable, odourless, and non-inflammable and indeed cannot emanate fumes

Mentioning some of the chemical substances with toxic properties used during the late war, Dr Carter states

> "Among them I would name trinitrotoluene and cellulose acetate The latter is extensively used as a varnish for aeroplane wings It is a mixture of benzine acetone, methylated alcohol, and tetrachlorethane forming a colourless liquid which gives off a heavy pear like odour"

This is an extraordinary statement, as cellulose acetate is in no sense a mixture of the substances mentioned It is not a liquid but a solid, bearing a strong resemblance to grated wood pulp It is a stable compound, obtained through the action of acetic anhydride and acetic acid on cellulose (cotton or wood-pulp), and its name indicates its composition it is a combination of cellulose with acetic acid

The writer of the article incriminates cellulose acetate, whereas it is the solvents employed to make an acetate of cellulose varnish which possess the toxic properties A mixture of benzine, acetone, methylated alcohol, and tetrachlorethane is not acetate of cellulose, although such a mixture might be used to dissolve the latter body —I am, etc,

London S W Sept 23rd M T CALLIMACHI, D Sc

SIR,—I read in your issue of September 13th an article on this subject which raises points of orthopædic interest. The technique of cellulose splinting, without preliminary plaster cast, which I advocated in the *Lancet* and brought to the notice of the British Medical Association Orthopædic Section at Bradford was based on work for over a year on more than fifty cases without any ill effect to any patient or myself or others who assisted at the work. May I also point out that the solutions 25 and 26 I use from the British Celanese Limited, do not contain tetrachlorethane as the writer supposes. Sir W. Willcox's paper in the *Lancet* (1915) and also Dr. Lees (*Lancet* 1916) were on poisoning purely due to tetrachlorethane, and jaundice was a constant symptom. The experimental work of Willcox on animals with cellulose acetate in solvents like acetone, benzene, methylated spirit and in tetrachlorethane respectively showed that the last solvent caused severe drowsiness. Being a heavy spirit tetrachlorethane accumulates close to the ground and may cause toxic effects in certain susceptible individuals. By an extractor and electric fan such accident can be avoided.

Cellulose acetate itself is a non-poisonous substance. It is cotton dissolved in acetic anhydride washed free from acid, shredded and ground. The solvents in the solution I advocate only contain acetone, alcohol and benzol. This has been verified from the maker this week. The word "dope" used during the war was essentially for tetrachlorethane preparations. The Celanese Company assure me they have had no reports of any bad effects from the use of solutions 25 and 26 which are also made use of for artificial limbs and in artificial silk weaving.

As to my personal experience I have made all the splints myself for children and adults of practically all the joints of the body, and for immobilizing bilateral phthisical chests without any toxic effect on the patients. Only two of the nurses who assisted me had attacks of slight headache. None of the others had any headache, as I work with an electric fan in a well ventilated room. To get over the odour of acetone we used to wear a face mask which was discontinued. It can be rendered less noticeable by dilution with camphor or other substitutes. Regarding the possibility of acetone being the agent of poisoning, the strength used is less than that in use for celluloid splints as made at Alton or Carshalton. Through the courtesy of Dr. Pugh I personally witnessed his technique and he also takes the usual precaution to aerate the room, etc. Occasional diarrhœa and indigestion in one or his nurses were the only ill effects.

I notice that in Sheffield vaseline was used which I did not advocate. I use oilsilk stitched tightly next to the skin inside the vest to prevent any absorption or fumes by the body, also the celastoid film before bandaging and painting with solution adequately protects the patient. The dexterity one soon acquires completes the cutting stage of the splint, especially in a child, in fifteen or twenty minutes. In fact, a few layers are quite enough to maintain the mould, which can be completed out of the body at leisure.

Those who have watched the celluloid process of splint-making cannot but admit the direct method is simpler and more economical. I therefore maintain that the Sheffield experience of temporary coma with acetonuria was one of exceptional susceptibility in a child probably weakened by tuberculous disease. Individual idiosyncrasy is a factor which must be prepared for in other lines of work. Dr. Martin of Leasowe reports occasional acidosis in the Surgical Tuberculosis Hospital.—I am, etc.

Leeds, Sept. 26th. Z. P. FERNANDEZ, M.D., D.P.H.

THE VALUE OF FRUIT AS A FOOD

SIR,—"S. J. T." (in your issue of September 20th, p. 542) asks for some practical advice as to the nature and amount of the constituents of a fruitarian dietary and to what extent the usual porridge, meat, milk pudding, etc., are to be replaced.

In the first place I would refer him to the investigations and observations of Dr. Jaffa, Professor of Nutrition in the University of California.[1] He showed that a vigorous university student, aged 22 and a prominent athlete, maintained his nitrogen balance in equilibrium upon a daily diet of either 5½ lb. grapes, 6 oz. walnuts and a little bread, or 4½ lb. apples, 8 oz. dried peas and 4 oz. almonds, or 3½ lb. apples, 9½ oz. dates, 6 oz. peanuts with a little milk, olive oil and tomato, or 5½ lb. pears, 7 oz. walnuts, a little bread and milk, or 16 oz. walnuts, 12½ oz. prunes and 18 oz. oranges. From this it is clearly evident that the ordinary meal that a man gives up to eat he must eat a great deal more to make up for the loss in calories.

The ordinary dietary of people in civilized communities is in excess of their requirements and one of the most valuable methods of preventing the excess of the protein intake is to put a patient upon a fruitarian diet. Professor Jaffa observed two of his fruitarian children, of 6 and 9, their thoroughness of digestion and absorption was equal to that of an ordinary adult, and assimilated in that they digested 80 per cent. of the nitrogen ingested.

My own observations upon several thousand patients who were ill and of people who were well have been that the immediate and sudden substitution of a fruitarian dietary has been generally beneficial and in high percentages of cases markedly so. The advice that I have found the simplest to give where patients had to feed at home was simply to continue their ordinary diet, but omitting all flesh food and adding a daily dish of salad with oil and vinegar and a plate of any fruits in season. Specifically I have found it generally helpful to add 1 lb. of raisins, ½ lb. of cheese, a couple of eggs and 1 lb. of nuts per week. The nuts should be ground in a mill and the raisins should be soaked in cold water for twenty-four hours.

The general effect of such a dietary is to increase the alkalinity of the blood, decrease the acidity of the urine, replace constipation by a normal functioning and slightly increase diuresis.—I am, etc.

London, W., Sept. 24th. JOHN OLDFIELD.

TREATMENT OF FROST-BITE

SIR,—In modern textbooks of surgery written or edited by British surgeons certain subjects for which the authors have little or no experience must be included if the book is to embrace this comprehensive subject. Naturally information with regard to these subjects must be gleaned from other textbooks if no authoritative article has appeared in recent literature. Consequently one new textbook follows another often repeating the same old story more or less paraphrased. Thus one sees the treatment of frost-bite almost similarly dealt with in the last edition of Choyce and Beattie's *System of Surgery* and in Cantlie's *First Aid to the Injured*. In both it is suggested that the frost-bitten part should be rubbed with snow, ignoring the fact that a frost-bitten nose or other extremity is anæsthetic and easily abraded or scratched by grit in the snow or even by a hard fibre in the glove. Again, snow in the neighbourhood of the assumed conveniently warmed room is almost certainly contaminated, also the act of picking up the snow will result in wetting the gloved hand, and in the presence of moisture the fingers will soon share in the frost-bite.

In the late British expedition to North Russia it was found necessary to issue orders to medical officers and combatants forbidding men adopting these measures. Alternative suggestions for treating early frost-bite were at the same time circulated. These suggestions were drawn up after I believe consulting Majors Marshall and Macklin both of whom had had experience as medical officers to antarctic expeditions. As regards the treatment of frost-bite Lieut.-Colonel D. C. L. Fitzwilliam, one of the authors of Choyce and Beattie's *Surgery*, read a paper in Archangel to the allied medical officers on the use of paraffin in the later stages.

It is time that British textbooks on surgery scrapped many dangerous and ridiculous suggestions and instead gave information as to prophylaxis and early and late treatment of a condition which if neglected frequently results in serious maiming.—I am, etc.

Somerset House, Sept. 26th. T. H. PICKERILL, F.R.C.S.Ed.

[1] Bulletin 142, U.S. Department of Agriculture.

MEDICAL OFFICERS AND CONSULTING FEES

SIR,—Dr Barford tells your readers that it has been his custom in the past to reply to remarks from those only who sign their names I cannot help feeling that Dr Barford's friends, if not Dr Barford himself, will regret that he departed from his custom on this occasion Such argument as can be extracted from his letter is, of course, all in favour of my contention I quite agree with him and with 'Whole Time," in your issue of September 20th, that lay committees have sometimes appointed inexperienced young graduates to these responsible posts This all needs putting right But will the recommendation of the Representative Body at Bradford help or hinder in the process?

With regard to fees, I can assure Dr Barford that I do perhaps a hundred free consultations for every one that involves a fee But I am not prepared to relinquish the right to take a fee, and a substantial one, when offered me by another medical man who calls me into consultation concerning a private case outside my official duties

In the matter of anonymity, I believe the Ethical Committee of the Association would agree with me in thinking that letters such as this and my former one are better unsigned Doubtless, Mr Editor, you will see to it that neither Dr Barford nor I abuse the hospitality of your columns Such action as I can take within my Division of the Association will not be taken anonymously —I am, etc,

September 27th TUBERCULOSIS OFFICER

GALL STONES AND CANCER

SIR,—One of your correspondents last week, being satisfied that certain "brilliant experiments" have indubitably demonstrated that cancer can be caused by simple mechanical irritation, thought it only remained to show *how* mechanical irritation can produce cancer, and then the tale would be told When the premisses of a proposition are wrong the conclusion is also wrong, therefore it cannot possibly be shown *how* irritation of any kind can produce cancer, despite the most "brilliant," and equally unnecessary, experiments That cancer *follows* mechanical irritation of all kinds no one has ever doubted Irritation has always been closely associated with the disease, although it has not been found to precede it in all cases

Cancer has never been *caused* by mechanical irritation, and cannot be, because it is a specific disease This is proved by the fact that it is self-infective and transmissible *from* one individual *to* another Its transmissibility is proved by countless successful laboratory experiments on the lower animals, and by observed cases in human beings, both directly from one to another, and indirectly by inanimate objects

At the same time irritation, from whatever cause, is a most potent predisposing factor, and that is its role It prepares the soil most admirably for the reception of the causal agent, just as irritation of the soil by ploughing, harrowing, etc, prepares land for the reception of seed, but if wheat, for example, is not sown, there will be no crop, however thorough the preparation has been So with cancer, unless the causal agent is present, there will be no disease, however great the irritation

Before any alleged cause of a disease can be accepted as the true one, it is imperative that it shall be present in every case, wherever occurring, without exception Since cancer is as truly a specific disease as leprosy or tuberculosis, it is obvious that the cause must also be a specific one and present in every case All specific diseases are caused by toxins generated by their respective specific micro-organisms, and therefore it is only reasonable to assume that cancer is caused by the toxin of a micro-organism Has any such been discovered? Many observers have asserted that they have discovered one—for example, Scheuilen, Doyen, Jackson Clarke, Ford Robertson, Young, and lately Glover of Toronto

Glover asserts that he has not only discovered a micro organism which he believes to be the cause of cancer, but he has cultivated it and found it to fulfil in its entirety, the law of Koch, and *this has never been done before* He has gone further, and has produced an antitoxin which he has found successful On July 9th last he addressed the Clinical Association of Philadelphia at which meeting were present 700 medical men from the United States and Canada He stated that he had been able to isolate from every type of carcinoma a specific micro organism which, when inoculated into healthy animals, produced the disease Afterwards he had been able to recover the organism from these animal and had been able to immunize healthy animals against the disease From the blood of a large percentage of cancerous patients he had obtained pure cultures He described the organism, which is a bacillus It forms spores like cocci, and is motile It produces a toxin which induces the remarkable proliferation of cells so characteristic of cancer This toxin he had injected into healthy horses, and from them he had prepared an antitoxin in the same way that diphtheria antitoxin is prepared He exhibited under the microscope the living organism in the various stages of its life cycle

At the same meeting Dr Warmuth of Philadelphia gave an address confirming Dr Glover's discovery and experiments, all fully completing Koch's cycle of events He had experimented with Dr Glover's antitoxin for more than eighteen months with very gratifying results He had succeeded in making blood tests found to be reliable in 100 per cent of cases, by which it will be possible to recognize the disease at its very beginning, even before any local manifestation The antitoxin was not claimed to be a "cancer cure" but a treatment for cancer which is remarkably successful He enumerated many cases of successful treatment, entering into details of exhibition of the serum, dosage, etc

I would suggest that your correspondent direct his attention to the really brilliant experiments of Dr Glover, which have had such successful results, and then he will not have occasion to consider impossibilities —I am, etc,

Driffield, E Yorks, Sept 27th A T BRAND, M D, C M

ALCOHOL AS A NARCOTIC POISON

SIR,—I feel that until it is realized that it is in the abuse of anything that poisonous results follow, the point will never be settled Many of our everyday foods and drinks may as truly be regarded as noxious when over indulged in Nothing more surely poisons than too much meat eating, over-smoking, and so on

Alcohol in its proper sphere is a useful and refreshing adjunct to our internal economy I admit that severe penalties must be meted out to fools and reckless people who endanger the public The worker likes his glass of beer or his pint, and is better and happier for this, others who can afford it benefit by whisky and soda—but the price!—I am, etc,

September 1st VOBISCUM

The Services.

CIVIL CONSULTANTS TO THE NAVY

THE following civil consultants to the Navy have been recently appointed by the Admiralty

Sir Humphry D Rolleston, Bt K C B, M D, F R C P, to be Consulting Physician to the Royal Navy

Arthur Edmunds, C B, M S, F R C S, to be Consulting Surgeon to the Royal Navy

C Hubert Bond, C B E, M D, D Sc, F R C P, to be Consultant in Mental and Neurological Diseases to the Royal Navy

VOLUNTARY AID DETACHMENTS

THE scheme for voluntary aid detachments, which has been approved by the Army Council, is designed to supplement the medical services of the naval, military and air forces in the event of war or other national emergency in any part of the world On the outbreak of war the personnel of the detachments, which are a technical reserve of the forces of the Crown, would be required for motor ambulance convoys, ambulance trains, general, naval, military, and air force hospitals, auxiliary hospitals, rest stations, hospital ships convalescent homes command depots, entraining, detraining, embarking and disembarking sick and wounded

Under the War Office, which is the supreme authority in the movement, a Central Joint Voluntary Aid Detachment Council has been formed, with administrative and executive powers within the limits of the scheme

The position with regard to Wales has been fully considered, and the council has appointed a Welsh committee with full powers to act on its behalf Major General Lord Treowen C B C M G, is chairman, and Sir Herbert D W Lewis, K B E, secretary Both are members of the central council

Nominations submitted by the Territorial Army Associations for appointment as county controllers as agreed to by the Order of St John and the British Red Cross Society, were confirmed, and provision was made for the appointment of assistant county controllers, one to be nominated by the order and one by the society

The county controller is the chief executive officer for voluntary aid detachments in the area He is appointed by the association in agreement with the order society and council

Voluntary aid detachments may consist of either men or women but not of both They are divided into two classes—mobile to go anywhere and immobile, to work in the neighbourhood of their own homes Every member of mens and womens detachments must pass an annual efficiency test and all members must attend the annual inspection

Obituary

SIDNEY MARTIN, MD, FRCP, FRS,

Senior Physician and Professor of Clinical Medicine University College Hospital

We had to record with regret last week the sudden death, on September 22nd, of Dr Sidney Martin, renowned for his pioneer work in experimental pathology

Sidney Harris Cox Martin was born in Jamaica on April 8th, 1860, and was educated at University College, London, and in Vienna He obtained the diploma of MRCS in 1882, and in 1883 graduated MB, BS Lond, winning the university scholarship in medicine and taking honours in surgery he proceeded MD in 1884 In 1885 he obtained the MRCP diploma, and in 1891 was elected FRCP His early appointments included those of pathologist, curator of the museum, and medical tutor at the Middlesex Hospital and pathologist and registrar to the City of London Hospital for Diseases of the Chest

In 1890 when Dr Martin was assistant physician at both University College Hospital and the Brompton Hospital for Consumption, a Royal Commission was appointed to investigate the effect of food derived from tuberculous animals on human health, and the circumstances and conditions with regard to the tuberculosis in the animals concerned Dr Martin was requested by the Commission to undertake an inquiry into the influence on lower animals of food of tuberculous origin A very careful and exhaustive plan of research was devised, including both inoculation and feeding experiments, and his lucid report takes up 96 pages of the appendix to the first report of the Commission published in 1895 Dr Martin's main conclusion that food from a tuberculous source endangered a healthy animal was held by the Commission as proved He also laid emphasis on the probability that health tissues in a tuberculous animal would often be contaminated by the butcher's instruments conveying infection from elsewhere during the processes of flaying and dressing In his feeding experiments tuberculosis did not result when the meat used was taken from cows with mild or moderate degrees of tuberculosis, and the deduction was drawn that it was conceivable that a considerable part of an infected animal might be used for food if the tuberculosis was localized and sufficient care and discrimination were exercised in the slaughter house it was held, however, that in cases of generalized tuberculosis all the meat should be condemned Taking into consideration Dr Martin's experiments and certain other researches, the Commission came to the conclusion that probably an appreciable part of human tuberculosis was traceable to food In the same year in which the report was published Dr Martin was elected a Fellow of the Royal Society

Dr Martin had a prolonged and intimate association with the Royal College of Physicians In 1892 he delivered the Goulstonian Lectures on the chemical pathology of diphtheria compared with that of anthrax infective endocarditis and tetanus (BRITISH MEDICAL JOURNAL vol i 1892) In these lectures he emphasized the importance of further investigation of the poisonous products of the infective organisms In 1893 he delivered the Croonian Lectures on the chemical products of pathogenic bacteria considered with special reference to enteric fever (BRITISH MEDICAL JOURNAL, vols i and ii, 1893) In 1915 he delivered the Lumleian Lectures on non ulcerative infections of the colon He was a member of the Joint Committee of the Royal Colleges of Physicians and Surgeons in charge of the research laboratories on the Thames Embankment from 1901 to 1905 He was an examiner in medicine for the Joint Board of the Royal Colleges from 1907 to 1910, a member of the Council of the Royal College of Physicians in 1910-11, censor in 1915-16 and representative of the College on the Senate of the University of London in 1919 He was one of the original representatives of the College on the Imperial Cancer Research Fund from its foundation in 1902 until his death and he became chairman on the retirement of Sir William Church last year He was a member of the Advisory Committee of the Royal Colleges, known as the Committee of Reference, appointed in March, 1916 with reference to numbers of the staff of hospitals in the metropolitan district required for service in the army and was chairman of the Hospitals Appeal Subcommittee

Other addresses delivered by him included the Lettsomian Lectures in 1899, on functional derangements of the small intestines (BRITISH MEDICAL JOURNAL, vol i, 1899) and in the same year he delivered the Hunterian Lectures on certain intestinal parasites of the intestine, reported in our columns (vol ii 1899)

Dr Martin was formerly assistant secretary of the British Medical Association and one of his earliest papers included in a paper on the pathology of the blood read before the Section of Pathology of the British Medical Association in 1890 and published in our columns (vol i 1891) He was secretary of the Section of Pharmacology and Therapeutics of the Annual Meeting of the Association in 1883 when it met in Glasgow and vice-president of the same Section at the Annual Meeting in Nottingham in 1892 In 1895 he produced a *Text-book on Functional and Organic Diseases of the Stomach*, and then, turning his attention to the antitoxin treatment of diphtheria, published two papers in our columns (vol i, 1896, and vol ii 1898) In 1903 he published a *Text-book of General Pathology*, which was not only useful popular as a compendium for students, but also for its brief and complete summaries of various subjects He contributed accounts of tuberculosis and poisoning by food to Allbutt's *System of Medicine* and other articles by him are published in Quain's *Dictionary of Medicine* and Gibson's *Text-book of Medicine*

A Tribute by a Colleague

Men in great place are thrice servants: servants of the sovereign or state, servants of fame and fortune, and servants of business

By the sudden and unexpected death of Dr Sidney Martin British medicine has suffered an irreparable blow and University College Hospital has lost an ideal physician He certainly was a man in great place and he served but did not publish the fact on the housetops To have served on two Royal Commissions on Tuberculosis and to have held office on the Imperial Cancer Research Fund alone prove that he was a servant of the sovereign or state, to have published most important papers on scientific medicine, to have delivered Goulstonian, Croonian, Lettsomian and other public lectures, and to have held the professorship of pathology in University College and the lectureship in medicine at University College Hospital Medical School, prove that he has been a servant of fame, and to one who has had the privilege of working with him for years on the staff of a hospital which has gone through unique vicissitudes he will always remain the incomparable servant of business

It seems unbelievable that this quiet, companionable man, who could play such excellent golf, should also be able to discharge so successfully the difficult tasks of scientific investigator, of practical teacher of medicine of superb chairman of scientific or business committees, and of successful consulting physician During the war he discharged the exacting duties of his own and others at University College Hospital, and worked assiduously in the difficult work at the Third London General Hospital, and at the same time and without remission served upon important and exacting committees of the Royal College of Physicians

Then came the period of reorganization at University College Hospital which followed after the war When others felt resentment at much of the change which was said to be imperative Sidney Martin faced the new position, and by his common sense and adaptability made rough ways smooth, even to returning to take his share as a full physician of many years' standing in the work of out-patient physician, indeed he took a leading part in the curious but most salutary change by which all physicians to the hospital should have charge of in- and out-patients

Medical students are notoriously good judges of the members of the staff of their hospitals, Sidney Martin got through the ordeal from first to last as the 'great little man," the sound physician who had no axe to grind, and impressed the patients, nurses, and students with 'quiet confidence" in his skill and good judgement None would

claim that he was brilliant as a lecturer or teacher, but all sought his assistance in difficulty, knowing that beyond his opinion there was no other

University College Hospital has been fortunate in the past in its possession of devoted sons who have worked for the good of the place, and has never been more faithfully served than by Sidney Martin no one has given more of his best, and, must it be confessed, no servant of the sovereign or state, of fame, and of business had received less public recognition, his high character and superb abilities in an even harness from the beginning right up to the end The one stimulus he seemed to ask for was the work in front of him, however arduous, and not the reward so many who worked with him hoped would follow upon his labours for the institution, whose high principles he had so close at heart Reward—and it is extremely doubtful whether he needed any other than the right to enjoy the good things already allotted to him—was not his object It was sufficient to him to have commanded the respect and esteem of his peers in science and generations of "University" men This was fully shown by the large and representative attendance at the memorial service, held last Friday at the Church of St Marylebone for this "man in great place," whose character owed so much to a rich blend of honesty and kindliness

DANIEL BIDDLE, M R C S, L S A,

Kingston on Thames

MR DANIEL BIDDLE of Kingston-on-Thames, who died on September 14th at the age of 84, was a man of very varied attainments He was a son of Lieut.-Colonel Biddle of the Madras Artillery, was born in Gloucestershire, and educated at Taunton He studied medicine at the Somerset County Hospital and at St Thomas's Hospital, London, where he was house-surgeon in 1862 He then became a general practitioner at Kingston-on-Thames, and carried on a large practice for over fifty years He was also well known as a mathematician, and for some years was mathematical editor of the *Educational Times* His interest in statistics led to his being asked to assist in the preparation of the report by the Statistical Committee of the General Medical Council in 1885, and the statement in that report, that the Registrar had "availed himself of the valuable co-operation of an able and accomplished statist," refers, no doubt, to Mr Biddle Further reports were issued in 1886, and the extraordinary fullness of these and of the tables which were published with them in the minutes of the General Medical Council show how enormous must have been the work of compiling the statistics

Mr Biddle took an active part in opposing the dual system of notification embodied in the Infectious Diseases Notification Act of 1889, he helped to form the Thames Valley Medical Association, and was interested in the work of the British Medical Association In addition to his medical activities, Mr Biddle found time for interest in chronautics, and invented a balloon, he wrote pamphlets on geneological and theological subjects, he was a strong advocate for legalizing marriage with a deceased wife's sister, he wrote many articles on the question of harnessing the tides, he published a system of shorthand

Mr Biddle has been described as a doughty fighter in any cause that he took up Withal he retained the affection and esteem of his many patients, while the variety of his interests and activities must have given him a broad outlook on life and have increased his power in the practice of medicine

DR PATRICK JAMES QUINLAN, who died on September 6th, received his medical education in Dublin, where he obtained the diplomas of L R C P I, L R C S I, and L M in 1891 Dr J Mills, the resident medical superintendent of the Billinasloe District Asylum, writes It is with the deepest regret that his colleagues in the county of Galway heard of the death of Dr P J Quinlan, which occurred with tragic suddenness on the evening of September 6th He had been engaged in the heavy duties of a large practice and was walking home, when he suddenly collapsed, and died soon after He had been for some time in charge of the Kiltormer dispensary district, and had held the post of assistant medical officer of the Ballinasloe District Asylum, after which he was elected, some thirty years ago, to the Athenry dispensary district, where his kindly nature and genial manner rapidly secured for him an unassailable position and hosts of friends Always zealous and conscientious in the discharge of his duties, he won the approbation of the higher officials of the Local Government Board, and he associated himself in his spare time with the social life of the district He was a prominent and popular member of the famous Galway Blazers Hunt, and in his time trained many good horses In other forms of sport, such as shooting, tennis, and croquet, he was also well able to hold his own He was a member of a well known Tipperary family, and his house was a centre of hospitality Great sympathy is felt with his widow, who is the daughter of the late Dr Morris of Kilkenny, and his three young children His high ethical sense endeared him to his colleagues, who often profited by his wide professional knowledge, and now miss and mourn a high-minded gentleman and a loyal friend

DR FREDERICK ARNOTT STORR died on September 13th at his residence, Knowle Cottage, Mirfield, at the age of 59 He graduated B A Oxford in 1889, and after studying medicine at Leeds obtained the L S A diploma in 1894, and the D P H in 1896 Having held the post of assistant house-surgeon at Halifax Infirmary he practised for some years in Brighouse, and removed later to Mirfield In 1910 he was appointed medical officer of the Halifax Rural District Council and retained this appointment to the date of his death He was medical superintendent of the Elland and District Small-pox Hospital and honorary surgeon to the Mirfield Memorial Hospital, and during the war was commandant of the Military Auxiliary Hospital He was a member of the British Medical Association and a Fellow of the Society of Medical Officers of Health Severe illness in 1921, and again in the autumn of last year, necessitated amputation of the right thigh, and this misfortune led to an appeal being made on his behalf to members of the British Medical Association, which was published in our columns of September 15th, 1923 (p 488) The response to the appeal, combined with a generous grant by the West Riding Medical Charitable Society, rendered his last year of life very much more comfortable and less anxious than could otherwise have been the case

PROFESSOR BERTRAM WELTON SIPPY of Chicago, well known for his method of treatment of gastric and duodenal ulcer, died on August 15th of heart disease complicating diabetes, at the age of 58

DR ANDRÉ BERCÉ, a well known Paris cardiologist, has recently died, at the age of 61

THE LATE MR W B PATERSON

MR W A MAGGS whose tribute to the late Mr W B Paterson appeared in our issue of September 20th (p 546), desires to make a correction of detail The school at which Mr W B Paterson and Sir Frederick Treves, and Sir Frederick Hewitt were all the educated was Merchant Taylors, not the City of London School

Universities and Colleges.

UNIVERSITY OF LONDON

KING'S COLLEGE

A SPECIAL course of eight lectures on the histology of the nervous system will be given during the Michaelmas term (October—November, 1924) in the physiology lecture theatre of King's College (Strand, W C) by Dr C Da Fano, Reader in Histology in the University The lectures will be accompanied by demonstrations of specimens and will be held on Wednesdays at 4 30 p m, beginning October 8th The microscopical specimens will be exhibited one hour before the beginning of each lecture The course is free to all students of London colleges and to medical men and others on presentation of their visiting cards It has been recognized by the University of London as one of the special courses for the B Sc honours degree

UNIVERSITY COLLEGE

The following elections have been made in the Faculty of Medical Sciences at University College, London Bucknill Scholarship, value 160 guineas, D F Ogborn, exhibitions of 55 guineas each W A Wilson and H Temkin, Epsom Medical Scholarship R W Haines, additional scholarship, P A Cooper

Medical News

We regret to have to record the death of Mr W H A Jacobson consulting surgeon to Guy's Hospital well known to many generations of surgeons for his *Operations of Surgery* and also as the editor of the later editions of Hilton's *Rest and Pain* Mr Jacobson's death occurred on September 14th at his house in Kent, to which he had retired some years ago

Early this year we made a brief reference to the journal of the Kenya Medical Service, a modest periodical at that time issued to its subscribers in typewritten form Since April it has appeared monthly as a printed publication under the title of the *Kenya Medical Journal*, circulating throughout Kenya Colony, Uganda Tanganyika and Zanzibar Its function is the distribution of medical news of local or general interest and the discussion of problems appertaining to medical science The editorial conduct of this enterprising journal continues in the hands of Dr C J Wilson the publishers are the East African Standard, Ltd Nairobi The yearly subscription is twenty one shillings fifty cents posted, in Kenya, or twenty five shillings, posted outside East Africa

THE annual general meeting of the Society of Medical Officers of Health will be held at 1, Upper Montague Street, Russell Square, W C 1 on Friday October 17th at 4 30 p m when the new president, Dr J A Lyster will give his address on Idealism in public health The annual dinner of the society will be held at the Hotel Cecil Strand on the same evening at 7 30 The Minister of Health hopes to attend, and others who have accepted include Sir Humphry Rolleston P R C P, Sir George Newman Sir Arthur Robinson and Dr Haden Guest, M P A musical programme will follow the dinner Ladies are invited, and members are asked to give early notice to the Executive Secretary 1, Upper Montague Street, of their intention to be present with the names of their guests A payment of 12s 6d for each ticket should be included with applications sent before October 11th, after that date tickets will cost 15s

A SERIES of post graduate lectures on cancer will be delivered in the West Lecture Hall of the Royal Society of Medicine at 5 30 p m, commencing on October 6th when a lecture on the general pathology of cancer will be given by Dr Archibald Leitch, and on October 8th Sir Thomas Horder will lecture on cancer from a medical point of view These lectures are open to all members of the profession without fee The second week of the course in psychological medicine at the Bethlem Royal Hospital begins on October 7th lecture demonstrations will be given on Tuesdays and Saturdays, at 11 a m, by Dr Porter Phillips and Dr Thomas Beaton On the same day the first of eight clinical demonstrations on tropical medicine will be given at the London School of Hygiene and Tropical Medicine by Dr G C Low and Dr Manson Bahr at 2 p m the second demonstration will be given on Thursday at the same time On October 8th the first of four lecture demonstrations on electro therapy will be given at the Royal Free Hospital by Dr C L Heald at 5 30 p m Full particulars and syllabuses of all the courses may be obtained from the Secretary of the Fellowship of Medicine 1, Wimpole Street, W 1

DR JOHN JOHNSTON of Bispham, Blackpool has presented to the Bolton Reference Library his fine collection of the works of Walt Whitman whose friend he was Dr Johnston is the joint author of *Visits to Walt Whitman*, and his collection includes first editions of all Walt Whitman's works (many of them containing the poet's autograph) also all the important biographies and critical articles about him and his poetry Students and others will have access to the collection

SIR HILARIO MARCUS FERNANDO, M D, has been appointed a member of the Executive Council of the Island of Ceylon

In our issue of September 13th (p 482) Mr Wheatley, the Minister of Health was referred to as a former convener of the Public Health Committee of Glasgow We are now told that this is not strictly correct and that Mr Wheatley was convener of the Tuberculosis Committee the convener of the Public Health Committee having been Mr James Stewart, who is now Parliamentary Under Secretary of Health for Scotland

A RESEARCH into the harbouring of plague by wild rodents and the specific prophylaxis and therapy of the disease in man is being undertaken by the South African Institute for Medical Research Johannesburg The work is to be carried out largely in a mobile laboratory on the veld The present staff of the institute is to be augmented by a bacteriologist and an entomologist The conditions of the appointments are briefly stated in our advertisement columns, but full information, including particulars as to the salaries, can be obtained from the Director of the Lister Institute Chelsea Gardens, S W

At a meeting of the London Executive of the Labour party held on September 20th Dr Ethel George Bushill was adopted as medical officer of health for Finsbury, was adopted as the Labour candidate in the forthcoming parliamentary by election caused by the death of Sir Sydney Russell Wells The other candidates contesting the seat are Sir John Foster Fraser Conservative nominated by the Unionist Association Professor F Pollard nominated by the Liberal Association and Dr L Graham Little by the Graduates Association as a non political candidate At the general election in 1923 the total poll was 6,000 being divided Sir Sydney Russell Wells (Conservative) 2,767 Professor F Pollard (Liberal) 2,233, Mr H G Wells (Labour Socialist) 1,400 Polling takes place from Monday, October 13th till Friday, October 17th The writ has just been issued sent by the Vice Chancellor to all graduates on the parliamentary register The four candidates were duly nominated on October 1st

To commemorate the diamond jubilee of the Guild of St Luke a celebration of the Holy Eucharist has been arranged for St Luke's Day, October 18th at 11 a m in All Saints Church Margaret Street London W the sermon will be preached by Bishop Gore The annual service of the Guild will be held on the day October 21st in St Paul's Cathedral, at 7 p m the preacher will be the Bishop of Truro Tickets for this service may be obtained from the Hon Fairfield Whittaker, M D Chaplain's House Lane End Downs, Surbiton, Surrey, or Dr Dorothea Rooke 69 Park Road Baker Street, S W 1 The annual corporate Communion will be celebrated at St Andrew's Church Wells Street W 1 at 7 45 a m on Wednesday October 22nd and on the same day the annual general Chapter will be held at 25 Harrington Gardens S W, near Gloucester Road Station, at 5 p m, tea and coffee being served at 4 30

THE second session of the *Liverpool Psychological Society* will commence on October 7th, when the President, Dr Betts Taplin will deliver his inaugural address, on 'The Power of Suggestion,' at the University, at 8 p m The society's first session has been very successful, and an interesting programme of scientific research has been arranged for the coming winter Further particulars may be obtained from the Secretary, the University, Liverpool

A SPANISH Congress of Medical Science will be held at Seville from October 15th to 20th, under the presidency of Professor Teissons of Madrid

PARTICULARS for a revised edition of the *Fryer College Register* are now being collected Those who have received forms are asked to fill them in and return them to the sub-editors at once Any old Epsomian who has not received a form should send his address to Mr H F Lee 7 The Avenue, Feltham without delay

The annual meeting of the State Children's Association will take place on the invitation of Major Astor M P, and Lady Violet Astor at the Carlton House Terrace, on Friday, October 10th The chair will be taken by Lord Sandhurst at 3 p m Various matters relating to children supported by the state will be discussed

LORD CAVAN LEMOS writes to commend the Lord Roberts Memorial Fund for Workshops for Disabled Soldiers and Sailors This Fund which is an offshoot of the Soldiers and Sailors Help Society, has existed for many years and is devoted to helping all soldiers and sailors and not only those incapacitated in the last war Workshops were started after the South African war and were considerably enlarged as a memorial to Lord Roberts to accommodate cripples of the more recent war in them craftsmanship is taught and a market found for the work of disabled men since an injured man cannot compete with the uninjured being unable to work sufficiently long the memorial fund not only trains him and gives him work but also makes up the difference in money between the man's endeavour and his output Cheques may be sent to Lord Cheylesmore at the offices of the Fund 122 Brompton Road S W 3 they should be drawn in favour of the honorary treasurer of Lord Roberts Workshops Fund and crossed Lloyds Bank Ltd.

THE one hundred and fifty ninth annual session of the Pennsylvania University Medical School the oldest medical school in the United States opened on September 26th The school was founded by Dr John Morgan who held the first medical posts of his creation in the colonies and it still graduates have been registered

THE annual Belgian Congress of Professional Medicine was held at Ostend on September 6th and 7th on the occasion of the sixth anniversary of the Belgian Medical Federation Papers were read by Dr Wiedenhofer of Strasbourg on the evolution of the medical profession in Belgium, by Dr Lecorte and Penninckx on railway medicine and by Dr Koetritz on medical practitioners and club practice

Letters, Notes, and Answers.

ORIGINAL ARTICLES and LETTERS *forwarded for publication are understood to be offered to the* BRITISH MEDICAL JOURNAL *alone unless the contrary be stated* Authors desiring reprints of their articles published in the BRITISH MEDICAL JOURNAL are requested to communicate with the Financial Secretary and Business Manager, 129, Strand, W C 2, on receipt of proofs

ALL communications with reference to advertisements as well as orders for copies of the JOURNAL should be addressed to the Financial Secretary and Business Manager, 429, Strand, London, W C 2 Attention to this request will avoid delay Communications with reference to editorial business should be addressed to the Editor, BRITISH MEDICAL JOURNAL, 429, Strand, W C 2

CORRESPONDENTS who wish notice to be taken of their communications should authenticate them with their names—not necessarily for publication

Communications intended for the current issue should be posted so as to arrive by the first post on Monday or at latest be received not later than Tuesday morning

THE telephone number of the BRITISH MEDICAL ASSOCIATION and BRITISH MEDICAL JOURNAL is Gerrard 2630 (Internal Exchange) The telegraphic addresses are

EDITOR of the BRITISH MEDICAL JOURNAL, *Aitiology Westrand, London*

FINANCIAL SECRETARY AND BUSINESS MANAGER (Advertisements etc), *Articulate Westrand London*

MEDICAL SECRETARY, *Mediocria Westrand, London*

The address of the Irish Office of the British Medical Association is 16 South Frederick Street Dublin (telegrams *Bacillus, Dublin* telephone 4737, Dublin) and of the Scottish Office 6 Rutland Square, Edinburgh (telegrams *Associate, Edinburgh* telephone 4361, Central)

QUERIES AND ANSWERS.

INCOME TAX

Partnership Capital

"S L" entered into partnership with two other medical practitioners, paying a premium of £460, he has now withdrawn from the firm retaining the branch which he started, and received £144 in twelve monthly instalments in settlement from his former partners He asks whether these instalments are taxable

*** It appears to us that the £144 is a capital receipt, as the £460 was a capital payment, and as such is not liable to income tax

Fees for Part time Work

"W L C" inquires whether fees received for part time work for the Ministry of Pensions can properly be averaged in with general practice earnings for Schedule D assessment The local inspector of taxes claims to assess the fees separately under Schedule D

*** The question of separate assessment of fees chargeable under Schedule D (for example hospital retainer fees) was a frequent source of trouble in pre war years, but it was understood that the Board of Inland Revenue had definitely accepted the suggestion that they might reasonably be included in the Schedule D assessment The fees referred to by "W L C" are relatively a good deal larger in amount, but, on the other hand, are more closely allied to general practice earnings, inasmuch as they are paid on what is approximately a *quantum meruit* and not on a salary basis, and we know of no reason why the ordinary procedure should not be followed in assessing them The matter, unfortunately, is one of administration rather than of law and we suggest that "W L C" might give formal notice of appeal to the inspector against the assessment but should, before taking subsequent steps to test the technical merits of the assessment place the whole of the facts before the Board of Inland Revenue—addressing his letter to the Secretary, Somerset House, W C 2—and await its decision

Anticipatory Deduction

"J E H S" states that on a recent claim to repayment in respect of the year 1923-24 the inspector of taxes proposes to make a deduction for tax which will be payable by him for 1924-25 under Schedule A

*** The proposition should be resisted It is, no doubt convenient to set off from an amount repayable to a taxpayer any sums then due from him, but it is quite unreasonable and not justifiable in law, to set off tax which has not become legally due to the Revenue

LETTERS, NOTES ETC

A MEMORIAL WINDOW

DR J FLETCHER HORNE (The Poplars, Barnsley) writes To complete a sketch of a painted window to the memory of a physician I am desirous of finding a suitable subject for the central light of a three light window The figure should be standing and looking to the right in order to be in agreement with an adjoining window St Luke has been proposed as most suitable, but I have been unable to find a satisfactory print Possibly some reader of the JOURNAL may be kind enough to refer me to a fitting subject for the purpose

THREADWORMS

DR RACHEL GETHEN (Stanford le Hope, Essex) writes in reply to "J E W" (August 30th, p 391) In January, 1923, an adult aged 44 years, was treated by me for recurrent attacks of thread worms She had suffered in this way for ten or fifteen years, and everything known had been tried Remembering the good effect of thymol in ankylostoma duodenale, I prescribed two successive nightly doses of 30 gr each in an alcoholic solution, observing the usual dietetic restrictions and purgatives, hoping the anthelmintic effect would be as good in the appendix as in the duodenum The result was everything to be desired at the time No further treatment was requisite and I heard from her to day 'There has been no recurrence whatever since, thanks to your treatment"

TREATMENT OF ALOPECIA

DR CLYDE MCKENZIE (Smethwick) writes, in reply to "Medico's" request (September 27th, p 603) for suggestions in treating a severe case of alopecia areata I have obtained successful results with ultra violet light, using quartz applicators and an atmospheric quartz mercury vapour lamp as supplied by Kelvin, Bottomley and Baird A few applications, beginning with three minute radiations, are usually successful

"A H M D" writes In answer to "Medico," I have had great success by giving parathyroid tablets 1/20 grain daily Further, a personal experience is this I have been taking arsenic since February for pernicious anaemia, my long standing bald pate has now a fair growth of hair

HERPES AND VARICELLA

DR R LESLIE DAGGER (Morpeth) writes I was interested in Dr Frederick MacSorley's note (September 27th, p 604) pointing out the relationship between herpes zoster and varicella, and would like to mention two recent cases which came under my care and which presented the converse of the case he quoted Two adults of different families, each having a child contracted herpes zoster At the time I was treating them I warned each party that, in all probability, their child would develop chicken pox in about a fortnight In each case much to the amazement and wonder of their respective parents the child did so Are we justified, nevertheless, in all cases of herpes and varicella to prognosticate the development of varicella, on the one hand, and of herpes on the other, in some of the more immediate "contacts" with these cases?

THE CONTINENTAL HORSE TRAFFIC

THE majority of the horses exported from this country to the Continent are intended for almost immediate slaughter for food, a paper by Mr R G Linton, of the department of hygiene of the Edinburgh Veterinary College, gives some particulars of general interest about the trade Prior to 1914 regulations were very slack From then until 1921 the Ministry of Agriculture demanded a certificate that the animals were fit for work In the spring of 1921, however, the whole regulations were revised, a high standard of fitness was demanded, and these conditions were stringently observed There is now no traffic in decrepit or worn out horses The standard demanded for those animals shipped abroad is higher than that required for the horses still at work on the streets of this country Since 1921 horses unfit for work have been slaughtered in this country, and the trade in horse carcasses has steadily increased Most of them go to Belgium, France, and Holland, and while the numbers of horses and carcasses respectively exported to these countries in 1920 were 58,000 and 15,900, these figures are now almost reversed All carcasses are inspected by a veterinary inspector either before shipping or after arrival—in some cases on both occasions, depending on the regulations of the importing country The horse carcass trade is now as much under control as the dealing with any other form of animal food, and a very high standard of cleanliness is, as a rule, observed Mr Linton, after stating that some very fine animals are sent over for slaughter, observes—"rather a pity when one considers that many miserable animals that have long since earned their rest are allowed to work on our streets by those societies that seem to have taken over the responsibility of the administration of the Protection of Animals Acts" The details given show that there is now no grounds for complaint of cruelty or mismanagement Mr Linton maintains that any alteration of the present system by which only horses certified by the veterinary inspector as "fit to work" are exported would be inadvisable

VACANCIES

NOTIFICATIONS of offices vacant in universities, medical colleges, and of vacant resident and other appointments at hospitals, will be found at pages 38, 39, 42, and 43 of our advertisement columns, and advertisements as to partnerships, assistantships, and locumtenencies at pages 40 and 41

A short summary of vacant posts notified in the advertisement columns appears in the *Supplement* at page 132

EPITOME OF CURRENT MEDICAL LITERATURE.

Medicine.

242. Quinine in Lobar Pneumonia

L NICOLAYSEN (*Tidsskrift f den Norske Lægeforening* June 15th 1924, p 549) has given intramuscular injections of quinine since July, 1919, to the patients suffering from pneumonia in his hospital, which is Department VIII of the Communal Hospital in Christiania At two other medical departments (VII and IX) which are conducted by other doctors, injections of quinine are not given for pneumonia These two departments, therefore, served as controls, and the comparison was the more fair as all three departments admitted the same class of patient under the same conditions, with the exception of the quinine treatment The period studied was from January 1st, 1920 to April 1st, 1923 In this period Departments VII and IX treated 254 cases of pneumonia, 58 of which terminated fatally the mortality being 22 8 per cent In the same period Department VIII treated 93 cases 13 of which terminated fatally the mortality being 13 per cent To make the comparison more fair the author withdrew from the statistics of both groups all those patients who died within twenty four hours of admission to hospital and who could not, therefore, have had reasonable time in which to benefit from any treatment The corrected figures thus obtained showed a mortality rate of 17 3 per cent for Departments VII and IX, and only 9 4 per cent for Department VIII When the patients were classified according as their ages were below or above 50 it was found that the older patients did not seem to benefit greatly from the quinine the mortality in the quinine class being 25 per cent and in the non quinine class 28 per cent But below the age of 50 the mortality was only 4 2 per cent for the quinine class, as compared with 13 9 for the non quinine controls The composition of the solution injected was according to Aufrecht's prescription Quin sulph 0 50 gram, urethane 0 25 gram, aq dest 5 c cm This solution can be sterilized by boiling and if a little of the quinine in this concentrated solution becomes precipitated it is only necessary to warm the solution slightly before injecting it, and the precipitate will again be dissolved The author gives the injection into the muscles of the buttocks or thighs, and only occasionally has he seen persistent infiltration or slight necrosis ensue The first injection is given immediately after admission to hospital, the second is given on the following day the injections being repeated on alternate days, but not more than a total of four being given, as a rule in each case The author supplements this treatment with camphor which he gives by the mouth or by subcutaneous injection

243. Ambulant Treatment of Gastric and Duodenal Ulcer

I BOAS (*Deut med Woch*, June 13th 1924 p 783) has been driven by economic stress to give his patients ambulant treatment instead of strict rest in bed for gastric or duodenal ulcer While ambulant treatment should not be attempted for acute ulceration associated with severe haemorrhage, practically as good results were obtained in less acute stages of gastric and duodenal ulcer by ambulant treatment as by complete immobilization in bed for several weeks But if ambulant treatment is to be successful the patient must follow a strict dietary For the first week he should live only on slops, including milk, cream, and soups, more attention being paid to resting the stomach than to giving the normal number of calories After the first week, if all goes well the slops may be supplemented by soaked rusks and white bread in the third week by mashed potatoes and stewed fruit or gruel made with flour and in the fourth week by pulped vegetables eggs, soft cheese, and bread and butter In most cases, before each meal, sodium bicarbonate magnesia, and extract of hyoscyamus is given The author insists that this ambulant treatment should be controlled by examinations of the stools once or twice a week for occult blood the persistent absence of which is a very reliable sign of healing of an ulcer

244 Glycerin Lymph and Lanoline Lymph

S CUNNINGHAM and J A CRUICKSHANK (*Indian Journ Med Research* 1924, p 1173) as the result of an investigation at the King Institute of Preventive Medicine Guindy, Madras, of over 1 280 000 vaccinations, of which 1 181 715 were performed with lanoline and 105,437 with untreated glycerin lymph came to the following conclusions (1) Untreated glycerin lymph is superior to lanoline lymph for vaccination purposes under tropical conditions similar to those found in the Madras Presidency (2) When the conditions as to vaccination and verification are carefully controlled untreated glycerin lymph has been found to give an average take success rate of 90 9 and 88 9 per cent (3) Under similar conditions the average take success rate and insertion success rate obtained with lanoline lymph have been found to be 70 1 and 79 1 per cent respectively (4) Vaccine vesicles produced with glycerin lymph are larger and in every way more typical than those produced with lanoline lymph (5) For the ten day period during which the keeping properties of the two types of vaccine were tested the glycerin lymph gave the better results

245 Typhus Parotitis

W M WERZBLOWSKI (*Deut med Woch*, 1924, I, p 276) states that apart from mumps typhus fever is the only infectious disease in which non suppurative parotitis occurs as is shown by the following figures During the period 1903–17 when he was in charge of the department of infectious diseases in a Government hospital in Russia, among 9 731 cases of various infectious diseases simple parotitis occurred only in typhus Among 1 620 cases of typhus there were 48 complicated by parotitis, which was simple in 20 and suppurative in 28 Diphtheria, measles, and scarlet fever showed no tendency to give rise to parotitis at all Among 333 cases of small pox there were 8 cases of parotitis which were all suppurative and occurred only in the severest forms of the disease, of which they represented a pyaemic metastasis Among 251 cases of typhoid there were 11 cases of parotitis, which all ended in suppuration owing to a mixed infection from the mouth In cholera, dysentery and relapsing fever parotitis was always a late complication and always ended in suppuration During the period 1917–22, when Werzblowsky was in charge of a military hospital, out of 2 000 cases of typhus 252 developed parotitis, which was simple in 93 and suppurative in 159 Typhus parotitis presents the following characters In most cases it is unilateral Of 113 cases of simple parotitis it was bilateral in 22, and of 187 cases of suppurative parotitis only 7 were bilateral In one instance the parotitis was simple on one side and suppurative on the other The earliest date for the appearance of simple parotitis in typhus was the sixth day and the latest two days after the temperature had become normal In most cases the complication appeared between the eighth and eleventh days of disease, and lasted a fortnight the shortest duration being eight days and the longest three or four weeks According to Werzblowsky, the occurrence of suppurative parotitis in typhus has not the evil significance which it has in other infectious diseases

246. Syphilis and Tuberculosis.

A NADEL (*Derm Woch*, July 12th, 1924, p 61) observes that the most difficult task in the treatment of syphilis is to devise effective treatment in resistant cases Irreparable functional injury or disfigurement may result from the failure of ordinary treatment Resistance may be due either (1) to the system becoming accustomed to arsenic or (2) to the spirochaetes becoming arsenic proof In other cases failure of treatment may be due to the presence of another infection One of the most important of these is tuberculosis Nadel describes a case of gummatous ulcerat on of the face in an old tuberculous subject A butcher's assistant aged 2–, whose parents had died of tuberculosis (nine of his fifteen sisters also were dead), contracted syphilis in 1919 He had had several courses of mercuric salicylate and neosalvarsan He developed extensive ulceration around the left inner canthus and a large ulcer over the left malar bone and was pale and emaciated The Wassermann reaction was strongly positive The ulcers were septic with undermined edges on which were telangiectases He was given bismuth intramuscularly and intravenous injections of neosalvarsan with fifty inunctions of mercury ointment and the ulcers were treated with boric lotion and hydrogen peroxide Three months later the ulcer on had extended greatly, and there was some necrosis of the nasal lacrymal and frontal bones A skiagram of the chest showed extensive tuberculous lesions A mixed vaccine (streptococci and staphylococci) was given, in addition to a course of salvarsan and mercury, with daily doses of potassium iodide but the patient became worse A large abscess appeared in the left parotid region, but the left temporo-maxillary joint escaped invasion The pus contained *B. proteus* and *Staphylococcus aureus* no tubercle bacilli or spirochaetes were found No improvement followed the evacuation of the abscess The ulcers were then swabbed

with an aqueous solution of neosalvarsan This produced rapid improvement, but was so painful that Lugol's iodine solution was substituted Iodoform glycerin was injected into the abscess cavity, which was also treated by quartz lamp irradiations A year later the ulcers had healed but some cicatricial ectropion of the lower lid remained The patient had transient albuminuria whenever mercury was administered, but nephritis did not supervene, his general condition is now satisfactory

Surgery.

247 Oesophageal Pouches

B ANGLESIO (*Archiv Ital di Chirurgia*, July, 1924, p 469) publishes six cases of oesophageal pouching, with radiograms, full details of the operations, and subsequent histories About 270 cases have been recorded to date, and most of them were in the upper part of the pharyngo oesophageal tract Males are more often affected than females, and symptoms are rare before the age of 40 Some cases may be congenital or due to inherent weakness of that part of the oesophagus, but in the great majority of cases the chief causative factor is intrinsic or extrinsic stenosis of the first part of the oesophagus This stenosis may be traumatic inflammatory, or due to the pressure of a new growth The pouch is usually single, but double pouches have been described, the size varies, the commonest site is the posterior wall of the oesophagus, and the pouch tends to grow to the left The symptoms are those of stricture, and differ from those due to a carcinoma by their long duration and mode of onset Soft food can often be taken when liquids are rejected Unless the pouch is very big there are generally no external signs, and in diagnosis one has to rely on sounding and radiography The author recommends, where possible, resection of the pouch at one sitting, in some cases of malnutrition a preliminary gastrostomy may be necessary Invagination of the pouch involves a tedious convalescence Of the six cases reported three were operated on with very successful results, one died of pneumonia before operation, another refused operation, and the last had a tumour pressing on the oesophagus, the diverticulum being found at the autopsy The author gives a bibliography of some seventy references to recent literature on the subject

248 Operation for Cancer of the Sigmoid

C H MAYO and W WALTERS (*Surg., Gynecol and Obstet.*, July, 1924, p 1) give a description of the two stage Mikulicz operation for removing cancer of the sigmoid and descending colon End to end or lateral anastomosis gives excellent results in selected cases where the patient is in good condition If a primary operation is performed a tube should be passed from the anus to extend ten or twelve inches above the anastomosis, this prevents hardened masses of faeces from exerting pressure on the suture line and obviates gas distension The operation consists in drawing the affected segment of bowel out of the abdomen after separating the mesentery and suturing the two limbs together, attaching it to the abdominal incision with the diseased part projecting beyond the skin After waiting for adhesions to form the obstruction may be relieved by a small opening in the distended loop, and in four to eight days the entire projecting area is cut away, leaving the two ends of the colon flush with the skin Two weeks later crushing forceps are applied to the apposed walls of the intestine and gradually tightened, this re establishes communication, and the fistula will either close itself or can be readily closed later by a secondary extraperitoneal operation Statistics show that of 152 cases with cancer of the sigmoid and recto sigmoid 52 are living and well after a number of years, whilst an additional 37 had from two to seven years of post operative life In several cases there were loops of bowel adherent to the growth and requiring simultaneous resection In some cases the uterus and ovaries had also to be removed on account of involvement Where the growth is low in the sigmoid the rectum can be loosened up to the levator ani and brought up to the skin The two stage operation gives a lower mortality than other methods and offers a better chance of complete cure

249 Xanthosarcoma

B J C DEN HARTOG (*Nederl Tijdschr v Geneesk.*, June 7th, 1924, p 2566), of the Pathological Laboratory of the University of Amsterdam who records two cases, states that xanthosarcoma, of which no example has previously been published in Holland, is characterized microscopically by (1) hyaline tissue rich in cells, (2) giant cells, (3) pigment, (4) xanthoma cells, (5) vessels On naked eye examination the hyaline connective tissue presents a shiny greyish white appearance, of firm consistence, and the xanthoma cells give the growth an opaque yellow or greyish yellow colour and soft or pseudo-fluctuating consistence, when there is much pigment present the colour of the tumour is brownish black In almost all cases there is a formation of nodules which may be so marked as to make the growth resemble a blackberry, mulberry, or bunch of grapes The following two characteristic features are in favour of xanthosarcoma being a tumour rather than an infective granuloma In the first place, it can be readily shelled out from the surrounding tissue Even after several years' duration its separation can be effected without difficulty In the case of a granuloma, on the other hand, there are always adhesions to the surrounding tissue Secondly, xanthosarcoma not infrequently shows a local malignancy—for instance, the skeleton, joint capsules, or tendon sheaths may be invaded The development of xanthosarcoma is often attributed to trauma, which Rosenthal noted in 18 3 per cent of 71 cases In 50 cases collected by Den Hartog trauma occurred in 9, in two of which it was due to the patient's occupation, 5 of the 50 cases had recurrences In 31 cases the tumour was situated on the arm and hand (in 16 on the right side, in 9 on the left, and in 6 the side was not stated), in 14 it was situated on the feet (in 7 on the right foot, in 4 on the left, and in 3 the side was not stated), and in 5 cases the site was not given When the limbs are affected metastases do not occur, so that this form of tumour is relatively benign The skin is very rarely attacked The first of Den Hartog's cases occurred in a man aged 31, in whom the growth appeared on the left middle finger after a fall The swelling grew very slowly, and was excised after two years' duration, when it was found to present the typical appearances of xanthosarcoma The second case occurred in a man aged 35, in whom the growth was situated on the back of the foot, without any history of trauma Complete recovery took place after its removal

250 Pulsating Exophthalmos

C E LOCKE, JR (*Annals of Surgery*, July, 1924, p 1) points out that 588 cases of pulsating exophthalmos have been described since 1809, 23 per cent of these were spontaneous, whilst 77 per cent were traumatic in origin In some cases where an autopsy was obtained there was a communication between the internal carotid artery and the cavernous sinus, in others there was an aneurysm of the internal carotid or ophthalmic arteries Of the traumatic cases 94 per cent had an arterio venous communication between the internal carotid and cavernous sinus The condition is easily recognized clinically, yet it may be difficult to decide whether it is due to aneurysm or arterio venous communication In elderly people aneurysms are more liable to occur, whereas traumatic cases are nearly always cases of arterio venous communication A pulsating swelling above the inner canthus is usually seen with the arterio venous type, and the exophthalmos is greater The treatment includes various procedures to prevent the direct short circuiting of arterial blood into the venous system Three different principles have been applied (1) production of obstruction in the afferent arteries by compression or tying, (2) obstruction to arterial blood in the veins by tying or compression of the superior ophthalmic vein, (3) promotion of clotting in both arteries and veins by rest and subcutaneous injections The author recommends prolonged carotid compression before tying the carotid artery

251 Unger's Operation for Pituitary Tumours

E UNGER (*Zentralbl f Chir.*, July 19th, 1924, p 1560) observes that recent advances in clinical diagnosis of pituitary and other tumours in the region of the sella turcica have necessitated investigation of the best method of exposing this region He performed the following operation A woman, aged 39, had a pituitary tumour or cyst Under local anaesthesia an incision was made down to the frontal bone three fifths of an inch above and parallel with the supraciliary ridges this was carried backwards on each side parallel with the zygoma, the temporal fascia and muscle on each side being divided An osteoplastic flap was then raised, the frontal, parietal, and temporal bones being cut through from the supraciliary region to each temporal fossa, and then upwards to the vertex, a square of bone being thus raised, its attachment to the aponeurosis and hairy scalp was preserved The dura mater was then incised along the edges of the bony division The falx was divided between ligatures placed on the superior and inferior longitudinal sinuses A brain retractor was now introduced into the anterior fossa and the frontal lobes were raised, the head being held in a dependent position The pituitary region was exposed clearly, and a bluish glistening cyst was seen The right optic nerve was very swollen, but the left nerve appeared to have escaped After evacuation of 10 c cm fluid the cyst wall was partially excised, when a good view was obtained of the optic nerves and tracts, the chiasma, and the whole region of the sella turcica The wound was closed

and healed by first intention In three weeks there was obvious improvement in vision, walking and headache, this was maintained for three months when the pressure symptoms gradually returned before death occurred

Diseases of Children.

252. Post-encephalitic Behaviour Disturbance

B I BEVERLY and M SHERMAN (*Amer Journ Dis Child*, June, 1924, p 560) record two cases both of which were referred by the Juvenile Court In the first case a boy of 11 there was a vague history of an illness during which he slept for most of a month and from which dated the behaviour disturbance The boy appeared apathetic he admitted his delinquencies, but could give no reason for them The neurological examination was negative and the mental age was 8½ (Stanford Binet) Six months later the psychiatric condition was unaltered but neurologically he presented typical signs of the post encephalitic Parkinsonian syndrome The second case, a boy of 15 gave no history of any illness and was normal until September, 1920, when he was referred for treatment on account of indecent exposures and incorrigibility at school On examination his mental age was 11½ his behaviour seemed childish for this age he was emotionally shallow and showed poor insight The only neurological physical signs were sluggish slightly unequal and irregular pupils and the Wassermann test was negative Two years later his behaviour showed no change, but his mental age was 15 he had adequate intelligence and neurologically he was a typical case of post encephalitic syndrome The authors remark on the fairly constant symptomatology of this condition There may be a history of influenza diplopia, strabismus or protracted somnolence, from which mental changes may date or they may develop at any time up to several years afterwards Personality changes occur with a definite time of onset, and the most outstanding characteristic is mental deterioration with a high mental rating by intelligence tests The changes commonly are outbursts of temper irresponsibility incorrigibility, childish mannerisms cruelty to animals and children, lying, and stealing

253 Post operative Retention of Urine in Children.

H BOENINGHAUS (*Zentralbl f Chir* June 28th, 1924 p 1406) who records a case in a boy aged 7 states that transient retention of urine is frequent in adults after operations especially on the pelvic organs in women and that ischuria lasting for several days is no uncommon being explained by a temporary disturbance of the innervation of the bladder The younger the patient the less frequent the retention Some authorities indeed, maintain that it never occurs under the age of 15 Boeninghaus's patient while under medical treatment for tuberculous peritonitis suddenly developed pain in the left groin and swelling and redness of the correspond ing site of the scrotum As the spermatic cord was much thickened and very tender the possibility of its torsion was considered, and an operation was performed, when it was found that there was an extension of the peritoneal tuber culosis to the vaginal process, which was removed The wound healed rapidly, but retention of urine lasted for four days and was only cured by induction of ethyl chloride anaesthesia, which had to be employed on three days in succession Seven days after his discharge the boy was readmitted for erysipelas starting from the operation wound Complete retention again occurred, and was successfully treated by ethyl chloride anaesthesia as on the previous occasions

254 Treatment of Whooping-cough

K KASSOWITZ (*Wien med Woch* May 17th 1924 p 1022) describes the following therapeutical experiment which illus trates the inefficacy of the various methods recommended for the treatment of whooping cough Twins aged 8 months were admitted to hospital with severe pertussis on the sixteenth day after the beginning of the cough and on about the fourth day of the paroxysmal stage The number of attacks during the first two days was fifty five and fifty seven in one and fifty six and fifty five in the other The children were then put in separate rooms so as to eliminate the action of suggestion and one twin was given no drugs at all while the other was subjected to the following treatment (1) Sodium bromide 3 grams per diem combined with luminal 0 1 gram per diem for four days The number of attacks was reduced by about half, while only a moderate diminution occurred in the control child Somnolence, however and diffuse bronchitis with a slight rise of temperature ensued so that the treatment had to be discontinued (2) Injections of 1 c cm ether on two consecutive days, but without the slightest effect (3) Quinine hydrochloride 0 2 gram per diem had without any influence on the number and intensity of the attacks (4) Parenteral protein therapy in the form of intra muscular injection of 3 c cm skim milk A distinct febrile reaction ensued, but no improvement resulted (5) Antipyrin 0 2 gram per diem was then given for three days also without obvious effect The number of attacks had now fallen to 30 twenty daily but in the untreated child they were consider ably less (6) 0 01 gram of codeine hydrochloride was given without even transient improvement On discharge from hospital at their mother's request after seventeen days stay both twins still had about ten attacks daily, the violence and duration of each attack being about the same as on admission The untreated child, however, showed a distinct advantage over his brother both as regards the number and the intensity of the attacks

Obstetrics and Gynaecology.

255 Pernicious Anaemia and Childbirth

K VON OETTINGEN (*Zentralbl f Gynäk*, Jul, 12th 1924 p 1506) points out that pregnancy will occasionally bring on a form of pernicious anaemia, differing from the disease usually described under that name which is a constitutional disease progressing with intermissions to a fatal termination The anaemia of childbirth attacks healthy women who recover when the aggravating cause—namely, the pregnancy—is removed or complete d It is, however secondary in type as indeed is any anaemia of toxic origin since the damage to the blood forming organs as well as to the blood cells is secondary The author quotes the case of a woman previously healthy, who in each of three pregnancies suffered from hyperemesis accompanied by severe anaemia lemon colouring of the skin c c The labours were uncomplicated but were all followed by fever of unknown origin The anaemias became progressively worse during each succeeding preg nancy, although during the intervals between them the patient returned to her normal state of health At the end of the third puerperium she was put under treatment by arsenic and blood transfusion and improved considerably

256. Mikulicz's Drain after Wide Hysterectomy

J L FAURE (*La Gynécologie* July 1924 p 403) in a com munication to the Société de Chirurgie de Paris, stated that since 1920 he has inserted a Mikulicz drain in the pelvis after doing Wertheim's operation for cancer of the cervix the mortality has been reduced from 11 per cent previously to under 4 per cent in seventy six operations He inserts on the pelvic floor a bag containing five or six gauze compresses and a gauze drain four or five metres long The compresses are removed on the second day and the drain on the fourth the bag is taken out on the ninth or tenth day If a vaginal drain has been used it is removed on the fourth day Faure is convinced that his improved results are due to reverting to the Mikulicz drain which was wrongly abandoned about 1900 in consequence of improvements in the technique of peri tonization He lays stress also on the importance of the operator standing on the patient's left side and on the use of a large retractor such as Doyen's

257 Spontaneous Rupture of Uterine Veins during Labour

C TENCONI (*Annali di Ostetricia e Ginecologia* July 31st 1924, p 316) describes one case and discusses five from the literature, in which rupture of uterine veins during labour led to fatal intraperitoneal haemorrhage In all these cases as in three cases of rupture of the solemn vein towards term the bleeding was so gradual in the early stages as to prevent diagnosis Pain apart from that of the uterine contractions was not reported for several hours there was increasing abdominal distension and tenderness The two chief conditions to be considered in differential diagnosis are rupture of the uterus and premature detachment of the normally situated placenta (accidental haemorrhage) In none of the cases of ruptured veins did the uterine contractions cease to occur regularly the reverse is the case with uterine rupture The absence of external bleeding is against the diagnosis either of ruptured uterus or of accidental haemorrhage (in the majority of cases) and the latter condition is associated with alterations in the shape and consistence of the uterus In Tenconi's cases unlike the others variance were present in the region of the external genitalia. It is suggested that in a patient suffering during labour from abdominal distension and tenderness with some increase in the pulse rate and dullness in the flanks paracentesis abdominis should be performed and that if blood is drawn off the abdomen should at once be opened.

258 Puerperal Thromboses

G SCHAANNING (*Norsk Mag f Laegevidenskaben*, July, 1924, p 505) has studied the incidence of clinically demonstrable thromboses of the lower limbs among the 9,367 maternity cases admitted to a hospital in Christiania in the six year period 1917-22 There were fifty seven such cases, or 0 61 per cent of the total The average period between confinement and the onset of symptoms of thrombosis was from fifteen to sixteen days, the shortest being three days and the longest fifty one days In most cases the thrombosis began between the eleventh and the eighteenth days of the puerperium It follows that those maternity hospitals which discharge their patients on the seventh to the ninth day must keep their records of thromboses low at the cost of the patient, the author points out that his hospital's comparatively high thrombosis record is due to the fact that, even in uncomplicated cases, primiparae are not allowed to get up till the twelfth day of the puerperium, and are not discharged till the fourteenth day, multiparae being allowed to get up and to leave the hospital a day earlier than the primiparae None of the fifty seven patients died of embolism, but there were two deaths from pyaemia and one from pneumonia, in thirteen cases embolism occurred without fatal consequences It was found that thrombosis was comparatively frequent among women whose confinements had been protracted and attended with excessive loss of blood In the case of women who had lost more than 1,000 c cm of blood during the confinement, the incidence of thromboses was 2 92 per cent, whereas for those who had lost less than 1,000 c cm it was only 0 44 per cent There seemed to be no association with the age of the patient and the number of previous confinements, and no definite relationship was established between the incidence of thromboses and of puerperal fever or mastitis

Pathology.

259 Neurotropism in Spirochaete Strains

J H SCHULTZ (*Deut med Woch*, July 4th, 1924, p 914) gives an account of a small epidemic of syphilis which confirms the experimental work of Plaut and others who have taught that the affinity of various strains of spirochaetes for the nervous system differs greatly While on manœuvres in 1908 four officers contracted syphilis from the same woman One of them came of neuropathic stock, but the others belonged to perfectly healthy families Although all four were given skilled specific treatment, all developed severe neuro syphilis Four years after infection the officer who came of neuropathic stock developed hemiplegia when he was 27 years old Though vigorous treatment was given the hemiplegia remained practically stationary, and the patient developed irritability, slight dementia, and lack of staying power The second patient developed tabes of moderate severity, and the last two died of general paralysis, the rapid progress of which could not be checked even by intralumbar injections of specific remedies The fate of the woman who had infected these patients was not ascertained

260 Local Immunity to the Staphylococcus and the Streptococcus

IN this article A BESREDKA (*Ann de l'Inst Pasteur*, July, 1924, p 565) gives a summary of his work during the past two years on local immunity to staphylococci and streptococci If 1 c cm of a twenty four hour broth culture of a staphylococcus be injected beneath the skin of the abdomen of a guinea pig it gives rise, after a slight delay, to a rapidly spreading oedema, the skin becomes infiltrated, turns black, and finally sloughs off, leaving a large wound, which takes a long time to heal A quite different picture is seen in guinea pigs which have received the day before a compress, applied to the shaven skin, of a heated broth culture of the staphylococcus In this case there is little more than a superficial lesion, or more often a circumscribed abscess, which soon heals Arguing that there must be some substance in the broth culture which exerted an action antagonistic to that of the staphylococcus, he began working with older cultures, and found that by filtering an eight or ten day broth culture of staphylococci he was able to obtain a body which was atoxic, thermostable, and specific, this substance he calls an "antivirus" Injected intraperitoneally, it affords no protection, but if given intradermally—or, still better, as a sheet dressing applied to the skin—it gives rise to a marked immunity to a subsequent injection of a lethal dose of the staphylococcus The immunity thus obtained is independent of the presence of antibodies, and is of a strictly local nature Passing on to the consideration of the streptococcus, he records experiments in which, by applying a dressing soaked in a ten day filtrate of a broth culture of the streptococcus to the shaven skin, he was able to protect guinea pigs against a dose of living streptococci fatal to the control animals in twenty four hours Other animals which were treated by a dressing soaked in serum broth alone died in the same time as the controls The streptococcal antivirus, like that of the staphylococcus, has a distinct affinity for the skin, injected intraperitoneally, it exerts no protective effect From these animal experiments he passed to the treatment of human patients suffering from various lesions due to the staphylococcus or streptococcus, and by making use of his principle of the creation of a local immunity by applying a dressing soaked in a filtered culture of the infecting organism to the invaded part he was able to secure some striking therapeutic results Cases are recorded of osteomyelitis, puerperal infection, dacryocystitis, and rhino pharyngitis—among others—in which a cure of astonishing rapidity was produced, even when the lesions were chronic and had withstood all other methods of treatment

261 Tubercle Bacilli in the Lymphatic Glands of Healthy Children

DURING the course of two years ELISABETH PROSPERT (*C R Soc de Biologie*, July 25th, 1924, p 542) has made 100 necropsies at children's hospitals, and has systematically removed the mesenteric and the tracheo bronchial glands with the object of discovering how many patients harboured living tubercle bacilli in these structures The technique of the examination consisted in reducing the glands to pulp, treating them with 4 per cent caustic soda for three to six hours, and then planting them on to Petroff's medium From 85 cases which were completely free from tuberculous lesions, she succeeded in isolating tubercle bacilli from the mesenteric glands six times, in three of these cases the cultures from the tracheo bronchial glands were likewise positive In 15 of the patients there were tuberculous lesions present—in the meninges, lungs, or glands of these ten had mesenteric glands which appeared healthy, yet in every case the tubercle bacillus was recovered In the remaining five cases the mesenteric glands were caseous These results agree with those of previous workers She considers that they support the hypothesis that in man, and in animals susceptible to tuberculosis, infection in the vast majority of cases is primarily of a lymphatic nature, originating in the absorption of tubercle bacilli from the alimentary tract

262 Flagellar Agglutinins

MARION L ORCUTT (*Journ Exp Med*, July, 1924, p 43), working with the bacillus of hog cholera, noticed a difference in the motility of the organisms from separate colonies, and succeeded in obtaining pure cultures of a motile and of a non motile form A serum was prepared against each of these types The motile type serum agglutinated the motile culture in the form of soft, loose clumps in a dilution of 1 in 20,480, whereas it agglutinated the non motile culture in the form of small, fine clumps to a titre of only 1 in 640 On the other hand, the non motile type serum agglutinated both cultures to the same titre Absorption experiments showed that the motile type absorbed all agglutinins for both cultures from both serums, while the non motile type absorbed only agglutinins for itself from the motile type serum and all agglutinins from its own serum As it appeared probable that the flagella were able to give rise to specific agglutinins, an attempt was made to prepare a serum against them alone For this purpose a forty eight hour agar culture was suspended in saline and shaken with glass beads for half an hour, and then centrifuged for one to two hours By this means the flagella were broken off from the bacteria, which were then carried to the bottom, leaving the flagella in the supernatant fluid This fluid was drawn off, shaken, and centrifuged *again* The upper half of the fluid was drawn off and plated on agar to determine its freedom from bacilli Microscopical examination showed the presence of masses of flagella, but no bacteria Those supernatant fluids which were sterile were heated for half an hour at 60°-62° C, and were then used for the preparation of an immune rabbit serum Agglutination tests made with this serum showed that the motile bacilli were brought down in a dilution of 1 in 5,120, whereas the non motile bacilli were completely unaffected Absorption of this serum with the non motile type did not alter its titre When the serum was put up against the flagella suspension a soft, delicate, rather fluffy precipitate was observed up to a dilution of 1 in 320 By filtering the flagella suspension this was demonstrated to be a true agglutination reaction, and not the result of precipitins, no reaction occurred with the filtrate The experiments have shown that it is possible, starting from one culture, to prepare three serums—namely, against the original motile type, the non motile type derived from it, and the separated flagella This direct production of a flagella antiserum indicates that the flagella contain a separate specific antigen



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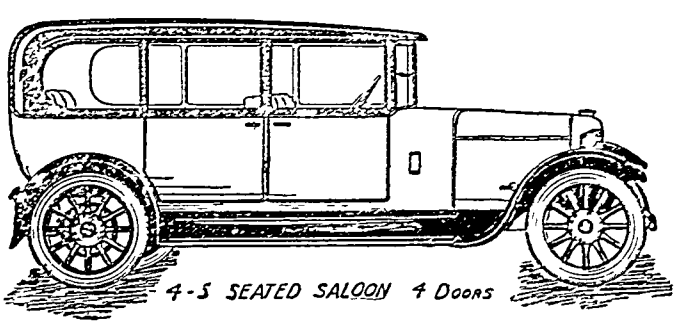
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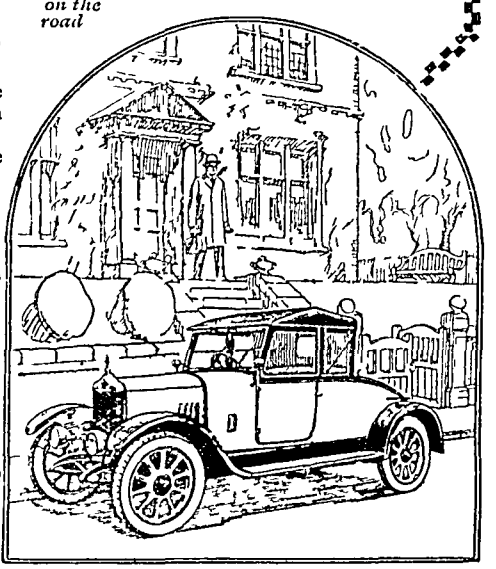
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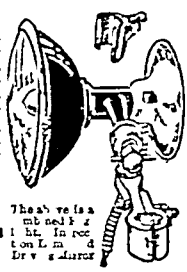
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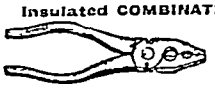


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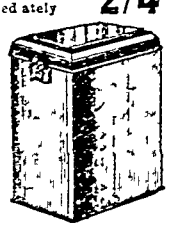
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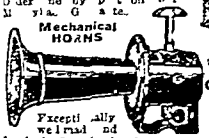
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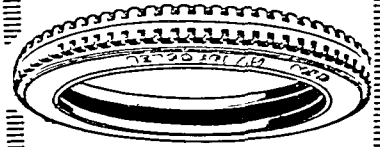
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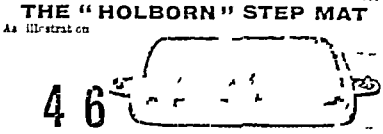
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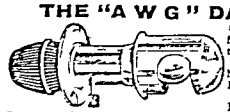
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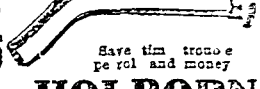
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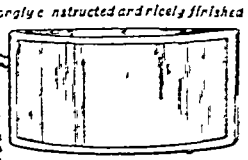


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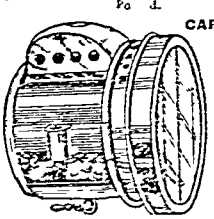
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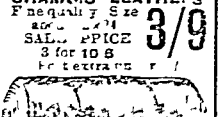
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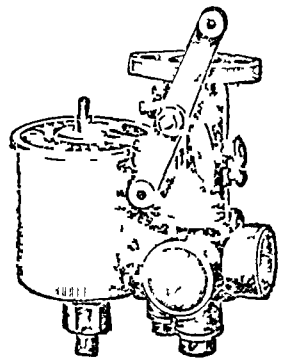
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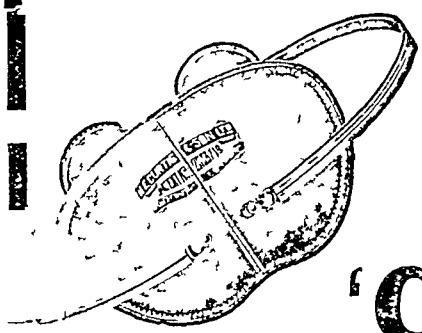
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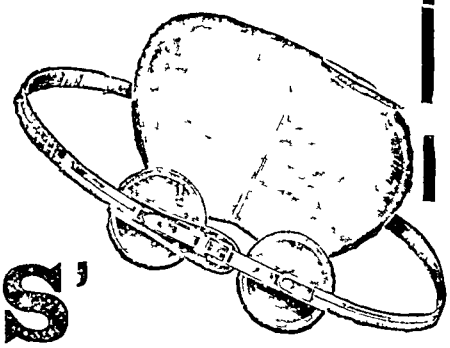
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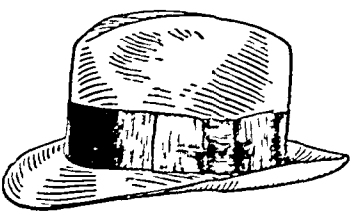
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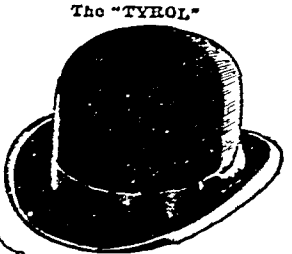
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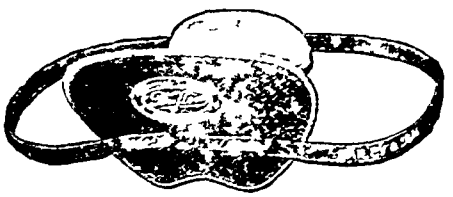
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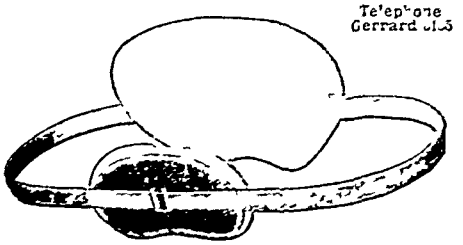
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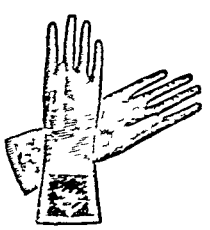
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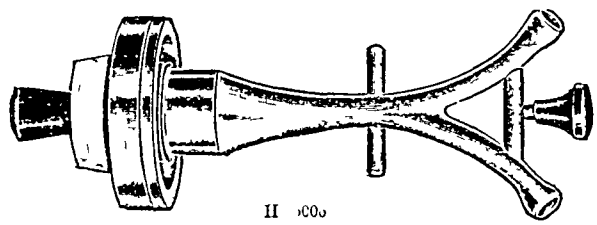
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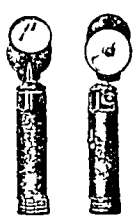
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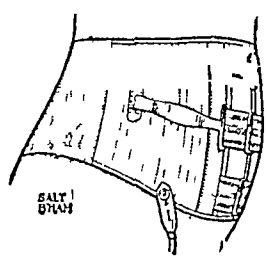
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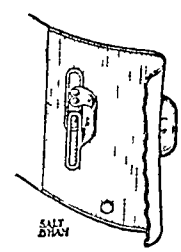
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FOR THE TREATMENT OF CASES OF TUBERCULOSIS

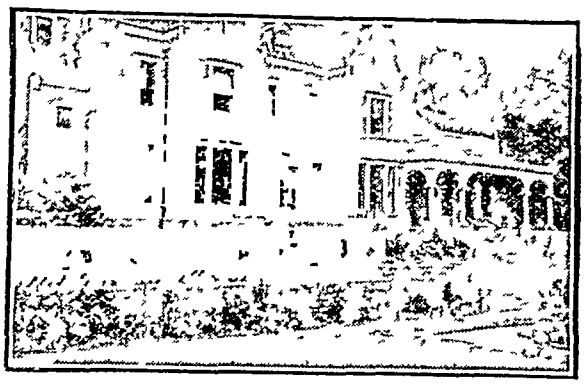
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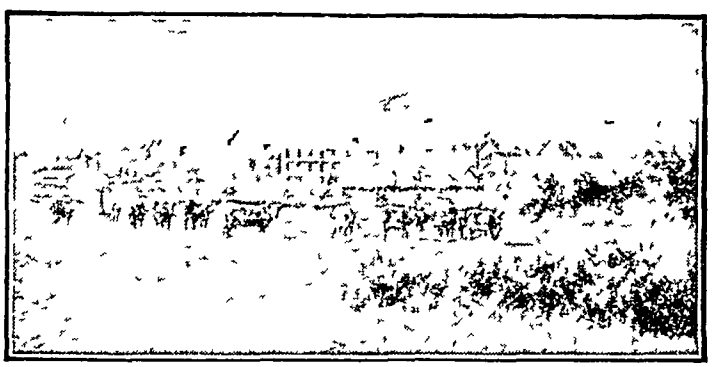
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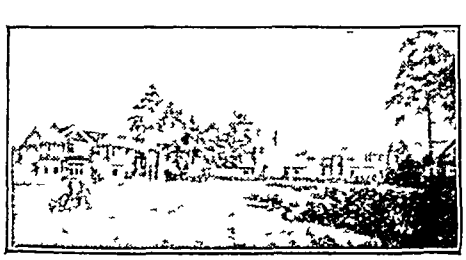
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At BANCHORY and MURTLE

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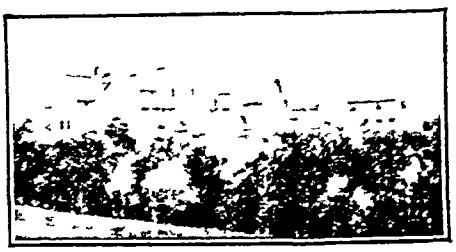
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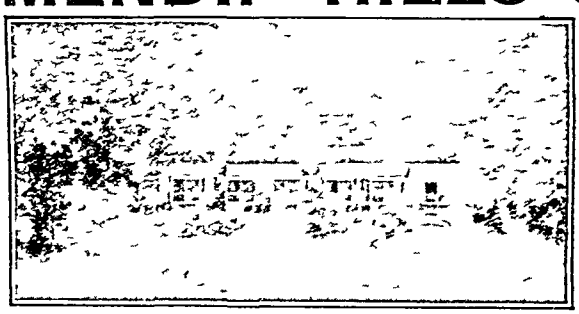
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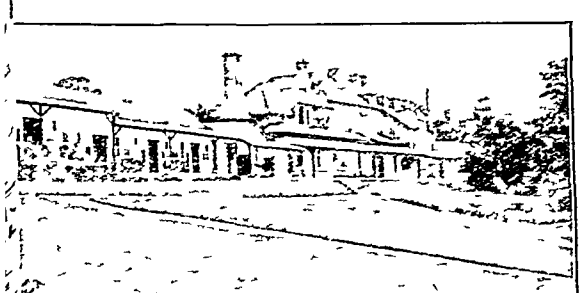
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The Practice of the Hospital is limited to Medical Practitioners For particulars apply to A. J. WHITING M.D. Dean

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COUNTRY OPEN AIR WARDS. 80 BEDS.

GIRL STUDENTS WANTED to learn Orthopædic Work and prepare for the Conjoint Examination of the C.S.M.M.G. Three years training, salary first year £16 second year £20 all found, uniform — Apply Miss HUNT L.M.C.

HIGHER MEDICAL QUALIFICATIONS

Are you desirous of obtaining one of the special higher qualifications *e.g.*!

Diploma in Psychological Medicine
Diploma in Ophthalmology
Diploma in Radiology
Diploma in Laryngology, etc
Diploma in Tuberculosis
Diploma in Bacteriology
Diploma in Public Health
Diploma in Tropical Medicine
All Higher Medical and Surgical Degrees and Diplomas

You can qualify for any of the above by our Courses of Combined Postal and Practical Tuition

Write at once stating your requirements to the SECRETARY MEDICAL CORRESPONDENCE COLLEGE 19 Welbeck Street W.1

WE SPECIALISE IN POST-GRADUATE COACHING FOR ALL EXAMINATIONS

Send this Coupon for Free Guide.

Name .....

Address .....

Examination in which interested .....

M.D. THESIS

(Cambr., Edin., Glasg., Durham, &c.)

SKILLED COACHING, GUIDANCE, and ADVICE from Special Tutors in conformity with the Regulations of the various Universities. Apply for particulars and free booklet, Hints on Writing a Thesis for the M.D. Degree" to the SECRETARY Medical Correspondence College 19 Welbeck Street London W.1

REALLY GOOD GIRLS' SCHOOL AT REASONABLE INCLUSIVE FEES

MARLBOROUGH COLLEGE

Tytherington Hall Cheshire, nr Macclesfield.

Welbeck Research Laboratories,

62, QUEEN ANNE STREET, LONDON, W 1.

BLOOD CHEMISTRY

All Blood Sugar Estimations prior to & during Insulin Treatment undertaken

Bateriological & Patho=logical Investigations

Tissue Diagnosis

Toxicology

Autogenous and Stock Bacterial Vaccines

Chemical Examinations of Water, Milk, Foods, Etc.

Accurate & Reliable Work Guaranteed

Price List, Literature, and Sterile Containers supplied on application to

The Director
WELBECK RESEARCH LABORATORIES,
62, Queen Anne Street, London, W 1

ROYAL NAVAL MEDICAL SERVICE.

SHORT SERVICE SCHEME

The Admiralty are prepared to accept applications for entry as SURGEON LIEUTENANTS for Short Service in the Royal Navy

Period of Service—3 years with option to extend for further twelve months

Pay—25s per diem or £456 5s per annum

Gratuity on discharge—£88 6s 8d for each completed year of service

Surgeon Lieutenants on the Short Service Scheme will be considered for transfer to the Permanent Service under certain conditions after six months service

Regulations for entry and form to be filled up by candidates will be supplied on application to the Medical Director General 69 Victoria Street London S W 1

The Egyptian Government

MINISTRY OF EDUCATION

SCHOOL OF MEDICINE

Wanted a lecturer in Chemistry Pay £E 500 a year in the grade £E 240–600 Contract for three years

Applications are invited from Egyptians only for this vacant post

The holder of this post is expected to devote his whole time to teaching and research

Applications must be accompanied by qualifications details of research work former teaching posts and testimonials and be addressed to the Director School of Medicine Cairo Egypt They should reach him before October 30th 1924

Crichton Royal Mental Hospital Dumfries

ASSISTANT PHYSICIAN Man unmarried fully qualified and registered who has held post graduate resident post in general hospital or Medical School or large town Well equipped laboratories with special staff and other facilities for original work Salary £350 plus £50 if he has diploma in psychiatry with furnished rooms board, laundry and attendance No deduction from salary for pension or other purposes Appointment terminable on three months notice Apply in writing to Physician Superintendent stating age qualification, and experience, with copies of testimonials

Salford Union Infirmary,

Hope, Pendleton, near Manchester

FIRST ASSISTANT RESIDENT MEDICAL OFFICER (MALE)

The Guardians of the Salford Union are prepared to receive applications for the above appointment

Candidates to be eligible must be unmarried, registered under the Medical Acts and possess a medical and surgical qualification Preference will be given to candidates with experience of Poor Law or General Infirmaries and possessing experience of X ray and Electrical work

Salary £300 per annum with furnished apartments, attendance and rations at the Infirmary

The appointment, which will be subject to the approval of the Ministry of Health will be made in the first instance, for a period of six months The Guardians expect the person appointed to remain for this period and to devote his whole time to the duties and also to act as may be directed by the Medical Superintendent as respects the Union Infirmary and other Institutions of the Union

The Infirmary contains about 910 beds is well equipped and provides excellent all round clinical experience of all classes of surgical, medical and children's diseases a large proportion of which are of an acute nature

Applications, stating age, qualifications and experience and accompanied by *copies* of not more than three recent testimonials (which will not be returned) should reach me as early as possible but not later than the 8th, 1924,

By Order
E H INCHLEY
Clerk to the Guardians

Poor Law Offices, Eccles New Road Salford
September 9th 1924

Bristol Royal Infirmary

Applications are invited for the post of HONORARY ASSISTANT SURGEON to the Ear Nose and Throat Department Candidates must be Masters of Surgery of one of the Universities of Great Britain or Ireland, or Fellows of the Royal College of Surgeons of England, Edinburgh or Ireland, or Graduates in Medicine of one of the Universities of Great Britain or Ireland and hold in addition a special degree or diploma in Laryngology and Otology of one of the Universities of Great Britain or Ireland or of the Royal College of Surgeons of England Edinburgh or Ireland Applications together with testimonials must be sent to the undersigned on or before October 22nd, 1924

ELLIS C SMITH, F C I S
Secretary and House Governor

Bristol Royal Infirmary

Applications are invited for the post of HONORARY DERMATOLOGIST Candidates who must hold a registered Medical qualification to send in their applications with testimonials to the undersigned on or before October 22nd 1924

ELLIS C SMITH F C I S
Secretary and House Governor

Westminster Hospital

(opposite Westminster Abbey)

A vacancy has been declared this day in the office of ASSISTANT OBSTETRIC SURGEON to the Hospital Gentlemen desirous of becoming candidates must be Members of the Royal College of Physicians and Surgeons of England and must forward certificate of his age and 30 copies of his application with 30 copies of each of 3 testimonials to the undersigned not later than October 11th 1924 and to attend the House Committee on Tuesday October 14th, 1924, at 1 p m By Order of the House Committee

CHARLES M POWER Secretary

September 30th 1924

Westminster Hospital

(opposite Westminster Abbey)

A vacancy has been declared this day in the office of OBSTETRIC SURGEON to the Hospital

Gentlemen desirous of becoming candidates are required to submit a certificate of their age and to attend the House Committee with their testimonials on Tuesday October 14th, 1924 at 1 p m

By Order of the House Committee

CHARLES M POWER Secretary

September 30th, 1924

The Bristol Royal Hospital

FOR SICK CHILDREN AND WOMEN

Applications are invited for the post of HOUSE PHYSICIAN Ladies are asked *not* to apply unless willing to live in with board

Applications, stating age, qualifications, and experience, must be sent to the undersigned not later than October 15th

J E SMITH
Secretary

October 4th, 1924.

S. AFRICAN INSTITUTE FOR MEDICAL RESEARCH,

JOHANNESBURG

Plague A research into the harbouring of Plague by wild rodents and the specific prophylaxis and therapy of the disease in man is being undertaken by the S A Institute for Medical Research. The work will be largely carried out in a mobile laboratory on the veld The present staff will be augmented by a **Bacteriologist** (preferably a medical man and with special experience in Plague) and an **Entomologist** (not necessarily medical but preferably with special experience in the study of the ectoparasites of rodents) Appointments will be primarily for one year and will be renewable thereafter by mutual consent First class passage, and allowances when absent from headquarters on duty, in addition to salary

Applications should be made to and further information may be obtained from 'BACTERIA' c/o the Director, The Lister Institute Chelsea, S W 1

The Hospital for Sick CHILDREN, Great Ormond Street, London, W C 1

A HOUSE SURGEON is required on October 19th 1924

Gentlemen are invited to send in their applications addressed to the Secretary before 12 o'clock on Monday October 6th, with copies of not more than three testimonials given specially for the purpose and also evidence of their having held a responsible hospital appointment

The appointment is made for six months Salary £50 laundry allowance £2 10s, and board and residence in the Hospital

Candidates must be unmarried, and possess a legal qualification to practice

All candidates must be in attendance on Wednesday, October 8th, 1924, at 3 p m precisely, to appear before the Joint Committee if required.

Forms of application and copies of the rules may be obtained from the Secretary

By order of the Board of Management

JAMES McKAY
Secretary

September 1924

Manchester Royal Infirmary,

CENTRAL BRANCH, Roby Street Manchester

54 Beds, Surgical Patients Now Casualties about 30 daily

RESIDENT MEDICAL OFFICER (Lady) £200 per annum with board residence and allowance for washing

ASSISTANT MEDICAL OFFICER (Lady) £100 per annum, with board, residence, and allowance for washing

The Board of Management of the Manchester Royal Infirmary invite applications for the above appointments The appointments are tenable for

signed by Friday 17th October 1924

Applicants for the Senior appointment are requested to state whether if unsuccessful they apply for the Junior appointment also

FRANK G HAZELL
Gen Supt & Sec.

September 24th 1924

Acton Hospital.

Appointment of RESIDENT MEDICAL OFFICER Salary £150 per annum with board, residence and laundry Candidates must be fully qualified and registered Duties to commence on November 10th

Applications stating age nationality and qualifications together with copies of three recent testimonials should be sent to the Secretary Acton Hospital Gunnersbury Lane Acton W 3

Carnarvonshire and Anglesey INFIRMARY Bangor

Wanted a wholetime and ORGANIZER Commencing Salary

Application should state age qualifications hospital experience if any and whether knowledge of Welsh Apply with not more than three testimonials on or *before* October 11th to the Hon Secretary C & A Infirmary Bangor

Leicester Royal Infirmary

(120 Beds)

There is a vacancy for a HOUSE PHYSICIAN Appointment for six months salary at the rate of £125 per annum with board, apartments and laundry

Applications with copies of three recent testimonials to be made by October 10th to the House Governor and Secretary of the Infirmary

September 24th, 1924.

APPOINTMENTS—Important Notice.

(a) British Islands.

Medical Practitioners are requested not to apply for any appointment referred to in the following table without having first communicated with the Medical Secretary of the British Medical Association, 429, Strand, London, W.C. 2.

CONTRACT PRACTICE.

ENGLAND

CANNOCK CHASE AND DISTRICT
(Club and Friendly Societies Appointments)

MIDDLESBOROUGH
Medical Aid Association for Workmen's Clubs)

SOUTH BANK & ESTON
Medical Aid Association for Workmen's Clubs)

WALES.

ABERTRIDWR GLAMORGAN
Windsor Colliery (Medical Scheme.)

EBBW VALE MON
(Workmen's Medical Society)

GILFACH GOCH GLAMORGAN
(Workmen's Medical Service.)

LLWYNYPIA CLYDACH VALE PENYGRAIG GLAMORGAN
(Workmen's Medical scheme

MARDY GLAMORGAN
(Workmen's Medical Service)

WALES *(continued)*

OAKDALE MON
(Medical Officer for Medical Aid Association)

OGMORE VALLEY GLAMORGAN
(Wyndham Colliery Medical Aid Society)
(Workmen's Medical Service.)

TONDU & ABERKENFIG GLAMORGAN
(Workmen's Medical Service.)

PUBLIC HEALTH.

ARGYLLSHIRE EDUCATION AUTHORITY
(Executive School Medical Officer)

CHELSEA METROPOLITAN BOROUGH
(Part time Medical Officer of Health)

CHESTER LE STREET RURAL DISTRICT COUNCIL
(Medical Officer of Health)

COLCHESTER BOROUGH
(Assistant Medical Officer of Health and Assistant School Medical Officer)

PUBLIC HEALTH *(continued)*

FIFE EDUCATION AUTHORITY
(Assistant School Medical Officer)

GLASGOW EDUCATION AUTHORITY
(Assistant School Medical Officers)

LANARK COUNTY
(Medical Officer of Health)

LINCOLN CITY EDUCATION AUTHORITY
(Woman Assistant School Medical Officer)

MIDLOTHIAN EDUCATION AUTHORITY
(Assistant Medical Officer)

NORTHUMBERLAND COUNTY COUNCIL.
(Woman Assistant Medical Officer of Health)

NOTTINGHAMSHIRE
(County Medical Officer of Health)

SOUTHWARK METROPOLITAN BOROUGH.
(Tuberculosis Officer)

WIGAN COUNTY BOROUGH
(Assistant School Medical Officer)

(b) Colonial Medical Service.—WINDWARD ISLANDS MEDICAL SERVICE (Grenada with Carriacou, St. Vincent and St. Lucia)

(c) Overseas Appointments.

Medical Practitioners are requested not to apply to any appointment referred to in the following table without having first communicated with the Honorary Secretary of the Division or Branch named in the second column or with the Medical Secretary of the British Medical Association, 429, Strand, London, W.C. 2.

Town or District.	Hon. Sec. of Division or Branch	Town or District.	Hon. Sec. of Division or Branch.	Town or District.	Hon. Sec. of Division or Branch.
NEW SOUTH WALES. *(All Friendly Society Appointments)*	Dr. R. H. TODD (Hon. Sec. New South Wales Branch) B.M.A. Building, 30-34 Elizabeth Street, Sydney N.S.W.	QUEENSLAND *(Brisbane Associated Friendly Societies' Institute)*	Dr. R. MARSHALL ALLAN (Hon. Sec. Queensland Branch) Adelaide Street Brisbane.	VICTORIA *All Institute or Medical Dispensaries)*	Dr. FRANK DAVIS (Hon. Sec. Victorian Branch) Medical Society Hall, Melbourne, Victoria.
				WESTERN AUSTRALIA. *(Contract and Lodge Practices.)*	Hon. Sec., Western Australian Branch, Room 6, Bank of New South Wales Chambers, St. Georges Terrace, Perth.

Address 429 Strand, W.C. 2.
October 1st 1924.

By order of the Council of the British Medical Association.
ALFRED COX, Medical Secretary.

Lancaster Union

The Guardians of the above named Union are prepared to receive applications for the appointment of MEDICAL OFFICER of the Workhouse Children's Home and Medical Officer and Public Vaccinator of the Lancaster District at salaries of £130 £30 and £50 per annum respectively with the usual extra medical fees prescribed by the Poor Law Orders.
The payment for Vaccination is by fees the ultimate amount being £148 per annum.
Full particulars of the appointment may be obtained from the undersigned to whom applications

Lancaster

Napsbury Mental Hospital,
near St. Albans, Herts.

COUNTY COUNCIL OF MIDDLESEX.

FOURTH ASSISTANT MEDICAL OFFICER required. Commencing gross salary £526 10s. Od. per annum of which £151 10s. Od. is War Bonus (subject to withdrawal of the Civil Service Bonus). Present charge a tenance for per annum Asylum Officers. plications to the

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Gloucestershire Mental HOSPITALS

JUNIOR ASSISTANT MEDICAL OFFICER.

Applications are invited for the post of Junior Assistant Medical Officer at the Second County Mental Hospital, Coney Hill, Barnwood.
Salary £350 per annum, together with board, washing and apartments. The appointment will be subject to the provisions of the Asylums Officers Superannuation Act, 1909.
Applications, together with copies of not more than three recent testimonials, should be forwarded to the Medical Superintendent, County Mental Hospital, Gloucester.
2 th September 1924.

Paddington Green Children's HOSPITAL, London, W.2

HOUSE SURGEON.

The appointment of House Surgeon will become vacant on November 1st, 1924. Gentlemen are invited to enter their applications with copies of three testimonials addressed to the undersigned not later than October 15th 24.
The appointment is held for a period of six months at a salary of £150 per annum with board and residence. Candidates who have held a resident appointment will be preferred.
Hospital Appointments Committee.

JAMES A. HAMLIN Secretary

Victoria Hospital for Children,
Tite Street, Chelsea, S.W.3.

The Committee of Management invite applications for the post of CASUALTY OFFICER AND REGISTRAR. These duties will include attending to Accidents in the Casualty Department, Out-Patients' Department, and Special Clinics.
Salary £150 per annum with board and residence.
Candidates must have had Medical and Surgical qualifications, and be registered under the Medical Act. The appointment which will date from November 1st, will be for 12 months, and is open to residents.
Applications with copies of not more than two testimonials should be sent to the Secretary not later than Thursday, October 16th.

By Order
D. S. JOHN BALFORD, Secretary.

Willesden General Hospital,
Harlesden Road, N.W. 10.

WANTED HOUSE SURGEON. Applications are invited for the above appointment. Salary at the rate of £100 per annum, with board, residence and washing. The appointment will be for six months from [illegible]. Every candidate must be duly registered under the Medical Acts.
Applications, stating age and other particulars, with copies of not more than two testimonials, are to be sent to the Secretary, not later than Saturday, October 11th, 1924.

Wanted, Nov 1st, Assistant (out), Univ city West, for old estab easily worked practice young keen abstainer energetic cyclist or motor bike Scot or Engl H S prefd, with spec exper Gyn and Dis Child £250 p a + good house and rate (=£75) + ½ private fees at branch + ½ midg and ½ night fees Good panel and clerk dispenser Rise proport, effort and accept ability Sign for a year, if approved Usual bond Good opportun —Add, essent particu, refs photo, testimos (copy), to No 4812 B M J, 129, Strand

Wanted —For 1st November well qualified and experienced ASSISTANT to take charge of branch practice in country, and assist Principal in town Good opportunity for Surgery Salary £400 per annum all found Must be able to drive car Send photo and testimonials —Address No 4842 British Medical Journal Office 429 Strand W C 2

Wanted for Nov 1st, Assist- ANTSHIP or Part time Work in London single young loyal reliable 1 years hospital exp, also appointments 5 years in gen and panel prac Spec exp in Mids, Children Lar Nose and Throat testimos -Add No 4915 B M J 1 9 Strand, W C

Wanted —An Assistant, near London, about 30 Scotsman or Englishman Experienced in general practice £300 indoor Cyclist or motorcyclist Full particulars wanted —Address No 4914 British Medical Journal Office 1.9 Strand W C 2

Wanted, Assistantship or Hospital Appointment or Ship Surgeoncy by M B B S, M R C S, etc Ex H S and Assist M O Age 26 single and total abstainer Will consider offer abroad if suitable Excellent refs —Add, No 5000 B M J Office 129, Strand, W C 2

Wanted — Assistantship by M B B Ch 1922 aged 25 experienced hospital and general practice North of England preferred —Address No 5005 British Medical Journal Office 129 Strand W C 2

Wanted immediately, single male ASSISTANT (indoors) in mixed practice in large South Coast town Salary £250 State age and essential particulars —Address No 5001 British Medical Journal Office, 429 Strand W C 2

Wanted —Indoor Assistant in panel and private practice in South Wales Town Good salary to well qualified man —Address with particulars, No 4922 British Medical Journal Office 129 Strand W C 2

Wanted, near Manchester, Out door ASSISTANT, about 30 preferably with some knowledge of general practice for six months from November 1st Partnership and ultimate succession considered after that period —Add No 4933 B M J Office 129 Strand W C 2

Wanted by ordinary M B, ASSISTANTSHIP in or near London at 28 single Irish own motor cycle Three years experience in present (first) appointment Disengaged Oct 20th —Address No 4 901 British Medical Journal Office 129 Strand W C 2

Wanted -Young doctor with good qualifications and exp of hospital and gen prac holding p time appt in London wishes to fill up 4 Mornings 2 Afternoons 5 Evenings a week Evening work or p time indoor Assistant ship prefd —Add No 4905 B M J Office 1 9 Strand

Assistantship wanted, in or near London by M B B S Lond M R C S L R C P (woman) 3 years hospital experience keen on midwifery good anæsthetist —Address No 1 831 British Medical Journal Office 129 Strand W C 2

Assistant wanted, near Leeds, to assist in panel and ppe prospects to su Essential particulars to X Y Z, c/o Wharram Ltd Lady Lane Leeds

Assistantship or Locum work wanted by experienced reliable doctor at Well received conscientious worker strict abstainer Good accoucheur and anæsthetist Highest recent testimonials and refs Moderate terms —Address No 4927 B M J 429 Strand W C

Assistantship or Locum wanted by M B B Ch One years experience general practice private and panel maternity Child Welfare and clinic work Excellent testimonials eye ist free now and resident in South Wales —Add No 4930 B M J, 429 Strand, W C

Woman Graduate (M B, B S Durham) aged 23 member B M A, will be available on October 1st, for an ASSISTANTSHIP, preferably with view or Locum Tenens work Keen and energetic In or outdoor Small salary in exchange for experience Good references —Addre s, Dr M W D, 58, Linden Road, Gosforth, Newcastle on Tyne

Woman Graduate with some experience desires ASSISTANTSHIP in *General Practice —Address No 4907, British* Medical Journal Office 429 Strand W C 2

Company operating in India require immediately, unmarried MEDICAL OFFICER Preference will be given to one with experience of Tropical diseases —Particulars regarding age and qualifications to be sent to Box 474 Shaw & Blake Ltd, Advertising Agents, 8, Bell Yard Temple Bar W C 2

Edinburgh Graduate, 1924, wishes appointment as ASSISTANT or LOCUM TENENS Has had hospital and some general experience First class testimonials Energetic able and willing Free after October 10th —Addre No 4913 B M J Office 129 Strand W C

India —The Salvation Army has a VACANCY for a DOCTOR capable of taking charge of a Hospital Rural missionary work Application should be addressed to—Commissioner H W Mail, 101 Queen Victoria Street London E C 4

London or District—Wanted, ASSISTANTSHIP (Woman), with or without view M A, M B Ch B, three years teaching Hospitals Special experience midwifery gynecology, anæsthetics eyes exper in G P Ex testis Add No 5003 B M J Office 429 Strand W C 2

M.B Woman requires position as ASSISTANT Young energetic cyclist London preferred, but not essential Salary £150 (indoor) —Address No 4911 British Medical Journal Office 129 Strand W C 2

M.B, F R C S Eng., desires ASSISTANTSHIP live out at £500 per annum —Address No 4813 British Medical Journal Office 429 Strand W C 2

M.B, used to Panel Practice, would give ASSISTANCE to G P in London for good experience in Midwifery —Address, No 4920 British Medical Journal Office, 429 Strand W C 2

Wanted, a Lady Dispenser and BOOK KEEPER for the South Preferably with experience at Hospital or with Chemist, to live out —Address stating age experience, and salary required No 4930 British Medical Journal Office 429 Strand W C 2

Wanted —October, Qualified DISPENSER DRESSER knowledge Welsh Colliery practice preferred Panel book cards records etc No man not moderate and reliable considered young Address with full particulars terms recent refs, etc No 4805 B M J 429 Strand

Dispenser, woman, qualified, Book keeper care of Instruments Disengaged October 5th Panel —Address No 4916 British Medical Journal Office 429 Strand W C

Dispenser, lady, qualified, seeks POST Doctor or Institution Liverpool district —Address No 4928 British Medical Journal Office 129 Strand W C 2

Dispenser, lady,, Hall Certificate desires position experienced excellent testimonials doctor or institution —Address, No 4929 British Medical Journal 429 Strand W C

Dispenser-Book-keeper, wanted at once Experience essential —Apply Dr Grimson 188 Lower Clapton Road, E 5

Doctors requiring Lady DISPENSERS should write to Mr J E Walden Westminster College 112 St George's Road, S E 1 (only address) No fees to Doctors 25 years experience Daughters and other relatives of medical men always in training

Lady Dispenser, qualified, quick accurate disengaged end October seeks POST with doctor preferably London Best references — Kindly address with particulars of salary hours No 4931 British Medical Journal Office 429 Strand W C

Lady Dispenser, 8½ years' good experience with chemist and doctor, desires post with doctor —Address No 4926 British Medical Journal Office, 429 Strand W C

Chauffeuse Nine years' experience refined, smart appearance speaks French references careful driver, clean licence used to a Doctor's practice long distances willing to go to any part please state particulars —Address No 4908, Brit Med Journ Office 429 Strand W C

Gentlewoman requires post as SECRETARY or Dentist, as driver any car qualified to Reception Highest Harley Street references —Address 4917 Brit Med Journ Office 429 Strand W C 2

Highly recommended Lady SECRETARY hospital experience desires re engagement Moderate salary —Write Miss M. Brighton, 63 Wickham Road, Brockley S E 4

Lady Chauffeuse —Fully trained Nurse desires POST four years driving experience in London; thoroughly experienced in sterilizing care of instruments packing surgeons bags Excellent references —Write, Lucas, 3, Devonshire Street London W 1

Young Lady Secretary Shorthand and typing essential. Some knowledge dietetics or medical experience useful Farm Manufacturing Chemists State Salary —Address, No 4918 British Medical Journal Office 129, Strand W C 2

FOR LOCUM TENENS APPLY TO Mr. PERCIVAL TURNER.

The Oldest and only Agent who for 40 years has supplied substitutes at short notice without fee to principals.

4, ADAM STREET, STRAND, LONDON, W C 2

Teleg: "Epsomian, London Phone: Gerrard 599

Locum —Doctor retired from own Practice desires further ENGAGEMENTS *London preferred Terms from 5gns p w* Disengaged till Oct 31st and after Nov 7th Does some 10 locums annually Good recent refs.—Address, "Medicus, 58, Talbot Road, Bayswater W

LOCUM TENENS

PROVIDED

Without fee to Principals

Apply to

Mr. W. S. ATKINS

43, BEDFORD STREET, STRAND, W C 2.

Telegraphic Address:

Positions, Westrand, London.

Telephone Regent 229

Wanted, Partnership or PRACTICE in South preferably in or near London yielding £1 000 p a by Scotsman 37 Qual 1917 Experience G P, special recreations mids and diseases of children Avail capital £500 Refs and tests -Add, No 4938 B M J 429 Strand

Wanted, able middle aged PARTNER in very old established high class easily worked London City practice Short hours Average income £1 300 Can be largely increased Half share ultimate succession -Address No 4937 Brit Med Journ 129, Strand W C 2

Wanted —Must be a capable Surgeon preferably F R C S as PARTNER *(half share) Receipts last 3 years £2 200, £2 600* and £3 000 Midland Town —Address No 4923 British Medical Journal Office, 129 Strand W C

M A, M B, B Ch Cantab, married requires about March 1925 SHARE worth £1 000 £1 500 in first class non dispensing non panel Practice in London West End preferred Exper in G P has held appointments in London Hosp —Add, No 5002 B M J Office 429 Strand

Partner wanted —Short Preliminary Assistantship Must be capable surgeon, preferably F R C S South coast town Sussex —Address full details to No 4723 British Medical Journal Office 129 Strand W C

Partnership wanted, cash and panel Practice by doctor engaged part time work Payment from receipts —Address No 4930 British Medical Journal Office 429 Strand W C

Partnership—Scotsman wishes Partner in old established rural Practice within 10 miles of London House available 1 or 2 One half share for sale at 3 years purchase £1 800 —Address No 5010 British Medical Journal Office, 129, Strand, W C 2

Wanted—Practice or PARTNERSHIP Income from £800 (with scope) to £2,000 a year Preferably South of England Applicant is experienced Grauate and can buy at once Details received in confidence by Box 5031 c/o Mr PERCIVAL TURNER, 4 Adam Street Strand W C 2

Wanted in Country district a General PRACTICE of £1 100 to £1 800 a year House with garden in southern part of England Applicant is experienced Graduate and can buy at once Details received in confidence by Box 5031 c/o Mr PERCIVAL TURNER, 4 Adam Street Strand W C 2

Wanted—General Practice PARTNERSHIP London or Suburbs Purchaser can —Apply PEACOCK & HARLEY 19 Craven Street Strand W C 2 (No

Wanted, a sound Practice of £600 to £1,500 p.a. in a good Town or District Well built detached house with at least 4 good bedrooms essential Panel work no objection —Address No 1910 BRITISH MEDICAL JOURNAL Office 429 Strand W C 2

Wanted—Practice for about £2,000 p.a. with minimum panel of 2,000 in own with good educational facilities for girls. Good house required with minimum of 5 bedrooms Principals only — Apply GRIFFITH MEDICAL AGENCY 16 Regent Chambers Queen's Square Newport, Mon

Wanted, by lady doctor, a PARTNERSHIP in a home of babies and children Address in confidence to Mr W H GRANT Wigmore Street W 1 (No charge unless sale effected)

Wanted — F PRINCE, 32, Charing Cross London S W 1 always has clients desirous of PURCHASING PRACTICES or PARTNERSHIPS in Town & Country Those prepared to pay good premiums can usually effect a quick sale Terms without obligation post free

Wanted, City Practice Must be able to stand every investigation —Address full particulars to No 4934 BRITISH MEDICAL JOURNAL Office 429 Strand W C 2

Bristol, wanted to purchase by Medical man with own practice a small additional PRACTICE or branch Surgery within district

City Practice —For disposal, HALF SHARE in old-established City practice doing about £1 300 p.a. Fees annually Very easy hours —Apply No 7610 c/o Mr PERCIVAL TURNER 4 Adam Street Strand W C

Exchange of Practices, South West County —Owner of an old established Practice of £1,400 a year in a charming country district in the West Country is open to exchange for a more easily worked Practice in West of London or in a good suburb —Apply in confidence No 7592 c/o Mr PERCIVAL TURNER, 4 Adam Street Strand W C 2

For Sale —Non-dispensing panel in a Good class Income last Censing and Will accept No 4925 BRITISH MED JOURNAL Office 429 Strand W C 2

For Sale —Country Practice, unusually good opening for medical man willing to purchase an excellent house long as established with a high-class connection No premium or introduction —Address No 4702, BRITISH MEDICAL JOURNAL Office 429 Strand W C 2

For Disposal —A good Prac- tice sold by him without being advertised —Full information free on application to 4 Adam St. W C 2

For Disposal — One-third SHARE of Practice at two years purchase Price £1 500 Riv ranide town within easy reach of London Panel and private both increasing —Address full details No 4919 BRITISH MEDICAL JOURNAL Office, 429 Strand W C 2

Information wanted —Trained Nurse C M B will be grateful if any doctor who knows of an opening for a first-class Nursing Home will communicate with No 4924 BRITISH MEDICAL JOURNAL Office 429 Strand W C 2

Hampstead, or similar [illegible]

Lancs —Old-established PRACTICE [illegible] house garage £32. Receipts over £3 000 Panel 1 [illegible] appointments £80 12 months introduction Price £4 500 part by instalments —MANCHESTER MEDICAL & SCHOLASTIC ASSOCIATION Ltd 6 Brown Street

Liverpool —Small, easily worked PRACTICE for sale. Non-panel Panel [illegible] Population chiefly industrial increasing rapidly —Address No 4906 BRITISH MEDICAL JOURNAL Office 429 Strand W C 2

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Bed sitting room available Doctors House close to Harley Street Reduced terms to Medical men —Address No 4808 BRITISH MEDICAL JOURNAL Office, 429, Strand W C 2

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Applications are invited for the following honorary appointment —
SURGEON IN CHARGE OF OPHTHALMIC DEPARTMENT
The successful applicant will be required to attend one day weekly at 1 p m Applicants must be fully qualified male medical practitioners
Applications with copies of two recent testimonials to be sent to the Secretary Farringdon General Dispensary 14 Partletts Buildings Holborn Circus E C 4 *not later than October 13th*
B A COCKLE Secretary

Royal Chest Hospital, City Road E C 1 (Royal Northern Group of Hospitals)

A vacancy occurs for a PHYSICIAN with charge of Out patients. Candidates must possess the degree of M D or M B obtained by examination at a British University and be Fellows or Members of the Royal College of Physicians of London
Applications should be sent to the undersigned from whom particulars of the office and details with regard to the submission of testimonials etc, may be obtained
GILBERT G PANTER
Royal North'n Hospital, Holloway N Secretary

Central London Throat, Nose & EAR HOSPITAL Gray's Inn Road W C 1

RESIDENT HOUSE SURGEON (MALE)

There will be a vacancy for a Second Resident House Surgeon to enter on duty on November 1st, Remuneration at the rate of £75 per annum
The appointment offers good opportunity of acquiring extended knowledge of the diseases treated
Applications with copies of not more than three testimonials should be sent to the undersigned as soon as possible
RICHARD KELSHAW Secretary

Richard Murray Hospital, Blackhill Co Durham

RESIDENT MEDICAL OFFICER

Applications are invited for the post of RESIDENT MEDICAL OFFICER (Male) at the above Hospital which has accommodation for 16 maternity cases and 16 surgical and medical cases The salary offered is £400 per annum rising by increments of £50 to £500 per annum, with board, apartments, and laundry in addition
Candidates must be fully qualified and registered medical practitioners between the ages of 25 and 45, with special experience in major operative surgery and in midwifery and preference will be given to candidates who have held an appointment in a general hospital The person appointed will be required to devote his whole time to the duties of the office, which will include the general medical control of the institution under the direction of the Joint Board and will be debarred from private practice but will be required to undertake the medical supervision of an adjacent small Convalescent Home for mothers and young children
The appointment is included in the Superannuation Scheme of the Durham County Council, and a deduction of 5% will be made from the salary in accordance with the provisions of the Local Government and Other Officers Superannuation Act 1922 and the appointment will be subject to passing the medical examination in connection therewith
The appointment will be terminable by three months notice on either side
Applications marked 'Resident Medical Officer' together with copies of three recent testimonials, must be received by the undersigned not later than October 15th 1924
W T McDERMID
Secretary to the Joint Board
Shire Hall Durham September 30th, 1924

City of Birmingham Education COMMITTEE

ASSISTANT SCHOOL MEDICAL OFFICER,

Applications are invited for the appointment of Assistant School Medical Officer Remuneration for a candidate with suitable experience and qualifications £600 per annum No war allowance Forms of application should be returned not later than first post on Monday, the 13th October 1924 Further information may be obtained from the undersigned *Communications should be endorsed* "Assistant School Medical Officer
Canvassing in any form, oral or written, direct or indirect will be regarded as a disqualification Applications and testimonials or copies thereof are not to be sent to Members of the Committee or of the Council
Education Office, Council House Margaret Street, Birmingham P D INNES Chief Education Officer October 1st 1924

District Infirmary, ASHTON UNDER LYNE (General Hospital, 400 beds)

HOUSE SURGEON wanted (with Ophthalmic experience preferred) November 8th Six months appointment Salary at the rate of £150 per annum with board residence and laundry
The resident staff consists of a Resident Surgical Officer and two House Surgeons
Applications with testimonials to be sent to LEONARD BOTTOMLEY, Esq M A LL D Honorary Secretary 120 Stamford Street Ashton under Lyne
FRANK OLIVER
Sept 26th, 1924 Superintendent & Secretary

Hospital for Consumption and DISEASES OF THE CHEST, Brompton, S W

The Committee of Management invite applications for the post of HOUSE PHYSICIAN (for which there are two vacancies) The duties include work in the Out patient Department as well as in the Wards and one of the selected candidates will also be appointed Assistant to the Tuberculosis Officer for the local Tuberculosis Dispensary at the Hospital Applications, with testimonials, must be sent in not later than Tuesday, October 14th 1924 addressed to the Secretary The appointment is for six months commencing on November 1st, with an honorarium of £50
Brompton September 1924 FREDERICK WOOD Secretary

County Mental Hospital, Lancaster

An ASSISTANT MEDICAL OFFICER is wanted Salary £300 per annum plus bonus at present £132 1s 0d per annum together with emoluments valued at £150 per annum subject to a deduction of 5% under the Asylum Officers Superannuation Act Age should not exceed 35 years, and preference will be given to a gentleman with a practical acquaintance with electro therapy and especially with X ray work Apply with testimonials and full particulars to Medical Superintendent

Scarborough Union, APPOINTMENT OF MEDICAL OFFICER AND PUBLIC VACCINATOR FOR THE POOR LAW *INSTITUTION*

The Guardians invite applications from qualified Medical men for the post of Medical Officer and Public Vaccinator of the above Institution The salary will be £140 per annum with fees for Vaccination and for Surgical and Midwifery cases in accordance with the scale approved by the Ministry of Health
Candidates must be qualified as prescribed by the Orders of the Ministry of Health and the appointment will be made subject to their approval
The appointment will be made subject to the provisions of the Poor Law Officers Superannuation Act, 1896 and 1897
Applications with testimonials and particulars of qualifications to be sent not later than Wednesday, October 8th next to the Clerk to the Guardians 14 Dean Road Scarborough
September 26th 1924

Croydon General Hospital

A vacancy occurs on the Honorary Staff at the above Hospital for a JUNIOR PHYSICIAN and candidates for the appointment are requested to forward their applications, together with statements of their qualifications and experiences, to me on or before Friday October 10th 1924 The candidate appointed will in addition to any other duties assigned to him be expected to act as Clinical Registrar Canvassing will disqualify
GEORGE H DAVIS Secretary
September 23rd, 1924

Royal Northern Hospital, Holloway London, N

Applications are invited for the posts of HOUSE PHYSICIAN and HOUSE SURGEON The appointments are for six months from November 10th Salary at the rate of £75 per annum with board, residence and laundry
Applications with copies of testimonial should be sent by October 18th to the undersigned, from whom forms of application and rules can be obtained
GILBERT G PANTER, Secretary

The Gloucestershire Royal INFIRMARY AND EYE INSTITUTION, Gloucester (110 Beds)

ASSISTANT HOUSE SURGEON (Male) fully qualified, required at once
Salary £150 per annum with board, residence and
age qualifications and
not less than three recent
testimonials to be addressed to the undersigned
Gloucester September 29th G HURFORD Secretary

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Wanted a SURGEON and PHYSICIAN There is a fixed retainer
dent population a
October there are
four Hotels The
Applicants must be strictly temperate and competent to do emergency surgery Help can be obtained from Guernsey

Royal Free Hospital, Gray's Inn Road, W C 1

Applications are invited from male and female registered medical candidates for the post of MEDICAL REGISTRAR tenable for 14 months
Salary £250 per annum Intending candidates *should submit applications accompanied* by copies of three recent testimonials stating age and qualifications to the undersigned, on or before the 15th inst
REGINALD R GARRATT Secretary

London Temperance Hospital, Hampstead Road, N W 1

Applications are invited for the post of MEDICAL REGISTRAR Honorarium at the rate of 40 Gns per annum The appointment is open to qualified men and women and will be vacant on November 1st next
Applications with not more than three testimonials to be addressed to the Secretary by October 18th

London Temperance Hospital, Hampstead Road N W 1

Applications are invited for the post of RESIDENT MEDICAL OFFICER (Male) for 12 months dating from November 1st next at a salary of £125 per annum Candidates must send application stating qualifications, age etc with copies of not more than three testimonials not later than October 18th, addressed to the Secretary

Urban District Council of HENDON

APPOINTMENT OF ASSISTANT MEDICAL OFFICER (Woman)

The above Council invite applications for the appointment of Assistant Medical Officer from fully qualified Medical women at a salary of £600 p.a.

The candidate appointed will be required to devote her whole time to the duties of the office which will consist mainly of work in connection with the Council's Maternity and Child Welfare Scheme and School Medical Service, but may also include other duties. Applicants should have had previous experience of similar duties.

The appointment will be subject to the provisions of the Council's Superannuation Scheme, and to the successful applicant will be required to satisfactorily pass a medical examination. The appointment will also be subject to the approval of the Ministry of Health.

Forms of application may be obtained from the undersigned.

Applications endorsed "Assistant Medical Officer," accompanied by copies of not more than three testimonials to be sent not later than Monday, October 13th, 1924.

Canvassing will be deemed a disqualification.

Dated this 24th day of September, 1924.

Town Hall, Hendon, N.W.4. HENRY HUMPHRIS, Clerk to the Council.

Blackburn Union

The Guardians of the Blackburn Union invite applications from Medical Practitioners (male) for the appointment of RESIDENT ASSISTANT MEDICAL OFFICER at their Institution and Infirmary. The applicants must be registered as

[illegible] Medical Officer and Laboratory

There is a separate Infirmary, separate Mental Block and a separate Sanatorium for children and [illegible] all Department Midwifery [illegible] approval and expect the person appointed to devote his whole time to the duties and also to act as may be directed by the Medical Officer as respects the Infirmary or other Department.

Salary £200 per annum, together with board, apartment, and assistance (subject to deductions under the Poor Law Officers Superannuation Act, 1896).

Applications, stating age, qualifications and experience, and accompanied by copies of not more than three recent testimonials, must reach me not later than October 1st.

Union Offices, Blackburn, September 22nd, 1924. CHAS. E. BYGRAVE, Clerk to the Guardians.

Holborn Union, London

HOLBORN AND FINSBURY HOSPITAL, Archway Road, N.19.

The Guardians of the Holborn Union invite applications for the post of SECOND ASSISTANT MEDICAL OFFICER at their Holborn and Finsbury Hospital, Archway Road, Upper Holloway, N.19. Salary £300 per annum with board, furnished apartment, etc.

The gentleman appointed will be required to devote the whole of his time to the duties of the office and to act under the direction of the Medical Superintendent.

The appointment will be subject to the provisions of the Poor Law Officers' Superannuation Act, 1896.

[illegible] me on or before October 14th, 1924. By Order, CHAS. J. CROSS, Clerk to the Guardians.

The Warneford, Leamington

GENERAL [illegible] on the 13th. SURGEON [illegible] will assist in the Surgical Ward. Maternity and Ophthalmic Departments and laundry. [illegible] ence with the [illegible] ent to W. J. RUSSELL RUDALL, Sept. 22nd, 1924. House Governor and Sec.

The Miller General Hospital

FOR SOUTH EAST LONDON, Greenwich Road, S.E.10.

HOUSE PHYSICIAN (Male) required (Pendennis and Surgical staff four). Salary £125 per annum with board, lodging and laundry. Applications stating age, nationality, qualifications and experience, accompanied by not more than three recent testimonials, to be sent as soon as possible to the Secretary.

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2. SLIGHT TOWN (N.W. Coast).—Old-established PRACTICE of about £1,500 a year. Panel [illegible] and appts. Full midwifery. Convenient house with garage and small garden. Rental £100. Premium £2,300.

3. WITHIN FIVE PEACH of the Marble Arch.—PRACTICE of about £1,200 a year. Freehold house. Vendor going abroad. Fees [illegible]. House and [illegible] furniture. Price for quick sale, £1,400.

4. NORTH OF ENGLAND.—PRACTICE of £1,400 a year in good [illegible] in centre. Panel £550. Fees from 3/6. Good corner house for sale. Vendor retiring. Price for goodwill £2,000.

5. LONDON (Central).—General PRACTICE of about £1,250 for sale. Good appts. £350. Small panel. No midwifery. House on [illegible] lease at £125. Price £1,500.

6. LONDON (S.E.).—Old-established PRACTICE conducted mainly as a Lock-up Surgery. Receipts £1,300. No panel. Expenses light. Efficient introduction assured. Terms moderate.

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Surrey.—A Partner required [illegible] general practice [illegible] in a [illegible] town. Receipts £2,200. Panel [illegible]. Fees 3/6 upwards. Scope. Personally known and [illegible] references. [illegible] with [illegible] of £75. Easy terms over [illegible] years. Purchase of One Third Share.—Folio [illegible].

South Wales.—A General PRACTICE situated in a [illegible]. Receipts £2,000. Panel [illegible]. Part of [illegible]. Good house in central [illegible]. Fees 3/6. Premium £2,000, [illegible] be had down, the balance by arrangement.—Folio [illegible].

Norfolk.—A General [illegible] for £3[illegible].

Notts.—A Middle and working-class PRACTICE (town and country). Receipts £1,200. Fees 3/6 upwards; small [illegible] house containing 3 bedrooms, etc. Rent £50 per annum.—Folio 662.

London.—City Practice Receipts £1,250. Including appts. £500. Panel [illegible]. Fees 3/6 upwards. Vendor retiring. Ample scope. [illegible] house in central position. Rental. Premium £2,000.—Folio 667.

Salop.—A Partner required for an old-established Practice situated in a Market Town. Receipts over £3,500. Large [illegible]. Centre of hospital industry. Increasing [illegible]. Surgical experience. Vendor has other [illegible]. Premium for one-third share [illegible] years purchase.—Folio 883.

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(Mr. A. HADLEY)

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2. NORTH MIDLANDS.—Middle and working-class PRACTICE in [illegible]. Receipts £1,000 a year. Panel [illegible]. Will be [illegible] increased. Good house. Rent [illegible]. Premium £75. Price for goodwill £1,100.
3. LONDON.—PARTNER wanted [illegible]. Irish Practitioner. Must have had [illegible] Practice returning about £1,000 a year. Highly [illegible] Living accommodation [illegible]. Premium [illegible].
4. MIDLANDS.—Small Inland Town PRACTICE returning about £2,000 per annum. Partnership [illegible]. Commencing [illegible] with [illegible] age [illegible] £40. Premium £3,000.
5. MIDLANDS.—Practice [illegible]. Middle-class PRACTICE worth £1,000 a year. Panel [illegible]. Fees [illegible]. Will [illegible] £60. Premium [illegible].
6. ESSEX.—PARTNERSHIP [illegible] 25 miles out. [illegible] for [illegible] [illegible] [illegible] [illegible] [illegible] [illegible] £500.
7. YORKS.—Lease, Trade [illegible] £900 a year. [illegible] £900. Premium £1,300.
8. SOUTH WALES.—[illegible] £1,000. Lease [illegible] £500. Premium [illegible].
9. WEST LONDON.—General [illegible] PRACTICE [illegible] £1,000. Lease [illegible] £500. Premium [illegible].

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PRACTICES AND PARTNERSHIPS FOR SALE

1 KENT—SMALL TOWN within one hour of London Old established mixed general PRACTICE Average income about £1 800 including valuable appointments probably transferable and panel of nearly 1 200 Fees 3/- to 10/- Twenty cases of Midwifery yearly at 2 to 5 guineas Excellent house containing 2 reception and 8 bedrooms separate entrance to professional rooms standing in its own grounds of ¾ of an acre with full sized tennis court etc Vendor's freehold price £2 300 Good Hospital in town and Vendor on the Staff Premium £2 700 Introduction if desired up to six months

2 MIDLANDS—COUNTRY TOWN within two hours of London Old established mixed general PRACTICE with a steady average income of £1 400 including £100 from appointments probably transferable Panel of about 800 Fees 2/6 to 10/6 About 60 midwiferies a year at 2 to 5 guineas There is an up-to-date Cottage Hospital and the purchaser would be on the Staff House contains in addition to professional rooms dining room, drawing room 4 bedrooms dressing room bathroom etc, electric light garage small garden Held on lease with over 10 years to run at a rental of £44 per annum Prem £2,100

3 YORKSHIRE IMMEDIATE—In a large town (population over 50 000) an old estab PRACTICE is for disposal in consequence of the continued ill health of Vendor The receipts which were formerly over £1 500 are now about £844 p a including panel of 700 and several appointments Visits 2/6 upwards and medicine extra Midwifery 2 gns House recently redecorated and situated in best residential district will be let on lease at £60 a year Vendor is on the Staff of the Hospital which has 120 beds and shortly to be increased to 150 Premium £1 000 or near offer

4 EASTERN COUNTIES—Within 4 hours run of London Practically unopposed PRACTICE old estab and situated in a very pretty Country Town with beautiful surroundings Cash receipts for last financial year £2 022 including appointment of £50 and panel of 500 Visits up to 2/- Very little Midwifery Car optional Railway station Charming residence (with ample accommodation) in its own grounds of ¾ of an acre Price £2 900 all of which can remain on mortgage at 5 per cent Premium for practice £2 500 Excellent prospects Tennis golf hunting shooting etc

5 RESIDENTIAL TOWN within 100 miles of London Non dispensing chiefly better class PRACTICE, producing an income of about £2 000 a year including small panel of about 600 Fees from 2 6 to 21/, mainly 7/6 upwards Only a few cases of midwifery yearly at 2 to 25 guineas Attractive and commodious house (3 reception 7 bedrooms etc garden) on rental at £100 p a Good society and sport of all kinds Premium £4 000, payable £2 000 cash and £2 000 by instalments

6 NEAR LIVERPOOL—In a large town (population nearly 100 000) close to seaside resort, an old established flourishing and increasing PRACTICE worth last year £2 100, including 1 600 panel patients Visits 2 6 to 5/ Midwifery 2 to 4 guineas about 100 cases yearly Good house with garage, available Vendor's property and will be let to Successor at £100 a year or can be purchased Prem 1½ yrs purchase Efficient introduction given

7 NEWCASTLE UPON TYNE AREA—Old established PRACTICE held by Vendor many years Steady average income of about £3 350 There is a Hospital in the town and a reasonable prospect of obtaining an appointment on the Staff There are various appointments worth about £150 a year Very little midwifery but large scope if desired Fees 4/6 to 21/ House is Vendor's freehold It is well situated and will be let or sold Excellent educational facilities Premium to include drugs, etc, about £3 000 payable £2 000 down

8 [illegible] 000) amidst [illegible] don an old [illegible] £3 500 per annum, including large panel Good fees The house is well situated has ample accommodation and can be rented on lease at £100 a year Premium £3 000 cash and £2 000 by instalments Satisfactory reasons for selling Educational facilities, and sport of all kinds

9 FAVOURITE INLAND SPA—PARTNERSHIP A well qualified and experienced man with a good personality is desired by a Consulting Physician as Partner with ultimate succession The present income is only about £1 [illegible] considerable scope for increase encouraged to undertake general [illegible] the partnership for the fees so obtained There is a choice of houses both on rental and to buy in the residential part of the town At present the fees are mainly 1 and 2 guineas but there are a few at 10/6 Premium for the half share £1 500

10 GROWING COAST TOWN within easy access of London Old established very sound mixed general PRACTICE Average income over £1 800 Fees mainly 3/6 to 10/6 Very little midwifery Very good corner house with small garden There is a Cottage Hospital in the place and the Practice offers very good prospects to a Surgeon Premium 1½ years purchase

11 HOME COUNTIES—Hospital town within 50 miles of London PARTNERSHIP [illegible] held by senio [illegible] Panel of 780 [illegible] from 3/6 Ve [illegible] with ample accommodation and good garden Price £2 000 or [illegible] an up to date [illegible] Good sport, [illegible] agement

12 [illegible] —BERLAND—Old established village PRACTICE Average income £813, but there is scope for increase 200 panel patients Advice and medicine 2 6 3/6 and 5/ Visits 3/6 to 10 6, medicine extra Small convenient house Price for house and practice £2 000

13 CHANNEL ISLANDS—Small and easily worked and very transferable PRACTICE worth about £500 a year Very suitable for a middle aged practitioner who desires a quiet life

14 [illegible] work Fees 15/ and £1 1s upwards Court fees £5 5s upwards There is a certain amount of X ray work at £3 3s Income is about £750 a year Two well situated rooms inclusive rent £100 a year Premium to include X ray equipment, furniture etc (Valued at £250) £1 000

15 WEST CENTRAL—Sound, easily worked PRACTICE of about £770 a year There is very good scope as the Vendor has suffered from ill health since the [illegible] 3 Very convenient flat Rent £58

16 LONDON NORTH—Old [illegible] producing an income of £1 400 a year including appointment worth £320 Panel of 3 0 but this can be largely increased if desired Visits and medicine 3/6 to 7/6 Practice is easily worked with no conveyance Nice house in good decorative repair with fair garden Rent £125 Garage can be let off at £26 or £54 Premium £2 000

17 SOUTH-WEST OF ENGLAND—COUNTRY TOWN—A ONE-THIRD SHARE producing £ [illegible] is offered in a good-class non p [illegible] with a considerable amount [illegible] Hospital in the town and the [illegible] the F R C S Eng) will be elec

18 SOUTH-WEST OF ENGLAND—ASSISTANTSHIP [illegible] to Partnership in a good mixed general Practice, worth over £2 500 a year Scope for increase with the aid of a suitable man Applicants should be about 30 to 35 single, and experienced in Surgery

19 YORK [illegible] work [illegible] from [illegible] from [illegible] lowes [illegible] garden Electric light Garage Price £2 500 of which [illegible] on mortgage Premium £1 400 cash

20 —FAVOURITE RESORT Old established [illegible] PRACTICE Income only about £400 per annum at present but there is very large scope for increase by a young well qualified man Good fees Excellent corner house with 3 reception, 6 bedrooms, garden Freehold Price for House and Practice £2 500

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ome County — Nearly £1 100 a year Old established Good fee little midwifery Small panel Good house garden Introduction as arranged — Apply 806

stern County — About £1,800 a year One-third now and ultimately Panel over 1 000 Visiting fees 3 6 up fery from 2 guineas House or rooms and Good sporting locality — Apply No 7605

idlands — At present doing about £750 a year with scope Panel 1 000 6 to 7 6 Midwifery to £5 5s Od Opportunity Small house rent £30 Premium — Apply No 7602

ndon, W — About £1,700 a year First-class PRACTICE non dispensing Fees 21 - upwards Excellent house on Purchaser must be a graduate middle-aged well qualified with ample means — Apply 595

uth Coast — For disposal, Great scope for increase panel etc Good — Apply No 7594

ncoln — Country Town, about £1,850 p.a. Very old established over 1 000 Visits 3 6 up Appointments £70 Good detached house tennis garden 1 acre Long introduction — Apply No 7593

ndon, S W — Partnership About £3 000 a year Panel 1 000 Very established Practice Midwifery fees 2 to 10 Visits 3 6 to 7/6. Flat available Premium 0 — Apply No 7585

ffolk — Nearly £1,600 a year Non-dispensing PRACTICE Panel Fees 5 to 10 6 Good detached house and garden £70 Some surgery and ample coals No 7533

orkshire — Average £1,286 Appointments £350 Visiting fees 3 6 to Panel nearly 1 300. Few midwifery cases house every convenience — Apply No 7581.

orth-West County — 7 — Apply No 7579

eath Vacancy — London, S E About £1 524 per annum Cash and panel CTICE Visiting fees 2/6 to 5/ Excellent ses on lease Small panel No Sunday or work — Apply No 7576

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ear Manchester — Nearly £2 000 p.a. Panel worth about £600 p.a. house with separate surgery to rent 1½ per purchase easy terms Good is near — Apply No 7565

stern County Partnership About £2,200 p.a. Panel about 2 000 and appointment Fees 3 6 up One third for 1½ per with succession in about 3 years No 7564.

ndon, S W — Partnership education £2 000 a year Half share disposal immediately Panel 1 1 Old established Good fees Excellent house and large Premises purchase — Apply No 7560

ottinghamshire — Over £1 250 a year Middle and working class rapidly increasing Fee chiefly 3 6 to 1 up to 21 Small house with garage on All part and good school — Apply 7549

eshire — Nearly £4,000 a year Old established Practice HALF For sale at 1½ years purchase Panel about Appointments £45 Good fees Good and garden to rent — Apply No 7536

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West Riding — Practice of £1 500 Panel 1 000 Opposition light Good house rent £80 Premium £2,000

Midlands — Town and country PRACTICE of £1,200 Panel 0 Good corner house with garage rent £60

Midlands — Good money-making PRACTICE of £1,800 with great scope Panel 2,200 Appointments £110 Rent £50 Premium £2 700 £1,500 down

Liverpool — Middle and working-class PRACTICE of £700 with great scope, for sale owing to illness Panel 4 0 Very little midwifery Premium only £800 for quick sale. Convenient house can be bought cheaply

North London — Practice of £1,600 Panel 1 100 Appointments £420 House with side entrance to surgery and small garden Rent £63.

Cornwall — Unopposed PRACTICE of £1,500 in beautiful district near the sea. Panel worth £550 Appointments £80 House with surgery garage etc. Rent £40 on lease Premium 1½ years purchase

Within 100 Miles — Country PRACTICE of £1 000 in good hunting district Panel and Appointments £200 No resident opponent Good house with tennis court and 1½ acres Rent £80 Prem. £1,500

Notts — Partnership with Succession Half share of over £1,600 House with nice garden and garage separate entrance to surgery Can be had on lease

Gloucestershire — Small town with cottage hospital PRACTICE of nearly £1 800 Panel 1 000 Appointments £120 Beautiful house and garden with tennis court on lease

Scotland — Unopposed PRACTICE of £8 0 Panel 0 Appointments £100 Good house with well wooded garden Price £1,500 for house and practice £1 000 down

New Zealand — Unopposed PRACTICE of £1 800 in beautiful district Good house Rent £100 Scope for surgery Premium £1 000

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East Coast — Steadily increasing PRACTICE in beautiful and resort in Yorkshire Receipts average £1,500 Panel 000 Excellent house with garden and garage to lease

Northumberland — O'd established Mixed non panel PRACTICE in large town Receipts over £3 000 Scope for panel and panel Good house to rent

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SURREY —(3) Riverside Town PARTNERSHIP in steadily increasing Practice Receipts 1924, £2 192 Panel 1 700 One third share at two years purchase

YORKS —(4) PARTNERSHIP in very old-established Practice in good Town Receipts average between £3 000 and £4 000 p a Panel 1 200 One fourth share at two years purchase, payable by arrangement Preliminary Assistantship of six months

YORKSHIRE, WEST RIDING —(5) Well-established mixed class PRACTICE nearly £1 500 p a, in Manufacturing Town Panel 1,358 Good house (5 bedrooms), to let on lease Premium one and a half years purchase

SOUTH WALES —(6) Very old-established PRACTICE, over £1 550 in beautifully situated Country Town Panel nearly 400 Fine old mansion house with half acre garden, to be sold Good schools and sport Premium £2 250

EASTERN COUNTIES —(7) PARTNERSHIP in very old-established Practice in a beautifully situated Market Town Panel 1 600 Detached house (4 bedrooms) Rent £50 p a on lease Scope for Surgeon Share worth about £1 100 p a at one and three quarters years' purchase

LONDON, S W —(8) Well-established PRACTICE of between £1 100 and £1 200 p a Panel about 1,600 House containing 5 bedrooms &c Rent £55 p a on lease Good scope Premium £2,000

WEST OF ENGLAND —(9) ASSISTANTSHIP with view to partnership in mixed practice of over £2 800 p a in Country Town Panel 800 One fourth or one third share at two years purchase Applicant should be keen on surgery Hospital in town

STAFFORDSHIRE —(10) PARTNER required (after preliminary Assistantship) in old established Practice about £2,500 p a, in Manufacturing Town Panel 2 600 House available One third share at first Partner should be aged 30 to 35, experienced, and good at minor Surgery Cottage Hospital

SOUTH OF ENGLAND —(11) PARTNERSHIP in good-class non panel practice of about £2,500 p a in beautifully situated country town Applicants should be Oxford or Cambridge Graduate, not over 35 and preferably F R C S Eng

SURREY —(12) PARTNERSHIP in good-class non-dispensing Practice in most desirable Residential Country Town No panel Suitable house could be obtained Partner must be Graduate of Oxford Cambridge, or London University aged 40/45 Share worth about £1 000 p a at first Hospital in Town

FIRST-RATE RESIDENTIAL DISTRICT up the THAMES —(13) PARTNERSHIP in good class Practice averaging about £1 550 p a Not much Midwifery Good house with garage to be sold Premium one half share £1 200 Scope for Surgery

LONDON S E —(14) Well-established and very lucrative PRACTICE about £3 625 p a in Industrial Centre Panel 1 500 Very good non basement house (5 bedrooms) to be sold Would suit two men Premium £4 000

SOUTH MIDLANDS—(15) Very old-established unopposed Country PRACTICE between £1 100 and £1 200 p a Panel 700 (about) Small house 3 or 4 bedrooms) Rent £50 (larger house could be purchased) Premium £1 550

SOMERSET —(16) Unopposed Country PRACTICE of £1 100 Panel 800 Good well appointed 12 roomed house with bath room Garden and garage Educational facilities Premium £1 400

YORK (near) —(17) Unopposed Country PRACTICE, between £700 and £800 p a £240 of which is panel) in picturesque growing Village Model detached house with garden garage electric light, bathroom &c etc for sale Premium one and a half years purchase

HOME COUNTY —(18) Very old-established PRACTICE averaging £144 p a in Residential District under 20 miles from London Excellent detached house (11 bedrooms) with large garden—suitable for reception of Resident Patients Moderate premium

DEATH VACANCY, CROYDON —(19) Old-established PRACTICE averaging £1 335 p a in populous Suburb No appointments or panel Well situated modern detached double fronted corner residence (6 bed and dressing rooms) on main road Plenty of scope for increase in all directions

EASTERN COUNTIES — (20) Very old-established unopposed Country PRACTICE averaging £1 650 p a Panel 850 Modern detached house (6 bedrooms) in acre ground Rent £80 on lease Premium one and a half years purchase

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MANCHESTER —(26) PARTNERSHIP in old established good class Practice over £4 500 in Residential District Small panel One fourth share would be sold for £2 115 with option to increase up to one half Partner should be about 30, and preferably M D or F R C S

SPECIAL OPHTHALMIC PRACTICE —(27) About £1 400, in high class inland Health Resort Operative and acute cases refused of late years Considerable scope for increase Premium £1,400

NORTH OF ENGLAND —(28) Old-established PRACTICE of £1 460 per annum in Country District Panel 810 Very good house (5 bedrooms) in charming grounds two acres Premium practice house and grounds £4 000 Mortgage could be had on house

YORKSHIRE, WEST RIDING —(29) Well established middle and working class PRACTICE over £1,300 (£920 from Panel and appts) in large clean town Good detached corner house Prem £1,400

EAST COAST —(30) Increasing PRACTICE over £900 in rapidly developing District Panel about 100 Nearest opponent 6 miles Bungalow residence (5 rooms) Premium £750

EGYPT —(31) Well-established PRACTICE £700 to £800 mainly among English Residents and Visitors Excellent semi-detached residence (5 bedrooms) Premium to include Furniture £1 100

SURREY —(32) PARTNERSHIP in Practice, £7,000/£8,000 per annum in one of the best Residential Districts House (7 bedrooms) to rent Premium one sixth share two years purchase Partner should be aged over 30 and have held hospital appointments

MIDLAND TOWN —(33) Old-established PRACTICE about £1 100 per annum in Residential Suburb Panel 600 Good house and large garden Premium £1,500

LONDON, N W —(34) PRACTICE worth about £400 per annum in working class district Panel 500 increasing Non midwifery Double fronted corner house Premium, Practice, and freehold House £1 500 Great scope for young man

LONDON, S W —(35) Recently established Lock up PRACTICE, in new and developing outlying Suburban District 1 of Consulting rooms £40 Prem to include lease, furniture, and fittings £250

SCOTLAND, NORTHERN HIGHLANDS —(36) PRACTICE averaging over £1 600 p a, in a Town No panel House (5 bedrooms, etc) in best residential part Ample scope for midwifery No panel Premium £1 200

WEST MIDLANDS —(37) PARTNERSHIP in old established Country Town Practice over £3 600 p a Panel 1 183 1s £60 Partner should be aged 35 to 40 with some Surgical experience Well equipped Cottage Hosp Prem one third share one and a half years purchase

LONDON, S W —(38) Well-established PRACTICE of £600 to £700 p a in favourite Residential Suburb Panel 900 No much midwifery Excellent detached house (6 bedrooms) with good garden for Sale Ample scope. Premium one and a half years purchase

SURREY —(39) PARTNERSHIP in good middle class compact practice over £2 650 in Residential District easy distance London Panel 1,200 Two fifths share at first at two years purchase

MIDLANDS —(40) Unopposed Country PRACTICE over £1 150 in beautiful part Panel about 720 Detached house (11 rooms) with half an acre garden Mild climate.

SOUTH OF ENGLAND —(41) PARTNER required in very sound old established Practice in Seaport Town Panel under 300 Share worth £700 to £800 at two years purchase Partner must be and energetic and not much over 30

SOUTH WALES —(42) Well-established PRACTICE nearly £1 250 p a in County Town Panel over 900 Fees 5/ to £2 2s Well situated double fronted house (6 bedrooms) with large garden Rent £ Educational facilities Premium £1 800

YORKSHIRE (WEST RIDING) —(43) PRACTICE over £1 500 p a, in thriving Industrial Town Panel 1,500 Good house (5 bedrooms) Rent £80 Premium £2 250

EASTERN COUNTIES —(44) Old established PRACTICE £1 855 p a in pleasant Market Town Panel 1 100 No midwifery Excellent detached house (7-8 bedrooms) Very good garden Cottage Hosp Premium one and half years purchase

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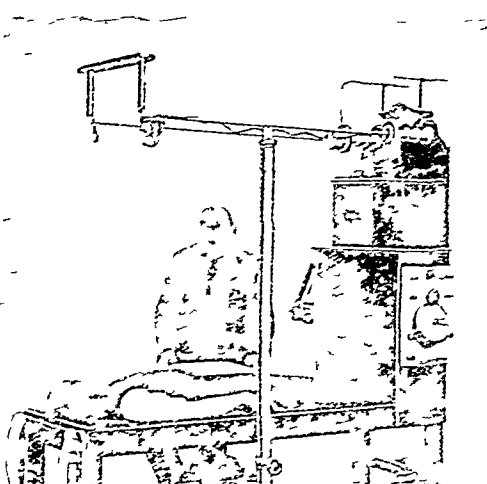
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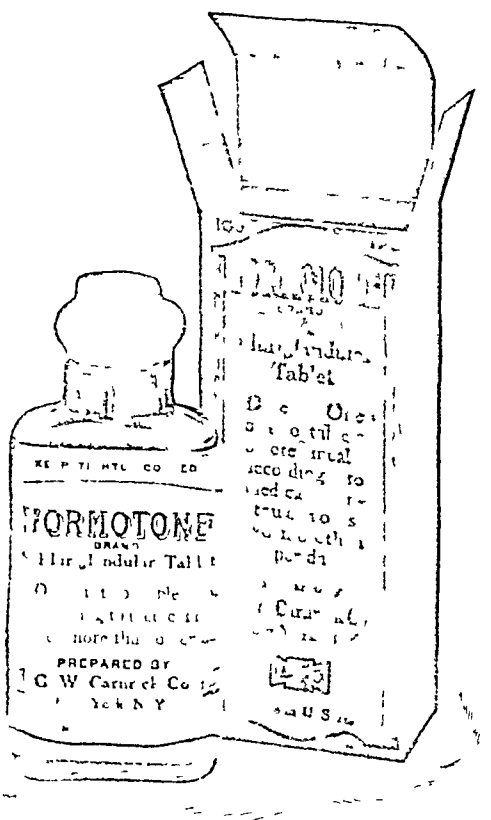
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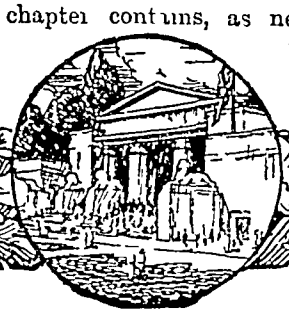
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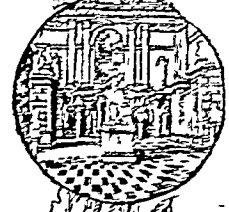


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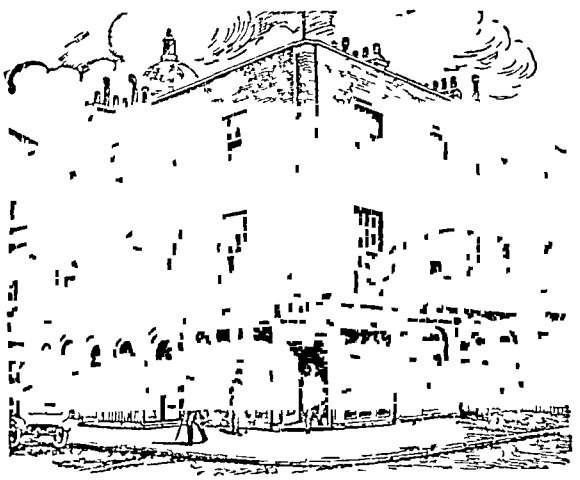
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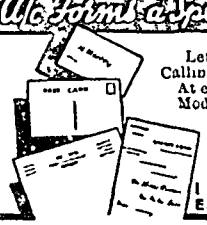
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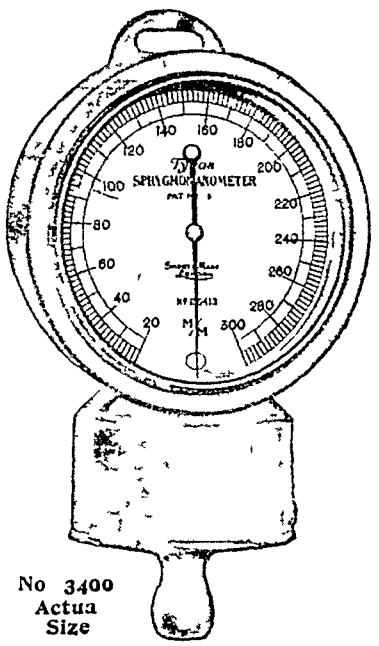
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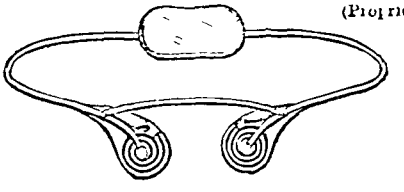
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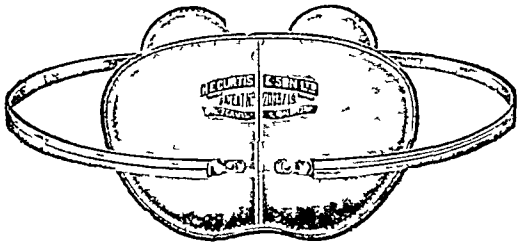
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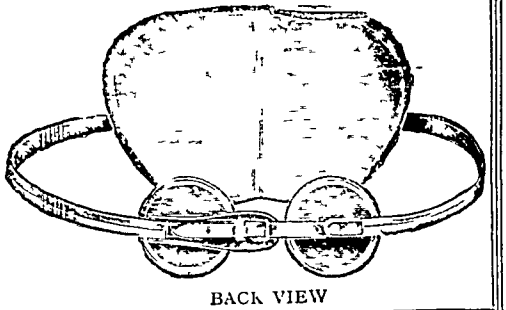
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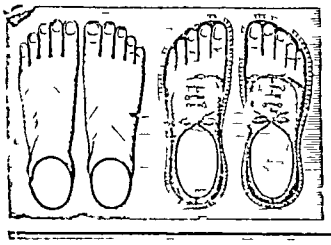
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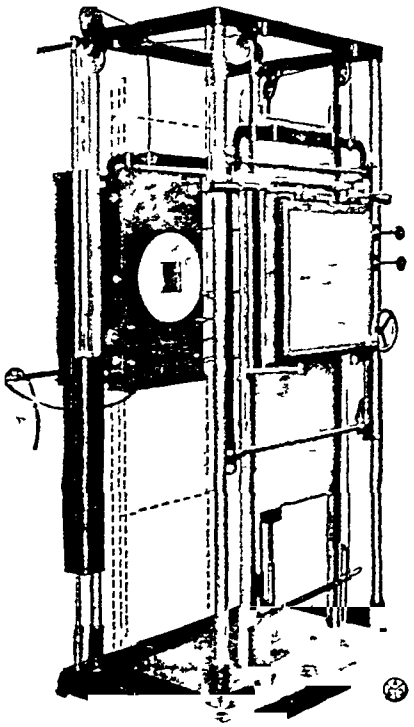
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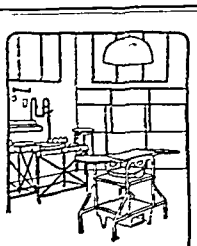
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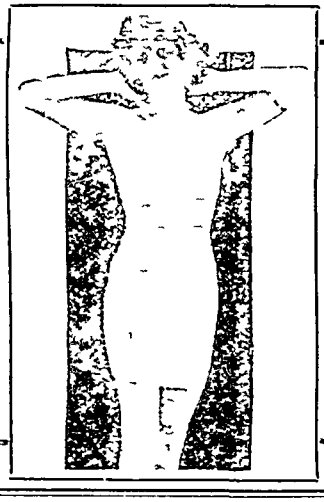
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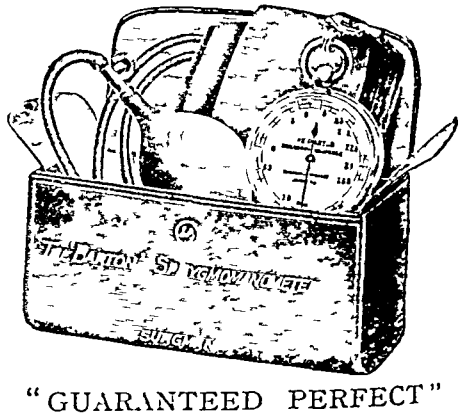
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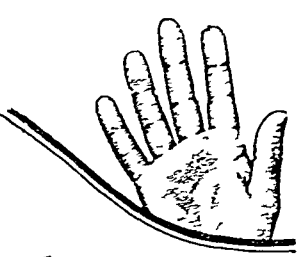
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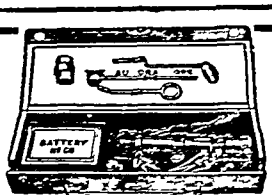
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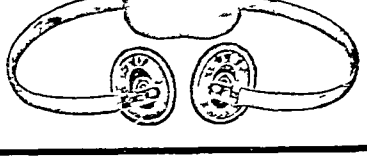
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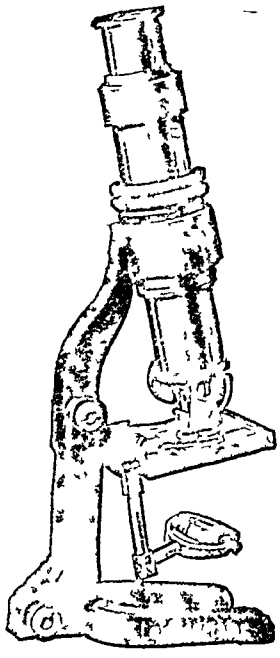
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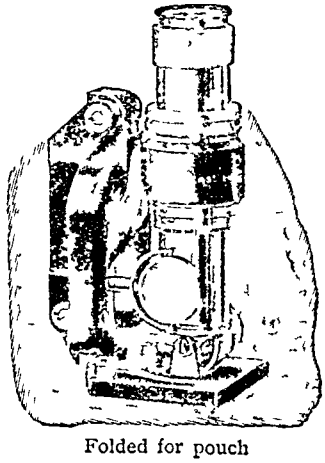


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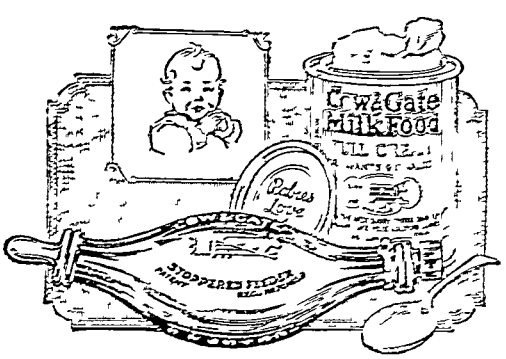
WHEN a mother has to resort to foster feeding for her baby, with the choice of a suitable food comes the selection of an efficient Feeding Bottle

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Many and varied have been the attempts to devise a bottle which allows a sufficient but not excessive supply of Food

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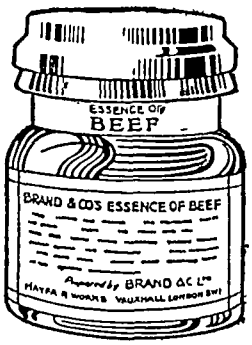
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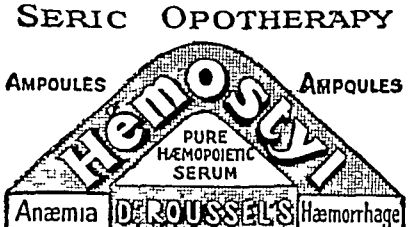
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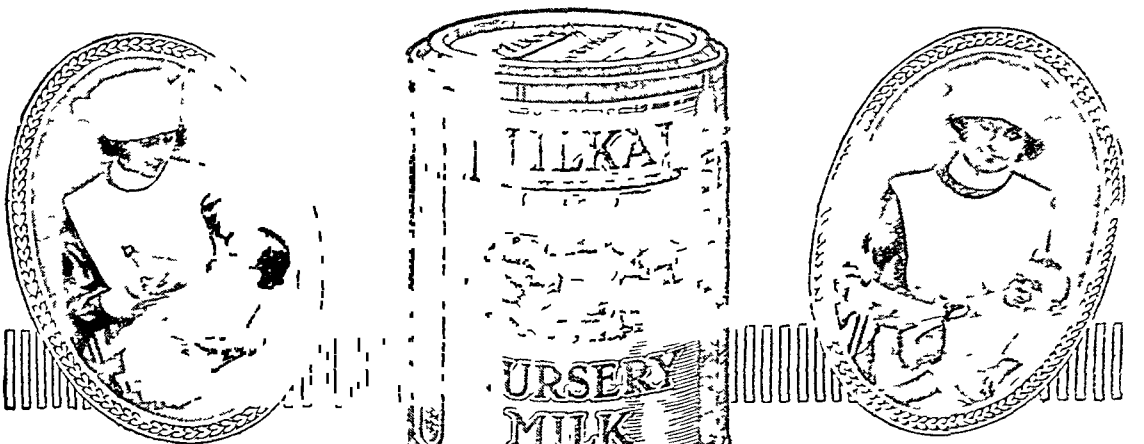
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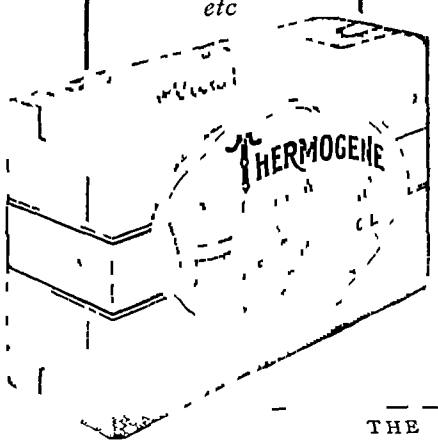
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Fat	3 3	3 5	3 45
Casein	0 9	3 0	0 80
Lactalbumen	0 4	0 3	0 60
Salts	0 2	0 8	0 65
Water	88 7	87 7	88 25
	100 0	100 0	100 0

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The preparation is supplied in sterile rubber-capped vials *ready for use*—each cubic centimetre of solution containing 0 2 gm of Bismuth Metal

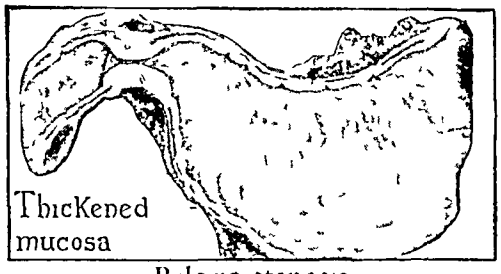
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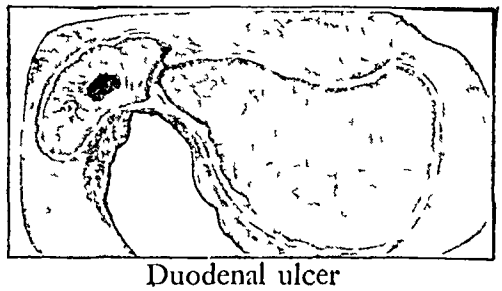
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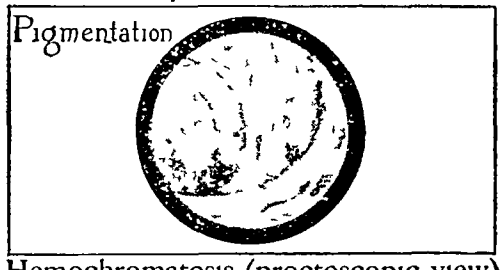
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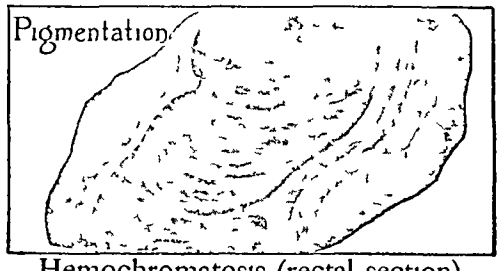


Pyloric stenosis


Duodenal ulcer



Hemochromatosis (proctoscopic view)



Hemochromatosis (rectal section)

LUBRICATION THERAPEUSIS
IN GASTRO-INTESTINAL ULCERATIONS.

A NOTED gastroenterologist points out that the first and last few feet of the gastro intestinal tract are the regions where ulcerations most commonly occur Ulcers of the esophagus, stomach, and duodenum, are fairly common, he states, but those of the jejunum and ilium are exceedingly rare Ulcerations in the upper digestive tract are practically never multiple, while those occurring in the lower bowel are usually multiple In fact, routine proctoscopic examinations by one of the leading gastro enterologists have shown that ulcerations of the large bowel are much more common than heretofore supposed

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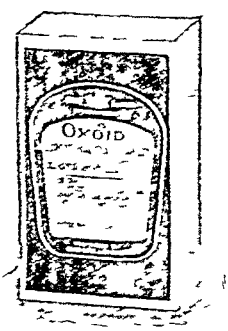
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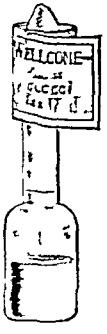
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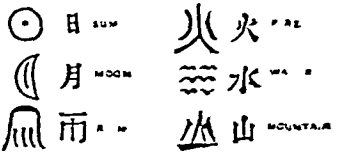
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PICTOGRAPHS AND IDEOGRAMS EVOLVED BY CHINESE PIONEERS OF A SYSTEM OF WRITING.—Writing in China, as elsewhere began its career in archaic pictorial characters. It remained in the pictographic stage later in China by about 2000 years than in the countries which had a contemporary civilisation—it is interesting to find that the beautiful Chinese script is still pictographic in form though much disguised There were three principal stages in its evolution. In the first we see the rude forms of objects A number of these are here reproduced each with its present-day equivalent beside it. But these simple pictographs could not represent abstract ideas and the first change came when some pioneer thought of blending them to make ideograms By combining the pictures for sun and moon the idea of light, brightness was produced. Morning was indicated by a picture of the sun causing dew to fall. A line passed through the pictogram for rings made the word for threading By repeating the sign for 'tree' the word for forest resulted while three such signs one above and two below formed the ideogram for shady dense. A heart with two horizontal lines (the number 2) above it, expressing the idea of feeling the sorrows of another heart, signified a compassionate being Some of these ideograms with their modern equivalent words are here illustrated The third stage was the addition of ideograms of phonetic characters by which their meaning could be modified. By this process words could be coined in any number



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British Medical Association

PROCEEDINGS OF SECTIONS AT THE ANNUAL MEETING, BRADFORD, 1924

SECTION OF ORTHOPAEDICS

R C Elmslie, O B E, M S, F R C S, President

DISCUSSION ON THE TREATMENT OF HALLUX VALGUS AND RIGIDUS

OPENING PAPER

BY

Sir ROBERT JONES, K B E, C B, F R C S,
Consulting Surgeon Royal Southern Hospital Liverpool Director of Orthopaedics, St Thomas's Hospital London

Hallux valgus is a deformity of the first metatarso-phalangeal joint where the great toe is deflected outwards, or, in other words, adducted towards the centre of the foot There may or may not be disability as a consequence, and if there is it does not necessarily depend on the degree of adduction If the adduction is extreme the second and, sometimes, the third toes are either over- or under lapped, or in certain cases may only be deflected outwards A bursal enlargement over the dorsal and inner side of the head of the metatarsal occurs in a considerable proportion of cases where the lateral angulation is extreme Even the presence of the bursa may give rise to scarcely any discomfort

Pronounced hallux valgus, therefore, like many types of flat-foot, may exist merely as a harmless deformity, and need not, save for æsthetic reasons, come under the notice of the surgeon Furthermore, the feet of the majority of adults would not conform to the normal standard which insists that the phalanges should be in a line with the metatarsal bones In the early stages of the deformity the toe can be easily placed in correct alignment later the deformity is fixed and cannot be overcome by manipulation The deformity usually develops after the age of 25, but should it occur during the athletic stage a complaint is sometimes heard that efficiency is lessened I was consulted by a famous sprinter with a left-sided valgus and he told me that he had been obliged to start his sprinting with his right foot as his left big toe had weakened He had no other disability By correcting the deformity and restoring the alignment of the extensor proprius hallucis he was enabled to renew his practice of starting his races with the left foot forward Several instances have been brought to my notice where the deflected toe appreciably weakened the fore part of the foot This is to be expected when we reflect upon the part played by the big toe in walking and in running This toe has a responsibility surpassing that of all the others in what I presume we all agree is the correct method of walking—namely, the alternate heel and toe—and in running it requires to be abducted to ensure its strongest grip Except in the case of the athlete who requires every atom of power, these points will not arise—the adducted toe will generally suffice

When the surgeon is consulted he is faced with the problems of pain and discomfort and only occasionally does a patient come to him solely because of the deformity There have been endless theories as to the etiology of the deformity, and I will not trouble you as to whether the ligaments or the muscular system or the joints are at fault, but I prefer to emphasize my belief that in the vast majority of cases the demands of fashion are to blame It is a question of boots—they are the exciting cause—ligaments and muscles and joints are merely their victims The deformity is a postural one in the first instance, an organic one later It is an outcome of our so-called civilization which demands that our feet should be moulded to a covering which has no reference either to the shape or the size of the foot All investigations have borne out the statement that primitive races exhibit well developed and normal toes I need only allude to the Abyssinians, certain South African races, and the American Indian All these races practise a heel-and toe walk and can abduct their big toe They walk with parallel feet, some of them pigeon toed, and although the longitudinal arch is often flattened they do not exhibit the everted foot It the toes are pointed forwards eversion cannot take place for the foot becomes a lever of propulsion, the muscles and joints being constantly exerted The rolling everted foot is no longer a lever, and the muscles of the sole and calf are proportionately attenuated

The studies of Hoffman who investigated the feet of barefooted Philippine and Central African races, bear out the conclusions of other observers In the primitive foot as in the shoeless child the movements resemble those of hands, and the great toe can be abducted almost as a thumb Furthermore the metatarso-cuneiform joint allows of very considerable movement, suggestive of the metacarpal of the thumb We have all seen the extraordinary development of the functional activity of the toes found in armless humans A child at Bachurch Hospital afflicted by infantile paralysis of the arms learnt to perform practically every action which could be done by the hands and the parents were very loath that she should undergo any treatment for the arms which might hinder the functional development of the toes It was found by Hoffman that the widest part of the undistorted foot corresponded to a line drawn from the top of the fifth toe transversely across the foot In a conventional shoe this, as we know, is anything but the case The phalanges in an undistorted foot should be in a line with their several metatarsals, and when weight is borne the toes separate and widen the base of support The great toe, to be at its greatest functional efficiency, should be apart from its neighbour by a wide interval It thus forms a support which assists in adducting the foot I have been at pains to dwell on this etiological factor as there is a tendency to overemphasize exceptional cases where the deformity could not be ascribed to the boot, and to instances where atrocious boots have not given rise to pain and disability I have never seen a normal foot in women who have worn fashionable boots although many have escaped pain and disability which, as we know only affect comparatively few

What are the causes of pain and disability? Generally the formation of a bursa or bunion, which becomes painful when inflamed This bursa does not always develop in the same spot When the deformity is but moderate it may be situated more on the dorsal aspect of the joint, when extreme it is found almost wholly on the inner side of the joint At this stage the head of the first metatarsal has undergone certain changes The cartilage which is unopposed, is thinned, and if arthritis is present may present erosions and lipping similar to that found in osteo-arthritis Osteophytic deposits may be felt beneath the bursa and a subluxation of the phalanx is present The flexors and extensors of the toe-joint are displaced outwards and are important agents in adducting the toe The sesamoids are often found to one or other side of their normal position The internal lateral ligament is very much stretched and is generally thickened The bursa which may be multilocular, sometimes communicates with the joint The external lateral ligament is short and thick, and frequently an irregular thickening is found at the inner side of the base of the first phalanx The sesamoids sometimes show inflammatory change and pressure erosion Corns may develop on the skin covering the bursa The bursa sometimes perforates and a sinus may persist if suppuration occurs, and in rare cases this may be connected with the joint

A hammer-toe is frequently associated with hallux valgus and is usually caused by it We rarely meet a pronounced case unless it is accompanied by a flattening of the longitudinal and transverse arches

The symptoms of hallux valgus as the pathology suggests, may be very trivial or extremely severe They may be due to inflammation of the bursa, periostitis around the edges of the capsule, traumatic arthritis either simple or of the osteo-arthritic type, osteophytic pressure on the digital nerves—all these often complicated by the presence of

adhesions In a small proportion of cases callosities may form under the head of the first metatarsal bone, and these are largely the result of the flattening of the transverse arch, while corns and callosities may be found over the second and third toes The symptoms, therefore, may be ascribed to strain and pressure

Hallux rigidus is allied in its etiology and pathology to hallux valgus It is, however, more frequently associated with an injury, and we find it often in the footballer who has passed his prime It is a progressive lesion, and in the later stages may present very marked arthritic changes with enlargement of the metatarsal head In elderly subjects the condition cannot be distinguished from osteo-arthritis Here again we have flattening of the arches, but callosities under the metatarsal head are not so common Bursae may form on the dorsal aspect of the head, but they are comparatively rare

The symptoms complained of in the early stages are those of a simple sprain developing into chronic arthritis The only objective sign is that of deficient dorsiflexion Attempts to straighten the toe give pain In the later stages the toe is fixed in plantar flexion, and walking becomes a very painful act, relieved sometimes by dorsiflexion of the terminal phalanx The fixation of the toe-joint is first a protective spasm, but later the joint and periarticular structures show signs of chronic inflammatory changes which prevent motion

When pain is associated with hallux valgus it is due to (*a*) an inflamed bursa, (*b*) arthritis, as in hallux rigidus, (*c*) osteophytic pressure on the digital nerves, (*d*) callosities under the joint

TREATMENT

Surgeons are apt to display unjustifiable optimism when they discuss the results of treatment In my opinion we should be extremely careful as to prognosis Results in every type of case are sometimes brilliant—but not always Care should be taken to find out precisely the chief disability of which the patient complains Is it the bunion, or the callosity under the toe, an arthritis, or the irritation of osteophytes? May not the discomfort arise from the adjoining hammer-toe, from metatarsalgia, or from flattened arches? The surgeon should know definitely whether the operation he proposes to perform will meet not merely one but every indication There is no apparition more unpleasant and accusing than the lady who declares that her foot is worse than it was before the surgeon intervened If she complains of pain and desires to be eased, and operation has failed to make her comfortable, it is of no avail to try and persuade her to be contented with a reconstructed and artistic joint She asked for comfort, and she failed to get it

The treatment of hallux valgus may be considered under three heads in relation to pain and disability (*a*) preventive, (*b*) mechanical, (*c*) operative

Preventive Treatment

If the deformity is in its postural stage our object will be to prevent further adduction of the toe, and correct any accompanying flattening of the arches We are rarely consulted at this stage, and then only for aesthetic reasons, for usually there is neither pain nor disability We should treat the flat-foot in accordance with principles which we individually cherish and see that the footgear does not encourage the deflection of the toe Correct shoes or boots should be insisted upon Perhaps I may be excused if I again emphasize the essentials of a correct boot It should fit moderately closely around the heel and ankle to prevent hitting of the heel in the boot The inner side of the boot should be straight right up to the tip of the big toe Any outward deflection favours the production of hallux valgus The sole of the boot inside should be as broad as the foot under the strain of body weight The upper part of the boot should not compress the forefoot The toecap should be sufficiently roomy to allow the free play of the toes, and should be higher on the inner than on the outer border It must be long enough to allow the foot to extend to its full length Stubbing of the great toe is an exciting cause of hallux rigidus

If these points are laid before the patient who suffers only from deformity but has no pain, she will be quite unhappy, and will ask, "Can nothing be done to my toe which will render such footgear unnecessary?" My answer has always been, "If I operate on your toe, and you wear your favourite shoes, then the deformity will return" I confess to being very averse to operating upon hallux valgus for aesthetic reasons unless I am given a free hand as to after-treatment It is an unscientific proceeding and ends in worry Removal of the head of the metatarsal is too radical, shaving the metatarsal head does not correct the deformity The effective operation is to take a wedge from the neck of the metatarsal quite close to the head, but in twelve months the deformity will have returned unless the fashionable boot is discarded Many years ago I used to make an incision on the inner side of the foot, subcutaneously divide the tight structures on the outer side of the joint, and excise and reef the capsule on the inner side The toe looked perfect after the operation, but the end-results were entirely in the hands of the patient, and were therefore usually unsatisfactory The same may be said of transposition of the extensor proprius hallucis to the inner side of the base of the first phalanx My experience of these and many other methods leads me to the conclusion that it is inexpedient to operate on the toe-joint for the correction of deformity, where function is good, unless an appropriate after-care is assured

Mechanical Treatment

This should consist in relieving the joint from pressure The sole of the boot should be thick enough to prevent strain on the toe in walking, and a bar of leather should be placed transversely across it just behind the metatarso phalangeal range The upper part of the boot should not press upon the inner side of the joint but be moulded out on a last, or the joint may be protected by the application of a horseshoe-shaped pad of adhesive felt with the base above I have lost all confidence in toe-posts or external splinting They are uncomfortable and ineffective If a callosity is present below the joint the boot may be hollowed there, but if this is done it is advisable to place within the boot a thick felt sole reaching from the heel to a point just behind the metatarso-phalangeal range The heel of the boot should be made higher on the inner than on the outer side in order to deflect the body weight from the great toe, and also to correct the flat-foot If arthritis is not a feature gentle manipulation prevents the formation of adhesions, and the patient should practise active movements, preferably in hot water, every night and morning

If the bursa is inflamed absolute rest should be prescribed, and if great pain is present ease is often secured by the application of fomentations If the bursa suppurates the abscess should be opened

One knows only too well that these conservative methods have their limitations, but it should not be forgotten that markedly pronounced hallux valgus is often painless, and it is only when an inflamed bunion supervenes that treatment becomes necessary Once the bursa recovers pain disappears, and this is frequently brought about without operative intervention I have known many instances of this sort where the experience of a painful bursa has overcome a patient's objection to an appropriate boot, the wearing of which has resulted in prolonged immunity from recurrence

Operative Treatment

We should mention, in order to condemn, certain procedures which are being practised We not uncommonly find suppurating joints due entirely to the fact that the surgeon has attempted a reconstructive operation during the inflammatory stage of the bursa This condition is very apt to occur, and it is essential to allow an interval of a few weeks to pass between the recovery of the bursa and the operative attack Cases also are found when both hallux valgus and hallux rigidus are treated by excision of the joints It is liable to result in a painful ankylosis for which it is difficult to find a remedy This operation should never be performed

Another useless operation is that of excision of the bursa without reference to the roughened bony prominence of the metatarsal head Equally futile is a transplantation

of the extensor proprius hallucis either into the metatarsal head or to the base of the first phalanx

The aims of operation should be the correction of deformity, the restoration of movement and, when possible, the preservation of the weight-bearing portion of the head

There are four types of operation which may be considered

(*a*) The removal of the bony prominence on the inner side of the foot together with the bursa
(*b*) Osteotomy of the neck of the metatarsal
(*c*) Removal of a part or the whole of the head of the metatarsal
(*d*) Removal of the base of the first phalanx

Before performing any of these operations I endeavour to find out where the pain is most severe Is it over the inflamed bursa, or confined to the joint? Is it referable to the callosities or to the space between the first and second metatarso phalangeal joints? Is the pain induced when the toes are pressed together If pain is confined to the region of the bursa and there is no evidence of an arthritis of the joint, I am content to remove the lateral prominence of the metatarsal together with the bursa, divide the extensor proprius hallucis, which helps to maintain the deformity, and to divide the capsule and shortened structures on the outer side If the valgoid deformity is not too pronounced and displacement can be rectified without much force, I pass a deep suture through the structures on the inner side of the neck of the metatarsal and the base of the first phalanx, which acts as an internal splint when tightened This operation generally succeeds in affording relief and in minimizing deformity

Removal of the head of the metatarsal I reserve for extreme cases of hallux valgus associated with bunion where the head is rough and painful and the joint tender It is an operation more suited to the elderly than to the young and athletic, and should never be performed if relief can be obtained by less drastic methods A patient who is in great and fairly constant pain will be well satisfied by the result of this operation, even if his foot remains weaker because of the loss of support It is prudent to warn the patient who submits to the excision of the head that his foot may be less effective as a support than the sound one, and that in a certain proportion of cases the metatarso-phalangeal range may give trouble and form a plantar prominence As a rule the operation is a distinct success and enables a patient to carry on painlessly even if his habits involve strenuous exercise of the feet

Where osteo-arthritic and periarthritic changes are present and the toe presents a large and gouty looking prominence it may be necessary to remove about half an inch of the neck If this is not done a firm, fibrous, but painful ankylosis is likely to occur I have several times experienced this in middle aged people In the athletic, when the head has to be removed and where the support of the arch is very necessary, an endeavour should be made to leave as much bone below as is possible The tightened structures on the shortened side should be severed and extension applied to the toe in such cases The danger lies in too close an approximation of the phalanx to the metatarsal, with resultant pain and stiffness This may be avoided by keeping the surfaces well apart until the wounds are healed and then encouraging active and passive movements There is no need to describe this operation It should be in the nature of a pseudarthrosis with the intervention of a flap, the tightened structures on the outer side should be released, and the extensor proprius hallucis should be divided There is no object in fixing the tendon into the base of the phalanx as it would tend to approximate bones which we desire to keep apart I need not dwell upon the great importance of making the section of bone clean and workmanlike Any spicules of bone left give rise to trouble

Where hallux valgus is accompanied by plantar callosities excision of the head should be the operation of choice Contrary to the general view, I am disinclined to remove the sesamoids unless there is a clear indication They form a very excellent buffer between the skin and bone and when the head of the metatarsal is removed they recover from pressure irritation A splint keeping the toe well abducted should be employed during the healing of the wound Occasionally one meets with a prominent osteophyte on the inner and lower part of the neck of the metatarsal in an otherwise painless hallux valgus Pain of an acute type is felt on pressure from above and below between the first and second metatarsals It is the same kind of pain experienced in metatarsalgia, and is, I believe due to the same cause In metatarsalgia the pain may be acute for a week or a fortnight, and then remain in abeyance until something occurs to make the nerve again hypersensitive Relief is obtained by chiselling away the osteophyte It is very rarely necessary to remove the head of the bone

Removal of the base of the first phalanx first of all suggested by Davie-Colley, and several years later by Steele and Keller, has, in my opinion a distinct place in the surgery of hallux valgus and rigidus It is indicated in the young and athletic where deformity is of no great importance, and where the maintenance of the strength of the forefoot is paramount It is especially useful in those cases where pain is limited to the joint, and where the bone surrounding the head is smooth and painless It is not suited for those cases where pain is located at the under or outer side just below the head The operation is very simple An incision about two inches in length is made on the inner side of the joint which is exposed The articular ends are separated and about a third or more of the first phalanx is removed If a bursa is present it can be removed together with the bony prominence This operation has the great merit of relieving the arthritis, while it does not intertere with the integrity of the transverse arch

Hammer-toe is so often associated with hallux valgus that it demands consideration Often the condition is a crippling one only because of a painful corn It is useless to excise the corn and a tragedy to amputate the toe We have all been asked to amputate the toe and I hope we have always refused to do so When the toe has been amputated in the absence of hallux valgus the operation has been the direct cause of the deformity The most effective treatment is division of the dorsiflexor and removal of the corn and ankylosis of the joint Division of the capsule and forcible rectification are quite inadequate

Hallux rigidus is a chronic irritative arthritis in which deformity plays but little part Pain and disability are due to plantar flexion and every attempt to rise upon the toe strains the joint Callosities under the toe are comparatively rare, but lipping in the later stages is frequent and may be found both on the upper portion of the metatarsal head and the first phalanx It is even in its early stages complicated by adhesions

The operative treatment of hallux rigidus is to aim at securing mobility without friction Whenever possible the head of the bone should be preserved and the operation of choice should be the removal of the base of the first phalanx Much relief may follow manipulation in the early stages of this affection

SUMMARY

Both hallux valgus and hallux rigidus are closely associated with flattened arches A flattened arch aids in the production of a hallux valgus by altering the line of pull of the extensor proprius hallucis, and a hallux rigidus aids the flattening of the arches because the foot is deprived of the free propulsive action of the big toe

The leverage action of the foot as propulsive agent is most effective in a toe-and heel walk with the feet parallel and the big toe slightly abducted

The etiological factor which is mainly responsible for the weakened arch and adduction of the big toe is the modern boot This is proved by an examination of races who wear no boots and whose feet conform in flexibility and appearance to those of a child before its feet are cramped Both the infant and muscular adult native can freely abduct the big toe

The preventive treatment of hallux valgus con[illegible] in

developing a heel-and-toe walk with parallel feet, and in wearing anatomically correct shoes

The mechanical treatment consists in deflecting the body weight from the inner to the outer side of the foot and in relieving the painful joint from pressure and friction

Operations for the correction of deformity in cases which present no functional debility should not be undertaken lightly, and never unless the patient is prepared to wear appropriate boots

The choice of operation should be decided by the special circumstances of the case For mild cases of hallux valgus without symptoms when the deformity can easily be rectified without force, it is sufficient to divide the capsule and reef it to the inner side, divide the extensor proprius hallucis, and remove a flap of skin so that when the edges are approximated it will hold the toe in slight abduction

Where there is neither pain nor disability, but where the deformity is more extreme and cannot be rectified by manipulation, it may be necessary to expose the joint, divide the tightened structures on the outer side, divide the extensor proprius hallucis, and perform a cuneiform osteotomy on the inner side

Where the symptoms are entirely referable to the bursa and do not involve the joint, the bursa should be excised together with the bony prominence below

A removal of the whole of the metatarsal head with part of the neck should be reserved for those of middle life where osteo-arthritic and periarthritic changes have occurred, the joint looking large and gouty Unless bone is fully removed in such a case pain and stiffness will remain

Removal of the head of the metatarsal should be reserved for those extreme cases associated with bunion where the head is rough and painful and the joint tender It is more suited to the post-athletic age

When dealing with the young athlete—even in extreme cases—special endeavour should be made to retain as much of the metatarsal as possible in order to maintain the strength of the arch The incision through bone should be oblique, and a portion of the lower surface of the head left The structures which hold the bones together should be divided, the bursa and its bony bed should be removed The toe should be maintained well extended until the wound has healed

In cases of hallux valgus where the symptoms seem to be maintained by friction of the first phalanx with the metatarsal, excision of the base of the first phalanx may be sufficient The arch is thus maintained

Where symptoms resemble metatarsalgia and pain is referred to the space between the first and second metatarsal heads, an osteophyte is often found attached to the neck on its under surface This requires removal

In hallux rigidus the operation of choice is that of the removal of the base of the first phalanx, care being taken to remove sufficient bone

After each type of operation treatment should be directed to prevent recurrence, and the musculature of the foot should be developed

The disadvantages of all operations where deformity is excessive and its reduction is effective lies in the fact that the big toe remains too wide apart from the remaining toes, and no boots can be bought to fit the foot This is due to the increased separation of the first metatarsal from the second To obviate this deformity I would advise an osteotomy just distal to the *base* of the first metatarsal, and so approximate the first metatarsal to the second This will materially lessen the deformity Reidl recommended a wedge osteotomy (with the base inwards) of the internal cuneiform bone, but this is not so effective as a division of the metatarsal Young of Philadelphia in an interesting investigation, found that in an appreciable number of cases of hallux valgus a wedge-shaped supernumerary bone is found between the internal cuneiform and the base of the metatarsal He looks upon this as an etiological factor, and by removing it and keeping the foot in equino-varus the deformity is corrected This bone is similar to the intermetatarseum described by Dwight The correction can only take place by the approximation of the heads of the first and second metatarsals If the abducted toe cannot be easily restored by manipulation further operative measures will be needed

GENERAL DISCUSSION

The President (Mr R C Elmslie) considered that cramping of the fore part of the foot and the abolition of muscular activity was more important than side pressure It was necessary, therefore, to re-educate the muscles by massage, etc, and to secure abduction of the great toe Before any routine operation was performed it was important that the main symptom should be seriously considered He laid stress on the following operative points (1) trimming of the exostoses round the head of the metatarsal, (2) excision of the head generally, but preserving the cartilaginous bearing surface on the under side if possible, (3) the rubbing of Horsley's wax into the raw bone, (4) keeping the transverse arch strapped for two months subsequently Massage and re-education of the rest of the foot followed

Mr D McCrae Aitken (London) said that the manner in which Sir Robert Jones had opened the subject for discussion had been so generous in its breadth of treatment of the many factors associated with the production of hallux valgus that ample openings for further discussion were made Few, however, would be able to add much to what he had said from the patient's point of view about the practical benefit to be derived from treatment, whether operative or non-operative From a survey of nearly half a century of practical experience, Sir Robert could speak in a way which left his hearers indebted to him, for he had not been silent about the disappointments, and had always considered the practical service to the patient first of all He was particularly grateful to the opener for introducing hallux rigidus into the discussion, for he considered hallux rigidus and hallux valgus to be closely related in nature and in etiology, both were intimately associated with, or even directly dependent on, flat foot, to which reference had been made Pronounced *hallux valgus* was perhaps more common in women, who, as a sex, were more addicted to the use of pointed shoes than men, hallux rigidus without much valgus deformity was probably more common in men The boot factor might therefore help in determining the type of deformity He thought it would be generally conceded that flattening of both the longitudinal and transverse arches was invariably present in adult patients with hallux rigidus or valgus The point he proposed to discuss was whether it was a primary etiological factor, for if so the proper alteration of the balance of the shoe must be an essential part of treatment, and the outward deviation of the great toe should not be dealt with as a mere isolated and unrelated deformity

In children about 11 or 12 years of age with everted or flat feet he occasionally saw an early stage of hallux valgus, and had noted that the skin on the inner aspect of the great toe, as well as that on the inner aspect of the head of the metatarsal, had hard callosities on it, similar to those in more advanced cases These showed that the child had already adopted the gait referred to in the opening paper as rolling over the inner border of the foot instead of using the plantar aspect of the toe for propulsion Carrying the weight of the body on the toe in this way put a rotational stress on the joint, causing a sort of wringing of the joint which its ligaments were not constructed to withstand Joint surfaces would withstand much compression, whether by body weight or by muscular action, and ligaments would tolerate considerable tension in the line of their fibres, but they resented being twisted or stressed in wrong directions, and became inflamed and hyperaemic He believed that this hyperaemia was the main primary cause of the hypertrophic bone formation along the lines of attachments of the ligaments, the edges of the joint cartilages shared in the hyperaemia, and with continuance of the mechanical irritation the osteo arthritic changes increased Pressure of the boot might give rise to a bursa over the osteophytic outgrowth, this was secondary, and might be the patient's chief sorrow Sometimes there was considerable deviation of the toe without pain and without much outgrowth of bone, he thought that in these cases it would be found that there was little or no twisting of the toe, the body weight being carried pretty fairly on its plantar aspect If there was a septic "rheumatic" element present in the patient this would

contribute to the pain and irritability of any strained muscle ligament or joint, but in his opinion the essential factor was mechanical strain Before trying to support this thesis by referring to results of treatment, he briefly referred to the mechanism of the foot in what Sir Robert had referred to as correct heel and toe walking with the foot pointing forward The outer toes carried by the cuboid had but little mobility The inner three toes were carried by the three cuneiforms which articulated through the scaphoid with the astragalus by a freely movable ball-and-socket joint The first metatarsal and the great toe could further be abducted and adducted to a considerable extent This part of the foot could be freely pronated and supinated at the mid tarsal joint and was the propulsive element of the foot In heel and-toe walking the weight came first on the heel, then along the outer border to the heads of the fourth and fifth toes, and then the mobile inner part of the foot came into play and provided the chief propulsive action, in combination with the calf muscles and the pressure was taken fairly on the plantar aspect of the foot and toes When the normal and correct balance of this part of the foot gave way the foot became pronated, the weight was carried too much on the inner border of the foot, twisting stresses were produced in the ligaments of the tarsus, giving rise to pains associated with what was called flat foot, and when the similar stresses affected the metatarso-phalangeal joint the patient was on the way to hallux rigidus or valgus

The results of treatment, he thought, supported this view First in children with early hallux valgus and callosities on the inner aspect of the foot and great toe, raising the inner side of the heel a little and placing a wedge behind the head of the great toe, and perhaps also the second toe, had the effect first of all of deviating the body weight on to the outer side of the foot and preventing the child from walking on the inner side of the foot Secondly the wedge behind the inner part of the foot tempted the child to grip with the inner toes, an action which re-educated the proper propulsive action of this part of the foot With proper shoeing in this way he had seen early hallux valgus disappear but this did not always occur Next in the advanced case with a painful joint the stout sole in the boot with a bar behind the tread took the stress of body weight off the toes relieved the joints and more particularly the ligaments round the joints from recurring injury, and so allowed the traumatic inflammation to die down, thus relieving the patient from the symptoms which caused distress There was, therefore good ground for insisting that whether as a curative measure in very early cases, as a palliative treatment in later stages or as part of the after-care after operative procedure, it was essential that the balance of the boot should be correctly adjusted by the means considered best by the surgeon With regard to operative attack he added that in order to expose fully the outer aspect of the head of the first metatarsal (because there was considerable osteophytic outgrowth) he had adopted, on the suggestion of Mr Bankart an incision between the first and second toes, completely dislocating the toe to the inner side This gave a full view of every side of the head of the metatarsal He did not think he would adopt it as a routine but only for cases in which a complete clearance between the first and second metatarsal head was essential

Mr Naughton Dunn (Birmingham) pointed out that pain was the dominant factor which caused the patient to seek advice Deformity or rigidity of the great toe was often seen in patients who had no complaint about the functional efficiency of their feet, but if pain was also present they expected relief If relieved of pain they were satisfied and any of the reasonable operations which procured this did not seriously interfere with the efficiency of the foot A patient sometimes came because of pain in the foot a definite deformity of the great toe might be present and might be assumed by the patient to be the cause of the pain unless examination of the foot included careful consideration of other possible sources of pain the results of operation on the great toe would not satisfy the patient His own statistics showed that there was some other source of pain in 52 per cent of the cases in which operation was undertaken for deformity or rigidity of the great toe The coincident treatment of these sometimes less obvious sources of pain was essential to satisfy the patient Flat-foot and hammer-toe were as a rule obvious if present and the presence or absence of pain from metatarsalgia should be carefully investigated Painful corns on the ends of the toes or on the dorsum of the little toe were also complications of foot deformity which might require appropriate treatment As regards the great toe joint itself, the consideration of the cause of pain was an essential factor in determining the operative treatment There were two types of cases In the first and commonest type the pain was due to pressure This might be simply boot pressure on a normal metatarsal head, leading to bunion formation or the pressure might be aggravated by lipping and new bone formation of the head of the metatarsal In these cases if joint motion was painless the most satisfactory result would be got by removing the bunion and mesial half or the metatarsal head together with any other abnormal bone formation on the other surfaces of the head The shoe was then made to fit the foot Pressure on prominent bone was eliminated, convalescence was short, and there was complete relief of pain without diminution of function Secondly there was the type of case where joint movement was painful and deformity or the metatarsal head was present Oblique excision of the metatarsal head from above downward and forwards was then the operation of choice enough bone must be removed to allow of easy correction of the deformity but if possible the section should be made so that the lower surface of the shaft still rested on the sesamoid bones Sir Robert had mentioned the interposition of a flap in the operation, this he personally considered quite unnecessary he believed that local fascial and fatty flaps, by the possible inclusion of divided cutaneous nerves were largely responsible for the painful joint movement which sometimes resulted In his opinion the essential of the operation was simplicity—a straight rather than a curved incision a direct incision to bone, exposure and removal of the head, and closure of the wound by a double removable silkworm-gut suture Where joint motion was painful and there was no alteration of the contour of the metatarsal head, he thought the false joint was better obtained by removal of the proximal half of the proximal phalanx of the great toe This operation was especially applicable to the cases of persistently painful hallux rigidus in adolescent It was an operation which should not be undertaken where trimming of the head of the first metatarsal bone was also necessary, as there was risk of ankylosis taking place if two opposing raw bone surfaces were present Sir Robert had not mentioned the special circumstances in which he would consider removal of the sesamoid bones In Mr Dunn's opinion removal of the sesamoids was necessary only in cases where as a result of their ankylosis to the metatarsal head painful persistent callosities had developed from pressure In these cases removal of the sesamoids and the under surface of the head of the metatarsal bone was necessary to give relief

In summarizing his remarks he concluded (1) That 50 per cent of the cases of hallux valgus and hallux rigidus were complicated by some other disability of the foot (2) That in many cases of pure hallux valgus and hallux rigidus the cause of pain was boot pressure on prominent bone, and that in these cases removal of the prominent bone was the operation of choice (3) That where removal of the metatarsal head was practised the interposition of local flaps was unnecessary, and that these were the common cause of the painful unsound ankylosis which sometimes resulted (4) That when arthritis was present without deformity of the head of the metatarsal, a better functional result would probably be obtained by removing one half of the proximal phalanx.

Mr E Laming Evans (London) dealing with the question, considered that local pain especially pressure was important This had to be abolished before an operation was performed He was guided in the amount of bone to be removed by the condition of the soft tissues if these were infiltrated he removed a greater quantity of bone When ankylosis occurred after excision he removed more bone and in reduced a free flap, the end of the shaft of the metatarsal

bone being resected on the sesamoids In severe cases he advocated amputating the great toe Muscle re-education was necessary, especially of the extensor longus hallucis

MR P B ROTH (London) considered that the chief cause of hallux valgus was tight socks and stockings These were big enough when bought, but were the same shape for right and left feet, and after washing shrank more and more They were darned and redarned, and became smaller and smaller, they were only thrown away when the darns appeared above the level of the boots or shoes They distorted all the toes, and pushed the big toe outwards However well fitting the boots, they would not prevent hallux valgus if the socks and stockings were wrong Other causes were trauma, heredity, and chronic sepsis Some years ago he wrote "that the operation of removal of the head of the first metatarsal was so often followed by crippling of the patient for life that he could not think a few successes entitled it to be considered at all" He was led to write this sentence because he had seen several deplorable results of the operation performed by others But he knew now that he had been wrong, and he took this opportunity of saying so The deplorable results were due to bad technique or bad after-treatment, the operation properly performed in suitable cases was an admirable one He had been finally led to this opinion by a pronouncement by MR Mumford Little, who pointed out that there was no anterior transverse arch to the foot as is generally understood, and that consequently removing the head of the bone could not interfere with it He was in entire agreement with this statement In a slight case he prescribed shoes to measure and shaped to the feet, taking care that the socks or stockings were fully large He did not use toe posts or springs, he had never found them do any good In a more serious case, where there was a painful lump, with perhaps a bursa over it, he chiselled off the lump in addition, and tenotomized the extensor proprius hallucis if tight In a bad case, where there was considerable pain, or a very prominent unsightly lump, or where there were overriding toes, he excised the head of the bone, dividing the neck subperitoneally as close to the head as possible with a pair of bone-cutting forceps He did not remove the bursa, as he considered that it acted as a useful buffer during convalescence, and prevented the skin from becoming adherent to the bone Afterwards the bursa, being no longer required, gradually disappeared After the stitches had been removed the feet were massaged and gently moved each day for a month, and the patient was allowed gradually to get about on them At the end of two months women were able to wear ordinary ready-made two-inch heeled shoes in perfect comfort, and they could even dance for hours

MR W ROWLEY BRISTOW (London) suggested that MR Roth would retract in a year or two his remarks about the transverse arch of the foot, the existence of which he had denied MR Bristow regarded the preservation of the sesamoids as the most important point in the operation on either of these conditions, and thought that cases in which they needed removal must be very few These structures acted to a great extent as the buffer necessary for the new joint He agreed with SIR ROBERT JONES and the PRESIDENT that patients with a mild degree of hallux valgus, and not complaining of pain, were best left alone For the severe degrees of deformity, when pain was the symptom complained of, in his experience free removal of the first metatarsal head was the operation of choice Removal of osteophyte or part of the head, usually resulted in a stiff joint The other point mentioned in the opening paper, but not discussed referred to the after-treatment The patient, after excision, was allowed up in two weeks, a metatarsal bar being worn which prevented weight-bearing and pressure on the new joint The bar was replaced in a week or two by an anterior arch support made from a plaster cast As soon as the stitches had been removed massage and electrical stimulation of the intrinsic and extrinsic muscles of the foot were commenced and continued for two weeks The patient was taught to move the toes and exercise them for himself, and his early efforts at walking were supervised With free removal of the head and preservation of the sesamoids, followed by appropriate after-treatment, the results were satisfactory, and there was no tendency to recurrence of the hallux valgus deformity

DR G HOLMES (Harrogate) pointed out that occasionally cases of hallux valgus were sent to watering-places diagnosed as gout or osteo-arthritis, and that not infrequently gout or osteo-arthritis was associated with this condition Treatment by hot paraffin wax or steam baths would in the majority of cases remove the inflammation and pain, and should be followed by massage and re-educative treatment of the muscles Most patients could be persuaded to wear suitable boots, but it was necessary for the doctor to put them in touch with a competent bootmaker who would provide suitable footwear without the ugliness for which surgical bootmakers were so often responsible

THE OPERATIVE TREATMENT OF ARTHRITIS DEFORMANS OF THE LARGE JOINTS

BY

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THE term "arthritis deformans" is used as indicating a "progressive non-suppurative disease of joints characterized by pain, swelling, and impairment of function leading eventually to deformities and ankylosis" It appears to be the most convenient term for the purposes of this paper, since it includes types of the disease possibly differing in pathology, and avoids any controversial suggestion as to either pathology or etiology In the short time at my disposal I wish to give some account of recent experience in the operative treatment of the disease as it has been worked out in a clinic remote from the advantages associated with a teaching hospital The invaluable help afforded by the writings of leading orthopaedists (many of whom are identified with this Section) has fortunately always been available and constantly laid under contribution

Operative measures have been undertaken in an attempt to meet one or more of the following indications (1) To relieve pain (2) To restore mobility (*a*) inability to carry out particular movements completely, (*b*) inkylosis (3) To remedy deformity (4) To arrest progressive change in the joint, and to hasten resolution by removal of diseased tissue The actual operations undertaken may be classified as (1) extra-articular (manipulation, tenotomy, etc), (2) arthrotomy, with more or less extensive intra-articular procedures

The frequent difficulty of fully meeting the indications by extra-articular operation has led me to resort to arthrotomy in an increasing number of cases, and with these latter alone this paper deals My experience of such operations in cases of arthritis deformans consists of 34 arthrotomies (performed on 28 patients), made up of 12 hip cases (11 patients) and 22 knee cases (17 patients) Of the 12 hips cases 8 were males and 3 females, the youngest was aged 17, the oldest 63—the average age being 43 years Of the 22 knee cases, 8 were males and 9 females, the youngest patient was 14 years of age, the oldest 66—the average age being 37

No patient has been submitted to operation who, after a careful clinical examination, did not appear to be a good operative risk, nor has any patient with an obvious focus of infection been operated on until this had been as far as possible eradicated Many of the patients had previously undergone a very thorough course of vaccine treatment—a procedure upon which some of my colleagues lay the greatest stress, deeming the "absence of response to a large dose of an appropriate vaccine" a sure criterion of the safety of operation Increasing experience would lead me to avoid operation in the case of a patient whom one judged incapable of a persevering co-operation in the after treatment, upon which the ultimate result largely depends The local conditions were in all cases investigated by careful clinical and *x*-ray examination, the latter preferably stereoscopic

In dealing with this disease I have from the first felt that one ought, whenever possible, to aim at a mobile joint

so in the e cases—the majority of my series—concerned with the treatment of end results, in which symptoms are caused by deformities the result of disease no longer active or actually at an end, some form of arthroplas y—taking this to me in ' the operative mobilization of any stiff joint "—was the operation of choice, arthrodesis being employed only to meet some special indication in two cases (knees) In only two cases (one hip, one knee) was a formal operation with interposition of autogenous fat-fascia membrane carried out, in these the Murphy technique was followed The remainder were treated by a procedure comparable to that described by Hildebrand as a " remodelling " operation, the main features of which are the removal of di eased and disorganized tissue and the reshaping of the articular surfaces to as near the normal as possible The details of this method were evolved slowly—the results in early cases undoubtedly suffering because too little was attempted Throughout I have approached these operations as primarily exploratory in character

HIP-JOINT

I have performed 12 arthrotomies of the hip-joint—1 Murphy arthroplasty, 1 excision of head of femur, and 10 remodelling operations

The joint is exposed by the U shaped or Murphy ' goblet" skin incision with temporary detachment of the great trochanter, care being taken not to jeopardize the blood supply of the flap by inclining the upper limbs of the U too much inwards A striking feature of the majority of the joints is the contraction and thickening of the capsule, which, far from being ' large and some what loose so that in every position of the body some portion of it is relaxed," was contracted, so that in every phase of the limited range of movement of which the joint was capable it appeared taut and unyielding This is, I believe, an important factor in causing limitation of normal movement Even complete division of this appears to me insufficient in view of the rapidity with which it unites, and I now excise it as completely as possible the ease with which a new " capsule " can be formed being well recognized After the capsule is divided and any bony adherence chiselled through the head of the femur is dislocated out of the acetabulum and the condition of the articular surfaces inspected Bony adherence involved the whole articular surface in only one case, and this was treated by a Murphy arthroplasty in two cases it occurred over a limited area, and in these I relied upon Horsley's wax rubbed into the resulting raw surfaces to prevent re adherence The few observations I have been able to make lead me to think this a trustworthy method In most of my cases the ligamentum teres had disappeared Osteophytic outgrowths from either the acetabular rim or femoral head are chiselled off, in one case great difficulty was experienced from finding the cotyloid ligament completely ossified—usually it is the head of the femur mushroomed out and misshapen which demands most attention In my early cases I did not remove the bone sufficiently freely Curved chisels of varying width are of great use in carrying out this part of the operation, as are also the special instruments devised by Murphy Resulting raw bony surfaces are made smooth by filing or the use of a burr and Horsley's wax thoroughly rubbed in Diseased cartilage is removed, areas of necrosed or carious bone are curetted, and the resulting cavities made as smooth as possible with Horsley's wax or if large and of suitable shape, filled with bipped fragments of the patient's fat Pedundant or diseased synovial membrane is clipped away—an insignificant feature of the hips I have seen Only once was a loose body found The femoral head is replaced and the range of movement in all directions noted Further remodelling takes place if necessary Certain muscles or tendons (notably the adductor longus) may need division When refixing the great trochanter the mechanical advantage of so doing at a lower level (as pointed out by Whitman and Platt) should be remembered

The limb is abducted as far as possible, and this position maintained during the early weeks of convalescence I have not always employed extension Passive movements are begun as early as the condition of the patient and he wound permit I have usually given an anaesthe ic the first time this is attempted

KNEE JOINT

I have done 22 arthrotomies of the knee-joint, a follow 1 Murphy arthroplasty, 2 arthrotomies 14 remodelling operations, and 5 synovectomies Two patients had to be operated upon and three had one knee opened a second t

The joint is approached by a long curved anterior incision, the patella being either split vertically or turned up after division of its tendon or detachment of the tubercle In incising the capsule due regard must be paid to the integrity of the lateral ligaments Flexion of the joint after division of any bony adherence of either patella or tibia gives a good view of the interior Degenerated or proliferated synovial membrane or fringes or ulcerated cartilage, and vascular granulation tissue are carefully dissected away and, if soft and necrosed, curetted or chiselled out, osteophytes growing from the articular margins removed, the resulting raw surfaces carefully filed smooth and thoroughly rubbed with Horsley's wax Loose bodies are sought for and removed Any contracted tendons which prevent full extension must be divided Three of the knee-joints in my series were opened in a comparatively early stage of monarticular arthritis with the idea of cutting it short by removing diseased tissue Little bony or cartilaginous change was present, and the operation consisted of a synovectomy as complete as the exposure permitted

After operation the leg is put up straight at first with thigh extension Passive movements are begun early and persevered with massage and active movements following as soon as the wound permits A few cases have been fitted during convalescence with the Ernst ambulatory splint

RESULTS

The only death in the series took place after a " remodelling " hip operation, the patient succumbing to alcoholic delirium on the ninth day There was no wound sepsis The upper limits of the U-shaped wound in one or two cases of both hip and knee showed a limited aseptic sloughing of the edge of the flap due to interference with the blood supply—a fact which determined my preference for a straight incision No patient suffered from shock sufficient to cause anxiety or to call for any special treatment, with the exception of one female patient aged 53, who, after a hip operation, needed continuous rectal saline during the night following the operation In only one case where pain was an indication for operation was there failure to cure it—a hip operation in a man of 47, where a second arthrotomy had to be undertaken before this symptom was relieved This patient developed during the first convalescence a sharp attack of acute polyarthritis with high temperature the remodelled joint being affected in addition to most of the other large joints—the only example of a post-operative flare up " I have encountered

In nearly all the hip cases the freedom of movement which at first resulted tended gradually to diminish as time went on Briefly I should say that of the 10 remodelling hip operations the resulting mobility was good in 1 case in 7 and bad in 2 The functional result of the Murphy arthroplasty was bad The knee operations have given on the whole better results in this respect than the hip ones, four of them presenting painless flexion to a right angle after sufficiently long time after operation to justify the belief that such improvement will be permanent In two of the three cases of synovectomy the result was not what was desired a result attained in one case only after a second and more thorough operation The third case, which twice gave a positive reaction for tubercle after inoculation (the micro copic examination of the tissue was not made and was heretofore subsequently lost The two cases of arthrodesis of the knee were attempted by the Murphy arthroplasty or by his joint saw but gave fair results The remodelling operations from the point of view of mobility can be classified thus good 7 fair 3 bad 2 In two cases the operation was too recent to judge

CONCLUSIONS

1 These operations were undertaken for the relief of whom, in spite of years of medical treatment were hopelessly crippled.

2 The results as far as the relief of pain is concerned were almost uniformly good, and in many cases there resulted a mobility beyond expectation in joints the stability and weight-bearing powers of which were excellent

3 In common with other observers I have found that results which were disappointing to the surgeon appeared to give satisfaction to the patient

DR WARREN CROWE (Harrogate) gave details of two patients operated on by Mr Frankling He insisted that patients for operative treatment ought to be able to take large doses of vaccine without any reaction occurring it was then much safer to operate

PROBLEMS IN THE TREATMENT OF ACUTE ARTHRITIS OF THE HIP

BY

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THE major problem in the treatment of acute arthritis of the hip is that of life saving This aspect of the case, however, will not be discussed further than to mention a recent method which seems to me to show some promise of success, not only in the disease under discussion, but also in the case of acute infections generally I refer to blood transfusion

Acute arthritis of the hip is a general blood infection The micro-organisms are virulent or, what amounts to the same thing, the resistance of the patient is low The disease is often fulminant in its rapidity Medicinal measures which take time are therefore discounted Surgical measures are difficult for anatomical reasons, and the mortality is therefore high The urgent demand of the patient is for specific antibodies, but it is hopeless in many cases to expect these to be manufactured by the affected person Wright has suggested the immunization of a suitable donor, and the transference of about 500 c cm of pure defibrinated blood to the affected person Although I cannot quote a case of acute arthritis of the hip in which this treatment has been successful, I have had one of acute arthritis of the knee in which a very anxious and apparently hopeless case was transformed within a few hours into a cheery convalescent, the phenomena, both subjective and objective, being exactly comparable to what one sees occur in the crisis of an acute pneumonia

With the above exception I have purposely avoided discussion of the early circumstances of the disease, such as the nature of the infection, the site of its origin within the joint, and the direction of its spread from this site, these being beyond the purpose of the paper Nor shall I discuss the difficulties arising from the presence of acute suppuration in a narrow space, far from the surface, nor the methods which are at present adopted for securing relief of tension and free drainage It is rather to the sequelae of the disease that I wish to direct attention It will be admitted of course, that, just as in cases of severe poliomyelitis, if orthopaedic principles have been observed during the acute stage, later difficulties will be materially mitigated Later problems, however, do present themselves, and it is of these that I wish to speak The patient has succeeded in weathering the first storm, but has been left with a limb already damaged, and is running the risk of becoming worse until a functionless and often painful lower extremity remains Let me state, at the outset, that I regard the influence of age as the vital factor from the standpoint of morbid anatomy, and a recognition of this must to a large extent determine treatment My interest

this problem was first aroused by a case which came under my care in 1917 with an acute infection occurring a few weeks after birth and involving the whole of the left lower quarter It was not at the moment, I regret to say, recognized as a case of acute arthritis of the hip, this fact being discovered only after the acute symptoms had subsided and when an x-ray photograph was obtained By this time the child a boy, was just over one year old He was beginning to stand up and the left limb was noticed to be in a position of flexion, adduction, and considerably shortened

A search into the literature disclosed the fact that as long ago as 1874 Thomas Smith of St Bartholomew's Hospital had accurately and exhaustively described as a definite clinical entity the acute arthritis of infants, specifying the main characteristics as follows

1 *Age*—Within the first year, often within the first few weeks or first few days of birth

2 *Onset*—Sudden, often preceded by traumatism In one case cited by him a woman with puerperal mania swung her child out of a window by the arm, the shoulder being affected subsequently

3 *Progress*—Rapid, to suppuration, limited to the epiphysis and the joint cavity The diaphysis always escapes

4 Involvement of *large joints*—hip, shoulder, knee, etc

5 Complete *destruction* of the whole epiphysis, leading to shortened, mobile, or flail joints

6 *Termination*—Rapid, either favourable or fatal Thirteen out of twenty two cases in Smith's series were fatal

7 Neither syphilis nor tubercle are *causal agents*

Smith's article makes, of course, no reference to the bacteriology except in so far as clinically he excludes both syphilis and tubercle In this case the cause was demonstrated it was due to *M tetragenus* Traumatism at birth was also a probable factor

Consideration of the morbid anatomy of the upper end of the femur of the infant as disclosed by x-ray examination affords a clear explanation of these clinical manifestations The head of the femur, being almost entirely composed of cartilage in infancy, is destroyed by the inflammation and suppuration, and the epiphysis rapidly disappears This occurred in the case under discussion, the problem then presenting itself was clear-cut and definite—namely, how best to treat a heavy and vigorous child of 15 months in whom there was a complete loss of the head of the femur The indications for treatment at the time seemed to be (1) against all operative interference, (2) to correct the deformity already present, this was done by forcible abduction and encasing in plaster-of-Paris for a short time, and then (3) to fit such an appliance as, whilst limiting the tendency of the femur to slip upwards, would allow of as much exercise of function as possible

In the absence of function it was clear that growth of the limb would be stunted, and the general deformity not only persist but increase Having removed the plaster of Paris a calliper splint was fitted, and for about two years this was used At the end of that time a knee-joint was introduced into the continuity of the side-irons I am not sure if the latter was judicious in the circumstances The boy himself is perfectly happy He gets about with ease, he stands and falls like other children, and to all intents and purposes is a strong and healthy lad He has at present three inches of shortening made up by a high heel, and he has developed some adduction which increases the effect of the shortening

Such, then, is the problem presented by an acute arthritis of the hip in infancy—a problem due to the early and complete absorption of the femoral head

The next problem is exemplified by the case of a girl somewhat older, aged 5 years At this age the head of the femur is mainly osseous, but not entirely so After ordinary treatment had been applied for a time and there was still a discharging sinus in the thigh, the child presented herself at hospital Separation of the head from the shaft of the femur was then found, a considerable portion of the neck having been absorbed there was also some periostitis in the upper part of the shaft Careful inspection of the x-ray photograph, however, revealed a certain amount of continuity in the bony structure of the neck, and it was therefore deemed advisable to foster this bony bridge in the hope that ultimately a neck would regenerate and so form communication, however irregular and ragged, between the head of the bone and the great trochanter For a considerable time, therefore, the child was kept in hospital on an abduction frame with moderate extension Later still a calliper splint was applied and the child allowed to get about, in the hope that use of the limb would promote bone formation Unfortunately, at this stage the child went

home to the country and discarded the splint an act which terminated for the time being if not indeed, for all time, the continuity of bone between the shaft and the femoral head Very little shortening has yet occurred and there is still a continuity of bone from shaft to head which, however is considerably deformed as the result of absorption The problem here is again a very definite one—namely, how to deal with a breach of continuity, partial or complete in the femoral neck I suggest in this that the object of treatment is first of all, to promote reproduction of bone whilst preventing further shortening Success in this objective *will leave a strut to the shaft, and will eliminate the* stability of the great trochanter slipping upwards upon the ilium The child has therefore been returned to her frame with extension and gradually abducted Treatment is, of course not yet completed There is still risk of the trochanter slipping upwards, but when the splint was *removed it did not do so, and it seems to me likely* that an ankylosis in good position will be the ultimate result Treatment has however, failed to secure mobility

The third orthopaedic problem is found in a girl older still, about 11 years of age when she came under treatment In this case the history, briefly stated, is as follows The child developed influenza in 1918, and *following* it an acute arthritis of the knee later still, an acute arthritis of the ankle These joints were treated by incision, the knee without drainage and the ankle with drainage The child did not, at this time, complain of the hip at all, but she was extremely ill and almost incapable of saying where she felt pain A year later when I saw her, it was discovered that she then had a dislocation of the hip X rays revealed this to be a pathological dislocation due to acute arthritis of the hip The patient presented herself with the usual deformities —flexion, adduction slight external rotation of the hip She walked with the aid of a crutch The knee was at this stage, freely movable but there was some ankylosis of the ankle in the position of equinus Subcutaneous tenotomy of the adductors allowed reposition of the head, and the hip was put in plaster in slight abduction After three months a walking calliper was fitted The hip-joint is placed slightly above the normal level, is mobile stable, and capable of good function and painless Here again was a *definite and clear problem A dislocation of the upper end* of the femur, the femoral head itself to all intents and purposes undestroyed so far as stability and mobility were concerned, but associated with it the absence or softening of the upper lip of the acetabulum The condition of the bone in this case accounted for its resistance to infection, and no doubt this resistance was materially assisted by the softening of the acetabulum and the dislocation of the joint which followed The calliper after being worn for four years has been discarded The hip-joint is painless, mobile, and stable, the only disability being a slight limp

The last problem to which I would direct your attention is that presented by an acute arthritis of the hip in an adult, a man, complicated as it so often is by a pathological dislocation In the adult one is dealing with a femoral head still more resistant to the influence of inflammation and infection, and except in those cases in which the inflammation begins as a definite osteitis very little destruction of the head is to be expected the brunt of the disease being borne by the acetabulum, whose upper lip yields and allows the head to escape upon the dorsum ilii By the time healing has occurred there has usually been so much shortening of the ligaments and capsule of the joint and so much inflammatory material filling up the acetabulum as to make reposition and replacement impossible Some *operation will have to be done therefore if the limb is to* become painless and capable of the functions of support and progression

In the treatment of these cases the requirements of the hip joint are, I take it (1) freedom from pain (2) stability, (3) mobility This is their order of comparative importance unless the patient sits at his work—for example if he is a shoemaker, or if the knee on the same side or the hip on the opposite side is already ankylosed In the case under discussion the man was a small shopkeeper and it was therefore decided to aim at ankylosis Through a Smith-Peterson incision the front of the acetabulum was exposed and its upper margin gouged free of cartilage The shaft of the femur was then divided close to the neck and the upper end of the shaft brought into contact with the ilium by abducting the leg A slice of the great trochanter was removed, but otherwise the upper fragment was left *in situ* The result is a firm bony ankylosis with a limb 2½ inches short This shortening might have been diminished by more abduction The limb is painless stable and mobile The man is able to stand upon it practically the whole day, although it is but six months after the operation

I do not, of course, claim that these few cases explain the problems which follow acute arthritis of the hip but they do illustrate one aspect of this somewhat difficult subject

DISCUSSION

Sir Robert Jones opened the discussion pointing out that pathological dislocation of the hip in children could sometimes be easily reduced Mr McCrae Aitken described his operative procedures in detail The President urged the early application of orthopaedic principles Mr Platt had found the thick capsule an obstruction to reduction in *the acute arthritis of infants*

LESIONS OF THE ULNAR NERVE IN THE REGION OF THE ELBOW

Mr Harry Platt (Manchester) presented some observations on the pathogenesis, prognosis, and treatment of certain special types of ulnar nerve lesion in the region of the elbow He divided these in to three classes

1 Nerve lesions associated with recent fractures of the lower end of the humerus
2 Late involvement of the ulnar nerve
3 Recurring dislocations of the ulnar nerve

He pointed out that the lesions in the first group were comparatively rare and usually formed a transitory complication of the fracture, but occasionally a severe neuritis persisted He had himself encountered 8 ulnar nerve lesions in 187 consecutive fractures of the lower end of the humerus In one case only did the symptoms of severe nerve-block persist after a period of six months This case was treated by operation and the nerve trunk displaced to the front of the elbow a procedure which was followed by rapid regeneration and recovery of function

Late involvement of the ulnar nerve was a well recognized clinical entity with a characteristic picture, including a definite sequence of events—namely (*a*) a fracture of the lower end of the humerus in early childhood (*b*) a latent period, which might be as much as fifty years, (*c*) the spontaneous development of an ulnar neuritis Various types of operation had been carried out for this disability but it was now realized that the most logical and effective procedure was anterior transposition of the nerve trunk

Recurring dislocation of the ulnar nerve was a condition in which the exact etiology still remained somewhat obscure The signs of neuritis of the ulnar nerve which developed in these cases demanded operative treatment and again the operation of anterior transposition was indicated

CLINICAL DEMONSTRATION

In the afternoon a clinical demonstration was held in Mr Basil Hall's nursing home

Mr S W Davy (Leeds) showed the following cases (1) myeloma of the femur treated by resection and bone grafting (2) calcaneo-varus, (3) five cases of spinal curvature treated by bone grafting in one of these a psoas abscess had occurred without disturbing the grafts (4) end to end transplantation in a case of old hemiplegia, and (5) four cases of spastic diplegia

Mr F W Gordon (Bradford) showed two cases of transplantation of the tibialis anticus into the peroneal muscles, and one case of transplantation of the flexor carpi ulnaris into a loop formed from the palmaris longus

SECTION OF OPHTHALMOLOGY.

A MAITLAND RAMSAY, M.D., F.R.F.P.S., President

DISCUSSION ON THE INTRACAPSULAR METHOD OF CATARACT EXTRACTION

OPENING PAPERS

I.—PROFESSOR IGNACIO BARRAQUER,
Barcelona

By a correct cataract extraction we mean the removal of the whole cataract without producing any mutilation or ectopia in the intraocular organs. The classical operation by cystotomy is an extraordinarily imperfect operation from a surgical point of view. Its principal defects are as follows:

1. The necessity of making pressure on the eyeball with little spoons or with the fingers on the lids to obtain expulsion of the lens predisposes to vitreous loss.
2. The entrance of different instruments (spoons, knives) into the anterior and posterior chambers to remove the remains of the lens from the eye, traumatizing the iris and favouring iritis.
3. The retention in the eye of the greater part of the lens capsule and the remains of the lens cortex, these are the cause of incarcerations, iritis, iridocyclitis, later plastic iridocyclitis, secondary glaucoma, etc.

To avoid all pressure on the eyeball, to avoid the entrance of unnecessary instruments into its chambers, and to remove the lens entirely within its capsule, is the only way to get rid of all those complications.

Many methods of intracapsular extraction have been practised since 1745, or since the time of Daviel, in order to obtain an ideal removal of the lens. Studying those different methods of intracapsular extraction, we can assemble them into two large groups—those that remove the cataract by traction and those that expel it by pressure on the eyeball. Among the first group, the more commonly performed are those of Kalt and Knapp, and yet their methods do not become popular, because in the greater number of cases the instruments employed for the traction of the lens break the capsule, and the operation often becomes an ordinary cystotomy with all its inconveniences, aggravated by the complications caused by severe traction on the zonule.

Among the operative procedures of the second group, the only one really worthy of mention is the operation of Smith, who by his clever technique, and by the brilliant successes obtained in many thousands of cases, has demonstrated in a clear manner the great advantages of the intracapsular extraction. Nevertheless, its performance by hands not so expert as his is often accompanied by vitreous loss and other accidents that spoil the success of a great number of operations.

In 1916 I arrived at the idea of the construction of a pneumatic forceps (cup) that would grasp the lens by its anterior face, and without breaking its capsule, by stretching would detach it from its attachments and pull it out entirely. Although in my first trials I successfully obtained intracapsular extraction, complications in the ciliary region made my statistics bad. Histological examinations of operated eyes and lenses, and preparations and experiments on dead eyes, enabled me to corroborate that the traction on the lens most frequently caused rupture of the fibres of the zonule at their ciliary attachment, causing haemorrhages and inflammation in this region. To avoid this inflammation it was necessary to disjoint the zonule from the lens by its lens insertions. This I secured after several changes in the shape of the cup and by giving a vibratory movement to the vacuum, which was carefully studied by Professor Gallemaerts of Brussels in July, 1922. With this apparatus one obtains a nearly instantaneous diminution in the maximum diameter of the lens, and the vibrations not being sufficiently strong to be transmitted the full length of the zonular fibres to their peripheral insertion, the fibres give way close to the lens and so avoid the harmful traction on the ciliary region.

At first I practised extraction combined with a large iridectomy, but I was very soon convinced that the defect in the pupillary sphincter was not only unnecessary but harmful, because it predisposed to incarcerations with all their ill consequences—iridocyclitis, secondary glaucoma and so on—and when I practised my operations without iridectomy prolapse of the iris was a complication that sometimes spoiled their success. The Hess peripheral iridectomy and the application of sutures in the flap improved my operation very much, although annoying vitreous ruptures sometimes occurred. By training my assistants in the manner of holding the lids, avoiding the least pressure on the eyeball during all the operative steps, and by paralysing the orbicularis by means of an injection of novocain according to the technique of Van Lint-Villard, this complication also disappeared.

My erisiphaque is in reality a zonulotome and a pneumatic forceps, because when grasping the lens and deforming it it immediately brings about rupture of the zonular fibres, and afterwards the operator, in withdrawing the instrument from the anterior chamber of the eye, drags along with it, as if in forceps, the cataract entirely separated from its attachment. As it is necessary to obtain a certain amount of deformation of the cataract in order to secure rupture of the zonular fibres at their attachment to the lens, and the solidity and elasticity of the lens being different in every case, it is necessary to determine the physical condition of the lens in order that the strength of the vacuum and the number of vibrations necessary to procure separation of the suspensory attachment without rupture of the capsule may be arrived at. The greater the hardness of the lens, the greater must be the intensity of the vacuum.

In withdrawing the instrument with the cataract attached, a movement of rotation must be made in such a way that while the upper border of the lens follows the concavity of the patellar fossa, without exercising any pressure on the vitreous or altering its shape, the posterior surface of the lens becomes anterior and its lower border is brought upwards across the pupil and out between the edges of the flap.

I need not explain the special way in which I prepare my patients, the details of the technique of my method, nor the post-operative treatment, because I have published it several times, and probably all of you know it, and I need only repeat that to get the good results I have obtained during these last years it is indispensable—

(1) To prepare the patient beforehand as regards his general condition.
(2) To make a careful study by means of the Gullstrand slit lamp and microscope of the physical conditions of the cataract.
(3) To be sure of the perfect sterilization of the eye to be operated on.
(4) To employ the previous suture of the flap.
(5) To operate with a perfect erisiphaque, well regulated beforehand with reference to the physical conditions of the cataract on which we are going to operate.
(6) Surely the most important point of the operation is to avoid always all pressure on the eyeball, either with the retractors or with fixation forceps, in cutting the flap, in making the extraction, and afterwards when one ties the sutures and puts on the bandage. Very little pressure causes rupture of the hyaloid, which, if not followed by loss of vitreous, at least allows that humour to enter the anterior chamber, and so brings about failure of what we attempted—namely, not to produce any intraocular disturbance.
(7) We must never divide, except in a few cases, the iris sphincter, and the very thin post operative bandage must be left untouched for several days after the operation, the absence of intraocular inflammation making unnecessary the dressings that are always harmful.

I can assure you that when I operate in my clinic under my ordinary conditions there are very few patients with senile cataract who do not have a black, central, and round pupil and with more than 8/10 of vision ten days after the operation. It is in patients with symptomatic, diabetic and myopic cataracts that the best results are obtained, as compared with those who have undergone capsulotomy. The reduction of the number of vitreous ruptures and the

absence of iritis ensure a large percentage of successes. I have practised cataract extraction by capsulotomy for sixteen years and by phacoeresis for eight years, and during the latter period the percentage of patients with normal visual acuity is more than double that in the former one, and the number of operative accidents and post-operative complications has diminished in the same way.

My operative technique is not difficult—it is only completely different from other cataract operations. Any ophthalmologist who can operate correctly on ten successive cataracts, and who knows practically the normal anatomy of the eye and the pathological anatomy of post-operative complications of cataract extraction, is able to learn rapidly the phacoeresis technique. This is demonstrated by the new statistics published by Drs. Barrera of Madrid, Saint-Martin of Toulouse, Guiral of Habana, Green of San Francisco, and others.

Whenever we do not obtain a black, central, and round pupil and more than 8/10 vision, it means that the cataract was not of the simple senile type, or that at the time of the operation either the operator or the patient was at fault.

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A PRELIMINARY NOTE ON THE INTRACAPSULAR EXTRACTION OF CATARACT WITH SPECIALLY DESIGNED FORCEPS.

I WISH in the first place to thank your Committee for the honour of their invitation which affords me the privilege of taking part in this discussion.

The subject of intracapsular removal of cataract has been widely known for many years. Colonel Henry Smith, who is present to-day, read a paper before this Association in 1903, and at that time had already had an experience of 6,000 cases in India. His method of operating by expression is well known, and many ophthalmic surgeons visited his clinic, among others Dr. Arnold Knapp of New York, in 1911. Dr. Knapp in the following year began his work in intracapsular extraction. His subsequent writings have sufficiently indicated his method of procedure with blunt forceps (Kalt's) and expression. Professor Barraquer, to whose interesting address we have listened this morning, developed, in 1916, his new instrument, which he has called the erisiphaque, and with which he has operated in many parts of the world.

The method of intracapsular extraction, of which I have now had some little experience, is performed with forceps. I have *not* had a *large number* of cases so far, and still hope that both technique and instruments may be further developed and improved with increased experience. I will not discuss the conditions of general health or that of neighbouring mucous membranes and teeth, which we know require careful scrutiny and often special attention before operation is undertaken. It may be taken for granted that prior to operation every possible care has been taken to ascertain by all methods at our disposal that the eye and its surroundings comply with the strict requirements of aseptic surgery. The state of the eye with regard to functional reactions is tested carefully in the usual way. The condition of the lens is examined with the pupil dilated by focal illumination, with the opthalmoscope, and with the corneal microscope two or three days prior to operation. The type of cataract and the stage of advance are carefully investigated but, so far as I am concerned, not as yet with sufficient certainty in the interpretation of appearances.

The forceps are blunt or toothless. The lower margins of the blades, which come into apposition when the instrument is closed, have a specially designed curve, are smooth, and meet in a clamp-like manner. The shanks of the forceps do not meet, and all projecting parts are carefully rounded off so as to cause no injury to the cornea or iris. The correct apposition of the blade margins is insured by 'stops' on the handles and too great pressure is prevented by an adjustable nut on one of the stops. The upper aspect of the closed blades forms a small spoon-shaped or boat-shaped cavity or cup. This is directed upwards when the instrument is in position, and can be clearly seen through the cornea. The lower aspect of the closed blades is convex and feels like, and, when the instrument is first placed in position, rests lightly upon the central part of the anterior capsule of the lens. The forceps, which I have had in use in its present form for some time, was modified from a pair of Kalt's forceps which I purchased in New York in 1920. It has been modified in size, in shape, and in action. Recently I have found that the capsule of the lens seldom gives way where the forceps take hold, and I believe this is in part due to the construction of the instrument.

Hitherto I have always performed iridectomy immediately after iridectomy the forceps are used. The blades are introduced closed through the central part of the incision, with the point tilted downward, so as to raise the edge of the corneal flap. As soon as the closed blades reach a position at or a little beyond the centre of the lens, they are placed still closed, lightly on the lens capsule and opened widely to 4 or 5 mm. During the opening movement the blades are held in light contact with the surface of the lens. The pupil margin, which I have often seen in contact with the outer aspect of the blades, are gently pressed asunder, and I have never seen the iris injured in any way or caught by the forceps. When the opening movement of the blades ceases the closing movement should begin without any delay, and as this closing movement begins the blades are gently pressed against the lens capsule. This gentle pressure is increased as the closure proceeds, so that the convex edges of the clamping margins of the blades dimple or indent the capsule into the soft subcapsular cortex of the lens. As the closing blades approximate, the pressure upon the lens is progressively increased, and at this stage it can be clearly seen through the cornea that a relatively large mound or capsule-covered cortex is forming between the blades. When the closure is complete, the cup of the forceps contains quite a considerable mass of capsule-covered cortex. This contained cortex distends the portion of capsule within the cup and during the traction which follows prevents it slipping from between the lower margins of the blades, and thus too great pinching pressure upon the capsule is unnecessary. The contraction and large size of the blades also helps to spread or distribute the strain upon the capsule. Note that the degree of approximation or pressure of the blade margins has been arranged prior to the operation by the setting of the adjustable nut on the lowest stop between the handles.

Immediately the forceps have been completely closed a gentle forward movement towards the centre of the cornea is made and the forceps held forward in this position for an appreciable period—say for five seconds or more. This first forward movement puts the lens capsule on the stretch all round, and begins the moulding of the lens. When this forward movement is considered sufficient, the direction of traction is altered so as to bring the greatest degree of tension to bear upon one part of the suspensory ligament at a time. If we suppose the cornea to be marked like a clock face as viewed from the front, I should begin the lateral traction forwards and to the side towards 2 o'clock and afterwards towards 10 o'clock and then toward 12 o'clock always maintaining a partially forward movement. The suspensory ligament appears to give way at one part at a time and always below the horizontal meridian. Once the rupture of the ligament has begun the subsequent separation is much easier and the ligament seems to strip off from the lens margin. In cases where the zonule gives way easily, the above stages of the procedure may not be noticeable. At this stage—which is often about half a minute but has varied from 10 to 15 seconds in one case to from 60 to 70 seconds in another—the lens begins to yield and to come forward at the lower part. This gives the impression that the lens has become free from its lower and lower lateral attachments. The forceps traction is constantly maintained but with a little less strength so as to bring the lens forwards and forward by a slowly. This slow gentle but continuous traction which I have found best gives time for the capsule of the remaining suspensory ligament attachments and assists the gentle and slow separation of the lens from its bed upon the anterior surface of the vitreous humour. At this point, where the retaining power of the suspensory ligament has largely given way, the lens begins to abut upon the

posterior surface of the corneal flap, and then on the margins of the wound It has now become considerably altered in shape, this varying in degree according to the consistency of the lens, which in its turn depends upon the type of cataract and the age of the patient In certain cases it is remarkable to see how much of the intact capsule with contained cortex may be drawn, like the narrow end of a pear, into and even through the wound, prior to the successful delivery of the lens The moulding of the lens in some instances suggests that the nucleus has altered its position in relation to the surrounding cortex While this shows the toughness of the capsule and the suitability of the forceps, it is not desirable if due to a preventable cause, such as too small an incision The lens having engaged in the wound, is slowly drawn through, but must be so held that when its maximum diameter has passed out it can be restrained from anything like a sudden, or even too rapid, a completion of its exit This is, I believe, important, because it is one of the manœuvres which helps to prevent vitreous from following the lens into the wound If the last third or quarter of the lens be held in the wound for a few seconds it appears to be finally pushed away by the resiliency of the corneal flap, which closes down behind it

After the extraction has been completed and the conjunctival flap has passed into good position, as practically always happens, there comes the question of the freedom of the iris from the wound I have always felt reluctant to introduce a repositor, and have found that stroking of the cornea may suffice, but if necessary the repositor must be used Atropine, if not used prior to operation, should be used immediately after

The dressing I use is a small round piece of lint smeared with vaseline and placed over the closed eyelids A round of Gamgee tissue is put over this, and fixed with a strip of half-inch plaster Then over all is placed a perforated aluminium shield which is held in position by two strips of plaster Both eyes are covered for twenty-four hours, after which the unoperated eye is left open and the operated eye has the dressing removed, leaving the shield only I use the shield with straps of plaster in preference to a bandage round the head, as I find it steadier, and it is not liable to tugging from movements of the patient's head on the pillow

GENERAL DISCUSSION

Lieut.-Colonel Henry Smith, I M S, said that this was a discussion of the different methods of intracapsular extraction of cataract and, presumably, of the relative merits of this proceeding compared with the capsulotomy operation He would draw attention as briefly as possible to certain issues on the importance of which enough stress was not laid

Control of the Lyelids.—Thorough control of the orbicularis, whether by novocain or by mechanical means, or by both when novocain failed, as it not infrequently did, was absolutely essential if the operator was to have a fair chance

The Incision.—For an intracapsular operation the incision should be 180 degrees commencing in or just behind the sclero-cornea It accidents turned it into a capsulotomy operation no harm was done one never regretted having room enough but always regretted having too little Bursting or the capsule in expression was almost always due to too small a wound, and generally due to the same cause in the traction form of extraction

The Strœlenau, Kalt, Knapp, and Sinclair methods were substantially the same They would, he considered, be all improved if the operator made traction with one hand and pressed a squint hook on the flat—the point directed upwards—on the lower third of the cornea to assist in dislocating the lens Dr Barraquer's method would, he thought, be improved by using the squint hook in the same way This would also render the capsule less liable to tear in all these cases Dr Barraquer still laid stress on not tearing the suspensory ligament some distance from the lens to do so would undoubtedly imply more force than was justifiable Having repeatedly examined lens for this very thing with a magnifying lens before Dr Barraquer commenced intracapsular extraction, he had never once found tags of suspensory ligament attached to the lens He did not think that the zonule was ever thus torn whatever method was adopted The detachment was always directly from the lens, so that they need have no fear on this issue, vibratory movement had nothing whatever to do with it There seemed to be a general demand for a less complicated instrument than Dr Barraquer's, and Messrs Down Brothers were likely to supply it in the near future

The Physical Condition of the Lens.—Too much stress was laid on this issue From the practical point of view it was either a hard cataract or a Morgagnian cataract, if the former the plain of the iris was pushed forward, if Morgagnian it was the most ideal for the capsulotomy operation, or for the procedure which he had long advocated—the least favourable for any of the other methods of intracapsular extraction Though the lens was a globe in which the different countries of the world could be made out, like Dromio's wife, these things, however interesting, did not help the operator, and the idea that the younger men must investigate every cataract and draw inferences bearing on operation by the newest methods of examining the lens rather tended to frighten him unnecessarily The younger men in later years would surely come to agree with him that they were taught a thousand-and-one terrors, which seemed after events bogies designed apparently to make sure that they would never draw blood and never acquire enough confidence to operate

Escape of Vitreous.—People talked as though escape were not incidental to the old operation Professor Parker of Detroit read a paper at the annual meeting of the American Medical Association in 1921, giving about 14 per cent in his experience of about 1,400 It was much more serious in the old operation on account of the lens matter and capsule left behind than in the intracapsular operation A large escape was as fatal as a choroidal haemorrhage a small escape was of no consequence Nature was unable to repair the large one, but was able to repair the small one, this was the only explanation why eyes with a small escape were as well as those with no escape

People seemed to swallow the conclusion that pressure and friction must do harm, therefore it did do harm, they drew a conclusion from one premise instead of two, and advanced no facts The epithelial surface of the cornea would stand a surprising amount of friction without showing signs of reaction, and considerable pressure and pressure-strain was well tolerated and need not be feared, always provided reasonable skill was used He had frequently extracted in capsulo down to 30 years of age, and a few times down to 25 without any sinister result No one operating on patients over 50 years of age would have to use half this amount of pressure-strain

Reference had been made to Dr Barraquer's cases in America Lieut.-Colonel Smith had had a similar experience There was no finer body of sportsmen in the world than American surgeons, but in every country there were a few who "shoot the pigeon sitting" Dr Barraquer operated on some cases and never saw them again, some of them were talked over or reported adversely, the venom losing nothing as it passed round The speaker was similarly treated at Chicago, but on independent inquiry it was found that the results were twice as good as reported 6/50 turning out to be 6/6, and so on

They were told that the old operation was satisfactory, why then this search for a better one? Their answer was Take the immature cataract as one of the many cases in which it was not satisfactory In this and every country they were very numerous, men in the prime of life—50 to 60—found themselves put on the shelf, so to speak, for five years, ten years, or even for life, until their cataracts were ready for the old operation The penalty of waiting was tremendous, the demand was insistent, and they must give such patients relief The old operation could not do it, but the new one could India with its 40,000 cataracts a year, mostly intracapsular, would determine this question

Mr M L HEPBURN (London) said that in proposing and performing a new operation the aim of the surgeon should be to remove the disadvantages of the old operations without introducing any fresh ones Only in this way could they arrive at perfection in surgical technique He was prepared to admit that Professor Barraquer's operation was an ideal one if no objections to it could be found Another point in bringing forward a new operation was to avoid exaggerating the weaknesses and disadvantages of the older operations so as to throw into relief the method which specially appealed to the particular surgeon in this connexion he dealt first of all with what Professor Barraquer called the principal defects in the operation of cystotomy

The exertion of pressure in any way was a decided objection to the older operations, but who in these days ever exerted this pressure with the finger on the lower lid—a most septic procedure? The necessary instruments entering the anterior chamber were at the most three and possibly only one and if all the instruments were sterilized together he failed to see any objection to this, except the danger of a patient moving his eye at the moment when any particular instrument was being inserted, in his experience accidents from this cause practically never occurred Then again, traumatizing the iris and favouring iritis" was largely a theoretical objection, without bringing forward numerical statistics, he was prepared to say that the degree of reaction following any intraocular operation was about equally divided between those in which the iris was cut and those in which it was left intact Again as regards the retention of lens capsule and remains of lens cortex in the eye—the only danger of lens capsule being left in the eye was that it might be caught up to the wound, which could be avoided by doing a simple extraction The retention of lens cortex was by no means so dangerous as formerly except when it was infected, and in these days of asepsis such a complication need not seriously be considered In the days when asepsis was not practised the retention of lens matter in the eye was to be feared but ophthalmic surgery had advanced in this respect concurrently with other branches of surgery

The chief points in favour of the various operations could be crystallized as follows

1 Intracapsular Removal of the lens entirely with its capsule and thus rendering a needling operation unnecessary Also in the Barraquer operation the elimination of all pressure on the globe

2 Simple extraction cystotomy operation To prevent the capsule being caught up in the wound

3 Combined extraction, cystotomy operation To obviate prolapse of the iris, and to enable the lens to be delivered with less pressure The objections to the two latter operations could be summed up as follows Prolapse of the iris in simple extractions and the inclusion of the capsule in the wound in combined extractions All other disadvantages or advantages usually advanced against or in favour of one or the other were of minor consideration and often had no foundation in fact

Skill in ophthalmic operations was acquired by continual practice, but all efforts were in the direction of lightness of hand when this was maintained at a high level the results by any method of operation were undoubtedly better In all intracapsular operations the rupture of the suspensory ligament was essential and the question was how much force was necessary for this to be produced satisfactorily In Smith's operation rupture of the capsule was accomplished by pressure from without, and while in skilled hands this amount of pressure was reduced to a minimum yet it was a principle they all tried to avoid as much as possible, and in Professor Barraquer's operation this was absent altogether In the operation now being discussed the force was exercised by a pulling action which in his opinion was preferable to the pressure method

In spite of the apparent advantages of the Barraquer operation they were faced with serious complications which militated against a perfect result and over which they might have little control In the first place, would the vacuum produced by the pneumatic cup hold the lens firmly enough through all the manœuvres it had to go through If it did not hold the suction action was communicated to other parts, resulting in the loss of vitreous and inclusion of the iris For the necessary pneumatic power they were dependent not on skill, but on the perfection of the electrical apparatus at their side It was true that they could partly control it by sliding their finger or thumb over the hole in the crisphaque and maintaining it there in a firm position but this firm pressure on a relatively clumsy instrument could not fail to produce strong contraction of the muscles of the hand which led to the reverse of light handedness so essential in ophthalmic operations Every advocate of the intracapsular operation did not deplore the loss of vitreous, but he noticed that Professor Barraquer mentioned were associated with the desire to maintain the integrity of the vitreous, and with this he entirely agreed He regarded the loss of vitreous as a distinct disaster although perfectly aware that fluid vitreous was easily replaced with very little effect on the ultimate acuity of vision but in a large number of cases any loss predisposed to detachment of the retina and other complications and he was convinced that any teacher of surgery and any exponent of the new operative procedures should never treat lightly the loss of vitreous He did not quite agree that "very little pressure causes rupture of the hyaloid" unless the hyaloid was weak as in some cases of myopia, or in a secondary cataract due to iridocyclitis, but when the vitreous was fluid the tendency to rupture was increased by undue pressure

Turning to his own experiences and those of his colleagues at Moorfields he added that he had done the operation once or twice himself and had been thoroughly convinced of its dangers Two of his colleagues had performed this operation many times, and from close study of their experiences (*Trans Ophth Soc*, 1923) he was satisfied that the loss of vitreous and other difficulties were far in excess of those experienced in the older cystotomy operations The loss of vitreous was 25 per cent in the one case and 23 05 per cent in the other, while the total amount of failures due to all complications including loss of vitreous was 40 per cent in the one case and 42 per cent in the other These mentioned other difficulties in the technique not found in the older operations, and from their own experiences over a series of cases they had now abandoned the operation altogether As regards the visual acuity attained as a result of the various operations there was nothing to choose between a successful intracapsular operation and a cystotomy operation Some advocates of the intracapsular method maintained that the patient had better vision afterwards than when a cystotomy operation had been performed, but, judging by their usual standards, he did not see that they could desire anything better than 6/6 and J 1 which occurred repeatedly after the latter operation On the whole he was strongly of opinion that the disadvantages of the Barraquer operation far outweighed the advantages and could not be recommended as the cataract operation of the future

Mr J GRAY CLEGG (Manchester) had had some experience of the expression method of intracapsular extraction but had been unable to satisfy himself that it was as safe as the older cystotomy procedure Some twelve years ago the late Professor Stanculeanu of Bucarest presented him with a pair of his avulsion capsule forceps used in much the same way as that which Mr Sinclair now employed He found that the capsule was often torn by them and he therefore had abandoned the method but he intended with the improved pattern or Mr Sinclair to return to it In the United States during 1922 he had watched Professor Barraquer employ his special procedure and he was struck by his great skill and delicacy of touch In several cases there were difficulties with the crisphaque on account of the unaccustomed electrical connexion and the report Professor Barraquer was hand carried to a certain extent The fact that the apparatus was delicate and required frequent adjustment formed a decided objection to its use by others in general In reply to a query by Mr Clegg at the International Congress of Ophthalmology at Washington two years ago about complications he stated that they were practically none He asked whether Mr Sinclair had resorted to his traction operations in all of the 6 recent extractions It did not appear certain that a

partial vacuum on the anterior capsule necessarily implied a vacuum in the vitreous Mr Clegg presumed that the head band and retractor was suggested by Colonel Smith as being better than production of paralysis of the orbicularis muscle by subcutaneous injection In this country Mr Clegg had found that most patients were as quiet as could be desired, and it was therefore only necessary in particularly refractory and uncontrolled persons to resort to measures to prevent the nut-cracker action of the lids

Mr Bishop Harman (London) said that the apparatus needed for the performance of the operation of Professor Barraquer put the procedure in a class by itself It could only be performed in a regular eye clinic where there was available every resource in equipment and skilled assistance, it was useless in the many places where most of their work had to be done Who would propose to carry such an elaborate installation into the country?—yet they had to operate in the country Again, the elaboration of instruments not only limited the sphere of the surgeon's operations, but it reflexly affected his mentality, and therefore his skill in operating If his attention was diverted to the care of a number of extremely complicated instruments it was certain he could give less attention to his patient, so that the primary object of the procedure was obscured

Of Colonel Smith's methods of expression he would say that the degree of force required for its performance, at any rate upon Europeans with their tough connective tissues, was unwarrantable Far greater risks were run by that excessive force than could possibly be entailed by a needling operation of an after-cataract formed by a dense capsular remnant His personal experience was all in favour of the safe simplicity of the extraction of cataract after cystotomy, and he would never submit a British patient to forcible expression within the capsule He was impressed by Mr Sinclair's experiments in removing the lens intact by forceps, and thought the procedure worth trying, for it did not entail dangerous violence

Mr Harrison Butler (Leamington) asked what was wrong with the ordinary method of cataract extraction Under the best conditions it gave about 95 per cent of reasonably good results, and the loss of vitreous could be reduced to about 2 or 3 per cent He invariably paralysed the orbicularis with an injection of novocain, and generally used a conjunctival bridge By this method he had reduced his vitreous loss to a minimum He had seen Barraquer's method of extraction and was not at all impressed with it the pump gave a great deal of trouble and the operation lasted about half an hour He was struck with the distension of the wound caused by the exit of the lens with the spoon, which seemed to add about 50 per cent to the thickness of the lens He could see no reason for adopting a method which was complicated and dangerous when the orthodox operation yielded such good results

Mr R J Coulter (Newport) considered the instrument shown by Colonel Smith unnecessary, since the same result could be obtained by the use of the lid hook as suggested by Colonel Smith himself, but held by the surgeon instead of by his assistant

Mr A L Whitehead (Leeds) speaking as a surgeon of some years' experience deprecated the use of complicated mechanism in any form of operative surgery In all branches of surgery history showed that such aids were sooner or later abandoned, in fact, the more complicated the apparatus the shorter was its reign In the hands of the originator or his immediate pupils excellent results might be obtained but the large majority of surgeons inevitably found that the complications outweighed the advantages Unless it proved possible to simplify Professor Barraquer's apparatus it would not be acceptable to the majority of ophthalmic surgeons

Colonel Smith's operation required no elaborate apparatus, but it demanded dexterity, skill, and an enormous experience which the opportunities of the average British surgeon did not supply Mr Sinclair's method seemed well within the powers of the average surgeon Should the forceps fail to hold the capsule the effect was simply that of a capsulotomy according to the plan of Knapp and Fuchs, but the loss of vitreous, about 14 per cent, was very much higher than was usual in the ordinary operation with rupture of the capsule by a cystotome The speaker very much doubted whether this operation had any real advantages over the usual operation which he practised—a combined extraction with a large section, a conjunctival flap, and capsulotomy by a cystotome In his hands, even in extraction of immature cataract, the percentage of loss of vitreous had been almost negligible, and the after-results were very good

Mr E E Maddox (Bournemouth) said that just after carefully studying Colonel Smith's excellent book about his operation, and whilst deliberating whether it would be justifiable to attempt it, he had had the good fortune to receive a flying visit from Major McKechnie, who arrived so full of enthusiasm for this operation that Mr Maddox seized the opportunity to ask him to hold the lids of a hospital patient while the intracapsular extraction was performed Mr Maddox adhered loyally to every detail as laid down by Colonel Smith, and the lens emerged so neatly, and left so good a pupil without loss of vitreous, that the speaker naturally became enthusiastic also He had treated about fifty patients, nearly half by Smith's method, and the remainder by removing the lens with a little loop made for the purpose, like a short-handled bent vectis Vitreous was lost in a good many, but the results on the whole were quite as good as with ordinary extraction He would not advise intracapsular methods for lenses fully ripe and suitable for simple extraction, but there were certain cases for which it was highly advantageous, more particularly those in which there was a tendency to gouty iritis or chemical glaucoma, likely to be precipitated by thickening of aqueous with dissolving lens matter Even when the other eye had been lost elsewhere, he had in three cases removed the lens in its capsule for reasons of this kind

As regards Barraquer's operation, the chief advantage claimed for it, of the absence of all pressure upon the globe might not be so unmixed a blessing as it seemed, for the alleged tendency to detachment of the retina would be lessened by simultaneous pressure upon the lower part of the cornea to compensate for the retirement of the lens from its bed, and the ideal operation might prove to be one in which the *vis a fronte* was supplemented by a *vis a tergo* It was not the vacuum in the sucker which would affect the retina, but the complete occupation of the wound by the lens during its exit, which prevented the entrance of air to fill the space behind it With an elastic sclera sufficient contraction no doubt took place to obliterate the potential cavity, but with a hardened sclera the danger of detachment might be great Intracapsular extraction by pressure from without demanded such intense concentration and alertness on the part of the operator, that it was not wise to attempt it under difficulties—as, for example, when overworked or indisposed

Dr Gordon Spencer (Mesopotamia) considered that the discussion was of great value A simple apparatus for any operation was essential, since in foreign countries the assistants were usually incompetent and replacement of instruments impossible This ruled out Dr Barraquer's operation Colonel Smith's operation was excellent in the right hands, but required too much practice Mr Sinclair's method held out great promise, because an intracapsular operation was desirable, so many patients returned to their homes with a secondary cataract and were never seen again

Mr O G Morgan (London) thought that two very important arguments against the intracapsular operations were the extremely common slight loss of vitreous and the association of iridectomy Although a large loss of vitreous was a tragedy and a small loss was dangerous, and was only one point removed in danger from capsule in the wound, strands of vitreous in the wound formed a track for infection, delayed the healing of the wound, and by contraction seemed to draw the iris, especially the pillars in iridectomy, into the wound, causing prolap

Cystotomy was neither difficult, if performed within two to three weeks, when the average patient was quiet, or dangerous if aqueous was not lost, thus preventing the prolapse of vitreous into the anterior chamber. A simple extraction, or one with peripheral iridotomy, was to his mind the ideal operation. By causing adhesion of the anterior and posterior parts of the lens capsule it prevented capsule in the wound, and, even if iris prolapse occurred twenty four hours afterwards, and this adhesion had taken place, this, the most serious complication of the operation, was avoided.

PARESIS OF THE ACCOMMODATION AS A LATE SEQUELA OF ENCEPHALITIS LETHARGICA

BY

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Mild attacks of encephalitis lethargica are probably much more frequent than is generally believed. The symptoms are very similar to those of typical encephalitis but are transient and leave no permanent ill effects. They are often incorrectly diagnosed as influenza, but the ocular symptoms should indicate the true diagnosis. Diplopia, often very transient, and a slight paresis of certain extra- and intraocular muscles will always be found.

In one case under my observation in a child double vision was not complained of, but the parents noticed that the boy constantly misjudged distances and had difficulty in directing food to his mouth. Affections of the ocular muscles are probably the most common of all the symptoms of this disease in the acute stage of both severe and mild attacks. As a final result or sequela they are less frequently present.

Many cases have been recorded in which paralysis or paresis of the accommodation has been found in association with palsies of the external ocular muscles. As an isolated symptom it is much less frequent, and a series of such cases having recently come under my observation it seemed advisable to place them on record. Through the courtesy of Dr. Johnstone Jervis, the medical officer of health for Leeds, I have been able to obtain particulars of twenty four cases of encephalitis lethargica occurring in the Leeds area in the first six months of this year. Ocular symptoms were present in all in the early stages, and in some persisted for long periods. Most of the cases were serious, and the diagnosis was made without much difficulty. In the case of four patients who came under my care complaining of defective vision, the original illness had been mild, followed by a more or less complete return to good general health, in only one had a diagnosis of encephalitis been made.

The brief notes of these cases are as follows:

T. R. B., male, aged 23, was seen first on March 10th, 1924. Six weeks previously he had been ill for a few days with fever, headache and dilatation of the left pupil on recovering he found that he was unable to read ordinary print but his distant vision was unaffected. The dilatation of the left pupil gradually passed off and the pupils were now equal. Vision was 6/6 in each eye with normal refraction he could read J. 1 easily at 14 inches with + 2·5 D. sph. for each eye. The condition had improved in June so that he was able to read J. 1 with + 2·0 D. sph.

D. B., female, aged 16, seen on March 24th, 1924. There had been a sudden illness seven days previously with severe headache and diplopia lasting five days she was now unable to read. The vision was 6/6 in each eye, retraction normal. Paresis of accommodation was present she could read J. 1 with + 3 D. ph. On June 12th she could read J. 1 with + 2·5 D. ph.

E. M., male, aged 32, seen on April 28th, 1924. Four weeks previously he had had a severe illness with headaches and diplopia for about a week and encephalitis lethargica was diagnosed. Recovery was gradual and he now feels perfectly well but is unable to read. The pupils are rather large but react well and equal. There is a well marked paresis of accommodation corrected by + 2·5 D. sph. The right eye is hypermetropic vision 6/18, the left is emmetropic vision 6/6. On June 20th the condition was unaltered but on July 14th he was able to read J. 1 with + 2·5 D. sph.

W. F. T., male, aged 12, seen on May 5th, 1924. About a month previously he became drowsy and had diplopia. Subsequently he was heavy and very slow mentally and was inclined to sleep frequently during the day. He complained of inability to read any except very large print. The pupils were 6 mm. in each eye, reaction normal, he required + 1·5 D. sph. for J. 1. On June 19th he was much brighter and read J. 1 with + 1·0 D. sph.

There has been progressive but slow improvement in the case.

Paresis of the accommodation is apparently most common in the mild cases of encephalitis lethargica and it has not been observed as a sequela in any of the severe cases occurring in this district, except in association with such other ocular symptoms as inequality of the pupils, defect in convergence, or a complete third nerve palsy. It bears some resemblance to the paralysis of the accommodation which occurs in diphtheria epidemic, in that it appears in mild and somewhat atypical cases. It is well known to ophthalmic surgeons that a definite history of diphtheria is often very difficult to obtain in post diphtheritic cycloplegia—often the only complaint is of a mild transient sore throat during a diphtheria epidemic—or where diphtheria has been present in the same house or district. In three of my cases the original attack was so slight as not to direct attention to the real nature of the illness. It is on account of the diagnostic significance of this partial cycloplegia in association with the antecedent history that I have brought these cases to your notice.

Mr. HARRISON BUTLER (Leamington) had seen several cases of encephalitis during the previous six months, in fact, at one time several cases a day came to the Birmingham Eye Hospital. In all there was a history of influenza followed by the paralysis of an eye muscle. Unfortunately he had seen four cases in which the optic nerve was affected—three of retrobulbar neuritis and one of optic neuritis. Two were followed by almost total blindness and two made a complete recovery.

RELATION OF THE BLOOD UREA TO DIABETIC COMA AND TO THE DURATION OF DIABETES MELLITUS *

BY

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As the blood urea concentration in cases of eclampsia and of diabetic coma is at present under discussion it may be of interest to publish some results which were obtained in a recent investigation on certain blood constituents in diabetic patients under treatment by insulin. Two cases of coma are described and a table is given showing the blood sugar and urea content of fourteen patients in whom the duration of the diabetes mellitus was known.

The estimations of blood sugar were made by Wallis and Gallagher's modification of the Folin-Wu method, those of blood urea by the method of Twort and Ardern.

CASE I.

A married woman, aged 56. Her aunt had suffered from diabetes mellitus and she had noticed the symptoms in herself six years ago. She had been treated for four years. On November 18th she had pain in her knees on stooping and lost her appetite. On the night of November 22nd she became somnolent and was admitted on the afternoon of November 23rd semi-comatose but unable to speak. The temperature was 97° F. and the urine contained much sugar and acetone.

One hour after admission, having had no insulin during the previous twenty four hours, her blood contained 0·2 per cent. sugar and 0·2 mg. of urea per 100 c.cm. On the morning after a diet of water only and 90 units of insulin, having been given four hourly fluid nourishment, the blood sugar had fallen to 0·2 per cent. and the urea had risen to 0·7 mg. per 100 c.cm.

On November 27th, on a diet containing 2 grammes of nitrogen, 110 units of insulin in the twenty four hours, the blood sugar was 0·3 per cent. and the urea 50·9 mg.

On December 11th, on a diet containing 9 grammes of nitrogen, 90 units of insulin the blood sugar was 0·12 per cent. and the urea 70·0 mg. per 100 c.cm.

On January 5th, on a diet containing 9 grammes of nitrogen, 90 units of insulin the blood sugar was 0·25 per cent. and the urea 70·0 mg. per 100 c.cm. of blood.

It will be seen that in this case the blood urea fell more or less concurrently with the blood sugar as the result of treating the diabetes.

* Extract from a report to the Special Committee on Diabetes appointed by the Medical Research Committee.

CASE II

An unmarried woman, aged 20, stated that appetite and thirst had for several months been unusually great One month previously she had noticed loss of weight For twelve days she had ceased to work owing to weakness On January 2nd, 1924, she felt definitely unwell On January 4th she "fainted" and was admitted to hospital sufficiently conscious to attempt, unsuccessfully, to answer questions The knee jerks and abdominal reflexes were then absent, but returned before the second examination of the blood was made One hour after admission, having had an almost protein free diet during the previous twenty four hours, the concentrations of sugar and of urea in the blood were respectively 620 mg and 27 mg per 100 c cm On the following day, after an enema of olive and castor oils, the administration by the rectum of half a pint of water every hour, and a total of 40 units of insulin, the figures were 250 mg and 41 4 mg

Thus, in the second case the concentration of blood urea was within the normal limits and actually rose as the blood sugar concentration decreased and the clinical signs of coma disappeared

Since the blood urea concentration is not necessarily increased in diabetic coma, it follows that the kidney threshold for urea is not necessarily raised One or two estimations done some time ago on the blood of eclamptic patients showed a normal concentration of urea These results and those of De Wesselow,[1] who studied the coma of nephritis, suggest that coma is not due to hyperuraemia Among the possible causes are an increase in the inorganic phosphates, a relative alteration in the amounts of the inorganic constituents, and an alteration in the hydrogen-ion concentration of the blood I am inclined to suspect some decomposition product of urea, but the estimation of such products is difficult

The table shows the blood urea concentrations of patients who had suffered from diabetes mellitus for various periods ranging from three months to seventeen years Only those patients are included whose histories were definite and intelligent Case 13 is the first case of coma described above, and the figures given are, as in all the other cases, those obtained on the first examination after admission Case 14 is the second case described In all the other cases the blood urea remained constant under diabetic treatment in hospital

TABLE

Case	Sex	Age (years)	Duration (years)	Blood Sugar (grams per 100 c cm)	Blood Urea (milligrams per 100 c cm)
1	M	27	1/2	0 098	28 1
2	M	28	1/4	0 088	25 0
3	M	40	2	0 137	31 5
4	M	63	17	0 113	25 6
5	F	16	2	0 207	23 5
6	M	66	1/4	0 173	29 9
7	F	23	1½	0 336	34 7
8	F	43	2½	0 137	31 5
9	M	46	3	0 138	48 7
10	F	52	3½	0 242	28 0
11	F	20	4	0 250	41 4
12	F	20	1	0 108	24 5
13	F	56	6	0 466	82 2
14	F	20	1/4	0 620	27 0

It is of interest to note that the patient Case 4 in this table had a systolic pressure of 160 mm Hg taken over the brachial artery by the auscultatory method, but no arterial thickening or proteinuria

It seems certain that the duration of diabetes mellitus does not necessarily raise the concentration of blood urea From this it may be inferred that the disease does not lessen the excretory power of the kidneys for urea

The research on which this note is based was carried out at St Bartholomew's Hospital The author is deeply indebted to Sir Frederick Andrewes, F R S, to Dr Mackenzie Wallis, and to the members of the staff who allowed access to their patients Towards the expenses of the research a grant was made by the British Medical Association

Summary

1 The concentration of blood urea in diabetic coma is not necessarily proportional either to the depth of the coma or to the concentration of blood sugar Low concentrations have been found in the coma of eclampsia

2 The concentration of blood urea does not necessarily rise in chronic diabetes mellitus Diabetes mellitus does not raise the kidney threshold for urea

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ACUTE PNEUMONIC PULMONARY TUBERCULOSIS TREATED BY ARTIFICIAL PNEUMOTHORAX

NOTES ON TWO CASES

BY

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It is a matter of general experience that in a large proportion of cases of acute caseous tuberculosis (lobar pneumonic type) there is a fatal termination within three months of the onset of illness, while nearly all the remainder, who have succeeded in overcoming the initial toxaemia, succumb to fibro-caseous disease and broncho-pneumonic extension within eighteen months The very few who are alive at the end of two years tend to be hopelessly incapacitated by reason of extensive fibro caseous and fibroid pulmonary disease With the exception of the first case recorded below we do not know of one person, undoubtedly afflicted with this form of pulmonary tuberculosis, who is in good health and able to do Grade III manual work more than two years after the onset of his disease

Radiographic examination of this type of case shows that, in addition to the primary "pneumonic" focus, there is, within a few weeks, considerable secondary bronchopneumonic involvement of the remainder of the same lung, and also similar implication, to a variable extent, of the opposite lung, usually about its middle zone

It is reasonable to suppose that toxaemia will be limited and further spread of disease to the opposite lung be checked, so soon as the primary lung can be collapsed by artificial pneumothorax

Just as in the treatment by artificial pneumothorax of ordinary fibro-caseous tuberculosis the presence of definite (even considerable) disease in the "sound" lung need be no deterrent, if for other reasons the treatment is deemed advisable, so in the acute caseous form artificial pneumothorax should be attempted provided there be only small or moderate (up to one-third) involvement of the "healthy" lung

This almost inevitable secondary implication of the "healthy" lung is, however, one very cogent reason for beginning the treatment by artificial pneumothorax as early as possible, and another reason, equally cogent, is the fact that if treatment be delayed more than a few weeks the formation of tough pleural adhesions may prevent satisfactory collapse of the affected lung, and the efficacy of the treatment may be correspondingly impaired It is not usually possible to diagnose this form of tuberculosis with certainty till the second or third week, since it is liable to be regarded as ordinary pneumonia till about the fourteenth day, when the absence of crisis, the swinging

temperature, and the evidence of softening may lead to a correct diagnosis, the discovery of tubercle bacilli in the sputum may be expected towards the end of the second week but their appearance may be delayed for some time further In any event we consider that the diagnosis should be established and treatment commenced in nearly every case by the end of the fourth week, and in some cases quite a week earlier

At the present time there has not been recorded a sufficient number of cases of acute caseous tuberculosis treated by artificial pneumothorax to justify an opinion as to what percentage can be restored to health by this means, but we venture to publish a short account of our two first cases in the belief that the present very high death rate in this class of case will be reduced very materially provided artificial pneumothorax treatment can be employed sufficiently early in the disease

CASE I

A G a schoolboy aged 16 years was always quite healthy till January 20th 1922 when he contracted influenza He was treated by Dr Milne of Streatham who kept him in bed for two weeks after a further weeks convalescence the boy felt perfectly well and returned to school The following day February 11th he shivered and had three haemoptyses totalling about twelve ounces of blood He was put to bed and Dr Milne noted the rapid development of signs of consolidation in the upper half of the right lung and later on increasing infiltration of the right base At first the clinical picture resembled lobar pneumonia but no crisis occurred the temperature began to swing widely and by the middle of March in spite of the fact that no tubercle bacilli were found in the sputum on three occasions Dr Milne was satisfied that the case was one of acute pneumonic phthisis On March 23rd the late Dr Arthur Latham was asked to see the boy with a view to deciding whether artificial pneumothorax should be attempted Dr Latham agreed that this treatment would afford the only possible hope of recovery and on March 24th the boy was admitted to St George's Hospital x-ray photographs being taken on his way from the receiving room to the ward A few weeks later the onset of Dr Latham's fatal illness precluded his further attendance at the hospital and the subsequent treatment of the case devolved on the present writers

Condition on admittance (March 24th)—A pale wasted boy with hectic flush dirty tongue injected fauces and frequent cough he was obviously very ill indeed Temperature 102° pulse 120 respirations 28 The right lung showed diminished expansion especially of the upper half with increased tactile vocal fremitus solid dullness to percussion over the upper half back and front vocal resonance greatly increased some aegophony The breath sounds were tubular with many hard crackles and pleural creaks over the upper and middle lobes The lower lobe showed impaired resonance and many medium and fine crepitations The left lung was hyperresonant and emphysematous with a patch of fine crepitations in front of the axilla and a band of hard crepitations to the left of the vertebral column (conducted from the other side) The heart which was dilated gave sounds of poor quality there were no murmurs

A skiagram showed much fibrosis with excavation of the upper and middle lobes of the right lung with pleural involvement and fine mottling all over the lower lobe There was emphysema and general tuberculous infiltration of the left lung chiefly in the lower lobe and most marked just external to the cardiac impulse

Subsequent Course of Case—It was considered advisable to collapse the right lung fairly quickly The first injection was given on March 25th no difficulty was met with and 320 c.cm of oxygen were introduced The initial manometer reading were −4 −8 cm and the final −3 −6 cm By the end of a fortnight five injections had been given nitrogen being used after the first day and satisfactory collapse had been achieved the final pressure after treatment was maintained at roughly −1 +3 cm A persistent adhesion from the apex to the first rib did not interfere with the collapse The sputum which after the first injection of gas was copious and loaded with tubercle bacilli ceased completely when collapse had been achieved and there has been none since April 1922 Constitutional improvement was slow but steady the temperature did not reach the normal for five months and was not stable for seven months the pulse remained high for several months but was down to 70—90 a minute by March 1923 The weight rose in eighteen months from 99 lb to 121 lb but has fallen a little since manual work has been undertaken

After nine weeks of treatment pleurisy with effusion developed on the right side with severe constitutional disturbance for several weeks This necessitated gas replacement of the fluid which took several weeks to reform in any amount after the chest had been completely emptied Finally the fluid though sterile became purulent and in July 1923, was so thick that it could not be withdrawn through any ordinary aspirating apparatus Accordingly 5 c.cm of Gauvain's fluid* was injected to liquefy the effusion and a few days later 18 oz were removed with success Since September 1923 the boy has been at a sanatorium where we are informed it was once necessary to liquefy and remove a thick effusion as described above but since then no fluid has formed and ordinary gas refills are performed every fortnight or so He is now doing Grade III work (pick and shovel and drawing a truck) is afebrile and without cough, the signs in the left lung have long since disappeared and he looks and feels perfectly well

*Camphor 1 part thymol 2 parts ether 3 parts.

CASE II

W H a schoolboy aged 15 was admitted to St George's Hospital on January 1st 1923 with a history of the sudden onset of illness with shivering pain in the right chest cough and expectoration ten weeks before Physical examination as well as x-ray photographs showed an almost identical condition to that described in Case I except that there was rather more implication of the left lung The same treatment was adopted but owing to the existence of numerous tough adhesions only partial collapse of the right lung was obtained in spite of the fact that the intrapleural pressure was raised at each treatment to +30 and +40 cm Nevertheless progress has been on the whole satisfactory the fever has disappeared there is neither cough nor sputum and moderate walking exercise has been permitted from time to time without obvious ill effect other than an increase in respiration rate By reason of the pleural adhesions it is now (sixteen months after the beginning of treatment) impossible to introduce any more gas and the lung has partly re-expanded though with a very thickened pleura and marked falling in of the chest wall

We do not maintain that this case is as satisfactory as the first one, and it is too early yet to say what may be his ultimate capacity for work or exercise, but we think that if he fails to make a good recovery it will be because he was not got at early enough to achieve full collapse of the damaged lung before the presence of multiple adhesions rendered this impossible

A CASE OF STREPTOCOCCAL MENINGITIS TREATED WITH SERUM RECOVERY

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RECOVERY from meningitis due to a haemolytic streptococcus is sufficiently rare to warrant placing the following case on record

A girl aged 10 of delicate constitution had been subject to mucous catarrh of the bowel and mild attacks of acidosis associated with an irritable patch dermatitis which were quickly relieved by treatment Adenoids but not the tonsils were removed during 1922

On March 14th 1924 she was sent home from school with mild tonsillitis and a temperature of 99°. On March 18th she complained of earache the tympanic membrane was hyperaemic but not bulging on March 19th the temperature was 100° and the pain in the ear continued On March 22nd the dermatitis was very troublesome but the temperature was 98° F On March 24th she had pain in the right ear and the breath smelt of acetone Vomiting occurred but was relieved by alkali On March 25th the pain in the ear ceased and she was better until March 30th when persistent vomiting recurred and the vomit was thought to contain pus Mr E. S. Steward of Harrogate examined the ear but did not consider there was any indication for surgical treatment There was slight hyperaemia of the tympanic membrane but no swelling or vertigo the ear appeared to be settling down A small amount of pus was squeezed from the right tonsil

On March 31st she complained of severe frontal headache and she saw two of everything and was confused and apathetic The temperature was 104° F and she was seriously ill the vomiting continued The neck was stiff with pain when the head was bent forwards The knee-jerks were not obtained and Kernig's sign was present Exploratory lumbar puncture yielded 20 c.cm of turbid fluid under increased pressure polymorphs 60 per cent lymphocytes 40 per cent No organisms were seen in direct films After the puncture the headache was relieved and the temperature dropped to 99.8°

The headache and general symptoms returned next day and the temperature was 103° F After the removal of 20 c.cm of fluid 15 c.cm of antimeningococcal serum were given intrathecally and 10 c.cm subcutaneously This was followed by great relief much generalized pain and considerable increase of the headache Towards the end of the next day (April 2nd) there was distinct improvement and the temperature dropped to 101° The pathological report upon the fluid was Fluid turbid the turbidity being due to pus cells composed of polymorphs 64 per cent lymphocytes 36 per cent No blood present Globulin reaction mild Globulin increased Culture on solid media gave a mixed growth of a short chained streptococcus which was markedly haemolytic in character Lumbar puncture was again performed

the pressure and turbidity were less, 10 c.cm. of antistreptococcal serum were injected subcutaneously.

On April 3rd the improvement was very distinct. There was no headache and the mental condition was normal. Kernig's sign was not obtained. Lumbar puncture gave only slightly turbid fluid under normal pressure. Next day 6 c.cm. of clear fluid were obtained by puncture, and the patient was quite clear from symptoms. Except for a serum rash on April 10th recovery from this point was uneventful.

Remembering the rarity of primary streptococcal meningitis, it may be questioned whether in this case the meningitis was not secondary to an ear infection. There was evidence of ear disturbance following mild tonsillitis, and although a streptococcus was not recovered from the throat, we are of opinion that the meningitis was definitely related to the primary naso-pharyngeal condition. At no time previous to the meningitis or during the illness was there any aural discharge.

Numerous instances have been recorded of recovery following operation for meningitis developing during the course of middle-ear suppuration. Such cases have been reported by Holger Mygind[1] of Copenhagen amongst a series of 210 cases of otogenic meningitis, and also by G. J. Jenkins,[2] J. F. O'Malley,[2] and E. Watson-Williams.[2] In many of these cases the cerebro-spinal fluid was turbid to the naked eye, and organisms were seen in the direct smears of the fluid obtained by lumbar puncture. Apparently in only a very small minority of the patients who survived were organisms recovered by cultivation, and in no case was a streptococcus obtained. In all the cases the meningitis followed ear disease, and with the exception of one of Mygind's all the cases were operated upon and basal drainage brought about.

The unusualness of our case lies in the recovery without operation after a streptococcus had been obtained by culture from a markedly turbid fluid. We have found records of only two cases parallel with ours—one of the series reported by Mygind which was not operated upon (no organism was, however, recovered by culture), and a case reported by Archer[3] from which a haemolytic streptococcus was recovered by culture.

We are of opinion that the serum administered by intrathecal injection was definitely related to the improvement which took place within twenty-four hours, and that the horse serum itself produced some effect of the nature of foreign protein shock which resulted in the stimulation of the child's antibacterial powers.

It is hoped that the happy result in this case may stimulate others to treat energetically cases of meningitis, usually considered hopeless, by frequent lumbar puncture and early intrathecal injection of serum. In the absence of a complete bacteriological report it would seem worth while to make use of an antimeningococcal serum.

We wish to acknowledge the help afforded by Dr. Sinclair Miller, who carried out the bacteriological examinations.

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OBSTINATE CONSTIPATION TREATED BY CRUSHING THE LOWER END OF THE COLON AND UPPER END OF THE RECTUM

BY

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The subject of the operation here described was brought to me by Dr. James C. Watt, of the West African Medical Service, who supplied the history and urged the operative treatment which was carried out by me.

The patient, a man aged 36, was robust as a boy, but during adolescence he developed chronic dyspepsia with constipation. He used to get very generally constipated and he began to suffer from headaches, drowsiness and tiredness on rising. When about 25 years old the constipation became severe, so that cathartics had to be used regularly, and the man became an invalid.

Right-sided abdominal pain and discomfort now became constant, and the pain in the hypochondriac region was so severe that cholelithiasis was diagnosed and the abdomen opened in 1922. No local lesion was found, but some peritoneal bands passed down to the ascending and transverse colon, matting these slightly, but not sufficiently so to cause noticeable obstruction. The appendix was removed at this time.

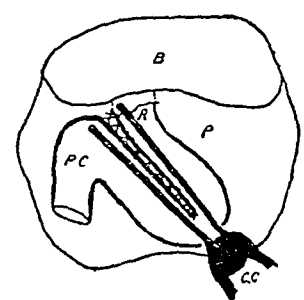
The patient was now hardly capable even of the lightest work, he was often melancholic, and "at the end of his tether." He was placed by Dr. Watt on a low protein diet and advised to use a bowel douche daily. There was immediate relief from all symptoms, the patient feeling happy and comfortable in body for the first time for years, but he could not regain a healthy degree of strength and still had attacks of obstinate constipation.

X-ray photographs taken in February, 1924, showed general atonicity and ptosis of the colon, characteristic of the asthenic type of chronic intestinal stasis. Shortly after this I was asked by Dr. Watt to see the case and consider the advisability of performing an operation to destroy sphincter action and kinking at the upper end of the rectum.

The patient was prepared for operation by Dr. Watt, who lays stress upon the thorough clearing out of the system by practical starvation, with copious water drinking and daily enema, until the tongue is clean and the abdomen concave, then low protein diet for a couple of days, and practical starvation for twenty-four hours before operation. Sips of water are allowed immediately after the operation, morphine is given as required, and a low protein diet gradually re-established, beginning about forty-eight hours after operation.

Operation

The operation is simple and presents little difficulty in performance apart from the rather restricted space in the lower pelvis. With the patient in the Trendelenburg position, a vertical median incision was made in the lower abdomen, extending above the umbilicus. The bladder was turned forward, and the pelvic basin and pelvic colon exposed. A point on the pelvic colon, about four inches above the attachments of the peritoneal ligaments of the rectum, at which the kinking was marked, was chosen. A small incision was made at the apex of this kink into the interior of the bowel, and through this incision the blades of a large and powerful crushing forceps were introduced, one blade going into each limb of the V. One blade there-fore descended, as it was introduced, toward the rectum, while the other ascended the pelvic colon. The blades were introduced to their full extent so that the blade which descended toward the rectum reached the insertion of the peritoneal ligaments. As the clamp was now closed, the two limbs of the V were approximated, so that four inches of the end of the pelvic colon and the beginning of the rectum lay parallel to four inches of pelvic colon immediately higher up.



Outline diagram of pelvis: P, with bladder B drawn forward, showing crushing clamp CC inserted into interior of bowel through opening at apex of kink. One blade descends to rectum R (wavy line above R indicates line of peritoneal reflection); the other blade passes along pelvic colon PC. YYY indicates line of suture.

Care was taken at this stage to keep the mesenteric attachment of the bowel well away from the proposed line of crushing. The mesentery of both limbs was kept below, or posterior to, the position of the blades of the crushing forceps, and once this position had been assured the full crushing power of the forceps was applied.

The clamp was kept on for several minutes, and during this period a stitch was run along the junction of the two pieces of bowel above or anterior to, the blades of the crushing forceps, so as to minimize the danger of separation of the pieces of bowel on removal of the clamp. The clamp was then slipped out carefully, and the preliminary incision made at the apex of the V was sutured. The abdominal wound was then stitched up.

The idea of the operation is that, once the two pieces of bowel with which have been severely crushed have sloughed, a wide opening will be established between the upper end of the rectum and the pelvic colon, redundant pelvic colon and consequent kinking will be largely done away with, and in addition a sphincter action of the upper end of the rectum and kinking about the junction of the pelvic colon and upper rectum will be rendered impossible.

Certainly the results of the operation were remarkably good. The patient soon began to lose his melancholic symptoms, the tongue kept clean, and the bowels began to move naturally, once or twice daily, with the aid of a little olive oil. He has recently been able to leave for New Zealand, feeling fit and able for his work. A letter received from him at the time of writing this states, "I am keeping very fit and have a bowel movement twice a day."

Memoranda:

MEDICAL, SURGICAL, OBSTETRICAL

REFLEX VASOMOTOR INHIBITION IN LOBAR PNEUMONIA

I DESIRE to record the following unusually well marked instance of reflex vasomotor inhibition in a case of lobar pneumonia the underlying factors doubtless exist in all cases of pneumonic consolidation The phenomenon described may therefore well be present in a less easily recognized or more transient form in all such cases, and must in the present instance also have escaped observation but for the old fashioned and apparently now unjustifiably discredited form of counter-irritation employed in treatment

A B a healthy English male 20 years of age was suddenly attacked with acute lobar pneumonia There was a well defined circular area of consolidation about four inches in diameter on the posterior aspect of the left lung immediately below the angle of the scapula The case displayed no unusual symptoms and treatment was mainly expectant with counter irritation in the form of linseed and mustard poultices over the affected region After poulticing for twenty four hours the skin involved showed the usual erythema with the exception of a sharply demarcated circular patch—corresponding exactly in size and position to the underlying consolidated portion of lung—the colour of which remained strikingly unaltered continuous poulticing only gradually succeeded in reddening it Recovery was uneventful

This case furnishes an elegant illustration of the nervous connexion between the skin and underlying viscera, and suggests the rationale of treatment of various disorders of internal organs by local counter-irritation

J W TOMB, O B E, M D, D P H

Lansol Bengal India

STRANGULATED HERNIA IN INFANTS

I HAVE been interested to read the remarks on strangulated and irreducible hernia in infants in the JOURNAL of July 12th 26th, August 16th, and September 13th The writers do not all clearly differentiate as regards the pathology of the conditions found, so that it is not always evident whether the hernias were *strangulated* (that is, whether the constriction at the neck of the sac was such as to interfere with the blood supply of the contents), *obstructed* (that is, interfering with the flow of contents through the lumen of the bowel), or *irreducible*, where no obstructive symptoms are present

In a consecutive series of 1,500 operations for inguinal hernia in infants and young children I have operated on three cases where true strangulation had occurred

CASE I

A premature infant (7 months) aged 5 weeks and weighing just under 4 lb was admitted to the Royal Hospital for Sick Children in June 1922 from the Maternity Hospital with a history of a right inguinal hernia present since birth Forty eight hours before admission the infant which was not thriving refused its feeds and vomited several times The bowels were constipated and the next evening the vomiting became faecal in character and the hernia was then noticed to be irreducible On admission the abdomen was distended and the scrotum tense and oedematous and an irreducible right inguinal hernia was present Immediate operation was performed practically without any anaesthetic The sac contained a drop of blood-stained fluid and a loop of ileum greatly congested and with the contiguous surfaces glued together by lymph A tight constriction ring was divided and the bowel returned to the abdomen The infant was sent back to the Maternity Hospital but only survived for fourteen hours

CASE II

J C a male infant aged 12 days was brought to the Children's Hospital with a history of a swollen scrotum vomiting and constipation for forty hours The child had been seen by a medical student the day before who having failed to reduce the swelling by taxis diagnosed hydrocele and did nothing further On admission a large irreducible left inguinal hernia was present the scrotum was swollen and discoloured At operation the hernial sac contained blood stained fluid and a loop of deeply congested ileum presented showing a circular gangrenous patch about the size of a sixpenny piece while the constricted portion of the gut was almost as bad After dividing the constriction at the neck of the sac the affected loop was pulled on until healthy bowel came into view and as invagination of the gangrenous portion was not possible a hasty resection of 4 inches of bowel with end to-end anastomosis was performed The infant made a satisfactory recovery and has since been operated on for a hernia on the opposite side

CASE III

W W aged 2 years had a history of two days' strangulation of a left inguinal hernia At operation the sac contained blood stained fluid mixed with liquid faeces and some fragments of undigested nuts The strangulated loop of ileum had ruptured and was gangrenous Resection of 6 inches with end-to-end anastomosis and drainage of the sac was followed by a satisfactory recovery and the radical cure of the hernia was performed two years later

The irreducible hernia as seen in the adult does not occur in young children, for as soon as the hernia becomes irreducible it also becomes obstructed, and gives rise to vomiting and, if unrelieved, to distension and constipation At the same time, the great majority of such cases will reduce themselves if the infant is put to bed with the pelvis raised and a hot fomentation to the scrotum The infant falls asleep and almost invariably the hernia disappears Failing this very gentle taxis under light anaesthesia may be tried, and generally is successful

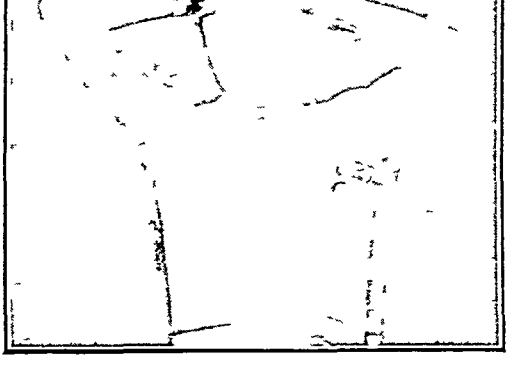
Where real strangulation has occurred, this is evidenced by oedema and discoloration of the scrotum, and operation should be performed without delay

GERTRUDE M A HERZFELD, M B, Ch B F R C S E.

Edinburgh.

ELONGATION OF BRACHIAL ARTERIES

THE illustration accompanying this note is reproduced from a photograph of a woman aged 77 who was admitted to Tooting Bec Mental Hospital in February 1924 I think the condition of her brachial arteries must be very uncommon They appear to be congenitally too long for the



upper arm, in full extension they are quite visible and resemble in shape a bent bow The appearance of the arteries with the arm in flexion is seen in the photograph, they close up like a U-spring The depth of the loop is about 2½ in I am indebted to Dr E H Beresford, medical superintendent of the hospital, for leave to publish this case

THOMAS LINDSAY, M D, Ch B Edin, F R C S E. D P M Lond.

Tooting Bec Mental Hospital S W.17

SPONTANEOUS RUPTURE OF THE HEART

I SHOULD like to add another case of spontaneous rupture of the heart to the case published by Dr Gilmore (BRITISH MEDICAL JOURNAL, August 30th p 373) and the interesting series by Dr S Watson Smith (September 13th p 465)

In March 1924 a woman aged 67 who never complained of any symptoms of heart trouble retired to bed and was found next morning dead and half undressed on the bedroom floor

Post mortem examination showed a well nourished woman with marked deposit of fat The pericardial sac was filled with blood which was swabbed out The heart was slightly enlarged and fatty There was a vertical tear 1½ in long in the anterior wall of the left ventricle the heart muscle was very friable and the tear with minute white patches pointed at the edges were normal and there was no disease of the aorta

GEORGE LEWIS L R C P and S D P H.

Lincoln

Reviews.

THE TREATMENT OF GOITRE

LAST May (vol i, p 786) we published a review of Professor de Quervain's book on goitre, in which he showed himself an ardent advocate of the treatment of Graves's disease by surgical measures Now we have Dr ISRAEL BRAM's more bulky volume, entitled *Goitre*,[1] in which the case for its treatment by medical means is presented with an advocacy more ardent still The former may be said to represent the case for the prosecution, the latter that for the defence, and if at times counsel for the defence somewhat overwhelms us with the torrent of his words, yet the conviction grows as we hear him to the end that he is pleading in a right cause, with sincerity of purpose and intimate practical acquaintance with his subject Dr Bram remarks in his preface that in most books on diseases of the thyroid gland practically all goitres are regarded as requiring surgical treatment at some time or other in their course, and that other measures especially where Graves's disease is concerned, are only mentioned to be dismissed Disagreeing whole-heartedly with this generalization, he desires to assist the general practitioner to classify cases into those amenable to non-surgical treatment and those amenable to surgical treatment, and also to indicate what methods bring about the best and the promptest results in those instances "obviously of non-surgical nature" Accordingly he provides a therapeutic classification of goitres, including in the non-surgical class simple parenchymatous hypertrophy, colloid goitre, puberty hyperplasia, and the hyperplastic thyroid swelling of Graves's disease or the diffuse non-encapsulated swellings of the gland, in the surgical class he includes adenomatous, cystic, and all other types of thyroid enlargement not included under non-surgical goitre This classification is perhaps as good, if not better, than any other, at all events it is convenient in reaching a decision as to the best line of treatment to be followed in each individual case Few will quarrel with Dr Bram's therapeutic classification, the surgeons perhaps least of all, in so far as simple parenchymatous, colloid, and adolescent goitres are concerned, but there will still be found many who will disagree with his bold inclusion of Graves's disease among non-surgical goitres Dr Bram does not make this inclusion without giving his reasons, and we think that the unprejudiced general practitioner will find them at least as sound as those on which others base their arguments for regarding this complex disorder as primarily a disease of the thyroid gland curable only by removal of the major portion of the organ

After dealing with the anatomy and physiology of the gland, Dr Bram goes on to consider the diagnosis of goitres He insists that right therapy can be based only on right diagnosis, to be made only after a thorough investigation of each patient from every point of view—environmental as well as physical and mental Individualization, combined with the careful selection of the measures to be employed, and the concerted and harmonious action of medical attendant and patient, comprise the measures "upon which success is assured" Three chapters, about fifty pages, are devoted to endemic sporadic and puberty goitres, twenty chapters or approximately 350 pages to Graves's disease The author considers that endemic goitre is caused by 'a geographical deficiency of iodine in the air, food, or water', this view is too narrow, and loses sight of other important factors in causation Sporadic goitre he regards as being due to a variety of causes among which are heredity, puberty, adolescence, pregnancy, lactation, menstruation, disease of the female reproductive organs, focal infections, and acute infectious diseases 'none of which are dependent upon a deficiency of iodine intake' As to the causation of Graves's disease he has nothing new to say, but his view that the malady is a generalized defect in the action of the vegetative nervous system and of the entire chain of endocrine organs is a good working hypothesis for those who have to treat the disease The last 200 pages, which deal with the management and treatment of Graves's disease, are the best in the book Although "there is no specific method of therapeutic procedure" the author affirms that "the properly equipped internist, after eliminating those who are moribund, the insane and the non-co operative, all of whom constitute approximately 10 per cent of patients who apply for treatment, should obtain 100 per cent recoveries" by the judicious application of psychotherapeutic, hygienic, dietetic, and medicinal measures In the ardour of his advocacy of the non-surgical treatment of Graves's disease, Dr Bram has made his book too lengthy, and its size may make the busy practitioner shy of embarking on its perusal This would be regrettable, for we agree with the author that the majority of cases of Graves's disease can, and ought to be, dealt with by the family physician, who must possess the requisite knowledge and understanding There is much truth in Dr Bram's assertion that "it is the dormant attitude of medical men in general that is responsible for thyroidectomies in Graves's disease" The reviewer recalls in this connexion the plaint made to him not long ago by one of our foremost thyroid surgeons "I wish there were more physicians who would undertake the treatment of these cases If there were, fewer would need to be sent to the surgeon" The book contains 150 excellent photographic illustrations and an adequate index

R MCCARRISON

[1] *Goitre: Surgical Type and Treatment* By Israel Bram M D London The Macmillan Company 1924 (Med 8vo pp xviii + 479 with 150 illustrations 30s net)

ENCYCLOPAEDIA MEDICA

WE welcome the appearance of the twelfth volume (Skin—Tuberculosis) of the second edition of the *Encyclopaedia Medica*,[2] of which the last volume was reviewed by us a few months ago (BRITISH MEDICAL JOURNAL, April 26th, 1924, p 751) Of the principal articles four are new—those on stillbirth by Dr F J Browne, on the sugar of the blood by Dr C G Lumbie, on injuries and diseases of the tendons and tendon sheaths by Mr A H Tubby, and on trench fever by Dr J W McNee Seventeen articles have been rewritten, and one article, that by the late Mr Alexander Miles, has been revised by a fresh hand (Sir D'Arcy Power)

The article on the skin, which is the largest in the volume, is the work of five writers, and appears to be the same as in the first edition Three subjects—the spleen, the stomach and duodenum, and the thyroid gland—are each the joint work of a physician and a surgeon On the other hand, the vast subjects of syphilis and tuberculosis are each described by a single writer The principal surgical articles, apart from those already mentioned, are articles on surgical affection of the spine by Mr A H Tubby, suppuration by Sir G Lenthal Cheatle, affections of the trachea by Professor Leonard Gamgee and Mr E M Woodman, and transfusion by Mr James M Graham Neurological articles have been contributed by Dr James Collier, who writes on the spinal cord, Dr Edwin Bramwell, who discusses syringomyelia and tendon-jerks, Mr David Lees, who deals with tabes dorsalis, and Dr E Farquhar Buzzard with tremors

Among the miscellaneous subjects we may call attention to the article by Sir Thomas Oliver on dangerous trades, and that by Mr T W Drinkwater on toxicology The article on stomatitis by Dr G F Still is an excellent practical discussion of the subject, for though the majority of such cases are often regarded as of minor importance, some may give rise to a great deal of trouble in practice He might perhaps have found space for an allusion to trench mouth and its relation to Vincent's angina *In Sir James Canthie's* article on sprue we see no reference to its treatment by *calcium and parathyroid* as *recommended* by Dr Harold Scott Such blemishes in so large a work do not detract from the general excellence of the new edition, now so rapidly nearing completion With the exception of the photographs in the article on small-pox, which are too blurred to be of much value, the illustrations are excellent

[2] *Encyclopaedia Medica* Vol XII Edited by Alexander Goodall M D, F R C P E Second edition Edinburgh W Green and Son, Ltd 1924 (Roy 8vo pp viii + 769, illustrated 30s net)

TREATMENT OF TUBERCULOSIS

THE second edition of the *Domiciliary Treatment of Tuberculosis*,[1] by Dr F RUFENACHT WALTERS, manifests the usual characteristic of second editions—namely an increase in size over the first With the yearly additions to knowledge this may be regarded as inevitable, but with books as with university curricula, in which there is a constant increment without a concomitant decline in the demand made on the student, a sad lack of appreciation of the principles of relativity is too often shown In his medical course the student is expected to spend a quite unnecessary amount of time on subjects which are of comparatively little use to him in after life, whereas he is given the scantiest opportunity for training in subjects which will be of vital importance to his after-efficiency There is so much respect paid to knowledge that it is only with the greatest difficulty that we can relinquish the idea of educating our sons on the teaching given to our fathers

No one will dispute the value of the two new chapters which have been added to this edition but it is a matter for regret that the space they occupy has been provided by increasing the length of the book rather than by eliminating some of its previous contents This would not have been a difficult task There is, for instance far more than is necessary on such subjects as the different kinds of tuberculins, on therapeutic serums, and on the value of the opsonic index—subjects open to so much doubt and ambiguity that a discussion of them is likely to afford little help to the general practitioner for whom the book is written On the other hand, the indications for artificial pneumothorax and the importance of secondary infections receive only brief recognition Apart from these defects the book seems to fulfil its purpose very suitably, and possesses the great merit of containing frequent references to original authorities where the subjects discussed may be studied more in detail

The second volume of the *Handbuch der gesamten Tuberkulose-Therapie*,[2] edited by Professor LOEWENSTEIN in collaboration with other authors, deals with the subject mainly on an anatomical basis, the organs being taken in order Special chapters are devoted to a more general treatment of the subject, thus the specific treatment of tuberculosis, its relation to the endocrine glands the chemotherapy of tuberculosis, home treatment, and tuberculosis in the tropics, receive separate consideration

Professor Loewenstein expresses the opinion that the only sure test of recovery is the disappearance of the bacilli—a test which is most readily applied in cases of pulmonary disease Of 682 cases treated, some with old tuberculin and others with new tuberculin, the bacilli disappeared from the sputum in 52 93 per cent, a result which compares favourably with that obtained from hygienic and dietetic treatment in which the bacilli disappeared in 12 per cent of the cases only It is asserted that almost all clinicians are now satisfied of the value of the specific treatment Animal serums, whether normal or immunized, have been proved to possess no therapeutic action Professor Carpi gives the statistics of 120 cases of tuberculosis he has treated during the decade 1910 20 by the production of artificial pneumothorax Of these, 26 were unfavourable for operation which was merely adopted as a measure *in extremis* in 28 there were complete or almost complete adhesions in 4 the patients were lost sight of, in 66 the indications were favourable for operation, and the clinical results were good in 33, the cure being definitive in 23

Among the numerous drugs in use much attention it is said, has been given of late years to gold as a specific remedy in tuberculosis The sodium auro-cyanide is reported to have given good results experimentally in guinea-pigs, and in the treatment of lupus but it was found to produce toxic effects, it was claimed, however, that these could be avoided by combining the gold with cantharidine and ethylene-diamine, as in the preparation 'aurocantan" More recently a somewhat similar compound—krysolgan—has been recommended as having a direct action on the tubercle bacilli There has been much discussion as to the degree of toxicity of these compounds and reports have not been infrequent of such complications as rashes, nephritis, oedema, stomatitis and gangrene of the mucous membrane, following their intravenous injection Like all heavy metals, gold is a capillary poison loosening the cement substance of the endothelium, relaxing the musculature and tending to produce necrosis and gangrene apparently the right compound for intravenous injection has yet to be discovered

The volume affords a detailed survey of the therapy of tuberculosis from many standpoints it contains a bibliography, and the views and experiences of different authors are discussed

EPILEPSY

DR DONALD FRASER has written a book entitled *Clinical Studies in Epilepsy*[3] *in which he endeavours to deduce the* possible cause of the idiopathic form of epilepsy from a study of the symptomatic cases where there is a definite lesion to account for the seizures He has been much influenced by the work of Hughlings Jackson who he believes laid the only foundation on which we can build satisfactorily for the future Dr Fraser takes the view that there can be no psychogenesis of epilepsy as has been suggested by some writers of the psycho-analytic school, and holds that for a chronic disorder affecting nervous structures and tending to cause deterioration in them we must seek a material causation no matter how great the psychic involvement may be Unfortunately we are still entirely in the dark as to the causation of idiopathic epilepsy, and we cannot be said to have advanced appreciably either in our understanding of this disorder or in its treatment since the time when Hughlings Jackson expressed the view quoted by Dr Fraser that 'there is in a case of epilepsy grey matter which is so abnormally nourished that it occasionally reaches very high tension and very unstable equilibrium and therefore explodes"

The opinion reached by Dr Fraser following a survey of the various theories of epilepsy and a study of his clinical material is very similar to that expressed by Hughlings Jackson in the above quotation He stresses the effects of two main conditions as the only essential or necessary factors in the induction of an epileptic seizure of any kind these are a toxin or toxins, wherever and however produced, noxious to cell or vessel, and a cerebro-spinal or cerebral reflex set up by the irritation of strain or defects in parts or centres serving special functions—a state analogous to Hughlings Jackson's irritable or explosive grey matter It cannot be said that the views here advanced have any immediate practical bearings upon the treatment of epilepsy, but they certainly suggest directions in which research might be expected to add to our knowledge of this distressing disorder Important advances have been made in physiological chemistry and it may be that in course of time it may be possible to discover something like the *hormone y* which the author postulates as an important factor in resisting the influence or the toxin or toxins which initiate the epileptic movement

THE PHYSICAL CHEMISTRY OF THE CELL

At the close of last year (November 24th, p 989) we had occasion to review in these columns the first part of the fifth edition of Professor HOBER'S book on the physical chemistry of cells and tissues Our welcome was tempered only by the regret that the publishers had not seen fit to indicate the scope of the part which was yet to be published The omission is now repaired by the appearance of this part and our appreciation for the renewed labours of the author becomes unreserved

The duty of a reviewer of a volume which has received

[1] *Domiciliary Treatment of Tuberculosis* By F Ruf nacht Walters M D B S M R C P Lond F R C S Eng Medical Director Crook burn Sanatorium Second edition London Baillière Tindall and Cox (Post 8vo pp xi + 283 7 6d net)

[2] *Handbuch der gesamten Tuberkulose Therapie* Herausgegeben von Prof Dr med Ernst Loewenstein Band II Berlin and Vienna Urban and Schwarzenberg 1923 (Imp 8vo pp viii + 1027 190 figures 9 plates Paper cover 33 75 bound 38 25 Swiss francs)

[3] *Clinical Studies in Epilepsy [Chapters I and II contain a Historical Introduction to the Epilepsies as Bearing on the Establishment of Idiopathic Epilepsy]* By Donald Fraser M D F R F P and S Glas Edinburgh E and S Livingstone 1923 (Cr 8vo pp 243 [illegible])

the universal benediction of its readers is not difficult On the one hand, he has but to advertise to its adherents the appearance of an edition new in material as well as in name On the other hand, the obligation remains to offer the book to fresh readers To all, then, whose thoughts enter the ill-charted forests where physical chemistry borders on physiology Professor Hober's work is proffered as the survey of a zealous explorer in the land The first part reviewed the principles involved The theories of solutions, ionic equilibria, the colloidal state, heterogeneous systems, catalysis, and enzymes were granted adequate preliminary treatment, and were followed by an authoritative discussion of osmosis and permeability in relation to the problems of the cell

The second part,[6] which we now have under review, first extends the argument to the phenomenon of narcosis, wherein the work of O Warburg, of Meyerhof, and of the author is admirably co-ordinated The bewildering task of marshalling the data on haemolysis, agglutination and sedimentation, irritability, pH and ion antagonisms, is attacked in a lengthy chapter on the physiological effect of electrolytes Here we welcome the due regard paid to the studies of Loeb, Osterhout, and the American school For the electrical properties of matter, membrane potentials, polarization, and electro-osmosis, a chapter is reserved, and others are devoted to absorption and secretion and to the energetics of metabolism

Enough has been said to indicate the magnitude of the labour It only remains to add that whilst we may regret that we have not in our language a book of the same scope and fullness, it is yet a matter for congratulation that so large a labour for the service of physiology has been accomplished, and is being maintained up to date

DISEASES OF THE EAR

IT is satisfactory to learn that the second edition of *Diseases of the Ear*, by DR KERRISON, has been so well received that a third edition has become necessary two years later There is certainly no modern book which attempts with greater success a comprehensive and detailed survey of the subject, and its popularity is richly deserved, but it is doubtful whether the additions and alterations the author has introduced into the later editions add very much to its value The merit of the book lies in the clear exposition of practical otology, it is such an account as could only be written by a master of the subject The sections of aural surgery and the intracranial complications of middle-ear disease are brilliant It is gratifying to observe that the work of Albert Gray on oto-sclerosis receives recognition in this edition, but where the author writes from knowledge acquired second-hand he does not always succeed in carrying the reader with him Thus a chapter on tumours of the eighth nerve (an abstract of *Tumours of the Nervus Acusticus* by Cushing) has been introduced, and properly so, but the writing does not reach the level of the main body of the work The chapter on facial palsy again, is sadly out of date One unfortunate error still persists the illustration of Billance's plastic operation on the meatus shows the flap cut upside down These minor defects however, do not greatly detract from the excellence of the text-book, which we do not doubt will hold its own for many years

NOTES ON BOOKS

DR O BURWINKEL'S short and remarkably readable monograph on angina pectoris[3] is founded on twenty-five years' practice at Nauheim Angina pectoris is thought to have become much more frequent in recent years and to be no longer confined to middle age and advanced life, it is now, so we are told not at all uncommon to meet with well-marked cases in the twenties or thirties The importance of syphilis in the aetiology is emphasized at least 50 per cent of the patients giving a positive Wassermann reaction, although many of them appear to be genuinely unaware of their infection Abuse of tobacco, especially excessive cigarette smoking, is held to be another important factor After a graphic description of the symptoms the author discusses the prognosis, and, unlike some physicians, who are of opinion that death is inevitable within two or three years, maintains with Sir William Osler that life may be prolonged, and that even complete recovery may take place in a small number of cases Special attention is given to treatment, including operation, though the author does not appear to have any personal experience of its results A short bibliography, consisting mainly of German works, is appended

DR L MEUNIER'S *Histoire de la medecine depuis ses origines jusqu'a nos jours*[9] appears to be a reprint without any additions or changes of the edition published in 1911, though this perhaps does not make the same difference that it would in works on other aspects of medicine, it is not a recommendation to a history of medicine Its nine chapters deal respectively with medicine before, during, and from the time of Hippocrates to that of Galen, the interval between Galen and the sixteenth century, the sixteenth, seventeenth, and eighteenth centuries, finally, two chapters are devoted to the nineteenth century It certainly contains an enormous amount of information, but even in this respect, and especially in the absence of the relief provided by portraits of the prominent figures in medical history, it does not compare favourably with Garrison's attractive *Introduction to the History of Medicine*, now in its third edition

The work on *Fertility and Sterility in Human Marriages*,[8] by DR EDWARD REYNOLDS and DR DONALD MACOMBER, of Boston, contains five sections The first consists of three chapters dealing respectively with fertility and sterility as biological problems, with the frequency of sterile marriages, and with the mechanism of fertility The second section is devoted to a consideration of the determining causes of sterility in the female, which include chronic passive congestion of the pelvic organs, complete and partial arrests of development, specific and non specific infections, dyspareunia, displacements, and neoplasms The writers found that while in hospital work tubal inflammation due to gonorrhoea was very frequent, the percentage of tubal sterility of gonorrhoeal origin in private practice was very small The third section, which is from the pen of Dr Edward L Young, Jr, deals with the determining causes of sterility in the male, including diseases of the testicle, prostate, and seminal vesicles, as well as impotence and allied conditions In the fourth section relative infertility, the marital habit, and the prevention of sterility are discussed, special importance being attached to dietetic deficiencies as a cause of infertility The fifth section consists of two chapters, the first of which describes the method of examining a case, while the second deals with the surgery of sterility, special attention being given to transuterine insufflation of the Fallopian tubes, which was first introduced by Rubin of New York in 1920

The unfinished manuscript of a little book on diagnosis by laboratory methods at the bedside was found among the papers of the late Professor CHARLES LESIEUR It has been completed by Professor G MOURIQUAND, his successor in the chair of general pathology and therapeutics in the Lyons Faculty of Medicine The work is divided into three parts In the first a description is given of simple methods employed for examination of the blood, urine, cerebro spinal fluid, gastric contents, stools, pus, sputum, and various effusions, the second part deals with the bacteriological examination of wounds and biopsies, and the third part contains a brief description, in alphabetical order, of the micro organisms associated with various diseases

Pediatric Nursing,[12] by MISS BESSIE INGERSOLL CUTLER, is designed to help the nurse entrusted with the care of infants and children It contains useful chapters on maternal nursing, artificial feeding of infants, food for the child, nursing technique in minor surgery and general therapeutic procedures,

[3] *Die Angina pectoris in Lehre und Praxis* Von Dr med [illegible] Leipzig Verlag von Julius Hoffe 1924 (Pp vi + 536 with 16 illustrations)

[6] *Diseases of the Ear* By Sir [illegible] Kerrison M D Third edition Philadelphia and London J B Lippincott Co 1924 (Roy 8vo pp xvi 614 328 figures 30 net)

[8] *Die Angina pectoris* Von Dr med [illegible] Halle a S Carl Marhold 1924 (Demy 8vo pp 55)

[9] *Histoire de la medecine depuis ses origines jusqu'a nos jours* Par le Dr L Meunier Preface par le Professeur Gilbert Ballet Paris Librairie L le François 1924 (Pp vi + 537 Fr 30)

[8] *Fertility and Sterility in Human Marriages* By Edward Reynolds M D and Donald Macomber M D With a section on the determining causes of male sterility by Edward L Young Jr M D Philadelphia and London W B Saunders Company 1924 (Med 8vo pp 355 17 figures 25s net)

[12] *Diagnostic par les methodes de laboratoire au lit du malade* By Ch Lesieur and C Mouriquand Collection des actualites medicales Paris J B Baillière et fils 1923 (Double cr 8vo pp 264 Fr 6)

[12] *Pediatric Nursing its Principles and Practice* By Bessie Ingersoll Cutler R N New York The Macmillan Company 1923 (Demy 8vo pp ix + 478 55 figures 14 net)

the nursing of infectious diseases, and surgical nursing Chapters on the mental development of children have been contributed by Frederica Beard, on the educational value of occupational therapy in the care of sick children by Susan Tracy and on the orthopaedic nursing care of children by Catherine A Smith A selected bibliography by Frederica Beard of works on mental development, elementary psychology, and practical child study is appended The work which is more advanced than most books of the kind, is characterized by careful attention to detail

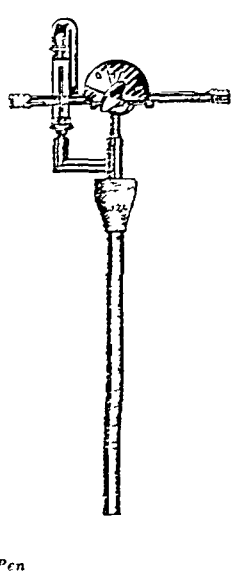
PREPARATIONS AND APPLIANCES

Glax oro

We have received from Messrs Glaxo samples of Glax-oro and literature relating to it This preparation it is stated by the makers is a mixture of dried milk malt barley kernels and cocoa to which has been added a new preparation a vitamin concentrate prepared from cod liver oil It is stated further that Glax-oro contains this fat-soluble bone-forming vitamin from cod liver oil in a tasteless form and that it is an easily digestible nutritious food in a very palatable form The makers state that it consists of the solids of milk together with malt flour malt sugars, cane sugar and cocoa and they claim that its special value lies in its vitamin content since they state that Glax-oro contains vitamins B and C and both forms of the fat soluble vitamin A the growth promoting factor and the bone-forming or antirachitic factor The special and remarkable claim of the makers is that they have succeeded in their laboratories in isolating from cod liver oil a tasteless product which contains the antirachitic vitamin in 2 000 times as high a concentration as it occurs in cod liver oil A large amount of research work has been carried out in many scientific laboratories during the last few years on the isolation of the antirachitic factor of cod liver oil and remarkable advances have been reported in this country and in America Messrs Glaxo claim to have achieved a greater success than any previous workers, but if such a claim were made by a scientist it would not be accepted until all the methods had been published so that anyone could repeat the experiments We have no reason to doubt the makers claims for Glax-oro but we have not been able to test them because a full test of these claims would involve several months of highly specialized research We shall await with interest the confirmation of these claims from independent sources

An Oxygen Ether Apparatus

Dr W B Bacon (Royal Infirmary Manchester) writes The apparatus here described is intended for the administration of a constant quantity of oxygen with a variable amount of ether The supply of oxygen can be directed either in part or in whole through the ether so that the amount of ether can be varied from nothing the patient receiving pure oxygen to the maximum when all the oxygen passes through the ether The apparatus resembles the ether fitting of the Shipway apparatus but permits oxygen to be given pure by simply a turn of the tap no disconnecting of tubes being necessary The apparatus is small measuring only 9 inches by 3½ inches and is fitted with a bevelled cork so that it may be used in any ordinary necked bottle of capacity from four to twenty ounces A glass indicator is fitted to act as a safety warning should any of the fluid find its way into the outlet tube The tube for the oxygen is marked oxy The apparatus can be supplied by Messrs Billings and Sons Ltd 305 Oxford Road Manchester Although designed for the administration of ether it can equally well be used for chloroform and here the advantage of being able to give additional oxygen is undoubted



A Fountain Pen

The John Hancock cartridge pen sold by the J P H Syndicate Ltd (23a Old Bond Street London W 1) for 25 with a pocket case containing three cartridges is constructed on a principle we believe to be new It is charged by introducing into the barrel a sealed cartridge containing ink by screwing down the cartridge is directed the seal is punctured and on replacing the upper end the pen is ready for use and will write for as long as the ink lasts The merits of the pen are that a spare cartridge can be carried without the risk of inking clothes and as there is no joint at the nib end can be used without risk of inking fingers The drawbacks are that the pen is useless without the cartridges and that these cost 1d each The manufacturers claim that 10 000 words can be written with one cartridge but we have not obtained nearly so many The contrivance is perhaps better suited to carry in the pocket than for use at the desk

Nova et Vetera.

SIR ROBERT MACARA, K C B,

SHIP'S SURGEON AND PENINSULAR VETERAN

During the eighteenth century, from about 1750 to 1780 it was not uncommon for junior officers of the Indian Medical Service to hold combatant commissions in addition to their *warrants as assistant surgeons It was not until 1782 that* commissions were given to all officers entering the Company's medical service, before that date all, with the exception of a few seniors, were warrant officers only It appears clear that *no general custom of holding* such double commissions as ensign and assistant surgeon or lieutenant and assistant surgeon ever existed but undoubtedly many individuals did actually hold both and carried out the duties of both position either simultaneously or by transfer from one to the other as required It was only in the junior ranks that such double duty was permitted When the turn of an officer holding such a double commission came for promotion either regimentally to captain or departmentally to full surgeon he had to make up his mind either to accept the promotion offered or definitely to decline it once for all, and await his turn for promotion in the other branch Some made one choice some the other In one case at least that of Francis Balfour a distinguished Oriental scholar his juniors in the medical service bitterly resented his choice of medical promotion, and several of them submitted petitions to Government against his return to the Medical Department after some ten years of military and political duty Government decided in favour of Balfour, who subsequently rose to be the head of his service

The most singular case, however of an officer doing both military and medical duty is that of Robert Macara, who served the East India Company for nearly twenty years (1784-1803) as surgeon of an Indiaman while all that time holding a combatant commission in the British army, with gradually rising rank

Robert Macara was the only child of the Rev Duncan Macara minister of the parish of Fortingal in Perthshire from 1754 to 1804 and his wife Susanna Robertson The date of Robert's birth is not known but he was baptized at Fortingal on May 6th 1759 so was probably born early in that year He matriculated as a student of the United Colleges of St Leonard and St Salvator St Andrews at the age of 14 in the session of 1773-74, and went through the arts course for four years, but left the university without taking a degree On August 17th, 1783 he was gazetted ensign in the 95th Foot then a Highland regiment In the following year the regiment was disbanded and its officers placed on half pay An ensign's *half pay was small* and Macara had to find some other means of earning his living He chose medicine and on March 25th 1785 sailed from Portsmouth as surgeon of the East Indiaman *Podney* Where and how he got his medical education is not known His name does not appear in the roll of graduates or any of the Scottish universities As he was 23 when gazetted ensign he may have gone through a period of apprenticeship before 1782

Macara made six voyages to the East as surgeon of the *Podney* 1785-86 the *Thetis* 1786-88 the *Ceres* 1789-91 the *Valentine* 1792-93 the *King George* 1794-95 and lastly after an interval of six years the *Marquess Wellesley* 1801-03 The logs of these voyages are still extant among the marine records of the India Office These logs are dull and lengthy documents of over one hundred folio pages each filled with details of weather course and the usual routine of duty at sea Macara's name is not mentioned in any of them except in the lists of the ship companies The surgeon of an Indiaman *must have had very little professional work* to do though as they often carried drafts of troops on their outward voyage and invalids when returning there would be a small amount For the first five voyages Macara drew pay at £3 a month for the sixth £3 5 During the long war with France an Indiaman was always armed and at times it might meet a French man-of-war or privateer and passengers and crew alike had to be ready to fight for their

lives, or at least to escape a French prison An Indiaman, as a rule, was no match for a man-of-war, though they usually put up a good fight, and had some famous successes, notably in Dance's action in the Straits of Malacca on February 14th, 1804, when the Company's China fleet attacked and put to flight a squadron of French men-of-war One surgeon in the Indian Medical Service, William Spottiswood, was killed in action on August 14th, 1803, when the Indiaman *Lord Nelson*, on which he was a passenger going home to retire, was taken off Ferrol by the French privateer *Bellone* No such naval encounters, however, broke the monotony of any of Macara's voyages Several false alarms are recorded in the logs, when the ship was cleared for action, but no actual fighting took place

As already stated, Macara was placed on half-pay when his regiment, the 95th Foot, was disbanded in 1783 Almost all the battalions numbered above 70 were reduced in that year After twelve years he was promoted (December, 1795) to captain in the 94th Foot, but did not do duty with it When he reached England on July 21st, 1803, on the *Marquess Wellesley*, at the end of what turned out to be his last voyage, he found orders awaiting him to rejoin the army Three weeks before he had been gazetted captain in the 42nd Foot—the Royal Highlanders, or Black Watch He joined his regiment at once, and his serious military career began, at the age of 44, after twenty-one years of only nominal service in the army His rank as captain was dated from December 16th, 1795 The *Army List* of 1804 shows him as fifteenth out of eighteen captains in the regiment, that of 1805 as seventh In November, 1805, he was promoted to major There were four majors in the regiment In 1809 he had risen to third, in 1810 to second, and in 1811 he became senior major He was promoted to lieutenant-colonel in the army on January 1st, 1812, and in April, 1812, got the same rank in his regiment In 1813 he became senior lieutenant-colonel, and got the command of the regiment when his predecessor, Colonel Stirling, was promoted to major-general and went home, shortly before the battle of Nivelle

Most of Macara's military service was spent in hard fighting in the Peninsula The first battalion of the Black Watch went out to Gibraltar in 1805, thence to Portugal in August, 1808 It served under Sir John Moore in the retreat to Corunna and battle of Corunna on January 16th, 1809 From Corunna it returned to England, and served at Walcheren in August and September, 1809 The second battalion landed at Lisbon in July, 1809, and took part in the battle of Busaco on September 27th, 1810, the defence of the lines of Torres Vedras in the winter of 1810-11, Fuentes d'Onoro on May 3rd, 1811, and in the siege of Ciudad Rodrigo and the capture of that citadel on January 19th, 1812

The first battalion landed at Lisbon on return from England in April, 1812 The two battalions were then combined, and took part in the actions at Salamanca on July 23rd, 1812, Burgos (September 19th, 1812), Vittoria (June 21st, 1813), battle of the Pyrenees (July 25th, 1813), capture of San Sebastian (September, 1813), passage of the Bidassoa (October 7th, 1813), capture of Pampeluna (October 31st, 1813), battles of Nivelle (November 10th, 1813), Nives (December 9th, 1813), Orthez (February 27th, 1814), and Toulouse (April 10th, 1814) In how many of these actions Macara took part cannot be stated with certainty He received a medal for the battle of the Pyrenees, and clasps for Nivelle, Nives, Orthez, and Toulouse, having commanded the regiment in the last four, and also the Peninsular Gold Cross

The Black Watch sailed for Ireland in June, 1814, but were among the troops sent to Belgium to meet Napoleon after his return from Elba The regiment landed at Ostend in the middle of May, 1815 The first general action took place at Quatre Bras on June 16th, 1815, and in that action Macara was killed, commanding one of the best regiments in the British army in the greatest struggle in which that army was ever engaged prior to 1914

On June 16th the command of the Black Watch passed through the hands of four men within a few minutes—Macara killed, Lieut.-Colonel Dick severely wounded, Brevet Major Davidson mortally wounded, and Brevet Major Campbell In the campaign the 42nd lost 4 officers, 2 sergeants, and 45 rank and file killed 19 officers, 12 sergeants, and 216 men wounded—nearly all at Quatre Bras At Waterloo itself, two days later, they lost only 6 killed and 37 wounded These were heavy casualties a century ago, though they sound small enough compared to those incurred during the recent war

The Order of the Bath was reorganized in January, 1815, when all the existing Knights of the Bath (K B) became Grand Crosses (G C B), and two new ranks were instituted —Knight Commander (K C B), and Companion (C B) Macara was one of the first gazetted K C B, on January 2nd, 1815

Macara was an only child and never married, so he left neither descendants nor near relatives A joint monument to him and to Colonel Cameron of the Gordons, who also fell at Quatre Bras, was erected on the hill of Tor Alvie, north of Kingussie, in Inverness-shire

MEDICAL SICKNESS, ANNUITY, AND LIFE ASSURANCE SOCIETY

The annual general meeting of the Medical Sickness, Annuity, and Life Assurance Society was held at the offices of the company, 300, High Holborn, W C, on October 6th, under the chairmanship of Dr F J Allan

Chairman's Address

The Chairman said that the members must have read with much satisfaction the annual report which had been circulated, it showed the society to be in a healthy and flourishing condition The society was in its fortieth year, but its conversion from a friendly society into a mutual insurance company had imparted fresh vigour into it In the sickness and accident branch the additional business was represented by a net increase of £3,550 in annual premiums The sickness and accident claims amounted to £24,131, which, though £5,000 larger than the previous year, was still within the figure expected, the increase was largely attributable to influenza. Notwithstanding regular advertising in the medical press, it was surprising the number of practitioners who were unaware of the society's existence, and had therefore made no provision against the risks of accidents or sickness A short illness meant an increased expenditure in the household, but when the illness was of long duration, or led to permanent incapacity, a medical man's savings—if he had any—might soon be dissipated Letters of thankfulness had been received from many permanently incapacitated members of the society for the regular help afforded them for many years In some cases their insurance benefit had been their sole income The life assurance branch, a comparatively new department, showed satisfactory progress, the new business had increased by leaps and bounds each year Life assurance was the best investment obtainable, since it afforded the professional man an opportunity for providing for his old age, or for his dependents in the event of death, at a relatively small initial outlay The society had introduced a scheme, which was meeting with appreciation, whereby newly registered practitioners might assure at reduced premiums in the earlier years when income was restricted A further advantage not obtainable under any other form of investment was that a rebate of income tax was allowed in respect of the premiums paid Dr Allan emphasized the advantage of insuring in a mutual company like theirs, inasmuch as the funds belonged entirely to the members, who got the benefit of the lower premiums charged, since there were no shareholders to claim any profits that accrued and no agents to claim a commission on every premium There was no doubt as to the stability of the company, the funds were invested only in first class securities The interest yield was not so high as would be the case if the investments were of a more speculative kind, but the board acted on the principle of safety first In conclusion, Dr Allan expressed the board's appreciation of the loyal services of all the staff, and thanked them for their ever willing co-operation He moved that the annual report and balance sheet be received and adopted

The motion, on being put to the meeting, was carried unanimously

Dr Charles Buttar and Dr Harvey Hilliard were, on the motion of Dr W T Evans, seconded by Dr N Walker, re-elected members of the board of directors

Messrs Harber, Sturges, and Fraser were re-elected auditors for the year

A vote of thanks to the chairman, proposed by Sir William Willcox, seconded by Dr W K Sibley, concluded the proceedings.

British Medical Journal.

SATURDAY, OCTOBER 11TH, 1924

CORRELATION OF PRE-CLINICAL AND CLINICAL TRAINING

THE Association of American Medical Colleges held a meeting at Omaha at the end of last February and the *Proceedings* a copy of which reached us a short time ago contain among the twelve papers several dealing more especially with the problems of the relation between the teaching of the pre-clinical and clinical subjects.

Within the recollection of a generation the teaching of anatomy and physiology in this country was mainly though not everywhere in the hands of practising surgeons and physicians and although the whole-time teacher has now come into his own, those who were taught under the old regime must feel inclined to rub their eyes with a Rip van Winkle-ish sensation at a recent American dictum that the really vital problem of the correlation of the medical curriculum would only be solved when the so-called pre-clinical subjects were taught by men in sympathy with clinical medicine and the so-called clinical subjects by men who know enough about pre-clinical sciences to apply them, and that until that time comes attempts at correlation must be continued. As a return to the old plan is most improbable and as the problem is equally important in Great Britain it may be interesting to hear how the question of bridging the gap between the two divisions of the curriculum is being dealt with in the United States.

That the pre-clinical subjects should be somewhat cut down and brought into a relation of practical application to medical practice is no doubt the fervent belief of most clinicians. Both here and in America there is a move to make the professors of physiology and anatomy consultants to the hospitals and at Louisville the professor of anatomy is to be consulting radiologist to the hospital, thus recalling the close association at Manchester of the anatomical department of the University with the x-ray department of the Royal Infirmary, where Dr. A. E. Barclay's assistant, Dr. Woodburn Morison is or was also university lecturer in Professor Stopford's department. On the other hand, it is perhaps less easy to interest clinicians in the pre-clinical subjects: at any rate Professor David L. Edsall of Harvard said that he was much struck in 1923 when inspecting the educational conditions in Great Britain—the dominating country in physiology—by finding that less physiology is taught in the British clinics than in other countries because the teachers are still interested almost solely in pathology in relation to clinical work. After several trials in correlating the two divisions of the curriculum he comes to the conclusion that little can be accomplished by formal separate and self-conscious methods, and that it is wiser quietly to bring this end about by "infiltrating the atmosphere" as indeed had been done in various directions. The teaching of neurology has been combined with that of anatomy for a considerable time in some American medical schools.

In an earnest address describing an experiment in interdepartmental correlation Dr. Donald Joseph Guthrie recognizes the danger to which the hard-worked student is exposed when he comes among the keen specialists of the pre-clinical subjects and has to serve many masters instead of as in the old days of apprenticeship, receiving his instruction from one source. As a preliminary step to connecting the pre-clinical and clinical instruction he would bring the teachers of the respective preliminary studies into closer co-ordination. He suggests possibly not without serious intent that if the physiologist (and no one) and the pathologist attended the lectures of other departments they would be less likely in their own courses to plough a lonely furrow. Although this desperate remedy does not appear to have been put into execution at the University of St. Louis other plans for correlating instruction have during the last eight years been tried for example when the physiologist lectured on the circulation or nervous reflexes the instructor in physical diagnosis or the head of the neurological clinic has come in to show the clinical aspects. But after this and other variations had been tried it became clear that such didactic methods did not call on the student himself to make sufficient effort and that it would advantage him more to delve on his own account. Accordingly three years ago a scheme was inaugurated whereby students working in pairs after preliminary instruction how to dig out for themselves information and references from original publications prepare papers dealing with the anatomical physiological pathological clinical and therapeutical aspects of the various systems. These papers were read before the other students by their authors and criticized by the teachers they were then deposited in the library and the students as a whole were required to abstract and have a knowledge of their contents. This method worked with benefit to both the teachers and the taught.

Dr. O. H. Perry Pepper of Philadelphia records the experiment begun last year in the medical school of the University of Pennsylvania of giving once each week an informal question and answer form of clinic to students in their first year designed to correlate chemistry physiology and anatomy with their practical work thus proving to them the importance of the early subjects and cultivating from the start their clinical sense and a kindly human attitude towards their suffering fellow men. Another advantage is that it may tend to correct the perhaps unconscious influence of the increasing number of teachers in the preliminary subjects who have not taken medical degrees. The clinics were as far as possible arranged to correspond with the subjects concurrently taught in the elementary courses thus the physiology of the nervous system was illustrated by a clinic on the peripheral reflexes and on cerebral lesions such as cerebral haemorrhage and gastric crises or by a clinic on cases of carcinoma with skiagrams. In these cases the instructor must remember that the students have any medical vocabulary and that words may have apparently simple explanations must be carefully explained in the practical experience of the usual hospital history must be omitted. The clinics appealed to the students' curiosity and their teachers have [illegible] professional attitude on the one hand and [illegible] concerned have [illegible] a sort of post-graduate course in the pre-[illegible]

subjects The same scheme was successfully adopted at Emory University, and was expanded by setting each student to write two essays—one strictly scientific, the other biographical, but in both instances a rather startling recommendation is made to the students as to their method of collecting information If the thesis is on the chemistry of the thyroid gland the student is advised to write to Drs Kendall and Charles Mayo for details of their work and life Such a scheme, if widely adopted, would add terror to distinction, and, indeed, such authorities would be in danger of being extinguished by their own distinction

The method of making students work up a subject as if for an original paper is by no means new, for it was in vogue at the Johns Hopkins Hospital for more advanced students in Sir William Osler's day, and though it may be useful for the able few it is so time-consuming that ordinary students would acquire a very patchy knowledge of the vast field of medicine

BOVINE TUBERCULOSIS AND MILK.

IT is of considerable significance to note that while tuberculosis in man has been considerably reduced during the last half-century, this improvement has been largely confined to adults There is little alteration in the mortality rate in children, in whom a large number of the cases are of bovine origin and can consequently be traced to the ingestion of milk from infected cattle The problems presented by the presence of this disease in these animals are therefore of very deep importance in public health Their magnitude may be realized when it is understood that probably upwards of 60 per cent of the milch cattle are tuberculous Gofton[1] points out that nearly £100 weekly is spent in condemnations of tuberculous animals slaughtered for food in the city of Edinburgh alone

Tuberculosis, in bovines as in man, takes many forms, and, apart from the actual demonstration of the bacillus in the lesion or in milk, modern methods of diagnosis consist of various modifications of the tuberculin test The most common method in use is subcutaneous injection A regular rise in temperature to over 103° F within twenty four hours is considered a positive reaction There are many limitations to this test—the most important being a temporary immunity to it caused by a previous inoculation An intradermal test consisting of the injection of small quantities of concentrated tuberculin into the skin is also used This injection is usually made into the subcaudal fold of skin or into the lower eyelid (the so called intrapalpebral test), and a positive reaction is indicated by the appearance of a sensitive swelling at the site of inoculation between the twelfth and seventieth hours after injection The third method used is the ophthalmic test in which a few drops of the tuber-

Toulouse, having commit[illegible] eye, preferably sensitized and also the Peninsular Gold All these tests have their

The Black Watch sailed [illegible]siders that they should were among the troops sent to [illegible]nction with a physical after his return from Elba The [illegible] is obvious that the in the middle of May, 1815 The [illegible] thorized hands At place at Quatre Bras on June 16th, [illegible]erculin, and by its Major was killed, commanding one in the British army in the greatest slender the animal army was ever engaged prior to 1914 a The Ministry

On June 16th the command of the [illegible]ry tuberculin in through the hands of four men within the wisdom of Major killed, Lieut.-Colonel Dick Sc[illegible] Brevet Major Davidson mortally woun[illegible]

this omission is doubtful, but the mere inclusion of veterinary tuberculin would perhaps be of little use unless the sale were also brought under control

The treatment of animals which react to the test presents many problems—economic as well as hygienic Bang, the great Danish investigator, believed that the pasteurization of milk of reacting animals with no 'open" lesions was all that was necessary, and Copenhagen's low child death rate from tuberculosis supports this conclusion He also believed in the conservation of valuable animals for breeding purposes In any case, the eradication or even control of bovine tuberculosis is useless unless conditions in farms and cattle sheds are made hygienic In this respect even more depends on the farmer than on the design and construction of the buildings Even in badly designed and badly built sheds—and the majority fall within this class—good pure milk can be produced if they are kept really clean One of the first steps is the efficient instruction of the farmers in veterinary sanitation Vaccination against the disease has not yet been developed to any great extent, but the recent work of Vallée and his fellow workers in France in this respect is significant These investigators inoculated some young cattle with an almost avirulent strain of the bacillus in a non-absorbable medium and found that a considerable degree of immunity was developed Their experiments, however, are not yet completed

The decreasing mortality from tuberculosis among adults is due to a large number of factors, probably the most important is the increasing attention given to general hygiene and cleanliness Balfour and Scott,[2] however, have recently drawn attention to another possibility Statistical investigations have shown that mild infections with the bovine strain of the bacillus—such as are caused by the ingestion of the organism in milk during childhood—may greatly assist in setting up and in increasing the general resistance of the body Statistics also show that while the adult tuberculosis death rate is declining, the consumption of milk and milk products has been steadily increasing, and the chances of such immunization have become more frequent and probably more constant The truth of Römer's law—that where tuberculosis is rare it is acute and fatal, but where it is common it is chronic and relatively benign—is finding more and more support This raises the interesting question of what would be the state of this country in the course of the next few generations if we eradicated tuberculosis without doing so in the rest of the world We might find ourselves in the same position as those uncivilized lands which have been already devastated by this disease of civilization Balfour and Scott suggest that possibly the Utopian dream of a tubercle-free milk supply—a different matter from the practicable clean milk supply—would not be desirable if we could ensure a regular optimum dose of the bacilli The danger from milk is due less to the presence of the bacillus than to the presence of an excessive number of bacilli If milk is pasteurized at a low temperature, and the process is correctly carried out, it contains only dead pathogenic organisms The whole problem, however, bristles with difficulties, and only in the close co-operation of the medical and veterinary professions, combined with steady and prolonged research, can we hope to see a satisfactory improvement in the struggle against tuberculosis

[2] *Health Problems of the Empire* 1924, pp 261 305

SIR MALCOLM WATSON

In recognition of the honour of knighthood conferred upon Sir Malcolm Watson, M D , D Sc , on June 3rd, for his services in connexion with the prevention of malaria, Sir Ronald Ross gave a luncheon on October 2nd at the Hotel Bellevue, London Replying to the toast of his health, the guest gave an account of his work in the Federated Malay States An early and serious difficulty was the clay soil which caused a considerable amount of surface water, and in the hill lands the mosquito was able to live and multiply in running water Surface drainage only resulted in improving the conditions for the growth of mosquitos A scheme of subsoil drainage was put in hand in 1910 and in consequence the cases of malaria dropped from 6 185 in 1914 to 10 on July 31st, 1924 To illustrate how protecting them from disease increased the efficiency of the labour forces, Sir Malcolm Watson compared the years 1916 and 1917 with 1914, and calculated that 10 722 working days had been saved This portion of his work related to Klang and Port Swettenham, but subsequently Singapore was taken in hand, with the result that about 35,000 lives had been saved in the last ten years He compared the work in the Malay States with Assam which he had visited in the early part of this year and remarked that little malaria control was effected because of a feeling throughout India that such work was not practicable Although generally there was but little opportunity at present to carry out the drainage requirements yet in one case, in a tea garden over six miles of drains, representing 300,000 cubic feet had been cut with very encouraging results During his stay in India he visited Mian Mir in the Punjab, where an abortive attempt at malaria control had been made in 1902-3 He hoped that the attempt would be made again before long but on improved lines In conclusion, Sir Malcolm Watson paid a warm tribute to the Ross Institute, and declared that through the work of Sir Ronald Ross over 100,000 lives had been saved in the Malay States Among the medical men who attended the luncheon were Sir William Leishman, Sir David Bruce Sir Percy Bassett-Smith Sir William Simpson Sir James Cantlie, Dr Andrew Balfour, and Dr Aldo Castellani

FAR EASTERN ASSOCIATION OF TPOPICAL MEDICINE.

The fifth congress of the Far Eastern Association of Tropical Medicine, held at Singapore in September, 1923 under the presidency of the Hon Dr A L Hoops, was reported briefly in our issue of November 17th (p 940), and in more detail in that of December 1st, 1923 (p 1059) The association was founded at Manila in 1908, where the first congress was held in the following year The second congress was held at Hong-Kong in 1912, and the third at Saigon in 1913 After the lapse of eight years due to the war, the fourth congress was held in 1921 at Weltevreden in Java Last year's congress at Singapore was of exceptional interest and value, it owed much of its success to the active co-operation of the Malaya Branch of the British Medical Association, whose honorary secretary, Dr J W Scharff, acted as secretary and treasurer of the congress The full transactions of the congress have now been published in a handsome volume with many excellent illustrations [1] In a brief preface the editors—Drs A L Hoops and J W Scharff—express thanks to their colleagues in Singapore, and to members of the staff of the London School of Tropical Medicine, for assistance in its preparation The opening pages of the volume give full information regarding the constitution and membership of the association The text of the address of welcome to the congress by Sir Laurence Guillemard, Governor of the Straits Settlements and High Commissioner for Malaya, is followed by Dr Hoops's presidential address on the prevention of disease in the tropics Sir Malcolm Watson's opening address on malaria introduces a group of papers on malaria and allied topics by various members of the congress The sections that follow consist in like manner of grouped papers on beri-beri ankylostomiasis plague, and leprosy The succeeding 500 pages contain the text of thirty-five papers on miscellaneous subjects and brief reports of such discussions as followed them In the nature of things most of these communications deal with tropical diseases but many also are of general interest The volume ends with a summary of the business transacted during the congress together with an outline of the scientific meetings and some account of the social functions This volume of *Transactions* reflects great credit on the editors whose acquaintance many members of the British Medical Association had the pleasure of making during the Annual Meeting at Bradford last summer

[1] *Transactions* of the Fifth Biennial Congress of the Far Eastern Association of Tropical Medicine held at Singapore 1923. Edited by the Hon A L Hoops M D President and J W Scharff M B Honorary Secretary of the Congress London John Bale Sons & Danielsson Ltd 1924 (Crown 8vo pp xx + 957 coloured and numerous charts in text 30s net)

SCIENTIFIC AND INDUSTRIAL PESEAPCH

The report of the Committee of the Privy Council for Scientific and Industrial Research for 1923-24 [1] opens with a note that the estimated expenditure for research work and administrative services for 1924-25 amounts to £328 281 as compared with £270 863 in 1923-24, and £297,437 in 1922-23 Great progress has been made in organizing active intellectual co-operation in scientific matters between different State departments, and it is felt that the time is coming when the Government Survey will have at its disposal a scientific personnel competent to recognize the scientific significance of practical difficulties and the facilities existing to deal with them and whose standing will command acceptance by the scientific heads of the various department and establishments Grants have been made to research associations for some time and during the past year full reviews have been held of nine associations which have existed for about five years In all cases except that of the British Scientific Instruments Research Association further grants are being given on a rapidly decreasing scale The opinion is expressed that research associations should realize that they must sooner or later look for sole maintenance to the industries they represent The British Scientific Instruments Research Association has accepted an offer of further grants of £10 000 a year for five years on condition that the industry subscribes annual sums rising from £1 500 in the first year to £2 250 in the fifth The particular circumstances of this industry called for exceptional treatment, because the advance of science is largely dependent upon the continued improvement of scientific instruments and because the work of this association is an important supplement to the research undertaken in the interests of national defence Suitable conditions for close control over the operations of the association have been framed and accepted In connexion with the Fuel Research Board proposals are put forward which include the more rapid development of the chemical and physical survey of coal seams During the year 291 grants were made to individual research workers and 1 in training a compared with 30+ in the previous year The standard of the students' work has improved appreciably a warning note is sounded, however that great importance is to be attached to the school history of individuals and the experience has shown that it is inadvisable to allow [illegible] to absorb whole of the student's attention during the last two years of school life to the exclusion of the humanities and the detriment of his general education A summary of the

[1] H.M. Stationery Office. 1s net.

work of the research organizations of the department includes reports of the good progress made during the year at the National Physical Laboratory The most important event of the year, so far as the Food Investigation Board was concerned, was the sending of the small scientific expedition to Australia to study the conditions of apple transport The report on this subject was reviewed in our columns on August 25th, 1923 (p 335), and a special report on the bacteriology of canned meat and fish on January 19th, 1924 (p 127) Investigation of the changes brought about in beef, mutton, and fish by freezing was continued during the year It was found that in muscle tissues which has been slowly frozen, fluid separates containing proteins, ferments, and other organic substances in solution This liquid drips away from the flesh on thawing, whereas when the flesh has been frozen rapidly in air the course of chemical changes is strikingly different Trials were made with ice containing a disinfectant in low concentration, the results obtained were not very satisfactory, the flesh becoming impregnated with the disinfectant A Dental Investigation Committee was appointed during the year to initiate and supervise researches from the chemical and metallurgical points of view Work has been begun on the various alloy systems involved in the production of dental amalgams, this investigation is being carried out at the National Physical Laboratory Arrangements have also been made for research into vulcanizable rubber and into substitute materials for dentures and adhesive lutes An investigation by the Fabrics Co-ordinating Research Committee upon the action of fireproofing agents has been started at the Royal Aircraft Establishment Information relating to methods of waterproofing has been collected, but it was felt that no useful conclusion could be reached until more was known about the physiological effects of wearing garments made from the various types of proofed material the Medical Research Council has accordingly arranged for a series of experiments on this subject Developments in the organization of research in other parts of the empire are described in an appendix

THE OPIUM EVIL

FROM discussions in the press and information received from Geneva, it appears that the preparation of the agenda for the two conferences to be held next month with a view to carrying out more effectually the articles of the Opium Convention of 1912 exhibited some divergence of view among the members and assessors of the Advisory Committee on the opium traffic The reversion of China, which in 1914 was reported to be free from cultivation of the poppy, to being one of the chief, if not the largest, opium-producing countries in the world gave much cause for anxiety Persia, again, appears either to be lacking in the will or the power to carry out the provisions of the Hague Convention The Indian Government is criticized for continuing to export large quantities of opium to the Straits Settlements, Borneo, and Hong-Kong, well knowing it is to be used for smoking purposes, which the Indian Government has officially stigmatized as 'a social vice" It would appear to be argued in some quarters that if there is a demand for smoking (or prepared) opium in the Far East, and if other countries, such as China and Persia, pander to that taste, it is both justifiable and good business for the Indian Government to do likewise The findings of the Royal Commission of 1895 are cited as unchallenged, although Lord Morley, when Secretary of State for India, dismissed them as having "failed to satisfy public opinion in this country or to ease the consciences of those who had taken the matter up" The House of Commons twice affirmed its conviction that the Indo-Chinese opium trade was "morally indefensible" That trade is no more, but China has gone back on her undertaking to extinguish opium production within her borders, and is now raising thousands of tons of opium every year When the Opium Convention was signed at the Hague in 1912 the British plenipotentiaries were instructed to declare that its provisions "shall apply to British India in every respect in the same way as they shall apply to the United Kingdom" It may be legitimately questioned whether the export of thousands of chests of opium by the Indian Government for smoking, or their retail of opium for eating to the native population of India, can be regarded as faithful observance of that official declaration The Union of South Africa has redirected attention to the abuse of Indian hemp, and the question of its inclusion as a dangerous drug to which the Convention should apply is to be considered The slow progress made in putting into effective practice a Convention now twelve years old is no doubt disquieting As those who drafted that document indicated at the time, control of these dangerous drugs at and from the source is the primary object to be aimed at, and so long as countries which produce the opium poppy and the coca shrub either lack the will or the power to arrest a lucrative trade, or are not prepared to co-operate internationally in suppressing the abuse of these narcotics, little progress will be achieved by the multiplication of conferences and committees

THE PROTECTION OF EYESIGHT IN INDUSTRY

CORRECT methods of industrial lighting are necessarily based on consideration of the comfort of the eye Hence the complete solution of this complex and interesting problem demands the concerted effort of the physicist and the physiologist, supplemented by the practical experience of the workshop In a report on the problems of industrial lighting[1] issued recently by the International Labour Office (Geneva) it is sought to bring the facts ascertained through these three sources of inquiry into close relation, and a very large measure of success has been attained The problem is complicated by individual, social, and physical conditions, and any regulations promulgated may be rendered difficult of application by local circumstances which cannot readily be modified Thus, in the case of natural lighting, climate, the aspect of buildings, narrow passages, badly lighted courtyards—all have an important influence Yet in each of these fields for reform progress has been made Research on suitable daylight illumination has been successfully applied to the planning of school premises, and from these experiences it is possible to proceed to the more complicated problem of factory and workshop lighting In artificial lighting the problem is still more complicated, for inquiry has to be made into the spectra of the various sources of light, the constancy of the light, the heat produced by it, the products of combustion, the influence of ultra-violet rays, and the influence of all these elements on the eye There is much work to be done, but real advances in knowledge have been made, as is shown by the collated reports The increasing demands of industrial life demand more and yet more light So far this has been met by the increase in the specific intensity of the illuminant and the extended use of the gas filled electric glow lamp, this has brought with it special difficulties, and research is needed to secure that the injurious effects of these new illuminants shall be converted into advantage Efforts are being made to render the illuminant as uniform as possible through the working areas of shops, and to avoid as far as possible the dazzling effect on the eye of imperfectly screened sources of great brilliance For this purpose the conversion of direct light into diffused light

[1] *The Protection of Eyesight in Industry* International Labour Office Studies and Reports, Series F (Industrial Hygiene), No 6 Geneva 1923 Pp 158 Price 2s 6d.

by various methods of screening is of importance There is also no doubt that industrial organizers are beginning to realize the value and the economy of new methods—work is better done, the workers are happier in their work, their health is safeguarded, and accidents are less frequent There is now an agreed unit of light, which curiously enough, is exactly equal to the British unit candle power—derived from the Harcourt petance lamp and in current use for over twenty five years The qualities of daylight have been investigated, and the value of it in the several seasons of the year set out The immense difference between summer and winter is shown by graphs, and the necessity of reinforcement of winter light by artificial means enforced The desiderata of artificial light are said to be that it should be easy to use and not too expensive and should resemble daylight as closely as possible in regard to immobility constancy of intensity, absence of variation in the illumination, and spectrum, so as not to cause fatigue or injury to the eyes If fine work is to be done the spectrum of the artificial light should be as near as possible that of the sun—which is essentially a diffused light—and should not alter the colour of objects It should not be rich in ultra-violet rays, its brightness should be moderate and its radiant surface sufficient it should not sensibly raise the temperature especially in the neighbourhood of the worker's head and it should not alter the composition of the air by products of combustion Careful tests have shown that dirty and dusty fitments cause a heavy loss as do dirty windows The influence of reflectors for various purposes has been carefully worked out so that there is no longer any excuse for using shades designed for one type of lamp for another type The type of lighting and standard of illumination must be adapted to the work This is shown by the experimental determination of the amount of reflection obtained with work on different soft goods It is lowest with black velvet, being only 0 37 per cent it increases through the dark serges reaches 10 9 with natural wool and attains a maximum of 65 9 per cent with white cloth Other sections of the report deal with visual acuity and occupational acuity of the eye with eye strain and the influence of posture and errors of refraction and the effect of the various rays of the entire spectrum on the eyes In one of the appendices is a table of suitable occupations for men and women according to the indications given by their visual acuity The section on industrial accidents shows how heavy is their incidence among night workers and in the winter months certain social insurance experts have stated that 25 per cent of the total number of accidents are connected with insufficient lighting, but no thorough inquiry on this point has ever been carried out There is a good bibliography The book has been translated from the French of the original edition by Mr Leon Gaster, honorary secretary of the Illuminating Engineering Society of London, who has done his work well

SUPPLY OF MORPHINE AND HEROIN TO DRUG ADDICTS

THE Minister of Health has appointed a committee of nine medical men to advise him in regard to the supply of morphine and heroin (diamorphine hydrochloride) to persons addicted to these drugs The chairman of the committee is Sir Humphry D Rolleston, Bt K C B M D President of the Royal College of Physicians of London and the other members are Sir William H Willcox, K C I E C B C M G M D (Honorary Medical Adviser to the Home Office) Dr J W Bone (representing the British Medical Association) Dr R W Branthwaite C B (Board of Control), Dr G M Cullen (Scottish Board of Health) Professor W E Dixon, M D, F R S (Reader in Pharmacology, Cambridge University), Dr John Fawcett (Physician to Guy's Hospital), Dr Adam Fulton (Divisional Medical Officer, Ministry of Health), and Dr J [illegible] Whitaker (Senior Medical Officer, Ministry of Health) The terms of reference to the committee are To consider and advise as to the circumstances, if any in which the supply of morphine and heroin (including preparations containing morphine and heroin) to persons suffering from addiction to those drugs may be regarded as medically advisable, and as to the precautions which it is desirable that medical practitioners administering or prescribing morphine or heroin should adopt for the avoidance of abuse and to suggest any administrative measures that seem expedient for securing observance of such precautions" The joint secretaries of the committee are D F W Adams, O B E, and Mr R H Crooke Ministry of Health Whitehall, S W 1 to whom all communications should be addressed

AT THE CHURCH CONGRESS

THAT much troubled and very troublesome lady Joanna Southcott whose followers at the Church Congress here at Plymouth were heaping maledictions on the heads of the bishops because the bishops would not take her cult with sufficient seriousness reappeared in the spirit last week at Oxford in a more pacific mood The streets were invaded by numerous sandwichmen who carried placards declaring, in startling red letters a Great discovery by the Panacea Society of the healing of diseases through Joanna Southcott That is about all that can be got on a placard, and for further particulars the curious were referred to smaller bills which were pressed by ardent ladies into the hands of those attending the twenty meetings of the Congress These bills only made the mystery a little deeper They spoke of slow but sure deliverance not miraculous but by treatment without money and without the price or accepting any particular belief from cancer nerves consumption epilepsy paralysis rheumatism eye and ear trouble etc etc etc It was added Do not write for particulars but state all your complaints at once in as few words as possible and an address was given To see such proclamations along the academic highways of Oxford certainly gives rise to some curious reflections The Church Congress, of course is in no way responsible for what goes on at its doors and on its platform on this occasion faith healing and its associated subjects were mentioned only to be dismissed One of the readers of papers the Rev L W Grensted fellow and chaplain of University College, Oxford said that dubious relics miracle mongering hysterical healing ministers not to worship but to superstition On the other hand Miss Smithell licensed woman missioner in the diocese of Chichester strongly urged the ministry of healing which she said must not be limited to praying for the sick but must take the sacramental form of the laying on hands which became in the faithful act not of our hands but the pierced hands of Him who was wounded that men might be healed She begged the responsible for the training of the future ministry to affirm that the ministers of Christ were called to heal just as much as to preach and as one who herself had taken part in healing missions she said that there was no thing like healing for uniting Christians together and for bringing nearer the advent of the Kingdom One also rejoiced in reading paper the remark of Lady Maud Warrender in a [illegible] that clergymen should not restrict their text to [illegible] but should seek comforting and strengthening words [illegible] other literature that the phrases of M Coue had a certain religious significance and a germ quality which might [illegible] turn in a basis for pulpit discourses A subject which [illegible] drawn fire at previous Congresses—has or birth control—was touched upon only by one speaker the Bishop Woolwich, and by him in terms of emphatic commendation on

He said that the use of artificial contrivances to prevent conception, such as was advocated by what was euphemistically called the "birth control" school, was clearly opposed to Christian conduct The purpose of such contrivances, he declared, was to make possible the exercise of a spiritual faculty for the satisfaction of a physical desire only, and to prevent the spiritual consequence for which the faculty was given Such a practice was the degradation of a sacrament It was due to a perverted human ingenuity, it was fraught with great dangers, physical and moral, and it was a practice on which it was impossible to invoke the blessing of God because it was entirely subversive of the spiritual significance of His sacramental gift

THE PREVENTION OF BLINDNESS IN INDIA

DISEASES of the eye are much more prevalent in Asia than in any other part of the world The teeming populations of the great plains of India and China, their lack of knowledge of personal hygiene, and the climatic conditions, favour the spread of contagious eye diseases, with resultant scarred eyes, and partial, and not infrequently complete, blindness The prevailing undernourishment of many of the races of India, combined with the stress of long hours of intense sunlight, bring about atrophic changes in the crystalline lens of the eye, with consequent blindness from cataract Similar conditions are to be found in miniature in Egypt along the Nile valley, and since the latter country is the more visited by Europeans the bad eye conditions are patent to all, and have called for attention early The munificence of Sir Ernest Cassel has provided for the establishment of central, local, and travelling hospitals, with a competent medical staff, and the effects, both in the prevention of disease and the relief of suffering, have been great even in these few years The vastness of India makes the problem insuperable to individual effort, or even as a matter of special central organization But much may be done by the teaching and spread of simple rules of hygiene through the schools and village organizations, and the provision of facilities for visits to hospitals We have received a letter signed by Sir Arthur Lawley, formerly governor of Madras, by Lord Carmichael, formerly governor of Madras and of Bombay, and by Lady Pearson, calling attention to the work on these lines now being done by the Bombay Blind Relief Association It has dispensaries and medical officers in four or five districts, and a system of first-aid workers who visit the villages to find operable cases of cataract and furnish simple treatment for sore eyes It is proposed to form a committee in England to forward this work, and communications may be addressed to Dr T Cochrane, World Dominion Press, 3, Tudor Street, London, E C 4

THE first social evening of the session will be held by the Royal Society of Medicine on Thursday, October 16th, at 1, Wimpole Street Fellows, members of sections, and their friends will be received by the President, Sir StClair Thomson, at 8 30 p m Dr W T Grenfell, C M G (Labrador), will give a brief discourse on "Medicine in a Corner of the Empire" (with lantern illustrations) at 9 30 The library will be open, and various objects of interest will be exhibited Music, light refreshments, and cigarettes will be provided Fellows who know of Dominion and foreign practitioners visiting this country are asked to send their names and addresses to the secretary in order that invitations may be sent to them

A SERIES of museum demonstrations on anatomy and malformation of the heart will be given in the theatre of the Royal College of Surgeons of England, Lincoln's Inn Fields, W C, by Sir Arthur Keith, F R S on Fridays, October 17th, 24th and 31st, at 5 p m

Medical Notes in Parliament.

[FROM OUR PARLIAMENTARY CORRESPONDENT]

Reassembly of Parliament

PARLIAMENT reassembled on September 30th Despite the arrangement made before the Recess, whereby no business beyond the Irish Free State (Confirmation of Agreement) Bill should be taken till October 28th, controversy soon developed on other subjects, and this week began at St Stephen's with strong expectations of an early dissolution and general election

Sir George Newman's Report

On October 2nd Mr Wheatley, the Minister of Health answered questions by Labour members on the annual report of Sir George Newman for 1923 In reply to Mr J Guest, Mr Wheatley said he had read Sir George Newman's statement in that report that many health authorities and medical officers of health muddled on from hand to mouth, the victims of every passing whim or popular stunt, instead of organizing their work as responsible and competent men charged with the duty of directing the public service of their district Mr Wheatley said there was no question that the large authorities were, as a whole discharging their duties satisfactorily The difficulty was largely due to the passivity of local public opinion on health questions in many areas, and he had this point under consideration Further difficulty arose from the number and size of many of the 1,800 sanitary authorities a subject which would fall within the terms of reference to the Royal Commission on Local Government now sitting

Mr Guest asked if there were a record at the Ministry of Health of "muddling" authorities and "incompetent" medical officers of health Mr Wheatley replied that there was

Mr Guest further asked what steps Mr Wheatley proposed to take, in the interests of the community, to remove such medical officers and to supersede such authorities Mr Wheatley referred Mr Guest to an answer given to Sir Herbert Nield on February 15th This answer was a statement of the classes of medical officers of health and senior or chief sanitary inspectors whose appointments cannot be terminated without the consent of the Minister of Health

Mr Greenwood, Parliamentary Secretary to the Ministry of Health, informed Mr R Richardson that Sir George Newman's statement in the annual report for 1923, to the effect that in hundreds of sanitary districts there was a failure to use the facilities which the sanitary law provided was based upon official records of the Ministry of Health Mr Richardson asked whether Mr Wheatley was prepared to appoint a Royal Commission to inquire into the whole question of the laws relating to public health and housing and into the generally unsatisfactory conditions prevailing in the health service Mr Greenwood said the matters would appear to fall within the terms of reference to the Royal Commission on Local Government now sitting

London University—Answering questions from Mr Gilbert Mr Edward Wood, on October 2nd, Mr Trevelyan, Minister of Education, said he had already announced his intention of setting up a new Departmental Committee to report on the steps to be taken to given effect to the report of the Haldane Commission on London University He could not say when the report of the Committee was to be expected A previous Departmental Committee had made a first report in April, 1914, but had not resumed its work since the war

Death Certificates—On October 2nd Mr T G Penny asked the Home Secretary whether, in the new form of death certificate to be issued, he would make it compulsory for doctors to inspect the body of the deceased before signing, so as to guard, as far as possible, against the chance of live burial Mr A Greenwood, Parliamentary Secretary to the Ministry of Health, replied that no powers were available which would enable such an obligation to be imposed upon medical practitioners, and legislation would be necessary to give effect to the suggestion Mr Penny asked whether the Government if it remained in office, would take steps to bring in legislation to secure these safeguards No answer was returned

Sterilization of the Unfit—Probably for the first time in the House of Commons the Government was asked on October 2nd to investigate the advantages of sterilization of the unfit The subject was raised by Mr Black, who asked whether, in view of the continuously enlarging financial responsibilities accepted by the State with regard to unemployment, invalidity, and old age, he would state the policy of the Government with respect to the procreation of children who, owing to physical or mental deficiencies, became a charge upon the State funds, and whether he was prepared to appoint a Royal Commission to investigate the possibilities of improving the calibre of the nation by restricting the procreation of children to persons possessing a recognized minimum standard of physical and mental efficiency Mr Greenwood replied that the Minister of Health did not see his way to recommend the appointment of a Royal Commission on the question In refusing the suggested Royal Commission Mr Greenwood added that the Minister of Health was not aware of the existence of any recognized standards of physical and mental efficiency

Opening of the Medical Schools.

ST GEORGE'S HOSPITAL

ADDRESS BY SIR ISAMBARD OWEN ON "LOOKING BACK AND LOOKING FORWARD"

At the reassembling of St George's Hospital Medical School on October 1st the inaugural address was delivered and the prizes distributed by Sir Isambard Owen M.D., F.R.C.P., consulting physician to the hospital, who reviewed the medical changes which had taken place during the last half-century and spoke of possible future developments.

Sir Isambard Owen said that from a study of the origin and development of universities in Europe, one of the impressions left on his mind was that the reputation and success of an academic institution was largely proportional to the degree in which it succeeded in creating a sense of corporate existence among its members and a corresponding corporate pride, involving not only a feeling of fraternity but a sense of common interest in the credit and reputation of the community as a whole. He regretted that so little attention had been given to this subject when the reconstruction of the University of London was undertaken at the close of the last century. It was, indeed, the keynote of the counter-scheme which Sir James Kingston Fowler and he put forward at that time. In speaking of the University he could not forbear making an allusion to the great loss which the University had sustained in the death of its member of Parliament Sir Sydney Russell-Wells, who was a distinguished St George's man.

Medical changes during the last half-century (Sir Isambard continued) had been revolutionary. When he himself entered upon medical study fifty-five years ago the teaching of Lister was only just beginning to be followed in England, and at least 95 per cent. of modern surgery was unborn. Ovariotomy was a strictly tabooed subject, cerebral surgery was undreamed of, and the suggestion by a surgeon that as a possible expedient a damaged kidney should be removed was regarded as a professional joke. Preventive medicine was in its earliest infancy, pathology still dealt with dead material alone, and no human ova had then been seen a pathological bacillus. The methods of medical education had undergone no less radical changes for in those days the schools of the London hospitals had only recently completed their organization by absorbing or replacing the private schools of anatomy and chemistry that had previously worked in connexion with them. St George's had since made itself the pioneer in a further advance, in that it had decided to confine itself to its legitimate fields of pathology, public health, and clinical medicine and surgery. Nothing was more striking than the degree to which laboratory methods had supplemented or even supplanted the older methods of clinical investigation. Some appeared to look forward to a day when the whole conduct of clinical medicine would pass into the hands of the wizards of the laboratory, and the physician would appear only as their expectant client. But it was well to remember that clinical observations in the older sense of the term (provided they were accurately made) and also the conclusions drawn from them (if logically drawn) were every whit as scientific as the work of the chemist and the pathologist.

One branch of medical research had somewhat lagged behind the rest—namely, therapeutics. In saying this he was not questioning the value of the light that pharmacology had thrown on the mode of action of remedies or ignoring the many recent discoveries of new and promising medicinal agents. Our forefathers admitted a certain *vis medicatrix naturae* in theory, but ignored it in practice. That manner of regarding therapeutics still prevailed among the public, and was, in fact, the basis on which the whole fabric of quackery was built. It was however when the practical application of the principles of therapeutic science began that the difficulties surrounding it presented themselves. One could hardly wonder, considering all things, that so little had hitherto been accomplished in that direction, and that practical therapeutics was still so largely at the mercy of uncertain conflicting or even mutually contradictory individual views. Small wonder, too, that the establishment of a real science of therapeutics based on exact statistical method had been often pronounced an impossibility. Was this really the case? The three hardest-worked years of his life at St George's had convinced him at least that there was no impossibility in the matter, granted three conditions: a sufficient wide field of inquiry, unity of aim and method among its cultivators, and adequate means to retain the services of fully trained observers, working under a single direction.

With the growth of the scientific spirit another new spirit had entered the medical world—the spirit of co-operation in scientific research. In the growth of that spirit, perhaps, one might look for the future hope of therapeutic science and anticipate that what was deemed Utopian in 1880 might become an admitted possibility of a more modern time. Should such a thing come to pass he hoped that it might be the fortune of St George's Hospital to furnish the starting point of the new advance.

MIDDLESEX HOSPITAL

ADDRESS BY DR CHARLES PORTER ON PREVENTIVE ASPECTS OF MEDICINE

THE opening of the ninetieth winter session of the Middlesex Hospital Medical School took place in the Queen's Hall on October 1st when Mr. S. G. Asher, chairman of the school council presided, and the Earl of Birkenhead distributed the prizes. An address was delivered by Dr. Charles Porter, medical officer of health for Marylebone, who took for his subject, "Some preventive aspects of medicine."

Dr. Porter confessed at the outset that he had a fear that once the medical student got into the wards and began to traffic with disease, to see it and study it, and the multitudinous methods adopted with a view to alleviating it, he might come to regard it as inevitable. It was easy to come to such a conclusion the system of medical education now in vogue almost drove the student to it. He saw so much of disease and the various conditions were so beautifully catalogued for him that it was no to be wondered at if he came to regard diseases and disease groups as established things. Curative medicine he could see at work and its result. Was preventive medicine anything more than a conception? If so, then the out-patient department always thronged the ward always full. This was a reasonable and pertinent question. The student had reason for his doubts.

The lecturer went on to explain that if there were no very obvious signs of the operation of preventive medicine it was because such medicine was very much of the kind that what had hitherto been done was little more than clearing the ground though even in these primitive efforts it was possible to show results which were almost complete disappearance of certain diseases, both infectious mortality of others. The general death rate in England and Wales 1875-80 was 21·4 per thousand; for 1923 it was 11·6. The speaker gave further figures for London and Glasgow showing the same improvement, often even more striking, during the forty years and also touched on the striking results in reducing among infants.

He next reminded the students that the title of "doctor" which they hoped presently to gain gave them the right and the ability to teach In particular, every practitioner who accepted service under the Insurance Acts undertook thereby to carry out preventive as well as other duties He became, as Sir George Newman had said, a "missionary of health," able and privileged to advise the people on the healthy ordering of the home, the formation of personal habit, and the choice of occupation If the doctors and the people would realize their responsibilities and co-operate for prevention, prevention would follow, and remarkable results, if not as wonderful as those already obtained in respect to infant mortality, would be forthcoming He begged the students not to confine their energy and enthusiasm to the study of disease There was much to be gathered from the study of health A professor of preventive medicine had caused amusement by suggesting that, well or ill, everybody should undergo a complete medical examination at regular intervals, and by the age of 60 should have been completely overhauled seventy-five times The reason for the amusement was not clear The speaker believed that the benefit of regular and frequent medical inspection would soon be widely recognized Already, in fact, large numbers of children, leaving the elementary schools, had received there and at the child welfare centres previously a certain proportion of the seventy-five medical examinations due to them The unfortunate thing was that these inspections ceased on leaving school The evidence as to the benefit of these inspections was abundant, but they should not be limited to any age or class

The Earl of Birkenhead, in presenting the prizes, said that he had been particularly struck by the advice that the man of 60 should have been completely overhauled seventy times He himself was not yet 60, and as he could recall only two occasions on which he had been overhauled, it appeared that in the course of the next twelve months he ought to be examined about fifty times in order to get himself on the good books of the professor whom Dr Porter had quoted Lord Birkenhead went on to express his admiration of the work done by the ancient hospital and its school When an institution had for so long a period of time maintained honourable traditions, inculcated a feeling of *esprit de corps*, and maintained a high standard of professional efficiency, the community as a whole owed to it no small measure of gratitude By the continuous opportunity given to young medical men, and to their elders in the profession also, by multiplying the data upon which generalizations could be made, and from which conclusions could be wrested, hospitals were rendering great scientific service It must be a proud moment for young men when they were first saluted by the title "doctor," but he suspected that they did not take long to realize the wisdom of the teaching of Socrates that no man began to be wise until he realized how little he had mastered of the immense sum total of attainable human knowledge He wished to add how sincere was the admiration of laymen for the work done at such a hospital and for the continuing conquests of medical science

A vote of thanks to Dr Porter was carried, on the motion of Dr R A Young, seconded by Professor W B Tuck, and to the Earl of Birkenhead, on the motion of the Chairman (Mr Asher), seconded by Mr John Murray

The Dean (Mr Alfred Webb-Johnson) mentioned in his report the endowment of the University Professorship of Anatomy by the munificent gift of £10,000 from Mr S A Courtauld Mr Courtauld's gift was yet another evidence of the growing realization of the importance of medical education and research He announced with regret the resignation of Professor Lazarus-Barlow, University Professor of Experimental Pathology, and of Dr Campbell Thomson, physician to the department for diseases of the nervous system Among the notable achievements of the year he mentioned the work of Dr E C Dodds on the preparation of insulin, this work, which had resulted in great improvements in the process of manufacture, was due, under Dr Dodds's direction, to the close collaboration between the physicians of the hospital and the departments of pathology, physiology, and biochemistry

WESTMINSTER HOSPITAL

ADDRESS BY MR H J WARING
ON
THE MEDICAL MAN OF THE FUTURE

The introductory address to the students of Westminster Hospital was given on October 2nd by Mr H J Waring M S, F R C S Mr A E W Marshall, a governor of the hospital, presided

Mr Waring said that the science of medicine was still in its youth, and the probable manner and direction of its growth was a matter which should have a great interest for those engaged in every kind of medical practice, and perhaps still more for those concerned with medical education Whether he was right or wrong in his judgement as to the manner in which that growth would manifest itself, there was no harm—probably some good—in letting the mind play with the subject In any case it was necessary to maintain towards the possible future developments a certain alertness and suppleness of mind The trend of development might be viewed with criticism and dissent, but there was no room for apathy or indifference

Two processes were at work in medical investigation and treatment—processes distinct, although in some respects related The first was the process of specialization The increase of specialists was to a great extent an inevitable and, up to a point, a desirable process It was the specialist who could most readily extend the frontiers of knowledge Nevertheless, the process had its dangers, one of which was that the specialist tended to work in isolation and to concentrate his activities on the one particular branch he had made his own Unless the specialist could work in direct relationship with members of his profession engaged on other lines this habit of concentration might take the undesirable form of an obsession, so that every problem came to be viewed by him from a particular angle without regard for other aspects Moreover, specialization had its repercussions in medical education, and in that connexion those concerned with medical education were constantly being met with new demands and new problems Specialists, naturally, pressed for the inclusion or recognition of particular subjects in the curriculum, and yet, under present conditions, there was not time for many such inclusions

The second outstanding feature in modern medicine was the recognition of fresh curative and ameliorative agencies and their continual extension That sweet simplicity which held that to pour down the throat the contents of a bottle was the best, or in some cases the only, method of effecting a cure had become a thing of the past Gradually all the sciences were being directed to this great task of curing or relieving suffering humanity, but the full significance of all this had yet to be appreciated It was this recognition of new agencies and extension of old ones which would revolutionize the practice of medicine and surgery, and it had this much in common with specialization that it made an increasing demand, though of a different kind, upon the time and work of medical students It was no longer a question of a particular method of treatment or an acquaintance with some particular branch of disease, it was a question of the interpretation of the human body in terms of physics and chemistry This opened up the necessity of emphasizing more strongly than ever the importance of the so-called preliminary or fundamental sciences in medical education He sympathized with a certain amount of impatience on the part of medical students in their desire to get more quickly to grips with the actual practice of medicine, nevertheless, he was convinced that the medical student of the future would have to spend more time rather than less upon the fundamental sciences In the future the value of his work in the wards would be more directly determined by the attention given to the preliminary and fundamental sciences before admission to the wards

What would be the cumulative effect of this increase of specialization on the one hand and of the constantly increasing employment of new diagnostic and curative agencies on the other? He paused to think of its bearing

on the future of the hospitals The recognition of the value of the resources of a modern hospital from this point of view was not confined to medical men, the lay public had become aware of it, and instead of reluctance—a survival from pre Listerian days—the upper and middle classes were showing almost eagerness for hospital treatment in illness The provision of adequate accommodation for paying patients was now one of the problems confronting the governing bodies both in London and the provinces Was it reasonable to expect any medical practitioner, however learned, to be able to give in a complicated case anything more than a general diagnosis and then to refer the patient to the appropriate expert or group of experts For his own part he envisaged an organization of the medical profession in which there would be brought to bear upon a particular case all the resources for diagnosis and treatment which were at the disposal of a great hospital Some such co-operation and assistance there was already, but it was very often circuitous and indirect

The length of the course in the medical school of the future would probably be much the same as at present but its character would be different in certain important respects With the raising of the standard of science teaching in public and secondary schools the medical student would enter on his work with a grounding in physics chemistry, and biology Physiology would probably be more comprehensive than at present, and would include a fair amount of biochemistry and biophysics Physics would be carried much higher, and so shaped as to have a definite bearing on subsequent clinical work He would expect more emphasis to be laid on pathology On the other hand, the study of materia medica was at present far too detailed and extensive Altogether, the ideal would be to give the student the best possible training in general medicine, allowing specialization only in those subjects to which he intended to devote himself in practice

As for the organization of medical practice Mr Waring thought that in urban areas the medical man practising alone would gradually make way for a group, partnership, or association, organized on the basis of division of labour, with certain lines of specialization which however, would not be so marked as to divide the group into watertight compartments One of the group would certainly be a pathologist Associated with the group would be an institution for the reception of patients, linked up with other institutions of a similar nature It was fairly obvious that some radical alteration in national health insurance administration must follow, and for his part he would not be sorry He was convinced that under a group system such as he had outlined it would be possible to hand over to the profession responsibility for the health of the people He closed with a word or two about the Navy, Army, and Air Forces He thought that, in future, arrangements must be made whereby a considerable proportion of the civil medical profession would always be available for immediate service with these forces and would occupy a proper, not a subordinate or inferior, position

ST BARTHOLOMEW'S HOSPITAL

OLD STUDENTS' DINNER

At St Bartholomew's Hospital the opening of the new winter session was as usual marked by no introductory address or other formal celebration, but the annual old students' dinner was held on the evening of October 1st in the Great Hall of the hospital St Bartholomew's is fortunate in possessing this fine chamber where the medical officers and lecturers and past students can dine together once a year within the hospital precincts The chair was taken by Dr J H Drysdale, who has lately resigned the post of physician to the hospital His immediate supporters at the high table included Sir Clifford Allbutt, Regius Professor of Physic at Cambridge Sir Archibald Garrod Regius Professor of Medicine at Oxford, and Sir Anthony Bowlby, Sir William Lawrence and Sir Herbert Cohen, almoners of the hospital, the masters of several City companies, and the senior members of the active medical and surgical staffs In proposing continued prosperity to St Bartholomew's Hospital and Medical College, the Chairman referred to some of the most pressing needs of the hospital, mentioning in particular the construction of new operating theatres and of small ward laboratories He said that new buildings in Giltspur Street have been acquired for the accommodation of the physiology laboratories to the great advantage of that and other departments of the school There are now 800 students working at St Bartholomew's of whom 100 have entered this session for the full curriculum, in the past year 123 students obtained the English conjoint qualifications In congratulating the Pughe team on bringing the Inter-Hospital Cup back to Smithfield after too long an interval, Dr Drysdale remarked on the change which seemed to have come over students since the war, they not only worked harder nowadays but played harder The toast was responded to by Sir Herbert Cohen and the senior physician, Dr H Morley Fletcher who are joint treasurers of the Medical College The health of the guests was proposed by Sir Archibald Garrod, who prefaced his speech by admitting that he was himself a guest that evening, though he was never likely to forget that for forty years the chief interests in his life had centred round Smithfield This toast was responded to by Mr C J Ritchie, Master of the Merchant Taylors' Company and by Sir Walter Fletcher, Secretary of the Medical Research Council, who expressed his pleasure in watching the successful way in which his own hospital was keeping abreast of the demands of modern scientific medicine, he named, in particular, the good work of the 'Radium Team" The chairman's health was proposed by Mr W T Holmes Spicer, senior ophthalmic surgeon, who spoke of Dr Drysdale's devotion to St Bartholomew's and its students, and the regard in which he is held by colleagues and pupils The toast was received with enthusiasm Dr Drysdale ended his acknowledgement by asking the company to drink the health of the secretaries of the dinner—Sir Charles Gordon-Watson and Mr Reginald M Vick—who each briefly replied, the former taking that opportunity to give an account of the proposals for the St Bartholomew's war memorial

ST MARY'S HOSPITAL

ANNUAL DINNER

The annual dinner of the past and present students of St Mary's Hospital Medical School was held on October 6th at the Connaught Rooms, Great Queen Street The chairman, Dr E M Callender, C B E, was supported by Sir Humphry Rolleston, President of the Royal College of Physicians, Mr A P Prideaux, chairman of St Mary's Hospital Board, Sir William Willcox Sir Anderson Critchett, and the Mayor of Paddington amongst many other Proposing the toast of the continued prosperity of St Mary's Hospital and Medical School Dr Callender gave many interesting reminiscences of "forty years ago" He recalled the consternation caused in the dispensary by the house physician who, at the behest of his Latin loving chief when in need of a tent and steam kettle for a bronchitic patient commenced his prescription *nabeat tabernaculum"* Affectionate and humorous memories of Sir William Broadbent Braxton Hicks Walton Edmund Owen, and others blended with tales of hospital life in the days before the period of expansion had set in Mr A P Prideaux replying gave an account of the present happy position of St Mary's Hospital in that it was doing something more than paying its way The equipping of the new ray department and the installation of new lifts was a most satisfactory achievement and he now held out the possibility of improvements and extension of the operating theatres Dr C M Wilson dean of the medical school spoke of the losses they had sustained in the departure of Mr Clayton Greene and Dr E H Kettle He said that the entry for the current year was particularly good in all respects and the prospect for the future very bright Sir Anderson Critchett proposing the health of the chairman, referred to the great honour that had been conferred upon Dr Callender by his being elected president of the Medical Society of London

ROYAL COMMISSION ON LUNACY AND MENTAL DISORDER

OPENING SESSION

THE first meeting of the Royal Commission on Lunacy Law and Administration and Mental Disorder was held at Old Palace Yard, Westminster, on October 7th The Right Hon H P Macmillan, K C , presided The names of the members of the Commission and the terms of reference were published in last week's JOURNAL (p 633)

SIR FREDERICK WILLIS, chairman of the Board of Control, was the first witness, but DR C HUBERT BOND and MR S J FRASER MACLEOD, K C , two of the Commissioners, sat with him and also answered questions

The CHAIRMAN, MR MACMILLAN, said that he was anxious at the outset to appreciate the principles upon which lunacy law had developed It seemed to him to exhibit the reconcilement, as far as possible, of the liberty of the individual with the protection of the public against an abnormal individual and of that individual against the consequences of his abnormality On the medical side there had been a progressive endeavour to ameliorate the conditions under which those of unsound mind were detained, and to aid their recovery

SIR FREDERICK WILLIS said that he believed the work of the Board of Control had largely resulted in bringing mental hospitals into their present state of efficiency, but, of course, there had also been a general growth of a better spirit throughout lunacy administration In addition to the Board, the Lord Chancellor had an ancient jurisdiction, more particularly with regard to the property of insane persons, the Home Secretary had jurisdiction over criminal lunatics, and the Minister of Health had a general responsibility for the provision of mental hospitals The patients with whom the Board had to deal resolved themselves into two categories private and rate aided On January 1st the total number of persons under care for mental disorder in England and Wales was 130,334, of whom 103,892 were in county and borough mental hospitals, 11,323 in Poor Law institutions 2,139 in registered hospitals (institutions not run for profit), 1,187 in metropolitan and 1,610 in provincial licensed houses, 171 in naval and military hospitals, 785 in criminal lunatic asylums, 5,266 in hospitals under the control of the Metropolitan Asylums Board, and 417 in private single care in addition 3,544 insane persons were receiving outdoor relief Boarded out cases, which were very few in number, were included in the first of these categories, the names of the patients still remaining on the books of the mental hospitals The licensed house had been discouraged It had been enacted that the number of these institutions should not exceed the number in existence at the time of the passing of the Act in 1890, and as the licences lapsed the number diminished

MR MACLEOD, on the Chairman's request, gave an account of the process by which respectively a private patient and a rate aided patient came under detention With regard to medical certificates, two were required in the case of a private patient, these must be given by qualified medical practitioners who were not related to the applicant for the order, and whose examinations were of recent date (within seven days) and had been made separately The certificate must state what had been observed by the medical man himself as distinct from what he had been told by other people One of the certifying medical men should be the usual medical attendant of the patient, or if this was not the case the fact must be stated on the document and the reason given When these documents reached the Board of Control they were subjected to a careful scrutiny, first by an experienced clerk and then by a Commissioner Sometimes the certificates did not contain a sufficient statement of the facts observed by the certifier, and in that case they were sent back, and if they could not be amplified or amended the order for detention fell to the ground The Commissioners also sometimes formed the view that the facts which the certifier stated as having led him to the conclusion that the person was of unsound mind did not justify that conclusion, but this did not occur in any substantial number of cases He supposed that the documents which came to the Board related, on the average, to about 100 fresh cases a day, in perhaps 12 or 20 cases the documents would be put aside for further scrutiny, generally, however, on some technical point, though a few came in for criticism on substance A certificate in need of amplification or amendment was sent back to the certifying doctor, who was entitled again to see the patient, now in an institution, but not to add to the certificate matters arising since the date of his original examination

The CHAIRMAN asked whether, in the event of medical certificates not being amended to the satisfaction of the Board the Board directed the discharge of the patient SIR F WILLIS said that in that case the Board told the medical superintendent that the case should be discharged, and it was discharged, but this happened rarely, probably not once in a year

DR BOND said that many medical men found great difficulty in certification Often it was impossible for the Commissioners examining the document to make out whether the certifier had himself observed at the time of examination the facts which he related In other cases the facts set down did not necessarily indicate unsoundness of mind The scrutiny of the Board was directed to the whole certificate, but the accent was on the paragraph relating to the facts observed at the examination Of course, the Commissioners knew from experience that in certain difficult cases it was not possible to base the decision on the facts observed at the time of examination, and here the facts communicated to the certifier by other people must also be taken into account The CHAIRMAN asked whether the forms were subjected to a purely medical scrutiny DR BOND said that this was not the case, but if one of the legal Commissioners was examining the forms and came upon a medical issue he referred it to his medical colleague DR Bond added that he thought the prescribed form could be said to be successful If there was difficulty it was due to the fact that medical men did not always grasp the essential of certification—that of precisely setting out the facts on which conclusions were based But there had been improvement, especially since some of the medical bodies had established diplomas in psychological medicine, and this was reflected in the certificates

The CHAIRMAN remarked that the profession had now been well educated in filling up forms of all sorts

DR BOND went on to give particulars of the reports which had to be furnished by the medical superintendent after the admission of the patient The first report had to be furnished not later than seven days nor earlier than two days after admission A diagnosis was not asked for, but a description of the case, and, in particular, a note of any marks of bodily injury

MR MACLEOD then described the legal process in the case of rate aided patients Here any magistrate could give the order (not a selected justice, as in the case of the private patient), but he was required to see the patient (the selected justice need not do so), and there was only one medical certificate instead of two The private patient was apparently protected more than the rate aided patient because it might be imagined that there were occasionally interests at work to deprive a person who would be in the position of a private patient of his liberty, and these interests would not act in the case of the rate aided patient In the experience of the Board the safeguards for the rate aided patient were, however, sufficient All the documents relating to both classes of patients were scrutinized in the same way A report at the end of a month's detention, which was required in the case of the private patient, was not required in the case of the rate aided, but the requirement as to yearly reports applied to all patients About 800 reports a week were received by the Board and carefully scrutinized

The CHAIRMAN said that apparently these reports were the justification for the continued detention of the patient, and he asked whether it was ever found that the special reports did not justify the original certificate MR MACLEOD said that he did not recall such a case The CHAIRMAN remarked that the importance of the periodical reports was that they served to bring up a case formally for review SIR F WILLIS said that the real safeguard for the patient was not any system of documentation, but the high character and ability of the officers of mental hospitals DR BOND added that in any case in which there was a scintilla of doubt the Board called for a further report after a definite period, and this was closely examined

MR MACLEOD went on to describe the visitation system County and borough mental hospitals were visited once a year by two Commissioners as well as, once every two months, by members of their own visiting committees The guardians had a right, and were encouraged, to visit cases coming from their union, but there was no obligation Licensed houses were visited twice a year by the Commissioners and four times a year by visitors appointed by justices at quarter sessions Registered hospitals were visited under statute once a year by the Commissioners, but in fact twice The Lord Chancellor's Visitors visited those patients who had been judged of unsound mind by inquisition and those in whose property the Lord Chancellor had some concern The total number of persons visited by the Lord Chancellor's Visitors would be about 700 The statutory visit of the Commissioners to the county and borough mental hospitals must be made by a legal and a medical Commissioner together, and must be without previous notice He described the full inquiries which were made Every patient was seen and spoken to, and complaints were received, but it was more customary, especially in the case of convalescent patients, to receive appreciations

The CHAIRMAN asked what opportunities the patients had for private interviews with the Commissioners Mr MACLEOD said that private interviews were always given if asked for, except in the case of dangerous patients

Dr BOND in reply to a question by Sir DAVID DRUMMOND, said that the time given to the visit was certainly not sufficient to satisfy the aspirations of a medical Commissioner, but he thought the time was sufficient to make the visit effective More and more the Commissioners were appealed to by the officers for guidance and personal advice in the conduct of the hospital Every patient was spoken to but, of course, a large proportion of patients were suffering from secondary or other forms of terminal dementia, and in these and some other cases of more acute excitement it was seen to be quite useless to attempt to draw the patients out Therefore it was possible to see a very large number of patients in an institution in a comparatively short time

On the second day of the inquiry evidence was given by the Ministry of Health and the Lord Chancellor's department

THE PROBLEM OF MATERNAL MORTALITY

CONFERENCE IN LONDON

AN interesting conference, organized by the Post Certificate School, was held on October 6th at the Royal Society of Arts, when the subject discussed was 'How to reduce the maternal mortality by the co-operation of all the health services concerned"

Dr J S Fairbairn who took the chair, indicated that the subject had been suggested by the recent report by Dr Janet Campbell of the Ministry of Health the speakers for the most part took portions of this report and dealt with them from some particular point of view The importance of ante natal care was emphasized repeatedly, and Mr Aleck Bourne urged that it was needed by every pregnant woman whatever her class or rank Mr Bourne described the ideal ante-natal clinic as he conceived it, staffed by obstetric specialists, and acting as a consultative centre for the general practitioners in its district but it was pointed out by Dr H Scurfield that outside London ante-natal work was very deficient In rural districts this was especially the case natural shyness appearing to be a terrible obstacle Mr Bourne had suggested that if a woman refused ante natal supervision no practitioner should undertake the case but Miss Liddiard, of the Mothercraft Training School, put the matter in a more practical form by insisting that every woman ought to be educated to demand ante-natal care during her pregnancy

In a letter from Sir Francis Champneys, which was read by the chairman at the beginning of the meeting one of the points raised was that in every case of death in childbed the person actually concerned in the delivery of the woman should be the subject of studied attention Speaking from the point of view of the general public, Mrs Bruce Richmond said that while midwives were bound by their regulations to maintain a certain standard of cleanliness and asepsis, doctors were often very lax in this respect She suggested that the General Medical Council should bear this point in mind, and in this respect Sir Francis Champneys's suggestion was particularly pertinent When a woman died in childbed as much investigation was required as if she had died from small pox was another point urged by Mrs Bruce Richmond in the course of a very effective speech she pleaded for 'better doctors, better midwives, and more of them" insisting that midwives ought to receive a more honoured place as member of an important profession Speaking as a general practitioner Dr J W Wayte of Croydon described the co-operation necessary between the midwife and the doctor All midwives should be fully trained and a full nurse's training was also desirable—a point emphasized by later speakers He urged that in every confinement a doctor and a midwife should both be available, although both need not necessarily be present It was obvious that this would necessitate further financial provisions and Dr L F Pilgrave of Ealing made one reference to this in dealing with the work of the local supervising authorities He deprecated the flat-rate system of payment under the 1918 Act of doctors called in by midwives but he also dealt with the wider aspects of the co-operation between the doctor, the midwife, and the local authority insisting that this co-operation must be close and cordial In the inspection of midwives the instructional element should always be kept well to the fore, and refresher courses were eminently desirable The handywoman was severely criticized by several of the speakers, and it appeared obvious that further legislation was desirable to curtail her activities if not to abolish them completely

A novel aspect of the problem of maternal mortality was dealt with by Dr L W G Malcolm who described the increasing activity of Poor Law institutions in providing facilities for confinement cases In the present state of the housing problem much of the danger of this could be avoided by arranging for confinements to be dealt with in hospitals, and several interesting schemes were indicated for removing the stigma which hindered the use of the many beds in Poor Law institutions which were available for maternity work Ante-natal care, close co-operation between the authorities and services concerned with maternity work and provision of increased hospital accommodation would, however all be useless without the education of the public to realize the importance of the problem of maternal mortality This was the text of Miss Liddiard's remarks who urged that the present generation ought to be approached through women's institutes and clubs throughout the country, the coming generation of mothers should receive instruction at school in mothercraft and all it meant Fathers also, should receive instruction as was urged by several of the later speakers Miss Liddiard suggested that the barrier of shyness might be broken through in rural districts if midwives would settle in one place, and by their devoted lives seek to win the confidence of those around them All women must be encouraged to view motherhood in its proper light as the grandest of the professions"

During the very interesting general discussion the importance of holding autopsies on all women dying in childbed was stressed by several speakers These, it was argued should be conducted by experts and in this way much useful information might be brought to light Another point raised was that of the need of closer co-operation between the medical student and the midwife when the former was working on the district Did an inexperienced student actually do harm? This and other questions would probably be answered, as the chairman remarked in his summing up, if in every case of death during childbed the person who actually delivered the woman could be ascertained

Dr William Paterson of Willesden represented the British Medical Association at the conference which was well attended by doctors, midwives health visitors and others The stimulating discussion should help towards promoting the necessary co-operation between all the health services by which this great national problem of maternal mortality may one day be solved

England and Wales

CARDIFF ROYAL INFIRMARY

SIR EWEN MACLEAN M.D. Hon. Surgeon Gynaecologist to the Cardiff Royal Infirmary and Professor of Obstetrics and Gynaecology in the Welsh National Medical School has presented a thousand guineas for the endowment of a bed in the Thompson ward of the infirmary in memory of his mother who had always been interested in the work of the institution No condition is attached to the gift Sir Ewen Maclean hopes that in the expenditure of money the council will have a free hand to meet any special requirement of the hospital or gynaecological department

RETIREMENT OF DR F W HOPE

In a report presented to the Liverpool Corporation in the autumn of 1873 by Dr William Trench the medical officer of health it was stated that no deaths from [illegible]

fever had occurred in the previous week in Liverpool, an exemption which had not happened for twenty-five years, the last instance of typhus not appearing in the weekly mortality returns having been as far back as 1848. The editorial comment in the journal[1] from which this information has been gleaned was

"All who are acquainted with the insanitary condition of some parts of this populous town will congratulate Dr. Trench upon this striking proof of what can be accomplished by energetic and constant medical inspection."

Ten years later Dr. E. W. Hope was appointed deputy medical officer of health to Dr. Stopford Taylor, who succeeded Dr. Trench, and on the retirement of Dr. Taylor, in 1894, Dr. Hope was elected senior medical officer. For more than forty years, therefore, he has been completing the reforms begun by his predecessors, and has initiated many others with a zeal and perception of the future needs of the community which stamp him a reformer of the first rank. In his annual report for 1921 he gave an account of the sanitary condition of the city as he found it in 1883. The population was 540,000 and the deaths in that year numbered 15,000. In 1921 there were less than 12,000 deaths among a population of over 800,000. In the earlier year there were 20,000 houses and 24,000 cellar dwellings wholly unfit for human habitation. Receptacles for refuse consisted of deep pits or trenches, extending from one end of a street to the other, and it was found to be unsafe to empty them during the summer months, since the process was invariably attended by an excessive destruction of infant life. There was no municipal isolation hospital, the workhouse hospitals being the only institutions available for the isolation of infectious disease. The sanitary staff was quite inadequate and the personnel had had no special training in their duties. There was no port sanitary administration and no check or hindrance on the importation of infectious disease. No side of Dr. Hope's administration has been carried out more carefully and energetically than that connected with the port, and he is quite justified in his statement that—

"the Liverpool Port sanitary organization is to-day as complete as careful organization can make it, and thoroughly fulfils the needs of those important international obligations which have been entered into by most of the maritime nations who recognize that the public health is an important international matter and not a mere local affair."

The supervision and control of food supplies was negligible, the medical inspection of school children was unthought of, and no special attention was paid to the welfare of young children or of their mothers. In 1883 the Society for the Prevention of Cruelty to Children was established in Liverpool, and it subsequently became the National Association. Dr. Hope truly states that the title of the association and the title of the Child Welfare Association of to-day sufficiently indicate the advance in public opinion, in regard to children, in the interval. The gulf between the prevention of actual cruelty and the active promotion of child welfare is a wide one. Very early in his public health career Dr. Hope recognized the importance of creating a favourable public opinion in support of public health reforms, and much of its success is due to his carefully worded reports and to the sound advice contained in them. He would be the first, also, to acknowledge the support he has invariably received from his professional colleagues, not only in Liverpool but throughout the country. He is an ex-president of the Liverpool Medical Institution, and in 1913 was president of the Public Health Section of the British Medical Association at the Annual Meeting at Brighton. In 1912 he was president of the Society of Medical Officers of Health, when he delivered an opportune address on 'the expanding scope of sanitary administration." We understand that Dr. Hope is not relinquishing his association with the Liverpool University as professor of hygiene, or with other universities and examining bodies as an examiner in public health.

After-care of Mentally Defective Children

The City of Birmingham Education Committee has had a subcommittee devoted to the after-care of mentally defective children since 1901. The report for 1923 has now been issued.[1] The duty of the committee includes the keeping of a record of the subsequent histories of former pupils of the special schools for the mentally defective in the city and assisting them to find employment. It also looks after children notified under the Mental Deficiency Act but who are not in institutions. Last year it supervised 803 such children. Of these, 350 had been in no school, they were mainly idiots or imbeciles, but there were some who were deemed educable for whom accommodation had not been found. In some districts of the city children have to wait fifteen months to two years for a place in a special school. Nearly 2,000 male persons who were over school age were under observation, about 35 per cent. were doing remunerative work, 13 per cent. were at home and useful, 11 per cent. were in institutions, and 25 per cent. had been lost sight of. There were fewer women, and a greater proportion doing useful work at home. The report states that "Some people have been known to allege that all criminals are mentally defective, and others that all mental defectives have criminal tendencies, but they fail to substantiate their statements. An examination of the records of the committee, extending as they do over a period of twenty-one years, and relating to more than 3,000 defectives, shows that except for certain cases of immoral conduct, and others of petty thieving, criminal offences have been few."

Certain of the female defectives are quite unable to protect themselves from sexual dangers, and during the past year four such persons had given birth to an illegitimate child. The wisdom of providing adequate care in suitable institutions at a sufficiently early age for young women who need protection in this direction is manifest, and the expenditure involved would be true economy. Most of the cases under the care of the committee fall within the ages of 16 to 27 years. Records are kept of marriages and progeny, 185 families have been noted. Most of the children are very young at present, but it has already been recorded that the three children of one of the men appear to be mentally defective, and of the four children of one of the women two are attending a special school and the two younger ones are said to look far from normal. Trustworthy evidence on these lines would help to convince public opinion of the necessity for denying parenthood to the mentally unfit.

[1] *Public Health*, vol. x, 1873, p. 185.

[1] Report of the Special Schools After-care Subcommittee of the C of Birmingham Education Committee. July, 1923.

Scotland.

Scottish Board of Health Consultative Councils

The Scottish Board of Health announces that it has made the following new appointments to its several consultative councils:

Medical and Allied Services: Professor J. R. Currie, M.D., Glasgow University; Mr. A. Gofton, F.R.C.V.S., Chief Veterinary Inspector, Edinburgh; Dr. G. R. Livingston, Dumfries; and Professor B. P. Watson, M.D., Edinburgh University.

National Health Insurance (Approved Societies Work): Mr. J. G. Barry, Glasgow, Miss Jean Coutts, Aberdeen, and Mr. Jobson, Stirling.

Local Health Administration and General Health Questions: Bailie P. J. Dollan, Glasgow; Mr. A. Findlay, Aberdeen; Mr. Hugh Fraser, Inverness; Bailie Simon G. Fraser, Dundee; and Mr. M. A. Reynard, Clerk to the Glasgow Parish Council.

Highlands and Islands: Mr. J. G. MacDonald, Inverness, and Mr. Hugh Miller, Stornoway.

Welfare of the Blind in Scotland

The second report of the Scottish Advisory Committee on the Welfare of the Blind was issued last week.[1] The report, which covers the period 1921-24, is signed by Sir David Paulin (Chairman) and Sir William Reid (Vice-Chairman) on behalf of the committee, which includes representatives of public authorities, voluntary agencies and blind workers. The medical profession is represented by Dr. George Mackay, consulting ophthalmic surgeon to the Edinburgh Royal Infirmary. This committee was set up shortly after the passing of the Blind Persons Act, 1920, to advise the Scottish Board of Health on the care and supervision of the blind in Scotland. As practical

[1] H.M. Stationery Office, 120, George Street, Edinburgh (price 1s.).

every question of importance affecting the interests of blind persons has been before the committee, the report is in effect a review of the problem of the care of the blind in Scotland and an account of what is already being done. There are, the report states, 6 054 blind persons in Scotland on the Central Register kept by the Board of Health. The gradual increase in the number of blind persons registered is attributed to the greater interest in the blind since Government grants were provided for voluntary agencies and the responsibility for the welfare of the blind was placed on local authorities. Of the total number of registered blind, 399 are under 16 years of age and 3,627 are over 50, 3,650 blind persons are unemployable. The committee records with pleasure the striking decrease in the number of blind children under 5 years of age—from 48 in 1920 to 15 on April 1st, 1924.

It may be assumed that this is to some extent due to the energetic measures that are being taken generally by public health local authorities to secure the prompt notification and treatment of cases of ophthalmia neonatorum and also for the systematic and effective treatment of persons suffering from venereal diseases.

The report discusses and makes recommendations on the education and technical training of the blind, the wages of blind workers, municipalization of workshops, the disposal of goods made by the blind, home work, home teachers (their training and qualifications), residential homes, the medical certification of blind persons, and methods of dealing with those who are incapable of working or being trained. Many of the recommendations of the committee have been adopted by the Board of Health and are now the accepted policy in Scotland. The committee, by a majority, agreed to recommend that as a general principle the municipalization of workshops for the blind is not at present desirable. The committee disapproves of the Blind Persons Act (1920) Amendment Bill, as drafted, which is at present before Parliament, and an alternative scheme of amending legislation is substituted as a "substantial solution of the whole problem of the blind." In the committee's opinion blind workers in institutions are already substantially provided for and new legislation must deal principally with the problem of the unemployable and necessitous blind. It recommends that a graduated compensation allowance of not less than £1 a week should be granted to blind persons within a prescribed means limit, and that this should be paid to the capable and incapable blind alike, two-thirds of the cost of the compensation allowance being met by the State and one third by the local authorities. It recommends also that power should be taken to provide that the standard minimum wage to blind workshop employees should be not less than that paid to unskilled municipal workers in the district, on condition that the recipients should be qualified workshop employees who have undergone a course of technical training and are capable of earning a reasonable wage. The other recommendations deal with the granting of powers to local authorities in Scotland to promote arrangements for the prevention of blindness, the necessity for the approval of the Scottish Board of Health to the registration of charities for the blind, and the empowering of the Board to compel local authorities to combine where necessary for the purposes of the Act, and also to compel local authorities to enforce the provisions of the Act.

Edinburgh Royal Infirmary

At a meeting of the board of managers of the Royal Infirmary on October 6th, Lord Provost Sir W. L. Sleigh presiding, several vacancies on the visiting staff were filled up. Dr. Andrew Rutherford was appointed assistant physician. Messrs. J. J. M. Shaw and F. Gordon Bell were appointed assistant surgeons. Dr. Robert Aitken was appointed assistant physician for diseases of the skin. Dr. James Young was reappointed assistant gynaecologist. It was stated that 1 482 patients had been treated during the past two weeks in the institution and 1,796 new cases had been treated in the out patient department. The number of cases awaiting admission to the infirmary on October 1st was 1,684.

Glasgow Post-Graduate Courses

The Glasgow Post Graduate Medical Association has arranged a series of weekly demonstrations for medical practitioners in the various hospitals of Glasgow commencing on November 5th and continuing until March 27th, 1925. Some short special courses will also be conducted. Further particulars can be obtained from the secretary of the association, the University, Glasgow.

West of Scotland Foreign Service Medical Club

The West of Scotland Foreign Service Medical Club consists of medical men who served overseas during the great war, all its members we are glad to know, are also members of the British Medical Association. The sixth annual meeting and dinner of the club will be held in the Grosvenor Restaurant, Gordon Street, Glasgow, on the evening of Tuesday, October 28th. The honorary secretary is Dr. David Shannon, 26, Woodside Place, Charing Cross, Glasgow, C.3.

Ireland.

The Royal Academy of Medicine

During the session of 1923-24 the Royal Academy of Medicine in Ireland consisted of 193 Fellows, 13 members, and 26 student associates, an increase of 20 Fellows and 6 members over the previous year. The accounts for the session have been audited, and the financial state of the Academy is shown in the balance sheet appended to the annual report. The total income for the year, including a balance of £40 carried forward from the previous year, amounted to £483, and the expenditure to £407. By the kindness of M. Blanc, the French Consul, a cinematograph film illustrating events in the life of Louis Pasteur was lent to the Academy, and on December 11th 1923 the Academy entertained a large number of visitors to view this interesting film on the first occasion that it was shown in Ireland. The council records with deep sorrow the deaths during the session of three honoured Fellows of the Academy, Wallace Beatty, Alexander O'Sullivan, and Sir Andrew Horne. The urgent need for the provision of facilities in Dublin for research in connexion with medicine and the allied sciences was brought before the council and a conference of the various licensing corporations in Ireland was invited to meet the members to discuss the matter. At that conference a scheme for the establishment of a research institute was drafted, and the draft has been submitted to the various corporations which were represented. As soon as the approval of these bodies has been received it is proposed to submit the scheme to the Government. The council has good grounds for believing that the scheme will be adopted, and hopes that in the next report it will be possible to speak of the actual establishment of the institute. During the session there were 27 sectional meetings of the Academy at which the attendances were: Fellows 637, members 55, associates 161, and visitors 338, or a total of 1 191, as compared with a total of 941 in the previous session. The plan of holding a combined meeting of the sections of medicine and surgery was again adopted during the year, and on January 25th Mr. D. P. D. Wilkie of Edinburgh opened an interesting discussion on "Jaundice." This meeting was well attended. On February 29th Mr. James Sherren of London read a paper before the surgical section on "Diseases of the stomach and its surgical treatment." The paper evoked great interest among the 100 persons who were present at the meeting. On May 5th Sir Leonard Rogers, F.R.S., by invitation of the council, read a paper before a special meeting of the Academy on "L. proteus, its cultural characters and its relation to tuberculosis."

Health of Belfast

Dr. Baillie, the Medical Officer of Health of Belfast, has just issued his annual report for 1923. It is especially interesting because in that year the mortality was the lowest on record, and because it includes the first report of the School Medical Service. As no census was taken this decennium, the

figure for the population is an unreliable estimate after fourteen years from an actual count, and so all figures calculated from the population are more subject to error than if only a few years had elapsed The death rate for 1922 was calculated at 14 8 per 1,000, that for 1923 at 13 8—the actual number of deaths being 7,117 The births numbered 10,426, or 25 0 per 1,000 in a population of 429,000 as estimated by the Registrar-General Only 4 deaths were caused by typhoid, but 308 were due to measles and whooping cough A decrease of 0 2 per 1,000 in deaths due to phthisis is also very satisfactory, considering the steady fall during the last twenty years When one considers the mortality rates of the last decennium of last century there is every cause for sincere congratulation

Belfast School Medical Service

The first annual report of Dr T F S Fulton, chief school medical officer, is published with Dr Baillie's report, and gives a survey of the work of the School Medical Service under the new authority During the year 76,700 inspections were made, and the service appears on the whole to have won the approval of the parents The poor condition of the schools had from time to time met with serious criticism The late Dr Alex McKeown had drawn attention to the wretched state of some of the buildings, Professor Lindsay had again and again tried hard to arouse public indignation, others, too, had joined The disgraceful condition was known to the health authorities, and they did what was possible for them, but they were not the body responsible It is curious that in a city where public protests were common, and many worthy enterprises for the public benefit were undertaken, no public movement as regards elementary school education was ever set on foot, or indeed mentioned, by any class, and the children were allowed to suffer in mind and body during the attempt to educate them Dealing with the general hygienic condition of the schools, the report states that of the 194 school buildings in Belfast, 53 are totally unsuitable for the purpose, 29 are graded as to be replaced as time serves, 100 are satisfactory, or can be made so, 11 are good The majority of the schools have insufficient ground space Complaint is made regarding the lighting and the ventilation, the old-fashioned type of desk, the insufficient room and floor space—100 children are cramped into floor space which normally should accommodate 30 to 50 In the private protests that were made earlier much stress was laid on deficient sanitary accommodation, but it is understood that this came under the control of the public health authorities, and was remedied With a regular medical service and a new authority, every hope is now entertained that the children will have their bodies as well as their minds properly looked after The old accusations have been fully substantiated

Correspondence.

POSTERIOR GRAVITY DRAINAGE IN EMPYEMA

SIR,—I should be much obliged if you would kindly allow me to supplement my article, on posterior gravity drainage in empyema, published in the BRITISH MEDICAL JOURNAL, May 5th, 1923 (p 758), by stating that the further experience of my colleagues and myself confirms the opinion therein expressed—namely, that posterior drainage invariably effects prompt cure We find, however, that taking as centre of external incision the termination of the two-and-a-half inch line drawn downwards from the inferior angle of the scapula occasionally admits of undesirable elasticity in way of encroachment on the posterior axillary line consequently, in order to secure free dependent drainage with immediate cessation of purulent secretion and rapid cicatrization of sinus, thoracotomy (with or without excision of a piece of the ninth or tenth rib) should be executed just posterior to the posterior scapular line—a point which can be rapidly determined by counting the ribs from below upwards in the said line

Again, I wish to invite attention to the aseptic and excellent drainage afforded by the use of a wisp of silkworm gut in these and similar cases As elsewhere stated, these wisps are made by doubling twenty to forty strands of silkworm gut and tying the double with a piece of silk about one half-inch from each end Permanent outdoor treatment is highly beneficial after operation—I am, etc,

Buenos Aires, Sept 6th JOHN O'CONOR, K B E, M D

TRAINING OF NURSES IN COTTAGE HOSPITALS

SIR,—At the Annual Representative Meeting at Portsmouth it was decided that the British Medical Association should support a proposal that nurses should be allowed to undertake part of their training for registration in cottage hospitals It may interest members to know that the Royal United Hospital, Bath, applied to the General Nursing Council for approval of the following scheme, under which probationers in cottage hospitals should be able to take up while there the preliminary examination of the General Nursing Council, and under which two years' work in one of these hospitals may count as one of the three required for registration

Scheme for the Training of Nurses in Cottage Hospitals in parts of Wilts and Somerset, under Section 1 (Clause 2) of the Scheme of the General Nursing Council

1 For the purpose of this scheme, such approved cottage hospitals as shall enter into it shall be affiliated with the Royal United Hospital, Bath Only such cottage hospitals as are approved by the General Nursing Council can be admitted to the scheme

2 Probationers of these hospitals shall, during the first four months, undergo at the cottage hospital the course of instruction set out in Sections 1, 2, 4, and 5 of the syllabus for the first year of training

3 During the following twenty months they shall attend lectures given by the Sister Tutor at the Royal United Hospital Bath These lectures shall be given at that hospital or at such cottage hospitals and at such times as shall be most convenient for the attendance of the probationers

4 At the end of this two years' training and lectures a probationer shall be qualified to enter for the preliminary examination, and the two years thus occupied shall, for the purposes of registration be considered equivalent to one year in a complete training school

5 There shall be an undertaking on behalf of the probationer that after passing her preliminary examination she shall carry out the third and fourth years of her training at the Royal United Hospital, Bath, or at some other recognized training school for nurses This undertaking shall not apply in the case of those nurses who intend to train as midwives only

This scheme has been approved by the General Nursing Council In order to arrange details as to the places where and the times at which the lectures will be given, and the payment of expenses, it will be necessary to hold a meeting of the matrons or other representatives of the hospitals concerned The council has approved the following hospitals Chippenham, Frome, Melksham, Paulton, Saverake, Shepton Mallett, Swindon Victoria, Trowbridge, Warminster—I am, etc,

Bradford on Avon CHARLES E S FLEMMING

OBSTETRICS AND LOCAL HEALTH AUTHORITIES

SIR,—I write to express agreement with Professor Louise McIlroy's letter on the above subject, which appeared in your issue of October 4th (p 642)

After sixteen years of medical practice, ten of which have been spent in the public health service, I would add my testimony as to the results of unskilled midwifery in producing the chronic ill health of many mothers who attend child welfare clinics, and a certain number of the cases of paralysis, sometimes accompanied by mental defect, which occur among school children

One of the means by which an attempt is being made at betterment is the ante-natal clinic Such a clinic is more effective if the medical officer in charge, whether whole or part-time, is not only possessed of previous experience in gynæcology and obstetrics, but continues to maintain practical touch with them This is to some extent the case in areas where the ante-natal medical officer is also in charge of the maternity home and wards to which cases are admitted under the local authorities' maternity and child welfare scheme

Dr McIlroy suggests that one all-time medical officer might carry out the combined duties of ante-natal medical officer, emergency obstetrician to the local midwives, and inspector of the latter This suggestion has much to commend it, and would have still more if charge of the local

maternity home were added to the duties One obvious advantage would be the closer co-operation between the practising midwives and the ante natal centres, which is so desirable and still so absent from many areas

If Dr McIlroy's suggestion should appear to savour too much of municipal midwifery for those of your readers who object to this line of medical evolution, there is the alternative one of a local obstetrician of recognized standing who would be willing to act as the emergency consultant for the local midwives, and to take part-time service under the local authority as medical officer to their ante natal clinics Such an officer would be in regular, not occasional, attendance at the clinic, and would co-operate with the inspector of midwives for the district

The separation of the ante natal from the infant welfare work, which usually have been combined under one officer, may also be objected to by some, but obstetrics is a branch of medicine for which many doctors of both sexes have neither liking nor natural aptitude, and for one who will make a successful obstetrician there will probably be several potential infant welfare specialists It is therefore open to doubt whether the prevailing arrangement although convenient, is the one best calculated to achieve results

As regards nursing mothers, it will always be more natural and convenient for the mother of a young baby to attend a clinic with her baby and have supervision of her general health and diet from the medical officer in charge of the latter, but she could attend a so-constituted ante natal clinic at least once within a few weeks of her confinement, and be subsequently referred to it whenever any condition arose suggesting the necessity for further consultation, and her special needs could thus be met without the establishment of another special clinic —I am, etc,

Willesden Oct 6th AGNES HILL NICOLL

SIR,—Dr McIlroy's letter in your issue of October 4th (p 642) seems to me to raise some curious points for the consideration of the general practitioner Her suggestions, as far as I understand them, amount to the following That no general practitioner should be allowed to attend an abnormal confinement if he does not hold a special permit from some competent authority That he may be allowed to do so when the medical inspector or those holding permits are not available

I should like to know if Dr McIlroy seriously suggests that when a practitioner has attended a confinement at the request of a midwife he should be compelled to furnish a detailed report of his treatment to the medical officer of health? Finally, what about the patient? Perhaps she would prefer some ordinary practitioner (who has no permit) rather than the medical inspector provided —I am, etc,

Liverpool Oct 6th. C A ROBINSON

HOSPITAL TREATMENT OF EARLY MENTAL DISEASE

SIR,—In an article in your issue of September 27th Dr Comrie brought before us the results of the treatment of early mental illness in the wards of the Edinburgh Royal Infirmary The fact that 72 per cent of 500 cases in the course of one year were discharged sufficiently well to return home speaks for itself and Dr Comrie is to be congratulated Surely the day is not far distant when all general hospitals will set aside beds for the treatment of mental disease in its incipient stages

There is one point, however in Dr Comrie's paper that requires some elucidation What does he mean when he says, referring to the psycho neuroses that a previous sexual trauma in the Freudian sense was found to be especially prevalent? I am unaware that Freud places especial significance on the presence of a sexual trauma in the life-history of his patients The roots of a psycho-neuro is are to be found deeply imbedded in the patient's unconscious mind, and can only be found after prolonged analysis

Again, Dr Comrie says 'In my opinion, however, the employment of this procedure [psycho-analysis], while very useful in elucidating the vagaries of the patient, is more apt, considered as a therapeutic agent, to be followed by increased mental unrest and distress than by improvement" Dr Comrie cannot be referring to the psycho-analysis of the cases under review, for it is obviously impossible to analyse thirty five cases in fifty-four weeks If he means the investigation of the patient's sexual life by cross-examination I am in full agreement with him, but this is not psycho-analysis in its Freudian connotation, and Freud himself has warned physician against the dangers of such pseudo-analysis —I am, etc

Dunfermline Oct 6th DAVID MATTHEW, M B, D P M

SIR,—The account given by Dr J D Comrie in your issue of September 27th of the Hospital treatment of early mental disorder is interesting One would like to know whether the entrance of the patient was altogether voluntary and whether he was detained or could leave if he chose It might, perhaps, be suggested that a more satisfactory arrangement than the grouping of so many varieties (epileptics inebriates, defective, and toxic cases—many of them requiring quite distinctive treatment) might be arrived at by the starting of specialized home, colonies or places adapted for the care of delirious cases—for example puerperal or influenzal It is desirable that the latter should in every instance be kept apart from the stigma associated with lunacy

Dr Comrie stresses the fact that many of his cases were directly attributable to the vicissitudes of life We may almost venture to say that in the majority of such there is no disease at all He states It is important to note that most of the attempts at suicide were made by persons suffering from simple melancholia without delusions" What is most needed in all early mental cases is reassurance and hope for the troubled mind, and the supply of new interests to which mental activity may be directed The atmosphere of a general hospital can scarcely be said to be an ideal environment for furnishing these essential In his cases recovered enclosed within hospital walls in the midst of a great city how much sooner would their balance have been regained with direct access of open air and sunshine and less concentration on their own ills and those of others The great need for multitudes of such cases is not for more hospitals but for homes or health and rest specially adapted for the recovery of mind and body

No legislation is required for the purpose of carrying out this greatly needed development There exists at present no legal barrier to the running of hospitals or homes for those not dangerous and unfit to be at large—in other words, the uncertifiable Dr Comrie states that in 64 per cent of his cases certification was unnecessary All that is requisite for the provision of the form of treatment here indicated is that Government grants should be extended to the health committees (as distinct from the asylum committees) of local authorities They already possess the powers needed to run homes of this nature—quite apart from lunacy and free from detention—which could be inspected and controlled by the Ministry of Health with a view to the prevention of illegal restraints or ill treatment

The most important advances in recent medical progress have been based on reasonable common sense applied to the prevention of disease or disorder It is well worth while to apply the same to the beginnings of loss of mental balance The slight increase in initial expenditure would lead in the end to a great saving and is likely to meet with an abundant reward —I am etc,

Dalry El Oct 11 S E WHITE

CANCER IN AFRICAN NATIVES

SIR,—For more than twenty years one has heard the statement has been made that malignant disease does not occur amongst primitive race Dr J Bell Walker of Aberdeen Scotland, recently wrote to me for details of a case of cancer that we had together in 1904 in a native Banyan man of Nyasaland which he thinks is the first recorded in scientifically proved I believe that the medical officer (of Chiromo) who must have the credit of first detecting was a Captain Fox He sent up to me as principal medical officer at Zomba a letter for consultation I agreed that it was an epithelioma and asked Dr J B Walker, then in charge of the Livingstone Memorial Hospital, to remove it I believe that he agreed with me and operated I then sent the specimen to the Imperial Cancer Research Fund, London, and, so far as I recollect heard no

more about it Dr Walker has now ascertained that the Fund staff put the specimen in their museum and forgot to examine it critically Dr J A Murray has had microscopical sections prepared, and the evidence entirely clinches our clinical diagnosis I had not heard of any cases in other doctors' hands, but since that mentioned above I have had three others of malignant diseases one a sarcoma of the parietal bone of the skull in a young native boy (a Chikunda), about twenty years ago, that quickly ended fatally, one of a sarcoma of the forearm in a Manganja woman, the third of epithelioma (cancer) of the tongue of a Yao woman Both women refused operation, and I left their district without being able to follow the cases to their termination

I think that cancerous diseases must be as ancient as *most others*, and that *some causes* that have usually been advanced, such as dietetic ones, have only a nutritional effect on embryonic cells that may predispose to growths Boys get warts on their fingers, possibly from seeing them on another boy's hands In 1900, north of Lake Nyasa, I was asked to see an official's native servant man who had been hypnotized by a native doctor called Mwakatundu It was 2 p m , and he could not be roused The old man certainly had an uncanny appearance, and ways likely to assist suggestion The above-mentioned case of a malignant sarcoma of the forearm I treated by suggestion for a few days, telling the patient to carry on the auto-suggestion treatment in her village That would be about 1912 When I returned to the district—I believe after a few months' absence—she was well and cheerful, and her tumour was only half the size that it was when she came to me

I have read of consecutive cases of cancer occurring in families or old houses, and such cause suggested as dry-rot in old flooring boards I advance the explanation that all cases may possibly be attributable to auto-suggestion as the causal exciting factor The power of concentrated thought, and especially the subtlety of the "unconscious," are known Animals have their subconscious mind, so why should not such an experiment as applications of the irritant tar to a guinea-pig's skin, causing cancer, be merely due to that I have given up reading medical journals for a great many years, so do not know whether my suggestion regarding the possible cause of malignant diseases has been advanced by anybody else, or whether experiments on cause and treatment may have been carried out along those lines I have retired from medicine and follow the precarious occupation of growing that seductive weed *Nicotiana tabacum* (the "Fumes of Hell" of James II), and it will be apropos to recommend it as a palliative of cancerous symptoms I believe a West of England chemist once advanced a preparation of violet leaves for this purpose Tobacco seems to have many remedial virtues I have found it of much value as a fomentation in influenzal pneumonia of natives Applied as old, dark leaves, with the mid-rib removed, done up in thin gauze, a few leaves thick, dipped in hot water, and kept damp with hot wet cloths, and warm with wool, etc , for some hours, according to effect, it would first have a stimulating effect, followed by a sedative one, besides an antiseptic action on the secondary microbic manifestations in malignant diseases It might, then, well deserve its ancient French name of "herba regina" I will close with this motto "Let fools step in when the great (pure scientists and specialists) and money have failed"—I am, etc ,

Makungwa, Limbe P O , Nyasaland J E S OLD

CARBON MONOXIDE POISONING

SIR,—Some years ago a tall, strong-looking young man, of good complexion, came into my consulting room He had scarcely sat down when he volunteered the following information "Doctor, I cannot get the idea of suicide out of my mind" I inquired fully into the possible causes, and in response to some questions bearing upon the conditions under which he worked, he stated that, some little time before, a gas stove had been installed in his office As far as could be ascertained he considered it an efficient stove, it was clean, convenient, economical, labour-saving, and it thoroughly warmed the office Strictly speaking, if "fume" be defined as "smoke or steam from combustion or exhalation," this apparently admirable heating apparatus gave off no fumes, no gas stove can give off fumes in this sense, carbon monoxide being a colourless and also an odourless gas, it is always present if there be incomplete combustion of coal gas Further questioning elicited the fact that this stove had *no outlet—in other words*, it seemed that as there was no visible exhalation there was no need for a chimney to carry away the products of combustion The conditions were the same as with an imperfect chimney, but, of course, worse in degree I have rarely, if ever, found the chimney from a gas stove that had an upward draught all round the inlet, as the simple device of carrying a lighted taper or match all round the inlet easily proved The stove in this young man's office was removed, and in a very few weeks he returned, quite happy, to my consulting room, and stated that the *morbid idea of suicide with which he had* been obsessed had left his mind Whether or not he had ever trusted to a basin of water to counteract the baneful effects of a lethal gas, that delusion and snare had, fortunately, not been relied upon by him

Some years before this incident I was sent for to see three children, said to be very ill It was a poor home in a squalid street, like many streets that deface a *beautiful* residential town in England On entering their bedroom and going towards their bed—there was only *one bed* in the room—there was a sudden sensation as of an iron band being tightened round my forehead, my head was in the poison, the children, being lower down, were comparatively free from it A fine warm fire of coke was glowing splendidly The diagnosis was quickly made a down draught from an inefficient chimney had been causing the room to be invaded by copious amounts of carbon monoxide Extinction of the fire was followed by the speedy recovery of the three children

To what is the complexion of the modern professional baker due? At 5 o'clock one morning I was permitted, by the courtesy of the owner, to go over a small bakery which was generally admitted by the consumers of most wholesome-looking, pleasant-tasting bread, to be efficient It surprised me not a little to find that our bread was cooked in an atmosphere of carbon monoxide, the fuel used being coke, which was burned in the oven The cause of the ruined complexion of the workers was quite obvious This bakery, like many others, was "passed" *annually*, after an expert inspector's careful examination I would advise him to combine a little physiology with hygiene and sanitation The conditions under which the bread was cooked, however, raised two questions in my mind Is the partially charred crust of bread capable of absorbing large quantities of the poisonous monoxide—colourless, odourless, and tasteless—just as charcoal can absorb very many times its own bulk of many gases? And what is the physiological effect of consuming a foodstuff that has been cooked until part of it undergoes a modified charring—being "well fried," as is said—in an atmosphere of carbon monoxide? At present I am unable to answer these questions From clinical observation, however, I am convinced that the vitamine properties of bread so prepared are destroyed, and that the physique and health of the consumers—that is, a very large number of people—are, in an insidious way, very much impaired —I am, etc ,

Reston, Berwickshire R CUNNINGHAM AFFLECK

ASSISTANTS IN GENERAL PRACTICE

SIR,—I was interested to read the letter headed "The hours of medical work" in the JOURNAL of September 20th (*p* 542), and I heartily endorse the views expressed therein

The British Medical Association has done admirable work in obtaining a minimum scale of remuneration for assistant health officers When will the Association make a thorough investigation into the conditions of drudgery under which that huge number of underpaid, overworked, badly housed members of the profession—the assistants in general practices—live?

Surely an average remuneration of £350 per annum, and a working day of twelve hours with repeated and frequent night work, and with but one free afternoon a week—and often not even that—is a state of affairs that should not be permitted to exist?—I am, etc ,

September 21st EX-ASSISTANT

Obituary

W H A JACOBSON, M Ch Oxon, F R C S,

Consulting Surgeon to Guy's Hospital

We had to announce with much regret in our last issue the death on September 14th, at Lordine Court, Ewhurst near Hawkhurst, of Mr W H A Jacobson, M Ch, F R C S, consulting surgeon to Guy's Hospital

Walter Hamilton Acland Jacobson was born at Oxford in 1847 he was the second son of the Rev William Jacobson, then Public Orator of the University and Vice Principal of Magdalen Hall, soon afterwards Regius Professor of Divinity, and eighteen years later consecrated Bishop of Chester He was educated at Winchester and Corpus Christi College, Oxford, where he took a second class in Moderations and graduated with first class honours in Natural Science in 1869 Soon afterwards he entered Guy's Hospital Medical School took the M R C S in 1872 and became F R C S in 1875 Many years later, when the M Ch degree was established at Oxford, he felt it his duty to sit for this examination before he could conscientiously examine for it In the course of time he was appointed demonstrator of anatomy, assistant surgeon, and teacher of operative surgery at Guy's Hospital, and he rapidly developed into a wonderful teacher of anatomy and surgery He was assistant surgeon for over twenty years full surgeon for three and consulting surgeon for nearly twenty years He was also surgeon to the Royal Waterloo Hospital for Children and Women, Waterloo Road



W H A. Jacobson

Photograph by] [Speaight Ltd London

No man ever gave more devoted and loyal service to his medical school and hospital than Mr Jacobson His work at Guy's came before everything else During "take in" or when he was in Clinical" he was often in the wards by 7 a.m, even though he had been operating late at night He frequently walked to the hospital from Great Cumberland Place His lectures on anatomy were extremely popular because he had the gift of making the dry bones live" his apt surgical allusions showed the great importance of anatomy in practical surgery He prepared these and his surgical lectures with the greatest care and generally arrived a long time beforehand and covered several blackboards with beautifully written and accurate notes and excellent drawings He often distributed printed notes of his clinical lectures, which men treasured for many years His surgical lectures and demonstrations were crowded, for his brilliant intellect, extensive knowledge, fascinating personality, and scintillating wit and humour made everything he said interesting and memorable Men frequented his lectures, not only to gather sound knowledge and to be signed up," but also to obtain mental refreshment and stimulation Like the great teacher he was, he took pains to make everything clear to the dullest member of his class For twenty years his "Out-patients" were most instructive and amusing, they were packed with students to the last His kindness, sympathy and generosity to his hospital patients were so extraordinary that many of them walked long distances to see him and to show themselves years after they had completely recovered

His love for the students was deep and genuine he helped them in all sorts of ways, often without thought or any reward 'Pom's" personal ascendancy over his pupils was so remarkable that he could say what he liked to them He told them the blunt truth and exercised his ready wit and sarcasm upon them, but he never meant any harm by it The men realized that it was all for their good, and they loved and feared him in return, some of them were a little hurt because he was rude to them, thinking that he did not notice them, but 'Pom' knew full well that they did not need any special attention

Jacobson's boundless energy and great literary ability enabled him to write his unrivalled book *The Operations of Surgery* afflicted as he was for many years with severe insomnia, he made good use of the time it afforded him and did most of his writing after waking in the small hours of the morning This book was the outcome of a strong belief which he had held for many years that a work on operative surgery which aimed at being more comprehensive in scope and fuller in detail than those already published would be of service to many who had recently been elected to hospital appointments and to those who were working for the higher examination The first edition of this book appeared in 1888 and exceeded beyond all expectation for its wealth of clinical experience its accurate and critical descriptions of operations and its sound common sense made it indispensable to every surgeon It is probably the best book ever written on general operative surgery and has run through six editions the last of which appeared in 1915 Jacobson wrote another good book on *Diseases of the Male Generative Organs* published in 1893 and he revised several editions of John Hilton's great work on *Rest and Pain* His contributions to the *Guy's Hospital Reports* were numerous and valuable and lucid and charming in style He also wrote some of the best articles for Holmes's *System of Surgery* and for Heath's *Dictionary of Surgery* Through his writings Jacobson became known all over the world and many medical men came to see him and his work at Guy's Hospital It was a pity that he had to wait such a long time before getting his beds He was on the Court of Examiners of the Royal College of Surgeons for some years and he also examined for the University of Oxford

We are indebted to Mr P P Powlands surgeon to Guy's Hospital for the following personal tribute

When I first knew Jacobson over thirty years ago he was assistant surgeon and lecturer in anatomy and at the height of his fame and power He presented a distinguished and striking figure A little over middle age his hair was already white and scanty he was of medium height rather thin light and extraordinarily quick and active his step was peculiarly springy His forehead was high and very prominent his face was lean and expressive He was a great walker and believed in taking plenty of exercise to keep himself fit Above all Jacobson was a character and a genius for both had an innate capacity for hard work pains combined with great natural ability and all his work was very human and apparent fruit of conscious and eccentricities He was the hero of numerous stories which are still told where Guy's men foregather Stern austere in manner he appeared to be a martinet but in reality was a most genial and sympathetic soul Once a stranger misled by his distinguished appearance mistook him for a famous knight and asked "Are you

Sir ——?" "No, sir," was the reply, "just common clay" He had a great contempt for anything that sounded false or savoured of self-advertisement, but he was very quick to discover merit and scrupulous in giving credit for good work done In short, he was a man of unblemished character, high ideals, great attainments, and lovable personality, somewhat capricious in his temper, he was *not* always easy to understand Too honest to suffer fools gladly, he must have found his ready wit somewhat of a hindrance to him in his private consulting practice, with the result that he did not reap quite as well as he sowed But after all, although he was full of honest ambition, *Jacobson never did anything for gain*, but rather for good

Somewhat late in life he was happily married, but the tragic loss of his son and only child, who was accidentally drowned in 1905, cast a shadow over his later years and led to his complete retirement from the profession which he had adorned The rest of his life he spent at his country house at Ewhurst in Sussex, devoting himself to his wife, his garden, and his poor neighbours He was very good and kind to the children, and had a great and lasting influence over them On Sundays he taught them the Scriptures, with the aid of wonderful pictures, and immediately afterwards taught them how to shoot or play games They adored him in return and made his latter days happier Those who had the privilege of visiting him at Lordine Court can picture him still in his beloved garden, suitably but wonderfully clad, bending to his toil, proudly showing a rare and beautiful plant or bringing a weakling to a better place in the sunshine

An old pupil, house-surgeon, and friend, Dr John Fred Briscoe writes

The death of Mr W H A Jacobson creates in many of his old pupils feelings of sentimental respect and regard The son of the late Bishop of Chester, he brought to bear on his work a nobleness of character which was unique He possessed the highest sense of duty to the profession which he adorned Those who had the honour of being his house-surgeons regarded him as an exemplary teacher imbued with the faculty of personal inspiration None but those with similar temperamental qualities sought his disciplinary advice, but he exacted from them a complete return of their services, both in and out of hospital Mr Jacobson steered the course of not a few in the way in which their professional abilities best fitted them in their future careers And his thoughtfulness and thoroughness were the advantageous assets which he passed on to others He objected very strongly to irregular manners and particularly to the use of unparliamentary language In fact, being finished himself, he expected the same polish from those who served under him As surgeon to the Royal Waterloo Hospital for Children and Women he was instrumental in raising it to a higher standard of excellence than it had hitherto attained Following in the footsteps of John Hilton, he reproduced the work of that great surgeon, *Rest and Pain*, besides his own standard book on *Operations of Surgery* Not least, he was a disciple and admirer of Dr Hilton Fagge, author of *Principles and Practice of Medicine*, nephew of John Hilton and one of the hardest worked physicians Guy's ever had His resignation at Guy's Hospital was prematurely the outcome of a family calamity, which caused his complete retirement His was the motto *Dare Aude*

SIR CHARLES CAMERON, Bt, M D, M Ch, LL D,

Formerly Member of Parliament for Glasgow

We regret to announce the death of Sir Charles Cameron, Bt, on October 2nd, at Englefield Green, Surrey at the age of 83 For twenty-four out of twenty-six consecutive years he was one of the representatives of the city of Glasgow in Parliament, and during that period became one of the most active and prominent of the private members of the House of Commons

Charles Cameron was the son of John Cameron, a newspaper proprietor of Glasgow and Dublin He was born on December 18th, 1841, in Dublin, and was educated first at the Madras College, St Andrews, and later at the University of Dublin At Trinity College, Dublin, he was senior moderator and gold medallist in 1862, and gained first place in the final medical and surgical examinations of that year He graduated M A and M D in 1865 and received the degree of LL D in 1870 He continued his medical studies in Paris, Berlin, and Vienna Cameron's ample professional qualifications, however, did not lead him into the practice of medicine, for in 1864 he became editor of the *North British Daily Mail*, a Glasgow periodical of which his father was part proprietor During the ten years of his editorship he entered more and more into the public life of Glasgow, and by the beginning of the seventies his devotion to the cause of social reform, education, and temperance, and his interest in politics, had won for him a name among the more advanced members of the Liberal party in the West of Scotland In 1874 he stood for Parliament and was returned at the head of the poll for the undivided constituency of Glasgow, which at that time had three members When the city was split into separate constituencies, in 1885, he was again elected, and sat as member for the College Division for ten years In 1895 he lost that seat, but from 1897 to 1900 he represented the Bridgeton Division

During his many years of parliamentary life Charles Cameron had the distinction of getting no fewer than nine separate Acts placed on the Statute Book, and in recognition of his many services he was created a baronet in 1893 He was "the father of the sixpenny telegram", he introduced and carried the Inebriates Acts, also the Acts abolishing imprisonment for debt in Scotland, and the Acts conferring the municipal franchise on women in Scotland Other measures introduced by him secured various reforms in the Scottish Liquor Licensing Laws In 1893 he was made chairman of the Departmental Committee on the transit of cattle coastwise, in 1894 chairman of the Departmental Committee on habitual offenders, and in 1895 a member of the Royal Commission on Liquor Licensing Laws

Sir Charles Cameron was the author of many papers and pamphlets on social and political subjects, his occasional medical writings, as might be expected, were addressed rather to the public than to the profession, and dealt with such matters as vaccination and the prevention of cholera He was president of the Health Section of the Social Science Congress in 1881, and of the Public Health Section at the Annual Meeting of the British Medical Association held at Belfast in 1884 His presidential address at Belfast was entitled "The Cholera Microbe and how to Meet It," and was printed in full in the British Medical Journal of August 2nd, 1884, page 233 In it he gave a scholarly account of recent research into the habits and peculiarities of the cholera bacillus In view of the interest which the question was then exciting, especially in connexion with the criticisms of English observers on the researches of Robert Koch, the address was reprinted at the close of 1884 in the form of a shilling pamphlet Another medical distinction in which he took pride was the gold medal of the Dublin Pathological Society In 1895, when the break in his parliamentary career took place, he was presented with his portrait by a wide circle of friends and admirers in recognition of his high personal character and his services to the city of Glasgow He was for many years a justice of the peace, and in 1894 was appointed a deputy lieutenant of the county of the city of Glasgow

Sir Charles Cameron married twice He is survived by his second wife, one daughter, and a son, born in 1903, who succeeds to the baronetcy

HENRY GERVIS, M D, F R C P Lond,

Consulting Obstetric Physician, St Thomas's Hospital

Dr Henry Gervis, who died on September 25th, was born in 1837 at Tiverton, Devon He was the eldest son of Mr F Shorland Gervis, a medical practitioner of that town He was educated at Taunton School, and while there gave evidence of the mental capacity that afterwards distinguished him In the school prize list of Christmas, 1852, he is recorded as having won the first prizes in Hebrew, Greek, Latin, history, chemistry, and German He received his medical education at St Thomas's Hospital, and there continued his habit of prize winning, and ended his career as a student by gaining the Treasurer's medal He also

obtained a medical exhibition and gold medal for anatomy and physiology at the University of London After obtaining the M R C S diploma in 1858, he graduated M B Lond in 1860 and proceeded M D in the following year He became M R C P in 1862 and was elected F R C P in 1874 Dr Gervis became successively assistant obstetric physician, obstetric physician, lecturer on midwifery and diseases of women, and consulting obstetric physician to the hospital His connexion with St Thomas's began when the hospital was situated in St Thomas's Street, continued through its temporary sojourn in the old Surrey Gardens, and was completed in the present building on the banks of the Thames He commenced practice in St Thomas's Street, and rapidly built up an extensive connexion In 1879 he removed to 40, Harley Street, and there became widely known as a consultant in gynaecological cases His courtly presence and charm of manner, combined with his vast stores of knowledge and great practical experience, made his advice eagerly sought for in his own specialty, and endeared him to an ever increasing circle of patients The cares of his busy practice left him scant leisure for writing, and beyond some brief contributions to the medical press, he has left no permanent literary memorial of his work, but his painstaking and accurate method of teaching must have left its impress on many generations of medical students

In 1899 Dr Gervis retired from practice and went to live at Hillingdon Heath near Uxbridge There his energy found vent in much public work, and he became a magistrate for the county of Middlesex Eight years later he removed to Bath, where he continued to reside until his death At Bath he took a keen interest in the Royal Mineral Water Hospital, of which institution he became a vice-president, in the District Nurses Institute, the now defunct Bluecoat School, and many other charities He took a great interest in antiquarian research, and in the transactions of the Huguenot Society, being descended on his mother's side from a Huguenot family He was an enthusiastic and learned gardener

Dr Gervis married in 1860 Phoebe Louisa daughter of the late S K Pollard, Esq, of Taunton Mrs Gervis predeceased him in 1918, after fifty-eight years of an ideal married life He leaves one daughter and one son, Dr Henry Gervis of Brighton

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Dr Edgar Reid, who died on September 19th aged 59, received his medical education at Guy's Hospital He obtained the qualifications M P C S, L P C P in 1894, and the greater part of his professional life was spent in Swansea, where he was honorary gynaecologist at the Swansea Hospital During the war he was in charge of the 33rd War Hospital at Cardiff Throughout his life he was an enthusiast in sport, in Rugby football he was the captain of the Guy's Hospital and Swansea teams, playing three-quarter for both He also won distinction as a batsman in cricket, and was captain of the Swansea XI several times In 1896 he took an active part in the formation of the Pennard Golf Club, and was both captain and secretary on one occasion he was the runner-up in the Welsh golf championship He leaves a widow and one daughter A colleague writes "Deliver us from mean hopes, from fear and favour, and grant that we here before Thee may finish what remains of our course without dishonour to ourselves or hurt to others" This final prayer at the graveside so truly expressed the outstanding attribute of the friend whom we accompanied to his last resting place No one who came in contact with Edgar Reid, even if only for a short period, could imagine him stooping to anything mean or failing in his obligations In his varied pursuits he gave of his very best As a consultant in gynaecology he gained great success in an extensive practice by his operative skill and kindliness, which won for him the confidence and respect of his patients and the whole hearted support of those who worked with him, doctors and nurses alike As an athlete he had outstanding ability, excelling in many branches of sport He was held in great admiration as an exponent and he was as much appreciated for his generosity as an opponent, quick to express admiration of the prowess of any who defeated him, and unstinted in his praise of the skill of those whom he overcame He was a sport man in the noblest sense of the word He never harboured a lurking grudge nor a dishonourable thought Death has robbed us of a loyal friend and a most lovable colleague "Every heart that has beat strong and cheerfully has left a hopeful impulse behind it in the world, and bettered the tradition of mankind"

Dr John Charles Harris died on September 21 at Ramsgate, where he had lived since his retirement from practice nineteen years ago He was born at Chipping Norton, and received his medical education at Westminster Hospital, taking the diplomas of M P C S Eng 1859 L M 1860, L S A 1861 For over forty five years he practised at Croydon He was almost 89 at the time of his death, but during the last twelve months had practically been confined to his bed The death of his wife four years ago proved a great blow to him In his younger days he was an excellent raconteur, within a few months of his death, too, he could always be roused, and would chuckle like a boy at tales of the Heythrop hounds at Chipping Norton, the Bicester and Whaddon Chase pack We are indebted to Dr Swindale of Ramsgate for these few notes

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The well known Swedish clinician, Professor Frithiloff Lennmalm, has recently died at Stockholm, at the age of 66

Dr Tommaso de Amicis, the *doyen* of Italian dermatologists and formerly director of the clinic of dermatology and syphiligraphy at Naples, has recently died

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Dr Charles Gopis a leading Brussels oto-rhino-laryngologist has recently died

Universities and Colleges

UNIVERSITY OF LONDON

London Hospital Medical College

The following awards are announced —University Scholarship in Anatomy and Physiology open to Students of the Universities of Oxford and Cambridge (£15) J G A Davel (Trinity College Oxford) Entrance Scholarship in Science (£100 Mr E A Hunter Epsom Scholarship (Free Medical Course) C E H Turner

St Thomas's Hospital Medical School

The following scholarships have been awarded Entrance Arts Scholarships (1924) First (value £50) J A G Bird second (value £40) J G Dathan Entrance Science Scholarships (1924) First (value £150) T H Wilson second (value £60) A M Easton Entrance University Scholarship (1924) (Value £100) C L Tucker (Trinity College Cambridge) Proxime Access to V B Wigglesworth (Caius College Cambridge) William Tite Scholarship (£25), H C Trowell

UNIVERSITY OF WALES

The following candidates have been approved at the examinations indicated

Final M B B Ch. (*Pathology and Bacteriology*).—Annie E C Davies D J Davies T W Davies R W Edwards Dilys Jones T Jones W H M Jones I O Martin H G S M Rees J D Williams J H Williams W B William

* With distinction.

The Services

ROYAL NAVAL MEDICAL SERVICE.

The Gilbert Blane Medal

Surgeon Lieutenant Commander Harold B Paddick D S O, R N has been awarded Sir Gilbert Blane's Gold Medal He having obtained a first-class certificate at the examinations held in last for promotion to the rank of Surgeon commander

DEATHS IN THE SERVICES

Lieut Colonel William Freed Thomas Madras M Ind Serv (ret) died on August 6th aged 71 He was the son of William Thomas printer of New Town Madras and was educated at Madras Medical College and at University College London He took the L S A in 1873 and the M P C S in 1879 and entered the I M S in the year He became Lieutenant-colonel after twenty

years' service and retired on June 22nd, 1909 He served in the Rumpa rebellion of 1879 80, and in the Burmese war from 1886 to 1889, when he took part in the operations of the 4th and 6th Brigades, and received the *frontier* medal with two clasps

Major Dugald Nairne Anderson, Indian Medical Service (ret) died on July 11th, aged 51 He was educated at the University of Edinburgh, where he graduated M B and C M in 1896 He entered the I M S in July, 1899, and became major after twelve years' service, he retired on account of ill health on September 1st, 1912 He served in the China war of 1900, receiving the medal

Major William John Masterson, Indian Medical Department, died on August 9th, aged 52 He was educated at the Calcutta Medical College, entered the I M D in February 1892 received his first commission as lieutenant in December, 1914, and reached the rank of major in February, 1922 He served on the North West frontier of India in the Tirah campaign of 1897 98, receiving the medal with two clasps

Lieut Colonel Anthony Hickman Morgan, D S O, J P, D L, R A M C (ret), died at Cowes Isle of Wight on September 29th aged 66 He was born in Dublin on June 29th, 1858, the son of the late Captain Anthony Morgan, 95th Foot, of Shibbereen, co Cork, and was educated in Dublin, where he took the L R C S I and L K Q C P in 1880 Entering the army as surgeon on February 5th, 1881, he became surgeon major after twelve years service, and retired on February 12th, 1895 Though he was in the army only fifteen years he saw a great deal of war service in that time Egypt, 1882, medal and Khedive's bronze star, West Africa, expedition up the Gambia river against the native chief, Fodey Kabba, 1891 92 medal with clasp, West Africa, 1893 94, operations against the Sufas, mentioned in dispatches, *London Gazette*, February 28th, 1894, expedition in Gambia against Fodey Silah mentioned in dispatches *London Gazette*, May 4th, 1894 clasp and D S O, and, after retirement South African war, 1899-1900, on hospital ship *Princess of Wales* mentioned in dispatches *London Gazette*, June 17th, 1902 Queen's medal with clasp On July 7th 1897, he was appointed major and honorary lieutenant colonel of the 17th (Volunteer) Battalion of the Rifle Brigade In 1904 he served as high sheriff of County Cork, and in the same year became a Knight of Grace of the Order of St John of Jerusalem In 1906 he unsuccessfully contested the Isle of Wight as Conservative candidate He was also a J P and D L for County Cork, an I R G S and F Z S In 1896 he married Mary, daughter of the late C E Bagnell, of Clonkennan, Limerick

Surgeon Captain Horace Bruce Marriott, O B E, R N (ret), died at Epsom on September 28th, aged 61 He was the son of the late Rev C Hardwick Marriott, vicar of Walton cum Felixstowe, and was educated at Guy's After taking the M R C S and L R C P Lond in 1888 he entered the navy, becoming surgeon commander on February 11th 1907 and retiring with the rank of surgeon captain on February 18th, 1918

Surgeon Lieutenant Commander William Leckie Coulhe R N died suddenly at Southsea on September 15th aged 37 He was the youngest son of the Rev James Coulhe of Pencaitland, and took the Scottish triple qualification in 1915 after which he entered the navy attaining his recent rank on April 12th, 1921 He was serving on H M S *Vernon* at Portsmouth

Medical News.

THE Home Secretary has appointed Sir Archibald E Garrod, K C M G, M D, F R S, to be a member of the Advisory Committee on the Administration of the Cruelty to Animals Act, 1876, in the place of Sir H Bryan Donkin, M D, who has resigned

THE Royal Commission on National Health Insurance announces that its meetings will be resumed on October 16th, and that any persons or bodies desiring to submit evidence should communicate, without delay with the Secretary of the Commission, Mr E Hackforth, Ministry of Health, Whitehall, London, S W 1

THE St Thomas's Hospital old students' dinner will be held at the Prince's Restaurant, Piccadilly, on Friday, October 24th, at 7 o'clock for 7 30 The chair will be taken by Dr Seymour Taylor The price of the dinner, inclusive of stewards' fee, is 15s, to be paid at the restaurant Decorations will be worn The honorary secretaries are Mr R H O B Robinson and Dr D G Leys

THE dinner of the past and present students of University College Hospital, London, which was postponed, will be held on Friday, October 24th, at 7 30 p m, at the Hotel Cecil Tickets can be obtained from Mr Gwynne Williams and Dr T R Elliott at the medical school

THE thirty third French Surgical Congress opened on October 6th, at the Paris Faculty of Medicine, under the presidency of Professor Tuffier The audience included a delegation of Polish surgeons

DR FRANK CLARE WILKINSON, dental tutor in the dental school of the University of Liverpool, has been appointed to the newly created chair of dental science in the University of Melbourne Dr Wilkinson graduated B D S Liverp in 1912, M B, Ch B in 1915 and M D in 1917

A COURSE of four public lectures on water supply and its purification will be given at University College, London, W C, by Professor S L Rashkovich, M D, Director of the Technical Sanitary Institute of Petrograd, on Fridays, October 10th, 17th, 24th, and 31st at 5 30 p m Professor H R Kenwood will preside at the first lecture. Tickets of admission are not required

AT the third of the series of post graduate lectures on cancer, to be delivered in the West Lecture Hall of the Royal Society of Medicine on October 17th at 5 30 p m, Mr J Swift Joly will speak on cancer of the bladder These lectures are open to all members of the profession without fee A three weeks' intensive course in laryngology, rhinology, and otology will begin on October 13th at the Central London Throat, Nose, and Ear Hospital, and will occupy the whole of each day, except Saturday The third week of the course in psychological medicine at the Bethlem Royal Hospital begins on October 14th On October 14th and 16th Dr G C Low and Dr Manson Bahr will give clinical demonstrations on tropical medicine at the London School of Hygiene and Tropical Medicine Full particulars of these courses may be had from the Secretary of the Fellowship of Medicine, 1, Wimpole Street, W 1

THE fifth International Congress of Public Health Nursing commenced at Bedford College on October 1st This course is organized by the League of Red Cross Societies in collaboration with Bedford College and the College of Nursing, and its aim is to train nurses for executive and teaching positions under municipal, State, or Red Cross societies

DR A G WILKINS, on his retirement from the office of senior medical inspector of schools to the Staffordshire Education Committee, has been presented by the members of the staff and friends with a gold wrist watch, a travelling clock, and medical books

A LYCH GATE, erected at the entrance to Ludgershall churchyard, was dedicated on September 25th as a memorial to the late Dr James Evan Jones, who for many years practised in the district

AT the meeting of the Society for the Study of Inebriety to be held in the rooms of the Medical Society of London, 11, Chandos Street, Cavendish Square, W, on Tuesday, October 14th, at 4 p m, Professor W L Dixon, M D, F R S, will open a discussion on cocaine addiction Each member and associate may introduce visitors

THE opening meeting of the University College Hospital Medical Society, at which Professor J S Haldane, F R S, of Oxford, is to read a paper on the physiology of acclimatization to high altitudes, has been postponed from Friday, October 17th, till the following Wednesday, October 22nd, at 8 15 p m

THE Fourth International Congress of the History of Medicine will be held at Geneva from July 22nd to 27th, 1925 Sir D'Arcy Power is the *president d honneur*, and the president of the Congress is Dr C G Cumston The general secretaries are Drs A de Peyer and Emile Thomas, both of Geneva A preliminary programme will be issued on December 1st, 1924, and can be obtained from the Bureau de Secrétariat General, 20, rue General Dufour, Geneva

AT a meeting of the Yorkshire Tuberculosis Society on Saturday, October 25th, at 4 p m, at the Tuberculosis Dispensary, Queen's Road, Sheffield, Mr H Morriston Davies, consulting surgeon, University College Hospital, London, will give a lecture, with lantern illustrations, on surgery in the treatment of pulmonary tuberculosis All medical practitioners will be welcome

AT the Gloucester City Police Court on October 2nd Dr W R Hadwen was committed for trial at Gloucester Assizes on a charge of manslaughter arising out of the death of a child named Nellie Burnham, aged 10, who died on August 10th Mr Micklethwait, who appeared for the Director of Public Prosecutions, in opening the case said that the allegation of the prosecution was that the child died from diphtheria and pneumonia, and that her death was caused or contributed to by the gross negligence of the defendant Evidence was given by the mother of the child, by Dr L S Ellis who attended the child during the last day of her life, by Dr W Washbourn, who made the *post mortem* examination, by Dr R B Berry, M O H for Gloucester and medical superintendent of the Infectious Diseases Hospital, and by Sir William Willcox, physician to St Mary's Hospital and assistant physician to the London Fever Hospital, who was called by counsel for the prosecution as an expert witness Dr Hadwen had been already committed for trial on a coroner's warrant on September 12th Bail was allowed, and Dr Hadwen, who was represented by Mr A I Clements, reserved his defence

THE Harveian Society of London will hold a clinical meeting at the Paddington Green Children's Hospital on Thursday, October 16th, at 4.30 p.m.

THE Chadwick Lecture programme for this autumn includes lectures in London on "Defective hygiene and child life," with special reference to the effect produced on growth and development of children by town dwelling and slum areas by Dr Lawson Dick, M.D., F.P.C.S. on "Pats," by Mr Mark Hovell, F.R.C.S. on 'Smoke,' with a review of its causes, its effects on vegetation, fabrics, masonry and metal work and its influence on health and the death rate, by Professor J. D. Cohen, F.P.S., and on "Ante natal and post natal child physiology and hygiene, by Dr W. M. Feldman. Each lecture will be illustrated by epidiascope or lantern slides and among the chairmen will be Sir William J. Collins, M.D., chairman of the Chadwick Trustees, Sir James Crichton Browne, M.D., and Sir Frank Baines. Further information about these lectures which will be free to the public may be had from the secretary at the offices of the trust, 13, Great George Street, Westminster.

THE Tokyo University library, which was destroyed in the great earthquake a year ago, is now being quickly restored, a large number of books having been presented by the Rockefeller Foundation, the Universities of Rome, Germany, Michigan, Columbia and California, educational bodies connected with the French Academy, and other countries, including India, Australia, Holland, and Switzerland.

DR. JAMES F. E. BRIDGER, principal civil medical officer, *has been appointed a nominated official member of the* Legislative Council of the island of Ceylon.

THE Home Secretary has appointed Dr. Sibyl Gertrude Overton to be an Inspector of Factories and Workshops under the Factory and Workshops Act, 1901.

Letters, Notes, and Answers.

ORIGINAL ARTICLES and LETTERS *forwarded for publication are understood to be offered to the* BRITISH MEDICAL JOURNAL *alone unless the contrary be stated.* Authors desiring reprints of their articles published in the BRITISH MEDICAL JOURNAL are requested to communicate with the Financial Secretary and Business Manager, 429 Strand, W.C.2, on receipt of proof.

ALL communications with reference to advertisements as well as orders for copies of the JOURNAL should be addressed to the Financial Secretary and Business Manager, 429 Strand, London, W.C.2. Attention to this request will avoid delay. Communications with reference to editorial business should be addressed to the Editor, BRITISH MEDICAL JOURNAL, 429 Strand, W.C.2.

CORRESPONDENTS who wish notice to be taken of their communications should authenticate them with their names—not necessarily for publication.

Communications intended for the current issue should be posted so as to arrive by the first post on Monday, or at latest be received not later than Tuesday morning.

THE telephone number of the BRITISH MEDICAL ASSOCIATION and BRITISH MEDICAL JOURNAL is Gerrard 2630 (Internal Exchange). The telegraphic addresses are:

EDITOR of the BRITISH MEDICAL JOURNAL, *Attiology, Westrand, London.*

FINANCIAL SECRETARY AND BUSINESS MANAGER (Advertisements, etc.) *Articulate, Westrand, London.*

MEDICAL SECRETARY, *Mediocera, Westrand, London.*

The address of the Irish Office of the British Medical Association is 16 South Frederick Street, Dublin (telegrams *Bacillus, Dublin*, telephone 4737 Dublin) and of the Scottish Office, 6 Rutland Square, Edinburgh (telegrams *Astate, Edinburgh*, telephone 4361 Central).

QUERIES AND ANSWERS.

OBSTINATE CONSTIPATION IN A CHILD.

'MEDICO' asks for suggestions for further treatment in the following case. A boy aged 3 with a history of chronic constipation and recurrent rises of temperature. Prolapse of the rectum occurs at times. The child has been given two tablespoonfuls of liquid paraffin a day with the result that one stool has been passed every other day. He has also had occasional soap-and-water enemas. He has now been put on a mixture containing sodium sulphate, tincture of belladonna and infusion of senna three times a day with liquid paraffin twice a day, and cascara cordial one drachm at night. Abdominal massage is being used, but the bowels are still obstinate and prolapse recurs at times.

ELECTRIC LIGHTING AND HEATING.

"D.M.O." writes: At present I use electricity for lighting on the "flat rate" plan, and I am thinking of adopting it on the "Norwich" system for heating purposes as well. I should be glad to hear the experiences and results of one or two medical men who have tried this system in the house and surgery.

INCOME TAX.

Cash Receipts or Book Debts?

D.L." has retired after thirty years' work in practice. The local inspector of taxes insists that he is chargeable in respect of debts paid to him after retirement.

"An assessment on a practice for a particular financial year is in respect of the profits of the practice *for that year*. It is calculated on a three years' average and is usually based as regards the gross profits on cash receipts rather than on a detailed estimate of the actual of the year's bookings, the method being convenient and yielding, in the long run, the same result. It therefore follows that when tax has been paid on assessments for a number of years to say April 5th 1921, the liability has been accounted for in respect of precisely the same period, and where the practitioner has ceased to exercise his profession there is no valid legal ground for assessing him for subsequent periods in respect of profits which he has, in fact, ceased to earn.

F.K.M." has declined to supply particulars of his book debts, claiming to base his liability on cash receipts. The inspector of taxes has now arranged for estimated assessments in excess of the amount of liability returned.

"The position with regard to the cash receipts basis is that where a practice is in a normal condition the actual receipts year by year approximate to the value of the year's bookings. If the cash receipts basis is displaced the difficulty that immediately arises is to estimate the value of each outstanding book debt—notoriously both difficult and important in the case of a medical practice. The matter was discussed with a leading official at Somerset House at length (see our issue of November 15th 1921, SUPPLEMENT, p. 185) and it was understood that objection to the application of the cash receipts basis would not be taken by the Inland Revenue Department except in abnormal circumstances—for example in the case of a new practice. We suggest that our correspondent should call the local inspector's attention to this fact and ask him what facts he has in mind in treating such cases as abnormal.

Average War-time Concession.

P.O.N. understands that there was an income tax concession to doctors who served as medical officers in the army during the war by which they were allowed on resuming civil practice to treat their army service years as part of the average for assessment. As the pay was generally less than practice earnings the concession might be valuable. The inspector of taxes states that the concession applied only to non-practising officers.

"It is always difficult to speak definitely of a concession, but so far as our information goes the basis of the concession was a recognition that service in the forces was a peculiar form of employment and that as a result where an officer in the R.A.M.C. resigned his commission and took on his pre-war employment—for example as an assistant, he was allowed to average his army pay for the purpose of his civil assessment. We believe therefore that the inspector is correct in stating that the concession did not extend to the earnings of a practice, which technically are not profits of an employment."

Non-medical Profits.

D.C." has been requested by the inspector of taxes to give full details of the profits made by him in his dealings in stocks and shares and asks: "Must I pay income tax on these profits and how do I stand with regard to my losses?"

"Whether D.C. is liable depends on whether he can correctly be said to be dealing in stocks and shares. If he does more or less habitually buy shares with a view to reselling them he is distinguishable from the more ordinary man who buys for investment purposes and may or may not form the intention later of reselling at a profit. In the former case his profits are assessable in the year the result of his transaction is a gain in capital and it is not liable to tax. Assuming that liability attaches to the gains, it follows that relief is due in respect of the losses. Ordinarily this relief operates automatically—that is, the actual amount of liable profit for a year will be the sum of the profits on various successful transactions less the sum of the losses on unfortunate speculations.

LETTERS, NOTES, ETC.

THYMOL FOR THE THROAT.

DR. WILLIAM COPEMAN writes: In the issue of Dr. Paul Gerhardt's paper in the JOURNAL of October 4th he recommends and has administered with success aqueous solutions of thymol in alcohol as a local application in the treatment of throat infections. This seems most remarkable in view of the well-known toxicity of thymol in solution and the empirical and dangerous practice of the necessity for avoiding alcohol when carbolic acid, creosote or cajuput oil are used externally during asthma. I am reminded

given thymol for ankylostomiasis whilst practising in the tropics, but with a wholesome respect for the views of Manson and others (q v) Dr Gethen's suggestion is very risky, to say the least of it, and I warn others against adopting it

STORIES OF PEOPLE TURNING RAPIDLY BLUE

SEVERAL cases have recently been recorded in which the patient turned "blue," and the reports have been gathered together by enterprising reporters into paragraphs which might seem to suggest that the blueness was in each case due to a similar cause This is clearly not the case In a fatal case the medical evidence was to the effect that the cause of death could not be stated in the absence of a *post mortem* examination, it might, for instance, have been acute pneumonia, acute laryngeal oedema, vascular disturbance, pulmonary thrombosis or embolism, heart disease, rupture of an aneurysm, or apoplexy—for example, pontine haemorrhage In children a rabbit bone or other foreign body may set up acute laryngeal spasm, other cases may be examples of acute food toxinaemia In one case poison seems to have been suspected by the coroner Again a deep ebony may be caused by a combination of cyanosis and petechial haemorrhage resulting from toxinaemia One case was a steel worker, and in this instance the discoloration may have been due to gas poisoning True melanosis is a slow process, and the discoloration is rather a sepia brown tending to black, though a bluish tinge might be produced by the sepia or black pigment showing through layers of epidermis In all fatal cases of the kind a *post mortem* examination should undoubtedly be made, as correct determination of the cause of death is desirable from the statistical point of view

SUGAR AND MIGRAINE

DR H BAZETT (Torquay) writes Dr Thomas's letter (BRITISH MEDICAL JOURNAL, September 27th p 598) is interesting and suggestive, but with the complex human mechanism, does it not invariably turn out to be an error to ascribe any one set of symptoms to any one single material cause? May I add my experience to the solution of the problem? I found several of the very worst cases I was called to as a general practitioner occurring in early and late adult life, but dating from childhood, yield entirely to a prescription of the juice of half a lemon, unsweetened, in a tumbler of water, on an empty stomach, night and morning, for the remainder of life In one case, a male breaking of this habit twice in the three years I attended him, led to quick recurrence of the fortnightly attacks I found that in all cases I could get a history of ancestral gout

CONGENITAL PYLORIC STENOSIS IN TWINS

A GOOD example of the close similarity, as it were duplication, sometimes to be observed in twins is contained in two notes published recently of two pairs of twins suffering from congenital hypertrophic stenosis of the pylorus In one instance, reported by H Leslie Moore, both the infants were submitted to Rammstedt's operation (longitudinal incision of the thickened serosa and muscularis down to, but not through, the mucosa) at the age of 4 weeks, both died of respiratory paralysis six and eight days after the operation In the other instance, reported by Herbert H Davis of Omaha (*Journal of the American Medical Association* vol 83 p 686), Rammstedt's operation was performed at the age of 4 and 5 weeks respectively Both infants did well, and about a year later won first prize for twins at a baby show

RESPIRATORY CRISIS IN AN INFANT

DR M L BARST (London) writes that he was called by a midwife to a baby, born two hours previously after a normal labour The baby was somewhat premature (37–38 weeks), but was rather large At birth it cried lustily, but soon afterwards its breathing became very shallow, and the crying was replaced by a feeble crowing Dr Barst found the baby markedly cyanosed with very poor respiration He turned it head downwards when it began to cry well, but on being placed on a pillow the cyanosis returned This was repeated several times Prolonged artificial respiration and a hot bath failed to effect lasting improvement Finally the baby was given an injection of 3 minims of pituitary extract into the buttock The effect was instantaneous the cyanosis disappeared, the respiration became normal, and the quality and volume of the voice became satisfactory Four weeks later the baby was quite well

ABSCESS OF FRONTAL LOBE

DR H W BERNARD (Dublin) writes The case reported in the JOURNAL of October 4th (p 622) ought to be of interest to general practitioners and dental surgeons, since the primary cause of the cerebral abscess was possibly left canine tooth root trouble, with infection of the antrum, purulent catarrh of the turbinates, and nasal mucosa Septic phlebitis and infection of the left frontal sinus may have been present with necrosis of bone, or phlebitis extending to the frontal lobe Pyorrhoea, with its resultant toxaemia may bring about dangerous results, but the upper jaw stumps should, I think, be attended to first, especially long canine stumps, since they approach close to the floor of the antrum

GOAT'S BUTTER

FROM a paper contributed by Mr T Knowles and Mr J C Urquhart to the last meeting of the Society of Public Analysts it appears that owing to the increase in the number of her Is of goats in this country the amount of goat's milk butter now sold is larger than formerly They have made a number of analyses and find that the Polenske value varies from 4 9 to 8 7 This, if interpreted in the light of the usual standards of cow's butter, would erroneously be assumed to indicate adulteration

The Polenske value of a fat is a numerical expression indicative of the proportion of fatty acids which are volatile and insoluble in water When it exceeds the number peculiar to butter fat the excess is interpreted as an indication of admixture with a vegetable fat, such as coco nut oil The Polenske value of the fat of cow's butter is never above 3 An observed Polenske value higher than 3 in goat's butter has not the same significance as in the case of cow's butter Neglect of this fact would lead to an erroneous judgement of the purity of the sample

MECHANICS OF SUCKLING

DR T A MACGIBBON (Christchurch, New Zealand) writes In reply to Dr C J Aitken (July 12th, 1924, p 88) may I state that the tongue *does take part* in the act of suckling More than ten years ago I propounded, in a letter to Dr Logan Turner of Edinburgh, a theory as to the mechanism of suckling in its relation to the moulding of jaws This theory—it is hardly a theory—has been copied almost word for word in Dr McKenzie's book, 1920 edition, on *Diseases of the Ear and Throat* In suckling the orbicularis oris muscle grips the first curve of the breast where are the ampullae The milk is squeezed into the ducts of the teat, which, being erectile, is distended and elongated, and lies between the tongue and the hard palate The final action is compression of the ducts by the tongue against the hard palate and the ejection of the milk on to the posterior third of the tongue occurs just before suckling, and is done to drag the teat or nipple into the mouth, where it is grasped The buccinators, which are used forcibly in true suction, are only rendered tense to act as fixation points for the powerfully acting orbicularis Where the buccinator is used for suction, as in bottle fed babies, the extreme contraction compresses the delicate jaws and causes deformity This is one of the chief causes of jaw deformity

PARTURITION AT THE AGE OF 13

DR J T DOW writes At 6 30 one morning I was called to a confinement, of which I had no previous knowledge, at a remote farm I found a girl, aged 13 years and eight months, beside her on the bed was a fully developed male child, living, and with an evacuated afterbirth attached The vulva was much swollen and oedematous, and protruding from it was a large clot The uterus was well contracted, gentle pressure expelled the clot and controlled the haemorrhage The appearance of the external genitals was then extraordinary, just a trickling of blood from an aperture, the diameter of an ordinary pen, in the surrounding swollen mass Birth had obviously taken place at least one hour before The pulse was 110 and the patient had a moderate degree of shock The history of the parturition was pitiful she had come home from the village school in pain forty hours previously and had lain in bed unattended and terrified till my arrival, ignorant of her pregnancy and the reason for her pain I had her transferred at once to the local Poor Law Institution, there, under care and kindness, her mental state improved There was no perineal tear, but some intravaginal sloughing She and her baby, we glhing 6 lb, are recovering normally, and are yet another instance of the wonderful care of Mother Nature

PNEUMOCOCCAL POLYARTHRITIS

DR T GERALD GARRY (Cairo) writes with reference to Dr Gubb's paper Cases similar to that he describes were very frequent as a sequel to bacillary dysentery (from which apparently his patient suffered) among soldiers in the Near East during the war, and generally recovered under appropriate antidysenteric treatment, without ever ending—in uncomplicated cases—in suppuration I think it extremely probable that examination of the faeces would have cleared up some doubtful points, and that to the "numerous pneumococci" could not be attributed the *jons et origo* of the malady

WHISKY AND CANCER

DR JAMES JEFFARDS, (Kegworth, Derby), writes Malignant disease being very prevalent in my district, many cases have come under my care in twenty five years of general practice During this time I cannot recollect one case occurring where the subject was a whisky drinker, in beer drinkers occasionally, but the majority of cases occurred in people who were either total abstainers or very moderate, and during the past few years the disease has increased with alarming rapidity I wonder if this increase is in any way due to the increased duty on whisky which practically prohibits its extensive use I would be interested to know if any other general practitioners have had a similar experience to mine, for if it could be proved that whisky was a preventive it might open up a field for experiment in treatment with whisky or one or more of its constituents

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VACANCIES

NOTIFICATIONS of offices vacant in universities, medical colleges, and of vacant resident and other appointments at hospitals, will be found at pages 37, 41, 42 and 43 of our advertisement columns, and advertisements as to partnerships, assistantships, and locumtenencies at pages 38 39, and 40

A short summary of vacant posts notified in the advertisement columns appears in the *Supplement* at page 132

EPITOME OF CURRENT MEDICAL LITERATURE.

Medicine.

263. "Spasmodic Diphtheria.

G W Ronaldson (*Brit Journ Child Dis*, July-September, 1924, p 182), who records two illustrative cases alludes to the cases of diphtheria associated with symptoms of irritation of the nervous system which have been described by French writers under the name of "diphterie spasmogene" The irritation may take the form of meningism or of pseudo tetanic seizures Previously recorded cases may be classified in three groups. The first consists of cases in which no diphtheritic membrane is found and the clinical picture is that of an acute affection of the nervous system Though no infective agent can be demonstrated in the cerebro-spinal fluid, diphtheria bacilli can be cultivated from the saliva, naso-pharynx, or conjunctiva In such cases the initial diagnosis is usually cerebro-spinal meningitis, rabies, or tetanus In several instances the symptoms rapidly subsided after injection of diphtheria antitoxin The second group, of which Ronaldson s first case is an example, consists of cases of clinical diphtheria accompanied by spasmodic nervous symptoms In the third group to which Ronaldson s second case belongs the signs of nervous irritation appear after disintegration of the false membrane Ronaldson considers that the number of well authenticated cases on record is sufficient to warrant the statement that symptoms of nervous irritation may be met with in cases where diphtheria seems to be the only possible explanation, but maintains that further proof is necessary before we can admit a diphtheritic origin for symptoms met with in subjects who show no clinical signs of diphtheria Commenting on this paper M Critchley (Ibid, p 188) under the title of post diphtheritic "chorea, records a case in a girl, aged 14, in whom symptoms of chorea developed after an attack of diphtheria in association with the ordinary phenomena of diphtheritic paralysis—namely nasal voice, paresis of accommodation and generalized polyneuritis Recovery took place within two months Critchley is of opinion that rheumatic chorea and polyneuritis could be excluded as well as epidemic encephalitis, and alludes to a similar case reported by Globus in a woman aged 29 who developed choreiform movements together with myoclonus as a complication of vaginal diphtheria Klebs Loeffler bacilli were obtained in cultures of the cerebro-spinal fluid There was no evidence of paralysis Mental changes supervened and death took place The autopsy showed definite acute inflammatory changes localized to the basal ganglia

234 Arterial Hypertension in Acute Nephritis

C Lian and J Haguenau (*Arch Mal du Coeur, des Vaisseaux et du Sang*, August, 1924 p 506) state that although much has been written on the cardio vascular complications of chronic nephritis since Bright s early researches, comparatively little attention has been paid to those accompanying acute nephritis Lian and Haguenau found in 7 soldier patients that the maximum arterial pressure was definitely increased in 6 and the minimum pressure in 5 In one case the blood pressure was only moderately high—a patient aged 20 years had a maximum pressure of 148 5 mm Hg with a minimum pressure of 138 He was not seen until a month after the onset of the acute nephritis, and it is probable that at the onset the blood pressure was considerably higher and had fallen progres sively None of these patients showed any signs of pre existing chronic nephritis In another series of observations on 11 soldiers only 3 showed manifest hypertension after the disappearance of acute symptoms Lian and Haguenau place the e cases in three categories a certain number recover completely in some a 'simple albuminuria persists without evidence of renal changes or hyperpiesis in other patients chronic nephritis, with or without hyper tension, supervenes but all authorities agree that this is rare The authors conclude that (1) acute or chronic nephritis is, in certain cases the exciting cause of transitory or permanent arterial hypertension (2) there are both transitory and permanent cases of hyper ension not due to nephritis 3) there are cases in which arterial hypertension either transien or permanent coincides with the bacterial in fection or with the intoxication which produces an acute or chronic nephritis Hyperpiesis may result from a dis turbance of the endocrino sympathetic system from certain toxins or toxic products in the absence of a renal lesion from certain nervous disturbances either direct or reflex or, lastly from the interaction of two or more of these proces es

265 Recovery in Pneumococcal Meningitis.

W Lieber (*Klin Woch*, September 2nd, 1924, p 1622) refers to the gravity of the prognosis in pneumococcal meningiti but cites cases of recovery in which the diagnosis had been confirmed bacteriologically Eugen Fraenkel states that 2 per cent of patients recover while Lubarsch estimates the ratio at 1 per cent The results of specific serum therapy have been generally disappointing, Schlesinger reports, however, three recoveries following administration of pneumococcal serum Morgenroth s optochin successfully used in very dilute (1 in 500 000) solution in pneumococcal keratitis has been recommended by several authorities in pneumococcal meningitis Wolff and Lehmann claim to have cured an infant, aged 8 months, by repeated intrathecal and intraventricular injections of optochin Loewe, Meyer, and L Valentin have recorded recoveries after its use, and Landsberger and Leschke recommend relatively large intrathecal doses of optochin Pieder records the following case which suggests that these writers have underestimated the therapeutic value of the simultaneous lumbar punctures A woman, aged 24 who had suffered from chronic double otitis media with perforation of both membrana tympani but who was otherwise healthy sustained a contused wound on the left side of the forehead subsequently she complained of headache, tinnitus, and irritability Four days later the eyelids were swollen and there were subconjunctival ecchymoses, she was deeply flushed with labial herpes and there were physical signs of early consolidation in the left lung The Kernig sign was positive the Babinski negative There was definite hyperaesthesia of the skin but no exacerbation of the chronic otitis media. The blood culture was sterile a blood count showed 10 000 leucocytes per cubic millimetre, the differential count was normal The Wassermann reaction of both the blood and the cerebro-spinal fluid was strongly positive Pneumococci were recovered from the spinal fluid Three further lumbar punctures were performed on alternate days 20-30 c cm of fluid was removed on each occasion and 20 c cm of physiological NaCl solution was twice injected into the spinal canal The temperature fell to normal on the twelfth day after the fall the headache and all other symptoms of meningitis disappeared, and the patient made a complete recovery Pieder observes that if optochin had been used in this case the *post hoc ergo propter hoc* argument might have been used The case shows that untreated pneumococcal meningitis is not necessarily fatal.

266 Small Doses of Iodine in Graves s Disease.

J Wahlberg (*Finska Läkaresällskapets Handlingar*, May-June 1924, p 385) confirms the observations of Neiser, published in 1920 which suggested that iodine may be beneficial as well as injurious in Graves s disease The author finds the problem is largely one of dosage and he gives even smaller doses than those recommended by Neiser Wahlberg gives iodine in the form of potassium iodide a 1 in 20 aqueous solution containing 0 0033 gram of potassium iodide per drop he does not give more than 15 drops in the day This treatment was given in eight cases of hyperthyroidism and in one case of vasomotor neurosis with a goitre The basal metabolism was investigated with Krogh s apparatus and there was in every case at first a reduction In most cases the pulse became slower and the patients felt better But the ultimate results were not so satisfactory as those of Neiser indeed there was only one case in which marked improvement was maintained. In two cases the disease became worse and this was probably on account of the treatment, a cumulative action of the drug having established its early beneficial effects But these early effects were so promising that the author considers this line of treatment deserving of further research

267 Measles without Eruption.

E Krasemann (*Monatsschr f Kinderheilk* 1924 xxvii p 513) remarks that cases of measles with an ill marked or entirely absent eruption have been seen more frequently since the introduction of the prophylactic use of convalescent serum In the first half of 1923 there was a severe outbreak of measles at Rostock and Krasemann noted that the eruption was absent in about 3 per cent of all the cases the diagnosis of these being based on exposure to infection the appearance of Koplik spots and the subsequent spread of infection Two such examples of this kind occurred in three brothers aged 2, 6 and 7 years respectively The symptoms in each case were nasal discharge conjunctivitis, cough irregular temperature slight bronchitis, and in two cases typical Koplik spots

parts of both thighs, apparently following the course of the circumflex iliac vessels The extravasation was blue red in colour, was neither tender nor sensitive to pressure, and when the true period began gradually disappeared The diagnosis from a traumatic extravasation in this case was easy, as there was no history of trauma, no tenderness, and the lesion appeared with absolute regularity eight to ten days before the beginning of each period Hirschberg considers the case one of complementary rather than vicarious menstruation, and ascribes the condition to increased permeability of the vessel walls, due to some disturbance in the endocrine equilibrium, though he is unable to explain why one vessel should be alone affected.

279 **Diagnosis of Sterility**

M HUHNER (*Amer Journ Obstet and Gynecol*, July, 1924, p 63) describes the tests which he employs in cases of sterility Microscopic examination of an unstained condom specimen of normal semen shows very many spermatozoa moving with extreme rapidity, if on early inspection the spermatozoa are few, dead, absent, or moving very feebly, and numerous Bottcher's crystals are present, the semen is certainly abnormal In cases of azoospermia thus detected surgical treatment of obstruction in the epididymis is only justifiable, according to Huhner, after the fluid from the testicle has been examined also, if numerous active spermatozoa are present in this the diagnosis of obstruction is correct and operation is indicated Absence of spermatozoa in the aspirated fluid may be due to an attack of mumps or to severe gonorrhoeal orchitis, in such cases operation would be useless A further test described by the author is that of microscopical examination of the fluid removed by pipette from the cervix uteri as soon as possible after coitus, the presence of numerous live spermatozoa shows that the male semen is not at fault, that the position of the cervix is physiologically suited for impregnation, and that the cause of sterility may reside higher in the female genital tract than the cervix A positive result of this test serves to exclude from responsibility for sterility (1) anatomical causes in the male, (2) premature ejaculation, (3) a possibly inimical action of the vaginal or cervical secretion on spermatozoa If the condom specimen contains live spermatozoa and the cervical specimen dead ones the female genital secretions may be unduly acid, and if then coitus be preceded by an alkaline douche, the cervical specimen may be found to contain live, active spermatozoa, thus furnishing a clue to treatment The finding of living spermatozoa in the fundus uteri two or three days after coitus, when spermatozoa in the cervix are dead or absent, signifies that sterility is due to (1) a small infantile uterus, (2) tubal obstruction, (3) ovarian abnormalities, or (4) disharmony between the germinal cells of the husband and wife The performance of the last mentioned test will indicate when operations for dilatation, curetting, or correction of uterine malposition are bound to be fruitless

280 **Menorrhagia and Radium Therapy**

R CROUSSE (*Gynécol et Obstet*, 1924, ix, 6, p 539) regards radium therapy as the last treatment to be tried, before resorting to hysterectomy, in severe and intractable cases of uterine bleeding in young women It has the advantage that some chance of child bearing is preserved, and the suggestion of recent experimental work, such as that of Lacassagne, that radiation in small doses may lead to deleterious effects on the ova and therefore the offspring, lacks confirmation at present He reported to the Belgian Gynaecological and Obstetric Society three cases resistant to other modes of treatment, in which small doses of radium, filtered through platinum and lead, were given by the vagina In the first patient, a nulli para aged 22, the second, third, and fourth next expected periods were missing and the subsequent ones were normal The second patient, a nullipara aged 28, had normal menses two months after treatment, and ten months later became pregnant and went to term In the third patient, a single woman aged 27, surgical treatment was contraindicated by reason of a haemophilic tendency two radium applications were followed by amenorrhoea, but by rectal and other apparently vicarious haemorrhages

Pathology.

281 **Action of Insulin on Blood Coagulation.**

LA BARRE (*Journ de Méd de Bordeaux et du Sud Ouest*, July 10th, 1924, p 531) pleads for the compulsory use of a method of insulin preparation, such as that employed by Banting, which will produce it in a purified form It is recommended that the insulin be [illegible] aqueous solution by ammonia sulp [illegible],

allowed to stand for twenty four hours, then centrifuged, and the supernatant fluid drawn off The precipitate (which contains the insulin) should be dissolved in 70 per cent alcohol, concentrated to one tenth of its volume, and added to 94 per cent alcohol, by which the insulin is again precipitated After further centrifugalizing the alcohol is removed, leaving a fine white powder of pure insulin In a series of experiments the author has demonstrated that if "impure" insulin be employed there is delay in clotting both *in vitro* and *in vivo*, and when only extremely small amounts were used The main action appeared to be an inhibition of the interaction between the fluid and cellular elements of the blood which normally results in the production of thrombin With "pure" insulin, on the other hand, no such delay in clotting was observed The author is of opinion that the retarding action of impure insulin is to be attributed to the presence of derivatives of choline or analogous substances In the usual dose of insulin (which he gives as ten units) there is present about 80 mg of choline, and it has been found that 2 5 mg of the latter will arrest the process of clotting, while even 0 5 mg will retard it Moreover, it has been noted that impure insulin contains products possessing a hyperglycaemic action and opposing the hypoglycaemic effects of insulin prepared according to the method given above As it has been found that choline injected intravenously into the dog causes a short hyperglycaemia, and as pancreatic substance contains 0 015 per cent and blood serum only 0 0002 to 0 002 per cent of choline, the author considers that it is to the latter substance that the hyperglycaemic action of impure insulin is to be attributed—an additional argument in favour of the employment of the purified product In conclusion he emphasizes the importance of using purified insulin in the injections now so frequently given prior to operation on diabetics, in support of which he cites a case recorded by Vermeuwe where the employment of an impure product resulted in profuse haemorrhage on account of the antithrombitic action produced

282 **Stability of Pneumococcus Types in Sterile Abscesses**

PREVIOUS work has shown that *B typhosus* and *B pestis caviae* become relatively inagglutinable when grown in sterile fixation abscesses in mice E MEGRAIL and E E ECKER (*Journ Inf Dis*, July, 1924, p 1) have now made experiments to test whether the same results occur in the case of the pneumococcus A 2 per cent suspension of gum tragacanth was injected subcutaneously into mice and rats After a time varying from six to twenty-four hours a salt suspension of a blood agar culture of a type pneumococcus was injected into the resulting abscess, the organisms were withdrawn when the animal showed signs of serious illness, and were then passed through another animal, and so on till several passages had been accomplished The biological and agglutination properties of the organism were studied before and after the transfers to ascertain whether any changes had occurred Several experiments, varying in details, were carried out, but in no case was any change found to take place Inulin fermentation and bile solubility remained unaltered in the passed strains, in only one case was the agglutination titre lowered through passage, in all the remaining cases it was the same as before Even when the animals were kept alive longer by the injection intraperitoneally of immune serum, and the organisms remained in contact with the abscess contents for a greater time than they otherwise would have done, the agglutination reactions were unchanged From these experiments the authors conclude that the pneumococcus has a type stability when placed under conditions in which typhoid bacilli and other organisms show variability It may be noted that they were working with whole cultures, not with single colony strains

283 **Fungi in Diarrhoeal Conditions**

M S FLEISHER and M WACHOWIAK (*Amer Journ Med Sci* September, 1924, p 371) studied culturally the relation of fungi to diarrhoeal conditions in a series of 32 cases, in 2 of which the fungi were isolated from the stools and, in some from the blood In rabbits the organisms caused diarrhoea and even death, and were found in the blood and internal organs of some of the animals Although monilia, or similar organisms, may be present in normal stools they are relatively infrequent, and yet in this series of 32 cases, in which diarrhoea was a prominent symptom, such organisms were present in the stools in 62 5 per cent In some of these cases identical organisms were demonstrated in the blood thus pointing to a causal relation between the organisms and the symptoms This view is further supported by the presence in the blood stream, as also by the improvement following vaccine therapy in some of the cases The author add that organisms of this type should be suspected in chronic diarrhoeas otherwise unexplained

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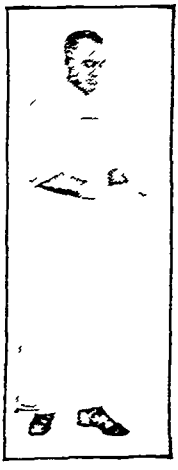
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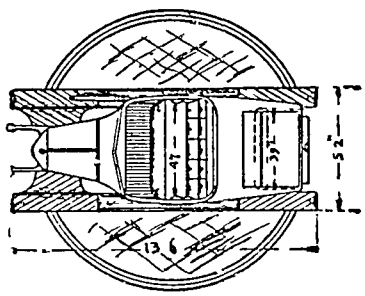
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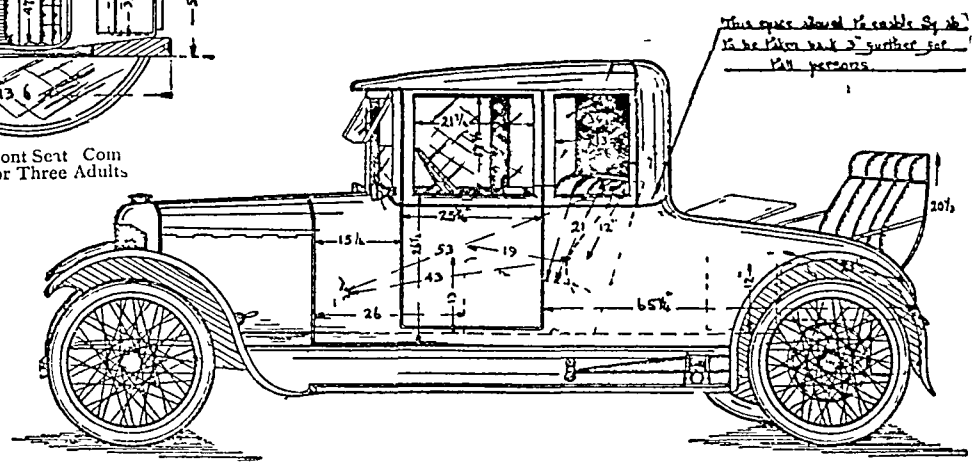
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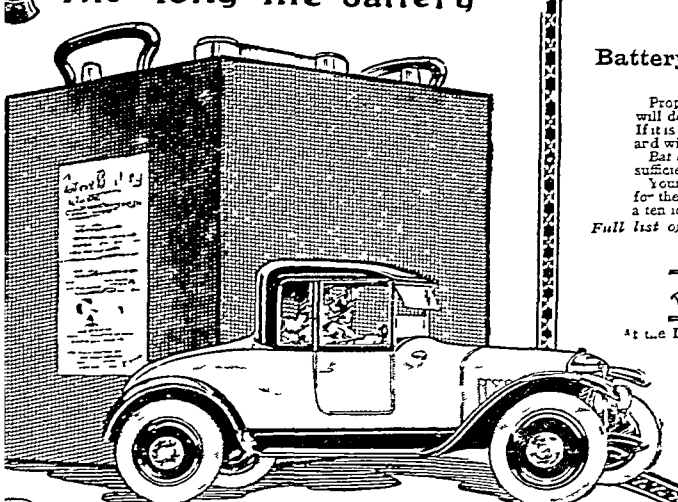
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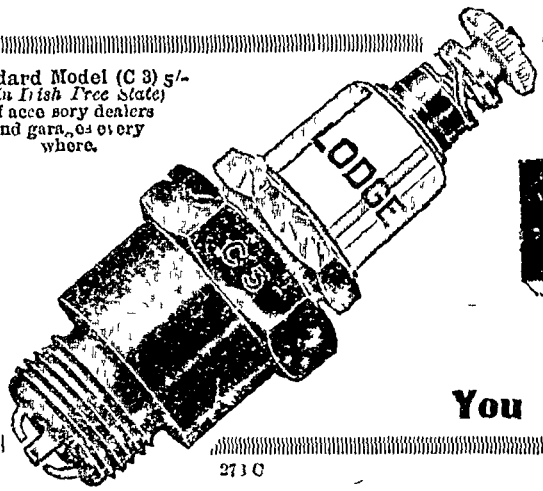
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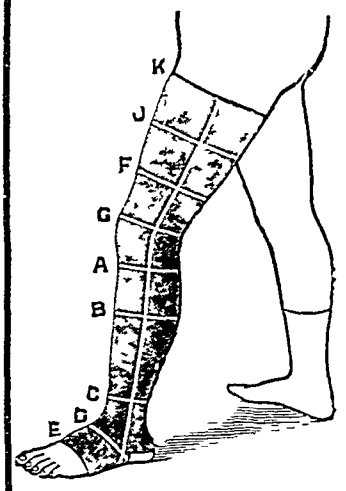
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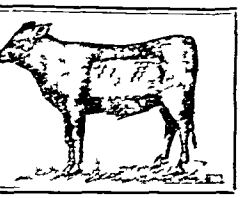
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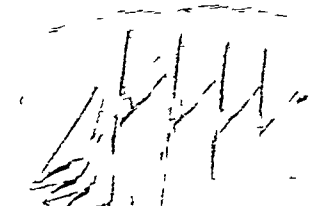
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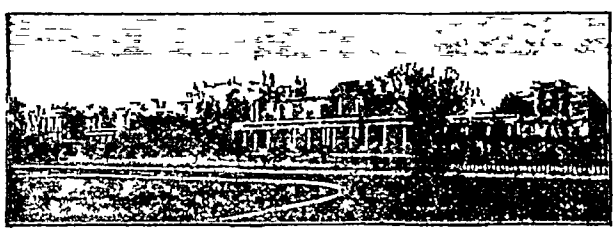
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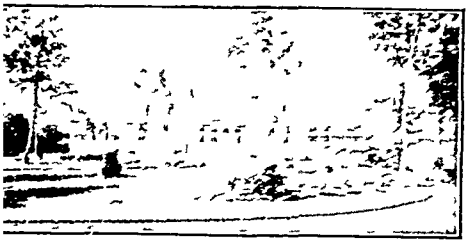
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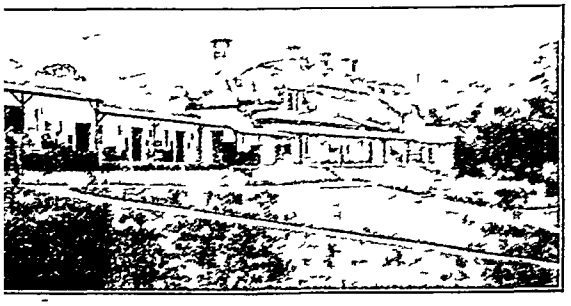
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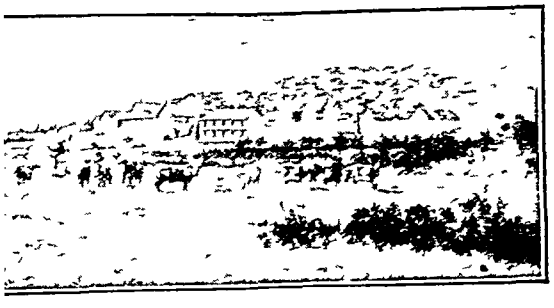
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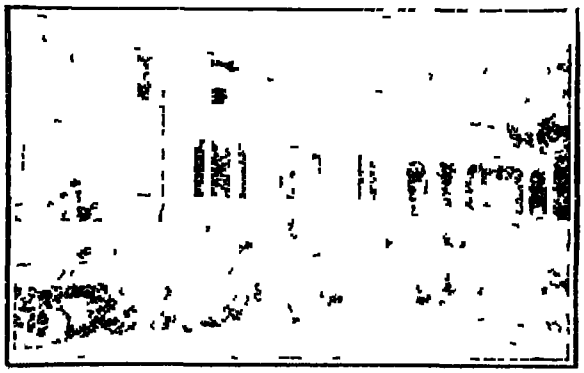
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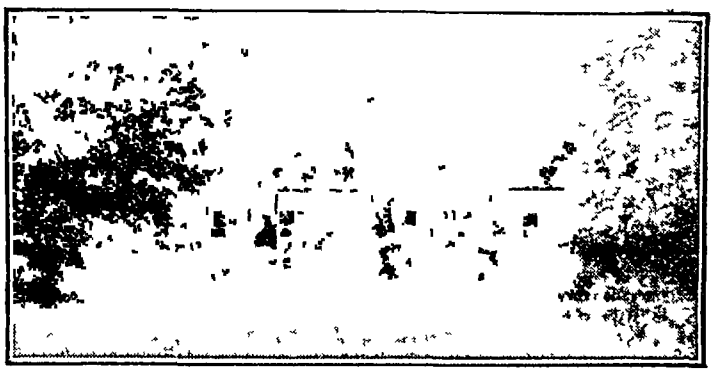
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Mon 20th Oct	The Anatomy of the Heart Dr B T Parsons Smith	The Use of the Polygraph Dr John Parkinson
Tues 21st Oct	The Physiology of the Circulation Dr J Strickland Goodall	The Use of the Polygraph Dr John Parkinson
Wed 22nd Oct	Aortic Disease Dr F W Price	The Electrocardiograph Dr J Strickland Goodall
Thur 23rd Oct	Rheumatic Carditis Dr John Parkinson	The Electrocardiograph Dr J Strickland Goodall
Fri 24th Oct	Functional Disturbances of the Circulation Dr R O Moon	Sphygmomanometers Dr B T Parsons Smith

FIRST WEEK. AFTERNOON

Date	2 0—3 0 p m	3.0—4 p m
Mon 20th Oct	Ward Demonstration Dr R O Moon	Out patients Dr J Strickland Goodall
Tues 21st Oct	Ward Demonstration Dr F W Price	Clinical Demonstration Dr R O Moon
Wed 22nd Oct	Pathological Demonstration Dr H B Weir	Out patients Dr R O Moon
Thur 23rd Oct	Ward Demonstration Dr B T Parsons Smith	Out patients Dr F W Price
Fri 24th Oct	Ward Demonstration Dr J Strickland Goodall	Out patients Dr John Parkinson

SECOND WEEK. MORNING

Date	10 0—11 0 a m	11 15—12 30 p m
Mon 27th Oct	Infective Endocarditis Dr B T Parsons Smith	The Roentgenogram and Orthodiagram Dr F W Price
Tues 28th Oct	Aneurysm of the Aorta Dr B T Parsons Smith	Angina Pectoris Dr R O Moon
Wed 29th Oct	Diseases of the Arteries Dr F W Price	Circulatory Failure Dr J Strickland Goodall.
Thur 30th Oct	Mitral Stenosis Dr R O Moon	Treatment of Heart Failure Dr John Parkinson
Fri 31st Oct	Prognosis in Heart Disease Dr R O Moon	The Diagnosis and Significance of Abnormal Cardiac Rhythms Dr F W Price.

SECOND WEEK. AFTERNOON

Date	2 0—3 0 p m	3 0—4 p m
Mon 27th Oct	Ward Demonstration Dr R O Moon	Out patients Dr J Strickland Goodall.
Tues 28th Oct	Ward Demonstration Dr John Parkinson	Clinical Demonstration Dr B T Parsons Smith
Wed 29th Oct	Pathological Demonstration Dr H B Weir	Out patients Dr R O Moon
Thur 30th Oct	Ward Demonstration Dr B T Parsons Smith.	Out patients Dr F W Price
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By Order
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Plague A research into the harbouring of Plague by wild rodents and the specific prophylaxis and therapy of the disease in man is being undertaken by the S.A. Institute for Medical Research. The work will be largely carried out in a mobile laboratory on the veld The present staff will be augmented by a **Bacteriologist** (preferably a medical man and with special experience in Plague) and an **Entomologist** (not necessarily medical but preferably with special experience in the study of the ectoparasites of rodents) Appointments will be primarily for one year and will be renewable thereafter by mutual consent First class passage and allowances when absent from headquarters on duty in addition to salary

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Appointments in the first place will be for a period of six months dating from the 1st November 1924.

Candidates must possess a registered Medical and Surgical Qualification in the United Kingdom.

Applications with copies of three recent testimonials and a Certificate of ability to administer Anæsthetics should be sent to the undersigned not later than Wednesday the 22nd October 1924

Two Members of the Resident Staff are Candidates for the two senior appointments.

HERBERT P PUTHERFORD
Secretary and House Governor

Metropolitan Hospital

Kingsland Road, E.

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Candidates must be Fellows or Members of the Royal College of Physicians of London and Graduates in Medicine of a University recognised by the Medical Council.

Candidates will be required to call up and meet on the Staff

Applications with copies of recent testimonials must reach the undersigned not later than October 15th 1924

HERBERT P PUTHERFORD
Secretary and House Governor

Manchester Babies Hospital,

Burnage Lane Levenshulme.

[illegible] Resident Medical Officer [illegible] Dr P MEDICAL OFFICER [illegible] appointment [illegible] Salary £125 per annum with board residence and laundry Further particulars may be obtained by Candidates on personal application to ANGELA LOWEZ
Secretary

Wanted—An Assistantship with prospects, by a Conjoint man of over six years experience in panel and private practice Willing to take complete charge of a practice or branch in or near London or abroad Has extensive experience in midwifery children and skin diseases At present employed as an Assistant in large East End practice (for over two years) where there are no prospects Interview can be arranged excellent refs—Address No 5123 B M J Office 129 Strand

Wanted Assistantship or PART TIME employment compatible with attendance at post-grad courses in London Single man aged 30 M B Oxford M R C S, L R C P Ex H S H P Exp priv and panel practices midwifery Energetic Well recd Excel testi Disengaged—Address No 5155, B M J Office 129, Strand, W C

Wanted—Assistantship or LOCUM by woman Graduate (M B Ch B St And) æt 26 Experienced in private and panel practice H S General Hospital four months Able to cycle motor cycle and drive car—Interview arranged—Add, No 5162 B M J, 429 Strand W C

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Arrol-Johnston 15 9 h.p., 1923 24 Self starter dynamo 4 seater, all weather curtains tax paid year As new cost £595 accept £250—Address 69, St Pauls Avenue Willesden Green London

La Licorne, two-seater Coupe with large Dickey Good roomy car Firm of Coal Merchants using same at present for traveller wish to dispose of this to standardize their fleet and will accept £55 or nearest offer, for quick private sale No dealers Car in excellent condition and good running order Licence and Insurance paid to December—Write 'Coupe c/o POOLS ADVERTISING SERVICE 180, Fleet Street E C

11.9 Bean Coupé, 1923, painted dark blue double dickey leather hood glass sliding windows Looks as good as new Cost over £400 accept £250—Apply INGLIS Bank House Erith Kent

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Letterheads Pos
R ANDERSON & SON Printers [illegible]

Don't Purchase your Car UNTIL you have consulted us *We are* Agents for all leading makes and will supply you with any Car on DEFERRED PAYMENTS Your old car taken in PART EXCHANGE Call write or phone—ERNEST GRIMALDI Ltd 87 Great Portland Street W Langham 2983

Taunton and Somerset HOSPITAL

NOTICE IS HEREBY GIVEN that the Joint Committee will meet on Tuesday November 4th next, to elect an HONORARY PHYSICIAN

The successful applicant should reside within two miles of the Hospital

Applications with diplomas to be sent to the undersigned on or before Saturday, November 1st next

Personal canvassing will disqualify

F J J STACEY Secretary

Taunton and Somerset Hospital, Taunton.
Dated October 11th 1924

St Thomas's Hospital

the post of Pathologist to
1 Surgical) Units Salary
Duties to commence at

Applications to be forwarded to the Medical Secretary of the School St Thomas's Hospital not later than Saturday October 31st 1924

Further information as to the duties of the post may be had on application to the Medical Secretary

APPOINTMENTS—Important Notice.

(a) British Islands.

Medical Practitioners are requested not to apply for any appointment referred to in the following table without having first communicated with the Medical Secretary of the British Medical Association, 429, Strand, London, W.C.2.

CONTRACT PRACTICE.

ENGLAND.

CANNOCK CHASE AND DISTRICT
(Clubs and Friendly Societies Appointments)

MIDDLESBOROUGH
(Medical Aid Associations or Workmen's Clubs.)

SOUTH BANK & ESTON
(Medical Aid Associations or Workmen's Clubs)

WALES.

ABERTRIDWR GLAMORGAN
(Windsor Colliery Medical Scheme.)

EBBW VALE MON
(Workmen's Medical Society)

GILFACH GOCH GLAMORGAN
(Workmen's Medical Scheme)

LLWYNYPIA CLYDACH VALE PENYGRAIG GLAMORGAN
(Workmen's Medical Service)

MARDY GLAMORGAN
(Workmen's Medical Scheme)

WALES (continued)

OAKDALE MON
(Medical Officer for Medical Aid Association.)

OGMORE VALLEY GLAMORGAN
(Wyndham Colliery Medical Aid Society.)
(Workmen's Medical Scheme)

TONDU & ABERKENFIG GLAMORGAN
(Workmen's Medical Scheme)

PUBLIC HEALTH.

ARGYLLSHIRE EDUCATION AUTHORITY
(Executive School Medical Officer)

CHELSEA METROPOLITAN BOROUGH
(Part time Medical Officer of Health)

CHESTER LE STREET RURAL DISTRICT COUNCIL
(Medical Officer of Health)

COLCHESTER BOROUGH
(Assistant School Medical Officer)

FIFE EDUCATION AUTHORITY
(Assistant School Medical Officer)

PUBLIC HEALTH (continued)

GLASGOW EDUCATION AUTHORITY
(Assistant School Medical Officer)

LANARK COUNTY
(Medical Officer of Health)

LINCOLN CITY EDUCATION AUTHORITY
(Women Assistant School Medical Officer)

MIDLOTHIAN EDUCATION AUTHORITY
(School Medical Officer)

NORTHUMBERLAND COUNTY COUNCIL
(Woman Assistant Medical Officer to Health, Maternity and Child Welfare and Tuberculosis Dispensary Medical Attendant at Institutions for Infectious Diseases Hospital)

NOTTINGHAMSHIRE
(County Medical Officer of Health.)

SOUTHWARK METROPOLITAN BOROUGH
(Tuberculosis Officer)

STIRLING ROYAL BURGH
(Medical Officer of Health, Tuberculosis Dispensary and Child Welfare and School Medical Officer, Public Analyst and Medical Attendant at Institutions for Infectious Diseases Hospital)

WIGAN COUNTY BOROUGH
(Assistant School Medical Officer)

(b) Colonial Medical Service.—WINDWARD ISLANDS MEDICAL SERVICE
(Grenada with Carriacou St. Vincent and St. Lucia)

(c) Overseas Appointments.

Medical Practitioners are requested not to apply to any appointment referred to in the following table without having first communicated with the Honorary Secretary of the Division or Branch named in the second column or with the Medical Secretary of the British Medical Association, 429, Strand, London, W.C.2.

Town or District.	Hon. Sec. of Division or Branch	Town or District.	Hon. Sec. of Division or Branch	Town or District.	Hon. Sec. of Division or Branch
NEW SOUTH WALES. (All Friendly Society Appointments.)	Dr. R. H. TODD (Hon. Sec. New South Wales Branch) B.M.A. Building 30-4 Elizabeth Street, Sydney N.S.W.	QUEENSLAND (Brisbane Associated Friendly Societies' Institute.)	Dr. R. MARSHALL ALLAN (Hon. Sec. Queensland Branch) Adelaide Street Brisbane	VICTORIA. (All Institute or Medical Dispensaries.)	Dr. FRANK DAVIES (Hon. Sec. Victorian Branch) Medical Society Hall E. Melbourne, Victoria.
				WESTERN AUSTRALIA. (Contract and Lodge Practices.)	Hon. Sec., Western Australian Branch, No. 9 Bank of New South Wales Chambers, St. George's Terrace, Perth.

Address: 429 Strand, W.C.2.
October 8th, 1924.

By order of the Council of the British Medical Association
ALFRED COX, Medical Secretary.

Gloucestershire Mental HOSPITALS

JUNIOR ASSISTANT MEDICAL OFFICER.

Applications are invited for the post of Junior Assistant Medical Officer at the Second County [illegible] ith board ment will Asylums [illegible]

Royal Chest Hospital,

City Road, E.C. (Royal Northern Group of Hospitals)

A vacancy occurs for a PHYSICIAN with charge of Out-patient. Candidates must possess the degree [illegible] on at a [illegible] nbers of [illegible] aining] alls with regard to the subjects on of testimonials can be obtained

GILBERT G. PANTER
Royal North[illegible] Hospital, Secretary
Holloway, N.

Monmouthshire County COUNCIL.

ASSISTANT MEDICAL OFFICERS

The Council invite applications from duly qualified Medical Practitioners holding a Diploma in Public Health and State Medicine for the appointment of [illegible]

[illegible] Experience in correction of errors of refraction is essential.

Salary £500 per annum, rising by annual increments of £25 to £750 with residential quarters and reasonable subsistence allowance, but the increments to be suspended for the next twelve months.

The successful candidate will be required to act under the direction and supervision of the County Medical Officer to devote their whole time to the service of the County Council and to reside in such place as the Council may determine.

A schedule of the duties to be performed together with conditions of appointment and a form of application can be obtained from the undersigned to whom applications, accompanied by copies of not more than three recent testimonials, are to be sent by Monday, October 27th, 1924.

D. ROCYN JONES
County Medical Officer
County Hall, Newport, Mon. October 1st, 1924.

North Riding Mental Hospital

Clifton, York.

SENIOR ASSISTANT MEDICAL OFFICER & DEPUTY SUPERINTENDENT

Applications are invited from duly qualified gentlemen between [illegible] years of age.

Previous Mental Hospital experience [illegible] and preference will be given to candidates [illegible] diploma in Psychological Medicine.

Salary £600 per annum, rising by annual increments of £25 to £700, and by annual increments of £25 to £750, subject to the Officer appointed being certified by the Medical Superintendent to be physically and mentally fit.

Applications, stating age, qualifications, and previous experience, together with copies of not more than three recent testimonials, to be sent to the undersigned not later than [illegible]

Any further information may be obtained from the undersigned.

Applications will be treated as confidential by the Medical Superintendent.

Royal Free Hospital,

Gray's Inn Road, W.C.

[illegible] for the appointment of [illegible] MEDICAL REGISTRAR [illegible] salary £250 per annum [illegible] two recent testimonials [illegible]

REGINALD H. GALLOP, Secretary.

County Council of Durham

EDUCATION DEPARTMENT

ASSISTANT SCHOOL MEDICAL OFFICER

The County Education Committee invite applications from men only for the post of Assistant School Medical Officer to act under the County Medical Officer, in connection with the inspection of school children and such other duties as may be required by the Education Committee Commencing salary £600 per annum rising by annual increments of £25 to £650 per annum together with travelling allowances according to the county scale The successful candidate will be required to devote his whole time to the duties of the office and to reside in or near the district to which he may be attached at a place to be approved by the Education Committee

The appointment will be subject to three calendar months' notice on either side to expire on the last day of any calendar month Applicants must have had experience in the work of School Medical Inspection, and preference will be given to candidates who —

(a) Have had experience in the work of a school clinic
(b) Have been accustomed to make special reports on mentally defective, physically defective, epileptic, and other defective children
(c) Possess a diploma in public health

Copies of not more than three recent testimonials are required Canvassing directly or indirectly is prohibited and will disqualify

A deduction of 5 per cent will be made from the salary in accordance with the provisions of the Local Government and other Officers Superannuation Act, 1922, which has been adopted by the Council and the appointment will be subject to passing the County Council's medical examination in connection therewith

Forms of application, to be returned not later than Monday October 20th, 1924, may be obtained from the undersigned

A J DAWSON
Director of Education

Shire Hall Durham
September 30th 1924 (Advt 79 1924)

County Borough of West Ham

ASSISTANT RESIDENT MEDICAL OFFICER

Applications are invited from unmarried Medical Practitioners for the post of Assistant Resident Medical Officer at Davenham Sanatorium, Essex The salary will be £350 per annum including quarters, with full board and laundry

Applicants must not be more than 30 years of age, and have had experience in the treatment of Pulmonary Tuberculosis (and preferably also experience in treatment by artificial Pneumothorax), and will be required to devote the whole of his or her time to the duties of the office

The appointment will be subject to the provisions of the Local Government and other Officers Superannuation Act 1922 and to a medical examination as required by the Council for the purposes of that Act and the statutory contributions to the Superannuation Fund under the Act will be deducted from the salary

Applications on the form provided (which will be forwarded by the undersigned on receipt of a stamped addressed foolscap envelope) must reach me not later than Friday October 24th 1924

Applicants must be members of a recognized Medical organization

Canvassing members of the Council is prohibited, and will disqualify

By Order
GEORGE E HILLEARY,
Town Clerk

Town Hall West Ham, E 15 October 3rd 1924

Central London Throat, Nose & EAR HOSPITAL Gray's Inn Road, W C 1

RESIDENT HOUSE SURGEON (MALE)

There will be a vacancy for a SECOND RESIDENT HOUSE SURGEON to enter on duty on Nov 1st Remuneration at the rate of £75 per annum

The appointment offers good opportunity of acquiring extended knowledge of the diseases treated

Applications with copies of not more than three testimonials should be sent to the undersigned as soon as possible

RICHARD KERSHAW, Secretary

London Jewish Hospital, Stepney Green, E 1

The Council of Management invite applications for the post of ANÆSTHETIST Candidates must possess a registered qualification and will be required to attend on three half days each week Honorarium at the rate of One Guinea per attendance

Applications should reach the Secretary not later than October 31st 1924 accompanied by copies of three testimonials, especially obtained for the appointment

Hospital for Consumption and DISEASES OF THE CHEST, Brompton, S W

The Committee of Management invite applications for the post of HOUSE PHYSICIAN (for which there are two vacancies) The duties include work in the Out patient Department as well as in the Wards, and one of the selected candidates will also be appointed Assistant to the Tuberculosis Officer for the local Tuberculosis Dispensary at the Hospital Applications with testimonials, must be sent in not later than Tuesday, October 14th, 1924, addressed to the Secretary The appointment is for six months commencing on November 1st, with an honorarium of £50

FREDERICK WOOD,
Secretary

Brompton
September, 1924

Hospital for Consumption AND DISEASES OF THE CHEST, Brompton S W

The Committee of Management invite applications for the post of ASSISTANT RESIDENT MEDICAL OFFICER Candidates must be registered Practitioners and must have held a Resident Hospital appointment for six months Salary £150 per annum, with board and residence

Applications, with testimonials to be sent in on or before October 18th 1924 Candidates will be required to attend the meeting of the Medical Committee on Wednesday, October 22nd, 1924, at 4 30 p m

FREDERICK WOOD,
Secretary

Brompton,
October, 1924

Bristol Royal Infirmary

Applications are invited for the post of HONORARY ASSISTANT SURGEON to the Ear, Nose and Throat Department Candidates must be Masters of Surgery of one of the Universities of Great Britain or Ireland, or Fellows of the Royal College of Surgeons of England, Edinburgh or Ireland or Graduates in Medicine of one of the Universities of Great Britain or Ireland and hold in addition a special degree or diploma in Laryngology and Otology of one of the Universities of Great Britain or Ireland, or of the Royal College of Surgeons of England, Edinburgh or Ireland Applications together with testimonials must be sent to the undersigned on or before October 22nd, 1924

ELLIS C SMITH, F C I S
Secretary and House Governor

Bristol Royal Infirmary

Applications are invited for the post of HONORARY DERMATOLOGIST Candidates who must hold a registered Medical qualification to send in their applications with testimonials to the undersigned on or before October 22nd, 1924

ELLIS C SMITH F C I S
Secretary and House Governor

East London Hospital for CHILDREN AND DISPENSARY FOR WOMEN, Shadwell E 1

Applications are required for the posts of MORNING CASUALTY OFFICER (Male) and AFTERNOON CASUALTY OFFICER (Male) both non resident Salary £120 per annum with lunch or tea The posts are for six months, subject to re appointment by the Board Applicants must be duly qualified and registered, and will be expected to attend the meeting of the Selection Committee

Applications with testimonials to be sent to the undersigned not later than Saturday, October 25th, 1924

W M WILCOX Secretary

East London Hospital for CHILDREN AND DISPENSARY FOR WOMEN, Shadwell, E 1

Applications are invited for the post of RESIDENT MEDICAL OFFICER (Male), vacant on November 1st, 1924

Applicants must be duly qualified practitioners in Medicine and Surgery Salary £200 per annum, with board, residence and laundry The appointment is for one year, and is renewable Applications, with testimonials, must be sent in on or before Saturday, October 25th, 1924, addressed to the undersigned from whom further particulars may be obtained

W M WILCOX Secretary

East London Hospital for CHILDREN AND DISPENSARY FOR WOMEN, Shadwell, E 1

Applications are invited for the post of HOUSE SURGEON (Male) The appointment is for six months from November 1st 1924 Board, residence and laundry are provided Salary at the rate of £125 per annum Applications, with testimonials to be sent to the undersigned not later than Saturday, October 25th, 1924

W M WILCOX, Secretary

Borough of Wednesbury

MEDICAL OFFICER OF HEALTH, ETC

The Council invite ment of Medical Offic of the Isolation Hosp Maternity and Child Welfare Department and School Medical Officer for the Borough of Wednesbury

Inclusive salary at the rate of £800 per annum

Applicants being fully qualified and duly registered Medical Practitioners must have such additional qualifications as are prescribed in the Sanitary Officers Order 1922 and the terms of such Order or any modification thereof shall regulate the services of the gentleman appointed The duties as Medical Officer of Health will be those set out in the said Order and such other duties as the Council shall direct and the gentleman appointed will direct the work of the nurses at the Maternity and Child Welfare Centre and personally attend for the purpose of advising expectant and nursing mothers He will also superintend the Children's Hostel and the Isolation Hospital As School Medical Officer, the duties will be such as the Board of Education and the Council or Education Committee may require

The appointment will be made in accordance with the Public Health Officers Act, 1921 and subject to the terms of the said Order and to the approval of the Minister of Health and Board of Education

The officer appointed will be required to devote his whole time to the service of the Council and the Education Committee and to reside in the Borough The appointment will be terminable by the officer appointed by giving three months previous notice, and if the officer appointed fails to give such notice before resigning his office he shall forfeit three months salary as liquidated damages pursuant to Article 12 of the Sanitary Officers Order 1922

Forms of application may be obtained from and must be returned to, the undersigned, accompanied by copies of not more than three recent testimonials on or before the 5th day of November, 1924, endorsed Medical Officer of Health

W H POLLITT Town Clerk

Town Hall Wednesbury October 9th, 1924

City of London Hospital for DISEASES OF THE HEART AND LUNGS Victoria Park, E 2

(Bus, tram and rail Cambridge Heath, L & N E Rly)

Applications for the post of HOUSE PHYSICIAN (male), with copies of recent testimonials are invited to be sent to the undersigned by Monday, November 3rd, 1924

The appointment will be for six months from November 10th

Salary at the rate of £125 per annum, with board residence, and laundry provided

GEORGE WATTS, Secretary

West Hartlepool CAMERON HOSPITAL

HOUSE SURGEON (Male) required 45 Beds £200 per annum with board, rooms and laundry provided

Applications stating age accompanied by testimonials, to be sent to me before October 20th, 1924

J G TAYLOR,
Secretary

October 6th, 1924

Hospital for Epilepsy and PARALYSIS, Maida Vale, W

MEDICAL REGISTRAR REQUIRED

Applications are invited for the post of MEDICAL REGISTRAR They should be accompanied by copies of not more than three recent testimonials, and should reach the undersigned by October 20th 1924 An honorarium of £100 is attached to this appointment, which is for one year and further particulars can be obtained on application

H W BURLEIGH
Secretary

North Staffordshire INFIRMARY, Stoke on Trent (A General Hospital)

JUNIOR HOUSE PHYSICIAN Salary £125 per annum board residence, and laundry Applications invited for this appointment Applicants must state age, qualification and experience and forward copies of three testimonials

W STEVENSON
House Governor and Secretary

Borough of Batley

Applications are invited from registered medical women, experienced in obstetrics and gynæcology for the position of PART TIME OFFICER at the ANTE NATAL CLINIC Fees per Session in accordance with B M A scale

G H PEARCE
Medical Officer of Health

Richard Murray Hospital,
Blackhill Co Durham.

RESIDENT MEDICAL OFFICER.

Applications are invited for the post of RESIDENT MEDICAL OFFICER (Male) at the above Hospital which has accommodation for 15

which will include the general medical control institution under the direction of the Joint and will be debarred from private practice ill be required to undertake the medical super of an adjacent small C nvalescent Home for ers and young children appointment is included in the Superannuation scheme of the Durham County Council and a tion of 5% will be made from the salary in lance with the provisions of the Local Govern and Other Officers Superannuation Act 192 he appointment will be subject to passing the al examination in connection therewith appointment will be terminable by three hs' notice on either side lications marked Resident Medical Officer ner with copies of three recent testimonials s be received by the undersigned not later than er 15th 1924.

W T McDERMID
Secretary to the Joint Board
Hall Durham. September 30th 1924

ueen's Hospital,
Birmingham

lications are invited for the post of THIRD SICIAN for Out patients Candidates to be ates in Medicine of a University of the United dom also Members of the Royal College of cians of London or Fellows of the Royal e of Physicians of Ireland, or Fellows of the College of Physicians of Edinburgh or to be so within one year of their election sicians for Out patients shall not hold office if engage in the practice of surgery midwifery

norarium £50 per annum
lications stating age together with testi ials and Certificate of Registration to reach the signed by October 20th.

HEDLEY LUCAS House Governor

oyal Waterloo Hospital for
CHILDREN AND WOMEN
Water oo Road S E.1

ere is a vacancy for an HONORARY SUR N in Charge of Out patients Candidates must aduates in surgery of a University recognized e General Medical Council and Fellows o the l College of Surgeons lications must be sent to the Secretary at the tal on or before October 24th with copies of nore than three recent testimonials

oyal Waterloo Hospital for
CHILDREN AND WOMEN
Waterloo Road S E 1

ere is a vacancy for an HONORARY GYNÆ OGIST in Charge of Out-patients Candidates be graduates in surgery of a University recog l by the General Medical Council and Fellows e Royal College of Surgeons plications must be sent to the Secretary at the ital on or before October 24th with copies of nore than three recent testimonials

ondon Temperance Hospital,
Hampstead Road N W 1

plications are invited for the post of MEDICAL ISTRAR. Honorarium at the rate of 40 gns, nnum The appointment is open to qualified and women and will be vacant on November 1st

plications with not more than three testi ials to be addressed to the Secretary by ber 18th

ondon Hospital Dental
SCHOOL

ere is a vacancy for an HONORARY ESTHETIST in the London Hospital Dental ol to attend one morning a week For further iculars apply to the House Governor London pital E 1

The General Hospital,
Birmingham.

In consequence of the appointment of Dr L G PARSONS to the office of Honorary Physician the Board invites applications for the vacant post o ASSISTANT PHYSICIAN

Candidates must be graduates in medicine of a University of which the degree is recognized by the General Medical Council and a Fellow or Member of the Royal College of Physicians of London but twelve months from the date of appointment will be allowed for obtaining the latter qualifications

The appointment will be made by the Board on noon when candi

cates of registration and testimonials must be sent on or before November 3rd to the undersigned from whom a copy of the conditions attaching to the office can be obtained

A H LEANEY House Governor
October 3rd 1924

The General Hospital,
Birmingham

The Board invite applications for the post of PRESIDENT SURGICAL OFFICER.

Candidates must be Fellows of the Royal College of Surgeons in London Edinburgh or Dublin and must also possess a medical qualification and be registered The salary will be £180 per annum with board, residence and washing

The appointment will be made for one year in the first instance and be subject to annual renewal for two subsequent years. Application with certificate of registration and copies of testimonials, should be sent to the undersigned by November 3rd next The appointment will be made at 12 0 noon on Friday November 7th 1924 when candidates will be expected to attend

A. H LEANEY,
October 3rd 1924. House Governor

Westminster Hospital,
Broad Sanctuary S W 1.

Applications are invited for the office of PHYSICIAN for Diseases of Children to this Hospital Candidates must be Fellows or Members of the Royal College of Physicians practising exclusively in children's diseases. Each candidate is required to transmit a certificate of his age, and 30 copies of his application with 30 copies each of three testimonials to the undersigned, no later than October 24th and to attend the House Committee on Tuesday October 28th 1924 at 4 p m

By Order of the House Committee
CHARLES M. POWER, Secretary

The Island of Sark

Wanted a SURGEON or PHYSICIAN There is a fixed retaining fee guaranteed by the Island of £100 per annum A resident population of about 600 During the months April and October there are many visitors there are 4 hotels and many lodging houses. Apply to W F COLLINGS Esq Seigneur of Sark Channel Islands

Telephone. Langham 2728
Telegrams: Assistamo, London.

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TRAINED NURSES FOR MENTAL, MEDICAL, SURGICAL AND FEVER CASES

Nurses reside on the premises and are available for urgent calls, Day or Night.

THE NURSES' ASSOCIATION
(In conjunction with the MALE NURSES' ASSOCIATION)
29, York Street, Baker Street, London, W 1
(Mrs.) MILLICENT HICKS *Superintendent*
W J HICKS *Secretary*

ST. LUKE'S HOSPITAL.
ESTABLISHED 1 51

PRIVATE NURSING STAFF DEPARTMENT
TRAINED NURSES for **MENTAL** and **NERVOUS CASES** can be had immediately Apply to LADY SUPERINTENDENT 19 Nottingham Place London, W.1 Telephone Mayfair 512)

NORTHERN BRANCH —Apply LADY SUPERINTENDENT, 5 Clarendon Rd. Leeds Phone Leeds 2 5

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MEDICAL TRANSFER AGENCY
Partners
W S ATKINS (Late of ARNOLD & SONS London)
J I LOWNDES (B.A.Cantab L.R.C.P.)
43, BEDFORD STREET, STRAND W C 2
(A few doors from the "Lancet" Office)
Telegrams Politions, Westrand, London"
Telephone Regent 2

LOCUM TENENTS and ASSISTANTS supplied

FOR DISPOSAL

Surrey —A Partner required for a general Practice established in a market town Receipts £2,200 Partner's Fees 3 6 upwards Scope Personally known and recommended nice house with detached consulting room Rent £75 Premium 2 years purchase for One Third Share —Folio 900

South Wales — A General PRACTICE situated in a colliery district Receipts £2,000 Panel 1,000 Private practice Good house in central position Rent £52 Premium £2,000 payable half down and the balance by arrangement —Folio 01

Norfolk —A General PRACTICE situated in a country district Receipts £1,600 Panel nearly 700 Good fees Nice house with excellent garden etc. Rent £35 per annum. Premium £2,500 —Folio 600

Notts — A Middle and working-class PRACTICE (town and country) Receipts £1,200 Fees 3 6 upwards small corner house containing 2 bedrooms etc Rent £60 per annum —Folio 662.

London — City Practice Receipts £1,250 including appts £500 Panel 160 Fees 3 6 upwards Vendor retiring Ample scope. Nice house in central position at rental Premium £2,000 —Folio 667

Salop —A Partner required for an old-established Practice situated in a Market Town Receipts over £3,500 Panel 2 00 Cottage hospital in district Income should have Surgical experience Nice house at rental Prem. for one third share 1½ years purchase —Folio 883.

Purchasers stating their requirements can have details of other Practices not advertised

LEE & MARTIN, LTD.,
THE BIRMINGHAM MEDICAL AGENCY
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TELEGRAMS Locum Birmingham." TELEPHONE 1140 Central, Birm.

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Accounts Investigated Income tax Returns prepared
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6 BROWN STREET

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Telephone 5932 CITY

TRANSFERS and PARTNERSHIPS arranged, and Investigations, Valuations undertaken.
ASSISTANTS & LOCUM TENENS SUPPLIED
PRACTICES for sale. Particulars on application

ESTABLISHED 1868.

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(Mr A. HADLEY)
MEDICAL TRANSFER AGENCY,
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Telephone Central 1112.

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LOCUM TENENS and ASSISTANTS supplied

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(Gerrard 1 3.) (Estab 1 3)

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No Charge to Purchasers. All Business Address Mr NEEDES personal attention

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Telephone GERRARD 399

Printed Prospectus of Terms, etc., post free on application

South Wales—£2,000 a year Very safe PRACTICE Appointments and Panel about £1 700 Visiting fees 3/6 to 10/6 Convenient house rent £52 on lease Hospital, 50 beds Premium for quick sale £2,000, terms could be arranged—Apply, No 7616

London, N W—£600 a year. Panel 560 Visiting fees 3/6 to 7/6 No midwifery or appointments Good detached house Lease for sale—Apply, No 7614

Kent—Important Town About £500 a year Panel 600 Fees 3/6 to 10/6 Good house to rent Hospital Great scope Premium £750—Apply, No 7613

City Practice—For disposal, HALF SHARE in old established City practice doing about £1 300 p a Fees usually 21s Very easy hours—Apply, No 7610

Home County—Nearly £1 400 a year Old established Good fees Very little midwifery Small panel Good house and garden Introduction as arranged—Apply, No 7606

Eastern County—About £1 800 a year One-third now and ultimate succession Panel over 1 000 Visiting fees 3/6 up Midwifery from 2 guineas House or rooms available Good sporting locality—Apply No 7605

Derbyshire-At present doing about £750 a year with scope Panel 100 Fees 3/6 to 7/6 Midwifery to £5 5s Od Opposition not strong Small house rent £30 Premium £350—Apply, No 7602

London, W—About £1,700 a year First class PRACTICE non dispensing No panel Fees 21/- upwards Excellent house on lease Purchaser must be a graduate middle aged and well qualified, with ample means—Apply, No 7595

South Coast—For disposal, good class PRACTICE, returning over £1 200 p a No panel or dispensing Visiting fees 7s to 21s Appointments about £180 Midwifery 5 to 12 guineas Detached house electric light, etc, to rent Great scope for increase panel etc Good schools—Apply No 7594

Lincoln—Country Town, about £1 850 p a Very old established Panel over 1 000 Visits 3/6 up Appointments about £70 Good detached house tennis garden ¾ of an acre Long introduction—Apply, No 7593

London, S W—Partnership About £3 000 a year Panel 1 000 Very old established Practice Midwifery fees 2 to 10 guineas Visits 3/6 to 7/6 Flat available Premium £2 750—Apply No 7585

Yorkshire—Average £1,286 Appointments £350 Visiting fees 3/6 to 10/6 Panel nearly 1,300 Few midwifery cases Good house very convenient—Apply, No 7581

North-West County.—University Town £1,200 a year Old established Visits 5/ to 10/6 Midwifery 4 to 7 guineas Freehold house standing in own grounds Scope—Apply No 7579

Monmouthshire — Over £1 600 a year Established 20 years Panel over 1,100 Visits 5/ up Appointments about £940 p a Good house, garden, and garage, to rent—Apply No 7570

Near Manchester — Nearly £2 000 p a Panel worth about £600 p a Moderate house with separate surgery to rent Premium 1½ years' purchase easy terms Good schools near—Apply, No 7565

Eastern County. Partnership About £2 200 p a Panel about 2 000 and other appointments. Fees 3/6 up One-third share for disposal with succession in about 3 years Apply No 7564.

London, S W—Partnership and succession £2 000 a year Half share for disposal immediately Panel 1 800 Old established Good fees Excellent house and large garden Prem 2 yrs purchase—Apply No 7560

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YORKS (W R)—Old established G P Nice house, panel nearly 1,300 Two appointments Premium £3,000 to include house Part can remain.

YORKS (E R)—Busy industrial practice Panel over 1,120 Income £2 050 p a Scope for Surgery Premium 1½ years purchase Part can remain

CITY—Old established G P Non panel Good position Fees 5/ upwards Scope for V D, Ear Dye Nose and Throat work Premium £3,400

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LONDON S W—Old-established G P Panel 865 Income £1 000 Small house garden etc Low rental Premium £1,700 to include lease

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(3) Y 233—Working and middle-class PRACTICE in the WEST RIDING of YORKSHIRE Average receipts £1 500 per annum One year's purchase would be accepted for cash.

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(5) L 148—Middle class PRACTICE, LIVERPOOL doing about £700 p a Scope for increase Old established

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Birmingham.—Good-clas PRACTICE in residential part Rece £1,420 Fees 5/ to 10/6 No panel and re few midwifery Fine house with large gard at low rent Good introduction

Colliery Practice of £2,00 mo tly from panel (1 300) and appointm Few midwifery Cottage hospital. Good hou rent £52 Premium one years purcha £1,000 down.

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West Riding—Practice of £1,500 Panel 1 550 Opposition Good house rent £80 Premium £2,000

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Midlands — Good money making PRACTICE of £1 800 with good scope Panel 2 300 Appointments £12 Rent £50 Premium £2 750 £1 500

Liverpool—Middle working class PRACTICE of £700 great scope, for sale owing to illness 420 Very little midwifery Premium £800 for quick sale Convenient house bought cheaply

North London.—Prac of £1,600 Panel 1 100 Appoint £420 House with side entrance to s and small garden Rent £63.

Cornwall—Unoppo PRACTICE of £1 500 in beautiful district near the sea. Panel worth £500 A ments £80 House with surgery garage Rent £40 on lease Premium 1½ years pur

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1 HAMPSHIRE—DEATH VACANCY A very old-established mixed general country PRACTICE situated within 4 miles of a large town and held by the late Incumbent over 40 years Steady average income of £1 039 including appointments and panel of about 140 Good scope for increase Advice and medicine from 2 6 visits from 5 to 20/ medicine extra Very little midwifery House contains lounge hall dining room drawing room consulting room and dispensary 5 bedrooms 2 bathrooms Lit with petrol gas Heated Acre of garden Garage Freehold price £1,500 Excellent hunting shooting fishing etc The practice is eminently suitable for a man of about 30 to 40 of good social standing and fond of sport Premium £1,500 There is a locum in charge

2. KENT—SMALL TOWN within one hour of London Old established mixed general PRACTICE Average income about £1,800 including valuable appointments probably transferable and panel of nearly 1 200 Fees 3 - to 10,— Twenty cases of midwifery yearly at 2 to 5 guineas Excellent house containing 2 reception and 3 bedrooms separate entrance to professional rooms standing in its own grounds of ¼ of an acre with full sized tennis court etc Vendor's freehold price £2 300 Good Hospital in town and Vendor on the Staff Premium £2 700 Introduction if desired up to six months

RESIDENTIAL TOWN within 100 miles of London Non-income Fees [illegible] mid wifery yearly at 2 to 25 guineas Attractive and commodious house (3 reception, 7 bedrooms etc. garden) on rental at £100 p.a. Good society and sport of all kinds Premium £4 000 payable

Cottage Hospital and the purchaser would be on the Staff House contains in addition to professional rooms dining room

[illegible]

and experienced man with a good personality is desired by a Consulting Physician as Partner with ultimate succession The present income is only about £1 500 a year but there is very considerable scope for increase and the newcomer would be

established very sound mixed general PRACTICE Average income over £1 800 Fees mainly 3 6 to 10 6 Very little midwifery Very good corner house with small garden There is a Cottage Hospital in the place and the Practice offers very good prospects to a Surgeon. Premium 1½ years purchase

9 SOUTH-WEST OF ENGLAND—COUNTRY TOWN—A ONE-

the P R C S Eng) will be elected to the Staff Premium £1,600

10 HOME COUNTIES PARTNERSHIP Well established by Panel of [illegible] from 3 6 with ample accommodation and good garden Price £2,000 of which £1,000 can remain on mortgage There is an appointment at Hospital and an early vacancy on the Staff is probable. Good sport schools etc Premium 2 years purchase half by arrangement

11 BORDERS OF CO DURHAM AND NORTHUMBERLAND—Old-established village PRACTICE Average income £813 but there is scope for increase. 240 panel patients Advice and medicine 2 6 3 6 and 5 Visits 3 6 to 10 6 medicine extra Small convenient house Price for house and practice £2,000

12 CITY PRACTICE—The connection is almost entirely Insurance work Fees 15/ and £1 1s upwards Court fees £5 5s upwards There is a certain amount of X ray work at £3 3s Income is about £750 a year Two well situated rooms inclusive rent £100 a year Premium, to include X ray equipment furniture etc (Valued at £250 £1 000

13 WEST CENTRAL—Sound easily worked PRACTICE of about £770 a year There is very good scope as the Vendor has suffered from ill health since the war Fees mostly 10 6 Very convenient flat Rent £58. Premium £1,100

14. LONDON NORTH.—Old-established PRACTICE producing an income of £1,400 a year including appointments worth £320 Panel of 300 but this can be largely increased if desired. Visits and medicine 3/6 to 7/6 Practice is easily worked with no conveyance Nice house in good decorative repair with fair garden Rent £125 Garage can be let off at £26 or £54 Premium £2,000

15 BIRMINGHAM—Old-established PRACTICE producing about £1 000 per annum. Visits from 3,6 upwards Very little midwifery lowest fee £2 2s Large freehold house with three reception rooms professional rooms 11 bedrooms etc standing in its own grounds Price £1,500 Premium 1½ years purchase

16 NEWCASTLE-UPON-TYNE AREA.—Old-established PRACTICE held by Vendor many years Steady average income of about £3 350 There is a Hospital in the town and a reasonable Staff. There are Very little mid wifery Houses is ill be let or sold ic ate drugs etc

only £3 000 payable £2 000 down

17

18 SOUTH-WEST OF ENGLAND—ASSISTANTSHIP with view to Partnership in a good mixed general Practice worth over £2,500 a year Scope for increase with house and other emoluments Applicants should be about 30 to 35 single and experienced in Surgery

19 YORKSHIRE—Large clean town. Well-established mid Class and working-class PRACTICE Income £1,300 including £550 from panel and £350 from appointments Advice and medicine from 2 6 visits and medicine 3 6 upwards Very little midwifery lowest fee 2 guineas Good detached freehold house with [illegible]

20

[illegible] a present to the [illegible] increasing by [illegible] well-qualified man. Good fees Excellent house with [illegible] detached garden Freehold Price House and Practice £2,500

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SOUTH COAST (Seaside Resort) —(3) PARTNERSHIP in Practice Net receipts average £2 306 p a. Panel Partner should be young and energetic Premium one [illegible] chase

LONDON, E C —(4) PARTNERSHIP in Special City Practice Excellent opening for gentleman (aged 30–35) specializing in Skin work and experienced in Nervous and Digestive Disorders Share worth about £500 for one and a half years purchase

EASTERN COUNTIES —(5) PARTNERSHIP in old-established non dispensing Practice £2 250 p a in first-rate Town No panel Incoming partner should be University man or F R C S Hospital and chance of appointment on staff One third share at first at one and a half years purchase (preliminary Assistantship)

LANCASHIRE — (6) Well-established PRACTICE averaging over £2 000 p a (including panel) on outskirts of Preston Modern detached house Premium £2 000

EAST COAST —(7) PARTNERSHIP in well-established PRACTICE £3 800 in rapidly developing Seaside Town House with 4 bedrooms to rent Incoming partner should be aged between 40 and 50 Premium two-thirds share £3 000

SEASON PRACTICE —(8) In delightful Health Resort abroad Receipts last season (November to April) £220 Fees 10/6, occasionally 21/ No midwifery Nominal premium

SURREY —(9) Riverside Town PARTNERSHIP in steadily increasing Practice Receipts 1924, £2,192. Panel 1,700 One third share at two years purchase

YORKS —(10) PARTNERSHIP in very old-established Practice in good Town Receipts average between £3 000 and £4 000 p a Panel 1 200 One fourth share at two years purchase payable by arrangement Preliminary Assistantship of six months

YORKSHIRE, WEST RIDING —(11) Well-established mixed class PRACTICE nearly £1 500 p a, in Manufacturing Town Panel 1 358 Good house (5 bedrooms), to let on lease Premium one and a half years purchase

SOUTH WALES —(12) Very old-established PRACTICE, over £1 550, in beautifully situated Country Town Panel nearly 100 Fine old mansion house with half acre garden to be sold Good schools and sport Premium £2 250

EASTERN COUNTIES —(13) PARTNERSHIP in very old-established Practice in a beautifully situated Market Town Panel 1 600 Detached house (4 bedrooms) Rent £50 p a on lease Scope for Surgeon Share worth about £1 100 p a at one and three quarter years purchase

LONDON, S W —(14) Well-established PRACTICE of between £1 100 and £1 200 p a Panel about 1 600 House containing 5 bedrooms &c Rent £55 p a. on lease Good scope Premium £2 000

WEST OF ENGLAND —(15) ASSISTANTSHIP with view to partnership in mixed practice of over £2 800 p a in Country Town Panel 850 One fourth or one third share at two years purchase Applicant should be keen on surgery Hospital in town

SOUTH OF ENGLAND —(16) PARTNERSHIP in good-class non panel practice of about £2 500 p a in beautifully situated country town Applicants should be Oxford or Cambridge Graduates not over 30 and preferably F R C S Eng

SURREY —(17) PARTNERSHIP in good-class non-dispensing Practice in most desirable Residential Country Town No panel Suitable house could be obtained Partner must be graduate of Oxford Cambridge or London University aged 40/45 Share worth about £1 000 p a at first Hospital in Town.

FIRST-RATE RESIDENTIAL DISTRICT up the THAMES —(18) PARTNERSHIP in good class Practice averaging about £1 550 p a Not much Midwifery Good house with garage, to be sold Premium one half share £1 200 Scope for Surgery

LONDON —(19) Well-established and very lucrative PRACTICE about £3 890 p a, in Industrial Centre North of the Thames Panel 1 500 Very good non basement house (6 bedrooms) to be sold Would suit two men Premium £4 500

SOUTH MIDLANDS—(20) Very old-established unopposed Country PRACTICE between £1 100 and £1 200 p a. Panel 700 (about) Small house (3 or 4 bedrooms) Rent £50 (larger house could be purchased) Premium £1 550

YORK (near) —(21) Unopposed Country PRACTICE, between £700 and £800 p a. £240 of which is panel), in picturesque growing Village Model detached house with garden garage, electric light, bath (h & c) etc for sale Premium one and a half years purchase

HOME COUNTY —(22) Very old-established PRACTICE averaging £444 p a in Residential District under 20 miles from London Excellent detached house (11 bedrooms), with large garden—suitable for reception of Resident Patients Moderate premium

DEATH VACANCY, CROYDON —(23) Old established PRACTICE averaging £1 335 p a in populous Suburb No appointments or panel Well situated modern detached double fronted corner residence (6 bed and dressing rooms) on main road Plenty of scope for increase in all directions

DEATH VACANCY, EASTERN COUNTIES —(24) Very old established unopposed Country PRACTICE averaging £1 6 0 p a. Panel 850 Modern detached house (6 bedrooms) in acre ground. Rent £80 on lease

LONDON, S E —(25) PARTNERSHIP in old established PRACTICE in outlying Residential Suburban District close to the Crystal Palace No appointments or panel Share worth about £750 p a, at one and three quarter years purchase Ample scope

WITHIN 50 miles of LONDON —(26) PRACTICE £1,500, in first rate Residential District Modern detached house (5 bedrooms) in grounds to be sold Excellent educational facilities Premium £2 000

SOUTH AFRICA (CAPE PROVINCE) —(27) PRACTICE about £1 000, in one of the wealthiest Pastoral Districts on line of Railway Ideal equable dry climate Very comfortable house to rent Living very cheap Premium £750 Vendor known to the Association

HOME COUNTY —(28) Well established and increasing mixed class PRACTICE over £1 000 in Residential District Panel about 100 Not much Midwifery Old fashioned detached house (6 bedrooms) in good position Premium £1 500

MANCHESTER —(29) PARTNERSHIP in old established good-class Practice over £4 500 in Residential District Small panel One fourth share would be sold for £2 115 with option to increase up to one half Partner should be about 30, and preferably M.D or F R C S

SPECIAL OPHTHALMIC PRACTICE —(30) About £1 400, in high class inland Health Resort Operative and acute cases refused of late years Considerable scope for increase Premium £1 400

NORTH OF ENGLAND —(31) Old-established PRACTICE of £1 460 per annum, in Country District Panel 810 Very good house (5 bedrooms) in charming grounds two acres Premium practice house and grounds £4 000 Mortgage could be had on house

YORKSHIRE, WEST RIDING —(32) Well-established middle and working class PRACTICE over £1 300 (£920 from Panel and appts) in large clean town. Good detached corner house Prem £1 400

EAST COAST —(33) Increasing PRACTICE over £500 in rapidly developing District Panel about 100 Nearest opponent 4 miles Bungalow residence (5 rooms) Premium £750

EGYPT —(34) Well-established PRACTICE £700 to £800 mainly among English Residents and Visitors Excellent semi detached residence (5 bedrooms) Premium to include furniture £1 100

SURREY —(35) PARTNERSHIP in Practice, £7,000/£8,000 per annum in one of the best Residential Districts House (7 bedrooms) to rent Premium one sixth share two years purchase Partner should be aged over 30 and have held hospital appointments

MIDLAND TOWN —(36) Old established PRACTICE about £1 100 per annum in Residential Suburb Panel 400 Good house and large garden Premium £1 500

LONDON, N W —(37) PRACTICE worth about £450 per annum in working class district Panel 500 increasing No midwifery Double fronted corner house Premium Practice and freehold House £1 500 Great scope for young man

LONDON, S W —(38) Recently established Lock up PRACTICE, in new and developing outlying Suburban District Rent of Consulting rooms £40 Prem to include lease, furniture, and fittings £250

SCOTLAND, NORTHERN HIGHLANDS —(39) PRACTICE averaging over £1 600 p a., in a Town No panel House (5 bedrooms etc) in best residential part Ample scope for midwifery and panel Premium £1,200

WEST MIDLANDS —(40) PARTNERSHIP in old established Country Town Practice over £3 600 p a. Panel 1 183 Rent £60 Partner should be aged 35 to 40 with some Surgical experience Well equipped Cottage Hosp Prem one third share one and a half years purchase

LONDON, S W —(41) Well-established PRACTICE of £600 to £700 p a., in favourite Residential Suburb Panel 300 Not much midwifery Excellent detached house (6 bedrooms), with good garden for Sale Ample scope. Premium one and a half years purchase

SURREY —(42) PARTNERSHIP in good middle class compact practice over £2 650 in Residential District easy distance of London Panel 1,200 Two-fifths share at first at two years purchase

MIDLANDS —(43) Unopposed Country PRACTICE over £1 150 in beautiful part Panel about 720 Detached house (6 rooms) with half an acre garden Mild climate

SOUTH OF ENGLAND —(44) PARTNER required in very sound old established Practice in Seaport Town Panel under 400 Share worth £700 to £800 at two years purchase Partner must be keen and energetic and not much over 30

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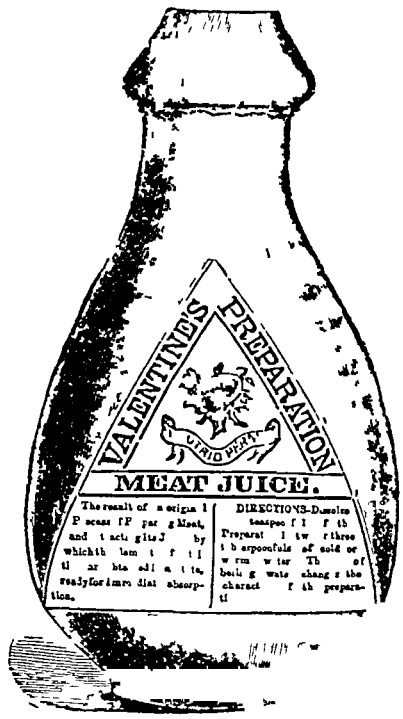
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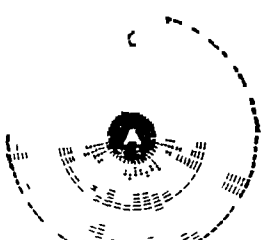
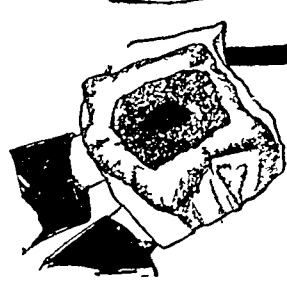


Diagram represents inflamed area. In zone "C" blood is flowing freely through underlying vessels This forms a current away from the Antiphlogistine, whose liquid contents, therefore, follow the line of least resistance and enter the circulation through the physical process of endosmosis In zone "A" there is stasis, no current tending to overcome Antiphlogistine's hygroscopic property The line of least resistance for the liquid exudate is therefore, in the direction of the Antiphlogistine. In obedience to the same law exosmosis is going on in this zone, and the excess of moisture is thus accounted for



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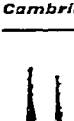
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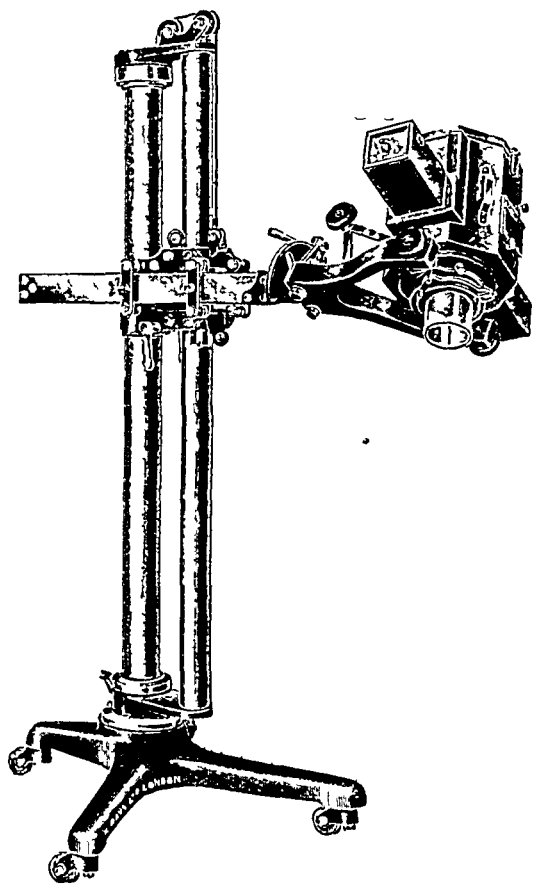
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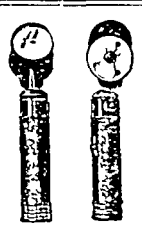
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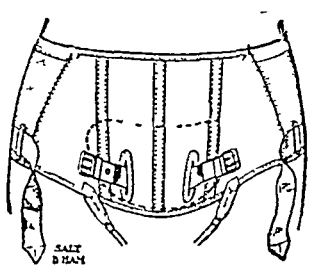
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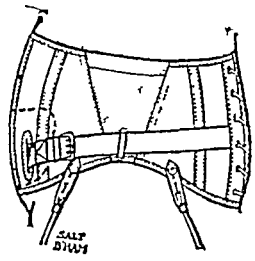
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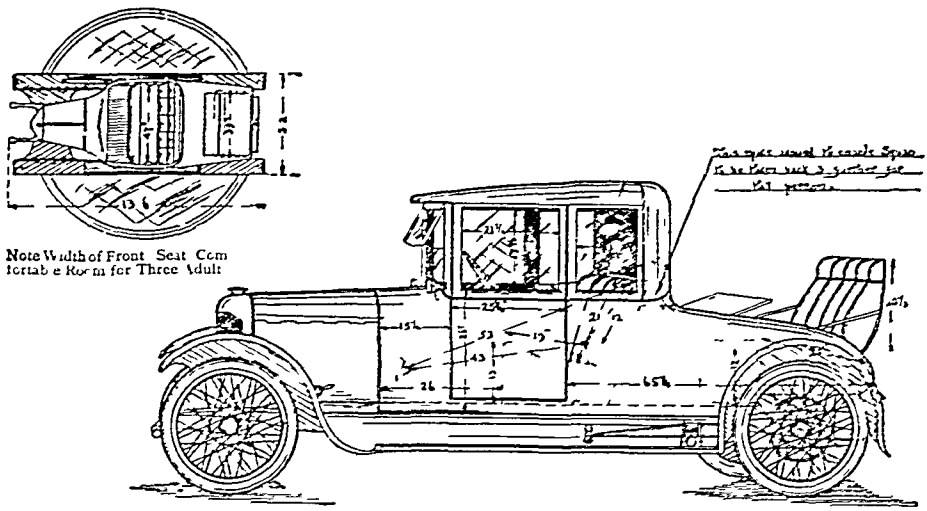
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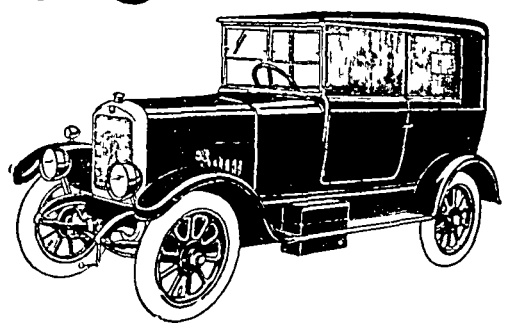
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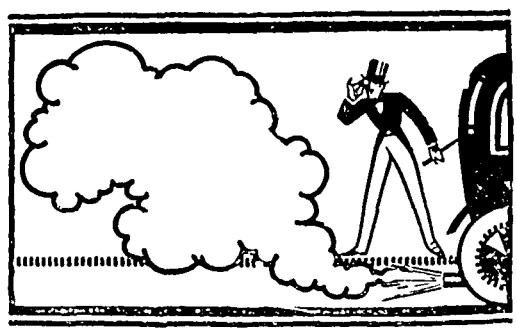
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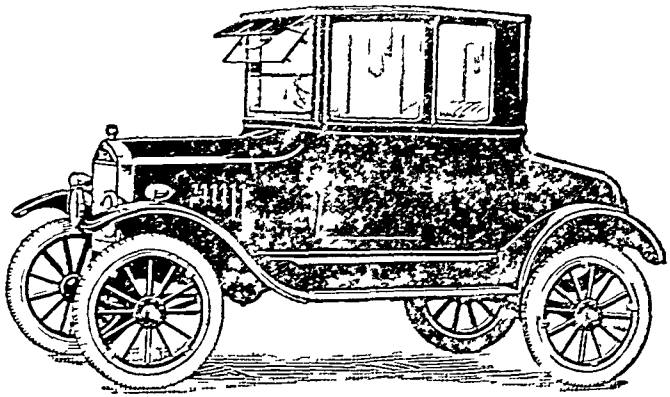
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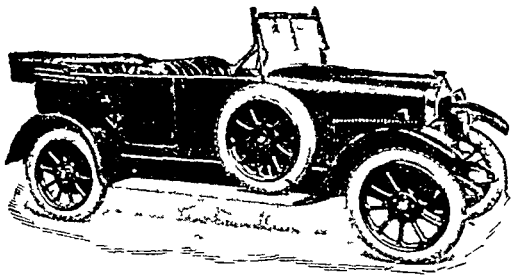
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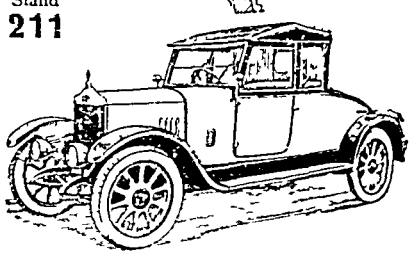
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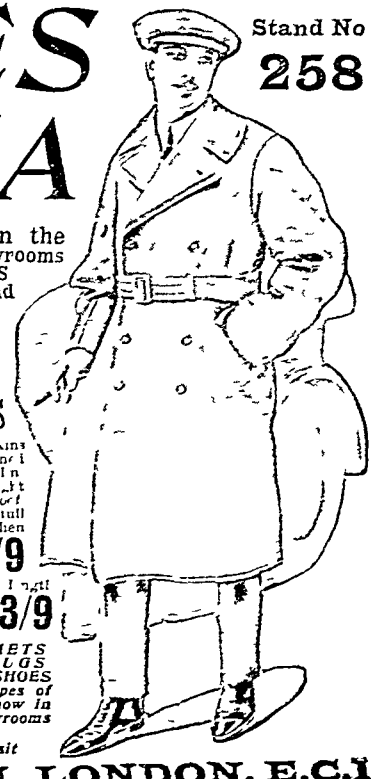
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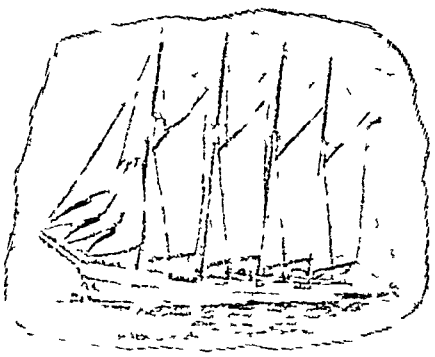
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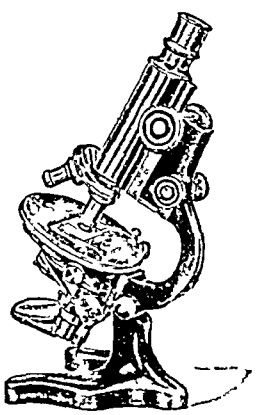
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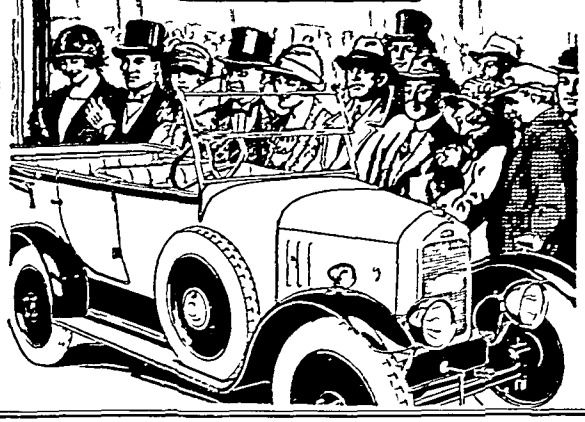
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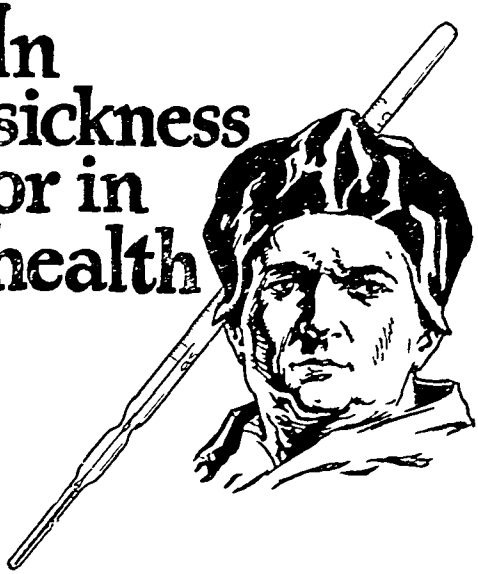
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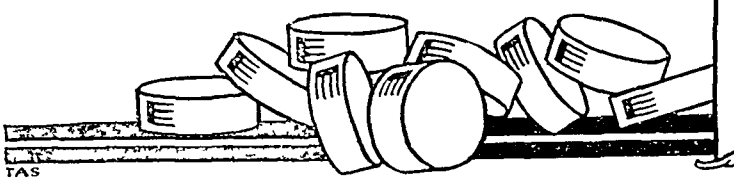
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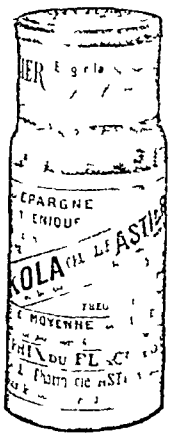


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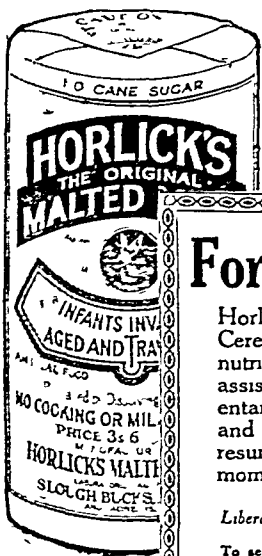
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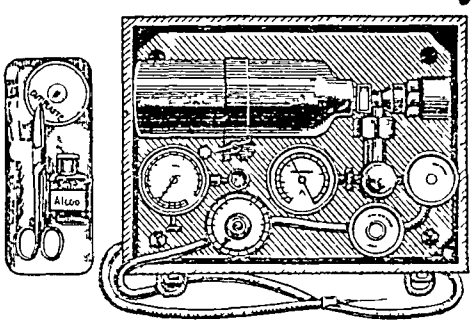
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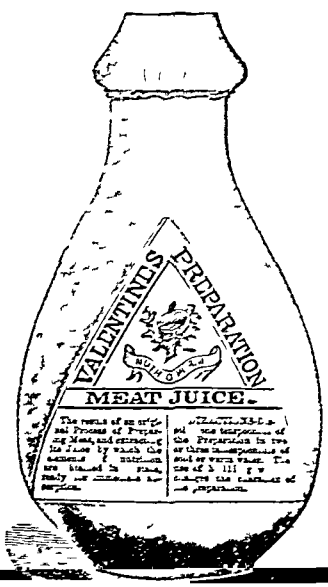
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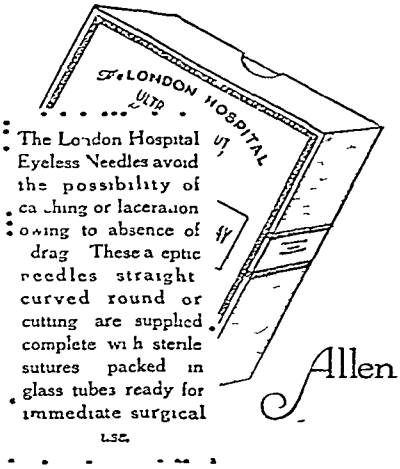
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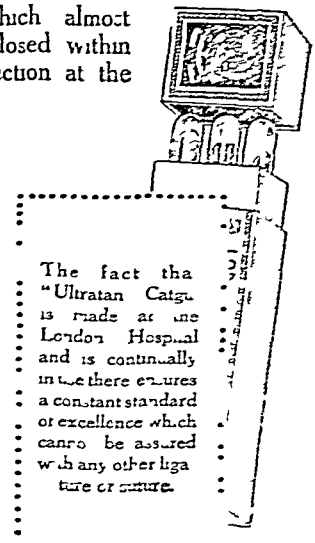
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PROCEEDINGS OF SECTIONS AT THE ANNUAL MEETING, BRADFORD, 1924

SECTION OF MEDICINE

W LANGDON BROWN, M D, F R C P, Vice-President, in the Chair

DISCUSSION ON CARDIAC IRREGULARITIES, ESPECIALLY IN REFERENCE TO PROGNOSIS AND TREATMENT

OPENING PAPERS

I—T WARDROP GRIFFITH, C M G, M D, F R C P,
Professor of Medicine University of Leeds Physician Leeds General Infirmary

I HAVE been asked to open a discussion on irregularities of cardiac action with special reference to prognosis and treatment At the outset I may say that, while I have no quarrel with the title of the discussion, we shall find that in many cases we are more concerned with the underlying or associated conditions than with the actual irregularity I must try to respect the limitations imposed upon me by the title, and certainly the width of the subject ought to satisfy the aspirations of anyone It will however be necessary for me to state briefly the outstanding facts as to our present knowledge of the irregularities of cardiac action

There is nothing more instructive than to turn to the writings of the older observers and read them in the light of our present knowledge If we do this we shall rise from the task with a feeling of deep admiration for the accuracy of their observation To them we owe the classification of cardiac irregularities into those of time and force and the statement that these are often combined To that special form of irregularity of the pulse in which one beat in an otherwise regular series is missed out the term "intermission" was applied It was clearly grasped that in some cases this was the expression of a true intermission of cardiac action and that in others a weak beat had failed to reach the wrist. In this connexion Balfour quotes with critical approval the remarks of Hope, who had commented on the mistakes made by the "non auscultators" We shall however come to the conclusion that even Balfour was too ready to accept as a true intermission that which we now regard as due to a premature systole

I like to think that the old writers in contrasting irregularity with intermission were expressing the difference between that complete arrhythmia which we now know to be the hall mark of auricular fibrillation and that dropping of a pulse wave which is usually the expression of an extra-systole When they said that irregularity was a more serious matter than intermittence we shall agree with them —with this reservation that the intermittence we have in our mind is that due to a premature systole and not that due to a partial heart-block

It would not be possible to exaggerate the importance of the work of Sir James Mackenzie on the venous pulse which has done so much to elucidate many of the varieties of irregularity, nor is it possible for anyone who has tried as I have admiringly, to follow the work of other to study the writings of Sir Thomas Lewis on the electrocardiograph without feeling that in his experimental work and in his clinical observation alike he has immensely raised the prestige of British scientific medicine

I shall assume that we are in agreement in believing that the sino-auricular node is the normal site for the starting of each cycle of cardiac contraction because it is here that the stimulus material reaches the flash point soonest, and that the excitation and the contraction waves pass very rapidly over the auricles slowly through the node of Tawara and then so rapidly by the Purkinje network that they reach all parts of the ventricular musculature at periods which differ only by minute fractions of a second.

The accompanying table, for which I claim neither completeness nor originality, shows the chief forms of irregularity I make no more than a passing reference to those which depend upon variations in the attainment of the flash point by the sino-auricular node The influence of respiration, of exercise of emotion, and of various medicaments are all well recognized and need not detain us nor need the partially understood condition of sino-auricular block do so

Cardiac Irregularities

I Sinus arrhythmias
II From extra-systoles
  A Single (1) auricular (2) ventricular (3) auriculo-ventricular or nodal
  B Double or multiple of the same three varieties
  C Paroxysmal tachycardia
III From alternans
IV A V heart block
  A When complete (1) from ventricular extra-systoles (2) from the presence of two rhythmic centres
  B When partial (1) sporadic intermissions (2) rhythmical
V From sino-auricular block
VI From fibrillation and flutter

The irregularity which arises from auricular fibrillation must needs engage much of our attention, something must be said about extra-systoles and paroxysmal tachycardia and if time and space permit I should like to elicit some discussion on the subject of those irregularities which depend upon partial heart-block

AURICULAR FIBRILLATION

We are all familiar with the very common and serious form of irregularity which is associated with this condition for it prevails in more than 50 per cent of the patients admitted into a general hospital with symptoms of cardiac failure The history of the growth of our knowledge of this condition is both fascinating and familiar For many years a form of cardiac irregularity has been recognized in which there is complete arrhythmia in which large and small beats of the pulse follow one another in complete confusion with less than the usual relationship between the size of the beat and the length of the preceding pause To James Mackenzie belongs the great credit of pointing out the connexion of this with that form of venous pulse to which he gave the name of "ventricular," the normal evidence of auricular activity being absent His first and natural inference that the auricle was paralysed was soon given up when he found that the *post-mortem* appearances were far from that of a paralysed organ He then formed the opinion that auricle and ventricle were contracting at the same time owing to impulses coming from the auriculo-ventricular node to this condition he gave the name of "nodal rhythm," but with scientific caution he reserved his final opinion A very important stage was reached in 1909 when Rothberger and Winterberg on the one hand and Lewis on the other recognized the similarity between clinical curves from cases with complete arrhythmia and experimental curves obtained after fibrillation had been set up in dogs Lewis's papers showed the consistency of the polygraph venous curves with the assumption that the auricle was not taking part in their causation—other indeed than by showing slight waves during the longer pauses His electrocardiographic results were quite convincing and finally he was able to demonstrate the fibrillating auricle in a horse which had the affection and was killed by being shot through the head and had its heart immediately exposed to view

We now know that the presence of a pulse which has no recognizable rhythm, which is indeed non-rhythmical carries with it the sure inference that it owes its lack of rhythm to this condition The behaviour of the auricle is such that, while it loses all power of propulsion of the blood it showers irregularly toward the auriculo-ventricular bridge hundreds of stimuli of which probably many never cross the bridge, and of those that do some may be so weak as not to elicit any response Those that do and are strong enough to elicit a response reach the ventricle at irregular intervals, and, in harmony with the 'all or nothing'" behaviour of the heart pointed out by Bowditch, the contractions will be the result of

which the ventricle is capable at those particular moments when the stimuli reach it As the stimuli reach the ventricular musculature at irregular intervals, and as the strength of a ventricular contraction seems usually to depend upon the duration of its period of rest, we find that the beats do indeed vary in strength and efficiency But careful inspection of tracings shows that this simple relationship is not characteristic of the irregularity of fibrillation, for weak beats may follow long pauses and strong beats may follow short pauses That a weak beat should appear to follow a long pause may find an explanation in the long pause being so in appearance only it may have contained one or more weak beats which had used up the energy of the muscle A greater difficulty is presented by a short pause being followed by a strong beat Probably here the explanation is allied to that advanced by Gaskell in his discussion on the pulsus alternans The muscular fibres of the heart do not all recover at the same rate, the strength of any contraction will depend upon the number that have so far recovered as to contract at all, and the vigour of their response will depend upon the degree of their recovery Considerations of blood supply may influence this, nor can the muscular fibres always be at concert pitch—"*neque semper arcum tendit Apollo*"

The development of auricular fibrillation is at times—and according to some frequently—ushered in by transient paroxysmal attacks, in other cases the frequent occurrence of auricular extra-systoles has been noted It is, however, certain that fibrillation of an abiding character is often found where there has not been any definite history suggestive of the actual date of onset So latent or so slight may the symptoms be that many of its subjects do not even seek medical advice, the usual avocations of life in the way of work or of sport are carried on, and the condition may be detected only when for some reason a routine examination of the heart is made On the other hand, the majority soon complain of dyspnoea and have the usual symptoms of cardiac failure combined with the characteristic non-rhythmical pulse with numerous imperfect beats, many of which do not reach the wrist even if they succeed in opening the aortic valve

The Influence of Digitalis

It has of course been well known for many years that the form of cardiac failure which is associated with a pulse and cardiac action devoid of rhythm calls for the free use of digitalis This was fully grasped long before the nature of the arrhythmia was understood, and I have sometimes thought that this has been overlooked We now know that the influence of digitalis in depressing the conductivity of the junctional tissues is especially developed in cases of auricular fibrillation, and that it is this property which makes it such a useful drug in the treatment of the cardiac failure with which it is associated A large number of stimuli which would formerly have passed to the ventricles, goading them into contractions for which they were unprepared, are now arrested Those stimuli which do reach the ventricles are separated by longer intervals, the ventricles have longer to recover and respond by stronger and more effective contractions It is to be noted that the fibrillation of the auricles continues—indeed it is said that the use of digitalis tends to its perpetuation—and that the arrhythmia persists

> Who is there among us who has not repeatedly seen tients admitted into hospital with profound cardiac ilure—shown by orthopnoea, dropsy, albuminuria, enlargement of the liver, venous fullness in the neck, cyanosis, and a pulse devoid of all rhythm—improve with rest in bed, and who can doubt that the free administration of digitalis has been followed by a slowing of the pulse, a diminution in the number of ineffective beats with a strengthening of others, and a recovery of adequate *arterial blood pressure*?

Opinions differ as to whether these beneficial effects arise purely from the diminution of the number of impulses reaching the ventricles, or whether, in addition to this, there is some direct action on the muscle of the ventricles by the drug As a result of clinical experience I am strongly of opinion that some such action must exist In cases of cardiac failure where the rhythm was normal, and where digitalis had been withheld on the ground that it was not likely to benefit the patient, I have given full doses with great benefit, I have seen dropsies and albuminuria go and the patient greatly relieved, though there has been little or no diminution in the frequency of the cardiac beats

I have said that the drug must be given in adequate doses I have very little experience of the administration of massive doses after the manner of Eggleston I have used the tincture in doses of 10 minims every four hours or oftener Sometimes the drug may cause a degree of heart-block which becomes complete, and in some cases during the development of this there have been no untoward symptoms, but this consummation should be avoided as excessive and not devoid of danger When the action *of the heart becomes infrequent* under the influence of the drug, extra-systoles of ectopic origin begin to show themselves These arise in either the right or left ventricle, or sometimes in one and sometimes in the other Now an occasional extra-systole when the heart is slowing down under digitalis does not call for the stopping of the drug, but when they begin to appear rhythmically or even very often, though irregularly, after normal beats it is generally held that the drug should be lessened or stopped I do not go so far as Lewis in this matter, and I have continued the use of the drug even when extra-systoles were frequent and rhythmical Still I agree that caution is necessary

It is the case, therefore, that there are a great many people who, in virtue of Withering's great discovery of the merits of digitalis and of the extended knowledge which has led to a more efficient use of the drug, are leading useful and in some cases active lives while they still have auricles which are fibrillating

The Influence of Quinidine Sulphate

It may again be mentioned that digitalis does not cause the fibrillation to cease and that the pulse *remains non*-rhythmical In 1914 Wenckebach quoted the case of a South African Dutchman who was in the habit of taking quinine for the relief of malaria and who found that a cardiac irregularity of which he was the subject lessened while he was under the influence of the drug Wenckebach's experience was that quinine abolished the irregularity of paroxysmal fibrillation, but had no effect on the more permanent variety In 1918 Frey suggested quinidine as being less toxic and more soluble, and the use of this drug in a systematic manner has gone hand-in-hand with an understanding of the true nature of the affection Here again we find ourselves on fascinating ground All that I know about this matter I have learned from the work of Lewis He gives the fullest credit to Romanes, to Mayer, to Mines, and to Garry, and as the result of elaborate experiments on dogs he has established on a firm basis the view that both auricular flutter and fibrillation are due to a circus movement of the wave of excitation and contraction which under certain conditions of impaired conductivity passes round a tract of muscle in the auricle and reaches the starting point at a time when the muscle has recovered its power of response In this way a continuous wave of contraction passes round and round the course, there being always a short portion of responsive or partially responsive muscle between the advancing crest of the wave and its returning tail He has produced *both conditions in the dog* by electrical stimulation, and has found that the one may pass into the other He seems to have proved that in flutter the ambit of the circus—the length of the course, in other words—is longer than in fibrillation, the former probably surrounding the two venae in a *common loop*, the latter surrounding it may be one caval opening In harmony with this the number of circuits in flutter varies between about 230 and 350, and in fibrillation it is about 400 to 500 In flutter the length of time occupied by the circuit is remarkably constant and the electrical *oscillations* vary only by almost immeasurable fractions of a second, in fibrillation the general course of the circuit may remain constant so far as can be made out, but the circuits vary in details of their exact course and in the time taken for their completion In both cases centrifugal waves of excitation p

off from this "mother wave" Those found in flutter are singularly regular and uniform from circuit to circuit, in fibrillation they are as in the case of their "mother wave," irregular The difference between flutter and fibrillation is therefore largely if not entirely, a question of the degree to which conductivity is impaired by the distribution of the barriers to the passage of the stimuli, a degree which is greater in fibrillation than in flutter

The experiments of Lewis carry conviction to my mind, and I am prepared to subscribe to his opinion that the former view which attributed fibrillation to a series of rapid impulses arising at one or more irritable centres in the muscle of the auricle to which it responds in a confused manner is no longer admissible

Now quinidine has two actions it lengthens the refractory period and it slows conduction in the auricular musculature It may be that the second effect is solely due to the first but it is clear that the second if acting alone, would tend to perpetuate fibrillation or flutter whichever was present The former effect may result in the excitation wave slowly passing though it may be reaching the starting point before the muscle has recovered and is capable of response Should this occur let us say in fibrillation it may be that an excitation wave passing by a longer circuit may reach the starting point after the muscle has recovered, and so flutter or impure flutter may be established With a further lengthening of the refractory period even this wave of excitation slower still it may be in its passage than when it entered into its kingdom of dominance may reach the starting point before the muscle has passed out of the refractory state The circular wave is now brought to an end and the sino-auricular node immediately comes into its own again During all the time that fibrillation or flutter has been prevailing it is almost certain that the sino-auricular node has been building up its stimulus material in the confident hope as it were of being able to initiate a stimulus as in the days of old but every time the excitation wave of the circuit comes round its small magazine of stimulus material is blown up and it has to begin again But it is not weary in well-doing it bides its time, and it has its reward when its rivals of fibrillation and flutter are put out of action by the closing of the circuit

My experience of the use of quinidine is not great enough to entitle me to speak with authority or to discourse on statistics I have followed in the footsteps of others and I have done so with caution I have adopted the usual plan of giving on a selected day two doses of 0·2 gram at an interval of two or three hours In the absence of any unfavourable reaction, doses of 0·2 gram have then been given every two hours either until the normal rhythm was restored, or until in all 2 grams had been given or until the drug had to be stopped on account of symptoms of poisoning The effect of the drug is well seen in the tracings shown in Figs 1 and 2

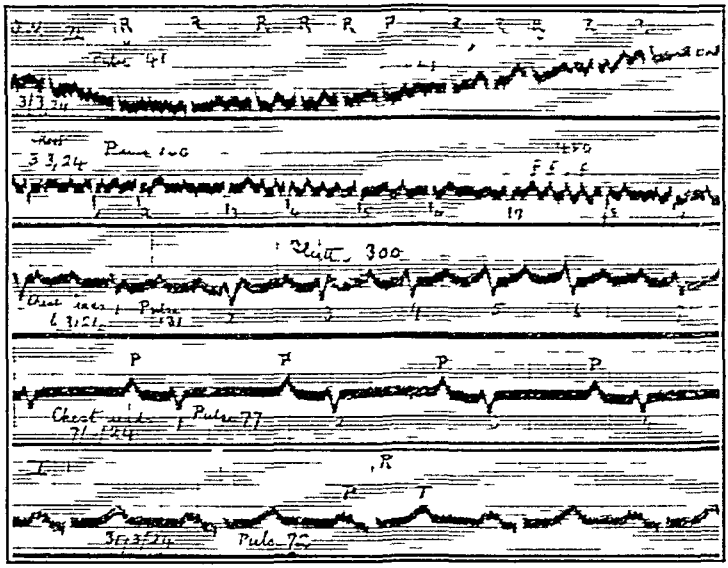


FIG 1—Case of mitral stenosis Patient aged 18 Fibrillation known to have existed for at least eight months First two tracings—Lead II and chest leads respectively—taken before quinidine was begun From March 6th at 4 p.m till March 8th at 4 a.m five doses of 0·2 gram given Tracing number 3 shows an almost pure form of fibrillation 300 per minute every second or third stimulus getting through to ventricle Some failure of drug being stopped Then from 10 a.m on the 6th till 4 a.m on the 7th nine last 0·2 gram were given Shortly after the last dose the patient suddenly was conscious that the throbbing in the neck had ceased and the pulse was found to be regular and infrequent Tracing number 4 taken by chest leads shows the restoration of the normal rhythm with a long P—P interval The I—tracing from Lead II shows some tendency to a shortening of this long P—P interval

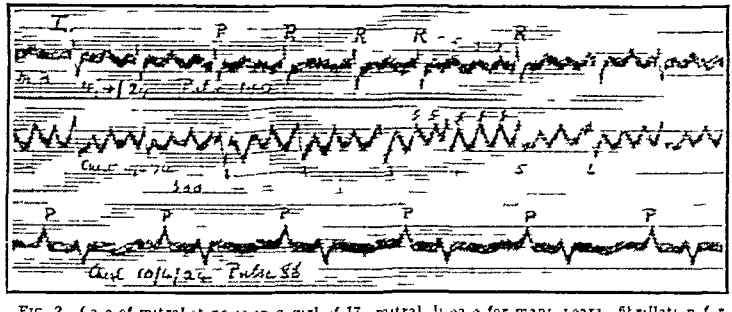


FIG 2—Case of mitral stenosis in a girl of 17 mitral disease for many years fibrillation for many months possibly more than twelve First and second tracings taken before treatment—Lead I and chest leads respectively On day of leaving test dose patient had 2 grams of quinine sulphate over a period of twelve hours in doses of 0·2 gram The third tracings—chest leads—shows the restoration of the normal rhythm

Now quinidine has two actions it lengthens the refractory period and it slows conduction in the auricular musculature It may be that the second effect is solely due to the first but it is clear that the second if acting alone, would tend to perpetuate fibrillation or flutter whichever was present The former effect may result in the excitation wave slowly passing though it may be reaching the starting point before the muscle has recovered and is capable of response Should this occur let us say in fibrillation it may be that an excitation wave passing by a longer circuit may reach the starting point after the muscle has recovered, and so flutter or impure flutter may be established With a further lengthening of the refractory period even this wave of excitation slower still it may be in its passage than when it entered into its kingdom of dominance may reach the starting point before the muscle has passed out of the refractory state The circular wave is now brought to an end and the sino-auricular node immediately comes into its own again During all the time that fibrillation or flutter has been prevailing it is almost certain that the sino-auricular node has been building up its stimulus material in the confident hope as it were of being able to initiate a stimulus as in the days of old but every time the excitation wave of the circuit comes round its small magazine of stimulus material is blown up and it has to begin again But it is not weary in well-doing it bides its time, and it has its reward when its rivals of fibrillation and flutter are put out of action by the closing of the circuit

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It is clear therefore that in a certain number of cases the normal rhythm of the heart is restored by the use of quinidine The answer to the question whether it should be used must depend upon the answers to the following What is the value of the restoration of the normal rhythm? and What are the dangers?

I Now the functions of the auricles of the heart are

(1) To act as reservoirs for the blood which reaches them during the ventricular systole when of course it cannot pass on

(2) To convey in harmony with their regular rhythmical action regular rhythmical stimuli to the functional tissues *en route* for the ventricles

(3) To propel that residual amount of blood which has not in obedience to other forces already passed into the ventricles during the earlier and greater part of their diastole

(4) By suddenly increasing the intravenricular pressure to lead to a closure of the auriculoventricular valves *before* the contraction of the ventricles takes place and so obviate that slight stretch of the muscle which is conducive to efficient response

Fibrillation does not interfere with the first of these functions it leads as we have seen to a great perversion of the second the third and fourth are not performed at all

The restoration of the normal functions of the auricle *ought*, one would think, to be attended with benefit There are, indeed, certain difficulties in understanding how the circulation of the blood goes on without the help of the

auricles These can be explained, it is true, but the propelling power of the auricle cannot fail to be an asset The influence of digitalis, though it lessens the number of stimuli reaching the ventricles, leaves them acting non-rhythmically—unless, indeed, complete heart-block has been caused The restoration of the normal rhythm will tend to equalize the amount of blood the ventricles have to deal with at each beat, and the regular call on their activities, one would think, must be favourable

In harmony with these views it is found that many of the patients express themselves as much better In the two cases of which I have shown the tracings one patient found on awakening during the night that the throbbing in her neck had gone, and both are now very much better than when the disorderly rhythm prevailed, though all medication has been suspended It has also been observed that when in some cases of cardiac failure the normal rhythm has been restored, good compensation has after a time been secured without any further use of drugs

II What are the dangers?

This is a very important matter, with which I must deal very briefly It is certainly the case that many unpleasant and some dangerous symptoms may arise after moderate doses of the drug, even when the precaution of test doses has been employed Among these may be mentioned nausea vomiting, palpitation giddiness, faintness, flushing, convulsions, syncope, apnoea, dyspnoea, and other signs of cardiac failure In some cases grave symptoms of respiratory failure have shown themselves, and in others the symptoms would appear to be explained by the sino-auricular node not taking on its function when the fibrillation ends In some cases where the patient was under the influence of digitalis at the time of the administration of the quinidine auriculo-ventricular heart-block has developed In some embolism has occurred

I must leave it to others with a greater experience than has fallen to my lot to advise us as to the dangers and how they may best be avoided The selection of suitable cases is important Those of short duration without great manifestations of cardiac failure do best, as might be expected

The question of dealing with cases in which there are marked signs of cardiac failure is very important It would seem best that these should be dealt with on the well understood methods of rest and digitalis, and that if thereafter it is deemed well to try to restore the normal rhythm a period of at least a week should be allowed to elapse before the quinidine is begun Here again I must leave the matter to the meeting

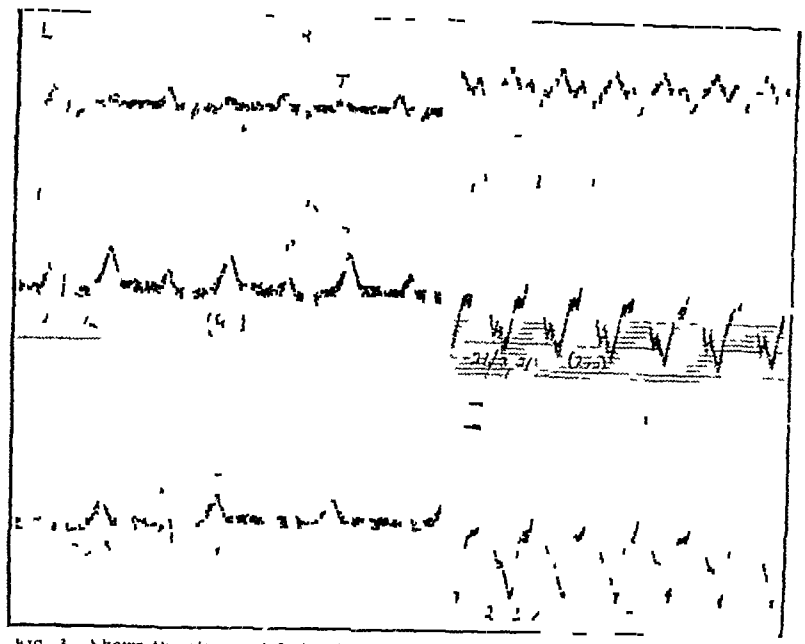


FIG 3.—Shows the slow and fast rates in a case of paroxysmal tachycardia Leads I, II, and III

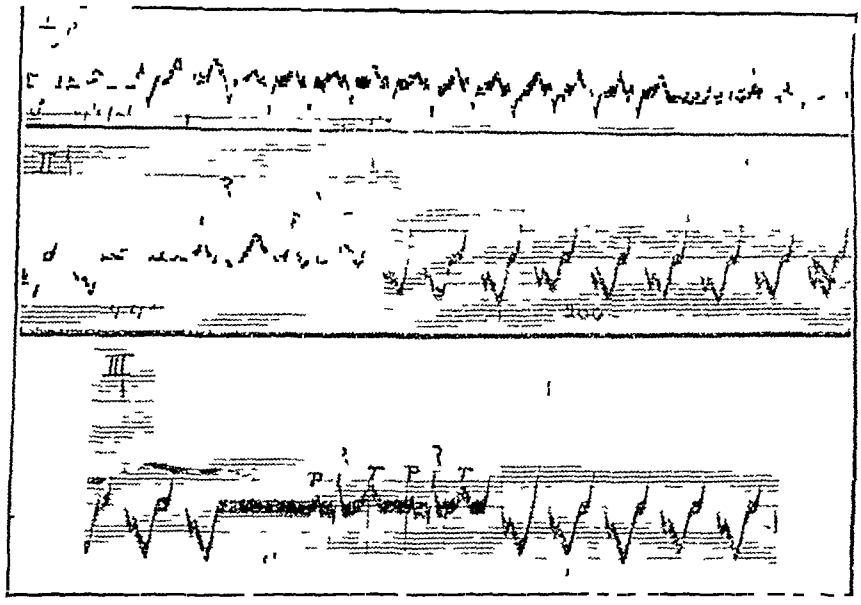


FIG 4.—Shows the beginning and ending of short paroxysms from a case Leads I, II, and III

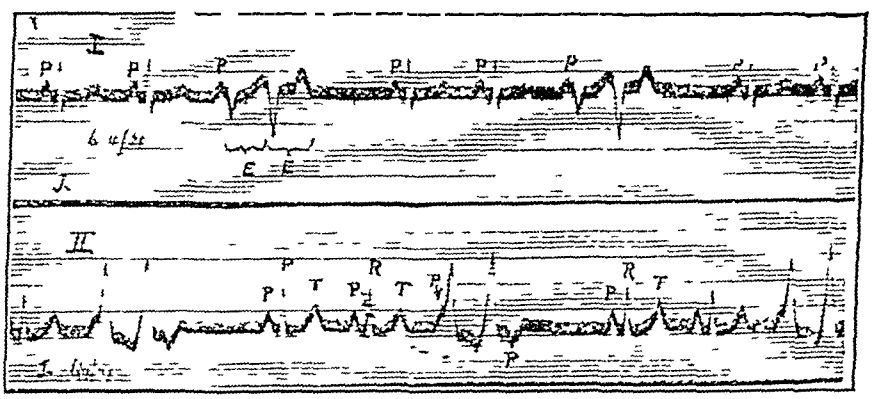


FIG 5.—Shows extra systoles occurring in couples from the same case as Figs 3 and 4 Leads I and II

Extra-systoles and Paroxysmal Tachycardia

It is well known that extra or premature systoles may arise in the neighbourhood of the sino-auricular node, in the general musculature of the auricle, in the node of Tawara, in the main bundle beyond the node, and in the right or left ventricle, where probably they arise in the Purkinje network All these varieties may now with certainty be distinguished from one another

In many cases the occurrence of extra-systoles is not noticed by those the subjects of them, but they may be associated with feelings described as if a "beat were missed out" or as if the heart were "tumbling over"

amount of discomfort, in some cases amounting to distress, varies greatly, some pay little attention to them, others of a more nervous disposition suffer greatly

These extra systoles can be produced experimentally in dogs by a great many different forms of stimuli applied to different parts of the heart and by such proceedings as clamping the aorta and by the injection of certain poisons The electrocardiographic records of these are all found to have their clinical equivalents

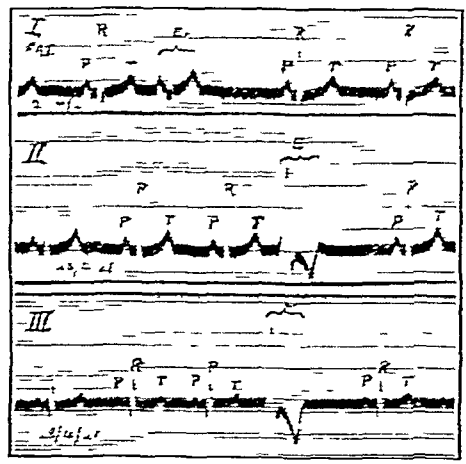


FIG 6—Shows isolated extra-systoles of right ventricular origin from the same case as Figs. 3 4 and 5a Leads I II and III

It seems a reasonable view to hold that isolated extra systoles are due to the presence at their points of origin of some irritable focus from which at time to time discharge takes place More especially in the case of the ventricles it happens that an extra systole may fall after every normal systole so that one cannot but think that the normal systole in some way causes the discharge which leads to the extra systole When a second extra systole follows after the first it may be that the first causes the second, if so it would appear that an extra-systole is not so potent to determine a discharge as is a normal one, because extra systoles are much more commonly isolated If in the same way the second extra systole gives rise to a third we are on the highway towards the condition known as paroxysmal tachycardia, between which and an isolated extra systole there would appear to be the same difference as there is between a regiment of soldiers and one man The tracings (Figs 3 to 6) show these transitions well The first extra systole of a paroxysm follows on a normal beat at a varying interval the second usually at a shorter interval than separates the beats of a fully developed paroxysm Each paroxysm is remarkably constant as to its rate The presence of some irritable focus sending out regular impulses would of course explain the phenomenon I am not aware of any experimental work which might support the view that here, as in flutter, some kind of circus movement underlies the condition It is very hard to understand the occurrence of extra-systoles occurring rhythmically and at longer intervals (Fig 7 lower tracing) Over long periods of time I have found both auricular and ventricular systoles following on every second, third, fourth or fifth beat sometimes after following every third beat changing to after every fifth or sixth and maintaining that rhythm for some time It has been tentatively suggested that the irritable focus may have a rhythm of its own and that some of its stimuli may reach the muscle during the refractory period of a previous contraction and produce no effect while others which cause extra-systoles reach the muscle at times when it can respond Alternatively it has been suggested that the irritable focus has a rhythm which varies This is a theory which I do not think can be seriously entertained In the case of rhythmical extra-systoles of auricular origin, separated by considerable intervals from one another, it is possible to think there may be some rhythmically acting influence coming to the heart from without but to account for similar extra-systoles of ventricular origin it is indeed difficult to picture to one's mind a portion say of ventricular muscle surrounded as it were like Brunnhild in the opera by one barrier which on the one hand protects it from having to participate in the successive contractions of the ventricle and on the other hand leaves it free to send out rhythmical impulses



FIG 7—Shows right ventricular extra-systoles occurring in upper tracing after each normal systole and in lower tracing after each second normal systole.

Clearly to recognize that a cardiac irregularity is due to the occurrence of extra systoles is of course a matter of prime importance It is sometimes very difficult and or rarely I think it is impossible to be certain without instrumental means The condition from which it has to be distinguished include the following

(1) Sinus arrhythmia which I shall not discuss here the distinction of importance in the case of those that follow

(2) Flutter and more especially fibrillation When we have extra-systoles thrown in irregularly and when one of these auricular interpolated beats may be well nigh impossible by the unaided senses to decide upon the cause of the irregularity and the distinction is very important

(3) True pulsus alternans This may bear a superficial resemblance to the condition in which a premature systole following after each normal beat causes the pulse bigeminus The distinction may occur easily made by instrumental means and the outlook is widely different in the two cases

It is not easy to say anything useful about the prognosis of extra systoles in some cases they appear to be of no importance but it must be admitted that they are more frequent in those who have cardiac valvular or muscular lesions and in those the subjects of increased blood pressure, that they often persist in spite of treatment that they may be associated with severe distress, that their very existence may develop a severe neurosis and that the patient cannot be reassured Again it is said that they may usher in the condition of paroxysmal tachycardia or of auricular fibrillation In most cases our prognosis will depend more upon the conditions associated with the extra systoles than with the actual irregularity itself, and our treatment will be dominated by the view we take as to these In cases where we find no organic disease of the heart we shall probably advise as to careful living with a strict avoidance of anything approaching to invalidism Open-air pursuit should be encouraged and a reasonable amount of exercise should be taken. The diet should be light mastication should be thorough, and the teeth should receive attention to make this possible to eliminate oral sepsis and to guard against flatulence Coffee should be avoided tea should be weak and fresh tobacco should be limited Many other precautions may doubtless be suggested Digitalis should be avoided though I fear it is often ordered, and the cautious use of ammonia bromide may give some relief It is of interest to note that some observers claim to have seen great benefit from the use of small doses of quinidine, both

in extra-systoles and in paroxysmal tachycardia Fred M Smith of Chicago is especially confident about this The condition of the patient in cases of paroxysmal tachycardia is often extremely alarming, and of course some patients die during an attack The sudden spontaneous cessation of the attacks makes it difficult to gauge the value of the different manœuvres, such as firm pressure on the abdomen, holding the breath after a full inspiration, etc, which are tried to cut them short I have on more than one occasion given morphine hypodermically during the height of an attack, with the happiest results In the treatment of the irregularity of the heart arising from extra-systoles steady *encouragement of the patient is most necessary*, for "A merry heart goes all the day, Your sad tires in a mile-a"

Pulsus Alternans

I have mentioned the condition of *pulsus alternans* In this every second beat is weak, and that without the excuse of being premature as in the case of the *pulsus bigeminus* The prognosis of this is so grave that it is necessary to mention that a short period of alternans may follow on a premature systole without exciting alarm, but if it shows any tendency to persist the outlook at once becomes serious The condition may be simulated in heart-block, complete or partial, when every second heart beat coincides with an auricular systole which prevents it having its full effect The occurrence of an interpolated extra-systole, so weak as not to be detected at the wrist, may also simulate the condition, and it may also be found after the administration of atropine When, however, these extenuating possibilities are eliminated we are certainly confronted with a very grave condition, and serious myocardial disease must be suspected I have, however, reassuring recollections of two cases of well marked alternans in which the patients did well one was in a frail woman with renal disease, who not only recovered but who subsequently survived an attack of pneumonia, the other was in a young man who had double pneumonia and pericarditis, and who afterwards joined the army and took his share in the great war

Heart-block

I must be very brief in what I say about the irregularities due to heart-block When the block is complete and of some duration the ventricle, which sets its own rhythm, usually acts regularly, but to this there are at least two exceptions One was pointed out by Wenckebach, and is due to the occurrence of extra-systoles originating in the ventricle and differing from those seen when there is no block in the post-extra-systolic pause being of the same length as those which follow on the rhythmical beats Another exception is provided by cases in which there appear to be two centres in the ventricular musculature with different rhythms, one or the other of which in turn determines the ventricular rate

When the heart-block is partial there may of course be no irregularity, as when every second auricular stimulus gets through But when a block occurs sporadically, or when every third or fourth auricular stimulus is blocked, irregularities of varying patterns are met with A mere lengthening of the period of auriculo-ventricular transmission, which is of course the mildest form of heart-block, causes no irregularity and its mention may appear irrelevant but it may be a condition leading to heart-block, and I have found it last after the other manifestations of heart-block have passed off The causes of heart-block are very diverse acute or chronic lesions, recoverable or not, may be present, and the prognosis, so far as the duration of the block is concerned, will vary in harmony with these

When a patient has partial heart-block it may pass off entirely and the P-R interval may in time become normal, on the other hand, it may become complete, and then the patient is usually better in health and more comfortable than when the block was partial, both when the block is partial and when it is complete he is liable to attacks of the Adams-Stokes syndrome, and any one of these may prove fatal When a patient has complete heart-block, even if of some considerable duration, it may pass off completely, sometimes passing through a phase of partial heart block and sometimes apparently without doing so

There are many points of interest in the management of cases with partial heart-block, but considerations of time and space alike prevent their discussion by me I am in hopes, however, that others may contribute to our knowledge of this important aspect of our subject

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II—JOHN HAY, M.D., F.R.C.P.,

Senior Honorary Physician, Liverpool Royal Infirmary

May I first express my appreciation of the masterly and lucid presentation of the subject to which we have just listened? I do not think it could have been done better

In the time at my disposal I can do little more than underline some of the points referred to by the opener He described in detail the various forms of cardiac arrhythmia, and it is clear that prognosis and treatment alike depend on the recognition of the particular type of irregularity present Unless the nature of the irregularity is recognized prognosis is of necessity vague and hesitating, and treatment unsatisfactory I venture to say that there is nothing more important in the management of heart patients than the power to recognize the presence of auricular fibrillation

The war has done a great deal to focus attention on the heart, and there is now a far higher level of knowledge of this aspect of cardiac trouble, but even so there are many practitioners who have *no confidence* in their own *opinion* in the face of an abnormal cardiac rhythm It is essential that all should be familiar with the characteristic manifestations of this common and serious deviation from the normal—namely, *fibrillation of the auricle* In fibrillation the fundamental rhythm is lost, the action of the ventricle is disorderly and chaotic, and exercise aggravates the arrhythmia There is a tendency to consider a rapid ventricular action as an essential characteristic of fibrillation, but it is well to remember that even in the absence of treatment with digitalis the ventricular rate may be well within normal limits

It simplifies matters if we recognize that the more common irregularities can be arranged in two groups In the first group are the sinus arrhythmia, in which there is a rise and fall in frequency associated with respirations, and the arrhythmia due to the occurrence of premature beats In the second group are the disorderly action of auricular fibrillation and the alternating pulse Nearly every patient presenting an irregular action of the heart belongs to one or other of these groups

In the first group the prognosis may be considered good, other things being equal The presence of premature beats is, however, always an *indication* that a thorough examination of the patient should be made, especially in those of mature years The prognosis will depend on the associated conditions In the second group a guiding factor is the degree of distress induced by the onset of fibrillation from this it is possible to *gauge the integrity* or otherwise of the myocardium

The ventricular rate is also a guide—*the more rapid the* rate the more unsatisfactory the outlook, failure to respond to digitalis is an ominous sign, particularly if the fibrillation has been superimposed in a heart handicapped by a high blood pressure

The ominous import of an alternating pulse is now well recognized, I question, however, whether Professor Wilfred Griffith is quite justified in regarding the transitory alternation following an extra-systole with equanimity I believe it has the same evil significance as the fully developed pulsus alternans, although in a less degree Alternation occurring in a very rapidly acting heart is, of course, of little moment

The treatment of auricular *fibrillation* by quinidine sulphate has attained a degree of popularity at the present time and deserves our consideration Recently I have had the opportunity of pooling the results obtained by a number of observers, and the paper will shortly be published I may, however, say that in 166 cases of fibrillation associated with valvular disease quinidine was successful in restoring a normal rhythm for a period of more than three

months in 27 7 per cent in 87 cases of fibrillation in which there was no valvular disease the percentage of success was higher—namely 40 per cent The best results were obtained in patients affected by Graves's disease and toxic adenoma, in 12 patients a normal rhythm was restored and maintained in 66 per cent

In some of these patients partial thyroidectomy was an element in the treatment It has been found that the consequent diminution of the thyrotoxic condition facilitates the action of the quinidine A valuable paper by Dunhill, Fraser, and Stott in the July number of the *Quarterly Journal of Medicine*, deals with this aspect of the subject It is becoming more generally recognized that any septic focus interferes with the action of quinidine and should be radically dealt with before starting treatment It is probable that in the treatment of fibrillation by whatever mode of therapy every possible source of sepsis should be explored and dealt with

The last word in this discussion must be that the essential thing is the recognition of the nature of the irregularity present It is here that the difficulty lies and it is a matter of moment that every practitioner should make himself familiar with the clear clinical manifestations of the condition

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III—FREDERICK W PRICE M D Lond F R S Edin

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The subject of irregular action of the heart is of very great practical importance Formerly it was notoriously a source of perplexity and difficulty to the clinician A patient or it may be a candidate for life assurance or for an appointment, was examined and in the course of physical examination irregularity of the pulse may have been observed—with or without the usual physical signs of organic disease of the heart What significance was the practitioner to attach to the irregularity or the pulse in itself? It was known that this might on the one hand *signify definite and even serious impairment* or disease of the heart or on the other hand that it might be of no practical importance It was not possible however to determine the significance of the irregularity in any given case because there were no means of differentiating the types of irregularity or what any particular type signified The employment of the clinical polygraph and of the electrocardiograph has changed all this and the problem has been solved for we are now able to classify almost every case of irregular action of the heart into types, and we know what each type signifies I would at the outset emphasize two points—namely (1) Even *now notwithstanding* all that has been written on it, and the prominence given to the subject of late, there is not infrequently ignorance or a lack of appreciation of the recent advance in *knowledge of the* problem and its great practical importance (2) The work of elucidation having been accomplished by means of the clinical polygraph and the electrocardiograph it is not now necessary to employ either of these instruments in the vast majority of cases the use of a Dudgeon's sphygmograph being sufficient and in a large proportion merely auscultation This is of great practical importance to the general practitioner For example, by means of the aid of the stethoscope alone it is almost always possible to determine whether intermission of the pulse occurring during the course of acute infective diseases such as acute rheumatism, diphtheria and pneumonia is due to an extra systole failing to reach the wrist or to partial auriculo-ventricular block—a point of great prognostic importance

My custom is to classify all cases of cardiac irregularity apart from rare exceptions, into six groups (1) what is called sinus irregularity (2) irregularity due to premature contraction or extra systole, (3) irregularity due to heart block—whether sino auricular auriculo-ventricular or intra ventricular, (4) irregularity due to the pulsus alternans (5) irregularity due to auricular fibrillation and (6) irregularity due to auricular flutter To day we are concerned only with differential diagnosis significance and prognosis, and treatment and, in order to try to be of some practical help to the general practitioner I shall almost entirely confine my remarks with regard to diagnosis to the use of the stethoscope and of a Dudgeon's sphygmograph, *omitting all reference to the clinical polygraph* and the electrocardiograph May I emphasize the great advantage of auscultation at the apex over the other methods of physical examination in endeavouring to determine the type of irregular action of the heart —and the ventricular rate should always be counted at the apex

With regard to sinus irregularities it should always be remembered that while the condition is much more frequently met with in the young it may occur at all ages There is usually a definite relationship to respiration, and when irregularity of the cardiac action is found to be definitely related to respiration it is in all probability of the sinus type There is a variation in the length of the diastolic period of the cardiac cycle, while the systolic period remains constant and this can be detected by the stethoscope If a tracing of the radial artery be taken the intervals between the beat will be found to vary, but the actual variations are not numerous while the pulse beats are of equal or nearly equal, size There is no reason to suppose that sinus irregularity is either indicative of an impaired heart or that it adds to the gravity of any *diseased condition which may be present* so that this form of irregularity may be entirely disregarded

Extrasystoles are of great practical importance, they constitute one of the most frequent causes of irregularity of the pulse and may give rise to very disagreeable sensations It should be remembered that while they are of more frequent occurrence in the middle-aged and elderly they may be met with in the young They may appear at long or at frequent irregular intervals or regularly after each normal beat, or after every second or third, or more normal beats, or in paroxysms the last being an infrequent *cause of paroxysmal tachycardia* In most cases the pause which follows the premature contraction is abnormally long, being called the *compensatory cause* An extra systole may be so feeble that no wave is felt at the wrist so that there is simply an abnormally long pause resulting in an 'intermittent' pulse If a single extra-systole with its succeeding compensatory pause occur after every two normal beats, the pulse beat occur in threes the condition being known as pulsus trigeminus but if the premature contraction is so feeble that no wave reaches the wrist the pulse beats are paired (pulsus bigeminus) If an extra-systole occur regularly after each normal beat and the extra-systole fails to reach the wrist on each occasion, the rate of the arterial pulse is halved The commonest cause of intermission of the pulse, pulsus bigeminus, pulsus trigeminus, and halving of the pulse rate is the occurrence of extra-systoles On auscultation, in the vast majority of these cases, two heart sounds are synchronous with each cardiac cycle sometimes only the first sound very rarely is there an absence of both *sounds In the great majority* of cases a correct diagnosis of the existence of extra systoles can be made simply by palpation and auscultation especially the latter The differential diagnosis between intermission of the *pulse*, pulsus bigeminus, pulsus trigeminus and infrequency including halving of the pulse rate, *due on the one hand* to extra-systoles and on the other to partial heart-block, can be readily made as a *rule*, by means of palpation and auscultation, and will be referred to later It is sometimes very difficult, if not impossible to diagnose between extrasystoles occurring frequently and at irregular intervals, especially if of auricular origin from auricular fibrillation by palpation and auscultation alone but in such case a sphygmographic tracing is almost invariably sufficient

What is the significance and prognosis of extra-systoles? They indicate that a the time of the premature contraction some portion of the myocardium below the sinus is more excitable than the sinus This may or may not be due to some structural change in the myocardium it may, for example, be caused by poisoning of the heart wall without structural change The prognosis of extra-systoles is of great practical importance and there is considerable diversity of opinion on this question While it may be granted that extra systoles are of more common occurrence in the subjects of organic heart disease than in those who are not, and are more frequent in myocardial degeneration

than in valvular disease, further experience has not led me to change the opinion I expressed in 1911—namely, that when extra systoles are considered by themselves (that is, without reference to the conditions with which they may be associated) there is so far no evidence for supposing that they are either indicative of an impaired heart or that they add to the gravity of any existing morbid condition. Furthermore, while it is true that extra-systoles may precede the occurrence of other forms of cardiac irregularity, such as the complete irregularity associated with auricular fibrillation, it should be borne in mind that these might have arisen independently. The prognosis, therefore, should be based entirely upon the causal or associated condition.

With regard to treatment, this should be directed in the first instance to the causal or associated condition, the general health, and any existing cardiac failure, if present. I have never found digitalis or quinidine of any value for the irregularity itself. Bromides are frequently of benefit for the associated subjective symptoms, especially when there is irritability of the nervous system or insomnia.

Sino-auricular heart-block is a very rare condition, and the only remark I am going to make about it is that it may cause intermission of the pulse. Intraventricular block may give rise to gallop rhythm. The electrocardiograph is necessary for diagnosis. There are three degrees of auriculo-ventricular block: (*a*) there may be merely a prolongation of the interval which separates the commencement of the contraction of the auricle and that of the ventricle, each stimulus of the auricle reaching the ventricle, which duly responds; (*b*) the stimulus does not always reach the ventricle—in other words, the ventricle does not always respond to the stimulus from the auricle, and (*c*) a condition in which no impulses reach the ventricle from the auricle, so that the auricles and ventricles beat independently of each other. The first two of these are referred to as "partial heart-block," and the third as "complete heart-block." The first grade may give rise to irregularity of the pulse, on account of variations in the length of the intervals between the contractions of the auricles and of the ventricles. In my opinion this grade can only be recognized by means of the polygraph or the electrocardiograph. The second degree of heart-block may give rise to dropped beats, pulsus bigeminus, pulsus trigeminus, and infrequency, including halving, of the pulse rate. As already stated, the differential diagnosis between these conditions, due on the one hand to extra-systoles and on the other to partial heart-block, can readily be made, as a rule, by means of palpation and auscultation. In the former case a premature beat can be detected at the apex-beat, and on auscultation one or two heart sounds will, in the great majority of cases, be audible during the early part of the pause, because the ventricle has contracted, whereas in the case of partial heart-block, there will be absence of apex-thrust and of heart sounds during the pause, because the ventricle has failed to contract. When the ventricular rate suddenly falls to half its former rate, in all probability the case is one of 2 1 heart-block. In complete heart-block the pulse rate is slow, not infrequently being between 20 and 30 beats a minute, and usually not more than 36, though I have seen cases in which the rate has been considerably higher—even up to 62 beats a minute. It is sometimes difficult to distinguish between partial and complete heart-block without the aid of the polygraph or electrocardiograph. Most cases with a ventricular rate of 36 or under, however, are cases of complete heart-block. Also the presence of more rapid pulsations in the jugular veins than the rate of the radial pulse, and the presence of small waves occurring at regular intervals on the descending limb of the sphygmogram, afford help in differential diagnosis. In the opinion of some, faint muffled sounds may occasionally be heard during the long pause, due to the contractions of the auricles, although personally I have never been able to detect them. Some observers, too, have noted also an accentuation of the first sound, synchronous with the large pulsation in the jugular veins, when the auricular and ventricular contractions coincide. The occurrence of partial heart-block during the course of infective diseases is a sign, and may be the only sign, of myocardial involvement.

Digitalis and its allies are contraindicated in the first and second grades of heart-block, but not in complete heart-block, in which they may be given when there is dropsy or some other indication for their use. I have never found atropine, strychnine, oxygen, or amyl nitrite of any value in complete heart-block. Following Pheil and Parkinson, I have recently employed, with complete success, 5 minims of a 1 in 1,000 solution of adrenaline hydrochloride, administered hypodermically, in a case of Adams-Stokes syndrome due to complete heart-block.

By pulsus alternans is meant a condition of the pulse in which, while the rhythm is perfectly regular, a large beat and a small beat alternate. In the vast majority of cases it is necessary to take a tracing of the radial artery in order to recognize the condition. The prognosis appears to depend upon whether the condition is associated with tachycardia or not. In the former event it does not appear to have any serious significance in itself. In the latter, however, it is an indication of extreme exhaustion of the heart muscle. When the condition lasts only for a few cycles, this exhaustion may be only temporary, but even in these cases the prognosis should be guarded, when it is continuous, so far as my experience goes, death occurs within three years at the latest. It would be interesting to know whether the two cases mentioned by Dr. Wardrop Griffith were associated with tachycardia or not.

It is of the utmost practical importance that the variety of irregular action of the heart indicative of auricular fibrillation should be recognized, owing to its bearing on the diagnosis, prognosis, and treatment of cardiac affections. When auricular fibrillation has once set in, in the great majority of cases it persists for the remainder of life. This type of irregularity presents the following features: (*a*) It is continuous. (*b*) The irregularity is complete, the rhythm is irregularly irregular. In a sphygmogram it will be found that two beats of the same length or amplitude rarely follow each other. There is often no relation also between the length of a pause and the amplitude of the beat which follows it—that is, a short pause may be followed by a strong beat, or a long pause by a weak beat. There may be superadded ventricular extra systoles, occurring either isolated at irregular intervals, or, as is more usually the case, occurring regularly after each normal beat. In the latter event there is either pulsus bigeminus or coupling of the beats, or the premature contraction may be so feeble that no wave reaches the wrist, in which case the pulse rate is halved. This type of irregularity can usually be differentiated from the other types by palpation of the radial pulse and of the apex beat, and still better by auscultation at the apex. We may be reasonably certain of the existence of auricular fibrillation from the mere presence of complete irregularity of the pulse. In my opinion, the prognosis of auricular fibrillation depends mainly upon the causal or the associated condition, especially the integrity or otherwise of the myocardium, and whether any existing tachycardia can be controlled by digitalis medication.

On account of lack of time, I shall not deal with the subject of digitalis *versus* quinidine in the treatment of permanent auricular fibrillation (or of auricular flutter). With regard to digitalis, if auricular fibrillation is accompanied by tachycardia—whether there is mitral disease, aortic disease, or disease of the myocardium, the drug should be administered. With regard to dosage, my custom is to begin with 1 drachm of the tincture per diem, and to continue until there is anorexia, nausea or vomiting, diarrhœa, headache, an unduly slow pulse, or "pulsus bigeminus," or "coupling of the beats." The drug should then be stopped until these symptoms have passed away. In the great majority of cases the patient relapses, and the indication then is to find out what dose suits him best—that is the dose sufficient to control the action of the heart without at the same time giving rise to any toxic symptoms. One method is to begin with half the original dose, and this can be increased or diminished *pari passu* with the rate of the heart. Having discovered this dose it will be necessary, in the great majority of cases, for the patient to continue the drug for the rest of his life. In the course of time variations in the dose will be found to become necessary. The ventricular rate [illegible]

be watched Pulsus bigeminus is a danger signal and we should either stop the drug for a few days or diminish the dose I have used the method of massive doses introduced by Eggleston with success in a number of more urgent cases Intravenous injections of strophanthin are invaluable in still more urgent cases, or when the patient cannot tolerate any of the other preparations of the digitalis series of drugs by the mouth The results are the same as those following the administration of digitalis or strophanthin by the mouth, but are much more rapid, improvement in the general symptoms commencing within about two hours and becoming very pronounced six to ten hours later The injection should not be repeated within twenty-four hours, and then only in special circumstances and in a smaller dose, depending upon the ventricular rate Digitalis medication by the mouth may be commenced a day after the intravenous injection There is no evidence that the more recent preparations of digitalis are either pure substances or are more reliable than the tincture or the fresh infusion, both of which contain all the glucosides When auricular fibrillation is not accompanied by tachycardia no marked result usually follows the administration of digitalis

In most cases of auricular flutter there is a constant and uniform ratio between the auricular and ventricular rate, so that the rhythm of the arterial pulse is regular When, however as is not infrequently the case, the response of the ventricle to auricular contraction is at irregular intervals there is irregularity of the pulse rhythm, it may be even markedly so In some of these cases the sphygmogram may resemble that of a case from auricular fibrillation but if a sphygmogram from a case of auricular flutter be carefully studied it will be found that, even although the ventricular rhythm is very irregular the pulse beats measure out into groups of equal length whereas this is never the case in auricular fibrillation The diagnosis of auricular flutter is not infrequently impossible without the employment of the polygraph or the electrocardiograph indeed in some cases a correct diagnosis cannot be made with certainty even although the polygraph be employed an electrocardiographic examination being necessary I refer to the question of diagnosis without the use of these instruments under paroxysmal tachycardia in which the great majority of cases with regular rhythm or with pulsus alternans are due to temporary attacks of auricular flutter The same dosage of digitalis should be employed in cases of auricular flutter as in cases of auricular fibrillation with tachycardia, and the drug should be *continued until the full physiological* reaction is obtained After this, one of two plans may be adopted (1) The dosage may be lessened, and afterwards the administration of the smallest dose necessary to control the ventricular rate continued in the hope that the flutter may cease This plan is generally to be preferred, and I have had four successful cases of this kind within the last six months (2) Large doses may be continued in the hope of inducing auricular fibrillation, after which the administration of the drug is discontinued for some days in the hope of a return to the normal rhythm

A few words about paroxysmal tachycardia This term appear to be used in different senses I would suggest that it should be employed to denote a condition in which a marked acceleration of the cardiac rate occurs which commences suddenly and abruptly and without apparent cause lasts for a varying period, ceases suddenly and abruptly and is due to an abnormal rhythm—the stimulus for cardiac contraction, instead of arising at the junction of the great veins with the auricle, having its origin at an abnormal point The vast majority of cases of paroxysmal tachycardia are the result of (1) temporary auricular flutter with tachycardia, or (2) temporary auricular fibrillation with tachycardia Among other causes are paroxysms of extrasystoles We should consider the possibility of paroxysmal tachycardia whenever an individual is conscious of a marked increase in the cardiac rate or complains of attacks of palpitation, in either case occurring suddenly and without apparent cause, or suffers from dyspnoea on exertion, and other indications or cardiac failure coming on rapidly In some cases a correct diagnosis cannot be made with certainty even though the polygraph be employed an electrocardiographic examination being necessary The most important factors from the diagnostic point of view are (1) The commencement and termination of the attack of tachycardia The suddenness and abruptness of the onset and termination of the tachycardia is a characteristic feature—the maximum rate is attained within a few seconds and the return of the cardiac rate to what it was prior to the attack occur equally quickly, whereas in tachycardia associated with a normal rhythm the onset and termination are gradual (2) The cardiac rate A persistent rate of over 160 is almost invariably due to an abnormal rhythm, and a persistent rate of over 140 may be due to the same cause (3) The cardiac rate is not influenced by change of posture or other forms of physical exertion Within the last few months I have employed 5 grains—after a preliminary dose of 3 grain, to test for possible idiosyncrasy—of quinidine once daily in several cases of paroxysmal tachycardia, in the intervals between the attacks to prevent their recurrence, and it has been successful in each

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IV.—W. J. TYSON, M.D., F.R.C.P.,

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I THINK that it will interest this Section to be reminded that the subject or prognosis in heart disease was brought forward at the Annual Meeting of our Association at Brighton in the year 1886 I suggested to the collective investigation then in full work that this subject should be taken up and Sir Andrew Clark was the chosen spokesman to begin the debate

Within the last few days I have again read through the reports of this discussion and I can assure you it is strange reading Sir Andrew only dealt with valvular disease of the heart known to have existed over five years without causing serious symptoms, and in introducing the subject the author said that he must deal with it from a personal and empirical standpoint—a position which I intend to occupy this morning I may say in passing, in reference to the above debate that practically only the valvular side of heart disease was referred to Dr Frank Donald on of Baltimore was the only speaker who mentioned the wall being sometimes diseased The speakers including the late Dr Gairdner of Glasgow Dr Bristowe of London, and Dr Leach of Manchester drew attention to the points, which we now know, that rheumatic and choreic murmurs may and do disappear There were two significant expressions, which need to be repeated to-day (1) a case mentioned by Clark The patient felt ill only since he was told he had heart disease" and (2) by Bristowe "As to treatment, I am sometimes inclined to think that it is a pity there are physicians Many persons would lead a happy life enough but for them, it is quite time enough for persons to discover that they have heart disease when they begin to feel the effects of it"

The speakers did not consider the importance of the presystolic murmur in the same way as we do to-day, but they one and all—as opposed to Laennec—laid stress on the non-importance of most mitral systolic regurgitant murmurs, and also of many aortic regurgitant murmurs Clark's treatment was simple moderate diet, moderate exercise bowels attended to, work and encouragement Digitalis was more recommended in almost every case than it is to-day in other words its real action and proper place was not then understood, for as we know it slows the rate of the left ventricle without acting on the ventricle but through the vagus nerve acting on the supraventricular tissues

It is a long time since 1886—thirty-eight years—and this heart subject is again brought up at an Annual Meeting What changes or views have taken place during this interval? I am in a somewhat different position from many who are here to-day I have practised for forty-five years—hospital, private and consulting, more than this living in a comparatively small town I have had the opportunity, and I may say the advantage, of following up my cases I am purely a clinical physician and lay no claim to having known or worked the polygraph or the electrocardiograph although I have seen them used I have read pretty large

the heart literature, but I am giving you my own personal views and thoughts

In the first place, I do *not* think that my patients have suffered by my not having used the above instruments, but I must at once acknowledge that by these and other means our knowledge of the classification and diagnosis of diseases of the heart has been advanced One now recognizes sinus irregularity or respiratory arrhythmia, auricular fibrillation, extra-systoles or rather premature systole, heart-block, pulsus alternans, and tachycardia, but how far treatment has advanced in the same direction I think is very doubtful Looking back on my past cases I now recognize that I have seen examples of all the above conditions

It is forty years ago that I remember seeing a man of over 70 years of age suffering at intervals with what appeared at the time like an epileptic fit, his pulse varied between 30 and 15 I could find no disease to account for this variation, and of its origin or cause I knew nothing I found that by careful watching of the pulse I could tell when the fit would arrive, when this reached 22 to the minute the fit would occur Now, looking back, how plain the case appears!

There appeared about the same time in the BRITISH MEDICAL JOURNAL for 1879 and 1880 a series of letters on slow pulse, and, reading these again in the light of our present knowledge, I have no doubt that nearly all these cases were those of heart-block, yet not a single explanation of the cause is given

Again, take the case of respiratory arrhythmia, and consider how many young people have been condemned, and patients worried out of their lives, by being told that they had serious heart trouble and must rest from work and play I have had patients sent to me in ambulances from considerable distances, with full directions for permanent rest and continuation of drug treatment It requires courage and tact to get these patients up again and at work

The intermittent pulse we have all known for years—technically now called the premature systole or extra-systole—and have at last classed it in accordance with its true and correct value

We must all be particularly interested in auricular fibrillation, for we can now understand why many of our cases with a quickened pulse, say 120, with apparently no other disease to account for this rapidity, were benefited by digitalis, whereas other heart troubles were not so It is that in many cases of fibrillation we are enabled by experience to find out the exact dose of digitalis to keep the pulse at its proper rate—say 70

Tachycardia must have interested us all for many years and surprised us by being uninfluenced by rest and by exercise If I were asked what has been the greatest benefit conferred upon our patients during the last decade by men like Mackenzie and Lewis, I should say this, that in clinical medicine the effect of cardiac disease is to be estimated by the extent to which the ventricular action is affected, and the view that valvulitis is the central factor in heart disease has proved misleading In the words of Lewis, "The secret of successful prognosis lies in the actual tests of efficiency"

I had an interesting experience during the war in connexion with our own profession I was asked by the Government to examine all the doctors of Kent, Surrey, and Sussex between the ages of 40 and 55 with respect to their efficiency for war work One of my colleagues was a young heart specialist He reported unfavourably on some men as unfit on account of their supposed heart defects These men afterwards wrote to me—I suppose as being a Kent man and well known to them—saying that they were in large practice and working hard, and had never noticed anything wrong with their heart or their breathing until this army examination I replied that they should continue their work and think nothing about their hearts until some symptoms appeared, and even then, finding out their limitations, to go on working and live within these

It is said to me, and I feel sure that it is to you, to know how many people have been upset and depressed by this frequent heart examination It is quite time enough to know this when the heart begins to give trouble When breathlessness, pain, palpitation, giddiness, faintness, fainting, and fatigue appear, this is the time to think whether something can be done One would naturally then examine for oral sepsis, septic tonsils, chronic appendicitis, and acute, subacute, or chronic pulmonary lesions The one might influence unfavourably the prognosis in structural disease of the heart

I have watched aortic disease—regurgitant murmurs—for many years, and it has always appeared to me difficult to tell which of the cases are going to do well and which badly Of course it depends on the amount of the extra reserve power of the heart wall, and this, I take it, can only be gauged by testing in exercise Personally I have never seen a case of malignant endocarditis recover Dr Cotton says that a palpable spleen is usually associated with subacute infective endocarditis, but one hardly needs the presence of this sign to diagnose the above cases

In conclusion, the irregularities have been already mentioned, and are now well known As regards prognosis, a man's capacity for work is ascertained most certainly by putting him to work and by watching his reaction, after finding out what his limitations are he should live within them There are two diseases in which it is particularly necessary that rest should be maintained for some time—namely, rheumatic fever and influenza The two most important valvular troubles are the presystolic and the aortic regurgitant, but these vary greatly in prognostic value

I know of only one outstanding heart drug—digitalis—and even this one is practically confined to the treatment of auricular fibrillation, but I have found theobromine sodium acetate useful where there is cardiac dropsy

GENERAL DISCUSSION

DR FOSTER remarked that the irregularities of youth, and extra-systoles, were not now viewed so seriously, prognosis was good and treatment simple, especially in those cases where the over-anxious parent would give the child its freedom The condition of auricular fibrillation was on a different footing, inasmuch as there was often permanent damage done, thereby prejudicing a good prognosis Digitalis still remained their favourite drug and held its own Quinidine, however, sometimes acted when digitalis failed A young woman with mitral stenosis developed suddenly auricular fibrillation, was intensely ill, and cyanotic with much cardiac distress, quinidine was given and in thirty hours the patient was quite well She had a recurrence in eighteen months, owing to some alarming reports of the use of quinidine, digitalis was given, and the patient died in thirty hours He asked, what was the value of giving digitalis followed by quinidine? However optimistic one might be in heart cases, the outlook in cases of fibrillation was pessimistic, and those engaged in cardiological research should use all their resources to find out the cause of the condition, so that it might have treatment before the damage was done

DR HALLS DALLY (London) said they were all very greatly indebted to Professor Wardrop Griffith for the admirable and lucid manner in which, within brief compass, he had dealt with the salient features of the main types of cardiac irregularity, and to Professor John Hay for his views on the practical distinction between premature contractions and auricular fibrillation The essential difference, which Professor Hay had clearly pointed out, lay in the fact that the former possessed a dominant or fundamental rhythm while in the case of auricular fibrillation this fundamental rhythm was entirely lacking The more experience one had of electrocardiographic and polygraphic methods, the easier it often was to pick out the one class from the other without actual recourse to these methods at the time of clinical examination Now and again however, one came across a case in which the exact diagnosis became difficult or impossible without the useful aids It had been remarked by another [illegible] that he regarded prognosis in auricular fibrillation [illegible] always unfavourable When first the condition was described—and one had not then the opportunity of [illegible] out the subsequent history over a series of years—[illegible]

fibrillation was thought to be a grave condition, and to limit seriously the length of life In some cases it undoubtedly did so but with increased experience his own view was a far less gloomy one, since many patients with this condition lived for many years, and in the absence of other complications of gravity were capable of leading active and useful lives Digitalis was still their sheet-anchor, and he confessed that he found no other drug so useful in a large number of organic cardiac condition He found, however, that many practitioners were afraid of giving it, in the case of auricular fibrillation as well as in other cases, in the full dosage which was necessary to secure a state of partial heart block or in persisting in its use over a sufficiently long period of time Touching the effects of quinidine in cases of auricular fibrillation, their experience at Mount Vernon Hospital was that it should be avoided in the acute cases with rapid onset, and that it achieved most success in those of more chronic type This might probably be explained along the lines indicated by Professor Hay that the amount of toxaemia was usually proportional to the acuteness of the condition and that success was only to be expected when the toxic focus was first removed Premature contractions occurring in the absence of associated organic disease in individuals under the age of 40, on the whole carried a good prognosis when they occurred above this age he ventured to think that their significance was greater as indicating some defect which might prove to be more serious, although over 40 they were not infrequently met with He was in agreement with Dr Tyson in believing that at any rate in the case of anxiety neurosis grave harm was often done to the patient by his being told that there was something wrong with his heart

Dr G J Langley (Manchester) said that the more common cause of irregularity was probably produced by ventricular extra systoles, and these he divided into two groups The common one in which extra-systoles occurred might probably be regarded as physiological inasmuch as the usual complaint of the patient was that he could not get to sleep owing to 'the heart's bumping' The slowing of the heart which occurred prior to sleep doubtless gave a longer diastolic period during which there was increased opportunity for the ventricle to introduce an extra-systole Such cases showing extra systoles could be usually recognized easily, and it was found that the irregularity completely disappeared after sufficient exercise had been taken to raise the pulse rate There was, however, another group in which the extra systoles did not disappear on exercise, and these were prone to occur in patients past middle life One was tempted to believe that in such the irregularity might be due to changes in the myocardium That such changes were usual was shown by the work of Gosse in connexion with the alterations in the arterioles of the coronary circuit and for this reason they should be regarded as of serious import In connexion with the actual treatment of auricular fibrillation, it was possible that physicians had not given enough consideration to the question of the time occupied by a course of treatment and where time could be saved it was of natural help to the patient His own method had been to give a massive dose of digitalis tinct time according to the plan instituted by Eggleston and to follow this by quinidine according to the plan suggested by Emanuel of Birmingham, by which 6 grains of quinidine sulphate was administered every two hours until the pulse became regular, or half a drachm had been received By this plan the pulse speed was reduced by the digitalis as a preliminary and the regular rhythm was restored by the quinidine with the minimum waste of time Cases treated in this way had given results just as satisfactory as with the more prolonged method with the additional advantage of a considerably curtailed period of physical discomfort

Dr B H Pain (Southborough) referred to the problems that cases of cardiac irregularity presented in general practice

Dr E G Thomson (Bath) disagreed with Dr Tyson in his view that graphic methods were of no great value in general practice, on the contrary they gave valuable information about the condition of the heart muscle He asked for more information with regard to the dangers of quinidine, embolism was not infrequent in the ordinary course of cases of mitral disease was it more frequent in cases treated with quinidine?

Dr P W Veale (Leeds) protested against the habit of labelling patients as V D H and D A H He thought that no irregularity that had not been detected by the patient should be revealed He pointed out that auricular fibrillation did not occur in malignant endocarditis, and asked for an explanation

Lieut Colonel Longhurst asked whether anyone had had any experience of the use of convallaria which was used by Russian doctors to the exclusion of digitalis

Professor Hall said that the discussion had been interesting for the way in which it had brought together the point of view of the scientific man working from the scientific standpoint, and of the clinical man with the practical experience of the general practitioner It was the duty of a pendulum to swing Early in the last century the sounds of the heart were attracting so much attention that the pendulum tended to swing too far in their direction now perhaps it was swinging in the other direction Mistakes had been made in the things that were said to patient but the man in practice must say something and many things had to be considered in settling what was the right thing to say The term "weak" heart was to be avoided there was no "weak" pulse that meant anything as regards the heart

SECTION OF NEUROLOGY AND PSYCHOLOGICAL MEDICINE

T Grainger Stewart M D, F R C P, President

DISCUSSION ON CERTIFICATION IN MENTAL DISORDERS FROM THE MEDICAL AND SOCIAL ASPECTS

OPENING PAPERS

I.—HENRY YELLOWLEES O B E M D, F R F P S G, M P C P Edin D P M
Medical Superintendent The Retreat York

I feel it an honour to have been asked to open this discussion Although I was largely concerned in the choice of the subject with which we are to deal, I will confess at once that it is one which is quite unusually difficult to review wisely or to discuss profitably It is, nevertheless, one towards which a remarkable amount of medical and public attention is being directed at present, and I hope that a discussion of some of the practical points connected with it may prove interesting and perhaps helpful here and there

The title of our discussion would seem to imply that the medical and social aspects of this question of certification can be readily differentiated and separately discussed This is very far from being the case, if the social aspect means or includes the legal one, which, of course, it must For our present purpose it will be most convenient to start at the beginning of this matter of certification from a medical point of view and to observe how soon and how repeatedly we come to close quarters with social and legal considerations

Let us begin, then with the statutory certificate and go directly to the essence of it, which is the practitioner's statement or his conclusion that the patient is "a person of unsound mind and a proper person to be taken charge of and detained under care and treatment" You observe that the patient's medical and social aspects are put together in this prescribed form of words and the one certificate has to cover both The patient is "of unsound mind" *and* he is a proper person to be taken charge of and detained and he cannot be one without the other

Now it is very easy to imagine a person who is distinctly of unsound mind and yet by no means necessarily "a proper person to be detained" Is the form of certificate faulty inasmuch as it makes no provision for such? "By no means," you say Such persons do not require to be

certified" Exactly The certificate, then, deals essentially with the patient's social relations rather than with his medical state It is primarily concerned with his fitness for detention, and not with unsoundness of mind The Lunacy Act is only interested in mental disease if and when it renders a patient fit for detention I do not mention this to condemn it, but because it has an all-important bearing on the course the practitioner must adopt when writing a certificate Before proceeding, however, we must look at the word "detained," whose acquaintance we have just made Derivatives of the verb "to detain" hold unquestioned pride of place in the Act of 1890, and are usually fittingly mated therein with the companion word "lunatic" Most intelligent physicians, and especially those interested in the study of mind and its disorders, abandoned the use of this latter word about the time when they discarded the bow and arrow in favour of the arquebus, and ceased to accept the evil eye as the exciting cause of "windy spasms" It still flourishes, however, in courts of law, in the Lunacy Act, in certain sections of the lay press, and, for an interesting though hardly creditable reason, among those self-appointed "reformers," who, like the House of Lords, "represent nobody but themselves and enjoy the entire confidence of their constituents" We need only say that the word, and those who use it, might be placed, with advantage to the general community, on a certain "little list" of which we have all heard

To return to the word "detention," it is clear enough, without going into fine shades of meaning, that it signifies a keeping against the will, an interference with personal liberty Here, again, you will notice that there is no glimmering of the idea that a person of unsound mind might conceivably be not only willing, but anxious, to stay under care and treatment There is no consideration given here to the fact (and it is a fact) that a considerable majority of certified patients are not "detained"—"behind the shut door," if I may borrow a journalistic catchword from the editor of the *Spectator*—but remain behind the open one, because they are unable or unwilling to go beyond it

All this boils down to the fact that while the insane man may be a sick patient to be cared for, the law is very much more concerned with him as a man who is—if we may put its phraseology into plain words—to be deprived of liberty because he is moonstruck

Now it is but just to say that all this is not quite so inexcusably and hopelessly wrongheaded as it seems at first sight—for which small consolation we do well to be thankful It is bad, shockingly bad, but one can see glimmerings of the reasons that prompted it The chief one of them is that there was one dominating idea in the minds of those who drew up the Act, and that was the safeguarding of the liberty of the individual

Now this is a great and noble thing, and it would ill become us to speak lightly of any measures framed to protect it There is no need to remind the average Englishman of his debt to those of his race who have gained for him the liberty he enjoys to-day, or of how precious a possession it is It must be said, nevertheless, that "lunacy" legislation is so utterly obsessed with this idea of safeguarding personal liberty that it ignores almost completely the facts that the insane are ill, that their illness often prevents them knowing what is best for them, and that the opinion most likely to be of value on the point would, in all probability, be that of a competent medical man The reasons in this are hardly relevant and would involve us in a study of the history of the Act, but they are connected with the state of public feeling at the time it was drafted, the personnel of those charged with drafting it, and the condition of things in asylums at the time

We must now consider what happens when the medical man has stated his conclusion that a given person is moonstruck and should be deprived of liberty The oft-repeated statement that the liberty of every individual in the country is in the hands of any couple of medical men is, of course, absurdly and grotesquely untrue, but if it were so, I imagine that the public would be, to say the least, no less safe than they are at present

A petition and statement are, as you all know, filled up by the responsible relative of the patient The latter, by the way, is invariably referred to at this stage of the proceedings as "the alleged lunatic" This petition, along with the medical certificates, is then presented to a county court judge, a specially appointed justice of the peace, or a magistrate, any of whom has power to make out an order for the patient's reception

This is by a very long way the worst and weakest part of the whole business of certification The number of reception orders signed by county court judges is probably negligible compared with the number signed by magistrates and specially appointed justices That these latter ladies and gentlemen bring to this important and difficult duty a sincere desire for the public good, much discretion, and the most absolute integrity, is questioned by nobody (except, of course, the "reformers" previously alluded to) My complaint against them is simply that they are as a rule quite ignorant of the detailed requirements of the law which they are called upon to administer

Many of you will be familiar with the results which follow this sad fact I know of reception orders having been signed in cases in which one or both of the medical certificates were missing, in a case in which the petition was addressed to myself instead of to the magistrate, and in a case where the petition had been omitted altogether! After such instances it seems almost an anticlimax to tell of a case in which one of the medical certificates was, by some strange lapse, dated November instead of June, of one in which the petition and certificates were dated as having been presented the day *after* the order had been made, or of one in which the magistrate offered to sign a blank reception order form without having seen any papers at all!

All these instances are true, and the patients arrive every week with similar glaring irregularities in their papers, but with the order, which is the legal authority for their reception, duly signed Now, in the strict sense, this may be said to be illegal detention, or, more properly, illegal or irregular admission, and you will notice that it is an entirely different thing from what is implied by that catchphrase as used by the "reformers" I will say, however, that not in one case in ten thousand is there "illegality" of any other type, and the public neglect of this really serious matter is a perfect instance of the pastime known as "barking up the wrong tree"

Irregularities such as those referred to have, of course, to be rectified at once, and every jot and tittle of the law fulfilled This difficult, worrying, and singularly unpleasant duty falls—and I hope you appreciate the irony of the point—upon those unfortunate and lawless persons, the Board of Control and the medical superintendent concerned

We hear much about "the system," and are told that medical superintendents are part of it, and that its distorting and besotting influence, acting upon their natural ignorance and prejudice, unfits them even to offer an intelligent opinion where the welfare of the insane is concerned Let us at least put it to their credit that much of their time is spent in helping to administer the law as it stands, and in correcting the errors, even though they be but technical ones, of those who surely ought to be (but never are) regarded as the very keystone of "the system," whatever—if anything—that expression may mean

We have now to return to the certificate from the certifying physician's point of view, and we notice that consists, or should consist, of a statement of facts upon which he bases his opinion that a patient is of unsound mind The law is not satisfied with a mere statement of the medical man's conclusions (a fact, by the way, which is not generally appreciated), it insists that he shall forth "facts indicating insanity" Facts personally observed at the time of examination must be included and facts communicated by others may also be added The doctor, therefore, is not made the sole judge of the patient's insanity While recording his opinion, he must place observed facts on which it rests before the representative of the law, who has every right to draw a different conclusion from them if he feels so disposed The person has to satisfy himself that the doctor's *opinion* is founded is the magistrate or justice, who, as we have

is a lay person with almost invariably no knowledge of medicine, and not infrequently only a very indifferent one of the law

We may profitably digress here to notice what I regard as the crucial difference between the procedure in England and that in Scotland Each country has, as you know, its own Lunacy Act, and, as regards ease of working, welfare of the individual, and general convenience, there is no room for question as to which is the better of the two The English law is hedged around with safeguards, but many of them have a sadly boomerang like tendency and bear hardly upon those for whose benefit they were introduced The Scottish law is very characteristically administered more with regard to equity than to legal *punctilios, and it has far fewer safeguards, but those it has* are cast-iron ones and are in the right place One of the chief ones has to do with the point under discussion In Scotland the petition and certificates are laid before the sheriff, who is the authority who issues the order or warrant for the patient's detention Now the sheriff is a trained (and salaried) legal official, high and lifted up, and has a short and effective way of dealing with undated petitions loosely worded statements and doubtful certificates He simply refuses to sign the order The papers are returned to the person who presented them and—sometimes—an indication is given as to where the weakness lies No exceptions are made and discussion is not invited on the subject Generally speaking, it may be said that once the sheriff has issued his warrant, the papers on which he did so could stand inspection down to the dotting of the i's, by the House of Lords itself

That is a digression, but it is one of the explanations of the comparative immunity from legal trouble in mental work in Scotland I can hardly think of a case in which papers were returned by the Scottish Board of Control as being out of order after the warrant had been obtained, whereas in England, I should say that many superintendents would count themselves happy if a month passed without such an occurrence

To return to the certificate We see from the foregoing that its main object must be to convince a layman that a given patient is insane in the legal sense—that is to say a proper person for detention Now with that main object clearly in mind, how can the certificate be most well-framed I am sorry to say that one answer, and one answer only, leaps to the mind, in the first instance The Jews of old, we read asked for a sign but never did Jew ask for a sign so persistently and eagerly as laymen and lawyers demand 'a delusion" 'Has he got delusion" and then one cry 'Give us delusions," they say, or we *perish*, or at least your certificate does" I am not prepared to deny that a delusion, properly so called is no doubt *prima facie* evidence of insanity, but probably the saddest thing in all mental work is the apparent impossibility of convincing the lay mind that the importance of a delusion may vary to an almost infinite extent in different cases On the one hand, a delusion may be of the most trifling significance, while on the other it may be the very centre and essence of the *whole* case All this unfortunately, is a closed book to the average lay mind and, in particular, to the average legal one One waits with hope, long deferred, for some medical witness who has the courage and is given the opportunity, to explain the matter, when asked absurd questions about delusions in a court of law

The extravagant, rambling statements of simple mania, the disjointed proclamations of dementia praecox, the depressed forebodings of melancholia, the grandiose ideas of general paralysis, the incoherencies of hallucinatory confusion, and the perverted reasoning and false conclusions of paranoia, are lumped in an ignominious equality as 'delusions" and that is the end of the matter From a medical and scientific point of view, of course the thing is almost too hopeless to talk about—but there it is After all one can see and appreciate here, as in other connexions *something* of the legal view, if one tries hard That John Smith said, "I am a white rabbit," is a good, practical sort of statement which can be put in evidence and cannot be argued about It suffices for the purposes of the law and avoids any necessity for bickering with mental specialists over matters of opinion and conjecture and surmise What the particular state of John Smith's mind was when he made that statement, what particular brain illness, if any, he is suffering from, or, indeed, why he ever made the statement at all, are matters about which the law is not disposed to worry, and why should it?

None the less I believe that we are doing a poor service to our professional and scientific consciences if we see out to make our certificate what I have heard described as a really 'truthy" one—full of all manner of "delusions," and yielding its fruit every sentence The great and in fact the only practical, test of sanity for the purpose of certificates is, of course conduct and the aim of every certificate should be to give a simple, but definite picture of *abnormal conduct on the part of the patient* That is the first essential, and the more clearly that your picture can also show this abnormal conduct to be due to illness, so much the better for your medical self-respect Now, as regards drawing the picture, some of us will tend to fine line work, with an abundance of detail while others will tend to go in for general impressions or sketchy outlines Those who can steer a middle course are the rarer—the writer—who can write good medical certificates Why this should be such a difficult art I do not really know I have often thought that the attitude of distaste, not to say fear and trembling in which many of us approach the duty has a good deal to do with it and that such an attitude is very rarely justified The duty falls into three parts The first consists of a careful and conscient ous examination of the patient, the second of asking and answering the question, "Do I consider this person to be unsound in mind, and, if so, why" and the third of expressing your reasons (provided you do consider the patient to be of unsound mind) in words which will convey a clear picture to a lay person, and cause him to share your conviction The more carefully the first two parts of the duty are discharged the easier will the third part be

This is not the occasion to discuss with you the cruder and more glaring errors in framing certificates into which many of us have fallen at one time or another Most alienists have a stock of illustrations of these, with which to embellish their after-dinner speeches, and I am no exception but it would be out of place to retail them here Errors are pretty equally divided in my experience, between the mistake of *giving too little detail*, which produces a vague and unconvincing certificate, and that of giving too much, which produces a verbose and confusing one "He is queer in behaviour" is as bad at the one extreme as is the following at the other "After shaking hands, I said, 'What day of the week is it?' He refused to answer at first, but after persuasion said, very slowly 'Tuesday morning,' the same being untrue, as it was Wednesday afternoon"

No rules for guidance can be given The best general principle in my view is to state the outstanding aspects of the patient's *mental condition* in a *fairly* general way, and after such statements give illustrations or examples from the patient's detailed symptoms Each case, however is a law unto itself and I hardly think you would desire that we should discuss the details of this part of our subject I pass therefore to the consideration of the social and legal disabilities consequent upon certification, apart from the actual loss of personal liberty

I repeat here, though without any great hope of being believed that only a comparatively small proportion of certified patients regard as a distinct grievance the amount of restriction of personal liberty which is necessary This amount, by the way, is infinitely less than the public imagine, and is far from being the greatest hardship suffered by the patient The others may be briefly summarized by saying that a certified patient forfeits practically all his ordinary social and legal privileges, with the solitary exception that if he makes a will it is not necessarily invalid Most of these are returned to him if and when he is discharged "recovered" while others—such as permission to visit America—are lost to him for ever While certified his signature is useless on a legal document of any description, except a *will, and many* of us are familiar with the difficulty and confusion which result and persist until the tedious and expensive process of

appointing a receiver has been gone through No doubt a strict application of the law is the only absolute safeguard against abuses and scandals in this difficult matter, but a little elasticity, such as the accepting of the signature of an intelligent patient on a cheque, dividend warrant, or power of attorney, in cases where all the parties are known, and fraud is out of the question, would save a great deal of hardship and expense in a vast number of instances

Let us glance, in conclusion, at the way in which the public generally regard certification There is no doubt that the present Lunacy Act, the general ignorance concerning mental hospitals, and the grave disabilities under which certified patients labour, have combined to give the public, and many medical men, an intense aversion to the whole proceeding, which they regard as putting an eradicable stigma upon the patient A majority of persons view it with an unreasoning terror and disgust, and will go to practically any lengths to avoid it

The chief cause among those named is undoubtedly the present Lunacy Act A full, critical discussion of it seems hardly within the scope of our title, so I have merely mentioned a few points which are intimately concerned with the process of certification While writing this paper, however, I accidentally came across the most acute and scathing criticism of the Act I have ever read, in a twenty-year-old number of the *Journal of Mental Science*, and I cannot forbear to quote two paragraphs

"The liberty of the subject bogey should be relegated to a legal limbo, and lunacy legislation should be based not on panic and prejudice, but on common sense and justice.

"The lunacy law wants reform on many points, but first it is necessary to persuade those concerned in legislation that the medical profession is not in a conspiracy to shut up all the community in asylums, but, on the contrary, is really desirous of doing good to the insane that the insane are not criminals, but sick persons needing the most careful, skilful, and tender treatment, especially in the early stages of the disease"

The article then proceeds to deal with the treatment of incipient insanity, and touches upon the last point I propose to take up At present, by Section 315 of the Act, any person who independently undertakes, for payment, the charge of an invalid against whom mental disorder can be even alleged, is guilty of a misdemeanour According to the law, if such a one can be certified he *must* be, and he may not be treated except as a patient of an asylum, registered hospital, or licensed house Taking this fact along with the public feeling regarding certification, it is obvious that the care of early cases—an extremely difficult problem in itself—is a hopelessly insoluble one in England to-day

Bad laws are badly obeyed, and the foregoing provision is no exception "Anything rather than certification," being the cry of the public, and the law being what it is, we have, to our shame, many a case of definite mental disorder undergoing "treatment," so called, in a "nursing home," by "a nerve specialist," who, whatever his qualifications, lacks the essential one of practical acquaintance with the insane Thus the very people for whom exists the modern mental hospital, with its facilities for treatment and its trained staff, are kept out of it

Real borderland cases are a different matter, but, candidly, I fear that the public is being misled on the subject Let it be said quite clearly that, generally speaking, a true borderland case does not become insane, a mild or incipient case is by no means necessarily a curable one, and the acute, recent, recoverable cases are, on the whole, far more abnormal in conduct and require far more specially skilled hospital care than the permanently and hopelessly insane Unfortunately, the very opposite views to the above, and many more fallacious ones, are held by, and are being taught to, the general public To quote once more

Uncertified care may be the best or the worst form of treatment and may bring either salvation or utter ruin to the patient Ignorance may be worse than cruelty and the incipiently insane person who is well fed well clad and tenderly neglected in the nursing home bed or the genteel back parlour until hope of recovery is lost, is really subjected to the most grievous neglect"

I have left much unsaid, and I have refrained from constructive criticism and suggestions I have thought it right in this opening paper merely to put before you some of the most striking points for thought and discussion which our title suggests

In a way I deplore the fact that no direct scientific or clinical interest is attached to this discussion, but the glory of our specialty is its wide scope, and we can at least justify the inclusion of this aspect of it by its intense social interest and importance, and its practical bearing on the welfare of the insane

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When the general practitioner is confronted with a case of mental disorder he has a threefold task to perform He has to decide whether the patient is of unsound mind, and, if so, whether he should be certified If he decides that certification is necessary he has generally to overcome the family resistance to the advice he gives I should like to suggest a few clinical points which may be usefully borne in mind when the step of certification is in question

In the first place, what degree of insight has the patient into his own condition? Does he realize that he is ill? This is always an important consideration, for with a fair degree of insight it may be possible to avoid certification, and have the patient, if he be of the private class, admitted as a voluntary boarder Many such patients are still certified, though willing and even anxious to submit to suitable treatment, care, and control After insight comes the question of suicide Where a patient shows any evidence of being actively suicidal, certification is the wisest course Suicidal impulses occur in many depressed states, and it is well to remember that early cases of dementia præcox, especially young subjects whose school life has been unusually brilliant, are often liable to sudden, impulsive suicidal attempts, though there may be no apparent evidence discovered during examination There is the difficult case, which turns up from time to time, which is actively suicidal but not certifiable I mention this class of case because it would be instructive to learn the opinion of this Section concerning it I believe it is impossible as a general rule to certify a patient who intends to commit suicide unless there is other evidence of disorder of mind Next comes the question of danger to others Here there are some useful clinical signposts, not infrequently overlooked Ideas of persecution may or may not result in criminal conduct, but they are danger signals Many men live comparatively normal lives with vague ideas of persecution But the patient who discloses a firmly crystallized belief that he is being persecuted by one specific individual is a danger Most paranoid patients give us, clinically, warning of the approach of antisocial conduct by writing to the police or some public person, either for protection or to lay information against their supposed persecutor Persecutory ideas occur in many states—paranoia, dementia præcox, chronic alcoholism, epilepsy, and senile dementia being the most common The number of criminal assaults committed by senile dements with persecutory notions is surprising There is one form of these ideas of reference to which I would draw your special attention I refer to senile disorders, are generally directed against the chastity of the partner in marriage, and are a certain menace to the safety of the family and the public

I pass over the more acute states of excitement, confusion, and depression, where the state of the patient is obvious, and where certification is easy Many of the acute states are very transient, but I suggest that the best place for them effective treatment is a mental hospital, and that with increased access to and knowledge of these hospitals the public will adopt a changed attitude institutions for mental illness, and lose to a large extent its hatred of the admittedly unpleasant and cumbersome legal machinery at present associated with admission to treatment

With these few clinical suggestions I leave the practitioner, and propose to bring before you for discussion some of the difficulties of the physician in charge of a mental hospital The first deals with treatment

Having been duly certified as a person of unsound mind and a proper person to be placed under care, it is

surprising paradox to find our patient legally quite able to refuse the treatment which is deemed necessary by competent and expert medical men

Take the case of a successful and able business man, aged 40 years, admitted in a state of confusion. Examination suggests cerebral syphilis, with the prospect of excellent results from energetic antisyphilitic treatment. The gentleman, who has been making a sad mess of his business affairs for some weeks, stoutly refuses lumbar puncture, refuses the administration of salvarsan, and struggles violently if mercurial inunction be attempted. What is the right course to pursue? Such difficulties are, of course generally overcome in one way or another but no medical man is adequately protected against the possible consequences of forcing treatment upon a patient against his express wishes, however insane he may be. It seems reasonable, in a case where treatment is urgently necessary, and the friends of the patient are in complete agreement with the expert opinion advising the treatment that the patient's opposition should be overruled, and that the medical men carrying out the necessary technique should be securely protected against any possible legal action that might be taken by the patient.

The second difficulty to which I should like to draw your attention applies especially to those hospitals where patients are taken for payment. A patient, as you know, is detained by virtue of the judicial order, made by a specially appointed judicial authority and known as the "reception order." This remains in force for a year, and must then be renewed by a special report and certificate given by the medical officer of the hospital in which the patient is detained. For all practical purposes this is a renewal of the judicial order, and a recertification of the patient. It throws a heavy responsibility on the shoulders of the medical man—one which I venture to suggest is disliked and is certainly not wanted and does much to disturb the relationship between a doctor and his patient. In contrast to the Lunacy Act at present in force the Mental Deficiency Act of 1913 adopts a very different procedure and persons detained under this Act are seen at stated intervals by an independent practitioner and two visitors, usually justices of the peace, who decide between them as to the continuation of the order. Thus the medical officer of an institution where patients are received for payment has no part in the continuation of detention orders under this Act.

One of the most striking aspects of the whole subject of the care of the insane is the violent public feeling excited by any discussion of the subject. This will always be the case whatever Lunacy Act may be in force. Disorder of mind is still a profound mystery to the great mass of the public. It is in some ways comparable to the mystery of death. Think of the many defences erected by the community against the deep and instinctive fear of death. There are thousands of normal persons who will not pass a cemetery on a dark night. There is scarcely a village in Europe that is not erecting its magic stone emblem of propitiation to the spirits of those who died in the great war. Our patients touch similar deep and instinctive sources of feeling. One could recount at length the superstitions that have from time to time satisfied the public mind in its search for the cause of insanity. In this country a mental patient is still officially and legally described as 'moonstruck." We are all familiar with the panic caused by the rumour of an escape from the local mental hospital. Comparatively few years ago insane persons were treated with unbelievable cruelty, and that, let it be remembered with full public approval. In London itself a visit to Bedlam was a popular form of post-prandial amusement.

The community instinctively dislikes any departure from the normal and naturally persecutes its mentally afflicted: it criminals, and its scientific and social reformers. The happier lot of our patients to-day is due to the efforts of our own profession. But the public is still convinced that ill treatment is the natural treatment, and projects this conviction on to those of us who are engaged in this branch of medicine, believing eagerly the worst that is said of our work. Even legal luminaries regard "incarceration" in a mental hospital as the greatest of human ills, browbeat medical witnesses in court, and refer persistently to our nurses as "keepers." Our subject to-day is assuming a fresh importance in view of the recently appointed Royal Commission. It must be the aim of all doctors, both special and general, to evolve clear cut and constructive criticism of existing law.

GENERAL DISCUSSION

Dr. J. H. Thornley (Scarborough) said that he desired to thank the President and the officials of the Section for the compliment they paid him in asking him as a mere general practitioner to take part in the discussion on certification in mental disorders; and he felt some difidence in following upon the able and logical opening by so pronounced an expert on mental diseases as Dr. Yellowlees, but he hoped the Section would bear with him in his attempt to put forward some of the difficulties in this grave matter from the general practitioner's standpoint. He wished it to be understood that he held no brief for practitioners as a whole, but was merely speaking as one of them.

In the first place, although he considered that there was no reason to suppose that the trust reposed in medical practitioners and justices of the peace was abused by any negligence, yet the powers which the law conferred upon them were very serious, and the onus on the general practitioner was more than should justifiably be thrown upon him. Although he agreed to a great extent with Dr. Yellowlees that the oft-repeated statement, that the personal liberty of any individual was in the hands of a couple of medical men, was absurd, yet it was quite conceivable that the 'facts indicating insanity"—expressing the opinion of two medical practitioners who were possibly of very limited experience—and the order signed by a justice of the peace who's medical knowledge was *nil*, if not who's knowledge of the law was often decidedly limited, but who was rightly guided by the doctors' advice, ere to mean or legally depriving an individual of his liberty, and of attaching to him that stigma which—whatever we knew to the contrary—was still undoubtedly fixed upon him in the minds of the general public. Dr. Yellowlees had told them that in Scotland—and they had yet a good deal to learn from Scotland—a highly placed official the sheriff, acted in the place of the justice of the peace in England and satisfied himself that the legal requisite were correct, even to the dotting of the i's and the crossing of the t's. But much more so was it necessary that a highly placed mental expert, recognized and paid by the State, should sign and endorse a certificate justifying the medical opinion that the patient was of unsound mind and a fit and proper person to be detained as a lunatic. This he thought, would go a long way toward relieving the onus on the general practitioner, and convincing the relatives of the patient that by signing the petition and statement they were doing the right and proper thing. He was convinced that a patient, whether rich or poor, should have the benefit of the advice and experience of a mental expert—appointed by the State—who should be (if certification was decided upon) the signatory of one of the certificates.

They did not seem to be in the same position with regard to mental diseases as they were with regard to other medical and surgical cases, where they had the voluntary hospitals, staffed by the best medical and surgical men in the district, and where assistance in difficult cases was readily and willingly obtained even in doubtful infectious cases they always had the medical officer or health to give the benefit of his expert opinion and advice. With the exception of the large centres, there were no mental clinics where experts in mental disease could easily be obtained for advice and consultation. There were many medical men whose opinion might be perfectly sound, but who had not the aptitude for putting into correct phraseology the "facts indicating insanity observed by themselves," and it was a question whether the filling up of certificates was sufficiently taught at the medical schools. Dr. Yellowlees had told them how the layman and lawyer cry out for a delusion—but Dr. Thornley considered that there were not the only ones who did so. What a sense of relief it gave to be told by a colleague, when called in consultation with a view to certification that the patient had a

definite delusion Other conditions which worried general practitioners were those states of mental depression from innumerable causes—such as neurasthenia, brain fatigue, and financial, business, or domestic worries—when the patient saw his doctor, told him that he was "fed up" and felt so bad at times that he would like to "end it all," or that he was afraid lest he should lose complete control of himself and damage other people or take his own life These remarks were often made with a view to creating a sympathetic attitude on the part of the doctor and to impress him with the fact of how really ill the patient felt Although they might treat such remarks lightly, yet there was the lingering fear of a tragedy, the publicity of an inquest with the usual verdict of "temporary insanity," and the consequent damaging criticism of the medical attendant for not having realized the seriousness of the patient's condition

With reference to that group of cases including the insanity of toxæmias from acute infective disorders, traumatism, and the effects of drugs, alcohol, etc, were they justified in certifying such cases? They had to consider the benefit of the patient, who required skilled mental nursing and treatment under the best conditions, only obtainable in the best mental institutions, the undoubted slur which was absurdly but assuredly cast on anyone who had been confined in a mental hospital, together with the fact that the patient, if not in the acute stage, was certainly associated in the convalescent stages with other patients of a permanent type, such as those with dementia General practitioners were, therefore, divided in their opinion by the distinct benefits on the one hand, and the unfortunate social aspects on the other With regard to those difficult "borderland" cases where skilled observation was so essential, Dr Thornley considered that some method should be devised by which such patients could be temporarily detained This detention would automatically cease within a prescribed period, and thus give time for observation and reflection before a definite opinion was given He was sure that mental experts would be the first to admit the extreme difficulty in distinguishing the graver forms of neurasthenia and marked cases of eccentricity from some cases of insanity The general practitioner, the mental expert, the nursing home, or whoever was taking charge of the patient, would, however, need to be adequately protected against legal action

Dr Thornley summarized the difficulties and suggestions, which he had attempted to put forward, as follows

1 To lay the wraith of the "liberty of the subject" bogy by bringing in the aid of a trained alienist—a State official—to lift the burden from the shoulders of the general practitioner

2 The education of the general public to realize that insanity was a malady and not a social stigma

3 To obtain the aid of a highly placed legal official who would supervise the case and satisfy himself that the documents, etc, conformed to the law

4 The need for a more practical experience and instruction in the expression of the facts upon which the medical man's opinion was based, and to strike the happy medium between a too scanty, and what Dr Yellowlees had called a "too fruity," certificate

5 The fact that a delusion was so variable in its importance, although an obvious fact indicating insanity, yet it alone might not be a fact justifying certification

6 The constant fear of suicide

7 The justification or otherwise of certifying in cases of sanity of toxæmias, trauma, etc, when there was every reason to believe the cure would be speedy

8 The necessity of some very modified form of temporary detention for reflection and observation

Dr J I Russell (North Riding Mental Hospital) said that in the present form of certificate legal and social considerations almost completely overshadowed the medical aspect of the case The primary object of the certificate was to procure the patient's detention the question of treatment of his illness was rarely given a thought Neither the friends nor the doctor of the patient ever thought of sending him to a mental hospital until his conduct had made him intolerable at home From the legal point of view this was quite right, but he felt certain that it was to a large extent responsible for the vague fear and horror with which the man in the street viewed the subject of mental disease Dr Russell asked if they themselves were not encouraging this view They were joining in the popular cry—"At all costs save the incipient from certification," and to this end it was proposed that cases should be treated in general hospitals, often poorly equipped for this type of case—hospitals without verandahs and without gardens, and situated, perhaps, amidst the noisy traffic of the city He feared that this policy would only increase the stigma which was so unfortunately associated with the mental hospital, and he felt that it would be wiser to fight for the elevation of the mental hospital to popular favour, rather than to encourage a retrogressive movement which threatened to convert mental hospitals into homes for incurables Dr Russell believed that such a fight was possible, but not with the present form of certificate, and he suggested that the greatest good would result from the adoption of a medical certificate which would admit a patient to a mental hospital and there detain him for a limited period—three months if necessary—in much the same way that patients were detained in hospitals for infectious diseases At the end of this period, if not previously discharged recovered, the patient would either return home or a reception order would be prepared By this means he believed that cases would be received earlier, the status of the mental hospital would be raised, and the suicide of many incipient and recoverable melancholics would be prevented

Dr Russell then entered a plea for the rate-aided patient, considering that it was neither just nor reasonable that the certification of a poor man should be so much easier than that of a man of means Whatever purpose might be intended it was surely not achieved, since any patient, however affluent, might be admitted as a pauper and, without further certificate, be transferred to the private class, after which he remained as a private patient with but one medical certificate and without petition He considered that the same procedure should apply to private and rate-aided cases The poor patient had another grievance it was not an uncommon practice to remove him to a union hospital, ostensibly for treatment of his malady, but in fact merely to facilitate his transfer to a mental hospital, his certification and admission were arranged without either consulting or informing his friends Moreover, the petitioner of a private patient might at any time order his discharge, whereas the relatives of the rate-aided case had no such right It seemed unfair to deny to the next of kin of a rate-aided patient the rights and privileges enjoyed by the petitioner of a private patient

Dr Stanford Read (London) regarded insanity as really a legal term involving the necessity for control, insanity was to be distinguished from mental unsoundness In the minds of most medical men, however, the terms were largely synonymous The result was that the idea of commitment to an institution went hand in hand with mental disease In certification, the "facts indicating insanity" were highly debatable, and thus a medical man with practically no knowledge of psychopathology might commit a patient whose condition required no such step Thus, such symptoms as depression or suicidal ideas might be taken at an incorrect value It would be ideal, therefore, as Dr Thornley had said, to have in every local area an expert in mental disease who would be either entirely responsible for certification or be a co-signatory with the medical practitioner It would also be ideal if every mental case could be first placed in an observation hospital prior to certification The stigma attached to insanity was deeply rooted, and was only helped by the medical world speaking of "nervous breakdown" when the word "mental" should be used The public should be educated and familiarized with all the factors of mental hygiene, only in this way would the stigma gradually be removed In Gheel, in Belgium, where over a thousand certified insane patients were housed with the general population, and where they had more or less liberty—the system that had been in vogue for hundreds of years—the

had come about such a familiarity with insanity that it was viewed in a very different light from the usual one, and the factor of the stigma had sunk into insignificance.

Dr BEDFORD PIERCE (Leeds) said that the system of "voluntary treatment" should be greatly extended. The more it was used the less would be the need for certification. In spite of many recommendations, voluntary treatment was still impossible in any public mental hospital. It was perfectly true that few miscarriages of justice occurred under lunacy procedure. He personally had never known a patient wrongfully detained, and a legal commissioner had told him that he had known of only one case, and it so happened that privately he had heard particulars of this case which showed there was room for doubt. The record of the medical profession was extraordinarily good in this respect, and they could justly be proud of it. Yet they must not be content and silently ignore criticism. It was not that the asylum as a profession would suffer, but that there was grave danger that timely treatment of their patient would be delayed. The Harnett case disclosed a painful ignorance of mental hospital administration and the attitude of counsel and even the Bench, towards medical men engaged in psychiatry left much to be desired.

Dr. Bedford Pierce submitted that the procedure in respect of compulsory treatment in recent acute cases—such as acute melancholia following confinement and delirium during the course of convalescence from acute infective disease—should be different from long-standing cases. There was the case of a man suffering from depression who tried to throw himself out of a railway carriage window and was certified; he recovered in a week and found himself deprived of his post as managing director of his company in accordance with the articles of association. Cases such as these needed skilled care upon some temporary basis without certification. He considered that certification could be deferred safely provided (1) there was no concealment, and (2) the hospital or place of treatment was properly equipped. Privacy without concealment could be secured by a system of notification accompanied by medical statements and reports. Much had yet to be done to provide proper conditions available to all. At least three provisions appeared to be essential, and all unfortunately involved more expense. (1) Adequate medical service (not one doctor to 500 patients). (2) A skilled and trained nursing service. (3) Provision of gardens, occupations, interests, and the exclusion or the degraded chronic insane. If in every area suitable hospitals were provided, such could be affiliated to the general hospital and where medical schools existed they would become centres for teaching psychiatry. A great step would thus be taken towards providing early and more effective treatment, and in reducing the need for formal certification.

Concerning the present procedure of certification, Dr. Bedford Pierce submitted the following criticisms. (1) The present magistrate's order was of little value as a safeguard. He agreed with Dr. Yellowlees that the Scottish method of a sheriff's order was better. The order should be given by a trained lawyer with a fixed address and definite hours. In case of doubt he would be authorized to call for expert assistance. Any inconvenience or danger from delay could be met by an elaboration and extension of the Urgency Order. There need be no special haste about the Reception Order if the patient recovered before it was obtained so much the better. (2) The procedure in pauper and private cases should be the same. The fact that the patient was an artisan's wife did not justify any less care. He advocated two certificates in all cases. (3) There seemed no reason why the doctors should be obliged to see the patients separately. (4) It had been suggested by Dr. Tromley that one of the certifying doctors should be a specialist. He was doubtful, however, whether it was wise to split up the profession.

As a subject for discussion, Dr. Bedford Pierce suggested in respect to complaints of improper detention the appointment in each district of a legal referee, who would be entitled to call in expert advice and see documents. The deprivation of civil rights was a grave matter and as a profession they should readily welcome appeal to a legal authority. Conflict would no doubt arise, and patients might be recommended for discharge undesirably, on the whole, however, the burden on medical men in charge of the insane would be lessened. The scheme might work out as follows. A patient was released and complained of his detention. It would be the duty of the medical man in charge to give the particulars as to how he could apply to the referee (somewhat akin to the form which was at present supplied for appeal to a magistrate). The referee would take such steps as he considered necessary to satisfy him that the patient was rightly detained; if dissatisfied he would report to the Board of Control for decision. This would necessarily mean the decentralizing of some of the work of the Board of Control, but it would not reduce their responsibility in those cases that could not be settled locally.

In conclusion, the speaker urged the following points. (1) The voluntary treatment of patients should be facilitated in every possible way. (2) Temporary detention without certification in recent acute cases should be permitted. (3) Effective treatment should be secured for all patients, poor as well as rich. (4) A legal referee empowered to call in expert advice in difficult cases should be appointed in every district. (5) Finally, the responsibility of initiating treatment necessarily thrown on the medical profession should be accompanied by effective legal protection, but every patient if aggrieved, should have a right of appeal to a legal referee.

Dr JOHN MILLS (Ballinasloe, co. Galway) expressed his entire agreement with the chief points of reform indicated by Dr. Bedford Pierce. He considered that the most urgent reform needed was that the class referred to by lawyers as "pauper patients" should be allowed admission, under proper safeguards, to district asylums on the same conditions as "voluntary boarders" were admitted to private institutions. He could recollect many patients with incipient insanity who had come to him asking for admission under the present law he was compelled to refuse. Dr. Mills also desired to draw attention to the great reluctance of juries to find anybody insane no matter how strong the evidence and suggested that temporary detention on the certificate of an official similar to medical referees under the Ministry of Pensions would give the general public more confidence in mental hospitals.

Dr DAVID BLAIR (Lancaster) said that it was distinctly unfair that the whole onus of certification should be thrust upon the family physician. He considered that all patients—private and rate-aided class alike—should be certified by two medical men, one being a specially appointed mental expert *and the other the patient's usual medical attendant*. The importance of the medical certificate being a statement of facts and not a mere expression of the doctor's opinion, was *not sufficiently realized in practice*.

Dr. C. WORSTER-DROUGHT (London) emphasized the importance of remedying the anomaly that a patient certified as of unsound mind was legally able to refuse all necessary treatment. Certification therefore did not imply compulsory treatment. He had a case of one of cerebral syphilis to which Dr. James had referred and entirely supported his observations. The matter could be adjusted by the insertion of a treatment clause in the medical certificate or if this were impracticable from the legal standpoint by using an additional certificate authorizing necessary treatment and protecting the physician from legal action as regards the question of certifying a patient merely on the reiterated threat to commit suicide. Dr. Worster-Drought was of the opinion that in the majority of such cases certification was unjustifiable. He remembered an instance which occurred while he was engaged in neurological work in the army during the war. A recruit was admitted to hospital with the history that he had attempted to drink carbolic acid. While in the observation ward the patient repeatedly announced his resolve to commit suicide, but showed no other symptoms. He was not unduly depressed nor did he exhibit any disorder of conduct. In due course he was certified about four years

later, when the war was over, the patient sought out Dr Worster-Drought, and among various threats accused him of ruining his life by causing his certification, he said that not for one moment had he ever intended to commit suicide, but that he had merely acted the part to escape military service Some months later, however, he was again certified by other physicians, and was still in a mental hospital

Dr Worster-Drought considered that a defect in our social system was that between the general hospital and the county mental hospital there were no institutions to which a patient of the so-called "pauper" class could be admitted The general hospital was not suitable for, and usually did not admit, either borderland cases or those suffering from the milder forms of insanity, there was no other course but certification Some cases were admitted to the special hospitals for nervous diseases, but these institutions did not really desire such cases, nor were they entirely suitable What to do with the mild and borderland cases whose means were slender and those of the hospital class was an ever-recurring problem The position could be met only by the foundation of special institutions similar to the Maudsley Hospital, or by the admission of voluntary boarders to the county mental hospitals, the latter course, however, was not without its objections

A COMPARISON OF THE EFFECT OF THE LONDON CLIMATE ON CAPTIVE ANIMALS AND MAN

BY

N S LUCAS, M B,

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It had long been felt that there was some correlation between the weather and the number of deaths occurring among the animals living in the Zoological Society's Gardens, but there had never been any attempt to work out the actual figures This was probably due to the difficulty of obtaining accurate figures of the climatic conditions prevailing in the neighbourhood of the Gardens, the figures derived from Kew naturally would not apply However, from 1919 records have been kept at the Royal Botanic Society's Gardens, and as these are situated within half a mile of the Zoological Gardens, it would appear that these could be applied to the Zoological Gardens without introducing any serious error I wish here to acknowledge my indebtedness to the curator, Mr J L North, for the loan of all his records, which has made this analysis possible

In view of the larger numbers of small birds kept in the Gardens, and the frequent difficulty in giving an accurate diagnosis of the cause of death, it was not justifiable to attempt to work out figures for birds The conditions prevailing in the Reptile House also seemed to place the inhabitants somewhat outside the influence of the weather It was resolved, therefore that only mammalian deaths should be examined For this purpose all deaths due to accident or the attacks of cage companions were excluded The atmospheric conditions which appeared to have a bearing on the matter were the following

1 Maximum temperature in the shade The temperature in the shade was selected because all the animals have an opportunity to get into the shade should they wish it

2 Minimum temperature of the air This was chosen rather than minimum temperature of the grass, for the reason that in cold weather all the animals have a shelter—not necessarily heated, but enough to keep them from the extreme of ground temperature The warming of houses would seem to introduce a fallacy in the use of external temperatures, but in most cases a change of external temperature, if of any magnitude at all, affects to some extent the level of temperature in the houses

3 The total rainfall per month

4 The number of days per month in which the wind blew from the quarter between the north and the east This was included because it had been observed that the number of deaths seemed to increase when the wind was in that quarter

5 Total sunshine per month

6 The number of days per month on which fog occurred

7 Percentage of moisture in the atmosphere, saturation being taken as equal to 100

8 Total deaths per month

9 Total deaths from pulmonary diseases other than pulmonary tuberculosis

Further, it was felt that it would be of considerable interest to show a comparison between the deaths of the higher and lower mammals Figures were taken from the deaths occurring in the Borough of Marylebone excluding those due to accident or suicide Also a chart is given here for pulmonary disease in the same area Marylebone was chosen as being the borough in which the greater part of the Gardens is situated For these figures I have to thank Dr Charles Porter, B Sc, medical officer of health for Marylebone

A short explanation is also required of the charts themselves The four years taken are 1920, 1921, 1922, and 1923 These are indicated by the vertical black lines Each of the twelve black dots in the division represents a month The numbers are totals except in the charts of humidity and temperature, when the monthly number is the mean of the daily readings for that month The monthly figures for the four years then added together and divided by 48 give the mean for the four years, which is indicated by the horizontal black line running the length of each chart If the charts are then placed vertically in order, with the vertical black lines corresponding, the deviations from the mean occurring in each month can be read with ease

Turning first to the charts of total deaths in the Gardens, it is seen that the number of deaths is, as a rule, above the average in January, and then falls gradually, with a rise in June and July, after which it falls, to rise again in the late autumn There is not, however, any great regularity Yet it can be said that the months of August and September are the healthiest

There is one year which is worthy of special note—namely, 1921 This was a year in which there was a remarkably fine spring, summer, and autumn The monthly total of deaths is below the average through a larger and more unbroken period in the year than is shown in any of the other years In fact, the only months in which the total is above the average are July, November, and December, and in November it is only just above—that is, 23 as compared to 22 5 That July, which was the hottest and sunniest month of the year, should be the month with the highest number of deaths—namely, 27—may appear remarkable but the drought brought with it a great deal of dust and also tended to cause decomposition of food, with attendant diseases of the alimentary tract

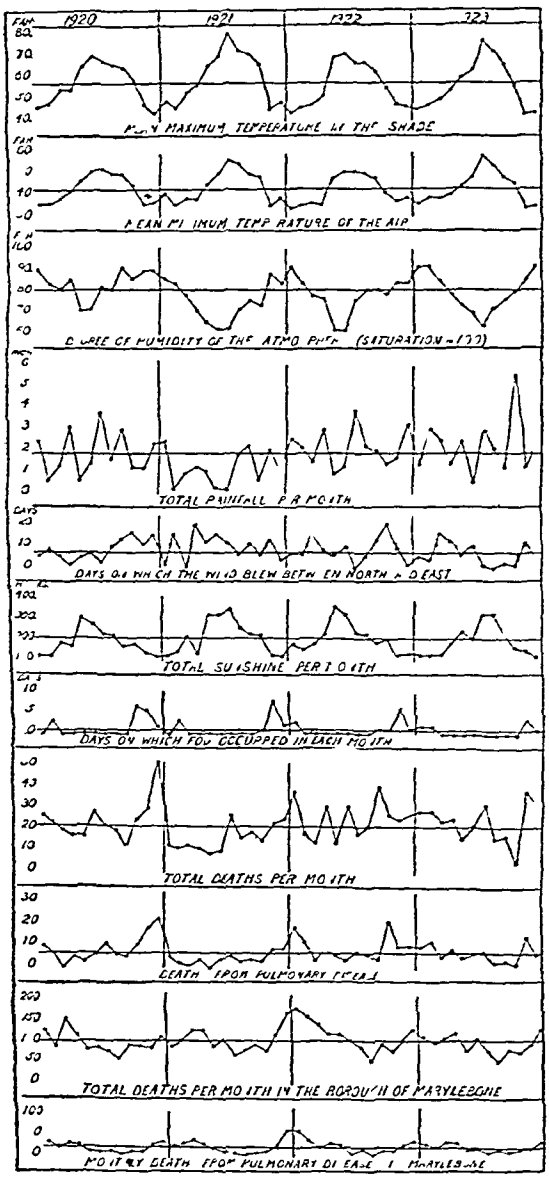
Human mortality, on the other hand, was not unusually low during 1921 The monthly total of deaths was only below the average during six months, and in December it reached a total only second to that of January, 1922, which was the following month Another reference will be made to this later

The pulmonary disease charts of animal and human show a much closer relationship, and both run in a more regular fashion There is a rise in November and December which reaches its highest point in January It falls during the spring, to remain at its lowest during June, July, August and September The year 1921 shows an abnormality, which is especially marked in the animal deaths Here the monthly deaths for the first ten months of the year were all below the average, while those for November and December were only 9 for each month, the average being 7 On the other hand, the human deaths only showed two months with totals below the average

Having pointed out that these rises and falls exist it is now appropriate to examine the other charts and to see what deviations from the normal can be found to have existed during those months in which there was a deviation from the normal in the death totals

Probably the first condition to occur to the mind of the investigator with regard to climate and the deaths of animals is temperature As would be expected, the charts of maximum and minimum temperature corre-

very closely When the mean monthly maximum drops, the minimum follows it, although there is one striking difference, which is that the deviations from normal for the maximum are far greater than those of the minimum The former ranges from 45° to 80° I , while the latter only ranges from 35° to 58°, so that the range of the one is more than twice that of the other The greatest deviations of minimum temperature occurred in February, 1921 and January, 1922 In February, 1921 (temperature 36°), the



to all deaths were 13—that is 9 below the mean while in January, 1922 (temperature 35°) the total deaths were 38—that is 16 above the mean The deaths from pulmonary disease were 3 below and 12 above respectively The figures for Marylebone were exactly average—that is, 110 for February 1921 while for January 1922, they reached 270 —that is, 160 above The pulmonary deaths were 7 and 30 above the average in these two months

These figures have been chosen as examples, but it can be seen from examination of the charts that the death figures and those for temperature do not correspond It is true that in the warm summer months the deaths are fewer than in cold winter ones, but, as the example taken shows, in two months in which the average monthly minimum temperature differs only by one degree, the difference in the death totals is very marked

There is another aspect of temperature which might easily be considered responsible for a large number of the deaths among exotic mammals this factor is the rapid changes in temperature from day to day, the existence of which in *the English climate*, is a *by*word To examine this a chart was made of the daily temperature , maximum and minimum, for two years, and beneath it a chart of the daily deaths. In spite of the fact that a drop in temperature of 10° in twenty four hours was by no means uncommon occurrence the death rate seemed absolutely unaffected by such changes In fact, *the one had so little bearing on* the other that there was no need to reproduce any of the charts It is not unnatural that this should be so, when the conditions in many semi tropical parts of the world are considered, where the fall of temperature at sunset is far greater and more rapid than it is here It is necessary therefore , to search elsewhere for a cause and the next points to examine are rainfall humidity of the atmosphere, and the direction of the wind

It will be simplest to compare in tabular form the two months which were previously used to point out the small influence of low temperature when considered alone These months were February 1921, and January, 1922

	February 1921	January 1922
Total deaths	13 below normal	16 above normal
Pulmonary deaths	5 below	12 above ,,
Total human deaths	Normal	30 above ,,
Pulmonary human deaths	7 above normal	30 above
Humidity	3% above	11 above ,,
Days of wind N to E	7 above	1.5 below ,,
Total rainfall	1.8 in below	0.7 in above

This is a very nearly perfect example of the importance of a warm moist dry atmosphere in health The only point in which there is a failing is that there were fewer days of northerly and easterly winds in January, 1922, than in February, 1921, but, as will be shown later, these unfavourable winds appear only to have influence when accompanied by rain It is interesting to note that the maximum temperature of February was only two degrees higher than that of January

Choosing the deviations in another way, December, 1920 provided the greatest total of animal deaths during the four years, and also the greatest total of pulmonary deaths, while October, 1922 gave least in total deaths and a very small pulmonary aggregate

	December 1920	October 1922
Total deaths ...	30 above normal	17 below normal
Pulmonary deaths ...	16 above	5 below
Total human deaths	10 above	13 below
Pulmonary human deaths	12 above	5 below
Humidity	9% above	1% below
Maximum temperature	10 below	1 below
Minimum temperature	6 below	2.5 above
Days of wind N to E	7.5 above	7.5 below
Rainfall ...	0.5 in above	0.8 in above
Sunshine ...	60 hr below	90 hrs below

Contrasting these two opposites it can be seen that in December the weather was unduly cold and there was a northerly wind There was only a slight excess of rain over the normal, yet the humidity was 9 per cent above the normal In October, a favourable month, the minimum temperature was above the normal, and the maximum only slightly below it The days of northerly winds were as much below the average as above it in the other month, but

the total rainfall was tremendous, and the humidity 1 per cent below the normal This would support the argument that rain without cold winds is harmless, while the converse also applies The human deaths correspond also, but, owing possibly to the different modes of life of acclimatized humans and unacclimatized wild animals, the difference is not so marked

Looking at the problem from the point of view of the average number of deaths in a month, July, 1920, has been chosen as showing an exact average total of deaths, and it is notable that there is no great deviation of wind, rainfall, or humidity, and that the deviations of the two former balance each other

July, 1920	
Total deaths	No deviation
Pulmonary deaths	4 above normal
Total human deaths	20 below
Pulmonary human deaths	5 below
Humidity	1% above
Maximum temperature	10° above
Minimum temperature	10° above
Days of wind N to E	5 days below
Rainfall	1 9 in above
Sunshine	20 hours above

There are two more factors which must be considered—namely, fog and sunshine With regard to the former, one cannot help feeling that, in Regent's Park at all events, the prevalence of fog was not really very great in these four years There have been only forty-one days on which fog has occurred in the whole of them, and on very few of these has the fog persisted throughout the day It is true that the number of deaths is greatest in those months in which as a rule fog occurs, but rain and north-east winds are also prevalent then, and in a much greater degree Of much greater importance is sunshine, or rather it is to be feared the absence of it, for the daily average of sunshine is but three hours out of the twenty-four In the winter months it is approximately one hour a day It is unnecessary to discuss here the action of sunlight in the prevention of disease That it plays a very important part is now generally accepted There is, however, one point which will bear emphasizing, as being new, and that is a possible difference in the effect of sunlight on man and animals To see this it is only necessary to look at the charts for sunshine and human and mammalian deaths for 1921 Reference has already been made to the good health of the animals during this year, but, whereas the total of *deaths remained low* among the animals in November and December, among the humans the total for the same months rose to a great height In fact the number of deaths in December was the second highest recorded in the four years, the largest being that of the January following It would appear, therefore, that the lower mammals might be capable of storing up the sunlight and using it to increase their disease-resisting powers more satisfactorily than can the human

The period over which these statistics extend is somewhat too short for any very strong conclusions to be drawn, but they are certainly suggestive of the two following

1 That a dry cold atmosphere is not harmful, nor is a warm *moist one*, but a cold damp atmosphere is most deleterious both to the higher and lower mammals

2 That while sunshine is beneficial to both, it would apparently have a more lasting effect on the lower mammals

REMOVAL OF PART OF A SAFETY-PIN FROM THE BRONCHUS OF A CHILD BY PERORAL BRONCHOSCOPY

BY

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The following case illustrates the relative absence of signs and symptoms which is almost characteristic of the aspiration into the air passages of a metallic *non-obstructive* foreign body

Peter C , aged 2 years and 10 months, had been playing with a damaged safety-pin on May 18th, 1924 The mother noticed that he had a slight attack of coughing lasting only a few moments, and she was unable to find part of the safety-pin Little more was thought of the matter, for there were no further symptoms beyond a slight loss of appetite, but after three or four days a very slight cough developed, just sufficient to give the mother a little uneasiness and cause her to consult the doctor, who, even in the absence of physical signs, fortunately decided to send the child to hospital for an *x-ray* examination

The child was admitted to the Royal Alexandra Hospital for Sick Children, Brighton, on May 24th, the honorary radiographer, Dr Burrington Prowse reported on the same day the presence of part of a safety-pin in the right bronchus It was lying obliquely at the level of the second to the fifth dorsal vertebra, safety-catch downwards, and tilted one inch from the middle line, the spring and pin portion were fortunately missing



Radiogram of part of safety pin in right bronchus

The child's condition was normal apart from a slight occasional cough, and the only physical sign present, and that an equivocal one, was a trace of deficient expansion on the right side

On May 25th the child was starved of fluids for five hours and given 1/200 atropine in order to keep the bronchus as free as possible of secretion Under chloroform anæsthesia the larynx was exposed with a laryngeal spatula through which a 5 mm bronchoscope was passed into the trachea The upper end of the pin, not yet blackened, was seen just above the carina, and was grasped with slender Paterson forceps A little manipulation served to release the impaction of the safety catch, which was caught on the junction of the upper lobe bronchus, and the pin was then withdrawn, together with the bronchoscope, to the level of the rima glottidis, into the axis of which it was rotated, and then removed The bronchoscope was in use for four minutes, and no post-operative oedema developed For four days there was slight hoarseness, and the child left the hospital in a week

An experience such as this emphasizes the need for vigilance in dealing with cases in which the presence of a foreign body is suspected, whether or not presenting symptoms, and the advisability of a radiogram in all cases It also emphasizes the fact that peroral bronchoscopy is a satisfactory means of dealing with such cases, which should completely supplant the old method of bronchoscopy through a tracheotomy wound

Memoranda:

MEDICAL, SURGICAL, OBSTETRICAL

POST OPERATIVE THIRST

I venture to suggest the following simple means of relieving the thirst and dryness of the mouth and throat which follow abdominal operations It consists in spraying the throat and mouth with a solution of boracic acid gr 10 to the ounce of water, slightly acidulated by the addition of a little lemon juice The spray is cooling and cleansing in its action and reaches all parts of the mouth fauces and pharynx which neither gargling nor rinsing of the mouth can do without considerable exertion and practice they are practically impossible in children Spraying requires no exertion on the part of the patient beyond opening the mouth and can be applied in whatever position the head may be resting The liquid used can be made very cold by keeping the bottle on ice or hot by placing it in a bowl of hot water I have found the cold spray to be the most gratifying to the patient the spray can also be used to great advantage in fevers and sore throats

T D Harris, M R C S Eng
Aberdare

TUBERCULOUS CERVICAL GLANDS

With reference to the article on tuberculous cervical glands by Mr R Davies Colley C M G F R C S in the Journal of August 16th (p 259) I would like to mention a method which has been used by me for the treatment of single suppurating tuberculous glands before or even when they have involved the surrounding tissues to a slight extent, but before a sinus has been formed

As soon as fluctuation is present in the gland the skin is sterilized and a suitably curved surgical needle carrying a stout linen thread is made to transfix the abscess It the gland is tending to point to the surface the site of exit is made at that spot—the points of entrance and exit being kept as far apart as possible The ends of the coarse linen thread suture are tied in a knot so that a loose circle of thread is left passing through the gland A dry dressing is then applied

The contents of the abscess cavity drain out by way of the linen thread suture and every day the loose circular suture is moved either a little forward or backward to prevent it adhering The skin is painted with tincture of iodine once daily, and dry dressings applied as required The pus is allowed to drain out in this way till discharge ceases when the suture is cut and withdrawn

The main advantages of the above method, where applicable are the ease of application and that no resultant scar is left

F A E Silcock, M B D P H,
Medical Superintendent City of Leicester Isolation Hospital and Sanatorium

A CASE OF GENERALIZED VACCINIA

The case here recorded seems of sufficient interest to warrant publication

E W J a general labourer aged 44 was admitted as a recurrent case of melancholia to the Kent County Mental Hospital on July 23rd 1924 On July 29th vaccination was performed on the right arm in the region of the insertion of the deltoid On the morning of August 4th four pale papules appeared surrounded by a reddish area which daily became umbilicated purulent vesicles on August 6th accompanied by considerable swelling and inflammation of the whole limb In the evening of this (the eighth day after vaccination) a distinct vaccinia rash appeared on both arms the temperature rose to 102° and the patient complained of nausea and headache By midnight the rash had spread to the whole of the body excepting the face and the temperature (axillary) registered 103 4° The pulse rate was 90 and the respirations 20 No enlargement of glands could be felt On the following morning the temperature fell to 100° and the rash had begun to disappear in the evening the temperature was 98 4° There has been no further pyrexia or reappearance of the rash

I am indebted to Dr M Abdy Collins, the medical superintendent, for permission to publish the notes

G T Baker, M C, L M S S A,
Assistant Medical Officer Kent County Mental Hospital Chartham Down

LARGE OVARIAN CYST AND GALL STONES

This case appears to me to be of sufficient interest and rarity to justify publication

A married woman aged 56 was referred to me by Dr Rowland Llanadhairn on April 22nd 1924 and was admitted to hospital on that day She was suffering from an enormous abdominal tumour She had noticed a gradual enlargement of the abdomen for eighteen months it commenced on the left side she had had swelling of the legs and feet for twelve months and difficulty in micturition for six months Dr Rowlands was not consulted until Christmas 1923 when he diagnosed ovarian cyst and advised operation but this the patient refused As the swelling was incapacitating her more and more and as she had several attacks of mild abdominal pain and pressure symptoms such as dyspnoea palpitation and flatulence she at last consented

She was tall emaciated and pale but free from jaundice She complained of pain in the epigastrium radiating to the upper part of the spine and flatulence after food but had not had biliary colic She had lost flesh and strength especially during the last six months The pulse was 85 the temperature and urine normal The abdomen appeared to be completely filled by a large ovarian swelling projecting in front but no bulging in the flanks It was immovable dull to percussion and a distinct fluid thrill could be elicited A diagnosis of cystic ovarian tumour was made

Operation

This was performed on April 23rd under ether anaesthesia The abdomen was opened by a right paramedian incision extending from the level of the ensiform cartilage to just above the pubes The abdominal cavity contained an enormous multilocular cyst arising from the left ovary Extensive adhesions to the parietal peritoneum were separated and the tumour easily delivered through the wound and removed by dividing its pedicle distally between clamps The pedicle which was four inches broad was transfixed and ligatured and the raw area covered in by Lembert sutures

Nothing abnormal was found in the pelvis and the stomach duodenum and liver were normal but several calculi could be felt in the gall bladder It was removed in the usual manner the cystic duct and artery being ligatured separately bleeding from the raw surface of the liver was controlled by deep catgut sutures A moderate sized drainage tube was inserted to the stump of the cystic duct and the abdominal wound closed in layers

Apart from transient retention of urine and distension of the abdomen the patient made a splendid recovery the drainage tube was removed on the sixth day and the discharge gradually ceased She left the hospital in three weeks free from symptoms and with the wound soundly healed In the middle of September she was about her household duties and feeling very fit

The Tumour—The tumour which measured 50 inches in circumference and weighed 46 lb was multilocular but fully five-sixth of it was formed by a big cyst which occupied its anterior part it contained thin yellowish fluid the remainder of the tumour was composed of six smaller loculi which contained mucous material

The gall bladder was lightly enlarged its wall was thickened and fibrotic It contained clear mucus and two large spherical gall stones and numerous dark brown faceted smaller stones

J F Thomas, M D,
Senior Surgeon Carnarvonshire and Anglesey Infirmary Bangor

ACUTE INTUSSUSCEPTION

While I was house-surgeon to the Beckett Hospital Barnsley Yorkshire a healthy looking male child aged 5 months was admitted with a history of diarrhoea of two days' duration and the passing of blood and mucus in the stools The bowel was found to be prolapsed for about four inches through the anus A large sausage-shaped mass could be palpated on the right side of the abdomen The prolapsed bowel was easily reduced inside the rectum, but when pressure was removed it again came down, this time to a distance of about six inches owing to the continual straining of the patient

Under general anaesthesia the abdomen was opened by an incision slightly to the right of the middle line, and the rectus muscle displaced outwards The diagnosis of intussusception was verified, and my assistant having reduced the bowel through the anus, pushed the apex of the intussusception up within reach of my hand inside the abdomen Reduction was easily accomplished by pressure some slight difficulty being experienced in the last portion owing to the oedema present The intussusception was of the ileo-caecal variety and the usual enlarged lymphatic gland was present at the ileo-caecal junction

Recovery was uneventful, and the child was discharged at the end of the third week

I have to thank Dr Edwin Orsmond for his skilled assistance during the operation

J Desmond O'Neill, M B I M S
Indian Station Hospital Poona India

Reports of Societies.

THE EVOLUTION OF NEUROLOGY AND ITS BEARING ON MEDICAL EDUCATION

Dr. F. Farquhar Buzzard, the new President of the Section of Neurology of the Royal Society of Medicine, delivered his address from the chair on October 9th, and took for his subject "The evolution of neurology and its bearing on medical education."

Neurology (said Dr. Buzzard) was the oldest of the medical "ologies," not perhaps by right of primogeniture, but because of its exceptional precocity. This precocity arose from the fact that even in infancy its anatomical elements were more readily cemented together by physiology than was the case with any other branch of medicine. In the result the problems of neurology had become progressively more straightforward and perhaps easier of solution than those of other departments of medicine. The science of neurology was approaching exactitude in regard to the relationship of symptoms and physical signs to disorders of function and changes of structure. During the last quarter of the nineteenth century the edifice of neurology was in process of construction. The foundations were chiefly composed of anatomical facts interspersed with meagre physiological details by way of "mortar." The superstructure grew in height as disease after disease was quarried and laid in place, but in the absence of any considered plan the architecture was faulty and lacking in proportion and design. Nevertheless, incomplete though it was, it was an edifice to be proud of, and every year saw the foundations widened by additions to the knowledge of anatomy and physiology.

In speaking of present and past conceptions of morbid processes, the speaker employed a sporting analogy. He likened the earlier conceptions to the golf ball which was stationary before the player: the physician might miss it, the surgeon might slice it, only a quack might drive it out of bounds or into a hazard without penalty. The later conceptions were like the cricket ball which came from a distance and was deceptive in its flight, and the swerve of which required watching. A long experience of the bowler's wiles might enable the batsman to play the ball with increasing confidence, but the danger of being bowled, stumped, or caught out could never be very far away. "We want more cricketers and fewer golfers in our ranks."

In its early days (Dr. Buzzard continued) a specialized offshoot like neurology was apt to be isolated from its fellows. Only as it neared maturity was its relationship to the main trunk and the other branches clearly determined. It was not his intention to depreciate the work which had been done in the past, but the time had come when the map of medicine required careful reconsideration from the point of view of the medical student. It had become a maze rather than a map—a maze from which innumerable superfluous names and countless blind alleys must be eliminated in order that the main roads might stand out clearly for the student of medicine to see and follow. As an examiner he had been appalled at the amount of material the candidate was expected to assimilate. The medical curriculum required revision. In his own time he was taught physiology and anatomy, passed an examination in those subjects, forgot practically all he had learned, and started on new subjects called medicine and surgery. Three years' work, during which he learned much about disease and little about health, enabled him to pass another examination and qualify. A year later his steps were turned to Queen Square, and his thoughts to neurology, and he found that he had to go back to the beginning of things, relearn the anatomy and physiology of the nervous system, and so gain what was to him an entirely new conception of the relationship between health and disease. As time passed he realized that this conception was applicable not only to neurology but to other branches of medicine. Did the student of the present day go through a different series of experiences? He thought not. After two or three years of study of anatomy and physiology he had no knowledge of the normal standards as applied to the living human being, and therefore had not the necessary data to enable him to detect variations from the normal. Yet in the next two or three years he had so much to fill up his time that there was little or no opportunity of making good this deficiency, with the result that he qualified with such acquaintance with minute details as was required of him, but more or less ignorant of health and uncertain in his detection of disorders of function.

A newly qualified practitioner should be familiar with health as represented by normal structure and function, he should have at his fingers' ends all the ordinary tests employed in medicine for detecting variations from normal function, he should be thoroughly acquainted with morbid processes, whether of degenerative, vascular, inflammatory, or neoplastic origin, and capable of recognizing the alterations of structure which they produced, he must be intimate with the history of disease as illustrated by its clinical course, and he should be well grounded in the established principles of treatment, realizing that therapeutic measures were very unstable and depended largely on the vogue of the moment. Under the present system very few such qualified men were adequately equipped for the practice of medicine, though fortunately only a minority assumed really responsible positions without passing through some further kind of apprenticeship. In his view the student who had passed the threshold of anatomy and physiology should be made to feel that he had entered medicine. He should be faced with living as well as dead subjects, and his task should be made easier by facilities for comparing the normal with the abnormal. The study of musculature should embrace not only the original insertion of muscles, but their living function, their daily and hourly use, and the methods by which their action or inaction could be demonstrated. And what applied to the musculature applied to other tissues and organs. He outlined a reformed curriculum which would bring about what he had in view—the expansion of anatomy and physiology, the adoption early in the medical curriculum of methods, such as radiology, by which structure and function could be viewed from additional standpoints, and the study of psychology, which should also begin during the physiological era of the curriculum. His proposed alterations in teaching would necessitate some change in the point of view of examiners. Those conducting final examinations would need to satisfy themselves that candidates were adequately educated rather than made replete with fact, and that their knowledge of medicine and surgery was built on foundations of physiology and anatomy sufficiently strong to support the additions which post-graduate study would add to it year by year.

Dr. Henry Head, in proposing a vote of thanks, said that from the beginning physiology as taught at Queen Square had always associated structure and function. He recalled vividly his own early experiences at Queen Square where he had to revise many things he had previously learned. One of his first interviews was with Rivers, who asked him what case he had been doing that day. "Just a straightforward hysteria," was his reply. "Then," said Rivers, "I am sure it is not." That sent him (the speaker) back in a humble mood, and he need scarcely say that the case proved to be one of disseminated sclerosis. Many such shocks were necessary, however, before he was sufficiently humbled to look at the work in the wards from the old point of view of the physiological laboratory. What he had been brought up to look for in his previous hospital experience was structure, now he was face to face with function. From the very first day at Queen Square structure and function had been associated, and it was because of this that neurology had made its advances. He was delighted to hear Dr. Buzzard insist that those great principles which underlay the progress of neurology were applicable to the practice of medicine, and that neurologists had been ahead of the rest of medicine, not because they had more knowledge than other people, but only because they had a better method. It was this better method that should be taught to the younger generation, and he welcomed Dr. Buzzard's proposed revision of the curriculum.

TINTED LENSES AND THEIR USES

At the meeting of the Ophthalmological Section of the Royal Society of Medicine on October 10th, Sir ARNOLD LAWSON, the incoming President, delivered his address from the chair.

Sir Arnold Lawson took for his subject 'Tinted lenses and their uses." A good deal had been written, he said, about the ultra violet rays and their destructive effects on the eye. The general public had become imbued with a haunting fear of daylight, so that the wearing of glasses which eliminated ultra violet rays had become a fashion. Tinted glasses seemed to be prescribed in an indiscriminate and indefinite way with the idea of getting rid of the ultra-violet bugbear. But what was the real truth about the human eye and its susceptibility to ultra violet rays? A great deal of protection was afforded by the cornea and the crystalline lens, especially the latter, against ultra violet excess. Only ultra violet of a very narrow and harmless range of wave-length—a small proportion of the possible ultra-violet radiation—reached the retina under normal conditions. Ordinary sunlight in the lower altitudes was rather poor in ultra-violet the eye was constructed to allow the ultra violet rays of ordinary sunlight to pass harmlessly to the retina, and a certain excess was excluded by the protective properties of the eye itself. There was no need, therefore, in the normal person to protect the eyes from ordinary daylight, and what he had been saying about the ultra violet applied equally to the infra red. Certain factors came in, however, to complicate the situation in some cases. In the Alps, for example, there was increased intensity of daylight, owing to the rarefaction of the atmosphere and the absence of vapour. The spectrum was extended at both ends though more markedly at the red end than at the violet. Again in certain states of health prolonged exposure to quite a moderate degree of light might be harmful because of the lowering of functional power. The presence of glare—that is an undue amount of reflection from lower surfaces—was another factor which might lead to trouble. Here again however, it was the luminous and infra-red portions of the spectrum rather than the ultra-violet which were involved. Snow-blindness was not due so much to excess of exposure to ultra violet radiation as to excess of exposure to infra-red. Finally various occupations required special adjustments. Acetylene welding for instance exposed the worker to an intense ultra violet radiation glass-working to heat radiation.

He proceeded to show the results of certain tests of the spectroscopic value of tinted glasses. Incidentally the thickness of the glass was an important factor. Peacock blue of 2 mm. thickness shut off the red orange and part of the green, and also interfered with the blue and violet and eliminated the ultra-violet but similar glass 0·5 mm. in thickness let through a great deal more both of the red and of the violet. The absorption factor in the case of thin glass was enormously lessened, to a much greater extent than he would have thought possible if he had not seen the spectroscopic records, and he hoped that the Section or the Council of British Ophthalmologists would take steps to bring about some uniformity in the thickness of the glass used for tints. Taking glass of 2 mm. thickness the result of his investigations was to show that the old London smoked glass from the point of view of protection against ultra-violet radiation, was almost as good as the deeper shades of Crookes glass, and that as regards the red end of the spectrum it was better than the Crookes. If it was desired to eliminate both ends of the spectrum peacock blue should be used. The violet end of the spectrum was absorbed best by fieuzal glass. Crookes 1 and 12 were not really tinted glasses at all but they furnished a useful way of protecting a sensitive eye in mild glare, and they did not disfigure the face or alter the colour values. For patient with healthy eyes but who were physically or mentally abnormal Crookes glass especially B and B2, was excellent but he thought that too much protection should be discouraged, and that as the patient improved in health the wearing continuously of some kind of tint should be gradually abandoned, because it was likely to become a pernicious habit. Cataract due to glass blowing was caused by infra red rays, and tints such as fieuzal 4 or 5 or peacock blue afforded the best prophylactic. Nothing was more harmful in the early stages of cataract than exposure to bright light of any kind. In cases in which a habitual tint was wanted there was nothing more comfortable than Crookes glass but in active inflammatory diseases of the retina and choroid he would much prefer peacock blue.

In the course of a brief discussion, Mr. H. B. GRIMSDALE indicated a possible use for tinted glass in cases of middle-aged persons who were reluctant to give up their participation in sport and yet found difficulty in focussing moving objects. This difficulty, he believed was due to a difference between the luminous perception of the two eyes and the use of a tinted glass reduced the perception of the normal eye more to the level of the other so that the sight of the two eyes became better co-ordinated. Persons who had used these glasses had regained their efficiency as a game.

Mr. ERNEST CLARKE said that the fear of glare came in with the advent of carbon points in early electric light, and the fear was now disappearing. He had found Crookes 1 and 12 of enormous benefit to people bordering on neurasthenia who were hypersensitive. The great point about the Crookes glass was that it did not cut off the luminosity, and was not unsightly. The late Sir William Crookes had told him that it would be too expensive commercially to separate from the serum the metal didymium, which was an adulteration. (A subsequent speaker stated that the value of the Crookes glass was in the didymium, one of the rare earths which had a positive absorption of the spectrum.)

Mr. TEACHER COLLINS said that he had advised amber-tinted glasses considerably. He was first led to appreciate their value by the experience of a medical colleague who was a mountaineer, and who on the morning of a climb, painted his face yellow a procedure which caused amusement to the other members of the party but at the end of the day he was the only one who face was not burning red. The speaker believed that snow-blindness was really due to the effect of ultra violet rays on the surface of the eye and accordingly he had ordered amber tinted glasses. A surgeon on an Antarctic expedition had assured him that all the party wore amber-tinted glasses to protect themselves from snow-blindness and even the ponies were similarly protected. Workers in the neighbourhood of furnaces, and cooks in the neighbourhood of ovens, found great relief from the wearing of peacock blue.

The experience of another speaker was that in mountaineering green glass was more comfortable than peacock blue and gave the climber a better appreciation of objects, while yet another said that smoky amber glass had proved a perfect success in the case of a party on a shooting expedition to Labrador.

FLOURS AND CHILD NUTRITION

At a meeting of the Medical Officers of Schools Association on October 8th, Dr. L. R. LEIPHEIPER presiding a discussion took place on the relative values of stone-milled and other flours and breads in relation to the nutrition of the growing child.

Dr. ROBERT HUTCHISON said that the subject of the relative merits of roller-milled and stone ground flour as a food for growing children had given rise to a great deal of controversy, and was one on which very divergent opinions were held. As a basis for discussion it would be well to recall a few chemical facts about flour. The wheat berry consisted of three parts (1) the germ or embryo, (2) the husk or bran (3) the endosperm. Of these the last made up by far the largest part of the berry. Each of these parts had its own characteristic chemical components. The germ consisted largely of soluble proteins the exact nature of which was to some extent unknown and was rich also in phosphorus and fat. The bran contained a relatively large amount of mineral matter along with a considerable amount of protein derived from its inner layers. The endosperm consisted mainly of starch, but also contained some valuable proteins such as gluten. Water soluble vitamin was contained in the germ and bran, but was absent from the endosperm. In roller milling a white flour was obtained which

represented about 70 per cent of the whole wheat, and was derived entirely from the endosperm In stone-ground flour about 80 per cent of the whole wheat was yielded, and a considerable part of the germ and some of the inner layer of the bran was contained in the flour It followed, therefore, that stone-ground flour would be richer than white flour in proteins, in phosphorus, and in vitamins It was true that the difference in protein was not very great, for it had been calculated that even if the whole of the germ was included in the flour the protein content of the latter was increased only by about 0 6 per cent This, however, was not quite the way to look at the matter, for it was the quality of the protein that was of importance, and not mere quantity, and it had been found that the proteins of the germ were peculiarly suited for the promotion of growth —in other words, they were of specially high biological value Little was known as to the form in which phosphorus was contained in stone-ground flour There was no reason to doubt, however, that it was in a form available for nutrition and capable of combining with calcium in bone formation The question of vitamins he might pass over, as it would be dealt with by others There remained to be considered the digestibility of stone-ground flour and the "availability" of its nutrients As to this it might be said with confidence that it was as completely digestible (in the physiological sense) as white flour Indeed, experiments made during the war showed that even wholemeal flour was much more completely digested than was at one time supposed, provided it was finely ground Nor was bread made from stone-ground flour, if properly baked, less digestible (in the popular sense) than white bread, while it had the advantage of being more "staying" to the stomach

Dr Hutchison then turned to consider the bearing which these chemical and physiological facts about the two sorts of flour and the breads made from them had upon the question of the choice of bread for the feeding of growing children It was generally agreed that during growth there was required (1) an abundant supply of energy (calories) in the diet, (2) a relatively large proportion of protein, (3) a sufficiency of mineral matter, especially phosphorus and lime, and (4) a supply of accessory constituents or vitamins How, then, were the two forms of bread calculated to meet these requirements? With regard to the supply of energy there was nothing much to choose between them, but with regard to protein it was obvious that the advantage was with the stone-ground flour It was true that the difference in total protein was not very great, but, as he had already said, some of the protein derived from the germ was of specially high tissue-building value In the case of children who had an abundant mixed diet this special protein was obtained from other sources, but where the diet was mainly composed of bread the difference might become of considerable importance The same was true of the mineral constituents In the case of a child fed on an abundant and mixed diet the comparative poverty of white flour in this respect did not matter, but if the child was fed mainly on bread it might make all the difference to growth and bone formation

There remained the important question of the vitamins, into which he would not enter in detail But it was evident that the opinion one formed as to the relative merits of white and stone-ground flour would depend largely upon the importance to be attached to the vitamins in nutrition His own view was that there was a tendency at present to exaggerate the importance of the vitamins He agreed that they were necessary for healthy growth, and that absence of the water-soluble vitamins caused beri-beri and scurvy These diseases, however, were never met with in this country, and he was not aware of any clear evidence that general ill health, apart from these specific diseases, was due to vitamin defect He could not help feeling that if the diet was right in other respects, the vitamins would look after themselves, and that in such an abundant and mixed diet—which was what they should aim at—the question of what sort of flour the bread in the diet was made from was of minor importance

Dr C E Shelly dealt in some detail with the manner in which the grain of wheat was treated in the production of flour by the stone-grinding mill The result of the process was that wholemeal flour contained everything that was in the grain—both layers of bran, the endosperm (starch), a small amount of gluten, cellulose, and the germ with its valuable contents The bran and the germ between them gave it a slightly dark colour, so that it did not make such an attractive looking bread or pastry The bran could not be looked upon as an essentially nourishing part of the grain, and it had an action which was not quite comfortable to the modern stomach An occasional change to wholemeal bread was useful, but as a constant article of diet it might be improved The bran could be removed from the wholemeal by a combination of winnowing and sifting, but in depriving the flour of the bran it was deprived of a very small percentage of the germ as well There remained a form of flour which was conveniently named millstone flour This could be sifted again to greater fineness and whiteness, though with each sifting a little more of the germ was lost This millstone flour was a complete food, it cost a little more than white roller milled flour, but it was cheaper in the end because it went further It made a kind of bread which invited mastication It was said not to keep so well as ordinary flour, but with this he did not agree, it only needed to be kept under proper conditions In the case of roller milling the grain was squashed rather than ground, and the germ was cut away from the rest of the grain The result of the roller-milling process was to deprive the flour of the germ and the bran, leaving the endosperm, which was largely starch, a small amount of gluten, and some cellulose The germ and the bran were sold under the misleading name of "offal," and the flour, representing mainly the endosperm, was sold as a starchy kind of food Was it fair that children should be made to take a bread which had been deprived of some of the best qualities of the original wheat and which did not contain the nourishment to which they were entitled?

Sir Harry Baldwin said that the jaws of civilized people in quite modern times had become deformed or ill developed, to their great detriment, to say nothing of the quality of the teeth It seemed to him that this deformity had arisen during the period over which we had been reducing our vitamins by removing them from the flour There was a good deal to suggest that the small and misshapen jaw was due to partial avitaminosis in early life This deformity conduced largely to dental caries The general opinion of dental surgeons was that caries was mostly due to the kind of food eaten, especially the sticky carbohydrate food which accumulated in the interstices between the teeth The bread from finely ground white flour produced a sticky substance which remained about the teeth most tenaciously The staple food of the poor should not be deprived of its important natural constituents simply to pander to the vitiated taste for white flour

Dr G E Friend, medical officer to Christ's Hospital said that at Horsham the boys had been fed on a bread made from stone-milled flour containing a varying proportion (from 76 to 80 per cent) of the whole grain During the last two years a certain amount of the bread had been made from a flour containing 86 per cent of the whole grain It was found that the boys at first would not eat very largely or for any considerable period of the stronger bread, but during the winter months nearly one third of the bread was of the 96 per cent kind As a result of the use of these breads there had been a great improvement in the teeth When the school first removed to Horsham the average number of carious permanent teeth per boy found at each annual inspection was four, now it was 1 5 He could not claim, of course, that the improvement was entirely due to the use of wholemeal bread In other respects the boys had improved, particularly in weight, though here again other factors came in as well as food The chief value of the wholemeal flour, in his opinion, was that it ensured proper mastication

Dr Ogier Ward gave the percentages of waste which took place at the successive crushings in the process of roller milling He added that since he had been able to induce his local baker to produce mill tone bread he was content with nothing else Mr Guldensi (St Guy's Hospital) gave an account of some experiments which

during the war which went to prove the value of wholemeal bread Miss May Yates said that it was quite possible to make wholemeal in roller mills, with some adjustment of the machinery, and this statement was endorsed by another speaker who was a baker and who gave some technical details of the process

The following resolution, proposed by the Chairman, Dr Lempriere, was carried without dissent

> That whiteness of flour is not in itself necessarily an indicator of its value as a food but that the natural germ containing bread made from an 80 per cent flour tastes better and is more nutritious particularly for the growing child and should be provided

It was stated that this would be sent to schoolmasters and educational authorities

Reviews.

SOME MEDICAL ESSAYS

Dr Arthur F Hurst's *Essays and Addresses on Digestive and Nervous Diseases and on Addison's Anaemia and Asthma*[1] will be heartily welcomed by the numerous readers of these papers, which originally appeared in this and various other journals not only because they are now available in a convenient form, thus providing a continuity not otherwise so easily attainable, but because they have been revised and expanded so as to represent the author's latest opinions Thus the account of achalasia of the cardiac orifice of the stomach, which appeared in the *Quarterly Journal of Medicine* in 1914, now contains a reference to a paper written in 1922, and is supplemented by an article on pelvi rectal and anal achalasia or so-called congenital idiopathic dilatation of the colon The address appropriately delivered at Harrogate on 'The sins and sorrow of the colon," recalling a somewhat similar title for a lecture on splenic ailments by his late senior colleague, Sir I Taylor is a happy blending of the historically interesting with the practical applications of recent research The chapter on ulcerative colitis which appeared in the *Guy's Hospital Report* (1921), of which he is the successful editor, has an addition, dated last year showing that ten cases have now been successfully treated by intravenous injections of antidysenteric serum, a control trial of simple horse serum failing to give the same benefit

The two lectures on gastric diatheses—the hypersthenic which disposes to duodenal ulcer, and the achlorhydric with its association with appendicitis, cholecystitis pancreatitis, and rheumatoid arthritis—are followed by a complete statement of his present views on "Addison's [so-called pernicious] anaemia" and its relation to subacute combined degeneration of the spinal cord In 16 cases of this nervous disease Dr Hurst has found complete achylia gastrica which is such a constant factor in pernicious anaemia he argues that in both these diseases the loss of the antiseptic action of the normal gastric juice makes it possible for bacteria such as the *Streptococcus longus* swallowed in cases of oral sepsis, to infect the intestines and produce haemolytic and neurotoxic bodies, and that the relative amount of these two toxins determines whether the haemolytic or nervous symptoms predominate The nervous disorders of the stomach and intestines, the hysterical element in organic disease, and contractures are considered in a clear and illuminating style and there are interesting accounts of asthma, appendicular dyspepsia, and cholecystitis and gall stones in the light of recent research Throughout the work the value of team work, which is generously acknowledged, is obvious and the reader cannot but be impressed by the new and attractive aspects of the application of research to medical practice, set forth with an open mind as to future modifications that further investigations may make necessary

[1] *Essays and Addresses on Digestive and Nervous Diseases and on Addison's Anaemia and Asthma* By Arthur F Hurst M A M D Oxon F R C P London William Heinemann (Medical Books) Ltd 1924 (Demy 8vo pp viii + 300 15 plates 30 figures 21s net)

"THE EXTRA PHARMACOPOEIA"

All persons interested in the progress of therapeutics will welcome the appearance of a new edition, the eighteenth, of Martindale and Westcott's well known *Extra Pharmacopoeia* It is four years since the last edition appeared, and the first volume only is now issued the second is to follow in due course The book has for so long been so popular with the medical profession as a handy work of reference that it is superfluous to describe its general scope In spite of the continuous and rapid advance of therapeutics, the authors still aim to give an account of the materia medica chemistry and therapeutic action of every drug the medicinal use of which is in any way established

The two outstanding impressions created by a survey of the present volume are—first, that therapeutics have made very extensive and remarkable advance in the past four years, and, secondly, that the authors have shown indefatigable energy in condensing into their new volume a full summary of these advances

The following are some of the chief new features included in the present edition Insulin is the most important new therapeutic substance described, eight pages are devoted to a description of the discovery, modes of preparation, standardization and therapeutic employment of insulin A number of important new trypanocidal and spirochaeticidal remedies are described the chief of which is the synthetic substance 'Bayer 205", it is well treated in a page and a half A note is also given concerning No 309, the French product prepared by Tournemu this year, which is probably identical with 'Bayer 205" Trypanamide, the new American product, is also described

No fewer than six pages are devoted to the various bismuth preparations that have been introduced for intramuscular injection in the treatment of syphilis The two new mercurial compounds flumerin and mercurochrome, are mentioned shortly The former is a compound for use in syphilis and the latter is a very valuable disinfectant suitable for application to mucous membranes Some interesting new compounds introduced by Dr Martindale also deserve special mention—namely aspriodine, a compound of iodine and salicylic acid sedasprin, a compound of bromine and salicylic acid and emetine periodide, which is stated to be superior to emetine bismuth iodide in the treatment of chronic cases of amoebic dysentery Besides these new compounds the advances in therapeutic knowledge during the last few years have necessitated the rewriting of the accounts of the pharmacological actions of many other drugs The ten pages devoted to the description of the vitamins contain material that is nearly all new work, and the same is true of the article on protein therapy

These notes on a few of the salient new features of the present edition show very clearly how careful the authors have been to bring their book completely up to date Great praise is due to them for the care they have taken to give a full account of all the recent advances in therapeutics, but they have performed another almost equally valuable service by wielding the blue pencil in a drastic manner for they have cut out a large number of useless drugs and thus have prevented any appreciable increase in the size of their book A special feature of the new edition which practitioners will find of the greatest value is an account of the provisions of the Dangerous Drugs Acts A study of this article will save medical men from incurring the fearsome penalties enacted in these Acts The authors provide an interesting preface to the volume in which they mention the chief new features, and also discuss a number of interesting problems They criticize the Dangerous Drugs Acts severely, for, as they point out The Acts in fact punish those who ought to be supplied for the sins of those who abuse the drugs" The preface concludes with an appeal to practitioners to support home industries by doing all in their power to increase the use of British drugs

In conclusion we may say that the present volume keeps up the high standard set by the previous editions of this

The Extra Pharmacopoeia of Martindale and Westcott By W H Martindale Ph D F C S and W Westcott M B Lond D P H Vol I Eighteenth edition London H K Lewis and Co Ltd 1924 (Foap 8vo pp xxxviii + 1163 2nd ed. net)

work, and that practitioners will find this edition just as complete, up to date, and useful a work of reference as they have found its predecessors to be

THE MAYO CLINIC AND FOUNDATION

THE remarkable activities radiating from the Mayo brothers almost take the reader's breath away, for the fifteenth volume of the *Collected Papers of the Mayo Clinic and the Mayo Foundation*[1] contains references to 308 papers written by 148 authors working at one or other of these institutions, which have appeared during 1923 The present year sees a change in the policy of publication, last year the two volumes published contained 2,100 pages, this year a single volume of less than 1,400 pages has been brought out, but 97 of the 308 papers are given by title only and others are abridged or abstracted This plan has been adopted for papers dealing with subjects of technique or of such a specialist character as to be of limited interest to the general surgeon or physician The papers, which have been published elsewhere, are grouped under the headings of the alimentary tract, the urogenital organs, ductless glands, blood and circulatory organs, skin and syphilis, head, trunk and extremities, brain, spinal cord and nerves, technique, and general or miscellaneous As would naturally be anticipated, the largest number of papers deal with the alimentary system, they number 70, and 18 are given by title only, the urogenital organs are discussed in 41 papers, the head, trunk and extremities in 46, the ductless glands in 33, and the blood and circulation in 30 The last or miscellaneous group contains 41 papers, 18 of which are recorded only by title, but a few of these may be mentioned on account of their interest, in recording his observations on medical conditions in Europe, Dr Charles Mayo says that the surgeons are doing more widely diversified work than the average surgeons in America, fewer fields of surgery being held by specialists Dr William Mayo, who contributes six papers, devotes much attention, in his address to the American Surgical Association on "A Question of Size," to the atom and the molecule, and pleads that the overburdened students of medicine should be taught more biophysics, and that the time spent on chemistry should be correspondingly curtailed In his discussion of the distinctive features of undergraduate and graduate medical schools, Dr L B Wilson agrees that these two functions, which he describes as the preparation of general practitioners and the training of specialists, should remain distinct, but he believes that they should be closely correlated, and that a university should undertake them both Dr William C MacCarty in a paper on "The Pathologist of the Twentieth Century" deals with the real status of the pathologist in the profession, and urges a broad outlook and a closer approach to the patient Among his five other contributions to this volume is a combined discussion of the radiological diagnosis of gall-bladder disease, in which he states that among five thousand gall bladders examined microscopically seventeen only were normal This volume, like its predecessors, is a veritable storehouse of information and a monument to the Mayo brothers

THE MICROSCOPIC AND GENERAL ANATOMY OF TEETH

THE second edition of Mr HOWARD MUMMERY'S *Microscopic Anatomy of the Teeth*[2] has been enlarged by some 200 pages by the addition of a second part on the general anatomy of the teeth, both human and comparative Throughout the book we are conscious of the philosopher trying so to unravel the tangled skein of his special knowledge as to co-ordinate his facts with the great central idea of evolution The dominant note is evolution, and this, perhaps, explains the use of the hackneyed word "comparative" in the title to designate an account of the teeth of all creatures, extinct or living, of lesser degree than man

But it is the title only we would have altered The idea itself gives life, and a most fascinating life, to the dry bones of odontology The evolution of the human molar provides matter for a most interesting chapter "Concrescence" and "tuberculy" are displaced and the "dimer theory" takes their place, its claims resting largely on the histological work of Bolk on the developing teeth of existing animals A wider investigation into the enamel organ of the various orders of living things shows that some enamel organs resemble secreting glands, some the like the human enamel organ characterized by huge ameloblast cells, while in others the first formed and actually active ameloblasts are replaced at a later stage of enamel formation in the same tooth germ by a secreting gland The question arises, Which is the primitive method of enamel formation, and can the enamel organ be used as a help in tracing the relationships of animal life? The enamel of some animals is shown to have a definite fibrillar basis, and we would ask the author, Does this point to a closer relation between enamel, dentine, and bone than has hitherto been allowed?

The vexed question of the innervation of dentine is dealt with in the chapter on the dental pulp, and though we think that the author's figures show there is something in the dentinal tubules which needs attention, and may well be nerve fibrils, we cannot follow him in his description of a synapsis and nerve-end cells beyond from which the fibrils originate We cannot see in Fig 136 the neurofibrils in the dentine it is intended to show As a point in evolution we may wonder why an organ whose life is spent in calcifying itself till often no pulp remains should be provided with a nerve end organ worthy almost of a retina

The second part of the book has been rendered additionally attractive by illustrative plates, many drawn by the author himself, of the animal under discussion, or of its skull and teeth, taken from actual specimens In this connexion we may note the plate on the ancestry of the horse as especially illuminating We have a few complaints to make The paragraphing of the letterpress is sometimes faulty; the historical review of the literature on dentine immunity tion ends curiously in a description of persistent pulps and injured elephant tusks Can the author find no word but "anlage" to express his meaning on page 428, or if he must use it, can he explain just what the original German author had in mind? As it stands it is simply mystery

The author hopes the book "will meet the requirements of the B D S degree of London and the various other university degrees and diplomas" Beyond a doubt it will, and if any man of mind and leisure take up this volume he will find it hard to lay it down, and will run great risk of becoming an ardent worker in the fascinating field of odontology

THE ACTION OF ALCOHOL ON THE HUMAN ORGANISM

SOME years ago (1918, vol i, p 238) we drew attention to the work issued by the Advisory Committee appointed by the Central Control Board, under the title of *Alcohol: its Action on the Human Organism*, which was intended to afford a basis for future research and as a review of the existing state of scientific knowledge as to the action of alcohol on the human organism The second edition of this valuable and admirably impartial report,[3] which has been edited by the Alcohol Investigation Committee of the Medical Research Council, contains numerous additions such as an account of the conditions affecting the rate of absorption of alcohol, as shown by the work of Mellanby and Miles the experiments carried out by Vernon, McDougall and Smith, and Miles for testing the effect of alcohol on the accurate co-ordination of nervous and muscular activity which is necessary for skilled movements, statistics illustrating the relations of alcoholism and insanity, and recent work on the effect of parental alcoholism on the offspring

[1] *Collected Papers of the Mayo Clinic and the Mayo Foundation* Edited by Mrs M H Mellish Vol xv, 1923 Philadelphia and London W B Saunders and Co 1924 (Med 8vo pp xviii + 1377 410 figures 43 3s net)

[2] *The Microscopic and General Anatomy of the Teeth, Human and Comparative* By J Howard Mummery, C B E, F R C S, D Sc Pern L D S Eng London Medical Publications Second edition Humphrey Milford Oxford University Press (Demy 8vo, pp iv + 618 42 plates, 270 figures 35s net)

[3] *Alcohol: its Action on the Human Organism* Abridged and revised London Published by His Majesty's Stationery Office 1924 (Cr 8vo, pp xx + 170 1s 6d net)

A new chapter has been added on alcohol as a drug, in which the conclusion reached is that its main value is due to its narcotic action It is also recognized that alcohol possesses a limited food value under conditions in which ordinary nourishment cannot be taken, and that by diverting blood from the internal organs to the surface it helps to ward off a chill On the other hand, it is shown that there are no grounds for the popular belief, still held by some medical practitioners also, that alcohol possesses a stimulant action on the heart, respiration, and vital activities in general, or that it has a protective value against infection The chapter on alcoholism and longevity contains a criticism of Professor Raymond Pearl's work, and a new paragraph relating to the risks of venereal disease and accidents in non-abstainers The appendices dealing with the total consumption of beer, spirits, and wine in the United Kingdom and the annual deaths from alcoholism and cirrhosis of the liver have been brought up to date

AN INTRODUCTION TO PHYSICAL ANTHROPOLOGY

Under the title of *A Short Course on Physical Anthropology*,[1] Professor Drennan has published a serviceable little book which provides a most helpful introduction to this subject Although primarily written for the students of anatomy of the University of Capetown, it will probably be used more widely, since it serves as an introduction to the larger textbooks and is likely to stimulate greater interest in anthropology among medical students The subject is dealt with in an elementary manner throughout and the simpler methods used in craniology are described in a clear and practical style In the later pages brief reference is made to some of the most significant discoveries of fossil man The reader is thus prepared for the study of monographs in which full accounts of primitive human remains may be found A list of the more important books of reference is included in the preface Professor Drennan is to be complimented upon producing a very modest book, likely to be welcomed and appreciated by teachers and students of anthropology

MEDICAL HISTORY OF THE WAR

A correspondent writes to the effect that he does not think the medical authorities in Egypt did in fact expose themselves to the unfavourable comment of the critics mentioned in our review (British Medical Journal, July 19th p 106) of the third volume of the *Medical History of the War* (1) The officers successively in charge of the splint factory at Alexandria were also in charge of the surgical division of one of the hospitals (2) They got no extra pay for their extra work and as far as he knows such work was not recognized by the award of any decoration (3) The factory was kept open in 1919 for the purpose of preparing sets of models of all appliances used in the East by the medical services, including ambulance sand carts and sledges, to meet the wishes of various departments One set was presented to the Khedive, who took much interest in the enterprise

This letter has been shown to our reviewer, who says that he has now had an opportunity of reading the final annual report on the work of the Central Splint Factory at Alexandria which is in question In this the officer, the last and longest in charge of it, gives a history of the undertaking from the beginning The three officers successively in charge were also in charge of the surgical division of No 21 General Hospital Starting as merely an annexe to the splint room of this hospital, the undertaking rapidly grew to be very large, its wages bill alone eventually reaching £2 000 a year The calls upon it, many of which came from far distant commands, were so great that work had often to be carried on until nine at night throughout the whole week Similar factories, our correspondent holds will always be necessary in great overseas wars, and it is an advantage that they should be managed by a surgeon Those in charge at Alexandria found themselves handicapped in some degree by lack of technical knowledge, and of experience in managing workmen, and in keeping accounts on a large scale Hence any future appointees should be secured opportunities of studying the subject The factories should be mainly assembly shops, the splint parts being cut by machinery and supplied by contractors This was in effect the plan eventually adopted at Alexandria The work of the officers in charge was gravely increased by the multiplicity of small variations of pattern demanded by medical officers and the confusing names given to them Young surgeons proved very fertile in devising apparatus, but provided very imperfect specifications and drawings Consequently the officer in charge, besides drawing up an elaborate nomenclature, had often to make new drawings, or even paper or other model of the splints demanded, before the workmen could understand what was required He suggests that in order to obviate such difficulties on a future occasion a committee should draw up a list of standard splints detailing the measurements necessary and the best materials to use for each The same committee should also emphasize the fact that apparatus, however well designed, can play only a minor part in good surgery

Commenting on this report, our reviewer observes that it shows what excellent work outside their own true province medical officers can do when willing to undertake any and every task demanded of them He thinks however, that the critics mentioned by him would probably not have been silenced by the double employ of the officers concerned They would have maintained that it is not economic to employ surgeons on work which can be done by less highly trained and more easily obtained officers, and that this is the case in connexion with splint supplies In France splints were standardized at an early date by an expert committee and it would have been considered the duty of officers in charge of surgical divisions to discountenance unnecessary demands for other than regulation patterns Had the work of a hospital in France been of such a kind as to allot of the surgical officer managing an important enterprise outside its purview in addition to the duties of his appointment the staff should have been reorganized so as to effect a corresponding economy in other medical personnel In France quartermasters were in charge of all store dealing with surgical apparatus and their repair With regard to our correspondent other remarks, the reviewer writes that extra pay is allowed in the P A M C, not for extra work but as an inducement to medical officers to qualify for appointments requiring special knowledge for their adequate fulfilment Decorations other than those for services in action would seem usually to have been awarded in relation to the prominence of the appointment held The continuance of the factory for the purpose indicated is one of the many expenditures to which the taxpayer would probably have objected as unnecessary had he been aware of them

NOTES ON BOOKS

The second volume, devoted to children's diseases, in the treatise of medical pathology and applied therapeutics, edited by Professor Emile Sergent and MM L Ribadeau Dumas and L Babonneix[2] consists of two parts In the first Professor Weill and other members of the Lyons Medical Faculty (MM Pehu Gardere, Bertoye, and Dufourt) discuss infections of the newborn and certain acute diseases such as dysentery malaria, acute articular rheumatism, influenza, typhoid and diphtheria as seen in children, Professor Nobécourt deals with congenital and acquired heart disease M Merklen contributes chapters on diseases of the liver, kidney, and genito urinary apparatus and MM Babonneix Voisin, and Tinel give an account of various diseases of the nervous system. Most of the second part is devoted to a description of practical orthopaedics by MM Lance and Lamy the other articles include a discussion of anaemias in childhood by M Pives and a chapter on the therapeutics and pathology of childhood by M Terrien Every article is essentially practical and lucid and the work should be read by those who wish to gain a clear idea of French teaching in pediatrics

[1] *A Short Course on Physical Anthropology* By M R. Drennan A M B F R C S E. The S A Electric Printing Co Ltd (Med 8vo pp 43 7 figures. 5s.)

[2] *Traité de Pathologie Medical et de Thérapeutique Appliquée* Published under the direction of Emile Sergent L. Ribadeau Dumas L. Babonneix Tome XXV—Enfance Tome II in two volumes (Paris A Maloine et Fils 1923 (Demy 8vo vol i pp 622 123 figures vol ii pp 610 62 figures Fr 60 the two volumes.)

The Pneumococcus and Pneumococcal Affections[8] is a translation into English by DRS D S PAGE and EVA MORTON of the monograph from the Pasteur Institute prepared by DRS COTONI, TRUCHE, and Mlle RAPHAEL, which was reviewed in our columns of April 21st, 1923 (p 683) A preface to the English edition points out that the loose terminology of applying the label of Type IV to all pneumococci not agglutinated by the serums of Types I, II, or III must not be allowed to give the erroneous impression that the Type IV organisms are related closely to one another The bibliographical references have been confirmed, and the list has been extended to include the titles of publications since the appearance of the French edition This monograph in its English form will be of great value to all those who are concerned with pneumococcal affections and their treatment

The very interesting pamphlet by Mr R KIRKPATRICK, assistant keeper of the Department of Zoology in the Natural History Museum, on the *Biology of Waterworks*[9] was discussed on its first appearance in a leading article on December 15th, 1917 (p 799) A second edition was called for within a few months of the first, and now a third has appeared The three main sections of this well arranged and well illustrated little work are headed (1) animals associated with water supply, (2) plants in waterworks, (3) biology in relation to water purification Incidentally it provides a key to a small exhibition, illustrating the physiology and pathology of drinking water, in the central hall of the Natural History Museum

[8] *The Pneumococcus and Pneumococcal Affections* By L Cotoni, C Truche, and Mlle A Raphael English edition by D S Page, M A, M B Cantab D P H, and Eva Morton, M R C S Eng, L R C P Lond London J Bale Sons, and Danielsson, Ltd 1924 (Med 8vo, pp viii + 218 6 figures, 40 charts 16s net)

[9] *The Biology of Waterworks* By R Kirkpatrick Third edition London British Museum (Natural History), and B Quaritch, Ltd 1924 1s)

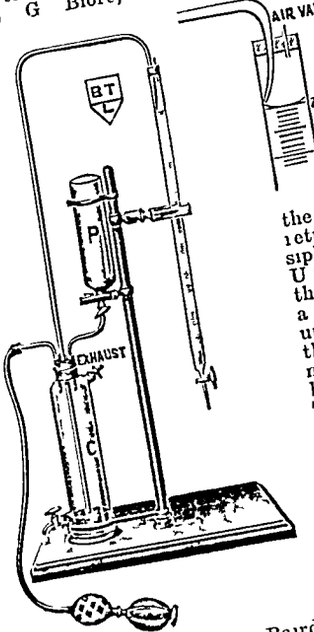
PREPARATIONS AND APPLIANCES

Insulin Hydrochloride

WE have received an interesting new product from Messrs Burroughs, Wellcome and Co—namely, insulin hydrochloride, made up in the firm's tabloid form Each tabloid corresponds with an average dose of 10 clinical units, and when dissolved in 0 5 c cm of sterile distilled water makes an equal volume of standard insulin The makers state that the product has been prepared under conditions approved by the Medical Research Council, has been submitted to exhaustive clinical tests, and has been found in all respects equal to standard insulin Provided its keeping qualities are established, this new preparation is likely to be a great convenience to all who wish to administer insulin The tabloids are convenient to administer are readily portable, and may be dissolved within the syringe

A Power Burette with Self adjusting Fluid Level

DR J P S DUNN (Ministry of Pensions Hospital, Orpington) writes to call attention to a new burette devised by himself and Mr L G Blore, assistant in the chemical laboratory The diagram illustrates a self filling and self adjusting burette, and the mechanism is as follows The burette is filled by pump pressure, which is maintained until the fluid level has risen beyond the zero mark shown in the diagram Upon releasing the pump the current is reversed



the surplus fluid in the burette is returned to the cylinder C by the siphon action of the connecting U tube (the capillary extremity of the short arm of which is adjusted a millimetre or more—depending upon the radius of curvature of the fluid meniscus—above the zero mark), and the fluid level in the burette falls automatically to zero The inflow may be delicately controlled by pressure upon the rubber pump, should, however, this pressure be unduly sustained, any tendency to overflow of the burette is readily checked by release of the "exhaust" The "dead beat" effect of the latter further operates to quench the oscillations which otherwise would be induced in the capillary extremity of the connecting tube Messrs Baird and Tatlock, 11, Cross Street, Hatton Garden, E C, are the makers For permission to publish, acknowledgement is due to the Director General of Medical Services of the Ministry of Pensions

ROYAL COMMISSION ON LUNACY AND MENTAL DISORDER

(*Continued from page 683*)

AT the second meeting of the Royal Commission on Lunacy and Administration and Mental Disorder, on October 8th, under the chairmanship of the Right Hon H J MACMILLAN, K C, the examination of members of the Board of Control was continued

SIR FREDERICK WILLIS, chairman of the Board, described the procedure followed on the discharge of a private patient

The CHAIRMAN It appears that a patient must always be discharged if the person on whose application he was detained desires the discharge, provided only that the patient is not in a dangerous state or unfit to be at large, in the opinion of the medical officer in charge, subject, of course, to appeal to your Board The person on whose application the patient has been detained might have an interest in his continued detention Suppose a person of that interest in the patient wanted his discharge, what action would he take?

SIR F WILLIS He could come to the Board of Control, and it interested in the welfare of the patient, and the applicant, to Commissioners would proceed, independently of the applicant, to investigate the case We have had such cases fairly frequently and they are always inquired into unless the person making the application is obviously unreliable, or the case relates to a patient whom we ourselves have seen quite recently and know all about There is no statutory obligation on the Board to do this, but in the case of a Government department "may has the effect of "shall"

SIR DAVID DRUMMOND Suppose there is no independent party interested in the welfare of the patient, and the applicant for the original order makes no move, who is entrusted with the control tion of the case?

SIR F WILLIS Our domestic machinery would bring to notice anything deserving attention

The CHAIRMAN remarked on the curious provision that a patient who had escaped from detention and remained at large for fourteen days was free from restraint, the order lapsed SIR F WILLIS said that he saw no reason in this stipulation it was probably an inheritance from the old days of laxity administration

The differences between the procedure on discharge of a private and on discharge of a rate aided patient were discussed and the CHAIRMAN remarked that here, as in the procedure with regard to the order of detention, the explanation of the difference was probably that there was no pecuniary inducement on the part of any person to retain the rate aided patient in institution

Dr BOND said, in reply to a question from the chairman, that full facilities and access to the patient would be given for independent medical examination Cases had arisen, although rarely, in which there was a difference of opinion between the medical superintendent and the outside doctor In such cases one would be inclined to give greater weight to the view of the superintendent, who saw the patient constantly, than to the outside doctor, who saw him on one occasion when he was perhaps apparently normal, for most of these patients had lucid periods There was, however, a growing practice, which the Board encouraged, for the medical superintendent, on the admission of a patient, to discover the name of his family doctor if there was one, and inform him briefly as to the nature of detention and invite him, if in the neighbourhood of the asylum, to come in and discuss the case It one who paid was done in every instance

The question of patients sent out on trial was next discussed SIR F WILLIS said that in the year 1922 23 the number of patients from borough and county asylums sent out on trial was 5,525, a large number had to return to the institution In regard to the adequacy of accommodation, he expressed the view that mental hospital accommodation was inadequate that in a short time the position would be serious, not to any undue increase in insanity, but to the growth of population

The CHAIRMAN thought it might be necessary to recommend a policy which since 1890 had arrested the growth of the population If fifty five licensed houses were sufficient in 1890 a larger number might be permitted now SIR F WILLIS said that the licensed house was a very useful institution almost always well managed

The witness was next questioned about medical certificates He said that there were very few misdemeanours in the asylums under the Act, but difficulty did arise through medical practitioners withholding certification of one of the primary facts in order to avoid the stigma of detention The practice of evasion of the Act, and of many such cases the Board of Control have no knowledge The practice of the Board of

such a case would be to apply to the Lord Chancellor for an order

The CHAIRMAN said that of course the circumstances might vary infinitely. This matter would be considered by the Commission at a later stage in connexion with voluntary treatment. He went on to refer to insane persons in workhouses. What was it that determined whether a patient found himself in a public asylum or in a workhouse? Sir F. WILLIS said he was afraid it was largely accident.

The CHAIRMAN said that the asylum provided a means of treatment and possible cure. Workhouse institutions were not the proper place for the reception of patients likely to improve under treatment. If they must be used it should be for chronic and hopeless cases. Sir F. WILLIS said that his Board would welcome consideration of this matter by the Commission. He felt that at present the best use was not made of the total accommodation. The CHAIRMAN thought it also might be desirable to have a more extensive series of regulations pertaining to lunatic paupers in workhouses affording them the same protection and facilities for making complaints as in the case of patients in other institutions.

Sir F. WILLIS, in reply to further questions, said that the Board had no statutory powers in the appointment of medical and nursing staffs or the arrangement of dietary. It could make recommendations.

Dr. BOND, at the request of Mrs. Matthews, described what happened to a patient on arrival at an institution. A preliminary physical examination directed specially to cleanliness and to marks of injury was made while the persons who had brought the patient remained on the premises. The patient was then put to bed for a week at least and an elaborate examination was made probably by more than one doctor. The cerebro-spinal fluid would be examined, a blood count made, the temperature recorded, and so forth, and he statement of the mental and bodily condition of the patient was sent to the Board of Control. The examination was repeated at monthly intervals certainly for the first three months and probably for the first year, and later at quarterly intervals. There was no rule that the physical examination must be repeated, but there was a rule that all changes must be noted. He added that mechanical restraint was now very rare in asylums.

Sir HUMPHRY ROLLESTON asked what happened if one of the medical certificates on which the patient was detained was found to be out of order and the certifying doctor could not be found—that is, was out of the country. Dr. BOND said that if the certificate was essentially faulty the Board would declare the order invalid and start again, if it was merely a technical fault the order might remain.

Sir H. POLLESTON asked how often it happened that the second certificate—the first having been given by the family attendant—was by a recognized expert in mental disorder. Dr. BOND said that this depended on the locality. In the metropolis it frequently happened that the second certificate was given by a well known specialist. He added that faulty certificates were extremely few compared with the hundreds of thousands of proper certificates that came to the Board, and that the medical profession as a whole had nothing to be ashamed of in the matter of certificates.

Sir DAVID DRUMMOND asked whether medical officers in mental institutions had sufficient clinical experience. Was it necessary for them to have had a training in a general hospital? Dr. BOND said that the Board had recommended such training some years ago, and had also urged mental hospital authorities to have in addition to their resident staff certain consulting physicians (not mental specialists) and gynæcologists and so forth.

Sir D. DRUMMOND: But you do not suggest that it should be a *sine qua non* that the asylums officer shall have had special clinical experience?

Dr. BOND: We should like to enforce it at once if it were practicable, but I do not think we could get the doctors. It happens quite often now that *visiting committees do not* get sufficient applications. But I think that the great majority, if not all, are capable of making a good general examination.

Sir D. DRUMMOND: Do you recognize that it is very desirable for every medical officer to have a special training in psychiatry?

Dr. BOND: Not necessarily before appointment, but before he gains any position of seniority.

The CHAIRMAN, at the request of a representative of the National Society for Lunacy Reform (who said that he had thirty witnesses he wished to call), put some questions to the witness. He asked how frequently the Board of Control had to investigate cases of cruelty.

Sir F. WILLIS said that the Board received a great many complaints chiefly from patients themselves, generally in letters. The cases were always investigated sometimes by inquiry on oath, and in very few instances—perhaps one in the last three years—were the charges found to be substantiated. In one case only in 1923 a prosecution was instituted against an attendant who was convicted of striking a patient and fined £2.

The CHAIRMAN: How many cases are brought to your knowledge in which there has been cruelty, but dismissal or some other disciplinary action has been taken instead of prosecution?

Sir F. WILLIS: Very few cases, half a dozen a year at the outside. All allegations are followed up, and in one rare case when the visiting committee did not prosecute the Board of Control prosecuted.

The CHAIRMAN: If the patient is ill treated his position is a difficult one; he may not have anyone to appeal to.

Sir F. WILLIS: He could always appeal to the doctor, and if competent to write, he could write to us.

The CHAIRMAN: Have you ever heard of cases in which the patients were too frightened to complain?

Sir F. WILLIS: That has been stated but not substantiated.

The CHAIRMAN: Such a thing could conceivably happen.

Sir F. WILLIS: Occasionally the Commissioners in going round are apprised of some case, and hold an inquiry then, and if the circumstances are very special a sworn inquiry.

The CHAIRMAN next asked whether the medical practitioners referred to in various sections of the Act need have any special qualification.

Sir F. WILLIS said that in most Acts of Parliament it was assumed that the practitioner knew everything about medicine. He added, in further reply, that the number of persons who had been discharged from detention on the ground that they were no insane when admitted was very small. He had no experience of an case in which person not insane had been wrongly detained in asylum. He regarded the existing machinery in the matter of certification and provision with regard to detention as adequately safeguarding the liberty of the subject, but if any additional precaution could be suggested they would be welcomed. He stated further that with regard to curative treatment in mental hospitals his Board had no responsibility—it acted only in an advisory capacity. The responsibility for the treatment of each individual must rest with the medical officer of the institution. If the Commissioners found an institution which was lax in this matter it would report to the committee of the institution concerned and would investigate further at the end of a short period. The Board could not require that an additional doctor should be appointed or a laboratory provided, but it could and did bring pressure to bear on the medical superintendent and in the case of a public asylum on the local authority.

This concluded the examination which had lasted eight hours of the members of the Board of Control, and the CHAIRMAN stated that they would be called again before the end of the inquiry.

Sir CLAUDE SCHUSTER, permanent secretary to the Lord Chancellor, gave evidence on the legal position of the Lord Chancellor in lunacy matters. He said that the Lord Chancellor's Visitors numbered three—two medical men and one lawyer—and they had to visit at stated intervals all lunatics found by inquisition and others in which property the Lord Chancellor had an interest, and they had to pay special visits when required to get specific information. Their interest was enlisted in individuals, not in institutions. The Lord Chancellor's department had also to deal with letters from lunatics which were numerous and lengthy. Some lunatics wrote every day to the Lord Chancellor voluminous essays on their delusions. The witness found it extremely difficult to answer the question whether the jurisdiction of the Lord Chancellor was of any value. It depended on the constitution of the Board of Control. He thought that the Board of Control should include the very highest mental authorities, especially on the subject of lunacy. It was also essential to have on that body an adequate representation of the legal mind, because medical men looked at these matters from a special point of view. Those who like himself had to read a number of medical certificates felt that while the honesty of the certifier could not be doubted the document failed to meet the lawyer's requirement because of the inadequate selection and arrangement of facts. Doctors were not trained to express themselves in a way that carried conviction to the legal mind. He did not question the conclusion of the certificates only the exhibition of the grounds which the practitioner set out. The medical man looked at the matter from the point of view of cure, but the question which the lawyer had to decide on the certificate was whether or not the person should be detained.

The CHAIRMAN: We can hardly expect every practitioner to go through a legal training in order to learn how to prepare a piece of evidence. But in Scotland at any rate all medical men take a course in forensic medicine.

Sir DAVID DRUMMOND: They do in England also.

The inquiry was adjourned until October 21st, when the evidence of witnesses for the Ministry of Health will be taken.

British Medical Journal.

SATURDAY, OCTOBER 18TH, 1924

MENTAL DISORDER AND THE LAW

The report published this week (p 707) of the discussion in the Section of Neurology and Psychological Medicine on certification in mental disorders from the medical and social aspects merits the close attention of the medical profession As one of the speakers, Dr G W B James, observed, the subject has assumed fresh importance owing to the appointment of the Royal Commission on Lunacy and Mental Disorder, which has now begun its sittings, and it should be the aim of all doctors, both special and general, to evolve clear cut and constructive criticism of the existing law

One matter which must be less vaguely stated than hitherto concerns the type of mental illness which it is considered should be treated without certification in its early stages Dr Henry Yellowlees, who opened the discussion, pointed out that a true borderland case does not often become insane—and presumably he here refers to the psycho neurotic—and that a mild or incipient case is by no means necessarily a curable one The most recoverable cases are undoubtedly, as he says, the acute forms of disorder patients who exhibit the most pronounced abnormality of conduct, and who are, therefore, the most certifiable There is certainly a general impression abroad that if mental cases were treated in the prodromal stages, before the disturbance in behaviour becomes pronounced and certification is inevitable, a number of cases would be cured, and the incidence of chronic insane in the asylums would considerably diminish This view would appear to be in some measure justified The general principle that the earlier a disease is treated the greater the possibility of recovery would appear to apply equally to mental disease as to other maladies It would, however, be a mistake to create the impression that there are specific cures for such conditions as dementia praecox and paranoia (which constitute the bulk of chronic asylum cases) if only they were taken in the early stages While an arrest or amelioration of such cases is obviously more likely if they are taken in the early stages, yet it must be remembered that an exact diagnosis and definite prognosis is extremely difficult in incipient psychoses

We do not think, however, that the plea for the treatment of mental cases without certification should be based upon promises of a dramatic diminution of cases needing permanent control in asylums There is no experience upon which to base such a promise, and a decrease in the incidence of insanity must ultimately depend upon the degree to which the principles of mental hygiene are disseminated amongst the community as a whole To agitate for an alteration of the law in order that cases described under such vague terms as "mild" or "early" may be treated without certificate would hardly seem to be justified The psycho neuroses, mild depressions, psychopathies, and nebulous types with vague psychotic symptoms would appear to cover the cases included under these terms, and there is nothing in the law to prevent them being treated without certificate at present It is true that there is a lamentable absence of homes to which such patients can be sent, but some do exist, and there is no legal barrier to their multiplication Many patients are treated, of course, as voluntary boarders, and, as we pointed out in a recent issue, there is no reason why the public mental hospitals should not be permitted to admit cases on a voluntary basis, the principle having been already admitted in one area It is thus not so much for mild and incipient cases that a radical amendment of the law is necessary, but rather for the acute cases, in which the symptoms are often of extreme severity

A statistical survey of the patients discharged as recovered from the mental hospitals reveals the fact that a large proportion were under certificate for less than six months, this period including the stage of convalescence, part of which is often spent at home on trial Furthermore, a considerable number of the recoveries are found to occur in patients who exhibit extreme restlessness, stupor, resistiveness, and confusion, so that they are definitely certifiable and cannot be treated away from home without legal sanction Such cases are due to a variety of causes—childbearing, lactation, influenza or other toxic illnesses, the stress of adolescence or the climacteric, and environmental difficulties They are, in many instances, recoverable in the full meaning of the term They often do not relapse, and lead perfectly normal and useful lives after discharge It cannot be denied that certification inflicts a very real hardship in such cases, and it must be remembered that these acute and recoverable psychoses occur in patients as young as 17, in women beginning their married life, and in persons in the prime of life holding responsible positions, all of whom are definitely handicapped in after-life by having been certified as insane We are in agreement with Dr Bedford Pierce that for such cases certification could be deferred safely, provided that there was no concealment and the hospital or place of treatment was properly equipped The restraint applied to persons suffering from the acute psychoses would be similar to that applied to the subject of a pneumonic or typhoid delirium, and both groups of mental illness would necessitate similar modes of treatment

There can be little doubt that in the future there will be an explicit recognition of the fact that, from an administrative standpoint, acute mental illness and chronic insanity involve two distinct problems Acute mental cases require a hospital, in the ordinary meaning of the term, for their treatment—a hospital differing only in structure from the general hospital, in which the whole resources of modern medicine are available for the treatment and investigation of the patients A hospital in the above sense is not required for the treatment of the majority of chronic mental patients What they need is a home in which they can be as happy as possible in view of their psychic disabilities With such patients every endeavour should be made to provide occupation, amusements, as much freedom as possible, and skilled medical treatment in the case of illness There should be strict differentiation between the sick, the degraded and disturbed, and the quiet and peaceful patients, so that those who are able to appreciate the amenities of life shall have nothing to jar on their susceptibilities Actually it is in these directions that progress has been made, and there is no question that the change in the methods of treatment since the lunacy laws were formulated has been very remarkable Whenever possible the recent admissions are treated in separate

hospitals apart from the chronic cases and every effort is now made to abolish the prison like features which characterized these institutions when different conceptions of mental disorder prevailed

It is on the basis of knowledge acquired by those who are accustomed to deal with mental cases that an amendment of the law is seen to be necessary if further progress is to be made That the duration of many cases of insanity is brief, that the attack is curable and leaves no traces of abnormality on the personality and that such patients are amenable to the same methods of treatment as are applied to other illnesses, are facts that should now be recognized by the Legislature, as also the fact that the conditions which made the provisions of the present lunacy law necessary no longer exist It is only when acute early and recoverable cases are treated apart from irksome legal formalities that the stigma which is now attached to the subject of mental disorder—and indirectly to his relatives—will be removed and it is only then that the public will learn to look naturally on mental disorder as a disease which, like all other diseases is open to cure amelioration, or progressive advance according to its nature and intensity

NOTIFICATION OF PUERPERAL SEPSIS

In April last the Ministry of Health published an elaborate report on maternal mortality by Dame Janet Campbell, senior medical officer of health for maternity and child welfare to the Ministry[1] we gave an account of it in our issue of April 12th (p 682) and set out fully the recommendations with which it concluded One of these recommendations was that in view of the *unsatisfactory results of the present notification* of puerperal fever it should be considered whether amendments are desirable in the existing legal provisions for notification in order to increase its practical utility a matter in which it would be useful to consult a competent medical body such as the Obstetrical Section of the Royal Society of Medicine" This invitation has been accepted, and the Sections of Obstetrics and Gynaecology and of Epidemiology and State Medicine of the Royal Society of Medicine have arranged a joint meeting with the Society of Medical Officers of Health on Thursday, November 6th to discuss the notification of puerperal sepsis The officers of the Obstetrical Section consider it very desirable that the views of those engaged in general practice as well as of obstetricians and medical officers of health, should be expressed during this discussion, and any general practitioner not a member of the sections or the society mentioned will be welcomed as a visitor and asked to take part in the discussion

Another recommendation of the report had reference to the need for improvement in the quality of professional attendance To attain this it was advised that the education of medical students in the principles and practice of obstetrics and gynaecology should as recommended by the General Medical Council be improved, and that midwives should be better trained by requiring a longer period of teaching prior to certification, and periodical post certificate courses of instruction As a corollary it was recommended that there should be closer co operation between the medical practitioner and the midwife and between the professional attendants and the local authority Preventive midwifery under the local authority should it was thought comprise the ante natal and post natal care of all pregnant women by the professional attendant as far as possible the establishment of maternity centres and the provision of maternity beds including observation and isolation beds for the treatment of complicated cases of midwifery and for the accommodation of women whose circumstances do not enable them to be confined easily and suitably at home

It was further recommended that all maternal deaths due to childbirth and all cases of puerperal infection, whether fatal or not should be investigated by the medical officer of health The final recommendation referred to the provision of special nourishment for necessitous, expectant and nursing mothers, to the desirability of extending sickness benefit during pregnancy, under the National Insurance Acts and to the need for widespread educational propaganda by official and voluntary agencies Sir George Newman in his prefatory note to the report pointed out that steps had already been taken by the General Medical Council the Central Midwives Board the local authorities and the Ministry of Health to deal with most of the points made in the recommendations but observed that there was need in almost all directions for further development of such arrangements

A few weeks afterwards the Scottish Board of Health issued the report of a Departmental Committee which it had appointed to inquire into the incidence of puerperal morbidity and mortality in Scotland with special reference to the conditions contributing thereto and to suggest any remedial measures A full notice of its arguments and recommendations was published in our issue of May 31st (p 961) and this article may be consulted with advantage in view of the coming discussion The Scottish committee urged the importance of ante natal care and the need for more systematic practical training of the medical student and discussed the problems presented by the education of the pupil midwife the maintenance of the midwife and the proper functions of local maternity hospitals In the same issue of the JOURNAL we took occasion to discuss the subject in a leading article (p 969) It was there observed that in the view of the Scottish committee—that the services of the trained midwife and the doctor are complementary—were accepted it seemed clear that the charge of normal labour would in future be more and more transferred to the midwife the duties of the medical practitioner being rather those of ante natal examination, and of passing patients as normal or, if abnormal of referring them to maternity homes, and of exercising general supervision

The joint meeting on November 6th will commence at 8 p m at the house of the Royal Society of Medicine (1, Wimpole Street, W 1)

PARLIAMENT AND VACCINATION

On September 13th (p 482) we commented in these columns to the new Vaccination Order issued by the Minister of Health and to the attitude of the vaccinationists towards the Minister He is now receiving from them exactly the kind of thanks or his concession to their demands might have expected had he known them better In their official organ they say frankly that whatever has come or may be hoped is unfortunately unable to pressure And as they have exercised pressure After receiving

[1] Ministry of Health Report No 40 Maternal Mortality By Janet Campbell M D M S London H M Stationery Office To be obtained through any bookseller Price 2s

a second letter from the League," and another, at the instance of the League, from the Labour party's executive committee, "Mr Wheatley let it be known that if the League continued to press the matter he would be willing to restore the Form" Thereupon another League letter was sent to him, "and a few days later Mr Wheatley issued his Order" But as for Mr Wheatley himself, his views, whether for or against vaccination, are 'without value or importance" Especially "his readiness, as avowed to Mr Abbott, to favour compulsion for everyone in face of an epidemic is thoroughly exasperating, and shows him to be equally ignorant and wrong-headed on the subject"

The British Medical Journal has, of course, nothing to do with party politics, but from the spectator's point of view there is a striking resemblance between the attitude of the extremest Russian Bolsheviks to Mr Ramsay MacDonald and that of the Anti-vaccination League to Mr Wheatley Clearly he is not an anti-vaccinationist, and he should begin to realize that no half-way concession will suffice to placate such a cult His knowledge of Glasgow compels him to believe in vaccination for the control of small-pox, and that belief condemns him in their eyes, so that while they accept all he gives them they continue to denounce him, and they deliberately make public the means they have used to effect their purpose, whatever the influence of that publicity may be on Mr Wheatley's reputation in politics Meanwhile the Minister of Health determinedly holds his peace on the merits of the matter, and just before the dissolution flatly refused to rescind the Order This refusal to be drawn into discussion was perhaps his most politic course in the circumstances He knows he has made a blunder, and he acts on the old adage, "Least said soonest mended" But the lesson, it may be reasonably assumed, will be remembered by him, and he will not be in a hurry again to try to reconcile the irreconcilable

Now that a general election has come upon us, the machinery of the Anti-vaccination League is doubtless working at full speed to entrap candidates who may make pledges about the Vaccination Acts in the hope of securing votes from persons who, in the narrowness of their outlook, put aside great national and imperial questions and concentrate on the one limited subject of the vaccination law Candidates, if they have time in the turmoil of the contest to give any real attention to the matter, should be warned by Mr Wheatley's unhappy experience Whether he ever gave a definite pledge we do not know, but if not his treatment by the League is all the more a warning of what may be expected

Recently in the newspapers there has been some protest in advance as to replying to sets of questions on many matters which, if or when the time comes for Parliament to deal with them, should be decided on their merits, in accordance with relevant circumstances and considerations Candidates will be wise to accept the advice given by Mr Baldwin in the House of Commons last March not to answer *questionnaires* at all—it is perhaps significant that those who issue such documents have to go to a foreign language for a term A firm refusal to commit himself hastily may lose a candidate a few votes here and there, but the display of caution and strength and independence will count for far more than easy or thoughtless pliability in the estimation of electors capable of weighing up the qualities of those who appeal for their support

THE MAUDSLEY HOSPITAL

The first annual report of the superintendent of the Maudsley Hospital is one of very special interest Fifteen years have passed since the munificence of the late Dr Henry Maudsley rendered possible the building of a hospital for recoverable cases of mental disease At first the difficulty of finding a suitable site, and later the war, delayed the fulfilment of his project, but the delay was not without gain, for powers were meantime obtained under the London County Council Act, 1915, allowing patients requiring treatment to be admitted at their own request and not under certificate This would have had Dr Maudsley's cordial concurrence, enhancing as it undoubtedly does the opportunity for the early study of mental disorder and its treatment under conditions the most favourable to recovery The further question arose whether any other than voluntary patients should be admitted, and it was decided to restrict the admissions to patients of this category, so that no certified patient is accepted at the Maudsley Hospital, nor is any patient ever certified there This latter provision was bound, of course, to give rise to some little difficulty, owing to the fact that a voluntary patient has the right to leave within twenty-four hours after giving notice to that effect Since this may happen in a case where there has been a sudden change for the worse, it is an essential condition of admission that some responsible party should agree to take care of the patient in such a contingency This same party likewise guarantees the payment of hospital charges These charges vary according to whether the patient has or has not a legal settlement in the County of London If he has, the charges are according to means, if not, the full maintenance rate, amounting to about £5 a week, must be paid The question of medical suitability also arises, it can generally be decided by a telephone conversation with the practitioner, but in any event the decision as to suitability rests with the medical superintendent Formalities are reduced to a minimum, and details of the steps preliminary to admission have been widely circulated The Maudsley Hospital has two chief purposes—research into the causation of mental disease and into its early treatment These are not coincident, but are not necessarily mutually exclusive Cases are accepted often because of the unique opportunities they present for study of their causation, quite apart from their chances of recovery Such facts have to be borne in mind when the results of treatment are examined The report is cautious in tone and comprehensive, and Dr Edward Mapother, the medical superintendent, claims little Bearing in mind the dual purpose of the Maudsley Hospital, he has observed a judicious discrimination in the selection of cases, nor does he hesitate to say that even though the aim of the hospital were a single one—treatment to recovery of the maximum number—good results would indicate mainly the capacity for prognosis of the medical staff Many forms of treatment have been pursued Especially interesting was a case of bronzed diabetes with profound confusion, where treatment by insulin brought about practically complete physical and mental recovery, although there was no marked hyperglycaemia but definite glycosuria The malarial treatment of general paralysis of the insane has been carried out in several cases without any conclusive results Various forms of psycho-therapy have been employed Dr Mapother, although sceptical of the tenets of any recognized school, none the less insists that this method yields results that cannot otherwise be obtained Research work was handicapped at the outset by the necessity for organizing the general work of the hospital, but later numerous investigations have been carried out under the direction of Dr Golla, director of the pathological laboratory These include the determination of basal metabolism in cases of

dementia praecox, investigation of the oculo-cardiac reflex, some abnormality being noted in the majority of cases of the psychoses, and testing of the emotional response as indicated by the psycho-galvanometer. The researches are of great promise, and are being actively prosecuted. During the first year 1,012 cases have attended the hospital, of these 452 were admitted as in patients. Of the latter the majority came via the out-patient department. About half the total number of admissions were sent in by general practitioners after consultation with the superintendent. This shows how real an advantage the Maudsley Hospital is to the busy practitioner. Altogether the report makes stimulating reading. The work which is being undertaken in the Maudsley Hospital is one of singular promise.

PROTECTIVE GLASSES

THE subject of the presidential address of the new president of the Ophthalmological Section of the Royal Society of Medicine, Sir Arnold Lawson, of which a report will be found at page 719, is of very general interest and one on which the opinion of many practitioners must frequently be asked. Magazines, newspapers, and railway posters are all advertising the advantages to eyesight of special forms of spectacle glass designed to protect the eyes of the wearer from the "damaging" effects of ultra violet rays, and many persons are becoming obsessed with a fear of the mysterious influences of these rays. These rays are potent when they are in any volume, as in the rays of an exposed arc-lamp, or in the clear atmosphere of the high Alps. In such situations exposure without protection is likely to cause injury to both eyes and skin, but the effects are transient, and these special conditions are rarely met with by the ordinary city dweller. For him the murky atmosphere of the smoke laden canopy of heaven cuts off far too much of the virtues of sunlight—a fact that has been brought home to us by recent researches upon the pathology of rickets. For the great majority of the population specially tinted or protective glasses are quite unnecessary; where spectacles need to be worn the ordinary glass of the lenses gives sufficient protection. If in the neurasthenic more is needed, then the protective, but scarcely tinted glass devised by Sir William Crookes gives all the additional defence needed. When genuine pathological processes occur within the eye further protection is both valuable and necessary. For the special conditions of exposure to sunlight at high altitudes, or for the industrial risks of furnace workers, welders, and the like special forms of protective glass are imperative. It is to be hoped that the address of Sir Arnold Lawson will do something to dispel a fear engendered by the commercial exploitation of scientific advances designed for definite purposes. So far as town dwellers are concerned far greater benefits are to be found in the proper arrangement of lighting both natural and artificial. Conditions have been vastly improved in schools but it is still common to see clerks working at desks facing the window, and therefore in conditions that would try perfect eyes. In the opposite case windows are often dirty or overshadowed by screening walls, so that on even bright days artificial light has to be used to supplement the inadequate daylight. Further the spread of the use of high power illuminants excellent in themselves, has brought real disadvantages to the office workers, since these new lights are used in ways which produce a maximum of irritation to the eyes instead of a maximum of comfort. New wine must be put into new bottles, and with new lamps new shades *new hangings* and new arrangements are needed or else the eyes of the users will be as uneasy as the old wine skins strained by the fermentation of the young wine. Much of the demand for protective glasses comes from clerical workers and it arises from the neglect of these simple precautions in lighting, the use of the protective glasses does not, in fact, attain the end sought.

MEDICAL CONFERENCE IN HONG KONG

AT the invitation of the Hong Kong and China Branch of the British Medical Association, the China Medical Missionary Association will hold its biennial conference at Hong Kong from January 21st to 28th, 1925. Delegates have been invited from Great Britain, India, and America, and it is hoped that eminent authorities in different branches of medicine and surgery will address the conference. Board and *lodging for* members is being provided at a nominal cost and private hospitality will be available to a limited extent. It is worthy of special note that the two bodies about to meet in conference—the Branch and the association—were founded independently in the same year—1886—and that the University of Hong-Kong in whose buildings the *meetings* are to be held had its origin in the foundation of a missionary hospital. Western medicine was first introduced into China in the early part of the *nineteenth century* and the progress subsequently made has been almost entirely due to the work of medical missionaries. Since 1915 a considerable amount of assistance has been received from the China Medical Board of the Rockefeller Foundation, the chief work of the latter being the creation of the present Peking Union Medical College which was originally a missionary effort. The China Medical Missionary Association was founded in 1886 and has at present about 600 members, chiefly British and American missionaries and certain Chinese and other doctors who are in sympathy with its work. The association meets biennially in different cities of China but this is the first time it has visited Hong Kong, the South China branch of the association having its headquarters at Canton. Since 1887 the missionary association has published the *China Medical Journal* which until 1915 was the only journal of Western medicine appearing regularly in China. In the latter year however a National Medical Association of China was established for Western trained Chinese and a medical journal was associated with it. The Hong Kong and China Branch of the British Medical Association was first established in 1890 but it naturally grew out of the Hong-Kong Medical Society which was founded in 1886 with the late Sir Patrick Manson as its first president. It now has 158 members of whom 29 are resident in Hong-Kong. In 1887 the Alice Memorial Hospital was opened under the auspices of the London Missionary Society and the Hong Kong College of Medicine was founded with Sir Patrick Manson as its first dean. From this College of Medicine came the University and its medical school in 1912 with the first appearance of its medical society's journal the *Caduceus* in 1922. The conference provides an excellent opportunity for this school to demonstrate its possibilities as a centre of the practice of Western medicine more particularly in South China. These possibilities have already been recognized by the Rockefeller Foundation which provided 750,000 dollars for the endowment of full time chairs in medicine surgery gynaecology and obstetrics. The China Medical Board contributes also towards the scholarship fund for students enabling them to come from the Canton Christian College to the University for their medical course. The conference will provide *moreover* an opportunity for the British and Chinese in Hong Kong to appreciate something of what is being done for Western medicine in China and will encourage them to make some contribution in return for the commercial and other benefits which they derive from residence in Hong-Kong. It is proposed to place the sectional meetings of the conference under the control of a joint chairman and to appropriate the British Medical

Association and the China Medical Missionary Association The following sections have been formed general medicine, therapeutics, pathology, general surgery, ophthalmology, ear, nose, and throat, radiology, obstetrics, anthropology and anatomy, physiology, hygiene and public health, parasitology, naval and military hygiene In the great hall of the University arrangements are being made for the exhibition of instruments, drugs, medical publications, food materials, and hospital apparatus The joint honorary secretaries of the conference are Professor J L Shellshear of the University of Hong-Kong, representing the British Medical Association, and Dr James Maxwell of Shanghai, representing the China Medical Missionary Association

A PATENT METHOD FOR THE ENCOURAGEMENT OF SCIENCE

Dr Fritz Warschauer, who describes himself as a patent agent of Berlin, requests us to publish a note of a lecture he gave lately to the Deutsche Naturforscher und Aerzte at Innsbruck We will do so with pleasure, because the matter of the lecture must have been no less interesting to the natural philosophers and doctors of Innsbruck than Dr Warschauer's English report is to us It appears that in this lecture "the bacteriology has been, for the *first* time, discussed minutely from the point of view of the German Patent Act" The lecturer showed "on hand of numerous specifications that the German Reichs-Patentamt has, in acknowledging a justified claim, granted patents for bacteriological process" Formerly an invention was considered patentable in Germany "only if it related to mechanical or chemical treatment or working up of raw materials, viz, if by technical means a technical effect was obtained" It seems, however, that "in praxi the Reichs-Patentamt has given up this antiquated notion, probably in consideration of the development of the bacteriologic science, and by a recent decision it has expressly acknowledged that processes and methods are patentable which utilize the vital proceedings of nature" We are sorry that Dr Warschauer has not sent us the list, "combined by the lecturer," showing that "many famous scientists and leading chemical factories are inventors and proprietors of the bacteriological patents" Our ill-paid scientists should be grateful to Dr Fritz Warschauer for his message of hope Why not draw royalties instead of invoking State assistance? The bacteriologist of the future, lapped in luxury, deriving from a patent cure-all polyvalent serum an income that even Jackie Coogan might envy, will look with pity upon the wasted opportunities of pre-Warschauer workers And he will have the added satisfaction that, by retiring early on the proceeds of his world-wide patent, he will make room for other aspirants to fame and fortune, thereby encouraging the pursuit of science

INTERNATIONAL CONGRESS OF THE HISTORY OF MEDICINE

As we announced briefly last week, the fifth International Congress of the History of Medicine will be held at Geneva from July 20th to 25th, 1925, under the patronage of the Medical Society of Geneva The president of honour is Sir D'Arcy Power, K B E (London), and the vice-presidents of honour are Dr P Capparoni (Rome), Dr D Giordano (Venice), Dr E B Krumbhaar (Philadelphia), Dr Ingwal-Lavastine (Paris), Dr J G de Lint (The Hague), Dr A Pater (Geneva), Dr J D Rolleston (London), Dr Charles Singer (London), Mr C J S Thompson, M B E (London), and Dr Tricot-Royer (Antwerp) The president of the congress is Dr Charles Greene Cumston (Geneva) The vice-presidents are Dr Ernest Wickersheimer (Strasbourg) and Professor Andrea Corsini (Florence) The general secretaries are Drs A de Peyer and Emile Thomas (Geneva) The treasurer is Dr Edouard Schauenberg Subscriptions for members will be 15 Swiss francs, for associates 10 Swiss francs, these should be sent to the treasurer at the office of the general secretariat, 20, rue General Dufour, Geneva Members will be entitled to a copy of the *Proceedings* of the congress when published A preliminary programme of the proceedings will be issued about December 1st, 1924, and can be had on application to the general secretariat A cordial invitation is extended to members of the medical profession interested in the subject to become members and take part in the sessions of the congress

PETER LOWE'S "CHIRURGERIE"

An exceedingly rare Elizabethan surgical textbook is being sold at Messrs Sotheby's on October 28th—namely, a copy of the first edition of "The Whole Course of Chirurgerie, wherein is briefly set downe the Cause, Signes, Prognostications and Curations of all sorts of Tumors, Wounds, Vlcers, Fractures, Dislocations and all other Diseases, usually practised by Chirurgeons, according to the opinions of all our auncient Doctours in Chirurgerie Compiled by Peter Lowe, Scotchman, Arelian, Doctor in the Facultie of Chirurgerie in Paris, and Chirurgian ordinaire to the most victorious and christian King of France and Navarre" A note on Master Peter Lowe, with a reproduction of his portrait at the Royal Faculty of Physicians and Surgeons of Glasgow, appeared in our issue of July 8th, 1922, (p 59) Only one other copy of this edition of 1597 is on record, and only two copies exist of the second edition of 1611, one of which is in the British Museum It was printed in London by Thomas Purfoot, and incidentally throws light on the bibliography of another book, Norden's "Speculum Britanniæ," published in 1593, for a leaf of this latter book is bound in at the end of Peter Lowe's textbook, which makes it very probable that Purfoot printed for Norden also, whose well known "Speculum" contains no clue to the printer At the end of the textbook proper Lowe appends several pages of the "Presages of the Divine Hippocrates" He dedicated the work first to King James and also to Lord Sempill, both dedications are dated April 20th, 1597

THE GENERAL ELECTION

As the nominations for the forthcoming general parliamentary election take place on Saturday, October 18th, it has not been possible to compile a complete list of medical candidates We understand that the following members of the medical profession will offer themselves for election

Dr C Addison (Lab) *Hammersmith South*
Dr Ethel Bentham (Lab) Islington East
Sir George Berry (Con) Scottish Universities
Sir *John Rose Bradford (Con)* } University of London
Dr T G Bushnell (Lab) }
Dr E G Graham Little (Ind) }
*Dr W A Chapple (Lib), Dumfries
Dr Stella Churchill (Lab), Hackney North
Dr R Dunstan (Communist) Birmingham West
*Dr Walter E Elliot (Con) Glasgow Kelvingrove
*Dr T E Fremantle (Con), St Albans
Dr O Glee on (Lab) *Portsmouth North*
*Dr L Haden Guest (Lab) Southwark North
*Mr Somerville Hastings (Lab) Reading
Sir *Henry Jackson* (Con) Wandsworth Central
Sir Richard Luce (Con) Derby
Dr J J Lynch (Ind Lab) Walsall
Dr I H MacIver (Lab) Argyll
Dr H B Morgan (Lab), Camberwell North West
Dr A Salter (Lab) Bermondsey West
Dr Laura Sandeman (Con) *Aberdeen North*
Professor Thomas Sinclair (Con), Queen's University, Belfast
*Dr G F Spero (Lib) Stoke Newington
Dr T Watts (Con), Manchester Withington
*Dr J H Williams (Lab), Llanelly
*Lieut-Colonel T S Bethamp Williams (Lab), Lambeth, Kennington

Candidates who sat in the recent Parliament are indicated by an asterisk

UNIVERSAL CURES, ANCIENT AND MODERN

BY

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Any general discussion of quackery is far too big a subject for a single paper.

This paper is confined to certain universal cures brought forward by men of considerable medical knowledge who nevertheless appear to have genuinely believed that they had discovered a universal cure for disease. Most of the cures discussed appear to have some real or supposed connexion with electrical phenomena.

Francis Anthony Mesmer

During the last two centuries there has been a general tendency for universal cures to be connected with electricity and magnetism. About 1750 a widespread idea was established that the mysterious new *phenomena of electricity* and magnetism were manifestations of a force which, if properly applied, would act as a remedy for all known diseases.

This vague popular idea was first *exploited on a large scale* by Francis Anthony Mesmer (1733-1815). Mesmer started with an interest in astrology and wrote his thesis for the M.D. of Vienna on the subject of the influence of the planets on the human body. He next spent many years experimenting with the Imperial astronomer Pere Maximilian Hell on the effects produced by magnets when applied to the diseased body, and he attained considerable success by practising in Vienna along these lines. He discovered, however, that he could influence patients without magnets and even without touching them, and thus developed a form of treatment by suggestion. Professional jealousy drove him from Vienna, and he went to Paris in 1778, where he attained sensational success by methods which really consisted in treatment by suggestion reinforced by an imposing display of imitation electrical apparatus. Like most enthusiasts who believe that they have discovered a universal remedy, Mesmer expressed the utmost contempt for orthodox medicine, and resolutely refused to submit his apparatus to any form of test.

The measure of his success in Paris is indicated by the fact that he was supported by a large number of doctors, headed by Dr. D'Eslon, President of the Medical Faculty of Paris, moreover, he is said to have made £16,000 in fees in two years, and the Government offered him a pension of about £1,000 a year provided that he established a clinique magnetique and instructed three State appointed persons in his methods. Mesmer refused this offer, but in 1783 a number of well-to-do persons subscribed a total of about £14,000, in return for which Mesmer agreed to instruct them as pupils.

Mesmer therefore enjoyed the support of a large and powerful section of Parisian society, but his methods soon found imitators, and the wholesale exploitation of hysteria forced the Government into action. A strong commission was appointed, including amongst its members Lavoisier and Franklin. After five months' inquiry the commission decided that Mesmer's apparatus was incapable of producing any electrical or magnetic effects. They admitted that patients were profoundly affected, but thought that more harm than good was likely to be produced, and recommended the suppression of Mesmer's practices.

The most interesting points about Mesmer's success are as follows: he really did discover something—namely, the extraordinary effects that suggestion can produce in disease on the other hand, he firmly convinced both himself and his patients that a complex and imposing apparatus, his famous tub, possessed marvellous powers of healing by the magnetic force it exerted, and yet the tub was incapable of producing the slightest electrical effect of any kind. The general similarity between Mesmer's tub and Abrams's oscilloclast is very striking.

James Graham

James Graham had a fair knowledge of medicine; he studied at Edinburgh and may have taken his degree there. He picked up some knowledge of electricity in America. In 1780 he returned to Europe, and practised in London and Bath, and also at Aix-la-Chapelle. He exploited electricity as a cure for all diseases; he apparently had a fair amount of knowledge of the subject, for he had constructed to his own design some unusually large electric friction machines, and apparently produced quite impressive sparks.

He converted a large house in the Adelphi in London into one of the most remarkable palaces of quackery that has ever been known. This Temple of Health was furnished throughout with most lavish ornaments; statues, armour, painting, immense pillars and globes of gold, remarkably arranged plates of burnished steel, and electrical apparatus of every description were included in the decorations. The general effect was intensified by soft music from an invisible orchestra and perfumes of spices. The chief shrine of the temple was the Grand Apollo Apartment; this contained a throne, and above the throne a crown was suspended from which electric discharges could be produced. Patients were treated by being placed on the throne and having electric discharges played upon them.

In addition to the above methods of treatment Graham claimed that by means of electricity he could extract from drugs ethereal extracts that were cures for all known complaints, and which were indeed practically elixirs of life. For a certain supply of these medicines the modest fee of £1,000 paid in advance was demanded, and it is known that this sum was paid by several persons.

Graham was a tall, and one may of commanding presence, and he reinforced the attractions of his electric sparks by providing a strong sex interest. He gave a lecture on the cure of sterility with an entrance fee of six guineas, and a contemporary reports: He uses the plainest language in dealing with the parts concerned with generation, yet ladies as well as men crowd to hear him without scruple. Graham issued his lecture in pamphlet form at the price of a guinea, and even by modern standards it must be ranked as remarkably obscene.

Extra attractions also were provided at the lectures; for Emma, the future Lady Hamilton is said to have served as a nude model in his lecture on health. In addition Graham's temple contained the famous piece of apparatus, his Celestial Bed. This was an ornate couch around which electric discharges could be produced. The bed was guaranteed as a cure for sterility, and couples were allowed to use it on payment of a fee of £50.

There is, however, another side to his character; for he gave very sound hygienic advice to his patients, recommending cold baths and fresh air, ideas that were then extremely uncommon. Moreover, Graham was a religious fanatic, and throughout his writings one finds declamations against war and appeals for religious toleration blended with a kind of deism.

In the late years of his life Graham became insane. Some called him half-enthusiast, half-knave. Graham is chiefly interesting as a blend of religious enthusiast and obscene charlatan, and his writings are a proof of how complex and contradictory are the motives actuating the unbalanced minds of the discoverers of universal cures.

Elisha Perkins

The vogue of Perkins's tractors is, I consider, the most interesting example on record of the sudden rise and fall of a universal delusion regarding a universal cure.

For many years Perkins, who was the son of a doctor and a graduate of Yale, lived as a successful practitioner in Connecticut; he was a man of fine physique and remarkable for his untiring energy. He was respected by his fellow practitioners and acted as chairman of the local medical society. His strong personality and desire to do his professional duties soon brought him a high position amongst his patients, and he was very impressed by the amount of benefit that patients appeared to derive from his mere presence.

Magnets and lodestones were still believed to be endowed to possess medicinal powers—for example, the Royal Sick

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Abstract of Presidential Address to the Section of Therapeutics, Royal Society of Medicine, October 14th, 1924.

of Medicine in Paris concluded in 1779 that magnets were therapeutic agents of no ordinary efficacy Perkins concluded that his personal influence was due to some occult magnetic force, and made experiments in treatment by the application of magnets and metals to the diseased parts His son, in a short biography, states

"These experiments, however, for many years added but little to the information he obtained from the first observation The extreme uncertainty attending the results of all his experiments sometimes almost inclined him to think that this supposed discovery was all a fallacy, and the effects ascribable to imagination In the year 1796 however he acquired some new ideas on the subject which led to the discovery of the unequivocal influence of certain metallic substances on diseases, and the invention of the metallic tractors"

These tractors were two sticks of metal, about as thick as lead pencils—one looking like brass and the other like steel They were made of a mixture of various metals, including silver and gold, and were sold for five guineas a pair Perkins believed that these tractors were capable of benefiting or curing practically all diseases both of men and animals Their method of application was as simple as the tractors themselves, for it consisted in simply drawing the tractors downwards over the affected part for twenty minutes, and no previous knowledge was apparently needed for their application

Perkins, who was a man of great energy and enthusiasm, travelled up and down the country demonstrating his invention He demonstrated the use of the tractors in numerous hospitals, and his methods were endorsed by numerous doctors and professors, and he received the support of many of the leading men of the country, such as governors and judges His methods naturally met with opposition, and in 1799 he was expelled from the Medical Society of the State of Connecticut on the ground that his patenting of his invention was contrary to professional etiquette

In 1799 yellow fever ravaged New York, and Perkins went there to combat the epidemic with his tractors, he caught the disease, and died, after five days' illness, at the age of 59 This ending proves conclusively Perkins's absolute sincerity Yellow fever is not a disease which anyone would encounter with a remedy which they knew to be worthless, but one would have imagined that his death would have raised doubts concerning the efficacy of his tractors The vogue of the tractors was, however, undiminished They had been introduced to Denmark by the wife of Major Oxholm, a Danish diplomat, and were investigated by the leading professors of surgery and medicine in Copenhagen, who issued a report stating that "The arguments against animal magnetism would not apply to Perkinism, that the discovery was of importance to the healing art, and that it merited the thorough attention of physiologists" The report contains accounts of the cure of gout, rheumatism, and epilepsy and other diseases, and it was translated into German by Dr Tode, physician to the King of Denmark

England was, however, the seat of the greatest triumphs of Perkinism The movement here was directed by Perkins's son, who came here about 1797, he was not a medical man, but possessed the instincts of a sound advertising agent The tractors had a tremendous popular success, and were used with equal efficacy on humans, horses, and pet dogs In 1804 a Perkinean Institute was founded in London, with Lord Rivers as president The institute enjoyed the support of eight professors of four different universities, twenty-one physicians, nineteen surgeons, and thirty clergymen It is said to have had a larger endowment than any other hospital in London

There was, of course, opposition to the prevailing craze In 1799 a Dr Haygarth of Bath performed a few experiments with the help of some friends They explained fully and impressively to a group of hospital patients that a miraculous new remedy had been discovered, and proceeded to treat them with imitation tractors made of wood The results were striking, most of the patients declared themselves immediately cured or greatly benefited, although one or two stated that the pain of the treatment was so intense that they could not endure it The hospital was soon surrounded by an excited mob demanding treatment with the new remedy The experimenters apparently had a rather difficult and dangerous time when they had to explain that the whole business was a hoax

The opinions of Perkins, junior, on this criticism are best indicated by the following headings of the pamphlet he published in reply

"All these artifices having in view to prove that the tractors acted on the imagination, the author presented as an extinguisher of such pretensions, above an hundred cures on infants, horses, epileptic fits, tumefactions and inflammations

"Among the vouchers to these facts were eight professors, in four different universities, eighteen regular physicians, fourteen surgeons, thirteen clergymen, etc

"Very strange that the diminutive looking tractors should be pretended to have any influence on the imagination of a patient, from the confidence they might create

"The writers in the *London Medical Review*, whose supply of bread depends on a continuance of the use of medicine in preference to this simple remedy, devote thirty six pages to dissuading the public from trying metallic tractors

"Reason for attaching far greater confidence to the testimony of the numerous respectable and *disinterested* characters adduced in this work than to the *interested* writers on the contrary side of the question"

It will be observed that the arguments for and against universal cures have not altered appreciably during the course of one hundred years The cures always fail completely when subjected to any adequate control or test, and the reply to such criticisms is always the same a high-minded philanthropist is working for trivial pecuniary rewards to provide mankind with a universal safeguard against disease, and this urgent and all-important work is being obstructed by the selfish opposition of a profession which fears that its livelihood is being endangered

I hope that I have indicated in this discussion the respect that I feel for Perkinism—the respect that one owes to any perfect example of its kind, even though it be but an example of human folly Perkinism was a true artistic triumph in that a maximum effect was produced with the simplest possible technique Half the civilized world was induced to believe that any disease could be cured by drawing over the diseased part two sticks of metal for twenty minutes I do not think that this record in delusions has ever been rivalled, and I doubt if ever it will be surpassed

Twenty years later, when the bubble had burst, it still seemed incredible to one who remembered the craze that the whole thing should have been a complete delusion The idea that an enormous effect can be produced without any rational cause is offensive to the ordinary beliefs of mankind, and with every craze one hears the identical argument that there must be something in it because it is so widely believed and supported

Perkinism is a remarkably clear-cut demonstration of the falsity of this assumption There was no discoverable germ of truth in its practice, it achieved enormous popularity in a few years—testimonials as to its miraculous powers were supplied by thousands of persons, including many of the highest professional attainments, finally it fell into utter disrepute with equal suddenness Like an epidemic the craze rose and raged and waned, without any apparent reason for its course The only reason for the belief and for the disbelief seems to have been the rise and decline of a wave of delusion, and the whole history of the process shows how completely judgement can be inhibited by mass suggestion

Albert Abrams, 1863-1924

Dr Albert Abrams was a medical graduate of Heidelberg, and he practised for many years as an orthodox practitioner in San Francisco About fifteen years ago he began to seek for a universal cure for disease, and first brought forward the cult of spondylotherapy This was a blend of osteopathy and chiropractic with some of the more glaring absurdities toned down We cannot tell what form spondylotherapy would finally have assumed, for its development was dwarfed by Abrams's next step—his discovery of the famous electronic reactions

The electronic reactions of Abrams are obtained by two

machines—one a diagnostic machine and the other a curative machine. The diagnostic machine was the original and fundamental "discovery," and I shall only deal with this at present.

The apparatus consists of a contrivance or dynamizer in which is put the drop of blood to be tested; this is connected through four rheostats to the forehead of a healthy medium. The presence of the blood in the dynamizer causes changes in the area of stomach dullness of the medium, these changes are modified or abolished by varying the resistances in the rheostats. With this mechanism Abrams claimed that he could determine the age, sex, religion, race, and nature of disease of the patient providing the drop of blood. Moreover, the diagnosis could be made from either a drop of blood or the handwriting of the patient. For example, the diseases suffered by Dr Johnson were determined from a signature of the great lexicographer. I think you will agree that these claims are remarkable, for in the first place there appears to be no conceivable relation between Abrams's theories and any of the known laws of physics, chemistry, or physiology. Secondly, the claims appear to be of such a nature that their truth or falsehood could be demonstrated by a few hours' test.

An examination of Abrams's publications shows that his ideas developed step by step from some theories put forward by a Mr Baines in 1913. Mr Baines was an electrician who detected the well known skin currents by means of delicate galvanometers and thought that their measurement would provide a means of diagnosing and locating disease. This theory, advanced by an electrician with no knowledge of medicine was developed by Abrams, who had some knowledge of medicine, but apparently no knowledge of electricity. This accounts for the final bizarre form of his theories. Naturally Abrams was able to get equally good results whatever modifications were introduced into his apparatus, and his followers have found the same. On one occasions wires have been disconnected unknown to the operator, the reactions have been unaltered, the reason being that electronic vibrations need not travel along wires. On other occasions specimens have been removed from the dynamizer without the knowledge of the operator and the reactions have continued, the reason is that the electronic vibrations are so powerful that they set up similar vibrations in all material with which they come in contact, and these after-effects can only be destroyed by waving a magnet over the spot.

Abrams soon passed from the diagnosis to the treatment of disease. Starting from the fundamental idea that disease is due to derangement of the vibration rates of the electrons he sought a method of altering these rates. He noted the fact that a glass resonator could be shattered by a sufficiently strong sound of the wave length to which it vibrated. He therefore devised his oscilloclast, a form of electrical interrupter. The oscilloclast is intended to pass into the body electronic energy of the same wave length as the erring electrons in the diseased tissue. Some of the early forms of the oscilloclast were the subject of adverse criticism because an investigator found that one of them contained four closed circuits and did not furnish sufficient energy from its terminal leads to deflect even the most sensitive galvanometer. This error has now been adjusted, and the patients under treatment can lie and watch an electric light twinkling at the correct vibration rate. Abrams was an American Jew, and naturally, almost instinctively he made a commercial success of his discoveries. As I have pointed out in other instances of universal cures, the fact that they consider their discoveries priceless and charge accordingly is no evidence that they do not believe in the discoveries.

Abrams's theories violate all the known laws of physics and physiology even more completely than did the theories of Perkins, and I do not propose to attempt any criticism but will pass on to describe the progress of electronic therapy. As already mentioned, the diagnostic claims of Abrams are such that they admit of proof or disproof with extraordinary ease.

Abrams's doctrines were naturally disbelieved by the rest of the American medical profession as a whole, but since he held a reputable position in San Francisco he was given opportunities to demonstrate the truth of his extraordinary claims. He always refused, and soon there arose a sharp antagonism between him and his followers and the rest of the American profession.

The offer of two machines, one a universal means of diagnosis and the other a universal means of treatment, naturally proved attractive to many persons, particularly to osteopaths, homeopaths, and chiropractors. The great expense of the machines rapidly provided a strong commercial interest in support of the electronic method, and public interest was sufficiently aroused for a leading popular scientific paper, the *Scientific American* to offer to undertake an impartial investigation of the whole matter. This proposal was endorsed by the electronists in general and Abrams in particular. The committee of investigation found, however, that it was practically impossible to arrange even the simplest tests and the investigation which they imagined would take a few weeks took nearly a year. The final report has just been published and it simply states that as far as the committee can ascertain the so-called electronic reactions do not even exist.

The following criticism by the *Scientific American* appears to be completely justified:

> If in the opinion of the electronic workers their methods are insufficiently developed at this time to pass a most elementary test such as we propose then in good faith and through honesty of purpose they should without delay suspend their present electronic practice. They should tell their patients that they are not sure just what they are doing. After all human life is too precious to be the subject of raw experimentation of something worse than that as the case may be.

The only means by which the electronists can make this position satisfactory is by submitting their methods to some properly controlled impartial test. Such tests ought to commence with the diagnostic technique, for this is much the easiest to test and this was Abrams's original discovery. The methods of treatment were later developments from the original diagnostic methods. There is now an Electronic Society, I believe, and therefore there is no obvious difficulty in organizing satisfactory and final tests.

The general argument of the electronists is that tests are superfluous since they can support the truth of their claims by innumerable testimonials from patients cured of every kind of disease and that they are so busy doing *good* that they cannot waste time in proving what they already know to be true. Unfortunately for this argument, history fails to record any variety of quackery that has failed to obtain testimonials from persons who have genuinely believed themselves to have been benefited by its method.

The history of Perkins's tractors surely teaches as clearly as anything can that thousands of honest people can believe sincerely in a universal remedy for disease which is absolutely worthless. As I have said it is difficult to offer any criticism of Abrams's theories because these bear no relation to any of the known laws of physics and therefore there is no basis for argument. They are just as completely outside the realm of inductive science as were Mesmer's tub, Graham's ethereal essence, Perkins's tractors or Hahnemann's tinctures and like these other cults the electronic reactions have acquired a body of devout followers most of whom are probably fervent and sincere believers.

In all cases ancient and modern we find that the followers of the cult, if left to themselves, can perform miracles daily but under impartial inspection cannot satisfy the most elementary tests. There is really nothing strikingly new or remarkable in the present electronic vogue; dozens of similar crazes have arisen in the past and will arise in the future. These universal cures simply represent the old quest for the elixir of life in a new form, and arise to satisfy the fundamental craving of the mass of humanity for a miraculous cure for disease. Science has nothing to do with these cults and they are scarcely influenced by its progress, and since the type of mind that produces them and accepts them both remain constant one finds from century to century that remarkable analogies between succeeding crazes which I have tried to indicate in this paper.

THE OLYMPIA MOTOR SHOW.

NEW STYLE MOTOR CARS FOR MEDICAL MEN

By H MASSAC BUIST

The International Motor Car Show was opened under the patronage of the King at Olympia, Kensington, on October 17th, and will remain open until the evening of Saturday, October 25th, Sunday excepted The charge for admission on Monday, Tuesday, Wednesday, and Thursday will be 5s, on other days 2s 6d The hours are from 10 a m to 10 p m on each day This is the eighteenth show organized by the Society of Motor Manufacturers and Traders, and it is a little unfortunate that again this year it is taking place during the period of a general election

Visitors will find that drastic reductions have been made in the cost of the cars shown, these reductions have been effected not only to clear stocks, but also because many individual enterprises have embarked on quantity production to an extent hitherto unknown in British practice The reductions are the more remarkable because the British trade is heavily taxed and is badly situated with regard to labour costs The trade in the United States is protected by a 25 per cent import duty, while the French industry is protected by a 62 per cent tariff, and wages in France are something less than a third of those paid in this country It is encouraging to find that in many instances British-built vehicles are being sold at prices which are competitive with foreign products This applies not only to the so-called "light cars," but to middle-size cars also It is quite a mistake to accuse the British motor industry of want of enterprise, this exhibition shows that it has answered the challenge created by the unequal competition due to the tariff laws of other countries The result of the broad-minded policy pursued by the Society of Motor Manufacturers and Traders is that the British public, including, of course, medical men, can choose from the cream of the output of motor factories of foreign countries as well as of their own All that is asked by the British industry in connexion with the present show is that, given equivalent merit at approximately the same prices, the home-built car should be chosen, thereby giving employment to British labour

New Chassis Types

This year's show is remarkable in that its prime interest lies not in the introduction of quite new chassis types but in the fact that it is representative of the current motor manufacturing enterprise of all parts of the world The reasons for the relatively few changes are twofold In the case of many manufacturers their existing models have been developed in detail because they were introduced as entirely new types either one, two, three, or four years ago Having proved successful, the practical thing to do is to refine and otherwise perfect them as opportunity offers and further experience is gained The other reason, unfortunately, is that there remain, quite inevitably, a number of car types, made both by foreign and by home builders, which have been over-produced and which have to be cleared There is a sound reason for the introduction of each of the new cars There has never been more commendable designing in general than characterizes the novelties introduced, and this applies to the evolution of the small-engined car, as distinct from the small car of cramped accommodation—two absolutely different things, which American experts still fail to appreciate but which should be fully grasped by even the non-technical British public, albeit this is not yet always the case

New Cars

The entirely new home-built types presented for the first time at a motor exhibition are as follows

20/40 h p £20 tax straight eight cylinder 2 493 c cm Belsize with four wheel brakes chassis £695 saloon landaulette £1,050

£16 tax 1 991 c cm overhead valve six cylinder engined Marlborough sports type chassis with front wheel brakes £400

18/35 h p £19 tax overhead valve 2 540 c cm six-cylinder engined Talbot car with internal expanding front wheel brakes on a six brake system four speeds, right hand controlled, complete with five seater all weather equipment, £825, seven seater saloon landaulette £1 090

12 h p £12 tax 1 699 c cm side valve four cylinder engined Arrol-Johnston, with four wheel brakes four seater complete, £360

15/45 h p £16 tax 1,991 c cm six-cylinder engined Calthorpe chassis with Rubway contracting band front wheel brakes chassis £318

45 h p £52 tax 8,458 c cm double sleeve valve six cylinder engined, 18 ft 4 in wheel base 60 in track Daimler chassis with four wheel brakes—the largest chassis yet standardized—£1 400

14 h p £14 tax 1,944 c cm four cylinder engined Gwynne chassis £360, four seater £410

9/20 h p £9 tax overhead valve water cooled four-cylinder 1,074 c cm engined Rover one door four seater complete with electrical engine starting and car lighting as well as all weather equipment, three speed gearbox, worm drive, balloon tyres, £185, three door four-seater on longer wheel base, with *de luxe* body, £215

14/45 h p £14 tax four cylinder overhead valve (overhead cam shaft driven) 2,120 57 c cm engined four wheel braked Rover, with right hand controlled four speed gearbox, bevel axle driven, enclosed internal expanding mechanically controlled four wheel brakes, with Dunlop balloon tyres and a mile a minute speed capacity five seater complete, £550

In regard to entirely new types from abroad the 15 h p sports type overhead valve engined Lorraine may be mentioned, each and all are meritorious cars of their kind, but relatively few of them concern the average medical man Of the Rover types, the earliest information was published in these columns last month when the chassis were described in detail For the medical man who wants great powers of acceleration and good hill-climbing capacity the Talbot is worthy of remark It is economical in fuel, tyres, and tax in relation to its performance and great durability It is by no means experimental, for it was designed by Mr Louis Coatalen, the Sunbeam engineer, and its main details are uncommonly like a more up-to-date version of the smallest six-cylinder engined Sunbeam car, which is not now listed The Talbot is built at Kensington by the new management, and it represents the latest practice of the firm, it is of a type which ought to restore it to the enviable position it enjoyed in the larger middle-size car market before the war

From Canada come the £22 tax 3,102 c cm overhead six cylinder monobloc engined Buick five seater, £395 with contracting hand front wheel brakes and balloon tyres, also the £23 tax 3,995 c cm side valve six cylinder engined three speed Studebaker with hydraulically controlled expanding shoe four wheel brakes, four or five seater, £415 complete

13/35 h p £13 tax 1,873 c cm four cylinder engined Triumph with balloon tyres Lockheed hydraulic four wheel brakes Lucas grease gun lubrication to the chassis, and Marles steering gear, saloon £495 complete

18/50-h p £18 tax 2 850 c cm four cylinder engined Swift with four speeds controlled by the right hand large diameter rear wheel brake drums equipped with two sets of shoes mounted side by side one pedal operating in synchronism with Perrot type front wheel brakes and the other (outer) set controlled by hand lever touring model £595 complete

America introduces the six cylinder Lockheed hydraulic four wheel braked, three speed, semi balloon tyred Chrysler touring type at £465, and the smallest four cylinder car made in the U S A, the 16/45 h p £17 tax 2,378 c cm Rollin designed by Mr Rollin White, of White Steam Car fame, with internally expanding four wheel brakes, balloon tyres, disc wheels, "one push" oil gun chassis lubrication, system three point rear suspension five-seater £343

From France comes the 15/50 h p £16 tax 2 484 c cm four-cylinder engined front wheel cum transmission internal expanding shoe braked Berliet chassis at £450 the 16-h p £16 tax 3,016 c cm four cylinder engined Chenard Walcker with no brake drums on the back wheels, all braking being through Hallot automatic servo on the transmission shaft and on the front wheels in synchronism, on a system which ceases to operate directly the wheels lose momentum, in other words, the moment the wheels become locked, the 20-h p 3 745 c cm overhead valve six cylinder engined Hispano-Suiza with the firm's distinctive four wheel braking system and the £12 tax 10-h p 1 552 c cm double-sleeve valve engined Voisin with exhaust vacuum controlled Dewandre front wheel brake system

Examples of New Price Scales

It may not be good policy to take a car in its first year of production unless it follows, in the main, a design of which the given firm has had long previous experience, and there-

fore embodies nothing experimental A medical man wants a car that is not merely low in price, but which will not cost him much in taxation the tyre, fuel and lubricant bills of which shall be moderate, which shall be a good hill climber, of reasonably good acceleration and equipped for all weathers Hitherto many a small car that has fulfilled most of the requirements has failed in regard to the accommodation for driver or passenger

It is in this connexion that the most all round progress has been achieved by the industry, as well as in reducing prices, this year Take Coventry's contributions alone, and observe the excellent fruit that the pioneer work of the Standard Company is bearing now in other directions That concern was the first to appreciate that when a small engine is put in a car, if that vehicle is to be useful it must provide full scale accommodation for driver and occupant This year we find among Coventry's product the 10-h p Singer, the 10 h p Swift, the 11 h p Hillman the 9/20-h p Rover, and so on, all marketed with greater accommodation That this applies also to Birmingham is shown by the developments in connexion with the 11/22-h p overhead camshaft driven overhead valve Wolseley, the accelerator pedal of which is now placed on the extreme right, thereby affording much more leg room Other

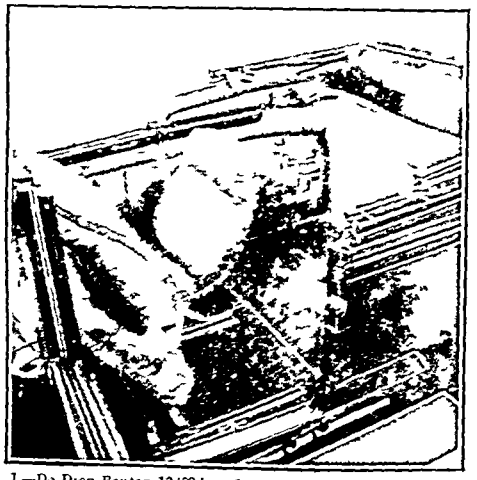


FIG 1.—De Dion Bouton 12/28 h p Coupe-cabriolet 2/4 seater Interior of bodywork showing occasional seats drawn forward

examples from various parts of the country could be cited, but a few illustrations of each point must suffice

It is highly satisfactory to note—and on this point the medical man should be careful to investigate for himself—that where chassis have been lengthened to provide more body space, generally they have been strengthened in section proportionately, this is essential Many chassis are made wider The practice of fitting balloon tyres to small cars is almost universal The popularity of the Dunlop cord type, which scores of manufacturers are standardizing, is observable Provided the steering is designed properly, this is the class of vehicle for which the balloon type of tyre is really needed, and on which it can be made eminently satisfactory In connexion with larger scale cars it is to be observed that America favours the use of the balloon tyre of the straight-sided variety, whereas few manufacturers on the Continent follow this example, though they are willing to supply such tyres as an extra to the buyer's order—in other words, on the purchaser's judgement, not on the manufacturers' Practically the same situation obtains in regard to the industry in this country This decision is not the outcome of lack of enterprise but has a sound basis The Belgian industry does an interesting thing in the case of some of the Minerva cars, which come under the heading of the full scale middle size car and which are equipped with what are styled "semi-balloon" tyres in other words, tyres that are of not exaggeratedly large section nor of pronouncedly low pressure

Moderate Prices

While in nearly all cases development in detail is shown, it may be seen in regard to the scale of accommodation, nevertheless the most important appeal is under the heading of price in which connexion we may take such well known all weather equipped types as the following and quote the figures to give an idea of the very widespread efforts that have been made to open a new series of possibilities to the medical man whose means are limited strictly

£12 tax 4 C £275 £12 tax Argyll-John on £360 Austin 8 seven £155 8 h p Power £160 Morris-Cowley 2-seat £175 9/20-h p Power seat at £185 10 h p Singer seat at £215 10-h p Swift 4 seat at £235 11 h p Standard with Kineton seat at £260 11 h p enlarged and widened balloon tyred Hillman saloon £335 11/28 h p Morris Cowley seat at all weather equipped with four wheel brakes £245 £12 tax 2-seat Bean £335 £10 tax 2-seat Pelsize £240 £11 tax 4/5-seat Bianchi £345 £10 tax 2-seat Bean £240 £11 tax 2 at Calcott £265 £11 tax 2-seat Caltelette £225 £8 tax 2-seat balloon tyred Citroen £145 £12 tax balloon tyred seat at Citroen £225 £11 tax 2-seat Clyno £175 £16 tax 5-seat Crossley £345 £6 tax 4-seat Daimler £860 £12 tax seat Darracq £425 £13 tax 2 3-seat De Dion Bouton £475 £15 tax seat De Dion Bouton £650 £14 tax Delage 5 seat £475 £16 tax 5-seat Delaunay Belleville £650 £24 tax 5-seat Dodge £525 £16 tax 4 5-seat Durant £160 £10 tax seat Enfield Alldays £350 £17 tax

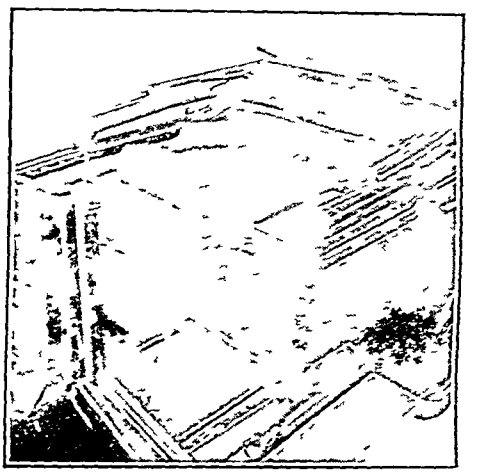


FIG 2.—De Dion Bouton 12 28 h.p Coupe-cabriolet Interior showing occasional seats folded back

six-cylinder Essex £295 £11 tax seat Fiat £540 £23 tax 4 5-seat Ford £125 £11 tax 2 seat Galloway £245 £8 tax 4-seat Gwynne £250 £11 tax 2/3-seat Hillman £358 £8 tax 2/3-seat Humber £240 £21 tax 5-seat six-cylinder Lorraine £645 £11 tax 2 seat McKenzie £250 £19 tax 5-seat Overland £165 £11 tax 4 5-seat Peugeot £295 £12 tax 4-seat Phoenix £365 £28 tax 5-seat F W B Studebaker £415 £12 tax 4-seat Sunbeam £570 £17 tax 5-seat F W B 14/40-h p Sunbeam £625 £9 tax seat 10 23-h p Talbot £345 £14 tax 4 5-seat 14 40-h p Vauxhall £625 £11 tax 2-seat Wolseley £275

The Doctor's "Occasional Four" Coupe

De Dion Bouton introduces this year on a 12 28-h p four wheel brakes chassis, an occasional four coupe type of good interior illumination and notably easy access The rear beside the driver is tilted forward when it is desired to enter or to leave, the rear collapsible seats which are accommodated very neatly when not in service Ample accommodation is afforded for luggage when the rear seats are not being used It is to be noted that the height is of fashion of rear suspension by cantilever springs is employed Front wheel brakes have been incorporated in De Dion practice for some seasons This type of all-ender body affords two really roomy front seats sliding independently of one another on rails and locked at once in the position most comfortable to the occupant of each

The doors are uncommonly wide one being provided on each side, so that it is possible to have direct access to the different seats The front seats are built on the scale principle

so that a light push on the back rest causes each seat to slide forward towards the windscreen, where it lies folded up out of the way, leaving a gap of 18 inches through which to pass to the rear seats. Even in the case of the driver's seat, which, of course, is impeded in its forward motion by the presence of the steering pillar, nevertheless 14 inches of space is available if it is desired to have access to the rear seat from his side. In the rear of the body are provided two folding seats each about 14 inches square. When not in use these slide out of sight into pigeon-holes in the rear squab. Those riding in these seats can face either forward or vis-à-vis. Even when two passengers occupy the rear seats still the luggage capacity is adequate, a hinged flap in the boot giving access to a tunnel which is the full width of the body and open at its inner end. Four frameless plate-glass windows, controlled by easy lifting handles and self-locking when in closed position, are provided, together with a V screen. This, and all other De Dion bodies, are equipped with rubber insulating buffers interposed between the body and the chassis round the dash to prevent rattle. Nine barrel-shaped buffers are employed on this particular body, and ten circular rubbers are interposed between the dash and the body proper. The mounting of coachwork on rubber buffers, originated by Lanchester, is somewhat widely exploited this year.

Coachwork Schemes

That metal will not be superseded and that wood will be the material which will be eliminated presently from body-building is illustrated by the methods in which the Austin bodies are built of steel. The steel body has been standardized by Dodge in America for years, and it is interesting to note that in the new American Rollin car a three-point flexible suspension with single-point attachment at the rear is used to solve the problem of chassis twist, which causes noise in covered bodies. To-day, not only does it not cost much money, but men who know how to wish down a car without destroying the varnish are not available, because the younger generation has not been trained to this. Hence the interest of what is, in effect, a system wherein the transatlantic manufacturer, turning out, possibly, a million against our hundred thousand, would have no advantage.

With few exceptions manufacturers do not introduce larger engined models than formerly, though there is the case of the Daimler, also the Belsize "straight-eight," which latter, however, has only a 2-litre engine. Buick introduces a 20-h.p. six-cylinder type to supplement its existing 27-h.p. type, and it is significant that the 2,300 c.c. four-cylinder engined Rollin car, brought from America by the designer of the erstwhile White steam car, with four wheel brakes, is called the smallest four-cylinder engined car made in the United States, a point that gives us at once the difference between American and European engine practice, since that engine is three times as large as some of the well established European types.

Four Wheel Brakes

Though in France I have been working on the idea for twenty years, yet to-day, when most manufacturers are actually giving attention to it and a large number are actually standardizing some scheme, I realize that not one car builder in three who standardizes cars with four wheel brakes to-day is doing so on lines that are desirable as regards safety, economy, wearing life, and so forth. That ultimately four wheel brakes will be a standard equipment of all cars, including the lightest, because of them light road adhesion, is hardly open to doubt. It has taken more than ten years to get the light car accepted as a permanent type, and I have spent at least as long in advocating the possibility of fitting a small engine into a chassis which provides, nevertheless, full scale accommodation for the occupant. That work is coming to fruition this year in a general fashion, as many new style small cars listed are testifying. We must not expect to reach my ideal, of 1 cwt. of vehicle weight for 1 cwt. of passenger weight transported, for, possibly, twenty years. The vehicle having 1 cwt. of car per 1 cwt. of passenger will be all-metal built—

Governing Factors in Improvements

The work of perfecting engines and rendering them flexible goes ahead. Therefore by conventional methods it is possible to make simpler gearboxes, and hence there is less urgent need for torque converters to displace them. In like fashion the coming of the balloon tyre may in part hold up chassis development, for it succeeds in disguising the faults of suspension in certain cars, especially as the average user has not the advantage of handling a couple of score, or more, different makes of motor carriages every year, and thereby keeping in touch with the latest achievements, and so ever resisting his standard of judgement. Many a car that seems to steer well and to ride smoothly to the average user is, as a fact, a third or fourth ranker in classification under those heads. If we could enable buyers—alike among existing motorists who desire new machines, and among entirely newcomers who do not understand the niceties of cars—to know exactly the relative merit of each car in its category, there would not be a dozen types of cars on the world's market to-day, and their users would have the best in each class at a lower price than they have to pay for the worst car to-day, because production of the leading types of each class would be on a scale representing in each country the most economical conditions of production.

Engine volume is no guide to engine performance, and, in general, there is one standard of engine performance in the New World and quite another in the Old. Much more is expected here of an engine than in America. Therefore, to consider an American car cheap because it has an equivalent nominal engine rating with a European is to be led astray. The way to achieve satisfactory motoring is to get the machine that fulfils requirements, irrespective of design. In this country many firms have re-rated their engines—for instance, the Humber, Singer, and the Wolseley—this year. The overhead valve gains many converts, by far the most general system of operation being by a camshaft in the crank case working vertical pushrods and rockers, though there are notable exceptions. Other engine developments include the general spread of

General Tendencies

The influence of the British Empire Exhibition over much of the detail of design, alike of chassis and of bodies, is shown at this show. Instances are afforded by the 14/40 Vauxhall, the 18-h.p. Armstrong-Siddeley, the Empire Talbot-Johnston model, the redesigned 14/40-h.p. Sunbeam, which is now fitted with six wheel brakes and is a reproduction on a lesser scale of the remarkable 20/60-h.p. type, in all of which vehicles there is ample ground clearance, generous provision of body width, and low centre of gravity. The practice of providing proportionately much wider doors is almost universal. It is to be found even on such cheap constructions as the 9/20-h.p. Rover, the 10-h.p. Swift, and the 10/26-h.p. Singer, and has been always a characteristic of Standard car practice.

Sometimes the widening of chassis is accompanied by the provision of larger brake drums, illustrated in the smaller Singer and the 9-h.p. Rover models. Again, Standard is one of the firms that has not hesitated to borrow a distinct from racing practice by using large diameter brake drums, to the great gain alike of efficiency and economy both of brake linings and of tyre wear. In regard to engine practice, we find the use of the Lanchester vibration damper for balancing the secondary forces in the crank case coming into general practice alike in England and America, because it is commercially a practical proposition.

forced feed lubrication To this end too, filters have been furnished to the pumps and aluminium pistons are gaining in favour We no longer consider it necessary to raise the bonnet to start an engine, even in cold weather hence the general use of stranglers operated from the dashboard

There is a distinct movement, particularly on behalf of the British industry, to provide change-speed gear and hand brake control levers on the driver's right, this being in response to public demand, instances among small cars are the 10-h p Swift and among middle size, the 14/40-h p Vauxhall Among the middle car classes there is a tendency for British practice to revert from the American to the Continental system in providing four speeds forward, despite the fact that no engines are more flexible than the best English makes, for the reason that America cannot get the Continental scale of power output for volume which our manufacturers do, and that in general, Continental manufacturers do not provide the flexibility which our best manufacturers do because abroad the demand is mainly for an engine that shall function much like an aircraft power plant —namely, that it shall be able to run slowly as well as at high speed on the straight, clear roads In this country on the contrary, with its twenty miles an hour speed limit and its tortuous roads, it is impossible even if the law be ignored, to go in average country at the full capacity of an engine for more than a few hundred yards at a spell Therefore we want flexibility always The use of four speeds assists a flexible engine, particularly in hill-climbing wherein cars in this country are at a disadvantage because our hill roads are ill graded, whereas hill and mountain roads abroad are graded scientifically Therefore our hills are relatively more difficult to climb and it is better to have a greater number of speeds Nor do drivers in general object to changing gear as much as they were wont to do because of the increasing use of the plate clutch also of the provision of better profiles for gear teeth and lighter controls and the use of clutch stops, whereby double clutching can be eliminated The plate clutch is a British invention which is being taken up now all over the world

Better Chassis

In regard to chassis construction, the fabric universal joint for the propeller shaft—the hardest worked of any on a chassis—finds an increasing number of users on the great saving of expense some manufacturers who have used these joints in the past are making them of more generous proportions this year, a point which newcomers would do well to note Apart from cheapness, these joints have the advantage of not needing lubrication

Disc wheels are not making much progress in use on small cars, but an interesting example of their introduction to some of the most expensive vehicles is afforded by Lanchester Many manufacturers are using lower frames an instance is the Austin 20-h p model with Carlton body giving a large, well lit interior of exceptional proportions and very easy of entrance The 14/40-h p Sunbeam has proportionately a much lower hung chassis of greater width and excellent lateral stability

Maintenance is facilitated, as well as efficiency ensured, by the very pronounced increase in the use of grease gun lubrication for chassis a practice which will unquestionably become universal because it ensures grease being applied to all the points of a chassis which need it, and very rarely get it, unmixed with road dust or grit, by the methods of oiling hitherto used This grease gun system is adopted by American and Continental manufacturers including Darracq, as well as by numerous English manufacturers

Front axles have undergone modifications in face of the introduction of front wheel brakes an instance is the 20-h p six-cylinder Wolseley which is of a correct section Examples of correctly designed axles in this respect include the 40-h p Fiat the 14/45-h p Rover, the 20/60-h p Sunbeam, and the 20-h p Lanchester—three distinct systems For the first time the 40/50-h p Rolls-Royce is shown with front wheel brakes of a very special design and fair performance, as I found in trial The firms marketing front wheel brakes as standard include Austin for all models, Lanchester the new 12-h p Arrol Johnston, as have the 14/45-h p Rover and many other quite new types Vauxhall extends the principle, hitherto standardized on the 30/98-h p type, to the 23/60-h p type Some manufacturers like to couple up the transmission with the front brakes, and to keep the rear wheel brakes independent In France there is the Chenard-Walcker chassis with no drums on the back wheels a scheme that has been copied in that point by one American manufacturer Front wheel brakes are optional on certain Armstrong-Siddeley cars on certain Crossley certain Daimler the 14-h p Standard, the 14/28-h p Morris-Oxford and on the side valve four- and six-cylinder engined Fiat models and among very many others

Prices of Foreign Cars

To show that reductions in prices are not confined entirely to British makers the 15/20-h p 2 litre engined Bianchi chassis is now listed at £395 the reduction of the different model complete with coachwork ranging from £80 to £160 The three-quarter English built coupe body on this is listed at £670 the four seater all-weather English body at £715 complete this is also the price of the English built four seater saloon Bianchi displays original practice in supplying forced feed lubrication to the gearbox gaining power and reducing noise The quite new 15/50-h p four cylinder engine is of the overhead valve type, and Perrot automatic type four wheel brakes are provided to the chassis on system that furnishes the car with six brakes in all Louis Penault one of the pioneers in standardizing front wheel brakes on really engineering principles employs them even for the £9 tax £250 8 3-h p three seater type now without any prejudice to the amplitude of the steering lock This small machine is also equipped with balloon tyres

Some Popular Cars for Medical Men

One of the comparatively few British firms to introduce entirely new chassis this year is Calcott whose 12/24-h p type is fitted with an all-weather equipped four-seater body at £375 and the four to five seater at £525 the three-seater semi-coupe costs £355 The design of the chassis does not differ from well proved practice the power being transmitted through a dry plate clutch to a gearbox giving four speeds forward controlled by the driver's right hand the back axle is driven by silent bevel gear The braking efficiency is proportionately much greater than on any former Calcott type The clean lines of the chassis are commendable, and it should have good wearing qualities This engine comes within the 2-litre category

The 11 h p Hillman engine has been developed in detail to meet the equipment of the car with balloon" tyres and of the new wider and more commodious coachwork provided A better system of lubrication by forced feeding is furnished for the power plant A gear pump is driven from the rear end of the cam shaft to ensure the circulation of the lubricant In place of a dipper stick for ascertaining the oil level a convenient two-level tap is fitted furnished with a handle placed accessibly above the tray between the bearer arms and the side of the power plant The equipment on this car is very complete including dash lamps licence holder petrol gauge air strangler on the dash carpets on the floor electrical Klaxon horn windscreen wiper hood cover spring gaiters by lamp lighting set, and so forth The four five seater all-weather body is available at £375 on this pattern

Standard's introduction of the Piccadilly four seater saloon on the 11-h p chassis at £275 represents a new note in values as does the £220 five seater all weather Kingston body on the same chassis The £14 tax four-cylinder overhead valve engined Standard chassis is listed at £225 and with Warwick all-weather body at £235 The Pall Mall five-seater saloon on the same chassis is £295 complete All 14-h p Standard types can be furnished with a system of front wheel brakes

The three-quarter coupe-cabriolet on the developed 10-h p Swift chassis is listed at £275 and the four seater or the two- eater with dickey on the same chassis at £255 in each case The wheelbase of this type has been lengthened by 9 inches so providing much more leg room and seating capacity The four seater model's present two doors each

of commendable width The running-boards have been brought much nearer to the ground, and valances added to fill in the space between boards and frame The springing has been developed to take the more commodious coachwork, and Hartford shock absorbers are standardized

Italy introduces the 15/50-h p £15 tax 2,294 c cm overhead valve four-cylinder engined Bianchi, with internal expanding front wheel brakes chassis £440, 4/5 seater complete £555, also the 50/100-h p £45 tax 7,372 c cm overhead valve eight-cylinder-in-line engined Isotta-Fraschini, with the firm's distinctive four wheel brake system chassis £1,395, 4/5 seater complete £1,750

Accessories

The Accessory Section is by no means the least interesting of the show It constitutes an exhibition which itself would occupy several days fully to investigate Though chiefly connected in the minds of the motoring public with the sale of cars and the building of high-grade coachwork for chassis, Mann, Egerton and Company exhibit also (Stand 369) much interesting garage and motor-house equipment, together with clever and attractive fittings for the car One is a neat smoker's companion For the thoroughly equipped garage there are bench milling machines, an air compressor and tank, a pressure cleansing tank, a mileage test tank, a grinding machine and attachments, an engine stand, a first-aid equipment, a wheel alignment gauge, and so forth The M E atomizing air valve, exhaust gas heater, petrol-oil cans, plug holders and cleaners, are other items of interest

Those who suffer from cold when motoring in winter should inspect the "everlasting foot warmer and foot muff," exhibited by A W Gamage (Stand 258) Of course, this firm shows also an extraordinarily complete range of motor equipment and accessories The Gemmy flooding-from-the-dashboard device for the carburettor, the Ford-Fixe combined exhaust and inlet washer, and a spare petrol can combined with the foot rest, are shown by Messrs Johnson, Neal and Co (Stand 375) Messrs S Smith and Sons (M A), Ltd (Stand 429), show the popular K L G sparking plug—used by practically all the competitors in important races—the need for which increases as standard motor car engine efficiency is improved "Rectaskid" is the name of a thin ball bearing inserted between two main leaves of each road spring the claim being that it reduces skidding, the principle will be explained to visitors at Stand 269

Electrical Apparatus and Tyres

The reputation achieved by Exide batteries is made plain by the exhibit of the Chloride and Electrical Storage Company (Stand 290) There is on view an interesting battery that has been in continuous use for twelve years, taken from the first Cadillac car equipped with an electric engine-starting car-lighting and engine-ignition system, this being the first firm in the world to standardize the electrical engine starter A redesigned model of the now long proved Lodge priming plug, with a number of distinctive features, is shown for the first time A new Lodge-Ford plug is among many interesting types that include the smallest sparking plug ever made (Stand 426) Examples of various types of Zenith carburettors, of which over 5 million are in use, include a special model made for rapid fitting to Morris Cowley and for Morris-Oxford cars Various technical improvements have been made in the 1925 Zenith, ensuring still greater efficiency and petrol economy, all these devices are now sold complete with filter under the float chamber and in an strangler over the inlet port, ensuring easy starting on the coldest morning (Stand 477)

The Dunlop Rubber Company's exhibit includes the low-pressure, large section "comfort" or "balloon" tyres evolved as a result of many years' experience, in the course of which admirable research has been used, instead of rushing on the market prematurely to meet an anticipated demand The Dunlop "wired-on" "balloon" tyre is claimed to be the safest large section type, and the security of the method of rim attachment is made plain by demonstration on the stand Chevrolet Swift, Vulcan, and such-like cars, with 31 in by 3½ in beaded-edge normal tyres, will take 31 in by 4·40 in "balloon" tyres without alteration of existing rims Of course, the firm continues to make its well known corded tyre types, both of the beaded-edge and of the straight-sided varieties Among the accessories marketed by this firm is a special jack for use with cars fitted with balloon tyres (Stand 500)

THE VOLUNTARY HOSPITALS IN GREAT BRITAIN.

Work of the Joint Council

The fifth annual report of the Joint Council of the Order of St John and the British Red Cross Society concerning the provincial hospitals of Great Britain has been published

Dr F N Kay Menzies, director of Hospital Services of the Joint Council, has collected in this report a huge amount of valuable information about the work of voluntary hospitals during 1923, and so follows the example of the late Sir Napier Burnett, who originally instituted the issue of these annual reports He draws attention to the fact that whereas in 1921 the ordinary income of the hospitals failed to meet the ordinary expenditure by £419,135, and in 1922 this deficit still amounted to £74,978, in 1923 the ordinary income exceeded the ordinary expenditure by £213,694 In 1920 only 44 per cent of hospitals had a surplus of ordinary income, in 1921 this percentage had increased to 51, in 1922 to 57, and in 1923 to 66

The object of the report is defined by Dr Menzies as being the presentation of the position of the provincial voluntary hospitals with reference to the facilities available for treatment, the extent to which they are utilized by the community, the annual cost of maintaining these facilities, and the sources and expenditure of the financial resources by which they are maintained Out of 755 hospitals, with 44,403 available beds, 710 hospitals, including 43,404 available beds, are reviewed in this report In the London area, which is not included, there are 116 hospitals, with 13,002 available beds, the total, therefore, in Great Britain is 871 voluntary hospitals, with 57,405 available beds With regard to the finances of these hospitals in 1923, the total expenditure was £6,381,115, and the total receipts £7,689,072 Of these total receipts £7,051,248 was raised by voluntary effort, the remainder being derived from public services (£550,918), and grants from the Voluntary Hospitals Commission (£86,906) These figures comprise both the ordinary and the extraordinary income and expenditure Dr Menzies remarks that it is now impossible for any person to maintain the old argument that the voluntary hospital system finds its justification in the fact that by it a vast amount of sickness and suffering is cured and relieved at little or no cost to the public purse He considers that it should be argued rather that the strength of the voluntary system and the real justification for its continuance should be based upon the fact that this immense volume of work is carried out more efficiently and more economically than it could be by any other known method or system Comparing the two years 1922 and 1923, it is interesting to note that in the former year 2,090,855 patients were treated at a cost of £4,946,299, whereas in 1923 2,861,306 patients were treated at a cost of £5,162,393 It is thence possible to estimate that the cost of a patient in 1923 works out at £1 80, against the cost of £2 40 in 1922

In an address delivered last June to the British Hospitals Association, Dr Menzies attempted to demonstrate the considerable growth of the responsibility of public health authorities in connexion with the provision of treatment for disease, and the full text of his address is published in the report He now draws attention urgently to the great need of providing greater facilities for treatment of ophthalmia neonatorum and infantile paralysis He refers to the report of the Departmental Committee on the Causes and Prevention of Blindness (1922), and suggests that it is almost a national scandal that ophthalmia neonatorum should be still responsible for approximately 30 per cent of all cases of total blindness in this country, not to mention the large number of cases of partial blindness The disease is eminently curable if prompt and efficient treatment is provided in the earliest stages, but, generally speaking, throughout Great Britain inadequate provision of this kind

is made Similarly, with regard to poliomyelitis he adds that the available hospital accommodation is seriously deficient, though there is evidence to show that the cases, if recognized at an early stage and submitted to skilful and prolonged treatment, will greatly benefit, whereas neglecting them results in irreparable and lifelong injury In his opinion, if the voluntary hospital system cannot cope adequately with these diseases, public opinion will insist upon adequate provision being made by public health authorities

An attempt was made during the year to estimate approximately the sum spent annually upon drugs in voluntary hospitals, and it is believed to be not less than £200 000 An article on economy in drugs and dressings, by Colonel J W Harrison, special medical officer for venereal diseases to the Ministry of Health, is published in the report Colonel Harrison, using the venereal diseases department of St Thomas's Hospital as an example, indicates that there is still considerable scope for economy in this respect without any sacrifice of efficiency being involved Dr Menzies urges similar conclusions in the case of tuberculosis dispensaries and in the case of private practitioners and suggests to hospital boards of management and their medical staffs that subcommittees might well be formed to investigate the question The main body of the report is devoted to statistical reports of the volume of work done in the voluntary hospitals, of total receipts and expenditure, of analysis of some of the sources of ordinary income, and analysis of the principal items of ordinary expenditure

Besides the special articles mentioned above, Mr J F Stone, accountant to St Thomas's Hospital contributes a statement of the principles upon which hospital accounts should be based, and Sir Francis Colchester Wemyss a member of the Joint Council, briefly surveys contributory schemes taking as examples two in operation at the Chesterfield Royal Hospital, in Glasgow the Radcliffe Infirmary, Oxford and the Royal Hampshire Hospital, Winchester

England and Wales

University of Durham College of Medicine

At the opening ceremony of the winter session of the University of Durham Newcastle upon Tyne, College of Medicine on October 6th, the address to the students was given by Sir Thomas Horder, Bt, of St Bartholomew's Hospital In the unavoidable absence of the President Sir David Drummond, the duty of introducing the orator to the audience was discharged by Sir Thomas Oliver In the evening Sir Thomas Horder was entertained to dinner by the staffs of the College of Medicine and of the Royal Victoria Infirmary The chair was occupied by Sir Thomas Oliver, who was supported by Mr R G L Mortimer and Sir Joseph Reed vice-chairman and honorary treasurer respectively of the Royal Victoria Infirmary In acknowledging the toast of his health, and after alluding to the pleasure of meeting men of the Newcastle School of Medicine, Sir Thomas Horder reviewed some of the methods of medical practice in vogue in these days He compared British with American methods, and discussed "group work" at length He did not altogether favour "group work," and he gave reasons for the opinions he expressed He thought that much more could yet be done in the way of post-graduate teaching He admitted that in London there were difficulties in providing the particular type of post-graduate instruction needed by medical men visiting this country from the colonies and from the United States He was in favour of a temporary interchange of teachers, and of a mutual interchange of clinical visits whereby physicians and surgeons might have the opportunity of seeing the patients in other hospitals, and the students be given the opportunity of observing how the diagnosis and treatment of disease might be approached from other standpoints than those with which their own teacher had familiarized them He himself had invited physicians from other institutions to visit his wards and to give demonstrations

Liverpool Annual Medical Service

This service will be held at St Luke's Church on Sunday next, October 19th, at 3 p m The Right Rev A A David, D D Bishop of Liverpool will preach the sermon It is hoped that as many members of the profession as possible will attend, especially as this will be the first address given to medical men by Dr David since his appointment The Lord Mayor and Lady Mayoress will be present and medical men are asked to wear academic dress The offertory will be made on behalf of the Royal Medical Benevolent Fund The medical men who may be prevented from being present are hereby reminded of the objects of this Fund, which needs the generous support of all practitioners The local honorary treasurer Dr J Ernest Nevins 32 Prince's Road Liverpool will gratefully acknowledge any donations sent to him

Scotland.

Royal Medico-Chirurgical Society of Glasgow

The opening meeting of the Royal Medico-Chirurgical Society of Glasgow was held on October 3rd, when Professor Archibald Young delivered his presidential address on the limitation of surgery past and present

Professor Young, far from taking a gloomy view of the outlook aimed rather at indicating the direction in which surgery as a science might progress and the lines along which further research might be pursued most profitably In a short historical survey of the earlier surgical achievements he referred to an interesting address by Erichsen in 1886, in which the following pronouncement occurred

> That the final limits of surgery have been reached in the direction of all that is mechanical and manipulative there can be I venture to think little doubt We have thus reached in many of our most important operations the final limit to which surgery can be carried Art is final but science is illimitable We have reached finality in the mere mechanical art of surgery both as to the expansion of its limits and the precision of its practice But we are yet on the threshold of the science of surgery

While such a pronouncement, said Professor Young, made nearly forty years ago and by one of the foremost surgeons of that day could not in view of the notable advances in operative method and technique since that time, be accepted as even approximately correct it contained, nevertheless, more than a grain of truth and it emphasized the separate role and the very different outlook of surgery the purely technical art and surgery the science The field of cranial surgery was chosen to illustrate some of the victories over restraints and limitations which had rendered progress difficult if not impossible and reference was made to perhaps the greatest of such victories—namely, the discovery and elaboration of anaesthetics and the conquest of microbic infection by the introduction of antiseptic practice and technique Professor Young then outlined a few of the limitations that still hindered the advance of the science of surgery—the problems of repair of tissues the manner in which the organs function and the question of periodicity as a fundamental mode of action tumour growth, the action of x rays radium and irradiation and many other such problems He urged the necessity for combined research by all concerned Before they could hope to set aside materially the restraints and limitations that still remained they would have to try many lines of research They must adopt a generous and all-embracing system of collaborative research by which the experience enthusiasm, original thought and varying points of view of many workers no only in pure surgery but also in all the allied sciences, might have cumulative weight

Housing in Scotland

The Scottish Board of Health has issued a scheme to local authorities on the Housing (Financial Provisions) Act, 1924 This Act provides for a programme extending over a period of fifteen years and aims at a production in that time of approximately 2 500 000 houses in Great Britain The amount of the increased contribution from the Exchequer to help local authorities in their building schemes under the new Act will be £9 a year for forty years in urban areas, and £12 10s a year in rural areas.

For the assistance of local authorities the Scottish Board is preparing model plans, specifications, and schedules conforming with the requirements of the Act, and embodying numerous economies that have been shown to be practicable as the result of the Board's experience in the past five years Copies of these plans, etc, are obtainable from H M Stationery Office, 120, George Street, Edinburgh It is open to local authorities not only to engage in building schemes themselves, but to assist private enterprise in the provision of houses subject to certain special conditions The type of house to which the subsidy applies varies to some extent, and the scheme includes two-storied cottages, bungalows, or houses built in flats or tenements Certain limits of area are fixed—for example, a two-storied cottage must show a minimum area of 620 square feet and a maximum of 950 The houses must be constructed in a satisfactory manner, and must possess an estimated life of not less than sixty years Although considerable latitude is allowed in the design of the house, the Board points out that the following accommodation can well be provided within the limits specified—that is, a living room of 180 square feet, and three bedrooms of 150 feet, 110 feet, and 80 feet respectively Where a parlour is provided some reduction in the size of the living room may be permitted One very proper and necessary condition needed to render a house eligible for the subsidy is that it must be provided with a bathroom containing a fixed bath

Steel Houses in Scotland

Steel houses were first brought to public notice when the Housing Bill came before the House of Lords last July The matter rose in Lord Wen's speech dealing with the bill, in which he outlined the proposal for the building of 500,000 steel houses in the next five years for the rehousing of our slum population The Committee of Inquiry, recently established by Mr Wheatley, Minister of Health, to examine new processes of house construction, last week paid a visit to Glasgow for the purpose of inspecting various types of specimen houses which have been constructed in the area In particular, the Committee visited the works of Messrs G and J Wen, where they inspected sections for one of the new steel houses A concrete foundation had been laid down outside the workshop, and this was examined A short time afterwards, on returning to the position where the foundation had been inspected, the house was found almost complete, the walls having been put up, the floor laid and covered, and the roofing almost finished while the members of the Committee were visiting another part of the works This house is of the bungalow type, containing living room and three bedrooms conforming in size to the demand of the Scottish Board of Health, also a larder coal cellar, bath room, and scullery The outer walls consist of steel plates bolted together Standard timber units for the frame and joists eliminate the necessity for the employment of a joiner, the inner walls being formed of asbestos composition do away with the necessity for plastering, and the roof being formed of metallic shingles or asbestos slates eliminates the necessity for employing a slater Further, the water pipes are made of standard lengths of copper piping with screw junctions so that the skilled plumber is to a large extent also eliminated from the construction All this standardization makes for great rapidity in construction and diminution in cost The house in question is produced for a price at the works of £360, but as larger numbers are constructed this cost will in all probability be considerably reduced Taking into account the cost of delivery and erection the total cost of the house may be taken meantime as about £450, which is a very considerable saving in comparison with houses built of brick or stone The life of the house is said to be at least fifty years and the Scottish Board of Health has already approved of the trial construction of a number of such houses by the Dundee Corporation With regard to habitability and amenity, the provision of an air cavity between the two layers of wall ensures efficient insulation against extremes of temperature, and any fear which local authorities may have with regard to monotony in the appearance of a great number of such standard houses can be dispelled by judicious planning of the site and lay out, painting of the exterior and variation of surroundings Several individuals and companies are taking an interest in the production of these houses including Messrs William Beardmore and Co, Dalmuir, on behalf of the Duke of Atholl, the Glasgow Steel Roofing Company and Messrs John MacDonald, Glasgow, and plans of two types and two sizes of houses have so far been provided One of these houses, produced by Messrs Beardmore is to be exhibited at the forthcoming Domestic Welfare Exhibition, to be held in the Kelvin Hall, Glasgow

St Andrews Institute for Clinical Research

At the opening of the winter session at the St Andrews Institute for Clinical Research Dr Maitland Ramsay delivered his inaugural address as director there was a large attendance of practitioners from Fife and from Dundee Dr Ramsay, referring to the founder of the institute, Sir James Mackenzie, expressed gratification that his name was still associated with it as president He then discussed the general principles of clinical research, as enunciated by Sir James Mackenzie He particularly emphasized the importance of clinical observation, and commented on the tendency to neglect this primary function of clinical medicine and to rely upon laboratory reports in its stead While these were of great value, they could never replace that accurate observation and weighing of clinical symptoms upon which the older physicians relied The value of the sensations experienced by the patient was often underestimated, but, speaking as a clinical ophthalmologist, he assured his audience that these were of the utmost diagnostic and prognostic significance in diseased conditions of the eye He then drew a close parallel between the symptoms of eye-strain and the sensations and disabilities experienced by patients suffering from cardiac inadequacy In conclusion, he hoped that his audience would take full advantage of the facilities of the institute for recording their observations Dr C E Douglas of Cupar, the secretary of the Fife Medical Association, congratulated Dr Ramsay on his address, and expressed his conviction that the work done at the institute was of great practical value to the practitioner He urged his audience, by their co-operation, to ensure the continued success of the institute

The winter session is being devoted to the study of renal efficiency On October 14th Professor D Waterston gave the first of two papers on the anatomy and embryology of the kidney, the second will be read on October 21st On October 28th and November 4th Professor P T Herring will deal with the physiology of the kidney, the subjects of subsequent discussions will be announced later All practitioners are cordially invited to these meetings

Correspondence.

MEDICAL SCIENCE AND GENERAL PRACTICE

Sir,—The Croydon Medical Society, a small society which has a social as well as a scientific side, has arranged a scheme of monthly meetings during the coming winter which may interest similar societies elsewhere

A series of lectures on recent advances in their own subjects will be given by recognized leaders in the scientific world of medicine In this way, it is hoped, direct contact will be established between the laboratory on the one hand and the practical clinical worker on the other

I think it will be admitted by all that the lack of liaison between the research worker and teacher of medicine or surgery at the present day is lamentable By the methods now in vogue it takes several years for a knowledge of important physiological facts to filter through even to the bulk of consultants or teachers, and probably at least twenty years before the general public receives the advantage of this knowledge in the form of approved methods of diagnosis and treatment

Dr E H Starling, Fullerton Professor of Physiology, opened the session with a paper on 'Compensation and decompensation of the heart" Reference to the study of a heart-lung preparation was made, and many practical inferences of the utmost value to practitioners present were drawn Other subjects arranged by the society include pharmacology, applied anatomy, and pathology

It is felt that infinitely more help is given to the doctor in his work by going back to the fundamentals, rather than by building up a superficial knowledge of minute details of treatment which change as continuously as all fashions do —I am, etc,

Ernest Cowell

Croydon, Oct 14th

OBSTETRICS AND LOCAL HEALTH AUTHORITIES

SIR,—Dr Louise McIlroy's letter (October 4th, p 642) is most opportune, coming at the time when the method of administration by public health authorities of obstetric work are rather rapidly crystallizing to a standard for the country at large With nearly all her letter and valuable suggestions I agree The regulation specifying the duty of a midwife when abnormality occurs in her practice, in which the words "registered medical practitioner" occur, is having an effect now which its framers never foresaw, and in my experience, even in discussions with medical officers of health, is to ways and means of carrying out their supervising work over midwives it has been used as an argument that, in any given case which might at the moment be under consideration, everything has been done quite correctly because the registered medical practitioner" had been summoned

One difficulty that one foresees in these matters is that medical officers of health are not usually expert obstetricians Who can expect them to be so? Taking the country through as a whole, it is doubtful if as yet they are as a body interested or sympathetic in this work, which is new to many of them Consequently one hesitates to endorse the suggestion that the obstetrician called in should have his report (which he should of course make) open to the *professional* criticism of the chief administrative officer

I venture to say that the difficulties mentioned by your correspondent—and they are undoubtedly very real and pressing—will be best met by her four separate suggested remedies, only excepting the expression in No 2— whole time officers"—for it is doubtful in the present state of national finance and with the present attitude of local government bodies to salaries, especially those of medical women in particular, to expect adequate pay to so skilled a practitioner who might be seldom required without overloading him or her with other duties Therefore I suggest it would be best to say in that connexion part-time officers"

With regard to the other suggestions (3) and (4) I believe these would be best brought about through central administrative action, possibly by the Ministry of Health making for instance maternity benefit *conditional on the patient* with serious complications accepting the best skilled assistance offered by the local authorities In carrying out many of these reforms I think we have here a good opportunity for work by the local medical advisory committees suggested and recommended by the British Medical Association *to be formed in all districts*—I am, etc,

Norwich Oct 10th ARTHUR CROOK

SIR,—Professor Louise McIlroy's letter is very opportune and all who have given this subject any thought will warmly endorse the sound common sense it contains Antenatal care is now a proved enormous benefit to the whole community, mothers and infants may truly eat of "the tree of life" Expert attention and advice are there for the asking of any and every expectant mother

When the labour is due—either a normal one, or premature induction, or Caesarean section, as the case may be—except for the relatively few who can be admitted to hospital the patient receives any help that happens to be available Up to this point she has been, as it were, under the eye of the medical officer of health—indirectly, it is true At what may prove to be the most critical time in the history of the case there now comes a *most illogical* hiatus Unless admitted to hospital she is "anybody's case" Should so serious a contingency as puerperal septicaemia arise, the patient is legally due to come once more under the eye of the medical officer of health The vast majority do not, for it is doubtful if any septic cases are notified unless the patient is *in extremis* and the final certification looms near and becomes more than a possibility *This is where the* supposed supervision by the medical officer of health of puerperal sepsis becomes a mere farce, and, indeed, can be nothing else so long as this state of affairs prevails It would appear that the situation is made illogical by the hiatus *mentioned above* and which is implied, if it is *not* specifically stated in Professor McIlroy's letter

To be consistent, the health authorities ought either to leave alone ante natal care and puerperal sepsis and let the whole matter of maternity be organized by some separate body, or frankly accept the whole responsibility from the beginning of pregnancy to the complete convalescence of the mother and the proved well being of the infant Professor McIlroy's suggestion of appointing expert obstetricians (if need be to act under the medical officer of health), who would undertake personally to supervise the antenatal stage attend at the labour if necessary, *and pilot the patient to complete convalescence, is the only* rational solution if the medical officer of health is to retain any interest in this work The medical officer of health *cannot* be expected to be an expert obstetrician in addition to his other already multitudinous duties but the obstetric officer appointed could be responsible to him Maternity welfare would then be a continuous and consistent pursuit, and the promise already held out by antenatal care would yield its fullest and richest fruit—I am, etc,

Harrogate Oct 10th W OSBORNE GREENWOOD, M D, B S F R S Edin

SIR,—Generally speaking, I do not believe that there is nowadays much of the unskilful or impatient midwifery practised which is condemned in Dr Louise McIlroy's letter of October 4th (p 642) In all the larger towns, and in many of the smaller ones, I think it is recognized that anything really difficult in midwifery is best sent into a hospital, and that this occurs except where manipulative or operative manœuvres are of the simplest In the country, of course removal might be impossible, but here again I do not see how an arrangement could be made workable for a doctor or specialist standing to attend wherever required

I also fail to see why a doctor called in by the midwife should be required to furnish a detailed report of his treatment to anybody In an age when we are inundated with official forms and regulations do not let us be required to add to this still another, which in most cases would be perfectly useless

As regard criticism by the medical officer of health (excellent fellow as he usually is) why should he criticize when he has no special qualification to do so and has in fact usually less knowledge of midwifery than his colleague Either he must add a special study of midwifery to his already extensive curriculum, or else the job must be taken out of his hands altogether

With regard to Dr McIlroy's numbered suggestions I would say

1 More medical inspectors would be needed than would be economically possible and more time would be lost by delay in urgent cases than would be saved otherwise Is it natural for the good general practitioner to be satisfied to be called in only if someone else cannot be procured in time?

2 Is the mother to be diagooned by these whole time officers or has she to have a say in the arrangement of her own confinement?

3 The same applies here If a woman requires help she should have the option of pleasing herself who is called in She usually forms a good idea during the years who is able to deal satisfactorily with difficulties in labour Again who will decide who is a reliable obstetrician Shall he be academical brilliant or will it be necessary for us all to submit to a practical examination?

4 In most cases we have this ready help in the hospital

I think all will agree that except in rare cases there is no place for expert and dangerous manœuvres to be undertaken at all and that these cases are best rushed off to hospital Where the cases are very urgent or naturally could hospital Where the cases are very urgent or naturally could not get the special help of whole time officers so that we are left only with those cases which are found in rural districts *with* hospitals far away, and specialists far away also

My plea would be not for a host of new officials we have too many already, and the financial burden is too great in these hard times The solution is in my opinion, much simpler and less costly, and that is a greater appreciation of the maternity hospitals already existent and a more rapid

and methodical means of transport thereto I think the *much maligned general practitioner* is not so black as he is painted, *nor are his failures so great* as we are given to suppose —I am, etc,

Hyde, Cheshire, Oct 7th J G Bennett, *M C*, M D

CELLULOSE ACETATE

Sir,—I am interested in the letters which appeared in *your issue of October 4th* relating to my "case of poisoning by cellulose acetate" By way of *reply I will give some* details which will make matters quite clear as to how the cellulose acetate solution came to be used for the making of the encasing splint

In the *Lancet* of June 14th Dr Fernandez published a communication entitled "The use of non-inflammable cellulose splints," and *proceeded to say*, "Cellulose acetate was suggested to me by the employment of cellulose dopes or varnish for aeroplane fabrics" He used "two solutions Solution 26, which is thicker and more viscous, and the thinner Solution 25 for the additional coating" Then followed the technique to be employed

In ordering these solutions Dr Fernandez's article was drawn attention to, and a quotation asked for his Nos 25 and 26 solutions The reply stated "We beg leave to *quote you for cellulose acetate solutions Nos 25 and 26*", and they were supplied in due course *There is therefore* no doubt that the preparations used were as advised by Dr Fernandez

The results were recorded by me in *your issue of* September 13th We afterwards examined the bulk of the solutions which still remain in the tins The *atmosphere* of the room felt close, and we *appreciated the presence of* a heavy odour On smelling the liquid for a few minutes we were conscious of inhaling a rather sickly vapour, which *did not invite a continued inhalation*

Acetone was clearly present, as proved at the patient's bedside If tetrachlorethane were not present, then it is obvious that an enhanced gravamen against the "solution of cellulose acetate" exists

I have, of course, no animus against this preparation in any way, but after the anxious experience we went through, when the issue of the child's life was in the balance, both my colleague and myself felt that it was only right and fair that the case should be recorded, and there the *matter rests, so far as I am concerned*

I may *add* that the patient was no weakling, but a bonny, plump little girl living an open-air life, and now again *actively getting about on crutches with* almost fully restored movements in a slightly tuberculous knee —I am, etc,

Sheffield, Oct 6th Godfrey Carter

X-RAY EXAMINATION IN RELATION TO PULMONARY TUBERCULOSIS

Sir,—It was heart-breaking to read the article in your issue of October 4th (p 615) entitled "X-Ray examination in relation to some aspects of pulmonary tuberculosis," by Dr J H Mather He writes

'Reference to some of the cases detailed below make it clear at once that *an x-ray examination may be of such supreme value* that a radiologist's report should be obtained whenever there is a shadow or doubt as to the presence of tubercle I shall endeavour to prove that this is essential in cases *where the evidence gleaned* from the physical examination of the chest is not sufficient to account for the symptoms

Again

"Now *in the three cases above quoted* there was no evidence to suggest the presence of emphysema and certainly the lesions were not small in extent we must therefore look *for some other cause* to account for the failure to detect these cases clinically I would suggest that this failure to diagnose cases of symmetrical disease is due to *the lack of a basis for comparison between the two lungs*'

The writer is generous I suggest, Sir, that the failure was due to ignorance and to a lack of appreciation of the very elements and first essentials in the diagnosis of phthisis The very first things to do are those which in the quoted cases were apparently *not done—namely*, to look for tubercle bacilli, toxaemia, and *raised temperature* These are the important things, not physical signs There may be severe active disease with no physical signs, and conversely all the physical signs of *pulmonary tuberculosis may be caused by a non-tuberculous lesion*

In the cases quoted tubercle bacilli were *found* in the sputum after the *x-ray* report had been made, and in several cases the unfortunate patients died within a few weeks

In Case I the *symptoms* were marked loss of weight, slight cough and expectoration, later emaciation, the diagnosis suggested was duodenal ulcer In Case II the symptoms were shortness of breath following influenza, husky voice, loss of weight, slight cough and expectoration, the diagnosis was aneurysm, new growth, or tuberculosis In Case III the symptoms were cough, expectoration, pain in chest, and shortness of breath, the diagnosis was gastritis

It is inconceivable how it came about that the true diagnosis was missed Such dreadful errors will be prevented, not by radiography, but by a general knowledge and acceptance of the truth that phthisis is *to be diagnosed, not* by physical signs, *but* by *tubercle bacilli*, toxaemia, and evening rise of temperature

That there were no abnormal physical signs in the cases of gross tuberculosis quoted in this article I cannot believe, but that is another question Frequently in moribund consumptives the *chest* appears quite resonant especially to hard percussion In such a stage, however, it does not matter so much if the diagnosis is missed, except that no *precautions against the spread of infection* are taken, but in early cases of pulmonary tuberculosis, if the profession is going to continue to place reliance on physical signs as a means of diagnosis, countless tragedies will continue to happen —I am, etc,

London, W Oct 12th F G Chandler

MEDICAL OFFICERS AND CONSULTING FEES

Sir,—I note that "Tuberculosis Officer" says (October 4th, p 646) he will still continue to take private fees, but in so doing he is acting in direct contradiction *to the resolution of the Representative Body at the Bradford Meeting* Such actions are undesirable in the best interests of the profession as a whole *Unity and loyalty is the only means* of strength in an Association such as ours —I am, etc,

Chichester, Oct 4th Arthur M Barford

Sir,—*To my mind one* of the chief advantages of a whole-time appointment is freedom from the distraction of wondering whether a fee should be expected or not I have had *ten years' experience* of general practice and twelve years of tuberculosis work, and I am convinced that it is better for a whole-time official to be paid an adequate salary rather *than receive a smaller salary* and be expected to supplement it by securing fees when and where he sees the opportunity Being able to advise and assist free of expense to one's *patients is a constant source* of real pleasure and satisfaction Why should tuberculosis officers give this up?

The whole-time official cannot expect to receive the same income as a successful general practitioner, but, on the other hand, he is free *from* the worry of collecting his fees and having to get money out of sick people who can hardly afford to pay him I think tuberculosis officers should stick to the substance and leave the shadow alone —I am, etc,

Folkestone, Oct 6th T M Prince

ASSISTANTS IN GENERAL PRACTICE

Sir,—I was pleased to read "Ex-Assistant's" letter in the Journal of October 11th (p 690), and I write to express agreement He mentioned £350 per annum as the average remuneration offered to assistants This, I think, *is above* the figure offered by most practitioners

Surely £250 per annum is quite an inadequate salary for an indoor assistant, and yet it is offered, even in your advertisement columns, by those practitioners *who are taking advantage of the present "glut on the market"*

I note that the British Medical Association refuses all advertisements of Public Health appointments which do not offer a certain *minimum* salary Could assistant-hops not be brought under a somewhat similar supervision, and advertisements be only accepted with the *proviso* that a minimum salary *of, say*, £300 must be offered for an indoor assistant?—I am, etc,

H W B

October 11th

SIR,—A general practitioner of some standing recently offered a medical woman, for an indoor assistantship with no exceptional advantages, a salary no more than one-seventh of that quoted by your correspondent (£350). On further inquiry, he stated that he required a woman assistant, as he knew he could not get a man so cheaply.

Medical women have no desire to undercut their professional brethren. Cannot something be done to prevent the offer of these preposterous salaries?—I am, etc.,

October 13th MEDICAL WOMAN.

THE HOURS OF MEDICAL WORK

SIR,—I must press doctors to follow Dr. Machlachlan's advice (p. 542), and will state my experience, etc. For nearly twenty-five years I have stated my hours, *x* to *y*, impressed upon patients the need to be present at *x*. If they crowd the place out near *y*, closing time, I refuse to examine them and make them come next *x*, when I have time, *y* means closing at that time, and no worker will start a new job at five minutes to his closing time. The patient who comes in at the finish, wishing to catch me when I am quiet, I remind that I have quite finished and that he will find a quiet time during the next *x* to *y* hours, also that he has missed the quiet times I had to spare. Accidents and emergencies excepted, I carry this out very strictly. If my hours do not suit them they can go to another doctor, I tell them, but it is surprising how often they see the reasonableness of it. I remind them, too, that visits after 8 p.m., *light or dark*, are night visits, and must really be necessary, as it does not pay to keep an assistant for such visits. I must confess that I have had more difficulty since daylight saving, as people do not realize that I start just as early as ever. Special cases for examination I will arrange for before *x*, but not after *y*. After *y* I have cases to read up, correspondence, next day's work to arrange.—I am, etc.,

September 21st. MEDICUS.

CARBON MONOXIDE POISONING

SIR,—Dr. R. Cunningham Affleck (October 11th, p. 690) has not brought forward any evidence which proves that his patients suffered from carbon monoxide poisoning. They might have been, and probably were, suffering from confinement in heated, stagnant air at head level with cold floor. The fact that he attributes to carbon monoxide poisoning the sudden sensation of an iron band being tightened round his forehead, felt on entering a bedroom warmed by a coke stove, shows that he is unaware of the fact that carbon monoxide only poisons by deprivation of oxygen, and that it takes time to saturate the blood up to the partial pressure of the gas present in the room. The iron band feeling can only have been caused by the effect of the heated air containing sulphur acids, and possibly other irritant fumes, on the mucous membrane of the nasal sinuses.

Mr. T. Angus and I have recently made some observations on mice exposed to the fumes of flueless gas stoves in a small room with door and window closed, which show that natural ventilation, due to difference of temperature inside and outside the room, taking place through chink and cranny, is sufficient to prevent any appreciable formation of carbon monoxide in the blood. At the same time we found that the heated air at head level was objectionable and therefore ample ventilation by open window is required when such a stove is used.—I am, etc.,

Loughton, Oct. 14th. LEONARD HILL.

Medical Notes in Parliament

[FROM OUR PARLIAMENTARY CORRESPONDENT]

Dissolution of Parliament.

PARLIAMENT was prorogued and dissolved on October 9th after a Government defeat on October 8th. The general election is fixed for October 29th. The Ministry continues in office but all bills introduced this year to which the Royal assent had not been given by October 9th are dead. The Therapeutic Substances Bill had been dropped previously.

Vaccination.—On October 8th the Minister of Health, Mr. Wheatley, in answering Mr. F. Simon, said he would not reconsider his action in rescinding the Vaccination Order of 1923. He declined to admit that he was acting contrary to the advice of the chief medical officer of the Ministry of Health.

Lunacy Act.—In answer to Mr. J. Pickard on Mr. Wheatley said on October 8th that in the opinion of the Board of Control there were serious objections to the posting of Section 79 of the Lunacy Act in the waiting rooms of public asylums. The revised rules of the Commissioners of the Board of Control which were now awaiting statutory approval provided that on the admission of every pauper lunatic to an institution a notice should be sent to all persons whose names had been particularized as those of relatives or friends. In such notice the substance of Section 79 should be incorporated. He was not aware of any case during 1923 in which a private mental patient who had not been seen by a magistrate had been deprived of the subsequent notice of right of appeal to a magistrate through the negligence of the managers of the institution in which he was received. Mr. Wheatley added that he was not aware of any instances during the last ten years in which a penalty for detention of a sane patient had been enforced. He could not, he said in answer to a further question, undertake to introduce legislation for the alteration of the grant of £5 a head to boards of guardians for the maintenance of pauper lunatics.

Silicosis.—On October 8th the Home Secretary said he hoped to arrange for the commencement at an early date of an inquiry involving the medical examination of a number of workers in the pottery industry. Such an inquiry was required before a claim under the Workmen's Compensation (Silicosis) Acts could be brought up for pottery workers.

Tuberculosis (Ex-Service Men).—On October 9th Mr. Peel, Minister of Pensions, in answer to Commander Fletcher, said he was advised that it would not be in the best interests of ex-service men suffering from tuberculosis as a result of their war service to make final awards for pension on any general scale. It was his intention to secure awards for prolonged periods in all possible cases. He had considered the matter with his medical advisers.

Universities and Colleges.

UNIVERSITY OF OXFORD

CONGREGATIONS will be held for the purpose of granting graces and conferring degrees in Michaelmas term on the following days at 2.30 p.m.: Saturday, November 15th; Thursday, November 27th; Wednesday, December 17th.

UNIVERSITY OF CAMBRIDGE

THE following candidates have been approved at the examinations indicated:

D.P.H. (*both parts*).—S. F. Allison, C. C. P. Anning, Constance F. Appleton, W. H. I. Bathurst, G. B. H. Snell, L. P. Cornea, Mabel E. A. Deane, Alice M. S. Devar, H. S. Griffith, T. W. Hill, O. R. Horwood, D. J. Kahawita, H. J. R. Kirkpatrick, F. McKibbin, G. Meadow, Margaret J. Penne, Emily V. Saunders, Jacob Scott, R. Scott, E. S. Taylor, Ann W. Turnbull, J. Wyllie.

DIPLOMA IN HYGIENE (*both parts*).—†R. H. Bennetts, A. Fraser, M. Abdel Hamid Gohar, A. Y. Lamaie, †A. S. Muhammad, M. Aziz Yousry.

Distinguished in the application of Sanitary Science.
† Distinguished in the Principles of Hygiene.
Distinguished in Bacteriology.

UNIVERSITY OF LONDON

DEPARTMENTAL COMMITTEE ON UNIVERSITY COMMISSIONS' REPORT.

The President of the Board of Education has appointed the following to be a Departmental Committee to consider the final report of the Royal Commission on University Education in London, dated March 27th, 1913, and having regard to present circumstances and after consultation with the persons and bodies concerned to indicate what are the principal changes now most needed in the existing constitution of the University of London and on what basis a Statutory Commission should be set up to frame new statutes for the University: Lord Ernle (chairman), Sir Robert Blair, Mr. H. L. Eason, C.B., C.M.G. (Medical Superintendent of Guy's Hospital), Mr. H. L. Lees Smith, Sir Henry Miers, F.R.S., Professor A. F. Pollard, Sir Ambrose Heath, Sir Bertram Blount, K.C.B., Miss K. Wallas, and Mr. S. H. Wood, as secretary to Sir Robert Blair. Mr. H. L. Eason, C.B., C.M.G. (Medical Superintendent of Guy's Hospital), Mr. H. L. Lees Smith, Sir Henry Miers, F.R.S., Professor A. F. Pollard, Sir Ambrose Heath, Sir Bertram Blount, K.C.B., Miss K. Wallas, and Mr. S. H. Wood as secretary to the Board of Education, King Charles Street, Whitehall, S.W.1.

At an extraordinary meeting of the Senate, held on October 9th, when the Vice-Chancellor, Professor E. A. Gardner, L.H.D., was in the chair, a communication was considered, dated September 15th, 1924, from the President of the Board of Education, in reference to the appointment of a Departmental Committee to matters connected with the University, the following resolution was unanimously carried:

That the President of the Board of Education be requested to remind that the Senate was not consulted as to the reference to the Haldane Committee on, nor represented upon, nor gave evidence before, and that, having regard to the successful progress of the University since the report of the Commission, the Senate is of opinion that such changes in the organization of the University as may be necessary can be more readily effected by amendments promoted by the University than by a Statutory revision of the Letters Patent as contemplated by the Act of 1923, but that the Senate will be prepared to

furnish through its officers and appropriate committees any information desired by the Departmental Committee, and trusts that the various bodies and interests represented on the Senate will receive a full opportunity of putting individually or collectively before the Departmental Committee their views on the matters under consideration

UNIVERSITY OF SHEFFIELD

DR R PLATT and Dr C W A LISTER have been appointed Demonstrators in Physiology

UNIVERSITY OF GLASGOW

THE following candidates have been approved at the examination indicated

FINAL M B, CH B—J A Adie A D P Alexander J L Allan Ruth M Allinson Christina M Anderson J A Barrie Jessie L Barrie, J B Bennett J Boyd W Blackenridge, F H Brisby J B P Brown J Buchanan J A Buchanan J Byers R B Caldwell A W Cameron D E Cameron D H Campbell, P Campbell Margaret E Chalmers J H Chisholm G Christie J C Clark Ellen M Clow G A Cormack Annie T Crookes J T Curran B Dias R Dick A T B Dickson Enid M Douglas R Drummond J M Duff Annie B [illegible] G Isabella M D Hall ness A B H Irvine Helena J J Johnston J Kyle R †G M Callum Elizabet M Cracken T M Culloc M MacDr O W F W Macka N [illegible] J [illegible] Meek G Millar H V R Miller J [illegible] Molloy J A Montgomery E J Morgan F Morton R Morton W D Muir W P Muir J Myles S Newman A Nicolson A Ogg, Petrie, A M Pollock A D M Pyle J Pyle thy E D Rankin Mary A Rigby, P M Ritchie M Robertson H C Robertson Helen I Rod on A R Rooke A Rose W Russell R Sinclair L F Skinnider Isobel U Sloan G J Smith J K B Smith Mary C Stevenso P H Stewart J M Stirling Annie R Barbara S Tulloch E A Underwood G Warnock J Waters Elizabeth M P Wea J A Wilson Frances D Young A Dunlop J Ferguson J N Hamilton J A L V Jones M M M Cleland D M Farlane A C Douglas Margaret S Ford L G Scoular I F Somerville H M Wen

* Distinction in Medicine † Distinction in Surgery

ROYAL COLLEGE OF SURGEONS OF ENGLAND

A QUARTERLY council meeting was held on October 9th, when the President, Sir John Bland Sutton, was in the chair

Annual Report

The annual report to be presented to the Fellows and Members at the annual meeting on Thursday, November 20th, was approved and adopted It contains a record of the work of the College in its various departments from August 1st, 1923, to July 31st, 1924 In addition to an account of the annual meeting in November 1923, and a note of the lectures and awards during the year, the report contains a detailed statement of the work of reorganizing the museum under the supervision of Professor Shattock until his death The work in connexion with the army *medical collection* has made good progress and the specimens, numbering nearly 2,500, are being arranged in groups illustrative of different conditions The teratological collection has been rearranged and extended during the year, and the new descriptive catalogue of the collection of surgical instruments in the museum has been completed by the addition of a final volume devoted to the series of instruments in use among barbarians and semi-civilized nations The department of osteology has received important additions during the year by gifts of great value of human remains from the excavations at Scarborough, Chester and elsewhere The financial part of the report shows that the gross income of the College, exclusive of income from the trust funds, amounts to £46 211, being £3 244 more than in the previous year The gross receipts from the Conjoint Examination Board are £4,360 higher, mainly due to an increase in the examination and diploma fees for the Membership The total expenditure in respect of revenue amounts to £37 747 and is £343 less than the expenditure of the previous year The balance on the revenue is £8 464 a larger sum than has been realized in any previous year In the coming year it is proposed to carry out considerable repairs and alterations in the College buildings at an estimated cost of not less than £2 500 During the period under review 750 diplomas of Membership were issued (including 122 to women) and 50 persons (including 3 women) were admitted to the Fellowship, the licence in dental surgery was granted to 266 persons, including 12 women

Jenks Scholarship

Mr Anthony Richard Charles Higham, formerly a student at Epsom College, was nominated as the thirty second Jenks Scholar

Gilbert Blane Medal

A "Sir Gilbert Blane" medal has been awarded to Surgeon Lieutenant Commander Harold Boultbee Padwick, D S O, B A Promotion Examination, 1924

Lectures

The Bradshaw Lecture on "Some Clinical Aspects of Carcinoma of the Breast" will be delivered by Mr Raymond Johnson on Thursday, November 6th, at 5 o'clock, and the Thomas Vicary Lecture on "Sir Richard Owen as Conservator" will be delivered by Sir Arthur Keith on Wednesday, November 12th, at 5 o'clock

Obituary.

FREDERICK DEIGHTON, M A, M B CANTAB,

Consulting Surgeon, Addenbrooke's Hospital, Cambridge

MR FREDERICK DEIGHTON, consulting surgeon to Addenbrooke's Hospital, died at his residence in Cambridge on September 29th, at the age of 70 He held a high position in the university town, both as an able surgeon and as a much esteemed townsman He was born in Cambridge where his father was in practice as a surgeon, and, save for his student years at hospital, spent the whole of his life in the town Yet of few men can it be said more accurately that there was no provincialism or stagnation in his work He constantly sought out the new and brought it into line with his practice

Educated privately, he went to St Peter's College, Cambridge, where he began as a mathematician, but later took up natural science, in which he took his degree From Cambridge he went to St George's Hospital It was whilst holding the post of assistant surgical registrar that he was called back to Cambridge to take over his father's practice owing to his sudden death in an accident This was in 1883, when he had taken the M R C S Eng Compelled by circumstances to abandon all idea of work in London, Mr Deighton made up his mind to succeed in his native town With the responsibilities of practice on his shoulders he gave time to work at Addenbrooke's Hospital, and worked for and took the M A and M B at Cambridge University His ability and industry were recognized when, in 1891, at the first vacancy, he was appointed assistant surgeon at Addenbrooke's This began a long association with the hospital, covering a period of twenty-six years and only ending on his retirement in 1919 During this time his versatility was shown in the special work he did in addition to that of general surgeon For several years he had the anal and gynæcological departments in his charge, both of which owed their inception to him With these departments he kept abreast of the times, frequently going away to see the work of other men and the best and most modern ways of treating disease Yet, at the same time, he was a very deliberate thinker, not to be easily moved, and only taking on new methods where his own experience confirmed that of others In operating there was no show of brilliancy, but meticulous care and delicate manipulation, so that haemorrhage and shock were reduced to a minimum One of his house surgeons, talking gratefully of his former chief, ten years after leaving Addenbrooke's, stated that, in his experience, he had never met a better operator for *thyroidectomy* This man's experience had been wide and varied, and included reading for the F R C S Eng It was a great tribute, but thoroughly deserved

Mr Deighton's knowledge of surgery and his judgement were equally good He could trace the evolution of an operation and explain its virtues and its drawbacks, and could give a wide, comprehensive view of surgery which was invaluable to those brought in contact with him Again, there was no improvement in aseptic technique that he did not master and assimilate, and right up to his retirement from hospital he was as much up to date as the youngest of his colleagues But his most careful work as a surgeon was combined with a kindliness and *cheeriness of disposition*, a thorough friendliness of manner, which made him friends with all who worked with him Though he could speak plainly and to the point where the welfare of his patients required it, he was absolutely devoid of any sternness or severity, and increasing acquaintance added to the respect and regard one had for him He was devoid of all pretentiousness, and honest and sincere in his outlook on everything

During the war he was lieutenant-colonel in the R A M C (T), serving at the 1st Eastern General Hospital, and for some two years he was also surgeon to the Officers' (Research) Hospital Two of his sons lost their lives in the war, one of them belonging to his father's profession

Mr Deighton was president of the Cambridge Medical Society for the years 1902 and 1903, and his main contributions were to that society He was also ex-president

of the Cambridge and Huntingdon Branch of the British Medical Association His advice on all matters affecting the profession was listened to with interest as being a well balanced and sound opinion, and time showed that his outlook on medical politics was worth seeking When at Peterhouse he played cricket for his college, and in his early days of practice, when limited time meant intensive play, he took up real tennis In the nineties he became an expert chess player, twice playing for the South against the North At the age of 55 he took to golf, and his keenness and natural skill are evidenced by his handicap being down to six at the age of 60 He retained his keenness in the game until the end, and even when bed ridden was intensely interested to hear of the results of other people's play

He leaves a widow (daughter of the late Mr Francis Fisher, Crown Solicitor, Sydney, N S W), three daughters and two sons, one of whom is in the medical profession

W H B

Medical News.

A SERIES of museum demonstrations on anatomy and malformation of the heart will be given in the theatre of the Royal College of Surgeons of England Lincoln s Inn Fields W C by Sir Arthur Keith, F R S on Fridays, October 17th 24th and 31st, at 5 p m The first demonstration will deal with specimens illustrating the evolution of the human heart the second on common kinds of congenital malformation, and the third on applied anatomy of the heart

ACCORDING to recent statistics the total French losses in the war amounted to 1 325 000 dead and missing Of these 674,700 were killed in battle 250 000 died of wounds 175 000 of diseases and 225,000 were missing 9,287 822 were admitted to hospital of whom 3 594 889 were wounded and 5 988 213 were suffering from various diseases The proportion of killed and wounded was 1 in 4 About one fifth of the wounded had more than one wound After 1916 about 80 per cent of the wounded could be sent back to the front

THE next meetings of the Royal Commission on Lunacy and Mental Disorder will be held at the Royal Commissions House 5 Old Palace Yard on Tuesday and Wednesday October 21st and 22nd, beginning at 10 30 a m each day

OWING to the recent builders strike the consecration of the memorial chapel of Epsom College has been postponed from November 1st to Saturday February 21st 1925 The ceremony will be conducted by the Bishop of Winchester

THE fourth of the series of post graduate lectures on cancer will be given by Sir StClair Thomson on "Cancer of the larynx" on October 20th in the West Lecture Hall of the Royal Society of Medicine at 5 30 p m At St Peter s Hospital a four weeks special course in urology will begin on October 20th A fortnight s intensive course in cardiology at the National Hospital for Diseases of the Heart commences also on October 20th The Hampstead General Hospital has arranged a two weeks intensive course, embracing all the general and special departments of medicine and surgery, from October 27th to November 7th The following hospitals will participate in a combined course on children s diseases from October 27th to November 15th Paddington Green Children s Hospital, the Victoria Hospital for Children, and the Children s Clinic Courses in November are as follows dermatology, at St John s Hospital for Diseases of the Skin gynaecology, at the Chelsea Hospital for Women proctology, at St Mark s Hospital, venereal disease at the London Lock Hospital and a general course in medicine, surgery and gynaecology at the Royal Waterloo Hospital The syllabus of each of these courses can be had from the Secretary of the Fellowship of Medicine at 1, Wimpole Street, W 1

THE opening lecture of the winter session at the North East London Post Graduate College will be given on Tuesday, October 21st, at 4 30 p m , by Colonel L W Harrison, on the diagnosis and treatment of gonorrhœa in the male The lecture will be illustrated by a cinematograph film and will be open to any medical practitioners who care to attend An opportunity will be afforded from 3 30 to 4 30 p m for a visit of inspection of the new wards theatre and other recent extensions of the hospital Those wishing to attend are asked to intimate their intention to the Dean at the Prince of Wales s General Hospital, Tottenham, N 15, so that tea may be provided for them

THE Royal Society of Tropical Medicine and Hygiene will hold the opening meeting of the new session on Thursday October 23rd at 11, Chandos Street Cavendish Square After a demonstration at 7 45 p m on some malaria carrying mosquitos and their larvae, the President, Surgeon Rear Admiral Sir Percy Bassett Smith K C B , will take the chair, and a paper will be read by Sir Malcolm Watson, M D of the Malay States, entitled Observations on malaria control with special reference to the Assam Tea Gardens illustrated by lantern slides

THE next meeting of the Biochemical Society will be held at Cambridge on Saturday, October 25 h The society exists to facilitate intercourse between those biologists and chemists who are interested in the investigation of problems common to both, including animal and vegetable physiology and pathology, agriculture, and brewing Members of the society are entitled to use the library of the Chemical Society Burlington House, London, W

THE annual dinner of the West Riding Association of the Graduates of the University of Edinburgh will be held on Wednesday, November 12th, at the Midland Hotel Bradford at 7 15 p m The annual general meeting will take place at 6 30 The guest of the evening will be Professor George M Robertson, M D , Professor of Psychiatry in the University of Edinburgh

DR HENRY JELLETT late Master of the Rotunda Hospital Dublin, has been appointed consulting obstetrician to the Health Department of New Zealand

THE Home Secretary has issued an Order, which will come into force on January 1st, 1925, applying the provisions of Section 73 of the Factory and Workshop Act 1901, to all cases of poisoning by carbon bisulphide, poisoning by aniline and its compounds, and chronic benzine poisoning, occurring in a factory or workshop This section relates to the notification of certain diseases contracted in factories or workshops

MR TOM EASTHAM, K.C , M B , has been appointed Recorder of Oldham

A MEETING under the auspices of the National Council for Mental Hygiene will be held at the Liverpool Medical Institution 114 Mount Pleasant Liverpool on Friday, October 24th at 4 30 p m The speaker will be Sir Maurice Craig M D All medical practitioners are cordially invited

AT the meeting of the Tuberculosis Society, to-day (Friday, October 17th) at 8 o clock at 1 Upper Montague Street Russell Square Dr O Donovan will make a communication on cutaneous tuberculosis Members of the society are invited to the next meeting of the Society of Superintendents of Tuberculosis Institutions to be held at 122 Harley Street W 1 at 3 p m on October 20th when diet in cases of pulmonary tuberculosis and the duration of sanatorium treatment will be discussed

AT the meeting of the Medico Legal Society, to be held at 11 Chandos Street Cavendish Square W 1 on Tuesday October 21st, at 8 30 p m , Professor Harvey Littlejohn will present communications on (1) Judicial hanging—a humane method of execution and (2) What is the fatal dose of strychnine? —to be followed by a discussion

THE sixth international medical post graduate course was held in Carlsbad from September 7th to 13th Professor Ascoli of Rome read a paper on chronic malaria, and Dr Louis Fischer of New York dealt with rickets Professor Chagas of Rio de Janeiro reported a special variety of trypanosomiasis in Brazil, and Professor Katsunuma of Japan discussed the cell function of the oxydase reaction Other readers of papers were Professor Benedikt of Budapest Professor Bergmark of Upsala, Professor Schur of Vienna Professor Arnt de Berlin Professor Christiania and Professor L Asher of Berne The course attracted a large number of doctors from many countries

THE forty first exhibition of the Royal Institute of Oil Painters, now open at 195 Piccadilly contains an excellent portrait by Mr John St Helier Lander P O I of the Treasurer of the British Medical Association Mr V Bulloch Harman F P C S robed in the gown and hood of a Bachelor of Medicine of the University of Cambridge

MR BASIL GRAVES, curator of the Royal Westminster Ophthalmic Hospital and formerly research scholar of the British Medical Association, has been appointed clinical lecturer and special instructor in charge of the department for microscopy of the living eye in the Department of Ophthalmology, Graduate School of Medicine University of Pennsylvania U S A , for a period of three months from January 1st 1925

SIR HENRY DUKE (President), in the Divorce Division of the High Court of Justice on October 15 h said that the medical inspectors appointed by the court in undefended suits had resolved to give their services gratuitously in poor persons cases and by this self denying resolution they brought themselves into line with members of the Bar and solicitors

AT the September matriculation examination of the University of London 35 candidates passed in the first division and 343 in the second division In addition 22 took the supplementary certificate in Latin

DR A J CRONIN of Tredegar, Mon, has been appointed a temporary medical inspector under the Coal Mines Act, 1911

DR JEAN GUISEZ of Paris has been invited by the University of London to give a lecture at the house of the Royal Society of Medicine, 1, Wimpole Street, W, on November 6th, at 5 p m, on malignant disease of the oesophagus

The Final Report of the Departmental Committee on the Use of Preservatives and Colouring Matters in Food has now been presented to the Minister of Health and will shortly be published The terms of reference having been extended to include the treatment of flour with chemical substances, the Committee will now proceed to inquire into this question, and communications on the subject should be addressed to the secretary, Mr A M Legge, of the Ministry of Health, Whitehall, S W 1

IN connexion with the diamond jubilee of the Guild of St Luke arrangements have been made for a luncheon to be held on October 18th at Pagani's Restaurant, 42, Great Portland Street, W The Rev Canon Arnott, F R C S, the surviving founder of the Guild, is expected to be present On Tuesday, October 21st, the musical portion of the festival service in St Paul's Cathedral will be rendered by the combined choirs of St Mary the Virgin, Primrose Hill, and the League of Artists, under the direction of Mr Geoffrey Shaw The November Chapter of the Guild will be held on November 13th, at 5 p m, at King's College, Strand, when the Rev T H Passmore will read a paper The chapter on December 9th will be addressed by the Rev E P Lewis, D D

AT the closing session of the Ceylon Legislative Council on August 28th last, the Governor, Sir William Manning, said that the medical department of the colony had expanded very considerably during the last three years In 1921 the expenditure was Rs 5,093,689, in 1924 it has been Rs 7,448,600 In 1921 the expenditure on medical research was Rs 600, to day it is Rs 70,142 In this period 1,500,000 persons have been treated for ankylostomiasis For the treatment of parangi, nine whole time medical officers are employed—one in each province, ten new hospitals and thirty three new dispensaries have been opened, and additions and improvements to forty hospitals have been made A malariologist has been appointed, with a staff to assist him Sanitation has been seriously taken up, and four medical officers of health and sixty five sanitary inspectors appointed For estate medical inspection six whole time officers have been appointed The department has shared in the general development which has taken place during the period 1921-24 According to the Governor, Ceylon is better supplied with hospitals and dispensaries than any other tropical colony

Letters, Notes, and Answers.

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The address of the Irish Office of the British Medical Association is 16 South Frederick Street, Dublin (telegrams *Bacillus Dublin* telephone 4737, Dublin) and of the Scottish Office, 6, Rutland Square Edinburgh (telegrams *Associate, Edinburgh*, telephone 4361, Central)

QUERIES AND ANSWERS

SPAS OF FRANCE

WE are asked to state that in consequence of the reference to the approaching publication of a volume entitled *The Spas of France* contained in the article Some Vosges Spas" published in our issue of September 20 h (p 538) the Office Français de Tourisme (56, Haymarket, London, S W 1) has received a large number of inquiries with regard to the book The translation is however not yet ready and it is not likely that the volume will be available before the beginning of next year

SENILE CRANIOTABES

"ROSACEA" asks how to treat craniotabes in an old lady of 84 years The bone has thinned like an eggshell over one parietal bone The patient takes plenty of food and green vegetable

DISCHARGE FROM THE NIPPLE

"X Y" writes A lady, aged about 55, has lately noticed a straw coloured discharge from the nipple There is nothing to be felt in the breast, but about four years ago there was removed from it by operation a growth which was pronounced to be inflammatory and non malignant What is the significance of this discharge? Does it denote early malignant change in the breast or nipple?

OBSTINATE NASAL CATARRH IN AN INFANT

"G E" asks for suggestions for the treatment of obstinate nasal catarrh in an infant of 6 months The child is otherwise perfectly well, and his parents are healthy The condition developed when the child was a few weeks old it has never been completely cured, and often becomes bad enough to interfere with sucking

INCOME TAX

Demand for Accounts

"R D A" has been asked by the local inspector of taxes for his accounts for the three years ended December 31st, 1920, but cannot comply with the request as the practice was then carried on by a deputy, since dead He asks whether he can deduct one half of the annual value of his house as an expense of the practice

*** The inspector of taxes has no legal right to require the production of accounts, but would be within his statutory functions in bringing any particular case to the notice of the Commissioners, who might make increased assessments and call for the accounts if they were appealed against by the person assessed It is obviously more convenient for all parties that any reasonable request for accounts made by the inspector should be met and the matter settled with the person concerned without the formalities and inconveniences of an appeal In this case "R D A" is in a real difficulty, and we suggest that he explain the matter to the inspector—preferably orally—and he will probably find that the matter is capable of amicable settlement With regard to the annual value deduction, he can include in the expenses a reasonable proportion, one half is, speaking generally, quite reasonable when the property includes surgery and garage

Anticipatory Deduction

"J E H S" refers to a reply to his inquiry in our issue of October 4th (p 650), and explains that the repayment in question was for 1923-24

*** The action of the inspector is not so unreasonable as would appear from the note in our previous issue, but is still open to objection in principle He cannot claim a set off against money not yet legally due from our correspondent We suggest that a protest be lodged and a supplementary repayment requested

Work under the Ministry of Pensions

"E D C" was engaged for some time on locumtenent work and sessional work for the Ministry of Pensions, but in recent years has confined his professional work to the latter He asks if he can claim the three years' average

*** The question resolves itself into this—are the earnings the profits of an employment? We have not before us full particulars of the contract of service with the Ministry, but we are of the opinion that in substance it is a contract of employment If so, "E D C" cannot claim the average and is assessable on the earnings of the actual year The arrangement under which such earnings are pooled with general practice earnings for one (average) assessment appears to be without legal justification, and to be based on a departmental concession to the convenience of the profession and, incidentally, its own officers

LETTERS NOTES ETC

OBSTETRICS AND LOCAL HEALTH AUTHORITIES

DR AGNES HILL NICOLL asks us to correct the wording of a passage in the last paragraph of her letter on this subject published in the JOURNAL of October 11th, p 688 The passage should read 'As regards nursing mothers, it will always be more natural and convenient for the mother of a young baby who attends a clinic with her baby to have supervision," etc

ACUTE EPIPHYSITIS

SIR JOHN O'CONOR K B E, M D (*Buenos Aires*), writes, with reference to the discussion on acute epiphysitis in the Surgical Section at the Annual Meeting at Bradford, to express the very strong view that radical operative treatment is necessary and that in what is commonly known as acute epiphysitis the whole infected part on of the medullary canal should be laid wide open in an endeavour to obviate pyaemia

VACANCIES

NOTIFICATIONS of offices vacant in universities, medical colleges, and of vacant resident and other appointments at hospitals, will be found at pages 37, 38, 39 42, and 43 of our advertisement columns, and advertisements as to partnerships, assistantships, and locumtenencies a pages 40 and 41

A short summary of vacant posts notified in the advertisement columns appears in the *Supplement* at page *iii*

EPITOME OF CURRENT MEDICAL LITERATURE.

Medicine.

284 Influenza and Meningococcal Infection

O DOPTER (*Journ de Méd de Bordeaux et du Sud Ouest*, August 25th, 1924, p 700) records a small epidemic of cerebro spinal fever which occurred in the garrison at Rochefort in December, 1923 Five cases occurred in the course of four days, then there were no more for twenty five days, when there was another case followed by the seventh a fortnight later, and by the eighth and last after another six weeks The outbreak thus consisted in the sudden appearance of an epidemic focus followed by sporadic cases, which occurred during the course of the next three months Meningococcus infection had been endemic in the garrison for some years The outbreak of cerebro spinal fever occurred during an epidemic of influenza, and as soon as the latter had subsided the meningococcus infection resumed its usual insidious course Influenza may be regarded as one of the favouring causes of meningococcal infection, and may give rise to outbreaks which are apparently primary, but are really only the expression of an exacerbation of meningococcal rhino pharyngitis Dopter refers to the investigations made in 1919 by W Fletcher, who found the meningococcus as well as *B influenzae* in the lungs and heart blood of American soldiers who had died of influenzal bronchopneumonia

285 Intestinal Toxaemia

R S BOLES (*Therap Gaz*, August, 1924 p 548) believes the poisoning of intestinal toxaemia to be due to absorption of toxins from the lower ileum and caecum in consequence of regurgitation from the colon through an incompetent ileo colic valve The substances so absorbed, he thinks, are indole containing derivatives of amino-acids due to the action of putrefactive bacteria flourishing in consequence of excessive protein ingested or producing toxic substances by attacking the amino-acids when there is insufficiency of carbohydrate in the intestine Some of the toxins identified are tyramin, which raises the blood pressure histamin and cadaverin, which lower it and indole which produces headache and vomiting It is possible that these toxins attack one kind of tissue in one person another kind in another person, thus one patient may have gastro intestinal symptoms, another articular, a third neural, a fourth mental The liver, too, may "detoxicate" more thoroughly in some persons than in others Among the general symptoms are physical and mental fatigue, dizziness, headache, cold extremities, anaemia, the gastro intestinal symptoms are anorexia or capricious appetite hyperacidity or achylia gastric atony, pyloro spasm, spastic colitis, appendicitis and cholecystitis The neural and mental symptoms may include neuritis, neurasthenia, melancholia insomnia indecision, migraine, epilepsy and dementia praecox The cutaneous manifestations include urticaria acne eczema, erythema nodosum, and erythema multiforme Boles mentions three cases of brittle nails cured by stopping the toxaemia he traces certain cases of blurred vision, scotomata iritis and choroiditis to this intestinal origin Diagnosis involves a careful analysis of symptoms and a thorough physical examination, in which x ray examination should always be employed, the faeces and urine being also examined Treatment by continuous irrigation of the colon is highly recommended, and milk cultures of *B acidophilus* appear to be beneficial agar and liquid paraffin have been found useful also

286 Luminal and Pyramidon Rashes in the same Patient

W BOTHE (*Klin Woch*, September 9th, 1924, p 1678) describes the following case A girl aged 11 who had suffered from epilepsy since the age of 5 had been treated formerly with bromides but for three weeks had received a daily dose of luminal (0 1 gram) A morbilliform rash then appeared, and in spite of treatment she developed a universal drug erythema resembling a salvarsan dermatitis with considerable fever (105 F) marked generalized oedema and painful fissures at the flexures of the joints This was followed by desquamation of the abdomen back, hands and feet No visceral lesion was detected but there was marked leucocytosis with eosinophilia (25 per cent) After nine weeks the temperature became normal, but there was total loss of hair and of nails with pyodermia After the disappearance of the dermatitis sensitization tests were carried out with a 50 per cent luminal sodium ointment and minute oral doses of the same substance (=0 01 and 0 05 gram) all tests were positive the former oral dose produced diffuse erythema, while after the latter the rash became intense and universal None of the controls reacted On recurrence of epilepsy three and a half months later, the patient was given 0 2 gram of pyramidon daily (by mouth) Two days later a scarlatiniform erythema appeared, with bullae on the hands, which healed after desquamation The sensitization tests were positive, as with luminal

287 Typhoid Bacilluria.

A HERZ and G HEPPNHEIMER (*Wien Arch f inn Med* August 15th 1924 p 413) record in detail their observations on typhoid bacilluria, based on 374 typhoid affections with 219 cases of specific bacilluria they estimate that this bacilluria occurs in about 50 per cent of the cases The most characteristic indication was pus in the urine They point out that bacilluria is always associated with disease in the urinary organs, most frequently with localized kidney disease, and with a localized interstitial infiltration (lymphoma and abscess) Other associated diseases are affections of the pelvis of the kidney, bladder, prostate and vesiculae seminales The chief causes of the permanent excretion of typhoid bacilli are stated to be chronic inflammatory processes in the pelvis of the kidneys and the bladder and also typhoid affections of the urinary organs following a non typhoid process, such as stone in the kidney and bladder, hydronephrosis, pyonephrosis abscess in the prostate and vesiculae seminales The excretion of typhoid bacilli in the urine plays an important part in the transmission of the disease, and the danger of infection in this way is greater than that of infection from the faeces As regards the prophylaxis and treatment of bacilluria, the authors recommend, in every case of typhoid or paratyphoid fever, hexamine in doses of twenty grains daily, directly the diagnosis is made and continued on several weeks during convalescence If prophylactic treatment has not been carried out, a preparation of hexamine should be given for at least four weeks when bacilluria is diagnosed If this does not free the urine from bacilli accurate examination of the urinary tract by means of the cysto-cope and ureter catheter, and functional tests of the kidneys, should be carried out the seat of the disease localized and eventually, in certain cases, operation may have to be considered.

288 The Tonsils in Rheumatic Arthritis.

OSTEN HOLSTI (*Finska Läkaresällskapets Handlingar* May June, 1924 p 365) has made microscopic examinations of a large series of tonsils taken from three classes of per sons (1) healthy persons (2) patients suffering from rheumatic arthritis, and (3) patients suffering from a variety of other diseases, such as heart disease The 13 tonsils taken from healthy persons showed signs of slight chronic inflammatory changes but no severe destructive processes About two-thirds of the 83 tonsils taken from the subjects of rheumatic arthritis (chronic rheumatic arthritis acute relapsing arthritis and acute arthritis) showed much more extensive and severe disease, necroses and far reaching changes in the vessels being demonstrable The 107 tonsils taken from patients suffering from diseases other than arthritis showed slight chronic inflammatory changes similar to those in the first group of healthy persons After a detailed study of the clinical relationship of attacks of sore throat to the arthritic disease in his patients the author comes to the conclusion that there is often a definite connexion between disease of the tonsils and of the joints

289 Early Jaundice in Syphilis.

C W BOTTEMA (*Nederl Tydschr v Geneesk* August 2nd, 1924 p 653) states that jaundice is a rare occurrence in syphilis and in recent infections usually develops after the appearance of the secondary rash In such cases it may be (1) haematogenous or haemolytic (2) hepatogenous being either intrahepatogenous or extrahepatogenous through occlusion of the bile ducts by swelling of the mucous membrane or enlarged lymphatic glands (3) caused by a combination of haematogenous and hepatogenous factors probably occurs in the majority of cases Bottema records the case of a man aged 18 who developed jaundice about the same time as the inguinal adenitis accompanying the chancre or about four weeks before the appearance of a secondary rash Rapid disappearance of the jaundice took place after anti-syphilitic treatment

Surgery.

290 Conservative Treatment of Pott's Disease

S LESKINEN (*Acta Chir Scand*, August 13th, 1924, p 193) has investigated the after histories of patients given conservative treatment for Pott's disease in a hospital in Helsingfors in the period 1895–1920 Of the 241 patients, as many as 21 died in hospital Only 137 patients could be traced, and it was found that 43 had died after leaving hospital, the mortality, therefore, was as high as 40 5 per cent The survivors who were traced were classified according as they were still ill, fairly well, or cured It was found that, apart from the mortality of 40 5 per cent, the patients who were still ill represented 12 per cent, the patients who were fairly well 17 1 per cent, and the patients who were cured 30 4 per cent of all the patients whose fate could be ascertained Tuberculosis was the cause of death in 57 of the 64 cases terminating fatally The prognosis proved to be best for caries of the cervical vertebrae, the proportion of cases of complete recovery being as high as 68 5 per cent The prognosis was worst for the cases of disease of the thoracic vertebrae, only 21 1 per cent of the patients in this class recovering completely A classification of the patients, according as their disease was or was not complicated by abscesses, fistulae, etc, showed how enormously such complications reduced the expectation of life, only 8 4 per cent of the patients with fistulae recovered completely

291 Treatment of Tuberculous Abscesses and Fistulae

G J HUET (*Nederl Tydschr v Geneesk*, June 21st, 1924, p 2826) alludes to the work of Lansberg, Kuyzer, and Sir Leonard Rogers (see JOURNAL, February 8th, 1919, p 147) on the treatment of tuberculosis and leprosy by injections of cod liver oil or sodium morrhuate, and reports his experience of injections of tuberculous abscesses and fistulae with a mixture of cod liver oil and iodoform in place of the ordinary iodoform emulsion He obtained such remarkable and rapid improvement that as he had not sufficient cases of his own he invited van Dorp Beucker Andreae to test the method in the Marine Hospital at Katwijk D VAN DORP BEUCKER ANDREAE and F S L VAN BREDO (Ibid, July 26th, 1924, p 511) have treated 31 cases of tuberculous abscesses or fistulae by injection of neutralized and sterilized cod liver oil combined with bismuth carbonate, as recommended by Kuyzer Like this observer, the authors found that this preparation penetrates farther than Beck's paste owing to its greater fluidity The results of treatment were as follows In 5 cases the disease progressed in spite of treatment, and in 3 it remained stationary All these 8 cases were in children suffering from very severe forms of tuberculosis of the knee hip, or spine, of several years' duration Some of the cases could not be taken into consideration, as they had to leave the hospital prematurely for other than medical reasons In the remaining 23 cases considerable improvement or actual recovery took place during treatment, in some cases, indeed, immediately after it had begun Although the number of cases treated was not sufficient to be conclusive, the results obtained justified further trial of the method

292 Steinach's Operation

LEVY LENZ (*Deut med Woch*, August 15th, 1924, p 1121) has ligatured the vas according to Steinach's technique in about 50 cases, and finds that the operation can be easily performed under local anaesthesia in five to ten minutes, under ambulatory conditions The vas should be secured as close to the testicle as possible, ligatured in two places with silk, and then divided The 2 cm long incision in the scrotum is sutured at once, a small dressing is applied, and a suspensory bandage worn for a fortnight The author says there may be an immediate transitory effect, but permanent results are not to be expected till four to six months later He is not very enthusiastic about this operation, and in no case of what he calls normal old age has he seen any benefits follow it, only when old age has come on early, and presents morbid rather than normal characteristics, with slight mental depression, has the operation seemed to have a favourable effect He adds that it is difficult to form an accurate estimate of its intrinsic value because of the element of suggestion, and also because some surgeons have performed this operation who scale without paying due regard to the indications for it

293 Some Faucial Anomalies

S COHEN (*Med Journ and Record*, September 3rd, 1924, p 232) describes three anomalies of the mouth and fauces (1) The styloid process may project into the tonsillar fossa and be discovered only after tonsillectomy He remarks that the styloid process varies considerably in length, but the normal length is 1 inch, if exposed by tonsillectomy it does not delay healing nor require removal (2) Arterial pulsation may be seen in proximity to the tonsil, the vessel involved being (*a*) a tortuous and aberrant internal carotid, (*b*) the common carotid trunk (when the internal carotid is absent), (*c*) the external carotid, (*d*) the ascending pharyngeal, or (*e*) the ascending palatine arteries These abnormal vessels may add greatly to the danger of tonsillectomy, the possibility of their presence requires careful preliminary examination (3) Supernumerary tongue Cohen's patient was an infant, aged 10 days Shortly after birth inspiratory dyspnoea was observed, this was relieved when the head was lowered A body was seen in the pharynx attached to the left pharyngeal wall and resembling the tongue in appearance, its pedicle was attached behind the left posterior faucial pillar When this was drawn forward the dyspnoea was relieved. The body was removed with a snare, and on histological examination was found to be structurally like the tongue

294 Cervical Sympathectomy

F J SMITH and R D MCCLURE (*Surg, Gynecol and Obstet*, August, 1924, p 210) recall that cervical sympathectomy has been performed for angina pectoris by various surgeons since 1896 Jonnesco advocates resection of the entire cervical sympathetic chain below the level of the superior cervical ganglion, including the first thoracic ganglion This operation has been performed under local anaesthesia alone or combined with gas and oxygen After the resection the characteristic enophthalmos and pupillary miosis usually develop promptly on the side of the operation, occasionally there is also transient conjunctivitis on the same side The authors point out that although unilateral or bilateral resection may greatly lessen the number and severity of the attacks, it must not be counted on to secure complete relief from pain, unless the first thoracic ganglion is included in the resection The resection should be done on the side of greatest pain first, followed by a similar operation on the other side if complete relief is not obtained The indications for operation are frequent and severe attacks up of occupation, the main contrain upend ing myocardial insufficiency The authors record in detail two cases where this treatment was carried out with definite benefit but without complete cure

Neurology and Psychology.

295 Progress in Psychiatry.

I H CORIAT (*Boston Med and Surg Journ*, September 11th, 1924, p 499), in a general review, observes that the old descriptive psychiatry of Kraepelin is being displaced rapidly by the newer interpretative psychiatry (Bleuler) which utilizes the psycho analytical principles of Freud, though Kraepelin's classification of clinical types has outlasted those of other writers Coriat regards Brill's translation of Bleuler's text book as an important advance, particularly the conception of schizophrenic negativism Coriat adds that, according to Bleuler, the predisposing causes of negativistic phenomena may be divided into (1) Ambitendency, which sets free with every tendency a counter tendency (2) Ambivalency, which gives the same idea two contrary feeling tones, investing the same thought simultaneously with both a positive and negative character (3) The schizophrenic splitting of the psyche (4) Confusion and imperfect logic of general schizophrenic thought, rendering theoretical and practical adaptation to reality difficult or impossible He quotes Bleuler as stating that in the psycho analysis of hundreds of patients of schizophrenia none was without a sexual complex, and that in the majority it was a dominant symptom Bleuler agrees with Freud's views on sublimation and repression of the sexual instinct Coriat continues by pointing out that Karl Wilmanns of Heidelberg recognizes the importance of Bleuler's work on dementia praecox, and admits that Freud has exercised a tremendous influence and has materially contributed to modern developments, though feeling that this approach has been only partially successful in elucidating the symptomatology of schizophrenia Coriat refers to the extensive investigation of focal infection and mental disease undertaken by Kopeloff and Kirby These writers found that in 120 cases of various types—manic depressive insanity dementia praecox, psychoneuroses etc—the focal infections were removed in 58 cases, but this did not result in a higher percentage of recoveries than in the other group of 68 cases in which the focal infections were not treated He concludes that while it is desirable to remove focal infections in mental patients, as one would treat any other physical disorder, it has not been shown that focal infection is the etiological factor in functional psychoses

293 **Salvarsan Treatment of Multiple Sclerosis.**

H SCHAFER (*Deut med Woch*, August 29th, 1924 p 1178) has treated several cases of multiple sclerosis with salvarsan preparations, on the assumption that the disease is due to a spirochaete In 21 cases of typical multiple sclerosis, with a negative Wassermann reaction in the blood and cerebro spinal fluid, he gave silver salvarsan the initial dose being 0 05 gram, and the final dose from 0 15 to 0 2 gram Two injections were given every week, and the average total dose was 2 5 grams In 13 of these 21 cases (62 per cent) objective signs of improvement were demonstrable, the symptoms most amenable to this treatment were the spastic and paretic ones the intention tremor, nystagmus, and disturbances of the bladder and rectum In an earlier series of cases treated in hospital during the past twenty years by other measures such as baths rest cures electricity and the administration of iodine arsenic and silver, and by injections of fibrolysin the results were not so good In this series there were 135 cases of multiple sclerosis and only 34 of them (25 per cent) showed objective improvement The author has also given neosalvarsan in 19 cases, but has not seen any very encouraging results therefrom

297 **Paralysis of Brachial Plexus after Serotherapy**

J LEPINE (*Journ de Med de Lyon*, June 24 th, 1924, p 351) reports two cases of this condition The first a man aged 30, of excellent health had had an injection of antitetanic serum when wounded in 1915 In 1922 his right hand was crushed and he had another injection of antitetanic serum Eighteen days later he experienced great pain in both arms, especially the right with some contracture and very slight trismus When Lepine saw the man three months after the accident the violent pains had gone but there was still some pain and formication in the shoulders and arms There was slight diminution of sensibility in both shoulders in the distribution of the fourth cervical root, and a marked motor impairment in the upper arms but none in the forearms and hands Tendon reflexes were absent in the upper limbs and diminished in the lower limbs There was atrophy of the trapezius and deltoid and some winging of the scapulae The second case a man aged 51, also of robust health, had an injection of antitetanic serum following a fall on his right shoulder Eight days after the accident severe pain was felt in the shoulders and arms, the intensity being greatest in the right shoulder Four months later he had no appreciable atrophy or definite paralysis but the pain persisted in the shoulders involving especially the trapezius and occipital muscles, and immobilizing the neck and the right shoulder In Lepine s experience the prognosis in these cases is good, though their progress may be very slow He does not think the phenomena are anaphylactic in their nature, nor considering their rarity, that they are due to faulty serum—for example the presence of insufficiently neutralized tetanus toxin For mild cases he has found rest, sedatives at first nerve tonics later, the cautious use of strychnine (arsenic is to be avoided) gentle massage and light baths sufficient For amyotrophic cases the continuous current is indicated On account of a tendency to contracture faradism is contra indicated

233 **Progressive Lenticular Degeneration (Hepato-lenticular Degeneration)**

J G GREENFIELD I J POYNTON, and F M R WALSHE (*Quart Journ of Med* July, 1924 p 385) give a useful summary of the clinical and pathological investigations of this affection during the last ten years, based on 30 recorded cases They also describe a further case, with a report of the pathological examination The disease was first described by S A Kinnier Wilson in 1912, and named by him progressive lenticular degeneration (it is often described as Wilson s disease) The chief symptoms are tremor (resembling that of paralysis agitans), rigidity, dysarthria, dysphagia, anarthria, spasmodic weeping and laughing slight dementia no qualitative changes in the reflexes no true paralysis no affection of sensation The onset is in youth or early adult life, the duration is one to three years and the disease is always fatal Bilateral symmetrical degeneration of the lenticular and caudate nuclei of the brain and in all cases marked multilobular cirrhosis of the liver (clinically latent), have been found by pathological examination The investigations of the last ten years have shown that the changes are not invariably confined to the corpus striatum Nevertheless, within the corpus striatum the brunt of the disease process (indicated by atrophy and degeneration of nerve cells and overgrowth of neuroglia) falls upon the putamen and to a less extent upon the caudate nucleus The cardinal symptoms are muscular rigidity and tremor, but three main types of motor disorders may be met with—rigidity alone rigidity with tremor or torsion spasm In the new case reported, a girl of 14 developed progressive dysarthria, inability to keep the mouth closed, dribbling of saliva, mask like countenance spasmodic weeping and laughter impaired movements of face and tongue muscles, flexed attitude of arms and hands There was no paralysis, and the reflexes and sensation were normal Later she developed complete anarthria rigidity of face and arm muscles flexion of trunk and limbs tremor of hands, and finally rigidity of legs with slow flexion extension movements Death occurred in twenty months The liver presented multilobular cirrhosis of a rich cellular type In the brain marked shrinkage of the corpus striatum was found, involving the putamen of the lenticular nucleus and the caudate nucleus Microscopic examination revealed degeneration of nerve cells and increase of neuroglia in these regions

Obstetrics and Gynaecology.

299 **Blood Transfusion in Gynaecology**

O KHOOI (*Zentralbl f Gynak* August 2nd, 1924 p 1714) denies the value of blood transfusion in those acute and chronic anaemias which are gynaecological in origin He has investigated the red blood corpuscle count and the haemoglobin index very thoroughly and has examined the patient s blood before transfusion and subsequently at intervals of one, two four, and six hours, then at daily intervals and finally on alternate days In the acute cases, which for the most part, were ruptured extrauterine gestations he finds that the improvement in colour the fuller and more rhythmic pulse, and the slower and deeper respiration, which are described by several observers as the result of transfusion, are only transitory, if they occur at all and he thinks they are probably due to the Trendelenburg position and ether anaesthesia In cases not transfused, as well as in some of the transfused the haemoglobin index rose appreciably some days after operation He avers that the transfused blood does not possess full physiological properties, especially as regards gaseous exchange, but on account of the serum acts similarly to transfused saline solution In all his non transfused cases (45) the patient recovered from the shock without any transfusion being required Rigors followed transfusion in all cases and the temperature remained high for six days in some cases, though usually it fell on the day following transfusion For these reasons and also on account of haemoglobinuria (a dangerous complication) occurring in some cases, the author does not recommend transfusion, the effect of which seems to him to be at the best transitory only, except in a few specially selected cases In the chronic cases of anaemia due to fibroids, chronic metritis etc similar results were obtained and rigors again occurred, followed by cyanosis, breathlessness and severe headache in many cases Instead of transfusion in such cases the injection of a small amount of blood several weeks after cessation of bleeding has proved very beneficial No case was seen for which transfusion was an absolute necessity

300 **Diagnosis of Early Ectopic Pregnancy**

A SIPPEY (*Journ de Med et de Chir Prat* September 10th, 1924 p 615) states that the pain associated with unruptured ectopic gestation is characterized by its constant presence during the waking hours, even when the patient is lying down and by its stationary position in a strictly limited portion of the pelvis Vaginal haemorrhage in the early stages is slight, almost continuous and augmented by exertion Both pain and haemorrhage increase with the passage of time These symptoms especially if accompanied by breast symptoms and signs, point to ectopic pregnancy even if—as is often the case—no history of a missed period is forthcoming In cases of tubal as of uterine pregnancy bimanual examination shows enlargement of the uterus and softening of the cervix but in the first named condition a juxtauterine tumour is palpable in one or another vaginal cul de sac Diagnosis from adnexal inflammatory conditions is particularly difficult when the tumour has fallen in the pouch of Douglas In this connexion it is to be remembered that patients suffering from adnexal inflammation do not often conceive and that the presence of a unilateral tumour and the absence of muco-purulent discharge of pyrexia and of leucocytosis point to the existence of a tubal pregnancy

301 **Cancer of the Uterus and Pregnancy**

A MAYER (*Deut med Woch* July 25th 1924 p 1003) publishes statistics controverting the popular view that carcinoma runs a peculiarly malignant course when associated with pregnancy Among about 1 600 cases of carcinoma of the uterus the author has seen 31 cases in which it occurred during or very shortly after pregnancy and these cases were certainly not characterized by great malignancy

The statistics of Martius confirm the author's views of 18 cases of *carcinoma of the cervix* 88 9 per cent were operable, whereas of 725 non pregnant cases of carcinoma of the cervix only 65 3 per cent were operable Of 12 cases of carcinoma of the cervix associated with pregnancy and operated on, only 25 per cent relapsed, whereas a relapse occurred after an operation in as great a proportion as 48 per cent of the 340 *cases of carcinoma of the cervix not associated* with pregnancy Turning to the treatment of carcinoma of the uterus and the respective merits of *x* ray treatment before or after an operation, the author argues in favour of *x* ray treatment before operation This procedure arrests the superficial decomposition of the growth and banishes the discharge, with the result that the risk of post operative peritonitis is reduced Among 67 cases, several of which were given pre operative *x* ray treatment, there was an operation mortality of only 7 4 per cent, the incidence of peritonitis being only 4 4 per cent As the operation mortality without pre operative *x* ray treatment usually ranges from 10 to 20 per cent, pre operative *x* ray treatment marks a definite advance

302 The Ovaries after Hysterectomy

ALICE F MAXWELL (*Journ Amer Med Assoc*, August 30th, 1924, p 662) analyses in detail the end results of 500 hysterectomies In 329 cases the ovaries were removed, while in the remaining 171 cases they were retained Post operative *vasomotor symptoms occurred in 80 per cent of the former* class, while in those patients whose ovaries were retained vasomotor disturbances occurred in 42 per cent only The disturbances were classed as "severe" in 30 per cent of the former and in 12 per cent only of the latter The average duration of vasomotor disturbances was practically identical in the natural menopause (2 5 years), in hysterectomy with removal of ovaries (2 7 years), and in hysterectomy with retention of ovaries (2 25 years) In 11 per cent of these cases of vasomotor disturbance the symptoms persisted for a period of *from four to seven years, contradicting the* impression *that these phenomena are transient* The retention of ovarian tissue appeared to be a distinct advantage to the patient in only 7 per cent of the 171 cases in which the ovaries were retained was there any subsequent ovarian enlargement, and in only two cases was there transient pain In every case pain and swelling disappeared within six months No neoplastic degenerations were found nor were any secondary operations performed in the entire series The author draws the following conclusions (1) The frequency of vasomotor symptoms after hysterectomy is increased when both ovaries are removed (2) The frequency of symptoms with conserved ovaries after hysterectomy compares favourably with that of the normal menopause (3) Severe vasomotor symptoms are more common without than with ovaries (4) *The onset of delayed symptoms indicates that a definite* number of conserved ovaries will atrophy within a year after operation (5) The average duration of symptoms of the normal and surgical menopause is about two and a half years (6) Women with a low haemoglobin index are more likely to develop post operative disturbances (7) The frequency of symptoms depends largely on the healthiness or unhealthiness of the retained organs (8) Retained healthy ovaries are not susceptible to degeneration

Pathology.

303 Insoluble Bismuth in the Prevention of Syphilis

W KOLLE (*Deut med Woch*, August 8th, 1924, p 1074) records experiments with mercury and bismuth given to rabbits previous to inoculation with syphilis It was anticipated that the two metals would be equally effective in aborting experimental syphilis, but it was found that mercurial preparations were comparatively inert When, however, twenty six rabbits were given intramuscular injections of insoluble preparations of bismuth, which remained as depots in the body, artificial inoculation of the testicles with the spirochaetes of syphilis never led to the development of a chancre, even when the interval between the injection of bismuth and the attempted inoculation was as long as two to fifteen weeks The *x* rays showed that such insoluble preparations of bismuth as the carbonate remained as depots in the muscles for months Control tests were carried out with sixty eight rabbits who were not given a preliminary intramuscular injection of an insoluble salt of bismuth, and 94 per cent of these rabbits developed a primary chancre Rabbits given injections of easily absorbed preparations of bismuth were found not to be subsequently immune to experimental inoculation with syphilis The author recognizes the possible importance of *these observations on the prevention of syphilis in man, but* he insists on the need for caution and not assuming that these observations on rabbits are applicable to man He also points out, in connexion with the prophylactic administration of arsenical preparations, that the failure of a typical chancre to appear is not proof positive that a mild, abortive, or latent infection with syphilis has not occurred

304. Production of Ramifications in Diphtheria Bacilli

IN *the course of their* research into the production of diphtheria toxin anaerobically, L MARTIN, G LOISEAU, and V GIDON (*C R Soc de Biologie*, July 5th, 1924, p 332) made cultures of diphtheria bacilli in Martin's broth covered by liquid paraffin They found that at the junction of the broth and paraffin a thin bacillary layer developed which grew thicker subsequently, showing no tendency to break up and fall to the bottom of the tubes even at the end of several months At the end of twenty four hours the bacilli in this layer were of the normal type, but on the second day they became elongated and lateral branches appeared About the *fourth or fifth day of incubation* these ramifying forms reached their maximum development They were very numerous, and were often grouped together, though some remained isolated and stained deeply by Gram's method, particularly at the extremities, which appeared club shaped The greatest length of the isolated organisms was 11 3*μ* From the eleventh to the thirteenth day the appearance was very little changed, except that the length and breadth of *the filaments had increased, by the sixtieth day,* together with the ramifying forms there were irregular circular masses, stained by Gram's method and separated by unstained areas This appearance remained unaltered after five months' incubation If, however, the cultures after seven days' incubation were kept at the laboratory temperature *the appearance underwent no change at first,* but at the end of five months the ramifying forms had almost completely disappeared, leaving some Y shaped bacilli, some elongated forms, and numerous bacilli of ordinary appearance Cultures taken from this layer at varying intervals up to the end of five months and inoculated on coagulated serum gave in less than twenty four hours numerous colonies of diphtheria bacilli of the normal type The interpretation of the appearance of these *ramifications is admittedly difficult, but* the authors differ from the majority of observers, and believe that they are not to be considered evidences of degeneration, since their development is regular, then staining properties are retained, and these forms appear in such large numbers

305 The Metachromatic Granules of the Diphtheria Bacillus

STUDYING the nature of the metachromatic granules formed by the Corynebacteria, K L PESCH (*Centralbl f Bakt*, July 15th, 1924, p 208) endeavoured to ascertain the chemical constitution of these bodies Since *there is a considerable* amount of evidence that they consist of nucleic acid, free or in combination, he attempted to grow diphtheria and diphtheroid bacilli on a medium free from phosphorus This medium was very difficult to prepare, and even after several attempts he was unable to rid it of every trace of phosphorus However he *found that though this trace* was sufficient to enable growth to occur, it was not enough to allow of the formation of metachromatic granules He then tried growing bacilli which were naturally poor in metachromatic granules on a medium which was enriched with phosphorus or with nuclein Compared with control media to which neither of these bodies had been added, the formation of metachromatic granules was rather better on the enriched media He concludes that the production of *volutin*—the substance of which the granules consist—can be increased by the addition of either nuclein or phosphorus, and that therefore it is probable that volutin is built up out of nucleic acid combinations Studying further the quantitative production of granules on different media, he found that whereas the granule formation is good on blood agar, and still better on Levinthal agar, it is extremely poor on ascitic fluid agar Now the actual growth of the organism is very good on this last medium, on the other media it is not so good, particularly on Levinthal He concludes, then, that there is an inverse relationship between *the growth of the bacillus* on a given medium and its production of metachromatic granules, to this generalization Loeffler's medium is a partial exception Finally, he endeavoured to find a medium which should be more suitable for use than the present Loeffler serum Large numbers of nose and throat swabs were streaked on different media, including Klein's serum alkali albuminate agar, blood agar, and Loeffler's medium, and the number of positive diphtheria results calculated *It was found that the* highest percentage of positives was obtained by growth on Loeffler's serum, and the author concludes, therefore, that at present there is no medium which is more suitable for general use than this

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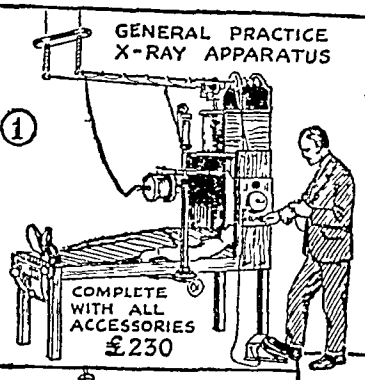
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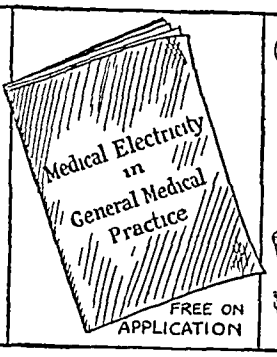
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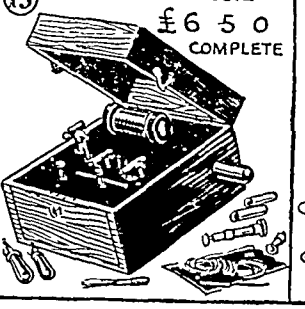
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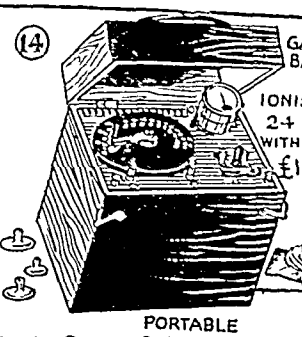
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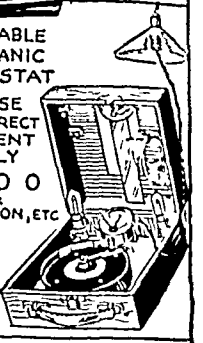
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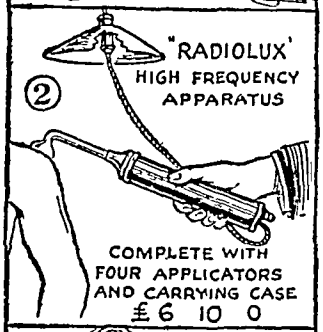


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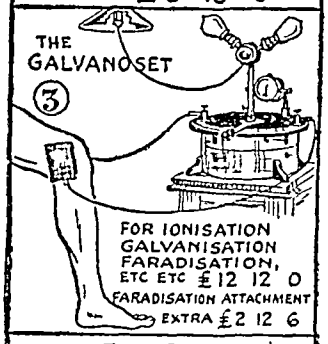
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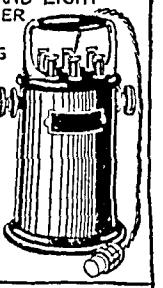
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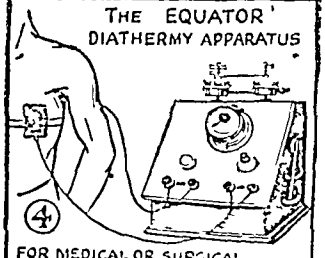
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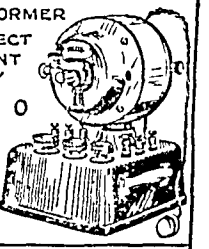
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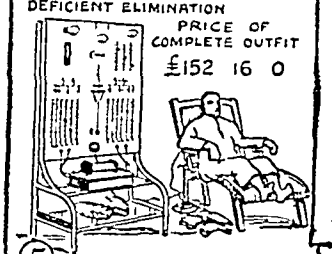
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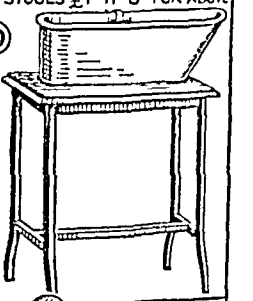
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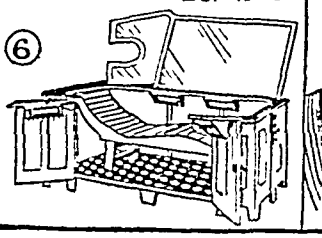
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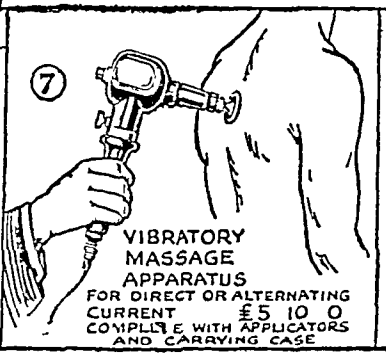
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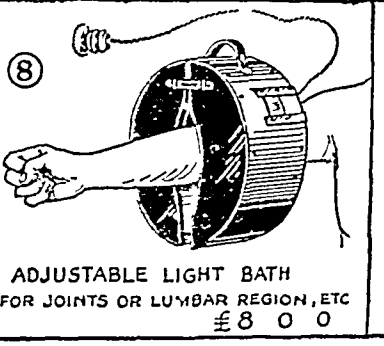
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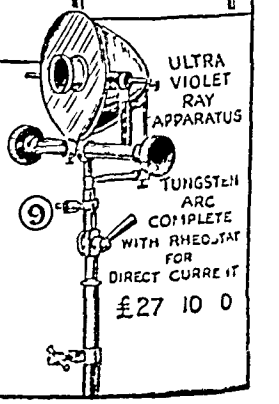
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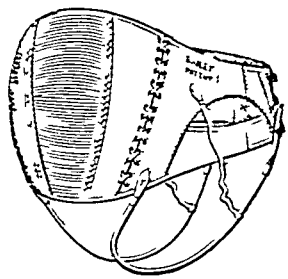
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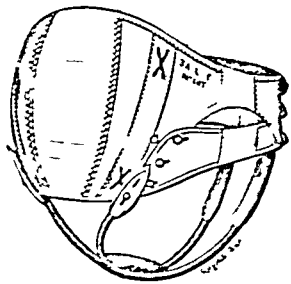
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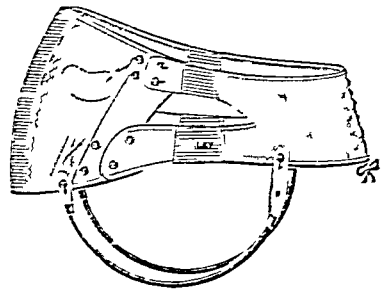
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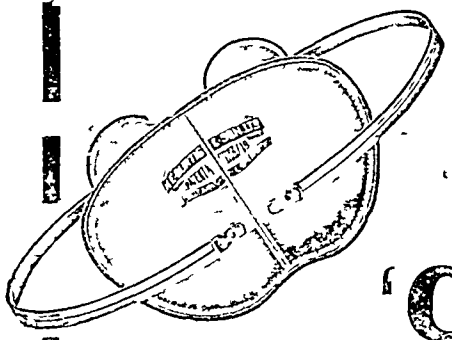
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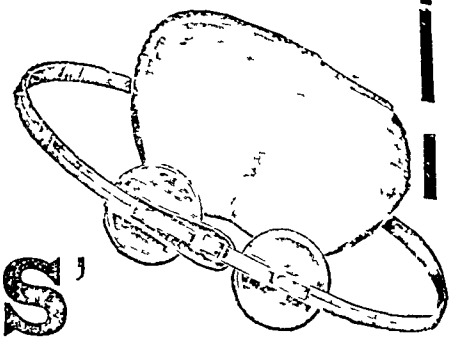
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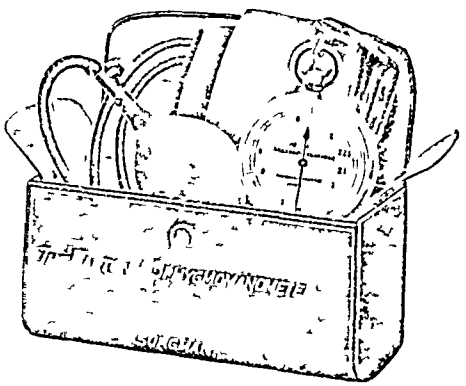
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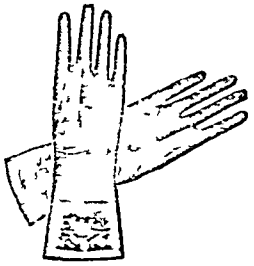


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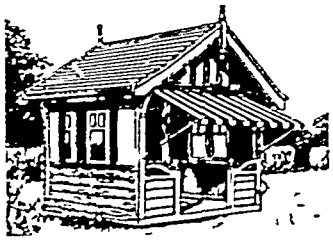
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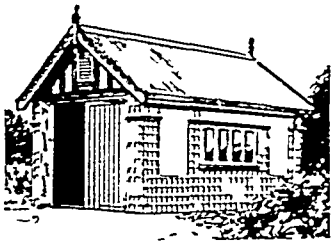
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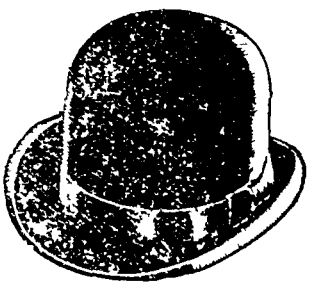
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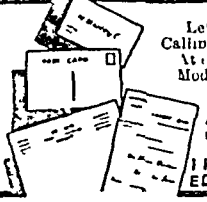
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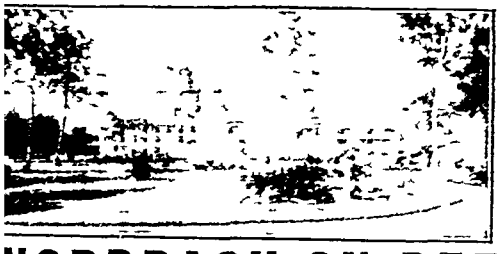
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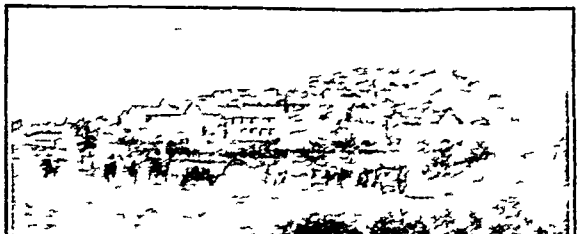
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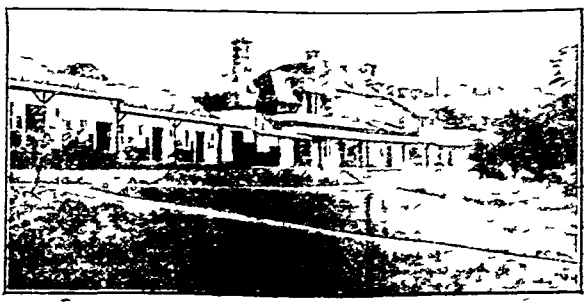
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The ANNUAL DINNER of the REUNION ASSOCIATION will be held at PAGANI'S RESTAURANT, Great Portland Street W on FRIDAY October 24th, at 7 30 for 8 o'clock The Chair will be occupied by Mr H W CARSON The price of the Dinner will be 12/6 (exclusive of wine) for Members and their guests The Secretaries are Dr BROWNING ALEXANDER 143 Harley Street W 1, and Dr S O RASHBROOK 7, Wellesley Road, Chiswick, W 4

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ANNUAL MEETING OF FELLOWS AND MEMBERS

NOTICE is hereby given that it is proposed to hold a MEETING OF FELLOWS AND MEMBERS at the College in Lincoln's Inn Fields on THURSDAY the 30th NOVEMBER 1924 at 3 o'clock p m and that a Report from the Council will be laid before the Meeting

Fellows and Members can obtain copies of the Report on application to the Secretary and can if they so desire have their names placed on the List of those to whom the Report is sent annually

Motions to be brought forward at the Meeting must be signed by the mover or by the movers and other Fellows and Members and must be received by the Secretary not later than the 10th November

A printed copy of the Agenda will be issued on or after the 15th November to any Fellow or Member who may apply for one

S FORREST COWELL Secretary
18th October 1924

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Examination in which interested .....

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All Blood Sugar Estimations prior to & during Insulin Treatment undertaken.

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University of Birmingham
(FACULTY OF MEDICINE)

LECTURESHIP IN MIDWIFERY AND DISEASES OF WOMEN

The Council invites applications for this appointment
Candidates must forward their applications with any further credential which they may desire to refer to the undersigned on or before November 1st 1924
Further particulars may be obtained from
GEO H MORLEY Secretary

ROYAL NAVAL MEDICAL SERVICE

SHORT SERVICE SCHEME

The Admiralty are prepared to accept applications for entry as SURGEON LIEUTENANTS for Short Service in the Royal Navy
Period of Service—3 years with option to extend for further twelve months
Pay—25s. per diem or £456 5s. per annum
Gratuity on discharge—£8 6s. 8d. for each complete month of service or £100 per annum.
Equipment allowance—£50 payable on joining.
Age of candidates—Not to exceed 30 years
Surgeon Lieutenants on the Short Service Scheme will be considered for transfer to the Permanent Service under certain conditions after six months service
Regulations for entry and form to be filled up by candidates will be supplied on application to the Medical Director General 63 Victoria Street, London S W 1

Courses of Post-Graduate

Applications to be made to the Secretary who will furnish any additional information required.

Two unexpected Vacancies in

old-established Private School Undergraduates of Nobility Fee moderate References from parents local clergy and medical men—Miss ELLIS The Grove Maltby nr Rotherham.

Countess of Dufferin's Fund

WOMEN'S MEDICAL SERVICE FOR INDIA

Two Medical Women required for General Service to proceed to India in January Emoluments Rs 550 p m rising furnished quarters provident fund passage and outfit allowance Applications on prescribed form (sent on written request) with copies of three recent testimonials, should reach the Hon Secretary U K Branch Dufferin Fund, c/o Major General J B SMITH India Office Whitehall S W 1 not later than November 10 h 1924.

Applications are invited for

the post of ASSISTANT MEDICAL OFFICER British Honduras The appointment is on probation for three years and if confirmed made pensionable for the whole period of service. Salary $2 430–$120–$3 150 Local dollar is approximately of same value as United States dollar Private practice is allowed, but is not likely to exceed $500 per annum Free quarters are provided or an allowance of $360 per annum in lieu Free passage to the Colony is provided for the officer and if married for his wife and children not exceeding four in number
Further particulars and the necessary forms of application can be obtained from the Private Secretary (Appointments) Colonial Office Downing Street London

Queensland Government

Applications are invited from candidates for the position of DIRECTOR OF THE LABORATORY OF MICROBIOLOGY AND PATHOLOGY Department of Public Health Brisbane Applicants must not be over 35 years of age They will also require to be holders of Diploma in Public Health and have had recognised laboratory experience in Microbiology Salary £750 to £850
Further information and forms of application may be obtained from the Agent General for Queensland 409 Salisbury House London W C to whom applications should be forwarded later than October 31st 1924

Royal Waterloo Hospital for

CHILDREN AND WOMEN Waterloo Road S E 1

There is a vacancy for an HONORARY SURGEON in Charge of Out-patients Candidates must be graduates in surgery of a University recognised by the General Medical Council and Fellows of the Royal College of Surgeons
Applications must be sent to the Secretary at the Hospital on or before October 24th with copies not more than three recent testimonials

Royal Waterloo Hospital for

CHILDREN AND WOMEN Waterloo Road S E 1

There is a vacancy for an HONORARY GYNÆCOLOGIST in Charge of Out-patients Candidates must be graduates in surgery of a University recognised by the General Medical Council and Fellows of the Royal College of Surgeons
Applications must be sent to the Secretary at the Hospital on or before October 24th with copies not more than three recent testimonials

East London Hospital for

CHILDREN AND DISPENSARY FOR WOMEN Shadwell E 1

Applications are required for the post of MORNING CASUALTY OFFICER (Male) and AFTERNOON CASUALTY OFFICER (Male) both non-resident salary £120 per annum, with uniform etc. The post of each man is subject to a pointment by the Board Applicants must be duly qualified and registered and will be expected to attend the meeting of the Selection Committee
Applications, with testimonials to be sent to the undersigned not later than Saturday October 25th 1924

W M WILCOX, Secretary

East London Hospital for

CHILDREN AND DISPENSARY FOR WOMEN Shadwell, E.1.

Applications are invited for the post of RESIDENT MEDICAL OFFICER (Male), vacant on November 1st 1924.
Applicants must be fully qualified practitioners in Medicine and Surgery Salary £200 per annum with board residence and laundry The appointment is for one year and is renewable Applications with testimonials must be sent in on or before Saturday October 25th 1924 addressed to the undersigned from whom further particulars may be obtained

W M WILCOX, Secretary

East London Hospital for

CHILDREN AND DISPENSARY FOR WOMEN Shadwell, E.1

Applications are invited for the post of HOUSE PHYSICIAN (Male) The appointment is for six months from November 1st 1924 Board residence and laundry are provided Salary at the rate of £125 per annum Applications should be sent to the undersigned not later than Saturday October 25th 1924

W M WILCOX Secretary

East London Hospital for

CHILDREN AND DISPENSARY FOR WOMEN Shadwell E.1

N B—Owing to an error the post of House Surgeon was advertised in the Journal of October 11th This post is NOT vacant

West London Hospital,
Hammersmith Road, W 6

Applications are invited for an appointment as SURGLON FOR DISFASES OF WOMEN (for which a present member of the Staff is a candidate) Should he be appointed there will be a vacancy for an ASSISTANT SURGLON FOR DISEASES OF WOMEN for which applications are also invited Candidates must be Fellows of one of the Royal Colleges of Surgeons of England Edinburgh, or Ireland

The successful candidate will be required, in addition to other duties to undertake such teaching for the Post Graduate College as the Board may approve

Applications accompanied by copies of testimonials should reach me not later than Wednesday November 19th 1924 Candidates must attend a Special Meeting of the Medical Council on Friday November 21st, at 4 30 p m and prior to that date call upon and send copies of application and testimonials to each member thereof They must not canvass members of the Board but nevertheless must send copies of application and testimonials to each member thereof and be in attendance at a meeting of the Board at 5 p.m on Tuesday, November 25th, when the election will be made

H A MADGE Secretary

West London Hospital,
Hammersmith Road W 6

Applications are invited for the post of DERMATOLOGIST Candidates must have degrees from one of the Universities recognized by the General Medical Council, and be Fellows or Members of the Royal College of Physicians of London or they must be Fellows of one of the Royal Colleges of Surgeons of England Edinburgh or Ireland The successful candidate will be required in addition to his other duties, to undertake such teaching for the Post Graduate College as the Board may approve

Applications accompanied by copies of testimonials should reach me not later than Wednesday November 19th 1924 Candidates must attend a Special Meeting of the Medical Council on Friday November 21st at 4 30 p m and prior to that date call upon and send copies of application and testimonials to each member thereof They must not canvass members of the Board, but nevertheless must send copies of application and testimonials to each member thereof and be in attendance at a Meeting of the Board at 5 p m on Tuesday November 25th, 1924 when the election will be made

H A MADGE Secretary

West London Hospital,
Hammersmith Road, W 6

HONORARY MEDICAL RADIOLOGIST (DIAGNOSIS) required Candidates must be duly qualified Medical Practitioners and have had experience of Radiological work especially X Ray diagnosis The successful candidate will have full control of and be fully responsible for his department in all matters relating to X Ray diagnosis

Applications accompanied by copies of testimonials should reach me not later than Wednesday November 19th Candidates must attend a Special Meeting of the Medical Council on Friday November 21st at 4 30 p m and prior to that date call upon and send copies of application and testimonials to each member thereof They must not canvass members of the Board but nevertheless must send copies of application and testimonials to each member thereof and be in attendance at a meeting of the Board at 5 p m on Tuesday, November 25th when the election will be made

H A MADGE Secretary

St Mary's Hospital, W 2

Applications are invited for the post of DIRECTOR of the Department of General and Special Pathology in the Institute of Pathology and Research Morbid Anatomist to the Hospital and Lecturer on General and Special Pathology to the Medical School

Salary £800 per annum The appointment is a whole time one

The last date for the receipt of applications addressed to the undersigned is Wednesday October 29th 1924

Copy of the Regulations of the office may be had on application The holder of the appointment is ex officio a member of the Medical Committee of the Hospital By Order

St Mary's Hospital, W 2 W PARKES
October 11th 1924 Secretary

North Staffordshire
INFIRMARY Stoke on Trent
(A General Hospital)

JUNIOR HOUSE PHYSICIAN Salary £125 per annum board residence and laundry Applications invited for this appointment Applicants must state age qualification and experience and forward copies of three testimonials on or before October 21st 1924

W STEVENSON
House Governor and Secretary

County Council of Middlesex.
DENTAL SERVICE

The County Council invite applications for the post of ASSISTANT DENTAL OFFICER Applicants must be fully qualified and registered Dental Surgeons

The duties of the post are the Dental Inspection and Treatment of School Children under the Education Acts and similar duties in connection with the Council's Maternal and Child Welfare Scheme

The candidate appointed will be required to give his or her whole time, including Saturday mornings to the duties of the post will not be allowed to engage in private practice will be under the supervision of the County Medical Officer and the Senior Dental Officer and must be prepared to reside in such area as the Committee desire

The Officer appointed will be entitled to one month's holiday annually

The salary is at the rate of £400 per annum, rising by £50 to £500 together with the current war bonus (at present £158 per annum)

The appointment will be during the pleasure of the Council and subject to one month's notice on either side

The successful candidate will be required to contribute to the County Council's Superannuation Fund and to pass such medical examination as the County Council may direct

Applications setting out (1) age (2) qualifications and (3) past experience together with copies of three recent testimonials should be forwarded to the undersigned so as to reach this office by November 1st 1924

Canvassing will disqualify

ERNLST S W HART
Clerk of the County Council
Middlesex Guildhall Westminster S W 1
October 8 h 1924

The General Hospital,
Birmingham

In consequence of the appointment of Dr L G PARSONS to the office of Honorary Physician, the Board invites applications for the vacant post of ASSISTANT PHYSICIAN

Candidates must be graduates in medicine of a University of which the degree is recognized by the General Medical Council and a Fellow or Member of the Royal College of Physicians of London but twelve months from the date of appointment will be allowed for obtaining the latter qualifications

The appointment will be made by the Board on Friday November 7th at twelve noon, when candidates will be expected to attend

Applications accompanied by diplomas certificates of registration and testimonials must be sent on or before November 3rd to the undersigned, from whom a copy of the conditions attaching to the office can be obtained

A H LEANEY, House Governor
October 3rd 1924

The General Hospital,
Birmingham

The Board invite applications for the post of RESIDENT SURGICAL OFFICER

Candidates must be Fellows of the Royal College of Surgeons in London, Edinburgh or Dublin and must also possess a medical qualification and be registered The salary will be £180 per annum with board residence and washing

The appointment will be made for one year in the first instance and be subject to annual renewal for two subsequent years Application, with certificate of registration and copies of testimonials should be sent to the undersigned by November 3rd next The appointment will be made at 12 0 noon on Friday November 7th 1924 when candidates will be expected to attend

A H LEANEY,
October 3rd 1924 House Governor

City of London Hospital for
DISEASES OF THE HEART AND LUNGS
Victoria Park E 2.
(Bus tram and rail Cambridge Heath LONDON Fly)

Applications for the post of HOUSE PHYSICIAN (male) with copies or recent testimonials are invited to be sent to the undersigned by Monday, November 3rd 1924

The appointment will be for six months from November 15th

Salary at the rate of £125 per annum with board residence and laundry provided

GEORGE WATTS Secretary

Victoria Hospital, Burnley
(120 Beds)

Wanted a HOUSE SURGEON to begin duty early in November next Salary £200 per annum, with residence board and washing Candidates who must be fully qualified are requested to send in their applications with copies of testimonials as soon as possible to F A HARGREAVES, Hon Secretary 7 Grimshaw Street Burnley

This Hospital is approved by the London University for the purpose of M B and M S Examinations

Bolton Union.
SECOND ASSISTANT MEDICAL OFFICER

Wanted for the Townleys Hospital Farnworth near Bolton, a Second Assistant Medical Officer a period of one year

The Hospital has accommodation for 500 patients is a recognized Training School for nurses

Salary £225 per annum and ration furnished apartments washing and attendance (subject to the usual deduction under the Poor Law Officers Superannuation Act 1896)

Forms of application together with conditions of appointment (for which a stamped addressed foolscap envelope must be enclosed) may be obtained from me

Last day for applications, November 3rd, 1924

H I COOPER,
Clerk to the Guardians
23 Mawdsley Street Bolton October 10th 1924

Manchester Royal Infirmary
HOUSE SURGEON (Male) Aural Gynæcological and Ophthalmic Departments

The Board of Management of the Manchester Royal Infirmary invites applications for the above appointment which will become vacant on November 15th, 1924

Applicants must be registered and hold a Medical and Surgical Qualification

The appointment is for six months (three months as Junior and three months as Senior) subject to the provisions of the By laws as to notice

Salary at the rate of £50 per annum with board residence and allowance for laundry

Applicants must state age and address their applications to the Chairman of the Medical Board by October 27th, 1924

By Order
FRANK G HAZELL
Oct 13th 1924 Gen Supt & Secretary

Metropolitan Hospital,
Kingsland Road, E 8

There are vacancies for the following:—

(a) A Senior House Physician	MALE
(b) A Senior House Surgeon	Salary £100
(c) A Junior House Physician	per annum
(d) A Junior House Surgeon	
(e) Two Casualty Officers	

Appointments in the first place will be for a period of six months dating from the 1st November, 1924

Candidates must possess a registered Medical and Surgical Qualification of the United Kingdom

Applications with copies of three recent testimonials and a Certificate of ability to administer Anæsthetics should be sent to the undersigned not later than Wednesday the 22nd October 1924

Two Members of the Resident Staff are Candidate for the two Senior Appointments

HERBERT F RUTHERFORD
Secretary and House Governor

Metropolitan Hospital,
Kingsland Road, E 8

The General Committee are prepared to receive applications for the appointment of an ASSISTANT PHYSICIAN from gentlemen not engaged in general practice

Candidates must be Fellows or Members of the Royal College of Physicians of London and Graduates in Medicine of a University recognized by the Medical Council

Candidates will be required to call upon Members of the Staff

Applications with two copies of recent testimonials, must reach the undersigned not later than October 22nd 1924

HERBERT F RUTHERFORD
Secretary & House Governor

Gravesend Hospital, Kent

JUNIOR HOUSE SURGEON Applications are invited from fully qualified men for the above post

The Hospital contains 71 beds and 1 cot and has a large out patients casualty and ophthalmic department

Owing to the unique situation of the Hospital at the entrance to the Port of London many accidents and interesting cases are treated and the post affords an excellent opportunity for such experience

The appointment will date from November 1st 1924 and will be for 12 months at a salary of £150 per annum payable at the rate of £50 for the six months as Junior House Surgeon and the second six months as Senior House Surgeon at the rate of £100 in equal monthly instalments Both appointments include board residence and laundry

Applications with copies of three recent testimonials should be sent to the undersigned immediately

C E CHAPMAN Secretary
October 8th 1924

APPOINTMENTS—Important Notice.

(a) British Islands.

Medical Practitioners are requested not to apply for any appointment referred to in the following table without having first communicated with the Medical Secretary of the British Medical Association, 423, Strand, London W C 2.

Town or District	Town or District	Town or District
CONTRACT PRACTICE.		
ENGLAND.		
CANNOCK CHASE AND DISTRICT (Clubs and Friendly Societies Appointment)	**WALES** (continued)	**PUBLIC HEALTH** (continued)
MIDDLESBOROUGH (Medical Aid Associations or Workmen's Clubs)	OAKDALE MON (Medical Officer for Medical Aid Association)	GLASGOW EDUCATION AUTHORITY (Assistant School Medical Officers)
SOUTH BANK & ESTON (Medical Aid Associations or Workmen's Clubs)	ODMORE VALLEY GLAMORGAN (Workmen's Country Medical Society) (Workmen's Medical Scheme)	LANARK COUNTY (Medical Officer of Health)
WALES	TONDU & ABERKENFIG GLAMORGAN (Workmen's Medical Scheme)	LINCOLN CITY EDUCATION AUTHORITY (Assistant School Medical Officer)
ABERTRIDWR GLAMORGAN (Workmen's Medical Scheme)	**PUBLIC HEALTH**	MIDLOTHIAN EDUCATIO AUTHORITY (Asst Medical Officer)
EBBW VALE MON (Workmen's Medical Society)	ARGYLLSHIRE EDUCATION AUTHORITY (Executive School Medical Officer)	NORTHUMBERLAND COUNTY COUNCIL (Woman Assistant Medical Officer of Health)
GILFACH GOCH GLAMORGAN (Workmen's Medical Scheme)	CHELSEA METROPOLITAN BOROUGH (Assistant Medical Officer of Health)	NOTTINGHAMSHIRE (County Medical Officer of Health)
LLWYNYPIA CLYDACH VALE PENYGRAIG GLAMORGAN (Workmen's Medical Scheme)	CHESTER LE STREET RURAL DISTRICT COUNCIL (Medical Officer of Health)	SOUTHWARK METPOPOLITAN BOROUGH (Tuberculosis Officer)
MARDY GLAMORGAN (Workmen's Medical Scheme)	COLCHESTER BOROUGH (Assistant School Medical Officer)	STIRLING ROYAL BURGH (Medical Officer of Health Tuberculosis Maternity and Child Welfare and I D Officer Police Dietary and Medical Attendance at Combination Infectious Diseases Hospital)
	FIFE EDUCATION AUTHORITY (Assistant School Medical Officer)	WIGAN COUNTY BOROUGH (Assistant School Medical Officer)

(b) Colonial Medical Service.—WINDWARD ISLANDS MEDICAL SERVICE (Grenada with Carriacou & Virgin and St Lucia)

(c) Overseas Appointments.

Medical Practitioners are requested not to apply to any appointment referred to in the following table without having first communicated with the Honorary Secretary of the Division or Branch named in the second column or with the Medical Secretary of the British Medical Association, 423 Strand London, W C 2

Town or District	Hon Sec of Division or Branch	Town or District	Hon Sec of Division or Branch	Town or District	Hon Sec of Division or Branch
NEW SOUTH WALES (All Friendly Societies Appointments)	Dr R H TODD (Hon Sec New South Wales Branch) B M A Building 135 Elizabeth Street Sydney N S W	QUEENSLAND (Brisbane Insurance Friendly Societies Institute)	Dr P MAPSHALL ALLAN (Hon Sec Queensland Branch) Adelaide Street Brisbane	VICTORIA (All Institute or Medical Dispensaries)	D FRANK DAVIES (Hon Sec Victorian Branch) Medical Society Hall E Melbourne Victoria
				WESTERN AUSTRALIA (Contract and Lodge Practices)	Hon Sec Western Australian Branch, No 9 Lane of N & South Wales Chambers St Georges Terrace, Perth

Address 423 Strand, W C 2.
October 10th, 1924

By order of the Council of the British Medical Association
ALFRED COX Medical Secretary

County Borough of West HAM

ASSISTANT RESIDENT MEDICAL OFFICER

Applications are invited from unmarried Medical Practitioners for the post of Assistant Resident Medical Officer at Dagenham Sanatorium Essex The salary will be £350 per annum including quarters with full board and laundry

Applicants must not be more than 30 years of age and have had experience in the treatment of pulmonary Tuberculosis (and preferably also experience in treatment by artificial Pneumothorax) and will be required to devote the whole of his or her time to the duties of the office

The appointment will be subject to the provisions of the Local Government and other Officers Superannuation Act, 1922 and to a medical examination as required by the Council for the purposes of that Act and the statutory contributions to the Superannuation Fund under the Act will be deducted from the salary

Applications on the form provided (which will be forwarded by the undersigned on receipt of a stamped addressed foolscap envelope) must reach me not later than Friday October 24th, 1924

Applicants must be members of a recognised Medical organization

Canvassing members of the Council is prohibited and will disqualify

By Order
GEORGE E HILLBARY
Town Clerk

Town Hall West Ham E.15 October 3rd, 1924.

Hospital for Epilepsy and PARALYSIS Maida Vale W

MEDICAL REGISTRAR REQUIRED

R
co
and should reach the undersigned not later than [illegible] 1924 An honorarium of £100 is attached to this appointment which is for one year and further particulars can be obtained on application.

H W BUPLEIGH Secretary

St Thomas's Hospital

There is a vacancy for the post of PATHOLOGIST to the Clinical (Medical and Surgical) Units Salary offered £600 per annum Duties to commence at the earliest possible date

Applications to be forwarded to the Medical Secretary of the School St Thomas's Hospital not later than Saturday October 31st 1924.

Further information as to the duties of the post may be had on application to the Medical Secretary

Shropshire Orthopaedic HOSPITAL, Oswestry

Two HOUSE SURGEONS (Male) are required Salary £250 per annum with board and lodging

Appointment for twelve months. Six copies of application with six copies of three recent testimonials should be sent to the Secretary before November 1st 1924

The Poplar Hospital for ACCIDENTS East India Dock Road E.14

Applications are invited for the post of SENIOR RESIDENT OFFICER Salary £200 per annum with board residence and laundry plus fees £5 per annum as Anaesthetist to Dental Clinic for L C C School Children. Appointment for period of 12 months

Applicants must be Fellows of the Royal College of Surgeons Post offers considerable scope for surgical practice

Applications stating age qualifications and enclosing copies of three recent testimonials to be sent to the undersigned on or before Thursday October 30th

D H LINDSAY
Secretary and House Governor

Royal Chest Hospital, City Road E C (Royal Victoria Dock Hospital)

A vacancy occurs for a PHYSICIAN who has a degree of Cambridge Candidates must be graduates of M B or M R obtained by examination and a British University and be Fellows Members of the Royal College Physicians London

Applications should be sent to the undersigned from whom particulars of the post and information as to the conditions on which it may be obtained may be had

GILBERT G PASTEY
Secretary

Royal North Hospital Holloway N

Wanted in a Cheshire Practice an ASSISTANT with a view to Partnership, preference given to one who has had experience in a general practice the work is very light and the practice is capable of considerable increase Some surgical experience an advantage The income is between £1 300 and £1 400 A good House and commencing salary of £350 offered and full table, a Partnership on easy terms Applicant must cycle and motor cycle Scotch preferred, but not essential It would be advantageous if he were a Catholic — Address No 5204 B M J Office 429 Strand W C 2

Wanted —An Assistantship with prospects by a Conjoint man of over six years experience in panel and private practice Willing to take complete charge of a practice or branch in or near London or abroad Has extensive experience in midwifery children and skin diseases At present employed as an Assistant in large East End practice (for over two years) where there are no prospects Interview can be arranged excellent refs —Address No 5123 B M J Office 429 Strand

Wanted —Young Assistant (Male) Scattered country Practice willing to dispense and book keep with view to Partnership First class references absolutely essential —Address No 5236 British Medical Journal Office 429 Strand W C 2

Wanted — Assistant (male) Colliery practice, panel in Glamorganshire Must be temperate single State age references qualifications when at liberty and other essential particulars —Address No 5230 British Medical Journal Office 429 Strand W C 2

Wanted —Assistant, indoors, with view to Partnership and early succession Good general practice in Midlands with panel returns over £2 000 —Address full particulars age references and capital available to No 5215 British Medical Journal Office 429 Strand W C

Wanted —Indoor Assistant in Glamorgan Colliery and panel practice State nationality and other essential particulars — Address No 5235 British Medical Journal Office 429 Strand W C 2

Wanted —Indoor Assistant, for October 27th £200 per annum Usual board —Address, No 5234 British Med Journal Office 429 Strand W C 2

Wanted, Assistantship by Scotch grad Three months experience in large gen prac —private panel, midwifery, and dispensing, et 27 single T P keen and energetic height 6 ft Good testimonials Can motor or cycle —Add No 5210 B M J 429 Strand W C

Wanted —Assistantship by M B Experience in throat and Address No 5227 British Medical Journal Office 429 Strand W C 2

Wanted, M R C S, L R C P, ASSISTANTSHIP Part time employment or Locum by single man, aged 26 R M O General Hospital one year anæsthetist used to dispensing Excellent references abstainer cyclist Free now —Add No 5225 B M J Office 429 Strand W C

Wanted immediately — ASSISTANT in a London practice -Address giving full particulars as to age medical school, qualifications experience &c to No 5228 British Medical Journal Office 429 Strand W C

Wanted by G P, 61, Night- WORK in or near London —Address No 5231 British Medical Journal Office 429 Strand W C 2

Assistantship wanted by woman graduate (M B Ch B Aberdeen) et 29 Some experience —Address No 5212 British Medical Journal Office, 429 Strand W C

Assistantship wanted by a thoroughly qualified doctor, with a view to partnership or purchase —Address No 5216 British Med Journal Office 429 Strand W C 2

Assistantship, or Locum TENENCY required immediately by medical man experienced in general practice Englishman Good dispenser Cyclist Moderate fees First class references —Address No 5226 British Medical Journal Office, 429 Strand W C 2

Assistantship or Locum wanted by M B Ch B aged 29 single Scotsman Experienced G P Now in Blackpool — Address No 5222 British Medical Journal Office 429 Strand W C 2

Assistantship or Locum wanted by M B B Ch woman qualified 1921 Good testimonials — Address No 5219 British Medical Journal Office 429, Strand W C

Company operating in India require immediately unmarried MEDICAL OFFICER Preference will be given to one with experience of Tropical diseases —Particulars required including age and qualifications to be sent to Box 474 Shaw & Blake Ltd, Advertising Agents, 8 Bell Yard Temple Bar W C 2

Chauffeuse, nine years' experience, refined, smart appearance splendid references Careful driver clean licence used to a doctor's practice long distances Willing to go to any part Please state particulars —Address, No 5208 B M J Office, 429 Strand W C 2

Gentleman give use of car (5 Seater) SERVICES as DRIVER, return for congenial home small salary —Address Box 3111 c/o Pools 180 Fleet Street London

Gentlewoman seeks Work with Doctor in or near London Qualified dispenser 10 years experience general practice 2 years operating theatre Typing book keeping —Address No 5211 British Medical Journal Office 429, Strand W C 2

Gentlewoman, good knowledge Optics books typewriting and receptionist requires POST with Doctor-Oculist Many years experience excellent references Free now —Daniels 8 Leander Road, Brixton Hill S W 2

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Each Additional Line	1/6

An average line contains six words

All remittances by Post Office Orders must be made payable at the General Post Office London No responsibility will be accepted for any such remittance not being so safeguarded

Advertisements should be delivered addressed to the Manager 429 Strand London W C 2, not later than first post on Tuesday preceding publication

Note —It is against the Rules of the Post Office to receive *poste restante* letters addressed either in initials or numbers

M B, woman, aged 25, desires ASSISTANTSHIP in General Practice (especially Midwifery) Both Hospital and Sanatorium experience —Address, No 5203 British Medical Journal Office 429 Strand W C 2

Medical Man, debarred from practice by physical disability could give ASSISTANCE in dispensing and book keeping — Apply L M S 2 Lambourn Villas, Ivest Hills Road Malvern Link

M R C S, L R C P, B S London, aged 29, with some experience in general and panel practice and dispensing, would ASSIST Doctor through the winter Nominal salary accepted if indoor and experience good Free end of Nov —Add No 5207 B M J, 429 Strand

M B., B Ch (woman), Irish, aged 29 qualified June 1924 desires ASSISTANTSHIP —Address No 5237 British Medical Journal Office 429 Strand W C 2

Pathological and Bacterio- LOGICAL LABORATORY ASSISTANTS ASSOCIATION —Pathologists and Bacteriologists requiring SKILLED CERTIFICATED LABORATORY ASSISTANTS are invited to communicate with H P Hudson Hon Secretary Panama Villa Trumpington Cambs —*No Fees*

Watford or District — ASSISTANTSHIP or Preliminary Assistantship with view to Partnership required by L R C P (Lond) M R C S (Eng) — Address No 5169 British Medical Journal Office, 429 Strand W C 2

Woman Graduate (N U I) desires ASSISTANTSHIP in General Practice —Address No 5220 British Medical Journal Office 429 Strand W C 2

Well - qualified Clinical Pathologist of experience wishes to JOIN ANOTHER in London All communications treated in confidence —Address No 5213 British Medical Journal Office 429 Strand, W C 2

Dispenser —Woman (Hall qualification) 4 years in public and private work Disengaged keeping, care of Morwenstow Cornwall

Dispenser, Hall qualification, (lady, 23 years), wants APPOINTMENT with Doctor full time 3½ years experience with doctors (partners) — Address No. 5152, British Medical Journal Office, 429 Strand, W C 2

Dispenser, lady, desires POSITION Hall certificate several years experience Excellent testimonials Doctor's Institution — C Malet, Lyndhurst, St John's Road Ipswich

Dispenser, thoroughly experienced in Surgery routine and Book keeping requires POST in London Excellent testimonials —Address stating salary offered Miss Pilgrim, 41 Barkston Garden S W 5

Doctors requiring Lady DISPENSERS should write to Mr J B Walden Westminster Road S E 1 (only 2 years experience of medical men always in training

Temporary Dispenser wanted immediately used to Dressing and Book keeping, Knowledge of N H Records desirable Possible permanency —Address stating age experience and salary to, No 5206 British Medical Journal Office 429 Strand W C 2

Secretary Attendant, Lady (26) desires POST shorthand and typewriting Light house duties if required Live in or out Excellent references —Write I K c/o Frost Smith Advertising Service 66, Finsbury Pavement E C 2

FOR LOCUM TENENS APPLY TO Mr PERCIVAL TURNER.

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4, ADAM STREET, STRAND, LONDON, W C 2

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Apply to

Mr. W. S. ATKINS

43, BEDFORD STREET, STRAND, W C 2.

Telegraphic Address

Positions Westrand, London.

Telephone Regent 39

For Sale —A Third Partner required in a fashionable South Coast Practice Receipts for past twelve months £2,151 rapidly increasing Premium two years purchase — Address No 5233 British Medical Journal Office 429 Strand W C 2

Graduate, 33, married, young family experienced steady well trained excellently recommended and received professionally wants pleasant provincial PARTNERSHIP or PRACTICE Preferably near sea Income about £1 000 up House to rent Limited capital required — Address, No 5223 B M J Office 429 Strand W C 2

Graduate, pub. sch., ex H S, H P R O O teaching hospital seeks PARTNERSHIP 6 years G P Capable Surgeon with large recent Senior Hosp experience in Midwifery & Gynæcology Well received married Somerset man 1st class tests —Add No 5202 B M J 429 Strand

Partnership, London — THIRD SHARE of a good class old established PRACTICE in S W district for all round Assistant's receipts for last six years £3 000 No premium Apply by letter, giving age qualifications etc and spell etc to Messrs Witham Roskell, Myddelton & Weld 1 Grays Inn Square London W C 1

For Disposal —A good Practice is not always to be had direct by Mr Percival Turner can generally offer something suitable Nearly all the best Practices are sold by him without being advertised — For information free on application to 4 Adam St W C 2

Good-class old established PRACTICE of £1 500 in Country Town with small Hospital in the West Premises house Premium 1½ years —Address British Med Journal Office 429 Strand W C 2

Wanted —General Practice

within limits from £800 to £1 500 a year in any pleasant residential district House or house and lease.—Apply PEACOCK & HARDY 13 Craven Street, Strand W C (No charge unless sale effected.)

Wanted —Country Town or

Coast PRACTICE, Midlands or South 21 000—£1,500 p.a. Good house and garden essential Some panel Golf schools society — Address No 5217 BRITISH MEDICAL JOURNAL Office 429 Strand W C 2

Wanted in Country district

a General PRACTICE of £800 to £1,600 a year House with garden near Lymm in Cheshire Applicant is experienced Graduate and can buy at once Details received in confidence by 5513 c/o Mr PARCIVAL TURNER, 4 Adam Street Strand W C

Wanted —Practice or Part-

NERSHIP yielding £1 000 to £3 000 a year in or near London or large provincial town Necessary capital available—Apply PEACOCK & HARDLEY 13 Craven Street Strand W C (No charge unless sale effected.)

Wanted — Middle-class

PRACTICE £1 500 to £2 000 a year with panel capable of development by two medical men London suburb good country or seaside town preferred Capital available No agents—Address No 5221, B M J Office 429 Strand W C

Wanted, within 100 miles of

London a PRACTICE of £400 to £1,000 per annum with panel Good house with 5 bedrooms to rent —Address full detail in confidence to No 5214 BRITISH MEDICAL JOURNAL Office 429 Strand W C 2

Wanted by M R C S, a nice

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Wanted. — F PRINCE, 32,

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PRACTICE averaging £1,623 for past 3 years of which £520 p.a. is received from panel Very compact and easily worked. Good house 5 bedrooms garage etc. House must be bought with practice Premium for house and practice £4 300 —Address No 5205 BRIT MED JOURN Office 429 Strand

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town and large cultural district) Northumberland Applicants BERT

M A, M B, B Ch Cantab,

married requires about March 1st a SHARE worth £1,000-£1,500 in first-class non-dispensing panel Practice in London or West End preferred Experience F R C P has had appointments in London Hospitals —Address No 5002 B M J Office 429 Strand

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PRACTICE in small Town Average receipts £1 087 Terms enable appointments Panel 1 300 Cottage Hospital Good house on lease Expenses small Practice within two miles radius Scope—LEE & MARTIN Ltd

Glamorganshire —Well estab

mainly Industrial PRACTICE in Colliery District Income £2 000 per annum Panel 1 Cottage Hospital Welcome assistantship Good house rent £52 Premium £2 000 for quick sale partly payable by arrangement —LEE & MARTIN Ltd

West Midlands —Old estab

Town and Country PRACTICE in a County Town Receipts £1 574 Appointments Panel nearly 600 Good fees Expenses small Hospital (2 beds) Purchaser would be appointed Physician or Surgeon Good house and garden —LEE & MARTIN Ltd

North of England —Old-

established Country Town PRACTICE Average receipts £1 460 Good panel Expenses small Good house garden tennis lawn and orchard —LEE & MARTIN Ltd 1 Temple Row Birmingham

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and PARTNERSHIPS —Mr W S ATKINS (late of ARNOLD & SONS London) has a large number of Clients who are seeking Practices and Partnerships and wish to settle down at once.—Send full particulars in confidence to Mr W S ATKINS Medical Transfer Agency, 43 Bedford St Strand London, W C 2

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Harley Street CONSULTING ROOM and use of Waiting Room to Let Dark room available Suitable for Radiologist or other Specialist — Address No 4824 BRITISH MEDICAL JOURNAL Office 429 Strand W C 2

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HONORARY ASSISTANT ANÆSTHETIST (male)

There is a vacancy in this office Attendance required twice weekly Further particulars can be obtained from the Secretary to whom applications accompanied by copies of not more than three recent testimonials, should be sent not later than November 1st

Clinical Pathologist — Man,
single full equipped laboratory work Salary £40 with board, lodging, laundry, and attendance or £100 in lieu of these emoluments should the man appointed eventually live out No deductions from salary for pension or other purposes Appointment terminable on three months notice Apply in writing to Physician Superintendent CRICHTON ROYAL MENTAL HOSPITAL Dumfries

The Committee of the Royal
National Orthopædic Hospital propose to appoint TWO HONORARY ASSISTANT SURGEONS Applications with copies of three recent testimonials should reach the Secretary 234 Gt Portland Street not later than Monday November 10th

Bradford Children's Hospital
HOUSE SURGEON wanted doubly qualified Salary £100 with board residence and laundry Applications stating age with testimonials not later than November 3rd to
C V WOODCOCK Secretary

The General Infirmary at
LEEDS
Wanted by the Department for Venereal Diseases at [illegible] needs TWO ASSISTANTS
(a) A registered medical MAN whose whole time must be devoted to the Department Salary £500 per annum
(b) A fully qualified and registered medical WOMAN salary £250 per annum, with the right to private general practice
In making these appointments, special consideration will be given to candidates who have had previous experience in treating Venereal Diseases by modern methods
Applications with copies of testimonials to be addressed at once to the General Manager the General Infirmary at Leeds
By Order
FRED J BRAY
October 13th 1924 General Manager

The Manor House Hospital,
Golders Green London N W 11
(Special Surgical Hospital—100 Beds)
Required immediately SENIOR HOUSE SURGEON with minimum twelve months hospital experience including six months as House Surgeon salary £200 per annum, together with board residence and laundry Appointment in first instance for six months Please send essential particulars and copies of testimonials to —
JAMES W LINKHORN Secretary

London Jewish Hospital,
Stepney Green, E 1.
The Council of Management invite applications for the post of ANÆSTHETIST Candidates must possess a registered qualification and will be required to attend on three half days each week Honorarium at the rate of One Guinea per attendance
Applications should reach the Secretary not later than October 31st 1924 accompanied by copies of three testimonials, especially obtained for the appointment

Gesto Hospital, Edinbane,
Skye
Wanted RESIDENT MEDICAL OFFICER for this Hospital to take up duties in January Salary £300 per annum, with furnished house, fuel and light and taxes paid Private and consulting practice allowed Applications, with four copies of recent testimonials, to be lodged on or before October 30th, 1924 with the Secretary J SIMPSON, Bank Agent Portree Skye

Swansea General and Eye
HOSPITAL (262 Beds)
HOUSE PHYSICIAN wanted (male) Salary £175, with board residence and laundry Good medical experience Appointment for not less than 12 months State nationality Applications with three testimonials (copies first) to be sent to the undersigned
W D HUGHES Secretary

The Royal Eye and Ear
HOSPITAL Bradford
Wanted HOUSE SURGEON Resident Salary £120 with board and laundry
Application stating age etc with copies of recent testimonials to be sent on or before the 31st inst to the undersigned from whom particulars can be obtained
C V WOODCOCK
October 10th 1924 Secretary

Royal Eye Hospital,
St George's Circus, S E 1
There is a vacancy for an ASSISTANT SURGEON (Honorary) for Monday and Thursday afternoons Applications to the Secretary
There are also vacancies for CLINICAL ASSISTANTS (unpaid) Over 20 000 attendances in the Out Patient Department annually

Birmingham and Midland
HOSPITAL FOR WOMEN
SENIOR HOUSE SURGEON wanted January 1st 1925 for six months Salary £75 per annum Apply with full particulars and copies of testimonials not later than November 1st 1924 to HUGH C ASTON 45 Newhall Street Birmingham

Birmingham and Midland
HOSPITAL FOR WOMEN
JUNIOR HOUSE SURGEON wanted December 1st 1924 for four months Honorarium at the rate of £40 per annum Apply with full particulars and copies of testimonials not later than Saturday November 1st 1924 to HUGH C ASTON 45 Newhall Street Birmingham.

Monmouthshire County
COUNCIL
ASSISTANT MEDICAL OFFICERS
The Council invite applications from duly qualified Medical Practitioners holding a Diploma in Public Health and State Medicine for the appointment of two [illegible] male assistants female [illegible] Medical Inspectors and [illegible] midwifery and infantile work, and the duties generally [illegible] of errors of refraction essential
Salary £500 per annum, rising by annual increments of £25 to £750 with third-class railway fare and reasonable subsistence allowance, but the increments to be suspended for the next twelve months
The successful candidates will be required to act, under the direction and supervision of the County Medical Officer, to devote their whole time to the service of the County Council and to reside in such place as the Council may determine
A schedule of the duties to be performed together with conditions of appointment and a form of application, can be obtained from the undersigned, to whom applications accompanied by copies of not more than three recent testimonials are to be sent, by Monday, October 20th 1924
D ROCYN JONES
County Medical Officer
County Hall, Newport, Mon October 1st 1924.

Kingsclere Union.
APPOINTMENT OF MEDICAL OFFICER
The Guardians invite applications for the appointment of Medical Officer of their Institution at Kingsclere and Medical Officer of the Kingsclere District of the Union The present number of the inmate [illegible]
The [illegible]
of Kingsclere
Sydmonton
acres and a population of 3 113
The successful candidate will also be appointed Public Vaccinator for the Institution and Kingsclere District with fees prescribed by the Vaccination Acts and Orders
Candidates must possess the necessary qualifications to conform to the Regulations of the Ministry of Health
The salary will be Medical Officer of the Institution £35 per annum Medical Officer of Kingsclere District £85 per annum subject to deduction under the Poor Law Officers Superannuation Act 1896 Certain medicines and surgical appliances are supplied by the Guardians
Applications, stating age and particulars of qualifications accompanied by copies of not more than three testimonials of recent date to be sent to me on or before Monday November 3rd 1924
Kingsclere By Order,
Newbury W A COOPER
October 7th 1924 Clerk to the Guardians

City and County of Kingston
UPON HULL
Appointment of
MEDICAL OFFICER OF HEALTH
The Corporation of Kingston upon Hull invite applications for the position of Medical Officer of Health of the City at a salary of £1 400 p a
The gentleman appointed will be required to devote his whole time to the duties of the office and will not be allowed to engage in private practice and all emoluments out of public moneys which may be payable to or received by him will have to be paid to the Corporation He also will be required to reside in the City and contribute to the Corporation Superannuation Fund
Particulars of duties and forms on which application should be made may be obtained from the Town Clerk
Applications endorsed Medical Officer of Health addressed to the Town Clerk Guildhall Hull, must be delivered at the Town Clerk's Office Hull not later than Monday November 3rd 1924
Guildhall Hull H A LEVIOLD
October 11th, 1924 Town Clerk

West Derby Union
RESIDENT ASSISTANT MEDICAL OFFICER (MALE)
The Guardians invite applications for the above position at the Smithdown Road Institution Liverpool at a salary at the rate of £200 per annum together with the usual resident allowances
Candidates must be single fully qualified and registered Appointment will be for a period of one year in the first instance subject to extension for a further period not exceeding three years at the option of the Guardians
Applications to be sent stating age qualifications &c with copies of three recent testimonials to the undersigned not later than the 31st inst
G W COSTER Clerk to the Guardians
Union Offices Bromham Terrace Liverpool

ıough of Wednesbury

DICAL OFFICER OF HEALTH ETC

Council invite applications for the appoint f Medical Officer of Health Superintendent Isolation Hospital Superin endent of the ılity and Child Welfare Department and Medical Officer for the Borough of sbury

sive salary at the rate of £800 per annum licants being fully qualified and fully regis- Medical Practitioners must have such nal qualifications as are prescribed in ılitary Officers Order 19.. and the terms of rder or any modification thereof shall regu e services of the gentleman appointed The as Medical Officer of Health will be those set the said Order and such other duties as the ll shall direct and the gentleman appointed rect the work of the nurses at the Maternity hild Welfare Centre and personally attend purp se of advising expectant and nursing rs. He will also superintend the Children's an the Isolation Hospital as School Medical the duties will be such as the Board of tion and the Council or Education Committee iquire

appointment will be made in accordance with blic Health Officers Act, 19 1 and subject to rms of the said Order and to the approval of inister of Health and Board of Education. officer appointed will be required to devote hole time to the service of the Council and ducation Committee and to reside in the gh. The appointment will be terminable by ficer appointed by giving three months ıs not ce and if the officer appointed fails s such notice before resigning his office he forfeit three months salary as liquidated ges pursuant to Article 12 of the Sanitary s Order 1922.

ns of application may be obtained from and be returned to, the undersigned accompanied ıdes of not more than three recent testimonials before the 5th day of November 1924 endorsed ical Officer of Health."

W H POLLITT Town Clerk.
n Hall, Wednesbury October 9th 1924.

Telephone. Langham 2728.
Telegrams. Assistamo, London.

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s) MILLICENT HICKS *Superintendent*
W J HICKS *Secretary*

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1 PARTNER wanted for a good middle-class private Practice in a pleasant outlying suburb (Kent) Share for disposal worth £1 500 a year Good house available

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3 MIDLANDS.—Small Industrial Town PRACTICE returning about £2,500 p.a. Panel 1 ,00 Convenient residence with garden garage, &c. Rent £40 Prem £3,500 or nr offer

4 SOUTH WALES.—Easily worked transferable Contract and Panel PRACTICE held several years by Vendor Receipts now about £2,000 a year surgery attached Cottage Hospital

5 MIDLAND Town Middle-class PRACTICE Receipts £1,300 a year Panel 00 Fees good Corner house with surgery attached Rent £60 lon, lease Premium 1½ years purchase

6 YORKS.—Large Town. General PRACTICE yielding £900 a year Nine-roomed house electric light and heating Will be Let or sold Premium £1,300 payable by instalments or near cash offer

7 ESSEX.—PARTNER wanted for country practice 20 miles from London No resident opponent for some miles Receipts £1 200 a year Choice of bungalow residences for sale Premium for half share £750

8 PARTNERSHIP with view to succession Sussex Coast Town (suburb) General Practice yielding about £1 150 p.a. Panel 1 00 Scope for material increase Half share for Sale Premium £1,000

9 SUSSEX COAST TOWN.—PARTNER wanted Receipts Premium

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(Gerrard 3.3) (Estab 1311)

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2 Near LIVERPOOL.—PRACTICE averaging over £1,500 a year with panel 1 000 largely Convenient residence garage etc rent £100 Price for prompt sale £2 000

3 WITHIN EASY REACH of the Marble Arch non-panel PRACTICE of about £1 200 a year for early sale Vendor going abroad Fees good House on long lease at moderate rent Price or quick sale £1 400

4 PRACTICE of £1,400 a year in the Tyne district for Sale with Freehold House Panel £550 Fees from 3 6 Vendor retiring Price for the two only £3 300

5 LONDON (Central).—General PRACTICE of about £1 250 for Sale Good appts £550 Small panel No midwifery House on one lease at £125 Price £1 500

6 LONDON (S E.).—Old-established PRACTICE conducted as a Look up and returning £1 300 a year No panel no midwifery or night work Expenses light Suit a bachelor

7 REQUIRED.—PRACTICE or PARTNERSHIP producing £1 000–£1,200 a year in or near London by Graduate with experience and capital

8 REQUIRED.—Country or Country Town PRACTICE of £1,500–£2,000 a year anywhere South of Oxford Will buy house if suitable or rental

9 REQUIRED.—Freehold HOUSE with land in the Country within 3 hours Size of Practice not material

Mr Needes will receive details in strict confidence

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J L LOWNDES (B A Cantab L R C P)

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(Adjoining the *Lancet* Office)
Telegrams Partitions Westrand London.
Telephone Regent 6[illegible]

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South Wales.—A Colliery PRACTICE producing £2 000 p.a. Panel 1 00 Pop 15[illegible] Contract and Private Good house in central position Rent £52 p.a. Premium £2 000 Accept half down and the balance by arrangement.—Folio 901.

Norfolk.—A General PRACTICE situated in an unopposed Country district Receipts £1,500 Good fee Nice house containing 6 bedrooms etc Large gardens tennis court etc. Rent £35 p.a. Premium £2 500.—Folio 600

Surrey.—Partner required

[illegible] Rent £75 p.a. Premium 2 years purchase for one third share.—Folio 900

London, W C.—A Practice situated in a thickly populated district Receipts £800 No panel No midwifery Fees 5 upwards Ample scope Small flat rent £80 p.a. Premium for practice lease and furniture £1 100.—Folio 660

Staffs.—Partner required for a General Practice situated in an industrial district Receipts £2,500 Panel 1 House at rental Premium for third share 12 years purchase. Option to increase to half share.—Folio 887

South of England.—A Coast PRACTICE situated in a charming district Receipts £1,250 Excellent fees Hospital appointment held No panel No midwifery House in good position at rental. Premium £2,500.—Folio 675

London.—City Practice Receipts £1 250 Including appts £500 Panel 160 Fees 3 6 upwards Vendor retiring Ample scope Nice house in central position at rental Premium £2 000.—Folio 667

Glam.—A General Practice situated in a Coast Town Receipts £2,200 Panel 1 00 Fees 3 6 upwards Shipping fees 21s upwards Ample scope Nine house with 4 bedrooms etc garden and garage Rent £75 per annum Premium 1½ years purchase.—Folio 662

Sussex.—A General Practice situated in charming district Receipts £1,400 Panel [illegible] Ample scope Fees 3 upwards Cottage Hospital Nice house containing bedrooms e Premium 1½ years purchase Folio 593

Sussex.—Partner required for a general practice situated in a good country district Receipts £1,500 Good fees showing increase Premium for two thirds share years purchase with view to succession.—Folio 886

London, W.—A General PRACTICE situated in a good district Receipts nearly £1,000 Panel 1[illegible] Fees 5 upwards No midwifery plenty of scope Nice house in central position containing 4 bedrooms etc Rent £110 per annum Premium £1,600.—Folio 651.

Notts.—A Middle and working-class PRACTICE (town and country) Receipts £1,200 Fees 3 6 upwards Small corner house containing 3 bedrooms etc Rent £30 per annum.—Folio 682.

London, S W.—A General PRACTICE situated in a thickly populated district 2 upwards [illegible] Premium [illegible] years purchase

Salop.—A Partner required for an old-established Practice situated in a Market Town Receipts over £3,500 Large Cottage Hospital in district Income from [illegible] Special experience [illegible] Premium for one third [illegible] years purchase.—Folio 883

Derbyshire.—A General PRACTICE in rising Manufacturing district Receipts about £500 Panel [illegible] Good class house containing bedrooms, etc a rental Premium £1 000.—Folio 653

Purchasers stating their requirements can have details of other Practices advertised.

BOVRIL MEDICAL AGENCY, Ltd.

ALDINE HOUSE,

10-13, BEDFORD STREET, STRAND, LONDON, W.C.2.

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Established by Bovril, Limited, to provide an efficient and reliable transfer service for the Profession at minimum Charges.

Under the personal direction of Dr J. FIELD HALL, and Mr. J. C NEEDES.

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The commission chargeable in respect of any practice in Great Britain placed exclusively in the hands of the Agency for transfer has been fixed on an exceptionally favourable scale, the maximum chargeable on any transfer being £50 In the case of Foreign and Colonial practices similarly placed the maximum is £75.

NO CHARGE IS MADE TO PRINCIPALS FOR THE INTRODUCTION OF LOCUM TENENS OR ASSISTANTS

Accountancy and legal services furnished by the Agency, where desired, at moderate inclusive charges

PRACTICES AND PARTNERSHIPS FOR SALE

1 NORTH MIDLANDS —In a pleasant Cathedral City a well established middle and working-class PRACTICE held 11 years by present Incumbent who is relinquishing on account of indifferent health Cash receipts average £1 400 per annum for the past three years including panel of over 1 000 Visits 5/ and 7/6 Midwifery 3 guineas 30 cases yearly The house, which is Vendor's property, contains 12 rooms garden etc, and will be let on lease at £60 a year or sold for £1 100 Premium £2 100 Excellent educational facilities

2 PARTNERSHIP —SOUTH OF ENGLAND — In a large flourishing Seaport Town a fourth Partner is required in a lucrative mixed class PRACTICE, averaging about £5 000 per annum panel of nearly 3 000 The sixth a year is for disposal Visits guineas Comfortable rooms at the Surgery are available for the ingoing partner Premium required for share 2 years purchase Golf tennis etc, and there is scope for development

3 HAMPSHIRE —DEATH VACANCY — A very old established mixed general country PRACTICE situated within 7 miles of a large town and held by the late Incumbent over 10 years A steady average income of £1 039 including appointments and panel or about 100 Good scope for increase Advice and medicine from 2/6 visits 5/ to 20/ medicine extra Very little midwifery House contains lounge hall dining room drawing room consulting room and dispensary 5 bedrooms 2 bathrooms lit with petrol gas Garage Hall an acre of garden Free hold price £1 500 or offer Excellent hunting shooting fishing etc The practice is eminently suitable for a man fond of sport A moderate premium will be accepted There is a locum in charge

4 WEST RIDING —HOSPITAL TOWN within easy reach of University City Well established middle and working class PRACTICE averaging about £2 000 per annum, including panel of nearly 1 200 (rapidly increasing) Suitable house available Premium 1½ years purchase, payable £1,800 down, and balance by instalments

5 KENT.—SMALL TOWN within one hour of London Old established mixed general PRACTICE Average income about £1 800 including valuable appointments probably transferable and panel of nearly 1 200 Fees 3/- to 10/- Twenty cases of midwifery yearly at 2 to 5 guineas Excellent house containing 2 reception and 8 bedrooms separate entrance to professional rooms standing in its own grounds of ¾ of an acre with full sized tennis court, etc Vendor's freehold price £2 300 Good Hospital in town and Vendor on the Staff Premium £2 700 Introduction considered up to six months

6 RESIDENTIAL TOWN within 100 miles of London Non-dispensing calling better class PRACTICE, producing an income of about £2 000 a year including small panel of about 600. Fees from 2/6 to 21/, mainly 7/6 upwards Only a few cases of midwifery yearly at 2 to 25 guineas Attractive and commodious house (3 reception, 7 bedrooms etc garden) on rental at £100 p.a. Good society and sport of all kinds Premium £4,000 payable £2 000 cash and £2,000 by instalments

7 HOME COUNTY — Hospital Town within 50 miles of London PARTNERSHIP A one-half share in a mixed general practice held by senior partner 25 years Average income over £2 000 Panel of 780 Advice and medicine from 2/6. Visits and medicine from 3/6. Very little midwifery Detached double fronted house with ample accommodation and good garden Price £2,000 of which £1 000 can remain on mortgage. There is an up-to-date Hospital and an early vacancy on the staff is probable. Good sport, schools etc. Premium 2 years purchase half by arrangement.

8 EASTERN COUNTIES —Within 1 hours' run of London Practically unopposed PRACTICE old established and situated in a very pretty Country Town with beautiful surroundings Cash receipts for last financial year £2 022 including appointment of £50 and panel of 800 Visits up to 21/ Very little midwifery Car optional Railway station Charming residence (with ample accommodation) in its own grounds of ¾ of an acre. Price £2 900 all of which can remain on mortgage at 5 per cent Premium for practice £2 500 Excellent prospects Tennis golf, hunting, shooting, etc

9 NEAR LIVERPOOL —In a large town (population nearly 100 000) close to seaside resort, an old established flourishing and increasing PRACTICE worth last year £2 100 including 1 600 panel patients. Visits 2/6 to 5/ Midwifery 2 to 4 guineas about 100 cases yearly Vendor's property, and can be purchased Premium

10 FAVOURITE INLAND SPA —PARTNERSHIP A well-qualified and experienced man, with a good personality is desired by a Consulting Physician as Partner with ultimate succession The present income is only about £1 500 a year but there is very considerable scope for increase and the newcomer would be encouraged to undertake general practice without accountancy, to the partnership for the fees so obtained. There is a choice of houses both on rental and to buy in the residential part of the town At present the fees are mainly 1 and 2 guineas but there are a few at 10/6 Premium for the half share £1 500

11 GROWING COAST TOWN within easy access of London Old established very sound mixed general PRACTICE Average income over £1 800 Fees mainly 3/6 to 10/6. Very little midwifery Very good corner house with small garden There is a Cottage Hospital in the place and the Practice offers very good prospects to a Surgeon Premium 1½ years purchase

12 WEST CENTRAL —Sound, easily worked PRACTICE of about £770 a year There is very good scope as the Vendor has suffered from ill-health since the war Fees mostly 10/6 Very convenient flat Rent £58 Premium £1 100.

13 LONDON NORTH —Old established PRACTICE producing an income of £1,400 a year including appointments worth £320 Panel of 300 but this can be largely increased if desired Visiting and medicine 3/6 to 7/6 Practice is easily worked with no conveyance. Nice house in good decorative repair with fair garden Rent £125 Garage can be let off at £20 or £51 Premium £2,000

14 NEWCASTLE UPON TYNE AREA.—Old-established PRACTICE held by Vendor many years Steady average income of about £3 350 There is a Hospital in the town and a reasonable prospect of obtaining an appointment on the Staff. There are various appointments worth about £150 a year Very little midwifery but large scope if desired Fees 1/6 to 21/ House is Vendor's freehold it is well situated and will be let or sold Excellent educational facilities Premium to include drugs, etc., only £3 000, payable £2 000 down

15 MIDLANDS.—LARGE MANUFACTURING TOWN —Old established PRACTICE producing about £1 000 per annum Visits from 3/6 Not much midwifery lowest fee 2 guineas Large commodious house Price, freehold £1 500 Premium 1½ years purchase.

16 MIDLANDS —In a delightful Town (population over 15,000) amidst beautiful surroundings and within 1 hours' run of London, an old established lucrative PRACTICE worth over £3,300 per annum including large panel. Good fees The house is well situated has ample accommodation and can be rented on lease at £100 a year Premium £3 000 cash and £2 000 by instalments Satisfactory reasons for selling Educational facilities and sport of all kinds.

17 SOUTH-WEST OF ENGLAND —ASSISTANTSHIP, with view to Partnership in a good mixed general Practice worth over £2 500 a year Scope for increase with the aid of a suitable man. Applicants should be about 30 to 35 single, and experienced in Surgery

18 FAR EAST.—MEDICAL OFFICER required for railways Salary about £600 a year increasing annually Three years engagement. First class passage out and home Aged 25-30 English nationality essential Personal application, if possible, to Bovril Medical Agency

19 FAR EAST —ASSISTANTSHIP with view to PARTNERSHIP, and ultimate succession in two years to an extensive practice Salary £800-£1,000 with furnished quarters. Passage paid Knowledge of Tropical Medicine necessary. Aged 25 to 30 and bachelor essential Personal application, if possible, to Bovril Medical Agency

20 BORDERS OF CO DURHAM AND NORTHUMBERLAND — Old established village PRACTICE. Average income £813 but there is scope for increase 2 0 panel patients Visits and medicine 2/6 3/6 and 5/- Visits 3/6 to 10/6, medicine extra Small convenient house Premium £1 000 or near offer

Profits accruing to Bovril, Limited, from the Agency will be allocated amongst recognized Medical Charities.

Full Schedule of Terms and Conditions will be forwarded on application

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London Suburb, S W — £300 a year Well-established Panel about 0 Visiting fees usually 5 Few midwifery cases 2 to 5 gns Good corner house to rent on ase Considerable scope.—Apply No 7623.

Yorkshire —£2,100 a year Panel 1 1 0 Visits 4 6 up Midwifery 2 3 gns Good house with garage rent £65 on ase Hospital in town Premium 1½ years arch e —Apply No 7619

South-East Coast —Over £2,000 a year Good fees Panel nearly 00 House with ample accommodation and arage on lease, a moderate rent —Apply No 618.

Lancashire —£2,000 a year Old-established Panel 1 6 0 Fees 2 6 to 0 6 Midwifery 2 to 4 gns House with good arden and garage Can be rented or purchased Premium 1 years purchase —Apply No 7617

South Wales —£2,000 a year Very safe PRACTICE Appointments Panel about £1 700 Visiting fees 3 6 to 0 6 Convenient house rent £52 on lease Hospital Jobels Premium for quick sale £2,000 erms could be arranged —Apply No 7616

London, N W —£600 a year Panel 00 Visiting fees 3 6 to 7 6 No midwifery or appointment. Good detached house ease for sale —Apply No 7614

Kent —Important Town About £500 a year Panel 00 Fees 3 6 to 10 6 Good house to rent Hospital Great cope Premium £750 —Apply No 7613

Lancashire —About £1,200 a year Non-panel Old established Ven tor etiring No midwifery or appointments. Fees 6 to 10/6 Small house rent £36 including ates and taxes Ample scope for both midwifery nd panel —Apply No 7612

City Practice —For disposal, HALF SHARE in old established City ract ce doing about £1,300 p a Fees usually 1s Very easy hours —Apply No 7610

Home County —Nearly £1,400 a year Old established Good fees ery little midwifery Small panel Good house nd garden Introduction as arranged —Apply o 7606

Eastern County —About £1,800 a year One third now and ultimate u cession Panel over 1 000 Visiting fees 3 6 up. Midwifery from 2 guineas House or rooms available Good sporting locality —Apply No 7605

South Coast —For disposal, good class PRACTICE returning over £1,200 a. No panel or dispensing Visiting fees 7 to 1s Appointments about £180 Midwifery 5 to 2 guineas Detached house electric light etc to nt Great scope for increase panel etc Good hools.—Apply No 7594.

Lincoln —Country Town, about £1,850 p a Very old established anel over 1 000 Visits 3 6 up Appointments bout £70 Good detached house tennis garden of an acre Long introduction —Apply No 7593

Yorkshire —Average £1,286 Appointments £350 Visiting fees 3 6 to 0 6 Panel nearly 1 00 Few midwifery cases Good house every convenience.—Apply No 7581.

North-West County — Univer ity Town £1,200 a year Old tabli hed Visits 5/ to 10 6 Midwifery 4 to 7 uinea Freehold house standing in own grounds ope —Apply No 7579

Monmouthshire — Over £1 600 a year Established 20 years Panel ver 1 100 Visits 5 up Appointments about 940 p a Good house garden and garage to nt —Apply No 7570

Eastern County Partnership About £2,200 p a. Panel about 2 000 and her appointment Fees 3 6 up One third sale for disposal with succession in about 3 years pply No 7564.

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FOR SALE.

NORTHANTS —Old established G P situated in nice town within 3 miles of London Panel 1,30 Average Income £1 304 Charming house 6 bedrooms 2 reception rooms to let on lease at £70 p a Premium £2,100

LONDON W —Well established NON-PANEL Income nearly £2 000 No night-work or Midwifery Premium £5 000 (cash) to include freehold house

SOUTH WALES —Well established Colliery and Contract PRACTICE Income £2.000 Panel 1 0 House to let Premium £2.000 £1.000 down balance by arrangement

LANCS —Old-established G P Panel 2 00 Income £3.300 Two appointments House to let. Cottage Hospital Premium 1½ years purchase or one third share for £2 000 Suitable for young North Country man

LONDON N —Old-established G P Panel nearly 400 Income over £950 p a (scope for Midwifery and Panel) Premium £3 000 to include house, or will let

YORKS (W R) —Old-established G P Nice house and nearly 1,000 Two appointments Premium £3 000 to include house Part can remain

YORKS (E P) —Busy industrial practice Panel over 1 120 Income £2.000 p a Scope for Surgery Premium 1 years purchase Part can remain

CITY —Old established G P Very panel Good position Fees 5 upwards Scope for V D Ear Eye Nose and Throat work Premium £3 400

CHESHIRE —PARTNERSHIP In old established Panel nearly 2 0 years' purchase

LONDON S W —Old established G P Panel 00 Income £1,000 Small house garden etc Low rental. Premium £1,600 to include lease

Purchasers stating their requirements will be sent particulars of other suitable Practices and Partnerships for sale, free of charge.

Please address all communications to the Manager Mr W H. GRANT Medical Transfer and Insurance Department.

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London, S W — Partnership with Succession Third share of about £1,500 Rapidly growing district Great scope Suitable for one or two easy terms

Cash Practice of £2 300, including £850 from panel Good house with garden and garage. Premium 1½ years purchase

Within 80 miles — Middle and working-class PRACTICE of £1,300 in nicest part Panel About 2 miles Hospital and schools Very nice house with 6 bedrooms separate entrance to surgery and nice secluded garden Rent £70 on lease

Liverpool — Non-panel PRACTICE of £1,200 Detached house with garage Premium 1½ years purchase

North-West London —Very d re fining Middle class PRACTICE of £600 including 200 panel Great scope for active man Large house can be bought or small ones can be had Premium £750

Within 70 miles —Practice of £700 with great scope in country town Population 6 000 Cottage hospital Panel 2 Good schools House on lease. Rent £55 Premium 1½ years purchase

Birmingham — Good-class PRACTICE in residential part Receipts £1 420 Fees 5 to 10 6 No panel and very few midwifery Fine house with large garden at low rent Good introduction

Colliery Practice of £2,000 mostly from panel (1)) and a good many Few midwifery Cottage hospital Good house, rent £52. Premium one years purchase £1 000 down

West Riding — Practice of £1,500 Panel 1,000 Opposition slight Good house, rent £80 Premium £2.000

Midlands — Town and country PRACTICE of £1,200 Panel 00 Good corner house with garage rent £60

Midlands — Good money- making PRACTICE of £1,800 with great scope Panel 2,2 0 Appointments £110 Rent £50 Premium £2,750 £1,500 down

Liverpool — Middle and working-class PRACTICE of £700 with great scope, for sale, owing to illness Panel 420 Very little midwifery Premium only £300 for quick sale. Convenient house can be bought cheaply

North London — Practice of £1,600 Panel 1 60 Appointments £420 House with side entrance to surgery and small garden Rent £63

Cornwall —Unopposed PRACTICE of £1,500 in beautiful district near the sea Panel worth £550 Appointments £80 House with surgery garage etc. Rent £40 on lease. Premium 1 year purchase

Within 100 Miles —Country PRACTICE of £1 000 in good hunting district Panel and Appointments £20 No resident opponent Good house with tennis court and 1¼ acres Rent £80 Prem. £1,500

Notts — Partnership with Succession. Half share of over £1,600 House with nice garden and separate entrance to surgery Can be had on lease.

Gloucestershire —Small town with cottage hospital PRACTICE of nearly £1 500 Panel 1,000 Appointments £120 Beautiful house and garden with tennis court on lease

Scotland — Unopposed PRACTICE £8 0 Panel 00 Appointments £100 Good house with walled garden Price £1,500 for house and practice £1,000 down

New Zealand — Unopposed PRACTICE of £1,800 in beautiful district Country House Rent £100 Salary £ Premium £1,000

Purchasers wishing to have interviews or Partners of other Practices and Partnerships

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NORTH OF ENGLAND—(1) Well-established PRACTICE in first-rate Cathedral City Cash receipts average £2,414 p.a. Panel 2,037 Good house (7 bedrooms) Rent £80 Premium one and a half years purchase

ESSEX—(2) Old established easily worked PRACTICE averaging £1,345 p.a. in populous Suburban District close to Epping Forest Panel 750 Beautifully situated house (6 bedrooms), in third of an acre of ground Premium one and a half years purchase

SOUTH WALES—(3) Well-established PRACTICE nearly £1,250 p.a. in Country Town Panel over 500 Fees 5s. to £2 2s. Well situated double fronted house (6 bedrooms) with large garden Rent £60 Educational facilities Premium £1,500

EASTERN COUNTIES—(4) Old-established PRACTICE £1,855 p.a. in pleasant Market Town Panel 1,100 No midwifery Excellent detached house (7-8 bedrooms) Very good garden Cottage Hospital Premium one and a half years purchase

YORKSHIRE (WEST RIDING)—(5) PRACTICE over £1,500 p.a., in thriving Industrial Town Panel 1,000 Good house (5 bedrooms) Rent £80 Premium £2,250

SOMERSET—(6) Country PRACTICE £1,100 Panel 800 Good well appointed 12 roomed house with bathroom Garden and garage Educational facilities Moderate premium

MIDLANDS—(7) PARTNERSHIP in sound oldest-established non-dispensing Practice, between £7,000 and £8,000 p.a. in first-rate Town No appointments or panel Premium one fourth share two years purchase Incoming partner should be aged 30 to 35 and keen on his work

DEATH VACANCY—(8) University Town Good-class PRACTICE about £900 p.a. No panel Detached house (7 bedrooms) to rent

HOME COUNTIES—(9) PARTNERSHIP in old established first-rate Practice in very desirable Residential District easy access to London House (5 bedrooms) to let Share worth about £1,150 p.a. at first at two years purchase Partner should be aged 30-35 and able to do some surgery Hospital

SOUTH COAST (Seaside Resort)—(10) PARTNERSHIP in rapidly increasing Practice Net receipts average £2,306 p.a. Panel 1,600 Flat available Partner should be young and energetic Premium one half share two years purchase

LONDON, E.C.—(11) PARTNERSHIP in Special City Practice Excellent opening for gentleman (aged 30-35) specialising in Skin work and experienced in Nervous and Digestive Disorders Share worth about £500 at one and a half years purchase

EASTERN COUNTIES—(12) PARTNERSHIP in old-established non-dispensing Practice £2,250 p.a. in first-rate Town No panel Incoming partner should be University man or F.R.C.S. Hospital and chance of appointment on staff One third share at first at one and a half years purchase (preliminary Assistantship)

LANCASHIRE—(13) Well-established PRACTICE averaging £2,100 p.a. on outskirts of PRESTON Panel 1,611 Modern detached house Premium £2,000

EAST COAST—(14) PARTNERSHIP in well-established PRACTICE £3,800 in rapidly developing Seaside Town House with 5 bedrooms to rent Incoming partner should be aged between 40 and 50 Premium two thirds share £3,000

SURREY—(15) Riverside Town PARTNERSHIP in steadily increasing Practice Receipts 1921 £2,192. Panel 1,700 One-third share at two years purchase

YORKS—(16) PARTNERSHIP in very old established Practice in Good Town Receipts average between £3,000 and £4,000 p.a. Panel 1,200 One-fourth share at two years purchase payable by arrangement Preliminary Assistantship of six months

SOUTH WALES—(17) Very old-established PRACTICE, over £1,550 in beautifully situated Country Town Panel nearly 1,000 Fine old mansion house with half acre garden to be sold Good schools and sport Premium £2,250

EASTERN COUNTIES—(18) PARTNERSHIP in very old-established Practice in a beautifully situated Market Town. Panel 1,600 Detached house (7 bedrooms) Rent £50 p.a. on lease Scope for Surgeon Share worth about £1,100 p.a. at one and three quarter years purchase

WEST OF ENGLAND—(19) ASSISTANTSHIP with view to partnership in mixed practice of over £2,800 p.a. in Country Town Panel 1,500 One fourth or one third share at two years purchase Applicant should be keen on surgery Hospital in town

SOUTH OF ENGLAND—(20) PARTNERSHIP in good-class non-panel practice of about £2,500 p.a. in beautifully situated country town Applicant should be Oxford or Cambridge Graduate not over 30 and preferably F.R.C.S. Eng.

SURREY—(21) PARTNERSHIP in good-class non-dispensing Practice in most desirable Residential Country Town No panel Suitable house could be obtained Partner must be graduate of Oxford Cambridge or London University aged 30 to 35 Share worth about £1,000 p.a. at first Hospital in town

FIRST-RATE RESIDENTIAL DISTRICT up to FRAMES—(22) PARTNERSHIP in good class Practice averaging about £1,550 p.a. Not much Midwifery Good house with garage, to be Premium one half share £1,200 Scope for Surgery

LONDON—(23) Well-established and very lucrative PRACTICE about £3,800 p.a. in Industrial Centre North of the Thames Panel 1,000 Very good non-basement house (6 bedrooms) to be sold Would suit two men Premium £1,500

SOUTH MIDLANDS—(24) Very old established unopposed Country PRACTICE between £1,100 and £1,200 p.a. Panel 700 (about) Small house (3 or 4 bedrooms) Rent £50 (larger house could be purchased) Premium £1,550

YORK (near)—(25) Unopposed Country PRACTICE between £700 and £800 p.a. £210 of which is panel) in picturesque growing Village Model detached house with garden garage of three lights, bath (h. & c.) etc., for sale Premium one and a half years purchase

DEATH VACANCY, CROYDON—(26) Old established PRACTICE averaging £1,335 p.a. in populous Suburb No appointment or panel Well situated modern detached double fronted corner residence (6 bed and dressing rooms) on main road Plenty of scope for increase in all directions

DEATH VACANCY, EASTERN COUNTIES—(27) Very old established unopposed Country PRACTICE averaging £1,000 p.a. Panel 850 Modern detached house (6 bedrooms) in acre ground Rent £80 on lease

LONDON, S.E.—(28) PARTNERSHIP in old established PRACTICE in outlying Residential Suburban District close to the Crystal Palace No appointments or panel Share worth about £750 p.a. at one and three quarter years purchase Ample scope

WITHIN 50 miles of LONDON—(29) PRACTICE £1,500, in first-rate Residential District Modern detached house (5 bedrooms) in grounds to be sold Excellent educational facilities Premium £2,000

SOUTH AFRICA (CAPE PROVINCE)—(30) PRACTICE about £1,000 in one of the wealthiest Pastoral Districts on line of Railway Ideal healthy dry climate Very comfortable house to rent Living very cheap Premium £750 Vendor known to the Association

HOME COUNTY—(31) Well established and increasing mixed class PRACTICE over £1,000 in Residential District Panel about 400 Not much Midwifery Old fashioned detached house (6 bedrooms) in good position Premium £1,500

MANCHESTER—(32) PARTNERSHIP in old established good class Practice over £1,500 in Residential District Small panel One fourth share would be sold for £2,115 with option to increase up to one half Partner should be about 30, and preferably M.D. or F.R.C.S.

SPECIAL OPHTHALMIC PRACTICE—(33) About £1,100 in high class inland Health Resort Operative and writer's refused of late years Considerable scope for increase Premium £1,100

YORKSHIRE, WEST RIDING—(34) Well established middle and working class PRACTICE over £1,300 (£920 from Panel and appts.) in large clean town Good detached corner house Prem. £1,100

EAST COAST—(35) Increasing PRACTICE over £1,000 in rapidly developing District Panel about 700 Nearest other 4 miles Bungalow residence (5 rooms) Premium £750

EGYPT—(36) Well established PRACTICE £700 to £800 mainly among English Residents and Visitors Excellent semi-detached residence (5 bedrooms) Premium to include furniture £1,100

SURREY—(37) PARTNERSHIP in Practice, £7,000/£8,000 per annum in one of the best Residential Districts House (6 bedrooms) to rent Premium one sixth share two years purchase Partner should be aged over 30 and have held hospital appointments

MIDLAND TOWN—(38) Old established PRACTICE about £1,100 per annum in Residential Suburb Panel 700 Good house and large garden Premium £1,500

LONDON, N.W.—(39) PRACTICE worth about £4,000 per annum in working class district Panel 3,000 Increasing Midwifery Double fronted corner house Premium Practice, and freehold £1,500 Great scope for young man

SCOTLAND, NORTHERN HIGHLANDS—(40) PRACTICE averaging over £1,600 p.a., in a Town No panel House (5 bedrooms etc.) in best residential part Ample scope for middle-aged panel Premium £1,200

WEST MIDLANDS—(41) PARTNERSHIP in old established Country Town Practice over £3,600 p.a. Panel 1,800 £60 Partner should be aged 35 to 40 with some Surgical experience Well equipped Cottage Hosp. Prem. one-third share one and a half years purchase

LONDON, S.W.—(42) Well-established PRACTICE £600 to £700 p.a. in favourite Residential Suburb Panel 500 Not much midwifery Excellent detached house (5 bedrooms) with good will for sale Ample scope. Premium one and a half years purchase

MIDLANDS—(43) Unopposed Country PRACTICE £1,150 in beautiful part Panel about 700 Detached house (7 rooms) with half an acre garden Mild climate

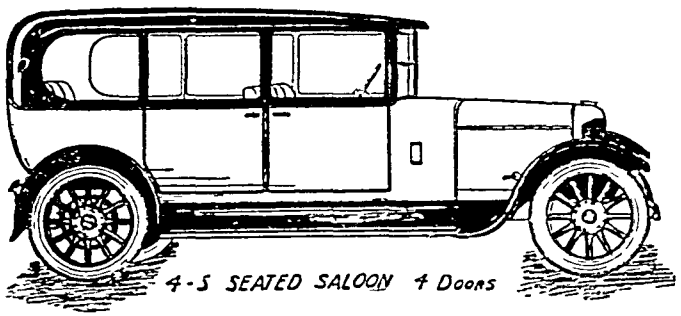
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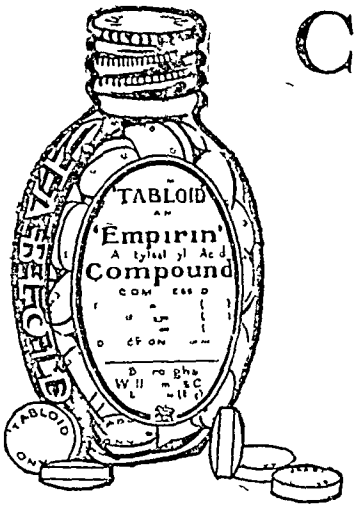
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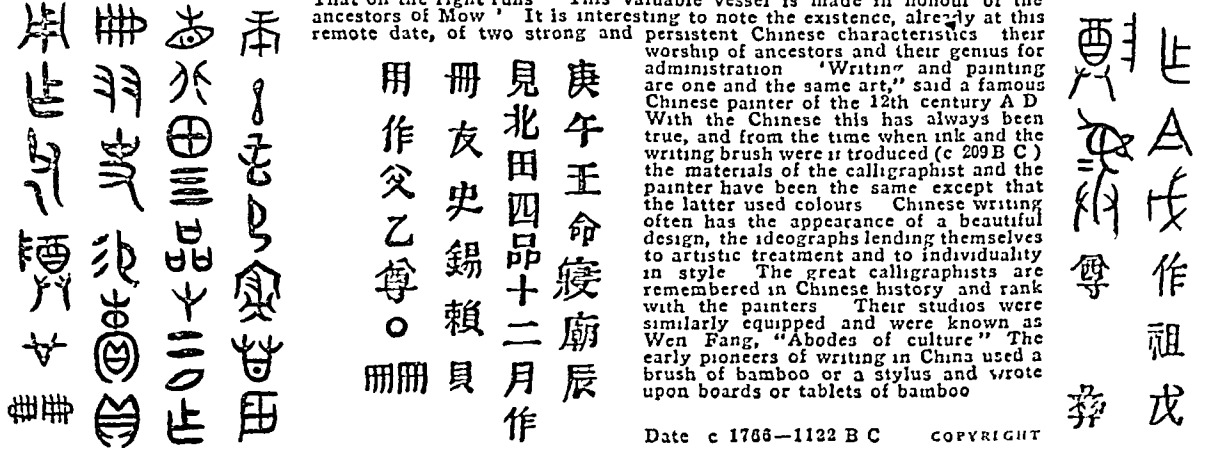
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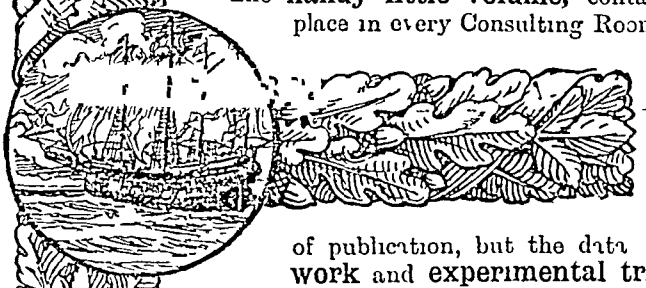
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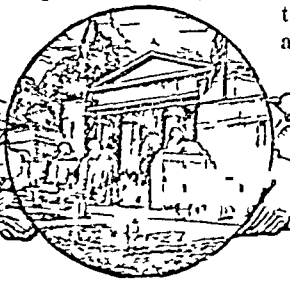
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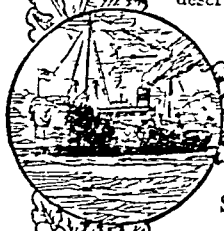


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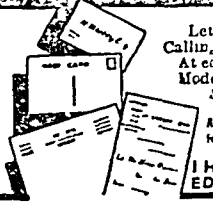
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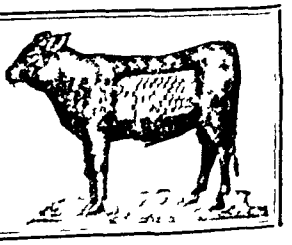
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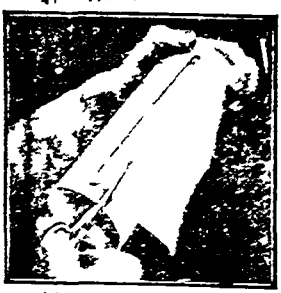




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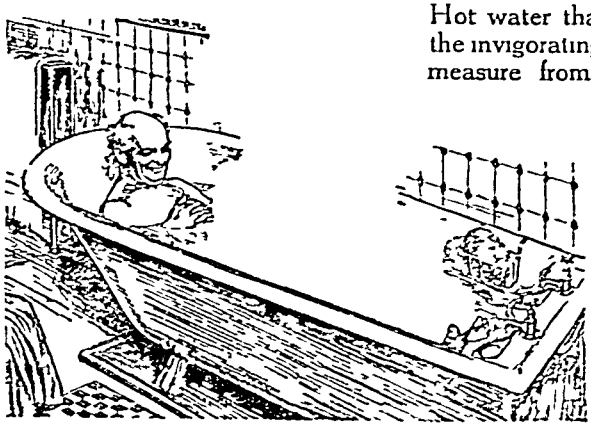
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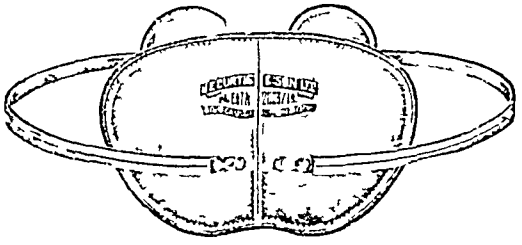
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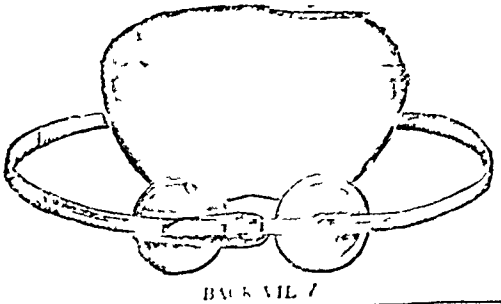
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The Influence of Diet and Light on the Vitamins of Milk—Biochemical Journal of 1923 xvii 735 (No 6)

The winter increase in rickets among infants in England seems, therefore, to result from the poor anti rachitic properties of the dry and artificial diet of stall fed cows, and partly from the very low value of the ultra violet rays in winter daylight These factors can be entirely eliminated by the systematic use of Glaxo

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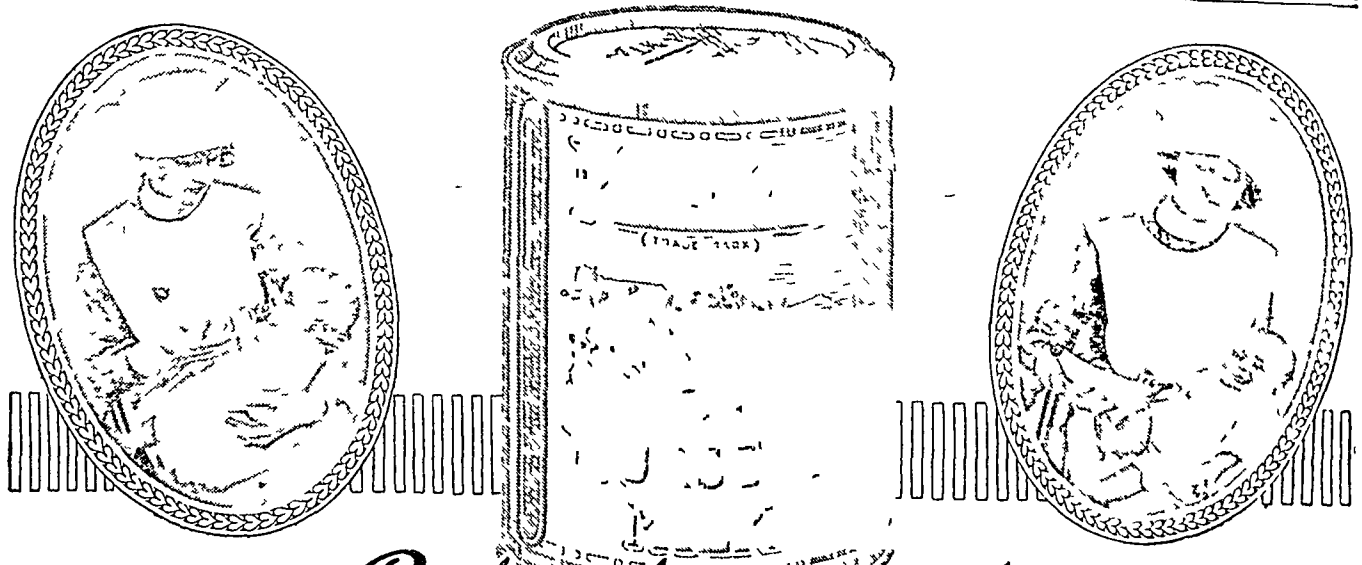
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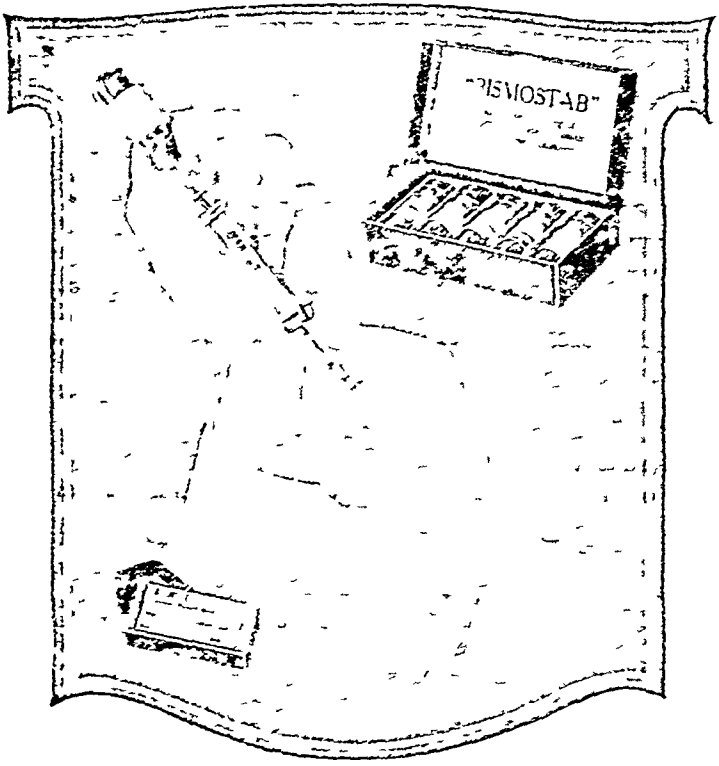
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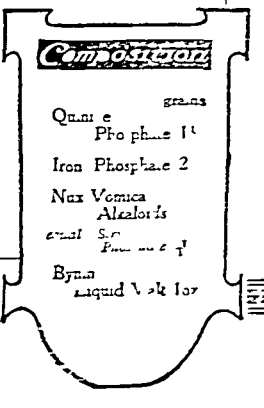
——*The 'Lancet'*

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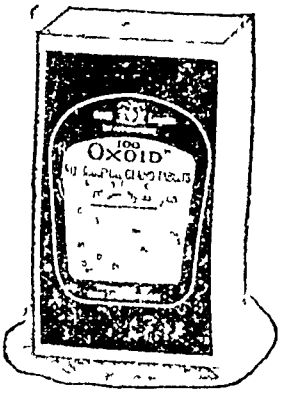
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Lab-Lemco is specially prepared for use in biochemical and research laboratories wherever work of a bacteriological nature is carried on. Each batch by a process of pooling is adjusted to a definite composition corresponding to standardised originals selected after repeated experiments.

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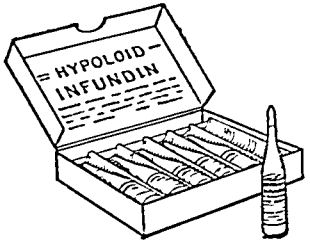
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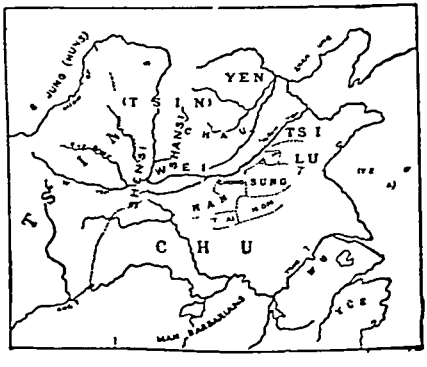
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MAP SHOWING THE EMPIRE OF CHINA AS BUILT UP AND EXPANDED BY THE CHOU DYNASTY DUPING ABOUT 900 YEARS—The Shang dynasty fell by reason of the luxurious living degeneracy and consequent misgovernment of its last representative. The Chou dynasty succeeded it after a great battle. Its early rulers built up an empire formed of a confederacy of feudal states each governed by its own head (all relatives of the emperor who were thus rewarded for their military aid) but united under the Son of Heaven *i.e.* the emperor At the beginning of the dynasty the Chinese were constantly engaged in keeping at bay the barbarian tribes—the Huns on the north and west the Man tribes on the south—whose attempts at encroachment were persistent and formidable They enlarged the borders of their empire, which had hitherto consisted of the two states of Shensi and Shansi by gradually getting the better of these tribes in warfare or by forcing them to give up territory in exchange for goods—even in time, they mingled with them in certain parts. Before the end of the dynasty considerable tracts thus became undisputed Chinese territory The period of the Chou dynasty is the longest as well as, perhaps the most important, in Chinese history In it were evolved most of the ideas and institutions by which the Far East has lived down to modern times. The great sages of China Laotzu Confucius and Mencius lived during this epoch and contact with the West was established by the slow and painful opening up of trade routes.



DATE 1122—249 B C.

Ambulatory Treatment of Fractures of the Limbs; Tuberculous and Arthritic Disease of Joints.

By CAREL A. HOEFTCKE

7, Harley Street, London, W 1

Extract from the Medical Press and Circular, *April 9th, 1924, pages 293—296*

RHEUMATICS

By an Eminent Physician

"Gentlemen—The subject you have chosen for discussion is one which, though of the greatest importance, happens to be, at the moment, very obscure and difficult

" Thus one finds as one blunders about in this swamp of 'Rheumatics' that each stone you try to step upon tilts you up and plays you false

" Lastly, there is one method upon which I would like to say a few words, though I must deal with it cautiously There are cases of severe arthritis in which the disease has become quiescent, but in which, either owing to the initial severity, or from lack of knowledge, or the character of the patient, severe contractures have resulted, one or both knees, for example, have become fixed at a right angle and the patient has been unable to walk, possibly for years These are sometimes dealt with by forcible extension and elaborate splints—a treatment associated with the name of Mr Hoefftcke No one, I think, is more afraid than I am of forcible wrenching of joints, or more cognisant of the amount of suffering that patients have to face in the course of this method of treatment I am, moreover, not a surgeon, and have not the requisite knowledge to appreciate how much value the element of traction possesses This, however, I must say, that in three out of four cases, all of the worst type, in which I followed through the results, they were eventually remarkable The fourth case, a hip-joint affected with osteo-arthritis, was a failure, but I am not prepared to alter my mental attitude because this was a failure, for the cases I am dealing with are most difficult, and there must be failure I can only repeat that I have seen three remarkable successes When I am faced by a patient with contractures of long standing, unable to walk or earn his living, I ask myself What method other than this is open to use? Gradual extension is out of the question, at least I have never seen a great success If, then, forcible extension has to be undertaken, is this splint the best, or is it unnecessary, complex, and expensive? Can we deal with these extreme cases any other way? Is the traction an important factor in eventually restoring function? I have had conflicting answers, and yet it seems to me that it is of importance, and, if so, any splint that can achieve this must, I imagine, be complicated and expensive"

Two of this Physician's cases are described and illustrated in my book, entitled "The Ambulatory Treatment of Fractures and Diseased Joints," published by Messrs Heinemann, Medical Books, Ltd, London, price 10s

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Extract from the Medical Press and Circular, *May 14th, 1924, page 406*

RHEUMATICS

By Carll A Hollopeter

" The danger of injury does no doubt exist if the wrenching is done without extension Under such conditions the joint surfaces are pressed together by strong muscular tension, and as the surfaces are usually eroded there is serious danger of injury If, however, the joint surfaces are kept separated while the manipulation takes place this danger is avoided Such separation can only be obtained satisfactorily by an extension table or extension splint Further, the suffering which the patient has to face is in a large measure due to the contact of the diseased joint surfaces and is accordingly, greatly reduced by suitable extension Cases treated by my ambulatory extension method in arthritic or tubercular diseases need not be quiescent, in fact, the earlier the extension treatment is applied the sooner a good result can be expected "

"The Lancet," *January 5th, 1924 review* —

" And it should be stated clearly that he works only with the medical profession and not as one who offers a substitute for medical services "

The Harveian Oration
ON
THE DEBT OF SCIENCE TO MEDICINE

DELIVERED BEFORE THE ROYAL COLLEGE OF PHYSICIANS OF LONDON ON ST LUKE'S DAY, OCTOBER 18TH,

BY

ARCHIBALD E GARROD, K C M G, D M, I L D, F R C P F R S,

REGIUS PROFESSOR OF MEDICINE IN THE UNIVERSITY OF OXFORD CONSULTING PHYSICIAN TO ST BARTHOLOMEW'S HOSPITAL

MR PRESIDENT AND FELLOWS OF THE COLLEGE,—More than two centuries and a half have passed since the most illustrious of our Fellows founded the festival which we celebrate to-day, and directed that an oration should be delivered by one of our number Upon the long list of Harveian Orators are many names familiar wherever medicine is studied, and amongst them those of my six most recent predecessors in my chair I esteem it a great honour that you, Sir, should have thought me worthy to stand here to-day, and to deliver Harvey's message

It will be my endeavour to follow the injunctions which he laid down to commemorate the great men of the past, benefactors not only to this College but to the human race to exhort our brethren to work together in peace and amity, and to urge them to pursue the study of our science, by methods of which he himself made such good use

Ever since this College was founded its Fellows and Members have, generation by generation, brought their several stones to the building of the house of medicine Upon its Roll are names of "men in their generation famous, and in ours never to be forgotten," men of genius whose fame as discoverers and as pioneers, in medicine and in other branches of natural science, is world wide and will never die, and of some highly distinguished in other walks of life, great scholars, such as Linacre and Caius poets and philosophers Upon it, too, are names of generous benefactors to scientific education, such as John Radcliffe and Matthew Lee, and of commanding personalities patrons of science, art, or letters, such as Richard Mead, the Mecænas of his day

But these great ones form only a small minority, and most of those upon our lists were men of lesser stature but as teachers who handed down to their pupils the treasures of their observation and experience, busy practitioners keen observers, or men of varied culture, few of them can have failed to add something to the sum of human knowledge Yet many of their names recall no memory, or have attained to that most arid form of immortality to serve as labels for malady or symptom But collectively, their work which they did counts for much, and those of us who are conscious that we shall leave no "footprints on the sands of time" may take courage from the thought that we too are helping to do the spade work for some future Harvey

On this occasion it is only fitting that special mention should be made of one born just three hundred years ago and who, although, owing to a technical obstacle now long obsolete, he was not a Fellow of this College, held its licence, and we may associate in our celebration the names of William Harvey, the physician to King Charles and the immortal founder of modern physiology, and Thomas Sydenham, the soldier of the Parliament, who did for clinical medicine what Harvey did for physiology and brought it back from the realm of fancy to the bedside study of signs and symptoms These two men, Harvey and Sydenham, each pre eminent in his own line, were wholly unlike in their outlook, and although contemporaries are not known ever to have met

Sydenham, at the mention of whose name the illustrious Boerhaave used to raise his hat, has been called the English Hippocrates, and by this College on his monument, 'Medicus in omne evum nobilis" Certainly no man ever had, in greater degree, the gift of conveying, in a few sentences, a vivid picture of a morbid state, and even though we may rejoice that those dear to us are no longer treated in accord with his prescription, we realize that he opened a new era of therapeutics To him must be assigned a high place among our benefactors

The history of medicine traces back to the birth of our race, and even beyond, for we know that the lower animals have therapeutic instincts From the outset treatment has been shaped by prevalent notions of the nature of disease, and maladies provoked by the enmity of a primitive deity, or by the malicious magic of a fellow creature, are only likely to be cured by magical methods In Osler's words "To a very definite but entirely erroneous pathology, was added a therapeutic rational in every respect had the pathology been correct" The primitive medicine and the art of the medicine man survive to this day among the savage races of the earth, and he would be a bold man who should deny their survival amongst those races which regard themselves as the highest products of civilization Are any of us wholly free from such ideas?

For ages medicine has striven to shake off her bonds, and to attain to the status of a science The first act of the drama was staged in ancient Greece We know well that the true spirit of inquiry, the desire for knowledge for its own sake, was innate in that wonderful race, of which the intellectual life centred around the city in which the people "spent their time in nothing else, but either to tell or to hear some new thing" The legacy of Greece embodies not only the Parthenon and the Erechtheum, the sculptures of Pheidias and Praxiteles the plays of Æschylus and Euripides, the thoughts of Socrates and the works of Plato Greece gave us also Aristotle and Hippocrates Only the true spirit of science could have prompted the minute and accurate research into the structure and functions of living things which are embodied in the writings of Aristotle, or the pictures of disease and its symptoms to be found in the clinical records of Hippocrates Do we not still speak of the 'facies Hippocratica" and of Hippocratic succussion?

We cannot doubt that there were forerunners of Aristotle, nor that much of the knowledge embodied in his books had been collected by lesser men Nor can we doubt that there were scientific physicians before Hippocrates, men of the schools of Cnidus and Cos, some of whose writings are included in the Hippocratic corpus Indeed, Aristotle whose lifetime overlapped that of Hippocrates bears witness to this when he speaks of physicians as men who usually base their medical theories upon principles derived from physics We must rather suppose that, like other men of genius, Hippocrates illuminated and crystallized the floating knowledge in the atmosphere of the Asklepieion But Hippocrates was something more than a man of science for when we read what he has written we realize that the most cherished traditions of our profession the rules of its conduct, were inherent in the Father of Medicine, the author of the Hippocratic oath

When at a later period, the centre of Greek medicine shifted to Alexandria, Erasistratus and Herophilus had opportunities for the practical study of human anatomy such as none had before them, and in the second century of our era the Greek tradition culminated in the life and writings of Claudius Galen, a great physician, a true inquirer of Nature, author of many treatises imbued with the spirit of Hippocrates, but not so great as he It was the strange fate of this man to be set up as an oracle to be regarded for more than a thousand years as infallible and his statements as admitting of no appeal Then after Galen the curtain fell, to be rung up again only in the sixteenth century of our era

During that long interact the races which had overthrown and overrun the empire of Rome were being educated *de novo*, to appreciate the culture which had destroyed Meanwhile, the keeping of the works of the ancient physicians passed to the Arab races and for centuries were only known in Syriac or Arabian translations, or in retranslations from those tongues into Latin Then in the end science stirred in her sleep in the thirteenth, and finally reawakened in the sixteenth century There was indeed much leeway to be made up Even as late as in the year 1559 Dr John Geynes was cited before

this College because he impugned the infallibility of Galen and was obliged to sign a solemn recantation of his error "Ego Johannes Geynes fateor Galenum, in iis quæ proposuit contra eum, non errasse" Surely, in the Elysian fields, the shade of Galen chuckled!

Great as were the achievements of the fathers of medicine, they began to construct their edifice with the bricks Their anatomy was almost wholly that of the lower animals, and the physiology of Galen seems to us grotesque The sciences upon which anatomy and physiology rest were hardly yet born If medicine were to be established upon a scientific basis the structure needed to be firm from the ground upwards, and from the sixteenth century onwards the foundation sciences, and those which form the lower stories, have been cultivated and advanced largely by medical men who saw them to be essential to the progress of their own science and art

So medicine, oldest of applied sciences, older indeed than the sciences applied, has through the ages furthered the growth of natural knowledge How profound her influence has been, and how it has been exerted, it is my present aim to show

Research and education are closely linked, but whereas from their earliest days there have existed, in the universities of Europe, the three professional faculties of *Divinity, Law, and Medicine, that of Natural Science is of* quite recent development For the student with a scientific bent two paths were open he might either attach himself to the Faculty of Medicine, or might approach his chosen studies by way of mathematics

Even down to the seventeenth century, or later, the university course in medicine was almost wholly theoretical The Professor expounded to his pupils the writings of Hippocrates and Galen, together with those of some of the great Arabians, such as Avicenna and Rhazes Such were the duties assigned by Linacre to his lecturers at Oxford and Cambridge, and those of the Regius Professors at those ancient seats of learning Thomas Molyneux (1661-1733), a young graduate of Dublin, where he was afterwards Professor of Medicine, visited Oxford in 1683, and heard the Regius Professor, Dr Luff, "read on the first aphorism of Hippocrates in the Physic School, where giving an account of the shortness of man's life since, and the length of it before the flood, he made up of Mr Burnett's fancy, not at all altered but in the word" No wonder that Molyneux was not diverted from his purpose to continue his studies at Leyden, where clinical medicine was being taught in a university clinic Elsewhere clinical knowledge was acquired by attendance upon the practice of a physician or surgeon, a system of apprenticeship which has this to its credit—that out of it has grown the English system of bedside instruction to small groups of students The first attempt to start clinical teaching within the university was made in Padua in the late sixteenth century, but the first organized clinic was that in Leyden, started in about the year 1630

The study of science for its own sake, apart from any professional applications, began again in the sixteenth century, and was active in the century which followed In this country Oxford took a large part in the renascence of pure science There Robert Boyle, the "father of chemistry," set up his private laboratory in 1654, and around John Wilkins, Warden of Wadham—the college of Mayow and Sydenham, and one to which science and medicine owe much—there gathered a group of men eager for the advancement of natural knowledge, who, with the members of the "Invisible College" in London, formed the nucleus of the future Royal Society In the same century chairs of astronomy, natural philosophy, anatomy and botany were founded in Oxford, and the Botanic Garden was established In 1657 Thomas Millington (1628-1704), a President of this College, was made Sedleian Professor of Natural Philosophy, and the first Savilian Professor of Geometry and Astronomy, John Bainbridge (1582-1643) was also one of our Fellows

How large a part members of our profession played in this reawakening of science is shown by the large proportion of medical men among the original Fellows of the Royal Society Of the total of 115, which included peers, clerics, and distinguished people such as John Evelyn and Samuel Pepys, only a small proportion were men of science in any strict sense, and of these no less than 25 were Doctors of Medicine, whilst 21 were Fellows of this College

In the reawakening of medical science Italy took the lead, and especially in the Of her universities, Padua, under the [illegible] of the Venetian Republic, became the chief centre of medical teaching in Europe, and thither repaired the pick of our English students to profit by teaching such as they could not obtain at home Later, when the star of Padua paled for a time, Leyden took its place as the cynosure of students of medicine

Of the professions open to him in former centuries that of medicine would obviously make most appeal to the youth of scientific bent, and as L C Miall puts it in his book on "The Early Naturalists"

> "The medical school furnished the only regular training for the naturalist, whilst he found in the medical profession the likeliest means of earning his bread"

In his Rectorial Address to the University of Aberdeen, delivered in 1874, Huxley brought out the same point, with even wider application, when he said

> "Within my recollection, the only way in which a student could obtain anything like a training in physical science was by attending the lectures of professors of physical and natural science attached to the medical schools"

Still more striking is the following passage from the same address

> "In the days when all the innumerable applications of physical science to practical purposes were non-existent even in dreams, days which men living have heard their fathers speak of, what little physical science could be seen to bear *directly upon human life lay within the province of medicine* Medicine was the foster-mother of chemistry, because it had to do with the preparation of drugs and the detection of poisons of botany because it enabled the physician to recognize medicinal herbs, of comparative anatomy and physiology, because the man who studied human anatomy and physiology for purely practical purposes was led to extend his studies to the rest of the animal world"

Now that the practical applications of science are so far greater even than when these words were spoken, and a course of scientific training is necessary or desirable as a preparation for so many walks of life, there have sprung up schools of physical science of which the Royal School of Mines and the College of Chemistry, now fused into the Imperial College of Science, were the earliest to be established in this country Our universities also teach science in all its branches, and grant degrees therein In a word, science has been weaned from its foster-mother

Seeing, then, that in the past medicine has supplied opportunities of education for students of natural philosophy and natural history, and has, at the same time, supplied a stimulus to their researches, it need cause no surprise that our profession can claim, amongst its most honoured members, not a few whose work has inaugurated new epochs in widely diverse branches of natural knowledge

At first sight it would appear that astronomy, to which the natural approach is through mathematics, is as remote from medicine as any science can be, but there was a time when the pseudo-science of astrology supplied a close tie between the study of the stars and that of disease The mediaeval physician was profoundly influenced by the horoscope of his patient, and studied the motions and conjunctions of the planets to obtain such help in diagnosis and prognosis, as is afforded nowadays by the blood count or electro-cardiogram He was expected to have some knowledge of astrology, and even in the sixteenth century there were amongst our Fellows such men as Thomas Twyne (1543-1613), who gained more fame as an astrologer than as a physician, and some note as a poet In medical astronomers, on the other hand, have been [illegible] number, but Nicolas Copernicus (1473-1543), who revolutionized man's ideas of the universe, was a physician, and amongst lesser lights mention may be made of our Fellow John Bainbridge

Another science which has little contact with medicine is geology, save in so far as the nature of soils has bearings upon public health, but medical men have played very important parts in its advancement Thus, Nicholas Steensen, commonly called Steno (1638-1686), who discovered the parotid duct which bears his name, may be described as one of the founders of geology and mineralogy Most of his active life was spent in Florence, where he held the post of physician to two successive Grand Dukes Of him von Zittel wrote, in his History of Geology, that he was the first who sought to solve geological problems by inductive reasoning He threw much light upon the formation and structure of crystals, and, as Leonardo da Vinci had done a century and a half earlier, he maintained that fossils are the actual remains of animals and plants of former epochs He ended his life as a Catholic bishop and his ascetic habits undermined his health This brilliant Dane is entitled to rank amongst the great ones of science, as anatomist, geologist, mineralogist, and physician, but his researches, so far in advance of his time, only received their due recognition after much of his work had been done over again by later investigators

John Woodward (1665-1728), Professor of Medicine at Gresham College, and Fellow of this College, also holds a distinguished place in the annals of geology By his observations he acquired a most extensive knowledge of the structure of the earth's crust, and had learnt much as to the superposition of the various strata, but he propounded a fantastic hypothesis that the whole globe had been taken to pieces at Noah's flood, and that from the resulting "promiscuous mass" the various strata had been deposited in quick succession He bequeathed his collections to the University of Cambridge, where they form the nucleus of the museum which bears his name Woodward was less eminent as a physician than as a geologist, and was evidently a quarrelsome fellow, for he forfeited his Fellowship of the Royal Society because he insulted Sir Hans Sloane, to whom he refused to apologize, and a quarrel with Mead, over the treatment of small pox, led to a passage of arms, in which the sword of Mead but the tongue of Woodward gained the mastery "Take your life," said Mead "Anything but your physic," was the reply The celebrated James Hutton also (1726-1797), who propounded the rival and sounder theory that the moulding of the crust of the earth has been effected gradually, by processes such as are now at work, was a Doctor of Medicine of Leyden but soon abandoned the idea of medical practice

In more recent times the presidential chair of the Geological Society has been occupied by William Babington (1756-1833), physician to Guy's Hospital, and by John Whittaker Hulke (1830-1895), surgeon to the Middlesex Hospital, to whom that Society awarded the highest prize in its gift—the Wollaston medal, founded by our former Fellow, the distinguished chemist and mineralogist of that name

Physics and chemistry are the fundamental sciences upon which physiology and medicine rest, and throughout their history have been closely associated with medicine Galileo Galilei (1564-1642), equally pre-eminent as astronomer and physicist, was a student of medicine when he watched the swing of the lamp in Pisa Cathedral and so discovered the law of the pendulum It was by his pulse that he timed the swing, and the first use which he made of his discovery was to construct an instrument to measure the frequency of its beats The other outstanding physicist of the sixteenth century was a Fellow, and sometime President of this College, William Gilbert (1540-1603), founder of the science of magnetism, who recognized the earth's magnetic properties Of him Dryden wrote

> Gilbert shall live till loadstones cease to draw
> Or British fleets the boundless ocean awe

This College can also claim amongst its Fellows one of the most brilliant men of science whom our country has produced, Thomas Young (1773-1829) whose discoveries in optics, and especially that of the interference of light, went far to establish the undulatory theory He was the first to detect astigmatism, and threw much light upon the mechanism of the eye and on colour vision He was a great linguist also, and by his work on the Rosetta stone aided materially the interpretation of the demotic text thereof Yet he found time to hold the office of physician to St George's Hospital, and to practise medicine

Amongst other great medical physicists I may recall the name of Luigi Galvani (1737-1798), physician and anatomist, who was led to the discovery of current electricity by his investigations of the electric organs of certain fishes, William Charles Wells (1757-1817), who solved the problem of dew, Julius Mayer, physician of Heilbronn to whom is due some of the credit of the determination of the mechanical equivalent of heat, and, in our own time, Hermann von Helmholtz

There was a time toward the end of the seventeenth century, when a dominant position in medical thought was held by a group of so-called iatro-physicists, who influenced by the work of Galileo and his followers, and by the views on physiological problems of two great mathematicians—Descartes (1596-1650) and Borelli (1608-1679)—endeavoured, but with far less competence, to extend them to all physiological processes by the supposed action of forces upon particles of various shape and size Like the iatro-chemists whom they superseded they went too far had their day, and passed In the true line of succession from Borelli on the other hand was James Jurin (1684-1750) a Fellow of this College and physician to Guy's Hospital He was an eminent mathematician and physicist, whose aim it was to make physiology an exact science

With chemistry the links are even closer The alchemist, who sought to prepare the elixir of life, had kindred aims to those of the physician Later in the period of the iatro chemists—followers of Paracelsus, van Helmont and Sylvius—medicine was regarded as a mere branch of chemistry, and physiology as a form of fermentation—curiously like, and yet quite unlike the physiology of to-day A more practical tie between chemistry and medicine was provided by the chemical literature and the study of poisons

It was not until the seventeenth century that chemistry began to be studied as a pure science—in the days of Robert Boyle upon whom as an appropriate recognition Oxford bestowed the degree of Doctor of Medicine and another who, like him were actuated by a desire to learn of the nature and composition of things At Oxford the second holder of the short-lived Vinerian Professorship of Chemistry Edward Hannes (died 1710), was a physician, in the early years of the eighteenth century lectures on chemistry were given by John Freind (1675-1728), a Fellow of this College and Harveian Orator and by several other medical graduates and the first holder of the Aldrichian chair founded in 1803 was John Kidd, afterwards Regius Professor of Medicine

In the earlier days a knowledge of practical chemistry was only to be acquired by students in the shop of apothecaries and as a scientific training this is much to be desired It was Vauquelin (1763-1829) who first organized courses of instruction in his own laboratory in Paris and this method was followed by Thenard (1777-1857) and Gay Lussac (1763-1829) and greatly extended by Liebig (1803-1873) Ernst von Meyer tells that the laboratory of Thomas Thomson (1773-1852) a doctor of medicine of Edinburgh and professor of chemistry in Glasgow was the first to provide practical teaching in Great Britain and it was not until 1845 that the College of Chemistry was established in London, with A W Hofmann as its director

The list of physician chemists is a long one and only a few of the most eminent can be mentioned First may be recalled John Mayow (1643-1675) one of the greatest of them all Mayow stands high on the roll of physiologists as well as of chemists From the point which he reached only one step remained to the complete explanation of respiration and combustion, and but for his too early death the discovery of oxygen would almost certainly have been antedated by a century, and phlogiston would never have been heard of Although a doctor of civil law, Mayow practised medicine at Bath A contemporary of Mayow was our Fellow Thomas Willis (1621-1675), whose work upon the anatomy of the brain is commemorated by the circle

of arteries which bears his name But Willis was also no mean chemist, and to him we owe the discovery of glycosuria Mention must be made of Friedrich Hofmann of Halle (1660-1742), a contemporary of Boerhaave, and of the illustrious Herman Boerhaave (1668-1738) himself, whose treatise on chemistry was long the best textbook of the subject Yet eminent as Boerhaave was as a chemist, it was as a physician and professor of medicine that he was pre-eminent, and it was during his tenure of its chair of physic that Leyden, as a school of medicine, reached its zenith Cullen (1710-1790), Joseph Black (1728-1799) the discoverer of latent heat, and Wohler (1800-1882), who, by his synthesis of urea, bridged the imaginary gap between inorganic and organic compounds, were all members of our profession who made notable contributions to chemical knowledge It was a Professor of Medicine of Halle, Georg Ernst Stahl (1660-1734), who propounded the strange theory of phlogiston, which, like the old man of the sea, clung around the neck of chemistry and obsessed chemists for more than a century This hypothesis, which presented an inverted picture of the truth, like a glove *turned inside* out, was upheld by men of the highest ability, and by none more tenaciously than by such men as Priestley and Scheele, whose own researches were knocking away the props upon which it rested The great Swedish man of science, Berzelius (1779-1848), the foremost chemist of his time, and the inventor of our system of chemical symbols and formulæ, was a doctor, and for a time a professor, of medicine, and it was by his friend Alexander Marcet, a Fellow of this College, and one whose services to biochemistry are not sufficiently remembered, that Berzelius was led to illustrate his lectures by experiments

Two more physician chemists may complete our series—William Hyde Wollaston (1766-1828), a Fellow of this College, a most eminent man of science, whose contributions extend over physiology and pathology, mineralogy, optics, botany, and, above all, chemistry, and William Prout (1785-1850) *Wollaston discovered the malleability of platinum*, a property of great value to chemists and physicists alike, detected cystin in urinary calculi, and invented the camera lucida Prout was one of the founders of biochemistry, and discovered of the hydrochloric acid in the gastric juice His much discussed hypothesis, usually spoken of as "Prout's law," that the atomic weights of other elements are multiples of that of hydrogen, and that hydrogen is the basal substance from which all the other elements are formed, has long served as a potent stimulus to observation and research, and now, in a sense, is coming to its own

In these later days the ties between medicine and chemistry are being knit more closely than ever before Most drugs of recent introduction are, like aspirin, by-products of the gas-works or dye factory, or, like salvarsan and its allies, synthetic products of the laboratory But far more important to the progress of medical knowledge is the light which is being thrown, by the *rapid advance* of biochemistry, upon the problems of metabolism and chemical structure of the body

The history of other sciences tells a like story Almost all the early botanists were medical men, and the chief stimulus to the study of botany was the search for useful drugs This is true even of classical times, the days of Theophrastus and of Dioscorides The early scientists were with few exceptions, such as Archimedes, observers rather than experimenters, and the mere differentiation and naming of genera and species—a branch of science which dates back to the Garden of Eden, and of which that great naturalist, Linnaeus, was a brilliant exponent—afforded an immense field of work Of the *Materia Medica* of Dioscorides Charles Singer writes "Its history has shown it to be one of the most influential botanical treatises ever penned It provided most of the little botanical knowledge that reached the Middle Ages It furnished the chief stimulus to botanical research at the time of the Renaissance" In the fifteenth and following centuries a long line of medical botanists carried on the tradition, including Brunfels (1484-1534), Fuchs (1501-1566), Bock (1498-1554), and Gesner (1516-1565), the most learned naturalist of his century, botanist, zoologist, artist, and professor of Greek, who died of plague whilst faithfully carrying out his duty, as town physician at Zurich, during an epidemic of that malady

But to quote Miall once more "It was generally believed that for every ill that flesh is heir to, Nature had designated some plant as the appropriate cure", and again, "Some believed that Providence had created particular plants to grow in those districts where the diseases which they cure are prevalent" Can it be denied that such tenets are held by millions at the present day?

The high distinction of having initiated the study of vegetable anatomy and physiology, those higher branches of botany, is shared by two men of the seventeenth century, both of whom were physicians One of them, Nehemiah Grew (1641-1712), we may proudly claim as a Fellow of our College He it was who first recognized the sexes of plants and the functions of the stamens, but he himself gives some of the credit for this to our former President, Thomas Millington Of Grew, Hallam wrote that "no man, perhaps, who created a science has carried it farther," but he must share the renown with no less a colleague than Marcello Malpighi (1628-1694), in whose splendid record the study of plant anatomy takes but a minor place A professor of medicine, zoologist, and botanist, founder of the science of embryology, elucidator of the structure of the lung, spleen, and kidney, to Malpighi must be assigned very high rank amongst those who have contributed to the advancement of natural knowledge

On the other side, the greatest of systematic botanists, and founder of our system of nomenclature of plants and animals, Carl Linne, commonly called Linnæus (1707-1778), who has been *said to have* "found botany a chaos and left it a cosmos," was not only a doctor of medicine, but held the office of *physician to the Swedish navy*, and practised in Stockholm for a time

The ties between medicine and zoology are less obvious, for the search for animal drugs can hardly have led anyone to the study of natural history But the transition from human to comparative anatomy is easy, and there have been medical zoologists from early times In the sixteenth century we find the names of Rondelet (1507-1566), Belon (1517-1564), Conrad Gesner once more, and of our own former President Edward Wotton (1492-1555), whose work, *De Differentiis Animalium*, gained for him a European reputation, but is marked rather by erudition than by originality of outlook and observation In the seventeenth century there lived and worked Malpighi, whose chief contribution to zoology was a very complete study of the anatomy of the silkworm, Swammerdam (1637-1680), the Dutch microscopist who first observed the red corpuscles of the blood, and two Fellows of this College—Martin Lister (1638-1712), a man with wide interests and a special bent for the study of marine and freshwater molluscs, and Edward Tyson (1650-1708), the author of monographs upon the chimpanzee, porpoise, opossum, and rattlesnake, and who first described the patterns upon the finger-tips

In recent times we may claim Richard Owen (1804-1892), who was credited with the power of reconstructing an extinct monster from a single bone, and also one whose eloquent words still ring in the ears of some of us, the greatest of medical zoologists, Thomas Henry Huxley (1825-1895)

In reality, botany and zoology are far more closely allied to medicine than our fathers knew Since most maladies are due to invasion of the body by lowly organisms, some animal and some vegetable, we need to approach the study of disease from the standpoint of the invaders which are ever trying to gain a foothold, as well as from that of the tissues which present the role of a culture medium and offer all the resistance in their power In that struggle, which is waged with varying *fortunes*, we physicians are the allies of our patients, whose own tissues play the chief part in the defence In order that our aid should be as efficient as possible we need to know all that can be learned about the nature and habits of the invaders, and of the insects which are the other hosts of some of them, and the study of bacteria is a branch of botany, and that of protozoa of zoology

At the renascence of the medical sciences it was in human anatomy that the first advances were made, and the new anatomy was based upon dissection of the human body The pioneer of this advance was Andreas Vesalius (1514-1564) His work was carried on in Padua Others had dissected the human body before him, in Alexandria and at a later time in Bologna, but the prevalent teaching of anatomy followed the text of Galen, and was based, almost wholly, upon dissections of monkeys and lower animals From Vesalius dates the great period of the medical school of Padua during which there taught there, after Vesalius, Fallopius (1523-1562), Fabricius of Aquapendente (1537-1619), Casserius (1561-1616) and Spigelius (1578-1625)—men whose names are written large upon the organs and tissues of the body To Padua also, despite the difficulties, discomforts, and even dangers of travel in those times came students from afar, and amongst them our own Thomas Linacre John Caius, and William Harvey As Sir Clifford Allbutt justly said, in his notable Harveian Oration delivered a quarter of a century ago "It was in Padua that medicine, long degraded and disguised, was now to prove her lineage as the mother of natural science and the truth of the saying of Hippocrates, that to know the nature of man one must know the nature of all things"

It is not necessary that I should dwell upon the share of medical men in the building up of modern physiology, for from Harvey onwards it has been almost entirely their work, but the day has passed in which physiology was regarded as the handmaid of medicine, and it has taken its proper place as a great independent science

Morbid anatomy, as an adjunct to clinical medicine dates back to the illustrious Morgagni (1682 1772), and so to Padua once more, and is intimately associated with the other great names of Albert von Haller (1708-1777) and Rudolph Virchow Knowledge of the changes, both great and minute, wrought by disease in the organs and tissues is still as essential as ever in the training of the physician and surgeon but morbid anatomy is no longer coextensive with pathology, and the pathology of to-day has entered upon entirely new fields So, as we well know modern pathology has rendered possible the destruction of the agents of disease or of their insect hosts before they reach the body—the triumphant achievements of preventive medicine Moreover, as the result of the study of immunity the bacteriologist is teaching us how to apply Nature's own selective remedies in place of the cruder drugs of earlier days At the same time, the pharmacologists are bringing to the test of scientific method the actions and uses of drugs which have long been used in an empirical way and are able to explain the proved utility of some which owe their introduction into the pharmacopoeia to superstition, or to some grotesque hypothesis

So, from the foundations of chemistry physics and biology, through the lower stories of human anatomy and physiology, of pathology and pharmacology we reach the cities once more, and come back to Hippocrates, to the bedside examination of the sick and injured But now that the foundations have been well and truly laid the clinical medicine of to-day is able to advance on scientific lines and the study of the abnormal can be based upon a knowledge of the normal

All who have taken part in this work, all those heroes of science and medicine whose names have been mentioned may rank as benefactors of this College both those who were its Fellows and those who were not and in commemorating them I may claim to have followed Harvey's first injunction

It is natural, nay inevitable, that as medical science grows and advances some of the workers in the field should elect to follow the path which leads through the laboratory whereas to others the wards make a stronger appeal and thus is taking place a differentiation of medical workers into distinct groups, and there is danger that the fission may go too far The worker in the laboratory wedded to his more exact methods, and distrustful of those with which the clinician is often compelled to be content, is apt to place his bedside colleague in a lower grade of caste than his own He is apt to look too much at the disease and too little at the patient, and to forget how greatly the former is shaped by the reactions and idiosyncrasies of the latter

We all know that a line of treatment resting upon a strictly rational basis may be useless or even harmful in an individual case It would be nothing short of a calamity were all the best scientific workers who enter our profession to be diverted from its clinical side to laboratory investigation for of no walk of life is it more true than of the practice of our art that "the multitude of the wise is the welfare of the world" From the ranks of the clinical workers have been drawn those who in the past have built up medical science It was in the intervals of their clinical practice that such men as Harvey himself William Gilbert, Nehemiah Grew and Thomas Young carried out the researches which have made them for ever famous, and, indeed, clinical medicine is itself essentially scientific

But clinical medicine is an art as well as a science and in the sick room many qualities are called for which are not essential in the laboratory A man who is deeply imbued with the spirit of science may prove a very poor practitioner whereas another, rich in common sense sound knowledge experience, and human sympathy, but to whom abstract science makes little appeal may make a very good one Tact and equanimity courage and restraint patience with fads and sympathy with grief diagnostic skill and manual dexterity are qualities called for in the daily work of the practitioner of medicine or surgery The marvel is that on the scientific side he has accomplished so much not that he has failed to accomplish more It ill becomes his colleagues in the laboratory to think slightingly of him

Medicine indeed embraces a number of constituent sciences and for the attainment of her benefactor aims all her branches need to work together in mutual respect amity and concord to bear in mind Harvey's third injunction to that effect, and his reminder that 'Concordia res parvæ crescunt, discordia magnæ dilabuntur"

Not only are the diagnostic methods which we employ in accord with the demands of science but also by the bedside study of signs and symptoms, and the recognition of the morbid anatomical changes with which they are associated, and also by the observation of the effects of surgical removal or gunshot injury of parts, very notable contributions to physiology have been made

Consider for a moment how our knowledge of the functions of the endocrine glands has been obtained The acumen and care in observation of that splendid clinician Addison threw the first ray of light upon the subject and removed the adrenal glands from the realm of mystery into that of observed fact The gradual accumulation of facts concerning exophthalmic goitre Gull's discovery of myxœdema, Kocher's observations upon cachexia strumipriva, and the effects of thyroid treatment provide a connected story of clinical work in medicine and surgery which led up to a solution of the functions of the thyroid gland and which had its practical outcome in the restoration to health of many sufferers from myxœdema the rescue of many cretins from imbecility and arrest of growth, and the amelioration of the lot of many sufferers from Graves's disease Again, it was the recognition of acromegaly by Pierre Marie, the study of its symptoms and morbid anatomy, the recognition by Erdheim of the syndrome which bears his name and that of the other results of pituitary defect together with the surgical results of Cushing and others which led us to our knowledge of the functions of the hypophysis knowledge which has been greatly extended by the experimental work of Schafer Moreover the inkling we have of the functions of the pineal gland and of the adrenal cortex are mainly derived from clinical observations of patients with tumour or other structural

The chance that an accidental gunshot wound led the French Canadian Alexis St Martin with a gastric fistula, and that the American army surgeon Beaumont under whose care he came, was able to take full advantage of the opportunity so afforded of studying the secretion and action

of the gastric juice, proved of the utmost value in the elucidation of the problems of digestion And in these times many clinical devices, such as test meals, duodenal soundings, and bismuth meals, are throwing yet further light upon physiological as well as pathological processes

The knowledge acquired in recent years of the mechanism of the heart's action is a triumph of scientific clinical medicine This work, which is so closely associated with the names of James Mackenzie, Thomas Lewis, Wenckebach, and Einthoven, has been gained mainly by the study of derangements of the heart's beat in man, by means of the polygraph and electro-cardiograph

But perhaps the most striking examples of all are afforded by the work which has been done upon the nervous system Bouillaud described clinical and pathological physiology as the sister of experimental physiology, and since the middle of the nineteenth century an immense amount of knowledge of the functions of the brain and spinal cord has been acquired by the labours of a band of brilliant investigators, many of whom are our own countrymen, and most were, or are, physicians or surgeons Of these I may mention Hughlings Jackson and David Ferrier, Charles Beevor, Victor Horsley, and Henry Head in this country, and on the Continent, Hitzig, Erb, Westphal, and Pierre Marie By their researches they have furthered the work of the pure physiologists, Sherrington, Gaskell, Langley, Gotch, and others

As regards localization, the first definite steps indicating that the brain does not function as a whole, but as a congeries of organs, was the localization by Broca of the motor speech centre, in 1861, which was based upon the position of the local lesions in fatal cases of aphasia, and Hughlings Jackson's study of convulsions due to cortical lesions These observations served as stimuli and pointed a way which was followed by many other observers, but by a not unfamiliar irony of things the assignment of a speech centre to the convolution of Broca no longer meets with acceptance

Lastly may be cited the work of Head upon the seats of pain due to visceral lesions, and upon epicritic and protopathic sensations It is clear that clinical observation is the royal road to the study of many kinds of sensory disturbance, in which an intelligent subject who can describe his sensations is needed, and in some instances the investigators have controlled their clinical observations by experiments upon themselves

The examples quoted show that, apart from the study of disease in bulk, and by statistical methods, there is also much to be learnt from the detailed study of individual cases

In a letter which Harvey wrote only six weeks before his death, to a Dutch physician who had sent him an unusual specimen, occurs the following passage "It is even so —Nature is nowhere accustomed more openly to display her secret mysteries than in cases where she shows traces of her workings apart from the beaten path, nor is there any better way to advance the proper practice of medicine than to give our minds to the discovery of the usual law of Nature, by careful investigation of cases of rarer forms of disease For it has been found, in almost all things, that what they contain of useful or applicable is hardly perceived unless we are deprived of them, or they become deranged in some way"

These words, as true to-day as when they were written are full of encouragement for those of us for whom the study of Nature's experiments and mistakes has a special attraction The structural malformation, or the hereditary and inborn departure from the normal of metabolism, although unimportant from the practical standpoint, may throw a ray of light into some dark place of embryology or biochemistry, and not a few of the rare maladies, such as chloroma, polycythæmia vera, sulphæmoglobinæmia, and the disease of which Bence-Jones albuminuria is a sign, offer fascinating and still unsolved problems of physiology and pathology

Obviously clinical medicine presents immense fields of scientific research, and those who cultivate them have the added satisfaction of knowing that every advance of medical science will, sooner or later, bring in its train some forward movement of the healing art

So, as we trace the history of natural science down through the centuries, we are confronted at every stage by the influence of medicine upon its progress The desire to alleviate human suffering, to repair the ravages of disease, and to mend the broken part, has served as a powerful stimulus to observation and experimental work It soon became obvious to the would-be healers that to understand disease they must needs understand the healthy workings of the organism and that pure science must precede applied So, as Huxley said, medicine became the foster-mother of the sciences But she became their school mistress also, and attracted to herself men whose scientific abilities would hardly have found an outlet in the other walks of life open to them in the earlier days, and them she not only taught but supplied with means of livelihood whilst they pursued their chosen studies Her part was rather that of a mother than of a foster-mother They, in their turn, repaid her care by laying firm foundations upon which a rational healing art could be built up, and, as we have seen, not a few of them achieved epoch making results in sciences outside the range of medicine

Thus it has come about that immense, and indeed incalculable, as is the debt of medicine to the pure sciences, the debt of science to medicine is hardly if at all less great But these mutual obligations are but internal debts, and the fact that medicine, in its widest sense, is merely a branch of natural science was recognized even by Aristotle, who, at the end of his work on respiration, wrote as follows

> "Our discussion of life and death and kindred topics is now practically complete But health and disease also claim the attention of the scientist and not merely the physician, in so far as an account of their causes is concerned The extent to which these two differ, and investigate diverse provinces must not escape us, since facts show that their inquiries are to a certain extent at least, conterminous For physicians of culture and refinement make some mention of natural science and claim to derive their principles from it, while the most accomplished investigators into nature generally push their studies so far as to conclude with an account of medical principles"

Yet, as Huxley pointed out, "It is a peculiarity of the physical sciences that they are independent in proportion as they are imperfect, and it is only as they advance that the bonds which unite them become apparent" That this is so is far more obvious to-day than when these words were spoken more than forty years ago For as we gain more knowledge innumerable fresh links are brought to light, and the unity of natural science is daily being revealed more clearly as the boundaries of its several branches fade and become indistinct

Few will any longer question the view that physiology is merely the chemistry and physics of living things Physics has captured the structure of the atom, is absorbing chemistry into itself, and is becoming revealed as the great fundamental science, of which all the others are but branches In this great complex of interlocked studies those which we class together under the comprehensive name of medicine have their allotted places, and advance in any one branch forwards the progress of the whole To take our part in this progress is alike our privilege and our obligation as members of the great band of seekers after natural knowledge

Upon the ceiling of the cloister of the University of Padua there are painted "stemmata" which record the sojourn there of many students who were councillors of their several "Nations," and amongst them are two which bear the name of Gulielmus Harveus, Anglus Some of the designs are heraldic, but Harvey's is symbolic, and prophetic I might add, in which, in place of a lifeless staff, the twin serpents are entwined round a lighted candle which throws out beams in all directions What more fitting emblem could have been devised? And yet these stemmata were painted when Harvey's work was scarce begun, and when he was still a member of the student body To search and study out the secrets of Nature by way of experiment" was his own way of life, and it is my duty to obey his injunction, and to exhort our younger brethren in the College to tread the path in which he led the way, and to see to it that in their hands the flame which Harvey lit shall burn as brightly as in Harvey's day

FOUR CASES OF EXOPHTHALMIC GOITRE TREATED WITH INSULIN

A Preliminary Report to the Medical Research Council

BY

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THE idea of treating hyperthyroidism with insulin was founded on the hypothesis of an antagonism between the hormones of the thyroid and the pancreas. Such an hypothesis admits of no definite proof, but the pathological and experimental evidence in its favour seemed to warrant the hope that insulin might prove useful in the treatment of hyperthyroidism and exophthalmic goitre. Since this work was begun, Goffin[1] has published a report of four cases of Graves's disease treated with insulin, three of which were greatly ameliorated. His work may be criticized on the grounds that no estimations of basal metabolism were made and therefore hyperthyroidism was not definitely established, nor is there a record of the conditions of his experiment being carefully controlled. Of the four cases here reported two were successful, and though it is too early to generalize on these few cases, they seem to give an indication of the type of case most likely to benefit from insulin. As each case requires very thorough and prolonged investigation to be of real experimental value and few can be adequately undertaken at a time, the following four cases are recorded now in detail in the hope that others may be tempted to investigate the question.

Evidence of an Antagonism between the Thyroid and the Pancreas

The clinical picture of hyperthyroidism and exophthalmic goitre is well known. The condition is due to an increased production and perhaps a qualitative change in the specific hormone thyroxin, an iodine compound. When this is present in excess, as in exophthalmic goitre, the metabolism as judged by the minimal heat production—the basal metabolic rate as it is called—is markedly increased, katabolism exceeds anabolism, the tissues are rapidly broken down and nitrogenous excretion is increased, weight is lost, the pulse and respiration are rapid, and the temperature often elevated. In brief, thyroxin acts as an excessive draught to the fires of the body. In addition the sympathetic system is over active, and to this the symptoms of nervousness, tremors, and exophthalmos are commonly ascribed. The carbohydrate metabolism is frequently upset and spontaneous glycosuria and hyperglycaemia may occur. More often this appears only on a glucose tolerance test, which shows a high and prolonged blood sugar curve. Usually the fasting blood sugar is normal, and it would seem that the oxidation of carbohydrates is normal and only the glycogenic function of the liver defective at first. This may lead subsequently to a true diabetes mellitus, presumably by prolonged overstrain of the pancreas.

On the other hand, although we do not know of any condition of excessive production of insulin by the body (hyperinsulinism), the effects of insulin are the opposite of thyroxin in several directions. Its total effect on metabolism apart from diabetes is little known, but it would appear to retard metabolism especially when the blood sugar is reduced to a low level (Macleod, 1924). Its effect on the weight of non diabetics is also unknown, although Harrison[2] has failed to fatten rabbits on large doses of insulin. But Garrelon and Santenoise[4] have recently shown its action as a vagotonic agent, apart from its hypoglycaemic effect, but owing to the importance of its therapeutic possibilities this point requires confirmation. Certainly some of the early symptoms of hypoglycaemia—the hunger pains, the occasional colic, and the heavy slow palpitation—are suggestive of parasympathetic vagus stimulation, the opposite of the sympathetic effect of hyperthyroidism. Insulin reduces the blood sugar and undoubtedly restores the glycogenic function, of the liver or a diabetic, or at least enables it to store glycogen. Loewi's adrenaline eye test for dilatation of the pupil may be cited as further evidence, for in Graves's disease it is often positive from increased sympathetic tone and in diabetes (hypoinsulinism) often positive from failure of the pancreatic hormone to counterbalance the sympathetic tonus—or so the theory goes.

Some experimental work on animals is definite in support of a thyroid insulin antagonism. Duchêneau[5] showed that thyroidectomy makes rabbits more sensitive to insulin. Burn and Marks confirmed this, and went further by showing that thyroid feeding makes a thyroidectomized rabbit again more insensitive to insulin. Falta states that—

> extirpation of the thyroid raises the assimilation limits for carbohydrates and reduces the protein metabolism during fasting. Extirpation of the pancreas reduces the assimilation limit for strongly and increases the protein metabolism during fasting. Simultaneous extirpation of the thyroid and pancreas produces indeed a diabetes this however pursues a milder course to the extent that the increase of the protein destruction is not so high and the diminution in weight does not increase so rapidly.

Friedman and Gottesman[3] have recently confirmed this. There is thus much scattered evidence to suggest a correlation between the thyroid and the pancreas, but so far most tends to show that the thyroid is an antagonist to insulin than the other way about.

Plan of Author's Investigation

Spontaneous variations in the clinical condition of a case of Graves's disease are notorious, and the consequent difficulty in estimating the specific effect of any treatment is recognized. In this investigation care has been taken to allow time for the preliminary improvement that rest in hospital usually brings about before starting insulin treatment. The patients were placed on a fixed diet to avoid changes in weight and metabolism due to diet alone, and to make it safe to give large doses of insulin with blood sugar control. Improvement was to be judged by changes in the general condition of the patient, the size of the thyroid, the nervous symptoms, the weight, and the pulse rate, and most important of all the basal metabolic rate. It was intended to estimate the nitrogenous excretion also, but so far this has not been done. All the patients were confined to bed throughout the investigation, and indeed were too ill to be allowed up. The progress of the cases is recorded in the tables which show the weekly change in weight morning and evening, pulse rate, basal metabolic rate, the units of insulin per day, and the respiratory quotient. The modified Thorn sphygmometer was used for the basal, supplied by the Sanborn Company, was used for the basal metabolic estimations, and the air analysed in a Haldane's apparatus. The tests were carried out in normal fasting hours after the last meal although a cup of tea was allowed four hours before the test for the comfort of the patient and seemed to make no difference. As all the patients presented ocular and nervous symptoms, tremor, tachycardia, and dilatation of the heart and enlarged thyroid these are not mentioned again in detail unless of special interest.

CASE I

An unmarried woman aged 23 was admitted to hospital on April 23rd with a history of feeling ill for three months, which had rapidly enlarged and begun to cause trouble during the last six months. She presented all the cardinal symptoms of exophthalmic goitre, the right lobe was more enlarged than the left and caused deviation of the trachea and dysphagia. The apex beat was 4½ in. from the mid-sternal line, and the case was too bad under medical treatment, and in Dr. Fraser's opinion was too bad for a surgical risk for operation. I was asked to take this opportunity of expressing my indebtedness to him for his kindness and especially for help in the examination of the heart. She had no glycosuria and no other symptoms pointing to hyperglycaemia.

Before starting insulin her average [illegible] was 1 [illegible] days and estimated at 500 grams of carbohydrate + 120 grams protein and 150 grams of fat. She was [illegible] on a diet arranged in our measures as near that as could be [illegible] kilogram of body weight and [illegible] 1,500 calories a day before operation and tea. Her progress [illegible] Table I. I do not think that [illegible] the insulin has to be increased [illegible] the injections

injections before and hardly knew they were changed Yet even after four days of insulin she was positive that the neck was less tense and that she could swallow better The insulin was increased in ten days up to 90 units, and four days later she had mild symptoms of hypoglycaemia (blood sugar 0 069 per cent) coinciding with the use of a new batch of insulin The dose was subsequently dropped to 80 units, which caused no inconvenience either locally or generally

At the end of three weeks the tremors and exophthalmos were quite gone and she felt much better and walked better The basal metabolism had dropped, but the pulse rate took longer to follow suit As she felt very hungry (an insulin effect) her diet was raised at the fourth week by 100 grams, after which she increased much more rapidly in weight Her general improvement was marvellous, insulin was discontinued after nine weeks, but her progress was still maintained, and all this during the hottest period of the summer, which is often fatal to these cases The thyroid obviously diminished in tenseness and size, but the measurements were unfortunately not made by the same person throughout the investigation and vary too much to afford any real indication As her weight increased the added fat tended to mask any diminution in the size of the gland, but at the end of her treatment it was still slightly enlarged The heart had returned to the normal position, and the pulse rate remained steady during the last fortnight, when she was allowed to walk about the ward

TABLE I

Weeks *	Weight in lb	Pulse		Basal Metabolic Rate per Cent	Respiratory Quotient	Insulin Units per Day
		Morning	Evening			
7	111	116	122	—	—	0
4	98	120	120	+66	0 74	0
2	95	112	108	—	—	0
1	92	100	120	+58	0 71	0
0	91	114	122	—	—	30 to 50
1	90	100	128	+41	0 79	70 to 80
2	93	96	120	+33	0 82	90
3	95	104	120	+19	0 76	80
4	97	80	120	+14	0 78	80
5	100	88	100	+13	0 87	80
6	105	84	100	+24	0 83	60 to 40
7	112	92	72	+24	0 81	40 to 20
8	117	84	96	+27	0 77	20 to 0
9	119	88	108	+16	0 77	0
10	125	78	100	+13	0 79	0

* Weeks before and after insulin treatment Insulin commenced at 0 This applies to the four tables

CASE II

A married woman, aged 28 was admitted to hospital with a history of swelling in the neck for six months and exophthalmos and extreme nervousness since a miscarriage three months ago The Wassermann reaction was negative She was excessively nervous and restless on admission and the heart was slightly dilated She had glycosuria (2 per cent in the twenty four hour urine), normal fasting blood sugar but hyperglycaemia after meals The variations in the carbohydrate metabolism throughout the experiment are very interesting

After two weeks of rest her basal metabolic rate had become stable, and she was put on a diet of 350 grams of carbohydrate, 120 grams of protein, 150 grams of fat, and 40 units of insulin given in two doses She became sugar free in three days and developed an enormous appetite an effect which insulin produced on three of the four cases Instead of losing weight she gained a pound in the first four days Accordingly 100 grams of carbohydrate were added to her diet in the form of bread and the insulin raised gradually to 100 units a day At the end of the second week she had greatly improved, she had gained 5 lb and the pulse and basal metabolic rates were dropping The fasting blood sugar was normal, and five and a half hours after the morning dose of 50 units was 0 074 per cent She never had any hypoglycaemic symptoms except that she was always very hungry even after a large meal I had now got her into the state at which I was aiming in which I hoped insulin would have its maximal beneficial effect either by the low blood sugars *per se*, by a direct antagonism to an excess of thyroxin, or by its general restraining influence on metabolism It seemed to be having the desired effect but she then received some very worrying domestic news which upset her completely, and she relapsed in every way except that she still continued to gain weight She was kept on the same diet and in spite of 100 units of insulin a day began to pass much sugar in the fourth week, and by the end of the fifth week the blood sugar was 0 179 per cent fasting level and 0 372 per cent two hours after dinner—figures which showed that the condition of the carbohydrate metabolism had become typical of diabetes rather than of hyperthyroidism The interesting question arises whether this was caused by the mental upset by an increased secretion of thyroxin rendering the insulin ineffectual, or by a diminished tolerance accompanying the rise in weight, or by a combination of these factors The carbohydrates were reduced to 350 grams a day in the fifth week, to 250 grams in the sixth and 200 in the seventh week, but in spite of the large dose of 100 units insulin a day, it was not till the eighth week that she became sugar free with normal blood sugars Her source of worry was removed in the sixth week, and after this she rapidly improved and felt so well that she decided to go home In spite of a diet ample in bulk and calories she complained of always feeling hungry, even when the blood sugar estimates were high, an effect probably due to insulin apart from the blood sugar level and noticeable in many diabetics under insulin This, I would suggest, is a vagotonic effect It is interesting to note that insulin raised the respiratory quotient markedly except in the fifth week, when the blood sugars showed her to be in a diabetic condition She never showed any ketosis

On discharge from hospital she declared herself better than she had been for months Her muscular power had greatly improved and the tremors almost disappeared The exophthalmos and the pulse rate were only slightly diminished The circumference of the neck diminished one inch in spite of the fact that the weight increased 26 lb The change in size and pulsation was most noticeable in the left lobe, but there was no sign of any residual adenoma in the right lobe to account for the fact that it hardly diminished at all

The insulin was suddenly discontinued during the last three days as the patient was anxious to leave, and slight glycosuria reappeared It is hoped to continue the investigation of this patient as soon as she can be readmitted to hospital

TABLE II

Weeks	Weight in lb	Pulse		Basal Metabolic Rate per Cent	Respiratory Quotient	Insulin Units per Day
		Morning	Evening			
2	81	120	120	+61	0 74	0
1	79	112	120	+43	0 79	0
0	78	110	120	+41	0 75	40
4 days	79	112	120	+41	0 76	60
1	82	109	100	+30	0 81	60
2	84	90	120	+26	0 81	80 to 100
3	89	130	140	+46	0 85	100
4	93	120	115	+46	0 87	100
5	98	130	140	+35	0 77	100
6	100	122	120	+41	0 80	100
7	103	108	112	+35	0 82	100
8	105	100	120	+24	0 82	100

CASE III

A married woman, aged 50, a severe case with marked tremor and muscular weakness was admitted with a history of swelling in the neck, nervousness, and palpation for two years and exophthalmos for sixteen months A carcinoma of the right breast had been removed four years previously and showed no sign of recurrence A deep seated adenoma could be felt in the right lobe,

TABLE III

Weeks	Weight in lb	Pulse		Basal Metabolic Rate per Cent	Respiratory Quotient	Insulin Units per Day
		Morning	Evening			
2	92	96	104	—	—	0
1	90	100	100	+42	0 77	0
0	89	96	100	+39	0 81	40 to 50
1	92	96	100	—	—	60 to 70
2	95	108	112	+46	0 82	80
3	98	96	104	+57	0 76	90
4	101	100	124	+65	0 74	90
5	104	104	142	+52	0 82	90
6	105	83	120	—	—	90
7	105	84	108	+46	0 77	90
8	105	88	112	+40	0 76	0

which was larger than the left. She had transient glycosuria on normal fasting blood sugar but gave a typical prolonged curve of slight hyperglycaemia with 50 grams of glucose.

Insulin was commenced with 40 units on a diet of 450 grams of carbohydrate, 120 grams of protein and 150 grams of fat—somewhat higher than she had been eating before. At first this proved too much for her but her appetite improved as the insulin was increased to 80 units and she rapidly gained in weight. She did not improve in other respects and after a month the insulin was reduced to 20 units a day. On this the gain in weight was not maintained, perhaps partly because appetite diminished although she was still able to eat a very liberal diet. When insulin was discontinued her general condition was little if at all improved although the tremors were appreciably less. The neck measurement remained unchanged but it must be remembered that she had gained 14 lb. to offset this. The *left lobe* was decidedly diminished and the adenoma in the right lobe was more obvious as the remainder of the lobe seemed to have shrunk. After the insulin was reduced below 40 units she ceased to gain weight but had no recurrence of glycosuria. The pulse and basal metabolic rate fell somewhat probably because she began to sleep better under the influence of bromides.

CASE IV

A married woman aged 47 was admitted on May 28th with a history of dysphagia for eighteen months and noticeable thyroid enlargement and exophthalmos for twelve months. She presented all the symptoms of Graves's disease and a dilated heart was found but from the presence of several nodules in the thyroid she was rather a case of toxic adenoma than of simple exophthalmic goitre. Glycosuria and hyperglycaemia were absent. The Wassermann reaction was weakly positive but this is common in hyperthyroidism and no significance was attached to it.

She was treated with x rays for a month with *no benefit* except that the thyroid became harder. She continued to lose weight as shown in the table. Accordingly she was put on a diet of *350 grams of carbohydrate 120 gram of protein and 150 grams* of fat—approximately what she was eating at the time—and 80 units and later 60 units of insulin were given. She got worse and developed pressure symptoms on the trachea so that the insulin was discontinued after a month. Unlike the other three cases she did not even gain weight appreciably although the loss was checked for a time.

TABLE IV

Weeks	Weight in lb	Pulse		Basal Metabolic Rate per Cent	Respiratory Quotient	Insulin Units per Day
		Morning	Evening			
3	79	96	93	—	—	0
2	76	100	100	+37	0·73	0
1	72	83	122	+34	—	0
0	71	92	93	+35	0·80	40
1	71	100	100	+30	0·82	0 to 60
2	72	93	92	+62	0·75	60
3	73	100	112	+64	0·79	60
4	72	106	120	+53	0·81	60
5	71	104	112	+61	0·77	40 to 0

The possible mode of action of insulin in hyperthyroidism whether by direct chemical or physiological antagonism by primary effect on carbohydrate metabolism or as a vagotonic with a general anabolic action will be discussed in a later publication when more evidence including some animal experiments, has accumulated. But it already seems possible to correlate the results in these four cases with different types of hyperthyroidism. Two cases were successful one strikingly so, and these were uncomplicated though severe cases of Graves's disease in young women. In one the carbohydrate metabolism was never abnormal so that insulin did not act primarily by correcting this. The two unsuccessful cases were older women and the disease of longer standing. One of them Case III was definitely a toxic adenoma (Graves's syndrome associated with adenoma of the thyroid), and though he gained in weight and felt better she did not fundamentally improve. Case IV, a complete failure, was admitted as a case of toxic adenoma but *when I examined her after the thyroid had* become hard, following a course of x rays I could not be sure of this. Therefore it would appear that hyperthyroidism arising from an adenomatous condition of the thyroid is not likely to benefit from insulin, and that the most hopeful are simple cases of Graves's disease. Indeed, on *a priori* grounds we could hardly expect insulin to influence an adenomatous condition or the thyroid to which the general metabolic disturbance seems to be secondary.

Nothing definite can be said regarding the dose of insulin. On theoretical grounds big doses would seem more likely to succeed and certainly small doses were no more effective than large. In Case III Griffin however reports improvement in his cases with 10 units a day and never gave more than 20.

The rise in the respiratory quotient under insulin was marked in the two successful cases but indifferent or absent in the failures. Such a rise may prove to indicate those for whom the treatment is likely to be successful in any case. It can hardly be due to the direct action of additional circulating insulin as the estimations were made eight hours after the last dose of insulin. It would seem to *indicate a* check on the former excessive katabolism of protein accompanied by improved glycogenic function of the liver or at least a storage of carbohydrate under the influence of insulin which remains available for oxidation even when the insulin effect wears off as occurs in diabetes.

The gain in weight was striking in three of the cases and in the first two was not due to any change in diet because they were kept on the same diet before and after the commencement of insulin and the gain in weight was evident before the diet was increased in response to the appetite *created by insulin. This suggests the use of insulin* in the treatment of undernutrition and emaciation in cases other than diabetes and hyperthyroidism. It is probable that insulin will acquire a much wider therapeutic field with the progress of time.

SUMMARY

1 Four severe cases of Graves's disease with hyperthyroidism were treated with large doses of insulin 60 to 100 units a day. The insulin was well borne and caused no inconvenience.

2 Two of the cases were greatly improved *one being* practically normal on discharge from hospital. In both the disease was uncomplicated and of less than a year's duration in women under 30. It seems unlikely that the *improvement was spontaneous or caused by any factor* other than insulin.

3 The two others were not essentially benefited although one gained much in weight and felt better. These were cases of toxic adenoma of the thyroid rather than of simple Graves's disease occurring in women of about 50 and of over a year's duration.

4 The treatment was carried on under strict standardised condition of diet and close blood sugar control but should its value become established these should hardly be necessary.

5 The subject is still in its experimental stage and these four cases are recorded now mainly in the hope that other workers may investigate its possibilities.

I wish to thank the physicians of King's College Hospital for permission to observe these cases the sister for her careful dietetic control the house-physician for their close co-operation and Mr. L. Hewer for many of the blood sugar estimations.

Present
1 Griffin J. Jesuthasan J. April L. Lister. Cramer S. Price P. [illegible]
Forbes Ieslie S. and Bruce J. Journal of Physiology [illegible]
[illegible] Harrison C. [illegible]
Garrow and Isaacs [illegible]
E. J. Diabetes Mellitus [illegible]
de Bruyne I. 21 [illegible] Burn J. H. and Marks H. P. [illegible]
Scott [illegible] Watts E. [illegible]
Journal of Physiology [illegible]

THE seventh Congress of French-speaking Medical Practitioners in North America took place in Montreal under the presidency of Professor Vallée of Laval University. The French Government was represented by Professor [illegible] and Dr. Pradeau Deputies of Lyons and Professor [illegible] of Bordeaux from whom letters were read. Papers were read on cancer, tuberculosis and mortality.

British Medical Association.

PROCEEDINGS OF SECTIONS AT THE ANNUAL MEETING, BRADFORD, 1924

SECTION OF OPHTHALMOLOGY.

A Maitland Ramsay, M D, F R F P S, President

DISCUSSION ON THE MICROSCOPY OF THE LIVING EYE.

OPENING PAPERS

I.—BASIL GRAVES, *M C*,

Curator, the Royal Westminster Ophthalmic Hospital, British Medical Association Science Research Scholar

THE PHYSIOLOGICAL ASPECT

It gives me great pleasure that I have been asked to contribute to the opening of this discussion The restricting of my contribution to the subject of the living eyes which are normal has, however, rather taxed me to present to you, in the short time available, an aspect of the subject which shall be both concise and interesting A full understanding of the normal effects is certainly a very necessary basis for the appreciation of what is pathological, but to summarize the various features seen in the different regions, from cornea and sclera right back to the retina and optic disc, would not be possible now, nor do I want to attempt it, because by now many of these features have come to be commonplace

The comprehension of the diverse features met with in the microscopy of both normal and pathological living eyes reverts always to a proper understanding of principles of illumination, with particular reference to the subject of optical sections, using this term in its widest sense At the annual congress of the Ophthalmological Society of the United Kingdom in Glasgow last May I brought forward certain clinical points in connexion with the optical section in the normal cornea I propose now to take this opportunity to present only two features—one relating to the optical section of the normal aqueous fluid, the other to the optical section of the normal lens—to which, as far as I am aware, attention has not yet been drawn

It is customary to regard the normal aqueous fluid as being non-relucent That this is not so I think it will be possible, to-morrow, to demonstrate practically to those to whom it may be of interest Mr J E Barnard, F R S, for the assistance of whose opinions I have had occasion to be much indebted, tells me that he would not expect any body fluid to be optically empty, even the cerebro-spinal fluid is not so Now I do not raise this point as a mere quibble, it is in my opinion a rather important point to recognize in the practical technique of this work—one which, as the cumulative evidence of various trained observers comes to hand, will possibly have an interesting clinical significance in relation to some varieties of intra-ocular disease

Owing to the reluctancy of the cornea and lens, the visibility of the ribbon-like slit-beam, as it traverses these two structures, is relatively high Between the planes of its passage through these the path of the beam, through the intervening normal aqueous fluid, is generally said not to be visible, this teaching arises from lack of suitable use of the facilities at our disposal The normal aqueous fluid, though admittedly only very slightly so, is reluctant If the beam is to be seen traversing the normal aqueous fluid it is necessary that the field of observation shall include both an area of the fluid which is transmitting the beam, and, for contrast, above and below this, an area of fluid which is unilluminated by the passage of the beam The observation of an area of the aqueous fluid so illuminated by the ribbon-like beam that it more than covers the diameter of the field of observation, does not permit of visibility of the beam when the fluid is normal (See Fig 1, in which *c* represents cornea, *a* aqueous, *l* lens, and the dotted circle the limit of the field of observation) Only when this fluid is very abnormal, so that from gross alteration of its colloid physical and chemical constituents it becomes relatively highly reluctant can the passage of the beam be appreciated under these conditions of observation, and such pathological pictures as that of Fig 2* are already forthcoming commonly in

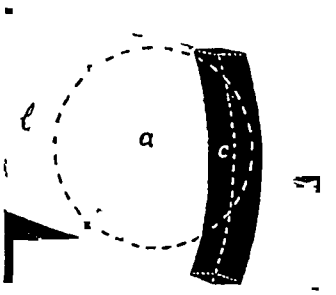
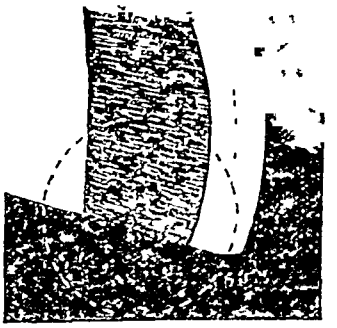


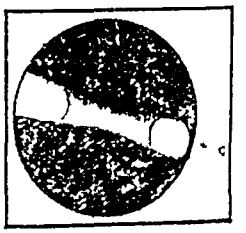
Fig 1


Fig 2

relation to uveitis in its severe—for example, sympathizing—forms

To make the optical loading of the aqueous fluid more readily appreciable in its earlier and finer pathological stages the field of observation may be arranged according to the plan of Fig 3, where the fluid is illuminated in one half—top or bottom—of the visual field, whilst no light is being transmitted in the fluid occupying the remaining half of the field Now from the contrast thus afforded pathological reluctancy of the aqueous fluid will be appreciated in finer degrees than is possible under the conditions of illumination of Fig 1, but even so, very fine degrees of increased reluctancy will not be appreciated thus, for more than one reason first, a relatively large area of cornea and of, say, lens within the visual field is brightly illuminated, and this tends to impair the observer's dark adaptation so necessary for his recognition of very fine contrasts, secondly, it is possible that the total amount of light thrown into the observed eye, when the slit-beam is used, is such that the amount of reflection, diffuse or otherwise, taking place from the medium, be it iris or lens, behind the aqueous fluid, to some extent causes an illumination of that part of the fluid which is not transmitting the entering beam I then made observations on the


Fig 3


Fig 4

aqueous fluid by cutting down the vertical diameter of the slit-beam to a very small length, and finally I came to use a round beam of very small diameter This is attained, when the ordinary pattern of the Zeiss make of nitra slit-lamp is used, by means of either the 0 5 or the 1 0 mm dot diaphragm With the arc slit-lamp it is generally preferable to use the smaller of these two dot-apertures

Now, using the ordinary nitra slit-lamp and the 1 mm dot-aperture, the observer may see, as shown diagrammatically in Fig 4,† the path of the beam traversing the normal aqueous fluid if he attends to these points, some of which are better demonstrated than described It is of which are better demonstrated than described It is of that the filament of the nitra-lamp should be loaded to the maximum of its current-capacity, this generally not

* The long faint streaks in the beam represent shadow streaks which were due to irregularities of surface contour caused by the presentation of a mydriatic in thick oily solution

† In Fig 4 the visibility of the aqueous beam is exaggerated

sita es alterin_ the set stop, inside the adjustable resistance, from the position it is in when sent out by the makers Only a few seconds are necessary for the observer s dark-adaptation, but the room should be really dark The observer should choose an angle of illumination which will not allow the specular reflection from the corneal epithelium to strike the microscope objective lenses, even though the reflected beam is not so directed as to pass along the axis of either of the objective tubes the beam should be accurately focused in the middle depth of the aqueous fluid — that is midway between cornea and anterior lens capsule the beam having traversed the aqueous fluid, should not strike the iris—a not uncommon error which gives rise to much diffuse reflection within the anterior chamber—but should pass on through the pupil into the lens, for which reason it is easier to observe the relucency of the normal aqueous fluid when the pupil of the observed eye is dilated The observer, using preferably oculars No 2 and objective a2, should see the small round corneal beam just on the one side of his chosen field and the beam as it enters the lens on the other side, the illumination being focused midway between these two levels, he will then bring the microscope to a focus on the illuminated aqueous fluid by first focusing on the illuminated corneal patch or on the illuminated anterior lens-capsule, then deliberately racking the microscope a little forwards or backwards as the case may be, to an extent which is really only guessed at out which becomes automatically accurate with practice The necessary adjustments thus being made, the observer need attend to only one or two points in order easily to see the beam traversing the aqueous fluid he should avoid certain fallacies due to reflections, he should make the slit lamp arm oscillate slowly up and down so as to give movement to this faint beam which thereby will be seen the more easily, and finally, at least when a beginner he should take observation with his own more appreciative perimacular field by directing his gaze deliberately a little above or below the level at which he seeks to see the beam I myself from long practice feel that given use of the same instruments under the same conditions, I can judge of a very slight range within which the relucency of the normal aqueous fluid, though slightly variable may be said to be normal All this might be no more than a scientific curiosity were it not for the fact that slight pathological increase in the relucency of the aqueous fluid occur in various abnormal conditions, an account of which has not, so far as I am aware, yet been forthcoming I have long made this a subject of clinical observation, and I am still doing so, for there are many points in connexion with it which I wish yet to find out, concerning not only the conditions in which this pathological increase of relucency occurs, but particularly also the incipient stages in such diseases at which this sign first manifests itself I touch on this aspect of the abnormal only to emphasize how desirable it is clinically for the observer so to have trained himself that he can appreciate the range within which the relucency of the aqueous fluid may be said to be normal

It should be understood that when speaking of this visibility of the path in the normal aqueous fluid I speak of a homogeneous "flare"—the 'outstanding beam" The brightness of this flare is variably increased in various pathological conditions Writings on pathological conditions show lack of proper distinction between the visibility component due to the flare and that due to discrete particles which are visible as such both factors can contribute to visibility of the path in pathological states but commonly the former exists alone When the arc slit-lamp is used occasional isolated illuminated particles may be seen to cross the beam track even in an eye which may be presumed to be normal, I believe that such particles when very few and when unaccompanied by any increase in the visibility of the normal homogeneous flare component are not necessarily indicative of past or present intraocular trouble With certain reservations, the discrete particles are generally seen better when illuminated by the ribbon-like slit beam than by the pencil-like dot-beam I might here add that as Mr J E Barnard informs me, the visibility, when due to particles of an order of size and distance of separation which is below the lowest limit of admitting of resolution is due to scattering of light but that in the case of particles which are visible as such their visibility is due to diffraction

I will now refer to the second point which I wish to introduce to-day A problem which interested me early in the study of the optical section of the lens was this any observer may notice, early in his experience that there is an inconstant feature of the optical section of the posterior, and sometimes anterior, lens-cortex—namely that a restricted portion of this will often differ from the rest of the lens section by having an almost metallic lustre This may be seen at its best in many a senile cortex but you may also sometimes see it though it is less delicate and elusive, in the cortex of some young people Not only does the extent to which this phenomenon is seen vary in different individuals but its manifestation varies in the same individual according to the optical conditions of adjustment of the slit-lamp apparatus Let Fig 5 represent the optical section in the posterior part of a lens let c be the capsular line and r the subcapsular or reduplication line the posterior cortex being represented by an area in front of r At times and in certain individuals you will find that a variably restricted area which for diagrammatic purposes we may represent by s in the optical section, comes to assume a metallic lustre in colour sometimes faint and golden sometimes rich and copper-bronze I need not go into all the explanations by which early I tried to satisfy myself as to what this meant I first wondered if it could be due to some phenomenon of scattering by structural elements in the cortex of the light which, after being specularly reflected from the posterior capsule was passing on its return journey forward, but this clearly was not the case, because in the first place the phenomenon somewhat modified is seen in the anterior cortex which in most lenses is not bounded posteriorly by any surface of high specularly-reflecting quality as is the posterior cortex by the posterior capsule and moreover, were this the explanation this appearance would be situated within the optical section itself only when the incident axis of illumination corresponded with the normal to the curve of the posterior capsule

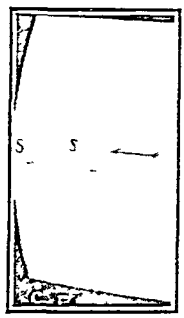


Fig 5.

In one of the first cases in which I noticed this appearance in a young person it took the form of quite a narrow vertically disposed band, and, as another explanation I wondered if its plane might be transposed transversely to the plane of the sectional beam and whether it might be due to a single additional reflecting surface situated just in front of the line r for when this area s chances to be narrow it is by no means easy, for one not knowing its proper explanation to say whether the lustrous area is disposed transversely or anteroposteriorly especially because its appearance is modified by the chosen angle of observation and therefore its stereoscopic appreciation is inevitably difficult when the observer is using a binocular microscope whose objectives are disposed at different respective angles

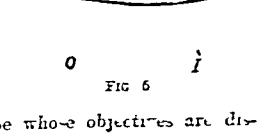


Fig 6

I next found that this appearance reveals itself near to its greatest intensity when the posterior capsule behind r is being viewed along the axis of its specular reflection, in Fig 5 s' represents the small area of the posterior capsule which is being viewed thus—that is it is being viewed by ordinary direct illumination (Fig 6), with the added necessary condition that the chosen axis of observation through the microscope makes with the normal a plane angle equal to that made by the incident axis of direct illumination Furthermore, the metallic cortical lustre disappears

when the relation of these angles differs widely from that necessary for seeing the posterior capsule in its specular reflex. This provided the key to the explanation of this manifestation in the optical section of the cortex. It is impossible now to go into the many aspects of this phenomenon, all of which are accordant with an explanation that it results from a summation of successive multiple specular reflections of a sort which, under the conditions I have named, occur from the stratified or laminated structural elements of which the cortex is built. This conception is represented purely diagrammatically in Fig. 6A. For example, the appearance is seen in general over an area of the beam which, though restricted in its extent, is nevertheless vertically much wider than would correspond with the size of the particular area of the posterior capsule behind it, which for the moment is seen in the axis of its specular reflection, this is because the cortical laminations are not so regular in their curved configuration, and it may be also that if approximately regular they differ slightly in the radius of their curvature from that of the capsule. Again, the manifestation disappears from any given region of the observed lens as this is tilted by making the patient move his gaze up or down a given vertical line, the lustrous area remaining, so to speak, in the "beam-region," but changing its disposition by a movement which is modified by, but does not accompany, the apparent direction of motion of the cortex. I may illustrate this by the three Figs. 7A, 7B, 7C. It is assumed that the slit-lamp arm and the axis of the observation system are in a horizontal plane, and that, without change in the angular disposition of these to the normal in the horizontal plane, Fig. 7A represents the appearance when the eye is looking upwards, 7B when it is looking horizontally, and 7C when it is looking downwards. In general, in a suitable case, more especially in one with a senile cortex, the specular manifestations X, X' might be seen to change their distribution and their position according to the vertical direction of the eye, as shown in these figures, in which X and X' are respectively in the anterior and posterior cortex, C and C' representing the arcs of the anterior and posterior capsule respectively, which, under the conditions of the moment, is seen in the approximate axis of specular reflection. Space does not permit me on this occasion to give simple diagrams explaining this, but its explanation—as that of other features, as well as differences between the manifestation as seen in the anterior and posterior cortex respectively, due partly to the laminations in the one being convex and in the other concave, and partly to a difference in their radius of curvature—and also that of certain changes which may be seen as age advances, may be based on the assumption of a summated specular manifestation occurring along the course of the sectional beam as the result of multiple lamination of structure. I have reason to suppose that from the very even of adolescence changes may occur in the character of the optical section of the cortex of some individuals which explanation can be understood only on the basis of this view.

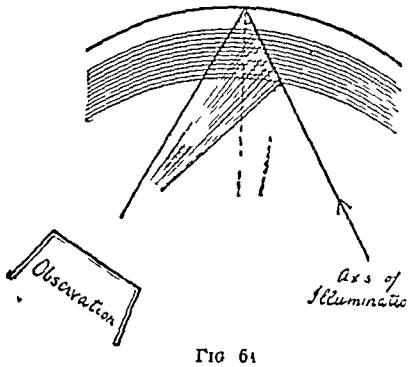
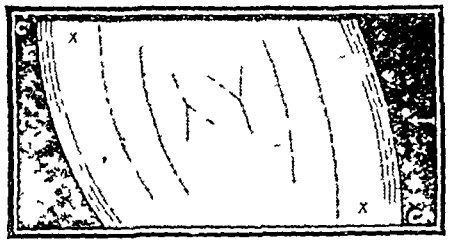
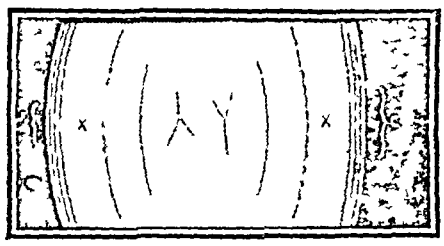
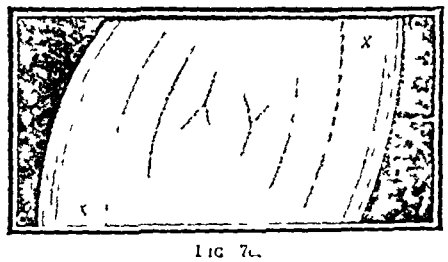


FIG. 6A.


FIG. 7A.


FIG. 7B.


FIG. 7C.

I think that prolonged observations by more than one observer will be required if it is to be ascertained why this manifestation should differ as it does in different individuals. Furthermore, I am not sure that prolonged study of many individuals may not lead to a recognition of presenile cataractous changes which might have some bearing on the prognosis as to the occurrence of senile cataract.

I would like to refer, in conclusion, to my indebtedness for the facilities which have been afforded me when pursuing this work at the Royal London Ophthalmic Hospital and at the Royal Westminster Ophthalmic Hospital.

H. T. HARRISON BUTLER, M.A., M.D. OXON.,
Surgeon, Birmingham and Midland Eye Hospital, Honorary Ophthalmic Surgeon to the Coventry and Leamington General Hospital

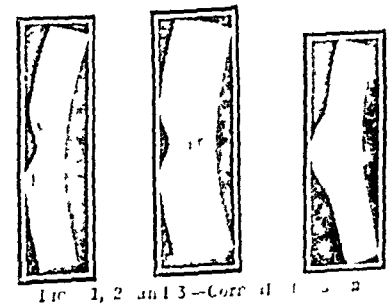
THE PATHOLOGICAL ASPECT

MR. BASIL GRAVES has opened our discussion with a lucid account of some appearances of the eye as seen with the Czapski binocular microscope under the illumination of Gullstrand's slit-lamp. I thank you for asking me to continue the discussion from the pathological side.

It is obviously impossible for me in the short time at my disposal to do more than touch the fringe of this vast subject, and I propose to allude only to one or two abnormal conditions in each section of the eye—the cornea, anterior chamber, iris, lens, and vitreous.

CORNEA

The depth and extent of a corneal ulcer can be accurately measured by using a micrometer eye-piece, but from the clinical standpoint it can be estimated by mere inspection of the optical section of the cornea. If stained with fluorescein we can see that the green coloration passes along the lymph spaces and penetrates deeply into the substance of the cornea. This will explain how easy it is for septic material to spread in the tissues of the cornea and why a septic ulcer so often gives rise to exclusion with the formation of hypopyon. Figs. 1 and 2 show the appearance of a corneal ulcer, and Fig. 3 the heaping up of tissue that has followed the healing of an ulcer.


FIG. 1, 2 and 3.—Corneal ulcers. 1 and 2.

Superficial keratitis takes many and varied forms. It is probable that the slit-lamp will help us to make a more exact and scientific classification, certain it is that the appearances suggest the existence of many distinct pathological states hitherto roughly grouped together under the comprehensive terms "superficial keratitis," "dystrophia corneæ," or "bullous keratitis." On the other hand, some of the varieties labelled with definite names, such as "alphabet keratitis," prove not to be pathological entities. The essential point of distinction is its location. The slit-lamp with its accurate localization enables us to decide that the abnormal state is wholly upon or external to Bowman's membrane, that it is located in the corneal stroma, but in its outermost lamellæ, that it is interstitial, or that it is confined wholly to the deeper tissues

of the cornea, perhaps affecting the endothelium alone Fig 4 is an example of a perfectly superficial keratitis a case that caused me considerable anxiety till the slit lamp examination showed that the whole process was external to Bowman's membrane

Herpes ophthalmica may cause a characteristic lesion lying in the superficial layers of the stroma just inside Bowman's membrane Fig 6 shows the appearance of the cornea examined with loupe and the focal illumination of a half-watt lamp The view with the Czapski microscope is seen in Fig 5 The difference is striking and is a good example of the value of the slit lamp Fig 7 portrays a late stage in a severe example of corneal inflammation in connexion with herpes ophthalmica The whole surface of the cornea is covered with plate like calcified deposits



Fig —Keratitis epithelialis



Fig 5 and 6—Herpes of cornea

Keratitis Disciformis—Fig 8 was drawn from a case at any rate simulating this disease There was a history of a trivial accident to the cornea The section (Fig 8a) shows that there is a fibrosed disc situated superficially in the substantia propria and that the whole thickness of the cornea is vascularized Here again the slit-lamp gave useful information, for examination with the loupe led to the erroneous conclusion that the vessels were in the main at any rate superficial



Fig 7—Calcification of cornea after herpes.



Fig 8—Discoid keratitis following injury



Fig 8a—Fig 8 seen in optical section

Central Keratitis—This affection, which is said to be tuberculous in nature, may leave permanent radial folding of Descemet's membrane and occasionally of Bowman's

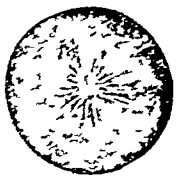


Fig 9—Radial folds of Descemet's membrane

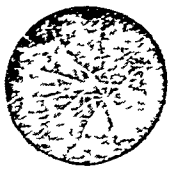


Fig 10—Folding of Bowman's and Descemet's membrane.

Fig 9 shows folds of Descemet's membrane of the radial type, and Fig 10 folds of both membranes

Folding of Descemet's membrane can be seen with the slit lamp in most inflammatory states of the anterior segment of the eye and are almost constant after operation upon the cornea They are invariable present in interstitial keratitis Typical examples are seen in Fig 11 They followed a preliminary iridectomy Two days later no trace of folding could be seen We must make a distinction between true and false folds, the latter being in reality tears in the membrane

Interstitial Keratitis—A description of this disease as seen by the slit-lamp would demand a lecture to itself I must therefore confine my remarks to two points alone In a late case which we might regard as cured leaving the usual rests or shades of a past vascularization visible with the loupe by oblique illumination, we may find that the vessels are not as imagined, functionless and atrophied, but that they still carry an active blood stream—that the disease is in fact by no means at an end Here again the slit-lamp gives information not previously at our disposal It is true that in many of these cases a correct use of loupe and illumination will permit us to see the flowing blood without using the slit lamp, but there are others in which the vessels are so tenuous that the blood stream can be detected only with the Czapski microscope When we examine the corneal prism in this type of case a parenchymatous keratitis that has run its course we note that it is quite difficult to get a clear sharp image of the epithelial surface but that the endothelial is easy to see This is due to the fact that the posterior surface of the cornea is coloured and reflects light better than the corneal surface This appearance is quite characteristic of the disease

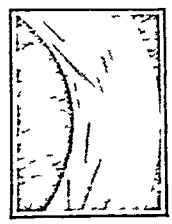


Fig 11—Folds in Descemet's membrane after operation.

Anterior Chamber

The examination of the anterior chamber with the slit-lamp is of the very highest importance with reference to inflammatory states of the anterior segment of the eye Keratic precipitates ("K P") can be detected when so small that they are apt to be overlooked by the older methods and under high magnification much can be learned about their nature and significance We are liable to regard flakes of absorbing cortex upon the surface of the cornea as mutton fat "K P" and to become unduly alarmed Black K P is very common after operation involving the iris and I regard it as perfectly harmless It peppers the anterior surface of the iris and settles down upon the lower two-thirds of the cornea After a perforating wound of an iris and especially of a brown iris the aqueous is full of particles of pigment which may be found for several days The detection of floating particles in the aqueous is of supreme importance We use the pinhole which forms the ribbon of the slit-lamp in a pencil This beam illuminates the cornea and lens but the anterior chamber should remain dark If the aqueous is albuminous the beam becomes visible in the anterior chamber and the brightness of this beam is a measure of the turbidity of the aqueous Fig 12 and 13 show the beam passing across the normal and the turbid aqueous In the aqueous contains formed particles these flash across the beam as scintillating specks Their motion is due to convection currents in the aqueous caused by difference in temperature of the iris and cornea The detection of cellular elements in the

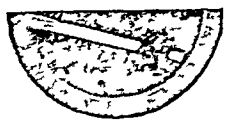


Fig 12.—Normal aqueous.



Fig 13—Albuminous aqueous.



Fig 14—Particles seen in beam across anterior chamber

(Owing to the small size of the reproduction these particles are not well defined.)

aqueous may be the first sign of a sympathizing ophthalmitis and can give timely warning of this formidable condition (Fig 14)

Iris

The great advantage of the slit-lamp in the examination of the iris is that in addition to giving a highly magnified *stereoscopic picture* of the superficial area it enables us to illuminate from behind and see the iris in lens-light If there is any atrophy of the retinal pigmentary layer or holes in this tissue the light shines through and the condition is made evident

Lens

The various forms of cataract can be localized and minutely examined with the slit-lamp and Czapski microscope It is often possible as the result of this localization to decide at what period of life an opacity developed

Each region of the lens is liable to its own type of cataract Immediately under the capsule we find vacuoles and lamellar cleavage The cortex shows cavities full of fluid (the so-called "fluid-clefts") and areas of degenerated fibres (myelin clumps) The central nuclei are liable in old age to sclerosis and to pigmentation The anterior part becomes dark yellow, and, as we pass back, the yellow gives place to a burnt-sienna brown, which in cataracta nigra becomes almost black in the posterior part of the lens The *infantile and the embryonic nuclei* are the seat of congenital cataracts and of lamellar cataracts Many so classed are not really lamellar, but in the familial type affect the whole of the embryonic nucleus Such a cataract seen in the beam of the slit-lamp looks like a lump of crystalline ice placed in the exact centre of the lens In lamellar cataract we very frequently find that there is, in addition to the main central wreath of scintillating *particles*, one or more peripheral rings of condensed lens tissue, showing that the disturbance of nutrition has been periodic

Capsular cataracts of varying types are common, and cannot be dated chronologically, for the capsule has covered each nucleus in turn Many deep-seated axially placed cataracts may originally have had a subcapsular origin As the capsule during the growth of the lens is constantly changing its situation with reference to the nuclei it leaves subcapsular opacities behind it The lens sutures are apt to be the seat of opacities, and this is especially true of the primary embryonic sutures, the anterior and posterior "Y" Coronal cataract, or cataracta coerulea punctata, is generally regarded as a congenital type This cannot be the case, for its situation is in the adult nucleus which has *not* developed at birth I have myself observed this form of punctate cataract appear in a previously clear lens, and I have noted a rapid deterioration of sight Cataracta *coerulea* is neither congenital nor is it stationary It develops during adolescence

The slit-lamp has furnished so much information regarding the anatomy and the pathology of the lens that all textbooks are obsolete in this connexion From the operative standpoint the slit-lamp is indispensable, for it gives an accurate knowledge of the nature of the cataract that we propose to extract or needle, and allows us to detect the earliest signs of inflammation both before and *after operation* I should not now dream of operating upon a cataract till I had made a minute examination with the Czapski microscope, and I have already refused to extract a lens that I should have operated upon had the slit-lamp not forewarned me of a chronic cyclitis I was able to decide that one eye was fit for operation, the *other* undesirable

Vitreous

The appearances of the vitreous are varied and often very beautiful It is hard to realize that a normal perfectly transparent vitreous is actually full of massive shreds of fibrillar consistence and innumerable opacities It is difficult to explain its physiological from the pathological, unless we assume it is maintained by constant application and by experience like appearances can be shown

lamp must be compared with what is detected with the ophthalmoscope with the loupe and condensing lens It is not generally known that the vitreous structure can often be made out with such simple apparatus as a half-watt lamp, a loupe, and a condensing lens

Retina

The examination of the retina with the slit-lamp calls for special arrangements and a high degree of technical skill It is necessary to use an arc lamp instead of the convenient nitra lamp, a contact-glass to abolish the corneal curvature, and either to employ a single tube microscope, *or to hang the slit-lamp* above the Czapski, so that the axis of the *slit-lamp* beam may make a very small angle with the axis of the microscope I cannot regard this *branch of the work as coming within the scope of ordinary* clinical work, but upon occasions it may afford valuable information about an intraocular tumour Those interested in the subject should read Koeppe's book

In conclusion, there is in my mind no doubt of the value of the slit-lamp I consider that one who has made himself master of the technique and has given enough time to the subject has raised himself to a plane of ophthalmology higher than he previously occupied

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III.—CHARLES B GOULDEN, MB, FRCS,

Ophthalmic Surgeon, London Hospital

THE best result by focal illumination can be obtained only when the illuminating source is *brought to a focus upon* the object to be examined *The advantage of this* is that *we only illuminate what we wish to examine, excluding light which might fall upon surrounding structures* in other words, we have our object brilliantly illuminated and seen in contrast with surrounding structures, which are in the dark The source of light must be uniform, strictly limited, with a high specific intensity, and a sharp image of this source must be obtained

All these conditions are found in the slit-lamp We use the slit-lamp with the source of light and the various focusing apparatus, arranged after what is called "the method of Vogt" The source of light, which is a small tungsten lamp, is placed a little behind the principal focus of the lens contained in the condensing chamber By this means the filament of the lamp is brought to a focus upon the focusing lens The slit, which is placed a small distance in front of the condensing lens, becomes *uniformly* filled with light and acts as the source of illumination The beam of light, therefore, contains in it two systems one, the image of the *filament which is brought to a focus upon* the focusing lens, and the other the light which is contained in the slit and which will be brought to a focus by the focusing lens in whatever position we *choose*

I do not wish to speak this afternoon of the slit-lamp as used merely as a method of focal illumination, but of the behaviour of the cornea and lens as mirrors when the image of the slit is focused upon them or in their neighbourhood The anterior surface of the cornea, and also its posterior surface, act as *convex* mirrors The anterior surface of the lens also acts as a convex mirror, but its posterior surface acts as a concave *mirror*

All mirrors show three methods of reflection (1) Light reflected regularly will produce an image of a luminous source at the point where the rays meet This may be either a real image or a virtual image—*when the rays* appears to come from a point behind the *mirror* Such an image will be seen only *when the eye is placed in the path* of the reflected rays (2) *Light is also* reflected diffusely in the same way as light is reflected from any object that is visible to us it is, in fact, the light reflected by the mirror so that the mirror may be seen by anyone in the neighbourhood (3) There is another method by which rays are reflected which gives rise to what is called *specular* reflection You are all acquainted with the phenomenon made by a blackboard which prevents your seeing what is written upon it This is an example of specular reflection

The Reflecting Surface of the Eye

Reflection will occur at each zone or discontinuity of surfaces where the index refracting suddenly alters These are

1 Anterior surface of the cornea
2 Posterior surface of the cornea
3 Anterior surface of the lens
4 Anterior surface of the adult nucleus
5 Anterior surface of the embryonic nucleus
6 Posterior surface of the embryonic nucleus
7 Posterior surface of the adult nucleus
8 Posterior surface of the lens

Diffuse Reflection

As the beam of light passes through the various media of the eye it illuminates each surface as well as the substance of the medium itself At each place where the beam strikes a surface a band of light is produced, owing to the peculiar ribbon shape of the beam In this way circumscribed portions of surfaces and media are illuminated and so become visible by diffuse reflected light to anyone in the neighbourhood

Regular Reflection

The more polished a surface, and the greater the difference between the refractive indices of the bounding media, the more light it reflects the greater the angle of incidence the greater the amount of light reflected The least amount of light is reflected when the incidence is normal to the surface

The Formation of Images and the Inter or Surface of the Cornea

The cornea is a convex mirror having a radius of curvature of about 8 mm , the principal focus is therefore 4 mm behind it We have three possible relations between the image of the slit and the cornea

1 The surface of the cornea may be at the focus of the beam of light In this condition the image of the slit coincides with the band of light which is formed by diffuse reflection

2. The surface of the cornea may be situated in the post focal part of the beam, the rays therefore when they strike the cornea are divergent The image of the slit is therefore formed behind the cornea between it apex and principal focus

3 The surface of the cornea may be situated in the pre focal part of the beam—that is, the cornea is cut by the ribbon of light before the rays have come to a focus The image of the slit now depends upon the relation of the focus of the beam to the principal focus of the mirror

(*a*) If the rays come to a focus between the apex of the cornea and its posterior focus then the reflected image of the slit will be in front of the cornea

(*b*) If the image of the slit is formed at the principal focus of the mirror, then the image formed by the cornea is at infinity

(*c*) If the image of the slit is formed between the principal focus and centre of curvature of the cornea the image formed by the cornea is behind the centre of curvature

(*d*) If the image of the slit formed by the rays is at the centre of curvature of the mirror, here also will be the image formed by the cornea

(*e*) If the image of the slit is formed behind the centre of curvature of the mirror then the image formed by the cornea is between the centre of curvature of the cornea and its principal focus

We have mentioned before that in the beam which leaves the slit there is also the image of the filament of the lamp which we focus upon the focusing lens The image of the lens with the contained image of the filament will also be formed in the cornea Now the focusing lens is always further from the cornea than is the image of the slit The image of the focusing lens is consequently formed, and always lies, between the apex of the cornea and its posterior principal focus, for example, the condition in which the image of the slit is formed by the focusing lens between the apex of the cornea and the principal focus The catoptric image of the image formed by the lens is therefore in front of the cornea If now we focus a microscope gradually towards the cornea, we shall first note the catoptric image of the slit formed by the cornea, then as we advance the microscope to the cornea the band of light formed by diffuse reflection, and, as we focus still deeper, we shall encounter the image of the focusing lens with the contained image of the filament of the lamp and the band of light in the cornea We shall also encounter in the band the peculiar reflection referred to previously, this is always smaller than the band of light in the cornea Until Vogt pointed out the clinical use of specular reflection it was always considered to be a nuisance and every attempt was made to avoid it Certain things may however, be seen in the area of specular reflection which cannot be seen by any other means these are chiefly minute inequalities of the surface, such as changes in the superficial epithelium due to glaucoma and small irregularities of the epithelium

Reflection from the Posterior Surface of the Cornea

The reflection from the posterior surface of the cornea is not nearly so bright as that from its anterior surface, mainly due to the fact that there is a very small difference between the index of refraction of the cornea and the aqueous The light reflected from the posterior surface of the cornea is yellowish, this is due to the fact that the light before it reaches the observer has to pass through the thickness of the substance of the cornea, where a good many of the rays of shorter wave-length are absorbed So as to observe the light reflected from the posterior surface of the cornea we must have a large angle between the illuminating source and the normal to the cornea, and observations must be made at an equally large angle on the other side of the normal It is chiefly the specular reflection which is of value We are actually able to see in a magnification of no more than twenty-four times the endothelium of Descemet's membrane and certain changes that take place in it

The Anterior Surface of the Lens

The anterior surface of the lens acts as a convex mirror, and we shall have similar phenomena to those seen when the beam of light was focused upon the cornea The anterior capsule of the lens is not perfectly smooth The result is an appearance in specular reflection of a fine shagreen Not only this but there is also present a peculiar lustre due to the difference between the images seen by the observer in either eye with the binocular microscope You will remember that picture for use with the spectroscope one of which is black and the other white when fused together give a lustre very much like that of a surface polished with black lead.

The Posterior Surface of the Lens

From the posterior surface of the lens the appearance of shagreen is also found in specular reflection and Vogt has pointed out that in such diseases as retinitis pigmentosa there is a peculiar iridescence from the posterior surface of the lens before any actual opacity has occurred It is an important clinical fact and by it we are said to be able to distinguish a complicated cataract from a senile cataract This peculiar iridescence may also be obtained from the capsule left after extraction of a senile cataract From the surfaces of the adult and embryonic nuclei no similar phenomena can be observed Apparently this is due to the very slight difference in the index of refraction between the various layers of the lens We are however able to see various bands formed as the beam of light passes through the lens

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IV—ON GAYER MORGAN, M.Ch., F.R.C.S.

Assistant Ophthalmic Surgeon Guy's Hospital; Ophthalmic Surgeon Royal Waterloo Opthalmic Hospital

For the purpose of this short paper I have collected a series of cases of cyclitis and I am going to deal with certain points which have been noted from time to time The cases chosen showed the usual features the symptoms being marked loss of vision and the obvious sign in most cases—keratitis punctata and vitreous haze Iritis in association with the cyclitis was a variable factor being in some quite a marked feature and in some apparently absent Of the 15 patients, 11 were women and 4 men The Wassermann reaction was positive in 7 cases, negative in 5 cases and not obtained in 2 cases

The first feature I wish to consider is the keratitis punctata This could be seen with the loupe in 9 cases it was found only with the slit-lamp in 4 cases, and was apparently absent in 2 cases In these latter not only was there no gross keratitis punctata, but no trace even of the dust-like deposit could be seen on the endothelium, and the endothelium itself in the central area of the cornea showed none of the changes usually associated with ocular inflammation I have no note in these cases as to whether the amount of pigment in the keratitis punctata varied with the amount of pigment in the uvea, but some recent cases have made me think that this is a true relationship, and that those eyes with much pigment, brown irides, and tigroid fundi show a darker type of keratitis punctata The aqueous flare, when looked for with the precautions described by Mr Graves, was present in nearly every case, and in most of them definite formed particles could be seen It is a curious fact that these particles are almost invariably seen moving upwards, and that, although they must all move downwards in the convection currents, it is the rarest thing to see this happen in the aqueous beam The flare is best seen with the smallest cylindrical beam of light, whereas the particles are most obvious when the slit is fully open and a large beam is used The presence of deposit on the anterior lens capsule seems to have no relationship with that on the endothelium covering Descemet's membrane As a rule it seems to avoid the anterior lens capsule, and this may be due to the influence of the convection currents in some way or to changes in the endothelium which predispose to deposition there There are exceptional cases where it is more thickly scattered on the lens and iris than on the endothelium, and in these cases it is noticeable that the iritis is a *more dominant factor*

In most of the cases subcapsular vacuoles could be seen They are often more easily spotted with the electric ophthalmoscope than with the slit-lamp, as the field of observation is so much larger, and they are easily missed with the small beam of the slit-lamp When their position has been noted with the former method they can then be found and studied with the corneal microscope They are like very bright spheres of varying size on the surface of the lens, and throw a shadow into the lens when illuminated *from in front* They *may easily be missed* with the ophthalmoscope when the vitreous is very cloudy and the brightness of the red reflex dimmed in consequence

In five cases definite iridescence of the posterior capsule was visible in the reflecting zone This indicates that the usual mirror-like reflex from this surface has been changed by some roughening or thickening in the capsular area, causing some interference with the normal action of the beam of light The iridescence, except in one case, was present without there being anything in the nature of a posterior cortical opacity secondary to the inflammatory condition which could be seen with the ophthalmoscope or the slit-lamp In the one exception there was a typical secondary cataract in the neighbourhood of the posterior lens sutures with very brilliant iridescence This iridescence seems to last a very considerable time, because in two cases with positive Wassermann reactions, in which the condition has improved under treatment and the vision is now 6/6, it can still be very easily seen In both these cases, however, there is still a very marked though extremely fine vitreous haze visible with the ophthalmoscope The changes producing this iridescence must be extremely fine to cause such a minimal interference with the visual acuity

Behind the lens is the retrolental space, which normally is optically empty Usually in cases of cyclitis this space remains optically empty, although the vitreous may be densely packed with deposits This is not constant, however, and occasionally one sees formed particles which seem to move in this space

Bounding the retrolental space behind is the anterior curtain of the vitreous It lies in folds, which in some places hang vertically and in others look more like a meshwork of vertical and horizontal strands Normally it floats up and down with movements of the head, and if it is attached somewhere in the ciliary region it certainly has a considerable amount of slack If the anterior layers of this curtain represent the hyaloid, then this latter is not the tightly stretched membrane one has usually been led to consider it With the patient in the upright position the curtain is seen, on movement of the eye, to float downwards until it is drawn taut by its attachment above It is probable that there is an attachment all round in the ciliary region, and that if the eye is examined with the patient in the reverse position this attachment would be demonstrated It would be interesting to examine the eye with the patient in the prone position to investigate the retrolental space, but this is not yet possible with the present instrument In one case this anterior curtain could be seen to be definitely attached to the posterior surface of the lens, so forming a loculation, as it were, of the retrolental space The rest of the curtain moved freely, pivoting on this attached point I presume that this vitreous synechia may be considered as analogous with the iris synechiæ and be possibly of inflammatory origin The meshwork of the vitreous in these cases of cyclitis contained a very much larger proportion of formed particles, mostly pigmented granules, than normal I had a feeling that in those specific cases the particles were much finer and more uniform in size than in those with a different etiology and in which some septic focus was responsible for the condition, but Mr Graves tells me that the largest opacities he ever saw were in a case of congenital syphilis It is difficult to say how long it takes for the vitreous to become quite clear of these pathological particles In the two cases I have mentioned before, where vision is now 6/6 and has been so for some months, and where the actual condition is presumably cured after a full course of N A B + mercury, the vitreous is still densely packed and the haze is quite visible with the ophthalmoscope

GENERAL DISCUSSION

Mr Humphrey Neame (London), for his contribution to this discussion of slit-lamp microscopy, took the description of a case in which detailed examination had been much facilitated by the use of this special apparatus The particular interest of the case was that the termination was not of a particularly common type The case was one of posterior stellate or rosette opacity of the lens following trauma, in which the opacity disappeared completely in the course of a few weeks

Hudson, in a "Clinical study of posterior traumatic cataract" (*Royal London Ophthalmic Hospital Reports*, xviii, 112), had described forty-three cases of different types of such opacity, in the course of the development of which from a short time after the receipt of the injury, he traced the following appearances in the more typical cases in the order of their occurrence (1) Feathery streaks in connexion with the lines of the lens star, (2) vacuoles in the midribs of the feather-like opacities, (3) lacework replacing the feather-like structure, (4) vacuole formation, particularly towards the equatorial region, often in palisade formation parallel with the lens fibres, (5) breaking up of the opacity into discrete vacuoles, which gradually become smaller until only a few granules of opacity remained

Hudson believed the opacity to be due to swelling of the lens fibres of the posterior layers, and produced a number of arguments in support of this, also that it had no connexion with aqueous action, for it occurred equally with penetrating and with non-penetrating injuries

In Hudson's series only two cases out of the forty-three had resulted in complete disappearance of the opacity, in one of these the lens was completely clear three months after a penetrating wound of the cornea, without penetration of the lens and without retention of a foreign body in the eye (*x*-ray evidence and magnet negative), in the other there had been a small scleral wound with the presence of a foreign body in the vitreous, but without penetration of the lens The foreign body was metallic and was removed by magnet eleven days after injury The opacity had disappeared eleven days after operation In the former the opacity was composed of irregular vacuoles, in the latter it was a small posterior-disc opacity In fifteen cases general opacity of the lens subsequently developed, and in the others variable degrees and types of posterior opacity persisted

Mr H Whiting, in his description of concussion changes in the crystalline lens (*Trans Ophth Soc*, xxxix, 1919, 169), had included in his posterior cortical [illegible]

seven of stellate variety These were the result of war injuries, and were only under observation for short periods, so that from the point of view of absorption of opacity, they are of less value Of the seven posterior stellate cataracts one was in part absorbed in thirty eight days from date of first observation (within two or three days of injury), and one was lessened in ten days Both of these were concussion injuries only The other during short observation, remained stationary or increased in density

Vogt (*Atlas of Slit lamp Microscopy* Berlin 1921 p 80 and Fig 202b) had described and illustrated a typical posterior rosette-shaped subcapsular cataract in a patient in whom the cornea, iris, lens and vitreous had been penetrated by a needle It was present within thirty six hours of the time of injury, and then measured 4 5 mm in diameter In ten days it had diminished to 2 mm diameter, in twenty days to 1 mm diameter, and in six weeks was represented merely by a few dots of opacity at which date V =6/6 Vogt described the opacity as composed of minute droplets under the posterior capsule and also between the posterior lens fibres as in the opaque area the suture and lens fibre pattern were strongly delineated

Mr Neame's case was a patient at the Royal London Ophthalmic Hospital, under the care of Mr Juler, to whom he was indebted for permission to report the condition John H , aged about 40, was injured in the left eye by a fragment of metal on April 20th, 1924 The cornea and iris were perforated, but no fragment of metal was retained in the eye Seven days after the date of injury Mr Neame made the drawing of the cataract—a typical feather like posterior stellate opacity—under examination by slit-lamp microscope The opacity had been reported two days earlier by the house surgeon—that is, five days after injury It was of an almost completely symmetrical eight-pointed star shape, very similar to the one shown by Vogt The opacity was not measured, but occupied a decidedly longer transverse diameter than that of the widely dilated pupil, for the apices of the arms were barely visible by examination with the microscope in an oblique direction behind the iris The drawing shown therefore represented the composite appearance of the opacity as examined obliquely in every direction, and not as seen directly antero-posteriorly through the pupil Under higher magnification (obj V 2 and I P 2= ×24 diameters) of the edge near one point the opacity was seen to be composed of elongated ovoid portions resembling those described by Hudson—like the juice sacs in fruit such as an orange It seemed to Mr Neame probable that the appearance was due to irregular swelling of the lens fibres, as suggested by Hudson, and not to vacuole formation between them

Seventy-one days after the above observation was made there was no trace whatever of lens opacity, only a somewhat increased brilliance of the posterior reflecting zone of the lens, beyond which the vitreous was visible Left vision +3 0 sph =6/12 partly

Mr Basil Graves, in reply to the criticism that the path of the beam could not be seen in the normal aqueous fluid, remarked that the path of the beam in the normal aqueous fluid was clearly visible if the precautions advocated were taken With the arc-lamp it was evident to a novice When the more ordinary nitra-lamp was used it was essential that the resistance should be regulated so that the filament was burnt at its brightest intensity and the dark room should have no leakages of light It was not correct to say that a long period was required for the observer's dark-adaptation the speaker had found that a few seconds were always enough He thought that ability to recognize the visibility of the beam in the normal aqueous fluid was important in the sense that notes on a case affirming an aqueous fluid to be normal were of greater clinical value if made by an observer who was able to see the beam in the normal aqueous fluid than if made by one who was not so trained It was much the same, for example, as the relative value of notes which affirmed that a fundus-macula was normal when the observer who made them knew that he had really seen and recognized that macula as compared, on the other hand, with the value of a similar statement made by an observer who, having vaguely seen the region where he supposed that macula to be said that the unseen macula was normal because he saw there nothing obviously pathological In the earlier notes of Mr Graves, taken two to three years ago, which were the subject of a research report he was now making, he regarded the frequent statement in them as to the aqueous fluid being normal of little value save to indicate that it was not grossly abnormal, because he had not then learnt a sufficiently delicate method for his observation On the other hand, he knew that in more recent time his notes on cases stated that the aqueous fluid was normal, he could depend upon that statement, because he would not have said so without having made a point of arranging the apparatus with sufficient accuracy to have seen the beam in that normal aqueous fluid

As regards the question of the vitreous a review of notes made on many cases over a long period was showing him that it was very difficult to draw conclusions about its pathological changes which enabled a classification of clinical conditions to be made fitting in with preconceived notions of clinical types From a purely practical point of view the clinical usefulness of the slit lamp examination of the vitreous in no case came up to that of the simple but valuable method of inspection for pathological vitreous 'dust' by means of the direct electric ophthalmoscope when this instrument was properly used

Mr Happer Butler in reply said he had no hitherto succeeded in seeing the flare in the normal aqueous (This discrepancy was cleared up in the afternoon at the demonstration of the slit lamp When the lamp were used at the normal voltage (8 volt) the flare was not visible even to Mr Graves but when the current was boosted up and the lamp overrun the flare was distinctly seen) It would therefore appear that the visibility was a function of the illumination, and this might be regarded as a test of normality If the flare was easily seen at a voltage of eight the aqueous was probably abnormal The slit-lamp distinctly showed a hyaloid membrane He had obtained a mirror effect from the hyaloid membrane, and on it he had been able to make out a marbling of the surface He did not wish to dogmatize but he thought that the appearances showed that there was a real retrolental space between the lens and the hyaloid, which were optically inactive The vitreous fibrils were he thought attached to the hyaloid membrane and normally did not reach the lens Under pathological conditions the fibrils might be attached to the lens

He agreed with Mr Graves that it was very difficult to interpret the appearances seen in the vitreous, and that such must be checked by careful examination with the ophthalmoscope He regarded fine particles as abnormal in fact, the coarser the vitreous architecture the more it approached the normal

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SYMPATHETIC OPHTHALMIA AND ALLIED CONDITIONS

BY

JAMES ALEXANDER WILSON O B E , M D ,

Cambuslang Glasgow

The etiology of sympathetic ophthalmia remains an interesting problem The inquisitive mind finds in the evolution of medical knowledge an ever-changing outlook on this and other problems, the collecting of evidence the expression of opinion, and the clash of criticism are all necessary if we are to make satisfactory progress towards our ultimate goal —the prevention of disease and the maintenance of health

In an article on sympathetic ophthalmia' published some years ago I asked the question How is disease of a particular type transferred from one eyeball to the other' In the conclusion it was suggested that

> In sympathetic ophthalmia—as in tetanus—toxin goes up the nerve and reach nerve cell causing a central disturbance with efferent influences—as in herpes—which manifest themselves first as capillary changes and then as uveitis

This problem may now merit further brief consideration Speaking in a general way, when a soluble toxin is carried in the blood stream, the distribution and manifestations are likely to be 'symmetrical' when there is a microbe virus the distribution and manifestations are likely to be 'asymmetrical"

Disease of the anterior part of the eyeball is usually due to some noxa, circulating in the blood stream, that acts directly on the tissues It may be the virus of specific disease, infective material from any part of the body, metabolic or chemical toxins, but it is a noxa that is diffused generally Certain factors may operate to determine a secondary infection or precipitation and its locality such as trauma—surgical or accidental—local secretion, affinity, local overwork, and possibly the influence of the sympathetic nervous system [2] In sympathetic ophthalmia the disease in the first or injured eye is probably in most cases autogenous, with trauma as its determining factor On the other hand, *ordinary herpes* is a peripheral manifestation of a central nervous disturbance

Messrs Orr and Rows, in their paper[3] dealing with the infection of the nervous system via the lymphatics of the peripheral nerves, showed that where there is an infective focus there is usually an infected lymph stream ascending from it to the central nervous system—a current that lies in the perineural sheaths In a recent paper by Marinesco[4] there is a record of experimental research on the virus of herpes febrilis This virus was inoculated into the corneoscleral margin of a rabbit's eye, it produced keratoconjunctivitis and, later, serious general symptoms After death it was found that the virus had left a track of its passage to the brain There was lymphocytic infiltration in the choroid, ciliary nerves, ciliary ganglion, Gasserian ganglion, and on into the brain The retina, sclerotic, optic nerve, the motor root of the ciliary ganglion, and the common oculo-motor nerves were all practically left intact This is the path of an invisible or filter-passing virus Sympathetic ophthalmia is by some writers also thought to be due to a filter-passing virus but one that makes its way into the blood stream, survives the hostile defensive agencies there, and then, owing to some peculiar affinity, settles in the uninjured eye

In tetanus and diphtheria the virus enters the nerve terminals at the infecting focus in the skin, tissues, or mucous membrane, and ascends in the perineural lymph spaces, so reaching the corresponding basal nucleus or root ganglion In a case of localized tetanus due to the presence of a piece of metal near the brachial plexus it was the shoulder muscles of the same side that manifested tonic spasms In another case a wounded foot was associated with tonic spasms of the corresponding thigh muscles and later with those of the other thigh In diphtheria the palate frequently becomes paralysed In these cases the conclusion is that the manifestations are limited by or "correspond to the nerve supply" Here the invading infective material is not diffused generally or mainly, but is confined it is compartmental or segmental Perhaps there are here the elements of a pathological arc—that is, the receptor, the nerve cell, and the effector segment

The fifth nerve is the sensory or afferent nerve for the eyeballs eyelids, nose, sinuses, gums, teeth, tonsils, skin of forehead, and face The three divisions converge to and enter the Gasserian ganglion This ganglion receiving many ascending streams may thereby have its functions influenced by various noxae and possibly in various ways An interesting and suggestive syndrome is seen in a case presenting trigeminal neuralgia herpes ophthalmicus, and paralysis of the sixth nerve, and in another presenting the same manifestations with the addition of uveitis and anaesthesia of the skin or cornea The neuralgia and the anaesthesia indicate involvement of the Gasserian ganglion, but the paralysis of the sixth nerve indicates that the central lesion has extended to the sixth nucleus Irritation of the fifth nerve may produce a variety of manifestations, that of the sixth nerve is probably limited Occasionally in these cases we also get vesicles on the cornea, and the pain that they cause reminds us that the locality selected is one that has a rich supply of afferent nerves The vesicles on the forehead and cornea and the uveitis are all due to the same primary noxa How are these peripheral manifestations produced? Are we to believe that they are due to a noxa manifesting merely contemporaneous chemical affinity for central and for various peripheral structures, that the central and peripheral lesions are isolated and independent, or are we to believe that efferent or antidromic impulses pass along afferent nerves, impulses capable of producing, Dr Ivy McKenzie maintains—dilatation of capillaries and inflammation? These peripheral manifestations are one-sided, and are limited in area by nerve distribution Further, they are associated with neuralgia, anaesthesia and paralysis, conditions that are dependent on the central lesion

I recently saw two patients with the sequelæ of encephalitis lethargica These patients were under the care of Dr John Rowan, but I have his permission to refer to them Both had paralysis of nearly all the eye muscles on one side with ptosis and dilatation of the pupil One had small bullae on the cornea, and the other keratitis with ulceration of the cornea and later inflammation of the eyeball Here again there is a central lesion paralysis of muscles, and peripheral conditions resembling herpes

Ordinary bullous keratitis may be associated with anæsthesia of the cornea and conjunctiva, in association that suggests a central or nerve origin, probably a neurotoxic condition In herpes ophthalmicus we occasionally get symptoms of sympathetic irritation in the other eye still sympathetic ophthalmia remains a somewhat unique disease, associated with a unique arrangement of the optic nerves The whole neuro-optical apparatus possesses much structural and functional unity

Experiment[5] has demonstrated that when aseptic particles of a choroid, taken from a human case of sympathetic ophthalmia, were implanted into the eye of a monkey, paths of infection were afterwards found leading along the sheath of the optic nerve, "or first along the anterior ciliary vessels out of the eyeball, then along the external eye muscles, and again backwards to the vaginal tissues," or to the optic nerve high up All the affected animals showed changes in the coverings of the optic nerves, and three out of four developed meningitis In this way, even if the optic nerve had been cut (Fuchs), the noxa could still pass up the optic nerve and reach both sides of the brain

If there is an efferent influence, then, in herpes ophthalmicus it travels by the frontal and nasal branches of the ophthalmic division, and in sympathetic ophthalmia perhaps by the nasal branch to the ciliary ganglion or perhaps by some other channel These various allied conditions suggest a mechanism that is largely limited by nerve distribution The direct action of a diffused noxa calls for general treatment, and when a central or neurotoxic element is present this also calls for treatment, sometimes even more so than the local eye condition We have still occasionally to remind ourselves that the eye is an item in a commonwealth and not an isolated entity calling only for individual consideration

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Memoranda:

MEDICAL, SURGICAL, OBSTETRICAL.

A COMPLICATED CASE OF FRACTURE AT THE BASE OF THE SKULL

The following case, which presents some unusual features, was treated by me recently at the Beckett Hospital and Dispensary, Barnsley, Yorkshire

A well developed man, aged about 30 was thrown from his bicycle during a collision On admission he was bleeding from the right ear, there were no marks of external violence he was very drowsy, but could easily be awakened and to answer questions A diagnosis of fractured base and concussion was made On the following day he was completely unconscious there was slight inequality of the pupils with a right hemiplegia and on careful examination a faint bruise could be seen over the right mastoid process The temperature was 100° F

Operation.—On the right side of the skull a flap corresponding roughly to the outline of the squamous portion of the temporal bone was turned down A fracture was discovered running across the mastoid process and appearing anteriorly through the middle cranial fossa A trephine opening was made just behind the external auditory meatus and enlarged with forceps A dura mater was dark blue in colour, but, on throwing the

was without pulsation A cruciform incision was made in the dura mater and several large blood clots with a quantity of soft normal brain matter escaped The scalp was then sutured the wound being closed without drainage The patient had completely regained consciousness at the end of twenty four hours after the operation

I have to acknowledge the skilled assistance of Dr I Ormond during the operation

Poona India J DESMOND O'NEILL, M B, I M S

OVARIAN CYST COMPLICATING A SIX AND A HALF MONTHS' PREGNANCY

THE case here recorded is of interest partly on account of the longer duration of pregnancy than usual, and partly because the strangulation of the cyst pedicle gave rise to practically no symptoms, there being no pain and only a slight rise of temperature to give warning of the event

A woman aged 18 was admitted to the Government Hospital Apia Samoa on June 26th 1924 She was six months pregnant and had noticed a tumour on the right side of the abdomen in addition to the uterus The day before admission she had acute abdominal pain and thought she was about to miscarry She had noticed the tumour for over two months and also that it enlarged more rapidly than the uterus She had no pain until just before admission and the bladder had given no trouble though the bowels were somewhat constipated She had one child (18 months old) the delivery having been normal

The pregnant uterus occupied the lower half of the abdomen there being a decided list to the left with a prominence extending upward towards the splenic area A tense fluctuating swelling occupied the right side of the abdomen arising apparently from below and behind the right upper margin of the uterus and extending up to and bulging the right lower ribs This tumour was quite distinct from the uterus and was dull on percussion with a marked fluid thrill Vaginal examination revealed a soft patulous os but no sign of commencing labour Nothing was to be felt in the right fornix which was higher than the left the gravid uterus being palpable through the latter By June 28th all pain had ceased but began again on July 2nd and early on July 3rd a live 6½ months foetus was spontaneously delivered it survived for about half an hour The puerperium was normal until July 5th when the temperature rose to 100·4° F it fell below normal on July 6th

On July 7th abdominal section was performed and a large dark brown cyst was found extending right up to the liver which was displaced upwards and backwards The cyst was adherent in places to the liver omentum and parietal peritoneum the latter being inflamed all over and covered with serum and recent fibrin tags *The pedicle was strangulated being twisted two and a half times* on itself and arose from the position of the right ovary The cyst contained port wine coloured fluid The temperature rose after the operation reaching 103·4° F on July 10th it then fell to normal and remained so There was a decided flow of bright-coloured lochia for three days after the operation

JOHN S ARMSTRONG, M B Ch B Ed,
R M O Government Hospital Apia Samoa

MULTIPLE ABNORMALITIES IN THE INGUINAL CANAL AND TUNICA VAGINALIS

SEVERAL years ago a man on active service in France complained of a "strain in the right groin" No definite diagnosis was made by the regimental medical officer Since then, on several occasions, he has experienced a sudden drawing up of the testicle accompanied by pain After a recent attack of this kind, unattended by nausea or vomiting the right testicle and cord were found to be swollen, tender, and drawn up to the external ring In a hot bath, after gentle downward stroking the testicle and cord regained their normal position, but further examination revealed the presence of a thickened cord and bubonocele

At the ensuing operation the following abnormalities were found The upper end of the tunica vaginalis lay on the anterior surface of the external oblique muscle and over the external ring The cord was completely twisted five times on itself After it had been untwisted a large pampiniform plexus of veins was disclosed which hung like a septum into the tunica vaginalis When this plexus had been removed, together with the surplus tunica vaginalis, a hernial sac was opened at the upper end of the inguinal canal and was found to contain a mobile caecum, with the appendix adherent to the wall of the sac These various conditions were dealt with in the classical manner

M J PETTY, F P C S Eng
Assistant Surgeon to the British Hospital Buenos Aires

Reports of Societies.

COCAINE ADDICTION

At a meeting of the Society for the Study of Inebriety on October 14th, Sir WILLIAM WILLCOX presiding, a discussion on cocaine addiction was opened by Professor W I DIXON, M D, I P S, Reader in Pharmacology in the University of Cambridge

Professor DIXON said that coca leaves had been used from time immemorial by the Indians in the western South America as a stimulant and narcotic and the habit survived to the present day especially in Peru It was asserted that natives who chewed the coca leaf were able to perform long and rapid journeys with less fatigue and without feeling the pangs of hunger On two occasions in the past the speaker had had injected into himself intramuscularly by way of experiment, about 1½ grain of cocaine The effects gave no pleasure at the time and left none as a memory but each injection produced a frontal headache some little excitement increased reflexes dilated pupils and pronounced insomnia His experience in this respect did not differ greatly from that of many others It might well be that cocaine did not represent the whole action of fresh coca leaves It was probable that coca-chewing allayed the pangs of hunger, which were in some way associated with the alimentary canal by depressing afferent nerve-endings

The action of cocaine upon the nervous system corresponded with the stimulation of the whole cerebral cortex After its injection into animals the cortex was more readily excited by electrical current whilst when injected into normal animals convulsions were produced which could, however be prevented by first severing the crura Moreover there was a relationship between the amount necessary to produce convulsions and the degree of development of the cerebral hemispheres Thus the dose of cocaine, per kilo of body weight required to produce convulsions in the rabbit was 0·18 in the bird 0·06 in the dog 0·03 and in the ape 0·018 grain It was not necessary to offer detailed evidence to prove that the symptoms in man were due to true stimulation Other drugs were known to exert a somewhat similar action but they were happily, now no longer used to produce artificial exultation Loquacity and exultation were sometimes seen after the injection of atropine but the latter would never become a drug of addiction because of its extremely unpleasant actions otherwise The same was true of caffeine the stimulation from which was mild and prolonged

With regard to cocaine poisoning a quarter of a grain produced very little effect on an ordinary person whilst 1½ grains was generally though not always well tolerated The total dose varied from 8 to 23 grains and there was probably not a case on record where cocaine had been used as a murder drug However cocaine like other drugs which especially excited the central nervous system was uncertain in its central action and varied greatly in different individuals, but when death resulted it was believed always brought about by shock caused by sudden paralysis of the central nervous system Mild stimulation of the latter whether by direct or reflex stimulation was followed by all the symptoms of cerebral hyperactivity but if the stimulus exceeded a certain degree the exactly opposite effects were produced He did not think that had been properly appreciated as the cause of collapse and death which sometimes followed the accidental but sudden absorption of cocaine in a susceptible person In every case of death in man from the use of cocaine or other local anaesthetic the symptoms were strikingly similar to those produced in animals The history of mishaps under local anaesthetics always showed that the poisonous action followed almost immediately after injection If one-half a grain of cocaine was injected in one hind limb of a rabbit death occurred in a few minutes but if a tourniquet was placed round the leg after injection and kept there for half an hour toxic symptoms were either very slight or did not occur at all Adrenaline was used in solutions for the

purpose of delaying absorption, and he thought the principle a good one, although it had to be remembered that if absorption occurred the adrenaline considerably increased the toxicity of the cocaine. Much had been written about idiosyncrasy, and it was undoubtedly a fact to remember that cocaine was far more dangerous in concentrated than in dilute solutions. When concentrated there was apt to be absorption into the circulation, whilst if dilute the conditions favoured adsorption to the tissue colloids which rendered the alkaloid innocuous. It was well recognized that man became tolerant to cocaine. With a little practice the dose might be increased as much as 20 grains. The explanation might be, as in the case of morphine, that it was due to increased destruction of the alkaloid, but that suggestion had never been proved. The ordinary laboratory animals did not become less sensitive to regular periodical doses of cocaine, but more so. So far as the question of tolerance was concerned, man therefore occupied a peculiar position in connexion with cocaine.

Turning to the question of addiction to cocaine, Professor Dixon reviewed the position in connexion with the drug prior to the war. It was sometimes said that the addiction epidemic in America, which was such an outstanding social problem there, started after the war or after the prohibition law, but that was not so, for the habit had been steadily growing for a number of years, though post-war conditions probably augmented the numbers. The Congressional Commission in America had stated, in 1919, that 2 per cent. of the whole American people, or 4 per cent. of the adults, indulged in narcotics. Cocaine-taking had spread over the world, but the habit was less prevalent in Europe than in the East or America. In Germany cocaine sniffing was entirely a post-war habit, and confined to the large cities, especially Berlin. In France the habit had been common during the latter years of the war, and had spread from there to Italy, Spain, and England. There was, however, reason to believe that drug addiction was diminishing in France. He had had opportunities of obtaining the powder sold by the habitues of the cafes and music halls in Paris, and each packet contained approximately half a grain of cocaine. It had been too frequently assumed that anyone using the powders was an addict. When cocaine addiction occurred as a single condition it was almost invariably the result of imitation and opportunity, it could be safely said that since the war addiction to cocaine had not followed the physician's prescription. The users of cocaine being a menace to others as well as to themselves, the problem became that of a State menace, and cases should be treated as typhoid and diphtheria cases were, not by making the patient responsible, as the "narcotic police" of New York would have them, but by isolation and effectual removal of the source of infection. The cocaine habit, when once formed, was the worst of all drug habits in that it more rapidly led to the mental, moral, and physical degeneration of the patient than the depressing drugs of addiction. Unlike morphine, cocaine induced insomnia, loss of appetite, dyspepsia, diarrhœa, and, not infrequently, delusions and deafness. In the one hallucination quite diagnostic of cocaine the patient complained of feeling some foreign body under the skin—sometimes like grains of sand, sometimes like worms moving. So far as he was aware that curious symptom was found in no other condition, but was pathognomonic of cocaine poisoning.

Although cocaine so rapidly led to degeneration in uncomplicated cases nevertheless the prognosis was better than in the morphinist. The degree of addiction might best be gauged by the withdrawal symptoms. They were certainly the most severe with heroin, less with morphine, and least of all with cocaine. Even when doses of 30 grains were taken daily cocaine could be dropped at once without serious injury to the patient, whilst similar sudden withdrawal in the case of heroin would certainly jeopardize a man's life. The normal person derived no pleasure from injections of cocaine, though that did not mean that with practice the satisfaction would not come. Who, then, were the people likely to be affected and to derive pleasure from such a practice? In 1906 Sir Clifford Allbutt and he had defined such people as neurotics. Quickness and sensibility, acute perception, and alert muscular reaction were not morbid characteristics, but qualities of high breeding. Such qualities became morbid when developed in relative excess in the lower ranges of sensibility. The higher qualities remaining at their former mean, the controlling centres no longer held the lower centres in check. The ordinary troubles of life became exaggerated out of all importance, but when they took drugs of addiction such people became in a sense more normal. Thus addiction to drugs was very likely to occur in favourable conditions in that type of person, though unlikely to occur in the normal type. Therefore the drug habit, treated broadly, was not a disease but rather a symptom of a pre-existing mental condition. Where it was a disease—in accidental correlation to a normal person—it ought to be readily curable, especially in the early cases, but that was not the case though it was recognized that those who contracted the habit as a result of disease—the relatively normal people—were by far the easier to cure. Americans were now discussing whether drug addiction was a medical issue or a police problem, and the special police commissioner in charge of the narcotic division of the New York police, writing in the *Journal of the American Medical Association* this year, concluded that because addiction had its origin in or was coupled with crime or criminal environment in 98 per cent. of the police cases, therefore the problem was in the category of criminology and came within the province of the police. That savoured of the mediæval method of dealing with lunatics. Drug addicts, in fact, made poor criminals, for judgement, self-control, and will power were lacking. The speaker added that each case of addiction presented a problem by itself, requiring the determination of the underlying cause. Few addicts came willingly for treatment so long as supplies of the drug were available, but fortunately supplies of cocaine were obtained only with difficulty here. He thought the following propositions would meet with few objections: (1) that the prosecution of cocaine traffickers should be carried out by every means at the disposal of society, (2) that some form of international control to prevent illicit importation of cocaine and coca leaves should be established, and here it was of happy augury that the League of Nations had instituted a committee of inquiry, (3) that it was desirable that cocaine should be controlled at the seat of production, (4) that information as to the gravity and danger of narcotics should be spread, not only among medical men and students, but especially among members of the teaching profession.

Discussion

Dr. H. H. Dale expressed his appreciation of the paper, and said that he had been particularly interested in Professor Dixon's description of his own experience of the effects of cocaine. If he had understood him aright, he had experienced nothing which could be called pleasurable, and he had suggested that possibly there was something in the coca leaf which caused the pleasurable sensation said to have been obtained in the instances cited from South America, and that cocaine was not equivalent to the coca leaf in respect to the euphoria the latter was reputed to produce. The speaker did not quite follow him there. He had Professor Dixon considered the possibility that the circumstances of the experiment modified the expected result? From the investigations which had been made on drug addiction it appeared that cocaine addiction differed from others, particularly from morphine addiction, in being totally the result of a social habit. He was told that the secret cocaine-taker was so rare as to be almost non-existent. In other words the vast majority of cocaine-takers acquired the habit in night clubs and other convivial resorts, using it to stimulate their flagging sensations so that they could renew the hectic pleasures which were beginning to pall. But when Professor Dixon sat down in the laboratory surroundings of a scientific laboratory, with no companions to promote his hilarity, the speaker did not think he should expect cocaine to produce the ultra-rich[illegible] tions which people experienced who took it in [illegible] environment. He found it produced in omnia, but,

ill, insomnia was one of the things which the night club habitue went to the night club to obtain, such a person wanted to whip up his brain so as to last out for a longer period. In this respect he imagined that cocaine addicts could be rather sharply differentiated from morphine addicts, the latter took their drug for the relief of pain or some other distress, and not that they might take part in night club enjoyments." He believed that cocaine addiction was practically limited to large cities, it had always been a city vice.

Dr. A. J. Copeland gave an account of some work which he had been doing in Professor Dixon's laboratory on the action of cocaine substitutes on the central nervous system of animals.[1] He had compared particularly butyn, tutocain, novocaine, and psicaine—the latest introduction—in their production of convulsions in laboratory animals when given in small doses. The convulsions to which they gave rise were identical in character, though not in degree, with those caused by cocaine itself. Butyn in these experiments appeared to have twice the convulsive action of cocaine, tutocain approximately half, novocain about one sixth, and psicaine rather less than cocaine. He submitted that these effects gave a valid criterion by which one might judge of the effects of these substitutes in man. Butyn never only was capable of giving rise to severe epileptiform convulsions in man. He had had a personal experience with tutocain, though he believed that Dr. Dale considered it merely a subjective observation. He was using a concentrated solution and observing the effect on the nasal mucous membrane when suddenly he received a mental shock, became excited and restless, and thought he was going to have a convulsion. The effect was very definite, it passed off after a few minutes, and was succeeded by a pleasant exhilaration. He suggested that the properties of these cocaine substitutes might render them liable to be used for their stimulating action, and if that use was continued they might become drugs of addiction. He believed it was a fact that heroin was on the market for ten years before any case of heroin addiction was recorded, therefore the statement that butyn was not a drug of addiction must be taken with some reserve.

Dr. Harry Campbell read a letter he had received from Dr. Francis Hare, medical superintendent of Norwood Sanatorium, who stated that in all his experience he had come across only three instances of the cocaine habit, and those not in recent years. It seemed to Dr. Hare that the habit was very infrequent, though the opposite impression was to be gathered from the newspapers. Many people, Dr. Hare thought, took cocaine for a time, and gave it up after a visit to their *own doctor*. At any rate he had seen only three pure cocaine cases, though he recalled many cases in the old days at the sanatorium—especially cases of doctors—in which cocaine had been used as an auxiliary to morphine. Dr. Campbell took up the remark of Professor Dixon that the individuals *most* liable to drug addiction were those of a peculiarly nervous temperament. But on what did the nervous temperament in general depend? In the speaker's view it depended essentially on the condition of the blood, and not primarily upon the nervous system. The blood normally *contained* stimulants, and to some extent depressants. When the stimulants were in excess the individual had the joy of life, and when the depressants were in excess he was miserable. It had occurred to him that the inherited tendency to drug addiction was essentially a blood defect—the action of defective blood upon the mind organ. The action of alcohol and stimulating drugs was to provide something which the normal individual received adequately from his blood. He had met with a case of periodic craving for cocaine, and his explanation was that the blood underwent periodical changes which at certain times made the craving for stimulants difficult to resist, while at other times there was no craving at all.

Dr. O'Sullivan hoped that if Dr. Campbell's view of the causation of the nervous temperament was correct there might sooner or later be evolved a method of treating the fundamental cause of these addictions. Dr. F. W. Willway thought that prominence should be given to Professor Dixon's statement that drug taking in America had not enormously increased as a consequence of the withdrawal of alcohol, statements to the contrary effect were industriously circulated. Dr. Adams remarked that there was such a thing as a national physiology and psychology, and that drugs acted differently in different races just as in different individuals.

Sir William Willcox, from the chair, remarked that he did not know of any case in which cocaine had been used for murder, certainly not in this country of recent years, but a good many cases of suicide by cocaine had been brought to his attention. He had seen cases where people, such as nurses, who had had access to cocaine had taken enormous doses—40 or 60 grains by the mouth. It was possible to get hold of these cases in time—within an hour or two—when there was a good chance of recovery because cocaine was an unstable alkaloid and washing out the stomach with permanganate decomposed it. With regard to the production of convulsions by cocaine, there had been three fatal cases at his own hospital, following on the administration of cocaine to the urethra before the passage of a catheter. It was extraordinary how recklessly cocaine was used in former days by certain specialists in treating diseases—solutions of as much as 10 per cent. or even the solid powder were used. He had seen it freely applied to the mucous membrane of the nose. The wonder was that there had not been more fatal cases from the use of this drug. Dr. Copeland had referred to the formation of addiction habits by cocaine substitutes, but it was difficult to say which particular compound would lead to the formation of a habit. During the last two or three months he had seen three cases in which patients suffering from asthma had become mildly addicted to adrenaline, the same could be said, he thought, of a good many other drugs. It was difficult, therefore, to say that a certain chemical would not produce the drug habit. Only time would show. The pure cocaine habit with hypodermic use was very rare, generally the morphinomaniac took cocaine for a change. Cocaine was chiefly used in combination with another drug or as a temporary alternative.

Professor Dixon, in reply to Dr. Dale, said that he did not regard the frequenters of the cafés of cosmopolitan Europe as normal people at all. They were worn-out people, leading an artificial life, and were always in a state of gloom until they became intoxicated with one or other substance. These were the people whose nerve cells were lashed into activity by cocaine so that they lost their lethargy and became violently energetic for the time being. These were the people who took cocaine with avidity, they were neurotics, and had become so in consequence of the unhealthy and unnatural life they had been leading. In a normal person, leading an ordinary life, the result of cocaine-taking was very different, it was so distressing that he was not likely to have any desire to repeat the experience. It was really painful, and how cocaine could produce the unspeakable beatitude and the pleasures so extravagantly described by the writers who had witnessed its effects in Peru he could not understand. These effects could not have been got from cocaine, even drug addicts did not describe the effects in that way. Either the historians thought it correct to indulge in exaggeration or the coca leaves could not produce quite the same effect as the cocaine. Coca leaves brought over from Peru certainly produced no effect at all, but then Indian hemp brought over in the ordinary way also had no action, although sent in sealed tins from the Himalayas it appeared an absolutely different substance. It might be, therefore, that there was some other property in the coca leaves which did not survive export under ordinary conditions. With regard to the drug habit in America, this had been increasing for many years, independently of prohibition. The emotional condition in which the war left the people accounted there as in other countries, for some increase in drug addiction. He added, in conclusion, that it was a disgraceful thing that the *British Pharmacopœia* should set out a 5 per cent. solution for cocaine injections. The French *Codex* gave, he thought, a 1 per cent. solution for hypodermic injection, and nothing more than this was ever required.

[1] British Medical Journal, July 12th, p. 41.

BLOOD CHANGES IN PREGNANCY

A MEETING of the Section of Obstetrics and Gynæcology of the Royal Society of Medicine was held on October 2nd, the President, DR H RUSSELL ANDREWS, in the chair

DR J MARRACK read a paper on plasma proteins in normal and abnormal pregnancy Comprised in the paper were the results obtained by DR L J COETZEE from work in the Hale Clinical Laboratory of the London Hospital The plasma proteins of normal and pathological women were compared with those of patients suffering from conditions which affected the plasma protein The changes in plasma proteins in pregnancy, whether normal or abnormal, differed from the changes resulting from the injection of foreign proteins It was suggested that absorption of foreign proteins might occur in pregnancy, but that the normal protective response failed, especially in conditions of eclampsia Changes similar to those in nephritis occurred in pregnancy when there was evidence of kidney damage alone, but in the toxæmia of pregnancy and eclampsia the changes characteristic of renal damage were much modified DR Marrack supplied bibliographical references and showed tables of the fibrinogen, albumin, and globulin ratios in various conditions

The PRESIDENT read a short communication on an unusual retroperitoneal tumour in a multipara, aged 42 He had removed it at an operation believing it to be composed of fat, but during the removal a necrotic patch gave way and about two pints of dark, odourless fluid escaped, suggesting sarcoma The patient recovered, but three months later had a large mass in the right loin Microscopical examination of the original tumour showed the presence of spindle-celled fibrous tissue having the characters of fibrosarcoma, but the cells were arranged in well defined bundles and were uniform in size and shape The lobule was limited by a fibrous capsule, and the President regarded the tumour as a retroperitoneal fibro-lipoma, with a fibrosarcomatous focal area of histologically low malignancy

A clinical demonstration preceded the two papers and discussion

THE PRODUCTION OF CLEAN MILK

A MEETING of the London Association of the Medical Women's Federation was held on October 14th, the President, Miss M CHAMBERS, being in the chair

DR SYLVANUS WILLIAMS, in opening a discussion on clean milk and its production, pointed out that the milk industry had hitherto had little help or guidance from the medical profession in producing clean milk, but only those actually in the industry could fully appreciate the difficulties and work out their solution Since the establishment, under the auspices of the Ministry of Agriculture, of the National Institute for Research in Dairying in 1913 at Reading, the local farmers had been interested in the ideals there put forward The abolition of dirt in milk was a problem which must be approached from an economic standpoint Berkshire farmers had shown themselves receptive of the new ideas about asepsis, and six or seven years ago it was generally recognized that a better quality of milk was worth a better price After a considerable struggle the principle was established that farmers were entitled to charge more for clean milk Three grades of milk were at present available certified milk, bottled at the farm, Grade A tuberculin-tested milk, bottled by the dealer to whom it was delivered in sealed jugs, and ordinary milk Certified milk formed only 2 per cent of the milk supplied in New York at present, and it seemed unlikely that it would ever be possible in New York, or in this country, to supply it so cheaply as to create a large market Grade A tuberculin tested milk, however, could be produced at a charge of only 1d per quart more than that of ordinary milk In New York 2 per cent of the milk consumed was fresh 98 per cent being pasteurized The alternative to pasteurization was the advocacy of tested clean milk which could be drunk without treatment, but Dr Williams said that efforts to create a demand by doctors for such milk had been only moderately successful

MR S WHITLEY, chairman of the British Dairy Farmers' Association, emphasized the difference between the methods of production of clean milk and those of farmers of by old days these crude methods still persisted in some farms where no effort was being made at present to improve the quality of milk The steps in the production of clean milk were as follows in the first place the cowshed was kept clean and the cows washed and dried before milking began The milker put on clean overalls and washed and dried his own hands MR WHITLEY observed that formerly some used to wash their hands in the milk The old wide-mouthed open milk pails were now replaced by covered pails, and a lip on the cover prevented dust which had settled on the cover from falling into the pail The pail was weighed and the contents poured into a tin receptacle, in which the milk was cooled, churned, and sent in a sealed can to a retailer, who was compelled to have a Grade A T T licence Such precautions were worth the 15 to 20 per cent extra charge that the consumer had to pay Last year more than 100 farmers were producing higher grade milk The supply then was greater than the demand, but now, though more farmers were producing this milk, MR WHITLEY understood that the demand was greater than the supply Many farmers were only waiting to recognize the existence of this demand in order to start producing Grade A milk

In answer to numerous questions, DR SYLVANUS WILLIAMS stated that Grade A milk could be bought in London at various prices In hospitals and welfare centres a start might be made in creating a demand which would bring down prices St Bartholomew's Hospital was supplied with Grade A milk, and on investigating some complaints as to its keeping qualities it had been ascertained that the milk had been kept too hot—namely, at a temperature of 74° F, whereas it should be kept at 60° F He admitted the great variability of the price of milk in London districts, and said that the price of Grade A milk ought not to be more than 2d per quart in excess of ordinary milk there was no law to prevent dairymen from charging what they could get A solution of the problem of distribution had not yet been found

Reviews.

ANAPHYLAXIS

DR AUGUSTE LUMIERE's book on anaphylaxis[1] is an important contribution to medical literature Not that there is much in it which has not already been offered to the scientific world, for DR LUMIERE has been working at anaphylaxis many years and has published a great deal on this subject The book is valuable because it collects all these researches into one volume and expounds the author's views with a clarity which it is exceptional to meet with in books on this theme

There is a tendency for monographs on such problems of pathology to develop into dictionaries, to which it may be handy at times to refer, but wherein only the scholar is at home There is nothing of this atmosphere about DR LUMIERE's book, it is simply written, not overburdened with quotations and references, and is as readable for the unmitigated as for the expert

The general point of view with regard to anaphylaxis is not strange to pathologists in this country, but some of the conclusions and explanations cover new ground In brief, he holds that antigen mixed with the blood of a sensitized animal provokes a flocculation in the body fluids and it is these flocculi which are responsible for the manifestations of anaphylaxis The physical state and the chemical composition, of the antigen antibody complex determines anaphylaxis This flocculation mechanically stimulates the nerve endings of the endothelium of the vessels in nerve centres, and the accidents of hoc are more severe the more sudden this excitation The endothelium may accustom itself to this stimulation but abrupt stimulation of nerve centres provokes a vaso-dilatation or visceral vessels and a fall of blood pressure DR LUMIERE maintains that the modification in the composition of the blood met with in anaphylaxis [illegible]

[1] *Le Problème de l'Anaphylaxie* [illegible] Paris: Masson et Cie. 1924 (Demy 8vo, pp. [illegible] 40 francs)

a direct relation to the intensity of the shock These blood changes, such as leucopenia and altered leucocyte distribution, are the result of the phenomenon of osmosis and dilution of the blood and different involvement of blood cells The modifications originate from the vaso-dilatation provoked by the action of flocculi on the capillaries of nerve centres This vaso-dilatation accounts for the osmotic currents which determine retardation of capillary flow, which alter the distribution of blood cells and temporarily modify the physical properties of the serum

The principles which govern the prevention and treatment of shock may be easily deduced if the above hypothesis is accepted They consist in avoiding the formation within or introduction into the blood of any flocculent precipitate When shock exists a certain number of alkaline substances are known which are capable of dissolving the precipitate formed by the union of antigen and antibody Since the flocculi are not identical in all cases, a reagent capable of dissolving some precipitates may modify others Formulae for some of these solutions are given Other steps in treatment consist in diminishing the excitability of the vascular system by anaesthetics or depressants, in counteracting the reflex vaso-dilatation by such drugs as adrenaline, and in compensating for the altered distribution of the blood by intravenous injection of fluids

These are the main lines on which the author's thesis is expounded In a summary so condensed as this the connecting thread of the argument is not so easy to trace as in the narrative of the book The reader is greatly helped by the excellent arrangement of the book, the well spaced out paragraphs, and the lavish illustrations

INTERNAL SECRETIONS OF SEX GLANDS

The volume entitled *The Internal Secretions of the Sex Glands*, by Dr A Lipschütz, professor of physiology in Dorpat University, is the second edition of a book[2] published in German in 1919, the author originally intended merely to translate the first edition into English but he soon found that the advances in knowledge made during the last five years rendered it necessary to rewrite the whole Dr F H A Marshall of Cambridge contributes a preface, in which he summarizes the scope of the work as follows

> The reader will find in the pages a comparative and connected account of the endocrine function of the gonad so far as these are known in all groups of multicellular animal The importance of such knowledge has now become generally recognized and the subjects treated are of profound interest for zoologist and physiologists alike as well as for medical men psychologists and students of eugenics

The volume is well illustrated and the lists of references, numbering altogether nearly a thousand are very complete The predominating note is caution, for the author has examined all the available evidence, and has avoided hasty generalizations, distinguishing carefully between proven fact and attractive but unproven hypothesis This is in very pleasant contrast with much that has appeared on this subject Endocrinology as a whole has suffered much from inaccurate work but the endocrine action of the gonads has perhaps suffered most or all

Dr Lipschütz not only shows that the mode in which the sex organs regulate the development of the rest of the body is extremely complex, but presents evidence which suggests that it may very probably prove to be even more complex than we at present imagine It is therefore difficult to give any short summary of the most important conclusions arrived at in the book, but a few points of special interest to medical men may be mentioned The discussion of the actions of extracts of testicles and ovaries makes it plain that the results obtained both in feeding and with injection are extraordinarily contradictory The author quotes evidence that injections of testicular extracts produce a general stimulant action on man, but adds 'One can scarcely say that these experiments on men provide proof of a specific testicular internal secretion" Experiments on the effects of injecting testicular extracts into animals are, however, quoted which provide evidence for the existence of such a specific testicular secretion

The caution of the author in accepting evidence that extracts of the gonads produce an effect whatever, even when injected provides an amusing contrast to the confident manner in which commercial preparations of these glands are recommended for cures of half the known diseases On the other hand the favourable results of transplantation of ovaries or testicles are considered to be firmly established, and a full account is given of the production of intersexuality by the grafting of testicle into a female and ovaries into a male A description is given of the satisfactory effects obtained in Germany by transplanting human testicles into men castrated by war wounds One very curious case is mentioned in which the testicle of a normal man was transplanted into a confirmed homosexualist with the result that the latter was cured of his abnormal propensities and married within a year This seems to open up some interesting new possibilities for what might perhaps be called medico-legal therapy

A chapter is devoted to the subject of rejuvenation and an account is given of the work of Voronoff and Steinach The author maintains his habitual caution in dealing with the results reported but the evidence mentioned seems to show conclusively that the methods of both Voronoff and Steinach can produce remarkable rejuvenation (or rather regeneration) and that the effects may last for more than a year

The third edition of Dr Weil's book has been translated into English this year and published under the title *The Internal Secretion*[3] The translator apologizes that the volume is completely up to date because he has had the assistance of the author in editing the translation In it an endeavour is made to give a general account of the action of the organs of internal secretion in the space of 267 pages The method followed is to take each important physiological function of the body in turn and to discuss the way in which it is influenced by the internal secretion Half the book however is occupied by two chapters—one on metabolism and the other on growth and bodily form Carbohydrate metabolism is discussed without mention of insulin—an inexplicable omission The interest of the author however is centred largely on the influence of the sexual gland on metabolism and growth He has not attempted to give references for this would have been impossible in so small a work The general impression gained from its perusal is that a laudable attempt has been made to summarize existing knowledge regarding the action of the ductless glands on the body, but that the result cannot be regarded as wholly satisfactory, one reason being that endocrinology is still in a stage when definite statements can be made which will meet with general acceptance Furthermore this book deals especially with the sexual glands and their mode of action as organs of internal secretion this is even more uncertain than that of the other endocrine glands In default of really reliable evidence the natural tendency is to accept any that seem to support the most attractive hypothesis and hence a summary though it may be plausible and interesting tends to become rather unsound

SURGICAL PATHOLOGY

A good up-to-date textbook on surgical pathology as distinguished from the general pathology to be found in the ordinary textbooks of surgery has been a long felt want Some such books are good museum catalogues other are good discussions of *post-mortem* anatomy nearly all fail in that they do not describe in sufficient detail the naked-eye appearances of pathological changes in the living tissues Professor McFarland of Pennsylvania University has written a book on *Surgical Pathology*[4] which though excellent in many respects, rather falls between two stools It is too advanced for the average student and lacks

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[2] *The Internal Secretions of the Sex Glands The Problem of the Puberty Gland* By A Lipschütz M D Cambridge Heffer and Sons Ltd Baltimore Williams and Williams Company 1924 (Demy 8vo pp xviii + 513 142 figures. 21s net.)

[3] *The Internal Secretions for the Use of Students and Physicians* By Dr A Weil Authorized translation of the third German edition by J Gutman M D Phar D F A C P London George Allen and Unwin, Ltd. 1924. (Demy 8vo pp xviii—267 no figures. 16s net.)

[4] *Surgical Pathology* By Joseph McFarland M.D. D.Sc. London H. K. Lewis and Co. Ltd. 1924. (Roy. 8vo pp. xii—701 no figures. £2 2s net)

a good deal of the simple general information which would be useful to those beginning to specialize in surgery, and it is to them that the book is especially addressed The author says truly that the stress of modern life tends to divert the mind from the path of leisurely scholarly attainment, and though few surgeons are likely to have time to read this book from cover to cover they will probably find it useful as a book of reference Breaking with precedent the author has felt himself free to proceed on his own lines, presenting old facts and theories, adding new ones, and criticizing their relative values He divides his book into three parts Part I deals with congenital conditions of surgical interest This is well arranged and gives a detailed description of developmental abnormalities It is useful to have under one cover all the information on this difficult and complex subject

Part II deals with tumours The classification followed is that devised by Adami, the subject is arranged under two main headings—of the simple blastomata and the malignant tumours It would seem to be a mistake to include all the epithelial tumours under the heading of malignant tumours

Part III deals with the general pathology of the various organs, and here some defects are to be found For instance, the pathology of the breast occupies more space than that of the whole of the alimentary tract, and the subjects of obstruction and strangulation are scarcely mentioned, the acute infections are not dealt with and the chronic only briefly It would seem that the author has not considered the pathology of shock, blood transfusion, anaphylaxis, and immunity to come within the scope of his book Nearly all the illustrations are borrowed, and some of the few which appear to be original are not well reproduced Perhaps the high standard of the first part has led us to expect too much The section on the mammary gland deserves special notice The author has some trenchant remarks on this subject, and "chronic mastitis" has no place in his vocabulary

RETINAL VENOUS THROMBOSIS

THE second of the Monograph Supplements[5] issued by the *British Journal of Ophthalmology* is a clinical study of 62 cases of retinal venous thrombosis followed over many years by Mr R FOSTER MOORE The investigation on which it is based was originally begun in 1913, when the author held the Lang Clinical Research Scholarship at Moorfields Eye Hospital, and it was his intention to have kept the patients under observation for not more than three years But the war intervened, with the result that, while some of the cases have been lost sight of, the course of the majority has been followed for a much longer period than was at first intended, and thus the records are very complete This research on a subject which the author has made peculiarly his own is, it is needless to say, a most careful and painstaking piece of work It can safely be asserted that no ophthalmologist and but few physicians can afford to be without a copy No abstract can do justice to it, but we may extract the following points from the author's summary

The outstanding cause is arterio-sclerosis In 70 per cent of the cases of tributary vein thrombosis the superior temporal vein was the branch affected After thrombosis of a vein has occurred an attempt to re-establish the circulation, either by development of new collateral channels or by canalization of the clot, is usually to be observed both processes may occur in the same eye, but though the circulation may eventually be re-established in large measure, the functions of the retina are not correspondingly recovered Haemorrhages in the retina are the rule, and in few cases does it ever become free of haemorrhage, exudation patches are common but pigmentary change is much rarer In about one-third of the tributary cases, central vision of 6/36 or better resulted, in central vein thrombosis the rule is that no useful vision is maintained

With regard to the visual fields, in tributary cases a sector-shaped defect does not occur, but some loss of [illegible] corresponding with the blocked vein is occasionally [illegible] In central vein cases the peripheral field is often, at [illegible] surprisingly complete, but later on a general or irregular contraction occurs In central vein cases it is usual for the tension to be less in the affected than in the unaffected eye in a few instances the reverse is observed, and these are probably cases in which acute glaucoma subsequently develops In tributary cases there is no difference in tension between the two eyes The study of this series confirms the view that high general blood pressure does not affect in any way the intraocular tension Acute glaucoma developed in none of the tributary cases

Of the cases in this series, 41·6 per cent were known to have developed eventually a gross cerebral vascular lesion, and the average duration of life after the onset of venous thrombosis was 5·8 years

It only remains to say that the monograph is illustrated by 31 charts of the visual fields and by 32 diagrams It is a work that must be studied in the original, for it is a most valuable addition to clinical knowledge of retinal venous thrombosis

SIR J C BOSE'S RESEARCHES

THE treatise by Sir JAGADIS CHUNDER BOSE, F R S, entitled *The Physiology of Photosynthesis*,[6] is really a monograph on a problem in physiological botany, and as such cannot receive more than a short notice in a journal primarily for clinicians The author describes in detail the various experimental methods whereby he has studied the evolution of oxygen by the living green plant (*Hydrilla verticillata*) All his methods are highly ingenious, especially those whereby electricity is employed in obtaining automatic records of such phenomena as the rate of production of oxygen, the intensity of light, the measurement of temperature, and the gain in weight by the plant through its synthesized carbohydrate Since only elementary mathematics are used to deal with the statistical data obtained, and most of the functions investigated have their curves constructed, the results of each experiment can be rapidly apprehended Sources of fallacy which could vitiate conclusions seem to have been carefully guarded against The theoretical principle of "physiological inertia" as affecting photosynthetic induction is referred to in an interesting manner when this subject is being discussed (p 87) The sixty illustrations are conspicuously clear No one interested in a typically modern experimental research into one of the fundamental activities of vegetable protoplasm will regret examining this work

The Scientific and Other Papers[7] of Rai Chunilal Bose Bahadur, C I L, I S O, M B, F C S, are the outcome of filial and avuncular regard on the part of J P Bose M B, for the papers are his father's, but they are dedicated to his uncle These are discourses on a very large number of the most diverse topics, from the chemistry of foods, toxicology, and pharmacology, through diabetes, small pox, and medico-legal problems, to paper making and the chemistry of matches Some of the papers were originally given as lectures Several have more than ephemeral interest, of such are the articles on diabetes in India, the prevention of small pox, "On the necessity for immediately restricting the free sale of poisons in Bengal", and on "Bhowanipore food poisoning case" It is not clear to for whom exactly these papers have been published, but for one thing, some of them were written as long ago from 1892 to 1907 The chemical, pharmacological, toxicological reports represent much excellent [illegible] work There is a full index The paper used for the is of poor quality, and there is about the binding "get-up" generally an indefinable air of amateurishness

[5] *Retinal Venous Thrombosis*. By R Foster Moore London: C Pulman and Son, Ltd. 1924. (Roy 8vo, pp 90, 32 figures, 31 charts 5s.)

[6] *The Physiology of Photosynthesis*. By Sir Jagadis C [illegible] D Sc, F R S, Director, Bose Research Institute, Calcutta Longmans, Green and Co Ltd (Demy 8vo, pp xvi + [illegible] tions 16s net)

[7] *The Scientific and other Papers of Rai Chunilal Bose Bahadur, C I E, I S O, M B, F C S*. Edited by J P Bose, M B, F C S [illegible] 1924. (Cr 8vo, pp xxi + [illegible] 11 [illegible] tions 5s.)

THE ABUSE OF COCAINE

In a volume of about one hundred pages Drs JORE and FRANKEL have attempted to give an account of the history and present extent of cocaine abuse and of the physical and psychical effects it produces They say that before the war the cocaine habit was practically confined to the prostitutes of the large capital, and that it was only during the war that it became at all prevalent in Europe It is interesting to learn that excess in the chewing of coca leaves must have been frequent amongst the South American Indians, for as early as 1569 the Spaniards condemned the drug and later tried to stop its cultivation on account of the damage it did to the Indians

In the volume under review three stages of intoxication are described (1) The euphoric stage is associated with a true stimulation of the higher centres of the brain, the powers of sensation and psychic activity are increased (2) This is succeeded by a stage of intoxication, in which the feeling of general well being is changed to one of anxiety, often associated with delusions of persecution The frequent crimes associated with cocaine abuse are usually committed in this stage (3) Finally comes the stage of depression or reaction, during which there is general lowering of the functions of the higher centres of the brain, and the subject feels utterly exhausted both physically and mentally

The effects of cocaine resemble those of alcohol rather than those of morphine, for the cocainist is an extrovert he is confident of his own brilliance and seeks companionship to impress The aphrodisiac action of the drug is held to be an important factor in its abuse, this action, strongly marked in women, is much more irregular in men cocaine, indeed, often renders the male impotent The reason for this difference between the reactions of the two sexes is unknown

The book concludes with reports of numerous cases of cocainism The authors give an account of a subject upon which little reliable literature is at present available The book is, however, rather diffuse, and could have been improved by more careful editing It should be read in the light of the recent discussion on cocaine addiction of which a full report appears at page 765 of our present issue

NOTES ON BOOKS

THE Pickett Thomson Research Laboratory is affiliated with St Paul's Hospital, London it was completed in August 1922 We have received an elegant volume the *Annals of the Pickett Thomson Research Laboratory*[1] vol i No 1, July, 1924, which is offered to the public at 25s net It contains five contributions by Dr D Thomson the first three dealing with researches on the virus of variola vaccinia on the etiology of measles, and on the etiology of scarlet fever the fourth with researches on the best methods of detoxicating vaccines without destroying their antigenic properties and the fifth with the classification of germs by microphotography It does not appear that any of these papers have been previously published The first three contain a fairly comprehensive review of the present state of knowledge of these matters, together with an account of some personal research work The remaining contents of the volume consist of an abstract of a paper by Dr T N V Potts (Assistant M O H Newcastle) on the treatment and prevention of the oto rhinological complications of scarlet fever by vaccines, a short paper by Dr M Saint of Paris on the relation of agglutinins and antibodies to detoxicated vaccines, and some observations on the treatment of cases of gas poisoning (resulting from the demolition of gas shells) by the medical staff of T N Pickett et Fils The volume contains 216 pages and some excellent illustrations It is not clear to whom the information in these various papers is addressed Such a book as this cannot have a wide circulation, and one wonders why the authors of the papers herein contained have chosen this instead of the usual channels of communication with medical readers There exist many different learned societies to which pathologists are invited to submit their research work Such papers as these are then discussed and reported in the proceedings or made available to all through the monthly or quarterly journals of scientific societies Owing to the multitude of scientific journals a prolonged search is often necessary in order to trace information on any one of the nine different subjects dealt with in this one book Those who contribute to such a volume as this might well ask themselves whether they would not find a more extensive audience and also lessen the labours of their colleagues, if they took their material in the first place to special societies when their papers would be published in the various transactions in which their possible readers are accustomed to search

Professor ALFRED GROTJAHN's work on social pathology of which the third edition[2] has recently appeared is divided into two parts The first or special part which consists of seventeen chapters is devoted to the consideration of various diseases and their social significance The chapters on acute and chronic infections, sexual diseases, and prostitution, diseases of the skin, industrial intoxications rheumatism and nervous and mental diseases have been written by Professor Grotjahn, and the remainder, which deal with respiratory, circulatory and alimentary disorders, pediatrics gynaecology and obstetrics surgical diseases, cancer ophthalmology and oto rhino-laryngology have been contributed by Drs Lewinsohn, Salomon Wolff Hamburger, and Kayser The second or general part consists of six chapters all written by Dr Grotjahn in which he considers successively the social importance of the various groups of diseases the social value of medicine hygiene hospitals and other institutions and the qualitative and quantitative regulation of the propagation of the species

THE National Council for the Unmarried Mother and her Child has published this year its sixth annual report[3] It contains however, very little that is of general interest as it has been purposely curtailed in order to admit of the publication in pamphlet form of a special statement of the work of State and voluntary organizations for the unmarried mother and her child, with a view to its wide distribution among overseas guests visiting the British Empire Exhibition The report records with the greatest satisfaction the placing of the Bastardy Act on the Statute Book in 1923 although that Act contains only a small remnant of the bill prepared by the National Council The Legitimacy Bill and proposals for a bill dealing with affiliation orders are also referred to but the report is otherwise brief and unimportant

The thirty third edition of the Charity Organization Society's *Annual Charities Register and Digest*[4] provides a classified register of the various charities in, or available for, London Summaries of the financial receipts and expenditure in connection with various charities are supplied for the years 1920 to 1922 inclusive Special attention has been paid to the index of societies and charitable agencies and consequently the useful information contained in the book has been rendered even more accessible than hitherto The classification of charities adopted in previous years is retained generally the institutions being grouped according as they provide relief for such afflictions as blindness and deafness relief for sickness and permanent or temporary distress or in reformatories and other educational institutions, or agencies for facilitating employment and emigration

Messrs J and A. Churchill have issued in pamphlet form a short *Medical Guide to the Principal British Spas and Climatic Health Resorts*[5] This is substantially a reprint (with illustrations) of the health resorts section of the current *Medical Directory*, prepared under the editorship of Dr R FORTESCUE FOX. It includes also lists of hotels hydro- and other residential accommodation at the various marine and inland watering places

Smith's Physicians and Surgeons Visiting List for 1925[6] is a handy pocket volume including a diary on a week to each page, and 32 pages of information and tables useful to general practitioners Ruled pages are provided for obstetric and vaccination engagements and various memoranda The volume is well bound it contains a pencil and two pockets for loose papers, and a useful index

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[1] *Der Cocainismus Ein Beitrag zur Geschichte und Psychopathologie der Paralysefrage* Von Dr E Joel und Dr I Frankel Berlin Julius Springer 1921 (Post 8vo pp 111 1 dollar)

[2] London The Pickett Thomson Research Laboratory 1924 (Demy 4to pp viii + 215 30 plates 2os net)

[3] *Soziale Hygiene* Verlag Gustav Fischer Jena und *Handwörterbuch der Sozialen Hygiene* Verlag von Dr Alfred Grotjahn Beide herausgegeben von Alfred Grotjahn und Julius Kaup (Demy 8vo pp 820 Band I 5m Band II 6m)

[4] London Cassell and Co Ltd (Demy 8vo pp 12 1s)

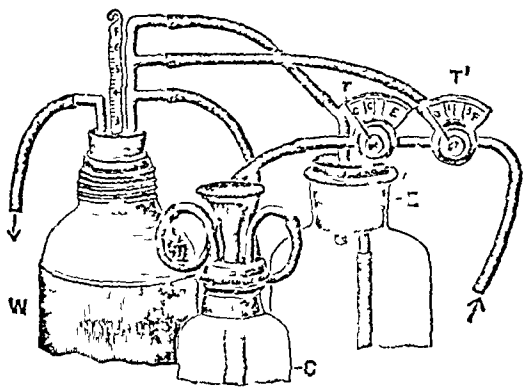
[5] *The Annual Charities Register and Digest* The Charity Organization Society London Longmans Green and Co Ltd 1924 (Demy 8vo pp xx 1061 30s)

[6] *Smith's Physicians and Surgeons Visiting List for 1925* Bristol John Wright and Sons Ltd London Simpkin Marshall Ltd Seventy ninth year Limp roan gilt 7s 6d Full leather gilt 10s 6d London Hamilton Adams and Co Ltd (Cloth 4s net)

MEDICAL AND SURGICAL APPLIANCES

Warm Ether

Dr Francis E Shipway (London, N W) writes I have been using for many years an additional tap, T', to my warm ether apparatus for the purpose of giving a constant supply of oxygen with variable amounts of ether, chloroform, or mixtures of the two The tap T' in the position O directs all the oxygen



to the patient, by moving it clockwise oxygen is passed through the anæsthetic in increasing amount, until in the extreme right position all the oxygen passes through the anæsthetic (this would be chloroform in the illustration) This simple arrangement has proved very useful and makes the administration extremely easy

LUNACY AND MENTAL DEFICIENCY

Board of Control's Report

The tenth Annual Report of the Board of Control for the year 1923 has just been issued [1] The most striking statistical fact in this report is the very large number of notified insane persons under care in England and Wales on January 1st, 1924 The number is 130,334, showing an increase of 4,053 on that of the preceding year, and is the highest yet recorded This increase does not necessarily connote any increase in the incidence of insanity amongst the general population What factors are to be held accountable for its production the Board intends to consider in a future report, in the meantime attention is drawn to the exceptionally low death rate for the year in question—1,036 fewer than in the preceding year—a fact which partially accounts for the startling increase First admissions during the year totalled 18,934

Owing to the accumulation of cases in mental hospitals, the question of accommodation is rendered particularly acute The Board urges the necessity of a thorough consideration of this problem, but in the meantime draws attention to certain provisional remedies A fuller use of the powers conferred under Section 25 of the Lunacy Act of 1890, whereby patients may be sent from mental hospitals to Poor Law infirmaries, should be exercised Absence on trial and boarding-out, wherever practicable, should be allowed The provision of nurses' homes within the grounds or of hostels outside would not only increase the available accommodation, but would benefit the nurses themselves, as at present more nurses sleep in the institution than are necessary for its proper control It is recognized that local authorities are compelled to limit their expenditure owing to the widespread financial stringency, but the construction of separate admission hospitals and of detached villas for convalescent cases, where means permit, would relieve considerably the present congestion and be of decided benefit to the patients concerned

As regards diseases, there is a notable diminution in the incidence of tuberculosis as compared with the previous year, but this still remains high (seven or eight times greater than in the general population, in spite of recent reductions)

[1] Board of Control Tenth Annual Report HM Stationery Office Imperial House, Kingsway, W C 2 Is 6d net

Various theories have been put forward to account for the state of affairs mental and physical peculiarities of patients, dietary deficiency, intramural wind infection understanding of the relative potency of these factors in production of the disease is very necessary There has marked reduction in the incidence of dysentery and its fatality rate Thirteen cases of pellagra were notified during the year, this disease was responsible for 10 deaths—9 amongst patients and 1 amongst the staff In recent years there been a considerable reduction in cases of general paralysis and a corresponding fall in the number of deaths from the disease The earlier recognition and treatment of syphilis partly accounts for this reduction in incidence, but it must also be borne in mind that previous to the systematic use of facilities for accurate diagnosis of the disease, an appreciable number of cases were erroneously regarded as general paralysis Consideration is given to the unfortunate mental sequelæ of encephalitis lethargica The Board has been in consultation with the Minister of Health on this matter, and it is hoped to formulate better means for studying, treating, and preventing these post-encephalitic mental conditions

There is a considerable number of patients at present in mental hospitals who could be more suitably dealt with in institutions for mental defectives Such institutions are all too few, however, and urgently require to be supplemented

Much remains to be done if continuity of care is to be secured for all mentally defective persons who cannot take care of themselves The full benefit of the Mental Deficiency Act as regards the prevention of suffering, crime, destitution, inebriety, and disease cannot be secured until the provisions of the Education Acts dealing with mentally defective children are brought into complete operation Although the powers and duties of all local authorities under the Mental Deficiency Act are the same, the Board of Control indicates how varied is the quantity and the quality of the work undertaken In some urban centres there is the closest co-operation between the local education authority and the committee for the care of defectives, and the numbers of mental defectives have been ascertained, the great majority of whom are in special schools In other centres such co-operation is lacking There is no methodical inquiry into the number of mentally defective persons, beyond those especially brought to notice The benefits afforded by the Mental Deficiency Act are not being utilized

The number of defectives ascertained for the year 1923 was 35,413, as compared with 25,470 for the previous year This increase shows an improvement in the activities of the local authorities, but there is still ground for believing that local authorities are still in ignorance of many cases of defect in their districts Authorities are urged to make more use of the powers conferred in Section 30 of the Act, allowing cases under guardianship It is also suggested that Section 7 of the Act be amended so as to allow of the transfer of a defective from an institution to guardianship

The very great difficulty of treating large numbers of violent and dangerous defectives is readily acknowledged The former methods of certifying such patients as insane and transferring them to mental hospitals did not prove satisfactory The Board realizes the necessity of facilities for isolation, and "it is significant that the opportunity afforded for solitude is greatly appreciated by the patients themselves" The co-operation of the Central Association for Mental Welfare in all questions relating to mental deficiency is gratefully acknowledged

The report refers to the abandonment of the Mental Treatment Bill, whose provisions have had the particular attention of the Board, who finds a "general consensus of opinion in favour of allowing early cases of mental disorder to be received for treatment for a period without certification under proper safeguards, and of extending to public mental hospitals the power to receive voluntary boarders" As recorded lately in our columns, special powers authorizing the reception and treatment of voluntary boarders at the Maudsley Hospital were granted under the London County Council Act of 1915, and the extension of similar powers to public mental hospitals cannot but be fraught with the greatest benefit to the mentally afflicted

British Medical Journal.

SATURDAY, OCTOBER 25TH, 1924

THOMAS LINACRE 1460–1524

On October 20th, 1524 Thomas Linacre the founder of the Royal College of Physicians of London died at his house in Knightrider Street and was buried in St Paul's Cathedral. Four hundred years have elapsed since that event but the anniversary of his death cannot be allowed to pass without some reference to the great and lasting benefits his labours conferred upon this country in his capacity as an enlightened physician and as a scholar of European renown.

Born at Canterbury he was educated at the monastery school of Christ Church in that city under the guidance of William Selling, who was one of the first in this country to acquire and spread the knowledge of the Greek tongue. In 1480 Linacre removed to Oxford, and under Cornelio Vitelli applied himself to the study of Greek. In 1484 he was elected a Fellow of All Souls, and in 1485 he travelled to Italy for the purpose of perfecting himself still further in Latin and Greek. Arrived there, he visited Bologna where he availed himself of the instruction in Latin of Politian, and Florence, where he came under the influence of Chalcondylas, who refined his already extensive knowledge of Greek. He then repaired to Rome, Venice, and finally to Padua where he took the M.D. degree of that university with great applause.

His visit to Italy exercised a profound effect upon his mind. He came to that country thirty-two years after the Greek Empire at Constantinople had ceased to exist, and he found the Italian universities full of students striving to acquire the inestimable results of the revival of the Greek spirit which had been brought to Italy by the refugee Greek scholars. He was impressed with the manner in which facilities were afforded in the universities for the prosecution of the quest for knowledge in all its branches. Padua was at that time nearing the zenith of its influence and it was there that he first conceived the idea of devoting himself to the study of medicine. His main purpose in visiting Italy was the acquirement of scholarship and with his rich endowments in this intellectual sphere he could have had little difficulty in performing the exercises necessary for the medical degree since they were purely scholastic and only required a knowledge of the ancient medical authors. He must have compared these intellectual centres in Italy vibrating with life, with the sterile conditions existing at Oxford where the barren scholasticism still held sway. While preparing for his degree in medicine at Padua he had observed the attention paid to that subject. The care bestowed upon the study of medicine in Italy made an indelible impression upon his mind and when in after years he resolved to improve the condition of physic in his own country it was after the Italian model that he shaped his College of Physicians.

On his return from Italy, about the year 1487 Linacre resided at Oxford where he continued his studies in classics and medicine, and it was during this period of his life that he devoted himself with his friends Grocyn, William Latimer, and Erasmus, to the work of promoting the revival of letters in this country. In 1501 he was summoned to the Court to undertake the dual duties of preceptor and physician to Prince Arthur and became physician to Henry VII and Henry VIII. About the year 1509 Linacre entered the Church and for the remainder of his life devoted his attention to the study of theology and to his duties as a cleric. It was not until 1518 that he was able to put in operation his cherished scheme of founding a College of Physicians for the purpose of promoting and controlling the activities of those who were engaged in the practice of medicine. At that time the conditions in England regarding the practice of medicine were deplorable. No attempt to control the practitioners in the country was effective for the Act of 1511 giving power to bishops or their vicar general to license those wishing to practise medicine had proved of little use. The country was flooded with ignorant men who had had no training in medicine and who practised their calling without let or hindrance. Linacre desired to elevate the profession of medicine and to secure for the benefit of the country men who had been properly trained and who were armed with learning and knowledge of medicine. His aims were realized on September 23rd 1518 when King Henry VIII granted a charter to Thomas Linacre and five other physicians to form a College of Physicians for the purpose of electing other physicians who in the opinion of the College were worthy of that distinction. The charter at first gave the College power to regulate the work of all physicians in London and seven miles around but in a little time its provisions were enlarged to include control over all who practised medicine in England with the exception of those who were doctors of Oxford or Cambridge. Thus through the inspiration of Linacre came into being the Royal College of Physicians which has existed now 406 years. Throughout its history the spirit of Linacre has exercised a profound influence over its character. Linacre was a great scholar and it was his desire that scholarship should go hand in hand with medicine. Modern developments in medicine have rendered this difficult or even impossible but through all the changes the College of Physicians has always been closely associated with high intellectual attainments, which were so prominent in the founder.

Linacre's influence upon medicine did not end with the foundation of the College of Physicians. He established two lectureships at Oxford and Cambridge called after his name and although they have not exercised any considerable influence over the course of medicine they are nevertheless evidence of Linacre's desire to improve medical teaching and practice. As the great example of the scholar-physician Linacre stands pre-eminent and we must never forget that it was largely through his translations of Galen into elegant Latin that physicians were led to study that giant of the Middle Ages and when they studied they soon began to doubt. Then came Vesalius Harvey and Sydenham and the teaching of mediaeval times was swept away never to return. For all that Linacre accomplished for medicine we commemorate to-day with deep respect and grateful thanks the four hundredth anniversary of his death.

THE PANEL CONFERENCE

At the Annual Conference of representatives of Local Medical and Panel Committees which was held last week the matters under discussion were of less immediate importance than in recent years and did not give rise to any serious controversial issues. From the full report which appears in the SUPPLEMENT it will be seen, however, that at least two questions of interest to the profession occupied considerable attention

One of these was the case in which a heavy penalty had been imposed by the late Minister of Health on two Lancashire practitioners, and the other was a point of public importance in connexion with evidence to be given before the Royal Commission on National Health Insurance

In the penal case referred to no one was concerned to defend the practitioners' actions which were called in question, but the report of the official committee of the Ministry of Health which inquired into the facts, disclosed, and even emphasized, a number of considerations which made the offence seem less heinous than at first sight it appeared to be The Conference was evidently much disturbed by the situation which the action of the Minister has occasioned, and passed unanimously resolutions of protest with regard to two points which seem to be of general concern, and can scarcely be allowed to rest where they are at present, in spite of the evident desire of the Ministry not to reopen them The correspondence clearly discloses the fact that the penalty—a "fine" of one thousand pounds—was to some extent inflicted in respect of offences which the Minister assumed had been committed, although no evidence of them committal was produced, even after most assiduous attempts to discover such evidence As one of the resolutions passed by the Conference says, "it is contrary to the principles of English justice to assume offences over and above those proved at the inquiry and to inflict any penalty in regard to such unproved offences", yet it appears clear, even from the last letter from the Ministry itself, that this is what has been done

The Conference further protested against the action of the Ministry on an important point of procedure Regulations have laid down, in agreement with the profession, certain rules and machinery by which alleged offences are to be investigated The Insurance Committee concerned, having followed the required procedure, came to certain conclusions It must be recognized that the Minister, charged by Parliament with the administrative duty of seeing that the medical service is efficient, may properly take independent action in a disciplinary case if he considers such action judicious In the case in question, however, the Minister, who was in the position of the judge who must finally pronounce judgement, caused a letter to be written asking or directing the Insurance Committee to revise and alter the conclusion to which it had come This action appears altogether indefensible and even outrageous It seems evident, on the facts of the whole case, that any Minister of Health who may be in office as the result of the general election may properly be asked to review the judgement of his predecessor

Another important matter that was the subject of discussion [illegible] accommodation, but evidence should be given before the Royal [illegible] present more fully with regard to the administration necessary for its proper approved societies with a view to the widespread financial No doubt many committees are composing administered by State organizations the admission practitioners by them insured plants are bad cases, where us imperfections in this patients pending present con- however, be assumed that administration concerned all such complaints rises, there unded, and in any case, as was pointed out [illegible] Conference, it is by no means certain that it is [illegible] for the medical profession, as such, to concern itself [illegible] this matter, so long as medical benefit—including all such additional benefits as in fact if not in law, are of the nature of medical benefit—is entirely separated from approved society administration This is the fundamental necessity, and it may well be that within their own sphere approved societies, subject to certain general requirements, would do the work of administering sickness and other cash benefits more efficiently and sympathetically than would any organization under State auspices and run by Government officials The decision of the Conference was that this, as well as other points connected with the evidence to be given before the Commission, should be considered by the Insurance Acts Committee, and that if possible opportunity should be given to Panel Committees and to Divisions of the British Medical Association to consider the memorandum of such evidence before it was finally agreed upon

FOOT AND MOUTH DISEASE

During September nine outbreaks of foot-and-mouth disease were confirmed in England, and restrictions were still in force in six districts The cost of the outbreak so far is about £3,500,000, and over 200,000 animals have been destroyed The American outbreak, which started in February last, has, according to Dr Mohler, chief of the Bureau of Animal Industry,[1] been practically stamped out The policy adopted was that of prompt slaughter of infected herds, cleansing and disinfection of infected premises, and compensation of owners for animals and property destroyed In the more settled areas eradication was promptly effected, but difficulties were met with in the inaccessible and poorly fenced range country, Dr Mohler, however, expects that the disease will have completely disappeared by the end of this year The outbreak has cost America over £1,000,000, and 108,000 animals have been slaughtered The methods adopted do not differ from those in use in this country, except in degree They were undoubtedly more drastic in their operation, mainly because of the existence of the highly organized Bureau of Animal Industry—a body which has no counterpart in Great Britain It is stated in the October issue of *Veterinary Medicine* (Chicago) that "when the results in the settled portions of California are compared with the efforts that have been put forth and the results attained in England during the past year in combating the present outbreak of foot-and-mouth disease in that country, the excellence of the American method can be better appreciated by contrast In England the disease has persisted for more than a year and eradication is not in sight, although the cost of the work has been three times the cost of that in the California outbreak and twenty times the cost of complete eradication in the settled portions of the state There is no question but that our Bureau of Animal Industry could have eradicated it in that period at any time since its appearance in England or Scotland, if it could have the same co-operation and support from the authorities and the people that it had in California" Even after discounting the influence of the naturally optimistic American spirit, it would seem that their criticism, although exaggerated, is not without truth, and it is well to know the opinion of other countries In a "slaughter" policy of eradication half-measures are futile and expensive, but we must also realize that such a policy is tolerable only in the almost complete absence of any real scientific knowledge of the etiology of the disease We have reported at various times the progress of [illegible] on foot-and-mouth disease abroad Early this year Löffler and Dahmer described what they considered to be the [illegible] organism—a minute ultra-microscopic microbe producing cultures the size of a red blood corpuscle A Government commission was appointed to investigate their [illegible]

[1] *Journ Amer Vet Med Assoc*, 1924, p 751

in an interim report[1] Professor Luhrs states that so far both cultural and experimental inoculations have been without positive results. Frosch and Dahmen were not present at the meeting to which the report was made, and Luhrs gave few details. Frosch and Dahmen, however, in a written reply, told that not only is the report by no means final, but that it is premature, and they claim confirmation of their work by Ruppert of La Plata, who has conducted his experiments on the basis of their published work. Although its specific nature is now disproved, we are not yet in a position to accept the Frosch-Dahmen bacillus as the cause of the disease. The report in the German journals, that the commission had confirmed their results, was apparently due to a misunderstanding. Meanwhile Vallée has given an account of recent French work on the disease. His efforts have been directed towards the solution of the immunization problem. He finds that blood drawn from recovered animals about the twelfth to fifteenth day of the disease has not only a certain curative action but gives almost complete immunity to susceptible subjects for from six to eight months. Large doses are necessary and the protection is specific for only one strain—or when there are two. The most recent and most interesting French work, however, has been directed toward obtaining a sensibilized anti-aphthous vaccine, which without causing a generalized infection, results in only a limited local one which is accompanied by an active immunity. The fact that the red cells absorb the virus—exactly how is unknown—and so render it more controllable, has been utilized. An intradermal inoculation of 0·6 c.cm. of red cells drawn from cattle cured of the disease with all untraced virus eliminated causes a cutaneous reaction without aphtha and gives a strong immunity. It is hoped by an extension of these experiments to be able to use a method hitherto considered too uncertain or too risky, and to be able to elaborate some technique whereby they can accurately estimate the exact virulence of the virus. The etiology of the disease will be discussed at the November meeting of the Berlin Micro-scopical Society, when the members of the commission and Frosch and Dahmen will be present.

SPIRITUAL HEALING MISSIONS

THE daily press has recently contained accounts of spiritual healing missions held by Mr J. M. Hickson at Frizinghall Parish Church, Bradford, and at St Michael's Church, Paddington. The Bishop of Bradford (Dr Perowne) took part in the mission at Bradford, where some 1,200 or 1,300 people seem to have been treated by the laying on of hands. According to newspaper reports some six or eight patients, suffering from diseases of long duration, have been benefited by the mission, and at the end of this month a thanksgiving service is to be held at Frizinghall, when a full statement of the healing results will be given. The cases in which improvement is said to have taken place are an elderly woman with rheumatoid arthritis, a domestic servant whose "right arm had been paralysed from birth," two cases of "spinal paralysis," a woman who had been blind for five years and now asserted that she could see a little, a woman with "paralysis of the left side for over a year," a young woman who had suffered for ten years from hysterectomy," and a man who had been dumb for two years. The Bradford mission seems to have been very well organized in the matters of transport, commissariat, and police control, and is described in the local press as having profoundly stirred religious thought in the city. One paper mentions the "ecstasy of the cured," and then testimonies to the power of the mission. We have called attention on former occasions to some of the dangers attached to the emotional appeals of these spiritual healing missions. Dr Otto May, in a letter to the *Times* on October 20th emphasizes the emotional element in the cures and points out the effect of suggestion on functional disorders and on the functional element in disease. While it is no doubt right that the mental element should never be ignored in the treatment of even organic disease, wholesale suggestion of cure must as Professor F. E. Wynn has pointed out in a letter to the *Yorkshire Post*, in fact be cruelty or disappointment on ignorant sufferers from really incurable maladies. We are glad therefore to note that the Bishop of Chichester (Dr Burrows) warned his Diocesan Council, which was addressed by Mr Hickson, that participants must be properly prepared spiritually, to be ready to accept disappointment." Clearly a medical investigator of all claimed cures would require more definite diagnoses than those we have quoted from the newspapers and it is impossible to expect medical men to accept as evidence statements entirely unsupported by though capable of [illegible]. And when we read of "cures" in connexion with such missions we are inclined to think that the organizers might read with advantage Dr Quinton's *Confessions of the Specialist* in the fourth series of Froude's Short Studies on Great Subjects.

HYGIENE IN GIBRALTAR

GIBRALTAR in actual extent of territory probably the smallest of our colonies has an interesting and instructive record of sanitary legislation and of the health of its civil population. The density of population and the housing conditions are such as might be expected to give rise to a very high incidence of disease and mortality; for according to the annual report on the health of Gibraltar for 1923,[1] 1,316 of the 3,420 families who constitute the civil population of 17,346 live in one room dwellings and in a city area of little over 104 acres. Of the 1,316 families in one room dwellings are families of six and 1,3 are families of more than six persons, while the situation as regards families in two-room dwellings is only a little better, for the highest number (181) among the 846 in such dwellings are families of over six members. Further, it appears that 10,000 Spanish and 1,500 British subjects come into Gibraltar daily from the neighbouring Spanish town, La Linea. This constant traffic is extremely apt to introduce infectious disease into Gibraltar, and, in fact, most of the small-pox epidemics which have occurred in the fortress were traced to foci of infection in Spain or Morocco, both being separated from Gibraltar by only a narrow strip of land or sea. Notwithstanding these detrimental health conditions the standard of public health in Gibraltar has been maintained at a very high level for many years, this has been due in a great measure to the efforts of a succession of army medical officers with a wide reputation as sanitary experts who have held the appointment of medical officer of health. It was in the nineties of last century that the then medical officer of health undertook the task of effecting important alterations in the civil habitations and crowded blocks of one- and two-room dwellings with a view to introducing light and air into them and providing suitable sanitary accommodation for the occupiers. Among other measures, by-laws, based on the model by-laws of the Local Government Board, were drawn up, and in 1892 the present form of annual report on the public health was inaugurated. The result of these measures was a marked permanent fall in the mortality rate from a figure considerably above 30 to one considerably below 20 per 1,000. During the last ten years only on one occasion—the influenza year of 1918—has it reached that figure. The average for 1913-22 was only 16·9 per 1,000, for the previous ten years 26·15, and for 1923 16·95. These figures represent more or less [illegible]

[illegible]

[1] *Berl. klin. Woch.* October 3rd 1924, p. 1507.
[2] *Ann. Med. Vet.* vol. 69, p. 321, or 2nd Oct. No., p. 337.

[1] *Annual Report on the Health of Gibraltar for 1923.* By [illegible], Colonial Surgeon. Printed by Ellis & Co., Gibraltar.

crude death rates for the past thirty years The birth rate for 1923 was 22 57 per 1,000, and the infantile mortality 109 5 per 1,000 births The average zymotic mortality for the last ten years was 1 31 per 1,000 of population, but in 1923 it rose to 1 84 owing to a somewhat extensive epidemic of scarlet fever, a disease of rare epidemic occurrence in Gibraltar Isolation could only be carried out partially, but the cases were comparatively mild, as is the general experience of scarlet fever in tropical or semi-tropical climates Most of the diseases which can be controlled by sanitary measures or require sanitary investigation are notifiable They include, for example, gastro-enteritis, tuberculosis, pneumonia, venereal disease, dysentery, Mediterranean fever, and others, in addition to the acute infectious diseases, and the fact that these are notifiable gives Gibraltar a considerable sanitary advantage over many other communities Pulmonary tuberculosis caused the greatest number of deaths amongst them, amounting to about one-third of the total deaths due to the notifiable diseases in 1923, but the death rate was only 1 3 per 1,000 of population, as compared with 1 62 for England and Wales Considering the overcrowding and housing conditions this must be regarded as somewhat remarkable, and, apart from general sanitary measures, is probably due to the excellent organization of a "destitute sick and tuberculosis scheme," subsidized by a grant from the Colonial Government Food and milk are supplied to the destitute and sick poor, home visits are paid by a nurse, and accommodation is provided in a home for early cases of tuberculosis School hygiene is also carefully supervised, and a soup kitchen was started last winter to supply soup in the school interval to children of the poor There is also a child welfare centre, which not only advises and instructs mothers in the care of children, but has also distributed milk and other medical comforts to families of the unemployed The City Council of Gibraltar may with reason congratulate itself on the good results of its public health department and on such excellent auxiliary schemes as these Neighbouring cities, such as Malaga and Cadiz, have shown very different health results, so that the climate of the south coast of Spain can scarcely be claimed as a factor in diminishing the incidence of tuberculosis and other preventable diseases in a crowded city like Gibraltar

SOCIETY OF MEDICAL OFFICERS OF HEALTH

THE Society of Medical Officers of Health, now entering upon its sixty-ninth year, held its annual dinner at the Hotel Cecil, London, on the evening of Friday, October 17th The new president, Dr Robert A Lyster, who had delivered his presidential address at the headquarters of the society earlier in the day, took the chair, and was supported by many well known members of the medical profession but politicians, owing to the coming election, were absent Besides the after-dinner speakers those present included Sir William Hamer, medical officer of health for the County of London, Mr W H Savery, chairman of the Housing Committee of the City of London Corporation, Professor Waller S Leathers, of the Vanderbilt University, Dr Herbert Jones, Dr Lustace Hill, and several other past-presidents of the society, Dr H B Brackenbury, Chairman of the Representative Body, and Dr Alfred Cox, Medical Secretary, of the British Medical Association, and Sir Dawson Williams, Editor of the *British Medical Journal* The toast of prosperity to the Society of Medical Officers of Health was submitted by the Bishop of Winchester (Dr F T Woods), who welcomed this opportunity of proposing the health of the health preservers of the community, and thus, as it were, offering 'a cock to Aesculapius" He urged the need for a wider and keener spirit of helpfulness within the Christian Church in aiding the medical service of the country the aim of all should be to make England not only fit for heroes to live in, but to make heroes fit to live in it The president of the society, in his reply, said that no body in the world would welcome more heartily than theirs the powerful aid of the Church in promoting and stimulating the highest ideals of the public health As a society they had no politics, and he wished to make it clear at the present juncture that any political party that came into power would find in the society a machine able and willing to give expert advice on public health matters He noted with regret that the proportion of brilliant men entering the public health service was much smaller to-day than in the past, the causes of this serious decline ought to be examined, for in the vast field of preventive work lay a great future for the public health branch of the medical profession The toast of the Ministry of Health, proposed by the honorary treasurer, Dr G F Buchan, was acknowledged by Sir Arthur Robinson, permanent secretary of the department, who mentioned with regret that three consecutive elections at this season of the year had prevented the reigning Minister from responding to this toast—and civil servants should be neither seen nor heard The health of the guests was proposed by Dr Harold Kerr, medical officer of health for the city of Newcastle-on-Tyne Lord Dawson of Penn, in his reply, complimented the society on its remarkable growth, and urged it to aim at bringing the general practitioner more and more into preventive work The toast was acknowledged also by Sir Humphry Rolleston, Bt, President of the Royal College of Physicians, Sir Francis Champneys, Bt, Chairman of the Central Midwives Board, and Mr H J Waring, Vice-President of the Royal College of Surgeons The health of the president was proposed by Dr Lockhart Stephens, president of the Southern Branch of the society, and Dr Lyster replied

THE HOUSE OF LONGMANS

IN the October number of the *Edinburgh Review* Mr Harold Cox records and celebrates the two hundredth anniversary of the foundation of the publishing house of Longmans It was already an old firm when the *Review* first appeared in 1802 under the auspices of Constable and Longman, to be afterwards carried on by the latter firm alone But the house, if not the firm, is really older than 200 years, for the first Thomas Longman bought a going concern from William Taylor, at the sign of The Ship in Paternoster Row, in 1724, where Longmans is still carrying on the business Taylor must have had a valuable connexion and stock-in-trade, since Longman paid what was then the very large sum of £2,282 9s 6d for it The odd shillings and pence suggest that he bought it on a valuation The fact that Taylor was the publisher of the first authentic edition of Robinson Crusoe shows that he was of good standing in the trade There are no doubt commercial concerns still in existence which are as old or older than the house of Longman, but it is exceptional indeed for any firm which has existed for two centuries to be able to say that any of its partners are the direct descendants of the founder Yet it is the fact that three Longmans of the sixth generation are now active members of this celebrated firm Its history is bound up with that of English literature since 1724 Longman was one of a number of publishers who were jointly responsible for the production of Johnson's dictionary, and the sufferings of many generations of schoolboys were associated with Lily's Latin grammar, despite which book, or with its help, some of them acquired their first knowledge of classical literature Buckley and Longman together acquired by purchase from the patentee the Royal grant and privilege of printing that celebrated work, in the preparation of which Colet and Erasmus had no small share It appears probable, too, that from the Longman the second had some interest in the produc-

of the *Times* Coleridge, Wordsworth, Walter Scott, Southey, Tom Moore, and Byron all entrusted the publication of their poems to this firm, although Byron soon transferred his works to John Murray Macaulay, Lecky, and, indeed, a majority of the great writers of the nineteenth century, had their books published by Longmans, including some of the best known writers of fiction, such as Rider Haggard and the author of *Dr Jekyll and Mr Hyde* and a few artists such as Andrew Lang Mr Harold Cox reminds us that *Gray's Bratony* was and is published at the sign of The Ship, but he omits to mention *Quain's Anatomy* one of the important medical works which bore Longmans' name on their title pages One of these is *Quain's Dictionary of Medicine*, and at the present time four pages of their catalogue are filled by the titles of medical and surgical works, although the business of medical publication is now largely in other hands The present firm may claim an antiquity beyond 1724 for in 1800 the business of the then house of Rivington's, which dated from the very early years of the eighteenth century was transferred to it, with all its associations, and including that valuable and ancient periodical, the *Annual Register*

THE HARVEIAN FESTIVAL

THE Harveian Festival of the Royal College of Physicians of London consists of a short series of quiet and friendly ceremonies on St Luke's Day, of which the centre and chief is the Harveian Oration, which was delivered this year by the Regius Professor of Medicine in the University of Oxford The oration has a history of over two centuries and a half, and we must admire the grace and ingenuity with which orator after orator has succeeded in finding a new subject, or a new aspect of an old subject Sir Archibald Garrod succeeded once more for though we have heard much of the debt of medicine to science we have seldom been reminded of the debt of science to medicine The oration and dinner were attended this year by the distinguished French physician Professor Calmette who was presented with the Weber Parkes Medal Dr Achard Permanent Secretary of the Academie de Medecine of Paris, by which British representatives were so cordially entertained at the celebration of Jenner and Sydenham and Professor Chauffard who returned thanks for his colleagues at the Harveian dinner Other guests at the dinner were Lord Sumner, who responded to the toast of the guests, the Dean of Christ Church, Sir Arthur Stanley G B E, Dr G L Gulland, Professor of Medicine in the University of Edinburgh, and Dr T K Monro his colleague of Glasgow, Sir John Bland Sutton, President of the Royal College of Surgeons of England Dr L W Amies Walker, Dean of the Medical School of Oxford University, and Sir Leonard Rogers, Moxon Medallist

THE SADLIER SERMON

AFTER a lapse of many years the annual Sadlier sermon was delivered in the presence of the Lord Mayor of London on St Luke's Day October 18th, in the Church of St Marylebone, by the rector, Canon S G Ponsonby Dr William Croone, a Fellow of the Royal College of Physicians, originally designed a plan for two annual lectures to be delivered, one before the College of Physicians the other before the Royal Society together with a sermon to be preached at St Marylebone After his death in 1684 it was discovered that his will contained no provision whatever for the endowment of these lectures His widow, a daughter of Alderman Lorimer of the City of London who subsequently married Sir Edwin Sadlier, Bt, fulfilled Dr Croone's intention by devoting a portion of her estate for the provision of the annual lecture, now called the Croonian Lecture," and the sermon In the course of last year the Charity Commissioners approved a scheme confirming the provisions of the will, and empowering the trustees to make grants to augment the income of other lectureships in connexion with the Royal College of Physicians The proceedings at the service on October 18th included a lesson taken from Ecclesiasticus xxxviii, commencing with the word "Honour a physician with the honour due unto him for the uses which we may have of him" Canon Ponsonby opened with an account of the origin of the Sadlier sermon, and next described the character and attainments of St Luke as recorded in the New Testament and in documents of the early Christian era He then passed to the consideration of Thomas Linacre, founder of the Royal College of Physicians, and celebrated scholar physician, and divine His Latin translation of Galen was said by Erasmus to be even more elegant than the original Greek The preacher described the arms granted to the College in 1540 with the representation of a sick man stretching out his arms toward an arm coming from above and in conclusion referred to the marked and increasing recognition of the power of mind over matter that had characterized the last fifty years He added that there was no question of substituting spiritual healing for medical ministration, though perhaps there had been some confusion of thought on the part of those who did not understand that physicians had always attributed their successes to the spiritual power working through them They had always conveyed hope and healing to the sick and comfort and consolation to the dying as well as material medical treatment

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THE first social evening of the session of the Royal Society of Medicine was held on October 16th The new president, Sir StClair Thomson received the guests in the library where refreshments were provided and interesting exhibits were on view Dr W T Grenfell C M G of Labrador delighted later the large audience with a detailed account of his work

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THE Mitchell Lecture before the Royal College of Physicians of London will be given by Sir StClair Thomson at the College on November 6th at 5 p m The subject of the lecture is tuberculosis of the larynx and its significance to the physician

THE GENERAL ELECTION

NOMINATIONS for the forthcoming general parliamentary election took place on Saturday October 18th, when the following medical candidates were duly nominated

The Right Hon C Addison (Lab) Hammersmith South.
Dr Ethel Bentham (Lab) Islington East
Sir George Berry (C) Scottish Universities
Sir John Power Bradford (C) } University of London.
Dr F G Burnell (Lab) }
Dr E G Graham Little (Ind) }
*Dr W A Chapple (L) Dumfries
Dr Stella Churchill (Lab) Hackney North
Dr P Dunstan (Communist) Birmingham West
*Dr Walter E. Elliot (C) Glasgow Kelvingrove
*Dr F E Fremantle (C) St Albans
Dr O Gleeson (L) Portsmouth North
*Dr L Haden Guest (Lab) Southwark North
*Mr Somerville Hastings (Lab) Reading
Sir Henry Jackson (C) Wandsworth Central
Sir Richard Luce (C) Derby
Dr J J Lynch (Ind Lab) Walsall
Dr I H MacIver (Lab) Argyll
Dr R O Moon (L) Oxford
Dr H B Morgan (Lab) Camberwell North West
Dr Joseph Robinson (Lab) Stretford
Dr A Salter (Lab) Bermondsey West
Dr Laura Sandeman (C) Aberdeen North
*Dr G E Spero (L) Stoke Newington
Dr T Watts (C) Manchester Withington.
*Dr J H. Williams (Lab) Llanelly
*Lieut Colonel T S Beauchamp Williams (Lab) Lambeth, Kennington

Candidates who sat in the recent Parliament are indicated by an asterisk

Professor Thomas Sinclair (C), the representative of Queen's University, Belfast, in the last Parliament has been returned unopposed

THE OLYMPIA MOTOR SHOW.

CONCLUDING REVIEW FROM THE MEDICAL MAN'S STANDPOINT.

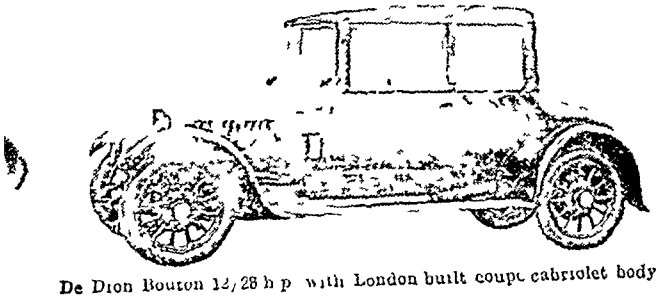
BY

H MASSAC BUIST

The eighteenth yearly International Motor Car Show, which closes at Olympia, Kensington, at 10 o'clock on Saturday night, must be pronounced by far the greatest of the series, and the one which has made the most striking appeal to the medical motorist It contains even promise of better things to come Thus the very largely used system of grease-gun lubrication for the chassis, which revolutionizes the vexed problem of proper yet easy maintenance, may in a year or so be further simplified by the use of a new material, the Belflex-Hobson fabric spring-shackle engine and torque arm mountings This means that spring-shackles—one of the most frequently neglected parts of a vehicle from the point of view of lubricant, and a great source of squeaking—can be replaced by what is really a development and adaptation of the principle of the Hardy universal fabric joint, which is a cheap and successful substitute for one of the most expensive and complex, as well as the hardest worked, pieces of a car mechanism—namely, the universal joints at either end of the propeller shaft Belflex material comes from America, but is as yet no further advanced in general application there than it is here, though we shall certainly hear more of it in twelve months' time By the use of this material for such parts as shackles, and so on, it would not be necessary to supply them with lubricant

Coachwork

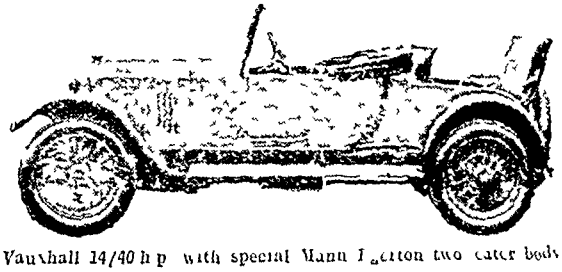
De Dion Bouton, as stated last week, introduces this year, on a 12/28-h p four wheel brakes chassis, an "occasional



De Dion Bouton 12/28 h p with London built coupe cabriolet body

four" coupe type of good interior illumination and notably easy access The seat beside the driver is tilted forward when it is desired to enter, or to leave, the rear collapsible seats, which are accommodated very neatly when not in service Regarding cars standardized with complete equipment in the form of four- or five-seat open-work bodies, it is to be noted that a great number are provided now with rear windscreens, also that most of these devices enable the screen to be thrust sideways to give convenient entrance to the car when the screen is in use The Humber curtaining scheme on the all-weather type of body is one of the neatest hitherto designed—alike from the points of view of erecting it in a moment and of stowing it quite out of sight and most conveniently when not in use It can be stated that the all-weather curtaining schemes on most cars really afford adequate protection, together with the provision of good visibility for safe driving Further, convenient driving is assisted greatly by the fact that this year a very large number of makers, particularly of cars of limited chassis space, nevertheless continue to provide independently adjustable front seats to accommodate the particular requirements as to leg length, and so forth, of the individual occupants, yet many of these devices are of types that do not develop rattle with wear Quite extraordinary things are being done in the matter of coachwork at really cheap prices—for instance, the new four-seat open touring all-weather British-built bodies on the Citroen chassis

The most notable entirely new contribution from abroad to the problem of the small scale car is provided by Citroen on a 11 4-h p four-cylinder engined chassis This maker has arrived at the conclusion that steel, instead of wood, should be used for the bodies His new car is a four seat saloon body on a 11 4-h p 1,453 c cm four-cylinder engined chassis, one advantage of the steel body is that it gives proportionately a greater range of vision to driver and to passengers because the posts are the smallest ever devised Other gains of this construction are the lightness without

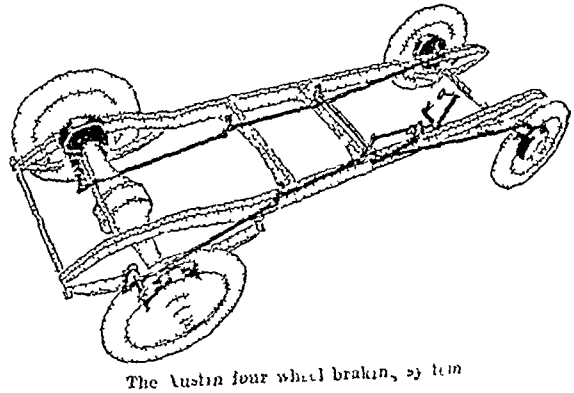


Vauxhall 14/40 h p with special Mann Egerton two seater body

sacrifice of strength, freedom from distortion and rattle, and the quality of being fireproof This four-seater, as exhibited, is sold retail at £325 The Citroen works are now producing 300 cars a day, which is a record for the European industry and an explanation of the low scale prices ruling this year As mentioned in these columns a month ago, Citroen was the first big scale maker to standardize balloon tyres on all his models, to the great improvement of their riding qualities

This system is in striking contrast with the flexible, non-rigid fabric Weymann method of construction, which could have been evolved to solve the problems of squeak and distortion only through applying aircraft engineering practice This type of covered body is listed as an alternative by a number of chassis builders Its use is for the permanently covered type of coachwork, and it is available in that form even on so small a machine as the 8-h p two-cylinder air-cooled engined Rover The Weymann body is manufactured under licence by Singer among many others Singer uses detachable pneumatic upholstery Wolseley, Lancia, and Singer show new-style fabric body materials that are really British in conception, whereas the original fabric body patterns were not

Of bodies built to special design there is a clever provision of what one might style a "semi-coupe" in the Mann Egerton blue granite two-seater, with commodious and comfortable dickey seat, provided on a 14/40-h p developed four-speed right-hand controlled Vauxhall chassis, the trimmings being blue antique leather The body panels are done in aluminium, and are equipped with quick operating hood fittings, together with all-weather side curtains that open and close with the doors, the price of the car complete is £650 This type of body can be



The Austin four wheel braking system

built broader at an inclusive price of £200 The S F. Edge patented "open-closed" compact light-weight body that is usable either as a two-three seat open touring car or as a coupe type is clever, the six cylinder chassis being available now with longer wheel-base, also with a four wheel braking system The Austin four wheel braking system, illustrated above, is so arranged that the

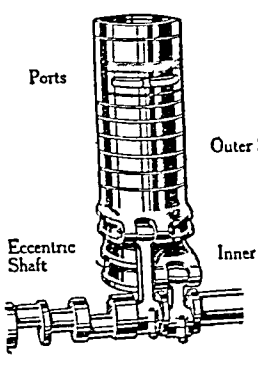
pedal action applies braking action to all four wheels in synchronism, with suitable compensating mechanism, provision being made for quick and easy adjustment A rod connects the pedal with the brake-operating cross member, the actual connexion to each wheel being by a cable

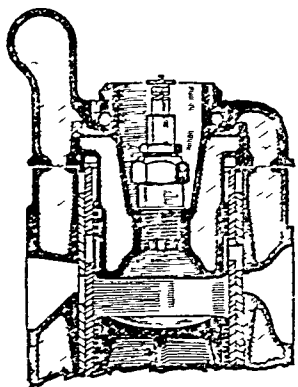
HINTS TO USERS OF "BALLOON" TYRES

The increasing use of shock-absorbers combined with the employment of low pressure tyres, serves as an intermediate makeshift measure in dealing with the problems of suspension It may be stated broadly that a happy compromise is being reached, though in connexion with the low pressure tyre it is to be observed that Minerva and Willys-Knight use a semi balloon type, as do some others On the large heavier car constructions the semi balloon tyre does not tend to drag at the corners Regarding this development Lieut Colonel Sealy Clarke, President of the Society of Motor Manufacturers and Traders, uttered a useful warning in the *Motor* concerning the manner of obtaining the best results from low pressure pneumatics This type needs to be watched more carefully to see that it is at the correct pressure than does an ordinary tyre, otherwise undue cost for damaged tubes and wall wear will follow For instance, with a normal tyre run at a pressure of 65 lb to the square inch, it matters relatively little that it is being run at 60 or even 55 lb whereas the loss of 5 lb in a balloon tyre inflated at 25 lb per square inch will alter the character of its riding altogether as also the strains imposed on it, as well as its behaviour at corners and so on It is not possible to forecast at present what wearing life can be expected of balloon tyres because the only statistics available are those by experts Data are needed concerning what happens in the hands of the inexpert—otherwise the general public There is no reason to anticipate a shorter wearing life than with normal section tyres, provided attention is given to correct inflation In any case the use of the balloon tyres in cars of poor suspension or with relatively weak springs, should result in economy in shackles, wear, and so forth But all tyre companies rightly stress the need continually to make sure that one is not driving with such pneumatics underinflated The consensus of expert opinion at the moment is that any under inflation beyond 10 per cent spells actual danger The Goodyear company states that balloon tyres are for comfort not 'stunting", therefore nothing could be more foolish than to drive over the edge of a curb or similar obstruction with a car shod with low pressure tyres because the shock to the thin walls may cause irreparable damage

DOUBLE SLEEVE VALVE ENGINE DEVELOPMENTS

It is more than half a generation since an American, who knew nothing whatever about engineering, Mr Charles Y Knight, discovered how to make a liquid fuel internal combustion engine which would function silently because instead of having poppet valves he inserted two sliding sleeves with slots in them, in the cylinders The principle was tried in America but nobody could make a success of it The invention was then brought to Sir Edward Manville chairman of the Daimler Company in this country and Mr Percy Martin experimented with it At first engineers said it was impossible because the sleeves could not be lubricated But a natural law, as distinct from man's ingenuity, looked after that automatically the sleeves lubricated themselves by capillary attraction In the issue it was found that this was —and it remains—the only type of motor car engine which works best in the natural condition of a gas engine—namely, when the sleeves are dirty, for example, gas-tight with lubricant As soon as the type was made successfully the Daimler Company pioneered it introduction to the public by putting it to a week's test on the bench, and the challenge issued by the company at the conclusion of that successful test till remains to be taken up Silent-acting valve gear on motor cars in general dates from, and is a consequence of, the introduction of that engine, which has been taken up under licence by Mercedes in Germany by Panhard in France, by Minerva in Belgium, and by Willys-Knight in America Today among other firms exploiting the type, is Voisin, the aeroplane builder, who now makes cars The licencees pool their improvements For a long time the sleeves were made of cast iron Much of the improvement in the performance of these engines is due to the more recent use of steel sleeves In the beginning too the cylinders were cast in pairs, now most of the licencees make monobloc engines even as are the poppet valve types with the result that much better rigidity is gained It was in connexion with this engine that Professor F W Lanchester evolved his harmonic balancing gear for dealing with secondary inertia forces in the crank case Even the American version of this engine, made by Willys-Knight has been improved greatly in performance this year by altering the position of the valve ports and by applying this Lanchester harmonic balancing gear The American types have four cylinders only, and therefore need it even more than do the six-cylinder types which are the more generally favoured system in Europe These engine are to-day standardized with much higher compressions They are supplied to the King's four new cars that replace the machines with the same sort of engine which his Majesty has had in use for thirteen and fourteen years respectively




The Daimler pocketless combustion chamber

ROYAL COMMISSION ON LUNACY AND MENTAL DISORDER

(Continued from page 772)

THE sittings of the Royal Commission on Lunacy and Mental Disorder were resumed on October 21st the Right Hon HUGH P MACMILLAN K C, presiding

Sir CLAUDE SCHUSTER permanent secretary to the Lord Chancellor desired to amplify an answer which he gave at the previous hearing when he said that he hoped a lunatic in confinement did not possess or would not be given the right to demand a public inquiry as to whether he had recovered He explained that he held this opinion because (1) lunacy was a disease whose cure or alleviation was a gradual process and the determination whether the patient had reached a point at which he might properly be released was a matter peculiarly unsuited for public inquiry (2) the function of those who had to determine whether the patient was to be released or further detained was not to investigate any charge against a patient as if he were an alleged criminal and it would be very undesirable that the local authority or the person in charge of the asylum should be forced into an office analogous to that of prosecutor and (3) a very large proportion of lunatics considered that they were wrongfully detained and every one of these people would have the right to demand an inquiry a lunatic's condition was unsuitable for public discussion and the details would be often unpleasant and sometimes humiliating for the patient, and detrimental to his interests

Evidence of the Ministry of Health

Mr L G BROCK, Assistant Secretary of the Ministry of Health described how certain powers and duties with regard to insane persons had been transferred from the Local Government

Board and the Home Office to the Ministry of Health These powers and duties might be grouped broadly under four heads (1) the limited powers of the Ministry with regard to the individual lunatic (the Minister could not order discharge, but he could institute inquiries on complaint), (2) approval of plans of local authorities and visiting committees for the purchase of land and erection of buildings, (3) certain powers relating to the Board of Control, concerning the Ministry's voice in some appointments to and by that Board, and responsibility for the Board's estimates in Parliament (the Ministry had no power to give directions to the Board for any specific administrative act, but as a matter of practice the Board invariably met the Minister's wishes), (4) its power to direct the Attorney General to prosecute any person alleged to have committed a misdemeanour under the Act

In reply to the chair, Mr Brock described the daily work of the division of the Ministry which dealt with lunacy administration All letters from patients were carefully read by a responsible officer, and, whenever necessary, the Board of Control was consulted regarding the latest medical report on the condition of the patient whose case was the subject of a letter This did not apply, of course, to a number of chronic patients, who wrote regularly, for the mental condition of these people was well known to the department, and there were other cases in which the letters bore on the face of them unmistakable evidence of insanity, a frequent complaint from patients was that they were being "poisoned by wireless", one patient wrote that he was "having communism injected into him by psycho analysis" Apart from these and similar exceptions, however, the most careful attention was given to every letter, and the Board of Control, if it had no recent report on the case available, obtained a special report, at the Ministry's request, on any case in which there was an allegation of wrongful detention or ill treatment When there was still room for doubt the Ministry asked that the Commissioners at their next visitation should pay special attention to the patient It a case presented medical as distinct from psychiatric issues which called for investigation, a medical officer of the Ministry was sent to report upon it In only one case of recent years had it been found necessary to resort to an independent inquiry

Mr Brock went on to say that the evidence available to the Ministry did not suggest that persons were improperly certified or detained longer than the medical superintendent believed to be necessary, nor had any allegations of ill treatment been fully substantiated At the same time it was clear that there were a number of patients in mental hospitals who, though in no sense sane, could be discharged without danger to themselves or the community if their relatives were willing and able to look after them The exact point at which a person suffering from mental disorder was sufficiently recovered to justify discharge was necessarily a matter of opinion, and some superintendents, mindful of the risks they incurred by recommending discharge prematurely, were more cautious than others It was also remarkable that in many instances where the relatives were convinced that the case was one of improper detention the medical report indicated a definitely bad prognosis The explanation might be that in certain forms of insanity which were slow in development there were periods of quiescence, and as the relatives were only allowed to see the patient on good days, they formed an incorrect impression of his mental condition Other cases developed acute symptoms at an early stage, and, though the prognosis was hopeful, the relatives, having seen the patient violent or raving before removal to the asylum, had no doubt as to his insanity and not much hope of his recovery

SIR HUMPHRY ROLLESTON asked what were the advantages of having the Board of Control as a separate authority, instead of an ordinary department of the Ministry MR BROCK said that he would prefer not to express any opinion on such a large matter of policy At present the relations between the medical Commissioners of the Board and the medical officers of the Ministry depended upon mutual courtesy and a regard for administrative convenience

Administration of the Poor Law in relation to Lunatics

MR H W S FRANCIS, assistant secretary of the Poor Law Division of the Ministry of Health, gave evidence as to the functions of the Ministry as the successor of the Local Government Board in the administration of the Poor Law His department kept in close touch with the administration of the local Poor Law authorities through a body of general inspectors, and medical officers, and every Poor Law institution was visited at least once a year The general inspectors had a statutory power of holding inquiries upon oath During the last five years such formal inquiries had been held in two cases in which persons of unsound mind were concerned In one case a representative of the Board of Control sat as assessor There had been other cases in which, after considering the report of the inquiry made by the Poor Law authority concerned and the action taken, it had seemed unnecessary that a departmental inquiry should be held The witness went on to give some statistics On January 1st there were 1,372,098 persons in receipt of Poor Law relief, of whom 125,972 were receiving relief on account of lunacy or other mental infirmity (93,733 in lunatic asylums, where their care was mainly the responsibility of the asylum authorities and the Board of Control, 4,707 in receipt of outdoor relief, and 27,432 in Poor Law institutions or institutions, other than asylums, maintained wholly or partly out of the poor rate) Of these 27,432 persons, 8,763 were inmates of Poor Law institutions provided solely for mental cases, and almost all the remainder were inmates of the sick or other wards of ordinary Poor Law institutions

Duties of Relieving Officer under the Lunacy Acts

The next witness was MR E J LIDBETTER, President of the National Association of Relieving Officers, who, on behalf of the body he represented, made a number of recommendations The first of these was that there should be no difference in the process of certification between the pauper and the non pauper case Juveniles—by which he meant persons under 16 who were imbeciles or idiots—should not, except in very rare cases, be certified as insane, nor should cases of senile dementia The provisions of the Mental Deficiency Act should be amended to enable juvenile pauper cases to be dealt with under its provisions He thought also that the Board of Control or some other authority or commission should be endowed with powers to determine under proper safeguards ambiguities in the statutes and points of law involved, and he described to the Commission some of the difficulties which relieving officers encountered—difficulties in many cases only to be got over by evasions of the law in the interests of the patient and the public

The chief recommendation of the witness, however, was that the workhouse should no longer be regarded as a place of safety for alleged lunatics, but Asylums Committees should be required to provide sufficient reception houses in all urban areas In such centres there would be sufficient cases to justify and require a rota of justices holding a daily session The preliminary period of detention need not then be as long as three days Such daily centres would be more formal and would conduct the investigation of cases in a more judicial atmosphere than was possible in the wards of a workhouse There would be a resident medical officer available at these reception houses for the purpose both of observation and treatment The reception house should also serve the purpose of a clinic for the provision, under proper circumstances, of advice and treatment to out patients On a recommendation for the discharge of a patient from an institution for lunatics the staff of the reception house would inquire into and report upon the conditions into which it was proposed to release the patient, and, on his release, would make some provision for after care

The CHAIRMAN said that the Commission was anxious to recommend the best provision possible, but he rather feared that the expense of such a scheme might be an objection He quite saw the importance of the proposal, but it was necessary to cut the coat to suit the cloth

MR LIDBETTER admitted that some of the branches of his own organization were not in favour of the scheme owing to its probable expenditure But he thought that the expenditure might not be as great as was anticipated, especially in view of the workhouse accommodation, in London at all events, now available for other than ordinary use

Nova et Vetera.

THE MEDICAL KNOWLEDGE OF CHARLES DICKENS

MRS GARGERY'S ILLNESS

MANY will recall passages from the works of Dickens in which he displays a familiarity with matters pertaining to medicine When his characters suffer, through illness or accident, he describes their symptoms with great minuteness, and in the case to which I wish particularly to refer he also shows great accuracy

Those who have read *Great Expectations* will remember the dastardly attack on Mrs Joe Gargery, the wife of the village blacksmith, who was struck on the back of the head and on the spine by an unknown hand The incident is described at the end of Chapter 15 and in Chapter 16

The immediate symptoms from which Mrs Gargery suffered, and more especially those which were evident later, are of interest in revealing the extent of medical knowledge possessed by Dickens Further, this keen observer, in his description of the later symptoms, has anticipated by

some years, as shall be shown, the findings of our great neurologists.

Let us first, then, consider the story of the assault and the description of the symptoms which followed, as Dickens has it:

"I became aware of my sister lying without sensation or motion on the bare boards where she had been struck down by a tremendous blow on the back of the head dealt by some unknown hand when her face was turned towards the fire.

She had been struck with something heavy on the head and had fallen at the blows were dealt something had been thrown down at her with considerable violence as she lay on her face. And on the ground beside her was a convicts leg iron which had been filed asunder."

Such an instrument would give a depressed fracture and the "tremendous blow" would cause widespread damage to the posterior portion of the brain. The next symptoms to be mentioned occur after some lapse of time:

"Long after these constitutional powers (the constables and Bow Street men) had dispersed my sister lay very ill in bed. Her sight was disturbed so that she saw objects multiplied and grasped at visionary tea-cups and wine-glasses instead of the realities. Her hearing was also greatly impaired, her memory also, and her speech was unintelligible. When at last she came round so far as to be helped downstairs it was still necessary to keep my slate always by her that she might indicate in writing what she could not indicate in speech. As she was (very bad handwriting apart) a more than indifferent speller, and as Joe was a more than indifferent reader, extraordinary complications arose between them which I was always called in to solve. The administration of matter for medicine, the substitution of Tea for Joe, and the baker for bacon, were among the mildest of my own mistakes. However, her temper was greatly improved, and I was present at the tedious unsteadiness of the action of all her limbs soon became a part of her regular state, and afterwards, at intervals of two or three months, she would put her hands to her head, and would then remain for about a week at a time in some gloomy aberration of mind."

It may have been about a month after my sister's appearance in the kitchen when Biddy came to me. Biddy's first triumph in her new office [that of assistant on Mrs. Gargery] was to solve a difficulty that had completely vanquished me. This was: Again and again and again my slate had traced upon the slate a character that looked like a curious T, and then with the utmost eagerness had called our attention to it as something she particularly wanted. I had in vain tried everything producible that began with a T, from tar to toast, and had even got into my head that the sign looked like a hammer, and on mentally calling that word in my sister's ear she had begun to hammer on the table and had expressed a qualified assent. Thereupon I had brought in all our hammers, one after another, but without avail. Then it occurred to me, as a last resource, to draw the shape, being much the same, but she shook her head.

When my sister found that Biddy was very quick to understand her, this mysterious sign reappeared on the slate. But it looked thoughtfully at it, looked toughtfully at Joe (who was always represented on the slate by his initials), and ran into the forge. Why, of course! cried Biddy with an exultant face. Don't you see? It's him! Orlick, without a doubt! She had lost his name, and could only signify him by his hammer. I confess that I expected my sister to denounce him. She manifested the greatest anxiety to be on good terms with him, was evidently much pleased by his being at length produced, and protested that she would have him given something to drink."

Later, towards the end of Chapter 18, we have another glimpse of our patient:

"Infinite pains were taken by Biddy to convey to my sister some idea of what had happened [that is, that Pip had now great expectations]. To the best of my belief, those efforts entirely failed. She laughed and nodded her head a great many times, and even repeated after Biddy the words 'Pip' and 'Property.' But I doubt if they had more meaning in them than an election cry, and I cannot suggest a darker picture of her state of mind."

Again we see the household at supper, with Biddy sitting "holding my sister's plate," and towards the end of Chapter 19 we find Mrs. Gargery "laughing and nodding and shaking in her usual chair."

Some time afterwards—it would be difficult to state exactly how long—Pip has news of the death of his sister. After the funeral he has a talk with Biddy:

"'I have not heard the particulars of my sister's death, Biddy,' I say. She replies: 'They are very slight, poor thing. She had been in one of her bad states—though they had got better of late rather than worse—for four days, when she came out of it in the evening, quite early tea-time, and said quite plainly, Joe.' She made signs to me that she wanted him to sit down close to her, and so she presently said, 'Joe,' again, and once, 'Pip.' And so she never lifted her head up any more."

Such, then, is the account of Mrs. Gargery's illness, caused by a blow from a blunt heavy instrument "on the back of the head," described again as "on the head and spine", let us examine in detail the symptoms which she showed, and see how far they coincide with our present knowledge of cerebral injuries. The first symptoms to be mentioned are those following the blow, that is, concussion:

"I became aware of a confusing impression that I had been through this before, that I had seen this before, that I had been lying in this place before, and had been moved from this place, and had been carried past this window, and had been spoken to by these voices, and had seen this light in the ceiling above me, from this very spot. Then, all in a moment, my head became very painful, and very full, and very empty, and I knew nothing."

Next we have the period of unconsciousness, followed by the return of consciousness:

"I began to see things and people about me. By degrees, I could hear what was said, and could speak consecutively. After an interval, I knew that I was lying in bed, and that Biddy was sitting by me, and I put out my hand and touched her arm. She was overjoyed to see me conscious, and controlled herself and me, lest we should disturb the rest of the house. She said that we were quiet and must be very thankful. She said no more at that time, and I closed my eyes again."

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remain for about a week at a time in some gloomy aberration of mind" Mrs Gargery before her injury is described as being a person of great irritability of temper, easily provoked, and subject to fits of most violent passion "She's been on the Rampage, this last spell, about five minutes," said Joe, while Pip writes, "She concluded by throwing me—I often served her as a connubial missile—at Joe", and later, "She pounced on Joe, and, taking him by the two whiskers, knocked his head for a little while against the wall behind him"

In a person of so violent a temper cerebral concussion would most likely be followed by symptoms of concussion neurosis, and also katatonic stupor, as mentioned by Purves Stewart, and, indeed, to such conditions does the above description of the "bad state" point The tremors which are often a marked feature of these traumatic neuroses are also mentioned to complete the clinical picture—"A tremulous uncertainty of the action of all her limbs soon became a part of her regular state", while the glimpse of Biddy holding the patient's plate for her at supper reveals this "tremulous uncertainty" That the patient's temper should have become improved as a result of the concussion is, however, an exception to the rule

In the light of our modern knowledge, does not this account of Mrs Joe Gargery's illness, the result of a widespread lesion of the posterior aspect of the brain, reveal Dickens to be a most wonderfully minute and accurate clinical observer? He would not realize the significance of his observations from a scientific medical standpoint, but the fact remains that he has described nothing that is not in keeping with present neurological knowledge His information could not have been obtained from medical friends or from medical literature, as will be shown, he must have gained it purely by his own observation

Great Expectations was written in 1861 What was the existing knowledge of the functions of the cerebral hemispheres at this time? It was known to Galen that the occurrence of paralysis on one side of the body was the result of lesions in the brain of the opposite side The theory that the functions of the brain can be localized in the cerebral cortex was introduced in somewhat fantastic form by Franz Joseph Gall as organology or cranioscopy, and by his pupil Spurzheim as phrenology, their joint researches appeared as a four-volume treatise with atlas (1810-19) Flourens in 1822-24 made his observations on the effects of removing the cerebrum and cerebellum in pigeons, showing the absolute maintenance of reflexes with loss of cerebration and volition in the former case and disturbance of equilibrium in the latter In 1828 he located the existence of true cerebellar and labyrinthine vertigo (Garrison)

In the same year as *Great Expectations* appeared Broca, confirming older statements by Dax and by Bouillaud (1825), maintained that aphasia, when it occurred in right-handed people, was always associated with a lesion of the third frontal convolution of the left hemisphere In 1836 Richard Bright had described localized epileptiform spasms from definite cerebral lesions, to be confirmed later (1864) by Hughlings Jackson Such, then, was the knowledge existing in 1861 upon the subject of localization of function of the brain It was some years afterwards (1865-72) that Meynert made his investigations on the anatomy and physiology of the brain He pointed out, on anatomical grounds, that the posterior portions of the hemispheres were probably more nearly connected with sensation, and the anterior with the power of movement Sir David Ferrier (1872-76) described the localization of sensory functions in the cortex, and in 1874 Wernicke described sensory aphasia, including alexia and agraphia In 1876 Flechsig mapped out the special motor and sensory, as well as the "silent," or inexcitable, areas in the cerebral cortex (Garrison)

Thus it will be seen that Dickens, in his account of Mrs Joe Gargery's illness, must have described a case which he had actually met with in life and observed himself The extreme accuracy of the description shows him to have been possessed of powers of medical observation far in advance of the clinicians of his day

CHARLES G STRACHAN, M B Durh, M R C I Edin

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Scotland.

VITAL STATISTICS OF SCOTLAND

THE Scottish Registrar-General's Report for the year 1923 has now been issued[1] It contains the usual detailed and well arranged information as to births, marriages, and deaths in the country as a whole, in the largest cities and towns, and in the public health districts of the counties Some of the main facts relating to the whole of Scotland are as follows

The population at the middle of the year is estimated at 4,901,100 Owing to large emigration, there is a reduction of 3,356 as compared with the previous year, though the total is 18,603 more than in the census year 1921 The births were 111,902, or at the rate of 22 83 per 1,000 of population, this being the lowest rate since registration began in 1855, excepting the three years 1917, 1918, and 1919 Expressed per 1,000 of women of the child bearing age, 15 to 45 (married and unmarried), the birth rate was 93 6, or 2 6 less than in the previous year The illegitimate births were only 6 68 per cent of the total births, this also being the lowest recorded Illegitimacy varied remarkably as between different parts of Scotland, it being [illegible] counties (including the burghs) of Wigtown [illegible] in the south west, and also in the north eastern counties—Aberdeen and those on the Moray Firth In the industrial region—Lanark, Renfrew, Dumbarton, etc—it was very low The marriage rate for Scotland was 7 19 per 1,000, being rather higher than in 1922, but lower than in the preceding five and ten years

Infant Mortality—The infant mortality rate was only 78 6 per 1,000 births, this being very decidedly the lowest on record, the previous minimum having been 90 3 in 1921 The year's rate is 18 1 per cent less than the mean of the preceding five years, and 24 7 per cent less than that of the preceding ten years—a notable and gratifying reduction In the counties, including the burghs, the rate ranged from 36 in Shetland to 101 in Banff

Cancer—Among the causes of death more than usually prevalent was cancer Its deaths were 6,376, or 790 in excess of a ten yearly mean Stated per 100,000 of population the rate was 130 Fifty years ago, in 1873, deaths from phthisis outnumbered those from cancer by 6,749, or nearly 440 per cent, but cancer deaths now outnumber phthisis by 2 380, or 60 per cent The cancer death rate in males in 1923 was 118 per 100,000, and in females 142, the former being 7 and the latter 4 more than in the previous year Of the total 6,376 deaths from malignant disease, 4,377 were ascribed to carcinoma, 276 to sarcoma, and 1,723 to other or unspecified forms

Tuberculosis—The death rate from all forms of tuberculosis in 1923 was 118 per 100,000, and is the third consecutive annual rate of less than 120, and the fifth less than 140 The deaths in 1923 were 5,790, in 1870 (in a much smaller population) they were 13,027, or 404 per 100,000 Of the total 5,790 tuberculosis deaths in 1923, there were attributed to the respiratory system 3,996, to tuberculous meningitis 664, to tuberculosis of the intestines and peritoneum 521, of the spine 97, of the joints 53, whilst 459 others included 138 acute and 171 chronic disseminated tuberculosis The skin accounted for 12, the bones (except spine) 23, the lymphatic glands other than abdominal 20, and the genito urinary system 55

Principal Causes of Death—A table of the relative frequency of causes of death in 1923 states every cause which produced more than 1 per cent of the total Heart disease accounted for 10 90 per cent, malignant tumours 10 08, apoplexy 9 13, pneumonia 7 39, diseases of early infancy and malformations 6 72, tuberculosis of the respiratory system 6 31, bronchitis 5 65, violence 3 90, nephritis, acute and chronic, 2 84, measles 1 77, whooping cough 1 56, diseases of the respiratory system other than tuberculosis, bronchitis, and pneumonia, 1 33, diseases of arteries 1 27, diarrhœa and enteritis (under 2 years) 1 25, and tuberculous meningitis 1 05 This list includes 71 2 per cent of the total deaths In 1922 a severe epidemic of influenza caused 5 08 per cent of the total deaths, but in 1923 the percentage was only 0 84 Deaths from pneumonia and bronchitis also contributed a smaller percentage of the total than in 1922, and thus helped to raise the relative percentages of deaths from other causes

Vaccination—The annual report on this subject relates to 1922, not 1923 Of 115,085 children born, 8,168 died before reaching the statutory vaccination age of 6 months Of the remainder, 62 10 per cent were certified as successfully

[1] H M Stationery Office, 120, George Street Edinburgh, and at H M Stationery Offices in England and Wales (8vo, pp cxxix + 152, 10s 6d. net 10s. 10d post free)

[illegible] to be insusceptible owing to previous [illegible] 983, or 0 92 per cent, were returned as [illegible] r reasons, and 36 98 per cent were reported unvaccinated, of whom 33,224 had been the subject of declaration of conscientious objection. The percentage successfully vaccinated is 0 36 less than in 1921 and is also less than in 1920, but is greater than among children registered in each of the years 1913 to 1919 It will be noted that the percentage vaccinated, being over 62, is much higher than in England, which is under 40 Previous to the Act of 1907 more than 91 per cent of the surviving births were vaccinated

Royal Medical Society of Edinburgh

The 188th session of the Royal Medical Society was inaugurated on October 17th by an address from Sir Ronald Ross, K C B, K C M G, F R S, Dr A B Williamson, senior president of the society, presided over a large attendance The lecturer took as his subject "Thoughts on medical discovery," and said that a very brief study of civilization showed that new discoveries constituted a rare phenomenon which tended to be localized both in time and place The Graeco Roman period of discovery had lasted about nine centuries, and thereafter a long negative period ensued for about eleven or twelve centuries, during which hardly any advance had been made Then suddenly, in the fourteenth and fifteenth centuries, a period of rebirth had begun almost simultaneously in every line, including art, literature, science, exploration, and philosophy A theory had been advanced by Sir Flinders Petrie that the cause of the periodic augmentations of intellectual vigour lay in the admixture of races from time to time by permeation or conquest Some centuries after admixture with a foreign race the vigour of a people began to increase, and arts and sciences were discovered or rediscovered, then gradually came regression and decay until subsequent infusions or conquests occurred It was unlikely that at any given time all the world's nations should be in the same state of development It might be said that to-day India and China were in the slack state as compared with Europe, and that Europe was approaching the slack state as compared with America The lecturer added that new discoveries in medical science were scanty in comparison with the large numbers engaged in this pursuit, but the same thing applied to all other departments of life Medical discovery was to human beings the most important of all kinds of discovery, and the amount of public attention given to it was disproportionately small The total amount provided for research every year in this country was probably only £180,000, which was equivalent to 1d per annum for each person in Great Britain For this penny everyone hoped to have his life prolonged! Eighty years ago the average expectation of life in London was under forty years, but it had been prolonged until it was now sixty years, and he saw no reason why the average expectation of life should not be prolonged to the seventy years of the Psalmist He had often wondered what would be the length of life if an individual were kept entirely free from pathogenic organisms and deleterious foods and drinks It was not known why elephants, parrots, and tortoises should live for more than a century while horses and dogs died before twenty years of age, this, too, might be a subject for research The nation had to pay millions of pounds for its protection from foot-and-mouth disease largely owing to the fact that it refused to pay small sums for the investigation of the disease Doctors and men of science might congratulate themselves personally on the fact that almost all the discoveries that had been made were made by them without help from anyone else, at the expense of the investigators themselves, but the world would be well advised to spend much more than it was now doing on investigating how diseases of all kinds might be fought

Regius Chair of Surgery in Glasgow University

Professor Archibald Young, M D, the new Regius Professor of Surgery in Glasgow, in his inaugural lecture on October 13th, dealt with the history and progress of surgery in Glasgow, with special reference to his predecessors in office Since the Regius Chair was founded, in 1815, there had been five previous occupants, all distinguished, each had helped to establish the high credit of surgery and of surgical teaching in Glasgow and in Scotland He gave a brief account of their achievements, referring more particularly to the epoch making work of Lister and Macewen He pointed out the great traditions to which he and all medical students in Glasgow University were heirs, and which it would be their duty and privilege to honour and maintain Professor Young concluded by referring to one great need of the Glasgow School of Surgery—a properly equipped surgical museum—and made a strong appeal for help in the founding and equipping of such a collection

Sir Malcolm Watson's Lectures in Glasgow

A series of lectures was given during last week in the University of Glasgow by Sir Malcolm Watson, M D, LL D, on anti-mosquito work in the tropics Principal Sir Donald MacAlister presided over large and interested audiences The lecturer described the method of examining malarial blood for the parasite, and explained in detail the various forms of parasite seen in the disease and their mode of growth He reviewed the different ways in which the parasite, having established itself in the human body, might accomplish the destruction of its host He showed how in many parts of the tropical world among races which had been long infected by the disease there had developed a partial immunity The parasite there infected the young children at an early age, if not too heavily infected they gradually became immune, and parasites could not be discovered in their blood In his second lecture Sir Malcolm traced the history of the malarial parasite in its passage from man through the mosquito back to man, giving in detail a review of the work of Sir Ronald Ross and his discovery that the sexual life history of the parasite was passed in the anopheles group of mosquitos, which could transmit the disease Many slides were shown in illustration, lent by Sir Ronald Ross, some being photographs of the original dissections made by him in Calcutta in 1898 In the third lecture Sir Malcolm Watson referred to the discovery that mosquitos not only carried malaria but also yellow fever, as was demonstrated by a commission of American workers in Cuba in 1900, during the Spanish-American war, when this fever was specially severe A different type of mosquito, the *Stegomyia fasciata*, was found to transmit this disease An active campaign against the mosquito during the following year cleared this disease out of a city from which it had not been absent for over two centuries The lecturer then described the wonderful achievements in preventive medicine of the American in the Panama Canal zone From 1904 to 1906 sanitary work was carried on which resulted in clearing away malaria and yellow fever from the Panama Canal zone A film was shown illustrating the great work of the Americans, in which the whole of the life history of the malarial parasite both in man and in the mosquito, was demonstrated A representation of the mosquito sucking blood from a patient was shown this film was lent by the courtesy of Dr Andrew Balfour of the London School of Tropical Medicine and Hygiene Various methods of controlling malaria were illustrated, including the rendering of houses mosquito-proof and the therapeutic use of quinine Cinematographs were also exhibited showing the process of emergence of adult mosquitos from pupa cases

Anderson College of Medicine Glasgow

The formal opening of the winter session at the Anderson College of Medicine took place on Tuesday October 14th, when an address was given by Dr Andrew Balfour C M G, director of the School of Tropical Medicine London There was a large attendance of students and the general public, who listened with the greatest attention and interest Dr Balfour chose as the title of his address "Vistas and visions—some aspects of the Colonial Medical Service" He gave a comprehensive survey of the great field for research in tropical diseases and indicated the wide range of opportunity for interesting and important work afforded in the Colonial Medical Services He described the many different diseases which would be met with in a tour of the tropics, pointing out the great need for continued research into the etiology of these, several of which were still obscure He instanced particularly bubonic plague, which continued to take a heavy toll of human life in India, the Gold Coast, Ashanti, and Nigeria, despite

their increasing knowledge of the bacillus and its carrier, the rat The campaign against rats had been pursued with relentless vigour, but without success in coping with the disease French workers on the African west coast had explained this by the possible presence of healthy human and of healthy cattle carriers of the disease Dr Balfour referred also to the outbreak of what might be called a new bacillary disease associated with ulceration of the throat in Egypt In speaking of leishmaniasis, he pointed out that though Sir William Leishman discovered the malady and its protozoal origin many years ago, they were still ignorant how the parasite effected a lodgement in the human body He emphasized the fact that the primary need for medical workers in the tropics was a microscope—that, indeed, this instrument there was as valuable as a stethoscope, if not more valuable

England and Wales.

Central Midwives Board

The Central Midwives Board for England and Wales met on October 9th for a special meeting and the ordinary monthly meeting Sir Francis Champneys presided

As a result of communications from the Ministry of Health the Board amended the first paragraph of the note at the back of the form of sending for medical help (Rule E 23 (*a*), page 31), to read

> "The medical practitioner responding to a call *in the case of any emergency, as defined in the Rules framed under Section 3, I (c) of the Midwives Act, 1902 (see Rule E 20)* will be paid his fee by the Local Supervising Authority for his attendance on this case, in accordance with the scale prescribed by the Ministry of Health"

A resolution was adopted requesting each local supervising authority to supply the Board with answers to the following questions

1 What drugs and antiseptics (including prophylactic drops for eyes) are carried and administered by the various midwives in your area?
2 What number of midwives practising in your area use "preparations containing opium" as permitted under the "Dangerous Drugs Regulations"?
3 Do you give any directions regarding the use of drugs by midwives in your area? If so, state what they are
4 Have any cases come to your knowledge in which a drug has been wrongly used? If so, state date, occasion, and result
5 Are any lectures or other forms of instruction arranged for midwives in your area regarding the use of such drugs and solutions as may be required in practice the conditions which call for their use, the mode of their administration, and their dangers?

Annual Medical Service in Liverpool

The annual medical service took place in St Luke's Church, Liverpool, on Sunday, October 19th There was a good attendance of medical men, a minority only being in academic dress The Lord Mayor and Lady Mayoress were present in state The University was represented by Vice-Chancellor Adami and many past-presidents of the Medical Institution were present The Bishop of Liverpool, Dr A A David, preached the sermon, taking as his text John i, 12 At the outset he drew attention to the impossibility of translating exactly the Greek word into a corresponding word in English The authorized version used the word "power," the revised version "right" The Greek word might be best paraphrased by "permission, and power to obtain" His discourse dealt with the efficacy of prayer and its helpfulness in all the straits that beset the life of man In becoming sons of God the endeavour should be to help one another by encouragement and by confidence in achieving the high ideals set before mankind through religion The offertory, which was on behalf of the Royal Medical Benevolent Fund, amounted to £81 12s 1d The local honorary treasurer will be pleased to add to this amount donations of members who were unable to be present, and Dr J E Nevins, 32, Princes Avenue, will gratefully acknowledge their receipt

The Liverpool Medical Institution

The first meeting of the eighty-sixth session took place on October 16th There was a large attendance of members and associates, and the President, Mr R C Dun, F R C S, delivered an inaugural address on "The banner of our pride" After an allusion to the untimely death of his predecessor, Mr G P Newbolt, he said that the number of members was now 486, that the library had quite recovered from the starvation period due to the great war, and drew attention to the Endowment Fund instituted for its maintenance Mr Dun's address was an historical survey of the origin, progress, and vicissitudes of the Knights of St John of Jerusalem A religious militant order, it was founded in 1048, and its object was to protect the holy places in Palestine The knights hospitallers played an important part in the Crusade, and for some centuries their chief seat was the island of Malta Through dissension and persecution the English contingent settled in Clerkenwell, where the knights hospitallers amassed great wealth, which was lost to them in the overthrow of the monastic institutions It never ceased to tend the wounded and sick in campaigns, but the Order practically became merged at the Geneva Convention in the Red Cross Society, whose beneficence and unexampled munificence was within the memory of all who had suffered during the great war It was the perusal of such stirring episodes intimately associated with the practice of first aid and medical treatment of the wounded that led Mr Dun to borrow from Macaulay the title of his address, "The banner of our pride"

Mr Thelwall Thomas proposed, and Dr Hill Abram seconded, a vote of thanks for an address which revealed much of painstaking research, and the members warmly acclaimed their appreciation of it Afterwards the President entertained the members to refreshments, and provided them with an excellent musical display

London County Council Report

The third volume of this report for 1923 is devoted to public health It includes the reports of Sir William Hamer as county health officer and school medical officer, both of which have been briefly referred to in this Journal (July 19th, p 125) In addition, the volume contains chapters (XXV, XXVI, and XXVII) dealing with general public health administration, main drainage, and housing Concerning tuberculosis it is pointed out that responsibility for its control in London is divided between the County Council and the metropolitan boroughs, the former providing or arranging for the residential treatment required through a public authority (other than Poor Law guardians), and the latter for dispensary treatment The total residential treatment in 1923 is represented by 1,173 beds occupied at the end of the year by insured persons and ex-service men, and 992 occupied by children and adults outwith the two above-mentioned classes Including both groups the admissions during the year were 5,326, in addition to 102 cases referred to the Invalid Children's Aid Association Permanent tuberculosis care committees, representative of statutory and voluntary organizations are in operation in nearly all the boroughs In connexion with the dispensary service the attention of the London Panel Committee and the British Medical Association has been called to the desirability of securing earlier notification The borough councils have been urged to arrange for tuberculosis officers being appointed visiting consultants for tuberculosis at Poor Law infirmaries in their areas There are now 31 tuberculosis dispensaries and two branch dispensaries in London Dental treatment is included in the service

For venereal disease the County Council and neighbouring authorities have a joint scheme for free diagnosis and treatment of in-patients and out-patients at 29 hospitals, and for in-patients only at 7 hostels Practitioners secure at the cost of the Council scientific reports on materials from suspected cases, and approved practitioners may obtain free of cost salvarsan or its substitutes Rescue and preventive work received attention by a central council of public authorities and voluntary agencies The provisions of Part I of the Children's Act, 1908, are duly administered, but the Council has been of opinion since 1920 that that part of the Act requires amendment There were 360 cases of puerperal fever and 753 of ophthalmia

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neonatorum, two cases occurred in which strong nitric acid had been put into the eyes of newly born infants by midwives in mistake for a weak solution of nitrate of silver, resulting in one case in total blindness of one eye and in the other of very great impairment of sight The Council has informed the Midwives Board of its opinion that the use of nitric acid by practising midwives should be prohibited Inquiry with regard to tuberculous milk is reported At four inspections of cows in London 7 370 cattle were examined, and no case of generalized tuberculosis was detected but in 125 cases other unhealthy conditions were found The action taken with regard to various diseases of animals, especially foot and mouth disease, is reported

In the chapter on main drainage, experiments in the biological treatment of sewage are briefly mentioned, and an account is given of administrative action regarding storm and flood relief The chapter on housing records the year's operations under the Act of 1923 in respect of many schemes

Employment of Married Medical Women

The General Purposes Committee of the London County Council is proposing to revert to the former rule whereby women doctors, like other women employees of the Council were compelled to resign their appointments on marriage In 1916, as a temporary expedient during the war, the rule was suspended, and married women continued in employment in various positions In 1921 when the rule was re-established so far as other women employees were concerned, it was thought desirable to make an exception for a further period of three years in the case of medical women in view of the difficulty experienced in obtaining practitioners with suitable qualifications The number of medical women at present employed in the service of the London County Council is 34 (17 of whom are part-time officers) and only three of these are married It is proposed to retain the services of the married women doctors now employed, as they have had valuable experience of school medical work, but to make the rule apply to medical women marrying in future

City of Westminster Health Society

Twenty years ago a society was formed for the improvement of health conditions in the City of Westminster ' and the annual report recently issued for the year 1923 shows that the society has cause for satisfaction It has seen the infant mortality rate decrease from 120 to 47 2 per 1 000 births since its activities began Last year the rate for London as a whole was 61 per 1,000 The work in maternity and child welfare includes visiting by salaried and voluntary workers, and the making of arrangements for pre natal examination and skilled attendance during confinement Instruction is given in mothercraft, with particular reference to the correct clothing of infants and school children Nasal hygiene receives special attention, and breathing exercises are taught at one of the centres where any form of nasal obstruction is sought out, and instruction given with regard to the use and care of handkerchiefs Students are encouraged to visit the centres maintained by the society, and during 1923 seventeen attended for practical training in various branches of the work The report contains a detailed analysis of the results of medical inspection of over a thousand children under school age It is recognized by child welfare workers that there is a dangerous and important gap between the infant welfare centre and the time when the child reaches school and again comes under regular medical supervision The medical inspection of the pre-school child has, however, received attention in Westminster and the report by Dr Olivier Richards is instructive The child is examined at each visit at intervals of one to three months, and advice is given to the parent concerning health and hygienic management It is emphasized that the welfare centre is not a treatment centre, and if some disturbance in health or physical defect is found the parent is advised what steps to take In the younger age groups the most frequent error in management is some wrong method of feeding, and the causes of difficulty in breast-feeding are analysed in detail While ' general conditions of the maintain breast-feeding, the large majority of these cases are not classifiable under the usual diseases contraindicating breast feeding, but are due to "insufficient rest" during the puerperium and to misgivings " and lack of confidence on the part of the mother or her relatives both these factors should respond to education In the older children (2 to 5 years) the chief error discovered is defective hygiene and the society is doing good work by teaching parents the importance to the child's health of fresh air and daylight, correct clothing, cleanliness, and regular habits

Ireland.

Medical Organization in the Free State

Well attended meetings of the medical profession in the Free State have been recently held in Carlow Cork, Limerick, and Clare The meetings were addressed by the Irish Medical Secretary, and schemes of organization for each of the county and borough areas were arranged The units adopted for organization were generally the Poor Law Union and the Health Board areas At a meeting of the County Clare medical practitioners recently held in Ennis the following resolutions were passed unanimously

1 That this meeting of the County Clare medical practitioners is of opinion that there is an urgent need for thorough organization of the profession throughout Ireland that we believe that that is best done by the establishment of county medical associations with a central delegate body in Dublin and an executive such as the Irish Medical Committee

2 That the first requisite to organization is money and therefore we are prepared to contribute financially to any reasonable extent required and we are also prepared to pledge our fullest co-operation with the Central Committee even to the extent of resigning our public offices in a body in the event of the conditions of medical service offered being considered unsatisfactory

Milk Supply of Dublin

The establishment of municipal milk depots in Dublin, with the object of fixing a reasonable price for milk in the city has been suggested following the protest aroused by the action of the milk dealers in raising the price to 2d per quart Dr O Dwyer, a member of the borough commission appointed by the Free State Government to take the place of the dissolved corporation has stated that if the baby clubs in the city and the Infant Aid Society desired to extend their activities and organization and approached the commissioners with a view to being afforded special facilities the matter would receive immediate consideration The Infant Aid Society and the baby clubs, which are doing very good work in supplying milk at a low price in the various depots under their control are in receipt of a grant of £3 200 from the commissioners and also £3 200 from the Government to assist them in their efforts It would appear that the commissioners are reluctant to take the responsibility of running milk depots but are prepared to assist financially the further extension of the enterprises of the baby clubs and Infant Aid Society with regard to supplying milk to the poor

A Belfast Presentation

The members of the visiting staff of the Royal Victoria Hospital Belfast, presented Dr W Calwell and Dr H L McKisack, their retiring colleagues, with a handsome piece of silver each, and entertained them as their guests at the annual dinner of the medical staff Dr Calwell joined the staff as assistant physician in 1895 and Dr McKisack as assistant physician in 1899

Cork Water Supply

At a recent meeting of the Cork Public Health Committee the city analyst, in dealing with a sample of water taken from the River Fergus at Coachford stated that the water is similar to common untreated sewage The contaminations which produce the polluted water should be subjected to some form of treatment by sedimentation, or allowed to flow over carriers on a field before being allowed to run into any stream of small volume" The analyst stated that the Macroom Rural District Council was responsible for applying the remedy described The Committee decided [illegible] against the Macroom Rural District Council

Ballymoney Board of Guardians

Arising out of a dispute with regard to the inadequacy of the remuneration allowed by the Ballymoney Board of Guardians for the *administration of* anaesthetics in the union hospital, Dr Wallace, medical officer of the Castle-quarter dispensary district, wrote to the guardians stating on behalf of the doctors who attended the recent conference that none of them would be available to anesthetize or assist at operations after October 2nd, 1924 The clerk said he had sent a copy of the letter to the Ministry, and had received the following reply

"I am directed by the Ministry of Home Affairs to acknowledge *receipt of your letter of the 27th inst respecting the refusal of certain medical practitioners in the* Ballymoney Union to assist at operations in the Route district hospital, and to state in reply that if the medical officer of the hospital requires assistance and the case is urgent, you should endeavour to obtain the assistance of the nearest available medical practitioner who is willing to act, at the best terms possible If the case is not urgent it is the duty of the medical officer of the hospital to apply to the committee of governors for authority to obtain the necessary assistance"

India.

School Medical Inspection in Simla

The quarterly report for the period ending December 31st, 1923, of Captain J R D Webb, I M S, the medical officer of Simla, embodies an account of the new system of school medical inspection introduced by him in the previous September Thus, out of 1,636 boys examined, no fewer than 1,111 (67 per cent) required some form of treatment, skin diseases were accountable in 233 cases, tonsils in 214, and glands in 287 Defective vision was found in 67 boys and defective hearing in 53 The application of the system had already resulted in an appreciable fall during each succeeding month of the number of boys suffering from various diseases Captain Webb proposes to make an addition to the system by the provision of expert medical assistance in the diagnosis of diseases of the eye, ear, nose, and throat, and by the organization of instruction classes in hygiene for both masters and children The results of medical examinations are recorded on index cards and accompany any boys who are transferred from one school to another He advocates the extension of this scheme to include schools for girls

Lady Reading Hospital, Simla

The announcement of the formal opening of the Lady Reading Hospital in Simla, on April 25th, appeared in our columns of May 17th (p 881), and the first patients were admitted without delay In the first four months of its existence 427 patients have been treated, 69 maternity cases dealt with, and 66 major operations performed The marked popularity of the institution indicates the extent of the need that is being met The hospital starts free from debt and with a sufficient endowment for its present needs The Simla municipality is co-operating cordially in the scheme and is represented on the hospital's governing body

National Baby Week, 1924

The report of the central executive committee of National Baby Week in India in 1924 contains a record of the successful venture launched by the Countess of Reading in August of the previous year The original committee appointed by Her Excellency included representatives of the Lady Chelmsford League for Maternity and Child Welfare and the Indian Red Cross Society, and these two societies jointly guaranteed sufficient funds for the project No general appeal for public subscriptions was required, though the scale on which the scheme was ultimately organized proved to be much greater than was anticipated Local governments, corporations, social welfare organizations, and private individuals contributed generously, and the committee was able to close its accounts without calling upon the two guaranteeing societies to any great extent The success of baby weeks in the various centres has made it clear that their annual repetition is desirable, each locality selecting the date most convenient to itself Several valuable conferences of health workers were held during the 1924 Baby Week, and will probably be increased in number during the coming year The report includes a short summary of the reports from many of the towns concerned, programmes of events and competitions, and suggestions put forward for the future The numbers of visitors in several towns were embarrassingly large, but the educational value of the whole undertaking was convincingly demonstrated

Correspondence.

THE BRACKENBURY TESTIMONIAL

Sir,—May I ask the hospitality of your columns to convey my most hearty thanks to those members of the profession who subscribed to the gift presented to me on Wednesday last? I have, of course, been able personally to thank only a few, but I hope that through them my thanks may have been conveyed to many others I should wish, however, that all, without exception, might know how very much I value their kindness, appreciation, and encouragement—I am, etc,

H B Brackenbury

Stroud Green, N Oct 20th

*** We publish in the Supplement this week a full report of the speeches made at the presentation on October 15th

DANGER OF STRONG APPLICATIONS IN THE PROPHYLAXIS AND TREATMENT OF OPHTHALMIA NEONATORUM

Sir,—May I, through your columns, draw the attention of practitioners to the danger of continued use of strong applications in cases of ophthalmia neonatorum? Every year since St Margaret's Hospital for ophthalmia neonatorum in London has been opened by the Metropolitan Asylums Board there have been admitted two or three cases in which both corneae have been destroyed or very severely damaged by the use of mercury perchloride in strengths of 1 in 500 to 1 in 3,000 used four or five times a day, or by silver nitrate (10 or 20 grains to the ounce) used as drops two or three times a day Although these drugs properly applied in correct dilutions are satisfactory, there is great danger if they are not properly used I therefore generally teach classes of midwives, etc, who attend this hospital to use protargol 10 per cent or acriflavine 1 in 1,500 in castor oil, as both safe and effective in the prophylaxis and treatment of the disease—I am, etc,

M S Mayou

London, W, Oct 16th

THE MADRAS GOVERNMENT AND INDIGENOUS SYSTEMS OF MEDICINE

Sir,—Three years ago the Government of Madras, at the instance of the Madras Legislative Council, appointed a committee to inquire into and to report upon the question of the recognition and encouragement of indigenous systems of medicine in vogue in the Madras Presidency The whole question was discussed fully, fairly, and crushingly in the issue of this Journal dated September 15th, 1923, from which I venture to quote the last two paragraphs

"The opinion is expressed in the report that no Western scientist should think of criticizing Ayurveda until he has learnt the Sanskrit language and studied the subject for some years under a competent Acharya But the Western scientist has no need of any such prolonged and detailed study he will, without the least difficulty recognize the familiar features of the phase of development reached by Ayurveda, when he recalls the history of his own science Similar unsupported metaphysical aid theoretical dogmas were to be found in both The 'authority of the Scriptures' was regarded as equivalent to the truth in the one as in the other, and our grandfathers accepted without a doubt the account of the creation of the universe given by Moses and regarded the first chapter of Genesis as the word of God In the last *hundred* years science has emerged from the metaphysical stage into the clear light of positive knowledge, and *if the Madras Government has the interests of the Indian people genuinely at heart, it will expend its energies in planting modern science in the country by the agency of scientific and teachers trained in Western methods, instead of endeavouring to stimulate the belated indigenous systems into renewed activity*

'There are many indications in the report that Ayurvedists feel the need of European methods—the microscope, bacterial techn[illegible]

etc What they really need is an altered scientific outlook they need to understand the difference between metaphysical and positive knowledge between the study of facts through the colour glass of theological dogma and their study in the plain daylight of science *The Madras Government is applied with the parties of the* It will be interesting to see whether it decides to set this country on the path of progress by the encouragement of European methods or pushes the country back into the old metaphysical rut [The italics are my own]

Most unfortunately the Government of Madras has not seen fit to adopt the excellent advice tendered to it in the above paragraph and has now, to the consternation of its medical officers, decided to constitute a Board whose functions will be as follows

(1) To form an association of practitioners of the indigenous systems *on the analogy of the British Medical Association* [Again the italics are mine]

(2) To formulate detailed proposals for a school or college of Indian medicine to be started in Madras

(3) To report whether, instead of the starting of a Government school or college scholarship may be given in certain existing institutions"

It is of the first importance that young medical men in this country should clearly realize the implication of this astounding order before they venture to enlist themselves in the service of a Government in which such things are possible The chief systems of indigenous medicine in the Madras Presidency (the Ayurvedic and the Unani systems) have been so well described in the article of September 15th 1923, already alluded to that it would be a work of supererogation to deal with them at any length here Their physiology is that of the so-called 'humours' their pathology resembles that which was current in the time of Hippocrates—a pathology which all other civilized peoples have for centuries cast behind them Their views on drugs are primitive, they know nothing of their standardization and rely rather on the phase of the moon under which the plants are gathered, or the dung of the sacred cow, on virgin's urine, and on similar harmful trash Western medicine has nothing to learn from them that it has not long ago learnt, classified, and standardized I can find no attempt in the report of the committee appointed by the Government of Madras to prove the hypotheses on which the whole of this archaic and effete system of medicine is supposed to be based A glaring light is cast on the committee's mentality by the astounding claim it makes that the ancient sages so trained their senses that their theories regarding the structure of the atom were not mere theory but were the result of direct observation and visualization by their highly trained senses Could credulity plumb a more abysmal depth than that which this claim reveals

Unfortunately this question of the State recognition by the Madras Government of this burlesque pretender to the claim of being a system of medicine does not stand alone For many years past the relations of the Madras Government with its medical officers has on a number of occasions been far from a happy one, and quite recently there has been a great feeling of discontent and annoyance amongst the medical officers now serving, with regard to the management of the big Presidency hospitals The Government, which proposes to launch out into expenditure on an effete and hopeless system of medicine has been issuing stringent orders as to the cutting down of the diets and of other items of expenditure in the very important Presidency hospitals My information is to the effect that those orders have not met with the approval of the officers of the institutions concerned, and that the opinion is widespread among them that if they are carried out the efficiency of the hospitals will be seriously diminished The matter attained such proportions that a number of articles appeared in the newspapers, criticizing the policy of retrenchment which had been followed, and in order to defend itself the Government issued to the press in July of this year a defence of its policy, in which it was stated that orders had been passed on several of the recommendations for effecting retrenchments "in consultation with the superintendents of the hospitals" I do not doubt that the superintendents were consulted, but was any respect or attention shown for their opinions? I have reason to doubt whether there was

There is a further statement in the Government's defence which has caused very deep and wide spread indignation in the ranks of the Service It is said "that people ever encouraged to resort to the Presidency hospitals of Madras not only with a view to medical treatment but in order to enjoy the amenities which hospital life afforded" As a superintendent of one of the institutions in the past I have read this statement with incredulity and indignation and find it difficult to find suitable terms in which to characterize it The work and the repute of the hospitals have gone out into all the world their diseases were drawn up by men who knew what the medical need and who recognized in them on times were incapable of doing how very much the success of medical and surgical treatment depended on carrying on hand in hand generosity in the diets given to really sick patients But it must be remembered that these hospitals are in the heart and centre of a population of forty million people and that into them are poured a large proportion of the difficult and desperate cases from all the district of the Presidency An added sting has been given to the order by the fact that the recommendation for the cutting down of the diets have been made on the advice of an inspecting officer who, whatever his admirable qualities may possibly be has I believe no qualification that would entitle him to registration in Great Britain, whilst he officers in charge of the Presidency hospitals are admittedly the pick of the local branch of the Indian Medical Service It is not even as if there were no fully qualified medical Indians in Madras for there are very many That there may be room for economies in minor matters no one will be prepared to dispute, but the suggestion that patients are encouraged to resort to the hospital to enjoy a loaf in luxury may certainly in my time—and I cannot doubt still is to-day—unfounded in fact, damaging to the reputation of the officers concerned and regrettable in the highest degree *If this is the way that the Madras Government is going to write in the press of its medical officers* who are by virtue of their position debarred from replying in their own defence it will have little cause to wonder if the young British born doctor turns his back on service in the Southern Presidency and this apart altogether from the merits or demerits of the proposed retrenchments

The much larger question that with which I have opened this letter—namely that of the recognition and encouragement in India of a so-called system of medicine for which a man trained in Western methods can have nothing but pitying contempt It knowing of this new and retrograde movement he enlists in the service of the Government, he will find it difficult indeed to avoid being made an instrument for the carrying out to some extent at least of a system of medicine which cannot fail to redound to his discredit and to damage his reputation This is no idle fear for several of the senior officers now or recently serving have been called on by Government to help them in this task and my information is that they have indignantly declined Will the man who goes in with his eyes open have the same liberty of action as the pioneer men who entered at a time when such a departure on the part of Government was undreamt of and if suggested as a possibility of the future would have been laughed at as grotesque and ridiculous

It is very difficult indeed to believe that the members of the Madras Government can really believe in this fantastic system of so-called medicine Are we to conclude then that they have yielded to Indian clamour and that they are acting in defiance of everything which a educated men know and believe, or is the explanation to be sought in the assumption that now that medicine is a transferred subject under an Indian Minister the latter has the last word in such decisions, and his European colleagues are practically powerless?

Whichever is the explanation I would ask once again Is it wise for the young British medical man trained in modern methods to enter the service of a Government in which such fantastic experiments are possible? The emphatic answer of the British Medical Association should, in my opinion, be in the negative, and should remain so until there is clear evidence that such retrograde and deplorable experiments are in some way made impossible

One last word We have trained a large number of medical men in our Indian colleges Many of these have taken degrees which deservedly stand high, and which entitle them holders to a place on the British *Medical Register* Are these men going to stand idly by and raise no protest against what both their intelligence and their heart must condemn? I sincerely trust they will not Those of us who have helped in the past to make them what they now are will look to them to justify our expectation that they will prove not unworthy of what Western science has taught them — I am, etc,

London, W, Oct 15th R H ELLIOT, Lieut Colonel I M S (ret)

THE REAL DEATH RATE

SIR,—The erroneous notion still exists, as has recently been revealed in articles in several leading newspapers, that the death rate by itself is always a fairly reliable measure of the health of a people I have thought for some time that we might be able to give the public a simple means of avoiding this and other fallacies on the subject The erroneous notion that if the inhabitants of two countries have a different death rate they must therefore have a different average of health is doubtless connected with the other common fallacy that 1,000 divided by the death rate (per thousand) invariably gives the average duration of life To estimate the average duration of life one must, of course, consider not only the death rate, but also the survival rate, if any—the survival rate being the rate of the natural increase of the population, that is, the birth rate *minus* the death rate, one must divide 1,000 by the death rate *plus* a fraction of the survival rate I have found that nine-twentieths is the fraction which gives an estimate most closely approximating to the result obtained by logarithms But ten-twentieths gives an estimate which is perhaps sufficiently close, and a half is an easily remembered and easily worked fraction I wish to suggest, therefore, that the death rate *plus* a half of the survival rate (D + ½ S) might be universally regarded as the real or comparable death rate of a country Dividing 1,000 by the death rate only gives a close estimate of the average duration of life when the birth rate and death rate are actually or nearly equal but dividing 1,000 by D + ½ S always does approximately give the average duration of life, so from this one would seem to be justified in regarding D + ½ S as the real death rate of a country

If my suggestion were approved and adopted, people could easily and quickly make a sufficiently accurate comparison of the average health in different countries, and thus avoid, for example, the frequent error of suggesting that France has a much higher mortality than England People could also be taught that 1,000 divided by D + ½ S gives an approximate estimate of the average duration of life, and therefore that D + ½ S cannot be under 15 unless it is possible for the inhabitants of a country to have an average duration of life of over 66 years, and newspapers would cease to publish articles suggesting that countries may come to have a birth rate and death rate of 6 per thousand, as this would at once be seen to imply the possibility of an average duration of life of about 166 years —I am, etc,

London, S W, Sept 27th B DUNLOP

THE BLOOD IN MILD CASES OF MALARIA

SIR,—In a recent work on haematology this sentence occurs in the description of a coloured plate illustrating tertian malaria "In view of the recent and moderately severe infection, the red cells show no anaemic changes" My experience of four relapsing cases is that no paroxysm is so slight as not to excite anaemic changes And, by the courtesy of asylum medical officers who supplied slides from several other cases, I am able to add that no case is too recent to escape such changes I saw no quartan or subtertian infection, but should expect the same changes in these

It is necessary to recall a few facts of haematology Polychromasia is a sign of unusually active erythrogenesis, and is conspicuous in the blood of the newborn babe, where it is associated with nucleated reds In adults polychromatic erythrocytes are still readily attracted into the blood stream and appear in minor anaemias of convalescents, whereas erythroblasts only appear in more serious anaemias or after severe haemorrhage In the so-called pernicious anaemias a toxin is also exciting the marrow to pathological regeneration The first indication of this is the appearance of punctated erythrocytes, which later on are associated with megaloblasts, giving a blood picture of anisocytosis, polychromasia, and normoblasts (normal regeneration), combined with punctate basophilia, Cabot rings, and megaloblast (pathological regeneration)

In malaria, as long as parasites are present in the blood I find erythrocytes showing polychromasia, anisocytosis, and often hypochromasia, and after each paroxysm punctate basophilia, Cabot rings, Jolly bodies, and sometimes erythroblasts In short, there is anaemia with unusually active normal regeneration, accompanied at the paroxysm with brisk pathological regeneration

At the same time leucocytes show neutropenia, monocytosis, and sometimes eosinophilia and plasmocytosis Amitosing lymphoid cells, myelocytes, and leucoblasts may usually be found after smart attacks Now myelocytes often accompany a sharp leucocytosis from any cause and may be compared to normoblasts But leucoblasts are quite pathological, and their entry into the blood is due not to chemotaxis but to direct toxic action on the marrow, so that they are comparable to megaloblasts Taken together, all four are characteristic of toxic anaemia such as the pernicious anaemias That toxins of varied origin may act on the marrow in much the same way is proved by the fact that small doses of lead soon produce a similar blood picture even to the leucoblast Obviously these toxins act mainly on the red, but also disturb the white elements of the marrow

These facts suggest that in suspected cases the presence of pathological regeneration may assist diagnosis in malaria just as in pernicious anaemia and in lead poisoning I do not know how long it persists, but it was still visible four and a half days after a paroxysm in which under treatment parasites had disappeared in forty hours, and of the erythrocytes 1 per cent showed polychromasia and 1 in 1,000 Cabot ring or punctate basophilia Punctate basophilia is entirely pathological and demands investigation just as much as albuminuria or glycosuria In any case it is useful to recognize these changes

With regard to technique, the following note may be useful

For leucocytes Leishman stain is satisfactory but more often than not it misses basophilia, Cabot rings, and Schuffner's dots in erythrocytes Manson's methylene blue answers well when made polychrome by boiling gently over a small flame for one minute about 8 c.cm in a clean test tube On cooling add 2 c.cm of the original solution, and it is ready for use and will keep for months It is convenient to have two small wide mouthed bottles with glass stoppers One contains 20 c.cm of pure methyl alcohol, and films are dropped in to be fixed by laying the bottle on its side for three minutes or more It may be used daily for months The other contains an ounce of distilled water, and five drops of 1 per cent aqueous solution of eosin and two drops of polychrome Manson's blue are added and mixed for each examination Fixed films are transferred with forceps to stain for half to two hours or longer—washing cautiously if overstained Films stained by Leishman in the usual way may, after examination of part of the film, be further stained in above solution with fair results Distilled water drop tube, and clean bottles are necessary and thin films desirable

—I am, etc,

West Ealing, W 13, Oct 17th ROBERT CRAIK, M D

GALL STONES AND CANCER

SIR,—I was surprised and pleased to see the letter from Dr Fiddian (September 27th, p 597) His views are much akin to mine I differ somewhat from him as to the nature of the cell affected, the epithelial cell is always the one affected, and it never forms a tissue—it lives its own life A letter of mine was published in the JOURNAL last year in which I said cancer was a reversion to embryonic condition This does not explain exactly what I mean I should have said the epithelial cell was arrested in its growth nearer to

the embryonic form than the fully developed cell Reversion to type is a term which is too loosely used the type is never lost, Nature is very "careful of the type" What I believe is meant by reversion is a casting off of adventitious accretions when the external stimulus which called them into existence has ceased to act I agree with Dr Iddian when he says it is clearly a struggle for existence on the part of the epithelial cells when faced with a new and menacing addition to their environment and it is the product of the cells which die in the fight which causes all the trouble in cancer, as shown in the later stages of Dr Leitch's experiments The epithelial cell knows no boundaries When the nature of cancer is officially recognized I believe my views will not be very far out —I am, etc,

Boston Sept 26th A W CRAWFORD

BLOOD TRANSFUSION

SIR —At the Annual Meeting of the British Medical Association at Bradford Mr Geoffrey Keynes read a paper on blood donors In the discussion he states (BRITISH MEDICAL JOURNAL, October 4th, p 615) that the citrate method is the most suitable for general use and that no further advance of importance has yet been recorded

When in Paris in March 1924 I saw at the Hopital St Michel a method of blood transfusion which I think is an advance in technique of some practical value The apparatus consists of a glass syringe of 200 c.cm capacity with an eccentric nozzle The piston contains in the distal part a small hollow fenestrated box, a screw inside the rod of the piston regulates the volume of the box which is filled with a mixture of sterile vaseline and paraffin By moving the piston up and down an even coating of the mixture is deposited on the inside of the glass barrel The syringe, piston, vaseline, and needles can be kept ready sterilized in a hermetically sealed drum With this instrument blood transfusion is very much simplified whole and not citrated blood is given clotting is delayed for a sufficient period, and the whole operation is reduced to two punctures

The instrument was designed by Dr A Becard and is made by Vincent in Paris Details of the technique and apparatus can be found in the recently published book *Transfusion du Sang*, by Victor Pauchet and A Becard — I am etc,

London W1 Oct 6th. STANFORD CADE, F R C S

MEDICAL OFFICERS AND CONSULTING FEES

SIR,—Dr Pearce thinks that I am chasing a shadow He is right The shadow I pursue is merely that intangible and elusive thing—professional status It is because, rightly or wrongly, I believe that the Bradford resolution was rather an oblique attack on that status, than a direct one on the few guineas we may receive as consultants that I, for one, regard it, like Dr Walker, as "provocative and unnecessary," and ask for its cancellation

As "Whole Time" wrote in your issue of September 20th we "stand or fall on our specialized knowledge" If we have none, we are fraud If we possess any it should be available for all, rich and poor There are still some people who will not accept gratuitous service If there are public authorities so short-sighted as to use the acceptance of these occasional consulting fees as an argument for the reduction of salaries—a phenomenon which I will credit when I meet with it—we can, if it is considered essential, hand over such fees to, say the after care committees

Dr Pearce and I qualified within a year of each other and we are both old enough to remember that the biggest fights have always been on account of 'shadows" Witness the prolonged struggle which was necessary to procure full military rank for the medical officers in the army and Indian services Ask an old army medical officer what that "shadow" meant to him! Nobody—I least of all—will quarrel with Dr Pearce for his attitude Such things are matters of personal evaluation What to one man is merely the pursuit of a shadow may mean to another the salvation of his soul —I am, etc

October 12th. TUBERCULOSIS OFFICER

PETER LOWIS "CHIRURGEPIE"

SIR,—The note in your issue of October 18th about the first edition of this book is not correct Three copies are known to the writer—one in the Radcliffe Library Oxford, another in the library of the Royal Medical and Chirurgical Society of London, and a third in the library of the Royal College of Physicians of Edinburgh — I am, etc,

October 20th. WALTER HUPST, Librarian Royal Faculty of Physicians and Surgeons Glasgow

Obituary

JOHN HAMMOND MORGAN, C V O, M A, F P C S,

Consulting Surgeon to Charing Cross Hospital

WE regret to record the death on October 11th at his house in Connaught Square, of Mr John H Morgan consulting surgeon to Charing Cross Hospital and to the Hospital for Sick Children, Great Ormond Street

John Hammond Morgan was born on August 19th, 1847 His father, John Morgan, F P C S, was for many years one of the leading general practitioners in the West End of London From Harrow he went to Trinity College Oxford, and graduated M A in 1873 Like his father before him he studied medicine at St George's Hospital and obtained the M P C S diploma in 1872 and the Fellowship in 1876 He was for some years surgical registrar at St George's and assistant surgeon to the West London Hospital Later he was appointed assistant surgeon to Charing Cross Hospital and to the Hospital for Sick Children, and surgeon to the Alexandra Hospital for Hip Disease For some years he served as examiner in surgery at the University of Oxford and from 1902 to 1910 was a member of the Council of the Royal College of Surgeons In 1897 he was president of the Medical Society of London, and delivered the Lettsomian Lectures on "Surgical affections of the urinary tract in children" He drew up the catalogue of the museum at Charing Cross Hospital, and wrote many papers on surgical subjects On three occasions he held office in the scientific sections at the Annual Meetings of the British Medical Association In 1878 at Bath he was secretary of the Section of Surgery at the London meeting in 1895 he was president of the Section of Diseases of Children, and in 1908, at Sheffield, he was vice-president of the Section of Surgery

For the following account of Mr Morgan's career and personal character we are indebted to his friend and colleague, Sir HERBERT F WATERHOUSE, consulting surgeon to Charing Cross Hospital

To all who were students at Charing Cross Hospital from 1880 to 1905 the death of Mr John H Morgan will come as a distinct personal loss, because no one was ever so completely the students' friend and no one could have taken a greater interest in their sports societies and welfare than he who was always affectionately known to them as "Johnny Morgan" Morgan was essentially a man whom students admire, as he was a brilliant athlete at Oxford where he was president of the Oxford University Athletic Club, and won the inter-university three mile race three years in succession His prowess as a long-distance runner was the more remarkable as he was a man of short stature

Hospital appointments came to him in full measure at first he was surgeon to the Hospital for Sick Children Great Ormond Street, to the Alexandra Hospital for Hip Disease, and assistant surgeon to the West London Hospital To the writer Morgan's work at Charing Cross to which he gave such devoted service for a quarter of a century was well known, as for more than ten years he acted as his assistant surgeon No man was more scrupulous in his attention to his hospital duties or gave more loyal service to any charitable institution

Morgan was by no means a showy operator His surgery was that of the old school, and he had but little sympathy with what he termed "new fangled ideas" Among his maxims, which he was constantly impressing upon his students, were "Do just what is required and no more",

'Avoid meddlesome surgery", and, as regards the abdomen, "Get in quick and out quicker" He was, however, probably a better surgeon than he was generally held to be, because his results were distinctly good, and they, surely, are the true test of a surgeon's merit Morgan's greatest friend was the late Sir Frederick Treves, for whom he had unbounded admiration, and whose writings might almost be said to have been his surgical bible Private practice and no attractions for Morgan, and few men of his experience and standing ever made, I imagine, a smaller income Possessed of ample means, he rather shunned than encouraged private operation cases, and to my knowledge frequently passed them on to Sir F Treves On my venturing a mild protest on one occasion he replied 'I don't want the money, and Treves will do it better than I could" This was characteristic of the man and his modesty Another instance I may mention of Morgan's self-effacement was when the lectureship at Charing Cross Medical School fell vacant Morgan had, by seniority, the first claim to the post He requested me to convey to Stanley Boyd his opinion that it would be in the interests of the school that Boyd should be appointed lecturer in surgery, and that therefore he had determined to stand aside in Boyd's favour He was an excellent committeeman, and acted for many years as chairman of the committee of the medical school.

Morgan was a deeply religious man, a firm adherent of the Church of England, and a staunch Conservative He retired from the staff of Charing Cross Hospital two years before he had reached the age limit, partly on account of ill health, but chiefly, as he told me, to give a position on the senior staff to his then assistant surgeon, Sir F Wallis In spite of ill health and his age (70 years), in 1917 he undertook the duties of surgeon in charge of the Hopital Anglais at Nevers, and carried on until increasing ill health compelled his retirement Of all that he did for the students at Charing Cross it is impossible to write in detail For many years he was president of the Students' Club and a generous supporter of the athletic, football, and cricket clubs, and the man to whom every student turned in time of trouble He will long live in our memories at Charing Cross as one of the best friends, the wisest counsellors, and the most generous supporters the school has ever had

Sir Henry Gauvain sends the following appreciation

The death of Mr John Morgan will be felt by many with a sense of real personal loss He typified the old-fashioned surgeon—dignified, courtly, with a high sense of duty, a direct manner which concealed the kindest of hearts and the most generous of instincts It has been my great privilege to be intimately associated with him during the past sixteen years On the suggestion of the then Presidents of the Royal Colleges of Physicians and Surgeons he was nominated an original member of the honorary medical board of the Lord Mayor Treloar Cripples' Hospital, and by the unanimous vote of his colleagues was elected chairman of the executive committee of that board No one could have been more zealous in the conduct of the duties his position entailed As the more urgent calls on his time diminished he returned ever more keenly his interest in the work at Alton His visits were always welcomed by all members of the staff, whom he treated with an altogether charming courtesy and consideration, and by the patients, who regarded him with both respect and affection He was deeply interested in the advances made in the technique of the treatment of our patients, and, tenacious to the sound principles on which conservative treatment of surgical tuberculosis are based, rejoiced in all advances made on these lines An ardent sportsman and a distinguished athlete, his activities were limited of recent years by reason of a severe accident in the hunting field Nevertheless, till comparatively lately he managed to travel a great deal, one of his latest considerable journeys being taken with his friend, the late Sir Frederick Treves, to the West Indies Since his retirement gardening had been one of his great hobbies, and it was ever a pleasure to him to take his friends around the delightful grounds of his beautiful home at Buckleburry Common In these grounds he had laid out a miniature rifle range for the use of the villagers, and it was a delight to him to see how greatly this thoughtful act was appreciated A staunch Tory and an ardent patriot, it was a source of great pride and pleasure to him to play his part in the great war as medical chief of the Croix Rouge Hospital for wounded soldiers at Nevers while in his 70th year I shall always remember him with respect and affection as a staunch and loyal friend, kind and generous to a fault, likeable and lovable, the true picture of "a fine old English gentleman"

SIR ROBERT HENDERSON, K C M G, C B,

Major General A M S (ret)

Major-General Sir Robert Samuel Findlay Henderson, K C M G, C B, Army Medical Service (ret), died in Queen Alexandra's Military Hospital, Millbank, on October 5th, aged 65

He was born in Calcutta on December 11th, 1858, the son of the Rev Robert Henderson, senior chaplain in Bengal, and was educated at Bedford School, Fettes College, Edinburgh University, where he graduated as M B and C M in 1882, and St Mary's Hospital, where he spent the final year of medical study Entering the army as surgeon on August 2nd, 1884, he became lieutenant-colonel after twenty years' service, brevet-colonel on November 22nd, 1910, and colonel on January 2nd, 1914, retiring on December 26th, 1917, with the rank of major-general He had a long list of war services Sudan campaign, 1885, Suakin, medal with clasp, and Khedive's bronze star, Burma, 1885 89, medal with two clasps, North-East Frontier of India,-Chin Lushai expedition, 1890, clasp, Burma, 1891, Wuntho expedition, mentioned in dispatches, *London Gazette*, February 9th, 1892, clasp, North-West Frontier of India, 1857 08, Malakand, medal with clasps, South African war, 1901 2, operations in the Transvaal, Orange River Colony, and Cape Colony, Queen's medal with five clasps *In* 1907 he was appointed secretary of the Royal Victoria Hospital, Netley, and from 1908 to 1912 he was secretary to the P M O in India, Sir Francis Trevor On promotion, in 1914, he was posted as A D M S at Quetta, in 1915 he was transferred to the 17th Division, and on August 1st, 1915, he was appointed director-general of the New Zealand Medical Force, with the rank of surgeon-general, holding that post till his retirement He was appointed honorary physician to the King in 1910, in 1917 he received the C B, and in 1919 the K C M G Until the outbreak of the war in 1914 he also held the Prussian Order of the Red Eagle

In his younger days Sir Robert Henderson was a famous international Rugby forward He was in the fifteen at Fettes, he played in the Edinburgh University fifteen for four years (1877-81), for the last three as captain, and subsequently for Blackheath, when he gained his international cap for England in 1882, 1883, and 1885

ARTHUR HILL TREVOR,

Commissioner of the Board of Control

Mr Arthur H Trevor took so wide and active an interest in the work of the Board of Control, and was so unremitting in his efforts to ameliorate the conditions and to advance the treatment of persons suffering from mental illness, that his sudden and unexpected death occasions a public loss, and by it the Commissioners are deprived of a colleague of great personality, who was highly esteemed as a friend by each one of them

Born in 1858, he was educated at Winchester and at Corpus Christi College, Oxford He was called to the Bar in 1884, and for some years practised on the South-Eastern Circuit and at the Sussex Sessions Appointed secretary to the Commissioners in Lunacy in November, 1905, he rapidly acquired so close and deep an interest in his new work that it was no small satisfaction to him when, two years later, he was chosen to fill the vacancy on the Commission created by the death of the late Mr G H Uthwatt, who was the victim of a murderous assault by a patient during an official visit to a mental hospital which, though it was not the immediate cause of his death, had left him in impaired health Trevor did a prodigious amount of work, not only when on circuit with a medical colleague inspecting

institutions and paying other statutory visits to patients, but also in the preparation of reports memoirs, and other literary work on behalf of the Board, in all this he was most painstaking was never satisfied until he had looked up all available references and what he wrote was always lucid and scholarly He also accomplished a great deal of useful work as a voluntary member of various committees, extraneous to his official duties but in aid of the better understanding of mental disorders and the advancement of their treatment mention, for instance, may be made of the active share he took in the work of the Committee of the Medico-Psychological Association in connexion with Lord Justice Atkin's Committee upon Criminal Responsibility, before which, later on, Mr Trevor, in conjunction with one of his medical colleagues, gave evidence He also gave evidence before the Royal Commission on the Care of the Feeble-minded in 1908 and upon the passing of the Mental Deficiency Act and the constitution in 1913 of the Board of Control, he threw himself heartily into the thus widened sphere of action of the Commissioners

He was emphatically a powerful link between the professions of law and medicine An ardent admirer of the latter, he was acutely interested in the broader aspects of medical problems, especially such as those which came up for discussion at the Board, or at meetings of the Medico-Psychological Association and of the Medico-Legal Society at which he frequently attended These he delighted to have explained to him by his medical colleagues and by the members of the medical staffs at mental hospitals, with so many of whom his duties brought him much in contact, and, endowed with breadth of vision and a ready grasp of essentials, he was a tower of strength in promoting progress The link between the two professions—inherent, indeed, in the constitution of the Commission ever since its inception in 1845—which he was ever desirous to see strengthened, was perhaps specially exemplified in him by first his constant reference to the exact words of the statute and then his habitual endeavour, short of their actual infringement, to mould administrative action so as to conform, as far as practicable, to medical aspirations In this connexion his bent of mind humane and progressive, was conspicuous in his persistent efforts to secure legislation to facilitate the prompt treatment of mental disorder in its incipient and early stages Up to within a few days of his death he had been preparing with much zest evidence for the Royal Commission on Lunacy Administration and the Early Treatment of Mental Disorder, and at their first meeting a moving tribute to his memory was paid by the chairman Mindful of his active interest in their work and his manifest wish to co-operate more actively than the fulfilment of his official duties perhaps demanded, the Medico-Psychological Association in 1910 elected him as an honorary member—a distinction but sparingly conferred only once previously upon anyone other than a medical man C H B

BOLTON GLANVILL CORNEY I S O M R C S

Mr Bolton G Corney, distinguished in the Colonial Service, died on September 24th at his residence Nevern Square West Kensington at the age of 74 after having suffered for a long period from distressing cardiac complications He was the son of Mr Bolton Corney well known in literary circles in London sixty years ago Educated at a private school in Barnes he always desired to lead a seafaring life, especially among semi civilized islanders then concluding that his wish might be best attained by going out to the South Sea Islands as a doctor he studied at St Thomas's Hospital and received the diploma of M R C S in 1874 He became well acquainted with many of the groups of islands in the Pacific and finally settled in the Fijis, being among the doctors whose labours on behalf of the natives under the headship of Sir Philip Gordon, were eulogized in the article on those islands in the *Times* of October 10th He wrote some instructive papers in association with his line of work on the mysterious Easter Island and on the epidemics of the insular nations in the Pacific Ocean As chief medical officer of the Colonial Government of Fiji and president, for a time, of the Board of Health Mr Corney was enabled to superintend and issue reports on the native population, especially as to the question of their threatened extinction and on his return to England he was made honorary secretary for Polynesia, in the Epidemiological Section of the Royal Society of Medicine Mr Corney should be remembered for a highly instructive series of surgical instruments of the most primitive character which he presented a few years ago to the museum of the Royal College of Surgeons of England, which have been arranged and catalogued in the instrument room in that institution These instruments are no longer to be found in Fiji as thanks to Mr Corney and his associates natives educated on European lines have replaced the medicine men who gave these strange instruments to the donor, explaining the uses to which they were applied

We regret to record the death of Dr James Albert Gibson, M B E of Carisbrooke, on October 12th at the age of 59 Dr Gibson was educated at Edinburgh, and at King's College and University College, London He graduated M B C M Edin in 1889, and proceeded M D in 1897 In 1906 he obtained the diploma of public health R C P S I For the last fifteen years he had been medical officer of health for the rural district of the Isle of Wight and the urban district of East Cowes and held for some time the appointment of county schools medical officer He had been medical superintendent of the Joint Isolation Hospital since it was built and was the county director for the island for the British Red Cross Society He was chairman of the Isle of Wight Division of the Southern Branch of the British Medical Association, and an ex-secretary and ex-president of the Southern Branch of the Society of Medical Officers of Health During the war he served as specialist sanitary officer to the Portsmouth garrison from 1914 to 1919 and was honorary medical officer in charge of the Seely Red Cross Hospital from 1914 to 1917 He contributed various articles on public health matters to *Public Health* He leaves a widow and one daughter The large attendance at the funeral service included the representative of Princess Beatrice, President of the Isle of Wight Branch of the British Red Cross Society the Mayor of Newport, and representatives of the British Medical Association, the British Legion, the rural district council, and voluntary aid detachments

Universities and Colleges

UNIVERSITY OF OXFORD

At a congregation held on October 16th the degree of Bachelor of Medicine (B M) was conferred on J W Alden

UNIVERSITY OF CAMBRIDGE

At a congregation held on October 13th the following medical degrees were conferred

M D—H T H Butt F B Hobbs
M Ch—A E Boche
M B B Ch—B B Jarein P D Griffiths T A Butcher
M B—J C Nevins
B Ch.—C J P Grosvenor

UNIVERSITY OF GLASGOW

The following degrees were conferred on October 20th

M D—(*With Honours*) G S Allan (*With Commendation*) J S Clunie
(*Ordinary Degree*) J A Dodds A H Hall W L T Mclean
The degrees of M B B Ch were conferred upon the following candidates

Elinor Drinkwater Jack on has gained the Wes[illegible] Memorial Prize awarded to the candidate who obtained the highest aggregate marks in the final examinations held during [illegible]

UNIVERSITY OF DUBLIN

School of Physic Trinity College

The following candidates have been approved at the examinations indicated

Final M B Part I—*Materia Medica and Therapeutics Medical Jurisprudence and Hygiene Pathology and Bacteriology* F Heatley Margaret H Donaldson Nancie N Lowther [illegible] W P Culbertson W M Gowan J C C Byrne E E Stanford H A Brown B Kahn [illegible] A Wanless W Sinclair D [illegible] Mabel E Brown Aileen Fair Jane D Fulton V I G Cleaver G V A Griffith E H Hall V C Horan E [illegible] E Hewson A E A O'Byrne, France s E O'Connor P F Palmer Grace Rankin Sela C Bo[illegible] W Pr[illegible]ell J C [illegible] Somerville-Large H. Tran[illegible] R T P Tweedy E J Wilson

D P H PART I—*Chemistry Bacteriology Physics and Meteorology* K J Bhavnani J M Gray W T Hoban PART II—*Sanitary Engineering Practical Sanitary Report Hygiene and Epidemiology Vital Statistics and Sanitary Law* E Parker K J Bhavnani
DIPLOMA IN GYNAECOLOGY AND OBSTETRICS—C C Coghlan
* Passed on high marks

ROYAL COLLEGE OF PHYSICIANS OF LONDON

AFTER the delivery of the Harveian Oration by Sir Archibald Garrod (printed in full at p 747), the President, Sir Humphry Rolleston, Bt, presented the Weber Parkes Prize and Medal to Professor Leon Calmette, formerly of Lisle, now Subdirector of the Pasteur Institute, for his researches on tuberculosis The President referred to him as the foremost authority on this subject, at the same time alluding to his researches into other aspects of bacteriology He then presented the Moxon Gold Medal to Sir Leonard Rogers, F R S, for his distinguished researches in clinical medicine He mentioned that there were few tropical diseases in regard to which he had not laid us under his debt by his investigation He mentioned especially dysentery, kala azar, cholera, and leprosy, and wished him success in his present researches into the treatment of tuberculosis

ROYAL COLLEGE OF SURGEONS OF ENGLAND

Annual Meeting of Fellows and Members

THE annual meeting of Fellows and Members will be held at the College in Lincoln's Inn Fields on Thursday, November 20th, at 3 p m, when the Council's report will be laid before the meeting Fellows and Members can obtain copies of the report on application to the Secretary Motions to be brought forward at the meeting must be signed by the mover and received by the Secretary not later than November 10th

ROYAL COLLEGE OF SURGEONS OF EDINBURGH

AT the meeting of the Royal College of Surgeons of Edinburgh held on October 15th Sir Harold J Stiles LL D, was re elected President for the ensuing year, Sir David Wallace C M G, D L, Vice President, and Mr Alexander Miles, F R C S E, Secretary and Treasurer

Mr Pirie Watson, F R C S E, was approved as a Lecturer in Surgery at the Extra mural School

The following 23 successful candidates out of 54 entered, having passed the requisite examinations, have been admitted Fellows

F G Bell A P Bertwistle E S Clayton A J Dodhi J A Douglas A M Elliott Captain A S Fry I M S C A S P Jayanayake L M McKillop I Maisels T McW Milai J Miller H MacD Monro H Mortimer Surgeon Captain J R Mun R N S L Navaratnam F H B Norrie T G R Panikkar I W Riddoch, R H Rose Innes H C Suri W P Tew D St J Wigle

ROYAL COLLEGE OF PHYSICIANS OF IRELAND

AT the annual meeting of the President and Fellows of the Royal College of Physicians of Ireland, held on St Luke's Day, October 18th the following officers were elected *President* Sir William J Thompson *Vice President* Dr W A Winter *Censors* Drs W A Winter, Gibbon Fitzgibbon, G E Nesbitt, and R J Rowlette *Representative on the General Medical Council* Sir John Moore

Mrs Mary Ellice Thorn Hearn M D, and Major J Drummond Sands, I M S, were elected Fellows of the College

CONJOINT BOARD IN SCOTLAND

THE following candidates have been approved at the examinations indicated

D P H—G M Currie J L Connacher J Yule R Lockhart T M Hunter Margaret W Kemp Margaret M U Martin R Armstrong A Hamilton A King Mary N Hendry Alice McGlashan Annabella McGarrity T S McKean Anne M Forrest May Marshall J D Dear A Penman Annie G Learmonth Elizabeth M Lindsay P V Pritchard I M D Grieve F B Maclezie Jenny C King Winifred Wight Isobel C Macdonald Elizabeth McV I Currie R J Matthews Sheila Hunter A M M Grierson, F W Gavin G W Simpson Phyllis M H Lunn G S K Iyer Jean V Kirkwood R H Dunlop Margaret D Cairns Catherine McL Buchanan W H Carter Christina Grant Daisy B McBride C C I Storach Isabella P Crosbie J C Macartney *Part I* M J Bett Marjorie H Mitchell I M Burdon G J Bastible A H Campbell Annie V Taylor I L McKinlay *Part II* Mary M Jack W A Horne Violet Oswald

FINAL EXAMINATION—*Medicine* I A M McKinney D Isaacs H D J Lazarus P J Badenhorst A M Filer W A D Oliver *Surgery* J F Hedley J M Rutherford R W C Thambiah E G Douglas P J Badenhorst *Midwifery* J I Hedley M Yeaman A Vasudev Florence M Smit [illegible] Douglas Sarkie Marian E Owen Morris [illegible] Rossie J P T Mills, A M Filer N I [illegible] L Low H A Newton W A D Oliver [illegible] D Ross C E Millen A Vasudev J L Malone A Wilson I D R Wylie K R Bali J L Clark G J Bell H B Warner H J Marcelin J Sullivan A G Farquharson P King J W McVicker Mary A McGill J K Steel G M Johnson A B C Doras W Alan J E Kennedy

The following, having passed the Final Examination, were admitted L R C P E, L R C S E, L R F P and S G

N Ampalavanar E S Brohier C J B Cave F Y Chia F El Ahmadi A S P Fernando E C Gilles P Groulie R H Hoit T Hughes J R Hunter H H James B S Jayawardene J W Keighley T I Kelly C [illegible] Martin D S Middleton T J Mun [illegible] Rutherford D Stewart [illegible] C H Thomas V B van Dort W G S Popper V I Thyagarajan J A McCann

Medico-Legal.

R v HADWEN

A RULE NISI was granted by the Lord Chief Justice, and Avory and Salter, JJ, in the King's Bench Division of the High Court of Justice, sitting on October 17th, calling on Dr W R Hadwen of Gloucester (who, on October 2nd, was committed for trial to the Gloucester City Assizes on a charge of manslaughter) to show cause why the trial of his case should not be removed to the Old Bailey Dr Hadwen was also committed for trial on a coroner's indictment

The court was moved by Mr St John Micklethwait, at the instance of the Director of Public Prosecutions who said that the ground of the application was that it was not possible to obtain a fair trial in Gloucester, and in support of this statement he read an affidavit by the Deputy Chief Constable for Gloucester shire which said that at an inquest on Nellie Christabel Burnham on September 12th, the coroner's jury returned a verdict of manslaughter against Dr Hadwen—it was believed by a majority of nine to three The foreman after the verdict was given, was alleged to have said to Dr Hadwen "I am sorry of course, you know I did not agree" Dr Hadwen was well known in Gloucester as a medical man and also as a public man The people of Gloucester were taking great interest in the case, and as many as 200 people assembled at the entrance to the police court and showed considerable feeling Dr Hadwen being cheered and the crowd singing 'For he's a jolly good fellow" The crowd showed hostility to the witnesses for the prosecution including Dr Ellis and all this had been reported in the public press During the small pox epidemic in Gloucester the inhabitants of Gloucester were practically divided into two camps The present prosecution had revived the old controversy, and was the subject of constant conversation and the exhibition of partisanship among the citizens As the grand and petty jurors for the coming City Assize would be drawn exclusively from Gloucester City, the deponent was of opinion that a fair and impartial trial could not at present be held in Gloucester

Sir E Marshall Hall, K C, on October 22nd showed cause, and pointed out that he only knew of two cases reported in which the prosecution had asked for the removal of a case from assize to the Central Criminal Court, and only in one of those cases was the rule made absolute

The rule was discharged

The Services

NAVAL MEDICAL COMPASSIONATE FUND

AT the quarterly meeting of the directors of the Naval Medical Compassionate Fund held on October 7th, Surgeon Vice Admiral Joseph Chambers C B C M G, R N, Medical Director General of the Navy, in the chair, the sum of £69 was distributed among the several applicants

Medical News.

THE Semon Lecture, which is given under the auspices of the University of London, will be delivered this year by Dr Guisez of Paris, at the house of the Royal Society of Medicine, 1, Wimpole Street, W, at 3 p m, on Thursday, November 6th, and not at 5 p m, as previously stated The subject of the lecture will be malignant disease of the oesophagus

A NEW course of post graduate lectures arranged by the Faculty of Medicine of the University of Sheffield commences on Tuesday next, October 28th, at 3 30 p m, and will be continued on subsequent Tuesdays and Fridays up till December 19th A course of six lectures on the history of medicine, by Mr George Wilkinson, F R C S, will be given in the University during the winter session the first, on Friday, October 31st, at 4 p m, is entitled "The Mediaeval Practitioner—Chaucer's 'Doctour of Physik'"

THE fifth and sixth lectures of the series of post graduate lectures on cancer will be delivered at 1, Wimpole Street, at 5 30 p m, on October 29th, by Mr Sampson Handley, on cancer of the breast, and on October 31st, by Mr R H Jocelyn Swan, on malignant growths of the kidney On October 27th, at the Hampstead General Hospital, two weeks' intensive course commences, including clinics, operations, and demonstrations in the mornings and afternoons, and lectures at 4 p m A combined course in diseases of children has been arranged, from October 27th to November 15th by the Paddington Green Children's Hospital, the Victoria Hospital, and the Children's Clinic A course in venereal disease will be held at the London Lock Hospital, Dean Street, from November 3rd to 29th From November 3rd to 28th a course in dermatology will be held at St John's Hospital for Diseases of the Skin A fortnight's course in proctology has been arranged at St Mark's Hospital from November 10th to 22nd Syllabuses of the courses may be obtained from the Secretary of the Fellowship of Medicine at 1, Wimpole Street, W 1

DR ROBERT BRIDGES the Poet Laureate, attained his eighteenth birthday on Thursday October 23rd Dr Bridges graduated M B at Oxford in 1874, and was elected a Fellow of the Royal College of Physicians in 1900 All members of the medical profession will wish to associate themselves with the congratulations and good wishes conveyed to him by his friends and admirers

THE annual dinner of Fellows and members of sections of the Royal Society of Medicine will be held on Wednesday, November 26th at 8 p m at the Hotel Victoria, Northumberland Avenue London, S W

A SERIES of eight lectures organized by the People's League of Health is being delivered at 11 Chandos Street Cavendish Square on 'The mind and what we ought to know about it' on Mondays, at 6 p m Tickets for the series may be obtained from the office of the League 12 Stratford Place W 1

THE fifteenth international post graduate course at Vienna will be held from November 24th to December 6th and will deal with children's diseases The subjects to be treated include tuberculosis, various nervous diseases exanthemata and erythemata diabetes and orthopaedics During the last three days there will be the usual class work Medical practitioners wishing to attend should communicate in writing with the secretary of the course Dr Kronfeld Porzellangasse 22 Vienna IX the fee is 500 000 kronen The sixteenth international course will be held from February 9th to 21st 1925 and will deal with diseases of the digestive organs A detailed programme will be issued shortly

THE annual dinner of the Cambridge Graduates' Club of St Bartholomew's Hospital will be held on Wednesday November 19th at 7 30 p m in the Grand Hall of the Hotel Victoria with Dr J H Drysdale in the chair

THE University of Bristol Association of Alumni (London branch) will hold its annual dinner on Friday November 7th at 7 45 p m, at Pagani's Restaurant Great Portland Street Viscount Haldane will preside Members of the University and past members of its associated colleges are invited to apply for tickets (price 8s 6d, exclusive of wine) to the honorary secretary Dr Elizabeth Casson, Holloway Sanatorium Virginia Water

THE Aberdeen University Club London, will hold its biannual dinner (which on this occasion celebrates the George MacDonald Centenary) on Thursday November 6th at 7 30 p m at Gatti's Restaurant Strand Dr Milligan 11 Upper Brook Street W 1 will be pleased to hear from graduates, past or present wishing to attend or to join the club

THE extensions to the Alton Cottage Hospital provided by the generosity of Mr and Mrs F B Summers of Froyle Hants in memory of their two children at a cost of £18 000 were formally opened on October 18th by Canon Causton in the absence of Major General the Right Hon J L B Seely The additions provide for sixteen extra beds quarters for the medical and nursing staffs operating theatre two private wards a separate block for x ray treatment and an out patients department A power house has been installed for lighting and heating purposes, and rubber flooring has been laid throughout The hospital was founded by Canon Causton's father

IN succession to the late Mr A H Trevor the Hon Herbert Crawshay Bailey, Barrister at Law has been appointed as Commissioner of the Board of Control

THE National Social Hygiene Conference for 1925 will be held in Cincinnati from November 19th to 22nd This conference marks the tenth anniversary of the founding of the American Social Hygiene Association, and it will be held under the joint auspices of that association and the Cincinnati Social Hygiene Society

THE Minister of Health is about to make Regulations for the purpose of preventing infection from the employment in and about farms dairies etc of persons suffering from pulmonary tuberculosis Copies of the draft Regulations which have been prepared for this purpose can be purchased under the description "Draft dated 17th October 1924 of the Public Health (Prevention of Tuberculosis) Regulations 1925 from H M Stationery Office Adastral House Kingsway W C 2 either directly or through any bookseller (price 1d) Any representations on the subject should be addressed to the Secretary to the Ministry at an early date

MR V WARREN LOW C B, F R C S was the guest of the Surgical Instrument Manufacturers' Association at the annual dinner at the Holborn Restaurant on October 10th In acknowledging the toast of the guests he complimented British manufacturers upon the very high standard of excellence reached by them in the surgical instruments they produced He considered that British manufacturers had not only kept abreast of the times but had presented to the world types, characteristics, and qualities which defied imitation

THE issue of the *Paris Medical* dated October 4 th is devoted to neurology, and contains the annual review of this subject for 1924 by J Camus Other articles in this issue deal with the modern treatment of meningitis writers cramp and the differential diagnosis of medullary compression and sclerosis

MORE than fifty medical practitioners from eleven European countries took part in a tour of the principal Italian spas organized by the Italian State Tourist Office, between September 18th and October 3rd Ten different spas were visited in a special first class train and the various points of general and clinical interest were demonstrated by the resident medical specialists Receptions and entertainments were arranged in Milan, Pomezia and Naples A second tour will be organized next year to include some of the more important Italian climatic stations in addition to the spas Further information may be obtained from the London offices of the Italian State Railways and Tourist Department, 12, Waterloo Place, S W

THE final report of the Departmental Committee on the use of preservatives and colouring matters in food has been published as we go to press The Committee was appointed in July 1923, by the Minister of Health and its interim report on formalichyde in meat was reviewed in our issue of August 16th, 1924 (p 289) The final report (which will be noticed in more detail in an early issue recommends that with two exceptions preservatives in the sense defined by the Committee should be prohibited in all articles of food and drink offered or exposed for sale whether manufactured in this country or imported The exceptions are (1) *sulphur dioxide* in sausages (up to 3 grains per pound) in jam (up to 0 3 grain per pound) in dried fruit (up to 7 grains per pound) in preserved whole fruit or fruit pulp (up to 5 grains per pound) in beer and cider (up to 5 grains per gallon) in alcoholic and non alcoholic wines cordials, and fruit juices (up to 3 grains per pint) and (2) *Benzoic acid* in coffee extracts (up to 3 grains per pound) in non alcoholic wines cordials and fruit juices as an alternative to sulphur dioxide (up to 5 grains per pint) in sweetened mineral waters and brewed ginger beer (up to 1 grain per pint) The Committee recommends that the use of preservatives so far as they are permitted should be conditional on the nature and quantity present in the article of food being declared in a manner prescribed by the Minister of Health It recommends also that the employment of copper sulphate to colour or preserve the colour of peas and other vegetables should be prohibited and that the Minister of Health should issue a schedule of colouring matters whose use is non injurious to health

Letters, Notes, and Answers.

CORRESPONDENTS who wish notice to be taken of their communications should authenticate them with their names—not necessarily for publication

THE telephone number of the BRITISH MEDICAL ASSOCIATION and BRITISH MEDICAL JOURNAL is Gerrard 2630 (Internal Exchange) The telegraphic address is

EDITOR of the BRITISH MEDICAL JOURNAL *Articulate Westrand, London*

FINANCIAL SECRETARY AND BUSINESS MANAGER (Advertisements etc) *Articulate Westrand London*

MEDICAL SECRETARY *Hitherto Westrand London*

The address of the Irish Office of the British Medical Association is 16 South Frederick Street Dublin (telegrams *Bacillus Dublin* telephone 4737 Dublin) and of the Scottish Office 6 Putland Square Edinburgh (telegrams *Associate Edinburgh* telephone 4361 Central)

QUERIES AND ANSWERS.

INCOME TAX

Book Debts

"R G C" bought a death vacancy but on the board being taken from March 1st, 1922 How should the purchaser's profits be calculated as regards gross receipts?

Strictly the gross receipts should be the total of the bills of fees chargeable for work done in the year to April 5th 1923 whether actually received or not It is obvious that this process is difficult to calculate as it involves detailed examination of probable bad debts and consequently some adaptation of the cash receipts total is being sought for to arrive the purchaser H I G C had taken over the debts the matter would have been simplified, as he could have included with the receipts for work done by him those for past years, but as he did not have

the debts over he has not the requisite information The inspector of taxes therefore suggests that to the cash receipts should be added the amount of the book debts owing to "R G C" at April 30th, 1923 This is *correct*, provided that that amount be reduced by a proper allowance for bad debts, but unfortunately "R G C's" statement does not show how much was owing to him at that date, as his accounts were sent out at the end of March It is not clear whether the total amount of bills issued at that date is ascertainable, if it is, the solution should be fairly simple—for example, an eleven months' account to that date could be struck, or the account taken to April 30th on the basis of including the April cash receipts and taking the outstandings at the end of that month as the March debts less cash received and less estimated bad debts for the eleven months An objection the inspector might raise to this is that it includes nothing for work done in April, 1923 unless paid for, seeing that accounts would not have been sent out by "R G C" for that month The inspector suggests that the outstandings at April 30th 1923, be taken at one fourth of the 1923-24 bookings (calculated as being receipts *plus* £80 bad debts) *plus* an estimate (three fourths of £80) for applications for debts surviving from quarter to quarter, *less* the amount of the April, 1923, cash receipts It will be unfortunate if "R G C" has not retained a note of the total of the March, 1923, accounts, as an eleven months' account is a solution preferable to estimating outstanding debts at April 30th, 1923, and then taking eleven twelfths of the profit so calculated, but if he has not retained that record we advise acceptance of the method proposed by the inspector, though our correspondent may be in a position to show that the practice improved in 1923-24, so that the cash receipts for that year give an indication of the previous year's outstandings, which is excessive and should be modified for the purpose to which he proposes to put that figure

Earnings from Previous Employment

"X Y Z" qualified in July, 1922, and had sundry earnings in 1922-23 and 1923-24, in May, 1924, he accepted a post at £360 per annum and has been assessed to income tax at £360 Can he average his earnings?

*** "X Y Z" is assessable in respect of his present office or employment and, though the matter is not entirely free from doubt in our opinion he is not entitled to bring into the average the earnings from previous employment Such a claim would be particularly difficult to maintain where the employment had been discontinuous, in which case the earnings of parts of a previous year would not produce "a fair and just" average for a year of continuous employment One point on the actual facts occurs to us, if "Y Y Z's" engagement dates from, say May 5th, 1924, then in respect of the year to April 5th, 1924, he is assessable in the sum of eleven twelfths of £360=£330 only so far as this employment is concerned

"H C" entered a practice as a junior partner drawing a fourth share of the profits, and inquires what his position is with regard to the deduction of his expenses incurred subsequently

*** For the period of the assistantship "H C" was chargeable in respect of his salary, and the amount of the salary was deductible as a business expense in computing the profits of the practice Subsequently his fourth share (which in a sense displaces the salary) cannot, but his expenses can be deducted in computing the practice profits Having arrived at these profits accordingly the three years' average is struck, and "H C" is liable for his share of the assessment so calculated, and further expenses cannot be deducted therefrom In other words, the expenses should be those incurred in the separate three years in the carrying on of the practice, not those of the year of assessment Having regard to the deductibility of the assistantship salary this is not likely to work out unfairly so far as "H C" and his partner are concerned

LETTERS NOTES ETC

HERPES ZOSTER AND VARICELLA

DR W N W KENNEDY (Hale, Cheshire) writes Early last month a married lady, aged 35, consulted me regarding an eruptive condition of her skin In the interscapular space, slightly to the left of the middle line, there was a herpetiform rash covering an area roughly equal to that of a half crown piece The pustules tended to become confluent, although their original discrete character could still be recognized There was also some suggestion of haemorrhage The condition was unassociated with pain however and there was no history of trauma or irritation No other portion of the skin surface was affected In a week the scabs had separated Exactly fourteen days from that date one of her children (aged 7 years), developed a characteristic chicken pox eruption without any systemic symptoms The family lives in an isolated house in the country The children had not been in contact with any other children, either at school or with visitors None of the adults, except the mother, gave a history of a recent skin affection The circumstances suggest something more than mere coincidence

MIXED GLANDS IN THE TREATMENT OF RHEUMATIC AFFECTIONS

DR A GORDON WATSON (Bath) writes In 100 cases of "rheumatic" arthritis in which a combination of the thyroid, pituitary, ovary, and testis were given by the mouth as an adjunct to other treatment, the following results were noted 70 felt some benefit from the tonic effect, 20 believed that mixed glands were the deciding factor in their marked improvement, and in 10 cases no difference was discernible The same preparation was used in all these cases, polyglandin (Allen and Hanburys) which contains in each teaspoonful of the elixir, pituitary 1/4 grain, thyroid 1/2 grain, ovary 2½ grains, testis 2½ grains of the fresh glands Great difference in individual tolerance was noticed—for example, in one patient, aged 79, half teaspoonful doses caused throbbing headache in the temporal region, but three drops thrice a day was highly effective, a fortnight's course (no other treatment being used) enabled this old gentleman to walk three or four times as well as before, his knees became more supple, and he has largely lost the fear of his knees giving way under him In some cases of rheumatoid arthritis and chronic "muscular rheumatism" this treatment seems to be of use, but my cases are not yet numerous enough to judge from, more especially as I have not used it alone

A RAY EXAMINATION IN RELATION TO PULMONARY TUBERCULOSIS

"GENERAL PRACTITIONER" writes to emphasize Dr F G Chandler's remarks (October 18th, p 742) about the danger of placing reliance on physical signs in diagnosing phthisis Early phthisis, he says must be diagnosed by symptoms, and just as important as tubercle bacilli, toxaemia and evening rise of temperature, is a weekly record of the patient's weight Examination of many thousands of specimens of sputum has also impressed me with the fact that failure to find the bacillus must not negative the diagnosis Many years ago, I well remember the late Dr Schorstein saying, "When you can diagnose phthisis by physical signs, you can do nothing for your patient" The early symptom of malignant disease of the larynx—hoarseness or loss of voice—is frequently neglected until the patient is past help At present no help or encouragement is offered to men wishing to do post graduate work, it has to be done in their leisure hours and at their own expense, also, for obvious reasons, resident posts in special hospitals are frequently given to men from the Dominions

FREE PASSAGES FOR UNIVERSITY GRADUATES

DR ALEX HILL (secretary of the Universities Bureau of the British Empire) informs us that the six great lines engaged in the passenger service to Australia and New Zealand have agreed to grant eight free first class return tickets yearly to university graduates desirous of studying problems connected with the development of the resources of the Dominions or of holding temporary teaching posts The selection of the recipients is to rest with a committee of the Universities Bureau, 59, Russell Square, London, W C 1

TELEPHONES FOR MOTORISTS

DURING the past month the Automobile Association has installed eight more day and night roadside telephones for the use of its members The "A A" roadside telephones are distributed throughout the country along the main roads, and access is given to the telephones by a special key issued to members The new telephones are *located at the cross roads* at Pulham, on the main Norwich-Ipswich road, at Flint House cross roads, on the Newmarket-Royston and Ware-Cambridge roads, at Blackmoor Gate, on the Lynton-Barnstaple and Ilfracombe-Wheddon cross roads, at Halcon Corner
Desford cross roads on the L
House cross roads, on the
roads, at Cadnam cross ro
road, and at East Horndon, on the new Southend road

DISCUSSION ON CARDIAC IRREGULARITIES

Correction

BY an oversight it was stated last week that Dr Langdon Brown was in the chair of the Section of Medicine of the Annual Meeting at Bradford when Professor Wardrop Griffith opened the discussion on cardiac irregularities The chair was taken on this occasion by the president of the section, Professor Arthur J Hall, of Sheffield

VACANCIES

NOTIFICATIONS of offices vacant in universities, medical colleges, and of vacant resident and other appointments at hospitals will be found at pages 38, 40, 41 44, and 45 of our advertisement columns, and advertisements as to partnerships, assistantships, and locumtenencies at pages 42 43, and 44

A short summary of vacant posts notified in the advertisement columns appears in the *Supplement* at page 109

EPITOME OF CURRENT MEDICAL LITERATURE

Medicine

306. Hemiplegia in Typhoid Fever

G Tizianello (*Il Policlinico* Sez Prat, Aug 18th, 1924 p 1069) states that among more than a thousand cases of typhoid fever admitted to the typhoid pavilion of the civilian hospital at Venice in the course of the last seven years only two developed hemiplegia Only a few instances of this complication of typhoid have been recorded in medical literature all of which ended in recovery, so that it was impossible to determine the nature of the causal lesion Tizianello's first case occurred in a woman aged 29, who developed left hemiplegia followed by gangrene of the left arm in the third week of a severe attack of typical typhoid fever Death took place after about five weeks illness and the autopsy showed an area of softening in the basal ganglion on the right side involving the putamen part of the globus pallidus and internal capsule and a small portion of the external capsule The second case was in a girl aged 18 who on the fifth day after the temperature had become normal and on the thirtieth day of disease, complained of headache and a few hours later suddenly developed right hemiparesis Almost complete recovery eventually took place Tizianello regards the process as thrombotic in both cases He thinks that probably the primary cause of the hemiplegia is always typhoid arteritis The similarity of the two cases suggests that the typhoid toxins may have their seat of activity in the grey nuclei of the base probably the putamen

307 High Blood Pressure.

According to E Kylin (*Klin Woch*, September 16th, 1924 p 1712) the disturbance in the autonomic nervous system is the point to which treatment should be directed in cases of high blood pressure A rest cure should be tried first, since this often gives good results, though when the patient returns to his former occupation the pathological condition may reappear For some time the author has treated essential high blood pressure by calcium salts and atropine given by the mouth Theoretical grounds for this treatment are the supposed predominance of the vagus nervous system over the sympathetic nervous system in essential hypertonus (as indicated by the adrenaline reaction) and the view that the calcium ions bring about stimulation of the sympathetic system It has been shown also that in essential hypertonus the calcium of the blood is diminished By the administration of atropine the author endeavours to restore the equilibrium between the vagus and sympathetic nervous systems Four cases are recorded in detail illustrating the improvement under the administration of calcium chloride and atropine four times a day These patients were in hospital but similar improvement was obtained in out patients, and the author considers that the treatment is worthy of further trial

308 Three day Fever with Rash in Children

E Gla zmann (*Schweiz med Woch*, June 26th 1924 p 589) discusses the diagnosis of this condition, a comprehensive account of which was first published in 1910 by Zahorsky, who called it "roseola infantilis The author has studied it since 1918 in Bern, and publishes several case reports to illustrate its most salient clinical features The disease is practically limited to children between the ages of 6 months and 2 years It begins with three days of comparatively high fever the fall of which by crisis is rapidly followed by the appearance of a rash resembling that of scarlet fever, measles, or rubeola During the three days of fever the patient is restless, sleepless and obviously in pain children old enough to speak complain of headache In this pre eruption stage of the disease there is only one reliable guide to the diagnosis—a leucocyte count The author points out that it is remarkable that such a brief and mild exanthematous disease should have so profound an influence on the leucocytes Great leucopenia occurs associated with a marked relative increase in the number of the lymphocytes to 80-90 per cent of all the leucocytes The number of the polynuclear leucocytes both absolute and relative is greatly reduced and the few polynuclears which remain often show degenerative changes a few myelocytes and metamyelocytes may be found The relative number of the large mononuclear leucocytes is increased With regard to the infectivity of this disease the author has not seen it in more than one child of the same family at the same time, perhaps because the age limit of this disease is comparatively short

309 Abortion of Measles by the Serum of Convalescents.

S Buttersieser (*Deut med Woch*, June 27th, 1924, p 676) publishes several tables illustrating the importance of measles as a remote or immediate cause of death among infants in hospital Almost one sixth of all the deaths in a children's hospital during 1922 were due to measles contracted in the hospital He recommends the adoption of the Degkwitz system of injecting the serum of convalescents into children who have been exposed to infection, and who may possibly be in the early stage of the incubation period He reports the successful use of this prophylactic measure on several occasions According to him, as much as 100 c cm of blood can be taken from a convalescent child if not too young this quantity being sufficient for twelve children He urges the medical authorities to organize a system of collecting the serum of convalescents and to educate both the public and the medical profession as to its value Munich and Stuttgart have already organized the distribution of this serum, and Buttersieser maintains that if such organizations were ubiquitous thousands of infants could be saved every year

310 Epidemic Encephalitis in Sweden

E Bergman (*Hygiea* July 15th 1924 p 425) states that about 2 500 cases of epidemic encephalitis have already been notified in Sweden and that more than half of the cases occurred in 1921 January 1921, marked the culmination of the epidemic and there were as many as 520 new cases in this month About 500 cases were notified in 1923 A study of 67 cases in Upsala was made by the author who found that in about 50 per cent the onset of the disease was marked by vague febrile symptoms In no case was the onset insidious, and only in 2 cases were there general symptoms without fever at the onset In as many as 18 cases lethargy and paralyses of the ocular muscles occurred at the beginning of the disease The cranial nerves and ocular muscles were affected in 85 per cent and in most of these cases the lesions of the cranial nerves began very early Indeed in some cases the disease was first detected when the patient went to an eye hospital on account of diplopia Most of the facial paralyses passed off rapidly The amyostatic symptom complex or Parkinsonism was observed in as many as 29 cases Ten cases terminated fatally and only 15 of the 67 patients were cured completely, though another 10 patients recovered sufficiently to resume full work The prognosis was worse and the mortality higher for the hyperkinetic than for the lethargic cases It was often noticed that neurasthenic and psychasthenic conditions developed as sequels, and either insomnia or persistent drowsiness continued long after the onset of the disease The author expresses considerable pessimism with regard to the various methods of treatment tried

Surgery.

311 Congenital Duodenal Occlusion.

J M Smellie (*Brit Journ Child Dis*, July-September, 1924, p 192) records three cases of this rare condition which he has seen during the last year Two died within a few days of birth as is the almost invariable rule, but one case lived for nearly three months Only three cases on record have survived longer In Keith's case where the duration of life was nine months the autopsy showed that the occlusion was complete but in Buchanan's case which lasted for eighteen months, and in Cautley's case extending over twelve months, the atresia was incomplete The site of the occlusion in Smellie's first case was just below the opening of the common bile duct of which type there are about twenty three recorded cases and in the second case the duodeno-jejunal flexure was the site of occlusion of which type eleven instances have been observed In the third case the occlusion would seem to have occurred just above the opening of the common bile duct but in addition there had been a complete interruption in the continuity of the gut and the second part of the duodenum appeared to have a common origin from the junction of the common bile duct and the pancreatic duct No previous examples of this variety appear to have been described While a developmental origin appears to be the most probable explanation of the condition in the majority of cases some are probably due to a localized foetal peritonitis, or foetal volvulus, especially

those occurring at the duodeno jejunal flexure In favour of the developmental theory is the presence in a small percentage of cases of other congenital abnormalities One of Smellie's cases had an imperforate anus, and in another the gall bladder was absent Relief for the obstruction can only be obtained by operation, which was successful in cases recently described by Jewesbury and Page and Hutchison

312 Cholecystenterostomy

F G DU BOSE (*Surg., Gynecol., and Obstet.*, September, 1924, p 295) considers that the results of gall bladder surgery are unsatisfactory, repeated operations for recurrence being a reflection on surgical efficiency He records his experience with cholecystenterostomy in twenty cases covering a period of eleven years, and insists that since the gall bladder concentrates bile, secretes mucus, and is a reservoir, it should be conserved whenever possible Cholecystenterostomy has been considered hitherto an operation of necessity rather than of choice, it remains to be seen whether it may not be rather the operation of choice Du Bose considers that it is indicated in common duct obstructions in patients who are "poor surgical risks," also in jaundice secondary to diseases of the liver and pancreas causing common duct obstruction In perforated duodenal ulcer he finds that it promotes healing of the ulcer by bathing it continuously in the alkaline bile In cases of stricture of the bile ducts he prefers it to choledochotomy or plastic surgery, being simpler, safer, and equally effective The operative technique recommended is the formation of an anastomosis between the gall bladder and stomach round a rubber tube After the suturing is completed an omental graft is placed round the suture line for complete protection The anastomosis may be made between the stomach or the duodenum This operation is contraindicated in cancer of the gall bladder, in cases of gangrenous or atrophic cholecystitis, and also in the presence of cystic duct occlusion or obstruction due to causes other than stone

313 Depressed Fracture of Zygoma

J C LEHMANN (*Zentralbl f Chir.*, September 13th, 1924, p 2016) states that there are very few recorded cases of this injury Lehmann's patient was struck on the left cheek by an iron headed "life preserver" When admitted there was a depression over the zygoma as large as the tip of a finger, but there was no external wound nor could crepitus be felt No discoloration of the skin was present round the depression, and the pain elicited on pressure appeared to be so slight that it was difficult to believe that the injury had occurred on the preceding day Next day, however, trismus was present, due to the pressure of the depressed bone on the temporal muscle Under local anæsthesia a small incision was made along the upper border of the zygoma, through this opening the bone was explored and an elevator introduced, the depressed fragment was easily replaced and the patient was relieved immediately, as trismus completely disappeared A small metal splint was applied externally, but it was not found necessary to wire the fracture, as recommended by Matas There was no recurrence of displacement through the action of the masseter Lehmann remarks that it is impossible to reduce a fracture of the zygoma by manipulation with a finger in the mouth, as the temporal muscle is an obstruction

314 Intestinal Obstruction by Meckel's Diverticulum

K A ROMBACH (*Nederl Tijdschr v Geneesk.*, August 9th, 1924, p 776) states that Meckel's diverticulum, which is the result of incomplete obliteration of the omphalo enteric duct, is found 20 to 24 inches above the ileo caecal valve Albert saw it in 2 per cent of the bodies examined by him, while P Turner in 10,360 autopsies noted its presence in 81 cases, in 18 of which it was of pathological significance The symptoms caused by Meckel's diverticulum may be classified as follows (1) Those due to persistence of the duct and its permeability throughout its entire length (2) Those due to intestinal obstruction by intussusception or strangulation of the intestine by the diverticulum (3) Those due to infection or perforation of the diverticulum The definite diagnosis of Meckel's diverticulum being the cause of these symptoms cannot be made, and the possibility only can be suspected In a certain number of recorded cases appendicitis was supposed to be the cause of the symptoms Rombach records a case in a previously healthy man, aged 31, who developed symptoms of intestinal obstruction which laparotomy showed were due to strangulation of the ileum by a Meckel's diverticulum one inch long Symptoms of peritonitis developed the next day, necessitating a further operation, which showed that the condition was due to paralysis of the portion of the gut from which the diverticulum had been removed, but ultimately recovery took place.

Therapeutics.

315 Treatment of Tapeworm Infections

H JACOBÆUS (*Ugeskrift for Laeger*, September 11th, 1924, p 669) reviews his experience of 132 cases of tapeworm infection, 125 of which were due to *Taenia mediocanellata* and 7 to *Bothriocephalus latus* In only a few cases could such symptoms as colic, vomiting, and emaciation be definitely traced to the intestinal parasites, in most cases there were either no symptoms or the gastro intestinal symptoms present were unconnected with the worms In only one of the 7 cases of *Bothriocephalus latus* was there definite anæmia Since the life of a cestode may be a matter of twenty five to thirty years, he remarks that it is well to get rid of them and not to wait for their spontaneous expulsion or their death from old age With regard to the amaurosis recorded in about 100 cases treated with extract of male fern, the author notes that most of these cases occurred in South Germany and Switzerland In the Scandinavian countries no such accident has been recorded, although the extract of male fern is much used A common cause of failure of treatment with this drug is the vomiting it provokes, and Iacobæus has found that by giving veronal on three evenings in succession, before the male fern is given, the tendency to vomit is greatly reduced He gives phenacetin with the veronal, 6 grains of each being taken every evening To an adult 2½ drachms of the extract of male fern is given at 7 a m in a little wine At 8 30 a m a powder containing calomel and jalap is given, and at 10 a m a strong infusion of senna leaves, he thinks it well to give aperients for a couple of days beforehand By combining male fern medication with veronal and phenacetin in every case likely to be troublesome on account of vomiting, the author has considerably increased the proportion of cases in which the head of the worm was evacuated, in the period 1922–24 he treated 49 cases, in 40 of which the head of the worm was found

316 Serum Treatment of Anterior Poliomyelitis

F S CLARKE and A G DOW (*Journ Amer Med Assoc.*, August 9th, 1924, p 421) discuss the use of Rosenow's horse serum in the prevention of paralysis due to anterior poliomyelitis, and give brief accounts of six cases in which it was successfully employed They urge the necessity of recognizing this infection before the onset of paralysis, and attach special significance to the following diagnostic points pyrexia rarely over 101° F, neck rigidity, and inflamed tonsils and faucial pillars Hyperæsthesia and resistance to examination are also said to be important symptoms, Kernig's sign, if present, is suggestive, but its absence does not rule out the disease, and the patellar reflexes are usually exaggerated, but vary from day to day The authors do not consider that the cell count of the spinal fluid offers a reliable basis for diagnosis In each of the six cases reported rapid improvement followed the injection of Rosenow's serum, and recovery was complete without paralysis

317 Sulfarsenol in the Treatment of Congenital Syphilis

G ÅHMAN (*Hygiea*, August 15th, 1924, p 481), who is in charge of a Welander hospital for congenital syphilis in Sweden, points out that in such an institution it is impossible for the medical officer to give all the necessary injections of anti syphilitic remedies, and in order that nurses may give them they should not have to be administered by the intravenous route For this and other reasons the author has found salvarsan, neosalvarsan, and various other arsenical preparations unsatisfactory, but he has found sulfarsenol, a French preparation introduced by Lehnhoff Wyld, and closely related to neosalvarsan in its chemical formula, almost ideal Injected subcutaneously as a 6 per cent aqueous solution it causes little pain and does not leave a persistent infiltration The author has given about 300 injections to 26 children, 19 of whom had previously been treated with other preparations of salvarsan to which the disease had proved more or less refractory The success of the sulfarsenol injections was the more striking as most of the patients had shown themselves to be refractory to salvarsan

318 Tuberculin Treatment in Infants

R OSSWALD and H SCHONFELD (*Monatschr f Kinderheilk.*, August, 1924, p 413) have endeavoured to determine (1) the clinical results in young children of two of the specific forms of treatment for tuberculosis, and (2) the effect of the treatment on the cutaneous sensitivity of the patients to tuberculin (von Pirquet test) Pounder's method of vaccinating the patients repeatedly with a prepared serum was applied to 36 children suffering from tuberculosis of the lungs, lymph glands, bones, or abdominal viscera The results were watched for periods varying from three to eighteen months,

but no difference could be observed clinically between the patients who received this specific treatment and those who did not In the absence of clinical manifestations the authors tried to determine whether the reaction of the patients to the biological von Pirquet test showed any variation, and they applied the test to 23 children before, during, and after their treatment according to Ponndorf's technique In 15 cases the cutaneous sensitivity showed an unfavourable alteration, in 2 it was unchanged, and in the remainder there were minor alterations, first in one direction and later in the other Moro's method of inunction was applied to 22 children suffering from tuberculosis of the peritoneum, lymph glands, or lungs, and, as before, the patients were kept under observation for many months From clinical observations the authors were unable to convince themselves that the treatment had any therapeutic value They again resorted to the von Pirquet test, and found that in 17 out of the 22 children the local cutaneous reaction showed no definite change, in 4 it was altered unfavourably, and in only one case favourably It cannot therefore be said from these results that Moro's treatment has any effect on the cutaneous sensitivity to tuberculin

Dermatology.

319 Herpes Zoster in Hodgkin's Disease

H K PANCOAST and E P PENDERGRASS (*Amer Journ Med Sci* September, 1924, p 326) consider that herpes zoster is present in Hodgkin's disease with sufficient frequency to justify its inclusion among the skin manifestations of that disease Notes are given of four cases of Hodgkin's disease and one of ovarian sarcoma, in which an attack of herpes zoster occurred While a certain number of cases are the result of a propagated neuritis, the zoster being due to an inflammatory irritation of a nerve transmitted to the cutaneous elements along its distribution such a condition may also arise from compression by a tumour In secondary malignant disease of the spine and in new growths of the chest herpetic eruptions may appear along the course of the nerves involved in the compression In the first case of Hodgkin's disease a typical zoster on the right side lasting about eight weeks was associated with palpably enlarged glands in the right kidney region while in the second a severe right intercostal herpes occurred without any demonstrable mediastinal enlargement the disease being followed by keloid formation in the third case during a slight attack of left intercostal zoster the hilum shadows were enlarged and in the fourth the herpes was situated along the distribution of the right femoro cutaneal nerve without any glandular enlargement in the inguinal or pelvic regions In the case of ovarian sarcoma general peritoneal metastasis was found at operation and herpes zoster involving the left eleventh and twelfth intercostal and first lumbar nerves developed and lasted eight weeks x ray examination of the chest and spine being negative as regards evidence of a new growth The patient later developed a mediastinal metastasis, but improved under x-ray treatment in spite of the extensive involvement she was still alive In the four cases of Hodgkin's disease the severity did not appear to have any relation to the eruption which was probably due to irritation caused by the proximity of the glandular enlargement to the ganglion

320 Symmetrical Lines on the Back in Tuberculosis

OLGA ELIASCHEFF (*Ann de Derm et de Syph*, June, 1924, p 555) notes that cases have been recorded in which pulmonary lesions in young subjects have been accompanied by the appearance on the thorax of lines of reddish colour and that in the instances hitherto recorded these lines have been located on the side opposite to the pulmonary lesion She now reports a case of pulmonary tuberculosis where the lines were observed on both sides although the lesion was in the left lung There were nine rows on the right side of the back and six on the left they were symmetrical, and corresponded in direction with the zones of cleavage of Langerhans Internally they were limited by the vertebral column externally by the axillary border and they extended from the seventh rib above to a line drawn transversely three fingerbreadths above the iliac crest below They were disposed in oblique bands some of which were interrupted by areas of healthy skin their length was from a third of an inch to four inches their breadth was just over an inch The colour was bright red the surface finely folded the edges well defined Palpation gave the impression of a skin rather thin and soft through which blood vessels were visible in places The horny layer was poorly developed in parts and from some places the granular layer was absent where present the latter was represented by fine cells filled with minute granulations While pigment was lacking in the lesions the adjoining basal cells were richly pigmented The connective tissue appeared normal, but round the vessels of the chorion there was a dense infiltration, composed for the most part of round cells and of some epithelial cells and fibroblasts The elastic tissue in the papillae and the chorion was broken, and was so attenuated in the upper layers of the latter as to be represented by fine granulations but in the healthy parts it seemed to be a denser network than normally The hair follicles, sebaceous glands, and sweat glands were normal The author discards the theory of a mechanical cause for the lesions—overdistension of the skin—nor does she favour the view that the condition may result from a weakness of the integument—congenital or acquired in consequence of toxic infection The lesions have been observed in areas where there has been an actual shrinking, and have made their appearance at the onset of shrinking She considers them to be a direct consequence of fragmentation of the elastic tissue of the skin attributable to trophic trouble and suggests that as it is reasonable to suppose that this tissue depends for its nutrition on a gland or glands of the endocrine class, the condition may be due to a derangement of endocrine mechanism

321. Pigmentation of the Skin

S BANG (*Ugeskrift for Læger*, July 17th 1924, p 543) suggests that light precipitates as pigment in the skin a substance which if not thus limited to the skin, is capable of being toxic Pigmentation he thinks depends on two factors—a propigment derived from the blood and a ferment in the epithelial cells which converts propigment into pigment He states that this propigment is related to adrenaline, and is similar to or identical with dioxyphenylalanin or dopa. This 'dopa' can be converted into pigment artificially by various oxidizing agents Not only is the chemical formula of 'dopa very similar to that of adrenaline but there are many other points of similarity When the suprarenals are functioning imperfectly increased pigmentation of the skin occurs in those areas where light normally produces pigmentation The author concludes that dopa is a by-product in the secretion of adrenaline by the suprarenals, and that the excessive pigmentation of Addison's disease is due to an overproduction of dopa

Obstetrics and Gynaecology

322. Kielland's Forceps.

G BARBARO (*Gynecol et Obstet* 1924 x 1 p 20) describes and illustrates the obstetric forceps introduced in 1915 by Kielland Many reports more or less laudatory have appeared in German literature but the forceps has scarcely been noticed in English American or French publications He concludes that although the instrument is no ideal nor universally applicable as was claimed it is yet of considerable use in certain cases and deserves systematic trial in countries other than that of its origin The blades of the forceps have almost no pelvic curve and the articulation of the blades is contrived so as to allow a certain freedom of interplay in the longitudinal direction, variation being possible in the height of application to the foetal head The instrument is chiefly intended for high forceps application and is reported to be particularly suitable for seizing the biparietal diameter, whatever its relation to the pelvis may be It is generally conceded that it is admirably adapted for rotating the head, but opinions differ as to its efficacy as a tractor

323 The Dystrophies of Puberty

G BOULANGER PILLET (*Journ de Med et de Chir Prat* September 10th, 1924, p 616) classifies the dystrophies of puberty as those in which changes in the skeleton or stature predominate and those in which the weight increases owing to abnormal obesity In the first group the dystrophy of Hutinel which is more frequent in males is the exaggeration of a normal physiological process the excess or growth affects the lower limbs especially and the extremities are lengthened without showing the thickening which occurs in acromegaly In girls ovarian disturbance is signalled by amenorrhoea oligomenorrhoea or menorrhagia There is a generalized coincident disturbance of other functions with concident disturbance of other functions with muscular insufficiency The dystrophies accompanied by adiposity are more frequent in females in certain cases a transitory dystrophy disappears after puberty but in others the malady increases progressively with advancing age, marriage, pregnancy and lactation The etiology of these conditions is uncertain A morbid condition of the pituitary body has been blamed, little evidence of this however is gained from radiological or ophthalmological or biological tests, and recent work tends to show that the majority of the

so called hypophyseal signs indicate in reality morbid conditions in the tuber cinereum and adjacent regions In several cases the author has found other signs pointing to morbid cerebral conditions—for example, convulsive crises, generally epileptiform, and severe intractable headache Almost constantly he has found that the cerebro spinal fluid shows a meningeal reaction In a certain number of cases signs of syphilis have been present, pointing to a therapeutic possibility which it is important not to neglect It is probable that nerve alterations in the floor of the third ventricle play a prominent etiological part

324 Pregnancy and Acute Appendicitis

A G J HERMANS (*Nederl Tydschr v Geneesk*, August 23rd, 1924, p 1004), who records six personal cases with a review of the literature, states that out of 1,000 operations for appendicitis performed by Kummell, two occurred in the third or fifth month of pregnancy, while among 2,000 cases of appendicitis seen by Sonnenburg three occurred in pregnancy and one in the puerperium Szenes states that, among 325 women operated on at the Zurich Surgical Clinic in the period 1919-21, four, or 1 14 per cent, were pregnant The association of pregnancy and appendicitis is thus a rare condition While some writers, such as Renvall and Fraenkel, regard the occurrence of appendicitis in pregnancy as a mere coincidence, others, such as Sonnenburg, Kalewski, and Pinard, consider that pregnancy predisposes to exacerbations of chronic appendicitis Others again, such as Konig, Boye, and Runge, look upon pregnancy as a safeguard against appendicitis, inasmuch as the hyperaemia of the pelvic organs occurring in pregnancy favours the absorption of the infective material present in the appendix and thus prevents the outbreak of an acute attack Boye reports 12 illustrative cases from Engstrom's clinic in which chronic appendicitis did not relapse during pregnancy The prognosis of appendicitis in pregnancy is generally regarded as very grave Not only is there the possibility of perforation of the appendix and septic peritonitis, but there is a special danger owing to the prospect of abortion or premature delivery and greater likelihood of puerperal sepsis Of 42 cases of appendicitis occurring in all stages of pregnancy reported by Futh, 22 were fatal According to Halban, the mortality from appendicitis, which is usually 12 per cent, ranges from 31 to 59 per cent in pregnancy, and Pribram estimates the mortality from appendix peritonitis in pregnancy at 50 per cent Hermans agrees with De Lee that appendicitis during pregnancy should always indicate immediate operation, and that even in cases of doubt operation is the safer course The earlier the operation is performed the better the prognosis is for the mother and the child In the puerperium the prognosis is graver the earlier the attack occurs after delivery, as the chances of puerperal infection are then greater

325 Pregnancy and Disease of the Heart

S PRASSULIDES (*Arch f. Gynak*, July, 1924) shows that all hearts, whether normal or damaged, increase in size during pregnancy He maintains that in many cases this hypertrophy is desirable, and that, contrary to the general opinion, the occurrence of pregnancy does not damage the prognosis in heart diseases He goes further and states that the appearance of a heart lesion, or even commencing failure of compensation, is not necessarily an indication for interfering with the pregnancy If compensation is established, if the heart muscle is active and undamaged, and more especially if there are no other complications, he believes that there is no danger, either immediate or remote It is only when such complications as recurrent endocarditis, nephritis, or advancing tuberculosis are added to an existing heart lesion that danger occurs Women with heart lesions (of these the worst are mitral) should be kept under medical supervision during the whole of their pregnancy and should never be left to the care of a midwife If the pregnancy is terminated, special attention must be paid to asepsis, in view of the dangers of recurrent endocarditis, thrombosis, and haemorrhage

Pathology.

326 A Scarlet Fever Toxin

J D TRASK, jun, and F G BLAKE (*Journ Exper Med*, September, 1924, p 381) show that a toxic substance can be demonstrated in the blood of patients acutely ill with scarlet fever, a similar substance being also found in the urine of a proportion of these patients This investigation was undertaken to provide further evidence in support of the conception that scarlet fever is due to a local infection of the throat by a special type of *Streptococcus haemolyticus*, which is capable of producing a soluble toxic substance, that this toxic substance is absorbed from the throat and causes the general manifestations of the disease, and that immunity, whether natural or acquired, is antitoxic in nature, and can be determined in an individual by finding out whether or not his serum blanches the rash in a patient with scarlet fever The serum of patients acutely ill with scarlet fever was injected intracutaneously into two classes of persons—those whose serum failed to blanch the rash in scarlet fever and those whose serum blanched the rash In the former class a reaction was noted, consisting of a bright red local erythema, varying from 20 to 70 mm in diameter, of one to four days' duration The several reactions were moderately indurated and tender, and were followed by pigmentation and desquamation Control injections in persons whose serums blanched the rash in scarlet fever caused no reaction In one case in which daily investigations were made the toxic substance was found in the blood from the second to the fifth day, and in the urine from the third to the sixth day The toxic substance was not neutralized by mixture with a human serum which gave a negative blanching test, but was readily neutralized by a human serum which gave a positive blanching test It was unaffected by normal horse serum, but was totally neutralized by the scarlatinal antistreptococcic serum of Dochez

327 Carnivorous Diet and Infection with Intestinal Protozoa

R W HEGNER (*Amer Journ Hyg*, July, 1924, p 393) has made a careful study of the literature, and has himself carried out some experimental work on the relationship between a carnivorous diet and the extent of protozoal infections of the intestine Reviewing the literature, he finds that intestinal protozoa in mammals are most abundant in rodents and ungulates, which feed almost exclusively on vegetation, that they occur frequently in those primates which are largely vegetable feeders, but that only on very rare occasions are they found in carnivorous animals He fed three rats for 174 days on a carnivorous diet, all of them were found to be free from *Giardia muris* and *Trichomonas muris*, but two of them had a few specimens of *Hexamitus muris*, control rats from the same colony that had been fed on various diets, largely carbohydrate in nature, were well provided with all three of these flagellates In another experiment 15 rats were fed on a carnivorous diet for one week, and were compared with 15 other rats fed principally on vegetable proteins and carbohydrates It was found that in the former group of animals the numbers of *G muris* decreased to one tenth, and the numbers of *T muris* to one fifty fourth of those present in the latter group Examinations were then made of faecal specimens, at intervals during a period of seventeen days, from 12 carnivorous animals belonging to ten different species which were living in the Zoological Gardens at Baltimore, no protozoa of any kind were discovered except in one instance—that of a wild cat which harboured some giardia cysts He considers that a carnivorous diet is unfavourable for the intestinal protozoa of mammals Possibly this may be due, he thinks, to the putrefactive flora which occurs in the intestine when a carnivorous dietary is being given At present he is working to test the value of a carnivorous diet in cases of human protozoal infection of the intestine

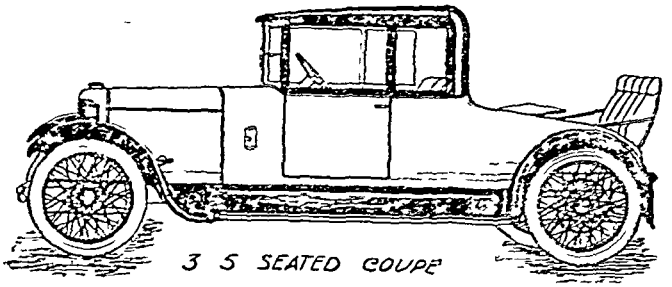
328 The Leucocytes in Various Forms of Arthritis

G KAHLMETER (*Hygiea*, July 31st, 1924, p 449) has investigated the numbers and proportions of the leucocytes in 169 cases of arthritis treated during the past seven years in two Swedish hospitals The cases were classified in five main groups, according as they could be regarded as (1) acute rheumatic fever, (2) primary chronic polyarthritis with fever, (3) secondary chronic polyarthritis, (4) primary chronic polyarthritis without fever, and (5) arthritis deformans The average mean leucocyte count in these five classes diminished uniformly from above downwards it was 9,394 in the first class and 6,036 in the fifth class If a leucocyte count of 6,000 to 7,000 be taken as the normal, the figures obtained by the author suggest that arthritis with fever is generally associated with leucocytosis The differential count showed that the leucocytosis was mainly due to the lymphocytes, in all the classes of chronic polyarthritis there was a certain tendency towards an absolute lymphocytosis, which was least marked in the cases of arthritis deformans The author is of the opinion that there are two main groups of polyarthritis, the disease in one group being due to infections, whereas in the other it is the result of constitutional or endocrine disturbances The first group consists mainly of young persons with anaemia (red cell count below 4 million per c mm), leucocytosis, and fever associated with disturbances in the joints The second group is mainly composed of persons in or beyond the age of the climacteric the polyarthritis is never associated with fever, and their leucocyte count is approximately normal.

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See —*The Lancet* Sept 6th 1924 *The Prescriber* June 1924 *The Journal of Clinical Research* April 1924 *The Journal of State Medicine* June 1923 *The Practitioner* November 1921 *The Medical Press* April 28th 1920

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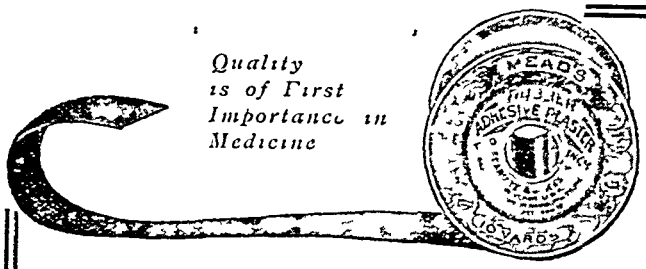
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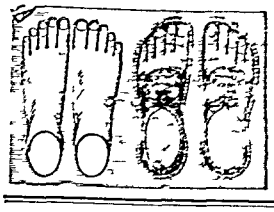
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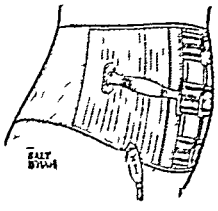
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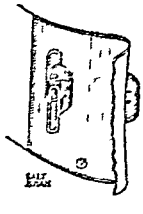
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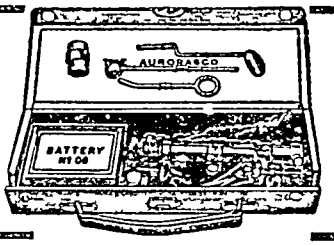
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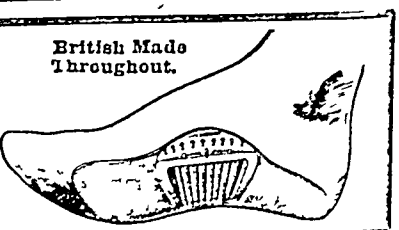
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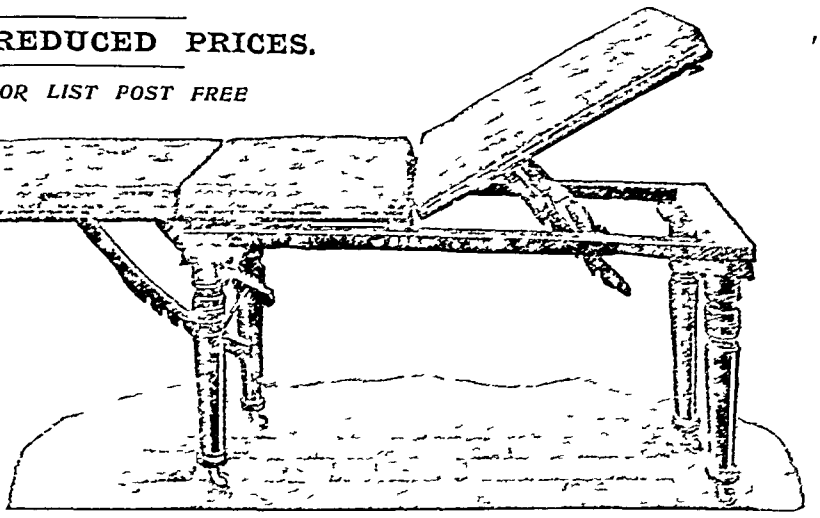


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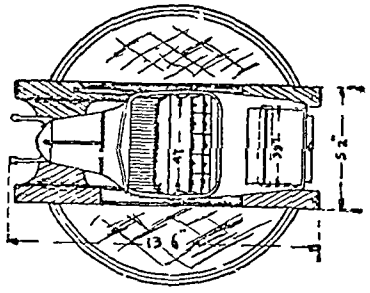
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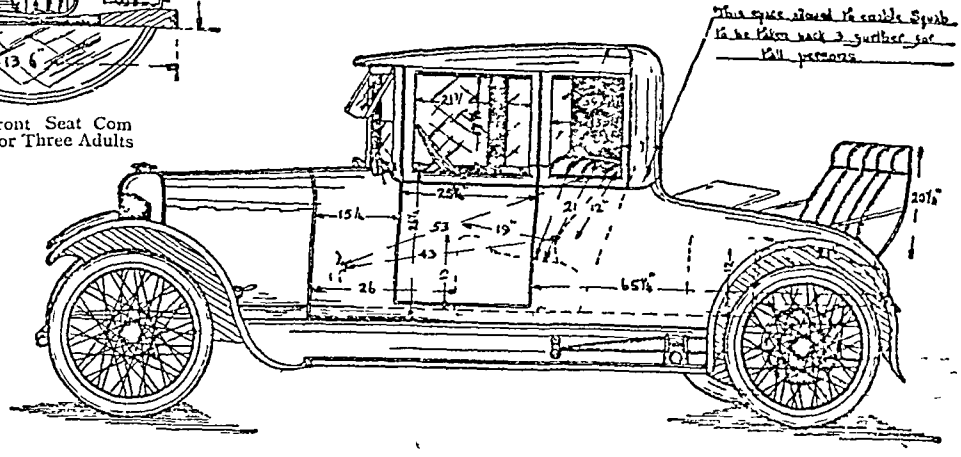
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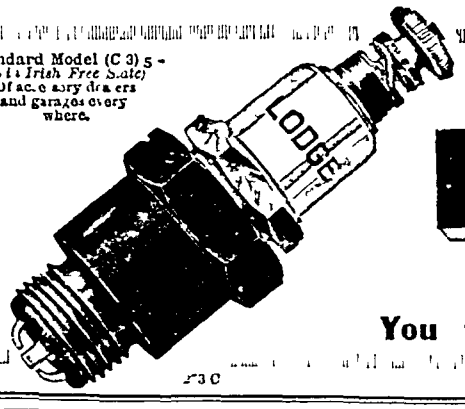
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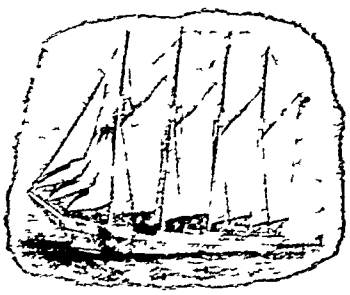
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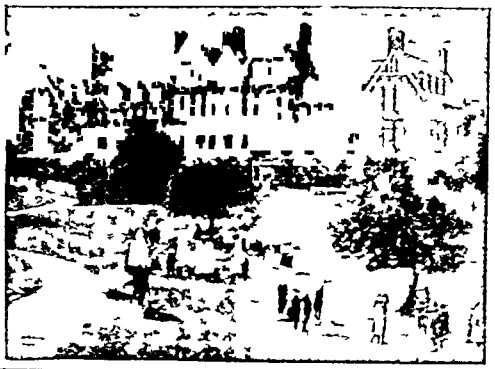
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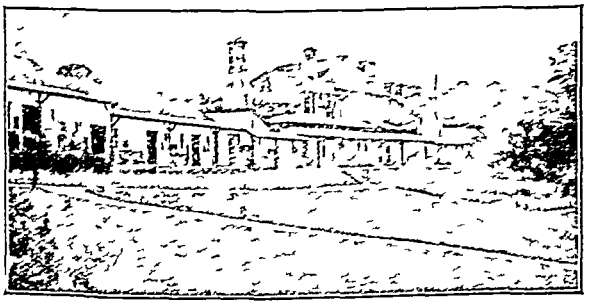
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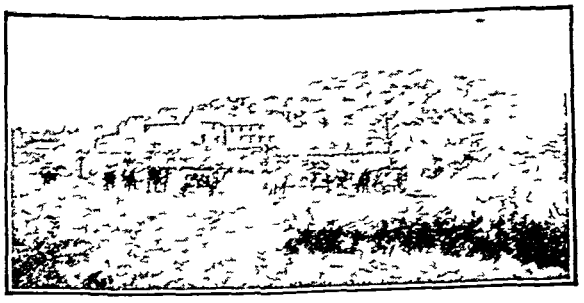
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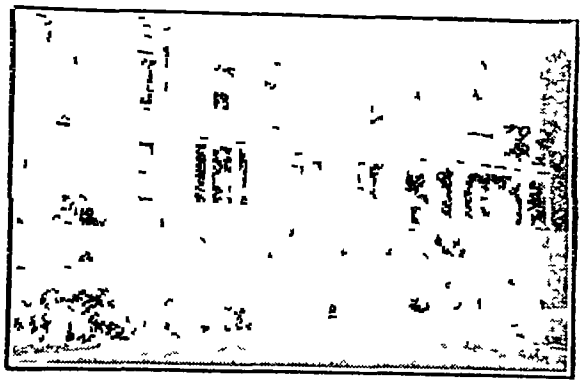
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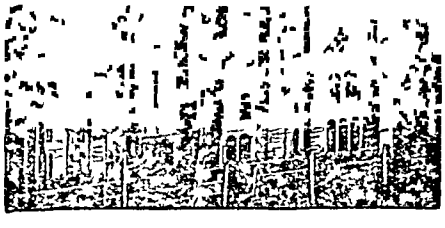
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Apply to the School Secretary St Mary's Hospital Medical School W

LONDON SCHOOL OF HYGIENE & TROPICAL MEDICINE,

Division of Tropical Medicine & Hygiene,
Endsleigh Gardens, N W 1.

Next Session will commence September 22nd 1924

For Prospectus and further particulars apply to The Secretary Endsleigh Gardens N W

POST-GRADUATE TEACHING

WEST LONDON HOSPITAL.

Continuous Clinical Work in all Departments—
CLINICAL ASSISTANTSHIPS—
F.R.C.S (FINAL) COURSE.
For further particulars apply to Mr H J Simson Dean, West London Hospital Hammersmith W 6.

SCHOOL FOR THE DEAF.

Absolute cure of speech defects in articulation children
KINGSFIELD HOUSE Oxhey Herts.
Principal Miss BULLOCK (Qualified Teacher of the Deaf) Large House and garden Outdoor life, games Close Bushey & Oxhey stations L M S R & Baker loo

F.R C S.(Edin)

A TUTORIAL CLASS for the next Examination commences shortly
Particulars from CHARLES WHITTAKER, F R C S Anatomical Department Surgeons Hall Edinburgh

Glasgow Post-Graduate MEDICAL ASSOCIATION

A SERIES OF WEEKLY DEMONSTRATIONS for Medical Practitioners has been arranged during the autumn winter and spring months, commencing on Tuesday the 4th of November next.
SPECIAL COURSES will also be conducted and CLINICAL ASSISTANTSHIPS are available in some of the hospitals
The Syllabus of these Demonstrations may be had on application to the SECRETARY Post-Graduate Medical Association The University Glasgow

Royal College of Surgeons OF EDINBURGH

At the Annual Meeting of the College held on the 15th instant, the following Office Bearers were elected for the ensuing year —

President—Sir Harold Jalland Stiles
Vice-president—Sir David Wallace
Secretary and Treasurer—Alexander Miles
Convener of Museum Committee—Charles Walker Cathcart
Librarian—John William Struthers

President's Council

George Mackay
Arthur Logan Turner
James Haig Ferguson
William George Sym
John Wheeler Dowden
John William Struthers
Ex Officio—The Vice-President
" The Secretary and Treasurer
" The Representative in the General Medical Council

Representative in the General Medical Council

Sir James Hodsdon.

At the same Meeting the following Examiners were appointed —

Examiners

Sir James Hodsdon
James Maxwell Ross
Robert H Blaikie
Sir David Wallace
Kenneth M Douglas
Sir Harold J Stiles
William George Sym
Alexander Miles
Arthur Logan Turner
William Guy
John W Dowden
John Cumming
Archibald A Scot Skirving
James Veitch Paterson
William Macrae Taylor
David Waterston
Nathaniel T Brewis
George L Chiene
James Haig Ferguson
Henry Wade
John W Struthers
George F Barbour Simpson
William Darling
William J Stuart
John Herbert Gibbs
Lewis Beesly
Charles R Whittaker
Archibald McKendrick
John Smith Fraser
Arthur Robinson
John A H Duncan
James Methuen Graham
Arthur H H Sinclair
John Davis Lithgow
Harry Moss Traquair
D P D Wilkie
Hugh S Davidson
R W Johnstone
John Fraser
Francis L Jardine
W Quarry Wood
David Middleton Greig
James Young
William Tyler Gardiner
Ernest Hugh Cameron
James Norman Jackson Hartley
Benjamin Philp Watson
Alexander Pirie Watson
Walter Waddell Carlow
Charles Edward Douglas
Francis James Browne
Henry Dryerre M R C S Eng., etc
R Stewart McDougall, M A D Sc
Thomas W Drinkwater Ph D
Geo H Gemmell F C S
Hugh Miller F Z S
Sydney A. Kay D Sc
George A Carse, M A, D Sc

Public Health Examiners

Charles Edward Douglas
John Jardine
Henry Ansley Cookson
John Hally Meikle M D D P H
Mabel Purefoy Fitzgerald
Austin Nimmo Smith, M B
Thomas William Drinkwater Ph D
George H Gemmell, F C S
George A Carse, M A, D Sc

Dental Examiners

William Guy, L D S
John Herbert Gibbs L D S
Archibald McKendrick L D S
Frederick John Turnbull L R C S L & L D S
Douglas Llewellyn Geo Radford L R C S L & H D D
James Dalgleish Hamilton Jamieson, L D S H D D
Charles Henry Kemball, L D S H D D
John Douglas Logan L D S
Andrew Johnstone Brown L R C S L & L D S
Archibald Adam Scot Skirving
John Macnaughtan Bowie
Frederick M Graham
John Adamson Honey Duncan
Charles Reid Whittaker
James Methuen Graham
James Norman Jackson Hartley
Thomas William Drinkwater L R C S E & Ph D
Hugh Miller, F Z S

Assessors

Charles Watson MacGillivray
Sir Montagu Cotterill
Charles Walker Cathcart
Sir George Andrews Berry
Robert McKenzie Johnston
George Mackay
Francis Mitchell Caird

Conservator of Museum

David Middleton Greig

Clerk—D L Fadie 49 Lauriston Place Edinburgh (Teleph ne 1019 Central)
Law Agent—Wm Campbell Johnston W S
Auditor of Accounts—George H Carphin C A
Officer & Sub-Librarian—Stewart Arthur
Assistant to the Conservator—William Waldie

University of London

The SEMON LECTURE for 1924 entitled 'MALIGNANT DISEASE OF THE GULLET' will be given by Dr D Guisez (of Paris) at the Rooms of the Royal Society of Medicine 1, Wimpole Street W 1 (by kind permission) on Thursday November 6th 1924 at 5 p m The Lecture will be delivered in French and illustrated with lantern slides The Chair will be taken by Sir Wilmot Herringham, K C M G C B
Admission free without ticket
A Course of Four Lectures on 'ENZYMES' will be given by Professor John Mellanby (Professor of Physiology in the University) at St Thomas's Hospital Medical School Albert Embankment S E 1 on Thursdays November 6th, 13th 20th and 27th 1924 at 4 30 p m
Admission free without ticket
EDWIN DELLER Academic Registrar

Shropshire Orthopædic

HOSPITAL Gobowen, near Oswestry

COUNTRY OPEN AIR WARDS 300 BEDS

GIRL STUDENTS WANTED to learn Orthopædic Work and prepare for the Conjoint Examination of the C S M M G Three years training Salary first year £16 second year £20 all found uniform —Apply Miss Hunt R R C

Liverpool School of Tropical

MEDICINE.

COURSES OF INSTRUCTION (lasting three [illegible] ary nd AY [illegible] pool

DANCING

Miss Evadne Newsholme, Hotel Quebec Marble Arch W 1 Phone Mayfair 4191
Personal tuition in all Modern Ballroom Dancing
Three private lessons £1 1s Cd
Class and Practice Dances held

Preliminary Examinations

The COLLEGE OF PRECEPTORS holds Preliminary Examinations for Medical and Dental Students in London and at Provincial Centres in March June September and December For Regulations apply to the Secretary College of Preceptors Bloomsbury Square London W C 1

Courses of Post-Graduate

Instruction in UROLOGY are held at ALL SAINTS HOSPITAL Vauxhall Bridge Road S W 1, the next Course commencing early in November
The fee for a three months Course is Five Guineas
Applications to be made to the Secretary who will furnish any additional information required

Home School for Backward

and DELICATE CHILDREN (estab 1904) Specialists Patients received Modern educational methods and handicraft training Horticulture garden games and occupations Entire charge if desired Elder girls admitted Terms moderate —Apply Principal Hatherley Brake Cheltenham

Small Private Residential

SCHOOL established 21 yrs for the Physical and Mental Development of ABNORMAL and BACKWARD PUPILS Special Department Pupils over school age Under Medical supervision —Prospectus Mrs Meiklejon Principal St Paul's House Upper Maze Hill S Leonard on Sea

University of Bristol

Applications which must be received by November 3rd are invited for the DIRECTORSHIP OF CLINICAL OBSTETRICS (part time post) —For conditions apply to the Registrar University of Bristol

The Royal Eye and Ear

HOSPITAL Bradford

Wanted HOUSE SURGEON, Resident Salary £120 with board and laundry
Applications, stating age etc, with copies of recent testimonials to be sent on or before the 31st inst to the undersigned, from whom particulars can be obtained
O V WOODCOCK Secretary
October 10th 1924

London Hospital, E 1

Applications are invited for the post of FIRST ASSISTANT to one of the four Medical Firms
The salary will be £400 per annum which will be paid by the Hospital and the Medical College jointly
Applications will be received up to first post on Friday November 7th
Particulars of the appointment may be obtained from the House Governor London Hospital, E 1

ROYAL NAVAL MEDICAL SERVICE

SHORT SERVICE SCHEME

The Admiralty are prepared to accept applications for entry as SURGEON LIEUTENANTS of Short Service in the Royal Navy
Period of Service—3 years, with option to extend for further twelve months
Pay—25s per diem or £456 5s per annum
Gratuity on discharge—£8 6s 8d for each completed month of service or £100 per annum
Equipment allowance—£50 payable on joining
Age of candidates—Not to exceed 30 years
Surgeon Lieutenants on the Short Service Scheme will be considered for transfer to the Permanent Service under certain conditions after six months service
Regulations for entry and form to be filled up by candidates will be supplied on application to the Medical Director General, 68 Victoria Street, London S W 1

St Mary's Hospital, W 2

Applications are invited for the post of DIRECTOR OF THE [illegible] GENERAL [illegible] Institute of ANATOMISTS GENERAL [illegible] Medical School
Salary £800 per annum The appointment is a whole time one
The last date for the receipt of applications addressed to the undersigned, is Wednesday October 29th 1924
Copy of the regulations of the office may be had on application The holder of the appointment is ex officio a member of the Medical Committee of the Hospital
By Order
St Mary's Hospital W 2 W PARKES
October 14th 1924 Secretary

Newport Education

COMMITTEE

of
M[illegible]
Further particulars may be obtained from the School Medical Officer, 88 Stow Hill Newport Mon
Applications, with full particulars of qualifications experience etc and copies of three recent testimonials should reach me not later than Thursday, October 30th 1924 Canvassing will be a disqualification
T ARTHUR LEWIS
Secretary and Executive Officer
Education Offices Charles Street Newport Mon
October 9th 1924

Queen Charlotte's Maternity

HOSPITAL (formerly Queen Charlotte's Lying-in Hospital) Marylebone Road N W 1

TWO ASSISTANT RESIDENT MEDICAL OFFICERS male or female required to commence their duties on December 1st, 1924
Applicants must be registered Appointment for four months The selected candidate will take alternate duty in the In patient Department and on the District The post of Senior Resident Medical Officer will also become vacant on December 1st 1924 The salary of the Assistant Resident Medical Officer is at the rate of £50 per annum and of the Senior Resident Medical Officer £100 per annum with board, residence and washing allowance (4 weekly) The present Assistant Resident Medical Officers are candidates for the Senior post
Applications with copies (not originals) of not more than three testimonials will be received by the Secretary up to October 29th

Burnley Union

RESIDENT MEDICAL OFFICER

The Guardians of the Burnley Union invite applications for the appointment of Resident Medical Officer at Primrose Bank Institution Burnley
The salary is £300 per annum together with furnished apartments rations washing and attendance The appointment will carry fees of £30 per annum for certifying midwife
Form of application may be obtained from the undersigned
Union Offices H E PURTON
Burnley Clerk to the Guardians

Kent & Canterbury Hospital

Canterbury

Required THIRD RESIDENT MEDICAL OFFICER, at the Kent and Canterbury Hospital (119 beds) Salary at the rate of £125 per annum Experience in the administration of anæsthetics essential Apply stating [illegible] qualifications experience and sending [illegible] to the undersigned [illegible]
E L CARLILL, [illegible]

NOTICE OF ELECTION

MEDICAL ACT, 1886 (49 and 50 Vict Ch 48)

NOTICE IS HEREBY GIVEN that, pursuant to the Medical Act 1886, an ELECTION of FOUR MEMBERS of the General Council of Medical Education and Registration of the United Kingdom to represent the registered Medical Practitioners resident in ENGLAND, is about to be held

Every registered Medical Practitioner is qualified to be nominated as a candidate.

Each candidate must be nominated by a separate nomination paper

Every registered Medical Practitioner resident in England is entitled to take part in nominating four candidates

Every nomination paper must state the name, registered address, and registered qualification or qualifications of the candidate nominated, it must be signed by not fewer than twelve registered Medical Practitioners, resident in England, nominating such candidate, and the registered address and registered qualification or qualifications of each one so signing must be appended to his signature.

Every nomination paper, accompanied by a declaration in writing signed by the person nominated, acknowledging that he consents to be nominated, must be delivered, by post or otherwise, on or before the 12th day of November, 1924, addressed to MR. NORMAN C KING, the Registrar, at the Medical Council Office, 44, Hallam Street, London, W 1, where forms of nomination papers may, on application by post or otherwise be obtained.

Every nomination paper in respect of which any of these Regulations have not been complied with, or which is not received at 44, Hallam Street, London, W 1, on or before November 6th, 1924, will be invalid

DONALD MACALISTER,
President of the General Medical Council, Returning Officer

NOTICE OF ELECTION

MEDICAL ACT, 1886 (49 and 50 Vict Ch 48)

NOTICE IS HEREBY GIVEN that pursuant to the Medical Act, 1886, an ELECTION of ONE MEMBER of the General Council of Medical Education and Registration of the United Kingdom, to represent the registered Medical Practitioners resident in SCOTLAND, is about to be held.

Every registered Medical Practitioner is qualified to be nominated as a candidate

Each candidate must be nominated by a separate nomination paper

Every registered Medical Practitioner resident in SCOTLAND is entitled to take part in nominating one candidate

Every nomination paper must state the name, registered address, and registered qualification or qualifications of the candidate nominated, it must be signed by not fewer than twelve registered Medical Practitioners resident in Scotland, so nominating such candidate, and the registered address and registered qualification or qualifications of each one so signing must be appended to his signature

Every nomination paper, accompanied by a declaration in writing signed by the person nominated, acknowledging that he consents to be nominated, must be delivered, by post or otherwise on or before the sixth day of November, 1924, addressed to Mr T H GRAHAM, the Registrar, at 20, Queen Street, Edinburgh, where forms of nomination papers may, on application by post or otherwise, be obtained.

Every nomination paper in respect of which any of these Regulations has not been complied with, or which is not received at 20, Queen Street, Edinburgh, on or before November 6th, 1924 will be invalid

DONALD MACALISTER,
President of the General Medical Council Returning Officer

NOTICE OF ELECTION.

MEDICAL ACT, 1886 (49 and 50 Vict, ch 48)

NOTICE IS HEREBY GIVEN that, pursuant to the Medical Act, 1886, an ELECTION of ONE MEMBER of the General Council of Medical Education and Registration of the United Kingdom, to represent the Registered Medical Practitioners resident in IRELAND, is about to be held

Every registered medical practitioner is qualified to be nominated as a candidate

Each candidate must be nominated by a separate nomination paper

Every registered medical practitioner resident in Ireland is entitled to take part in nominating one candidate

Every nomination paper must state the name, address and registered qualification or qualifications of the candidate nominated it must be signed by not fewer than twelve Registered Medical Practitioners resident in Ireland, so nominating such candidate, and the address and registered qualification or qualifications of each one so signing must be appended to his signature

Every nomination paper, accompanied by a declaration in writing, signed by the person nominated acknowledging that he consents to be nominated, must be delivered, by post or otherwise, on or before the sixth day of November, 1924 addressed to RICHARD J E ROE, at 35, Dawson Street, Dublin, where forms of nomination papers may, on application by post or otherwise, be obtained

Every nomination paper in respect of which any of these regulations has not been complied with or which is not received at 35, Dawson Street, Dublin, on or before November 6th, 1924, will be invalid.

DONALD MACALISTER,
President of the General Medical Council Returning Officer

October 23rd, 1924

West London Hospital,
Hammersmith Road, W 6

Applications are invited for an appointment as SURGEON FOR DISEASES OF WOMEN (for which a present member of the Staff is a candidate) Should he be appointed there will be a vacancy for an ASSISTANT SURGEON FOR DISEASES OF WOMEN for which applications are also invited Candidates must be Fellows of one of the Royal Colleges of Surgeons of England Edinburgh or Ireland

The successful candidate will be required in addition to other duties, to undertake such teaching for the Post Graduate College as the Board may approve

Applications accompanied by copies of testimonials should reach me not later than Wednesday November 19th, 1924 Candidates must attend a Special Meeting of the Medical Council on Friday November 21st at 4 30 p m and prior to that date call upon and send copies of application and testimonials to each member thereof They must not canvass members of the Board but nevertheless must send copies of application and testimonials to each member thereof and be in attendance at a meeting of the Board at 5 p m on Tuesday, November 25th, when the election will be made

H A MADGE Secretary

West London Hospital,
Hammersmith Road W 6

Applications are invited for the post of DERMATOLOGIST Candidates must have degrees from one of the Universities recognized by the General Medical Council and be Fellows or Members of the Royal College of Physicians of London or they must be Fellows of one of the Royal Colleges of Surgeons of England Edinburgh, or Ireland The successful candidate will be required in addition to his other duties to undertake such teaching for the Post-Graduate College as the Board may approve

Applications, accompanied by copies of testimonials should reach me not later than Wednesday, November 19th 1924 Candidates must attend a Special Meeting of the Medical Council on Friday, November 21st at 4 30 p m and prior to that date call upon and send copies of application and testimonials to each member thereof They must not canvass members of the Board but nevertheless must send copies of application and testimonials to each member thereof and be in attendance at a Meeting of the Board at 5 p m, on Tuesday November 25th, 1924 when the election will be made

H A MADGE, Secretary

West London Hospital,
Hammersmith Road, W 6

HONORARY MEDICAL RADIOLOGIST (DIAGNOSIS) require Candidates must be duly qualified Medical Practitioners, and have had experience of Radiological work, especially X Ray diagnosis The successful candidate will have full control of, and be fully responsible for his department in all matters relating to X Ray diagnosis

Applications accompanied by copies of testimonials should reach me not later than Wednesday November 19th Candidates must attend a Special Meeting of the Medical Council on Friday November 21st at 4 30 p m, and prior to that date call upon and send copies of application and testimonials to each member thereof They must not canvass members of the Board but nevertheless must send copies of application and testimonials to each member thereof and be in attendance at a meeting of the Board at 5 p m on Tuesday November 25th, when the election will be made

H A MADGE, Secretary

City of Leicester.
RESIDENT MEDICAL OFFICER

Resident Medical Officer required for the ISOLATION HOSPITAL and SANATORIUM Groby Road The Institution contains over 300 beds devoted to infectious diseases and tuberculosis the latter including early and advanced pulmonary and also surgical cases Experience of diphtheria specially desirable

Salary £350 p a, (less deduction for superannuation) together with board and residence

Applications giving full particulars as to qualifications age and experience together with copies of three recent testimonials must reach the undersigned not later than first post on Monday, November 3rd

Health Department C KILLICK MILLARD
Leicester Medical Officer of Health

Gesto Hospital, Edmbane,
Skye

Wanted RESIDENT MEDICAL OFFICER for this Hospital to take up duties in January Salary £300 per annum with furnished house fuel and light and taxe paid Private and consulting practice allowed Applications with four copies of recent testimonials to be lodged on or before October 25th 1924 with the Secretary J SIMPSON Bank Agent Portree Skye

The Metropolitan Asylums
BOARD invite applications for the appointment of JUNIOR ASSISTANT MEDICAL OFFICER in the Infectious hospitals service

Candidates must not exceed 30 years of age and must be duly registered and qualified by law to practise both medicine and surgery in England Junior assistant medical officers are subject to annual re election

Salary £500 per annum

Assistant medical officers are required to reside in the hospitals and to pay for board lodging and washing at the rate fixed from time to time by the Board's Finance Committee At present the rate is £130 per annum There is no accommodation for a married officer

Application to be made not later than 10 a m on Monday November 10th, 1924 on form obtainable by sending stamped address foolscap envelope to the Clerk, Metropolitan Asylums Board, Victoria Embankment London, E C 4

County Borough of Salford.
MUNICIPAL MATERNITY AND BABIES HOSPITAL, Seedley Terrace, Pendleton

Applications are invited for the post of ASSISTANT CHILD WELFARE MEDICAL OFFICER (woman) from fully qualified registered medical practitioners The person appointed will be required to reside near to the Hospital and to devote half time to the work of the Child Welfare Clinics and half time to duties in connection with the Hospital Experience in Midwifery and Children's Diseases is essential

Commencing salary £440 plus Civil Service Bonus (total at present £608 8s) rising to a maximum of £600 plus Civil Service Bonus, by biennial increments of £40 and Bonus

The above will be subject to the usual deductions for the purpose of superannuation

Applications endorsed Assistant Medical Officer and accompanied by copies of three recent testimonials to be received by the undersigned not later than noon on Monday November 10th 1924

Canvassing will be considered a disqualification

L C EVANS Town Clerk

London (Royal Free Hospital)
SCHOOL OF MEDICINE FOR WOMEN
(University of London)
Hunter Street Brunswick Square W C 1

OBSTETRICAL & GYNECOLOGICAL UNIT

The Council of the London (Royal Free Hospital) School of Medicine for Women and the Committee of Management of the Royal Free Hospital invite applications for the Full time Resident Appointment of THIRD ASSISTANT in the Obstetrical and Gynecological Unit Salary £270 per annum, with board and residence

Applications accompanied by copies of not more than three testimonials, and the names of not more than two persons to whom reference may be made, should reach one of the undersigned not later than the first post on Monday December 1st, 1924

Seven copies of all documents must be furnished

LOUIE M BROOKS
Warden and Secretary, London (Royal Free Hospital) School of Medicine for Women
REGINALD R GARRETT
Secretary Royal Free Hospital
Gray's Inn Road W C 1

The Cancer Hospital (Free)
Fulham Road London S W 3

The Committee are prepared to receive applications for the post of *HOUSE SURGEON* salary £100 per annum

The appointment is for six months and subject to rules, a copy of which may be obtained from the Secretary

Applications together with three copies only of testimonials, to be sent to the undersigned not later than first post Saturday November 1st 1924

J COURTNEY BUCHANAN Secretary

The Cancer Hospital (Free),
Fulham Road, London S W.3

The Committee of Management invite applications for the appointment of an ANÆSTHETIST to the Hospital

Preference will be given to candidates who are engaged in Anæsthetic Practice only

Particulars as to Honorarium rules &c., may be obtained from the undersigned to whom applications must be submitted together with copies of testimonials by first post Saturday November 1st, 1924

J COURTNEY BUCHANAN Secretary

Swansea General and Eye
HOSPITAL (202 Beds)

HOUSE PHYSICIAN wanted (male) Salary £175, with board residence and laundry Good medical experience Appointment for not less than 6 months State nationality Applications, with three testimonials (copies first) to be sent to the undersigned.

W D HUGHES Secretary

The General Hospital,
Birmingham

In consequence of the appointment of D L G Parsons to the office of Honorary Physician the Board invites applications for the vacant post ASSISTANT PHYSICIAN

Candidates must be graduates in medicine of the University of which the degree is recognized by the General Medical Council and a Fellow or Member of the Royal Colleges of Physicians of London twelve months from the date of appointment will be allowed for obtaining the latter qualification

The appointment will be made by the Board on Friday November 7th at twelve noon, when candidates will be expected to attend

Applications accompanied by diplomas certificates of registration and testimonials must be sent on or before November 3rd to the undersigned from whom a copy of the conditions attached to the office can be obtained

A H LEANEY, House Governor
October 3rd 1924

The General Hospital,
Birmingham.

The Board invite applications for the post of RESIDENT SURGICAL OFFICER

Candidates must be Fellows of the Royal College of Surgeons in London, Edinburgh or Dublin and must also possess a medical qualification and be registered The salary will be £180 per annum with board residence and washing.

The appointment will be made for one year in the first instance and be subject to annual renewal for two subsequent years Application, with certificates of registration and copies of testimonials, should be sent to the undersigned by November 3rd next The appointment will be made at 1 0 noon on Friday November 7th 1924, when candidates will be expected to attend

A H LEANEY,
October 3rd 1924 House Governor

Royal Berkshire Hospital
The Board of Management invite applications for the appointment of Honorary Surgeon Candidates must be Fellows or Members of one of the Royal Colleges of Surgeons of Great Britain or Ireland, or Surgical Graduates of one of the Universities of Great Britain or Ireland and must be registered

The elected candidate will be appointed for the period commencing on December 1st, 1924 and ending on the third Tuesday in January 1929 and will be eligible for re election Canvassing by or on behalf of a candidate will disqualify him

Candidates are required to provide sixty five copies of their applications and testimonials which must be addressed to the Secretary and reach him not later than November 8th, 1924

No testimonials will be required from candidates who are members of the existing Medical Staff

The election will held on November 18th 1924

By Order

Reading HERMAN BURNEY
October 20th 1924 Secretary

St Mary's Hospital for
WOMEN AND CHILDREN, Halston [illegible]

Applications are invited for the posts of RESIDENT MEDICAL OFFICER and ASSISTANT RESIDENT MEDICAL OFFICER (to November 30th) male or female The appointments are six months Board residence and laundry provided Salaries at the rate of £175 and £150 per annum respectively The duties of the R M O are mainly administrative and surgical and of the A R M O mainly medical

Personal canvassing not desired

Applications with copies of three recent testimonials to be sent to the undersigned not later than November 5th

A. ERNEST WILKES Secretary

Lindsey County Council
APPOINTMENT OF THIRD DENTIST

Applications are invited from fully qualified Dentists and Scholarships an allowance for travelling by car Applications endorsed County Dentist, and accompanied by copies (not more than three recent testimonials must be received not later than Monday November 10th 1924 by the undersigned from whom forms of application and terms of service can be obtained

County Health Dept. R ASHLPICH GLEDHILL
Corporation Offices, County Medical Officer
Lincoln October 21st 1924

Second Resident Medical
OFFICER wanted for the HOSPITAL OF ST JOHN AND ST ELIZABETH 60 Circular Road N W 8 Appointment for six months from November 1st Salary at rate of £100 per annum with board residence and laundry Apply to the Medical Superintendent between 2 and 4 p m any day at the Hospital

APPOINTMENTS—Important Notice.

(a) British Islands.

Medical Practitioners are requested not to apply for any appointment referred to in the following table without having first communicated with the Medical Secretary of the British Medical Association, 429, Strand, London, W C 2

Town or District	Town or District	Town or District
CONTRACT PRACTICE.		
ENGLAND	**WALES** *(continued)*	**PUBLIC HEALTH** *(continued)*
CANNOCK CHASE AND DISTRICT *(Clubs and Friendly Societies Appointments)*	OAKDALE MON *(Medical Officer for Medical Aid Association)*	GLASGOW EDUCATION AUTHORITY *(Assistant School Medical Officers)*
MIDDLESBOROUGH *(Medical Aid Associations or Workmen's Clubs)*	OGMORE VALLEY GLAMORGAN *(Blaenrhondda Colliery Medical Aid Society) (Workmen's Medical Scheme)*	LANARK COUNTY *(Medical Officer of Health)*
SOUTH BANK & ESTON *(Medical Aid Associations or Workmen's Clubs)*	TONDU & ABERKENFIG GLAMORGAN *(Workmen's Medical Scheme)*	LINCOLN CITY EDUCATION AUTHORITY *(Woman Assistant School Medical Officer)*
WALES.	**PUBLIC HEALTH.**	MIDLOTHIAN EDUCATION AUTHORITY *(School Medical Officer)*
ABERTRIDWR GLAMORGAN *(Penallta Colliery) (Medical Scheme)*	ARGYLLSHIRE EDUCATION AUTHORITY *(Executive School Medical Officer)*	NORTHUMBERLAND COUNTY COUNCIL *(Woman Assistant Medical Officer of Health)*
EBBW VALE MON *(Workmen's Medical Society)*	CHELSEA METROPOLITAN BOROUGH *(Part time Medical Officer of Health)*	NOTTINGHAMSHIRE *(County Medical Officer of Health)*
GILFACH GOCH GLAMORGAN *(Workmen's Medical Scheme)*	CHESTER LE STREET RURAL DISTRICT COUNCIL *(Medical Officer of Health)*	SOUTHWARK METROPOLITAN BOROUGH *(Tuberculosis Officer)*
LLWYNYPIA CLYDACH VALE PENYGRAIG GLAMORGAN *(Workmen's Medical Scheme)*	COLCHESTER BOROUGH *(Assistant School Medical Officer)*	STIRLING *(Medical Officer of Health and Child Welfare and Assistant Medical Attendant Dreadnought Hospital)*
MARDY GLAMORGAN *(Workmen's Medical Scheme)*	FIFE EDUCATION AUTHORITY *(Assistant School Medical Officer)*	WIGAN COUNTY BOROUGH *(Assistant School Medical Officer)*

(b) Colonial Medical Service.—WINDWARD ISLANDS MEDICAL SERVICE (Grenada with Carriacou St Vincent and St Lucia)

(c) Overseas Appointments.

Medical Practitioners are requested not to apply to any appointment referred to in the following table without having first communicated with the Honorary Secretary of the Division or Branch named in the second column or with the Medical Secretary of the British Medical Association 429, Strand, London, W C 2.

Town or District	Hon Sec of Division or Branch	Town or District	Hon Sec of Division or Branch	Town or District	Hon. Sec. of Division or Branch
NEW SOUTH WALES *(All Friendly Societies Appointments)*	Dr R H TODD (Hon Sec New South Wales Branch) B M A. Building 30-34 Elizabeth Street, Sydney N S W	QUEENSLAND *(Brisbane Associated Friendly Societies Institute.)*	Dr R MARSHALL ALLAN (Hon Sec Queensland Branch) Adelaide Street Brisbane	VICTORIA *(All Institute or Medical Dispensaries)*	Dr FRANK DAVIES (Hon Sec Victorian Branch) Medical Society Hall E Melbourne Victoria.
				WESTERN AUSTRALIA. *(Contract and Lodge Practices.)*	Hon Sec Western Australian Branch, No 6 Bank of New South Wales Chambers St. George's Terrace Perth

Address 429 Strand, W C 2
October 22nd 1924

By order of the Council of the British Medical Association
ALFRED COX, Medical Secretary

Bolton Union

SECOND ASSISTANT MEDICAL OFFICER

Wanted for the Townleys Hospital Farnworth near Bolton a Second Assistant Medical Officer for a period of one year

The Hospital has accommodation for 500 patients is a recognized Training School for nurses and is equipped with all modern requirements

There is a Resident Medical Superintendent and a Patient Assistant Medical Superintendent

Salary £225 per annum and rations furnished apartments washing and attendance (subject to the usual deduction under the Poor Law Officers Superannuation Act. 1896)

Forms of application together with conditions of appointment (for which a stamped addressed foolscap envelope must be enclosed) may be obtained from me

Last day for application November 3rd 1924

H J COOPER
Clerk to the Guardians

23 Bradshawgate Bolton October 16th 1924

Shropshire Orthopædic Hospital Oswestry

Two HOUSE SURGEONS (Male) are required Salary £250 per annum with board and lodging

Appointment for twelve months Six copies of applications with names of three recent testimonials should be sent to the SECRETARY before November 1st 1924

Applications are invited for

the post of ASSISTANT MEDICAL OFFICER British Honduras The appointment is on probation for three years and if confirmed made pensionable for the whole period of service. Salary $2 430-$120-$3 150 Local dollar is approximately equal to 2s 6d sterling

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October 18th 1924 Town Clerk

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Wanted, Indoor Assistant Cardiff, 16 miles State full essential particulars —Address, No 5407 British Medical Journal Office, 429 Strand, W C 2

Wanted, Assistant (male), large general Practice in Midlands for November —Write full particulars to No 5418 British Medical Journal Office 429, Strand W C

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TENDER

Township of Leeds

The Guardians invite tenders for the establishment of a DENTAL CLINIC at the Township Infirmary Beckett Street, Leeds (excluding sanitary fittings) The firms tendering are asked to submit lists of equipment similar to that usually installed in a School Clinic Tenders to be forwarded to me not later than Saturday, November 8th

The Guardians do not bind themselves to accept the lowest or any tender, and no allowance will be made for tenders

Poor Law Offices, South Parade, Leeds JAMES H FORD, Clerk to the Guardians October 14th 1924

The Poplar Hospital for ACCIDENTS, 1 a t India Dock Road E 14.

Applications are invited for the post of SENIOR RESIDENT OFFICER Salary £200 per annum with board, residence, and laundry, plus fees £75 per annum, as Anæsthetist to Dental Clinic for 1 000 School Children Appointment for period of 12 months

Applicants must be Fellows of the Royal College of Surgeons Post offers considerable scope for surgical practice.

Applications stating age, qualifications and enclosing copies of three recent testimonials to be sent to the undersigned on or before Thursday, October 30th

D H LINDSAY
Secretary and House Governor

Leicester Royal Infirmary

HONORARY RADIOLOGIST

An Honorary Radiologist is required Cond may be obtained upon application A local Radiologist is a candidate for the post Applications by Friday October 31st 1924 to the House Governor and Secretary at the Infirmary An honorarium of 100 guineas per annum is attached to the post

St John's Hospital for DISEASES OF THE SKIN Leicester Square W C

There will shortly be vacancies for CLINICAL ASSISTANTS Applications to the Secretary Superintendent not later than November

Wilts County Council

...NT COUNTY
...EALTH AND
... INSPECTOR

The Wilts County Council invite applications for the appointment of an Assistant County Medical Officer of Health and Assistant School Medical Inspector Applicants must be fully qualified ded cal Men holding a diploma in Public Health or an equivalent qualification and have had some spec al experience in Tuberculosis A practical knowledge of Mental Deficiency is also desirable

The duties of the post will be chiefly concerned with the School Medical Service but a proportion of

...to act under the direction and control of the County Medical Officer of Health who is also School Medical Officer

The salary will be £600 per annum and will be subject to a deduction of 5 per cent for superannuation under the Local Government and other Officers Superannuation Act 1922 and the candidate selected will be required to pass a medical examination The appointment will be determinable by three months notice on either side

...marked "Assistant County Medical Officer" to be lodged with the undersigned not later than Friday November 6th 1924

Canvassing either directly or indirectly is strictly prohibited and will be regarded as a disqualification

W L BOWN
Clerk of the County Council

County Offices Trowbridge October 1924

County Council of Middlesex

DENTAL SERVICE

The County Council invite applications for the post of ASSISTANT DENTAL OFFICER Applicants must be fully qualified and registered Dental Surgeons

The duties of the post are the Dental Inspection and Treatment of School Children under the Direction of the County Medical Officer and the Senior Dental Officer and must be prepared to reside in such area as the Committee desire

The Officer appointed will be entitled to one month's holiday annually

...annum,
...current

...measure of the Council and subject to one month's notice on either side

The successful candidate will be required to contribute to the County Council's Superannuation

...and (3) past experience together with copies of three recent testimonials, should be forwarded to the undersigned so as to reach this office by November 1st, 1924

Canvassing will disqualify

ERNEST S W HART
Clerk of the County Council
Middlesex Guildhall Westminster S W 1
October 8th 1924

The Queen's Hospital for

CHILDREN
Hackney Road Bethnal Green E 2
(Telephones ...0 and ...31 Clissold.)

...os of
...part
...ons or

Members of the Royal College of Physicians of London should send in their applications with copies of testimonials on or before November 15th and should be prepared to take up the duties immediately after appointment

Information regarding duties and times of attendance on application

T GLENTON-KERR Secretary

October 17th 1924

Hampshire County Council

WHOLE TIME DENTAL SURGEON

Applications are invited for the appointment of

Particulars of the appointment and forms of application may be obtained from the County Medical Officer The Castle Winchester and applications must be delivered to him not later than November 30th 1924

County Borough of Plymouth

MEDICAL OFFICER OF HEALTH

...month
...ficer of
...istered
Public

Health must be not more than 45 years of age and must have had previous experience of the duties of a Medical Officer of Health of a County or a Borough

The person appointed must devote the whole of his time to the duties of the office and must pass an examination as to his health. The duties of the office include the care of the Port Medical Officer and

...Tuberculosis and Venereal Diseases and such ... as may from time to ... of a Deputy ... Assistant Medical

...annual increments of £50 to £1,400 per annum

The engagement to be determinable by three months notice on either side.

Applications accompanied by copies of not more ...fifteen ... may be ... of the ... for eligibility to be sent to the Secretary not later than November 3rd next

R J HITCHELL Town Clerk.

Municipal Office Plymouth October 16th 1924

St Bartholomew's Hospital,

Rochester (1,565 Beds.)
Rochester Chatham Gillingham and District.

Applications are invited for the post of RESIDENT HOUSE SURGEON which will become vacant on December 1st next

Candidates must be unmarried qualified and registered Medical Men Those who have had a

...to be sent to the Secretary not later than November 3rd next

Royal Eye Hospital,

St. George's Circus S E.1

There is a vacancy for an ASSISTANT SURGEON (Honorary) for Monday and Thursday afternoons Applications to the Secretary

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W J HICKS Secretary

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South Coast — A General PRACTICE situated in large Coast Town Receipts over £2,000 Panel 1,... Fees 3/6 upward Excellent house 4 bedrooms etc. Premium 1½ years purchase. Folio 673

Surrey — Partner required for a general practice situated in a market town Receipts £2,200 Fees 3/6 upwards. Plenty of scope. Personally known and recommended Premises in central position containing 4 bedrooms etc Rent £75 p.a. Premium ... years purchase for one-third share — Folio 900

Staffs — Partner required for a General Practice situated in an industrial district. Receipts £2,500 Panel 1,300 House at rental Premium for third share 3 years purchase. Option increase to half share — Folio 887

S of England — A Coast ...trict ...pulation ...ctorate in good ...ition at rental. Premium £2,500 — Folio 675.

Glam — A General Practice situated in a Coast Town Receipts £2,200 Panel 1,400 Fees 3/6 upwards shipping fees 2½ guineas upwards. Ample surgery Nice house with 4 bedrooms etc garden and garage Rent £75 per annum Premium 1½ years purchase — Folio 681.

Notts — A Middle and working-class PRACTICE (town and country) Receipts £1,200 Fees 3/6 upwards Small corner house containing 3 bedrooms etc Rent £60 per annum. — Folio 682.

Purchasers stating their requirements can have details of other Practices not advertised

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Lancashire—£2,000 a year. Old established Panel 1,600 Fees 2/6 to 10/6 Midwifery 2 to 4 gns House with good garden and garage Can be rented or purchased Premium 1 year's purchase —Apply, No 7617

South Wales—£—,000 a year Very safe PRACTICE Appointments and Panel about £1 700 Visiting fees 3/6 to 10/6 Convenient house, rent £52 on lease Hospital, 50 beds Premium for quick sale £2 000, terms could be arranged —Apply, No 7616

London, N W—£600 a year Panel 560 Visiting fees 3/6 to 7/6 No midwifery or appointments Good detached house Lease for sale —Apply No 7614

Kent—Important Town About £500 a year Panel 500 Fees 3/6 to 10/6 Good house to rent Hospital Great scope Premium £750 —Apply, No 7613

Lancashire—About £1,200 a year Non panel Old established Vendor retiring No midwifery or appointments Fees 2/6 to 10/6 Small house rent £36 including rates and taxes Ample scope for both midwifery and panel —Apply No 7612

Home County—Nearly £1 400 a year Old established Good fees Very little midwifery Small panel Good house and garden Introduction as arranged —Apply, No 7606

Eastern County—About £1 800 a year One third now and ultimate succession Panel over 1 000 Visiting fees 3/6 up. Midwifery from 2 guineas House or rooms available Good sporting locality —Apply No 7605

South Coast—For disposal, good class [illegible] pa No panel 21s Appointments [illegible] 12 guineas [illegible] rent Great scope for increase panel etc. Good school —Apply No 7594

Lincoln—Country Town, about £1 850 pa Very old established Panel over 1 000 Visits 3/6 up Appointments about £70 Good detached house tennis garden ½ of an acre Long introduction —Apply No 7593

Yorkshire—Average £1,286 Appointments £350 Visiting fees 3/6 to 10/6 Panel nearly 1,300 Few midwifery cases Good house every convenience —Apply No 7581

North-West County.—University Town. £1,200 a year Old established Visits 5/ to 10/6 Midwifery 4 to 7 guineas Freehold house standing in own grounds Scope —Apply No 7579

Monmouthshire — Over £1 600 a year Established 20 years Panel over 1,100 Visits 5/ up Appointments about £940 pa Good house garden and garage to rent —Apply No 7570

Eastern County Partnership About £2 200 pa. Panel about 2 000 and other appointments. Fees 3/6 up One third share for disposal with succession in about 3 years Apply No 7564.

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LONDON, W —Well established NON-PANEL Income nearly £2 000 No night-work or Midwifery Premium £5,000 (cash) to include freehold house.

SOUTH WALES —Well established Colliery and Contract PRACTICE Income £2 000 Panel 1 300 House to let. Premium £2 000 £1 000 down and balance by arrangement.

LANCS —Old established G P Panel 2 000 Income £3 300 Two appointments House to let Cottage Hospital Premium 1½ years purchase or one-third share for £2,000 Suitable for young North Country man

YORKS (W R) —Old-established G P Nice house, panel nearly 1,300 Two appointments Premium £3 900 to include house Part can remain

YORKS (E R) —Business industrial practice Panel over 1 120 Income £2 050 p a Scope for Surgery Premium 1½ years purchase Part can remain

CITY —Old established G P Non panel Good position Fees 5/ upwards Scope for V D, Ear Eye Nose and Throat work Premium £300—£400

CHESHIRE —PARTNERSHIP In old established G P situated in large town Panel nearly 2 000 Income £1 707 Premium 2 years purchase for one third or one half share

LONDON S W —Old established G P Panel 360 Income £1 000 Small house garden etc Low rental Premium £1 600 to include lease

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F R C S, required as Partner Practice in Country Town Share worth £800 with increase later Fine opportunity for Surgeon

Lancashire—Practice of £650, with great scope Rent £40 Opposition slight. Large population

Colonial Appointment— [illegible] to Lartner [illegible] sh [illegible] er [illegible] Nic di

London, S W—Partnership with Succession Third share of about £1,500 in rapidly growing district Great scope Suitable house on easy terms

Within 80 miles—Middle and working class PRACTICE of £1 300 in nice town Panel 1 500 About 20 midwifery Hospital and schools etc Very nice house with 6 bedrooms separate entrance to surgery and nice secluded garden Rent £70, on lease

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Within 70 miles—Practice of £700 with great scope in country town Population 20 000 Cottage hospital 1 mile 3-7 Good schools House on lease Rent £55 Premium 1½ years purchase

Birmingham — Good-class PRACTICE in residential part Receipts £1 420 Fees 5/ to 10/6 No panel and very few midwifery Fine house with large garden at low rent Good introduction

Colliery Practice of £2,000 mostly from panel (1 30) and appointments Few midwifery Cottage hospital Good house rent £52 Premium one year's purchase £1 000 down

West Riding—Practice of £1,500 Panel 1 550 Opposition slight. Good house rent £80 Premium £2 000

Midlands—Town and country PRACTICE of £1 200 Panel 600 Good corner house with garage rent £60

Midlands — Good money making PRACTICE of £1 800 with great scope Panel 2 2 0 Appointments £110 Rent £50 Premium £2 750 £1 500 down

Liverpool — Middle and working class PRACTICE of £700 with great scope, for sale owing to illness Panel 120 Very little midwifery Premium only £300 for quick sale Convenient house can be bought cheaply

North London—Practice of £1,600 Panel 1 100 Appointments £420 House with side entrance to surgery and small garden Rent £63.

Cornwall—Unopposed PRACTICE of £1 500 in beautiful district near the sea Panel worth £550 Appointments £80 House with surgery garage etc Rent £40 on lease Premium 1½ year purchase

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2. SOUTH COAST WATERING PLACE.—(Population 30,000.)—Partnership with view to succession. A good old established PRACTICE, averaging for the past three years over £1,150 per annum, including panel of over 300. Visits 3, 5 and 7/6. No midwifery. Very nice house available with similar accommodation, garden, etc., which will be sold or can be rented. Half share, freehold, plus a 2 years' purchase. Good society. Sport of all kinds. Educational facilities. Small House. Good scope for increase.
3. PARTNERSHIP.—SOUTH OF ENGLAND.—In a large flourishing Seaport Town a fourth Partner is required in a hitherto mixed-class PRACTICE, averaging about £3,000 per annum, including appointments and panel of nearly 2,000. The sixth share, producing over £800 a year is for disposal. Visits 4 upwards. Midwifery 3 guineas. Commodious rooms at the Surgery are available for the ongoing partner. Rent £60 p.a. Premium required for share 2 years' purchase. Golf, tennis, etc., and there is scope for development.
4. SOUTH MIDLANDS.—In a pleasant Cathedral City a well-established middle and working-class PRACTICE held 11 years by present Incumbent, who is relinquishing, on account of indifferent health. Cash receipts average £1,400 per annum for the past three years, including panel of over 1,100. Visits 5/- and 7/6. Midwifery 3 guineas. Modern Surgery. The house which is Vendor's property, contains 12 rooms, garden, etc., and will be let on lease at £60 a year, or sold for £1,100. Premium £2,100. Excellent educational facilities.
5. MIDLANDS.—In a delightful town (population over 7,000) amidst beautiful surroundings, and within 1 hour's run of London, an old established lucrative PRACTICE worth over £2,500 per annum, including large panel and good fees. The house is well situated and has ample accommodation, and can be rented or leased at £100 a year. Premium 1½ years' purchase. Satisfactory reasons for selling. Educational facilities, and sport of all kinds.
6. [illegible] rooms, standing in its own grounds of [illegible] of an acre, with full size tennis court, etc. Vendor's freehold price £2,300. Good Hospital in town and Vendor on the Staff. Premium £2,700.

[illegible] run of London, established and situated in a very pretty Country Town with beautiful surroundings. Cash receipts for last financial year £2,022, including appointment of £50 and panel of 500. Visits up to 21/- Very little midwifery. Car optional. Railway station. Charming residence (with ample accommodation) in its own grounds of ½ of an acre. Price £2,900 all of which can remain on mortgage at 5 per cent. Premium for practice £2,500. Excellent prospects. Terms. Golf, hunting, shooting, etc.

9. HOME COUNTY.—Hospital Town within 30 miles of London. PARTNERSHIP. A one-half share in a mixed general practice held by seven or eight partners for 25 years. Average income as an Assistant £2,000. Panel of 500. Midwifery and medicine from 2/6. Visits and prices from 3/6. Very little midwifery. Detached Residence, with ample accommodation and good garden. Price £2,000 of which £1,000 can remain on mortgage. There is an open Hospital and an early vacancy on the staff is probable. Good sporting district. Premium 2 years' purchase, half by arrangement.
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12. NE. COAST.—UPOVTYNE AREA.—Long-established PRACTICE held by Vendor for many years, steadily averaging income of about £3,350. There is a Hospital in the town and a reasonable prospect of obtaining an appointment on the Staff. There are various appointments worth about £150 a year. Very little midwifery but large consulting practice. Fees 4/6 to 21/-. House and Vendor's freehold surgery will be sold. Exceptional facilities offered to a medical man. Premium, for immediate disposal, only £4,000, payable £2,000 down.
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17. FAR EAST.—MEDICAL OFFICER required for railways. Salary about £600 a year, increasing annually. Three years engagement. Free passages and home leave. Age [illegible] English medical qualification. Personal application to Board of Medical Agency.
18. FAR EAST.—ASSISTANTSHIP with view to PARTNERSHIP and immediate occupation for 3 years to an existing practice. Salary £800-£1,000 with [illegible] Knowledge of Tropical Medicine and Surgery essential. Personal application to Board of Medical Agency.
19. FAR EAST.—ASSISTANT required. Minimum age [illegible] years of age and who has seen some service. For 3 years engagement. Salary £630 first [illegible] £70 yearly. Passages and home. Carriage allowance. Good [illegible] social [illegible] terms, good opportunity for [illegible] to be retained.

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LANCASHIRE — (19) Well - established PRACTICE averaging £2 100 p a on outskirts of PRESTON Panel 1 611 Modern detached house Premium £2,000

EAST COAST —(20) PARTNERSHIP in well-established PRACTICE £3 800 in rapidly developing Seaside Town House with 4 bedrooms to rent Incoming partner should be aged between 40 and 50 Premium two-thirds share £3 000

YORKS —(21) PARTNERSHIP in very old established Practice in good Town Receipts average between £3 000 and £4 000 p a Panel 1 200 One fourth share at two years purchase payable by arrangement Preliminary assistantship of six months

SOUTH WALES —(22) Very old-established PRACTICE over £1 550, in beautifully situated Country Town Panel nearly Fine old mansion house with half acre garden To be sold Good and sport Premium £2 250

WEST OF ENGLAND —(23) ASSISTANTSHIP with view to partnership in mixed practice of over £2 800 p a in Country Town Panel 850 One fourth or one third share at two years' purchase Applicant should be keen on surgery Hospital in town

SOUTH OF ENGLAND —(24) PARTNERSHIP in good class non panel practice of about £2 500 p a in beautifully situated country town Applicants should be Oxford or Cambridge Graduates not over 30 and preferably F R C S Eng

SURREY —(25) PARTNERSHIP in good class non dispensing Practice, in most desirable Residential Country Town No panel Suitable house could be obtained Partner must be graduate of Oxford Cambridge or London University, aged 40 to Share worth about £1 000 p a at first Hospital in town

FIRST-RATE RESIDENTIAL DISTRICT up the THAMES —(26) PARTNERSHIP in good class Practice averaging about £1 550 p a Not much Midwifery Good house, with garage, to be sold Premium one half share £1 200 Scope for Surgery

LONDON —(27) Well established and very lucrative PRACTICE, about £3 890 p a in Industrial Centre, North of the Thames Panel 1 500 Very good nine bedroom house (9 bedrooms) to be sold Would suit two men Premium £4 500

YORK (near) —(28) Unopposed Country PRACTICE between £700 and £800 p a £210 of which is panel, in picturesque growing Village Model detached house with garden garage electric light bath (h & c) etc, for sale Premium one and a half years purchase

WITHIN 50 miles of LONDON —(29) PRACTICE £1,500 in first rate Residential District Modern detached house (6 bedrooms) in grounds to be sold Excellent educational facilities Premium £2 000

SOUTH AFRICA (CAPE PROVINCE) —(30) PRACTICE about three Railway five very cheap

HOME COUNTY —(31) Well established and increasing mixed class PRACTICE over £1 000 in Residential District Panel about 400 Not much Midwifery Old fashioned detached house (9 bedrooms) in good position Premium £1 500

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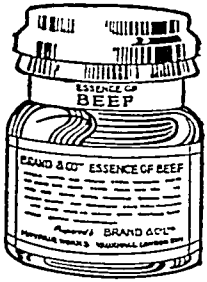
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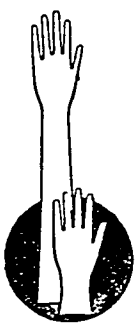
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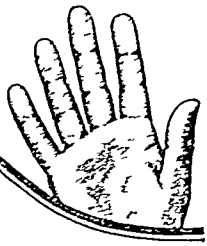


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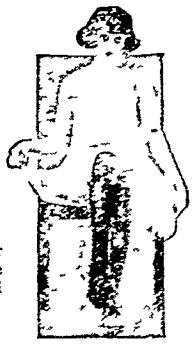
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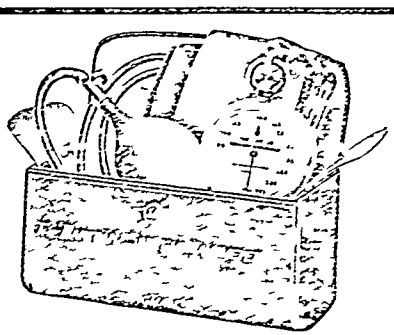
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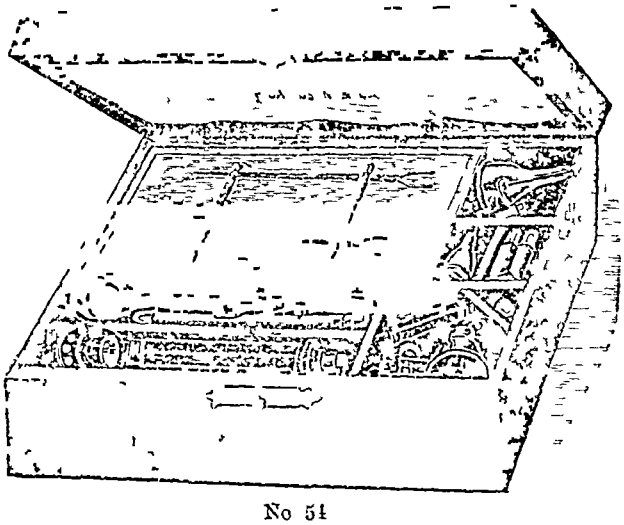
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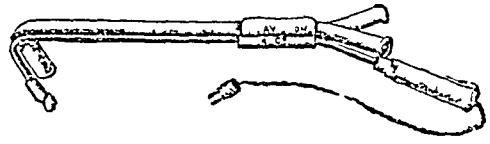
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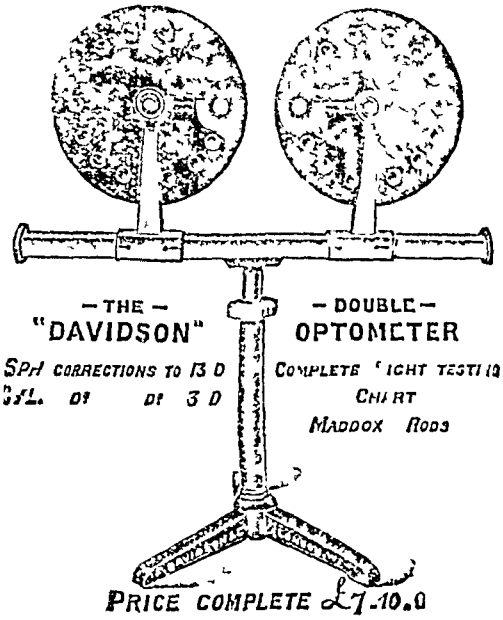
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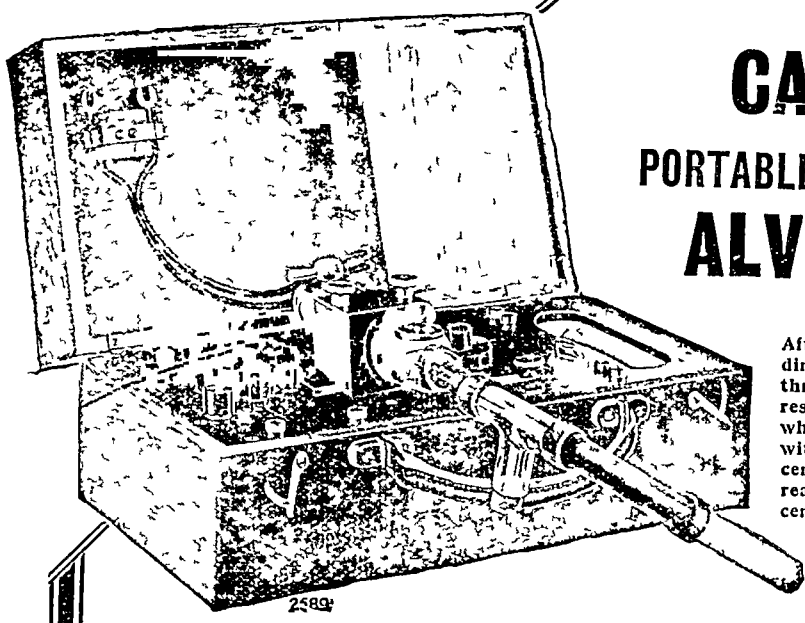
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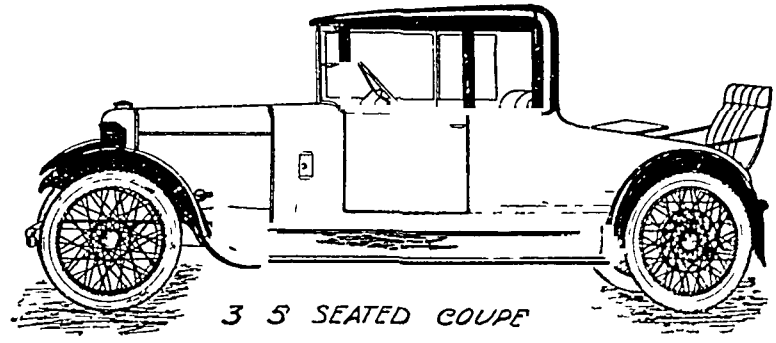
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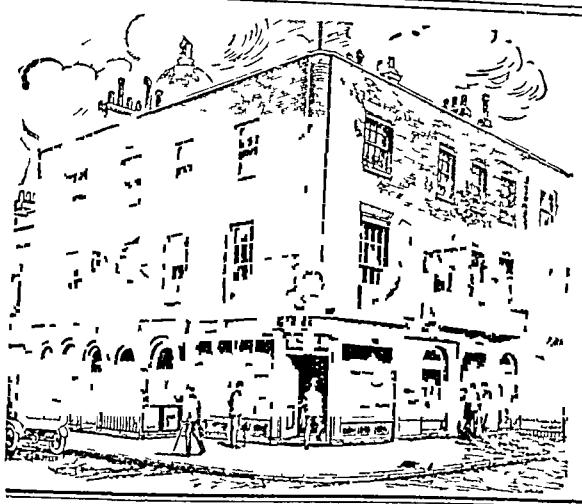
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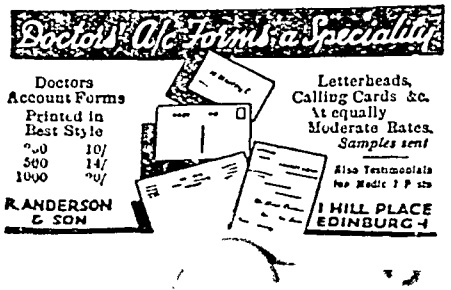
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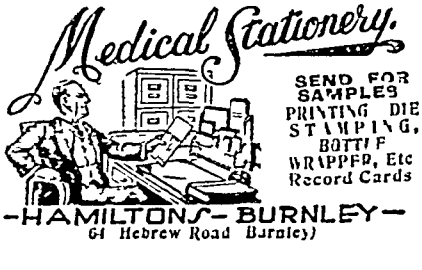
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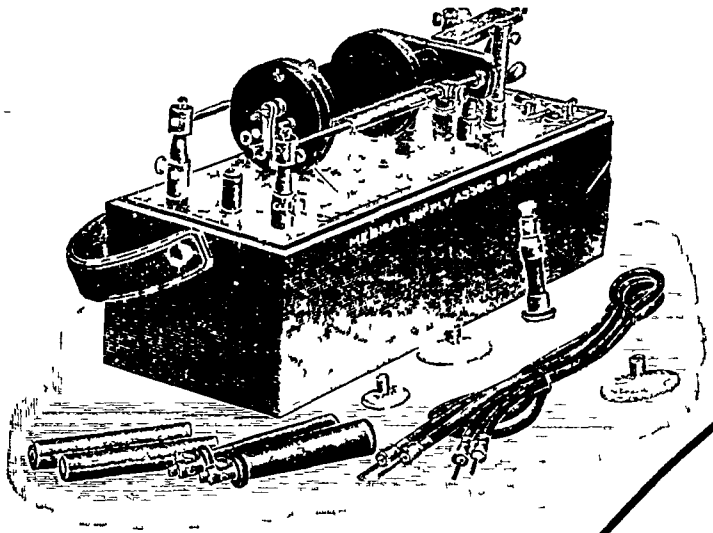
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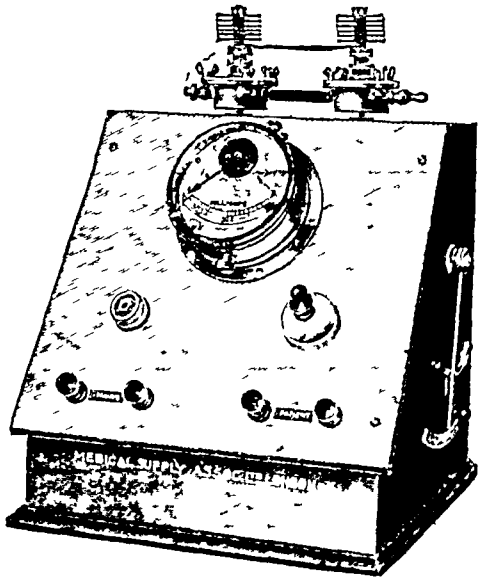


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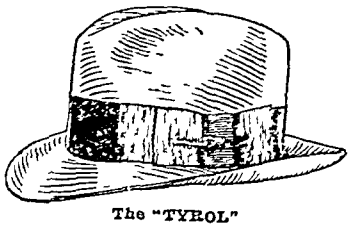
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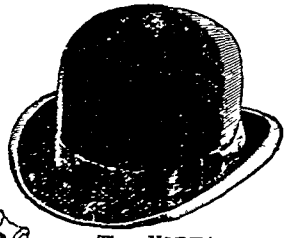
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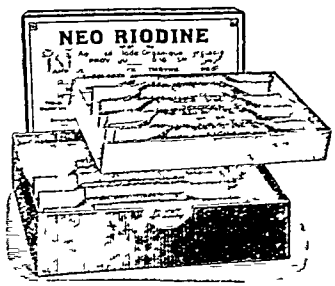
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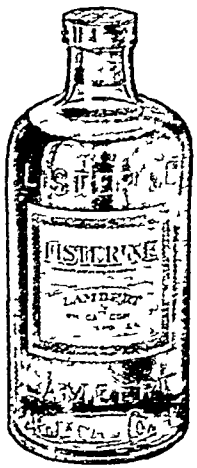
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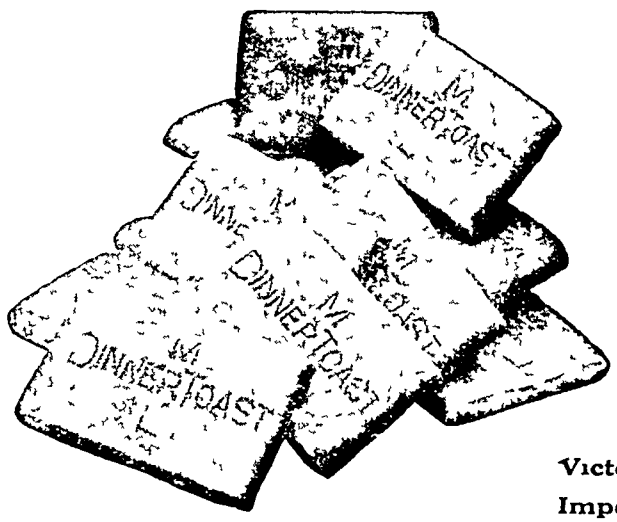
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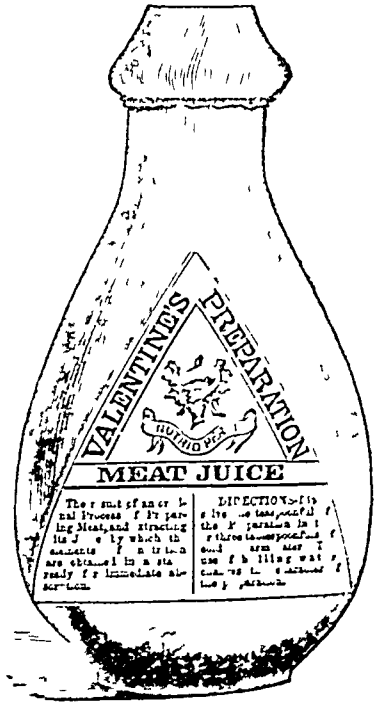
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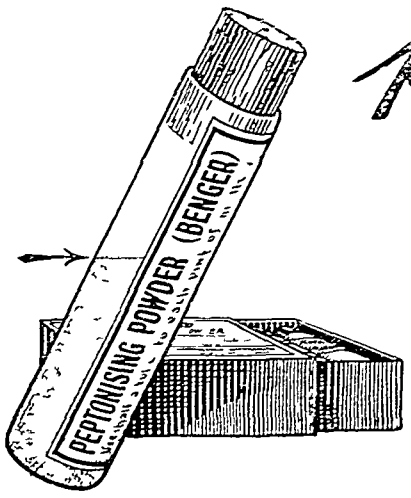
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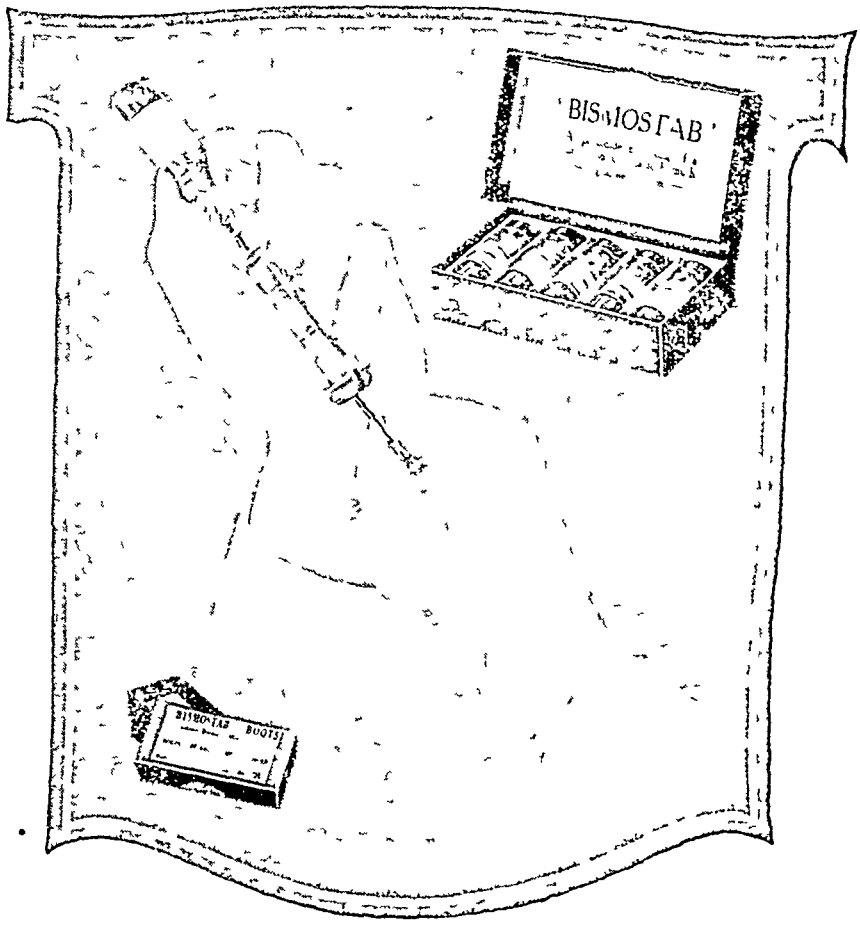
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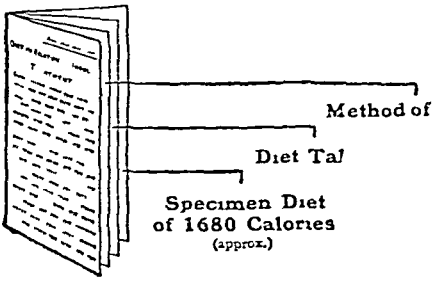
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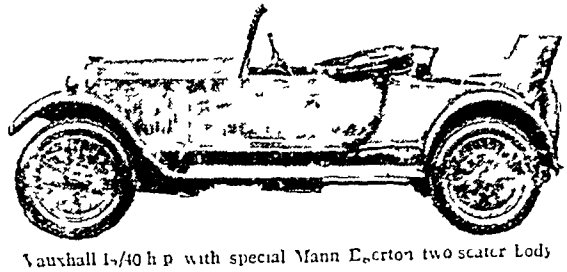
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The Lloyd Roberts Lecture

ON

ATTIC SALT TOR GALL STONES

DELIVERED AT MANCHESTER, OCTOBER, 1924

BY

SIR JOHN BLAND SUTTON P P C S I G,
CONSULTING SURGEON TO THE MIDDLESEX HO PITAL

A CHANCE observation in natural history by a boy may influence him in a particular line of study My father learning that pearls occur in fre hwater mussel led u to collect from the moat a bushel or mu cls, and after carefully searching them he found one pearl as big as a grain of mustard seed This simple experience quickened in me an interest in animal concretions especially pearl I zoars aegagropiles (Fig 1), and finally gall stones The mu eum of the Royal Colle e of Surgeons of England pos e es a large collection of animal concretion which was well displayed and admirably catalogued by Thoma Taylor in 1845 It contains among other things

Gall stones from women men and ap s
Erteroliths from cov and nakes
Vesical stones from cats and dog
And calculi from bovs and h g
Oat hair concretions found in man
Bezoars from wild goat calt and ram
Aegagropiles of many style
From women girls and crocodiles

Bezoars and enteroliths have an interest for mankind Thev form in the alimentary canal of mammals, birds reptiles amphibia and fishes They are common in goats calves and horses especially millers' horses A foreign body such as a chip of wood or metal a button nail or fruit-stone serves as a nucleus and becomes embedded in hairs which mammals lick from their skins and swallow In many instance the foreign body is encased in a deposit of triple phosphates which forms a hard stone-ball TLe deposit is often arranged in concentric layers The example repie-sen-ed in Fig 2 \ is as b g as a cricket ball I have seen one a foot in diameter, and it was used as a door stop in a museum

Bezoar powder is highly prized as a remedy in many countries In the *Dispensatory* of the Royal Colle e of Physicians, 1746, will be found an account of a famous remedy known as 'pulvis e chelis cancrorum compositus' containing tips of crab's claws prepared pearls, and red coral This was converted into "pulvis bezoardicus" by the addition of powder obtained from an Oriental bezoar This mode of prescribing the powder arose from the fact that bezoar powder being costly was sometimes clandestinely omitted In order to heighten the virtue of the powder it was directed to be made into pellets with the jelly of vipers It enjoved great favour for the treatment of epilepsy jaundice melancholy contagious fevers and worms The crab's claws powder was commonly called Gascoign's powder after its inventor



FIG 1.—Aegagropile from the stomach a cow The spiral arrang ment f the hair is due to peri taltic movement (Mu eum Royal Colle ge of Surg on)

FAITH IN DRUGS

Next to belief in the existence of a future place of permanent bliss nothing i more deeply rooted in the mind of man than faith in drugs Among uncivilized tribes the medicine man is of great importance and the filthy things he prescribes are swallowed by members of the tribe with confidence In England in Shakespeare's time many remedies were of the same nature as tho e forming the stock in trade of the African medicine-man Some idea of their nature may be gathered from the list of the ingredients for the hell broth in the famous cauldron scene in *Macbeth* In addition to hemlock root, gall of goat, and slips of yew, it contained

Eye of newt and toe of frog
Wool of bat and tongue of dog
Adder fork and blind-worm sting
Lizard's leg and howlet's wing

The *Pharmacopoeia* of 1746 had little to boast of in comparison with the odd commodities of a witch stew It contained in addition to other curious remedies—

Pulvis e chelis cancer rum compositus
Juxta precepta artis regiae
Chalybis rubiginis pulveriza
Lib sequenti et pulvere varieus

There is great virtue in a Latin prescription It looks like an e orcism (Dean Inge) The above prescriptions smack of dog Latin phraseology and writ in w ten jargon run

Claw of crab and pearls ground in
Viper broth and viper wine
Steel filing and their dried rust
Pills of crap and bezoar dust

In 1900 I was much amused when a distinguished Fel of the Royal College of Physicians recommended me to a man soap pills with the intention' to promote th escape of a gall stone presumably impacted in the common bile duct instead of removing it by operation We laugh at the Chinese vendor of quack remedies who sells at a high price scrapings from the fo silized bones of antediluvian monsters which he calls dragon's bones to be swallowed by rich and poor, forgetful of the fact that three of our most potent remedies are derived from fossilized trees and plants—coal

Some drugs used to-day and professionally sanctioned are remnants of a lingering faith in the medicinal valu of animal secretion and concretion It is true that bezoar powder is no longer prescribed by orthodox physicians but musk, a secretion from the musk deer is recommended as an anti-spasmodic for hysterical maidens Ox-gall as a cure for jaundice still appears in the druggist's list in spite of the inactivity of surgeons in removing obstructions from the common bile duct

PEARLS

The pearl an ornament appreciated in all civilized countries with beauty and riches is formed on the same principle as a bezoar The nucleus may be an intestinal parasite a grain of sand or a small fish entombed in layers of pearl substance—aragonit—arranged around a bezoar (Fig 2 B) The origin of a parasite a foreign nucleus or a particle Raphael Dubois in 1901 to ascribe the pearl as the brilliant secretion of a worm Pearl were formerly used as remedies seed pearl were swallowed while Scrapings from pearls served as ingredients in an electuary prescribed for its stimulant and restorative properties by Arabian physician and the compound powder of crabs claws or the *British Pharmacopoeia* contained prepared pearls and red coral Human credulity in regard to animal concretions has not parallel ambergris a fragrant pathological product found in the guts of sperm whales It was formerly in favour as an aphrodisiac and is still used in the East to flavouring dishes in Italy for piecing wine and in France for scent soap and pomatum

GALL STONES

Gall stones were late in attracting attention from naturalists but also from physicians [illegible] and last of all surgeons The nature of gall stones was ill understood until the French chemist Chevreul recognized the chief constituents of the crystallizable fatty bodies now known as cholesterin Chevreul recognized it as the chief constituent of

stones, and I had the foundation of our knowledge of biliary concretions Gall stones are often formed of spheres arranged concentrically around a nucleus, as in pearls and bezoars (Fig 2, C) The soft brown masses sometimes found in the gall bladder of oxen has been used as drugs by apothecaries and as pigment by artists

Modern surgery is responsible for a great increase in our knowledge of man's viscera This is true of the gall bladder It is established that gall stones are mainly formed in the gall bladder This receptacle is liable to several forms of infection, and the presence of gall stones in the gall bladder and the associated ducts leads to consequences which not only cause discomfort, inconvenience, and pain, but imperil health and life in various ways In 1883 I was busy rearranging the specimens in the museum of the Middlesex Hospital, and became deeply interested in an instructive set of specimens, illustrating diseases of the gall bladder and its ducts, collected by Dr Murchison from the dead-house Murchison held the post of physician and pathologist to the hospital for ten years In 1891 my interest was quickened in the clinical aspect of gall stones, for in that year I successfully excised some gall stones from the common duct of a woman of 58 At that date choledochotomy was a novelty This woman reported herself alive and well ten years later I followed gall-stone surgery keenly, and in 1907 opened a discussion in the Section of Surgery at the meeting of the British Medical Association at Exeter, on cholecystectomy * This formed the basis of my monograph on *Gall-stones and Diseases of the Bile-Ducts* Early in my surgical work I became convinced of the advantage to the patient of removing the gall bladder in preference to draining it, when infected and occupied by concretions, this attitude is supported by recent researches into the mode of formation of gall stones

The study of animal concretions throws some light on the physical and chemical processes concerned in their production Like hailstones, bezoars, and urinary calculi, gall stones are formed around a core, and for a long time it has been accepted by surgeons that this core, or nucleus, may be a clump of shed epithelium, mixed with pigment, crystals of cholesterol, or a cluster of bacteria Infection of the gall bladder is a primary factor in the production of gall stones During the last twenty years investigations relating to this matter conducted by Aschoff, McNee, and Rovsing, indicate that sepsis is not a common cause of gall stones, but sepsis is a serious sequel of gall stones Stasis of the bile in the gall bladder, by permitting the separating out of the constituents from the bile, is also an important factor in the production of these concretions When a gall bladder containing gall stones becomes septic the infection leads to an excess of lime salts in the bile, and these salts coat the stones with mantles of chalk

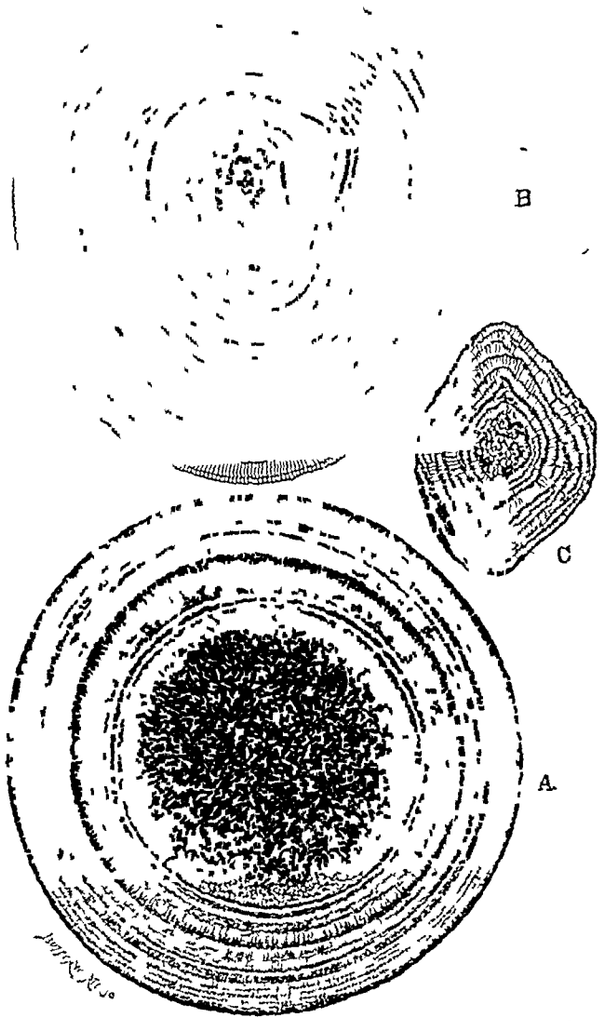


Fig 2—A Bezoar in section The nucleus consists of twigs (Natural size) B Pearl in section magnified (Rubbed) C Gall stone in section It consists mainly of cholesterol (Natural size)

These investigations teach that the majority of gall stones arise in the gall bladder Rovsing believes that the faceted shape of gall stones is not due to the mutual pressure of concretions one upon the other by the spasmodic clutch of the gall bladder He suggests that the facets are the expression of the intrinsic properties of certain gall stones just as in the urinary bladder the oxalate stone is spherical while the urate stone is oval He also suggests that the core of a gall stone is formed of bile pigment Such views destroy the picturesque simile that a gall stone is the tomb of a clump of bacteria In spite of the difference of opinion among men who have studied the modes in which gall stones form, this seems clear temporary bacterial cholecystitis associated with concentration and stagnation of bile is a frequent cause of gall stones The occurrence of chalk in gall stones is of clinical value, it facilitates the detection of stones in the living body by radiology and simplifies diagnosis in an extraordinary fashion

Cholecystotomy

In 1879 Lawson Tait deliberately opened a woman's gall bladder and removed a gall stone impacted in the cystic duct This marked the beginning of gall stone surgery in Great Britain He took no further interest in the extension of this class of surgery and was content with the simple method of cholecystotomy, but this simple experience led his acute mind to realize that the best results of gall-stone surgery were obtained in conditions unassociated with jaundice The removal of the gall bladder seemed to Tait ridiculously absurd, wholly unnecessary, and might have a deleterious influence on the health of the patient

It soon became clear to other surgeons that there were disadvantages connected with cholecystotomy—the mere draining of the gall bladder through an external opening—because the liver excretes 40 ounces of bile in twenty-four hours The bile normally drains into the intestine, the fluid part is absorbed, and the colouring matter mingles with the faeces When bile escapes through a fistula to be collected in a bottle, or caught in cotton-wool or gauze, it is a nuisance In 1894 a medical student submitted to cholecystotomy for calculous obstruction the fistula has been discharging mucus and bile to the present time—thirty years This man clings obstinately to his gall bladder, and has used more than a ton of cotton wool for absorbing the escaping bile

Many surgeons have agreed that when a gall bladder contains an apparently solitary calculus it is sufficient to remove the stone Experience teaches that it is difficult to decide in the course of an operation that the stone is solitary When gall stones exist in hundreds and the gall bladder resembles a bag containing shot, who can be sure that he has emptied it? The sutures used to secure the edges of the opening in the gall bladder to the margin of the incision in the abdominal wall will become encrusted with

* British Medical Journal, 1907, ii, p 577

cholesterol paste and bilirubin calcium, such things are as unpleasant as gall stones These sequelae are well known Experience and observation have taught surgeons that the majority of gall stones are formed in the gall bladder, and it is wise to remove this troublesome pocket when it has acquired the habit of moulding gall stones Surgeons agree in the truth expressed in the epigram "A gall bladder that has been subjected to a cholecystotomy is a liability rather than an asset" In the early years when draining a calculous gall bladder was the rule, surgeons sometimes suggested that recurrence of gall stones was an extremely rare event Few hold this opinion to-day I have removed the gall bladder from many patients who have been submitted to cholecystotomy by various surgeons and found gall stones therein In 1889 Knowsley Thornton removed from the common bile duct of a spinster a large gall stone and one from her gall bladder which was shrunken and useless In 1913 I removed from the ampulla of this woman a gall stone, in shape like a blunt cone, with a vertical height of 3 cm and a circumference at the base of 4 cm (Fig 3) The common duct admitted my forefinger easily

Some of the reasons urged for the retention of the gall bladder are odd A Canadian surgeon stated that an individual with a gall bladder sleeps better than one who has lost it Another reason equally odd, relates to a woman with intestinal obstruction her gall bladder was opened and she was fed for five days through the cholecystotomy opening and finally recovered Once I found the gall bladder useful in a surgical emergency in a man with a perforated duodenal ulcer The tissues around the hole were so rigid that I could not unfold the bowel In this dilemma I plugged the hole with the gall bladder secured it in position with a few stitches and performed a routine gastro-jejunostomy The man recovered in spite of the insult to his gall bladder Hamlet reminds Horatio that the toe of the peasant comes so near the heel of the courtier he galls his kibe Certainly the gall bladder might complain of being put to a base use in these terms

> Although I hold the bile as in a butt
> It is too mean to use me as a bung
> To plug an *opening in a leaking* gut

It is unwise to argue from an isolated experience that a patient should be advised to keep a diseased gall bladder against a similar contingency

CHOLECYSTECTOMY

Reflection on the development of surgery in relation to what is called visceral surgery teaches this—nearly all the methods of dealing with what were called encysted dropsies followed nearly the same order They began with tapping frequently repeated then incision and drainage, the margins of the artificial openings made in the cyst wall being stitched to the edges of the parietal incision Since the discovery of anaesthetics and the use of reliable ligatures complete removal (extirpation) of cysts has been adopted, with comfort and safety to patients Drainage methods were employed for ovarian cysts, hydatid colonies, hydronephrosis, and dropsical distensions of the gall bladder No one uses such methods to-day for ovarian cysts or hydronephrotic kidneys, and they are removed with little risk throughout the civilized world

The operation for removing the gall bladder—cholecystectomy—has passed through a groping stage, then a period of extreme specialization, ending in broad generalization The first time I met Lister in consultation was over a patient with calculous cholecystitis, and I wished to remove the gall bladder Lister agreed with the diagnosis but dissented in regard to operative interference, for these reasons When the abdomen is opened and nothing big removed it is very difficult to secure the abdominal wound safely He explained to me that his own experience in this matter had been very sad I am old enough to have seen the evil results when abdominal incisions failed to unite by primary union, and it is a privilege to have lived to see Listerian principles of wound treatment universally accepted and abdominal incisions heal as readily as surgical incisions of the face and limbs.

For twenty years I have consistently followed the practice of removing the gall bladder when occupied by gall stones, pus or infected bile Many surgeons only remove it when cholecystotomy is impracticable, and many hesitate to remove it in the condition known as acute septic cholecystitis The best results follow cholecystectomy for septic cholecystitis

Tanner (1924) analysed 117 consecutive cases of gall stones, operated on in Guy's Hospital and found that patients submitted to cholecystectomy were fairly as long in the hospital as those submitted to cholecystotomy The advantages of cholecystectomy are even more striking when the patients themselves are seen" in preference to trusting reports

An important fact in regard to diseases of the gall bladder revealed by modern surgery concerns cancer of this receptacle Thirty years ago primary cancer of the gall bladder was regarded as a rare disease few specimens were available for study, and all of them in pathological museums, were spoils from the dead house To-day primary cancer of the gall bladder is known to be a frequent disease and rebellious to surgical treatment, it is often found in gall bladders excised for gall stones, and its presence unsuspected until the parts are examined in the laboratory Gradually it has been established that in 95 per cent of cancerous gall bladders, gall stones are also present It is a fact that gall bladders submitted to cholecystotomy for gall stones and drained temporarily, or permanently are liable to become cancerous This is a strong reason for removing the gall bladder when patients suffer from calculous cholecystitis

VAGARIES OF THE GALL BLADDER

Some of the abnormal relations of gall bladders give rise to clinical puzzles The fundus of a gall bladder has been found strangulated in the sac of a right femoral hernia (Museum, St Bartholomew's Hospital) In a sexagenarian spinster under my observation the gall bladder containing many calculi could be easily felt through the thin abdominal wall and the gall stones made to grate together in the course of a clinical examination A gall bladder may be so mobile that it rotates and twists its narrow neck like a rope In size a gall bladder with its cystic duct obstructed with a calculus may become so distended with mucus as to reach the pelvis and resemble in clinical characters an ovarian cyst Lawson Tait began an operation under the impression that he was dealing with an ovarian cyst his astonishment was great when he discovered it to be a gall bladder converted into a huge mucocele The cystic duct was obstructed by a solitary gall stone and the gall bladder contained eleven pints of fluid Distended gall bladders of twice and thrice this capacity have been reported by Collinson and Terrier A similar experience occurred in my practice I expected to find a large subserous cystic fibroid but found a huge calculous and cancerous gall bladder in contact with the fundus of the uterus

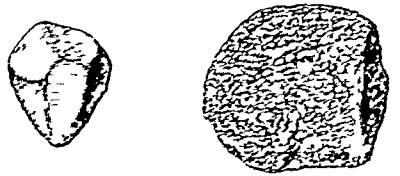


FIG 3.—Two gall stones (natural size) The larger was removed from the common bile duct of a pioneer The faceted stone was removed from the ampulla of a spinster aged 70 who had had no signs of jaundice A calculus excised between the gall bladder and colon (Museum St Bartholomew's Hospital)

When the gall bladder is converted into a mucocele with thin translucent wall its removal is a simple surgical exercise When it resembles a big red sausage with thick walls and as tense as the parchment of a well tuned drum, it startles the novice in surgery In such a case until stripping of the gall bladder from its bed in the liver is easily accomplished and with little bleeding because the hepatic vessels in immediate relation with the gall bladder are bound however the eyes of the patient may be in such condition it bleeds viciously and may delude the surgeon into the idea

that he has cut the hepatic artery It is worth remembering that the surface of the liver, stripped by the removal of a simple mucocele, will often bleed more freely than after the removal of an infected gall bladder When the detachment exposes a wide area of the liver, bile sometimes leaks from small bile ducts thus damaged, sometimes so freely for twenty-four hours or more as to raise the suspicion that the ligature has slipped off the cystic duct

Complications of Cholecystectomy

An important complication of calculous cholecystitis is fistulous union of the gall bladder and colon due to ulceration and escape of gall stones into the gut A gall stone which slips into the colon in this way may be as big as a bantam's egg The museum of St Mary's Hospital, London, contains a segment of pelvic colon with a gall stone of this size impacted in it, and with fatal consequences Many stones escape through fistulous openings in the gastro-intestinal tract, to the permanent advantage of the patient The orifice of escape in such a complication shrinks to a narrow funnel and thus occasionally resembles a cord In dealing with apparently solid cords a ligature should carefully be applied, a narrow channel communicating with the gut may exist in it and be sufficient to set up local sepsis, illustrating the maxim—a small leak neglected may sink a great ship

Nothing seems more surely established in clinical observation than the idea that complete obstruction of the common bile duct is inevitably followed by jaundice A spinster, aged 50, complained of a pain in the region of the gall bladder She was thin and I could feel a gall stone in the position of the common bile duct There was neither sign nor history of jaundice I removed a large stone from the common duct which had completely plugged it (Fig 3) The gall bladder adhered to and communicated freely with the transverse colon In this woman the bile found its way to the gall bladder by the cystic duct and dribbled through the fistula into the gut, to the patient's temporary advantage As the removal of the stone reopened the natural outlet for the bile, I removed the gall bladder and closed the hole in the colon The woman reported herself in good condition ten years afterwards

The gall bladder is a diverticulum of the hepatic duct The mere loss of the gall bladder is unattended with sinister consequences Many mammals and birds lack a gall bladder Some parrots have a gall bladder and some not Hamlet, in his soliloquy on the First Player, says

> But I am pigeon-liver'd and lack gall
> To make oppression bitter
> *Act II Sc 2 605*

This clearly indicates Shakespeare knew that the pigeon lacks a gall bladder Absence of the gall bladder neither causes inconvenience nor shortens life In 1906 I removed the gall bladder of a widow, aged 76, for acute calculous cholecystitis The mucous membrane of the gall bladder was thickly beset with flakes of cholesterol and glistened like the tinselled coat of Harlequin The patient lives, aged 94, and bids fair to become a centenarian

Radiography and Gall Stones

One of the difficulties in persuading patients to submit to operative treatment for suspected gall stones was uncertainty of diagnosis 'Give us a sign" was the imperative and persistent demand Many *physicians preferred to trust* soap pills and olive oil, *rather than the scalpel* The position has changed Radiography can secure shadows on photographic plates which indicate not only the presence of gall stones, but their size and shape *With such evidence* patients now willingly submit to surgery, and, as a rule, quick healing, *freedom from* leakage, and from the recurrence *of gall stones*, with quick restoration to health and usefulness, are the usual consequences of cholecystectomy *To operate for acute cholecystitis and not remove the gall bladder is as reprehensible as operating for gangrenous appendicitis and leaving the appendix*

The golden rule for surgeons to observe is this Examine the main ducts—cystic, common, and hepatic—especially the ampulla, and be satisfied they are free of concretions, remembering always *An undiscovered concretion in the common duct will wreck a cholecystectomy* The imminent tion may be long delayed *but it will surely come* Although the medicine-man can point to some wonderful cures and sorcerers can eject *out imaginary devils*, neither a sorcerer nor a physician can expel gall stones

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A British Medical Association Lecture.

on

LUMBO-SACRAL BACKACHE

BY

P JLNNER VERRALL, F R C S,

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Lumbo-sacral *pain is exceedingly common*, very disabling, and often so resistant to treatment that patients will resign themselves to it Either its treatment devolves *on the* general practitioner entirely, or the patients, if they can afford it, go from specialist to specialist in search of relief We have often to deal with a vicious circle involving many systems, but with only one symptom—pain This pain may be situated in various positions, may or may not be affected by turning of the spine, standing, or walking, and may be variously described as sharp, *gnawing*, or aching It is of the first importance in diagnosis *to obtain* an accurate account of this symptom *from the patient* We may simplify the subject *by dividing the possible causes* into five groups, three of which, the most serious, will not detain us long, but must be carefully excluded *before we consider the other more common causes* We have to deal with a *complex system of bones*, joints ligaments, muscles, and nerves, but we may separate the sacro-iliac joints for consideration later

Severe Bone and Joint Disease

Caries of the lumbar spine is not uncommon, and it must be remembered that adults are by no means exempt and that caries does not necessarily affect the bodies of the vertebrae, but may affect, though less commonly, the laminae, transverse processes, etc Diagnosis will be made by consideration of the extreme rigidity, possible deformity and abscess formation, and by the *x-ray* findings Spinal skiagraphy is by no means easy, and in doubtful cases it is essential to have a skiagram by an expert expertly interpreted The possibility of gummatous deposits *in the spine* must not be forgotten, the symptoms resemble *those of tuberculous caries*, and the two diseases may coexist Syphilis of the spine is, however, a rarity, and the same may be said of sarcoma, *but secondary carcinoma*, frequently associated *with a mammary tumour* (possibly unsuspected), is by no means *uncommon* Forewarned is forearmed, and severe localized pain *coming on in a patient liable to* carcinoma will lead to an adequate *x-ray examination*, when diagnosis is usually easy, as the skiagraphic appearances are generally characteristic Aneurysm and acute osteomyelitis are of course, exceedingly rare, but we must not forget them I do not propose to enter into the treatment of these cases as this would take us too far

Arthritis of the Lumbar Spine

Here again the skiagram affords us the *only absolutely* sure method of diagnosis Lipping of the edge *of the* vertebral bodies and osteophytic outgrowths are characteristic These latter may even go to the extent of complete fusion, producing actual bony ankylosis between the vertebrae Severe arthritis (spondylitis *deformans*) with its fixed absolutely rigid spine, is fortunately rare, as treatment can achieve little more than the arrest of the disease when it is well advanced *early diagnosis being the only hope* Gonorrhoea is *responsible for* at least 65 per cent of such cases Some surgeons would put the percentage higher, but quite 30 per cent are due to metastatic infection from

* Delivered before the War Section on April 1st

the intestinal tract (dysentery, typhoid, and even *Bacillus coli*), and this quite apart from the acute or subacute spondylitis not uncommon during the later stages of such diseases, and of less serious prognosis if correctly treated Spondylitis of this type is often associated with iritis both in the gonococcic variety and in the intestinal, the infective agent in the latter is either the primary organism or, more commonly, a streptococcus which has reached the system through the open intestinal ulcers Rarely, perhaps in 5 per cent, spondylitis deformans is due to metastases from other septic foci Milder degrees of arthritis of metastatic origin are common Moderate rigidity and pain in the lumbar spine combined with intermittent attacks of lumbago are associated with such arthritis It must not be assumed that every case of lumbago has arthritis, as the affection may be a pure fibrositis, but arthritis is sufficiently frequent to justify a skiagram, which will often reveal either slight lipping of the vertebral bodies or quite as commonly osteophytic outgrowth in some of the interneural joints

Treatment will follow the usual lines as for arthritis elsewhere In the acute stage rest is imperative, either on a frame or plaster bed in severe cases, or in mild cases simply in bed with the lumbar spine supported by a pillow Where abnormal curves are in course of development an attempt should be made to correct these by suitable padding of the bed or frame during the period of recumbency It would be absurd to condemn every patient suffering from slight spinal arthritis to permanent spinal fixation Radiant heat, counter-irritation, and ionization may suffice for mild cases Subacute cases may need firm fixation in a plaster jacket for a time but in chronic cases where the disease is sufficiently extensive to justify fixation the ordinary Thomas's back brace will meet all requirements and patients will be so much relieved by wearing it that they will not complain of the necessary fixation of the spine While carrying out this local treatment a rigorous search must be made for the toxic cause bacterial or chemical, and the appropriate treatment applied

Traumatic

Arthritis is often of traumatic origin a relatively mild trauma providing a point of diminished resistance to the attack of the circulating toxin as so frequently occurs in the joints of the extremities But we may have more severe lesions A history of violence, direct or indirect, will lead to the necessary investigation There may be lesions of bone ligaments, or muscles, or all together, or simply a concussion

Of the grosser lesions crush fractures of the vertebral bodies are commoner than is usually thought and we must not be blinded to the possibility of their occurrence by a history of comparatively slight immediate disability after the accident, as the fracture is impacted and there is relatively little instability If undiagnosed, such fractures will often yield gradually to the body weight and a deformity will appear with the necessary concomitant symptoms of spinal distortion In young subjects considerable violence is necessary, and the war provided us with many examples in men who had been blown up and buried under heavy masses of earth, and such accidents occur also in civil life In older patients however far less violence is needed I have a patient a lady of 65 who sustained a severe crush fracture of her first lumbar vertebra by stumbling when getting out of bed and falling with her back across a chair Minor fractures of laminae and articular processes arise not infrequently from indirect or direct violence, often during athletic pursuits Diagnosis is all important, and the skiagram should ensure this when there is any doubt

Treatment in the initial stages is by rest and complete fixation of the spine, and the prognosis is good firm union usually occurring in three or four months Subsequent symptoms will be due either to vertebral distortion if such has been allowed to occur, or to adhesions either in the joints themselves or round the exits of the spinal nerves Such adhesions are not always preventable, but much may be done by instituting exercises at the correct moment It is not easy to judge this moment accurately, but symptoms and the skiagram will, with experience be sufficient guide In old standing cases, where the skiagram shows firm union, it is quite correct treatment to break down adhesions by mobilization and to follow this up with active exercises

Spondylolisthesis must be mentioned, but is very rare It may occur either gradually or by sudden violence The skiagram of such a case shows a dislocation of the lumbar spine on the sacrum, causing a noticeable hollow in the back above the sacrum The skiagraphic appearance in this case is unmistakable, the antero-posterior view showing the round outline of the vertebral body, and the lateral view (if obtainable) the dislocation forwards Apart from the well known obstetrical considerations, such cases if they have symptoms or a progressive deformity, must be treated with a firm back brace with adequate abdominal support

Sprains of the spine are common, especially in those engaged in athletics Obviously many structures are involved together, and a more or less accurate diagnosis is obtainable only by a study of the symptoms produced by movement in various directions It is hardly necessary to add that such movements must be made with extreme care owing to the pain caused and to the possibility of the injury being more severe than one had imagined A skiagram should always be taken if circumstances permit Treatment consists in rest at first, and fixation either by strapping in mild cases or by plaster in severe ones When the acute symptoms have passed off local massage will aid absorption or effusion and expedite repair, and graduated active exercises should be instituted at the earliest date consistent with safety This latter is essential if adhesions are to be prevented, but in practice is very difficult to control, and it may well happen that adhesions form, and there may be pressure round the exits of spinal nerves with resultant neuralgia Fortunately we can easily recover the lost ground, when all acute symptoms are passed, by mobilization of the spine followed by exercises

Mobilization to be effective must be thorough, and the method described by Sir Robert Jones[1] represents the usual practice of orthopaedic surgeons Nitrous oxide anaesthesia is sufficient for the mobilization of the minor joints but it does not provide adequate relaxation for the treatment of the shoulder, hip or spine A full anaesthetic is given and the knees and hips fully flexed so as to get control of the pelvis Then while an assistant steadies the shoulders, the pelvis is held and the spinal movements of flexion, extension, lateral flexion, and rotation are performed seriatim to the full degree Mobilization must always be followed by active supervised exercises, commencing on the day following the operation

I have said that trauma may cause concussion without an organic lesion I refer to the familiar railway spine of the textbooks The spine may be held absolutely rigid and the symptoms may be pronounced, but moments of relaxation by subterfuge may often be obtained Characteristic spots of tenderness to pressure will usually be found on either side of the spine opposite the exits of the spinal nerves, the patient will be evidently neurasthenic and inclined to exaggerate symptoms and finally the skiagram will be negative I do not wish to dwell long on this subject suffice it to say that, when the legal aspect of the matter has been settled, mobilization will have both a moral and physical effect especially if combined with the application of a cautery (or even simply a scrubbing brush) to the back, and an assurance of cure Akin to this is the hysterical spine characterized by the same tender spots and often a fantastic attitude I will not presume to encroach on the domain of psychological medicine except to remind you that such cases often do this in mimicry of a genuinely diseased acquaintance Will they be treated by the orthopaedic surgeon or by the psychologist suggestion is the clue to treatment The surgeon will combine this with mobilization and the psychologist with actual hypnotism

Mechanical

We now come to the commoner and more important cause The back is an exceedingly complex structure containing a large number of bones joints, ligaments, and muscles whose functions are interdependent,

First, what are the potential movements of the spine? *Flexion and extension* occur mainly in the lumbar spine[1] and are those movements which mainly concern us at present Side bending is mainly lumbar in the erect position In flexion it occurs rather higher and in hyperextension lower Side bending and rotation are largely combined, rotation, however, being more a dorsal function It is well to remember that in the flexed spine the dorsal bodies rotate to the convex side of the curve and in the extended spine the lumbar bodies rotate to the concave side, the result being that dorsal rotation is greater and lumbar rotation less than an examination of the spinous processes would lead us to suspect One must also bear in mind the normal curves of the spine and their method of development The primitive foetal type is an antero-posterior continuous C curve The cervical lordosis commences to form soon after birth and the lumbar at about 6 months, the former being complete at about 1 year, and the latter developing more gradually The maintenance of these acquired curves depends on muscular action, and any lack of muscular tone leads to a tendency to reversion to the foetal type with associated pain, from dragging on ligaments, etc , and from the efforts made to prevent this reversion This naturally brings us to a consideration of the effect of the muscles in maintaining position The erect posture is maintained by balance combined with the integrity of the postural contraction of the essential muscles For a thorough understanding of this postural contraction we are indebted to the researches of Sherrington and to the application of his results to orthopaedic subjects admirably set forth by Bankart[2] To summarize his conclusions briefly The contraction of muscles is of two kinds—phasic, concerned with movement, and postural with the maintenance of posture Those muscles which normally serve to maintain the erect attitude are capable of either of these two functions, and there is reason to believe that the two functions are controlled by separate innervations, that of postural contraction passing through the sympathetic chain

In normal postural contraction no fatigue is caused, and the muscle has the peculiarly convenient quality of being capable of adapting itself to different lengths without change of tension Ultimate control comes from the paracerebellar nuclei, which are in intimate connexion with the higher centres and with the semicircular canals

Although we have seen that fatigue does not normally occur, very slight causes suffice to upset this balance and voluntary muscular action must be called to assist Neurasthenia, adenoids, eyestrain, and excessive mental work are merely some of the causes of this You are all familiar with the child who is devoted to books, works hard at homework, and generally gets prizes, but who complains of backache and has a hypholordosis *No exercises will cure* such a child, the muscles are not weak, but their control is insufficient and we must treat the cause Bankart has made the important observation that in such cases the myasthenic reaction is present, which is conclusive proof of the truth of the above What is true of such a child is true also in older people, and a search for a cause of lack of nerve control, toxic or mechanical, will frequently enable us to cure an obstinate backache We must also remember that in the aged there is normally an obliteration of the acquired curves and a reversion to foetal type, combined with decreased postural activity from general weakness

The immediate effect of such lack of adequately balanced muscular control is that the spine is left unsupported, and open to the influence of outside factors Habitual posture alone will not influence the spine, but when resistance to distortion is absent it will do so The result may be a scoliosis, quite pliable and easily corrected in the early stages Diagnosis is easy, inspection of the back will reveal the curve Pain will be chiefly complained of on the convex side owing to excessive strain on ligaments and to increased voluntary muscular effort and consequent fatigue There is frequently an actual acute lumbo-sacral angle which produces a concentration of pain in the lumbo sacral region This angle is usually obvious, but a skiagram will detect it with greater certainty The importance of its recognition lies in the necessity for correcting it before correction of the superincumbent spine is attempted On the other hand, the spine may yield in an *antero-posterior* direction and cause pain

No description of these defects would be complete without reference to Goldthwait's types[3] This very careful and accurate American observer has described two types of *person* particularly liable to suffer from lumbo sacral backache, and most people will agree with him His first type, termed by him the visceroptotic, has a long narrow back, flexible spine, and increased lordosis, with a sharp angle at the lumbo-sacral junction The effect of this is obviously to produce an increased strain at the sacro-iliac joints, and pain is located there His second type is the reverse of this—a thick-set body with slight lordosis and little movement of the lumbar spine Here the strain is thrown on the lumbo-sacral angle

The abdomen of a quadruped is supported directly from the vertebral column by muscles aided by a certain amount of elastic tissue The adoption of the erect attitude in man has necessitated a different mechanism, and a lordosis is developed This serves to balance the body, and at the same time to afford some support to the liver *Nature* also anticipates intermittent increases in weight in the human abdomen The most important of these is that of the gravid uterus, but food in the intestine and increased adipose tissue on the abdominal wall are also provided for Pregnancy is a normal function, and the various necessary *alterations are so marvellously successful that we should* expect no ill effects The savage woman develops increased lordosis and carries on her normal work *without* complaint, modern civilized woman develops the lordosis, but her overstrained nervous system refuses the postural contraction of the erector spinae, and she must use voluntary effort with consequent fatigue and pain at the lower attachment of the erector spinae The wearing of a pregnancy belt is the price she pays for civilization Pregnancy is, after all, a normal function, but overloaded intestines and an abdominal fat pad are not Actual enteroptosis may be added to this, and the resulting disturbance of the centre of gravity is great At the same time there is no natural tendency to compensate for this by increased muscle power and tone in the back, on the contrary, there will be toxicity and weakness At first voluntary effort will be required, with consequent muscle strain, effort, and fatigue When this fails all the strain will be thrown on the ligaments, with resulting pain from this cause This is perhaps the commonest cause of lumbo-sacral backache, the pain being felt mainly over the lumbo-sacral attachment of the erector spinae On the other hand, we may find a diminished lordosis with pain due to perpetual ligamentous strain without adequate muscular support In those women who are compelled by their social status to undertake heavy domestic duties a common cause of backache is to be found in the *low wash-tub and low kitchen sink Perpetual* stooping over these when tired throws an impossible strain on the erector spinae, lordosis diminishes, and backache is constant The remedy is obvious At the other end of the social scale, modern fashion has decreed that women shall have no hips, a flat back, no mammary development, and a head bent forward In scientific language we may describe this as a deliberate reversion to the foetal type of spine with obliteration of the normally acquired curve As modern life must of necessity throw a large strain on the nervous system of such women, we cannot expect a great degree of postural activity in their muscles The result is inevitable When once voluntary action becomes fatigued pain must and does follow, while the necessary subsequent redevelopment of the normal curves is naturally associated with additional pain from ligamentous strain Against the dictates of fashion the doctor is powerless, but he can do his duty and advise, and even if his advice be neglected for the moment it may be appreciated later on

Abnormal spinal curves may be due also to outside mechanical causes A large number of people have one leg shorter than the other The vast majority of these develop no deformity and no symptoms, but a pelvic tilt must exist, and where symptoms do occur we must notice and correct it by a high boot Increased lordosis may be associated with genu valgum and *flat foot in which there is* internal rotation at the hip and a consequently inclined pelvis

Similarly in talipes equinus there is pelvic tilting from insufficiency of the posterior structures of the leg Such deformities will need appropriate correction

Sacro iliac Joints

In England sacro iliac disability is considered rare but in America considerable attention is paid to these joints, and I think, rightly The characteristic symptoms are first, pain at the site of the joint, increased by any jar on the limb of the affected side, such as stepping off a step, and a feeling of insecurity, which is easily understood when we remember that the whole weight of the body above this point must be transmitted through these joints Examination will reveal deep tenderness over the joint (to be distinguished from the superficial tenderness due to referred pain) and pain elicited by lateral compression of the pelvic crests These signs and symptoms are common in greater or lesser degree to all sacro-iliac troubles Examination by *x* rays is of doubtful value, as, although gross disease such as tubercle will be readily shown, milder arthritis and relaxation cannot be diagnosed by this means, as no accurate joint line is obtainable in the skiagram owing to the tortuosity of the joint In tuberculosis, a very serious disease, symptoms will be marked possibly there will be intra or extra pelvic abscess formation and we shall be unlucky if we fail to see evidence in the skiagram Metastatic arthritis comparable to similar diseases elsewhere is by no means uncommon and is a source of severe backache, but perhaps the commonest trouble in these joints is relaxation of the ligaments Jones and Lovett[1] say that such relaxation is uncommon and they have rarely seen it With all possible deference to such high authority, I think it is quite common The outstanding cause for this is childbirth In ruminants these joints are normally relaxed to such an extent before labour that the cowherd can foretell the approximate date of calving from palpation of them After birth involution takes place in them *pari passu* with that of the uterus Precisely the same phenomenon occurs in women—with this difference, relaxation is less marked, but woman is a biped and her sacro-iliac joints must stand a relatively greater strain than do those of a quadruped In such cases there is a tendency for the sacrum to fall forwards and downwards producing a painful tension on the ligaments Here prevention by adequate rest after labour is better than cure, but in old standing cases rest will do much and should be insisted upon, *treatment being continued by means of a pelvic brace or* better one of those close fitting elastic corsets reaching well down on the hips that for some reason or other the Parisians are more expert at making than others

Tuberculosis is fortunately rare, but is of grave prognosis Definite tubercle will need years of recumbency and fixation although operation by bone graft has in recent years much improved the prognosis and shortened the period of treatment Grafting of this joint, as usually practised, is a difficult operation, consisting in the placing of a graft across the affected joint Frequently in doing this an abscess is opened, and although this is not a contraindication to the operation it is certainly a complication Acting on the suggestion of my assistant, Mr Fleming recently in cases both of tubercle and of simple metastatic arthritis I have adopted the plan of placing a long bone graft from the tibia through both posterior superior spines of the ilium, the graft resting on a prepared bed in the sacrum under the erector spinae muscles Such a graft is easily *inserted requires no additional fixation, and to my mind* represents a sound mechanical principle—that of the tie-beam Weight is transmitted downwards along the vertebral column and is resolved to a certain extent laterally through the sacro iliacs, the graft having therefore the same effect as do those iron bars with X-shaped pieces at the end that are customarily seen on houses which have become insecure This procedure will shorten the period of treatment *in tuberculous cases, and in others severe enough* to need operation causes relief as soon as the graft has united, and (so patients tell me) prevents that feeling of insecurity which is so terrible and which is the cause of the neurasthenia so commonly associated with sacro-iliac weakness

Sacralization of the Fifth Lumbar Vertebra

We are again indebted to America for observation of this defect High authorities[1] tell us that, although it occurs, it is rarely responsible for symptom With this I agree but when it does cause symptoms they are very severe In a certain number of individuals the fifth lumbar vertebra is fused to the sacrum, giving four lumbar and six sacral vertebrae This in itself does no harm, and is found out by *accident in a skiagram* In some cases however (sometimes combined with fusion of the bodies and sometimes without), the transverse processes of the fifth lumbar vertebra take on sacral characters and impinge on the ilium, forming a joint The condition may be very painful it can be diagnosed only by *x* rays, and a good stereoscopic skiagram is necessary before we can pronounce it certainly present It may cause no symptoms at all, but if symptoms occur they consist in intractable pain both local and referred to the area supplied by the fourth lumbar nerve, as the junction between the fourth and fifth lumbar nerves lies immediately anterior to the process Treatment consists in removal of the process, and the proximity of the nerve junction and the depth of wound necessary if the *process* is approached directly from the back render the operation difficult It is far better to approach the process by cutting a window from the iliac crest opposite it, as this serves the double purpose of removing the impinging process *and the structure on which it impinges* and is incidentally a relatively easy operation We will not delay longer with this moderately rare condition it will suffice if we realize the possibility of its occurrence

Referred Pain

I have already referred to the sympathetic system, and we have seen that it is probably the channel of control of the postural activity of the skeletal muscles Sherrington maintains that the tone of hollow viscera controlled by the sympathetic, is in reality postural activity In addition nutrition is controlled through the vasomotor fibres of the sympathetic But the sympathetic contains also the sensory *nerves of the viscera* The ganglia ted cord is connected with the spinal nerves by white rami communicantes, which arise from the anterior primary divisions from the second dorsal to the second lumbar nerves and from the third (sometimes second or fourth) sacral These rami obtain from the ventral root motor and secretory fibres and from *the dorsal root the sensory nerves for the viscera* These fibres are said to occur not only in the white rami, but to be capable of reaching the sympathetic chain by way of the grey rami By these grey rami the axons of sympathetic cells reach each of the spinal nerves and it is by them that postural and vasomotor control of the body is maintained For the purpose of this lecture the upper part of the sympathetic does not concern us

It is clear that as the sensory nerves to the viscera are the axons of spinal ganglion cells pain derived from the viscera may be referred to the somatic area served by the same ganglia and it is often so Study of cases combined with a consideration of anatomy will often enable us to diagnose the source of trouble A few examples will suffice to illustrate this

The lesser splanchnic nerve from the ninth and tenth dorsal ganglia reaches the solar plexus and thence through the superior mesenteric plexus reaches the intestine as far as the caecum Pain from this origin may be felt in the lower dorsal and upper lumbar region down over the crest of the ilium and in front The least splanchnic nerve from the last dorsal ganglion reaches the renal plexus and pain from the kidney may follow the distribution of the twelfth dorsal nerve Fibres from the first two lumbar nerves pass by the aortic and inferior mesenteric plexuses to the colon, and an overloaded colon in addition to the backache etc, may cause by its mechanical weight and by the toxins it may cause to enter the circulation may also cause backache (both lumbar and in the buttocks) by pain referred along the distribution of these two nerves

In the sacral region referred pain is common The upper sacral nerves communicate directly with the pelvic plexus, and pain is referred from the uterus bladder prostate etc

This pain is commonly felt over the sacro-iliac joints, but I would again emphasize that it is not a deep pain, and a little practice will easily enable us to discriminate between this and the deep tenderness associated with pain on lateral compression of the pelvis which is characteristic of sacro-iliac disabilities. It would seem that by calling attention to such a multiplicity of possible causes of lumbo-sacral backache I have but added to the difficulties of the subject, but these cases are very trying and often the trouble is of very long duration. By realizing the possible causes we may often by systematic examination and exclusion reach the correct solution at once, or, even if we do not do so, we may appreciate the fact that the pain is due to several of these causes combined in a vicious circle, and we may attack the different parts of that circle seriatim and achieve a cure.

To summarize briefly: in examining a case of lumbo sacral backache first exclude gross disease, injury, and arthritis, and have a skiagram taken. Then look for outside mechanical causes and outside causes of overstrain of the nervous system. Finally, remember the paramount importance of the sympathetic system and seek for referred pain.

Treatment has been briefly indicated in each case, but the value of mobilization in suitable cases must be remembered, and this valuable therapeutic measure should not be relegated to outsiders.

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ACUTE DIABETES FOLLOWING MUMPS

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THE occurrence of pancreatitis as a complication in the course of an attack of mumps is well known, and has frequently been described. Farnam[1] in 1922 collected 119 such cases from the literature, and added one of her own, in which laparotomy was performed. She summarizes the case records thus:

> An acute abdominal condition, probably pancreatitis, is sometimes associated with epidemic parotitis. It occurs more often in boys and young men than in other classes of the population. It usually follows, but may precede, the parotitis or may be the only manifestation of the disease. It is characterized by intense epigastric pain often vomiting, occasionally diarrhœa or constipation, and a slight rise in temperature. A mass may sometimes be felt in the epigastrium. It usually runs a short benign course and has not been known to affect the internal secretion of the pancreas.

All these 119 patients, with one exception, recovered. It may be stated that the only cases in which the pancreas has actually been seen at this stage are Farnam's (at operation) and Lemoine and Lapasset's[2] (*post mortem*). In the former case the pancreas was found to be red and tense, with three probable areas of fat necrosis, and the impression gained was one of acute pancreatitis.

Lemoine and Lapasset's case was that of an Algerian soldier who was admitted to hospital with mumps on October 2nd, 1902. The attack was at first simple but on the tenth day there occurred shivering, with high fever, and swelling of the testicle. By the fourteenth day the temperature had fallen to normal and the patient seemed to be well enough for discharge from hospital. Next day, however, he complained of having slept badly, and had vomited. The temperature was normal but there was epigastric tenderness and the spleen was palpable. Jaundice and more vomiting followed, and he died on October 18th, after an attack of hæmatemesis. At the *post mortem* examination the gall bladder was found to be swollen and œdematous, apparently from pressure by an enlarged gland on the common duct. The pancreas had almost tripled its normal weight (190 grams), and was œdematous and congested with swelling of the lymph glands round about. Histological examination showed a general increase in size of the islets and epithelial cells with diminution in size of the islets of Langerhans, through pressure of the swollen ducts.

Although symptoms of pancreatitis are thus relatively common in the course of mumps, glycosuria or diabetes has seldom been described, and Garrod[3] in his Lettsomian lectures (1912) commented on the rarity of glycosuria in this connexion. I have been able to find records of only three cases in the literature, with a doubtful fourth, and I add a brief description of a fifth case, a very acute one, which recently came under my own observation.

1. Harris[4] (1899) describes the case of a farmer, aged 42, who three years previously had had an attack of mumps. A month after recovery from this attack polyuria had set in, thirst, hunger and loss of weight followed, and these symptoms had continued with gradually increasing severity. When Harris saw him he was emaciated, having lost 50 lb. in weight, and the knee-jerks were absent. 6,440 c.cm. of urine, containing 4·6 per cent. of glucose, were passed in the day.

2. Barbieri[5] (1903) mentions the case of a boy, aged 6, who contracted mumps during an epidemic. Six days after the onset of the symptoms he complained of continuous pain above the umbilicus which radiated round the right side to the right lumbar region. The pain was attributed by the parents to worms, and the child was dosed with calomel and santonin. The abdominal pain continued, and next day there were also vomiting and diarrhœa. After two days of this the boy developed a voracious appetite and great thirst, but everything he ate was vomited an hour later. He drank 2 litres of water in a day. Barbieri was now called to see the patient, and found that he had slight epigastric tenderness, while the fæces under the microscope showed many droplets of fat. The urine had a specific gravity of 1034 and contained sugar. 2,400 c.cm. were passed in twenty-four hours. The symptoms subsided gradually, and after fifteen days had disappeared. By that time the urine was sugar-free, the specific gravity being 1015 and the daily amount no more than 600 c.cm.

3. Gillespy and Holden[6] (1917) record the case of a lad aged 16, who in May, 1916, had an attack of mumps without testicular or abdominal symptoms. On the third or fourth day of this illness the patient became very thirsty, and began to pass a large quantity of urine. When seen in hospital he showed pronounced signs of diabetes mellitus with sugar and acetone bodies in the urine. Tuberculosis of the lungs also was present, and he died in five months. The authors mention that at the *post mortem* examination some islets in the tail of the pancreas were found to show hyaline degeneration.

4. The case which I have classed as doubtful was described by Routh[7] in 1912. Here a man, aged 58, on April 13th developed a right-sided parotid swelling, which was attributed to a chill experienced five days before. Two superficial ulcers were present on the right side of the tongue. Some pyrexia followed and extension of the swelling to the submaxillary region. By April 28th the swelling was more severe, and incision under an anæsthetic was contemplated. On examination the urine was found to contain sugar and aceto-acetic acid (specific gravity 1038). By May 1st the aceto-acetic acid had disappeared, and on May 2nd the urine was free from sugar. This case would seem not to have been one of mumps, but rather one in which glycosuria was associated with septic parotitis.

I shall now describe a case in which diabetes followed mumps and ran a rapid course to death, the patient coming under my care in the last stage.

5. E. A., a girl aged 8, was admitted to Dundee Royal Infirmary on December 2nd, 1923, in coma. The history was that five weeks previously she had developed mumps which ran an ordinary course, and in which there had been no complaint of abdominal pain. Two weeks after the attack of mumps came on she began to pass a large quantity of urine and had to get up sometimes twice in the course of a night to empty the bladder. She complained of great thirst and her appetite increased. After a week the polyuria lessened but the other symptoms continued unabated. There was also pronounced constipation. A few days before her admission to hospital she became confused mentally, and on November 30th she failed to recognize her friends. She went into coma on December 1st, and when brought to hospital on December 2nd was deeply unconscious. A specimen of urine obtained by catheterization showed 8 per cent. of glucose and much aceto-acetic acid, and the breath had a strong smell of acetone. In spite of treatment by insulin she died within thirty-six hours, without recovering consciousness.

It is interesting to note that although abdominal pain is present in the common type of pancreatitis which complicates mumps, it was absent in Gillespy and Holden's case, and, as will be described, and it is not referred to as having occurred in Harris's, the only three cases of mumps among those recorded in which true diabetes seems to have developed.

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A CASE OF HAEMATOPORPHYRIA CONGENITA (CONGENITAL PORPHYRINURIA)

BY

HUGH T ASHBY, B A, M D CAMB, I R C P,

VISITING PHYSICIAN TO THE ROYAL MANCHESTER CHILDREN'S HOSPITAL ETC

THE child to be described first came under notice at the age of 12 months, and the reason for the child being sent to the hospital was the dark red colour of the teeth The case was then thoroughly investigated, and proved to be an example of haematoporphyria congenita Very few of the cases have as yet been recognized and recorded so early in life Sir A E Garrod and Mackey[1] report one similar case and I am indebted to the former's book, *Inborn Errors of Metabolism*, for help

The child was apparently born healthy and had had no illness of note She had been easy to bring up All her life however and even directly after birth she had passed urine which was red in colour and stained the napkins red The teeth were cut at the usual time and were dark red in colour The parents took her away to the seaside at the age of 4 months the weather was then very hot and sunny She came out in a rash on the face and back of the hands which the mother described as looking like chicken pox

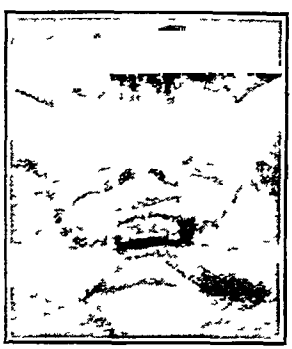


FIG 1.—Showing the pigmentation (red) of the milk teeth

Condition on Admission

The child aged 2½ years is well grown and apparently healthy She has been under observation for a year and a half and the urine has been of the characteristic port wine or red colour every time it has been examined It contains no albumin or blood corpuscle I am much indebted to Dr A Sellars for the spectroscopical examination of the urine and faeces For this purpose the acid extract from the urine and the alkaline extract from the faeces were used

Spectroscopic Examination — Acid Extract Position of two bands mean central position at 6 200 and 5 640 (Angstrom units) *Alkaline Extract* Position of four bands at 6 480 6 200 5 640 5 280 (Angstrom units) The position of the bands was ascertained by plotting against the spectral lines of lithium sodium thallium and strontium

The blood shows no abnormal condition and there is no enlargement of the spleen A most striking feature of the case is the marked red pigmentation of the milk teeth She cut her first tooth soon after the age of 6 months and it came through red in colour Dr Wigoder ground a tooth and the colour was as deep as the tooth could be ground showing that the pigmentation is not superficial only The child was demonstrated at a meeting of the British Dental Association and no one had seen or heard of a similar case It will be interesting to examine the milk teeth further when they are shed and also to see the condition of the permanent teeth Only very rarely has the pigmentation of the teeth been noted Curiously enough the bones *do not* show pigmentation when transilluminated by an electric bulb nor do they show any changes on x-ray examination The fundi of the eyes also show no abnormal pigmentation

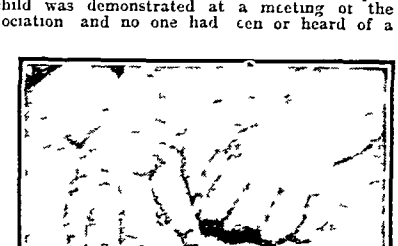


FIG 2.—Hydroa vacciniforme showing the large bullae some of which have burst

The child was again taken to the seaside this year during a spell of hot weather and had to be brought home again on account of large blisters appearing on the face back of the hands and front of the knees This condition is called hydroa vacciniforme Her face had become markedly pigmented from the sun and there were large bullae on the affected parts The blisters some of which had burst contained clear fluid of a reddish colour Scarring has been left after the blisters have healed The hair and the clothes give complete protection The nails of the hands were also affected and had become dark red as if they had all received a blow causing bruising It is certain that great care will have to be taken in the future against exposure to the sun to prevent serious disfigurement

Sir A E Garrod concludes that the outlook for these cases is serious and that there is a liability to tuberculosis This patient is, however, in good health and as long as precaution against excessive sunlight is taken, there is at present no sign that the child should not grow up and remain well The family history of the child is negative Most cases of porphyrinuria are the result of taking sulphonal or an allied drug for a considerable period

The cause of the condition is unknown, but it is probable that the porphyrin is an intermediate product in the conversion of haemoglobin into bilirubin as suggested by Hans Fisher Whatever the exact cause may be it is an inborn error of metabolism

Haematoporphyrin is a most remarkable sensitizer A small quantity of this injected into white guinea-pigs renders them so sensitive that they die from exposure to light Meyer Betz made himself very ill by exposure to very moderate light, after injection of a very small quantity in order himself and remained hypersensitive for weeks

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FATAL CASE OF ANEURYSM OF THE SPLENIC ARTERY

BY

DUNCAN C L FITZWILLIAMS C M G, M D, CH M F P C S

IT is well recognized that aneurysms are the risk of the strenuous life led by men and are uncommon in women they are to be expected at that time in life when the tissues are beginning to weaken but the vital forces and feelings which impel violent action still remain at their height They can be caused directly or indirectly by trauma which weakens the vessel wall, while certain diseases by sapping the strength of the vessel wall, predispose the individual to the condition Among the commonest of these diseases are atheroma and syphilis, while a less known cause is tubercle A nodule of tubercle settling in the vessel wall may quite well be the cause of an aneurysm in those positions where a compensating fibrosis is unable to reinforce the strength of the vessel For this reason aneurysms are sometimes met with in the brains of children—one such case is within my own recollection There is also a case in which an important verdict depended on the result of the *post-mortem* examination, where a man had been seen to strike a boy upon the head and the boy shortly afterwards died it was supposed from the blow Examination showed that a tuberculous aneurysm had ruptured in the ventricles of his brain

These being the well recognized factors in the production of aneurysms when we find that all these are set aside and we meet with an aneurysm in a woman of the age of 27 engaged in a light occupation without any other sign of disease, and the aneurysm is not single but one of three it seems to be a case that is worth recording more especially as the symptoms resembled those of a ruptured gastric ulcer or an ectopic pregnancy in many of their features

The case was as follows

Jean O C aged 27 single employed as kitchenmaid at a good address in London was admitted to St Mary's Hospital Paddington on November 27th 1923 at 4 p.m

History.—Sudden intense pain had come on with great tenderness in the pit of the stomach at 2 p m soon after food with nothing whatever to account for it and she was sent in by her doctor as probably a ruptured gastric ulcer

On admission the patient was in a state of extreme collapse from shock she was pale cold and clammy and in great pain On inquiry she had never had any indigestion pointing to a gastric or duodenal ulcer Her blanched condition made one look for symptoms pointing to an ectopic pregnancy but there was nothing to indicate this Light touch over the abdomen was not painful but any pressure caused great pain Her condition was very doubtful and it was decided to leave her for some two hours to see if the shock would pass off The respirations were 30 temperature 98° and pulse 120

At the end of one and half hours the hands were better but the symptoms pointed still more strongly to haemorrhage and it was still more blanched and her pulse weaker and rapid and she was inclined to be restless

At 6 30 operation was decided upon as I out any definite diagnosis being made She was opened above the umbilicus when the

abdominal cavity was found full of blood A dresser at once prepared and gave her intravenous saline Blaming myself for believing a single woman's history about her menstrual periods, and thinking that it was obviously a case of ectopic pregnancy, an incision was rapidly made above the pubes, only to expose a perfectly normal set of pelvic organs On mopping out the blood and clots the whole of the peritoneum of the posterior abdominal wall was found to be one huge tense haematoma, almost filling the abdominal cavity and approaching the anterior abdominal wall Blood had found its way into the mesentery of the small intestine and to a certain extent into the omentum The lesser sac was full of blood, and was emptied in the hope of finding the main bleeding point, but the whole area seemed to ooze blood and no bleeding vessel was seen As the patient was in a critical state and nothing was to be gained by prolonging the operation, the abdominal cavity was filled with saline solution and the wound closed He was sent back to bed, and the foot of the bed raised She died at 10 30 that night

At the *post mortem* examination the splenic artery was found tortuous and there were three aneurysmal dilatations along its course The largest of these was the size of a walnut, and situated near the hilum of the spleen It had calcified walls, which showed that it was not of recent formation This had ruptured and was the cause of the bleeding into the tissues behind the peritoneum The aorta and the arteries appeared healthy and there was no sign of the origin of the condition

British Medical Association.

PROCEEDINGS OF SECTIONS AT THE ANNUAL MEETING, BRADFORD, 1924

SECTION OF LARYNGOLOGY AND OTOLOGY.

W Jobson Horne, M D , President

PRESIDENT S OPENING REMARKS

The President, in opening the proceedings of the Section, said that, while he had no intention of inflicting a presidential address upon the Section, he could not refrain from expressing his appreciation of the honour conferred upon him The officers of the Section, after fully considering the choice of several subjects suggested for general discussion, had unanimously decided upon the two subjects now submitted—namely, "Chronic tonsillitis indications for treatment and results obtained," and "The importance of early treatment of acute otitis" The officers, in making this selection, were fully alive to the fact that the subjects were time-worn, but it was felt that there were points which would bear repeating if not emphasizing, and, moreover, that the matters to be discussed were of daily occurrence, and therefore of more practical value than other subjects less commonplace but more academic Dr Jobson Horne reminded them that the Section met on two days only, but it was his hope, with the help and support of the large number present, to get three days' work into two days

DISCUSSION ON CHRONIC TONSILLITIS INDICATIONS FOR AND RESULT OF TREATMENT

OPENING PAPERS

I —A BROWN KELLY, M D , F R F P S ,
Surgeon for Diseases of Throat and Nose, Victoria Infirmary, Glasgow

The term "chronic tonsillitis" designates a long-continued, mild inflammation of the tonsil, oftener, however, it is used to imply a state of the tonsil which is not manifestly inflammatory but which predisposes to acute attacks The two conditions of the tonsil which are mainly accountable for chronic inflammation and recurrent exacerbations are hypertrophy and sepsis, these are commonly associated

In discussing the indications for treatment of chronic tonsillitis, we have to deal, not only with the disease itself, but also with its distant effects, further, in making choice of a method of treatment it may be necessary to take into account special circumstances—for example, the patient's age, general health, or occupation

The commonest affection of the tonsils with which we have to deal is that of enlargement in the young This may give rise to various symptoms which experience has taught will pass off when the tonsils are removed, consequently we advise operation, and in the great majority of cases our recommendation is accepted or even welcomed by the parents, the benefit generally obtained being a matter of common knowledge On the other hand, various objections to operation may be advanced on the patient's behalf or may arise in our minds First among these is the natural disinclination to the removal of an organ or tissue not obviously diseased It should be remembered, however, that an enlarged tonsil, although apparently healthy on probing, squeezing etc , if examined microscopically after enucleation will be found to be diseased According to Dietrich,[1] the tonsils, even in earliest childhood, are attacked by acute inflammatory changes of all degrees, without signs or symptoms, in the course of various diseases of the upper air passages (measles, bronchopneumonia, etc) Similarly, Howarth and Glover[2] found evidence of bacterial infection in every tonsil examined, these cases ranging from 2 to 15 years of age while D J Davis doubts the existence of a normal tonsil after the first few days of life From the bacteriological standpoint every tonsil is therefore a diseased tonsil It is obvious that we cannot utilize this criterion, so that it becomes necessary to base our opinion mainly on the clinical history, concomitant signs, and local aspect

Another question which occasionally perturbs patient and doctor alike, especially since tonsillectomy has become *de rigueur*, is whether this operation may not abrogate or destroy some important function from the deprivation of which the patient will suffer This is conceivable in the young child and will be referred to immediately, but our everyday experience proves the contrary, so that we may cease to be discomposed by physiological misgivings For the present it should suffice to remember that the tonsil is made up of numerous nodules of lymphadenoid tissue precisely similar to those found, not only in the pharyngeal and lingual tonsils, but also scattered singly or in small groups beneath the mucous membrane of the pharynx, and that the faucial tonsil differs in no way from any solitary nodule excepting in that it consists of an immense collection of such nodules Schlemmer[3] has recently emphasized these facts, and maintains that there is no anatomical or physiological reason for assigning the tonsil a separate position or special function

If, then, the tonsillar function is shared by the lymphadenoid tissue throughout the pharynx and naso-pharynx, is it not probable that when the tonsil is removed its functions are carried on vicariously by the lymphadenoid tissue elsewhere? For, as already stated, no deleterious effect on the constitution has been traced to the mere absence of the tonsils after operation This view gains support from a sequence of events occasionally noted In a young child with large adenoids and small tonsils, if the former are removed and the latter left, it is not distant date the tonsils are found to have enlarged considerably, moreover, in children whose tonsils and adenoids are completely removed large granulations sometimes appear on the posterior or lateral wall of the pharynx and become inflamed from time to time

In very young subjects the age is often advanced as a contraindication There need, however, be no hesitation in removing enlarged or diseased tonsils from a child of 2 years, or even of 18 months, if healthy and vigorous When younger, in order to lessen the bleeding and shock it is advisable to operate on the adenoids first, and after an interval of weeks or months to deal with the tonsils It may be imperative to remove adenoids from a sucklin but it is rarely necessary to operate on tonsils before the completion of the first year of life

Does the removal of tonsils increase or diminish the susceptibility to contagious diseases? In young children when the tonsils are at the height of their physiological

activity two of the functions assigned them by certain investigators are protection against bacterial invasion by phagocytic action, and immunity resulting from the production within the tonsil of self immunizing agents. Removal of the tonsils in childhood would demand even more consideration than it receives if these opinions were established, but as yet they are largely hypothetical. According to the view generally held enucleation lessens the liability to contagious diseases, and when such diseases are contracted the attacks are milder in those who have undergone operation. Place's[4] observations add support to this opinion. He states that in scarlet fever in tonsillectomized cases the throat symptoms are slight. In a few cases under his observation in which only one tonsil had been previously removed the tonsillectomized side of the throat was nearly normal, while the tonsillar side showed the usual picture of scarlet fever. Severe faucial diphtheria is excessively rare in those who have had the tonsils removed. In his experience there has been little if any indication of a deficiency in the resistance of tonsillectomized cases. Zahorsky, on the contrary, thinks it probable that an attack of acute tonsillitis renders the patient temporarily immune to a variety of dangerous infections and that the child beginning his school life without the tonsils is in greater danger of acute diseases than one who still has them. As Logan Turner[5] states: "The answer to the question, 'Are the tonsils a protection or a menace?' must be in the affirmative as regards both counts." In short, we should determine whether the tonsils are clinically healthy or diseased and act accordingly, but in the young they should not be removed as a matter of routine procedure.

The question of the role played by the tonsil in producing enlargement of the cervical glands frequently arises. The tonsil, although not obviously diseased, is likely to be the etiological factor if the tonsillar gland is involved or if the glandular enlargement is preceded or accompanied by tonsillar pain or swelling. In such circumstances, and when the tonsil is enlarged or septic, its enucleation should be carried out. Howarth[6] has shown that the enlargement of cervical glands is not necessarily tuberculous, but in many cases is simple and due to chronic irritation. He thinks that this stage often precedes a tuberculous invasion, as was pointed out by J. H. Nicoll many years ago. Howarth considers that the tonsil is the portal of entry, and holds that the most important factor in the treatment of chronic glandular enlargement is the elimination of all primary foci of infection—the removal of the tonsil rather than of the cervical glands. In a large percentage of patients this is followed by the subsidence of the glands and possibly after a year or even longer, by their final disappearance. It is advisable in such cases to mention beforehand the possibility of the operation lighting up the inflammation in the gland and leading to its suppuration.

Singers, professional voice users, and the parents of children whose voices give special promise often inquire whether the removal of the tonsils is not liable to damage the voice. A great deal has been written and said to prove the groundlessness of this fear. The latest contribution to the question is by Vorhees,[8] who bases his conclusions on evidence adduced by physicians and singing teachers from 5,000 operations. The consensus of opinion shows that in the hands of skilled operators there need be no fear of damage to the singing voice that bad results are most often due to cicatricial contractions from careless dissections and that the good results likely to follow far outweigh any other consideration. In spite of this reassuring pronouncement caution is called for. If the operation is done before puberty nothing but benefit is likely to result; later in life however when the vocal training is completed surgical interference should be undertaken only after careful circumspection. The removal of a deeply seated septic tonsil cannot readily harm the voice but enucleation of a large tonsil over which the anterior pillar is stretched in a patient who has been singing for years may interfere with the adjustment of the pharynx, predispose to vocal fatigue, and impair the quality of the voice. In such subjects therefore if operation is necessary, gradual reduction is to be recommended—for example, by morcellement, diascission, the galvanocautery, or London paste (Irwin Moore). When the mere size of the tonsil is causing trouble contraction by radium might be considered.

In adults with chronic tonsillitis the disturbances due to sepsis are commoner and more important than those from hypertrophy. The sepsis may be manifest, as in the chronic lacunar variety. The tendency for tonsils on which tonsillotomy has been performed to become thus affected, and the local and constitutional benefit following the enucleation of such stumps have long been recognized. It is of the latter variety of tonsillar sepsis however, that I desire to speak. In recent years the subject of focal infections has received a large amount of attention in every branch of medicine. In view of the frequency with which the tonsil is the seat of a septic focus it behoves us to contribute what we can towards the elucidation of this difficult problem. I understand that it was largely with this end in view that chronic tonsillitis was chosen as the subject of to-day's discussion.

The faucial tonsils are peculiarly adapted for the development of septic foci. They are furnished with long, narrow, tortuous, branching crypts reaching to the capsule which favour the retention and accumulation of lymphocytes, leucocytes, and epithelial debris. The resulting collection may be considerable and as no secretion is poured into the crypts whereby they are flushed out the contents in this protected situation serve as an ideal breeding ground for micro-organisms, so that septic changes readily take place. The blood vessels and lymph channels running in the trabeculae and passing through the capsule establish the connexion with the general circulation and thus allow of metastatic infections.

The opinions which have been expressed as to the influences governing the localization of infections are still *sub judice*. Until comparatively lately a secondary focus was believed to develop at a particular site in consequence of previous injury of the tissue involved whereby its resistance was lowered. In many cases this explanation holds good and has been confirmed experimentally. The present tendency however is to adopt Poenow's[9] view and to assign to the circulating virus the power of selecting a certain tissue for its lodgement and growth. According to the same authority the organisms are supposed to acquire their different degrees of virulence and their different affinities for various structures in the primary focus of infection. Another factor which in some cases may play an important part is the invasion of the cells of a tissue by bacteria from a septic focus in the tonsil so that the cells are sensitized and react to minute doses of a homologous virus.

The detection of a septic focus, or good grounds for suspecting the presence of such, in a tonsil is manifestly a matter of importance. The presence of foul caseous plugs in the crypts or enlargement of the tonsillar gland may facilitate the diagnosis. In many cases however it is difficult or impossible by mere inspection to say whether a tonsil is healthy or diseased. The absence of signs by no means excludes the presence of a small chronic abscess close to the capsule or of a collection of decomposing debris at the bottom of a long crypt. It is often under such conditions when retention is more or less complete the affection latent and the tonsil apparently innocent, that most injury is being caused. In this connexion some useful deductions can be drawn from what has been learned with the help of radiology regarding dental sepsis. Thus Bertram Watson[10] believes that too much stress has been placed on pyorrhoea as a causative factor in the production of systemic disease and that it is of secondary importance to apical infection in which the deeply seated toxic process may be unaccompanied by suppuration.

Various procedures have been recommended and slightly described to aid the diagnosis of focal suppuration in the tonsil. French[11] introduced a tonsillo-scope for transillumination of the suspected structure but I am not aware of this ingenious instrument having been extensively used. Paterson-Smith[1] considers that redness limited to the tonsil and its immediate surroundings and especially a vertical red streak about an eighth of an inch wide running the whole length of the anterior pillar is a sign of chronic tonsillar infection. General redness of the fauces and pharynx he regards as more suggestive of oral or nasal infection. Quite recently Lott[12] has described and

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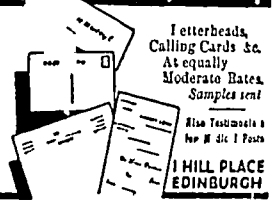
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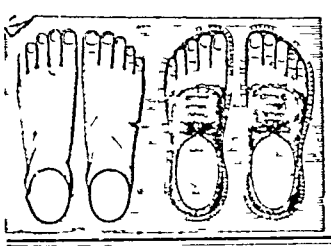
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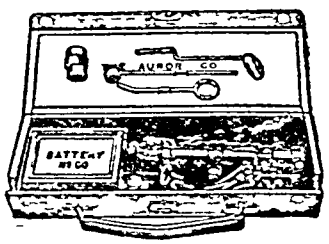
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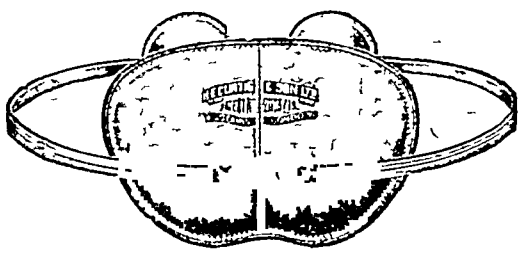
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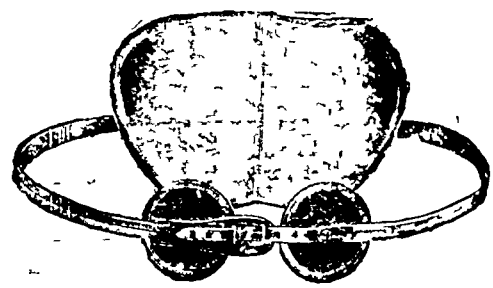
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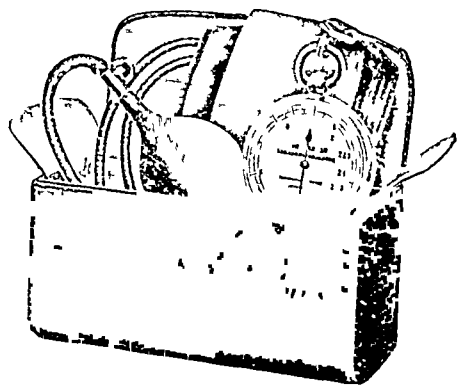
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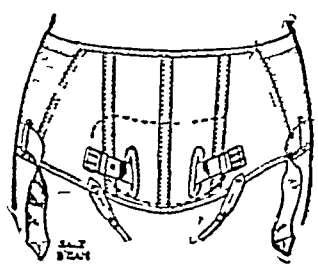
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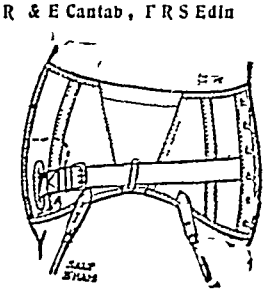
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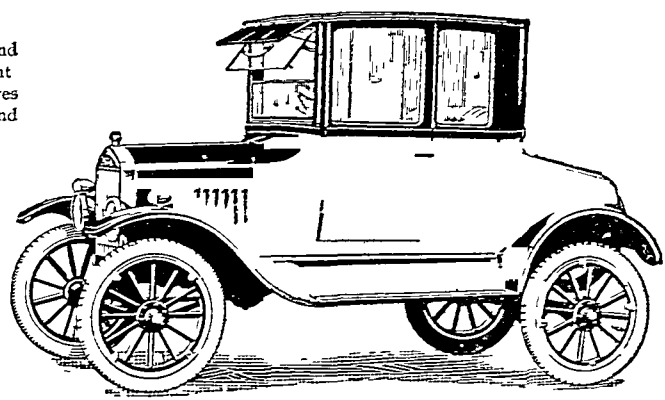
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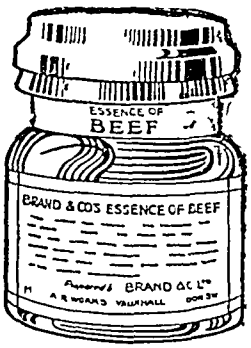


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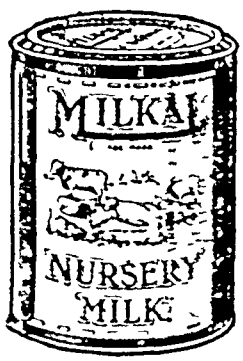
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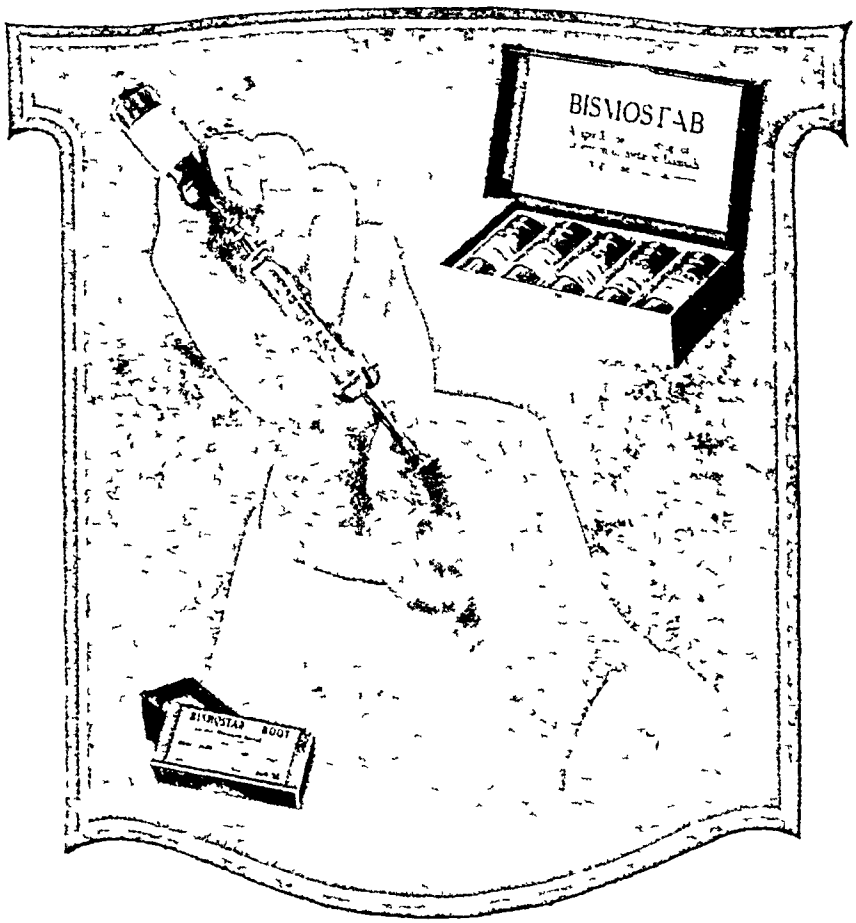
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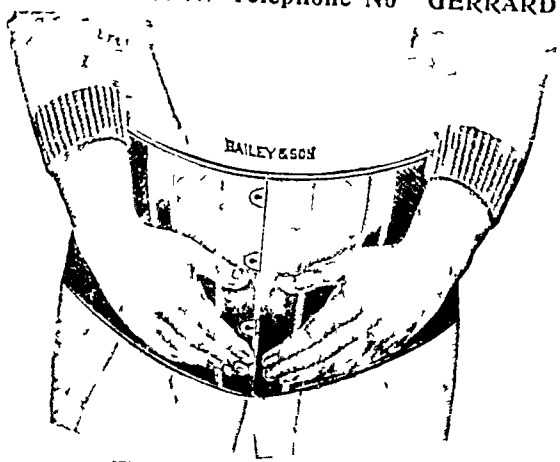
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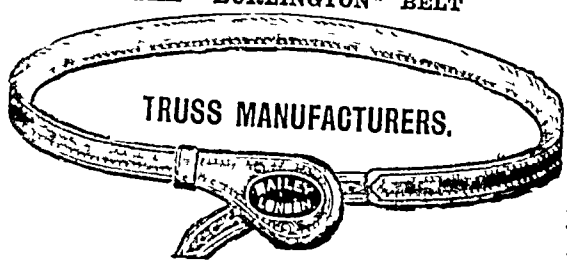
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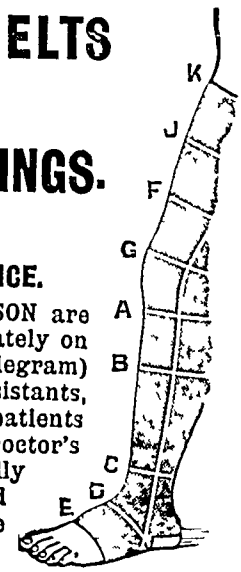


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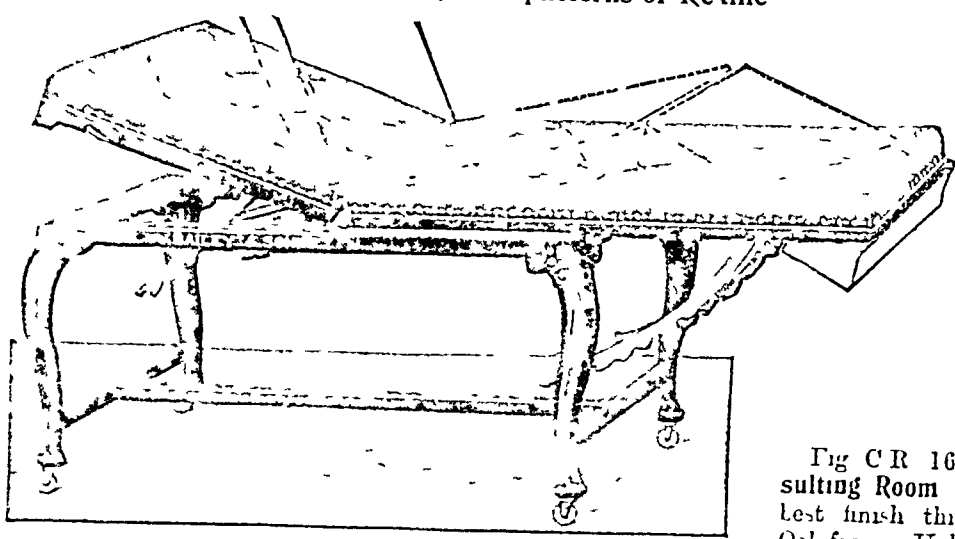
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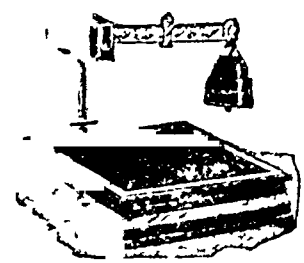
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An Address
on
SURGERY IN THE TREATMENT OF PULMONARY TUBERCULOSIS*

by
H MORRISTON DAVIES M D, M CHIR CANTAB,
F R C S ENG
MEDICAL SUPERINTENDENT VALE OF CLWYD ANATOMICAL CONSULTING SURGEON, UNIVERSITY COLLEGE HOSPITAL AND KING EDWARD VII WELSH NATIONAL MEMORIAL ASSOCIATION

SOME twelve to fifteen years ago and later remarks on this subject were almost completely confined to pneumothorax Even with this limitation the audience was apt to look askance at one, and a sound physician might show his soundness by asking "What is the pneumothorax treatment" or, "What are results" To have said at that time much about the further surgical possibilities when artificial pneumothorax failed was to run the risks of being thought so ultra-heterodox (some might say mentally aberrant) that one's influence in the technique of the simpler forms of treatment was likely to be seriously impaired Nowadays artificial pneumothorax is referred to familiarly as A P, in my place the slang term "gassing" is used Instead, moreover of having elaborately to expound the principles to general practitioners patients are sent to one definitely for this treatment

The other and, if I may use the expression more definitely surgical methods of treatment are not yet so widely recognized They are more serious they are associated with greater risks and they are still in this country far from being widely known or when known approved of In respect of these operations one is still looked upon with suspicion and even with disapproval, and the making of converts is a slow but very interesting process

Because of the general knowledge as regards artificial pneumothorax and the less general knowledge about the other surgical methods I propose to take up the subject at the point where pneumothorax fails to be complete, or fails altogether

The object of artificial pneumothorax is twofold (1) to rest the lung (2) to collapse the lung The relative importance of these two aims in different cases It the case is a fairly early one even if progressive rest is of more importance than collapse It is of course true that the more complete the collapse the more complete the rest but it does not follow that if collapse is partial only the rest obtained is of small value In some cases moderate partial collapse may be of the greatest value In the more advanced cases, on the other hand and particularly in chronic cases of long standing in which mechanical changes are well established and dilatation of the bronchi and cavities in the lung parenchyma are important and serious features the question of rest is of less importance than that of collapse The collapse, moreover, to be effectual must be fairly complete so far as the affected parts of the lung are concerned In haemorrhage moreover, if the bleeding is to be arrested by the pneumothorax the collapse must be such that it must involve *that part of the lung from which the blood is coming* In these cases, again, collapse is more important than rest

From the above it become clear that the presence of adhesions limiting collapse may not be of great seriousness in the treatment of those cases in which rest is the desideratum, but may completely ruin the value of the method in those in which collapse is essential even though the collapse may be equal to two thirds or the lung volume Statistics show, moreover, that the after results with complete collapse are most strikingly better than those where collapse is partial and is limited by bands and membranes and adherent patches

Apart from the consideration whether total collapse is necessary or not for the success in the treatment of any particular case, there are certain additional advantages gained by obtaining it The symptoms are more quickly got rid of, infection (in unilateral cases) ceases to be a constant danger bleeding is often more completely controlled, and the intervals between refill is *longer*

It becomes advisable, therefore in some cases, and necessary in others to divide when practicable those adhesions which are limiting collapse The adherence of the surface of the lung to the chest wall may be in the nature of a fusion of the two pleural membranes it may be by means of a broad membranous sheet allowing, but little separation, and often vascular *The adhesions may consist* of bands single or multiple varying in length and in size from the fine threads to cylindrical or flattened bands up to half an inch across The larger the adhesion the more likely is it to contain vessels of a size demanding respect in their treatment These band like adhesions may be attached to comparatively healthy lung or actually over a cavity They may have the appearance of starting direct from the surface of the partially flattened lung or the band may be part fibrous tissue part lung substance which has been drawn out into a cone In these cases it is often difficult to say by means of the x rays where lung ends and the adhesion begins though more possible by the aid of the thoracoscope Where fusion of the membranes has taken place division is not practicable in all other cases division may be possible but this cannot always be determined until the adhesion has been inspected

The diagnosis of adhesions between the visceral and the parietal costal pleural membranes is not in my opinion possible before a pneumothorax has been attempted unless it be by pneumograms as suggested by Deist Adhesions may be suspected as a result of the ordinary clinical and radiological examinations but that is all The adherence of the base of the lung to the diaphragm can, on the other hand be recognized when the dome of the muscle is distorted and flattened In such cases the dome will show an angle, or even be drawn into a point midway between the central tendon and the lateral costal attachments during inspiration some movement of the outer half of the dome will generally accentuate the angular deformity This type of distortion of the dome is not seen in cases of even extensive shrinkage of the lung if adhesions are absent It is naturally more frequently *observed on the right side*

The division of a single band like adhesion clearly defined by the x rays as a strand running across the pneumothorax from the partially collapsed lung to the chest wall is comparatively easy with a special long double-edged tenotome passed through an intercostal space the track having been previously anaesthetized with novocain This must be done in the x ray room the patient *being placed with the x ray* tube behind and the screen in front When the tenotome has been inserted the x rays are turned on the tenotome is directed so that the cutting edge of the blade rests on the adhesion which is then divided by slight sawing movements

When the adhesion is not so clearly defined or is large or is difficult of access and particularly when there are multiple bands or membranes *or the condition inside the* pleural cavity is somewhat obscure then the thoracoscope will give invaluable aid by enabling very precise knowledge of the state of affairs and relationship and character of the adhesions to be obtained With the vision obtained through the thoracoscope moreover, those bands or membranes which are found to be interfering with the collapse can be divided as and where required *by the galvano-cautery*

The technique is not particularly difficult, though practice is required in locating the adhesion in manipulating the thoracoscope with one hand and the cautery with the other and in deciding on the size of the band—the apparent size varies greatly with the distance from the lens Fortunately practice need not be at the expense of the patient as considerable skill can be *acquired by manipulating the instruments* inside a box across which pieces of string of various size and colour have been placed To those acquiring a thoracoscope and cautery I would make one suggestion it is as in mine the cautery is turned on and off by a sliding collar on the cautery handle have this fixed in the 'on' position and insert in the flexible wire a contact switch suitable for foot work

Details of the technique are as follows The table or bed on which the patient lies must be at a convenient height so

* Delivered before the Royal Institution of Great Britain [illegible]

that the surgeon can bend comfortably over the patient, to look down the thoracoscope when it is projecting two to three inches above the chest It is much easier to look down the thoracoscope when the light in the room is comparatively dim It is advisable to have a separate battery for both thoracoscope and cautery, it is also wise to have a resistance in each circuit

The thoracoscope is sterilized by standing it for some minutes in 1 in 20 carbolic acid, all other instruments are boiled All the instruments should be tested immediately before use The cautery when hot should give a red glow if too dark, the charred surface of the adhesion will stick to it, if too bright, bleeding from vessels will not be controlled

As a general rule it is simpler to insert the thoracoscope through the front of the chest In this position it is easy to look down it, and while the cautery is being introduced it can be left *in situ*, unattended if necessary, and will retain its position without falling over or dragging on the tissue The thoracoscope is inserted close to where the adhesion has been localized by the x rays, if there are multiple bands, some in the upper and some in the lower part of the thorax, it can be inserted between them The second or third intercostal space is the commonest site The cautery is best inserted in the axilla in the fourth or fifth intercostal space It is easier to work the two instruments if the cautery has to cross the thoracoscope to reach the adhesion

If the patient is nervous, a third of a grain of omnopon should be given beforehand The tissues of the chest wall through which the instruments must traverse are infiltrated with an analgesic I use 2 per cent novocain and adrenalin for this purpose I also make a puncture incision in the skin *to prevent the instruments dragging through it* Both thoracoscope and cautery are introduced through cannulas which are inserted through the chest wall by means of trocars

The thoracoscope is inserted first and a complete inspection of the interior of the pleural cavity is made Then, when the decision as to what adhesions shall be divided has been reached, the trocar and cannula for the cautery is inserted It is advisable to keep the patient at rest for at least sixty hours after the operation

When pneumothorax fails entirely or the amount of collapse obtained is insufficient to be effective, local or total collapse of the lung can still be obtained by other means

Collapse of the Base

Phrenicotomy and Evulsion of the Phrenic Nerve

If the complete nerve supply to one half of the diaphragm is divided, that dome will not only become paralysed and so be unable to influence expansion of the base of the lung, but it will in addition rise up into the thorax owing to the loss of all muscular tone The muscle is then influenced by the upward pressure of the abdominal contents and by the intrathoracic pull due to the natural retraction of the elastic tissue in the lung and the contraction of abnormal fibrous tissue This change of position will produce, or allow, a partial collapse of the lower lobe of the lung It has been found, moreover (Brunner), that during the ensuing months after the operation the dome of the diaphragm atrophies This allows of a still further rise, and also, therefore of a still further collapse According to Brunner and Felix, the rise of the right dome may be as much as 7 65 cm and that of the left dome 5 9 cm while the collapse of the lung may be equal to one sixth one-fourth, or even one-third of the volume of the lung It was to this end that the original operation of phrenicotomy was devised, the nerve being divided as it passed over the scalenus anticus muscle Results were often disappointing Sometimes a large phrenic nerve was found and then a fairly complete paralysis and a moderate rise of the dome into the thorax was obtained Frequently however the nerve bundle was small, and little or no change was noticed

The nerve supply to the diaphragm is mainly through the phrenic nerve which comes from the fourth cervical and occasionally obtains fibres also from the third and fifth cervical Motor fibres however run frequently in a bundle along with the nerve to the subclavius muscle W Felix has described a "doubling" of the phrenic nerve the second bundle of fibres may be 3 cm distant laterally from those which are taking the normal course This accessory phrenic he describes as taking the same course in the neck and in close association with the nerve to the subclavius It passes into the chest superficial to the subclavian vein, and then turns mesially to join the normal phrenic as it lies behind the innominate vein—the two nerves thus forming a loop round the subclavian vein This arrangement he describes as occurring in 20 to 25 per cent of cases The phrenic nerve is joined by fibres from the sympathetic in the lower part of the neck and also from the cochlear ganglion The twelfth intercostal nerve also supplies fibres direct to the diaphragm, but these are apparently of little consequence

Two operations have been devised to overcome the disappointments of simple division of the phrenic nerve

1 *Evulsion of the Phrenic*.—The nerve is exposed in the neck as it courses over the scalenus anticus muscle It is divided, and a secure hold is taken of the peripheral end An attempt is then made by steady traction to draw the whole nerve out from the thorax—that is to say, to pluck the nerve out from its insertion into the diaphragm When successfully accomplished the length of the nerve evulsed will be from 30 to 40 cm It will, moreover, have been torn away from connecting sympathetic fibres It will, in addition, bring with it the lower end of the accessory phrenic, when such exists Great care is required lest the loop formed by the phrenic and the accessory phrenic tear through the subclavian vein Other risks of the operation are haemorrhage, particularly from the pericardio phrenic artery and its two attendant veins which run through the thorax in contact with the phrenic In one case Sauerbruch had to remove two litres of blood from the thorax as a result of laceration of these vessels There is also the danger of tearing the lung and producing a pneumothorax or pyopneumothorax In cases where a pyopneumothorax already exists, there is the possibility that the pleura may get torn and the pus escape into the mediastinum Division of the vagus in mistake for the phrenic, death ensuing, has been described by Ziegler Failure to evulse the whole of the nerve is not unlikely when inflammatory processes and fibrous tissue formation have taken place at any point along the course of the nerve

As an alternative to this operation described by Felix, jun, and Lobsche there is—

2 *The Radical Phrenicotomy of Goetze*.—In this operation the phrenic nerve is divided low down in the neck the sympathetic fibres running to the inferior cervical ganglion are exposed by gentle traction on the phrenic, and are cut, as is the phrenic higher up again on the scalenus anticus, the nerve to the subclavius is also divided where it comes off the upper trunk at the upper and anterior border of the brachial plexus Both this and the preceding operation are done under local anæsthesia

The risks associated with the radical operation are theoretically slighter Actual experience shows, however, that the complications described is peculiar to the first operation occurs very infrequently

Goetze recommends his operation as a substitute for artificial pneumothorax when social reasons make refills impracticable Sauerbruch, Brunner, and others regard the paralysing of the diaphragm as the operation of choice in cases of tuberculosis of the lower lobe They advocate it in moderately severe or severe pyrexial cases when pneumothorax has failed, also in advanced but slowly progressive, slightly febrile cases, not entirely unilateral in which the question of thoracoplasty comes under consideration either because pneumothorax is from the first impracticable, or has been abandoned voluntarily and recurrence has taken place, or been abandoned involuntarily owing to progressive adherence of the pleural membranes Symptoms may be alleviated in advanced bilateral disease by unilateral paralysis on the more affected side Haemorrhage has been arrested by this operation Sauerbruch advises phrenicotomy should be done as a preliminary to thoracoplasty as a test of the capacity of the other lung to withstand the strain thrown on it by the major operation [illegible] this group of indications I would add intract[illegible] associated with cough in bilateral cases, or in b[illegible]

cases in which the left side is the more advanced One other condition is, I have long maintained, an indication for phrenicotomy I refer to cases of unresolved pneumonia which, unless some such prophylactic measure is taken, are likely sooner or later to lead to bronchiectasis

The results of phrenicotomy are, in general, considerable reduction of sputum and of cough and lowering of temperature Complete disappearance of symptoms must not be expected except in those cases where the disease is limited to the lower lobe Of 60 cases operated on by Sauerbruch 17 were improved none were healed Of 17 cases treated by Coetze, 7 were apparently healed, 9 were improved, and 1 was worse

COLLAPSE OF THE APEX

Apicolysis

This is the brief term which denotes artificial collapse of the upper part of the lung by mesial displacement of it together with the parietal pleura this layer of pleura having been stripped off the inner surface of the chest and the space thus formed being filled up by some foreign body, such as paraffin, fat, fibroids, muscle, etc

By this operation a fairly efficient collapse of the apex of the lung down to the third rib in the nipple line can be obtained The collapse, as in all operations other than pneumothorax, is permanent The objection to the operation is that it is necessary to introduce a foreign body into the extrapleural space formed by the separation of the lung and the parietal pleura from the deep surface of the ribs—otherwise the lung would at once re-expand There is possibly also slight risk in the operation of apicolysis that infected matter, squeezed out of the upper lobe may be inspired into the lower lobe An attempt to maintain this space by gas has been repeatedly made and found useless as the gas is too rapidly absorbed Paraffin is now used by Sauerbruch, Brunner, and others with varying degrees of success It has the advantage over living tissue that, when no complications occur, the volume of the paraffin remains unchanged and so also does the extent of the collapse On the other hand, complications are not infrequent The paraffin is an irritant and may give rise to an extrapleural effusion It is extremely difficult to prevent such an effusion from forcing its way to the surface through the wound and causing a fistula through which the liquid and the paraffin both escape and which sooner or later becomes infected Aspiration of the liquid before it has broken down the scar is difficult as the paraffin blocks the needle Once the fistula has formed it becomes necessary to remove the paraffin and to pack the wound with gauze to maintain the collapse of the lung Portions of two or more ribs may have to be removed later, to assist in maintaining the collapse and in the healing of the wound Another serious complication is the direct infection of the paraffin-containing cavity from the lung or the establishment of a communication between this extrapleural cavity and a cavity in the lung substance itself Baer does the operation through the front of the chest, while Sauerbruch and Brunner recommend the posterior route In neither case have the results been too encouraging

Many kinds of tissues have been utilized particularly by Tuffier, in place of paraffin—lipomata fibroids etc—and with a varying degree of success Living tissues transplanted into the extrapleural cavity diminish in volume during the first weeks or months There is a tendency therefore for the collapsed apex, together with any contained cavities partially to re-expand When fat is used, some of the fat may liquefy the liquid globules will work their way to the surface sometimes as long as two months after the operation causing a rise of temperature, pain, and a red swelling in the region of the wound If the skin is incised over this swelling the liquefied fat allowed to escape, and the wound kept aseptic it will heal there will, however, have been some loss of tissue and a corresponding re-expansion of lung I have recently tried to overcome this objection by the use of living pedicle grafts Briefly, the operation is as follows

An incision is made over the second costal cartilage and the adjacent part of the second rib These parts are exposed and excised The parietal pleura having been laid bare it is stripped off by the finger from the inner surface of the thorax, laterally, in front behind, and over the apex The lung gently pressed aside with the pleura collapses mesially and leaves an empty space which must be filled up by the graft In women the graft consists partly of fat from the front of the chest wall, but mainly when it is large enough, of the breast tissue on the same side The fat and breast tissue are tripped up in one long strip which is left hinged along the lower edge of the wound The lower end of the graft is then lifted up turned over, and tucked into the cavity, and the rest of the strip pushed in after it The divided edges of the pectoralis major are sewn over the attached end of the graft and the wound closed

In men there is usually insufficient fat and there is no breast tissue available I have, in one case, utilized the pectoral part of the pectoralis major muscle, detaching it from its connexions to the chest wall below the second rib and from its insertion into the humerus This part of the muscle has constituted the graft which has been tucked into the extrapleural cavity I have just recently seen this man six months after the operation, and have been very delighted with the efficiency of the collapse and the disappearance of symptoms There has been complete absence of any untoward result from transplantation of the muscle I feared lest contractions of the clavicular portions of the muscle should be accompanied by contractions of the graft, and that pain and discomfort would ensue There has been no discomfort whatever

The indication for apicolysis is that there is disease mainly localized to the upper lobe particularly that type of chronic tuberculosis which invades the whole upper lobe and shows little or no tendency to spread beyond and that type also in which there is cavity formation If the disease is clearly localized then I consider the operation to be preferable to attempting to collapse the whole lung by artificial pneumothorax on the ground that it is not a very serious operation, and when done there is no need for constantly recurring treatment, as with pneumothorax When however, the localization of the disease is less perfect and there is some invasion of the other lobe or lobes of that lung apicolysis is as indicated only when pneumothorax has been tried and failed and there are reasons against thoracoplasty Apicolysis is of value also in conjunction with pneumothorax when the upper part of the lung is adherent but the lower part is collapsed by gas

Results

The results of the seven cases on which I have done apicolysis have been as follows

1 Paraffin replacement for large apical cavity with retention of secretions Extrapleural effusion with escape of liquid and paraffin Permanent obliteration of intrapulmonary cavity but persistence of extrapleural empyema for which further treatment has been refused

2 Paraffin replacement Considerable improvement but the operation was not extensive enough

3 Fat replacement Liquefaction of some of the fat Incision aseptic healing of the wound and diminution of symptoms

4 Fat replacement No complications considerable improvement

5 Fat and breast tissue replacement Very great improvement

6 Fat and breast tissue replacement Two months later liquefaction of some of the fat Patient admitted to another hospital Abscess diagnosed and treated as such Readmitted under me Excision of part of two ribs Despite this there is considerable diminution of symptoms Under treatment

7 Muscle replacement Result most satisfactory

THORACOPLASTY

This is the biggest and the most serious of the operations for the treatment of pulmonary tuberculosis the results, however are so good that they fully justify the procedure It aims at producing almost complete and permanent collapse of the whole lung The collapse is not so complete as in a perfectly successful case of artificial pneumothorax, but it is superior to that in its influence on the disease because it is constant In pneumothorax the degree of collapse varies constantly, it may be complete immediately after a refill has been given but almost from that moment the lung begins again to expand and expansion continues until the lung is once more suddenly collapsed With thoracoplasty there is no variation Pneumothorax enables the lung to heal and when healed it may be allowed once more to function This is impossible with thoracoplasty, but the type of case selected for this operation has

usually reached that stage at which cavity formation or multiple dilatations of the bronchi make re-expansion, even after a considerable interval, undesirable

The operation is designed to collapse the whole of the chest wall together with the lung on the affected side The method of obtaining the result has changed since a decade and a half ago when the Wilms or Brauer-Friedrich operation was in vogue This change is mainly due to Sauerbruch, who recognized (and put in practice) the importance, above all else, of excision of the posterior parts of the ribs right up to the transverse processes of the vertebræ Variations of opinion exist as to the number of stages in which the operation should be done—as to the method of anæsthetization the amount of rib to be removed, and so on—but the essential principle stands

I cannot discuss the technique here I hope to publish that in full later Briefly, the operation entails the removal of portions of the posterior ends of the first ten or eleven ribs through a paravertebral incision A total of 110 to 140 cm of bone is removed The collapse of the chest wall is surprisingly immense, but the actual visible deformity of the patient when dressed and padded somewhat in the axilla is almost *nil* There is a considerable tendency to scoliosis, but this can be corrected by effort on the part of the patient

The results on the symptoms are often startling It is not uncommon to find immediate and complete cessation of all cough and expectoration One of my patients who had had incessant cough and sputum for two years despite continuous treatment, partly in a Swiss sanatorium and partly in this country, said that the complete disappearance of these symptoms from the time of the operation was alone worth the ordeal Another, who had his trachea drawn over to the affected side, complained that whenever he coughed his windpipe seemed to vibrate as a tense cord and that he had the sensation that sooner or later he would suffocate, this sensation disappeared directly after the operation, and this, combined with the cessation of cough and sputum, gave the greatest physical and mental relief

The operation, as is to be expected, is not always successful, it may be fatal It must be remembered, however, that most of the cases operated on would almost certainly get progressively worse until they succumbed, and that therefore every case improved or healed is a big gain to set off against those who die Considering the condition of those who undergo the operation, the mortality ratio is low

Sauerbruch has operated on 381 cases The mortality in the first week has been 14 per cent, while 35 per cent have been practically healed

Brunner, out of 117 cases, had an 11 per cent immediate mortality, 22 2 per cent were improved, and 41 9 per cent practically healed

Gravesen, out of 96 cases, had an 8 3 per cent mortality, while 21 9 per cent improved, and 14 8 per cent were much improved or practically healed

My own figures are much smaller Out of 25 thoracoplasties done for bronchiectasis and tuberculosis, 20 were for the latter condition Of these, 7 have become free from symptoms, 5 are considerably improved, while 4, still under treatment, bid fair to come under the "free from symptoms" group One case died of tuberculous enteritis eleven months after the operation One case only died immediately after the operation, and that case was complicated by a pyopneumothorax Previous to the operation on this patient about two pints of pus had to be aspirated every few days

If the above figures are combined, we have the observation that out of 514 patients who submitted to this operation, 237 derived very considerable benefit from it

Just as after pneumothorax treatment it is possible in many cases for the patient to return to work, so, too, is it possible for cases who have had thoracoplasty done But just as it is essential for patients with a pneumothorax to consider their health, be regular in their habits, and careful in their exercise and in the avoidance—if possible—of infections, so, too, is it the case with patients who have undergone the major operation

Cases suitable for this operation are selected from among those on whom pneumothorax has been tried and has failed *in toto*, or in whom the amount of collapse is inefficient and cannot be improved, also from those on whom a pneumothorax has been done and in whom the lung has re-expanded with return of symptoms and recrudescence of signs The greatest consideration must be given to the sound side In my opinion, any evidence of activity in this lung is a contra-indication to operation on the other This view is not held by all Continental surgeons Moreover, if, in the past, the less affected lung has been at all extensively implicated—that is, if there has been more than slight scarring or slight root involvement—there is too much danger from the strain that thoracoplasty will throw upon this lung Slight myocarditis is no bar to the operation, but the presence of additional disease, tuberculous or otherwise, elsewhere than in the larynx, is an absolute contra-indication I have already mentioned that Sauerbruch favours a preliminary phrenicotomy on the affected side as a means of obtaining information as to the ability of the sounder lung to withstand the strain of a complete thoracoplasty

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PURULENT PNEUMOCOCCIC PERICARDITIS: PERICARDIOTOMY: RECOVERY.

BY

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THE number of cases in which a purulent pericarditis of pneumococcal origin has been successfully opened and drained is not large This is not to be wondered at, seeing that the condition is only one item in a serious general infection, and its very presence points to an extension beyond what occurs in most cases Apart, however, from its interest in this respect, this case is exceptional in the time at which the pericardial infection began

On September 23rd, 1923, a youth, aged 17, whilst walking in the country was suddenly seized with dizziness and acute pain over the left front of the chest He had difficulty in getting home As the pain became more severe he was admitted to hospital on September 25th the third day of disease He was then in great distress and there were signs of pericardial effusion It was impossible to examine the back of the chest as the slightest attempt at movement caused extreme embarrassment to the breathing, and much distress He vomited at frequent intervals He was collapsed and grey with a moist skin The tongue was furred There was herpes on the lower lip His temperature was 102 8°, pulse 140, and respirations 40

On September 26th he was no better in spite of treatment, and paracentesis was decided upon The area of cardiac dullness was much increased to both sides The heart beat could be felt indistinctly, well within the left edge of the dullness, and for a short period a pleuro-pericardial friction sound was heard at the upper part of the left border When examined again a few hours later it had disappeared

Paracentesis pericardii was performed (V T) The needle was introduced in the fifth space 1½ inches from the sternum, passing backwards, slightly upwards and inwards, and 300 c cm of sero-fibrinous straw coloured fluid were drawn off This gave immediate relief After its removal pericardial friction sounds were heard over the upper part of the dullness The fluid contained many polymorphonuclear leucocytes with Gram positive diplococci, pneumococci were obtained culturally

During the next three or four days the temperature fell gradually to normal He slept well, the breathing, though still frequent, was not distressing There was no cough or sputum The herpes became more marked Occasional pleuro pericardial friction was heard just inside the left nipple line, also bronchial breathing in the left upper chest in front, and pleural friction in the left axilla There was also some dullness with diminished breath sounds at the left base behind

On October 1st the ninth day of disease he was listless and apathetic He was a bad colour and the pulse remained frequent in spite of the fall of temperature The liver edge could be felt 1 to 1½ inches below the costal margin and there was epigastric tenderness The pericardium was therefore again aspirated and 200 c cm of thin purulent fluid removed This was again followed by dennite pericardial friction sounds Later in the same day it was decided to drain the pericardium This was again followed under local anaesthesia (alypin) and one inch of the fifth left costal cartilage excised The internal mammary vessels were retracted inwards and the pericardium was opened (V T) A considerable quantity of thin purulent fluid escaped A drainage tube was inserted passing behind the heart After this he improved in his general condition The pulse came down considerably He began to eat his food The wound discharged freely the pus becoming much thicker He also developed a cough which caused some pain In spite of this however the temperature which had been subnormal at the time of the operation continued the rise which had begun two days after this

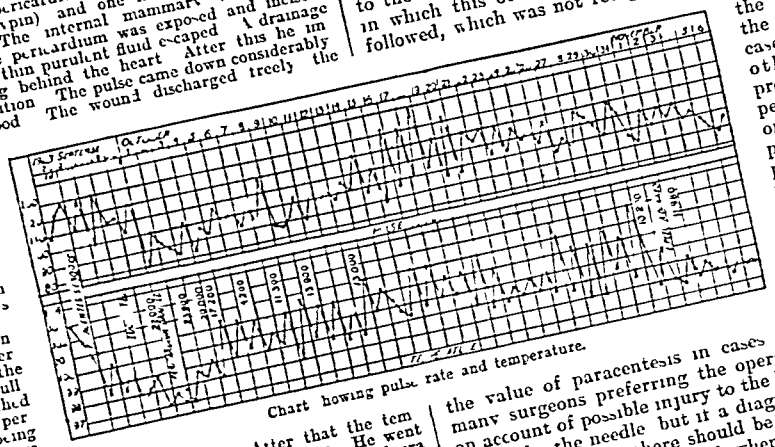


Chart howing pulse rate and temperature.

As the pleura continued it was determined to explore the left base where dullness and diminished breath sounds persisted and pus being found the left pleura was opened and drained on October 31st The empyema was a very small one After that the temperature fell to normal and he made a steady recovery He went out on December 11th apparently in excellent health The pleura had healed up some time before the pericardium ceased discharging At the present time nearly a year after his attack he is in robust health He is able to carry on his work just as before He plays football without any discomfort whatever The apex beat is slightly outside the nipple line The scar which is about an inch to the right of this is slightly retracted with each systole but there is no retraction at the apex There is no murmur

As a rule pneumococcal pericarditis is diagnosed, or overlooked, as the case may be, at some time after pulmonary symptoms have established themselves in characteristic fashion In this case it was fully developed and causing mechanical distress by the third day Whether there was also an initial infection of the lungs or not must remain uncertain, but if so it could hardly have preceded the pericardial infection Neither the temperature nor the general appearance of the patient suggested a pneumococcal infection, although the presence of herpes and the pulse-respiration ratio corresponded to what is seen in a pulmonary infection There was a striking absence of cough during the first week, and indeed a pneumococcal infection was not suspected until the bacteriological report on the fluid was received

In a very incomplete reference to the literature no definite case of a primary pneumococcal pericarditis of this severity has been found, or one in which surgical measures have been necessary on the fourth day of infection Attention has of recent years been called to the possible danger of injury to the left pleura at operation and Connor[1] reports a case in which this occurred, with the result that an empyema followed, which was not recognized during life, and proved fatal This may be the explanation of the empyema in our case, but on the other hand the presence of pleuropericardial friction on the left side prior to the first paracentesis shows that this pleura had not altogether escaped early infection

There is a tendency in the literature to depreciate the value of paracentesis in cases of pericardial effusion many surgeons preferring the operation of pericardiotomy on account of possible injury to the heart or coronary vessels caused by the needle but if a diagnosis of pericarditis with effusion is correct there should be little risk Paracentesis is easy and quick and relief, when the fluid has been drawn off, is immediate the operation of draining the pericardium can then be carried out in more favourable circumstances This was the procedure adopted in our case The oblique sinus was not drained, as recommended by Ballance and yet there was a complete recovery Possibly there is less necessity for drainage of this space in cases met with in civilian practice than in those occurring as a result of war wounds In support of this view one may instance the comparative success of arthrotomy for septic infections in civil practice, when compared with the unfavourable result of this operation in joint infections met with in war wounds

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EARLY PREGNANCY AND EPITHELIOMATA

BY

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Do the conditions prevailing in the first three months of pregnancy assist in a study of the etiology and treatment of epithelomata? It is in the hope of eliciting an answer to this question or at any rate of inducing others to consider the suggestion contained therein that I have written the following notes

It has always seemed to me that a clue to the cause and treatment of epithelomata through the conditions to be found in early pregnancy has never been given the care and thought to which it is entitled There is no other normal condition in which one tissue if it does not definitely attack at least invades another so that unless every possible clue fails we ought not easily to be turned aside and pronounce it a blind

The fundamental point to be kept in view in a study of any disease is that the normal human body is fully equipped to withstand disease and it should be our duty to find out in the first instance why its resistance fails—not the nature of the attacking force Remember that the tissues are fully equipped at the start therefore the weakness is on their side Working from this standpoint we would have to allow that the body tissues are prepared to, and normally can, resist the growth of tissues are prepared against this particular growth that will resist any invading growth whether malignant or no This leads me to suggest that as a result of this preparedness the body will resist the normal invasion of the chorionic epithelium The chorionic villi are able to invade the uterine wall and so in some way this resistance has been overcome—but how? That the body shows signs of a reaction taking place is evidenced by the general malaise nutritional disturbances and sickness of pregnancy We also know that lutein cells have appeared in the ovary after the ovum left it and these cells seem to grow in proportion to the rate of growth of the placenta and that when the placenta ceases to grow, at the third month these lutein cells also cease to grow That there is some connexion between these two points is admitted It is also generally admitted to-day that the function of the corpus luteum is that of an internal secreting gland When Frankel found that destruction of the corpus luteum in pregnant rabbits resulted in abortion, he concluded that it produced a secretion which maintained the implantation and growth of the ovum *in utero* I suggest that this might be modified by saving that the secretion produces a body reaction, the result of which is to provide an antibody to the normal body resistance to any invasion," and so the chorionic epithelium is able to maintain its hold, and that Fränkel's experiment allowed the normal body resistance full play, that the chorionic epithelium was repelled

Pregnancy sickness is evidence of this auto-inoculation and also explains the abnormal lutein activity found in

chorionic epithelioma. Overproduction of secretion results in completely antidoting resistance, and so invasion continues wildly. Underaction or inaction is a cause of sterility. Further, the action of lutein secretion in lowering or countering body resistance explains the preponderance in women of cancer cases under the age of 40, as compared with men under that age. The body must be primarily regarded as fully equipped, yet there is a weakness here and a clue to general resistance may follow deduction. The epithelioid character of the lutein cells and the fact that they contain a lipoid substance is important when we remember that the body is prepared to resist an attack by epithelial cells. My meaning, however, will be clearer if I diverge for a moment.

It seems a very important point to me that in the body generally we do not find an epithelioma growing where there is an unadulterated layer of fat below epithelium. I use the word "unadulterated" advisedly. The commonest sites for epithelioma are to be found where the epithelium comes into direct contact with mixed muscular or fibro-muscular tissue—for example, in lip, tongue, cervix uteri, and following dissolution of continuity of a fatty layer by wounds, ulcers, burns, etc. A case of cancer of the abdominal wall would be rare in this country, and yet among the women in India who carry burning incense next their abdominal skin, and so get large sores with a breaking down of the fat layer, it is common. It must be noted, too, that the only area which the body normally prepares for the reception of invading cells (chorionic epithelium) does not possess a fat layer. Fat, therefore, is protective. Muscular tissue, especially mixed muscular and fibrous tissue, has some property which makes it a very receptive medium for proliferating epithelium.

That epithelial and lipoid substances come so much into evidence in early pregnancy and produce some form of reaction on the part of the body, and that the fat of the body ordinarily exercises a protective action, are very important points. When I refer to "unadulterated" fat I mean fat which is not interlaced with elements such as I have said form suitable receptive media—for example, in the breasts. The action of fat may be purely mechanical: it may act as a protective blanket—we have evidence of germs taking advantage of this in the fatty envelope of the tubercle bacillus, and, to digress again, a method of attack on this envelope, preparatory to antituberculous treatment, is here indicated—but the close relationship of fat and epithelium in the body generally and the epithelial and lipoid nature of the lutein cells suggests that either fat alone, or some interaction between the two, provides the blood with its resisting powers, or, again, that the fat in itself provides both mechanical protection and the resisting powers to the blood normally, and that, in a finer and more intimate form, in the lutein cell epithelial and lipoid substances evolve an antidote to that resistance.

I do not think that impregnation of the ovum by the spermatozoon and subsequent events are in any way analogous to a proliferating epithelial cell, as I have seen suggested. An analogy would require the production of innumerable ova, *not* the much more highly specialized and complex result we get. The "microbe" is the epithelial cell itself, and its proliferation is the result of one of known methods. If, while proliferating, this cell is in contact with mixed muscular tissue, it is in contact with a new food, and sometimes intensive cultivation results. The epithelial cell, like any other living entity, will go in search of nourishing food, and, finding it, will greedily absorb it. This food being a vital constituent of muscle food, starvation and exhaustion result, with subsequent death.

The preventive treatment of cancer is of extreme importance, and is along the lines of greater internal and external body hygiene. An impaired drainage system must result in a lessened vitality of the body cells, and consequently impaired functional and resisting activity. Further treatment would follow a closer study of the exact uses of fat and isolation of the agent capable of producing increased body resistance, in conjunction with early diagnosis and its use after operation.

In conclusion, then, my answer to the question at the beginning of this paper would be in the affirmative.

British Medical Association.

PROCEEDINGS OF SECTIONS AT THE ANNUAL MEETING, BRADFORD, 1924

SECTION OF NEUROLOGY AND PSYCHOLOGICAL MEDICINE.

T. GRAINGER STEWART, M.D., F.R.C.P., President.

DISCUSSION ON THE DIAGNOSIS AND TREATMENT OF COMPRESSION PARAPLEGIA.

OPENING PAPER

BY

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THE subject for our discussion to-day, the diagnosis and treatment of compression paraplegia, is one which must appeal to the general practitioner as well as to the neurologist and the surgeon. Any form of paraplegia which is amenable to surgical intervention demands careful attention, and an early and accurate diagnosis is an essential preliminary to successful treatment.

We must first define what we mean by the term "compression paraplegia." For the purpose of this discussion I will define it as follows: "A pathological condition where a localized lesion causes pressure either on the whole contents of the spinal theca or on the spinal cord alone, with or without involvement of the nerve roots, in such a way that the functions of the spinal cord become progressively damaged."

In order to keep this subject within reasonable limits I am deliberately excluding from consideration cases of sudden or acute lesions of the spinal cord, caused by trauma or acute myelitis of any kind.

It is not of academic interest only to pause for a moment and inquire exactly how the functions of the spinal cord suffer—that is, how the symptoms are produced. For symptoms will often, indeed generally, arise some time before the cord is actually mechanically compressed or squeezed. The conditions are very different from those obtaining in, say, cases of gunshot wounds of the cord, with suddenly produced lesions which may entirely destroy the cord over one limited area. Here the interruption of function is complete physiologically and often anatomically as well. Ascending and descending degeneration of nerve tracts follow, and subsequent recovery depends primarily on the extent to which such secondary degenerations have occurred. But the morbid anatomy, as well as the conditions found at operations during life, show very conclusively that no such complete anatomical lesions exist in the majority of cases of compression paraplegia. Witness also the recovery, often complete recovery, which may take place after a successful intervention.

Microscopic examinations again demonstrate the exceedingly small amount of secondary degeneration which may be found even in cases which have shown a complete paralysis during life. Obviously, therefore, some factor must be at work other than the mere mechanical destruction of nervous tissues. This factor is almost certainly interference with the circulation in the cord. Probably the veins suffer first in most cases, with the production of a state of venous congestion. Later the arteries suffer, and an ischaemia or anaemia of the cord occurs, which, though insufficient to cause permanent degenerative changes, is yet enough to produce very considerable, even complete, temporary loss of function.

There is yet another factor to be considered, and one which is sometimes of great importance. This is the fluid

pressure exerted by a collection of cerebro-spinal fluid, encysted or at any rate dammed up by chronic adhesive meningitis, or sometimes caused by blocking of the circulation of the fluid in the subarachnoid space by a tumour within the dural envelope

Now what are the possible causes of compression paraplegia, using that term in the sense which I have defined already? We may attempt a classification as follows

Extrathecal Lesions

A Diseases of the bones
- 1 Pott's disease
- 2 Caries sicca
- 3 Tumours—(*a*) primary (*b*) secondary
- 4 Spondylitis deformans
- 5 Osteitis deformans

B Extrathecal lesions other than diseases of the bone
- 1 Aneurysms of the aorta
- 2 Parasitic cysts
- 3 Tumours arising in the perithecal tissues—for example sarcomata

Intrathecal Lesions

1 Tumours—
- (*a*) Extramedullary Fibromata sarcomata endotheliomata psammoma myxoma or haemangioma
- (*b*) Intramedullary tumours

2 Chronic meningitis
- (*a*) Pachymeningitis
- (*b*) Meningitis sero-circumcincta

The general signs and symptoms are best considered under two heads first those due to the direct effect of the lesion on the spinal cord and nerve roots at some particular level and secondly those due to interruption of the functions of the long ascending and descending tracts in the cord We may use the terms "local" and "remote" to designate the two groups of symptoms

The local symptoms are due to involvement of the nerve roots and some particular segment or segments of the cord Of these local symptoms those due to affections of the nerve roots, both posterior and anterior, are often the more important as they may constitute the earliest symptoms, and of these the symptoms referred to the posterior roots are the more constant Pains localized to the area of supply of the roots involved are a very common and characteristic feature, and may precede for some time any signs of pressure on the cord itself Usually more or less constant, these pains are subject to paroxysmal attacks of increased violence often induced by movements or by such a common and simple act as coughing or sneezing If the dorsal roots are involved on both sides a well marked girdle sensation may be present Associated with the pains sometimes is hyperaesthesia or hyperalgesia (better perhaps termed over-reaction) in the same area, and this condition may be followed later by a loss of sensation even when the pains persist—an example of the so-called anaesthesia dolorosa The existence of these root pains has a great practical importance, for it is not very uncommon to see a patient in whom useless operations have been performed for the relief of supposed renal calculi or appendicitis when a careful examination of the nervous system might have avoided this calamity

It is less common on the whole to find symptoms specifically referred to the anterior roots When present these consist in localized muscular atrophies or paresis with loss of the corresponding reflexes Occasionally involuntary muscular spasms may precede such wasting or weakness of muscles Such signs are generally best seen in cases of disease of the cervical region of the cord, for the changes are then easily studied in the musculature of the hands and arms The local symptoms referable to the spinal cord may be as follows (1) On the motor side, localized muscular atrophies and paresis with loss of tendon reflexes and sometimes vasomotor and trophic changes (2) Sensory symptoms, these may consist in a loss or diminution in sensibility confined to the particular distribution of the affected segment or segments, this sensory change may be of the so-called dissociated type, so typically observed in syringomyelia When a loss of sensation is present below the level of the lesion it may be difficult to separate the exact limits of the two areas of sensory impairment

Of greater interest is the occasional presence of pains *referred to parts below* the apparent site of the lesion—for example, pains in the legs in the case of a compression of the dorsal region of the cord This condition has been the subject of a good deal of comment recently, being entitled 'pains of central origin' but its occurrence was clearly pointed out by Horsley as long ago as 1911

The remote symptoms—that is, those due to interference with the conduction of the nervous impulses in the long tracts of the cord—may be considered under three heads (1) *motor*, (2) *sensory*, and (3) *autonomic*

The motor symptoms consist, first in a loss of voluntary power This may vary from a slight weakness to a complete loss of all power It is usually first apparent in the more distal parts of the limbs and affects the flexor muscles more than the extensors, a loss of power of dorsiflexion of the feet being one of the earliest signs Severe ataxia or inco-ordination is not as a rule found when enough voluntary power is present to test the movements The loss of power is generally gradual and progressive but occasionally a very rapid paraplegia sets in, notably in certain cases of Pott's disease where a complete paraplegia may sometimes be attained in as short a time as twenty-four hours Under a discussion of the motor symptoms must be included the state of tone of the muscles of the limbs—a point of great interest and importance

The commonest picture is what is known as a spastic paraplegia in extension The legs gradually become stiff, this stiffness spasticity or increase in tone affecting the extensor muscles of the lower limbs more than the flexors, hence the legs will be rigidly extended at the hip- and knee-joints with plantar flexion of the feet it being remembered that the calf muscles are physiologically to be regarded as extensors This increase in tone of the extensors may be so extreme as to render even forcible flexion of the limbs a matter of some effort As compression increases and the functions of the cord become progressively impaired this spastic paraplegia in extension may be seen to pass gradually into a spastic paraplegia in flexion with the limbs flexed at all joints

An earlier stage of this condition is the occurrence of *those painful flexor and adductor spasms which may constitute* an annoying and even distressing symptom The gradual passage therefore, of a case from one of spastic paraplegia in extension to one in flexion must be held to be a sign of ill omen

A flaccid paraplegia in cases of compression of the cord is far less often seen It may *however, occur as one of two* varieties (1) as the final stage of a complete compression where all physiological continuity in the cord is broken, and (2) exceptionally as an initial and sometimes temporary state In this second form it may herald the appearance of a rapidly fatal compression or it may be followed by improvement with the change to a spastic state With this early flaccidity an acute or rapidly produced lesion is present

Alterations in the reflexes are the next item for consideration under the head of motor symptoms These alterations may be rapidly summed up as follows Exaggeration of the tendon reflexes often with clonus a loss of the normal superficial reflexes, and the appearance of certain new forms of reflex activity Thus the knee-jerks and the ankle-jerks will be exaggerated, often with patellar or ankle clonus the abdominal and cremasteric reflexes will be lost if the lesion lies above the level of their reflex arc in the cord The normal plantar flexor response is replaced by the so-called extensor response or sign of Babinski Associated with this (Babinski's sign) is the "*flexion reflex*," which consists in a movement of flexion of the whole limb This may be seen to occur in a rudimentary form in the shape of the contraction of the flexors of the thigh even when this contraction is insufficient to move the knee joint appreciably This reflex flexion movement is best elicited by some slightly noxious stimulus, such as dragging a pin along the outer part of the sole of the foot Indeed, Babinski's sign is only part of the general flexion movement As compression increases the reflex excitability of the lower limbs becomes increased and the threshold of stimulation necessary to produce this flexion reflex is lowered, as the

same time the field from which it is possible to excite the reflexes enlarged Hence the frequent and irritating flexor movements or flexor spasms to which attention has already been directed, and which in severe cases may be produced by almost any handling of the lower limbs

In those more rare cases where the paraplegia has finally become flaccid, or where it has been flaccid from the first from the initial spinal shock, all reflex activity below the lesion is entirely abolished A useful generalization, however, emerges from what has been said on this question of the changes in tone and in the reflexes It is this A change from a spastic paraplegia in extension with exaggeration of the tendon reflexes to a state of flaccidity with great diminution or a loss in the tendon reflexes is a sign of grave import, indicating a progressive loss in the functions of the cord, whereas a change from an initial flaccidity to one of spasticity in extension with exaggeration of the reflexes is, on the other hand, a favourable sign

We must now consider the remote sensory symptoms It is a general rule that loss of sensation appears later than loss of motor power At first the feet and legs are affected most and the loss becomes less marked and less absolute higher up, thus in a lesion at the mid-dorsal level, for example, the sensibility above the thighs may be practically unimpaired Complete loss of all forms of sensation is relatively less common, except in the later stages of the disease A distinct dissociation of sensation may be found in some cases Generally the senses of position and passive movement and the vibration sense are affected before pain and temperature, and sensibility of light touch is usually the last to go Occasionally there is a relative preservation of sensation in the lower sacral segments when the loss is complete in all higher segments Unless a complete loss be present, a distinct variability both in the exact level and in the degrees of the loss is not uncommonly found, especially if the lesion causing the compression is diffuse and extends widely in a longitudinal direction

This general sketch of the symptoms applies to cases where the compression has been exercised on the whole cord more or less evenly Obviously there are many cases, and especially cases of intradural tumour, where the pressure is exerted at first on one side of the cord only, with the production of either unilateral symptoms or a more or less characteristic Brown-Séquard syndrome

The last division of the remote symptoms which remains to be considered is the affection of the autonomic system especially in relation to bladder and rectum, of the practical importance of which I need hardly remind you If the damage to the cord occurs above the lumbar and sacral regions and the roots of the cauda equina are not affected, the earliest bladder symptoms to occur are a difficulty in beginning the act of micturition, in most cases this soon gives way to retention of urine, which, indeed, not infrequently occurs quite suddenly If such retention be not relieved by the passage of a catheter or by suprapubic drainage overdistension of the bladder takes place, the sphincter relaxes from time to time, and dribbling of urine occurs If, however, overdistension be prevented, a certain amount of automatic action of the bladder may be expected to develop This will as a rule only occur in cases where the compression has been of gradual onset and where the functions of the cord have not been unfavourably influenced by the presence of urinary infection or bedsores Such automatic action may result in the involuntary discharge of urine at varying intervals Should the lesion be low down in the spinal canal and affect either the sacral segments of the cord or the roots of the cauda equina, the parasympathetic supply of the bladder will be interfered with, and, as a rule, instead of retention with possible later automatic action the sphincter of the bladder becomes paralysed and persistent dribbling of urine results In some instances even here a periodic reflex micturition is developed

The functions of the sphincter of the rectum are generally affected at the same time as the bladder Obstinate and increasing constipation is the rule, and when this is relieved by aperients or enemata control over the subsequent evacuation is lost Should the lesion involve the origin of the sympathetic nerve supply of the small intestine or the parasympathetic outflow for the innervation of the lower bowel, a paralytic distension of the abdomen may result—a condition which may be aggravated by the weakness or absolute paralysis of the muscles of the abdominal wall In severe lesions affecting the sacral segments the sphincter of the rectum may be completely paralysed

Other groups of symptoms coming under the head of the autonomic system are (*a*) vasomotor changes, (*b*) abnormalities of sweat secretion, (*c*) trophic lesions, and (*d*) finally, alterations in the functions of the pilomotor centres Time will only allow me to refer very briefly to this interesting series of changes

Abnormal vaso-constriction may be evident in an unusual pallor and coldness of the paralysed limbs, vaso-dilatation by some swelling or blushing of the skin, which is generally seen in the more acute cases The anomalies of sweat secretion usually consist in a tendency to hypersecretion in the paralysed parts, the level of the lesion in the cord has in some instances been demonstrated by the injection of pilocarpine Head and Riddoch have further demonstrated an excessive sweating as occurring as part of the fully developed flexion reflex or mass reflex in cases of severe injury to the cord, where the lower part of the cord below the lesion has taken on an increased reflex excitability Trophic lesions in the shape of bedsores are, unfortunately, only too familiar a symptom, which needs no description As a rule the more severe the compression the greater the liability to bedsores, and often one of the earliest results of a successful intervention is the healing of a sore

With the foregoing sketch of the general features of compression paraplegia in our minds it will be convenient now to describe briefly the peculiarities of some of the more important forms of the disease—and Pott's disease of the spine, or spinal caries, claims first attention, as being the commonest form of compression paraplegia About 5 per cent of all cases show spinal cord symptoms, which may occur at any age, and it is important to note that nervous symptoms may appear before any disease of the vertebral column has been suspected The cord may be injured in one of several ways—by pressure from an abscess, by the growth of tuberculous granulation tissue interfering with the circulation in the cord, by the formation of a dense chronic pachymeningitis, and finally, though very rarely, by the direct pressure of a displaced fragment of bone

With regard to these different forms of lesions in Pott's disease, Sorrel and Sorrel-Dejerine have lately pointed out that the form of paraplegia due to the pressure of an abscess tends to appear earlier, becomes more rapidly complete, and is attended with a better prognosis, while that due to a pachymeningitis appears more slowly, is progressive, and is ultimately the more incurable lesion In the majority of cases the onset is gradual and the compression progressive up to a certain point, but occasionally, and especially in elderly people, a complete paraplegia may set in quite suddenly In the slighter cases nothing may be noted beyond a slight weakness of the legs with perhaps some spasticity, increased tendon reflexes, and extensor plantar responses In more severe cases a typical paraplegia in extension will be found Root pains are not as a rule present, the loss of sensation is generally not extreme is often variable in degree, while its upper limit is characteristically fugitive and difficult to estimate accurately Exceptionally the paraplegia is flaccid from the beginning, in these cases the paralysis is usually of rapid onset and the prognosis grave

The next form of compression paraplegia to which I would make especial reference is that produced by spinal tumours Setting aside secondary tumours of the vertebral column, the commonest form of tumour is the intrathecal and extramedullary tumour, which arises inside the dural envelope, often in connexion with a nerve root, and exercises pressure on the cord over a particular segment or segments This is a lesion which is essentially amenable to cure by surgery, provided the diagnosis has been made sufficiently early Experience has taught me that the incidence of such tumours is much underestimated by the profession at large Many cases are allowed to drift into incurable and hopeless paraplegia for lack of an early diagnosis The only reason for this condition appears to be

a lack of appreciation of the possible existence of such a lesion

The clinical picture of these extramedullary tumours is that of a "slowly progressive spastic paraplegia, with early defined sensory loss often preceded or accompanied by well marked root symptoms and not infrequently with a tendency to the development of the Brown Sequard syndrome" (Lorin) In its most typical form the history of these cases is divided into three chapters First, a period characterized by root pains, often severe and paroxysmal, it is at this stage that the disease is most likely to be confused with quite different conditions, such as angina pectoris or renal calculus and various futile operations performed Secondly, a period where weakness of one or of both lower limbs appears accompanied by disturbances of sensation or the Brown Sequard syndrome Thirdly, a complete spastic paraplegia

I have already alluded to the character of these root pains, and will say no more about them now except to emphasize the importance of keeping in mind the possibility of the existence of a spinal tumour when pains of this kind are complained of The exact distribution of these pains is of course, often of great value in the topographical diagnosis of the lesion The symptoms produced by pressure of the tumour on the cord will follow more or less closely the description already given of compression in general But the frequency of a predominantly unilateral motor weakness with objective sensory loss mainly on the opposite side of the body (the Brown Sequard syndrome) is sometimes a characteristic feature In the earlier stages the objective loss of sensibility is apt to be more of the dissociated type where the sensations of pain and temperature are affected more than the sensation of light touch With the advance of the compression a typical spastic paraplegia in extension becomes evident, generally with great exaggeration of the tendon reflexes and a well marked flexion reflex as already described

In cases of long standing there are certain features in the disturbances of sensation which are worth remarking Besides the root symptoms the objective loss of sensation is generally very definite and extends to a perfectly well defined level At the upper border of this level of altered sensation there may often be found a zone of hyperaesthesia or a band where all forms of sensation are completely lost Even in severe cases it is to be noted that the sensibility in the sacral segments of the cord tends to be relatively less affected In these cases of extramedullary tumours a steady progress in the symptoms is the rule though signs of complete compression may be delayed for many months even years The actual nature of the tumour does not influence the variety or the course of the symptoms as much as its position—whether anterior or posterior to the cord or on its lateral aspect—except in so far as a rapidly growing tumour will obviously produce symptoms more rapidly

Much of my time has necessarily been occupied by a consideration of the signs and symptoms to be found in any case of compression paraplegia I have also discussed quite briefly the typical features of two special forms of this disease—spinal caries and extramedullary tumours I hope therefore that it is not necessary to enter deeply into the question as to whether in any given case a compression lesion is present or not There are, however, certain diseases which may simulate a compression paraplegia very closely These are spinal syphilis, disseminated sclerosis and syringomyelia A chronic syphilitic meningomyelitis may give very much the same clinical picture as we have described indeed there may actually be a certain amount of compression present from meningeal thickening Examination of the blood and of the cerebral spinal fluid may be needed to settle this point But it may be mentioned that a positive Wassermann reaction in the blood does not negative the existence of a spinal tumour, and a positive reaction in the spinal fluid has also been found in some cases of spinal tumour

There are, however other changes in the spinal fluid which are very typical of spinal compression of which an account will shortly follow Clinically, signs elsewhere in the nervous system, and especially changes in the pupils or cranial nerves, would naturally speak for syphilis and against tumour It is however, in certain cases of disseminated sclerosis that the greatest difficulty may arise Examples of the so-called spinal type of disseminated sclerosis with a spastic paraplegia and perhaps a little loss of sensation confined to the periphery of the legs do certainly exist, but it is wise not to be content too easily with this diagnosis In coming to a conclusion due weight must be given to the history, to the presence or absence of remissions or relapses, and to any affection of the cranial nerves, and especially of the eyes, and nystagmus alone cannot be accepted as conclusive evidence of disseminated sclerosis, for it has been found in lesions of the cervical part of the cord of many different kinds On the other hand root pains with a steady progress in the symptoms unrelieved by any remissions speak more strongly for a compression

Syringomyelia, though it may simulate a compression lesion in the cervical region, may generally be distinguished by the marked and persistent dissociation of sensation of its extreme chronicity, and by the late affection of the sphincters It is with greater difficulty separated from an intramedullary tumour, with which indeed, it is often practically identical in its nature and effects The final diagnostic test is afforded by lumbar puncture and examination of the cerebro-spinal fluid This is so important an aid that its use should on no account be omitted in any case where the slightest doubt exists

If we have excluded any general disease of the nervous system and have arrived at a definite diagnosis of a local lesion, two important questions then remain to be answered—the nature and the site of the lesion In considering the nature of the lesion our first step is to discover whether it is a disease of the bones of the vertebral column or not whether it is within or without the thecal sac Due regard must be paid to the history of the illness as well as to the results of the clinical examination This last must be very complete, and besides the ordinary neurological examination must include a careful examination of the spine, an examination of all the bodily system not forgetting the possible presence of some such lesion as an aneurysm of the aorta, and especially the possibility of a vertebral lesion being due to a secondary deposit of malignant disease, a careful search for the presence of a primary growth must therefore often be made X-ray examination of the spinal column is imperative, and may be combined, as will be described later, with the method of injection of lipiodol into the theca

The very important point of lumbar puncture and examination of the cerebro-spinal fluid must now be considered The changes occurring in the fluid in compression of the cord are often highly characteristic and may afford conclusive evidence of a block in the free circulation of the fluid in the spinal subarachnoid space Since Froin described a condition where the cerebro-spinal fluid was coloured yellow and clotted spontaneously on standing much has been written on this subject I can here only summarize the conclusions which we can draw from recent work One of two characteristic changes or series of changes is to be found in the fluid as withdrawn from the subarachnoid space below the site of the compression First the fluid may be, as normally, colourless, but contain a great excess of protein without any excess of cells—a condition to which the French have given the name of dissociation albuminocytologique" And secondly, and more rarely, the syndrome proper of Froin may be present where a yellow or golden brown colour of the fluid may be noted (xanthochromia), with a tendency to spontaneous and massive coagulation of the fluid, this coagulation taking place very rapidly after withdrawal The first of these changes the increased protein content, is certainly an earlier occurrence than the latter, which is not always found even in cases of severe or complete compression Indeed the estimation of the protein content of the fluid may be said to give a good index of the severity of the compression Bearing in mind the normal figures of the albumin content—namely, from 0 025 to 0 04 per cent—we can attach importance to figures of over 0 1 per cent which are by no means uncommon, indeed, figures of 1 per

cent have been recorded These changes are only found in the fluid below the compression, a fact which has led to the discovery of the value of a double puncture in some cases—one in the lumbar sac at the usual site, and the other above the supposed site of the lesion, usually in the cisterna magna through the occipito-atlantal ligament, after the method introduced by Axel An interesting comparison can then be made between the two fluids and definite confirmatory evidence of compression obtained

Recently Sicard has introduced a new method of radiological diagnosis which is useful in determining the presence or not of a block in the subarachnoid space, and secondly, its exact situation and magnitude This consists in the injection into the cisterna magna of a substance called lipiodol, a vegetable oil containing 40 per cent of iodine, which is very opaque to the x rays The lipiodol is very heavy and in a normal subject sinks rapidly to the bottom of the theca, where it is clearly demonstrated by x-ray examination If a block be present the lipiodol will be arrested for a varying time at the level of the block, hence the upper limit of the block may thus be clearly defined By injecting the lipiodol into the lumbar sac and inverting the patient the lower limit of the block may be similarly shown I will leave it to other speakers to discuss the exact details of this procedure and will only emphasize the value of this method, especially in cases where the topographical diagnosis of the lesion is not definite by neurological tests alone It is well to add a word of warning that cisterna punctures should not be undertaken without preliminary practice on the cadaver In the majority of cases a careful neurological examination is sufficient to establish an accurate diagnosis of the level of the lesion, in arriving at which the following considerations may be borne in mind

Localized root symptoms have a decided value, whether they consist of pains, of anæsthesia, or of localized muscular atrophies But in the majority of cases the topographical diagnosis rests in the main on the exact distribution of the sensory loss The value of this depends very much on whether a clear and definite upper level of altered sensation can be elicited If this is present a good localization can be established If, however, the upper level of the sensory loss gradually shades off into an area where sensation is only partially lost—a hypæsthesia—an exact diagnosis becomes more difficult In such cases the border between the absolute loss and the partial loss is usually taken as the level of the lesion Some observers place greater reliance on the level of the loss of temperature sense Occasionally it is possible to distinguish a zone of hyperæsthesia abutting on the upper level of the sensory loss If so, this has a localizing value

It is less common for a topographical diagnosis to be possible from the motor symptoms In lesions of the cervical part of the cord, however, muscular atrophies in the hands or arms or in the muscles of the shoulder girdle may afford exact information, as may also the results of electrical examination of the muscles A careful examination of the tendon reflexes in the arms particularly is often of great value, for these will be normal above the lesion, abolished at the level of the lesion, and exaggerated below the lesion A knowledge, therefore, of the segmental representation of the reflex in the cord is essential, though this can always be verified by reference to a textbook In lesions in the dorsal regions differences in the upper and lower abdominal reflexes and between the power in the upper and lower segments of the recti muscles have an obvious localizing value

There are many points of detail in the diagnosis of the nature, the extent, and the site of the lesion which could be elaborated in far greater detail than I have attempted I hope that other speakers will complete these gaps in my remarks and will deal more specifically with treatment, which is essentially a surgical problem

May I, finally, be allowed to repeat my conviction that many cases of chronic compression of the spinal cord go unrecognized until it is perhaps too late to achieve a cure or even much improvement? For this reason alone our subject demands close and careful investigation

GENERAL DISCUSSION

Dr HILDRED CARLILL (London) supplemented Dr Feiling's paper with some remarks based upon his own experience The special interest of compression paraplegia at the moment was due to the recent introduction of methods which facilitated the determination of the upper and lower levels of the compressing agent, and in some cases its nature A fracture of the spine, notably in the cervical and lumbar region, might occur without causing cord compression Fracture-dislocation might be present without impairing the palpable outline of the spinal column In many cases of traumatic cord compression there were obvious reasons by which the level of the cord injury might be diagnosed A photograph of a case was shown illustrating the attitude characteristic of a lesion directly below the sixth cervical segment In addition to the segmental distribution of sensory loss, the pectorals, triceps, forearm and hand muscles, abdominal muscles, and lower limbs were paralysed On the other hand, certain muscles of the upper limbs, notably the biceps, supinators, and deltoids, were not only not paralysed but were in a state of contraction from irritation of the fifth and sixth cervical spinal roots directly above the lesion In the photograph, the upper limbs were seen abducted and flexed at the elbows, the intercostals were paralysed, respiration depending on the diaphragm alone A colleague had found a fracture-dislocation between the seventh cervical and first dorsal vertebræ

Sometimes in affections of the upper two dorsal segments, and indeed throughout the cervical cord, they might find ocular evidence of sympathetic palsy Similarly in the dorsal cord, the lumbar enlargement, the sacral region, and in the conus and cauda equina, a compressing lesion usually gave specific evidence of its regional distribution Vasomotor disturbance was common in lesions of the dorsal cord Priapism was often quoted as a feature of cervical cord lesions, but it occurred frequently with lesions of the dorsal cord, and was ascribed by Kocher to vasomotor disturbance Of four cases of stricture involving the dorsal cord under Dr Carlill's own care there was priapism in two, and in one of these it persisted throughout the illness—six months, the intensity of the lesion was at the fifth dorsal segment In a case of fracture of the twelfth dorsal vertebra priapism occurred rapidly and was relieved by laminectomy A feature of some cases of cord injury was excessive sweating from an area of skin which varied with the level of the lesion If the injury was above the second dorsal segment the whole body might sweat, but the sweating area was mostly on the head, neck, arms, and upper part of the trunk With a lesion about the fourth dorsal segment the head and neck might be dry but the rest of the body wet A lesion at the level of the ninth dorsal segment might cause hyperidrosis over an area which corresponded roughly with that of the sensory impairment, and with lesions below this level the sweating area was apt to be less than that of the anæsthesia

Dr Carlill next showed two photographs (1) A case of compression paraplegia from stricture which affected chiefly the fifth dorsal segment The lower limbs were flexed at the hips and knees, and this attitude persisted after death It would be recalled that paraplegia in flexion occurred with lesions which affected not only the pyramidal tracts but the extra-pyramidal tracts as well The effect on the latter tracts was to abolish the reflex tonus of the palsied extensor muscles without interfering with the reflex activity of the paralysed flexor groups (2) A case showing that even a huge bedsore could recover if the cause of the palsy was effectively tackled The man had syphilitic meningomyelitis with sudden onset of paraplegia The disease, the palsy, and the sores were all cured permanently The local treatment of the sore was by sunshine

A man of 43 was at present under Dr Carlill's care whose lower limbs had been affected since he had cerebro-spinal fever in 1917, the disability had become progressively worse during the last two years The clinical diagnosis was compression paraplegia from a lesion at the sixth dorsal segment, a meningitis serosa circumscripta originating from the cerebro-spinal fever The lumbar puncture needle

filled with cerebro spinal fluid but no fluid could be persuaded to flow The fluid from a low dorsal puncture contained 0 02 per cent total protein and 17 lymphocytes per cubic millimetre Lipiodol was injected through a high dorsal puncture, and the radiogram showed the lipiodol held up at a point opposite the body of the seventh dorsal vertebra At the operation there was found a considerable fluid swelling covered by thickened arachnoid when this was removed a quantity of cerebro spinal fluid gushed out and the compressed spinal cord with its vessels came into view A bougie was then passed upwards and the subarachnoid channel found to be free The passage downwards was obstructed by another cystic swelling which was also removed The man had made definite but slow progress The cord had been compressed for a long time below the site of compression it had suffered probably more from obstruction to its blood supply than from deprivation of its cerebro- spinal fluid It would be recalled that the anterior spinal artery and the two posterior spinal vessels are in the central portion of the vertebral If the cerebro spinal fluid was not a nutrient of the cord a feeble circulation of it as regards both rate of flow and quantity was without significance The diagnosis in this case was made on the history and clinical evidence and was supported by the failure to obtain cerebro spinal fluid by lumbar puncture It was confirmed by the lipiodol injection and the x rays and proved by operation *Although the ultimate freedom* of the subarachnoid channel had been proved by the passage of the bougie it was still impossible to collect cerebro-spinal fluid by lumbar puncture two months after the operation The cerebro spinal fluid from a low dorsal puncture on June 26th 1924 contained 12 lymphocytes per cubic millimetre globulin in definite excess and 0 14 per cent total protein

For a few years physicians had been in the habit of comparing the chemical composition and the cellular content of samples of cerebro-spinal fluid taken from below and above the site of a suspected block in the subarachnoid space This differential examination from the point of view of the fact of compression of the cord rather than from that of the nature of the compressing force had lost some of its value now that they had lipiodol but as cerebro-spinal fluid was necessarily withdrawn from whatever site the lipiodol was injected it was convenient to examine it Even if lipiodol were not used to demonstrate the lower level of the compression, he had always withdrawn when possible some cerebro-spinal fluid in the preliminary survey of the case Authors were accustomed to recommend that lipiodol should be injected into the cisternal space to demonstrate the upper level of an obstruction Cistern puncture was an occipito atlantal puncture the thickness of tissue traversed in the adult was about 5 cm and the space between the dura mater and the medulla, when the needle was inserted at the correct angle, was nearly 3 cm The chief uses of cistern puncture were three (1) for the collection of cerebro-spinal fluid from above a block in the subarachnoid space (2) combined with lumbar puncture, for the irrigation of the subarachnoid space, (3) for therapeutic injections or the injection of lipiodol *In health the* cerebro-spinal fluid from the cistern and lumbar regions was identical The pressure was the same and the subarachnoid space could be proved to be a free channel The lumbar cerebro-spinal fluid was *sometimes normal below the* site of proved compression In cases of subarachnoid block the lumbar cerebro-spinal fluid might differ from that from the cistern The pressure relations also varied, this variation had proved to be of greater importance than the variation in chemical composition, etc., because changes of the latter type might be caused below the site of degenerative changes in the cord and apart from compression Lipiodol had rather usurped the place of the former contrasting of specimens of cerebro-spinal fluid For the purpose of demonstrating the upper level of a block with lipiodol it was necessary only that the injection should be made above the block It did not matter how high it was made As a rule they were able from clinical evidence to determine the segmental level of the upper part of the lesion, it was less easy with the lower Lipiodol not only gave the relation of the lesion to the bones, but it indicated whether obstruction was complete or partial As with everything else, cistern puncture was easy enough for those who knew how to do it and who had had opportunities of practice But there were and there would continue to be, physicians who had neither the knowledge nor the experience Moreover, some patients had necks which it was inadvisable to puncture by reason of acne, carbuncles or other sepsis In these, lipiodol might be injected by cervical or dorsal puncture It should be remembered that lipiodol once injected took a long time to disappear from the subarachnoid space, and this fact militated against its further use after, for instance, an operation had been performed for the purpose of removing a block He had seen one case of septic meningitis subsequent to lumbar puncture

On three occasions Dr Carlill had failed to withdraw cerebro-spinal fluid by lumbar puncture One was the case of circumscribed serous meningitis previously described Another was somewhat similar, in which a lesion of the cauda equina supervened on an attack of tetanus Both these cases had received the appropriate intrathecal treatment, but it was unlikely that treatment caused the condition which were found In the tetanus case it was only in the lumbar region that failure to withdraw cerebro-spinal fluid occurred, and this in spite of the fact that a general anæsthetic was employed The fluid higher up was *healthy The third case* was that of a boy with a pineal cyst It should be remembered that failure to withdraw cerebro-spinal fluid or to assess correctly its pressure might be due to obstruction anywhere between the cerebral ventricles and the point of exit of the needle

Dr Carlill doubted the accuracy of Dr Fearnley's statement that apart from syphilis a true positive Wassermann reaction in the cerebro-spinal fluid was found in some cases of spinal tumour In cases of meningitis due to causes other than syphilis the Wassermann reaction in the fluid was often positive provided that the serum reaction was positive His cases had been chiefly sarcoma fractures with dislocation syphilitic meningitis and tuberculous caries It was noteworthy that at operation and also at autopsy the cord in some cases had appeared to be intact *and untouched by the compressing agent although signs of* paraplegia had been obvious In a case in which sarcoma involved the lumbar and also the cervico-dorsal spine there was general weakness and a bedsore but no reflex, sensory or sphincter abnormality In none of four cases of sarcoma was there any cells in the cerebro-spinal fluid, but each fluid contained excess of globulin Of two cases of tuberculous lumbar caries, the fluid of one was healthy in the other there was excess of globulin but no cells It was useful to carry a bottle of saturated solution of ammonium sulphate to test for excess of globulin A rough determination that there was an excess might be made by noting the amount of froth on shaking the tube

He had had but one case of true xanthochromia with massive coagulation The lesion was syphilitic meningitis affecting chiefly the lumbo-sacral region When faecal incontinence and retention of urine were added to painful weakness of a lower limb, the former diagnosis of sciatica was doubted The cerebro-spinal fluid contained 364 polymorphs and 116 lymphocytes per cubic millimetre The fluid in these cases of massive coagulation contained not only an increase of albumin, but also a type of albumin usually absent—namely fibrinogen Xanthochromia needed to be distinguished from the yellow colour of former haemorrhage In a case of carcinoma affecting the cauda equina, secondary to disease of the breast, the first few drops of cerebro-spinal fluid were yellow After a small movement of the needle the subsequent fluid was perfectly colourless It contained 11 lymphocytes per cubic millimetre, excess of globulin, and 1 05 per cent albumin Incision of the distended dura mater relieved the pain Two or more tubes should always be ready A valuable and ready method of counting cells with the ordinary haemocytometer was described by Baker in a report on cases of syphilis of the nervous system by Hildred Carlill Fildes, and Baker in the *Journal of the Royal Naval Medical Service* October 1917 From the standard of the amount of information to be gained by the procedure at the time and in the laboratory be regarded

diagnostic thecal puncture is the most important operation in medicine From the patient's point of view, freedom from pain and after effects was urgently necessary From the physician's standpoint they were equally necessary, especially in view of the probable necessity to repeat the operation not once but many times The pathologist wished for a fluid without a single red cell produced by operative trauma These various considerations—pressure, quality, colour, "dry tap," etc—made it clear that the operation should be performed only by the expert or under his supervision If the patient did not see the needle and did not hear it spoken of he should be unaware that one had been used

In conclusion Dr Cahill wished to suggest that greater care should be taken of terminology in describing physical signs "Babinski normal" had no meaning presumably what was meant was "Plantar response flexor" "Plantars in excess" conveyed nothing to the mind "Knee jerks brisk (or absent), no ankle clonus," likewise conveyed very little, for it did not tell us whether the ankle-jerks were present or abolished, if they were absent, of course, there could be no clonus Lastly, a too ready use of five diagnoses should at all times be avoided—they were neuritis, lumbago, rheumatism, sciatica, myalgia

Dr J W Burrow (Leeds) emphasized the occurrence of vertebral rigidity in cases of spinal cord tumour, and showed a case of extramedullary spinal tumour, successfully operated upon by Mr Daw of Leeds, as an illustration in the discussion He considered small qualitative and quantitative changes in sensation of the utmost importance in diagnosis, and advocated the use of Head's algesiometer for the purpose of sensory examination Agreement was expressed with the opener of the discussion in his statement that paraplegia due to tumour pressure often went undiagnosed He also mentioned cases of paraplegia following slowly upon a slight trauma, knowledge of them pathology was sought The fact that a positive Wassermann reaction was occasionally obtained with highly albuminous cerebro-spinal fluids—almost certainly non-syphilitic—was commented upon Dr Burrow expressed some dissatisfaction with lipiodol as an aid in diagnosis He had seen retention of urine follow its use, and would only employ it in a few very difficult cases

Mr Geoffrey Jefferson (Manchester) said that as regards the cerebro-spinal fluid in paraplegia, in general, any pathological process which compressed the cord interfered with the ready passage of cerebro-spinal fluid alongside it Whether the compressing agent was outside the theca or within it, stasis in the distal or caudal portion would equally occur, and evidence of this stasis would be discoverable in the chemistry of the fluid These changes in the cerebro-spinal fluid might be summarized as falling under the following headings (1) changes in colour, (2) changes in chemical composition, (3) changes in pressure With regard to the first point, he was interested to hear that a true Froin's syndrome, a xanthochromatosis with rapid massive coagulation, had been so rarely met with He had seen it so far in its most characteristic form once only—a case in which a vertebral growth had invaded the canal equally with complete cerebro-spinal block Changes in the constitution of the fluid occurred with stasis, but they were apt to be more profound with intradural tumours than with extradural For when the blocking agent, usually a tumour, lay within the theca the albuminous and salt exudates from that tumour passed directly into the cerebro-spinal fluid These exudations were presumably given off from all surfaces of the tumour, from the upper no less than the lower, and hence xanthochromia or albuminosis might be present in the fluid above as well as below For this reason changes in chemistry and colour did not necessarily mean that the fluid tested had been withdrawn from below the growth But since in the fluid below the tumour stasis was added, the cerebro-spinal fluid changes would be more profound If the fluid, then, was very definitely abnormal, there was strong presumptive laboratory evidence (ignoring for the moment the clinical signs) that the tumour was above the point of puncture It went without saying that this would generally be the case, since the ordinary lumbar puncture was made between the fourth and fifth lumbar vertebrae, and the whole of the cord lay above The point was worthy of consideration, however, for they did not yet know to what extent the cerebro-spinal fluid was altered by stasis alone and to what extent it was changed by exudations from tumours or exudations within it The hard fibroma or endothelioma, for instance, could hardly influence the composition of the fluid profoundly by "weeping" into it

With regard to spinal fluid pressure a simple test could be employed Normally, any rise in cerebral venous pressure showed itself readily and rapidly in an accompanying rise in cerebro-spinal fluid tension Thus, a cough, or a straining with the mouth closed, caused a rise in cerebro-spinal fluid tension The same effect could be produced in a more controllable manner by compression of the jugular veins in the neck (Queckenstedt's manœuvre) In the presence of a complete spinal block the rise in cerebro spinal fluid tension would not be transmitted to the distal portion If the block were only partial the rise would be delayed This test, like any other single test, was corroborative only, but it was of considerable physiological interest It was very little extra trouble to attach a manometer to the lumbar puncture needle before collecting fluid, and to try the effect on cerebro spinal fluid pressure of congestion in the head It was not generally necessary to compare this with the fluid pressure obtained by high spinal or cistern puncture, although the comparison of the two made the picture complete Ordinarily one could obtain sufficient information from noting the latest period before any rise occurred, and the extent of that rise when it took place (see Ayer, *Arch Neurol and Psych*, January, 1922)

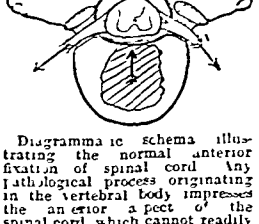
In connexion with lipiodol there was already a considerable and a growing literature So far no serious ill results following on its proper use had been described, and for that reason the cases mentioned by Dr Burrow were of considerable interest Much had still to be done in the precise observation and recording of its effects One of Mr Jefferson's patients had a temperature of 104° F the evening of the injection, but no further reaction occurred There was no block present in this case, and the cause of the pyrexia was obscure Lipiodol was always described as being very considerably heavier than the cerebro-spinal fluid, but Sicard had evidently realized himself that it was not so heavy that it would fall like mercury In his last paper he advocated waiting an hour before the x-ray photograph was taken in order to admit of better gravitation, for it was certain that droplets were held up by the slightest obstruction This delay was wise, and seemed to be a strong argument in favour of high injection as against low injection and inversion of the patient Lipiodol was a valuable adjuvant, a help in diagnosis, but no more Whether they were using it a trifle too enthusiastically they should learn from their collective experiences

With regard to paraplegia in spinal tuberculosis, one could not think of spinal tuberculosis without associating with it the name of its original observer, the terms in which he announced his discovery were of peculiar interest to a neurological section Pott, in his original paper ("Remarks on that kind of palsy of the lower limbs which is frequently found to accompany a curvature of the spine," etc), gave a good account of slowly developing spastic paraplegia He made particular note of adductor spasm, and even described involuntary movements Pott taught the profession to treat this condition, and though his methods might seem to us to have been brutal in the extreme (rest is not mentioned in his papers) he began to obtain cures, and took an optimistic view of the prognosis of this form of paraplegia This attitude had been fully justified by the subsequent history of this complaint, for to-day it showed a higher percentage of recoveries than any other form of paraplegia The actual incidence of palsy in vertebral tuberculosis was probably somewhere about 5 per cent Taylor and Lovett give it as 13 per cent (*Med Record*, 1886), but Charlton Wallace, in a recent and valuable statistical summary, found 79 paraplegics in 1,649 cases of spinal caries treated at the New York Hospital for the Ruptured and Crippled—that is, 4·7 per cent (*Journ Bone and Joint Surgery*, 6, 1924) Paralysis was certainly on the decline owing to the more efficient treatment of spinal tuberculosis to-day Thus it rarely developed in

children undergoing treatment though it might occasionally appear even then. Paraplegia in adult Pott's disease was a much more serious affection no doubt because it signified extensive bone involvement. Further, a correct diagnosis was often delayed, for spinal deformity might be absent. Most surgeons had seen cases of Pott's disease in adults where treatment had been carried out for a year or more on a diagnosis of rheumatism, fibrositis, or osteo-arthritis—diagnoses that had been corrected only by the appearance of a lumbar or psoas abscess.

Since the rational treatment of this form of paraplegia could only properly be appreciated by a knowledge of how the paralysis was brought about some discussion of this point was inevitable. Pott himself insisted that it was not the deformity itself which caused the spinal compression, and that it was not due to bone pressure. Charcot (*Leçons de Mardi*, 1888-89) held that it was due to pachymeningitis, "pachymeningite externe tuberculeuse" whilst recently Sorrel and Sorrel Dejerine (*Rev. Neurol.* 1924), as Dr. Feiling had said, discriminated between the modes of onset of the paralysis when the cause was abscess and when the cause was pachymeningitis—rapid in the former and slow in the latter. These authors also printed an excellent photograph of a case of cord compression by bone in an old Pott's disease, lest we were tempted to forget that such a thing was possible.

The problem of laminectomy in Pott's disease was an ancient one, and, whereas at one time surgeons were enthusiastic in its favour, the bad results which had followed ill-conceived operations had chilled enthusiasm. To-day they would generalize by saying that laminectomy was not indicated in carious paraplegia, but he thought all would make reservations. The chief argument against it was that 80 per cent. of cases recovered the use of their limbs with conservative treatment alone (Wallace). What of the remaining 20 per cent.? Where the paralysis remained stationary, or even increased after strict immobilization had been instituted, laminectomy would have to be considered. Certainly this might offer the only hope if serious sensory loss was developing. But these cases were fortunately uncommon. As a rule improvement followed very rapidly on immobilization of the spine with hyperextension and sometimes cure of the paralysis, but not of the disease, was effected within three months. Operation was most likely to do good when abscesses were present in the vertebral canal less likely to be of value when the cause of the palsy was a pachymeningitis.



Diagrammatic schema illustrating the normal anterior fixation of spinal cord. Any pathological process originating in the vertebral body impresses the anterior aspect of the spinal cord which cannot readily move backwards.

Mr. Jefferson's views on the place of laminectomy in Pott's disease were based on the surgical anatomy and means of fixation of the cord. Normally, fixation was effected by means of the issuing nerve roots passing on and into the intervertebral foramina. These roots ran in a definitely forward direction (see figure) and laced the cord on to the vertebral column much as encircling branches fixed ivy to the trunk of a tree. This anterior fixation was assisted by the close connexion between the anterior surface of the dura and the posterior common vertebral ligament. Further, when the body was flexed and especially if a localized kyphosis existed, the cord was brought into still more intimate contact with the bodies of the vertebrae. Behind, the cord was relatively free and the dura had no connexion with the ligamenta subflava or laminae, from which it was separated by a pad of cellular and adipose tissue. The cord was, therefore, particularly vulnerable on its anterior surface from any injury or disease of the bodies of the vertebrae, for it could not readily move away from them. A collection of fluid or caseous material or of granulation tissue on the backs of the vertebral bodies would impinge very readily on the cord itself. Whether this was the cause of motor paralysis being an earlier manifestation than the sensory changes he could not say. It had always seemed to him to be a question of functional physiology rather than a point in vascular supply. Possibly its pathology was a mixed one. It seemed very probable, however, that the most benign cases of paraplegia—those in which an improvement in the condition of the limbs followed in a few days of extension and fixation—there had not been even an external pachymeningitis. In these cases a collection beneath or involving the posterior common ligament projected backwards against the cord, forming an elevation, which would be mechanically enhanced by the collapse of the anterior parts of the vertebral bodies at that point. This explained why many laminectomy operations had been futile. The pressure was not exerted by the laminae themselves, but by a pathological process compressing the front of the fixed cord. Many excellent drawings illustrating these points were to be found in Alquier's valuable paper (*Nouv. Iconog. de la Salpetriere*, 19, 1906). The operation of laminectomy was to be undertaken with a clear conception of the objects aimed at. Removal of the laminae alone was useless. The most successful cases would be those in which an abscess was found in the vertebral canal, cases where there were masses of granulation tissue would be less favourable, and some attempt should be made to curette this tissue from the backs of the vertebrae. This required the greatest gentleness and no little experience of cord surgery. No attempt should be made to treat radically the bone condition, the object of the operation was the relief of cord compression and not the cure of the vertebral disease. The operation itself was to be carried out with the most complete haemostasis and the utmost gentleness which the surgeon could command. Care must be taken not to carry the bone removal so far laterally as to interfere with the zygapophyses else the stability of the back might be so far jeopardized as to lead to disaster.

In conclusion, Mr. Jefferson endorsed Dr. Feiling's remarks on the lamentable manner in which many cases of advancing spinal paralysis were allowed to progress to a hopeless condition. Spinal tumours and brain tumours were much commoner than was generally believed and they should all be on guard lest they escaped notice.

The President (Dr. GRAINGER STEWART) dealt with some of the surgical aspects of compression paraplegia. Chronic leptomeningitis did not improve permanently with operation. The compression of the spinal cord was probably due to a fluid pressure rather than to the meningitis. Once encystation was temporarily restored within twelve hours of operation.

In cases of intrathecal tumour the most frequent position for the tumour was between the anterior and posterior roots and attached to one or the other. The onset of the symptoms in such cases was very typical, and was due to purely mechanical causes. No compression would result until the tumour reached a sufficient size. It was not important to recognize these tumours as they were easily removed and the results of operation were excellent. As the tumour enlarged it first produced pressure on the lateral column of the same side, the first symptom being that the patient complained of "jumping" of the leg at night. Next, the leg was inclined to give way at times on walking—probably due to reflex spasm. Then the leg tended to drag until finally some degree of paresis was evident. Changes in the abdominal reflex of the affected side occurred very early: at first it was more easily exhausted than that on the opposite side, and later became reduced, with a corresponding increase in the deep reflexes of the leg of the same side. At this stage the plantar reflex might be doubtful or indefinite. He had followed several cases from the earliest manifestations, and motor weakness invariably occurred before any sensory changes developed. The first sensory sign was blunting to pain, heat, and cold in the opposite leg reaching up to within three or four segments of the lesion. These three or four segments represented the space occupied by the sensory fibres in crossing from one side to the other. It was thus seen that the signs tended towards a Brown-Sequard symptomatology.

As regards Pott's disease, the paraplegia had to be watched carefully. If the paraplegia was of the flaccid

variety and was not recovering, the case should be operated upon to prevent the spinal cord from becoming permanently damaged Opened abscesses should be swabbed out with strong mercury perchloride solution In cases of tuberculous pachymeningitis, root pains invariably occurred on movement, and often muscular spinal rigidity, the tissues might also feel boggy on palpation The old test of running a hot sponge up the back was sometimes very useful

The most rapidly fatal cases of compression paraplegia were those due to sarcoma Secondary growths from the kidneys and the suprarenal gland had been more frequent at the National Hospital, Queen Square, as a cause of compression paraplegia than those from carcinoma of the stomach or the rectum A further point in diagnosis was that in cases of chronic leptomeningitis there might be a complaint of abdominal tightness with no objective sensory signs whatever In all compression paraplegias sphincter involvement did not occur until there were signs of bilateral pressure, in cases of leptomeningitis sphincter trouble often developed early

DR C WORSTER-DROUGHT (London) dealt with the practical difficulties that arose in the differential diagnosis of lesions involving the lower cervical and upper dorsal regions of the spinal cord, more especially between (1) compression of the cord, by pachymeningitis or tumour, and syringomyelia with local undissociated anæsthesia and "central" pain, (2) intramedullary tumour and syringomyelia with Brown-Séquard syndrome, (3) early compression paraplegia without sensory changes and a pure spinal type of disseminated sclerosis

(1) *Compression of the Spinal Cord (Pachymeningitis or Tumour) and Syringomyelia with Local Undissociated Anæsthesia and "Central" Pain*—With regard to the differential diagnosis between these two conditions, he had met with the case of a young man who came complaining of weakness in the arms and legs and severe pain radiating from the base of the neck down the arms On examination the patient showed considerable spasticity and loss of power in the upper limbs with bilateral atrophy of the muscles of the shoulder girdle, spastic paraplegia with diminished abdominal reflexes, increased knee- and ankle-jerks, and a bilateral extensor plantar reflex, bilateral, though asymmetrical, loss of cutaneous sensibility of root type to all forms of stimuli (light touch, pain, and thermal) over an area extending across the shoulders and base of the neck, the upper part of the chest, and down the arms—comprising an area supplied from the fifth cervical to the second dorsal spinal segments There was no loss of sensation elsewhere The patient also complained of intense pain radiating from the neck across the shoulders to the front of the chest and down the inner side of both arms On lumbar puncture was obtained only a small quantity of cerebro-spinal fluid, which showed a normal cell count, increased protein content, and a negative Wassermann reaction From x-ray examination, the report stated that "the third and fourth dorsal vertebræ appear to be diseased" Lipiodol had not then been introduced, in any case, Dr Worster-Drought doubted the advisability of using lipiodol when a lesion extended so high in the cervical region, and, as events proved, it would have been of no help Such a clinical picture rendered it extremely probable that a lesion was compressing the spinal cord and involving the anterior and posterior spinal nerve roots It was decided, therefore, to give the patient the chance of benefit offered by operation At the laminectomy performed by Sir Charles Ballance, a large syringomyelia was found involving the area indicated, this was merely incised in the mid-line and the fluid it contained allowed to escape The case, therefore, was one of syringomyelia with the rather unusual phenomenon of "central" pain, believed to be due to the distension of the central canal of the cord The character of the sensory changes and the absence of any dissociated anæsthesia at this stage were noteworthy features (At a later stage, however, the patient developed dissociated anæsthesia in the legs) In view of the large size of the syringomyelia and the small amount of cerebro-spinal fluid obtained at lumbar puncture, the increased protein content was not surprising Another interesting fact was the remarkable improvement in the "central" pain that followed operation, which pain, incidentally, had never recurred The case, apart from its other interesting features, illustrated a difficulty that sometimes arose, and Dr Worster-Drought considered it preferable to operate on three cases of syringomyelia rather than allow a curable case of compression paraplegia to remain unrelieved

(2) *Intramedullary Tumour and Syringomyelia with Brown-Séquard Syndrome*—When a syringomyelia involved mainly one-half the transverse diameter of the spinal cord, the differential diagnosis between these two conditions was extremely difficult, as the physical signs might be identical, and the cerebro-spinal fluid examination and the injection of lipiodol were of no assistance In a case that Dr Worster Drought saw in 1915 this difficulty arose The patient—a woman, aged 25—complained of weakness in the right hand and right foot, with no pain whatever On examination there was weakness and wasting of the intrinsic muscles of both hands, which was more advanced in the right hand than the left, spastic weakness of the legs (right more marked), with right knee- and ankle-jerks greater than the left, and right extensor plantar reflex, left abdominal reflex greater than right, loss of cutaneous sensation to all forms of stimulus over the ulnar distribution of both hands, with absence of pain and thermal cutaneous sense over the left leg and mainly the left side of the trunk, extending upwards to just below the clavicle There was no spinal rigidity or tenderness Syringomyelia appeared to be the probable diagnosis As she was becoming rapidly worse, however, she was admitted to the National Hospital and operated upon by Mr Armour, who successfully removed an intramedullary tumour from the lower cervical region The patient made an excellent recovery, and three years later wrote to say that "she still had the full use of all her limbs, and was able to do her own washing and look after the children" At the present time Dr Worster-Drought had under his care a case of intramedullary lesion, in which it was doubtful whether the condition was one of syringomyelia or intramedullary tumour It was that of a young man, aged 21, who showed a right-sided increase of all deep reflexes, absent abdominal reflexes, right ankle clonus, and right extensor plantar reflex (left indefinite), atrophy of the intrinsic muscles of the right hand, with left-sided cutaneous anæsthesia to pain and thermal stimuli (light touch being everywhere normal) involving the left leg and extending up the trunk to the level of the fourth rib

(3) *Early Compression Paraplegia without Sensory Changes and the Spinal Type of Disseminated Sclerosis*—The difficulty of distinguishing between these two conditions frequently arose The spinal type of disseminated sclerosis—with spastic paraplegia and possibly some degree of unequal muscular weakness in the arms, with no cranial nerve or speech abnormality—was well known, and one seldom found any sensory change beyond the occasional impairment of postural sense, at the same time, all had agreed that in compression paraplegia disturbances of sensation were very late in their appearance The presence even of nystagmus would not favour disseminated sclerosis, for as Dr Fearing mentioned, it had been described in association with lesions of the cervical part of the spinal cord Also, a negative x-ray examination would be reported in disseminated sclerosis and in many cases of compression paraplegia, lipiodol might be of assistance, but again arose the question of the very doubtful advisability of using the substance in lesions of the cervical portion of the cord The cerebro-spinal fluid examination—especially the colloidal gold reaction—might be of considerable help A large increase in protein content would suggest compression paraplegia, but it had to be borne in mind that a slight increase was often found in disseminated sclerosis A positive colloidal gold reaction (with negative Wassermann and a normal cell-count) would favour disseminated sclerosis, in his (Dr Worster-Drought's) experience the colloidal gold curve in the spinal type of disseminated sclerosis was far more often "luetic" than "pretic" From a series of colloidal gold reactions in many cerebro-spinal fluids which he had investigated in conjunction with Drs C Lovell, Roche Lynch, and H J B Fry, it was found that the "pretic" type of curve was usually found in disseminated

sclerosis only when there was evidence of cerebral or cranial nerve involvement the vast majority of cases of the spinal type yielded a curve of the "luetic" type In a case of lesion of the cervical part of the spinal cord met with last year, the diagnosis lay between compression paraplegia and the spinal type of disseminated sclerosis There were no signs of brain changes and the X ray examination was negative The cerebro-spinal fluid (easily obtained in quantity) showed a normal cell count, slightly increased protein content negative Wassermann reaction and a positive colloidal gold reaction with a "luetic" type of curve The subsequent history of the case confirmed the diagnosis of disseminated sclerosis Dr Worster Drought had seen a complete From's syndrome—with xanthochromia and spontaneous massive coagulation—most frequently in connexion with cerebro-spinal fever, especially in cases of complete paraplegia following immediately upon the acute attack It also occurred in this disease apart from paraplegia In his experience From's syndrome was decidedly rare in other forms of compression paraplegia although an increased protein content with no change in the cell-count ('dissociation albuminocytologique') was relatively common

Puncture of the Dorsal and Cervical Theca—With regard to Dr Hildred Carlill's suggestion of puncturing the theca in the dorsal region for the injection of lipiodol Dr Worster Drought considered that more risk was attached to such an operation than to puncture of the cisterna magna Many individuals were devoid of a continuous posterior sub-arachnoid space in the dorsal region the septum posticum being absent and the dura arachnoid adhering directly to the posterior aspect of the spinal cord Lusk in dissections of the spinal meninges in eleven subjects had found that of the eleven only three had pre cut a complete posterior sub-arachnoid space extending throughout the dorsal region into the cervical region In the other eight cases he had found adhesions between the dura arachnoid and the posterior aspect of the cord at some situations between the cervical and the dorsal region In three of these cases medullaris and the cervical region in three or these cases the dura arachnoid was adherent to the entire posterior surface of the spinal cord from the level of the conus medullaris to the cervical region Consequently in puncturing the dorsal theca there was always the risk of inserting the needle directly into the spinal cord The only untoward incident he had seen follow puncture of the cisterna magna—apart from headache and occasional vomiting—was a unilateral and intense hyperaesthesia of the face This was possibly of physiological interest as it might be due to a slight trauma (by the point of the needle) to the tuberculum Rolandi at the side of the medulla—where the sensory spinal root of the trigeminal nerves comes to the surface—with consequent irritation In the case in question the puncture was performed by a zealous house physician and the hyperaesthesia persisted for about a week—preventing the patient's shaving—and then entirely disappeared

THE QUANTITATIVE OBSERVATION OF KERNIG'S SIGN BY A WHEEL GONIOMETER

BY

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No one will dispute the usefulness of Kernig's sign especially in suspected meningitis By the following method its usefulness I think, is considerably increased The trouble with Kernig's sign is that the clinician is often in doubt whether to consider it present or absent For this there are two reasons (1) Doubt as to the force we should use in flexing the leg on the trunk, for this varies with the muscles and age of the patient (2) Variations due to the case of the patient for the angle at which Kernig's sign begins to be positive is clearly very different for a baby who can suck his own toe and a stocky middle-aged man who is far from being able to do so But if we can measure Kernig's sign from day to day in a case of doubtful meningitis and find that it is slowly increasing, then we have no doubt that it is (and was) present Also, we can measure its gradual dwindling in convalescence

How then are we to measure Kernig's sign We need not only a handy goniometer* [demonstrated], but also a method or deciding on the angle of Kernig's sign which shall be independent of the force used The method which I have found reliable during the last four years is this The patient lies flat on his back on the bed horizontal The doctor lifts the leg off the bed with the palm of his hand behind the calf just below the middle of the tibia The other hand steadies the leg just above the knee but exerts no pressure As the leg is raised from the bed a critical angle is reached when the knee bends automatically—presumably to ease the stretching of the sciatic nerve caused by flexion of the hip When you are satisfied that this critical angle (at which knee is flaccid and that this critical angle (at which knee flexion just occurs) is constant you measure the angle with the goniometer, it should be about 90 degrees In meningitis it may be far less perhaps 45 degrees

The goniometer consists of a spindle acting as a pivot both for a yard of string and for a wheel graduated in degree The wheel is weighted so that the zero mark always floats to the top For this latter device there are two reasons (1) only one angle need be read (instead of two and subtracting) (2) the instrument need not be buttoned into the bedclothes to the actual hip-joint but can be applied anywhere along the femur The string is then stretched along the leg to the external malleolus while an assistant holds the leg up in the air at the critical angle which has already been determined Read off the graduation on the rim of the wheel where the string intersects it This is the angle of Kernig's sign The goniometer is then simpler to use than to describe my house physicians have no difficulty with it This instrument is also useful for measuring improvement in the flexion of stiff joints or limbs as in compensation cases also in sciatica

In sciatica I have observed that whilst the patient slowly rises from lying to sitting the knee of the affected limb flexes sooner than the sound one This is another way of eliciting my variant of Kernig's sign

SECTION OF PATHOLOGY AND BACTERIOLOGY

Professor C H BROWNING M D, President

CRITERIA OF TRANSMISSION AND CULTIVATION OF ENCEPHALITIS AND ALLIED VIRUSES

BY

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DURING the past few years a considerable amount of work has been done on the experimental transmission of diseases of the central nervous system to animals particularly with regard to encephalitis lethargica Widely different results have been claimed by different workers in their attempts to transmit this disease to rabbits by the inoculation of human material Loewe Hirschfeld and Strauss assert that the disease can be transmitted to rabbit The criterion of infection being the finding of certain brain lesions in the inoculated animals on micro-scopical examination The latter state that the changes consist of a marked meningitis with an infiltration of mononuclear leucocytes The small blood vessels in the cortex and in the basal ganglia show a perivascular infiltration with mononuclear cells and there may be areas of mononuclear infiltration surrounding a zone of necrosis These lesions are stated to be similar to those found in the human brain in encephalitis lethargica and to be diagnostic of the experimental disease Moreover they have claimed the isolation of a micro-organism which they regard as the etiological agent of encephalitis lethargica and that when cultures are inoculated intracerebrally in rabbits lesions similar to the above are found Based on the e results they assert that the culture causes encephalitis lethargica These results have been confirmed by Thillmer who regards the presence of brain lesions as diagnostic of the experimental disease Kling Davide,

* This instrument is being made by Down Bros

and Liljenquist[3] have also claimed that the virus of encephalitis lethargica can be transmitted to rabbits In their experiments intracerebral inoculation of human material produced no observable symptoms, and the animals died many months after the injection Sections of the brains revealed perivascular and meningeal infiltration with mononuclear cells, and from these results the authors assert that the transmission of encephalitis virus to the rabbit has been accomplished These authors point out that not all rabbits are susceptible to the disease, but that only 50 to 60 per cent of the inoculated rabbits reveal these cerebral changes McIntosh[4] also regards the finding of brain lesions in the rabbit as evidence of transmission of encephalitis virus It should also be noted that Reisoner,[5] Plaut and Mulzer,[6] working with experimental syphilis in the rabbit, assumed the presence of perivascular infiltration in the brains of the inoculated animals to be evidence of cerebral syphilis On the other hand, other workers—Levaditi,[7] Doerr,[8] Flexner[9]—have shown that the so-called encephalitis virus produces definite and characteristic symptoms in the rabbit After a short incubation period there is an elevation of temperature (up to 109° F), retention of urine, gnashing of teeth, uncontrolled wild muscular movements, paralysis and convulsions, and finally termination in death within seven days These observers regard the so-called virus of encephalitis as being closely related to if not identical with, the virus of febrile herpes Kling, on the other hand, using the presence of brain lesions as the criterion of encephalitis infection of the rabbit, is unable to show any such relationship It was pointed out by Bull,[10] confirmed later by Olivet,[11] and emphasized by Flexner,[9] that apparently normal uninoculated rabbits may show, on examination of the brain, areas of perivascular and meningeal infiltration with mononuclear cells

At Dr Flexner's request I carried out an investigation as to the presence and extent of the brain lesions in laboratory rabbits in the Rockefeller Institute, New York, using a large amount of material that was available at the time[12] In addition to the ordinary stock uninoculated rabbits, brain tissue was obtained from stock rabbits suffering from snuffles and other intercurrent infections such as pneumonia and subcutaneous abscesses, from rabbits injected intratesticularly with *Spironema pallidum*, and from animals inoculated in the testis with a transplantable tumour Four types of animals were thus studied It is to be noted that none of the experimental animals (for the material from which I am indebted to Drs Wade H Brown and Louise Pearce) had been inoculated intracerebrally The total number of rabbit brains examined was 372 The brains were removed whole, and fixed in either 10 per cent formalin or in Zenker's fluid Complete transverse sections of the cerebrum, and also, in most of the cases, portions of fore brain, mid brain, and medulla, were examined The sections were stained with hæmatoxylin and eosin, and, in addition, by Giemsa's method It is probable that this extended and complete examination of the brain accounts for the high percentage of lesions detected

Results of the Microscopical Examination of Brain Material from 372 Rabbits

The lesions found in the brains of these rabbits are characterized chiefly by an infiltration with mononuclear cells, and also in some cases by areas of peculiar localized necrosis The infiltrative changes may be divided, according to the location, into four types (1) perivascular, (2) meningeal, (3) in the cerebral substance, and (4) under the ependyma of the lateral ventricles It is to be noted that several or all of these types may be present together, and, in addition, localized necrosis The perivascular, meningeal, and cerebral types are usually found together, but any of the types may predominate The infiltrating cells are small, round, deeply staining, and mononuclear

1 *Perivascular Lesions*—This is the commonest lesion noted, and is often very striking The infiltration with the mononuclear cells may vary from a single layer to a thick dense sheath, and the cells may also be found in the so-called Virchow-Robin spaces

2 *Meningeal Lesions*—Involvement of the meninges is not quite as frequent as the perivascular, and consists of an infiltration into the pia-arachnoid with mononuclear cells In marked cases there is a broad band of cells on the surface of the brain from which finger-like masses, surrounding the blood vessels, penetrate the brain tissue

3 *Lesions in the Cerebral Substance*—These occur, in order of frequency, intermediate between the perivascular and meningeal lesions, being usually associated with the former There may be a diffuse infiltration with mononuclear cells, or, more often, focal aggregations of cells distributed irregularly

4 *Lesions under the Ependyma*—This is the least common lesion, and may only be found in the fore brain

Lesions with Necrosis—In 15 per cent of the total number of brains examined, localized areas of necrosis were noticed in addition to the infiltrative changes This lesion consists of a necrotic centre surrounded by epithelioid cells, around which is a layer of mononuclear cells The neighbouring blood vessels show perivascular infiltration In Giemsa preparations the necrotic centre sometimes shows protozoan-like structures, named by Levaditi *Encephalitozoon canicoli*, and regarded by some observers as the etiological agent of the lesions

Distribution and Incidence of Lesions

Source of Rabbits	No of Rabbits Examined	Percentage showing Brain Lesions
Transplantable tumour	146	50
Experimental syphilis	82	40
Normal uninoculated stock	52	60
Natural miscellaneous diseases (excluding snuffles)	50	70
Snuffles	42	76
Totals	372	55

From this table it is seen that the lesions of meningo-encephalitis of the types described were present in more than half (55 per cent) of the total number of 372 rabbits examined, and of which none was inoculated intracerebrally The lowest incidence was in the syphilis rabbits—40 per cent , tumour rabbits showed 50 per cent , and apparently healthy stock 60 per cent In the animals suffering from natural miscellaneous diseases such as pneumonia, septicæmia, and subcutaneous abscesses, 70 per cent showed lesions, while in the snuffles group 76 per cent were affected The areas of necrosis were present in 15 per cent of the total

It is thus seen that about one-half of the 372 rabbits showed lesions of meningo-encephalitis, and the recognition of the occurrence of such lesions is of the greatest importance in the interpretation of experimental results based purely on the histological examination of brain tissue The conflicting results of various observers on the transmissibility of encephalitis lethargica to the rabbit is due to the lack of recognition of spontaneous or accidental lesions in this experimental animal The pathological changes regarded by Loewe and Strauss as being diagnostic of experimental encephalitis lethargica in the rabbit, and which are described and illustrated in their various papers, appear to be identical with the lesions found in uninoculated rabbits and in rabbits not injected intracerebrally Therefore their conclusions, which are based solely on the histological examination of the brains of experimental animals, cannot be accepted The work of Kling and his associates is open to similar criticism A comparison of the photographic reproductions of what Kling and his co-workers regard as specific encephalitic changes, with the material here described, shows the lesions to be identical The peculiar necrotic areas which are stated by Kling to be pathognomonic of experimental encephalitis were found in 15 per cent of the rabbits supposedly normal or not inoculated with encephalitis material Kling also states that only 50 to 60 per cent of his inoculated rabbits were susceptible—that is, in which lesions were found These figures coincide with the present finding that 55 per cent of rabbits not inoculated with encephalitis material show similar pathological cerebral changes

Cultivation Tests with Encephalitis and Herpes Virus

The second part of the paper relates to cultivation tests with the so-called virus of encephalitis lethargica and of herpes febrilis.

In the following experiments two strains of the so-called encephalitis virus (Beckley and Leydig strains) and one strain of herpes virus (Hull strain) obtained from Dr. Simon Flexner were employed.

The criteria for establishing the experimental transmission of the so-called encephalitis virus to the rabbit are as follows:

1. *The Period of Incubation*.—This is usually from two to five days after injection, but with weak or attenuated strains periods up to twelve days may elapse before clinical symptoms are noticed.

2. *Symptoms*.—The first symptoms to be noted are elevation of temperature and retention of urine. The former is usually 105° to 106° F., but often reaches 107°, occasionally 108° F. This temperature is sustained throughout the course of the disease until just before death, when it is rapidly lowered and may become subnormal. The retention of urine is a very frequent sign, and may be demonstrated very slight pressure. The animal round the loins and using gently crisping the animal. Then as much as 300 c.cm. of urine may be expressed from the animal. The fever may continue for twenty-four to forty-eight hours, when general symptoms relative to involvement of the central nervous system become evident. The animal is hypersensitive, makes wild dashing movements, which, owing to disturbance of vision are often terminated by the animal hitting the wall or other obstacles. After a few moments of quiescence the animal bends back its head, lifts one or both fore paws off the ground, then stands up on its hind legs and finally falls backwards, forwards, or sideways. Sometimes the animal runs in circles, at other times it may rush forward until it is stopped by some obstacle. Salivation is very frequently observed. The saliva runs freely from the mouth, wetting the fur around the jaws and neck. Grinding or gnashing of the teeth is also very frequently noted. A few hours later the animal becomes weak and paretic, and lies on its side. At this stage the temperature is lowered, and the breathing laboured. Convulsive attack follows, in which the animal dies.

3. *Post mortem*.—The viscera are found to be normal. Care must be taken to exclude pneumonia, rabbit septicæmia, or other affections. The brain usually shows slight congestion. There is no apparent meningitis present.

Cultures made from heart blood, lungs, and brain show no growth in ordinary media, thereby eliminating septicæmia, pneumonia, or meningitis, or other known affections as the cause of death.

4. *Transmissibility*.—The virus from rabbit to rabbit by means of intracerebral injections of suspensions of affected brain can be effected indefinitely.

Cultivation Tests in Smith-Noguchi Medium

The animal was killed in extremis and the brain immediately removed with strict aseptic precautions. The cerebrum was carefully cut into portions about 1 cm. square, and such fragments were added to the Smith-Noguchi medium (fresh sterile rabbit kidney with ascitic fluid, and covered by a layer of vaseline) and incubated at 37.5° C. Cultures were examined at frequent intervals, and films stained by polychrome methylene blue, Gram's and Giemsa's methods. Numerous experiments were done using the three strains of viruses and also employing variations of the Smith-Noguchi technique, but in no instance were any micro-organisms detected. The results of Loewe and Strauss, who claimed to have cultivated minute "globoid" bodies, could not be confirmed. Since no living multiplying agent could be detected, the viability of the viruses in various media was determined in the hope of finding a suitable pabulum for the multiplication of the inoculant.

Experiments using Collodion Sacs

The so-called encephalitis and herpes viruses do not survive for five days when placed with either Ringer's solution or broth, in collodion sacs [illegible] abdominally in the

Survival of the Virus in Anaerobic and Aerobic Media

It is Loewe and Strauss state, the virus of encephalitis lethargica multiplies in Smith-Noguchi medium then *pari passu* the culture should remain active for a long period of time. It was thought that information as to the time the virus can survive in this medium would indicate whether it had merely survived, or had died, or even had multiplied within the cultures, and would thus control the above-mentioned negative result. The viability of the virus was tested by inoculating rabbits intracerebrally with (*a*) the brain fragment itself and (*b*) the fluid surrounding the tissue. In this way the presence of the virus in the fluid medium could be determined and also the length of time the virus remained active in the brain at the height of the disease was inoculated into a series of Smith-Noguchi tubes and incubated at 37.5° C. At intervals of two days a tube was examined for the presence of the virus. The ascitic fluid was poured off, centrifuged at low speed to deposit particles of brain, and a uniform deposit into a young (1,000 gram) rabbit. The piece of brain tissue in the culture was weighed in a sterile capsule and a 10 per cent. emulsion made in normal saline. 0.25 c.cm. of this emulsion being inoculated intracerebrally into a young rabbit. For control similar pieces of brain were incubated in ordinary 1 per cent. glucose broth and inoculated aerobically at 37.5° C. The supernatant broth and fragment of brain were treated and inoculated in a similar manner to the Smith-Noguchi cultures. The experiment was repeated several times with each of the three strains of virus.

Result.—After two days' incubation the centrifuged ascitic fluid from the Smith-Noguchi medium was non-infective, showing that the virus had not multiplied or even diffused into the surrounding medium. The virus, however, was still viable in the brain itself up to the sixth and occasionally the eighth day. The larger the piece of brain the longer the survival. On the other hand, when incubated in glucose broth under aerobic conditions the virus was present in the surrounding fluid, the test dose of 0.25 c.cm. being as active as the fresh virus. Moreover the brain fragments were still infective after twelve days' incubation. The experiments were repeated, the virus being added to these media in the form of ground up emulsion of brain tissue. Similar results were obtained. Virus could not be recovered from the Smith-Noguchi tubes after two days' incubation, showing that it had either been killed or rendered inactive while in aerobic broth the virus was still active after four days' incubation. These results show that Smith-Noguchi medium is not favourable even as the survival much less for the multiplication of the encephalitic herpetic viruses. On the other hand, aerobic broth is much less destructive to the virus which is able to diffuse into the medium and remain alive for six days. Attempts were made to determine what relation the oxygen tension and hydrogen concentration bore to the destruction of the viruses in Smith-Noguchi medium or their survival in aerobic broth. Changes in the oxygen tension and variations of the *p*H between 7.4 and 6.2 exerted no appreciable effect.

Summary

Summarizing therefore normal stock rabbits reveal in a high percentage of cases lesions identical with those described by other workers as evidence of the experimental transmission of encephalitis lethargica.

The results of experimental work in which the histological findings in the brain of the rabbit have been taken as the criterion for a positive transmission of the virus of encephalitis lethargica to that animal cannot be accepted. Contrary to the results of Loewe and Strauss, who claim to have cultivated the virus of encephalitis lethargica by the Smith-Noguchi technique, this medium is not favourable even for the survival, much less for the multiplication of the virus. Aerobic broth is a better medium for maintaining the activity of the virus. These results fail to uphold not only the cultural [illegible]

of Loewe and Strauss, but also that of other workers to identify the encephalitis virus with certain ordinary bacteria

Using an accurate technique, the so-called virus of encephalitis lethargica can be passed from rabbit to rabbit under conditions in which no visible organisms can be detected microscopically or made to grow in culture media

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Memoranda:

MEDICAL, SURGICAL, OBSTETRICAL.

HYDRAEMIC NEPHRITIS

THE following instance of this condition, which came under my care rather more than two years ago, was quite the most severe that I can recall. The case notes exemplify the utility, for clinical purposes, of the classification of nephritis as hydraemic or azotaemic, and may prove of use as indicating the line of treatment to be adopted in cases of the former type.

In March, 1922, Mrs. S., aged 46, who had previously been perfectly healthy, sent for me because oedema of the legs had developed. During the autumn of 1921 she had endured the strain of nursing her husband in a severe illness until his death in December. In January, 1922, she was passing large amounts of very clear urine, chiefly during the night and towards early morning. In February she began to pass water almost hourly, very little at a time, and could hardly retain it. In March the amount noticeably lessened, and the legs began to swell. Very soon afterwards she was acutely dropsical in the legs, arms, face, and conjunctivae, there was severe *oedema of the abdominal* wall and lumbo-sacral regions, and ascites and hydrothorax. She suffered from cough and a choking feeling, and her body was so unwieldy and increased so much in size that she could hardly move in bed. The blood pressure was normal, the systolic pressure being 120 and the diastolic 80. The pulse was quiet and regular, the heart healthy, and the ocular fundi normal. The urine averaged 8 to 12 oz. in the twenty-four hours; it was intensely albuminous, so that, even when diluted by an equal part of water, the albumin filled an Esbach tube to the top mark. The urea concentration test and the diastasic test showed that *the kidneys were dealing with nitrogenous substances normally. The symptoms were therefore due to chloride retention.*

Light diet and diuretics of various kinds, including digitalis, *potassium acetate*, caffeine diuretin, nux vomica, strophanthus, and others, had some effect, since the urine excreted in twenty-four hours rose to 20-30 oz., and by May 15th was 40 oz. The latter figure was reached, however, after all medicines had been stopped for two days. From the beginning of May the protein content of the diet was increased, and fish, eggs, tripe, chicken, bread, biscuits, butter, fruit, tea, and milk were given. During all this time no effect was produced on the general anasarca. No dangerous symptoms developed, but she remained immensely unwieldy and uncomfortable. On May 25th 225 grams of urea were given twice daily, and continued for three weeks; it was then stopped, no appreciable benefit having occurred. The diet was now practically saltless, the bread being specially prepared and other means taken to secure this. At the beginning of her illness, curiously enough, she had a great craving for salt which of course was not gratified. Throughout the illness attention was paid to the bowels, but *even fairly free purgation had no effect.* In short, no real improvement had been obtained by any of the means taken. As the anasarca remained intense, affecting especially *the abdomen and back, the question of pressure on the* kidneys by ascitic fluid and of renal and perineal oedema arose. The urine in June averaged 8 to 12 oz. in the twenty-four hours.

On June 26th I inserted a Southey tube into the subcutaneous tissues on the outer side of each ankle, and kept them in until June 29th. In that time there drained away 23 pints 9 oz. of fluid, and there was a decided diminution of the anasarca. On July 10th I inserted one Southey tube high up on the outer aspect of one thigh and removed it on July 12th, 9 pints 4 oz. of fluid having drained away. Diuretics were then resumed. The patient was easier and was able to sit up in bed. The urine, which had averaged 20 to 30 oz. in the twenty-four hours, rose on July 20th and 21st to 42 and 58 oz., and on July 23rd and 24th to 60 and 74 oz. respectively. Dietetic and medicinal treatment was maintained as before, and her progress was now *steadily good.* By September a mere trace of oedema remained with only slight albuminuria, and by the end of the year she was practically well and performing all her household duties. The cardio-vascular and other systems remained normal. From time to time in 1923 I examined the urine, as also recently, and found it to be perfectly normal in all respects, and the patient in sound health and vigorous.

The dietetic treatment in this case was very different from what it was, say, thirty years ago, when many patients were "drowned" by excess of fluids. No treatment did the present patient any good until the fluid in the tissues was mechanically drained away. I regret that I did *not tap the legs sooner, for recovery began very quickly* after the 32½ pints of fluid were withdrawn. No trouble occurred at the points of insertion of the tubes. The tubes were boiled, inserted through iodized skin, and the whole area was covered with sterile gauze and collodion.

Glasgow R. O. ADAMSON, M.D.

PERFORATED GASTRIC ULCER

THE following account of a somewhat unusual case—namely, perforation of a gastric ulcer, with general peritonitis, in a boy aged 16, with no past history suggesting gastric trouble, and with atypical physical signs—may be of sufficient interest to merit publication.

The patient gave a two days' history of pain extending transversely across the abdomen at the level of the umbilicus. This had not prevented him from working until noon of the day of admission to hospital when the pain had become more severe and he had vomited for the first time. There was no past history of abdominal pain. The face was flushed and the tongue slightly furred, temperature 99°, pulse rate 92. The abdomen did not move well on respiration, the point of *maximum pain was slightly* to the left of the umbilicus. The upper halves of *both recti and* the lower half of the right rectus were slightly rigid. There was no epigastric tenderness, both iliac fossae were *tender, especially the left. There was tenderness on rectal examination, greater on* the left side.

A provisional diagnosis of acute appendicitis was made and I accordingly communicated with Mr. L. E. Barrington-Ward, who requested me to operate. Assisted by Mr. H. Sandeman Allen I opened the abdomen by a right paramedian incision below the umbilicus. General peritonitis was discovered, the peritoneal cavity being full of greenish coloured fluid. Beyond sharing in the general peritoneal injection, the appendix was normal. The incision was accordingly continued upwards and the stomach examined. A small perforation, *surrounded* by an extensive indurated area, was found on the anterior surface of the stomach just below the junction of the middle and right thirds of the lesser curvature. This was invaginated and a piece of omentum stitched over the invaginated area. The wound was then closed, with drainage of the stomach area and of the pelvis. The patient has now made an uninterrupted recovery.

I am indebted to Mr. L. E. Barrington-Ward for permission to publish this case.

A. C. MACONIE, M.B., B.S. *Lond.*

Royal Northern Hospital, Holloway.

SUBMUCOUS LIPOMA OF CAECUM

THE following case seems worthy of record.

Mrs. Y., aged 61, was admitted to the Bedford County Hospital on May 31st, 1924, as a case of appendicitis. The history was that six months previously she had an attack of *diarrhoea*, followed by attacks of abdominal pain and severe constipation. One week before admission she had severe colicky pain and vomiting.

On admission she had definite tenderness and rigidity in the right lower quadrant of the abdomen. Her temperature was 99° F. and pulse rate 90. Without delay the abdomen was opened by right paracentral incision. The appendix was thickened, but not inflamed. The caecum, which felt as if it contained a mass of worms, was opened by an anterior incision and a submucous lipoma found projecting on the posterior wall. The mucous membrane *was incised over the mass* which was then shelled out. The mucous membrane was sutured with fine chromic gut and the caecum closed with a double line of sutures. Recovery was *without incident* and the patient left the hospital on June 18th.

Submucous lipomata of the caecum and colon are very rare. I have seen one previous case, which occurred in a patient of mine, a man aged 44, on whom Sir J. Bland Sutton operated. The case is described in the *Lancet*, vol. i, 1900 (p. 1437). In my case the tumour measured 4 by 2½ inches, and was about one inch in thickness.

Bedford W. GIFFORD NASH, F.R.C.S.

British Medical Association

CLINICAL AND SCIENTIFIC PROCEEDINGS

KINGSTON-ON-THAMES DIVISION

At a meeting of the Kingston-on-Thames Division, held at the Surbiton Hospital on November 11th, a paper was read by Mr FREDERICK HOBDAY, C.M.G., honorary veterinary surgeon to the King and President of the Comparative Medicine Section of the Royal Society of Medicine.

Mr Hobday took as his subject the value of collaboration between the medical and veterinary professions for the eradication of anthrax and tuberculosis using rabies as an example of the value of stamping out a disease from animals, and so abolishing hydrophobia in man. Glanders, similarly, should soon be relegated to the category of diseases which students could only study from textbook descriptions, twenty-five years ago nearly 2,000 horses were destroyed for this disease in the London area, in the present year there had been only one horse destroyed in the whole of Great Britain. Both rabies and glanders were transmitted to man primarily through the agency of an infected animal, and the disease was diagnosable and preventable in these animals only by the trained veterinary surgeon. So long as co-operation between the medical and veterinary professions continued, and legal regulations were loyally observed, neither glanders nor rabies would regain a footing in this country as diseases affecting man.

Passing to anthrax, the lecturer remarked that this also was a disease of animal origin, to be dealt with in the first instance by the veterinary surgeon. The difficulties were greater in this case, since ruminants which were the chief source of the disease, furnished the world with many more useful products than did the horse and dog. Food, hides, hair, wool, and bone manure for land fertilization, were all essential and in everyday use. Moreover the longevity of anthrax spores and vitality of the bacilli rendered it difficult to ensure the safety of land where anthrax carcasses had been buried. Sir John Moore, in a recent paper before the Royal Society of Medicine had illustrated this point from his experience in India, where it had been found that ground so infected could never be used for grazing. The compulsory destruction of such carcases by burning now in force in this country appeared to be the only safe way of dealing with the difficulty. At the International Labour Congress, held in Geneva in 1921 an International Committee had been appointed to consider the disinfection of wool and hairs infected with anthrax, the effective methods of preventing infection among flocks, and the possibilities of dealing with infection by anthrax from hides, skins, and other material. Statistics indicated that infection was often derived from foodstuffs such as cotton-seed and linseed cake, but no way had yet been devised to disinfect these thoroughly without destroying their nutritive properties. With regard to wool and hair, the experimental disinfection station at Liverpool, which commenced work in July, 1921, and through which all such products entering this country had to pass, had proved very successful. The formaldehyde treatment to which anthrax infected wool was subjected there had reduced the danger of infecting the human workers. This station, erected at a cost of over £100,000, could turn out some six million pounds of clean wool annually, and was equally applicable for the disinfection of horsehair, so that a very great improvement had been made during the past two or three years in diminishing the risk of what was once considered an invariably fatal disease. Sclavo's serum—the sheet-anchor in human treatment—was unreliable for animals, and in horses and cattle the disease still remained one of the most rapidly fatal of all microbic diseases. When it could be eradicated from the category of animal infection its abolition as a disease affecting man would automatically follow—another instance of the necessity for close co-operation between the medical and veterinary professions.

In regard to tuberculosis, Mr Hobday pointed out that authoritative statements had assigned no less than 85 per cent. of cases of tuberculous cervical glands in children to a bovine origin, that over 10,000 children died annually owing to tuberculous milk, and that there were fully a million tuberculous cattle in Great Britain. At present, with the exception of certain cities, there was practically no veterinary inspection of cows and cowsheds, even when a cow was detected with a tuberculous udder there was no legal compulsion for the slaughter of the animal, which might be transferred to a neighbour or sold in the open market. A resolution pleading for the reintroduction of the Animals Tuberculosis Order, suspended in 1914 had been sent to the Government by the National Veterinary Medical Association and by many of its branches. Under this Order it was compulsory for an animal with a tuberculous udder to be destroyed, compensation being paid to the owner. Although the destruction of every tuberculous cow would be impracticable at the present time for financial reasons, yet the re-establishment of this Order would prevent much disease in children. In a paper read before the Section of Pathology at the Annual Meeting of the British Medical Association at Glasgow in July, 1922 (reported in the JOURNAL of November 18th, 1922, p. 955), Mr Hobday had drawn attention to a new method of immunization of calves introduced by Dr Nathan Raw, the then president of the Tuberculosis Society of Great Britain and Ireland. In the *Veterinary Journal* for November of this year Dr Raw had published details of the results in a large pedigree herd during the past two years, all the calves had been vaccinated and afterwards tested regularly with tuberculin, and had passed successfully, this being in marked contrast to the former experience of the owner concerned, who had previously found reactions to be numerous. Mr Arthur Payne, of Wivelsfield, had also obtained similarly satisfactory results. In 1921, 50 per cent. of a pedigree herd under his care had reacted to the tuberculin test, in 1923, 15 per cent. reacted, in October, 1923, 10 per cent., in April, 1924, 5 per cent., and in October, 1924, there were no reactions. Dr Raw stated that animals so treated were able to resist invasion by the tubercle bacillus. Mr Hobday felt that the combination of Dr Raw's method of immunizing with the reintroduction of the Animals Tuberculosis Order would stamp out tuberculosis in cattle and be of enormous value in counteracting tuberculosis in children.

At the conclusion of the meeting Dr. W. C. CARVER proposed, and Mr. W. M. GOODMAN seconded, the following resolution, which was passed without dissent:

> That the prevalence of tuberculosis in cattle in this country continues to be a serious menace to the health of human beings and that to counteract this danger the reintroduction of the Animals Tuberculosis Order which was suspended in 1914 is urgently needed.

Reports of Societies.

NON-TUBERCULOUS MENINGITIS

A joint meeting of the Sections of Medicine, Otology, Neurology, and Pathology of the Royal Society of Medicine was held on December 10th with the President of the Section of Medicine, Dr ROBERT HUTCHISON, in the chair.

Dr J. H. THOMPSELL, who opened the discussion on the causes, early recognition, and treatment of non-tuberculous meningitis, said that the extensive practice of lumbar puncture during the past twenty-five years had added greatly to their knowledge of the pathology of these conditions. He regarded the cases classed as meningismus in which the symptoms and clinical signs of meningitis were present yet the cerebro-spinal fluid showed no changes as early cases of true meningitis where the defensive mechanism was sufficient to overcome the infection. The same happy result sometimes occurred in cases of frank meningitis, particularly in those of aural origin with purulent cerebro-spinal fluid. There followed the difficulty of separating the severe and dangerous cases of meningitis from those which would recover practically spontaneously. The symptoms and signs of meningitis were those of cerebral disturbance, headache, vomiting, delirium, coma, together with squints, transient palsies or clonuses, and Kernig's and Brudzinski's signs might all occur in the course of an acute non-meningeal infection. Definite changes in the cerebro-spinal fluid in the direction of increase in albumin and cell

content occurred in cases of focal infection in proximity to the meninges as well as in the meningitis of mumps Apart from the tubercle bacillus and meningococcus, which were omitted from the discussion, nearly every known organism had on occasion been responsible for a meningeal infection, the commonest were the streptococcus, pneumococcus, and *B influenzae*, but *B coli communis*, *B typhosus*, the gonococcus and staphylococci, and various forms of streptothrix also occurred *In most cases there was a primary focus of* infection in the ear, nasal sinuses, bones, or viscera, but *the pneumococcal and influenzal forms of meningitis were* generally primary As to treatment, any primary focus discovered should be dealt with surgically, and in the absence of such focus something could be done by the exhibition of a sensitized vaccine or blood transfusion from an immunized donor Cases of mild streptococcal infection often recovered after repeated lumbar puncture alone

SIR WILLIAM MILLIGAN said that meningitis was a frequent complication of septic middle-ear disease, and that 5 to 6 per cent of all cases of meningitis admitted to his hospital were of otitic origin In the early stages of otitic *meningitis there was little to indicate the onset of the* disease beyond a rise of temperature to 101° to 102° F, with perhaps a rigor, later the signs of cerebral pressure became manifest Meningeal infection began in the immediate neighbourhood of the primary focus, hence the impor*tance of performing a radical mastoid operation, even in* acute cases, in order that all the usual paths of infection might be carefully scrutinized, this in itself was often sufficient to ward off an impending meningitis SIR William Milligan considered that three types of otitic meningitis should be differentiated (*a*) the serous with a sterile, though often turbid, cerebro-spinal fluid (meningitis benigna), (*b*) a type in which the cerebro-spinal fluid was rich in cellular contents but showed no visible organisms (meningitis semi-maligna), (*c*) a type similar to type (*b*), but with living organisms present in the fluid (meningitis maligna) An accurate diagnosis of the type of meningitis, upon which the prognosis was dependent, could only be made by an examination of the cerebro-spinal fluid The fluid should, when possible, be obtained from the immediate neighbourhood of the primary focus, since that obtained by lumbar puncture might exhibit less marked changes Cases *of meningitis serosa usually recovered, but the prospects of* recovery in meningitis semi-maligna or maligna (for the latter was usually the *end-result of the former*) depended upon the success obtained in providing sufficient drainage *of the subarachnoid space* and cisternae, as well as the removal of the primary *source of infection* When the symptoms suggested implication of the cisterna pontis the dura in the neighbourhood of infection should be exposed and punctured, and the fluid examined *If* organisms were found in the fluid drainage should be provided by tubes or *strands of gauze In the cases where labyrinthitis* was the primary source translabyrinthine drainage was the operation of election In advanced cases of leptomeningitis the prognosis was extremely grave *Post-mortem* examination showed that the cisternae were invariably infected, and suggested that in the treatment of this condition efforts should be made to drain the cisterna pontis, the cisterna basalis, and the cisterna magna In conclusion, SIR William Milligan urged that operation should be undertaken in all cases of septic meningitis of otitic origin, in the past many lives had been lost by regarding the condition as hopeless, and operation, in consequence, uncalled for

DR C WORSTER-DROUGHT pointed out that syphilitic meningitis, *which might supervene within a few months of* the primary infection, gave rise to similar symptoms and changes *in the cerebro-spinal fluid to those of tuberculous* meningitis, from which it might be distinguished by the *Wassermann reaction and the results of treatment*, since the prognosis in syphilitic meningitis was very good He had seen meningitis connected with the ear, nose, and throat (1) after nasal operations, (2) secondary to intranasal or sinus disease apart from operation, (3) following wounds of the jaws, (4) secondary to suppurative otitis media In one remarkable case of meningitis associated with *B fusiformis* no primary focus was found at the *post-mortem* examination other than pyorrhoea alveolaris He considered the following to be the most valuable signs

1 *Rigidity of the posterior cervical muscles*
2 Kernig's sign
3 The pulse temperature ratio—a comparatively slow pulse associated with high temperature
4 Delirium or stupor with irritability
5 In infants, bulging of the anterior fontanelle

Head retraction he regarded as useless as a sign, and Brudzinski's sign as of less importance than Kernig's No reliance could be placed upon the reflexes for early diagnosis, but intense mental irritability accompanied by stupor was a valuable sign The diagnosis could, of course, only satisfactorily be established by examination of the cerebro spinal fluid Two principles governed the treatment of all forms of non-tuberculous meningitis (1) the establishment of efficient drainage of the meningeal exudate, and (2) the application of a specific immune serum as closely as possible to the inflamed tissues The first could be attained in most cases by repeated lumbar puncture, but in a few cases puncture at a higher level was called for, either in the cervical region, or puncture of the cisterna magna, sphenoidal puncture through the orbit, or puncture *of the lateral ventricles The second principle required the* daily introduction of serum into the subarachnoid space by lumbar puncture, since, if administered intravenously, *the immune serum did not reach the cerebro-spinal fluid in* any appreciable concentration

DR J G GREENFIELD spoke of the difficulties of the pathologist in dealing with the cerebro-spinal fluid obtained from suspected cases of meningitis, since there were a multitude of tests and reactions and only a limited quantity of fluid The problem was to attempt to arrive at a diagnosis and prognosis in two types of case first, those yielding a clear fluid yet exhibiting signs and symptoms of meningitis, and secondly, those in which there was a purulent exudate without signs of the disease, this latter being the more difficult, especially in cases associated with an sinus empyema The prognosis in *the latter type depended* on whether the pus under the dura was localized or not, and could be to some extent gauged by the presence or otherwise of organisms and their nature When a virulent streptococcus was the cause the outlook was very bad, in the case of other organisms it was better He regarded the protein and sugar contents of the fluid as of little *prognostic value*, but the chloride content was of the greatest significance Normally this was about 720 to 770 *mg per* 100 c.cm A figure of 630 to 690 indicated the danger zone, in which the patient might be expected to succumb to *generalized* meningitis, whereas the speaker had never known a patient to die in whom the figure remained within normal limits Craniotomy invalidated this test, which indicated the increased permeability to sugar of the inflamed meninges

MR W M MOLLISON, who discussed the subject of *meningitis of rhinogenic origin*, said that such cases might occur as the result of direct violence at operation, but more often the meningitis was a sequel of some intracranial complication of nasal disease such as pachymeningitis, cerebral abscess, cavernous sinus thrombosis, or osteo-myelitis of the frontal bone Infection might spread from the nose to the meninges (*a*) through gross lesions of the cribriform plate, (*b*) by direct spread or osteo-phlebitis, in which organisms had been traced in the vessels passing *through* bone which might appear to be normal, (*c*) by venous spread *following thrombosis* to the cavernous sinus and duræ viæ (1) the ophthalmic vein, (2) the spheno-palatine vein, (3) the veins from the nose to the superior *longitudinal* sinus, and (4) the diploetic veins, (*d*) by lymphatic spread, probably a fairly frequent route after nasal operations, since it had been shown that lymphatics run with the fibres of the olfactory nerve After a brief consideration of non-operative rhinogenic cases of meningitis, MR Mollison passed to the consideration of the operative cases, and quoted extensively from the literature on the subject Almost every variety of intranasal operation had been responsible for meningitis, operations upon the ethmoid being the most frequent cause Though the prognosis of post-operative meningitis was extremely bad, a few cases of recovery had been reported The speaker himself had

been fortunate in having only one fatal case, and two recoveries. The diagnosis did not differ materially from that of meningitis of otitic origin and the changes in the cerebro-spinal fluid were similar. Treatment was of little avail, particularly in post-operative cases. It therefore behoved a surgeon to take all possible precautions. His own rules were: (1) never to operate when the patient had an acute cold, (2) if possible, to open all sinuses containing pus at one sitting, (3) never to leave plugs in the nose for more than twelve hours, (4) to treat the middle turbinal with care, and (5) to avoid the olfactory sulcus.

Mr W. STUART-LOW, Mr C. I. WEST, Dr D. V. NAVARRO and Dr W. L. C. DICKSON also spoke, and the PRESIDENT commented on the value of the discussion.

SPLANCHNIC ANALGESIA

At a meeting of the Section of Anæsthetics of the Royal Society of Medicine on December 12th, Mr O. S. HILLMAN read a paper on splanchnic analgesia.

Mr Hillman stated that Crile's method of anoci-association, which aimed at cutting off nerve stimuli and sensations by means of local infiltration of the area to be operated upon, had its limitations, and perhaps also its disadvantages. The method to be described was regional splanchnic block, the splanchnic nerves on each side being reached by the posterior route, the needle was inserted below the twelfth rib at the level of the first lumbar vertebra, and at a distance of 7 cm. or four fingerbreadths from the middle line of the spine. The needle was inserted through a wheal in the skin if the patient was conscious, but if not it was pushed in direct, in a forward, inward, and slightly upward direction at an angle of 45 degrees with the median body-plane to a depth of about 9 cm., when it should reach the body of the first lumbar vertebra near its anterior convexity, in front of the intervertebral foramen and behind the splanchnic nerves. After striking the bone, which should be effected with gentleness lest the point of the needle be injured, the needle was withdrawn until its point lay in the subcutaneous tissues, and was reintroduced at a smaller angle to a point 1 cm. deeper than the spot first reached. The syringe was then applied to the needle, and aspiration was attempted in order to ensure that the needle was not in the lumen of an artery or vein. A solution of 1 per cent. novocain was then inserted, and in no case was more than 5 oz. of the solution used. About 1 oz. of solution would be necessary for each side of the body. The peripheral nerves were then dealt with either by paravertebral or by abdominal blocking. It was usually advisable to administer a general anæsthetic, but a minimum would suffice. The advantages of the method were (1) small respiratory excursion, (2) complete anæsthesia, (3) absence of straining when there was traction of sensitive parts, and (4) marked reduction of shock. The disadvantages were: Some twenty minutes was added to the length of the operation and there was a possibility in a lengthy operation that the field block might pass off. The advantages to the patient were that very little general anæsthetic was necessary, shock was reduced to a minimum, respiratory fatigue was abolished, there was no impairment of the general condition of the patient when the effect of the anæsthetic had passed off, there was little danger of respiratory complications following the anæsthetic, and there was usually less post-operative pain. The only disadvantages were occasional flatulent distension of the bowels, and headaches in a few cases as sometimes occurred after spinal injections. Mr Hillman showed photographs of the cadaver to illustrate his technique and a number of pulse and blood pressure tracings. The latter demonstrated the fact that a fall of blood pressure occurred about twenty minutes from the commencement of the injection, and that this effect gradually diminished, so that at the end of the operation the pressure had attained or was rising to the level at which it stood prior to injection. The tracings showed also that the pulse rate did not rise in proportion to the fall of blood pressure, but remained fairly constant. The total number of cases operated upon was 48, of which 26 were for gastrectomy. The mortality was 7 cases, of which 2 had had a partial gastrectomy performed.

Mr R. F. APPERLY then read a paper describing 43 cases of splanchnic analgesia, with a mortality of 5. Of the total operations 17 were gastrectomies, and three of these patients died. He agreed with the previous speaker regarding the advantages and disadvantages of the method. While he considered it preferable that a general anæsthetic should be given in addition to the block anæsthetic, the condition of the patient was sometimes so desperate that a general anæsthetic had to be avoided. In these cases a preliminary injection of morphine gr. 1/4 and scopolamine gr. 1/100 was administered one and a half hours before operation and followed by a second injection of morphine gr. 1/6 and scopolamine gr. 1/200 half an hour before the block analgesia was given. In the cases where a general anæsthetic was used the preliminary injection consisted of morphine gr. 1/6 or 1/4 and atropine gr. 1/100 half an hour before operation. The general anæsthetics he preferred were gas and ether, or a mixture of chloroform and ether. In view of the preliminary fall of blood pressure he advised that care should be taken to avoid raising the shoulders. Since regional blocks could not be hurried he emphasized the necessity of co-operation between surgeon and anæsthetist. It was necessary that the surgeon should indicate clearly the area within which he proposed to operate, and that he should confine his manipulations to the anæsthetized area unless he had warned the anæsthetist to deepen the general anæsthesia. Great care should be taken in moving patients after this type of anæsthetic. It was possible to reduce considerably the amount of novocain used, and it was perhaps best to do this by reducing the strength of the solution. Satisfactory anæsthesia could be produced with 1/2 per cent. solutions. In addition to the disadvantages mentioned by Mr Hillman there were two others. Patients complained sometimes of backache, and Mr Apperly had also encountered cases of regurgitation of the stomach contents when that organ was manipulated by the surgeon. If possible, in these cases a stomach tube should be passed and the stomach washed out, but this was sometimes difficult owing to the light general anæsthesia used. He had never seen any sequela to this accident.

Mr GORDON TAYLOR, whose patients supplied the majority of the cases under review, fully concurred with these observations, and said that the method had enabled him to perform successfully operations which he felt sure would have been fatal if performed under general anæsthesia alone. Only one patient had developed pulmonary symptoms, from which he died, and in no other case were previously existing chest troubles aggravated by the anæsthetic used. The method was a distinct advance in the art of anæsthesia, it was one which anæsthetists should take up, since the surgeon had enough responsibility already, and it was not possible in the same case to have two anæsthetists—one for the general anæsthesia and one for the block analgesia.

Mr STANFORD CADE had employed this method in some fifty cases and always used a 1/2 per cent. solution. He emphasized the danger of novocain poisoning if even small quantities of the drug entered a vessel. Palpitation and cyanosis were the preliminary signs of poisoning, and if the drug passed into the circulation there was immediate apnœa. He showed a number of tracings from animals demonstrating the effects of injecting novocain into the circulation. In all cases the result was death even when such small amounts as 20 minims were injected. He added that this was a quick and painless method of destroying animals.

Dr HUGH PHILLIPS asked what was the average duration of block anæsthesia. Dr C. F. HADFIELD asked whether splanchnic analgesia lasted longer than abdominal block analgesia, and whether fatter patients could be dealt with according to the measurements given by Mr Hillman when inserting needles to definite depths. He also wished to know how this form of analgesia appealed to private patients. Dr LANGTON HEWER had so far tried the method in nineteen cases, he had found that the average pulse rate in these was only 91, and that shock was much diminished.

Dr J. BLOMFIELD was glad that no speaker had mentioned the addition of adrenaline to the novocain solution. He advocated abolishing the use of this dangerous drug

DR HOWARD JONES asked whether blood was ever withdrawn after inserting the needle DR H W FEATHERSTONE inquired if weakening of the diaphragm or massive collapse of the lung had ever been observed after splanchnic analgesia

MR HILLMAN and MR APPERLY replied to the questions The duration of analgesia was from one and a half to two and a half hours The abdominal block was less persistent than the splanchnic, possibly because of the better circulation of the abdominal muscles, and partly because it was more difficult to ensure adequate analgesia of the nerves of the abdominal wall owing to the indefiniteness of the landmarks The fatness of a patient did not render the method much more difficult, since the landmarks mentioned had to be found, and it was not hard to make allowances for the depth of tissues to be traversed before reaching the landmarks Since in most cases an inhalation anaesthetic was given in addition to the block analgesic, private patients had no objections to the procedures adopted On several occasions blood had been drawn into the syringe when aspirating prior to injection

MEDICO-CHIRURGICAL SOCIETY OF EDINBURGH

A CLINICAL meeting of the Medico-Chirurgical Society of Edinburgh was held on November 19th, SIR DAVID WALLACE, the President, in the chair Among the many cases shown were the following

MR QUARRY WOOD showed a patient of 21, from whom a sarcoma of the proximal end of the humerus had been successfully removed by interscapulo thoracic amputation by the posterior method introduced by the late Mr Littlewood

SIR NORMAN WALKER showed a patient with leprosy, whom he had previously exhibited to the society, to demonstrate the remarkable progress she had made under treatment by a vaccine prepared from one of the excised nodules He also demonstrated a series of cases of lupus in all stages of chronicity to illustrate the excellent results obtained by the use of artificial sunlight, far in excess of those from any other treatment he had tried The healing scar tissue was softer and more pliable than that produced by any other method, and was therefore practically painless

SIR HAROLD STILES showed two cases of resection of the ileo caecal region for tuberculosis The first patient was a woman, aged 35, who had a chronic apical lung lesion About six months ago an anastomosis was made between the transverse colon and ileum owing to there being symptoms of chronic obstruction, and six weeks ago the resection was performed The second patient was a girl, aged 20, a farm worker Five years ago resection of the ileo caecal region and proximal colon was performed for hypertrophic caecal tuberculosis, probably of bovine origin She also had had an anastomosis made for chronic obstruction three months before the resection operation She looked the picture of health, and there was no lung lesion He also showed a lad, aged 17, one month after an operation for tuberculosis of the thyroid causing much suffocation from tracheal pressure The appearance at first sight suggested a malignant condition, tracheotomy was necessary

PROFESSOR LOVELL GULLAND showed a female patient with pellagra, and described the etiology of the disease and its essential clinical features This patient developed the symptoms during a "strike" time in the village where she lived, what little food she got consisted of small quantities of bread and margarine She still had a sallow appearance, but was vastly improved in health

MR SCOT SKIRVING showed again to the society a case of marked depressed fracture of the occipital bone with effusion of cerebro spinal fluid Three further aspirations had been necessary, and a month ago half an ounce only of cerebro spinal fluid was removed There had been no general or focal symptoms of any kind, and the aspirations had caused no faintness or headache He also showed a girl, aged 3, who swallowed a hatpin about 2½ inches long The pin had perforated the duodenum, and its point was impacted in the cortex of the kidney its track was covered with plastic peritonitis The pin was removed by operation and demonstrated to the society, with an x ray photograph of it in the abdomen

DR ROBERT A FLEMING showed a man, aged 60, with neuro fibromatosis of wide distribution involving symmetrical areas of the fifth cranial nerve, nerves of the scalp, cutaneous nerves of the arms, intercostal nerves, and the cutaneous nerves of both thighs There were no lesions below the knees, and nearly all the lesions were sessile A section of one of the tumours was shown to be almost entirely fatty in nature The relationship between neuro fibromatosis, von Recklinghausen's disease, and molluscum contagiosum was discussed.

DR DOUGLAS GUTHRIE showed a man, aged 35, after total laryngectomy for epithelomata of the larynx A preliminary tracheotomy, together with the removal of a portion of the tumour, was effected under local anaesthesia, and the later removal of the larynx was performed under general anaesthesia Small drains were inserted at the extremities of the lateral flaps, the wound being sutured at the operation The patient was fed by a nasal tube kept in position for three weeks

MR GEORGE CHIENE showed a male, aged 18, suffering from elephantiasis of the left leg and scrotum The patient had never been out of Scotland In 1914 he received an injury to the knee joint, and the limb was in plaster for six months, the joint was excised later In 1921 swelling of the leg began, and spread up the limb, involving the scrotum In December, 1923, the tensor fasciae latae was exposed and three long strips of the ileo tibial tract were cut, their bases being left intact One was brought up on to the under surface of the abdominal wall, and the others embedded in the muscles of the thigh Great reduction of swelling followed

MR J N J HARTLEY showed a miner, aged 52, admitted with symptoms of concussion following a cycling accident He regained consciousness on the third day, and seemed to be making good progress till the tenth day, when twitchings followed headache and drowsiness On the next morning a severe spasm occurred, affecting the whole body The patient became unconscious, and developed complete paralysis of the left arm and leg and the left side of the face A right temporal exploration disclosed a subdural clot extending over the cortex throughout the area exposed in the temporal fossa, a little turbid fluid was withdrawn A film was made of this fluid part of the clot, and among the polymorphs were found a few minute Gram positive cocci The patient made a satisfactory recovery

DR CHALMERS WATSON showed a case of disseminated sclerosis of five years' standing The patient had twice been in hospital before, and had been discharged with slight improvement Since June, 1924, steady deterioration had set in, and before his admission to Dr Watson's wards he had been unable to stand or walk, he was later confined to bed or a chair He was treated by Dr Watson's method of combating auto intoxication, and already showed marked signs of improvement He was still very tremulous, but was able to stand alone with the help of a stick

DR W T RITCHIE showed (1) A case of acromegaly The patient, aged 28, was 6 ft 6 in in height and weighed 217¾ lb He showed the features of gigantism characteristic of over activity of the anterior lobe of the pituitary Before epiphyseal union in the long bones was complete, and acromegaly, the result of the same hypophyseal disturbance after ossification of the epiphyses He had suffered much from headaches between 11 and 16 years of age Dr Traquair at that time had detected some bitemporal hemianopia, which had not progressed (2) A case of Erb's paralysis in a man, aged 29, who had been struck between the neck and shoulder by a sandbag in the trenches in 1916 Six months later symptoms began with the finding that he could not handle his rifle properly

DR CHARLES MCNEIL showed (1) A case of pyloric stenosis in a boy, aged 5 months, illustrating the importance of establishing the diagnosis early while the child was being breast fed The diagnosis was made when the child was a month old, at the first examination, lavage twice daily was instituted and breast feeding continued Progress had been slow, but quite steady (2) A case of interlobar empyema after pneumonia in a child, aged 7 years 11 months Repeated puncture in the lower axillary region was negative, but finally pus was obtained in the third interspace in the mid axillary line Five ounces were withdrawn and a cannula inserted, which was removed two days later because only serous fluid was being discharged Radiographs illustrated the gradual disappearance of the lesion, and the final photograph showed complete resolution

MR FRANCIS E JARDINE showed a case after operation for a retroperitoneal strangulated hernia, 28 inches of gangrenous small intestine were removed, beginning about 1½ inches above the ileo caecal junction Inside the resected bowel a sarcomatous tumour was found, which was, no doubt, a factor in causing the hernia

MR PIRIE WATSON showed a man, aged 68, after operation for the removal of a very large omental cyst which had caused singularly few symptoms The tumour was too large to remove despite a large incision, and a trocar was passed into it, allowing 1½ gallons of haemorrhagic fluid to be withdrawn The pathological report by Dr James Davidson indicated that it was a malignant endothelioma with invasion of the cyst wall, and a bacteriological examination by Dr McCallum showed the presence of *B coli* It was probable that the cyst had been of long standing, and had only recently taken on malignant features

MR J J M SHAW showed a man, aged 28, who received a shrapnel wound of the thigh in 1918 He came to the out patient department complaining of pain in the lower part of

the thigh, and on x ray examination nine and a half sewing needles were found in the left thigh It appeared that he had put a new housewife into his trousers pocket shortly before being wounded and the needles had presumably been blown into the limb, becoming dispersed in the muscles

A MEETING of the Plymouth Medical Society was held on November 25th the President Mr C L LANDER, in the chair Mr C HAMILTON WHITEFORD read a paper on some unusual surgical cases The list of cases was Death in convulsions during chlorotorm anæsthesia intraperitoneal rupture of the bladder, epithelioma of the penis following incomplete circumcision exstrophy of the bladder in an adult, failure of union between the vas deferens and the testicle, epithelioma of the tongue in a woman of 25 adenoma of the umbilicus, enteric spasm of the small intestine involving a long segment of bowel strangulation of the descending colon in a right femoral hernia sarcoma of the rectum, carcinoma of the rectum occurring simultaneously in husband and wife complete tear (non obstetrical) of perineum, causing rectal incontinence pyophlebometra A discussion followed, in the course of which Mr H E VELLACOTT and Mr J W G H RIDDEL mentioned a case of two girl friends of 18 and 21 who had occupied the same bed and were both found to be suffering from carcinoma of the rectum

Reviews.

PNEUMONIA

At the time of the late Dr R MURRAY LEIPER's death in March, 1921 it was stated in our columns (1921 i 548) that he had completed a work on pneumonia and its modern treatment for the Oxford Medical Press Dr J BROWNING ALEXANDER has now revised and edited the posthumous book and brought it out under the title *Pneumonia its Pathology Diagnosis Prognosis, and Treatment*[1] From the editor's preface it appears that in the original form of the work much more importance was attached to vaccine treatment than the author would probably have thought judicious had he survived to the present day, accordingly much that was then written has been modified or omitted and considerable additions have been made in the chapters dealing with bacteriology It may be said at once that the result of Dr Browning Alexander's editing has been successful, and that there is thus provided a good general review of pneumonia and bronchopneumonia with evidence of wide reading and numerous quotations from the writings of others, including the author's three chiefs ' at the Brompton Hospital for Consumption and Diseases of the Chest—Dr J Mitchell *Bruce, Sir James Fowler and* Dr *Percy Kidd—to whom* it is piously dedicated The ground covered is large, and it is convenient to have the subjects—which are included of course, in textbooks and treated individually in scattered papers, but seldom made the object of a monograph—between the covers of a well printed volume

In addition to ordinary pneumonia, there are chapters on influenzal pneumonia, pneumonia in children and surgical (post-operative) pneumonia The account of the lung complications of influenza appears to be based largely on the discussion that took place at the Royal Society of Medicine in November, 1918 and it might have been well to have referred, especially in the sections on the vexed question of the bacteriology and on the morbid anatomy to Dr Crookshank's *Collected Essays on Influenza* (1922) and to the reports from the American camps, particularly to those by W G MacCallum and E L Opie It is, of course, difficult to include every opinion, but it may be noted that the late G A Gibson's attractive dictum (1908) that the arterial blood pressure expressed in millimetres of mercury should not fall in pneumonia below the pulse rate expressed in beats per minute has, even with the admitted exceptions, hardly met with universal confirmation for Newburgh and Minot (1914) in America, and Geoffrey Evans (1920) in this country, have found that the blood pressure was higher in the fatal than in the surviving cases of pneumonia The account of the treatment of pneumonia is commendably full, and contains a good description of the use of digitalis, the observations justifying its employment, made at the Rockefeller Hospital, New York, being quoted, strychnine is also recommended, in spite of some adverse opinions, as of great value in a failing heart and falling blood pressure The uses and common mistakes made in the technique of oxygen inhalation are discussed in a thoroughly practical manner

In conclusion it may be said that this work will serve as an extremely useful source of reference to medical practitioners

[1] *Pneumonia its Pathology Diagnosis Prognosis and Treatment* By the late R Murray Leiper M A B Sc M D Edited and revised by J Browning Alexander M D M R C P Lond London William Heinemann (Medical Books) Ltd 1924 (Demy 8vo pp xiv + 351 Ls 6d net)

THE PRINCIPLES OF BIOCHEMISTRY

OPIE, when questioned said he mixed his paints with brains, the author of *Principles of Biochemistry* may be said to have mixed his with philosophical common sense The result is very satisfactory, for we have a series of essays on the various aspects of vitality rather than a catalogue of unrelated statements about chemical substances Professor BRAILSFORD ROBERTSON uses his chemical knowledge to interpret function rather than isolate from each other in two watertight compartments all he knows about chemistry and physiology respectively

The author's treatment of the part played by inorganic substances in the body may be cited in illustration of this *Instead of an enumeration of the inorganic salts in the* tissues, blood, and urine, we have in Chapter II an illuminating account of the physiological importance of water, sodium chloride, calcium and iron And the treatment is not elementary, it is taken for granted even so early in the book that the reader is familiar with nucleo-proteins, "haematogen," scurvy anæmia chlorophyll, and selective absorption in the thyroid Nor does this exhaust the subject, for under the heading Effects of the disturbance of the inorganic environment" the author later on returns to his thesis of the enormous importance of inorganic materials Professor Robertson quite candidly announces that in order to comprehend the biochemistry of to-day the student must have had some training in the use of the differential and of the integral calculus and have read something on the method of least squares, the theory and practice of interpolation, the theory of statistics and the conception of probability The sections into which new matter has been incorporated since the first edition are those on—neutrality of the blood metabolism in diabetes, and the biochemistry of growth Certain subjects are now treated for the first time these include the relation of growth to diet, the racemized proteins, the nucleic acids, and the inclusion of the environment in evolution

The chapter on "Chemical correlations" instead of being a summary of other people's work on the internal secretions is a masterly survey of the whole field of endocrinology but we are surprised to find only the barest reference to insulin, a substance fully proved to be of the highest importance for carbohydrate metabolism and one discovered, to boot, in Professor Robertson's old University of Toronto

The second part of the book is wholly occupied with a valuable discussion particularly illuminating for all students of physiology At the same time no artificial line is drawn between the facts of physiology and pathology, so that we find such subjects as the production of antiserums and the theory of antigens ably treated Where so much else is to be found in this large volume, we are disappointed to note that certain topics are virtually ignored these include filtration through compressed clay filters the reducing powers of the tissues, and latent life Rectal feeding is not fully discussed Even so original a writer as Dr Robertson does not attempt to deal with the problem of the reality of nerve energy surely in the last analysis a chemical one This is the more curious as he does treat of sleep and memory It seems to us that phase" is a better term than cycle" to describe the waves or oscillations on the curve of the growth of the individual, and we also think that of the two phrases inertia" or lag" (on page 555) the former, when referring to functional or physiological inertia, is to be preferred

[2] *Principles of Biochemistry for Students of Medicine Agriculture and Related Sciences* By T Brailsford Robertson Ph D D Sc Second edition London Bailliere Tindall and Cox 1924 (Roy 8vo pp xii + 796 57 figures Ls net)

The text is not interrupted by footnotes, but all the titles of papers referred to are classified in a convenient fashion at the end of each chapter The illustrations mainly consist of curves, but there are one or two excellent photographs of cases of disordered internal secretion

There are two indexes—one of subjects and the other of authors

The printing is excellent, and the use of heavy type to indicate topics under discussion has much to commend it, but the paper is so heavy that the book cannot be held in the hand without fatigue

MENTAL NURSING

IN addition to the regular course of instruction given to the staff of The Retreat, York, it has been the custom for some years to ask well known psychiatrists to give addresses at the hospital on topics connected with mental nursing These lectures, fifteen in number, have now been arranged and edited by DR BEDFORD PIERCE, and published in a volume entitled *Addresses to Mental Nurses*[3] Perhaps the most noteworthy feature of these addresses is the atmosphere of idealism with which they are permeated Nearly all the speakers emphasize the fact that the care of the insane, which is certainly one of the most exacting and difficult tasks which anyone can undertake, requires not only technical knowledge but a spirit of service as well Several of the addresses, indeed, are largely concerned with a study of the character traits which are an essential part of the equipment of those who aspire to be successful mental nurses

We regard this book as an important addition to the literature of mental nursing It is a work which every mental nurse would do well to possess as a supplement to the ordinary textbook, for not only does it furnish a great deal of practical information, but it encourages an attitude of optimism and hopefulness in a sphere of activity which is liable to provoke despondency Five of the contributors to this volume—namely, Dr David Yellowlees, Sir Thomas Clouston, Dr Charles Mercier, Sir George Savage, and Dr James Middlemass—have died in the last few years, and it is satisfactory to know that their teaching will still continue to inspire the work of the present and coming generations of mental nurses

INDUSTRIAL FATIGUE

MUCH interest has been taken in recent years in the study of fatigue, especially in relation to problems of industrial efficiency Numerous tests of fatigue have been proposed and practised They are of two categories One set of tests is concerned with the study of fatigue in the individual, and includes both physiological and psychological tests The other is concerned with fatigue in the mass, and is based on deductions made from industrial phenomena which may be looked on as representing the total individual fatigue reactions Dr DHERS, who has written a small book entitled *Les Tests de Fatigue*,[4] is sceptical of the practical value of fatigue tests He does not consider that the sensation of fatigue is in any way a reliable index of the presence of real fatigue

In the first part of the book we have a detailed consideration of the several tests in use Dr Dhers is a keen critic and indicates many fallacies in them In the second part, after enumerating the many factors productive of fatigue in industrial work, he goes on to consider its supposed sequelæ (diminished output, etc) Dr Dhers contends that the value of such methods of inquiry is limited, and deprecates hasty conclusions He considers that the problem of fatigue tests is essentially limited by our ignorance of the underlying biological phenomena

Dr M H PIÉRON, Professor of Experimental Psychology in the University of Paris, in an excellent preface, deservedly congratulates Dr Dhers on having set out clearly the real problems involved Thus only can real progress be made

[3] *Addresses to Mental Nurses* Edited by Bedford Pierce, M D Lond, I R C P Lond London Baillière, Tindall and Cox 1924 (Demy 8vo, pp 288 7s 6d net)

[4] *Les Tests de Fatigue Essai de critique théorique* Par Dr Victor Dhers Préface de M H Piéron Paris J B Baillière et Fils 1924 (Roy 8vo pp xii + 185 Fr 14)

A FAITH-HEALING NOVEL

NOT a few eminent authors have had a medical training when young But it is rare to find a busy medical man who is also a novelist Professor F E WYNNE, M O H Sheffield, is one of those who combine the two occupations, and following his earlier novel, the *Mediterranean Mystery*, he has now produced *Digby's Miracle*[5] The subject of the book is appropriate to the present time when newspaper columns are filled with the marvels of faith healing, and it is perhaps useful that the cold douche of comedy should be applied, by one who has been trained in medicine, to the fiery enthusiasm of faith healers Margaret Hesford, who had been stricken with paralysis at the age of 12 years, is 20 when the novel begins During the eight years that she had lain in bed she had become the local saint of the uninteresting village of Kinderwell Into this village there comes the young Dr Digby, compelled by lack of means to abandon his ambition to do research work in a London hospital He discovers that the paralysis is simply hysterical, but is faced with difficulty in adopting treatment —difficulty due partly to the inconvenience of destroying in a moment the saint's reputation in the small village, but arising even more out of pity for the girl's mother, one of the few unselfish characters in the book, who has slaved for eight years in her daughter's interest In this dilemma the doctor hits upon the idea of making a miracle of the cure, the patient is carried in her spinal carriage to a disused well, labelled for the occasion St Kilda's Well, with a suggestion that from it the village derived its name, and with a glass of water from this well an immediate cure is effected Unfortunately, Dr Digby's ingenuity leads him into a series of troubles the prickings of conscience, love-making, and later hate on the part of his patient, and, most embarrassing, booming of the miracle by the press throughout the country Kinderwell is thronged by the sick, further miracles are reported, the fame of the cures spreads publicans, Jews, reporters, and a disreputable ex gaol bird of a revivalist who starts the singing of hymns at the well, all take a hand in the organization of the healing business Dr Digby ends by falling in love with a charming female reporter, whose disillusionment is great when she learns all about the doctor's deception But the *deus ex machina* in the shape of Lord Altadore, the landowner of Kinderwell, sets matters right, and finally disposes of the miracle working well by sending for geological experts, who successfully drain it away

The story is amusingly told, but perhaps is almost overladen with cynicism The character of the paralysed girl puts a strain upon one's credulity Professor Wynne appears to suggest that she knowingly practised fraud from the age of 12 Her proceedings when cured are by no means saint-like But it is difficult to believe that after lying in bed for eight years she should have been able, at the age of 20, so to impress a Jew film producer with her powers as an actress that he forthwith engaged her for a cinema production Possibly Professor Wynne wished to eliminate an undesirable aspirant for Dr Digby's love in favour of the later introduction, the reporter Lucretia Bourne The author's style and views may perhaps be illustrated by such remarks as these "Nationalization would divert the profits from one set of pockets to another" "Talking politics is generally a swopping of catchwords" "As far as I can make out, 'democracy' is a system of counting heads and ignoring their contents"

NOTES ON BOOKS

AT the age of 87 Dr W W KEEN of Philadelphia has produced his "Religio Medici" under the title *Everlasting Life*[6] As a boy Dr Keen was brought up a member of the first Baptist Church His imagination was affected by prophecies of the "second Advent," which was to occur in 1843 and usher in the millennium The excitement caused by these prophecies was intensified by various unusual appearances in the heavens—mock suns and the great comet of 1843 But as he grew older his idea of a revengeful God became modified, and building on a text which he describes as the

[5] *Digby's Miracle* By Fred E Wynne London Herbert Jenkins, Ltd 1924 (Cr 8vo pp 310 7s 6d net)

[6] *Everlasting Life A Creed and a Speculation* By W W Keen M D LL D London J B Lippincott Company 1924 (Cr 8vo pp 85 4s 6d net)

glorious Christian Magna Charta, he gives his views of the essentials of Christian belief. Without disputing the faith of those who think otherwise, Dr. Keen finds no demand for belief in a miraculous virgin birth. To him Nature is only another name for God. He regards the Incarnation and the Atonement as essential to faith, which to him is as much a normal function of the human mind as is logic. Being convinced of immortality the author concludes with a speculation on "How shall we spend our time in heaven?" The little book is the work of an earnest and simple minded Christian well versed in scientific knowledge who finds no difficulty in reconciling the discoveries of science with the essential beliefs of the Christian religion.

We welcome the appearance of a cheaper unabridged edition of the late Dr. R. W. S. Bishop's book entitled *My Moorland Patients*, the first edition of which we reviewed some years ago (JOURNAL, June 3rd 1922, p. 878). By its happy combination of lively humour, keen sympathy, and sombre realism the work deserves to become a classic of its kind.

We have received a copy of a short memoir of the late Dr. Thomas Bodley Scott, who was mayor of Bournemouth at the time of his death. An obituary notice appeared in our issue on February 16th last. The little work, which has been edited by W. V. I. and "G. R. D.," contains chapters on T. B. Scott, the Doctor, by Dr. C. Hyla Greves; His Religion by the Rev. E. Moor, and His Writings, by G. R. Dennis, as well as a short account of his public work.

The first issue of the *Revue Franco-Russe de médecine et de biologie*[9] a new monthly journal edited by Drs. L. HACHLOVITCH, J. LEVITCH, Z. PELICHEFF, and A. ROUDAKOFF, contains original articles by Professor Diakonoff on a new anthropometric method, by Professor Semaschko on hygiene in Soviet Russia and by Dr. Dobreitzer on malaria in Russia, an account of the third Pan-Russian Congress for Combating Tuberculosis, and abstracts from Russian journals, and medical news.

The sixty-fourth issue of the *British Journal Photographic Almanac*[10] for 1925 is again edited by Mr. GEORGE E. BROWN who contributes to it a valuable article entitled "The plain facts of lenses." Another article by Mr. T. L. J. Bentley contains a useful discussion of the small camera with many practical hints. The present issue contains several new features and is larger than its predecessors, more pages being added to the text and reviews of many improvements in apparatus and materials being included. A series of short articles dealing with the properties of chemical substances used in photography is particularly helpful. The table of exposures has been extended to apply to countries in every latitude, and the book can be confidently recommended; the price is not increased.

A volume containing the *Transactions* of the Tenth Annual Conference of the National Association for the Prevention of Tuberculosis[11] has been published. This conference was held on July 3rd and 4th 1924, and was reported in our columns of July 12th (p. 61). It was chiefly occupied with the consideration of training colonies and their place in the tuberculosis scheme.

My Moorland Patients. By a Yorkshire Doctor (the late Dr. R. W. S. Bishop). Cheaper Unabridged edition, edited by J. C. Lewin. London: John Murray. 1924. (D. my 8vo, pp. viii+212, 4 plates. 7s. 6d. net.)

[9] *Thomas Bodley Scott, Mayor of Bournemouth*. Bournemouth: Ernest Cooper. 1924. (Cr. 8vo, pp. 93, portrait. 1s. net.)

[9] *Revue Franco-Russe de médecine et de biologie*. Paris: Société d'éditions scientifiques. "France-Russie." (Subscription: France, fr. 30; Union Postale, fr. 40; single copy, fr. 4.)

[10] *The British Journal Photographic Almanac*. Edited by George E. Brown, F.I.C., Hon. F.R.P.S. Sixty-fourth issue. London: Henry Greenwood and Co., Ltd. 1925. (Sup. roy. 16mo, pp. 814, illustrated. Paper, 2s.; cloth, 3s. net.)

[11] *Transactions of the Tenth Annual Conference of the National Association for the Prevention of Tuberculosis*. London: National Association for the Prevention of Tuberculosis, 20 Hanover Square, W.1. 1924. (Cr. 4to, pp. xxiii + 56. 6s. post free.)

THE LEAGUE OF NATIONS HEALTH COMMITTEE

THE League of Nations Health Committee held its third session in Geneva from September 29th to October 4th. Sir G. S. Buchanan, C.B., M.D., represented Great Britain. The committee adopted a report prepared by the subcommittee it had appointed at the request of the Advisory Committee on Traffic in Opium and of the Preparatory Commission for the International Opium Conferences. This report gives information in support of the estimated figure of 450 milligrams of raw opium and 7 milligrams of cocaine per inhabitant per year as the maximum for legitimate requirements of European countries possessing a well developed medical service. The Health Committee further decided to request the opinion of medical practitioners in different countries as to whether the therapeutic value of heroin is sufficient to outweigh the social dangers which its abuse entails. It recommended that propaganda against the abuse of cocaine and morphine should be confined to doctors and medical students, as it might otherwise do more harm than good by arousing unhealthy curiosity, and that preparations containing less than 0.2 per cent. of morphine or 0.1 per cent. of cocaine or heroin should also be included in the provisions of the Hague Opium Convention. The Health Committee approved the report submitted by the joint committee formed by members of the International Labour Office and the Health Committee to study the question of the disinfection against anthrax of leather and hides. The report recommends that members of the joint committee should study in their own countries the various methods of disinfection with a view to comparing their value, and that national committees should be formed in Belgium, France, Germany, Great Britain, and perhaps Switzerland and the United States for conducting further investigations. The liaison between these organizations and the joint committee should be assured by the International Labour Office.

The Health Committee, in pursuance of the proposal submitted by the Dutch Government relating to the simplification of quarantine and clearance formalities, decided to frame a model convention that might serve as a basis for the conclusion of special conventions whose purpose it would be to eliminate the unnecessary repetition of sanitary measures on ships. The Dutch and Belgian Government opened forthwith negotiations for the conclusion of a convention of this kind.

The committee adopted the report of its subcommittee on health instruction, suggesting a course of study for 1925, to comprise notably the collection of information relating to instruction in health matters for medical students and medical experts in European and, perhaps also in Canadian and American universities.

The Malaria Commission submitted a provisional report on its investigation in Bulgaria, Greece, the Kingdom of the Serbs, Croats, and Slovenes, Rumania, Russia, and Italy. The final report, which is being prepared to the end of this year, will contain exhaustive information as to the incidence of malaria and the methods used to combat it in all the countries visited. At the same time the Health Committee considered the first reports of its small committee of experts on the problem of quinine, and decided to recommend that attempts should be made in Algeria, Spain, Italy, and Rumania to try the effect of the various cinchona alkaloid. The experiments will be carried out under the auspices of the League Malaria Commission, and with the aid of material furnished by it, so as to ensure uniformity of conditions. Further, the Malaria Commission will continue its study of the incidence of malaria in Europe by establishing contact with experts and corresponding members, and by investigations in Sicily, Tunis, Algeria, Morocco, Spain, and Portugal during 1925.

The committee, after considering the report submitted by its subcommittee on sleeping sickness and tuberculosis in equatorial Africa, asked the Council to recommend to the Governments concerned that they should encourage conferences between governors and health officials in the affected territories as well as organize a regular interchange of information on all matters concerning the spread and incidence of sleeping sickness. The committee drew attention to the desirability of maintaining a medical service proportionate to the population and areas to be dealt with, and recommended a programme of technical research with regard to certain questions connected with the origin and spread of sleeping sickness.

The Health Committee approved the preparatory work for the opening of the Epidemiological Intelligence Office at Singapore, and notably the organization of a conference of health officials to be held in Singapore at the beginning of next year, at which Dr. Norman White will attend on behalf of the League Health Organization.

The committee instructed the Health Section of the Secretariat to prepare a preliminary report to serve as a basis for the adoption of a programme of investigation with regard to an antituberculosis campaign, as requested by the Fifth Assembly, and asked its presidents and vice-presidents to keep in touch with the preparatory work. A suggestion of the Japanese member that the Health Committee should investigate the standardization of tuberculin and study the methods for the preventive and early treatment of tuberculosis was adopted, the question of tuberculin being referred to the permanent subcommittee on the standardization of sera and serological tests.

The Health Committee, in approving the system of interchange organized for the year 1925, paid special attention to the arrangements for a South American interchange, in which ten health officials from South American countries appointed by their respective health administrations should study the working of the American, Canadian, British, and two or three Continental health services under the auspices of the League Health Organization.

consideration of the medical profession The high standard of the education at the College was manifest during the past year, when a "record" number of successes was obtained in university and other examinations Epsom College is entitled to a greater measure of support than it has yet received from the medical profession generally, out of the 350 boys in the school, 76 per cent are engaged in preliminary medical studies Details of the Royal Medical Foundation and of the Epsom College war memorial will be found in our advertisement pages this week

THE LEAGUE OF NATIONS EPIDEMIOLOGICAL INTELLIGENCE

THE Health Organization of the League of Nations has issued its statistics of notifiable diseases for 1923 [1] The statistics relate to 27 European countries, 15 African, 14 American, 12 Asiatic, and Australasia Certain reservations are pointed out in the introduction Wherever practicable the tables have been submitted to the responsible offices for their approval, but corrections have not been obtained from the more remote countries, also, efficiency of notification varies in different countries, and for this reason crude figures have been used more frequently than rates, as otherwise the reader might have been tempted to indulge in unjustifiable comparisons Geographic distribution and seasonal variations have been shown as fully as possible It is not professed that all diseases which could usefully be dealt with are yet included in the volume for 1923, but effort is being made to collect available data regarding venereal disease and certain other important causes of morbidity and death If the data so obtained are found sufficient, a supplementary volume will be issued Such a report as this cannot easily be made the subject of condensation or synopsis The statistical material is a mine from which epidemiologists may dig masses of detailed information regarding the ebb and flow of infections throughout the world, and as years go on (this being the eighth of the series) the data will become more and more valuable In the text introductory to the tables, however, the authors give a very brief indication of the position with regard to the various diseases The plague-infected area remains unchanged, India having had, as usual, the vast majority of the cases Although no very great extension has taken place, yet plague was more prevalent than in immediately preceding years Cholera, on the other hand, shows a general and marked decrease, and the death rate in India was the lowest on record Of yellow fever the outstanding feature was the entire absence of any reported case in Mexico, Central America, Ecuador, or Peru Typhus incidence in Europe was generally (with exceptions) lower than in any year since the war, and a return to pre-war prevalence is evident, Russia shows a very marked decline For small-pox the situation was favourable in Europe, notwithstanding local epidemics of mild type in England and Switzerland In Russia there has been constant diminution since 1920, though even yet that country furnishes nearly five-sixths of all the European cases The statistics of dysentery include a group of intestinal diseases of varied etiology, but amœbic dysentery is certainly uncommon in Europe Notwithstanding some increase in Germany in 1923, the general trend is definitely downward in Central and Western Europe, and in Russia since 1922 Enteric fever (including paratyphoid) has been rather more prevalent in Western Europe and less prevalent in Central and Eastern Europe Malaria was formidably prevalent in Russia, where there were over five and a half million cases, or more than double the previous year, whilst, on the contrary, there was a great reduction in Poland Dengue fever rose to unprecedented prevalence in the southern parts of the United States in the autumn of 1922 Texas had between 500,000 and 600,000 cases, the maximum being in October, the disease then declining rapidly until it became rare in February, 1923 Influenza's morbidity statistics rarely represent the true incidence, because notification is not compulsory except in a very few countries Mortality figures are more useful, and these indicate that the disease was much less severe in Europe in 1923 than in the previous winter Encephalitis lethargica was more prevalent than in 1922, but less so than in 1921 The statistics of cerebro spinal meningitis show no definite general tendency Scarlet fever prevailed throughout Europe in 1920 and 1921, and declined in 1922 and 1923, though in the latter year it increased in Bulgaria and some other countries in Eastern and Southern Europe Diphtheria shows a general decline in the last three or four years in various parts of the world—in Northern, Western, and Central Europe, North America, Japan, and Australia Measles had a low incidence in many countries, but there were severe epidemics in the United States, Egypt, and Denmark Whooping-cough is notifiable in few countries, its incidence was variable in 1923 Data for leprosy are defective In 100,000 persons examined for trypanosomiasis in the Cameroons under the French mandate there were 30,000 cases Statistics of trachoma are quite insufficient, but in countries like Egypt and Palestine 70 to 95 per cent of the population are affected Of anthrax there were in Russia 3,904 cases in 1922, and 7,801 in 1923 Under rabies it is stated that Germany had 71 cases, Czecho-Slovakia 22 (all fatal), and Latvia 21 Poland reported 2,572 cases of animal bites, of which 36 were fatal

[1] London Constable and Co Ltd (Roy 4to pp 107 with map 2s)

NEAR SIGHT AND CIVILIZATION

SIR ARTHUR KEITH, lecturing at King's College on December 11th to the British Optical Association, dealt with the causes of myopia He argued that a myopic ancient hunter could not have survived, and deduced from this that in prehistoric times cases of pronounced myopia must have been unknown or very rare Modern civilization had placed men's bodies under conditions altogether new to them Hence thoughtful men were seeking to understand how our bodies reacted under the increasing artificiality of city life To the question, "What is happening to our eyes which are now overtaxed by near work?" the answer returned by ophthalmic surgeons was to the effect that civilization is threatening our eyesight They agreed that all children were born with eyes fashioned for "distant" sight—just like the young of wild animals When, however, a thousand British children were traced from infancy to adult years, it was found by the end of the fourth year that some ten or more of them had lost the power of seeing distant objects clearly, every succeeding year others suffered the same loss, so that by the age of 20 about 150 of the 1,000 had become myopic In inquiries into the nature of the disorders which overtake the bodies of men living under the conditions of modern civilization—disorders such as contractions of the palate and deformities of the jaws—he found that a study of the normal processes of growth threw most light on the manner of their production He found no data to suggest that an eye which had remained normal until the twentieth year could thereafter undergo the changes which produced myopia It might be concluded, therefore, that the causes which produced myopia were operative only in the growing eye, and that myopia should be ranked among the disorders of growth Some said it was the strain which accompanied the convergence and accommodation due to using the eye for close work This alone could not be the cause of myopia, for thousands of people strained their sight to the utmost with no ill effect on their power of vision Some said it was muscular exercise, but this alone, whether mild or severe, could not be the cause of elongation of the eyeball, for then

all athletes and gymnasts would assuredly become myopic The conclusion Sir Arthur Keith drew was that if the eye were held by it would withstand unchanged all strains— short or small, continuous or interrupted—to which it might be subjected His argument led him to suspect that the essential cause of myopia must be sought for in the behaviour of the fibroblasts, which were not only the bricklayers but also the architects of the eye It the sclerotic fibroblasts lind the structures of the eye with sound material and laid it rightly then all was well, what ever might be the use to which the eyes were put But if the material was unsound and laid wrongly, then it was possible that forces which left the normal eye unaffected might damage the abnormal eye It was on such grounds that ophthalmic surgeons instructed patients with high degrees of myopia to avoid excessive

LONDON SCHOOL OF HYGIENE AND TROPICAL MEDICINE

The London School of Hygiene and Tropical Medicine has just made two interesting appointments It has nominated Dr H H Scott at present assistant director in the department of helminthology in the tropical division of the school to be Milner Research Fellow in comparative pathology This appointment has been rendered possible by the co-operation of the Council of the Zoological Society The fruitful field of research work in the Zoological Gardens for which Dr Scott is well qualified he is not only in experienced pathologist who has done much original work in various fields but is also well versed in helminthology and protozoology He is M D M R C P London and holds the D P H and D T M of Cambridge The other appointment is of Dr Edward Hindle, M A Ph D until recently professor of biology (including parasitology) in the Cairo school of medicine to undertake research work in spirochætosis Investigations in this field are much needed and Professor Hindle's record both as a research worker and writer is such as to suggest that he has exceptional qualifications for the work The school has also determined to send out research workers to investigate diseases common to Rhodesia and tropical and subtropical Africa This decision has been come to in response to a request from Sir Frances Newton High Commissioner for South in Rhodesia made in accordance with a scheme originally suggested by Dr Andrew Fleming assistant director for Southern Rhodesia Dr Fleming has recently been in this country to discuss details with the authorities of the London school and the Government of Southern Rhodesia has undertaken to make a contribution to the school for the purposes of this research and also to provide laboratory accommodation and equipment Both in recognition of the immense importance of research into the causes of those tropical diseases which now bar the way to the full development of the highlands of central and equatorial Africa the Government of Southern Rhodesia has set a very good example

THE MEDICO LEGAL SOCIETY

The annual dinner of the Medico-Legal Society was held under the presidency of Lord Justice Atkin on December 12th The customary toast Law and Medicine was in the hands of Sir William Collins who pointed out the various parallels between the two professions In Germany the common territory between medicine and law was spoken of as state medicine in France as medecine legale, and in this country as medical jurisprudence which was the title of the first work on the subject in English, by Samuel Farr, published in 1788 The subject was of wide range, from the exactitude of the chemist and microscopist on the one hand to the maze of psychiatrists on the other criminal responsibility or the insane on the one hand, but much hope of rapid materialization, to the proposal that an institute of forensic medicine should be founded in London, where by the faculty would be concentrated in one centre instead of being divided among a dozen medical schools Sir Humphry Rolleston, President of the Royal College of Physicians responded to the toast on behalf of the medical side of what he called the holy alliance Of the two divisions or the medical profession he could not help feeling that medicine or physic was more closely allied to law than was surgery A very good definition of surgeons had been put forward by one of them— that the surgeon was a physician who could use his hands, to which however, it might be retorted that the physician was a surgeon who could use his brain But physicians and lawyers had this much in common, that both of them depended for their professional success upon their offered to the medical profession by the Medico-Legal Society linking the two professions, expansion or outlook and in opportunity to become wise in the many legal bearings of medicine Mr T P Hughes, K C, President of the General Council of the Bar, responded on behalf of the legal profession Mr Justice Eve in proposing the toast of prosperity to the Medico-Legal Society said that no one who took even a cursory glance at the subjects with which the society had been dealing could fail to appreciate its value to both branches of its membership He hoped that from its further discussions some clearer light would emerge on the criminal responsibility of the mental degenerate (for no one was satisfied with the present position) and on questions connected with workmen's compensation such as industrial diseases malingering and partial as against total disablement Lord Justice Atkin in reply, said that there were very few persons now in either the legal or the medical profession, who had not some idea of the operations and value of the society The society, which had now passed its majority and was increasing in its membership acted as a liaison organization between the two professions both of which were sincerely seeking after truth although each approached the subject from different angles and were it not for such a society would rarely be able to reconcile their points of view Two subjects—namely criminal responsibility and professional privilege— till awaited the latter already done valuable work He could be said A further advantage of the society was that each side learned to know some of the idiosyncrasies of the other no doubt to such an extent that lawyers could practise more effectively as physicians practise law but a lawyer at least found great benefit to his practise from some knowledge of medical jurisprudence The course of elementary lectures on medical jurisprudence given recently by Sir Bernard Spilsbury under the auspices of the Council of Legal Education had also been worth a guinea attendance at the lectures must have been worth that to many barristers engaged in criminal work to any considerable other £500 a year It had always been to him a marvel that so many laymen whose business and private life was subject at all points to legal interference or direction remained in ignorance of law but he had to say also that a very large number of doctors although they might be required to give evidence at any moment went through their professional lives without any appreciation of the rules of evidence

CHARCOT CENTENARY

Paris is preparing to celebrate the centenary of Jean-Martin Charcot, who was born in 1825 and died in 1893 In 1862 he became physician to the Salpetrière Hospital, where he gradually built up the world-famous neurological clinic The centenary organizing committee under the patronage of the President of the French Republic and the leadership of statesmen and scientists of France, includes a[illegible]ns Pierre Marie, Albert Pierre,

and Paul Richer, who were pupils and colleagues of Charcot The president of the committee is Professor Babinski Early in June commemoration ceremonies will be held in Paris by the Academy of Medicine, the Faculty of Medicine, and the Paris Society of Neurology This society will hold at the same time its sixth international neurological reunion, celebrating the twenty-fifth anniversary of its foundation and the work of Charcot Foreign Governments, universities, and scientific societies will be represented by delegates, and a large number of neurologists from many countries have signified their intention of joining in the celebrations A detailed programme is being prepared, and may be obtained later from Dr A Souques, the general secretary of the organizing committee, 17, Rue de l'Universite, Paris, VIIe

A DEGREE IN ORTHOPAEDICS

Some years ago the University of Liverpool established the degree of Master of Orthopaedic Surgery A candidate for the degree is examined in the principles and practice of orthopaedic surgery, and before presenting himself must have attended courses of instruction approved by the university, including a course of at least fifteen months in clinical orthopaedic surgery Masters of Surgery of an approved university, and Fellows of the Royal College of Surgeons of England, Edinburgh, or Ireland, or of the American College of Surgeons, may be exempted from courses in anatomy and physiology and in pathology and bacteriology, but must attend courses in radiology and physiotherapy and in general surgery, as well as that in orthopaedic surgery The degree has just been conferred for the first time The recipient is Mr E B M Vance, M S Sydney (N S W), who has resided in this country to go through the course of clinical orthopaedic surgery, which, as we have said, occupies fifteen months So far as we can ascertain Mr Vance is the first recipient of an orthopaedic degree, certainly in this country, and probably in the world

TEETH OF MAORI AND BRITISH IN NEW ZEALAND

A comparative study of the jaws and occlusions of a certain number of Maori and of British born in New Zealand was brought before the Society for the Study of Orthodontics at its December meeting by Miss V H George In the course of her work for the Research Committee of the Dental Board at the Royal College of Surgeons, Miss George was asked to examine a number of plaster casts sent from New Zealand, these casts were obtained from twenty Maori and twenty men of British colonial stock on their return to the Dominion after the war and before demobilization In all the Maori casts the palates were well formed, usually spreading in a wide arch containing the full number of teeth, and normal occlusion was apparently the rule In the British casts, on the other hand, the arches were comparatively small and crowded, while the occlusion, which was usually subnormal, also afforded a notable contrast to the Maori series She gave some average measurements based on these casts, showing the greatest width between the buccal surfaces of the canine teeth, the second premolars, and the molars, also the length of the palate obtained by taking a line drawn from the mid-point between the central incisors to the mid-point of a line connecting the last molars They fully supported the statements quoted above Miss George added that it appeared from descriptions by those who had studied the Maori at close quarters that their other physical characteristics were as markedly different from those of New Zealanders of the British race as were their jaws and occlusions The New Zealand colonist had much the same physique as the average Englishman—medium height and build, with a rather long, narrow face, orthognathous profile, and brachycephalic skull The Maori, according to Mr Pember Reeves, a former Agent-General for New Zealand, are tall and bulky, long bodied, short-legged, with a fairly large pyramidal skull, showing well developed perceptive faculties and features varying from classic to negroid, and a wide though not usually a flat nose Some discussion followed on the diet of the Maori

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Sir David Prain, C M G, C I E, F R S, M B, Treasurer of the Royal Society, and late director of the Royal Botanic Gardens, Kew, has been elected a Trustee of the British Museum

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The first social evening of the Royal Society of Medicine in 1925 will be held on Monday, January 19th, when Dr Arnold Chaplin will give an address on some great personalities in history, good and bad, male and female The address will be illustrated by portraits During the evening Dr T M Legge, C B E, will exhibit some fifteenth century stained glass

Medical Notes in Parliament.

[From our Parliamentary Correspondent]

The House of Commons completed the debate on the Address and advanced a number of bills before adjourning over Christmas As Tuesday was occupied by a discussion on housing policy, which was initiated by the Labour party, no opportunity occurred for a general statement of the Government's policy on public health and medical administration, raised by Dr Fremantle The House is due to reassemble on February 10th

During the debate on the Address (December 10th) Major Cohen who was severely wounded during the war and spoke seated, said that medical practitioners in Swansea had been surprised at the number of men who came before them suffering either from wounds or disease directly traceable to the war but yet were not in receipt of pensions An independent medical committee formed there concluded that there were certain disabilities with regard to which it was impossible for a medical man to say definitely that they would not alter They specified organic diseases of the heart chronic pulmonary diseases, rheumatism, gunshot wounds, and diseases of the joints Major Cohen contended that it was not fair to fix a pension in such cases, and expressed the opinion that Circular 30 of May, 1924, was not satisfactory All final decisions should be made by an independent tribunal He pressed for a complete revision of final awards which were under 20 per cent disability

Ex Service Mental Cases—Major Tryon, the Minister of Pensions in reply to Sir Herbert Nield on December 11th deprecated the description of public asylums as pauper lunatic asylums, it was gravely misleading and needlessly offensive Ex service men who were as certified patients under the general law of the land, in public asylums were there as private patients The cost of their treatment averaged 25s a week in addition to the allowances paid both to the men themselves and to their families In 1923 the Government opened two special institutions for cases where they were medically advised that a chance of recovery or improvement was offered by occupational treatment and instruction In these institutions 415 cases were now accommodated All ex service cases in public asylums were under periodical inspection by medical officers of the Ministry and of the Board of Control, and every case seeming suitable for treatment in some other class of institution was removed from the asylum Relatives of some of the ex service men preferred that the men should be in the county asylums

Private Mental Patients—The Minister of Health, in reply to Mr Griffiths on December 15th, said it was the practice of the Board of Control to make inquiry regarding every individual private patient admitted to an institution without having been seen by a judicial authority Mr Griffiths said that the Board of Control had reported that during 1922 at least thirty one patients were deprived of the right of appeal to a magistrate "through misdemeanour on the part of medical superintendents" Mr Chamberlain replied that no instance had come to the notice of the Board during the year 1923 of failure to comply with the requirements of Section 8 of the Lunacy Act, 1890 Mr Chamberlain further informed Mr Griffiths that it was the practice of the Board of Control to return all reception documents which did not comply fully with the requirements of Section 31 of the Lunacy Act 1890 This was done in order that the necessary information might be inserted

Indian Medical Services—Answering Dr Fremantle and Mr Wardlaw Milne, on December 15th the Under Secretary for India, Earl Winterton, said that the Government had not reached a decision on the recommendations of the Lee Commission on the organization of the medical services in India It was hoped to introduce a bill early in the present session (1924 25) dealing with the recommendations of the Lee Commission In reply to Sir Philip Richardson, the Under Secretary for India said a report had been requested from India on the application of the recommendations made in 1918 by the British Station Hospital Committee, under the chairmanship of Major General Sir George Makins This report had not yet been received.

Scotland.

ABERDEEN MEDICO-CHIRURGICAL SOCIETY

At a meeting of the Aberdeen Medico Chirurgical Society on December 4th, with the President, Dr Peter Howie, in the chair, Mr William Anderson gave an address on his experiences and impressions during a recent visit to America, describing particularly the surgical work of the large clinics and the teaching hospitals He found the general principles of hospital administration much the same as those in this country but there was usually a much larger surgical staff in proportion to the number of beds and also a larger staff of nurses male attendants women clerks, stenographers, and photographers Out-patient departments were run mainly on the same lines but there was a much closer relationship between them and the wards A useful adjunct was the diagnostic clinic with beds for the admission of cases of undetermined diagnosis able to look after themselves where investigation for diagnosis could be carried out before their admission to the wards pressure on ward beds was thus to some extent relieved Mr Anderson then referred to the control of surgical ward work exercised by the American College of Surgeons Hospitals were graded by the College according to their efficiency, and committee visits were paid annually to inspect all facilities One very important feature of hospital work was the staff meetings these were held at least once a month and were always extremely private so that free discussion took place on such subjects as the deaths in the hospital the occurrence of epidemics in clean cases and of post-operative pulmonary complications the teaching of students, and subjects for special study Record keeping the follow up system and the social service were then described, and examples given of their methods and of their value to staff and to patients Anæsthetics were given by trained nurse-anæsthetists, and Mr Anderson had seen all methods in use except the administration of chloroform Nitrous-oxide-oxygen was the most popular, but ethylene-oxygen was also being used extensively He referred in some detail, and with great admiration, to the neurological surgery done by Cushing Mr Anderson then described in fuller detail the work of the Mayo Clinic and some of the special surgery done there—cardiac, gall bladder, and lung surgery, exsanguination transfusion, and the investigations into liver function

PROPOSED SCOTTISH COLONY FOR MENTAL DEFECTIVES

An address on the permanent care of the feeble-minded was delivered by Lady Leslie Mackenzie at a public meeting held on December 10th Sir H Arthur Rose, chairman of the General Board of Control for Scotland, presided over the meeting, which, he stated, was held in connexion with a resolution passed recently by the Edinburgh Women Citizens' Association, to assist in raising money for a scheme to found a colony for the permanent care of the feeble-minded Lady Mackenzie stated that the subject of the permanent care of feeble-minded persons had been before some of her hearers for over twenty years The people of Glasgow had taken up this subject long before Edinburgh did, and for many years in Glasgow there had been special schools for feeble-minded children In recent years special schools for this purpose had been established in Edinburgh, and she wished to make it clear that the mentally defective child was simply a child whose brain was not fully developed and which unfortunately would never be fully developed It was important, therefore to train that brain, although they could not cure it of its deficiency In the special schools whatever way the teacher found to be best for using the intelligence of the child was adopted, and the teacher was given a wide amount of liberty in this respect Such things as garden ing, keeping pets, manual work, and doing odd jobs about the school were given to the children to do In Glasgow there were over 2,200 mentally defective children in the special schools, and in Edinburgh there were between 400 and 500 Although children were well looked after during their time in these schools they had to leave at the age of 16 as far as their mental equipment was concerned, and, therefore, unable to earn their living and to compete with the ordinary intelligent human being There was thus, unfortunately, a great tendency for many of the boys to get into trouble, to be convicted for stealing, and to pass from prison to street, from street to poorhouse, and so on The girls very often became the mothers of illegitimate children, and it was particularly important to prevent motherhood in these girls, and so to stop the reproduction of feeble minded people to a certain extent It was to meet the needs of the hundreds of children leaving the special schools at the age of 16 that the women citizens had come to the conclusion that they should take action The action they proposed to take was to collect sufficient funds to start one institution for the permanent care of the feeble-minded and it was proposed that this institution should take the form of a colony where the inmates could begin with school and then later go to workshop or farm, or some other form of occupation still within the colony

CENTRAL MIDWIVES BOARD FOR SCOTLAND

The report of the Central Midwives Board for Scotland for the year ending March 31st, 1924, has been issued At the annual statutory meeting Dr James Haig Fergus on was re elected chairman and Dr Michael Dewar deputy chairman The total enrolments of midwives for the year had been 458, which with 5,477 previous enrolments, completed a list on the register of 5,935 Of this number 2 584 had been admitted after examination, and it was believed that the number actually in practice was at the present time approximately 3,000 Four examinations were held annually, taking place simultaneously at examination centres in Edinburgh, Glasgow, Dundee, and Aberdeen, subject to a sufficient number of candidates having entered at each centre The number of candidates who appeared for examination during the year was 473 of whom 430 had passed These came from fifteen different institutions in Scotland at which midwives may be trained and of which four were Poor Law institutions During the period under review sixteen midwives were cited to appear before the Board to answer charges of malpractice negligence and misconduct and as the result of these charges the names of ten had been removed from the roll In seven cases the offence charged was that of failure to send for medical assistance in cases of inflammation of the eyes excessive bleeding abortion, rupture of the perineum, and failure to notify these cases Five women were suspended from practice for three months for general carelessness in treatment, failure to attend during the full period of puerperium or failure to keep records of pulse and temperature The Board had resolved that after January 1st, 1926, the period of training should be increased to twelve months, except in the case of nurses already enrolled in the registers of the General Nursing Councils or Scotland, England, and Ireland as having completed a training in general nursing, nursing of sick children or nursing of infectious diseases In these cases the period of midwifery training would be limited to six months

England and Wales.

UNIVERSITY OF LEEDS CELEBRATION WEEK

In 1874 the Yorkshire College of Science opened its doors with three professors and twenty four students, in 1877 a faculty of arts was founded and incorporated in the college in the following year In 1904 the college received its charter as the University of Leeds, Sir Nathan Bodington becoming its first vice-chancellor Of the four faculties of the present university—arts, science, technology, and medicine—the first is the largest, yet medicine preceded the university and the Yorkshire College of Science by a very considerable period chronologically, for in 1831 the earlier efforts to provide systematic medical training in Leeds reached their fitting conclusion in the establishment of the Leeds School of Medicine, which became part of the Yorkshire College in 1884 The teaching staff of the university includes 268 men and women there are forty-two departments of study and more than 1,600 day students The

jubilee celebrations during the current week commenced with a sermon by the Archbishop of York on December 14th, when he expressed the hope that some day a faculty of theology might be added In the afternoon of December 15th Sir Berkeley Moynihan gave a most interesting account of the progress of medicine in Leeds

SHEFFIELD JOINT HOSPITALS COUNCIL

The second annual report of the Sheffield Joint Hospitals Council, which has just reached us, gives an account of the very satisfactory progress made during 1923 in hospital finance In particular the "penny in the pound" scheme, of which we gave a detailed account on September 15th, 1923 (p 483), has received considerably increased support, many of the smaller establishments throughout the area having co-operated for the first time This scheme brought in £10,866, as compared with £3,957 in 1922 The income of the council showed a surprising increase over the preceding year, and amounted to over £102,000, it was £72,000 in 1922 This most satisfactory increase occurred despite the severe unemployment and depression in trade which characterized the year generally The report draws attention to the marked loyalty of every section of the city to the voluntary hospitals, and the happy co-operation that exists between the Joint Hospitals Council, the hospital boards of management, and the various individuals and institutions concerned The total number of available beds in the Sheffield hospitals is stated to be 856, and there are said to be 2,759 patients waiting for admission The Lord Mayor of Sheffield in the report urges, therefore, that further efforts should be made to meet the growing necessities of the city in this respect The in-patients during 1923 numbered 12,697, and of these 3,586 were unemployed and necessitous The total number of out-patient attendances was 386,552 During the year under review 495 patients were sent to convalescent and rest homes at a total cost of £2,864, paid by the Joint Hospitals Council The great variety and value of the work undertaken by the council is brought out clearly in the annual report, which will attract especial interest, since in some ways the methods adopted in Sheffield differ from those in favour elsewhere

MANCHESTER CHILDREN'S HOSPITAL

The Earl of Derby formally opened on December 8th a new home for nurses in connexion with the Royal Manchester Children's Hospital in Pendlebury Accommodation is provided for sixty nurses in a spacious and well furnished recreation room, but at present only twenty-nine bedrooms are available Provision has been made by the architect for the opening of another wing in a few years, if the necessary money can be collected This would render it possible to house all the nurses, apart from those actually living in the hospital itself Up to the present an isolation block has been used as a nurses' home, but the new building will now enable this block to be available for its original purpose in case of emergency Of the £17,000 required for the new building £10,000 has already been received Lord Derby paid a warm tribute to the valuable and unselfish services rendered by the nursing staff, and referred to the important work carried on in the hospital Since the ground on which the home is built overlies a coal mine, the whole site has been covered with strong reinforced concrete, to minimize so far as possible any danger of subsidence

EXPENDITURE ON TUBERCULOSIS AND OTHER SERVICES IN LONDON

The Ministry of Health has asked the London County Council to forecast its expenditure for the year 1925-26 on the treatment of tuberculosis, the diagnosis and treatment of venereal diseases, and maternity and child welfare services The forecast as regards tuberculosis is £135,650, which is £15,000 more than the estimate for the present year For venereal diseases the Council's proportion of the estimated expenditure to be apportioned between the Council and neighbouring local authorities is £91,565, which compares with almost the same amount for the present year Both these figures are exclusive of sums of £20,000 and £10,000 which it is proposed to include in provisional amounts to cover possible developments of the work in connexion with the services mentioned The net expenditure on maternity and child welfare services is estimated at £10,190, as compared with £9,664 for the current year.

Correspondence.

EPSOM COLLEGE

SIR,—With the approach of Christmas, a season in which humanity at large relaxes its purse-strings, I ask your readers to bear patiently with me while I expound to them the work and the needs of one of the great medical charities

The Royal Medical Foundation of Epsom College exists (*a*) to give pensions to fifty aged or disabled medical men or their widows, and (*b*) to provide, free of charge, a good public school education, together with clothing, maintenance and pocket money, to fifty sons of deceased or disabled medical men

The Medical Foundation, so far as it is educational, is part and parcel of Epsom College, which is a public school open to all, but aiming especially, according to the intentions of its founder, at affording to the sons of medical men generally a school education at as near cost price as possible

Generous benefactions have augmented the value of many pensions and increased their number, so that last year the College bestowed no less than 166 That alone alleviates a sensible part of the destitution that befalls the unlucky in our profession as in any other But the part relieved is not nearly large enough, and to do much more much more money is needed

Perhaps, however, it is our educational work that awakens the warmest and widest sympathy There is very keen and widespread competition for the Foundation Scholarships, which have given to so many needy boys a start in life, open to them in no other way The expenditure on these has been greatly increased owing to the circumstances of the war and growing educational needs

To those who may catch sight of this letter I appeal to set it aside for perusal after a satisfying Christmas dinner, to sit down then in an easy chair with a pipe, and with closed eyes to conjure up before their minds a vision of their own wives, left widows in need, and suppliants to human kindness for the upbringing and perhaps the very bread of their own necessitous children Then let them at once, before the image has dissolved in the welter of work, draw up to their table and write us a cheque for such a sum as the spirit has moved them to give I warrant that the whole service shall add to, not detract from, the gladness of their Christmas festivities

Commercial travellers, haberdashers, and others provide tens and hundreds of thousands of pounds yearly for their needy, medical men give us less than four thousand for theirs At present one medical practitioner in sixteen helps us, if all would help with half a guinea yearly, or, better still, because easier of fulfilment, if half would help with one guinea yearly, we could multiply our present income by six In five years the Medical Foundation, at its present dimensions, would be permanently endowed, and all wearisome begging would be at an end, to the great advantage of the College With like support for a further five years we could go forward confidently to make our benevolent work commensurate with the full needs of the profession, and our school, with due regard to the intentions of our founder, second to none and an example to all, and an object of justifiable pride to the whole profession So trifling an individual sacrifice for so immense a common good cries aloud for its accomplishment!

Let me first lay my own gift on that altar by trebling my own subscription, so that I may earn the right to appeal to those who already help us and can do more to do it, and to those who do not help as yet to come to our aid

Cras amet qui nunquam amavit, quique amavit cras amet

One guinea annually, or a single donation of ten guineas, makes a governor and gives ten votes at each election in June of foundationers and pensioners, and each additional guinea annually gives ten votes more Voting papers, with details of candidates, are sent in advance to every governor Seldom a list that makes no direct appeal sometimes it will be the voice of a dead friend asking help for those he has left behind

Please send a subscription or donation to the Secretary of Epsom College, 49, Bedford Square, London, W.C.1, who will be glad to give any information, and welcomes personal visits at any time.—I am, etc.

RAYMOND CRAWFURD, M.D.,
Chairman of the Council of Epsom College.

49 Bedford Square, W.C.1,
Dec. 3rd.

FREUDIAN DOCTRINE

SIR,—I have read with much interest the article in the JOURNAL of December 6th (p. 1063) which is headed "An attack on Freudian doctrine," and includes a summary, by Protes of Sollier, of the proceedings at a conference on psychology held at the Institut des Hautes Etudes de Belgique, which was published in *Le Scalpel* of October 4th and October 11th this year.

In the course of this conference the discussion of psychoanalysis played, as the title of the article in the JOURNAL implies, a very important part. So far as I know no discussion of this subject of similar weight and authority has taken place under the auspices of any medical or scientific body in Great Britain. Yet the principles and practice of psycho-analysis are becoming widely known among the laity, and are constantly being referred to by the public press and in the pullulating literature of fiction is the new "psychology." They have also been received in the form of speeches or papers by a conference of Modern Churchmen and at a meeting of the Royal Anthropological Institute, without discussion in the course of this year.

I do not ask you, Sir, to open your pages to any such discussion as I have in mind, but would merely suggest that you might be able to invite members of the medical profession, as well as psychologists generally to say which or no such discussion would be desirable and practicable. I may add that two considerable attacks on Freudian doctrine have been published during the last two years in London, neither of which has been replied to by any prominent advocate of this doctrine.—I am, etc.

BRYAN DONKIN.

London, W.9, Dec. 11th.

** We are prepared to receive replies to the suggestion contained in the last paragraph of Sir Bryan Donkin's letter but cannot open our columns to the discussion of Freudian doctrines generally.

THE CENTRAL PRACTITIONER AND THE MATERNITY SERVICE

SIR,—Let us hope the reasoned appeal of Dr. John S. Fairbairn, whose opinion is of great value that this controversy may not develop into something like a wrangle between the general practitioners and the obstetric experts may bear fruit. But I have certain doubts. The attacks of his specialist friends have been too bitter and provocative I am afraid for anything like a truce.

Dr. Fairbairn's call upon the practitioners to withhold the courage from the shrinking hides of the specialists is stirring enough. The present correspondence was initiated by Dr. A. Louise McIlroy who made certain statements and laid down certain suggestions. This was followed by a letter from Dr. Agnes Hill Nicoll who supported and elaborated Dr. Louise McIlroy's communication. It is fair to assume that neither of the writers has much experience of general practice, at any rate in wide country districts. They barely disguised their contempt for the general practitioner as an accoucheur but they went out of their way to boast thoroughly the highly skilled body of specialists' duties as midwives and implied not obliquely that unskilled midwifery was directly due to the ignorance or incompetence of certain wretched practitioners. Listen to Dr. Agnes Nicoll in your issue of October 11th: "I would add my testimony as to the results of unskilled midwifery in producing the chronic ill health of many mothers who attend child welfare clinics." It is presumed, naturally, that general practitioners are chiefly, if not solely, responsible for the prevalence of puerperal sepsis.

One hesitates to retort upon these ladies especially as I am of opinion that their knowledge of general practice is rather limited. It is one of the inevitable consequences of the admission of women into the medical profession, who are excellent students and usually glib in examinations, that they find themselves rather in the air when the undertake general practice, and so they incline to some sort of officialism and favour jobs under an authority. Of course, I am not out to attack medical women, and least of all two such distinguished women though I am inclined to view their faith in specialization and institutional treatment, and all the other potential aids of licensed officialism, as a remedy for the present alleged parlous condition of obstetrics, as being rather pathetic. But I do protest against the constant iteration of specialist, individually and collectively, that puerperal sepsis usually arises in general practice and should be laid at the doors of the family doctors. There is not the slightest evidence for such a misconception that I am aware of.

The question now arises, Why is there so much puerperal septicæmia in these days of improved technique and general and special knowledge? In my opinion the reply is not only simple but quite obvious. I ever since the increased employment of midwives the progress of midwifery in general practice has halted and gradually diminished. Owing to many causes maternity work has become unpopular in general practice. It is uncertain the work is also sometimes extremely risky one and irregular it often involves night work and sometimes demands great skill and pluck and initiative at the very time when one's vital energy is at the lowest ebb and it is also quite unremunerative in proportion to the time and skill employed. Beyond that there is another factor in the disinclination for obstetrics which Dr. Louise McIlroy artfully mentions—namely, the lamentable deficiency of the clinical training of medical undergraduates. It is not only lamentable it is nothing short of a national scandal! Dr. Fairbairn may endeavour to defend his own class in your columns but it is notorious that in the universities and medical schools the amount of time and attention given to practical midwifery is grossly insufficient. I have employed assistants and locumtenents recently qualified whose knowledge of the art and practice of midwifery was almost elementary.

In the old days a man went into general practice often as an assistant with an experienced general practitioner who did all his own midwifery. After an uncertain period of what was really advanced apprenticeship he was bound to learn a good deal about normal and abnormal labour. There was a period of some mental distress and many alarms and qualms, and he either emerged a sound obstetrician or else if ever after dreaded the very name of obstetrics. Nowadays a medical practitioner may have a large and valuable practice and scarcely ever be called upon to attend a confinement. Normal cases are taken off his hands by the midwives who call in an expert when in difficulties and his better-class patients seek sanctuary in a nursing home or some other obstetric institution. Should he ever essay a maternity case he finds himself sadly lacking in that experience and knowledge that can only come from constant practice. The consequence is that the modern family doctor is less able to undertake obstetrics than his predecessor, and the general level of obstetric achievement is lowered.

That such a condition of affairs is other than good for the profession and the public is pretty evident.

And what is the remedy? First of all give the future medical practitioner a sound grounding in practical midwifery. It is nonsense to say there is no time or opportunity for this before now I have taught a raw student how to deal with practically every complication he is likely to see in general practice in a very short time. Obstetric experts and specialists are too prone to magnify their art and the difficulties of complicated cases. My old chief who thoroughly knew his business, used to say that there was less skill required than in cleaning a clock or tying a trout fly. Given a sound technique and a fair training with plenty of practice, all the difficulties mentioned in such a textbook as Fairbairn's *Encyclopædia of Midwifery and Diseases of Women* are quite easily vanish, and the practitioner can confidently undertake almost every case he is ever likely to come across.

I consider the modern tendency to banish midwifery from general practice, and so to create a monopoly hatched between the midwives and the specialists—a not permicious one—and I speak after an experience of some four thousand cases

which embraced practically every kind of difficulty, from simple forceps extraction to Cæsarean section I never see puerperal sepsis, and I have not yet had occasion to call in another medical man—except in rare cases to give an anæsthetic I hold that the home is the most natural place for the confinement, and that the family doctor is the best accoucheur in the great majority of cases True, there may be exceptions in large industrial areas or where the house is unduly insanitary But should obstetric institutions come into vogue universally I can see no reason why the general practitioner should not conduct his own cases There may be some individuals who feel inclined to delegate this duty to others, for reasons of convenience or want of confidence Such an attitude is bad for doctor and patient The craze for team work and specialization in every department of medicine is working havoc with the general level of the practitioner's work He is fast becoming a sort of glorified drudge, whose activities are confined to first-aid and signing certificates for an exacting authority The openly expressed contempt of the one-sided experts will very soon extend to the general public if it has not already done so It is up to the general practitioners to speak for themselves and to stay any further excursions into their domain

I have an opinion, founded upon full knowledge, that the *statistics of a well conducted general practice* compare more than favourably with those of even the best institutions Not long ago a midwifery case, previously successfully delivered at home by the family doctor, was removed into an institution at the end of the eighth month of pregnancy on account of a justo-minor pelvis She died on the third day of the puerperium! Personally, I should prefer the services of a first-class general practitioner to any specialist I have yet seen at work, provided the case was one which did not require much cutting There should be no rivalry between specialist and practitioner certain surgical and obstetrical cases are of such a nature as to demand the highest skill of the expert in a suitable institution In midwifery practice such cases are extremely rare, and when they do occur the well trained and experienced practitioner is infinitely better able to deal with them than any midwife

One cause of infection in women of the industrial class treated at home I have not seen mentioned, and that is a want of personal cleanliness of the pregnant woman I had to fight a battle royal, I remember, when I first insisted that every woman must have a warm bath with plenty of antiseptic soap at the beginning of labour The effect of such an elementary precaution was really marvellous Rises of temperature that were too frequent practically disappeared I am of the profound opinion that the great majority of infected cases are due to preventible causes They arise from infection due to a lapse on the part of either the midwife, the doctor, or the woman herself—I am, etc,

Holmsley, Yorkshire, Dec 8th ALEXANDER BLAIR, M D

PUERPERAL SEPSIS

SIR,—I consider that Dr Stavely Dick has struck the keynote (December 6th, p 1079) in respect of the diagnosis, prognosis, and treatment of fever associated with the puerperium

I may add that if the blood, the urine, and swab are found to be sterile a *dose of calomel will quickly clear up* matters, as in this case the temperature, etc, are most probably due to an intestinal toxæmia If, however, organisms are found, the *importance of an early diagnosis* cannot be overmuch stressed

I should place the *treatment and early diagnosis of* puerperal fever on the *same footing* as that of pneumonia To wait for the classical signs is simply courting disaster In the latter disease early diagnosis, including that of the organism, is all-important

Shortly, my method of procedure is as *follows* An early sputum examination and the immediate injection of a stock vaccine of the *like organism* whilst an autogenous is being prepared As long as there are signs of improvement I never repeat the vaccine Too early repetition is, in my opinion, the great mistake *in vaccine therapy* I keep my patient on water for at least forty-eight hours, allowing only fruit juices and an occasional stimulant if necessary My experience in pneumococcal pneumonia is that one may confidently expect a crisis in from twelve to thirty-six hours if the above precautions have been taken

It would be of great interest to know if any of your readers have had experience of immuno-transfusion in either of the above diseases In a case of ulcerated colitis in which I had an immuno-transfusion performed my patient died within an hour with all the symptoms of an anaphylactic shock This case, however, was already of three months' duration—I am, etc,

Plymouth, Dec 14th W LANG-HODGE

SIR,—In your issue of December 6th (p 1079) Dr Stavely Dick relates *some of his experience in dealing with this* disease I feel that Dr Dick, and perhaps others among your readers, may be interested in the following results of fifteen cases which were investigated in the laboratory of the Women's Hospital, Birmingham In each of this series the presence of a septicæmia was proved by obtaining from the blood stream a pure culture of a hæmolytic streptococcus

Four of these cases recovered, all of which were treated with an autogenous vaccine Of the fatal cases—eleven in number—three only received autogenous vaccine, and all three were admitted to hospital after more than a week's illness with pyrexia In seven out of eight of the *remaining* cases, death occurred within forty-eight hours of admission, and thus administration of an autogenous vaccine was precluded In one fatal case a vaccine was prepared but was not administered, and at autopsy a recent vegetative mitral endocarditis was demonstrated, engrafted upon an older inflammatory lesion of this valve—I am, etc,

Edgbaston, Birmingham Dec 8th REGINALD G ABRAHAMS

TONSILLECTOMY

SIR,—I have read the correspondence under the above heading with some interest That enucleation of the tonsil, when necessary, is to be preferred to tonsillotomy must be the opinion of a large majority of laryngologists, but if it is to be *maintained* by those who habitually practise dissection that no other method is surgical or thorough, then I must decline myself to be among those who disagree I do a large number of these operations in the course of the year, and I do not suppose that more than 2 per cent are cases for dissection The important point that must not be lost sight of by the operator is that primary and secondary haemorrhage is invariably due to the fact that a portion of the tonsil has been left behind This is the underlying danger of tonsillotomy—I am, etc,

J A GIBB

Maidstone, Dec 8th

SIR,—I am surprised to see surgeons still discussing the comparative value of tonsillotomy and tonsillectomy And I am so convinced of the superiority of the Beck-Sluder hidden-wire instrument that I feel impelled to bring it again to the *notice of British surgeons* It meets all the requirements demanded by Dr Sichel (BRITISH MEDICAL JOURNAL, November 15th, p 926), provided one understands that the tonsil must be pushed by the forefinger into the foramen A little knack is needed, and the tonsillectomy is beautifully clean and free from injury to surrounding tissues The only cases in which it fails are those in which the tonsils and fauces are firmly matted by old adhesions—I am, etc,

Atlanta, Georgia Nov 29th ALEX W STIRLING, M D Edin

SAUCE FOR GOSLINGS

SIR,—Surely it is getting high time for the collective opinion of the profession to express itself with some approach to definiteness on the question of medical publicity The proceedings of the General Medical Council and its judgements expose us, not altogether unnaturally, to a good deal of lay ridicule, not untinged with contempt Yet we are not in a position to blame the Council, seeing that we, like it, have so far formulated no accepted principles for our own and its guidance

Small men are hailed before the Council, and either patronizingly censured or removed from the ranks of the profession for two-guinea contributions to the weekly press, whilst the hundred-guinea contributions of their big brothers to the daily press are tolerated without comment. I could quote examples by the dozen. Only to-day I picked up in a bookshop a new popular work, with the not too dignified title *How is Your Heart?* clothed in a "jacket" as sensational as the title. The name and qualifications of the author are bla-zoned on the cover, the title-page, and the wrapper. And the book is prefaced by an introduction from the hand of one of our medical baronets in which he informs the public that Dr —— (the author) has made a special study of the particular subject under consideration" that his experience in the study of heart affections is very large, that he is thoroughly versed in his subject, and familiar with all its principles, and that he possesses a wisdom that is all too rare." It will be indeed surprising if many dozens of readers, when they come to chapter ten, which deals with "Early heart signs that should take you to your doctor," do not straightway look up in their telephone directory or other work of reference the address of this well-experienced man.

I happen to take the rather priggish view that the interests of the public must override our professional interests when they conflict. And therefore I am not quoting these extracts for the purpose of hot-tish criticism, but I am perfectly sure that if any of us had ever thought to write for the lay press an article on any special branch of medical practice, and allow it to be prefaced either editorially or by a medical friend with boosting announcements of our prowess and experience in this particular branch, we should soon find ourselves in the medical dock. Sauce for the goslings should be sauce for the ganders. Whatever laws we lay down should be such as can be defined and expressed in words. Having been laid down, the observance of the laws should be imposed with genuine impartiality on lay physicians and the humble medical journeyman alike.—I am, etc.

London, E.1, Dec. 6th. HARRY ROBERTS.

THE MADRAS GOVERNMENT AND INDIGENOUS SYSTEMS OF MEDICINE

SIR,—In my letter published in your issue dated October 25th I wrote: "The recommendation for the cutting down of the diets have been made on the advice of an impecunious officer, who, whatever his admirable qualities may possibly be, has, I believe, no qualification that would entitle him to registration in Great Britain." A Madras correspondent has kindly written to point out to me that the I.M.S. qualification of Madras University held by this gentleman was *formerly* registrable. I at once communicated with the Registrar, General Council of Medical Education and Registration of the United Kingdom, who has kindly given me the following information:

"The L.M.S. Madras could be registrable on May 24th 1933 when the Council drew the attention of the University to their resolution that the course of study should occupy at least five years and stated that in such circumstance they could not accept the Licence with its then curriculum of four years except in the case of those who commenced study before January 1st 1892. Further requests for the recognition were made in 1915 and 1917 and were both refused."

I have also ascertained from the same source that as this gentleman qualified in 1890 he was actually eligible for registration, but that "he has never appeared upon the *Medical Register* here." I regret that even in so small a detail I should have been incorrect, and, though the error does not in the least affect my point, I desire to do away with any shadow of want of accuracy. May I therefore ask the favour of your inserting this letter in the JOURNAL?—I am, etc.,

R. H. ELLIOT,
Lieut.-Col., I.M.S. (ret.).

London, W., Dec. 14th.

MULE-SPINNERS' CANCER

SIR,—It would be unfortunate if anything I said or omitted to say in my paper conveyed a wrong impression regarding Mr. S. R. Wilson's observations. I accept unreservedly his statement that he was aware of the association of scrotal cancer with mule spinners as far back as 1906, and that he convinced his colleagues in Manchester of the truth of his thesis, although Mr. Morley in 1911, in the paper to which he refers, did not mention this striking association. In view of the high incidence of the disease we can join with Mr. Wilson in his regrets that circumstances prevented the publication of his findings for so many years during which, had the knowledge been more widely disseminated, steps might have been taken to prevent its occurrence. As nothing appeared in print before November, 1919, or was known even to the factory inspectors, I think I was fairly accurate in stating that "no one until within the last two years *seemed* to have known."

Please give me leave once again to express my great appreciation of the value of the discovery of mule spinners' cancer by Mr. Wilson and his colleague Mr. Southam, and to say that if by further endeavours they are instrumental in preventing it as they quite well may do, they will have done a good service to medicine.—I am, etc.,

ARCHIBALD LEITCH.

Cancer Hospital Research Institute, London, S.W.3, Dec. 15th.

DIAGNOSIS OF CANCER OF THE THYROID

SIR,—May I correct a statement attributed to me in the JOURNAL of December 13th (p. 1113) in the report of the discussion on "Diagnosis of cancer of the thyroid"?

The final sentence reads: "He made a strong plea for the removal of all adenomata of the thyroid since eventually they caused pressure or toxic symptoms or became malignant." This report contains two grave errors as neither the statement nor the reason given for it is correct.

To remove all adenomata would be unnecessary for the patient and discreditable to the surgeon. What I said was that because some adenomata ultimately cause pressure symptoms, because some eventually become toxic, and because 3 per cent. of the cases which had come to operation—not 3 per cent. of the cases seen—had been proved to be malignant, therefore adenomata of the thyroid could not be regarded as entirely innocuous tumours, also that a woman has the right to ask for the removal of a tumour which is large enough to be a disfigurement when the enucleation of an adenoma does not deprive her of any normal thyroid tissue.—I am, etc.,

T. P. DUNHILL.

London, W.1, Dec. 15th.

Medico-Legal.

VERDICT OF MANSLAUGHTER AGAINST A MEDICAL MAN

Press Association.

At the Central Criminal Court on December 12th Dr. Percy Bertram, a medical practitioner of New Cross Road, was found guilty of the manslaughter of the wife of a labourer named Harding, living at Deptford, and Mr. Justice Shearman sentenced him to six months' imprisonment in the second division.

Mr. Percival Clarke, Mr. H. D. Roome, and Mr. W. Bentley-Purchase prosecuted for the Director of Public Prosecutions, and Sir E. Marshall Hall, K.C., and Mr. Arthur H. Davis appeared for the defence.

It appeared that the accused was called in to attend Mrs. Harding in her confinement at 10 p.m. on July 23rd. Labour and the prosecution alleged that her death was caused or accelerated by his failure—in the circumstances which arose during the confinement—to call in a second medical practitioner and to arrange for an immediate operation. His omission to take these steps was it was contended due to his desire to prevent anyone from knowing that he had pulled away the uterus during the confinement. The accused continued to attend Mrs. Harding at her home until July 26th, when he sent her to hospital, and she died at the hospital on July 30th.

Sir Bernard Spilsbury, in the course of his evidence for the prosecution, expressed the opinion that if the woman had been operated upon she would have had some chance of surviving, and that she would have been fit for an operation before she was removed to the hospital.

Dr. J. Bright Banister, obstetric physician to Charing Cross Hospital, giving evidence for the defence, said he only knew of two of her cases where the uterus had been removed, and in both of them no operation was performed—in the one case because the patient died on reaching the hospital, and in the other case because the patient died within thirty minutes of arrival at the hospital. Therefore in his opinion the conduct of the accused in keeping the patient lying at her house for nine days without sending her to hospital for an operation could not be said to have accelerated her death. Her chance of life was so small as almost to be negligible. He (the witness) would have considered the

patient's removal to hospital, and in his opinion, removal would have destroyed any chance of life Some time during the five days following the confinement there was just a chance that she could have been removed and have had a successful operation He could not say there was any more favourable moment at which she could have been removed than the moment at which she had been removed The doctor in attendance must always be the judge Her chances of life were as good left where she was as if she had been operated upon If it were a complex presentation, as the accused said it was, then it was a most difficult affair

Dr Hubert Roberts, senior obstetric surgeon to Queen Charlotte's Hospital also gave evidence for the defence He said it was a very difficult and dangerous case, and as the patient was suffering from acute shock nothing more could be done beyond leaving her at rest in bed In cross examination, he agreed that it would have been advisable for Dr Bateman to have called a colleague into consultation

Dr Bateman, in his evidence, said that when he was called in the nurse who was in attendance said the deceased woman had had pains for two days before He made an examination with his hand and he felt the head of the child He gave chloroform to the patient and applied instruments but they slipped at once as it was a transverse presentation He immediately desisted from the use of instruments and decided to use a treatment known as manual version He realized that it was a difficult case, but if he sent the woman to an institution then the probabilities were that the child would be born dead He therefore put his hand in the vagina to ascertain the position, and he found the feet When turning the body of the child there was considerable difficulty because its head was in the pelvic cavity, firmly impacted He continued the treatment for over an hour, and finally succeeded in delivering the child feet first in the usual way He then attended to the patient again for the purpose of bringing away the after birth He put his hand into the womb and brought the afterbirth away quite easily without the use of any force at all The nurse was standing by with a bowl, and he put the afterbirth in the bowl without looking at it very carefully, as the patient had collapsed, and it was necessary for him to attend to her immediately The room was very badly lit at the time by one broken incandescent gas mantle, five or six feet from the patient, and it would not have been possible to make an examination of the afterbirth without looking at it very closely and carefully, which he had not time to do He felt the woman's pulse and found that it was absent In consequence he gave her a hypodermic injection of strychnine, after which she rallied slowly It was untrue to say that after the child was delivered he made preparation for departure After the woman had rallied both the nurse and himself placed a hand over the abdomen of the patient to see if the uterus was contracting but to their surprise they neither of them were able to find it The nurse then brought to him the bowl in which the afterbirth had been put and he then looked at it carefully and to his surprise found the uterus also He realized that when he had extracted the afterbirth the uterus had come away with it The patient was in a collapsed state and quite unfit to be removed, though he knew that an operation would be necessary to save her life and that the operation should be performed as soon as possible He looked at the patient but came to the conclusion that she would never be in a fit state to survive the operation, and he had to decide immediately what was the best course to adopt He did not wish to shock the relatives, and, consequently, he told the nurse to say nothing to them about the fact that the uterus had come away The nurse wrapped it up and he took it away with him to his surgery He gave instructions to the woman's husband not to move the woman, being of opinion that any movement would be fatal and would start haemorrhage On his arrival home he showed the uterus to his partner Dr Carroll Twice a day afterwards he visited the patient and never was she well enough to stand an operation It was because the husband said the family were all worn out that he ordered her removal to hospital on July 28th

In reply to Mr Roome Dr Bateman said that had the woman died he would have given a death certificate

And no one would have heard of the matter?—Probably not

That is what you wanted I suggest?—That is not a fair question I did not want anything hid I probably should have consulted another medical man as to the procedure I should have taken

In the course of his summing up the judge said that a jury should only convict a doctor of causing death by negligence if he did something which no ordinary skilful doctor should have done

The jury were in retirement over an hour before giving their verdict

Mr Justice Shearman, in sentencing the accused, said he appreciated what a crushing blow to a professional man the mere conviction must be

The propriety of appealing is, we are informed, under consideration

Universities and Colleges.

UNIVERSITY OF OXFORD

THE following candidates have passed the Final Examination for the degrees of B M , B Ch in the subjects named

Materia Medica and Pharmacology D A Abernethy F J Bach A V Clemmey C R Croft T L Davies J H Ferguson E L Fothergill W H Hudson T M Ling D Lurie S Segal C W Simpson A G Wilson E M Wright Grace Batten Rosalind V Carruthers Margaret A L Herbertson Olive H Lister Irene M Titcomb *Pathology* D A Abernethy F J Bach R H B Bettington W B Boone C Charleson J C K Chilcott J L Cox G H Crisp C R Croft J A Eyres C W Fleming J N C Ford A T Fripp K A Hamilton S Harris H O Hopkins S Howard J S Jerome T M Ling C W Mackenzie R G Mathews E L Newell W F Howson Ray F J Sale J W de W G Thornton G P Thorold O R Tisdall E C Whitehall Cooke A L Wilkinson D O Williams Alice D K Peters *Forensic Medicine and Public Health* C E G Beveridge C P Blacker H A Byworth T A J M Dodd A T Fripp H L Harding J S Jerome M J W Minshull E L Newell J de la M Savage H N Stokoe R A Walsh D O Williams Mathilde E F Bugnion Ella J Cockram *Medicine Surgery Midwifery* M Mel Baird R J Brocklehurst T A J M Dodd H L Harding J R B Hern T B Hodgson P H Martin J D Mills M J W Minshull A W L Row H N Stokoe B E Tompson Mathilde E F Bugnion

UNIVERSITY OF LEEDS

AT a congregation held on December 13th the following degrees were conferred by the new Vice Chancellor, Dr J B Baillie

M D—G F Walker (with distinction) Ella M Hickman

M B , Ch B—*Marjorie E Knowles †Dorothée M B Gross †S K Sledge C H Ackroyd E E Blomfield Kathleen Boddy G Chambers Florence Cusworth G K Hatton H Hartley H A Hellewell F H Lodge W Murphy S Nagley R S Pyrah G D Rai G Rosemont F T Ruston Ann Sugden K A Turner

* With first-class honours † With second class honours

The William Hey Gold Medal for 1923 for the most distinguished graduate of the year was presented to G F Walker, who graduated M B , Ch B with first class honours in that year

The William Hey Gold Medal for 1924 and the West Riding Panel Practitioners' Prize in Medicine have been awarded to Marjorie Llaine Knowles

At the close of the ceremony the Vice Chancellor, who was warmly received by the students and those members of the general public who were present, gave a short address to the graduates In doing so he said he thought he might be departing from precedent His brief address, however, was so charming and so full of wisdom that everyone felt that a much greater breach of custom would have been amply justified

VICTORIA UNIVERSITY OF MANCHESTER

THE Council has accepted with regret the resignation of Dr W H Wood, lecturer in anatomy and tutor to the Faculty of Medicine, on his appointment to the Derby Chair of Anatomy in the University of Liverpool

Drs A L Barclay B A McSwiney, and B J Ryrie have been elected members of the Board of the Medical Faculty

ROYAL COLLEGE OF SURGEONS OF ENGLAND

AN ordinary Council meeting was held on December 11th, when the President, Sir John Bland Sutton, was in the chair

Fellowship

The Court of Examiners reported that at the recent examinations for the Fellowship 105 candidates presented themselves, of whom twenty seven were approved, including three (M A Lautre D Levi and C Stirton) who had not yet complied with the regulations Diplomas were granted to the following successful candidates as well as to Mr Arthur J Gardham, who had now attained the required age of 25 years

Arthur Rocyn Jones Anthony Blackstock Angus Hedley Whyte Frederick Cecil Wray Capp Bernard Warren Williams John Taylor Blackburn Haridas Jamnadas Bhatia Alexander Ernest Roche Frederick William Widgery Daryll Cedric Corry David Howard P[illegible] William Stewart Duke Elder John Dreaper [illegible] Brown Edwin Thomas Cato Charles Mills Greenslade Raymond Valentine Hennessy Alan Edward Lee George Dixon Fisher McFadden Charles Harwood Osborn Michael Joseph Smyth Hubert Wallace Symons

Membership

Diplomas of Membership were granted to the following

Margaret I B Cowling May H Elmitt and C J Polson

Licences in Dental Surgery were granted to ninety eight candidates

A report from the Board of Examiners in Dental Surgery was approved and adopted—that the regulations be modified so as to provide that a student who fails in any subject of the examination must produce a certificate that he has been "working in a dental school to the satisfaction of the dean for a further period of three months"

Tuft's College Dental School, Boston, Mass , U S A , was added to the list of institutions whose degree of D D S is accepted as exempting a candidate from the preliminary science examination and as admitting him to the first and second professional examinations on production of the certificates of study required by the regulations of the College

A report on the proceedings at the annual meeting of Fellows and Members was received

Mr H S Pendlebury was re elected a member of the Court of Examiners

ROYAL COLLEGE OF PHYSICIANS OF EDINBURGH

AT the annual meeting of the Royal College of Physicians held on December 4th, Dr George Lovell Gulland, C M G , was re elected President for the ensuing year The other office bearers were re elected also

He cleared up many of the difficulties in the interpretation of ovarian pregnancy, in the real significance of the occurrence of Neanderthaloid characters in aboriginal Australians, and in analysing the complicated factors of spinal shock following transverse section of the spinal cord The first of these three noteworthy memoirs was published in the *Journal of Anatomy* in January, 1922 The special value of the case of primary ovarian pregnancy was due to the early period of development and the clearness of the evidence in demonstration of the fact that the ovum was fertilized as the closing coagulum was formed in the mouth of the Graafian follicle and proceeded to develop in the connective tissue in this situation, embedding itself *ab initio* outside the growing corpus luteum of pregnancy The lucidity of the account of this specimen and the interpretation of its complexities afforded the first indication to the *anatomical world at large that a new John Hunter had arisen*

The results of the experimental work that he carried out in collaboration with Mr N D Royle between October, 1920, and July, 1921, were not published until this year ("The symptomatology of complete transverse lesions of the spinal cord," *Australian Journal of Experimental Biology and Medical Science*, vol i, 1924, p 57) By means of an ingeniously devised series of experiments he courageously attacked a difficult problem which had taxed the skill of many of the best experimental physiologists and clinical observers of Europe and America In particular he addressed himself to the task of deciding whether or not vascular disturbances played a part in determining spinal shock He showed that the variations in the ultimate results after section of the cord cannot be wholly explained by release of function alone There may be combined with release of function (due to section of the conducting pathways), vascular changes leading to rapid degeneration, or a temporary stage of hyperexcitability of the nerve cells The experience gained in this preliminary investigation was destined to prove of far-reaching importance when, in 1922, Hunter and Royle embarked upon the still more difficult task of cutting the Gordian knot of controversy regarding the sympathetic innervation of striated muscle and the central control of muscular tone But before undertaking this work Hunter spent eighteen months in Great Britain, Europe, America, and New Zealand, getting into touch with the medical schools of the world He went first to his former master, Professor Wilson, in Cambridge, who magnanimously allowed us at University College, London, to have the privilege of Hunter's stimulating help for a whole year During that time he occupied the position of an honorary lecturer, and he taught and carried on research, gave addresses to various societies, studied clinical methods (especially neurology) in London, as well as in France, Holland, and Germany, and visited and made himself familiar with the methods of anatomical departments in most of the British and many of the Continental schools

He carried out an important research upon the oculomotor nucleus of Tarsius (*Brain*, 1923), which, taken in combination with the results obtained by Brouwer, sheds important light upon the problems of human evolution He made an intensive study of the fossil remains of men, and devoted particular attention to the Piltdown and Rhodesian remains in the British Museum He devoted much time and energy to the problems involved in the reconstruction of the Piltdown skull, and showed that when the occipital region is properly reconstituted and orientated it presents a much closer analogy to the condition found in the newborn African anthropoids than does any other human skull By demonstrating that there is no disharmony between skull and jaw he has eliminated the chief factor in the controversy that had been raging for ten years before his work was done His monograph on the Piltdown problem, written in 1922, has not yet been published

During the short time he spent with Dr Ariens Kappers in Amsterdam he completed an investigation on the forebrain of apteryx (*Koninklijke Akademie van Wetenschappen te Amsterdam*, 1924), for which he was awarded the M D degree of the University of Sydney and the University medal On his way back to Australia he spent nearly three months visiting American and Canadian medical schools and not only acquired a knowledge of the scientific workers and their methods, but also rendered a great service by expounding in lectures and demonstrations the meaning of recent anatomical and neurological work in England In particular he did a great deal toward making Dr Henry Head's work on aphasia understood On his return to Australia he was made full professor of anatomy, being given the Challis Chair which Professor Wilson had formerly occupied, and he set to work to introduce the far-reaching changes incidental to the restoration of histology to the department of anatomy With the experience gained in his pilgrimage abroad he came to exercise an influence in the medical school and University, he was worshipped by the students and trusted implicitly by his colleagues

But the heavy work which these things involved did not prevent him from embarking upon a new and most formidable task—the experimental investigation of the problems of muscular tone, the solution of which had hitherto defied the leading physiologists and neurologists He attacked this intricate conundrum with confidence and courage His experimental work upon the effects of section of the spinal cord gave him technical experience and practice in observing the effects of lesions of the nervous system, his association with Professor Kulchitsky at University College had given him an exact and certain knowledge of new facts relating to the sympathetic innervation of striated muscle which were of fundamental importance in the attempt to solve his problem, and his experience of the work at Queen Square, the researches of Dr Henry Head, and Professor Stopford's work in Manchester, strengthened his assurance boldly to attack the problem He had explored the field of neurology and acquired the wider vision, he had acquired the experience of solving his own problems and of seeing other people solve theirs, he was ready to defy armchair critics and boldly to attempt the solution of the enigma of muscle tone

For several years Mr Royle had been endeavouring to devise some means of alleviating spastic paraplegia He had tried the usual surgical procedures on human patients, and by experiments on animals tried to discover some new operation, without much success He put his difficulties before Hunter on the latter's return to Australia Hunter showed him some of Kulchitsky's histological preparations, which revealed quite clearly that, contrary to the opinion expressed by Boeke and Aghduni, the sympathetic fibres to striated muscle did not go to the same muscle fibres as the medullated nerves He suggested that they should cut the [illegible] to an animal's limb and study the result [illegible] that section of the sympathetic did not destroy tone, nor even necessarily reduce it The change in tone was qualitative rather than quantitative That aspect of tone which Sherrington calls "plastic" is the function of those muscle fibres innervated by the sympathetic, whereas "contractile tone" (as Langelaan has called it) is a function of the voluntary and contractile fibres innervated by medullated somatic nerves, and is, therefore, not diminished by section of the sympathetic nerves This fact is the principle that underlies the surgical operation which Hunter suggested (and of which he devised the technique) for the alleviation of those cases of spastic paraplegia due to an excess of plastic tone, but not for those in which the contractile tone alone is responsible for the spastic condition In the hands of Royle this operation has yielded results which must seem incredible to those who have not witnessed them It has placed in the hands of the surgeon a technique which is destined to relieve a considerable group of sufferers from spastic troubles not only of voluntary muscles, but also of visceral muscles, such as those of the stomach and intestine, the bladder, etc But Hunter has extended the field of his experimental investigations and has studied the nature of the proprioceptive reflexes that are concerned with the maintenance of the two varieties of tone Deiters's nucleus and the vestibulospinal tract form integral parts of the somatic arc regulating contractile tone, whereas the ponto-spinal tract (Collier and Farquhar Buzzard) is an essential part of the sympathetic proprioceptive arc regulating plastic tone His investigations have also shed a new light upon the rôle of the frontal cortex, the corpus striatum, the red nucleus, the substantia nigra, and the cerebellum as influences affecting tone

Hunter and Royle were invited to New York to deliver (October 20th) the John B Murphy Oration on their work (see *Medicine, Surgery and Gynecology*, December 1924) and they gave demonstrations in many of the great medical centres of the United States and Canada Hunter then came to England to expound the results of his work and to meet those who criticize his results By a tragic fate he was struck down in the very week when he had hoped to demonstrate to those best qualified to appreciate it the new vision of neuro muscular function created by his genius and insight He died on December 10th at University College Hospital, of enteric fever contracted before his arrival in England He was so absorbed in the mission that had brought him to England as to be unconscious of the gravity of the illness from which he was suffering The last lecture he gave was delivered on December 5th in the anatomy theatre in Cambridge the department of the master who had played so large a part in guiding his life and shaping his aims

To those who have come under the spell of his genius and learned the truth of the teaching for which he has given his life it must ever remain a duty and privilege to expound his work in the hope of convincing others of its truth and to extend its applications by experiment and clinical applica tion To his widow and the University of Sydney we extend our deepest sympathy on their irreparable loss

G I S

The funeral service was held on December 12th at St Pancras Church The large congregation included besides the widow, Sir Arthur Keith the Provost and the Secretary of University College Professors J T Wilson G Elliot Smith, J P Hill, J H Starling A J Clark C C Choyce, T R Elliott, D M S Watson and Kulchitsky Mr T P Dunhill, the High Commissioner for Australia and the Agent General for New South Wales The British Medical Association was represented by Dr Alfred Cox, Medical Secretary

The Services

No 14 STATIONARY HOSPITAL

The annual dinner of the 14th Stationary Hospital was held at the Trocadero Restaurant London on December 12th Lieut Colonel J R Harper C B E took the chair and proposed the toast of The Hospital to which Colonel J S Warrack responded It is proposed to hold the next dinner on the second Friday in December, 1925

Medical News.

DR CHARLES MAYO will be the president of the Inter State Post Graduate Assembly which is to visit this country next June, and not his brother Dr William Mayo, as originally arranged Other members of the party will be Dr Franklin H Martin, Director General of the American College of Surgeons Dr Crile, and Dr John B Deaver Writing to Mr Philip Franklin, Dr Mayo states that it will certainly be a big meeting and expresses the hope that it will do a great deal of good in promoting harmony between the medical professions of Great Britain and America and that its influence will be far reaching on the people who read and hear of it

OWING to the illness of Dr Chandler the meeting of the Tuberculosis Society on December 19th was cancelled At the next meeting, on January 16th 1925 Dr Anthony Feiling will speak on tuberculosis of the central nervous system

GUY'S HOSPITAL was founded at the sole costs and charges of Thomas Guy on January 6th 1725 In connexion with the bi centenary a solemn service in commemoration of the founder and other benefactors of the hospital will be held in the Cathedral Church of St Saviour Southwark on Tuesday January 6th, 1925, at 12 noon The Prince of Wales president of the hospital, has signified his intention to be present

THE Queen's University (Belfast) Club London, will hold a dance in the Hotel Cecil on Thursday January 15th, 1925 at 9 p m Price of tickets (to include buffet supper) members 12s 6d guests—ladies 10s 6d, men 11s 6d Application for tickets to be accompanied by remittance and addressed to the Honorary Treasurer 17 Wimpole Street, W 1

THE Fellowship of Medicine is arranging a series of general lectures at the Royal Society of Medicine the first of which will be delivered by Sir Arbuthnot Lane at 5 30 p m on January 20th, 1925, and [illegible] the treatment

Beginning on January 12th the London Temperance Hospital, in association with certain special hospitals, will hold a two weeks intensive course in the general and special depart ments of medicine and surgery A course in cardiology has been arranged from January 12th to 23rd at the National Hospital for Diseases of the Heart (attendance limited to 16) The Royal Eye Hospital, Southwark, will hold a fortnight s course in ophthalmology from January 5th to 16) ment of common diseases of the nervous system at the West End Hospital for Nervous Diseases From January 6th to 31st there will be a course in the diagnosis and treat a series of lecture demonstrations on psychological medicine at the Bethlem Royal Hospital A course in urology will be held at St Peter s Hospital from January 12th to February 7th Copies of the syllabus of these courses may be obtained from the secretary to the Fellowship of Medicine, 1, Wimpole Street, W 1

THE January class of instruction in fevers, under the Metropolitan Asylums Board, will be held on Mondays and Thursdays at the Eastern Hospital, North Eastern Hospital, and Grove Hospital, on Tuesdays and Thursdays at the North Western Hospital, on Tuesdays and Fridays at the Western Hospital and the South Western Hospital and on Wednesdays and Fridays at the Park Hospital The special course of instruction on the diagnosis and treatment of fevers will be held at the South Eastern Hospital in February and March, on Tuesdays and Fridays, at 11 a m , commencing February 3rd A three months course of lectures and demonstrations in hospital administration will be given at the North Western Hospital on Mondays, Thursdays, and alternate Saturdays beginning on January 5th Full par ticulars may be obtained from the Clerk to the Metropolitan Asylums Board, Victoria Embankment E C 4

THE annual dinner of the Old Epsomian Club was held a the Trocadero Restaurant, London, on December 11th wit the President, Mr G E Waugh, F R C S , in the chai Proposing the toast 'Floreat Epsomia' in an interesting a witty speech, Mr Waugh remarked that Epsom College w founded originally by a man of great individuality who h tul en an original line from the first in such matters as teaching of natural science, and to day it was proud of fact that its scholars developed pronounced individualities rather than passively conforming to type Individuality was also the characteristic of the teaching staff and this quality was of great value in the world to day The headmaster, Mr A C Powell responding to the toast announced some striking successes attained in the intellectual sphere during the past year The new nave of the chapel—an Old Epsomian war memorial—was now in full use The cost of erection was £12,000 of which over £10,000 had already been raised be appealed to Epsomians to make a special effort to raise the remaining sum required He hoped that it might soon be possible for more Old Epsomians to be elected to the Council The college was the school of the medical profession, and had done a great work in training medical practitioners Besides fifty boys, the sons of doctors educated year by year without charge, a sum of no less than £5 000 had been awarded last July by the school in the form of scholarships, etc The toast of "The Guests" was proposed by Mr S Maynard Smith, C B , F R C S The Right Hon Sir Hamar Green wood, Bt , K C , M P , in his reply described the medical profession as the highest instrument for good the world had ever seen it recognized no frontiers of creed, colour or race Quality rather than quantity was the most vital need for the future welfare of the British Empire, and, therefore he was particularly glad to be present that night and to extend to the college his congratulations on its past and his warmest wishes for its future During the evening the school song, *Canticum Epsomiense*, was sung enthusiastically

THE annual dinner of the British Dental Hospital (formerly British Dentists Hospital) was held at the Langham Hotel on December 6th, the President (Sir Harry Baldwin) in the chair Dr Lennane in proposing the toast of the hospital, said that it had now proved the value of its existence Mr George Thomson, in his reply, said that all the members of the staff were also members of the British Dental Association Mr E E Turner proposed the health of the guests which was replied to by Drs Fenton Duddfield, Hewat, and Caley, and Mr C E Wallis

THE Minister of Health (the Right Hon Neville Chamberlain, M P) has appointed Captain William Brass, M P , to be his parliamentary private secretary (unpaid)

THE Rockefeller Institute for Medical Research has announced the release of the drug known as tryparsamide for use in the treatment of human and animal trypano somiasis (African sleeping sickness and mal de Caderas) and selected cases of syphilis of the central nervous system This action is based on results reported from clinical investi gations which have been in progress for several years The

He cleared up many of the difficulties in the interpretation of ovarian pregnancy, in the real significance of the occurrence of Neanderthaloid characters in aboriginal Australians, and in analysing the complicated factors of spinal shock following transverse section of the spinal cord The first of these three noteworthy memoirs was published in the *Journal of Anatomy* in January, 1922 The special value of the case of primary ovarian pregnancy was due to the early period of development and the clearness of the evidence in demonstration of the fact that the ovum was fertilized as the closing coagulum was formed in the mouth of the Graafian follicle and proceeded to develop in the connective tissue in this situation, embedding itself *ab initio* outside the growing corpus luteum of pregnancy The lucidity of the account of this specimen and the interpretation of its complexities afforded the first indication to the anatomical world at large that a new John Hunter had arisen

The results of the experimental work that he carried out in collaboration with Mr N D Royle between October, 1920, and July, 1921, were not published until this year ("The symptomatology of complete transverse lesions of the spinal cord," *Australian Journal of Experimental Biology and Medical Science*, vol i, 1924, p 57) By means of an ingeniously devised series of experiments he courageously attacked a difficult problem which had taxed the skill of many of the best experimental physiologists and clinical observers of Europe and America In particular he addressed himself to the task of deciding whether or not vascular disturbances played a part in determining spinal shock He showed that the variations in the ultimate results after section of the cord cannot be wholly explained by release of function alone There may be combined with release of function (due to section of the conducting pathways), vascular changes leading to rapid degeneration, or a temporary stage of hyperexcitability of the nerve cells The experience gained in this preliminary investigation was destined to prove of far-reaching importance when, in 1922, Hunter and Royle embarked upon the still more difficult task of cutting the Gordian knot of controversy regarding the sympathetic innervation of striated muscle and the central control of muscular tone But before undertaking this work Hunter spent eighteen months in Great Britain, Europe, America, and New Zealand, getting into touch with the medical schools of the world He went first to his former master, Professor Wilson, in Cambridge, who magnanimously allowed us at University College, London, to have the privilege of Hunter's stimulating help for a whole year During that time he occupied the position of an honorary lecturer, and he taught and carried on research, gave addresses to various societies, studied clinical methods (especially neurology) in London, as well as in France, Holland, and Germany, and visited and made himself familiar with the methods of anatomical departments in most of the British and many of the Continental schools

He carried out an important research upon the oculomotor nucleus of Twisius (*Brain*, 1923), which, taken in combination with the results obtained by Brouwer, sheds important light upon the problems of human evolution He made an intensive study of the fossil remains of men, and devoted particular attention to the Piltdown and Rhodesian remains in the British Museum He devoted much time and energy to the problems involved in the reconstruction of the Piltdown skull, and showed that when the occipital region is properly reconstituted and orientated it presents a much closer analogy to the condition found in the newborn African anthropoids than does any other human skull By demonstrating that there is no disharmony between skull and jaw he has eliminated the chief factor in the controversy that had been raging for ten years before his work was done His monograph on the Piltdown problem, written in 1922, has not yet been published

During the short time he spent with Dr Arriens Kappers in Amsterdam he completed an investigation on the forebrain of apteryx (*Koninklijke Akademie van Wetenschappen te Amsterdam*, 1924), for which he was awarded the M D degree of the University of Sydney and the University medal On his way back to Australia he spent nearly three months visiting American and Canadian medical schools and not only acquired a knowledge of the scientific workers and their methods, but also rendered a great service by expounding in lectures and demonstrations the meaning of recent anatomical and neurological work in England In particular he did a great deal toward making Dr Henry Head's work on aphasia understood On his return to Australia he was made full professor of anatomy, being given the Challis Chair which Professor Wilson had formerly occupied, and he set to work to introduce the far-reaching changes incidental to the restoration of histology to the department of anatomy With the experience gained in his pilgrimage abroad he came to exercise an influence in the medical school and University, he was worshipped by the students and trusted implicitly by his colleagues

But the heavy work which these things involved did not prevent him from embarking upon a new and most formidable task—the experimental investigation of the problems of muscular tone, the solution of which had hitherto defied the leading physiologists and neurologists He attacked this intricate conundrum with confidence and courage His experimental work upon the effects of section of the spinal cord gave him technical experience and practice in observing the effects of lesions of the nervous system, his association with Professor Kulchitsky at University College had given him an exact and certain knowledge of new facts relating to the sympathetic innervation of striated muscle which were of fundamental importance in the attempt to solve his problem, and his experience of the work at Queen Square, the researches of Dr Henry Head, and Professor Stopford's work in Manchester, strengthened his assurance boldly to attack the problem He had explored the field of neurology and acquired the wider vision, he had acquired the experience of solving his own problems and of seeing other people solve theirs, he was ready to defy armchair critics and boldly to attempt the solution of the enigma of muscle tone

For several years Mr Royle had been endeavouring to devise some means of alleviating spastic paraplegia He had tried the usual surgical procedures on human patients, and by experiments on animals tried to discover some new operation, without much success He put his difficulties before Hunter on the latter's return to Australia Hunter showed him some of Kulchitsky's histological preparations, which revealed quite clearly that, contrary to the opinion expressed by Boeke and Aghdai, the sympathetic fibres to striated muscle did not go to the same muscle fibres as the medullated nerves He suggested that they should cut the sympathetic supply to an animal's limb and study the result They discovered that section of the sympathetic did not destroy tone, nor even necessarily reduce it The change in tone was qualitative rather than quantitative That aspect of tone which Sherrington calls "plastic" is the function of those muscle fibres innervated by the sympathetic, whereas "contractile tone" (as Langelaan has called it) is a function of the voluntary and contractile fibres innervated by medullated somatic nerves, and is, therefore, not diminished by section of the sympathetic nerves This fact is the principle that underlies the surgical operation which Hunter suggested (and of which he devised the technique) for the alleviation of those cases of spastic paraplegia due to an excess of plastic tone, but not for those in which the contractile tone alone is responsible for the spastic condition In the hands of Royle this operation has yielded results which must seem incredible to those who have not witnessed them It has placed in the hands of the surgeon a technique which is destined to relieve a considerable group of sufferers from spastic troubles not only of voluntary muscles, but also of visceral muscles, such as those of the stomach and intestine, the bladder, etc But Hunter has extended the field of his experimental investigations and has studied the nature of the proprioceptive reflex arcs that are concerned with the maintenance of the two varieties of tone Deiters's nucleus and the vestibulospinal tract form integral parts of the somatic arc regulating contractile tone, whereas the ponto-spinal tract (Collier and Fuquhar Buzzard) is an essential part of the sympathetic proprioceptive arc regulating plastic tone His investigations have also shed a new light upon the role of the frontal cortex, the corpus striatum, the red nucleus, the substantia nigra, and the cerebellum as influences affecting tone

Hunter and Rovle were invited to New York to deliver (October 20th) the John B Murphy Oration on their work (see *Medicine, Surgery and Gynecology*, December 1924), and they gave demonstrations in many of the great medical centres of the United States and Canada Hunter then came to England to expound the results of his work and to meet those who criticize his results By a tragic fate he was struck down in the very week when he had hoped to demonstrate to those best qualified to appreciate it the new vision of neuro muscular function created by his genius and insight He died on December 10th at University College Hospital of enteric fever contracted before his arrival in England He was so absorbed in the mission that had brought him to England as to be unconscious of the gravity of the illness from which he was suffering The last lecture he gave was delivered on December 5th in the anatomy theatre in Cambridge the department of the master who had played so large a part in guiding his life and shaping his aims

To those who have come under the spell of his genius and learned the truth of the teaching for which he has given his life it must ever remain a duty and privilege to expound his work in the hope of convincing others of its truth and to extend its applications by experiment and clinical application To his widow and the University of Sydney we extend our deepest sympathy on their irreparable loss

C F S

The funeral service was held on December 12th at St Pancras Church The large congregation included besides the widow, Sir Arthur Keith the Provost and the Secretary of University College Professors J T Wilson C Elliot Smith, J P Hill J H Starling A J Clark C C Choyce, T R Elliott D M S Watson and Kulchitsky Mr T P Dunhill, the High Commissioner for Australia and the Agent General for New South Wales The British Medical Association was represented by Dr Alfred Cox Medical Secretary

The Services

NO 14 STATIONARY HOSPITAL

THE annual dinner of the 14th Stationary Hospital was held at the Trocadero Restaurant London on December 12th Lieut Colonel J P Harper C B E took the chair and proposed the toast of The Hospital to which Colonel J S Warrack responded It was proposed to hold the next dinner on the second Friday in December 1925

Medical News.

DR CHARLES MAYO will be the president of the Inter State Post Graduate Assembly which is to visit this country next June, and not his brother Dr William Mayo as originally arranged Other members of the party will be Dr Franklin H Martin, Director General of the American College of Surgeons Dr Crile, and Dr John B Deaver Writing to Mr Philip Franklin, Dr Mayo states that it will certainly be a big meeting and expresses the hope that it will do a great deal of good in promoting harmony between the medical professions of Great Britain and America and that its influence will be far reaching on the people who read and hear of it

OWING to the illness of Dr Chandler the meeting of the Tuberculosis Society on December 19th was cancelled At the next meeting, on January 16th 1925 Dr Anthony Feiling will speak on tuberculosis of the central nervous system

GUY'S HOSPITAL was founded at the sole costs and charges of Thomas Guy on January 6th 1725 In connexion with the bicentenary a solemn service in commemoration of the founder and other benefactors of the hospital will be held in the Cathedral Church of St Saviour Southwark on Tuesday January 6th 1925, at 12 noon The Prince of Wales president of the hospital has signified his intention to be present

THE Queen's University [Belfast Club London, will hold a dance in the Hotel Cecil on Thursday January 15th 1925 at 9 p m Price of tickets (to include buffet supper) members 12s 6d members guests—ladies 10s 6d, men 11s 6d Application for tickets to be accompanied by remittance and addressed to the Honorary Treasurer 17 Wimpole Street, W 1

THE Fellowship of Medicine is arranging a series of general lectures at the Royal Society of Medicine the first of which will be delivered by Sir Arbuthnot Lane at 5 30 p m on January 20th, 1925, and deal with the treatment of fractures

Beginning on January 12th the London Temperance Hospital, in association with certain special hospitals, will hold a two weeks intensive course in the general and special departments of medicine and surgery A course in cardiology has been arranged from January 12th to 23rd at the National Hospital for Diseases of the Heart (attendance limited to 16) The Royal Eye Hospital Southwark, will hold a fortnight's course in ophthalmology from January 5th and from January 5th to 31st there will be a course in the diagnosis and treatment of common diseases of the nervous system at the West End Hospital for Nervous Diseases From January 6th to 31st Dr Porter Phillips and Dr Thomas Beaton will give a series of lecture demonstrations on psychological medicine at the Bethlem Royal Hospital A course in urology will be held at St Peter's Hospital from January 12th to February 7th Copies of the syllabus of these courses may be obtained from the secretary to the Fellowship of Medicine, 1, Wimpole Street, W 1

THE January class of instruction in fevers under the Metropolitan Asylums Board, will be held on Mondays and Thursdays at the Eastern Hospital, North Eastern Hospital, and Grove Hospital, on Tuesdays and Thursdays at the North Western Hospital, on Tuesdays and Fridays at the Western Hospital and the South Western Hospital, and on Wednesdays and Fridays at the Park Hospital The special course of instruction on the diagnosis and treatment of fevers will be held at the South Eastern Hospital in February and March, on Tuesdays and Fridays at 11 a m, commencing February 3rd A three months course of lectures and demonstrations in hospital administration will be given at the North Western Hospital on Mondays Thursdays, and alternate Saturdays beginning on January 5th Full particulars may be obtained from the Clerk to the Metropolitan Asylums Board, Victoria Embankment E C 4

THE annual dinner of the Old Epsomian Club was held at the Trocadero Restaurant, London, on December 11th with the President, Mr G E Waugh, F R C S in the chair Proposing the toast Floreat Epsomia in an interesting and witty speech, Mr Waugh remarked that Epsom College was founded originally by a man of great individuality who had taken an original line from the first in such matters as the teaching of natural science, and to day it was proud of the fact that its scholars developed pronounced individualities rather than passively conforming to type Individuality was also the characteristic of the teaching staff and this quality was of great value in the world to day The headmaster, Mr A C Powell, responding to the toast announced some striking successes attained in the intellectual sphere during the past year The new nave of the chapel—an Old Epsomian war memorial—was now in full use The cost of erection was £12 000 of which over £10 000 had already been raised he appealed to Epsomians to make a special effort to raise the remaining sum required He hoped that it might soon be possible for more Old Epsomians to be elected to the Council The college was the school of the medical profession and had done a great work in training medical practitioners Besides fifty boys, the sons of doctors educated year by year without charge, a sum of no less than £5 000 had been awarded last July by the school in the form of scholarships, etc The toast of "The Guests" was proposed by Mr S Maynard Smith, C B, F R C S The Right Hon Sir Hamar Greenwood, Bt, K C, M P, in his reply, described the medical profession as the highest instrument for good the world had ever seen It recognized no frontiers of creed colour or race Quality rather than quantity was the most vital need for the future welfare of the British Empire, and, therefore, he was particularly glad to be present that night and to extend to the college his congratulations on its past and to extend his warmest wishes for its future During the evening the school song, *Canticum Epsomiense* was sung enthusiastically

THE annual dinner of the British Dental Hospital (formerly British Dentists Hospital) was held at the Langham Hotel on December 6th, the President (Sir Harry Baldwin) in the chair Dr Lennane, in proposing the toast of the hospital, said that it had now proved the value of its existence Mr George Thomson, in his reply said that all the members of the staff were also members of the British Dental Association Mr E E Turner proposed the health of the guests which was replied to by Drs Fenton Dudfield, Hewat, and Caley, and Mr C E Wallis

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drug will be manufactured by the Powers Weightman Rosengarten Co of Philadelphia, and will become available through the regular trade channels about January 1st, 1925 In releasing the drug for the benefit of the public, the Rockefeller Institute desires it to be known that the Institute does not share in any way in profits that may be derived from the sale of the drug, and that, with the cordial co operation of the manufacturers, provision has been made for the maintenance of a schedule of prices on as low a basis as possible

THE annual report for 1923-24 of Livingstone College, Leyton, draws attention to the fact that it is now thirty two years since the College was founded to give medical instruction to candidates for the mission field During that time 810 students have entered for the full course or for part of it, of whom 540 are still actively engaged abroad During the past session the thirty five students represented no fewer than twenty three different missionary societies and eight nationalities The vacation course in July was attended by twenty four students, representing nine missionary societies, and forty seven students have attended short courses on the care of the health in the tropics The financial report shows that all expenditure during the past year has been met and the existing deficit reduced by £42 A report of the commemoration day proceedings in May was published in our columns of June 7th (p 1035)

THE fees of district medical officers under the London County Council are to remain for a further period until December 31st, 1925, at the present rate of 11s 6d a year for each person entitled to free medical attendance, the sum to include medicines and simple surgical dressings

BY an Order of Privy Council, dated December 13th, the Earl of Balfour, K G, O M, F R S, and the Right Hon William Graham, LL B, M P, have been appointed into the vacancies in the membership of the Medical Research Council caused by the retirement of the Right Hon Edward Wood, M P, and Mr A G Church, D S O, M C Lord Balfour has accepted the chairmanship of the Medical Research Council

Letters, Notes, and Answers.

ORIGINAL ARTICLES and LETTERS *forwarded for publication are understood to be offered to the* BRITISH MEDICAL JOURNAL *alone unless the contrary be stated* Authors desiring reprints of their articles published in the BRITISH MEDICAL JOURNAL are requested to communicate with the Financial Secretary and Business Manager, 429, Strand, W C 2, on receipt of proof

CORRESPONDENTS who wish notice to be taken of their communications should authenticate them with their names—not necessarily for publication

ALL communications with reference to advertisements as well as orders for copies of the JOURNAL should be addressed to the Financial Secretary and Business Manager, 429, Strand, London, W C 2 Attention to this request will avoid delay Communications with reference to editorial business should be addressed to the Editor, BRITISH MEDICAL JOURNAL, 429, Strand W C 2

Communications intended for the current issue should be posted so as to arrive by the first post on Monday or at latest be received not later than Tuesday morning

THE telephone number of the BRITISH MEDICAL ASSOCIATION and BRITISH MEDICAL JOURNAL is Gerrard 2630 (Internal Exchange) The telegraphic addresses are

EDITOR of the BRITISH MEDICAL JOURNAL, *Aitiology Westrand, London*

FINANCIAL SECRETARY AND BUSINESS MANAGER (Advertisements, etc), *Articulate Westrand, London*

MEDICAL SECRETARY, *Mediocera Westrand, London*

The address of the Irish Office of the British Medical Association is 16, South Frederick Street, Dublin (telegrams *Bacillus Dublin*, telephone 4737, Dublin), and of the Scottish Office, 6, Rutland Square, Edinburgh (telegrams *Associate, Edinburgh*, telephone 4361, Central)

QUERIES AND ANSWERS.

INCOME TAX

Sale of a Share in Practice

"D C H" took over his former partner's share in the practice, the consideration given to be payment for four years of 20 per cent of the panel receipts less certain expenses, the payments being made quarterly How do they affect his income tax liability?

*** Our correspondent must decide on all the facts—including the negotiations preceding the sale—whether (*a*) the share in the practice was sold for an undetermined sum equal to the total of the payments to be made, or (*b*) for a four years' annuity based on the 20 per cent The latter case is a rare one, the normal transaction being essentially one of payment of a capital sum by instalments In neither case can the payments be deducted as professional expenses, but in the latter case the amount of the payments will have to be charged at the full rate of tax (without allowance for earned income), because that tax can be deducted by "D C H" when making the payments—but not afterwards

Cash Basis Retirement

"A W" refers to a reply given to his inquiry in our issue of November 15th last, and says that the local inspector refuses to accept his contention that post retirement cash receipts are not assessable on the retired practitioner

*** Our correspondent may find it useful to refer to replies in recent issues as follows to "L B C," September 13th, to "Leeds," September 20th, and to "D L," October 11th Putting the matter in a phrase, the inspector has not given due weight to the fact that the amounts of the cash receipts were taken as measures of the true income of the practice, and to the further consideration that a change of personnel in the practice does not justify a departure from the normal course of procedure When, for instance, "A W" paid tax on the average of his net receipts for 1919, 1920, and 1921, he was not paying tax on that specific income but on the income of the financial year ended April 5th, 1923 It is admitted that exceptional circumstances may from time to time justify a departure from the cash basis rule, but retirement is not, in our opinion, a fact which bears on the question Failing agreement with the inspector, "A W" might very well appeal either to the general (that is, local) commissioners, or to the special commissioners on circuit

SENSIBILITY TO HORSE SERUM

"F R C S E" writes I am in the unfortunate position of being sensitive to horse serum, usually getting a more or less severe local or general urticaria after a serum or vaccine injection I recently had an anticatarrhal injection, with the usual discomfort I intend to have some other injections later, and would welcome any suggestions for the prevention of the unpleasant after effects

LETTERS, NOTES, ETC.

AS in former years, the Automobile Association announces that its road patrols will not be on the roads on Christmas Day

KELOID VACCINATION SCARS

DR F W STANSFIELD (Public Vaccinator, Reading) writes During many years of public vaccination I have seen probably ten or a dozen cases similar to that described by Dr J Crisp in the JOURNAL of December 6th (p 1086) The condition, in my experience, never arises except when the vesicles become broken, and is probably a slight and localized "coccic" infection My cases have all been treated alike and all successfully The scars are dressed with ung resorcin co spread upon sterilized gauze, the dressings being changed every alternate day After a few days the keloid breaks down, leaving an open ulcer The treatment is continued with the same ointment, and in a week or so the ulcer heals, leaving a normal healthy vaccination scar As there are many brands of resorcin ointment on the market I may say that the one I use is made by Messrs James Woolley and Sons of Manchester

"EPHEMERIS PHARMACOLOGICA"

MESSRS OPPENHEIMER (179, Queen Victoria Street London, E C 4) apparently are not with those who would abolish Greek from the educational curriculum Even if the Greek be somewhat late, *Ephemeris Pharmacologica* is not unpleasant as a variant of "Medical Visiting List with Therapeutic Notes" The little book for 1925 which Messrs Oppenheimer offer to the medical profession is full of information, and in compiling it the authors have given heed to the appeal of Crabbe

> Oh! rather give me commentators plain
> Who with no deep research es vex the brain

The visiting list is arranged for recording the visits against any particular name for a month The therapeutic notes are brief but to the point, and appear to cover most of the drugs used in modern medicine Concise information is given on some legal matters, diet, infectious diseases, and poisons and their antidotes There are height and weight tables, a posological table tables for converting the metric system, postal information, and an almanac It is a handy book of quite small dimensions

CORRECTION

OUR report (p 1113) of the meeting of the Surgical Section of the Royal Society of Medicine held on December 3rd should have stated that the chair was taken by the President, Mr Herbert Paterson

VACANCIES

NOTIFICATIONS of offices vacant in universities, medical colleges and of vacant resident and other appointments at hospitals, will be found at pages 36, 37, 39, and 40 of our advertisement columns, and advertisements as to partnerships, assistantships, and locumtenencies at pages 38 and 39

A short summary of vacant posts notified in the advertisement columns appears in the *Supplement* at page 229

EPITOME OF CURRENT MEDICAL LITERATURE.

Medicine

Sero-prophylaxis of Measles

482. S. WOLFF (*Deut. med. Woch.*, November 7th, 1924, p. 1515) records the following incidents to show how effective and lasting may be the prophylaxis of measles induced by injecting the serum of a person who has recovered from measles. In July, 1923, a 24-year-old child (B. G.) developed measles, and in the same family there was another child (H. G.), aged 1 year, who, though it left in contact with the case of measles, did not develop it. In May, 1924, a third child (G.) born in the interval and aged only 5 months, had a fairly severe attack of measles. Again the child H. G. failed to contract measles, though exposed to infection. The solution of this riddle of H. G.'s immunity was found when it came to light that H. G. had suffered from severe melæna neonatorum when only 8 days old. An injection of 30 c.cm. of the father's blood had been given, and as the father had suffered from a severe attack of measles in his youth it would seem that the immunizing bodies created in the father by the natural infection had been transmitted to the infant by parenteral administration. The author points out as a curious fact that this would seem to have lasted a considerable time. The immunity conferred by the injection of the serum of convalescents from measles is generally supposed to be very short-lived. The author suggests that observations such as those recorded point to the feasibility of preventing measles by the injection of the blood of adults who have contracted measles in childhood instead of the blood of children convalescent from measles.

453. DEYER (*Monats. f. Kinderheilk.*, November 1924, p. 134) records observations on an epidemic of measles in an institution for invalid children under 3 years of age. There were in all seventy children, of the first three who showed symptoms two died, and it was decided at once to give the others injections of the serum of a convalescent (Degwitz's method of prophylaxis). Among invalid children it was very difficult to obtain serum from uncomplicated cases, and in sufficient quantity. At first serum from a convalescent, November 1924, p. 134) the mixed serums of two children between 1 and 2 years of age. Blood was drawn from the longitudinal sinus and after separation of the clot the serum was used for injection without being further treated. It was given first to those children who were in most danger—two who had developed measles with bronchopneumonia and eight who were suffering from various forms of tuberculosis; the two former both recovered rapidly after the injection, two of the latter did not develop measles, and the others recovered without complications. Finally serum from adults was given to the remaining children, but the quantity available was only sufficient to allow each child 10 c.cm. instead of the 30 c.cm. recommended by Degwitz. Of the children under 9 months, though the chances of infection were the same in their ward as elsewhere, only one developed the disease so that 10 c.cm. of serum would appear to be almost a sufficient prophylactic dose for children of that age. For those over a year old the dose was insufficient; many developed measles but in all the course was mild and no children died. The total number of cases was fifty-five, but the only deaths were the two at the beginning.

A Fatal Case of Hydrophobia

484. F. GERARD (*Rev. Tunisienne des Sci. Méd. et Tunis. Medical*, August, 1924) records the case of a boy aged 9 who had been bitten five months previously by a dog that could not be traced and four days later had commenced a course of intensive antirabic treatment (April 28th to May 18th). Four months later, after a severe fright, he was unconscious for some minutes. From that time his mind was dulled, he lost appetite, vomited, and had febrile attacks. For three days before his admission to hospital he ate nothing and could not be induced to drink. On admission scars of bites provoked a pharyngeal spasm. On admission scars of bites on the left knee and in the left axilla were quite distinct. In spite of his hyperexcitability he was easily calmed and answered questions although in a jerky manner. His general condition was good. Although unable to drink he could swallow his saliva. A current of air or a sudden raising of the bedclothes produced a short spasmodic attack. His respiration was very irregular; several spasmodic contractions of the diaphragm were followed by apnœa for some seconds, and then a sigh. The arm movements were normal but there was paresis of the right leg, with hyperæsthesia and weak knee-jerks. The left knee-jerk was accentuated; there was a positive Babinski sign on the left side, and the Kernig sign was absent. Lumbar puncture was performed three times without relief. The cerebro-spinal fluid showed marked lymphocytosis; no organisms were found. In spite of sedatives the patient's condition grew worse; the tendon and superficial reflexes disappeared and the boy died three days later. A necropsy was refused, but the last specimen of cerebro-spinal fluid produced rabies in a guinea-pig. Gerard points out that only one other case (Konradi) has been hitherto recorded of this diagnosis being made by the inoculation test using cerebro-spinal fluid withdrawn during life.

Œsophageal Movements in Health and Disease

485. D. DANILOPOLU, D. SIMICI and C. DIMITRIU (*Journ. de Phys. et de Path. Générale*, July 1924, p. 589) have studied the movements of the human œsophagus using an air-filled ampulla communicating with a receiving tambour and water manometer recorded the pressure within the recording system. It was found that the normal stimulus is distension (bolus); this produces (1) the true reflex of deglutition, and (2) local waves of peristalsis in the œsophageal muscles. They add that œsophageal peristalsis can occur without the production of the deglutition reflex and that contrary to the classical teaching the deglutition reflex can be originated by a stimulus at any level of the œsophagus. Though the authors term the local waves reflex they do not think that they involve a nerve centre but that they are produced by the local perioesophageal nerve plexuses. The deglutition waves were found to be much larger than those of the local peristalsis. In the second paper in the same issue (p. 612) the authors report that small intravenous doses of atropine, adrenaline, and of eserine exaggerate while larger doses diminish, the contractility of the œsophagus. These chloride in any dose only diminishes the excitability. These drugs had less effect on the large waves of deglutition than on the small peristaltic waves. All regions of the tube—pure striated muscle, pure non-striated muscle, or the region where these are mixed—are equally affected. These drugs acted less intensely on the œsophagus than on the stomach. In the third paper (p. 639) the authors report four cases of tetany, organic stenosis and cardiospasm. In tetany the œsophagus showed hypermotility; this they correlate with the hypertonus characteristic of the vegetative system generally in this disease. In stenosis they find the duration of the contractions is greater than the normal, eighteen seconds instead of nine to eleven. In cardiospasm a condition of hypertonicity was observed.

Surgery

Tuberculous Spondylitis

486. A. BRUNING (*Klin. Woch.*, October 14th, 1924, p. 1916) gives a summary of the most important points in the pathology and diagnosis of tuberculous vertebral caries and an account of its treatment. In the early stage the object of treatment should be to give rest to the diseased vertebræ, and an attempt should be made to prevent spinal deformity. With intelligent children rest may be often secured by keeping the child continuously face downwards in bed; the vertebræ are thereby very slightly separated from each other. The best treatment both for children and adults is the plaster of Paris bed or shell which extends from the neck to the upper part of the thighs. Directions are given for the preparation of this apparatus in a private house. The plaster bed or shell is carefully moulded especially in the region of the neck and shoulders and the patient rests on it both by day and night. The diseased vertebræ are protected thereby from all concussion, and the pain soon disappears. After six or nine months, if the pain has ceased, the plaster of Paris bed is replaced by a plaster jacket or corset in which the patient makes the first attempt to walk. After a further six or twelve months this is changed for a cloth corset but at night the patient usually willingly returns to the old plaster of Paris bed. The beneficial effect of sunlight on tuberculous diseases has been demonstrated by Poulier and in vertebral caries sun baths or exposures of the body to the direct action of sunlight have been employed; the head being protected from the sun's rays. These exposures are increased gradually, as regards the area of the body exposed

and the duration of exposure, until the whole body is exposed to the sun's rays for several hours daily The patient should also spend much time in the open air and should sleep in it The author recommends the administration of sodium iodide, 5 to 10 grains twice daily.

487 Intracardiac Injections in Stoppage of the Heart

G NICOLICH and POTOTSCHNIG (*Rif Med*, November 3rd, 1924, p 1034) report four cases of arrest of the heart's beat during operation treated by intracardiac injection of adrenaline In the first case, a healthy young man operated on for epididymitis, though the heart had stopped beating for ten minutes, recovery took place after injecting 1 c cm of 1 in 1,000 adrenaline, the operation was finished and the patient recovered without any ill effects In the second case, an old man with malignant disease, whose heart stopped during an operation, was temporarily revived and lived for twelve hours after the injection In the two other cases (perforated gastric ulcer and tuberculous peritonitis) no effect was obtained Of all the cardio kinetics injected adrenaline was found to be the best The authors advise that the injection should be made in the third or fourth space, and as near the sternum as possible, so as to avoid injuring the pleura—the chief danger, for haemopericardium does not follow puncture They suggest that it is perhaps immaterial whether the cardiac cavity be reached or not, the adrenaline probably acts on the cardiac nerves In the second fatal case the myocardium was found to be degenerate, and in the third and fourth to be poisoned by toxins

488 Gastro-duodenal Ulcers

P DUVAL (*Bull et Mem Soc Nat de Chir*, October 25th, 1924, p 908) considers that the diversity of opinion on the correct treatment of perforated gastric and duodenal ulcers is due largely to ignorance of the real cause of the perforation As a result of investigating a number of cases he believes that the mechanism of perforation is of two kinds There is first the non infected and chronic ulcer which suddenly perforates, and, secondly, there is the type of ulcer which may be either acute or chronic, which shows evidence of inflammation, and is always microbic in origin In the first group perforation is purely mechanical, whilst in the second group it results from infection The first variety may be simply due to the giving way of a scar without evidence of an inflammatory reaction In the latter type necrosis or suppuration is present, and infective organisms, usually streptococci, are always found Some surgeons think that simple suture of the ulcer after perforation will ensure cure, and that gastro jejunostomy or excision is unnecessary Duval agrees with this as regards the first group, where the perforation is mechanical and the ulcers appear to heal satisfactorily In the infected variety he does not find it sufficient, and believes that the ulcer and the infected area surrounding it should be excised In such cases destruction by the cautery, resection, or even partial gastrectomy, give the best results, the sutures being inserted in non infected tissues He considers it possible to determine with the naked eye whether the ulcer is infected or non infected Further research is necessary, but there appears to be more oedema in infected cases The examination of the blood for leucocytosis might assist in forming an opinion

489 Syphilitic Peritonitis

S KORACH (*Deut med Woch*, October 10th, 1924, p 1402) advances various arguments in support of his hypothesis that when surgeons open the abdomen and find diffuse adhesive indurative peritonitis the condition is often syphilitic In many of these cases the appendix is very hard to find, being embedded in adhesions, but it is itself the site neither of macroscopic nor microscopic changes, and the diagnosis of chronic appendicitis is not supported by sufficient evidence To illustrate his hypothesis the author gives a detailed account of a woman, aged 39, who was admitted to hospital suffering from intermittent fever, which resisted antipyretics The Wassermann reaction was positive, and the temperature fell after a course of mercury She returned to hospital six months later with fever and rigors, complaining of weakness, insomnia, loss of appetite and weight, and persistent and diffuse abdominal pain In the right side of the abdomen a tender, slightly movable swelling, of the size of a child's fist, could be seen and felt Large doses of potassium iodide were prescribed, and the tumour rapidly became smaller The temperature fell to normal, but as the tumour had not completely disappeared, and the patient complained of attacks of abdominal pain, exploratory laparotomy was performed, and diffuse adhesive indurative peritonitis was found There was no sign of disease of the gall bladder, stomach, or appendix, the duodenum and liver also appeared to be healthy The author suggests that in an appreciable number of cases of diffuse adhesive peritonitis much can be done by antisyphilitic treatment

Therapeutics.

490 Sulfarsenol in Malaria.

L DURŒUX (*Bruxelles Medical*, November 16th, 1924, p 92) has treated more than eighty malarial patients with this drug since 1918 Six years ago he began his investigations with various derivatives of "606," and he finds that sulfarsenol is less toxic and more active than any other form, especially in the treatment of malaria His results have improved since he has given injections at shorter intervals, he now gives (*a*) a small dose once a day, (*b*) a moderate dose every second day, or (*c*) a large dose each third day He has kept most of his patients under observation during the last four years He has found it advisable in chronic cases to repeat the treatment during seasonal changes, especially in October and March, particularly in the case of patients who do not suffer from typical recurrences of malaria, but who are profoundly debilitated, with headache, anorexia, nausea, and slight fever He reports success in several severe cases of Oriental malaria In his earlier series (45 cases) the injections were given at longer intervals, there were 6 relapses among the 27 patients who reported subsequently Among the 37 patients who have received intensive treatment since 1920, 23 have been under observation for three years, and only 2 have had relapses Almost all of these patients had been treated previously with quinine, either by the mouth or intravenously, but in every case relapses had occurred Durœux believes that it is possible to prevent relapses by a series of preventive injections when the seasons change

491 Treatment of Whooping-cough by X Rays

RALPH D LEONARD (*Radiological Review*, September-October, 1924, p 10) has investigated the therapeutic action of *x* rays in this disease during the last two years He found that a single exposure to *x* rays of patients who had been having ten to fifteen paroxysms during the night reduced the attacks to three or four Routine *x* ray treatment was given during the autumn and winter of 1922 to 300 patients Careful physical examinations and blood cultures were made, and skiagrams of the chest were taken before and after treatment The ages of the majority ranged from 1 month to 6 years At first three exposures were given at intervals of forty eight hours—alternatively over the back and front of the chest Improvement resulted in at least 75 per cent of the cases, vomiting being promptly relieved A year later 20 patients were kept under constant observation *B pertussis* was isolated in 6 of them In addition to stronger dosage, treatment was limited to the roots of the lungs, both front and back Skiagrams showed that all the patients had marked enlargement of the bronchial glands, and many had peribronchial thickening About 25 per cent gave evidence of some localized infiltration or consolidation of lung tissue, but no clinical evidence of pneumonia After treatment there was a definite diminution in the size of the bronchial glands

492 Vaccine Treatment of Whooping cough

AFTER briefly summarizing the published conclusions of various writers in England, America, Italy, and elsewhere, A H MEYER, M KRISTENSEN, and E SORENSEN (*Acta Paediatrica*, October 25th, 1924, p 21) analyse the results obtained by the vaccination treatment of sporadic cases and contacts in the children's wards at the Copenhagen and other Danish hospitals, children's homes, infant asylums, private practice, and during an epidemic in the Faroe Islands The vaccine was supplied by the Danish State Serum Institute A forty eight hours old culture of the Bordet Gengou bacillus on blood agar was rubbed off with a Pasteur pipette, and an emulsion in 0 5 per cent phenol saline was prepared In 1 c cm of this emulsion there were 10,000 Bordet Gengou bacilli The vaccine was given both prophylactically and therapeutically The conclusions drawn by the authors from their analysis of this considerable mass of material are that a vaccine prepared from the whooping cough bacillus has a beneficial effect upon whooping cough when given early in the disease—that is, up to and including the first week of the convulsive stage—mainly in lessening the severity of the disease The prophylactic effect is also probably of value, although the extent of actual prevention of disease is more difficult to judge The varying action of the vaccine in some cases may be due to there being an optimum period for administration, the age of the vaccine, and the possibility of there being various types of bacillus In whooping cough the complement fixation test appears only in the third to fourth week, but in three out of six healthy children thus vaccinated the complement fixation test gave maximum readings eight days after the third injection, whereas the test was negative in the three unvaccinated children.

493. **Two New Antimony Compounds**

A LANDALL (*Amer Journ Med Sci*, November, 1924, p 723) studied the therapeutic value in cases of granuloma inguinale of two new antimony compounds—sodium antimony thio glycocollate and antimony thioglycocollamide—a triamide of antimony and thioglycocollis, administered intravenously With a maximum dosage of 0 1 gram every second day rapid cure resulted in all the cases treated, immediate relief of pain after the first injection being noticeable in some There was no evidence of antimony poisoning, and no such irritative effects occurred at the site of injection as frequently accompany the use of tartar emetic Five patients intolerant to this latter drug showed complete tolerance to these new compounds Randall adds that both can also be used intramuscularly, though the sodium antimony thioglycollate is probably the better of the two Their possible value in the treatment of syphilis is under investigation and he thinks that they should prove efficacious in other infectious conditions

494. **Calcium Chloride in Arterial Hypertension**

W L T ADDISON (*Canadian Med Assoc Journ*, November, 1924, p 1059) records observations of the blood pressure in 13 cases of arterial hypertension before and after the administration of large doses of calcium chloride In the case of 7 patients the blood pressure had been under observation for many months before the calcium chloride was given In the 6 other patients the blood pressure was only ascertained a short time before the treatment commenced In 5 cases albumin was previously present and in 4 it disappeared after the calcium chloride In 3 cases there was a low specific gravity of the urine and comparative intolerance of calcium as the kidney function improved the calcium tolerance increased The daily dosage of calcium chloride amounted to 180 grains in 8 cases, to 150 grains daily in 3 cases to 57 grains daily in 1 case, and to 75 grains daily in 1 case In all cases the administration of the calcium chloride was followed by a diminution of the blood pressure systolic and diastolic, and usually this diminution was marked

Ophthalmology

495. **Standard Backgrounds for Testing Colour Vision**

C L FEPREF and GERTRUDE RAND (*Amer Journ Ophthalmol* November, 1924, p 843) point out the importance of considering the degree of brightness of the surrounding background when making accurate investigations of the fields of vision for colour They find that the chromatic excitation is inhibited by the achromatic and that this is more marked in the peripheral field than in the central field Broadly speaking, when the background is black the fields for the lighter colours, such as green are smaller (contracted) than when the background is white The reverse is the case for the darker colours such as red To obtain uniform results they advise that a grey background should be used of the same brightness as the colour of the test object

496. **Cataract in Dystrophia Myotonica**

W J ADIE (*Brit Journ Ophthalmol*, November, 1924 p 497) draws attention to the prominence of cataract as a feature in dystrophia myotonica The actual form of the cataract seen in these cases does not appear to be very characteristic or to differ much from early senile cataract In some cases a star shaped figure of opacity in the posterior cortex of the lens was reported as being the earliest change The importance of cataract as a symptom lay rather in the familial aspect since many patients with the disease fully developed were found to have relations otherwise in good health who had presenile cataract Presenile cataract was often found in the generation preceding the one in which the disease was fully developed

497. **Progress of Senile Cataract under Hygienic Care**

E JACKSON (*Amer Journ Ophthalmol* October 1924 p 775) bases his paper upon the examination of the notes of 593 cases of patients who showed senile lenticular changes His statistics show that quite a fair proportion of the cases retained useful vision, and that in a few cases vision actually improved He points out how impossible it is to forecast the rate of development of the cataract and that therefore it is impossible to estimate the value of the many so-called medical treatments of cataract Lenticular opacities certainly clear up spontaneously on occasion With regard to the hygienic care of these cases he suggests (1) Avoidance of eye strain by proper change of glasses whenever required, good illumination, and reasonable limitation of close eyework (2) Preservation of good general health and the taking of sufficient water in the daily diet (3) Proper treatment of ocular diseases, especially those of the uveal tract, which may be associated with the lenticular opacities

Obstetrics and Gynaecology.

498. **Toxaemias of Pregnancy**

R C CHENEY (*Journ Amer Med Assoc*, November 1st, 1924, p 1383), in discussing the toxaemias of pregnancy from the ophthalmological standpoint, remarks that while fundus changes are usually only found in the graver cases they sometimes commence quite early and may afford valuable guidance in connexion with etiology, prognosis, and the advisability of allowing the pregnancy to continue Routine examination of the fundus in carefully grouped cases should give interesting information as to whether certain changes are characteristic of certain types of toxaemia Though occurring usually in the later three months of pregnancy, fundus changes have been reported as early as the third month and recurrences in succeeding pregnancies are rare Cheney thinks that pregnancy should be terminated when a retinitis develops before the last fortnight or so These fundus changes in acute toxaemia of pregnancy may range from a few retinal haemorrhages to the classical picture of albuminuric retinitis Separation of the retina may occur, the retinitis being an acute toxic condition due to retinal ischaemia rather than to vascular conditions whereas in chronic nephritis the retinitis shows more vascular changes such as narrowing of vessels increased light streak, and tortuosity Though theoretically this should afford a means of distinguishing between the two conditions Cheney thinks that this is practically impossible in the majority of cases where a pre existing nephritis was not of sufficient severity to cause vascular changes and so the sudden flaring up of the nephritis due to the extra strain of pregnancy shows more the acute toxic type of fundus Statistics indicate however that when retinitis is present the chances are four to one that the patient has nephritis

499. **Inflammatory Carcinoma of the Breast.**

B J LEE and N F TANNENBAUM (*Surg, Gynecol and Obstet*, November, 1924 p 580) describe 28 cases of inflammatory carcinoma which is held to be a distinct clinical phase of carcinoma of the breast, of any histo pathological type apparently identical with the lactation cancer, acute medullary or encephaloid carcinoma and acute bravny cancer of other writers It represents 1 3 per cent of mammary carcinomata, and frequently takes a fulminating course The authors have not observed it in pregnancy or the puerperium Ten of the patients were aged 39 or less, the average age for the whole group being 44 6 in fourteen there had been no lactation and all had pendulous breasts In the early stages diffuse enlargement without defined tumour formation was common The inflammatory reddening and brawniness of the overlying skin may extend far beyond the normal limits of the mammary gland Glandular involvement including supraclavicular adenopathy, was well marked and early in the late stages the nipple was retracted and sometimes oedematous As a rule, there was little pyrexia The authors add that the condition has been diagnosed erroneously as mammary abscess, erysipelas or radiation erythema but they think the inflammatory appearances are characteristic Microscopically the most striking change was a wide invasion of the dermal lymphatics by carcinoma They consider that the prognosis is extremely grave cases treated surgically do badly and at present radiation treatment is said to offer the only hope of palliation

500. **Double Uterus**

M GUILLEMINET and L MICHON (*Gynecol et Obstet*, 1924, v 3 p 145) summarize 48 cases of double uterus recorded in the literature antecedent to 1912 and give full reports of ten hitherto unpublished cases They emphasize the difficulty of exact diagnosis even at operation and its great importance Recognition of duplicity of the genital organs, they point out may enable conservative measures to be applied successfully The authors add that anatomical study has shown that the uterine arteries remain normal both in number and in course so that the inner border of the hemi uterus is avascular In a large number of cases they found that the pelvic peritoneum showed a well marked vesico rectal serous septum which might even extend to the pelvic colon the detection of this at an operation should lead to suspicion that the uterus may exhibit congenital abnormality The abnormality most commonly detected by clinical examination, which must include careful inspection as well as palpation was double vagina, the vaginal septum may be small and to be detected only at the superior extremity The authors point out that duplicity of the uterus is most commonly recognized after the occurrence of haematometra in one uterus, utero-adnexal infection tumour formation in a uterus or one of the adnexas or pregnancy—a frequent event in spite of the malformation Of these complications,

it is only in haematometra or pregnancy that a preoperative diagnosis is sometimes possible, if in the former case the collection of blood is unilateral, the persistence of menstrual discharges from the other side is deceptive In 19 cases mentioned by the authors in which conservative treatment of the double uterus was practised, menstruation continued, and eleven of the patients had one or more subsequent pregnancies terminated naturally or by Caesarean section

501 Treatment of Bartholinitis

H SIEBER (*Zentralbl f Gynak*, September 27th, 1924, p 2126) states that in his experience infection of one or both Bartholin glands occurs in three out of four of all cases of female gonorrhoea He criticizes the usual methods of treatment, pointing out that injections of protargol, etc, damage the epithelium, that extirpation of the gland abolishes the secretion, and that Bier's congestion and vaccine therapy are not always successful He suggests *x* rays, and describes in detail a case in which such treatment was successful Several applications were made until the secretion became bacteriologically negative No recurrence took place

Pathology.

502 Fusiform Bacilli and Spirochaetes in Pulmonary Infections

I PILOT and D J DAVIS (*Arch Intern Med*, September, 1924, p 313) present as a clinical entity a group of obscure pulmonary infections, characterized by abscess formation and gangrene In the sputum and tissues were found, by anaerobic culture, fusiform bacilli and actively motile Gram negative spirochaetes, resembling in morphology *Spirochaeta vincenti*, *macrodentium*, and *microdentium* Associated with these *Streptococcus viridans* was often present, and *Streptococcus haemolyticus* occasionally, but most constantly in the fatal cases These organisms are normally present about the tonsils and teeth, and their mode of infection is readily understood where aspiration is a factor After general anaesthesia, tonsillectomy, and perforating lesions, the secretions of the mouth rapidly give rise to pathological changes in the lungs The lesions due to these organisms are of a great variety, depending to a large extent on the resistance of the patient and the behaviour of the pathological process In all the tendency to necrosis and the production of a foul smelling lesion are the striking characteristics The simplest lesion occurs in the form of a putrid bronchitis A more commonly seen lesion is that of a bronchopneumonia consolidation in any lobe, with formation of a single abscess cavity Of great interest is the diffuse form of gangrene, which represents the action of the anaerobes at their highest pathogenic power The blood vessels in the more extensive processes are filled with thrombi which may be rich in bacteria clumps made up of fusiform bacilli, spirochaetes, and cocci, such thrombi are probably the source of metastatic lesions in the brain Acute and chronic forms of the infection occur Both abscess and gangrene may develop rapidly, cough, pyrexia, and foul smelling expectoration with the causal organisms are characteristic Abscesses may be simple or multiple, and recovery is frequent Acute gangrene ends fatally in two or more weeks In bronchiectasis the symptoms may extend over a period of many years In treatment neo arsphenamin has given encouraging results in doses of 0 3 to 0 9 gram, administered once a week, the most favourable results are obtained in early cases Surgical measures may be necessary The prevention of these pulmonary infections lies in the proper hygiene of the mouth

503 The Haemoclasic Crisis and Hepatic Function

P S COSTA (*Pensiero medico*, August 10th and 20th, 1924) states that under the name of "haemoclasic crisis" Widal has described a number of haematological and vascular reactions, of which the most important are leucopenia and a fall of blood pressure, which occur after passage into the blood of certain heterogeneous substances As the result of his own observations Costa comes to the following conclusions (1) It is rare to find all the elements of the haemoclasic crisis present at the same time, but they may appear independently of one another (2) The test cannot be regarded as positive merely because there is a post digestive leucopenia or a fall of blood pressure or any other isolated phenomenon, because these symptoms may be a consequence of shock (3) A variety of factors may give rise to phenomena indistinguishable from the haemoclasic crisis (4) Some of the phenomena characteristic of the haemoclasic crisis appear in subjects whose liver is undoubtedly normal, nor can this circumstance be explained by the hypothesis of a latent hepatic disorder, because the phenomena are seen not only after ingestion of sugar but also after swallowing plain water, in which case it is impossible to speak of colloidoclasic phenomena (5) In subjects in whom there is obvious derangement of the hepatic function the test often gives negative results, and although Widal tries to explain this by the contention that there is still a part of the hepatic parenchyma which takes on a vicarious function, this hypothesis is in flagrant contradiction with the preceding view, since it is difficult to understand how the same test can indicate a latent hepatic disorder (6) Sometimes, especially in cases where only one or two components of the test are present, the test, if repeated after an interval of only one day, yields a different result, although the state of the liver according to clinical and laboratory data remains the same (7) The test is based on the normal processes of digestion and absorption, and since it is often impossible to express a definite opinion as to the condition of the gastro intestinal canal the test loses much of its value (8) The results obtained in children should be regarded with caution, since digestive leucopenia is the rule at this age, even after small quantities of milk The same applies to pregnant women

504 Action of Papaverine on the Human Stomach

D DANIELOPOLU, D SIMICI, and C DIMITRIU (*Arch Internat Pharmacodyn et de Therap*, vol xxix, 1924, p 471) quote the statement in the textbooks that papaverine paralyses unstriped muscle Various observers have found inhibition of muscular contraction in the bronchi, uterus, etc La Fevre de Arric reported that the contractions of the stomach in dogs were weakened by papaverine, passage of food through the small intestine was also retarded, but this was not associated with intestinal paralysis The intestinal lumen was diminished and occasionally violent but ineffectual contractions were seen According to this investigator the intestinal action of papaverine is similar to that of morphine Hitherto all observations of its action on the human stomach have been clinical and radiological, the three authors, regarding these methods as unsatisfactory, have employed the method of moderate inflation of the stomach by means of a rubber bag connected with a lever and a recording cylinder Moderate distension is most important since over distension causes tetanic contractions followed by paralysis In every experiment papaverine (1 to 3 cg) was injected intravenously, the subjects being healthy young adults The authors found that papaverine acting on the human stomach produced hypermotility followed by paralysis They add that the effects of papaverine are produced more rapidly when the gastric motility is increased They consider that their researches indicate that the intravenous injection of papaverine in a certain dose excites gastric contractions, and that that is its only primary effect The phase of paralysis is apparently the inevitable result of the phase of stimulation, this is analogous to the effects of stimulation of the vagus Some time after vagal stimulation has ceased the stomach contracts more and more strongly and finally enters the stage of tetanic contraction Papaverine increases the excitability of the gastric muscle producing the first phase of increased contraction and "semitetanus" If papaverine be injected during the phase of paralysis it produces no effect, nor has it any effect if injected during paralysis produced by vagal compression

505 Antirachitic Action of Light

A F HESS (*Amer Journ Dis of Children*, October, 1924, p 517) reports the results of experiments devised to ascertain whether the treatment of inert substances with the rays of the mercury vapour lamp could endow them with antirachitic properties He found that cotton seed oil, when exposed for an hour to these rays at a distance of one foot, had acquired antirachitic potency The irradiated oil was given as food to young rats in the amounts of 0 1 and 0 25 c cm daily, the control animals receiving non irradiated oil, all the animals were fed on a standard rickets producing dietary Linseed oil, tried as an alternative to cotton seed oil, was found equally suitable, but mineral oil after irradiation developed no antirachitic properties Such properties were also absent from fluids, including linseed oil, containing radium, hydrogen peroxide, and ozonated water, none of which had any protective potency for rickets The irradiated oils with antirachitic properties were found to be unaltered as regards their content of unsaturated fatty acid, although the total acidity had somewhat increased The colour was slightly bleached and a rather fishy odour was acquired, resembling that of cod liver oil The author is at present studying the question whether the antirachitic potency of such substances as cod liver oil can be improved by treatment with ultra violet rays

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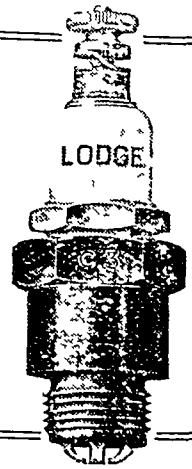
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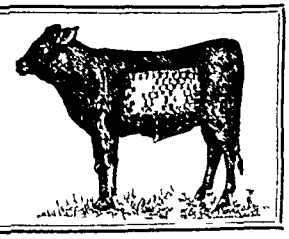
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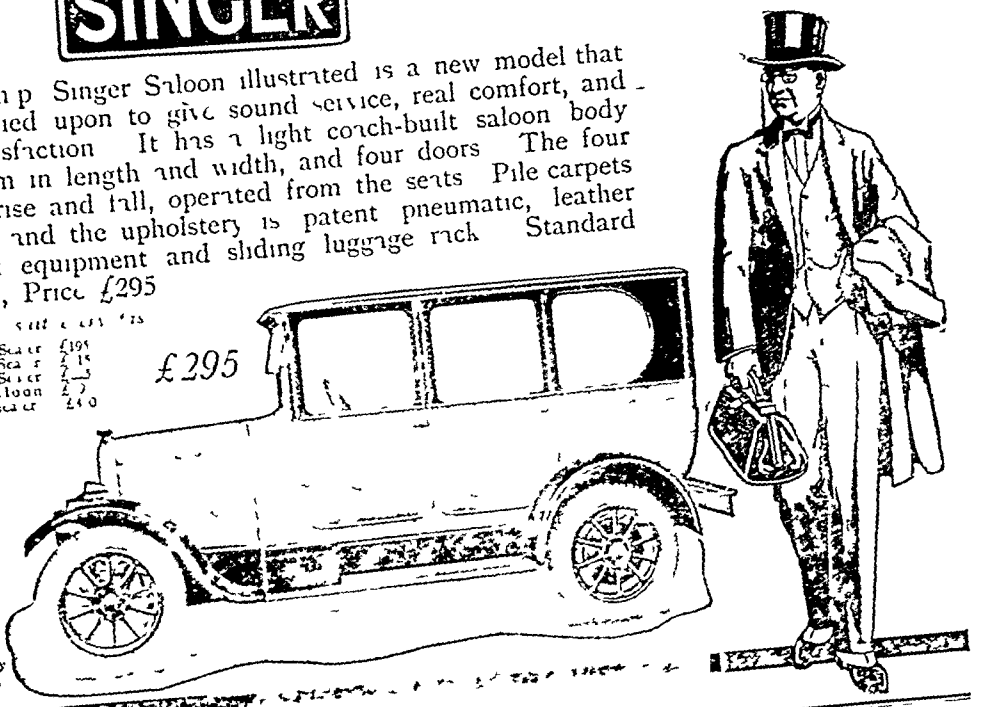
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Tuberculosis Cure Station, 5,000 feet high, SWITZERLAND.

Accommodation for 100 Patients.

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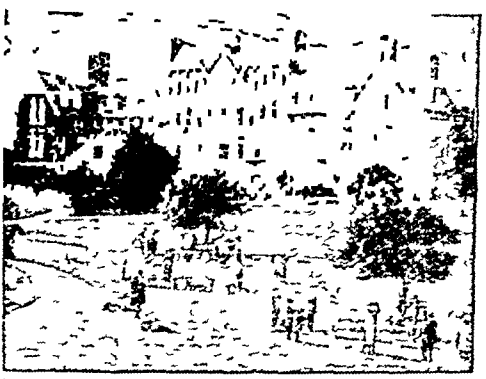
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Matron Miss L HANSON, late King Edward VII Sanatorium, MIDHURST, assisted by a full Day and Night Nursing Staff

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OPENED IN JANUARY 1899

This SANATORIUM was the first to be established in England for carrying out treatment on Nordrach lines Patients are received for open air inoculation or operative treatment, the latter under X ray control Full Nursing Staff The Sanatorium stands in gardens and private grounds of 65 acres, at an elevation of 862 feet above sea level, surrounded by woods and moorland, the rooms are heated by hot water pipes and lighted by electricity ROWLAND THURNAM, M D, DANIEL KENNEDY, L R C S L R C P

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Well situated on high ground and surrounded by pines and heather

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At BANCHORY and MURTLE

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NORDRACH-ON-DEE

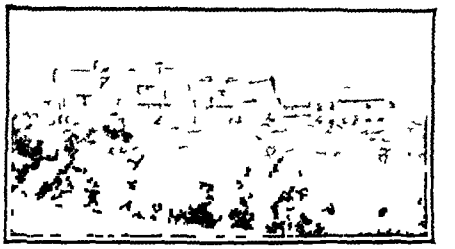
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Senior Physician Dr J M JOHNSTON

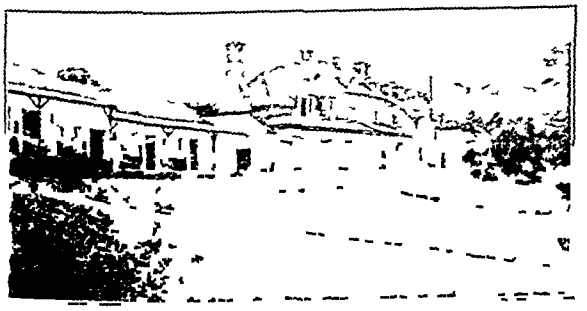
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Inclusive terms **7 Guineas a week.**

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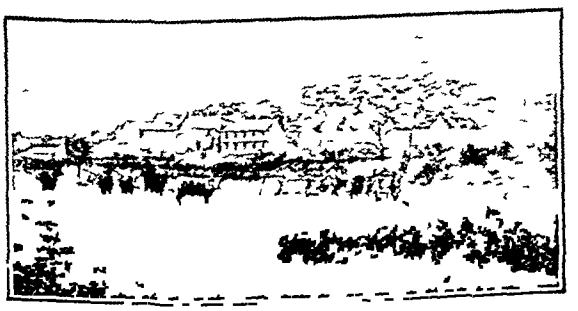
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Telephone 2 Painswick Telegrams Hoffman Birdlip"

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A course in preparation for the June Examination 1925 will begin on Tuesday January 13th. Full information can be obtained from the undersigned

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D.P.H.

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Further particulars can be obtained on application to the Dean, A E WEBB-JOHNSON, C B E, D S O, F R C S, or to the Secretary, R A FOLEY, Berners Street, W 1.

ST MARY'S HOSPITAL MEDICAL SCHOOL.

PADDINGTON, W 2

(University of London.)

PRIMARY F.R.C.S. COURSE.

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Physiology and Histology (with practical classes) —Prof B J COLLINGWOOD, O B E, M D (Professor of Physiology in the University of London)

Fee for the Course £16 16s Od or £9 9s Od for either section separately This fee includes membership of the Students Club during the period covered by the Course

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Particulars from CHAS R WHITTAKER F R C S, Anatomical Department, Surgeons Hall Edinburgh

Royal College of Physicians OF LONDON

The next PROFESSIONAL EXAMINATION for the MEMBERSHIP will commence on Tuesday January 20th

Candidates are required to give fourteen days notice in writing to the Registrar of the College with whom all certificates and testimonials required by the Bye-laws are to be left at the same time

J A ORMEROD M D, Registrar

Pall Mall East S W 1

Preliminary Examinations

The COLLEGE OF PRECEPTORS holds Preliminary Examinations for Medical and Dental Students in London and at Provincial Centres in March June September, and December For Regulations apply to the Secretary College of Preceptors Bloomsbury Square London W C 1

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COMMISSIONS in the ROYAL ARMY MEDICAL CORPS.

An Examination for not less than 20 Commissions in the Royal Army Medical Corps will be held on January 28th 1925

Applications to compete should be made to THE UNDER SECRETARY OF STATE the War Office not later than January 13th 1925 The presence of Candidates will be required in London from January 26th

Intending Candidates can obtain a full statement of the duties and emoluments of the Service on making a written application to THE UNDER SECRETARY OF STATE (A M D I) the War Office Whitehall London S W 1

The Milroy Lectures on State MEDICINE AND PUBLIC HEALTH

The Council of the Royal College of Physicians are prepared to receive applications for the office of MILROY LECTURER for 1926

Applications must be addressed to the Registrar Royal College of Physicians Pall Mall East on or before January 1st and should contain a statement of the division of the subject selected by the candidate

The course must comprise not less than three nor more than six Lectures

The Lectures are to be given on Tuesdays and Thursdays in February or March 1926

A copy of Dr MILROY'S 'Suggestions on the subject of his bequest and information as to the emolument may be obtained from

J A. ORMEROD M D

November 1924 Registrar

The University of Manchester

The Council are about to appoint a LECTURER IN ANATOMY Stipend £500 per annum Latest date for applications February 11th 1925 Further particulars may be obtained from the Internal Registrar

EPSOM COLLEGE

Established in 1855 as a Public School with a Royal Medical Foundation

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EPSOM COLLEGE is a mile from Epsom Town, in Surrey, in a healthy situation at a considerable elevation and on the edge of the Downs. It can accommodate about 300 resident pupils. 80 of whom from 8 to 14 years of age are in the Lower or Preparatory School, which is a distinct building within the College grounds.

The College contains a valuable Library and Museum, three Laboratories—Chemical, Physical, and Biological, a Lecture Theatre, a Carpenter's Workshop, an Armoury, a Gymnasium, a Swimming Bath, and extensive playing fields covering over 20 acres for the Upper and Middle Schools, and over 6 acres for the Lower School.

Within the College grounds but detached from the main building are a Chapel, a Sanatorium with about 40 beds and a well built and suitably fitted hut to serve as an extension of Infirmary accommodation for nurses and Isolation in the event of epidemic disease.

For boys who have matriculated at the University of London, and who desire to enter the Medical Profession the First Medical Examination of that University is conducted at Epsom College, and they are spared the trouble of going to London for the purpose.

The General Council of Medical Education and Registration of the United Kingdom has included Epsom College in the list of Recognised Institutions approved of by that Council as places at which medical study may be commenced and the College has been recognised as a School of Science by the Royal Colleges of Physicians and of Surgeons for the purpose of their Conjoint Diplomas.

Boys are also prepared for the Army, Navy, Civil Service, the Universities, and for mercantile careers.

Six Medical Scholarships, differing in value, are awarded annually at the Hospital Schools in London, and 27 leaving Scholarships, ranging in value from £20 to £100, are awarded under varying conditions, some of them annually but most of them tenable for several years. Besides these there are four Entrance Salomons Scholarships of £50 a year each and 'Hugh Nardon' Scholarships of £21, Lower School Scholarships of £15, and Junior Scholarships of 50 guineas are awarded annually.

School Lists, giving full information as to Scholarships &c., with prospectuses and forms of application, may be obtained on application to the Bursar, at the College, Epsom, Surrey.

ANNUAL FEES.—Sons of Medical Men, £120. Those who are not the sons of Medical Men, £140. Day Scholars, £45.

SPECIAL FEES.—Fees are charged for the First Medical Examination Class and for other special subjects, as in other Schools.

WAR MEMORIAL THE CHAPEL

The Old Epsomian Club instituted a War Memorial Fund for the purpose of enabling the Nave of the Chapel to be rebuilt in harmony with the new Chancel, and of placing in it a suitable monument bearing the names of old Epsomians and Epsom Masters who sacrificed their lives in the war.

The work of rebuilding the Chapel was commenced in July, 1923, and the total cost will be about £11,500. As a further sum of about £2,500 is required to complete the work, the Council earnestly appeal to Old Epsomians and other friends of the College for further contributions. The War Memorial Fund is still open, and Cheques should be drawn in favour of the Epsom College War Memorial Fund, and sent to Mr. S. Maynard Smith, of 49, Wimpole Street, W.1.

Donors to this Fund will receive the same voting privileges as those given to contributors to the Royal Medical Foundation of the College.

ROYAL MEDICAL FOUNDATION

FIFTY FOUNDATION SCHOLARS receive an education of the highest class in Epsom College and are boarded, clothed and maintained at the expense of the College. They have therefore, only a few voluntary expenses. They must be elected after approval by the Council from among the sons of necessitous Medical Men who have been Registered Medical Practitioners for five years.

FIFTY ORDINARY PENSIONERS who must be legally qualified Medical Men registered for five years, or the Widows of such receive £30 a year. They must be not less than 60 years of age at the time of their application for admission as candidates and their yearly income independent of any allowance from the College must not exceed £100.

The Ordinary Pensioners and the Foundation Scholars are elected by the Governors, voting by ballot and having votes in proportion to the amount of their contributions. There is one election in the year, namely in June. Forms of application can be obtained from the Secretary at the Office of the College, 49, Bedford Square, W.C.1.

The Ordinary Pupils the majority of whom are sons of Medical Men pay fees which cover the entire cost of their board and education.

The cost of maintaining the Royal Medical Foundation has to be defrayed mainly out of subscriptions and donations the income from which fluctuates materially. It would be lamentable if it should become impossible to maintain Fifty Pensioners and Fifty Foundation Scholars as at present but a reduction in the number will be inevitable unless an income of about £6,000 can be obtained by annual contributions.

The Council therefore appeal to the profession and to the public not to allow the Royal Medical Foundation attached to the College to languish. This Foundation is entitled to support in the first place by Medical Men and afterwards by all those who are sensible of their obligations to the Medical Profession.

Donors of 10 guineas, and collectors of 20 guineas, are Life Governors of the College, subscribers of one guinea annually are Governors during the continuance of their subscriptions. Contributions of a less amount than one guinea are welcome.

Any information with regard to the details of the College will be gladly communicated to anyone addressing inquiries to the HEAD MASTER, respecting educational questions, to the BURSAR at the College, Epsom, regarding business questions, or to the SECRETARY, at the office of the College where subscriptions and donations will be thankfully received.

J. BERNARD LAMB, Secretary.

Office, 49, Bedford Square, W.C.1.

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A POST GRADUATE COURSE on DISEASES OF THE NERVOUS SYSTEM will be held at the above Hospital from Feb 2nd to March 27th 1925
The General Course will consist of CLINICAL LECTURES and DEMONSTRATIONS TEACHING in the OUT PATIENT DEPARTMENT and PATHOLOGICAL LECTURES and DEMONSTRATIONS
The fee for this Course will be £5 5s
A COURSE OF LECTURES on the ANATOMY AND PHYSIOLOGY OF THE NERVOUS SYSTEM will be arranged if there are sufficient applicants
Fee £2 2s
A COURSE OF CLINICAL DEMONSTRATIONS chiefly on METHODS OF EXAMINATION OF THE NERVOUS SYSTEM will be given
Fee £2 2s

A limited number of students can be enrolled as WARD CLERKS or as CLINICAL ASSISTANTS in the Out patient Department
Applications should be addressed to the Secretary Medical School National Hospital for the Paralysed and Epileptic Queen Square London W C 1
J G GREENFIELD Dean
Tickets entitling to attend the Out-patient Clinics only (£2 2s for three months) may be obtained from the Secretary

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LONDON SCHOOL OF HYGIENE & TROPICAL MEDICINE,
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Next Session will commence January 5th 1925
For Prospectus and further particulars apply to The Secretary Endsleigh Gardens N W

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INDIAN MEDICAL SERVICE.

SPECIAL RECRUITMENT, 1924.

For not more than 13 European officers to be appointed in the immediate future special terms are offered, including gratuities of £1 000 after five years service together with free return passages for those who so long a desire to remain in the Service Otherwise the terms will be as detailed below

APPOINTMENT

The Secretary of State for India announces that these vacancies in the Indian Medical Service will be filled by direct appointment

Candidates must be under 32 years of age at the time of application and must possess qualifications registrable in Great Britain and Ireland under the Medical Acts *now in force*

CONDITIONS OF SERVICE

Up to the present time I M S officers have been employed both in the civil and military Departments of Government and have been interchangeable between the two The practice as regards employment in the civil and military side of the Service has been as follows —

At the beginning of his career an officer was employed on the military side which has medical charge of the Indian Army If he remained in military employ he held a post on the staff of a station hospital or a specialist post or a post on the administrative staff of the Army promotion being on a time scale up to the rank of Lieutenant Colonel and by selection to the ranks of Colonel and Major General He could however if he chose apply after 2 years Indian military service to be registered as a candidate for transfer to the civil side from which appointments are made to civil surgeoncies established at the principal civil centres to provide for the medical needs of civil officials and for general medical administrative purposes and to the specialist services (for example public health and bacteriological and research departments and the professorships at the medical schools) Such transfers normally took place after about 7 years service in military employment

The Lee Commission has however recommended certain changes in the organization of the Medical Services in India and in view of their recommendations only military employment can be guaranteed to officers entering the Indian Medical Service at the present time It is however guaranteed that they will be eligible for civil employment under such conditions of service as may be made applicable to officers in future appointed to the military medical service as the result of decisions taken on the Lee Commission report

PAY

The rates of pay for European officers in the Service are as follows —

	Per mensem (consolidated)
Lieutenants	650
Captains	800 for 3 years 950 3 years 1 050 3 years or until promotion to the rank of Major
Majors	1 200 for 3 years 1 350 3 years 1 500 , 2 years or until promotion to Lieut Colonel
Lieut Colonels	1 750 for 3 years 1 850 in 24th and 25th years of service 1 950 from 26th year of service 2 100 when selected for increased pay
Colonels Major Generals	2 200 to 2 500 } according to the appointment held 2 750 to 3 500 }

The above rates include an overseas allowance of Rs 150 *per mensem* for the first six years, Rs 200 *per mensem* for the next six years, and thereafter Rs 250 *per mensem* which will be admissible to officers of non Indian domicile only

It may be pointed out to intending candidates that the initial rate of pay for the Indian Medical Service and all Government Departments are based on the assumption that the majority of newly appointed officers will be bachelors It is also the case that an officer when junior is liable to more frequent changes of station than later on in his service and he may therefore be put to considerable expense for transfers if he has a family Officers, therefore who join the Service married may have considerable difficulty in living within their pay during the first few years of their service

Extras —In addition to the above rates, officers in military employment, when in command or second in command of the larger station hospitals, receive special allowances On the civil side there are public health bacteriological, research, and professorial appointments carrying special enhanced rates Special rates of pay are attached to the administrative appointments open to officers in both branches of the Service

PRIVATE PRACTICE

Executive medical officers in both civil and military employment may attend persons unconnected with Government service provided their duty admits of it Candidates are, however *informed that while serving on the military side the opportunities* for private practice are not great

WAR SERVICE

Service during the war as a medical or combatant officer or in a position usually filled by an officer counts towards promotion and pension so long as the rights of officers who have entered by competition are not interfered with

PENSIONS

The rates of pensions are as follows —

Service	Rate per annum	Service	Rate per annum
After 17 years	£400	After 23 years	£520
18	£430	24	£560
19	£460	25	£700
20	£500	26	£750
21	£540	27	£800
22	£580		

The above rates are subject to revision upwards or downwards to an extent not exceeding 20 per cent in all from the 1st July, 1924 and every three years thereafter The revision due this year will take the form of a reduction not exceeding 5½ per cent but the exact amount has not yet been decided

There are additional pensions ranging from £125 to £350 per annum for officers who have held high administrative appointments as Colonels or Major Generals These pensions are not subject to the reduction mentioned above

PASSAGES

Officers on appointment are when possible provided with passage to India by transport When such accommodation is not available passage at the public expense is provided by private steamer or passage allowance is granted if preferred The wives and families of officers who are married prior to the date of the officer's embarkation on first appointment to the Indian Medical Service will also be provided with passage to India at the public expense under the same conditions as those applicable to the officers themselves

During the course of their service officers of the Indian Medical Service in military employ are entitled to passage from India to the United Kingdom and back whenever they are granted sick leave by a medical board in India

If married their wives and families will also be granted passages to and from India to accompany them Further when the families themselves are upon the recommendation of a medical board in India invalided home for the preservation of life they may be granted free passage subject to the proviso that in neither case will families be provided with free passage *if during the preceding five years they have received free* passages in any circumstances

INCREASED CADRE

Formerly the allowance for furlough was 20 per cent This has now been increased to 25 per cent Previously there was no allowance for study leave now the cadre has been increased 2½ per cent for study leave, making a total of 27½ per cent Whilst on study leave there are special allowances

OPPORTUNITIES FOR RESEARCH

There is a Special School of Tropical Medicine in Calcutta, and Pasteur Institutes at Kasauli and Guindy

Further particulars can be obtained on application to the Secretary Military Department India Office Whitehall, London S W 1 Letters should be marked Recruitment for I M S

Malayan Medical Service.

(STRAITS SETTLEMENTS
FEDERATED MALAY STATES,
AND
UNFEDERATED MALAY STATES)

THERE are vacancies for Medical and Health Officers in the Malayan Medical Service on the time scale below the senior posts Candidates, who should not be over 35 years of age, should apply to the Private Secretary (Appointments), the Colonial Office, Downing Street, London, S W 1

2 Below the senior posts are appointments on a time scale salary which over 16 years rises from an initial salary of $5,280 (£616) a year to $9 600 (£1,120) a year by annual increments of $240 (£28) a year for the first four years and thereafter of $300 (£35) a year Selected candidates will be appointed at the initial salary of the scale, viz , $5,280 a year

3 On all salaries a temporary allowance is at present paid of 10% to unmarried and 20% to married officers Salaries are paid monthly

4 Senior posts and salaries are at present as follows —

Principal Civil Medical Officer, Straits Settlements, and Principal Medical Officer, Federated Malay States, $14,400 (£1,680) per annum

Director Government Laboratories, Federated Malay States, $13,200—$13,800 (£1,540—£1,610) per annum

Principal of the College of Medicine, Straits Settlements (Class A), $13,200 (£1,540) per annum

Chief Health Officer, Singapore (Class A), Senior Surgeon, Singapore (Class A) Senior Health Officer, Federated Malay States Chief Medical Officer, Singapore (Class A), Senior Medical Officer, Perak Senior Medical Officer, Selangor Senior Surgeon, Kedah, Chief Medical Officer, Penang (Class A) Principal Medical Officer, Johore, $12,600 (£1,470) per annum

Ophthalmologist, Federated Malay States, Chief Surgeon, Federated Malay States, $12,000 (£1,400) per annum

Pathologist Singapore, Superintendent, Central Mental Hospital, Federated Malay States, Bacteriologist, Federated Malay States, Professor of Surgery, College of Medicine, Senior Medical Officer, Negri Sembilan Senior Medical Officer Pahang, $10,200—$12 000 (£1,190—£1 400) per annum

Professor of Physiology, College of Medicine Professor of Midwifery, College of Medicine, Professor of Anatomy College of Medicine Chief Medical Officer, Malacca, $10,200—$12 000 (£1,190—£1 400) per annum

Pathologist, Penang, $8,400—$9,600 (£980—£1,120) per annum

Malaria Research Officer Federated Malay States, $6,600—$9,600 (£770—£1,120) per annum

5 The currency of the Straits Settlements and the Malay States is based on the Straits Settlements dollar All salaries are fixed in dollars and are so paid while officers are on service in the Colony For purposes of paying salary when on leave or pension after retirement, dollars are converted into sterling at the Government rate of exchange, which is at present 2s 4d to the dollar No change has taken place in this rate for the past 18 years and no alteration is contemplated so far as can be foreseen at present

6 After three years satisfactory service an officer is usually placed on the permanent establishment

7 In the Federated Malay States on quarters provided by the Government and on the furniture provided, a rent ranging between $26 50 (£3 1s 10d) and $65 (£7 11s 8d) *a month* and depending on the salary and the class of the quarters is charged while in the Straits Settlements the rent on all quarters is 6% of the officer's salary Quarters are usually available

8 Eight months leave on full pay with at present a free return passage is granted after every four years service, and casual leave may be taken locally in addition Leave on full pay counts for pension

9 Free passages are provided on appointment Half salary only is paid on the voyage out

10 Information and advice generally regarding mode of life, climate cost of living, outfit, and other particulars should be sought from Sir E L Brockman, K C M G , The Malay States Information Agency, 88, Cannon Street, London, E C 4

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Ashton under Lyne
(General Hospital 200 Beds)

HOUSE SURGEON wanted for January 7th, 1925 Six months appointment Salary at the rate of £150 per annum with board, residence, and laundry

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Applications with testimonials, to be sent at once to LEONARD BOTTOMLEY Esq M A LL D , Honorary Secretary, 120 Stamford Street Ashton under Lyne FRANK OLIVER
December 10th, 1924 Supt and Secretary

The University of Adelaide

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Applications are invited from graduates in Medicine for the above position

Applicants are requested to submit testimonials statement of academic qualifications published researches and a recent photograph to the Vice Chancellor c/o Agent General for South Australia Australia House Strand London The envelope containing the application should be marked, Application for Marks Lectureship Applications will not be received later than January 31st, 1925

The Lecturer will carry out his work under the general direction of the Professor of Physiology and Bio-chemistry He will be required to lecture and conduct practical classes and demonstrations in Mammalian Physiology, and in its applications to clinical Medicine, during two terms of approximately ten weeks each This course will form part of the third year of the Medical curriculum During the remainder of the academic year the incumbent will conduct research in Physiology and may from time to time be required to furnish a report on this research to the Council of the University

The salary will be £750 per annum If the successful candidate is appointed from beyond the Commonwealth of Australia, the sum of £100 will be paid towards travelling expenses The appointment will be for a fixed term of 5 years and will continue thereafter from year to year subject to six calendar months notice in writing on either side, given on or before June 30th

The gentleman appointed will be expected to take up his duties in Adelaide at the beginning of the second term, namely, June 1st He will not be allowed to engage in private medical or surgical practice

Further information may be obtained from the Agent-General for South Australia, Australia House, Strand, London

Chelsea Hospital for

WOMEN, Arthur Street, S W 3

There is a vacancy for a PATHOLOGIST (Gynæcological) Candidates must be graduates in Medicine of a recognized University or Fellows or Members of one of the Colleges of Physicians of London Edinburgh, or Ireland, or Fellows of one of the Colleges of Surgeons of England Edinburgh or Ireland They must be registered under the Medical Act and engaged in consulting practice only There is an honorarium of £40 per annum Applications for the above post must be sent, accompanied by copies of three testimonials not later than Friday, January 2nd, 1925 to the Secretary

HERBERT H JENNINGS

Chelsea Hospital for Women,

Arthur Street Chelsea S W 3.

A vacancy has occurred for the post of SURGEON to the Hospital Candidates must be Fellows of the Royal College of Surgeons of England Edinburgh or Ireland They must be registered under the Medical Act and engaged in Consulting Practice only

The Senior Surgeon to Out patients is a candidate for the post If he be elected there will be a vacancy for a SURGEON to Out patients Candidates for this appointment must be qualified as above

Applications must be sent accompanied by three testimonials to the undersigned on or before Friday, January 2nd next

HERBERT H JENNINGS Secretary

Stoke and Wolstanton Union

RESIDENT MEDICAL OFFICER

Applications are invited from duly qualified gentlemen no less than 30 years of age with experience in hospital administration for the appointment of Senior Resident Medical Officer at the Guardians Institution and Hospital, London Road near Newcastle, Staffs The total accommodation at the Institution is approximately 1 000 beds The Hospital (which is a training School for Nurses) has accommodation for 450 patients in addition to which are separate Mental Wards accommodating 150 patients, and a Tuberculosis Pavilion to accommodate 50 patients is nearing completion The medical staff includes a Visiting Surgeon, Ophthalmic Surgeon Aural Specialist and a Radiologist a Dispenser and a Masseur are also engaged The Hospital is equipped with X ray electro medical and pathological apparatus and has a specially constructed Operating Theatre

Salary after the rate of £600 per annum (no bonus) together with furnished house board and washing A general servant is provided The appointment is subject to the provisions of the Poor Law Officers Superannuation Act 1896

Applications stating age qualifications (with the dates thereof) and experience, with copies of not more than three recent testimonials, to be delivered [illegible] 19[illegible] not later than [illegible] passing

Union Offices, Stoke on Trent. T WOOD
December 11th, 1924 Clerk to the Guardians

Chester-le-Street Rural

DISTRICT COUNCIL.

APPOINTMENT OF MEDICAL OFFICER OF HEALTH

The Chester le Street Rural District Council invite applications for the appointment of Medical Officer of Health to act within their district at a salary of £900 per annum rising by two annual increments of £50 to £1,000 per annum together with actual travelling expenses, from persons qualified by Article 5 of the Sanitary Officers Order, 1922 to hold such office

The district comprises 16 parishes with an area of about 27 027 acres, and contains an estimated population of 59 41[illegible]

The person appointed will be required to devote the whole of his time to the duties of the office and the appointment will be subject to the provisions of the Sanitary Officers Order, 1922, and to the sanction of the Minister of Health

Applications, stating qualifications on forms to be obtained from the undersigned are to be sent with copies of not more than three testimonials of recent date, so that they reach me not later than January 1st, 1925

Canvassing in any form will be a disqualification.

Union Offices R V DICKINSON
Chester le-Street Clerk to the Council
December 15th, 1924

Parish of St Pancras.

GUARDIANS OF THE POOR

The Guardians of the Poor of this Parish are prepared to receive applications for the joint appointment of JUNIOR ASSISTANT MEDICAL SUPERINTENDENT (Male) of the St Pancras Hospital Pancras Road N W 1 and JUNIOR ASSISTANT MEDICAL OFFICER of the St Pancras House adjacent with alary of £350 per annum together with residential allowances subject to deductions under the provisions of the Poor Law Officers Superannuation Act 1896

Candidates must be registered Medical Practitioners qualified by Law to practice both Medicine and Surgery in England and Wales

For details as to duties hours and off duty time apply to the Medical Superintendent of the St Pancras Hospital as above

Application to be made upon forms to be obtained at my Office and selected candidates will be informed when and where they may attend a meeting of the Guardians B CHAPMAN
Town Hall Clerk to the Guardians
Pancras Rd London, N W 1
December 15th 1924

Ormskirk Union

INSTITUTION AND DISTRICT MEDICAL OFFICER AND PUBLIC VACCINATOR

The Guardians of the Poor of the above Union invite applications from duly qualified medical gentlemen for the above office

Applicants should hold a Certificate of Proficiency in Vaccination

Salary £500 per annum, and Vaccination and extra Medical Fees subject to the usual deductions under the Superannuation Act The salary will be apportioned as follows —

Medical Officer of the Institution, £400 per [illegible]

to reside within one mile from the Ormskirk Poor Law Institution The Guardians provide all medicines, and medical and surgical appliances

Applications accompanied by copies of two testimonials must be forwarded not later than 9 a m on Monday, the 22nd inst

ALFRED DICKINSON
2 Railway Road Clerk to the Guardians
Ormskirk December 5th, 1924

Merthyr General Hospital,

Merthyr Tydfil

Applications are invited for the position of RESIDENT HOUSE SURGEON for a period of six months at the Merthyr General Hospital (100 beds) Salary at the rate of £100 per annum, with board and laundry

Applications to be endorsed "House Surgeon" to be sent to the Secretary E EDWARDS Merthyr General Hospital Merthyr Tydfil

The Welsh Hospital,

Grove Road, Balham S W 12

ASSISTANT RESIDENT MEDICAL OFFICER (male unmarried) required January 21st

Candidates must be fully qualified and duly registered

Salary £100 per annum with board, residence and laundry

Applications with copies of testimonials to be sent to the Secretary from whom further information can be obtained

APPOINTMENTS—Important Notice.

(a) British Islands.

Medical Practitioners are requested not to apply for any appointment referred to in the following table without having first communicated with the Medical Secretary of the British Medical Association, 429, Strand, London, W C 2

CONTRACT PRACTICE.

ENGLAND.

CANNOCK CHASE AND DISTRICT
(Club and Friendly Societies Appointment)

MIDDLESBOROUGH
(Medical Aid Associations or Workmen's Clubs)

SOUTH BANK & ESTON
(Medical Aid Associations or Workmen's Clubs)

WALES.

ABERTRIDWR GLAMORGAN
(Miners' Contract (Medical Scheme)

EBBW VALE MON
(Workmen's Medical Society)

GILFACH GOCH GLAMORGAN
(Workmen's Medical Scheme)

LLWYNYPIA CLYDACH VALE PENYGRAIG GLAMORGAN
(Workmen's Medical Scheme)

MARDY GLAMORGAN
(Workmen's Medical Scheme)

OAKDALE MON
(Medical Officer for Medical Aid Association)

WALES (continued)

OGMORE VALLEY GLAMORGAN
(Wyndham Colliery Medical Aid Society)
(Workmen's Medical Scheme)

TONDU & ABERKENFIG GLAMORGAN
(Workmen's Medical Scheme)

PUBLIC HEALTH.

COVENTRY CITY
(Assistant School Medical Officer)

DULVERTON UNION
(Medical Officer of Workhouse and No 1 District)

EAST FORTUNE SANATORIUM EAST LOTHIAN
(Male Assistant Medical Officer)

EAST SUFFOLK COUNTY EDUCATION COMMITTEE
(Male Assistant School Medical Officer)

KENT EDUCATION COMMITTEE
(Woman School Medical Inspector)

PUBLIC HEALTH (continued)

LANARK COUNTY
(Medical Officer of Health)

LINCOLN CITY EDUCATION AUTHORITY
(Woman Assistant School Medical Officer)

NORTHAMPTONSHIRE COUNTY COUNCIL
(Medical Officer of Health)

NORTHUMBERLAND COUNTY COUNCIL
(Woman Assistant Medical Officer of Health)

NUNEATON RURAL DISTRICT
(Medical Officer of Health)

SOUTHWARK METROPOLITAN BOROUGH
(Tuberculosis Officer)

STIRLING ROYAL BURGH
(Medical Officer of Health Tuberculosis Maternity and Child Welfare and School Medical Officer Police Doctor and Medical Attendant at Combination Infectious Diseases Hospital)

WEST HAM COUNTY BOROUGH
(Assistant School Medical Officer)

WIGAN COUNTY BOROUGH
(Assistant School Medical Officer)

YORKSHIRE NORTH RIDING
(Assistant School Medical Officer)

(b) Colonial Medical Service.—WINDWARD ISLANDS MEDICAL SERVICE (Grenada with Carriacou St Vincent and St Lucia)

(c) Overseas Appointments.

Medical Practitioners are requested not to apply for any appointment referred to in the following table without having first communicated with the Honorary Secretary of the Division or Branch named in the second column or with the Medical Secretary of the British Medical Association 429 Strand London, W C 2

Town or District.	Hon. Sec. of Division or Branch	Town or District.	Hon. Sec. of Division or Branch.	Town or District.	Hon. Sec. of Division or Branch
NEW SOUTH WALES. (All Friendly Society Appointments)	Dr R H TODD (Hon Sec. New South Wales Branch) B M A Building 30-34 Elizabeth Street, Sydney N S W	QUEENSLAND (Brisbane Associated Friendly Societies' Institute.)	Dr R MARSHALL ALLAN (Hon Sec Queensland Branch) Adelaide Street Brisbane	VICTORIA (All Institute or Medical Dispensaries.)	Dr FRANK DAVIES (Hon Sec., Victorian Branch) Medical Society Hall E Melbourne, Victoria.
				WESTERN AUSTRALIA. (Contract and Lodge Practices.)	Hon. Sec. Western Australian Branch, No 6 Bank of New South Wales Chambers, St Georges Terrace, Perth.

Address 429 Strand, W C 2.
December 16th 1924

By order of the Council of the British Medical Association.
ALFRED COX Medical Secretary

St Mary's Hospital,
London W 2

OPEN APPOINTMENT

Applications are invited for the post of MEDICAL SUPERINTENDENT

The Medical Superintendent is the Senior Resident Medical Officer of the Hospital His duties are administrative and professional and include the charge of certain beds

Candidates must be qualified both in Medicine and Surgery and have held the post of Resident Medical Officer to some General Hospital.

Tenure of post — he appointment is for one year the holder being eligible for re-election for a second and third year

Inclusive salary £400 per annum with board and residence provided

The successful candidate will be expected to commence duty as soon as possible in January

Applications to reach the undersigned not later than Wednesday December 31st, 1924

W PARKES Secretary

St Andrew's Hospital,
Dollis Hill London

Applications are invited for the post of additional HONORARY SURGEON FOR DISEASES OF THE THROAT NOSE AND EAR.

Applications, with full particulars, etc. to be sent to the Administrator St. Andrew's Hospital Dollis Hill London N W 2

Dumfries & Galloway Royal
INFIRMARY

Applications are invited for the post of JUNIOR RESIDENT MEDICAL OFFICER (male) at the above Infirmary The Institution which contains over 100 beds is one of the premier provincial Hospitals in Scotland and offers exceptional opportunities of gaining experience in all branches of the profession Period of engagement twelve months from February 1st next. Salary £125 per annum

Applications with testimonial to be forwarded to the Treasurer Dumfries & Galloway Royal Infirmary 81 Irish Street Dumfries by Dec. 24th 1924

St Bartholomew's Hospital

ASSISTANT IN THE SURGICAL PROFESSORIAL UNIT

Applications are invited for the above post. Candidates for the post should be trained in bacteriology

Appointment will be made for one year from January 1st 1925 with eligibility for re-election

Particulars, as to duties etc., can be obtained from the undersigned with whom applications must be left on or before December 24th 1924

THOMAS HAYES
December 4th 1924 Clerk to the Governors.

St Pancras Dispensary,
39 Oakley Square, N W 1

There is a vacancy for the post of HONORARY PHYSICIAN to attend this Dispensary one day each week. Every candidate must be a Member or Fellow of one of the Royal Colleges of Physicians and a Graduate in Medicine of one of the Universities of Great Britain or Ireland and not practising Pharmacy

There is also a vacancy for the post of HONORARY OPHTHALMIC SURGEON to attend this Dispensary one day each week. Every candidate must be a Fellow of one of the Royal Colleges of Surgeons of Great Britain and Ireland and not practising Pharmacy

Applications and testimonials to be sent to the Honorary Secretary H PETER BOBBIN 2 Enfield Street, Tavistock Square W C 1 on or before the December 24th 1924 The election will take place on January 8th 1925.

St Bartholomew's Hospital

ASSISTANT IN THE MEDICAL PROFESSORIAL UNIT

Applications are invited for the above post

Appointment will be made for one year from January 1st 1925 with eligibility for re-election Particulars as to duties etc. can be obtained from the undersigned, with whom applications must be left on or before December 27th 1924

THOMAS HAYES
December 4th 1924. Clerk to the Governors.

Wanted—Assistant, with view to partnership in Northern Colliery and seaport to ... prospects to suitable man ... Cyclist and motor cyclist ... In erview essential Address stating age nationality references and other essential particulars to No 6204 BRITISH MEDICAL JOURNAL Office, 429 Strand

Wanted by Scotch M B, aged 30 ASSISTANTSHIP with view to purchase, or six months PARTNERSHIP introduction to sound general practice in good provincial town or near large city Can take full charge of practice Would suit doctor about to retire Income £1 000 to £1 400—Add No 6212 B M J 429 Strand

Wanted, Assistant with view to Partnership in Lanarkshire town Comfortable rooms provided Scottish graduate preferred L R C P S and H P essential Good prospects for man with surgical experience Give full particulars—Add No 6306, B M J Office 429 Strand

Wanted — Assistantship or LOCUM by M B Ch B (Glasg) aged 30, North of Scotland man Single abstainer active cyclist Experience G P Excellent testimonials —Address, No 6303 BRITISH MEDICAL JOURNAL Office, 429 Strand W C 2

Wanted — Six weeks' good EXPERIENCE G P S of England, from January 5th Scotsman M B Ch B, Post graduate student Some exp in G P Return for little or no salary but good home and return fare—Address No 6308, BRIT MED JOURN Office 429 Strand

Wanted, indoor Assistant, Welsh speaking in mixed Country PRACTICE Able to motor cycle Usual bond State particulars—Address No 6313 BRITISH MEDICAL JOURNAL Office, 429 Strand W C 2

Wanted — Lady Assistant, graduate country town practice Work light State essential particulars (indoor)—Dr EDGAR BARNES, Park Lane House Macclesfield

Assistant, with view to PARTNERSHIP or Partner immediately if suitable in highly desirable country practice of £1 800 p a Welsh speaking well qualified gentleman preferable, with a liking for surgery Keen and an abstainer—Address No 6215 BRITISH MEDICAL JOURNAL Office 429 Strand W C 2

Assistantship wanted by woman M B Ch B (Glasgow University) Experienced in hospital and general practice Free now — Address No 6305 BRITISH MEDICAL JOURNAL Office 429 Strand, W C 2

Assistant required by Pathologist and Bacteriologist in provincial city Preference given to applicant with B Sc and D P H—Apply Mr A V STORRY 12 Stratford Place Oxford Street London, W 1

Assistantship, Locum, or any medical work, wanted by woman, M B Ch B Free now Young reliable energetic Some experience general practice Good references —Address No 6321 BRITISH MEDICAL JOURNAL Office 429 Strand W C 2

Doctor, young, experienced, specialised offers his services as ASSISTANT or PARTNER Capital at hand—Address, H C D c/o LLOYDS BANK James Street, W 1

Doctor studying for F R C S, specialized in Skin and Cancer work and also in general practice, offers his Services to any doctor in London in return for hospitality Morning and Evening Surgeries accepted—Address No 6324 BRIT MED JOUR Office 429 Strand W C 2

Highly qualified Arts Graduate (English and fluent French) travelled, seeks SECRETARIAL POST with doctor or dentist—Address No 6323 BRITISH MEDICAL JOURNAL Office, 429, Strand W C 2

M.B, Ch B (Edin), woman, 26, desires ASSISTANTSHIP or LOCUM after Jan 1st H S Maternity Hospital Clinical Assistantships Medical Surgical and Gynecological —Address, No 6302 BRITISH MEDICAL JOURNAL Office 429 Strand, W C 2

M.B, Ch B (Edin), man, single ex H S H P 2½ years exp in G P (including G S) accustomed to take sole charge desire ASSISTANTSHIP or LOCUM or small Partnership Energetic abstainer excellent driver car Free Jan 1st—Add No 6312, B M J Strand

M.B, B S (Lond), M R C S, L R C P hard worker with small private income but no capital seeks ASSISTANTSHIP to overworked practitioner with view to ultimate succession or partnership or would act as locum Wide hospital and private experience and first class references Available immediately — Address, R J W Albany Club 21 Bedford Row W C

M B, Ch.B, Woman, desires ASSISTANTSHIP or LOCUM WORK preferably near London but not essential Experience in private and panel practice Good references Free beginning February — Address No 6316 BRITISH MEDICAL JOURNAL Office 429 Strand W C

Medical Officer required by large Company in the East Three years agreement Salary approximately £750 per annum, with free furnished quarters and passage Applicants should be under 30 years of age and preferably unmarried—Reply giving full particulars of qualifications and experience to Box "H REGENT ADVERTISING SERVICE, Ltd, 4, London Wall Buildings E C

Pathological and Bacterio- LOGICAL LABORATORY ASSISTANTS ASSOCIATION—Pathologists and Bacteriologists requiring SKILLED CERTIFICATED LABORATORY ASSISTANTS are invited to communicate with H P HUDSON Hon Secretary, Panama Villa Trumpington Cambs—No Fees

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Dispenser (lady), Hall Certificate Care Instruments books Experienced Now or after Xmas—T ADAMS 15 Vicarage Gate W 8 Phone Park 1966

Doctors requiring Lady DISPENSER ... Walden Westmin ... Road S E 1 (only ... 25 years experience ... of medical men always in training

Doctor's Widow, aged 28, requires post as SECRETARY Thorough knowledge shorthand typewriting and secretarial duties Excellent references—Address No 5927 BRITISH MED JOURNAL Office 429 Strand W C 2

Doctor's daughter requires post as SECRETARY to medical man, preferably London Shorthand typing book keeping etc — Address No 6307 BRITISH MEDICAL JOURNAL Office 429 Strand W C 2

FOR LOCUM TENENS APPLY TO MR PERCIVAL TURNER

The oldest and only Agent who for 40 years has supplied substitutes at short notice without fee to principals

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Gentleman, doing Locum over Xmas, requires another from January 5th 1925 Highest references—Address No 6320 BRITISH MEDICAL JOURNAL Office 429 Strand W C

Locum Tenens or temporary ASSISTANT thoroughly experienced aged 37 Now disengaged Good recent references—Address No 6309 BRITISH MEDICAL JOURNAL Office 429 Strand W C 2

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Mr W H GRANT Manager

Telephone LANGHAM 3000 *Telegrams* INSTRUMENTS WESDO LONDON

Wanted by M B Camb, F R C S D P H aged 33 a good-class PARTNERSHIP in the South of England Income £800 up Now free and can pay cash—"C" c/o BLUNDELL & Co 22 Craven St Strand W C 2

Partner wanted — Short ... antship Must be capable C S South Coast town ... tails to No 5419 British ... 429 Strand W C 2

Partner wanted, preliminary Assistantship North of England Must be capable surgeon graduate and F R C S Good class practice No panel Share for sale about £850 2 years purchase No agents—Address No 6310 BRITISH MEDICAL JOURNAL Office 429 Strand W C

Partnership, with short pre liminary Assistantship for Sale Share worth £1 000 at 1½ years purchase Sound country practice on W Cornish Coast Scope Excellent house for sale — Address No 6318, BRITISH MEDICAL JOURNAL Office 429 Strand W C

Wanted by experienced practitioner, general PRACTICE in good Country Town Good detached house and garden essential Ample capital No Agents—Address No 5928 BRITISH MEDICAL JOURNAL Office 429 Strand W C 2

Wanted—Practice or PARTNERSHIP, yielding £1 000 to £3 000 a year in or near London or large Provincial Town Necessary capital available—Apply PEACOCK & HADLEY, 19, Craven Street, Strand W C 2 (No charge unless sale effected)

Wanted—Practice, London W district to 10 miles out Small suitable for single man Cash Details in confidence to No 6005 BRITISH MEDICAL JOURNAL Office 429 Strand W C 2

Aberdeenshire — Country PRACTICE for Sale, about £600 Good house also for Sale House and practice £2 000 —Address, No 6314 BRITISH MEDICAL JOURNAL Office 429 Strand W C 2

For Disposal—Special Skin PRACTICE, conveniently and centrally situated Good consulting room Gentlemen who are desirous of obtaining a practice of this description please apply to No 7653 c/o Mr PERCIVAL TURNER 4, Adam Street W C 2

For Disposal—A good Prac- TICE is not always to be had directly but Mr PERCIVAL TURNER can generally offer applicants the best Practices advertised—Full Adam St W C 2

Lancs' Seaside Resort— PRACTICE for sale in centre of town Good house rent £70 Receipts about £350 with great scope for increase especially in panel Price £400 —MANCHESTER MED & SCHOLASTIC ASSOCIATION Ltd 6 Brown Street

Leeds—Private Practice of £1 000, capable of increase—middle and working classes—and prominent corner house for sale — Address No 6304 BRITISH MEDICAL JOURNAL Office 429 Strand W C 2

Manchester suburb—Old established, in residential district Good corner house large garden garage Receipts £2 000 Panel over 1,300 Price 1½ years purchase part deferred House also for sale—MANCHESTER MED & SCHOLASTIC ASSOCIATION Ltd 6 Brown St

Manchester—Good-class private PRACTICE in nice open suburb Audited accounts over £2 200 p a for last 3 years For Sale at 1½ years purchase No agents Nice house for Sale or Let Only cash offer entertained Add No 6322 B M J Office 429 Strand W C

Nucleus for Sale Income £350 including appointment and small panel. Non-dilatory but must be qualified. Outskirts of large South Yorkshire town with medical school. Lung trip. Great practice. Under taking up specialty.—Address, No. 6310, B.M.J., 429 Strand.

Practice or Partnership wanted about March. 90 by 3rd asst., M.A., M.B., Cantab. Hour appointment held 3½ years and assistantship for 3 years. Competent to undertake Maternity and Gynæcology. Terms £500 down and by instalment.—Address, No. 6311, BRIT. MED. JOURNAL Office, 429 Strand, W.C.2.

S.E. London—General and Panel PRACTICE yielding over £2,000 a year. Panel 1,000. Very good class residential. Large garden. To be let or sold. Good introduction. Premium £3,100.—Apply PEACOCK & HADLEY, 19 Craven Street, Strand, W.C. (No agents unless sale effected.)

To Purchasers—Do not Buy without expert advice. With 40 years experience Mr. PERCIVAL TURNER can advise in all cases. Terms free on application to 4 Arundel Street, Strand, W.C. Telephone: Gerrard 5033. Telegrams: "Eyesman, London."

West Riding of Yorkshire— For immediate disposal HALF SHARE in early-week practice, panel and private, practice carried on by Drs. SLACK and LISTER for past 30 years. Average gross returns for last 3 years £3,025. Excellent house, well fitted, urgent sale.—Apply Messrs. OXLEY & COWARD, Solicitors, Dewsbury.

Yorkshire—For immediate disposal—Old established Country PRACTICE. Centre of good hunting district. Increasing. Average receipts including small panel and appointments £960 per annum. Scope for increase. Commodious house with large garden, stabling, paddock and 13 acres of land. Price £3,000 including fixtures.—Address, No. 6317, B.M.J., 429 Strand.

Large industrial and middle-class PRACTICE. Panel over 2,000. Average receipts £2,700. Well established, and easy to manage. Very suitable house, separate professional accommodation. Ill-health reason for selling. Part to help introduction. Reasonable price for quick sale.—LEE & MARTIN, Ltd., 1 Temple Row, Birmingham.

West Midlands—Old estab Town and Country PRACTICE in a County Town. Receipts £1,574. Appts. Panel nearly 4. Good fees. Expenses small. Hospital 10 beds. Purchaser would be appointed Physician or Surgeon. Good house and garden.—LEE & MARTIN, Ltd.

Bournemouth—Eminently suited for Professional Man or Contracting Home.—COMMODIOUS HOUSE, 9 rooms, bathroom and offices on ground floor, 2 rooms, bathroom and offices on two floors above. South aspect. Good situation. Good garage. Gt. 4 rooms. £175 p.a. Full particulars from The ...

Private Mental Home—For Sale.—Long lease, large COUNTRY HOUSE in KENT, near London. Prepared and modernized this year at a cost of £3,335. Principal bedrooms, 4 reception, 2 bathrooms. Ample servants' quarters—22 rooms in all. Garage for 4. Stable. Outhouses, paddocks, orchard, vineries, flower and kitchen gardens, 2 tennis courts—in all 2½ acres. The surrounding 10-foot wall makes it absolutely secluded and ideal for Neurasthenic patients. Full particulars given by owner who is compelled to sell for £1,500.—Address No. 6301, BRITISH MEDICAL JOURNAL Office, 429 Strand, W.C.2.

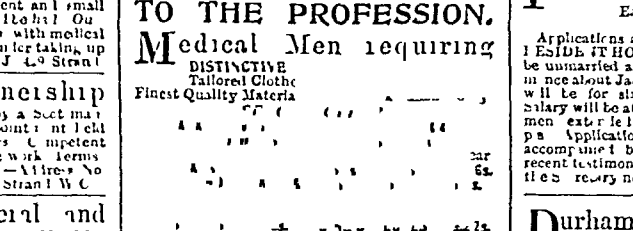
A well-qualified man, young, and of good family, is offered ACCOMMODATION in the house of a West End retiring practitioner (Specialist preferred). A nominal partnership could be arranged. A dentist might be considered.—Write S. Box 507, WILLINGS, 31 Knightsbridge, S.W.

Consulting Rooms, Portland Place, near Langham Hotel. Vacant next June. Waiting, Consulting and Dark Rooms suitable for X-ray or Eye work. Excellent service will be provided.—Apply Messrs. H. G. BRIGHT, 17 Finsbury Square, E.C.

W.C.1—Shop, two rooms, opportunity for Surgery, 32/- weekly, premium required, also basement, two rooms, rent 12/- or reduction if taken by one tenant—upper part private. Small furnished flat for such tenant can be given.—To Warm Bids, by St. Pancras Church.

IMPORTANT TO THE PROFESSION.

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OVERCOATS TURNED, CLEANED AND RELINED. Just like New. From 37/6.—CAMPBELL, GARRICK & Co., LTD., Hewer Street, London, W.10.

Napsbury Mental Hospital, Napsbury, St. Albans.

FOR DISPOSAL.

The Committee of this Hospital have a Manlove *Alliott Dynamic Injector*, two Pressure Waking Machines, two Power Box Mangles, a Davey-Paxman Vertical Steam Engine and a quantity of Pipe and Steam Tube fittings for disposal. The surplus article may be seen at any time except Saturdays and Sundays between the hours of 10 and 4.

Details of this may be obtained on application to the Clerk and Steward and offers should be sent not later than December 31st, 1924.

Liberal allowance for good MICROSCOPE in exchange for OPTICAL or ELECTRO-MEDICAL APPLIANCES made by F. DAVIDSON & Co., 59 Great Portland Street, London, W.1. 1921 Catalogue free.

Med. and Surg. Sundries (new and secondhand). Also Gas Surg. Mask Outfits £10. Retorts for 10 Spencer Wells' Forceps 2/6. Wool 2 oz. Compresses 1/4 to 1/6. Iodine Catgut tubes 1/6. Sterile milk or Catgut in tube 1/—A. W. ALLEN, 51 Bainbridge Road, Wembley.

X-Ray Apparatus for Sale, cheap. Coils, tubes, valves, cassettes, penetrameters, aprons, gloves, etc., sent for trial. Instruments repaired.—H. J. STRAIT, Orinda, Foxes View, Chingford, Essex.

A Doctor, having purchased a more powerful Car, wishes to sell his 20 h.p. DAIMLER LANDAULETTE. Harris Body in excellent condition. £138, recently overhauled and returned from Daimler works. £400 for immediate sale. Can be viewed any time. Trial by appointment.—HYDE, Chauffeur, Brunswick Garage, Westbourne Grove, W.11.

Daimler 5-seater Touring Car for sale. Recently overhauled by makers. Excellent condition. Fine dignified carriage. Nearest £160.—Hills Motor Co., Temple Street, Wolverhampton.

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Princess Alice Hospital, Eastbourne. (OPENS)

Applications are invited for the post of MALE RESIDENT HOUSE SURGEON. Candidates must be unmarried and fully qualified. Duties to commence about January 14th next. The appointment will be for six months and may be extended. Salary will be at the rate of £175 p.a. If appointment extended, salary will be at the rate of £200 p.a. Applications, stating age, qualifications and accompanied by not more than three copies of recent testimonials (typewritten), should be sent to the Secretary not later than December 30th.

Durham County Hospital ... to be appointed. Applications ... more than ... to be under-signed on or before January 3rd, 1925.

Candidates must be Members or Fellows of the Royal College of Surgeons, England, or possess a degree in Surgery of a British University. No canvassing.

WM. R. WILSON, Secretary.
9 Saddler Street, Durham.

Ingham Infirmary, South Shields.

Wanted SENIOR HOUSE SURGEON (Male). Salary £200, with residence, board and washing, out visiting. Candidates must hold registerable qualifications in medicine and surgery. The appointment will be terminable by one month's notice. Applications, stating age, and accompanied by copies (which will not be returned) of recent testimonials, to be sent to the undersigned from whom further particulars may be obtained.

JOHN POTTER, Secretary.

Finsbury Second Treatment CENTRE, 31 Spencer Street, E.C.1.

Applications are invited from qualified MEDICAL PRACTITIONERS for appointments on the staff of this centre. There are two minor aliments ... April 1st, 1925. Application with testimonials must be forwarded to the Secretary not later than January 3rd, 1925.

Norfolk & Norwich Hospital Norwich.

Applications are invited for the following appointments which will be vacant on February 1st, 1925:
HOUSE PHYSICIAN, £150 per annum with board, residence and laundry.
HOUSE SURGEON, £150 per annum with board, residence and laundry.
Preference will be given in each case to a candidate who has had a previous Hospital appointment.
Candidates (male) who may be desirous of registering qualifications should forward applications, stating age, nationality, etc., together with copies of testimonials to the undersigned not later than Friday, January 9th, 1925.

FRANK INCH,
December 16th, 1924. Secretary.

Royal Westminster OPHTHALMIC HOSPITAL (Incorporated by Royal Charter), King William Street, West Strand, W.C.2.

The Committee of Management are prepared to appoint THREE more REFRACTION ASSISTANTS.

Duties will be from 1 to 5 p.m. on the following days:
Mondays and Thursdays.
Tuesdays and Fridays.
Wednesdays and Saturdays.

The appointments are open to qualified Medical Practitioners who have had experience in Refraction work. They will be resident for six months' salary at the rate of £100 per annum each.

Cards dates are required to end in applications with copies of testimonials not later than Wednesday, December 31st, 1924, to the Secretary from whom further particulars can be obtained.

Withnell Urban District COUNCIL.

There is a vacancy for an appointment as MEDICAL OFFICER OF HEALTH (part time) to the above Council. Inclusive salary £80.

Applications should be forwarded to the undersigned to arrive not later than December 24th, 1924.

H. D. POLLARD (Clerk).
Railway Road, Darwen, Lancs.

All Saints' Hospital for

GENITO URINARY DISEASES
Out patient Dept and Offices 49-57 Vauxhall Bridge Road S W 1
In patient Dept, 91 Finchley Road N W 8

RESIDENT SENIOR HOUSE SURGEON required on January 1st next for a period of six months Salary £200 per annum together with board lodging and laundry

NON RESIDENT JUNIOR HOUSE SURGEON required on January 1st next for a period of six months at the expiration of which time he is elected to the Senior Office, subject to the approval of the Board of Management The duties consist of attendance in the Out-patient Department every afternoon, and three evenings weekly Salary £100 per annum

Applications stating age experience qualifications and enclosing copies of testimonials should be sent to the Secretary on or before December 23rd

D H EADE Secretary

City of Bradford

Applications are invited for the following appointments —

SENIOR DENTAL OFFICER, salary £650 per annum

ASSISTANT SCHOOL DENTIST salary £450 per annum plus war bonus (at present £33 16s Od per annum)

Forms of application may be obtained from the Medical Officer of Health Town Hall Bradford, and should be lodged with him not later than December 29th 1924

N L FLEMING Town Clerk
Town Hall Bradford December 2nd 1924

The Children's Hospital,

Sunderland (70 Beds)

Wanted beginning of February JUNIOR RESIDENT MEDICAL OFFICER (female) to act as House Physician Candidates must possess double qualifications (registered) Salary £100 per annum with board residence and laundry

Applications, stating age with copies of three recent testimonials to be received by the undersigned not later than January 6th 1925

S C FRYERS Secretary
Children's Hospital in connection with the Royal Infirmary, Sunderland
December 12th 1924

Birmingham City Fever HOSPITALS

ASSISTANT MEDICAL OFFICER (male) wanted immediately for service at the City Hospital Lodge Road Commencing salary £400 per annum rising to £500 by annual increments of £30 with usual residential emoluments

Applications stating previous hospital appointments and War service should be sent together with copies of three recent testimonials as soon as possible to Dr E H R HARRIES Medical Superintendent, City Hospital, Little Bromwich Birmingham

West Bromwich and District HOSPITAL (105 Beds)

Wanted a RESIDENT ASSISTANT HOUSE SURGEON (Male) He must be doubly qualified and unmarried Salary £180 per annum, with board, residence and washing

If possessing a and accompanied be sent to me on or before December 18th, 1924

By Order
FRANK I HANCOCK,
Secretary & Superintendent

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6 IMMEDIATE — Mixed PRACTICE of over ty in W of Eng Price £2 400

7 [illegible] very old estab Practice (London S W) Income over £2,500 p a Panel 1 000 Good fees Cash £100 monthly Expenses light Choice of residence Price for HALF SHARE £2 250 of which £500 can stand over

8 WITHIN EASY REACH of the Marble Arch, non panel PRACTICE of about £1 200 a year for early sale Vendor going abroad Fees good House on long lease and moderate rent Price for quick sale £1 400

9 NEW LIVERPOOL — PRACTICE averaging over £1 500 a year, with panel 1 100 and appts Convenient residence garage, etc, rent £100 Price for prompt sale £2 000

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NORTH WALES —Country Town G P Panel 1 2 0 Average income £1 575 House to rent £75 p a (4 beds) Branch surgery Premium 1½ years purchase

LONDON N W —Non Panel G P Average income £1 033 (Nursing Home attached average income £512) Premium to include Leasehold house (7 beds) £2,500 (cash) Scope for Panel

LONDON S E —Suburban G P Panel 1 900 Average income £2 353 Opposition slight, 12 roomed freehold corner house Premium £3,100 (cash House for sale or would let.

LONDON S W —Suburban G P —Main thoroughfare Panel nearly 700 (scope) Income £1 200 Nice house to rent Premium 1½ years purchase

HUNTS —NUCLEUS —Country Non panel Income over £300 p a Excellent house suitable for reception of patients Premium £1 550 to include house

LIVERPOOL (Growing Suburb) —Nucleus G P Panel nearly 100 Income £212 Freehold house (5 beds) Premium £1 150 to include house

DORSET —PARTNERSHIP in old-established G P (Hospital in town) Panel over 1 100 Appointments £140 Average income over £2 000 House to rent on lease Two-fifths share at 2 years purchase Suit Varsity Graduate aged 30 to 35

CHESHIRE — Old established Situated in Country Residential Town Excellent detached house Panel nearly 1,000 Average income £2 329 p a Premium £4 000 cash to include house

SOUTH COAST — Well established NUCLEUS G P in well known seaside resort Income £500 (increasing) Panel 300 Good fees Small house to rent or for sale Prem £1 000

Purchasers stating their requirements will be sent particulars of other suitable Practices and Partnerships for sale free of charge

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London, S.E.—About £900 p.a. Old-established PRACTICE. Large Visiting fees 3 6 to 5. mostly cash. Corner house with 4 bedrooms, etc. Rent £63 p.a. on lease.—Apply No. 7654.

Country Practice, Notts.—About £1,000 p.a. up to £1,500. Panel of 4 Appointments £150. Very much midwifery. Visiting fees to 21. Good detached house with 6 bed, bath, outhouses and large garden. Rent £36. All rates.—Apply No. 7650.

London, N.—About £1,550 p.a. Old-established. Small panel. No appointments. Visiting fees usually 5 to 7 6. Good house, ample living accommodation, consulting rooms and surgery. Town.—Apply No. 7648.

London, West.—About £2,000 a year. Very old-established. Panel about 1,000. Other appointments £100. Few midwifery cases, ample scope. Fees 3 6 to 21. Excellent corner house to rent.—Apply No. 7647.

Worcestershire.—About £800 p.a. and scope. Old-established. Panel 4/5. Good fees. Appointments over £100. Convenient house. 1½ acres of garden and orchard. Rent or sell. Premium £1,000.—Apply No. 7640.

Sussex Coast.—Nearly £800 p.a. Old-established. Panel 3. Visiting fees 5 to 10. Very few midwifery cases. Appointments £80. Good house on lease.—Apply No. 7638.

London, S.W.—Partnership. About £1,360. Share worth £1,000 p.a. for disposal now. Half later and ultimate succession. Panel 1,000. Visiting fees 3 6 up. Few midwifery cases. Ample scope.—Apply No. 7636.

London, N.—About £1,500 a year. Old-established PRACTICE. Small panel. Appointments about £400. Visiting fees 3 6 to 15. Good house on lease with garden and garage. Can be rented or lease purchased.—Apply No. 7634.

South Coast.—Partnership. About £2,700 a year. Non-dispensing, small panel. One-third share for disposal now, up to one-half later. Visiting fees chiefly 10/6. Applicants should be Graduate and F.R.C.S. for preference.—Apply No. 7631.

Cheshire.—About £1,900 a year. Old-established. Very little midwifery. Panel 9 8. Fees 3 6 to 21/-. Medicine extra. Good detached House, garage and garden. Mortgage can be arranged.—Apply No. 7628.

London, S.E.—About £2,000 a year. Old-established PRACTICE. Densely populated district. Appointments. Panel 900. Visiting fees 5 to 21. Midwifery average £5 5s. Corner house, ample accommodation, rent £55 on lease.—Apply No. 7625.

Lancashire.—About £1,200 a year. Non-panel. Old-established. Vendor retiring. No midwifery or appointments. Fees 2 6 to 10 6. Small house, rent £36, including rates and taxes. Ample scope for both midwifery and panel. Easy terms.—Apply No. 7612.

Home County.—Nearly £1,400 a year. Old-established. Good fees. Very little midwifery. Small panel. Good house and garden. Introduction as arranged.—Apply No. 7606.

Lincoln.—County Town, about £1,850 p.a. Very old-established. Panel over 1,000. Visits 3 6 up. Appointments about £70. Good detached house, tennis garden, ½ of an acre. Long introduction.—Apply No. 7593.

Yorkshire.—Average £1,286. Appointments £350. Visiting fees 3 6 to 10 6. Panel nearly 1,300. Few midwifery cases. Good house, every convenience.—Apply No. 7581.

Eastern County.—Partnership with view to Succession. Large Hospital Town. Over £2,000 a year. One third share for disposal. Panel 1,000. Other appointments £40. Visiting fees 3 6 up. Midwifery 2 to 3 guineas. Good house on succession.—Apply No. 7564.

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Death Vacancy, Yorks.—PARTNERSHIP. Half share of £3,250 in manufacturing town. Panel 2,500. Good opening for surgeon. Excellent house with garage. Premium £2,200.

X-Ray practice of £1,350 in large town near London. House rent £75.

South London.—Cash Practice of £2,300. Panel £900. Good house with nice garden. Price £3,100.

Lancs.—Nice middle and working class PRACTICE of £3,280 on Borders of Moorland country. Panel 1,100. Choice of houses. Scope for surgery.

West Riding.—Practice of £1,460 in fine town. Panel 8/9. Clubs £160. Fees 3 6 to 1 gn. No midwifery. Good house can be rented. Premium 1½ years purchase or near offer for quick sale.

Within 70 Miles.—Increasing PRACTICE of £750 in prosperous town with good schools. Opposition slight in proportion to population. Panel 1,000. House on lease. Rent £55. Cottage Hospital. Premium 1½ years purchase.

London, S.E.—Practice of £1,330 with house in residential part and separate surgery. Panel 940. House has consulting room, 2 sitting rooms, 5 bedrooms, nice garden and garage. Can be bought at a reasonable price.

North London.—Practice of £1,600. Panel 1,100. Appointments £420. Good introduction. Rent £85.

London, S.W.—Partnership. Half share of £2,500. Panel 1,100. Few midwifery 3 gns. up. Choice of suitable flats.

East Coast.—Practice in beau... School. £80 ... on lease.

Cornwall.—Unopposed PRACTICE of £850. Appointments £100. Panel £200. Rent £75. Premium £1,000.

Cheshire.—Practice of £1,500 in nice country town. Panel 1,400. Appointments £160. Double fronted detached house can be bought or rented.

London, S.E.—Practice of £1,100 in nice residential suburb. Appointment £240. No panel. Nice house with garage and tennis court can be bought.

North London.—Practice of £950. Increasing. Panel 1,000. House in main road with small garden can be bought.

Opening in growing residential district. House with surgery etc. NUCLEUS of about £200.

Colliery Practice of £2,300. Panel 1,110. Fees £85. Opposition slight. Hospital and scope for surgery.

New Zealand.—Unopposed PRACTICE of £1,800 in beautiful district with good roads. Rent £100. Premium £1,500 including furniture.

Purchasers should state requirements as Particulars of other Practices are also available.

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1 PARTNERSHIP with SURGICAL scope —SOUTH MIDLANDS —Pleasant Hospital Town A one third share (with increase up to one-half later) is for disposal in a sound better and middle class non-dispensing practice Average income for last 3 years £3 570 including a panel of 1 100 Fees for advice 3/6 and 5/- visits 5/- 7/-, and a few at one guinea About 50 midwiferies a year at from 3 to 10 guineas Choice of two good and well situated houses, with gardens and l t with electric light on lease There is an up to date Hospital in the town and the incoming partner would almost certainly be appointed to the Staff The Purchaser should be well qualified and experienced in major surgery Excellent schools and exceptional social advantages Sport of all kinds Premium for the third share £2 500

2 WARWICKSHIRE —Unopposed old established PRACTICE situated in the centre of hunting district within 10 miles of a large town Average receipts
Panel of 1 100 Visits 3/6 to
50 cases Very good house a
tennis lawn Water laid on Electric light Freehold Entirely redecorated Price £2 500 Premium £2,000 cash or £2,200 by instalments Plenty of social life

3 [illegible] ICE) —Unopposed, very old in a small market town in a [illegible] ntial district (population over 5 000) close to the sea Cash receipts for the last three years average £2 250 including appointments worth £150 and panel of 800 Held 8 years Nearest opposition 3 miles Railway station 2 miles Visits 2/6 to 21/ Midwifery 2 to 10 ming bath Prem

4 PARTNERSHIP —A one half share is offered in an old established PRACTICE situated in a Hospital Town within 30 miles of London (North) The average income is about £2 000 and there is a panel of nearly 800 Advice and medicine from 2/6 Very little midwifery Double fronted house detached and with ample accommodation Price £2 000 of which half can remain on mortgage There is an up to date Hospital and an early vacancy on the staff is probable Premium 2 years purchase

5 NORTHERN CATHEDRAL CITY —Old established middle and working class PRACTICE Average income for the last three years about £1 400 including panel of 1,000 Visits from 5/ to 7/6 Midwifery 3 gns upwards about 30 cases yearly Twelve roomed house with garden, will be let on lease at £60 p a or sold for £1 100 Premium £2 100

6 LONDON S W (Riverside Suburb) —Old established better and middle class PRACTICE non panel and mainly non dispensing Average income for the last three years £1 656 Visits 3/6 to 10/6 about 10 cases of midwifery yearly at from 3 to 10 guineas Commodious house with good garden garage Will be let on rental of £160 or the Leasehold sold for £2 500 Premium £3 000 payable £1 500 down

7 SOUTH LONDON —RESIDENTIAL SUBURB —PARTNERSHIP A one third share (to commence with is offered) in a very old established general practice Income for the last year just over £3 000, with scope Panel of about 700 Fees from 3 6 to 10 6 A few midwifery cases from 3 guineas A suitable house can be secured Purchaser must be a Cambridge Graduate Premium 2 years purchase

8 LONDON N W —Non panel middle class PRACTICE to which is attached a Nursing Home Total average income for the last three years £1,500 Advice and medicine 3/6 to 5/- Visits and medicine 5/- to 10/6 About 40 cases of midwifery a year from 3 to 5 guineas Large well situated non basement house held on lease with 60 years to run, with a ground rent of £10 Price £1,500 Prem £2 250, or near offer

9 LONDON NORTH
income of £1 400 a
Panel of 3 0 but thr
and medicine
conveyance
Garage can be
[illegible] rked with no
Rent £125
£2 000

10 WEST OF ENGLAND —RESIDE
qualified and experienced man can
with ultimate succession in a good
present income is only about £1 50
scope for increase particularly if general practice is also undertaken Fees mainly 1 and 2 guineas and a few at 10/6 Choice of houses on rental and to purchase Premium for the half share £1 500

11 KENT —SMALL TOWN, within one hour of London Old established mixed general PRACTICE Average income about
appointments probably transferable
Fees 3/- to 10/- Twenty cases of
[illegible] guineas Excellent house containing 2 reception and 8 bedrooms separate entrance to professional rooms standing in its o th full sized tennis court etc Good
Hospital in town and V 2 700
Introduction as desired up to six months

12 EASTERN COUNTIES —Within 4 hours run of London Practically unopposed PRACTICE old established and situated in a very pretty Country Town with beautiful surroundings Cash receipts for last financial year £2 022 including appointment of £50 and panel of 800 Visits up to 21/ Very little midwifery Car optional Railway station Charming residence (with ample accommodation) in its own grounds of ¾ of an acre Price £2 900 all of which can remain on mortgage at 5 per cent Premium for practice £2 500 Excellent prospects Tennis golf hunting shooting etc

13 INDIA —ASSISTANTSHIP with view to PARTNERSHIP —A well qualified man, holding the Fellowship and between 30 and 35 years of age is required on a two years engagement to commence next March in a practice producing £7 000 a year Salary £800-850 per annum plus board and lodging Prospect of a sixth share (with increase up to one third later) at one year's purchase payable by instalments, at termination of engagement

14 WESTERN AUSTRALIA —Unopposed PRACTICE situated in a small Township (population 1 500) amidst very picturesque surroundings and within 12 miles of the sea coast Cash receipts over £1 50
Lodge worth £389
5 guineas upwards 1
Comfortable compact [illegible] taining 6 rooms bathroom etc and ample land attached Rent £86 a year Premium £1 000 half down and balance in 12 months Small Hospital (with 6 beds) Sport

15 SOUTH OF ENGLAND—COAST TOWN —A fourth PARTNER is required in an increasing mixed-class PRACTICE Average income about £5 000 per annum including panel of nearly
The share offered for disposal
annum Comfortable rooms at
ingoing partner Rent £60
p a Premium 3 years purchase

16 RESIDENT [illegible] Non
dispensing come
of about £2 Fees

£2 000 cash and £2 000 by instalments

17 WEST RIDING —HOSPITAL TOWN within easy reach of University City Well established middle and working class PRACTICE averaging about £2,000 per annum including panel of nearly 1 200 (rapidly increasing) Suitable house available Premium 1½ years purchase payable £1 800 down.

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LONDON (SOUTH OF THE THAMES).—(2) PARTNERSHIP (with preliminary [illegible]) in well established high-class Practice taken £3,000 in one of the best suburbs. One-third share to suitable man at two years' purchase. Preference given to Cambridge graduate.

LONDON, S.E.—(3) Old established mixed PRACTICE over £1,100 p.a. in desirable residential Suburban District. Panel [illegible]. Charming corner house (6 bedrooms) in pleasant position to rent. Premium £1,600

INLAND SPA.—(4) PARTNERSHIP in good class non-dispensing Practice established [illegible] years, increasing over £2,000. One-fourth share at first at two years' purchase. Devon, Oxford or Cambridge Graduate preferred.

SOUTH WEST OF ENGLAND.—(5) Very old established mixed and Letters-as PRACTICE over £4,200 in important Service Town. No panel or opportunities. Commodious house in excellent position. Rent £100. Premium one and a half years' purchase.

MIDLANDS.—(6) Old established PRACTICE over £2,000 in Country Town, beautifully situated amid charming scenery. Panel 1,000. Well-recommended house of character still. Premium one and a half years' purchase.

SOUTH MIDLANDS.—(7) PARTNERSHIP in old established PRACTICE about £2,500 in desirable Residential District under middle-aged Partner. Panel 1,100. Premium one-third share two years' purchase and up to one half later.

SPECIAL OPHTHALMIC PRACTICE.—(8) About £2,500 in Seaside Town South of England. Would suit elderly practitioner retiring or [illegible] wanting quiet Practice with small expenses in healthy place. Premium one and a half years' purchase.

EAST ANGLIA.—(9) Unopposed Country PRACTICE, nearly £700 p.a. in Agricultural District. Panel about 1,400. Small house (6 beds.) garden nearly 2 acres. Premium one and a half years' purchase.

SOUTH EAST COAST.—(10) PARTNERSHIP in good middle-class Practice £4,200 per annum in [illegible] residential Resort. No panel. Two-fifths share at first, rising to one half later years. Purchase. Partner should be good tennis player and [illegible] towards music.

MIDLANDS.—(11) Unopposed Country PRACTICE over £1,100 in beautiful part. Panel about [illegible]. Leasehold house (8 bedrooms) with [illegible] acre garden. Mild climate.

LONDON, N.W.—(12) Old established good middle-class PRACTICE averaging £1,127 in Residential District. No panel. Fees 5/- to 10/6. Good corner house (6 bedrooms) in one of the best roads to be sold. Premium for Practice one and a half years' purchase.

HOME COUNTY.—[illegible] good class Country [illegible] Residential District. Excellent house (8 rooms) with beautiful grounds to be sold. Rent two years' purchase.

HOME COUNTY.—(14) PARTNERSHIP in well established and increasing Practice over £2,200 in delightful Residential Country Town within 30 miles of London. Panel 2,000. Cottage Hospital. Premium one-third share £1,425. Great scope.

[illegible] good class non-[illegible] Town. About 3,500 per annum. [illegible] House (8 [illegible]

NORTH WALES.—(16) Well established working class PRACTICE over £2,400 in Country Town. Panel 6,000. House with 4 bedrooms. Lease to be taken. Beautiful surrounding Country. Premium one year's purchase cash.

WEST OF ENGLAND.—(17) Small good class non-dispensing PRACTICE about £400 in first-rate Residential Town and Health Resort. No panel. Choice of houses. Premium £300.

SOUTH MIDLANDS.—(18) PARTNERSHIP in well-established Practice averaging over £2,100 p.a. in good Residential District. Panel 1,100. One third share at once and a half years' purchase after preliminary Assistantship.

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HOME COUNTY.—(20) PARTNERSHIP in good class Practice over £4,700 p.a. in most active Country Town. Panel 1,400. Fees 3/6 to £1 5s. Some mileage extra. Good society. Premium one-third share two years' purchase.

EASTERN COUNTIES.—(21) Very old established and increasing Country Town PRACTICE about £3,000. Panel 1,500. House (8 bedrooms and dressing rooms) with good garden &c. Rent £65. Premium £4,000. Suit two friends.

EASTERN COUNTIES.—(22) Unopposed PRACTICE, with beautiful house and grounds to be sold with [illegible]. Income £2,000 per annum. Panel [illegible]. Premium one and a half years' purchase.

LONDON, N.W.—(23) PRACTICE worth about £450 p.a., [illegible] working class district. Panel 600 in reasonably. Small two-storey Double fronted corner house. Premium Practice and freehold house £1,400. Great scope for young man.

YORKSHIRE (WEST RIDING).—(24) PARTNERSHIP in well established increasing Practice about £2,600 in Country Town. No panel. Not much midwifery. Premium one-third share £1,670 (up to one half later). Incoming Partner should be aged about 30 and keen on surgery.

SOUTH OF ENGLAND.—(25) PARTNER required in very sound old established Practice in Seaport Town. Panel under 600. Share worth £700 to £800 at two years' purchase. Partner must be keen and energetic and not much over 30.

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EAST ANGLIA.—(29) Old established unopposed Country PRACTICE averaging £3,845 p.a. in picturesque part easy distance of important Town. Panel about 2,200. Good house (6 bedrooms) in grounds about 2 acres to be sold. Considerable scope for increase. Premium one and a half years' purchase.

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NORTH OF ENGLAND.—(32) Old established PRACTICE of £1,400 p.a. in Industrial District. Panel 800. Very good house (9 bedrooms) in charming grounds two acres. Premium. Practice house and grounds £1,000. Mortgage could be had on house.

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EASTERN COUNTIES.—(34) Old established PRACTICE £1,855 p.a. in pleasant Market Town. Panel 1,100. No midwifery. Excellent detached house (8 bedrooms). Very good garden. Cottage Hospital. Premium one and a half years' purchase.

YORKSHIRE (WEST RIDING).—(35) PRACTICE over £1,500 p.a. in thriving Industrial Town. Panel 1,500. Good house (5 bedrooms). Rent £80. Premium £2,250.

SOUTH WALES.—(36) Very old established PRACTICE, over £1,500 in beautifully situated Country Town. Panel nearly 1,[illegible]. Fine old mansion house with half acre garden to be sold. Good schools and sport. Premium £2,250.

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YORKSHIRE WEST RIDING.—(43) Well established mixed and working-class PRACTICE over £1,300 (£920 from Panel and [illegible]) in large clean town. Good detached corner house. Premium £1,200.

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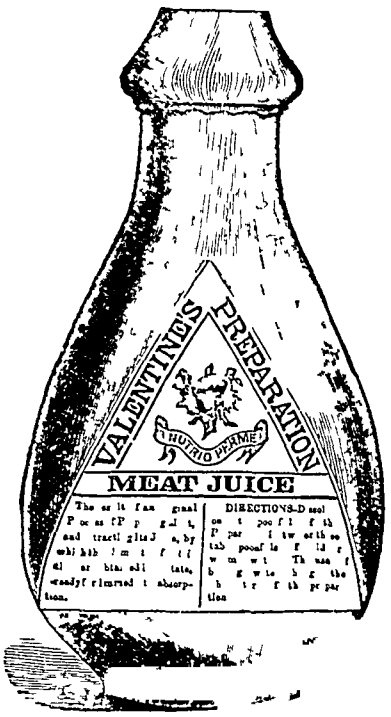
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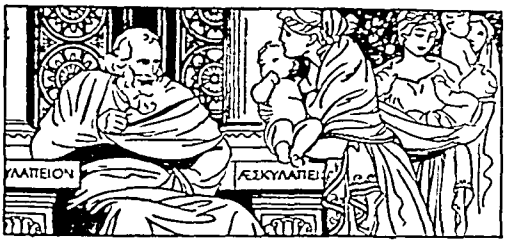
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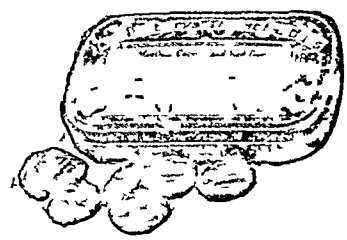


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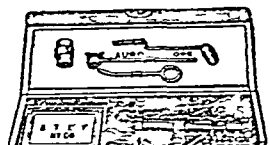
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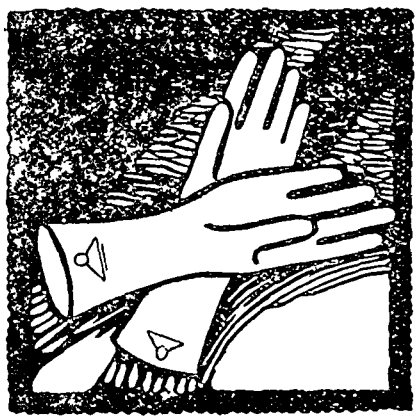
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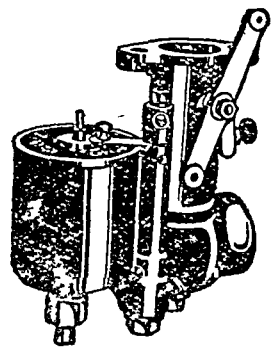
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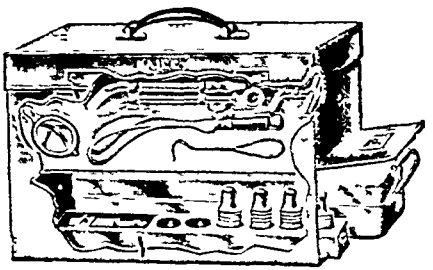
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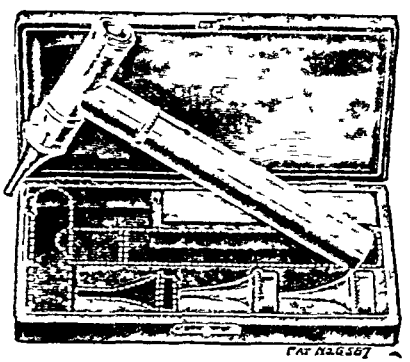
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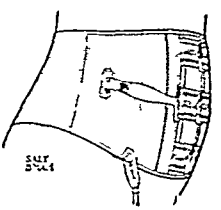
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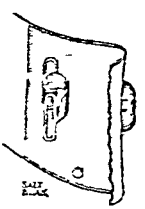
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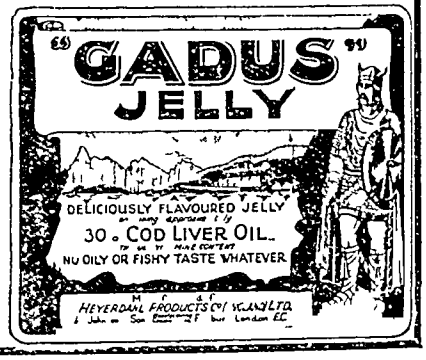
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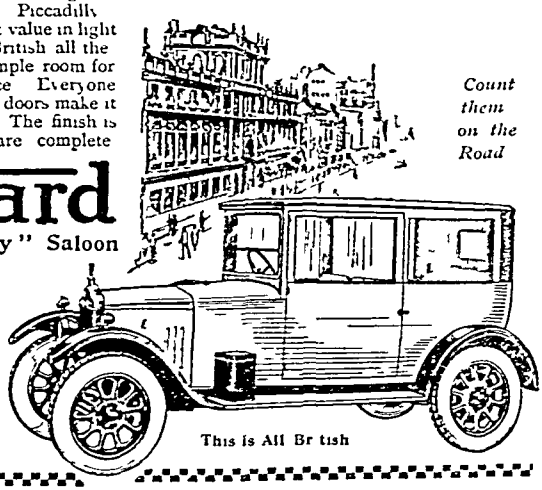
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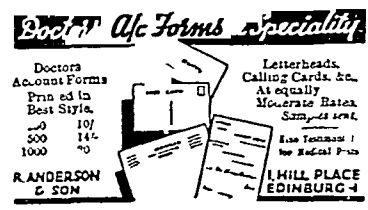
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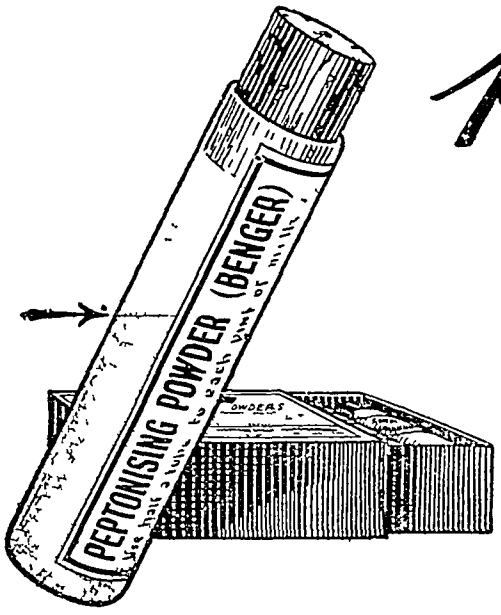
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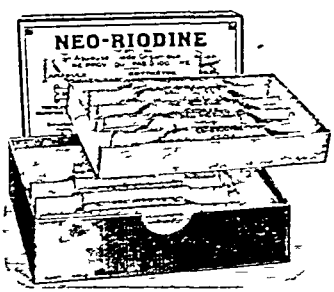
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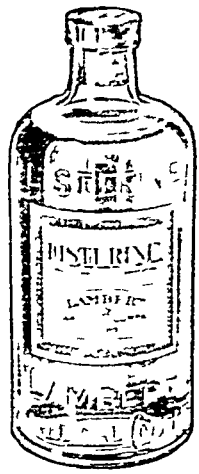


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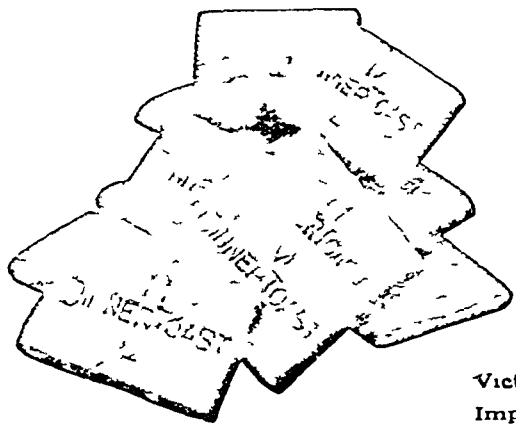
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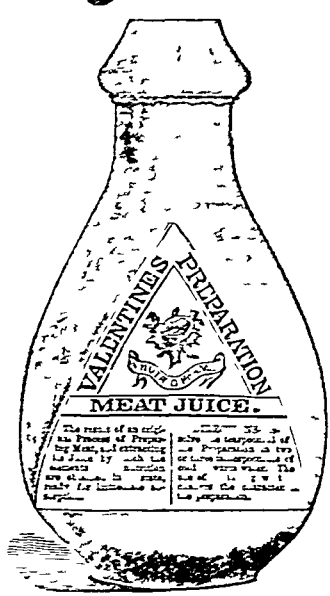
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Some Clinical References.

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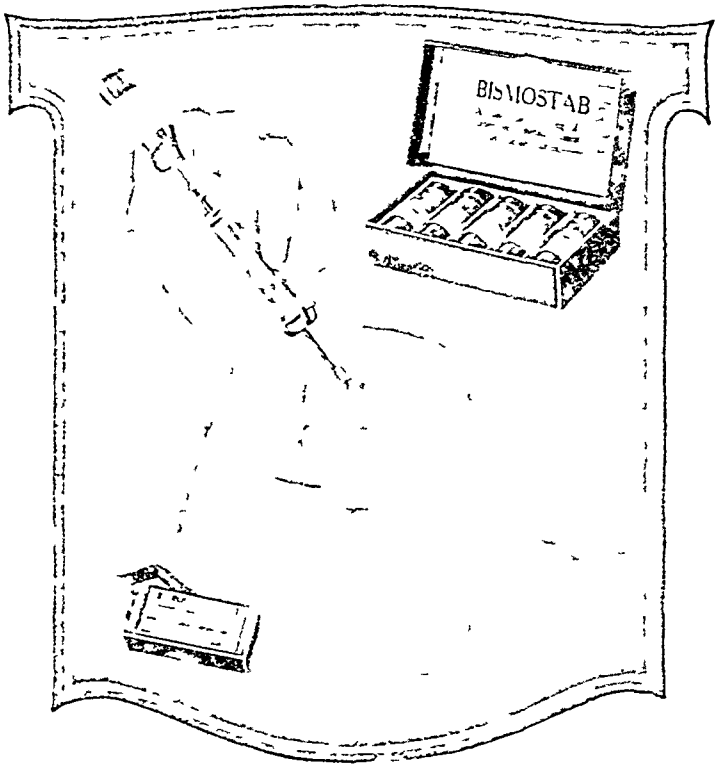
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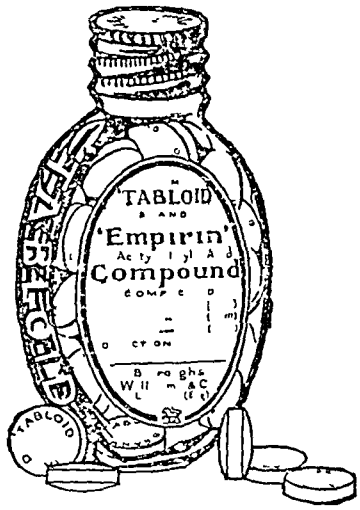
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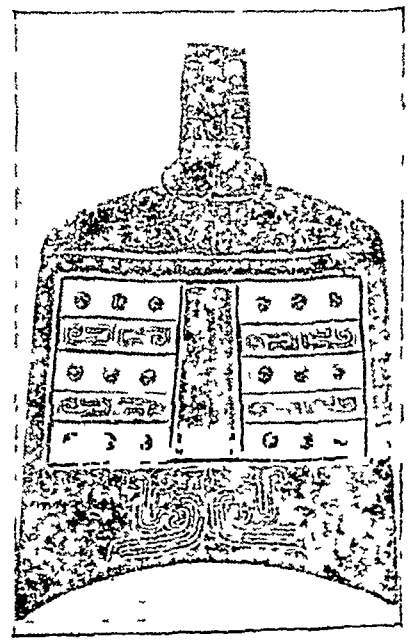
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BRONZE BELL EMPLOYED IN THE RITUAL OF ANCESTOR-WORSHIP AN IMMEMORIAL AND PERSISTENT FORM OF CHINESE RELIGION —Ancestor worship was an established cult as far back as Chinese history is available The Chinese believed that their ancestors lived somewhere after death, could come to them at call, watched over the interests of the family, and could work its members good or evil Upon this belief grew up the worship of ancestors, which was the only worship for all people in early times in China Offerings were made to ancestors for the purpose of obtaining from them benefits and blessings or to conciliate them Even at the present day each family preserves in a shrine wooden tablets upon which are written the names dates, etc of its deceased members, every clan has its ancestral temple containing like tablets, before which incense is burned daily, and where twice a month ceremonial offerings of food are made All important family events are announced to the ancestors In ancient times a bell, similar to the one suspended before the banqueting hall to summon the guests, was sounded to call the shades to the repast prepared for them in the ancestral temple The inscription upon the ritual bell here reproduced contains the following —"I, Kuo Siu Lu, say Grandly distinguished was my illustrious father Hui Shu with profound reverence he maintained a surpassingly bright virtue He excelled alike in the rule of his own domain and in his liberal treatment of the strangers from afar When I Lu presumed to assume the leadership of the people and to take as my model the dignified demeanour of my illustrious father, a memorial of the event O illustrious father seated above, protect with sheltering wings us who are left here below Peaceful and glorious extend to me, Lu, abundant happiness I Lu, and my sons and grandsons for ten thousand years to come, will everlastingly prize this bell and use it in our ritual worship" Ancestor worship remains to day the chief religious practice of the Chinese The pioneers who evolved and spiritualised it were benefactors, for the filial piety it inculcates is a great moral asset of the race, despite the possibility of certain pitfalls some see in it

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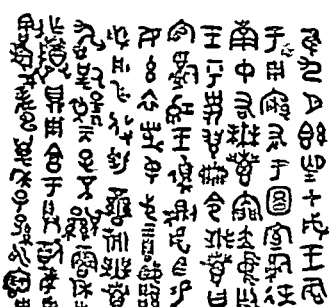
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CHINESE INSCRIPTION OF THE NINTH CENTURY B C MAKING REFERENCE TO A MINISTEP OF EDUCATION.—The Chinese justly deserve the title of pioneers in education notwithstanding that their subjects and methods of education early became unduly formalised No nation can vie with China in the importance she attached to the subject from very early times even if the remote antiquity she claims for her educational system cannot be accepted Her great teachers—Lao zu Confucius and Mencius—actually instructed the people between 600 and 300 B C and the way must have been prepared for them during many preceding generations The claim is made that the germ of the Chinese system of education existed in the third millennium B C and that Wu Wang (1122 B C.) the first emperor of the Chou dynasty established schools divided into six classes of which the three lower were intended for boys of from eight to fifteen years. The inscription here reproduced records an emperor's visit to the temple to offer burnt sacrifices and relates that Pan Chung the Minister of Education came in at the gate and stood in the middle of the audience hall. It also mentions the presence of a historiographer who had been summoned to record the proceedings



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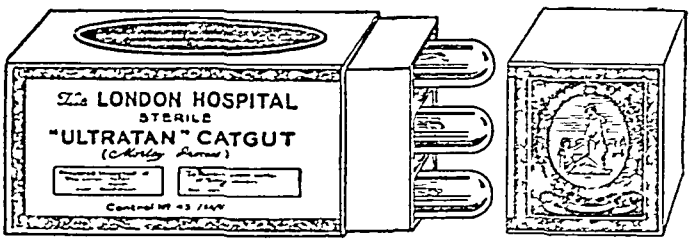
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By CAREL A. HOEFFTCKE

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More than twenty years have elapsed since I first introduced the Ambulatory treatment for acute and chronic disease of joints, and for fractures of the long bones of the lower extremity

As is the case with many revolutionary changes in medical and surgical procedures, this treatment has met with a varied reception, but the numerous and favourable reviews of my book, in home and foreign medical papers, which have appeared, show that the principle involved in the Ambulatory treatment, namely, extension combined with movement, has found great favour with the medical profession

The difference between, and the advantage of, the Ambulatory treatment over the recumbent, must be apparent in cases of neck of femur fracture in elderly people as it obviates the danger of congestion of the lung, when the patients are enabled to assume an upright position and walk about within a week of the accident

When the patient is in the upright position, the circulation is not impaired, which therefore allows callous to form and union to be obtained more rapidly than if the patient has to lie in bed

In cases of tubercular and arthritic disease of the joints, the patients can be allowed to walk about and exercise the joints, which avoids slowing of the blood supply, and enables the usual blood current to combat the disease, and repair the articulating surfaces

The Ambulatory Extension treatment has upset the accepted opinion that nothing can be done to arrest the progress of the disease in cases of rheumatoid arthritis or even to prevent consequent deformity contractures, ankylosed joints, etc Hopeless cripples, who have been unable to walk for years, have not only obtained moveable joints, but also have been enabled to have the free use of their limbs without any evidence of the disease remaining

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Extract from the MEDICAL PRESS AND CIRCULAR, *April 9th, 1924, pages 293—296*

RHEUMATICS

BY AN EMINENT PHYSICIAN

"GENTLEMEN—The subject you have chosen for discussion is one which, though of the greatest importance, happens to be, at the moment, very obscure and difficult

" Thus one finds as one blunders about in this swamp of 'Rheumatics' that each stone you try to step upon tilts you up and plays you false

" Lastly, there is one method upon which I would like to say a few words, though I must deal with it cautiously There are cases of severe arthritis in which the disease has become quiescent, but in which, either owing to the initial severity, or from lack of knowledge, or the character of the patient, severe contractures have resulted, one or both knees, for example, have become fixed at a right angle and the patient has been unable to walk, possibly for years These are sometimes dealt with by forcible extension and elaborate splints—a treatment associated with the name of Mr Hoefftcke

" This, however, I must say, that in three out of four cases, all of the worst type, in which I followed through the results, they were eventually remarkable The fourth case, a hip-joint affected with osteo-arthritis, was a failure, but I am not prepared to alter my mental attitude because this was a failure, for the cases I am dealing with are most difficult, and there must be failures I can only repeat that I have seen three remarkable successes When I am faced by a patient with contractures of long standing, unable to walk or earn his living, I ask myself What method other than this is open to use? "

Extract from the MEDICAL PRESS AND CIRCULAR, *May 14th, 1924, page 406*

RHEUMATICS

BY CAREL A HOEFFTCKE

" The danger of injury does no doubt exist if the wrenching is done without extension Under such conditions the joint surfaces are pressed together by strong muscular tension, and as the surfaces are usually eroded there is serious danger of injury If, however, the joint surfaces are kept separated while the manipulation takes place this danger is avoided Such separation can only be obtained satisfactorily by an extension table or extension splint Further, the suffering which the patient has to face is in a large measure due to the contact of the diseased joint surfaces and is, accordingly, greatly reduced by suitable extension Cases treated by my ambulatory extension method in arthritic or tubercular disease need not be quiescent, in fact, the earlier the extension treatment is applied the sooner a good result can be expected. . . . "

"The Lancet," *January 5th, 1924 review* —

" And it should be stated clearly that he works only with the medical profession and not as one who offers a substitute for medical services "

DEC 27, 1924]

An Address on THE TEACHING OF OBSTETRICS

DELIVERED TO THE EDINBURGH OBSTETRICAL SOCIETY BY B. P. WATSON, M.D., F.R.C.S.I. PROFESSOR OF MIDWIFERY AND DISEASES OF WOMEN, UNIVERSITY OF EDINBURGH, PRESIDENT OF THE SOCIETY

[FOLLOWING some introductory remarks, Professor Watson continued as follows:]

I propose in this address to direct your attention to what may be accomplished in the future, to inquire whether we are laying the proper foundations for advance and whether we are embodying in our teaching the advances already made in such a way as to make them available to the graduates of our medical school.

A calm review of present conditions is always helpful. Most of us are so busily engaged in the daily round of practice and teaching that little time is allowed for reflection. Things we have done in the past we are inclined to continue to do out of mere habit or because of a certain mental laziness which makes the effort of change seem too great. Tradition has its drawbacks as well as its advantages. Conservatism is to be commended when it makes us hold on to the things which are of proved value, but it must be condemned if it renders us incapable of appreciating and making full use of the new aid which emerge with time. This leads up to the questions I am going to put and to attempt to answer. Has our teaching of obstetrics and gynaecology kept pace with the advances made in these subjects in the last twenty years? Does our teaching equip the young graduate for the work he is expected to do when he leaves the medical school? Is the training of our midwives and nurses carried on in such a way as to give the maximum of benefit to the community and to themselves?

The advances made in obstetrics in the last thirty years have been mainly in two directions: in the perfecting of the technique, including a much better understanding of the indications for, and limitations of, the various operative procedures, and in the recognition of the importance of ante-natal examination and supervision. We have travelled so far along these two lines that, theoretically, we should already be seeing the results in a reduced maternal mortality throughout the country. That reduction, unfortunately, is not yet evident, and it is one of my purposes to-night to try to arrive at the reasons for this disappointing result.

I am not going to weary you with statistics. These have been cited over and over again in numerous publications and have been investigated by different commissions which have been set the task of inquiring into them. All these tables, for England and Wales for Scotland and for most other countries, tell the same tale of a maternal mortality of from 4 to 6 per 1,000 more or less constant for the past twenty or thirty years. The general death rate has been reduced by one third, the infant mortality rate has been halved since the beginning of the century, yet the maternal mortality rate is little lower than it was twenty years ago." Whilst this statement is justified by the statistics available we must not take them too literally. I think there can be no question that there has been a reduction in maternal mortality in the hands of individual practitioners and in our maternity hospitals. The individual practitioner carrying on an obstetrical practice according to modern ideals has better results than he would have had thirty years ago, that time. Notification of deaths due to puerperal causes is more complete to-day than it has ever been, so that a larger proportion of such deaths are tabulated than was formerly the case. Notwithstanding those corrections we must still regard the figures as too high. And apart from mortality, can any of us say that morbidity due to childbirth is any less in its incidence than it was? The numbers of cases awaiting admission to our gynaecological wards for operative treatment supply the answer. Why is it that in this one field of medicine there is so little to show in the way of improved results? The answer must be that, for some reason or reasons, we, as a profession, are not putting our theories into practice. This failure on our part is due to several causes. One of these, undoubtedly, is the inadequate training of our students, but whilst I shall devote most of my time to a consideration of means for improving this we must not forget that other factors play a part. A large share of the responsibility rests on the general community. It must supply the funds for the improvement of medical education, for the erection and maintenance of larger and better maternity hospitals, for the provision of ante-natal care, and for the supply of proper equipment for the conduct of labour in the houses of the poor. The economic problem is one which we must leave to our statesmen to solve. Until it is solved no great advance is possible. Meantime, it is for us to form public opinion by stating the case and suggesting remedies.

Textbooks and Systematic Lectures

Let us then, first consider the training of our students for on this depends advance in all other directions. I need say little about theoretical teaching. I am still a believer in systematic lectures. From these the student ought to obtain the foundation on which to build his clinical experience. These lectures have formed in the past a very distinctive and valuable method of teaching in our Scottish universities. To-day they still have their place, but in a modified form. Twenty or thirty years ago there were very few textbooks, and these were not always available to the student. Each subject could be more or less completely covered in one hundred lectures, and the student's notes came to constitute his textbook. Now that has all changed. Many good textbooks are available in all subjects. It is no longer possible to cover the whole or any one of the major subjects in a course of one hundred lectures. Some modification of the method is thus necessary.

If an adequate understanding of the subject is to be got, if time and energy are to be conserved for the teaching and learning of the practical and clinical sides more and more use must be made of reading for the acquisition of the groundwork by the student. The lectures therefore should not be a mere reiteration of textbook articles, but should reflect the individual experience of the lecturer. If they do not do so they fail of their purpose. They should deal with broad general principles and be freely illustrated by clinical pictures. They should be supplementary to, but not a substitute for, a textbook. Their chief object should be to give the student a proper perspective of the subject and to direct him in his reading and in his clinical work. In midwifery these objects can be easily attained in fifty lectures, while from fifteen to twenty ought to suffice for gynaecology. During this course the student ought to have access to the museum and practical room of the department where he can acquire a first hand knowledge of pathology and make use of models, manikins and instruments. This is the scheme which we are now following in the University of Edinburgh.

Clinical Instruction

After such an introduction the student is in a position to acquire clinical knowledge. Hitherto the teaching of clinical midwifery has been very incomplete. It is not so very long since the attendance at clinics in a maternity hospital was first insisted on. All that the student was called upon to do was to undertake so many cases of labour under the supervision of a hospital or practitioner. He very often had never seen a case conducted in the hospital and when he went out to attend the patient in her own home he had a totally inadequate equipment for the carrying out of a proper antiseptic or aseptic technique. All that required to be changed. It is now necessary for every student to attend clinics in the maternity hospital in addition to conducting cases himself. Our problem to-day is to ensure that the teaching he receives in those clinics and in the hospital is the best he can possibly get. Teaching has been handicapped in the past because a proper allocation of time for it in the medical curriculum was not made. Any odd hour in the day was taken for the purpose, and the student was only in the hospital during the hour of the clinic, when it so very often happened that no cases were available for demonstration. Such a state of matter could

not be allowed to continue Clinical midwifery must be taught in the same way as clinical medicine or clinical surgery The student must come in direct contact with the cases, and he must be given opportunities for examining patients and forming his own judgement upon them This can only be attained by having the student in more or less constant attendance at the maternity hospital over a certain definite period He must be free from other classes so that he may attend at the hospital at any time during day or night when work is going on He must for a definite time live, as it were, in the atmosphere of obstetrics An isolated clinic once or twice a week, or even once a day, over a short period of time is not sufficient The University of Edinburgh has adopted the plan of requiring of every student that he devote one term of ten weeks in his final year to the study of clinical obstetrics, clinical gynæcology, and diseases of children Clinical gynæcology and pediatrics occupy, on an average, not more than one hour a day each, leaving the rest of the twenty-four hours for intensive work in clinical midwifery During this time, in addition to set clinics conducted daily in the maternity, the student must attend a series of demonstrations in the practical room at the University At those meetings obstetrical and gynæcological subjects are discussed by the groups of students under the supervision and direction of one of the assistants They have in opportunity of working with models and instruments, and there is available a representative teaching collection of specimens in the Obstetrical and Gynæcological Museum Groups of students are detailed each day to be on duty at the Maternity Hospital During those days they have the opportunity of seeing all the work during the twenty-four hours

The student's interest is deepened, and the value of the teaching to him is increased, by insisting that short notes be kept of the various clinics he receives the reading he does, and the operations he witnesses Those notebooks are inspected by the clinician at the end of the term, and are awarded a mark in the final summing up of the student's work At the end of the term the student is examined clinically and orally The mark he obtains in this examination, together with that given by the clinician for the character of his notes and his general work in the wards, is added to the mark awarded in the written and oral examinations for his degree His final standing is determined on the aggregate of marks *Such, in brief* outline, is the method of clinical and practical teaching now being carried on in the University of Edinburgh It is not by any means a perfect system, and we are handicapped in various ways in the carrying of it out, especially by the large numbers of students with which we have to deal and by the inadequacy of the teaching accommodation in our *Maternity Hospital It would be* an enormous benefit to the students if small groups could, for a time actually live in the hospital or in a hostel in connexion with it and so be able to take a more active part in the work going on In the planning of any new maternity hospital in a teaching centre this must not be lost sight of

Ante-natal Work

A little more must be said about the character of the teaching in clinical obstetrics That teaching ought to be directed, to a very large extent, to enabling the student to acquire a knowledge of ante-natal conditions and of what may be called preventive midwifery For these purposes the ante-natal clinic should be the principal place of instruction There is no want of clinical material there but the great difficulty in most schools is want of space and proper equipment *If, and when, we get a new maternity* hospital in Edinburgh, we must see that the ante-natal department is large and is planned and equipped in such a way that large numbers of patients can be dealt with quickly The system in vogue at the Tarnier Hospital in Paris, under the direction of Professor Bundeau, seems to me an ideal one A large ward is used for this part of the work It contains about twenty beds or examining couches, each separated from the other by a simple screen When the out-patient arrives she undresses, puts on a dressing gown, and is placed on the examining couch To each patient two students are assigned The student takes the history, makes a general examination, carries out abdominal palpation, measures the pelvis, and makes a diagnosis of the period of pregnancy, presentation, position, and engagement or non-engagement of the presenting part His findings are checked by the clinical assistants, several of whom are always present At a set hour the chief of the clinic passes along, discusses the patients with the students, and thoroughly investigates any abnormalities In this way large numbers of patients can be dealt with in a very short time No patient is overexamined, and yet a very adequate training is given to the students I need not mention the tremendous advantage to the patient herself in that she has not to wait long hours in the clinic Until we get some such arrangement we cannot possibly give our students the training in ante-natal work which they ought to have, and we shall not get all the patients to attend who should

The teaching of abdominal palpation is, to my mind, one of the most important things in obstetrics If we could send out all students thoroughly trained in this method of diagnosing presentation and position, and capable of forming an estimate of the relative size of presenting part to pelvis, we should be doing a great work In the lecture room and at clinics we impress upon them the importance of this examination It is necessary, however, that they have many opportunities of carrying out the actual examination themselves The systematic use of pelvimetry ought also to be thoroughly taught There is a very general feeling among the older practitioners that the taking of pelvic measurements is difficult We must disabuse our students of this idea, and we must see to it that everyone who goes into practice possesses a pelvimeter and knows how to use it A great part of the teaching in the maternity hospital should thus be devoted to clinics and practical instruction on the pregnant woman No student can have too much of that

On a more thorough training of our students along these lines lies our hope of reducing puerperal morbidity and mortality *from obstructed labour* and from untimely and unnecessary interference with normal *labour, from the* toxæmias of pregnancy and from the hæmorrhages The necessity for ante-natal care and supervision is coming to be recognized by a large part of the community Its universal adoption can only come through the effort and example of the whole body of medical practitioners *thoroughly trained* in its details

Before leaving the subject of ante-natal teaching let me also emphasize the necessity for instructing students in post-natal conditions As ante-natal care is preventive midwifery, so post-natal care is preventive gynæcology A properly organized post-natal clinic should be an integral part of every maternity hospital It requires no additional space or *equipment*, as that set apart for the ante-natal clinic can be used for it In such a clinic the student should be instructed in the prevention and treatment of the various disabilities which may follow parturition The importance of this is recognized by all of us, and yet, in most medical schools instruction in it is sadly deficient One of the principal reasons for this is again the want of proper accommodation

The teaching in the hospital itself must be conducted as cases allow One of the very important things is to teach a proper system of aseptic or antiseptic technique, and to that end we must make our hospital technique as rigid as it can possibly be made I have heard it stated that it is no use trying to teach a rigid aseptic or antiseptic technique in midwifery, as it is never possible to carry it out in the patient's own home Such an argument is *most pernicious* I *believe that a* large proportion of the deaths from sepsis in childbirth can be traced to this fallacy It has been said over and over again that *labour* cannot be conducted aseptically—that it is not possible to apply the same principles to the conduct of labour as to the performance of, say, an abdominal operation I absolutely dissent from this view Take, for instance, the matter of preparation of the patient for labour It is the commonest thing to hear it said of a case which has become septic that *every possible precaution* had been taken, and yet we find that the vulvar region had not been shaved What would we think of a surgeon who did the most minor operation on a hair-bearing area without a preliminary shaving of the

part. It is very extraordinary how in this one piece of aseptic technique obstetrics should have lagged so far behind general surgery. As a compromise, clipping of the hair is pretty extensively carried out, but that is a very poor substitute. We have no hesitation in pealing of auto-infection from organisms in the vagina in any case in which this simple surgical precaution has not been taken. As an argument against it, it has been advanced that the patients object. I have yet to meet the woman who, when the necessity for it was explained to her, objected to being shaved. The difficulty of the procedure has been cited. With any form of safety razor it is just as easy to shave as to clip, and there is as little likelihood of causing injury to the patient. I feel perfectly certain that if this simple procedure were universally adopted throughout the country the incidence of puerperal sepsis would be materially lessened. It ensures greater safety to the patient not only during labour but in the puerperium. It renders the nursing very much easier and minimises the danger of the access of organisms to the genital tract in the first few days following labour—a danger which I believe has not been sufficiently recognized. No vaginal examination of a patient in labour should be made before having is done and the vulvar region thoroughly cleaned with some efficient antiseptic. The dorsal position is the one which ought to be adopted for this examination. It only in this position can the labia be thoroughly parted and the fingers introduced directly into the vaginal cavity. Another point in aseptic technique very often neglected is the proper emptying of the lower bowel during the course of labour. In a first labour lasting for twenty hours or longer the initial enema is not sufficient; that enema ought to be repeated every four hours during the course of the labour. Only in this way can we be sure that the lower bowel is emptied of faecal matter and that there will be no escape when the head comes down on to the pelvic floor.

The Conduct of Labour.

During the actual process of delivery in the hospital the same rigidity of technique should be carried out as in the surgical operating room. The compel to field surrounding the patient should be sterile. But it is on the carrying out of the minor details that emphasis should be laid. The students at the delivery ought to be asked to keep their eyes open for any breach of technique. This is one of the best ways in which to develop in them what may be called the aseptic conscience, and it is only when an individual possesses such a conscience that his technique will approach anything like perfection.

After such a training in the hospital we must ensure that when the student attends his cases in the district, he is supplied with a proper equipment so that he can conduct the case with the same care as in the hospital. The hospital should supply him with sterile nailbrush gown, and gloves, sterile towels and swabs, and two small sterile basins. All of these can be packed in bundles with stout cotton cover and carried in a bag together with the simple instruments—such as scissors, artery forceps, hæmatimeter, mucus tube, needles, and antiseptics—required for the ordinary case. The instruments can be sterilized in the hospital wrapped in a sterile towel and covering, and so be ready for immediate use. Instruments can be kept for a considerable time in this way without detriment. He should not attend the case except along with a nurse who is responsible for the preliminary preparation of the patient, administration of enemas, etc. To his first cases he should be accompanied by the extern resident surgeon who sees that all detail is properly attended to. If the student begins his obstetrical work in this way he will attain to a higher degree of surgical technique in his subsequent obstetric practice than has been the rule hitherto. All of this adds considerably to the expenses of the hospital, but it is necessary expenditure. Such a method is carried out in many of the hospitals in the United States and Canada, and in some in this country. Until it becomes universal in all the training of the student will be inadequate, and we cannot look for any great improvement in our mortality and morbidity so far as these are due to sepsis.

If we really face the facts I think we must admit that very often the conduct of labour in the ordinary house falls far short of the surgical ideal. The enormous reduction in the mortality from surgical operations, and the greatly increased scope of operative procedures, are due to three principal factors—rigid asepsis, prevention of all unnecessary trauma to the tissues, and avoidance of shock. These are the three things that are of importance in labour, the neglect of which leads to most of the maternal deaths.

With regard to asepsis I have already gone into some detail so far as the training of the student is concerned. How is the equipment I have mentioned to be provided for the doctor confining the working woman in her own home? At the present rate of remuneration for midwifery cases in general working class practice it is impossible for the doctor or midwife to provide such equipment for each case. One of the recommendations made to the Scottish Board of Health by the Scottish Departmental Committee on Puerperal Morbidity and Mortality is: That local authorities be empowered to furnish on loan, terms, outfit and equipment at a reasonable charge, which should be remitted in cases of poverty. This recommendation if given effect to will go a long way towards solving the problem. The cost to local authorities would be small, for such outfit could be used over and over again after resterilization. Several surgical firms and nursing homes already supply this equipment, but their charges are beyond the means of the working class patient. Here again let me emphasize that the thing needed above all is attention to detail in the use of whatever equipment is provided. It is no use providing a sterile field if the hands, whether bare or gloved, are soiled by contact with non-sterile objects and then brought into contact with the patient's genitals. Soiling of the hands is very often unavoidable when the doctor is single-handed or has inadequate assistance. It is necessary that he have by him a reliable antiseptic solution in which they may be disinfected. I am in thorough agreement with Donald and others who deplore the use of weak solutions of lysol to the exclusion of more powerful agents such as perchloride and biniodide of mercury. One of the greatest advantages in the use of gloves in midwifery practice is that the gloved hand can be more thoroughly disinfected during the course of the labour as a much stronger solution can be used than would be tolerated by the bare hand.

It goes without saying that the fewer examinations made on the parturient woman the less the danger of sepsis. Rectal examination has been advocated instead of vaginal, but even rectal examination not free from danger in these cases where potentially pathogenic organisms are present in the vagina, for in the examination the vaginal wall is pushed up through the cervix and the organisms may thus be directly introduced into the uterine cavity. With the acquisition of greater skill in and the appreciation of the value of abdominal palpation internal examinations or all sorts will become fewer and fewer. Abdominal examination at the beginning of labour reveals the fixation of the head and the exact position of the child. As the second stage progresses descent can be followed until the head is no longer palpable. Very soon after this the pelvic floor begins to bulge and the progress can be followed visually. The ideal way in which to conduct a labour is to make no internal examination at all, or to make only one just after rupture of the membranes to exclude such an accident as prolapse of the cord. If the patient's pelvis has been measured and a vaginal examination made in the later months of pregnancy, and if the head is presenting and fixed at the beginning of the labour there should be no necessity to do more. To make vaginal or rectal examinations simply to satisfy curiosity as to how things are progressing is not justifiable. If we train students and midwives in this way their training can be carried out with a minimum of discomfort and risk to the patients. Such abdominal examinations can be made by several pupils on the same patient, and there should no longer be the necessity of instructing only one pupil can be officially trained on each patient.

Under supervision a small group of students or one pupil midwife can learn infinitely more by thus following cases of labour in hospital than each could possibly do by attending a large number in their own homes. Far too much stress has been laid on the individual at entrance on the outdoor case. To send a student to confine a woman in a poor house, without the assistance of a nurse at the very

worst training possible for him Both should be present, and, in so far as the regulations laid down by the General Medical Council and the Central Midwives Board regarding the number of cases to be attended are concerned, that case should count for both So long as domestic midwifery is practised students and midwives must be instructed by attendance on patients in their own homes, but that should constitute a minor, not a major, part of their training

The avoidance of unnecessary trauma and shock may be considered next It must be part of our teaching that all forms of forcible delivery are attended by both Potentially pathogenic organisms, which would never become active in healthy tissues, may rapidly acquire virulence in bruised or devitalized tissues We all know the high incidence of sepsis in the "failed forceps" case We must teach that such operations as high forceps and version are of the nature of major operations, and must not be undertaken except under such conditions as would be deemed necessary for a surgical procedure of like severity In this matter the public requires educating It is often a difficult thing for a practitioner to persuade a patient and her friends that removal to hospital or nursing home is in her best interests That difficulty will, I am sure, become less and less as doctors see their patients more and more frequently throughout their pregnancies, and so gain their confidence

When we come to consider forceps application in general we reach the crux of the matter so far as midwifery practice as at present conducted is concerned Obstetrics takes up more time in proportion to the monetary return than any other part of the work of a general practitioner He cannot overtake all his work and give adequate time to his midwifery cases—hence the tendency to hurry delivery It seems to me that the solution is to be found in the closer co-operation of the doctor and midwife Such co-operation should include the ante-natal examination of every patient by the doctor, the measurement of the pelvis, the routine examination of the urine, and, two weeks before term, the determination of presentation and position, and the relative size of head to pelvis Under normal conditions attendance at the labour would be undertaken by the midwife, who has the assurance that, on the development of the slightest abnormality, the services of the doctor can be obtained The number of needless forceps deliveries would in this way be reduced, and the forceful delivery before full dilatation of the os and engagement of the head a thing unknown

In such co-operation also lies the hope of a reduction in the number of women suffering from neglected birth injuries The midwife attending a case on her own responsibility hesitates to inform the patient of the occurrence of a tear and the necessity for its repair, unless it is an extensive one That tendency would be minimized by her closer association with the doctor In this matter of the recognition and repair of pelvic floor injuries there is need for more detailed teaching of students It must be demonstrated to them that the absence of external tearing is not proof that an internal tear, involving the postero-lateral vaginal wall and levator ani, is not present, that such a tear can only be detected by careful separation of the labia and digital examination, and that its repair is essential if future disability is to be prevented The proper method of repair must be demonstrated to them in hospital over and over again They must be taught that, whilst every precaution must be taken to prevent lacerations, these are in many cases unavoidable, and that it is no reflection on their skill if they sometimes occur A wider recognition of this fact by doctors and midwives would result in fewer of these cases being neglected One of the findings of the Scottish Departmental Committee on Puerperal Morbidity and Mortality, based on evidence submitted, is that the co-operation of midwife and doctor, in the manner above stated, is a thing to be encouraged in every way

Training of Midwives

Whilst I have spoken mostly on the training and teaching of the student, the same principles apply generally to the training of the midwife Both can and ought to be taught in the same hospital, but they must be in such proportions that a proper training can be given to each In the large hospitals connected with our medical schools the training of students ought to be the first consideration In many of these hospitals the number of midwives trained is so great as seriously to diminish the clinical material available for students From the point of view of the hospital this condition of affairs is justified by the necessity of having a sufficient number of pupil midwives for the nursing of the patients That difficulty would be overcome if obstetrical nursing were made part of the general nursing curriculum in every training school By co-operation between the general hospital and the maternity hospital every nurse could pass through the latter, not training as a midwife, but as an obstetrical nurse I should like to see the time come soon when no nurse will be considered fully trained until she has had such experience The lack of it is a very serious handicap to those of our nurses who may wish to practise their profession in our dominions In Canada, for instance, a nurse with full training in a general hospital here, but with no experience in obstetrical nursing, cannot be registered and is not recognized At the present time a great many of our general nurses train as midwives, not because they have any intention of practising as such, but simply because it is the only way in which they can acquire a knowledge of obstetrical nursing The clinical material used by them would be much better utilized in providing more patients for our students and bona-fide midwives

The Maternity and the General Hospital

The importance of the linking up of the maternity hospital with the general hospital is being recognized throughout the world After a temporary tendency to the separation of obstetrics from gynaecology, these two subjects have again come to be regarded as essentially complementary to each other The one cannot be fully understood without the other, and the practice of both should be in the same hands In Germany the Frauenklinik has been a feature in the teaching schools for many years Very often, however, it was too much of a separate self-contained unit In this country gynaecology has advanced and taken its place alongside general surgery, largely because the gynaecological department has been a part of the general medical and surgical hospital The status of obstetrics in its relationship to the other branches of medical teaching and practice has been very materially raised in the last fifteen or twenty years Its importance, in relation to the general health of the community, is being more fully recognized every day To my mind there is no one single change which will do more to put it and maintain it in its rightful place than the establishment in every general hospital, and certainly in every teaching hospital, of a fully equipped maternity department The obstetrician would then have the advantage of close contact and frequent consultation with the workers in all other clinical departments, and there would also be available for him all the laboratory facilities for investigation and research which are so essential to further advance Such a problem is the toxaemias of pregnancy cannot be solved except by the co-operation of clinical and scientific workers Such co-operation has been extremely difficult in the past owing to the isolated position of our maternity hospitals and the impossibility of providing them with proper laboratory equipment and workers

In Edinburgh the first maternity beds were established in the old infirmary Now when we are faced with the necessity of providing a larger and more modern maternity hospital, I hope that no step will be taken until the advisability and possibility of the closest possible association of that new hospital with the Royal Infirmary has been most thoroughly explored There may be minor difficulties to be faced It is to be hoped that these will not be allowed to overshadow the larger question Edinburgh has a great opportunity now of taking a lead in this matter, and I trust that she will not lightly let it pass

I have been able, in the time at my disposal, to mention only a few of the problems which confront us It may be thought that I have spoken at undue length on the solution of some of them I have done so because I believe that the great need at present is to emphasize the necessity for a more detailed and careful practical application of the principles which we all recognize and accept In this lies our hope for the future

REFERENCE

1 *Maternal Mortality* Ministry of Health publication.

THE CLINICAL USE OF THE SPHYGMOMANOMETER*

BY

K DOUGLAS WILKINSON, O B I , M D, M R C P

ALTHOUGH Harvey announced the discovery of the circulation of the blood in 1628 our knowledge of the circulation did not advance materially until Carl Ludwig introduced the graphic method of studying the heart's action two centuries later He fixed a float to a mercury manometer and arranged so that the movements of the float were recorded upon a revolving drum, and since this the evolution of instruments and knowledge has been rapid Each instrument invented has added something to our knowledge — phrygmographs, polygraphs, electrocardiographs etc — and it is an interesting paradox that the use of instruments of precision in medicine has always (largely because of their educational value) of diminishing the necessity for their use Thus the phygmograph taught us many facts about the pulse which could be recognized subsequently without the aid of the instrument The electrocardiograph was necessary for the detection and explanation of auricular fibrillation, though we now recognize this condition without its aid, and to some extent the same is true of the phygmomanometer

The pulse may be defined as a rhythmic variation of pressures in an artery The highest pressure reached—the systolic—is the result of the output of blood from the left ventricle The lowest pressure—the diastolic—occurs at the end of diastole and is the result of three factor (1) the rate of blood flow through the arteries and arterioles into the capularies, (2) the volume of blood in the arterial system, (3) the action of the muscular and elastic coats of the arteries on the contained blood

The pulse pressure is the difference between the systolic and diastolic pressures The most highly trained finger is incapable of estimating systolic blood pressure accurately and cannot give any certain information about diastolic pressure, indeed, the routine use of the sphygmomanometer will quickly convince anyone that it is useless to expect any exact information about blood pressures from digital examination of the pulse, since the size of the vessel, the condition of its wall, and the force of the pulse may easily lead the finger to form quite an incorrect conclusion as to the pressures in the artery

The best method of obtaining the blood pressures is by *auscultation over the brachial artery, but palpation may* also be used to determine the systolic pressure

After reassuring the patient as to the painlessness of the procedure (this is important because fear is a frequent cause of a raised blood pressure) put the patient as flat as possible and apply the armlet to the upper arm well above the bend of the elbow See that both the patient and the arm are comfortable and relaxed. Apply a stethoscope to the inner side of the bend of the elbow over the lower end of the brachial artery and while listening pump up the armlet At first there is no sound but as the pressure rises a sound appears which is dull and indistinct at first but later becomes loud and clear and then as the pressure is raised further the sound gets softer and finally disappears entirely Now let the pressure fall by just opening the valve on the apparatus the point at which the sound first reappears is the systolic pressure allow the pressure to fall further and the point at which the loud clear sound becomes soft and dull is the diastolic pressure The finger on the radial pulse first detects the pulse beat at a point just below systolic pressure as read by the ear but *the finger cannot estimate diastolic pressure Often the* patient can tell the diastolic pressure for as the pressure in the bag is raised there is a point at which a sensation of throbbing in the arm becomes very evident and this is at or very near diastolic pressure

It is important to realize that an instrument only becomes really helpful when it has been used so often that its use is easy and its fallacies are obvious In no individual does systolic or diastolic pressure remain constant changes of position exercise, food, or drugs produce changes of pressure which are more or less temporary Excitement with its accompanying cardiac frequency always causes a considerable rise of pressure so that it may be necessary to wait until the patient is composed before making an observation of blood pressure

Calcification of arteries, even when considerable in amount, is of little importance as a source of fallacy in blood pressure estimations when more than two and a half inches of artery are compressed, for such a length of artery is never completely calcified The normal artery offers but little if any resistance to compression but when the artery wall is contracted to constrict the artery it may offer a considerable resistance The best way to overcome this constriction is either to massage the limb for a short time or to repeatedly compress and decompress the limb with the armlet

The first reading of a blood pressure is most likely to be fallacious and if immediately subsequent readings show a lower pressure observations should be repeated until a constant reading is obtained The lowest reading is most likely to be correct In any case with a frequent heart action the readings are *likely to be too high and if* possible blood pressure should be estimated during a normal heart rate

A normal child of under 12 years of age should not have a systolic pressure of over 100 nor a diastolic pressure of over 70 mm Hg unless it be very obviously in advance of its years in size or weight In adults the normal systolic pressure varies between 100 and 160 mm Hg and the normal diastolic pressure between 65 and 90 mm Hg and while pressure tends to rise with age there are many old men with quite low pressures Again pressures vary with physique big powerful men having higher normal pressures than their physical inferiors while in women the pressures are five or ten points lower than in men age for age and type for type

At each heart beat the left ventricle forces blood into the aorta and so maintains arterial blood pressure, but the height to which this pressure rises depends upon the resistance of the arteries arterioles, and capillaries and the response that the ventricle makes to overcome this resistance With a normal heart the ventricular response varies directly with the resistance—that is, with the diastolic pressure—and this fact is the keynote of physiological and pathological variations in arterial pressures

When (under experimental conditions) the inflow into the heart is kept constant the output of the left ventricle is unaltered by changes in the heart rate or arterial resistance, but when the inflow varies the heart automatically alters its output to equal the inflow so that in a given time the amount of blood entering the aorta equals that entering the right auricle With a heart rate of 60 per minute the duration of ventricular systole is about three-eighths of a second, so that the heart works three-eighths of the day (nine hours) and rests five-eighths of the day (fifteen hours) G N Stewart calculates the daily work of the heart (ventricles only) at about 150 000 foot-pounds and this is the work of a heart maintaining a systolic blood pressure of 120 mm Hg Prolonged increase in arterial resistance acts as a stimulus to the heart, increases ventricular volume, and, by giving the heart more work, causes hypertrophy

The pulse pressure and the systolic pressure are raised by

1 Excitement nervousness exercise
2 Tonic contraction of the arterial wall such as occurs in asthma migraine etc
3 Nephritis acute and chronic
4 Aortic regurgitation (patent ductus arteriosus and arteriovenous aneurysm)
5 Organic diseases of the arteries senile fibrosis, and arteriosclerosis although a raised blood pressure does not necessarily accompany arterial disease
6 Hyperpiesis—the condition described by *Sir Clifford Allbutt* in which there is a primary rise of blood pressure

The pulse pressure and the systolic pressure are lowered by

1 Loss of peripheral resistance from relaxation of arterioles such as occurs in all atrophic and wasting diseases—phthisis cancer acute fevers especially pneumonia and typhoid.
2. Anaemia from any cause loss of blood (haemorrhage from lungs etc)
3 Cardiac asthenia in Addison's disease and tarrat on
4 Vagus overaction in vomiting attacks collapse and shock

But apart from the detection of abnormally high or low pressures the sphygmomanometer gives us information about the regularity of pulse pressure, and is therefore of

* Read before the Coventry Division of the British Medical Association on December 4th 1923

the greatest assistance in the diagnosis of cardiac irregularities, and indeed it often renders the electro-cardiographic or polygraphic examination of the patient needless, as it enables us to make an exact diagnosis

In auricular fibrillation—important because it is so common, because it often implies grave myocardial disease, and because in certain cases the condition is now curable by means of quinidine—the pulse is irregular in force as well as in time, and in the cases with unusually slowly acting hearts the irregularity may not be easily felt by the finger But when the sphygmomanometer is applied the irregularity is at once obvious by the variation in the sound heard over the artery—a variation which makes it difficult to determine exactly either the systolic or the diastolic pressure, for as the pressure in the bag is raised the more feeble beats are cut out and the heart appears to be less frequent, until at a certain pressure only an occasional beat can be heard There are several facts which may enable us to diagnose the condition without the use of any instrument at all a markedly irregular heart in which the heart rate as counted at the apex is greater than that at the wrist, because the weaker systoles fail to open the aortic valves, or the association of marked pulse irregularity with the disappearance of a presystolic murmur, or the marked slowing of the pulse which usually follows the use of digitalis, and the fact that neither exercise nor atropine as a rule produces either a greater regularity or a marked increase in heart rate

In the form of irregularity known as pulsus alternans the sphygmomanometer may enable us to detect the irregularity before it is obvious to the finger Here the pulse is regular in time but the beats are alternately strong and weak Occasionally there is a slight alteration in time also, and where this is present the longer pause follows the stronger beat In some cases extra-systoles follow every normal beat, so that the pulse waves are felt as alternately strong and weak, but there is always a well *marked irregularity in time, and the longer pause always* follows the weaker beat, or, to put it in another way, the pulse is felt as two beats, the second of which is the weaker, and a pause Except in the alarm that they occasion in the patient these extra-systoles are of no importance The true alternating pulse is always indicative of a very serious condition, it is found in advanced cases of myocardial disease, in renal disease, and in advanced arterio-sclerosis, it is sometimes discovered in acute diseases such as pneumonia, typhoid, or influenza, and may be the only discoverable physical sign in patients with angina In my experience this form of pulse irregularity always implies an early fatal termination of the condition in which it appears

The pulsus paradoxus is the pulse irregularity which is commonly associated with pericardial effusions In this irregularity there is a failure of pulse volume during inspiration, so that at each inspiration the pulse either disappears entirely or becomes reduced in size A slight degree of this irregularity is produced by quite small effusions into the pericardium, but such slight irregularity may be quite imperceptible unless it is sought for by means of the sphygmomanometer Although the pulse pressure appears to be quite regular to the finger in such a condition, when the armlet is applied and the pressure in it is raised to near the systolic pressure the sound will be heard to vary markedly in intensity, being louder in expiration and softer or absent entirely during inspiration Pericardial effusion may be particularly difficult to detect, and this sign is often of assistance in doubtful cases Conditions which interfere with the inspiratory negative pressure in the thorax can also produce this pulse irregularity A large pleural effusion, whether of gas or fluid, may lead to the paradoxical pulse, and in the war this irregularity was fairly commonly found in men with wounds of the chest, especially those in whom there was a large wound which allowed free ingress and egress of air to the pleural cavity at each respiration Some children also show a slight degree of this irregularity of pulse volume in association with the juvenile type of irregularity in which the heart rate quickens during inspiration and slows during expiration

In heart disease severe heart failure may take place without any noticeable change in blood pressure, for the heart will maintain the blood pressures at or near the normal even when its output per beat is insufficient to ensure an efficient circulation As Sir T Clifford Allbutt says, "the heart dies sword in hand" But sometimes we can recognize impending heart failure in changes in blood pressure In cases of hypertrophy, renal disease, or arterio-sclerosis in which there has been a high pressure for years, a fall in the systolic pressure without any change in the diastolic pressure is significant, and whether it be associated with an increase in distress, or with dyspnoea, or appear alone, such a change in pressures is to be regarded with apprehension It has recently been shown that the higher the diastolic pressure the greater must be the pulse pressure for the same diastolic output per beat, so when a patient with a high diastolic pressure shows a fall in systolic pressure without any corresponding fall in diastolic pressure the output of his heart per beat is less, and, except there be a corresponding increase in pulse rate, his circulation is already beginning to fail This fact shows the importance of reading the diastolic pressure as well as the systolic

One of the well known signs of aortic regurgitation is the collapsing pulse, which was described by Corrigan ninety-two years ago—its peculiar character being due to the combination of a raised systolic pressure and a lowered diastolic pressure In adults with aortic incompetence the systolic pressure is always above 120 mm Hg, and the diastolic pressure is usually below 65 mm Hg Often it is very difficult to ascertain the exact diastolic pressure, as the pulse sound is loud even when the pressure in the armlet is at zero Sometimes the sound heard over the artery is so loud that it resembles a pistol shot

There is another curiosity in the arterial pressures in aortic disease which was first described by Professor Leonard Hill In a normal individual standing up the arterial *pressure in the leg* at the knee is higher than the pressure in the arm at the elbow by the weight of a column of blood equal in height to the distance from the knee to the elbow, but when the normal man lies down, the pressures in arm and leg soon become approximately equal On the other hand, in the great majority of cases of aortic regurgitation, when the patient is lying flat the pressure in the leg is considerably higher than that in the arm The suggested explanation is that, in order to maintain a good supply of blood to the brain when the patient is erect, those arteries in which blood flow is retarded by gravity (those above the level of the heart) are completely relaxed, while those arteries in which the blood flow is assisted by gravity are in a state of tonic constriction, and that this spasm persists even when the patient is lying flat In observing the leg pressures the armlet (or leglet) should be applied just above or just below the knee, and the stethoscope is applied either over the popliteal or posterior tibial artery It is important to have a bag of sufficient width, as too narrow a bag gives high readings The width of the bag should be about a quarter the circumference of the limb

While this peculiarity is not invariably present in aortic regurgitation there is usually a difference of 30 mm Hg between the systolic pressure in the arm and leg The severity of the valvular lesion may be gauged by the pulse pressure—the higher the pulse pressure the worse the lesion, but if the diastolic pressure is 70 or more it is certain that the amount of the aortic regurgitation cannot be serious

In hemiplegia from a cerebral haemorrhage the pulse pressure is always high, while in a thrombosis the pulse pressure is less than the normal for the diastolic pressure If the hemiplegic is found to have a high and rising pulse pressure he is sure to die of his haemorrhage, or if the pulse pressure is low and falling he will die of his thrombosis As an example of this statement I will quote a case, a man of 57, who had extensive arterial disease and a large heart His blood pressure was 200/140 (Note that the normal pulse pressure for a diastolic pressure of 140 should be about 120 mm Hg, while here it is only 60 mm Hg, so that the systolic output of the heart must have been considerably reduced) The patient had several cerebral

accidents, and finally succumbed The post mortem examination showed a very extensive cerebral thrombosis

In enteric fever there are two accidents which it is often difficult to differentiate—perforation and haemorrhage In the former a rise of blood pressure occurs after the primary shock, but in the latter the fall of blood pressure is always very marked and prolonged

In pneumonia a rise of blood pressure before the crisis is often the first sign of some complication, while a fall may indicate impending heart failure

Finally, blood pressure observation may be of considerable assistance in cases of albuminuria, a high blood pressure indicating renal disease—either a nephritis or that type of renal damage which results from hypertrophy of arteriosclerosis In pregnancy the sphygmomanometer may be especially helpful, for it is often difficult to decide how much importance should be attached to a small amount of albumin in the urine of a pregnant woman The normal systolic pressure of a woman of about 30 of average physique is about 112 mm Hg A pressure of over 130 would suggest the need for careful and frequent examination and a pressure of over 150 would probably indicate the onset of eclampsia

I do not think that a blood pressure of over 160 systolic or 90 diastolic is ever normal, although there are cases in which the diastolic pressure remains about 100 for a time without any certainable cause and then returns to normal limits Excitement may cause such considerable rises of pressure that it is well to bear in mind the fact that a high pressure is of greater significance when accompanied by a slow pulse

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CHRONIC INTESTINAL STASIS AND EPILEPSY

A WHITE ROBERTSON, L R C P and S Edin
LONDON

In the study of epilepsy it seems clear that whatever the actual exciting element the vascular system is the main source of the epileptic phenomena, either alone or as a carrier of toxic agents, and the work that has been done experimentally by the advocates of both views has been very considerable in the last twenty years Cells cut off from their circulation, even momentarily show a reaction towards acidity, and this acidity factor must not be lost sight of in the interpretation of the experimental results recorded by the mechanical and vascular theorists Faradization and epinephrin will also blanch pial vessels and produce epileptiform convulsions The proteoses of Cuneo to be presently described, have the same effect when painted on the cortex Lastly, lactic acid given intravenously will also produce convulsive seizures Acidosis, therefore whether produced locally or remotely, would appear to play a considerable rôle in the production of the epileptic convulsion and the work of Cuneo during the last nine years at Genoa goes perhaps further than that of any other investigator to establish its importance

Cuneo established the presence in the blood of persons who had just had an epileptic seizure of a substance which he identified with the proteoses and this substance introduced intravenously into animals faithfully reproduced the epileptic phenomena At the same time he showed that the urine of these persons contained an extraordinarily high percentage of organic acids Other features were a retention of total nitrogen, an increase in the nitrogen content and continuous acidity of the faeces Comparative tests in epileptic groups with a protein rich and with a carbohydrate pure diet next gave unexpected results, the acidosis in the former group being reduced with a corresponding improvement in the severity and number of the fits, whilst there was a percental increase in acidity in the second group, and the fits increased in number and severity It was next established that the fault in the starch metabolism occurred in the first stage of conversion to the disaccharides, maltose, lactose cane sugar, etc Normally this takes place through the action of the amylolytic ferments, the subsequent conversion of maltose being effected by maltase ferment through hydration into glucose The failure in the first stage resulted, in the absence of sufficient amylolytic ferment, in the production of a more or less intense concentration of organic acids—acetic, butyric, lactic, tartaric, etc —and these, which should normally have been united with all alimentary bases in the small intestine, passed in the epileptic into the blood stream and urine unchanged The alimentary salts in normal individuals are oxidized—if ammoniacal through ammonium carbonate into urea if sodium into sodium carbonate and this is the vitally necessary salt for maintaining the alkalinity of the blood and tissues Cuneo concludes from his work that this transformation of organic salts into sodium carbonate begins in the mucosa of the small intestine and is completed in the liver whence the sodium carbonate is returned to the gut with the bile Lack of bases favours the production of acidosis while a sufficiency of sodium tartrate favours the activity of the liver ferments and the production of sodium carbonate It sodium acetate or tartrate is introduced directly into the circulation it causes typical epileptic convulsions and Cuneo was able to remove from the carotid artery of the animals used a substance which proved to be a proteose

The source of these proteoses Cuneo found in the reduction of that fundamental constituent of all cellular nuclei nucleo-histone and in the case of the serum and leucocytes of the blood also this reduction takes place under conditions of acidosis due to the concentration of organic acids In an acid medium he was able to demonstrate the reduction of nucleohistone from both these sources into an innocuous acid and a toxic base having the chemical and biological properties of nucleinic acid and of proteose Introduced intravenously in dogs the latter not only produced typical epileptic convulsions, but the *post-mortem* appearances in dogs dying in status epilepticus so induced were identical with those found in the viscera and the brain and its coverings in persons dying of proteosaemia (albumosaemia), and as described by Tanzi and Lugaro in their findings in patients who died in typical status epilepticus

He believes that albumosaemia exists in epilepsy and that this is caused by an insufficiency of the alkali forming function in the liver and the small intestine, so that the acid organic salts which are transformable into sodium carbonate do not undergo this metabolic change, but enter the circulation and cause a division under certain conditions of the nucleo-histone element and the nucleo-proteins into nucleinic acid and proteoses These latter remain free and exhibit their convulsive action

Localized acidosis in derangements of the circulation may also set free albumoses or it may be other toxins, as in Jacksonian seizures and in the convulsions associated with cranio-cerebral injury with scar adhesions, brain abscesses circumscribed areas of encephalitis brain tumour cysts general paralysis cerebral arterio-sclerosis, the acidosis produced by interference with the vascular supply may as suggested by Professor Onato determine the release of proteoses locally in cells cut off from their circulation and so excite the convulsions associated with these conditions In general paralysis and arterio-sclerosis and probably also in encephalitis the vascular disturbances and the local cellular destruction processes in the brain elements are ideally combined to produce generalized convulsive seizures

A little over two years ago it was my privilege to address you on the possibility of proving a close connexion between epilepsy and chronic intestinal stasis More recently I have published a preliminary report on a small group of epileptics treated on lines directed exclusively to the relief of the gastro-intestinal conditions found associated in these patients with the epileptic phenomena To-day thanks to Cuneo's researches I find myself in a stronger position to press the importance of chronic intestinal stasis as a

In address to the Tunbridge Wells Division of the British Medical Association February 27th 1924

factor in the pathogenesis of epilepsy I have had opportunity of studying in very great detail 27 cases of epilepsy In all of these a full personal and family history was *obtained, and each patient was examined, system by* system, for indications of history of chronic toxic conditions The blood, menstrual blood, urine, and stools were examined, and the condition of the uterus, urinary bladder teeth, tonsils, nares, and sinuses investigated Thirteen cases were x rayed with bismuth meal and barium enema, and eight of these were operated upon for conditions of advanced stasis affecting the general health In every epileptic examined the clinical and laboratory evidence was eloquent of considerable chronic intestinal stasis and widespread mucosal catarrh of the intestine, as described first by Lane As in the early group reported, treatment has been directed in every case primarily to the relief of the intestinal condition

Of the 27 cases examined, only 20 can be reported upon is still under my personal supervision, and of these 5 have not been sufficiently long under treatment to enable me to include them in any statement of results I can, however, report on 15 cases sufficiently long under treatment to be included in such a return

In 5 cases there has been complete arrest of epilepsy over a period of from one to three years, 3 other cases show immunity over a period which just [illegible] in into the same category, 3 cases show a [illegible] and decrease in severity of the attacks, 3 c[illegible] with some injury to the scalp from burns, show no improvement at all, one case died from pulmonary embolus following operation

When it is remembered that bromides and luminal have been excluded from the treatment, and that the carrying out of my instructions has been in many and various hands, I think that I may fairly claim that the methods of treatment I have adopted have yielded results which go some way towards proving a close association between demonstrable chronic intestinal stasis and epilepsy

The following points have emerged in the examination of cases

The faeces were examined in all for intestinal parasites and their ova, with negative results Fourteen cases showed undigested starch in excess, and practically all cases showed an acid reaction in the faeces Bacilluria occurred in 15 cases, albumin in 4, sugar in 1 and the average total acidity of the 27 cases was considerably above normal The blood pressure readings varied under 100 mm , 4 under 110 mm 2, under 120 mm , 6, under 130 mm , 5, under 140 mm , 2, 150 mm or under, 4 So that the average was 121 4 mm The pulse pressure averaged 43 2 mm Of 11 females 4 showed definite goitre, and 4 marked amenorrhoea Tonsils were found enlarged and septic, or had been already removed, in 12 cases In one case a suppurating antrum had been treated Sixteen cases gave definite evidence of chronic catarrh of mucous membranes other than the gastro intestinal tract Enuresis was reported in 4 cases sleep walking in 4, urticaria in 7, stammering in 3, migraine in 3 asthma in 1 A family history of epilepsy was found in 8 stammering in 8, asthma in 3, migraine in 3, urticaria in 2, chorea in 1 In no case was a syphilitic history obtained either in the patient or in the parents In 2 cases the parents were first cousins Congenital defects or malformations were found in 5 cases undescended caecum in 1 maldevelopment of the genital organs 1, persistent deciduous teeth 1, hypoplasia of enamel 2 impacted molars 2 there was a personal history or active tubercle in childhood in one patient, and in one case the family history showed tubercle involving three members of the family, whilst in another case there was a family history of chronic alcoholism in the father

The results of treatment generally have been, I think, encouraging, and if all the operational cases have apparently not done better than the unoperated group, it must be remembered that these were cases calling definitely for operation on the grounds of intestinal stasis alone, and, further, that with the two exceptions where colectomy was done, the removal of a controlling appendix and acquired bands or adhesions still left the oedematous, turgid, congested and perhaps denuded mucosal surfaces for after-treatment Were not colectomy so dangerous an operation I should be inclined to resort to it more frequently in epilepsy but as a general rule the treatment of cases not operated on, or otherwise operated on, is necessarily prolonged and results cannot be expected at once in cases of long-standing chronic mucosal catarrh Yet the immediate cessation of epileptic attacks from the date of operation in several cases has been a very striking experience

There is much to investigate in every individual case, besides the degree of involvement of the colonic tube The extension of the chronically catarrhal and infective processes to the duodenal and upper jejunal area, and to the stomach, is a common feature in all cases of intestinal stasis at all advanced, and it is this extension which links my observations with those of Cuneo I believe that the leaking septic tank is the first cause of epilepsy, and that the later involvement of the small intestine and liver in chronic intestinal stasis is the next step towards the failure of the alkali reserve which Cuneo has described And I further believe that the graver the involvement of the mucous membranes of the body generally, but particularly of the colon, in the chronic catarrhal processes, the greater the output of organic acids and the more profound the demineralization of the tissues and cells of the body Acidosis is the feature of epilepsy, and is associated with persistent acidity or hyperacidity of the faeces and urine In the presence of such an acidosis the destruction of the nucleo-histone of mucosal cells is constant and widespread, and proteosuria results on a huge scale independently of the actual pressure of organic acids in the blood stream itself I am confirmed in this view by the constancy with which my patients attribute their attacks to indigestion, to constipation, or to the presence of offensive stools, and by the good results of a return to sound habits of colonic hygiene It is also my experience that the more chronic and extensive the colonic catarrh the more grave the epilepsy in severity and frequency Moreover, the more rigorously the system of treatment is carried out the more rapid and complete the improvement This treatment is directed to the restoration of the function and amenity of the gastro-intestinal tract, and particularly to the reduction of the septic catarrhal process, but no treatment will prove successful which does not also provide for a vitamin-rich diet, for remineralization, for endocrine and general hormone reinforcement, and for the removal of septic processes wherever recognized Where surgical relief of stasis is obviously necessary it must be carried out

The part played by heredity is still a matter of dispute, but the figures I give in my own small series are sufficiently striking, not alone for epilepsy, but for the closely allied explosive conditions — migraine, stammering, chorea, asthma, and urticaria Sargent reviewed over 18,000 cases of cranio-cerebral wounds with skull defect resulting from war injuries Of these about 800 only, or 4 5 per cent, developed epilepsy I have, in the last five years, made a complete clinical and laboratory examination of no fewer than 500 cases of typical chronic intestinal stasis, yet of these only 27 have shown any signs of epilepsy—say 5 per cent In these 500 cases are many showing varying degrees of other nervous conditions—nervous exhaustion, phobias, borderland cases, dementias, sclerosis, etc But, unless the vulnerability of the cortex to certain specific toxins in certain individuals or families is accepted, we have no other explanation for the very occasional appearance of epilepsy in a condition so common as acidosis All our present experimental methods of inducing epileptiform convulsions in laboratory animals—as tetanization, artificial anuria or acidaemia, painting the cortex with epinephrin or proteoses, etc —fail to explain the general immunity of the vast majority of people to the epileptiform convulsions so induced in laboratory animals I, too, like Professor Osnato am convinced that it is on the lines of Cuneo's work that the great advance is to be looked for My own work on stasis offers, as explanation of the failure of starch reduction in the small intestine which he has described in epileptics, the fact that extension of the catarrhal processes to the upper small intestine from the colon is due to mechanical obstruction at the ileo-caecal entrance and at the *duodeno-jejunal* junction secondary to overloading of the static colon Another factor must surely be the subversion of the hepatic functions by the high acid and toxin content arriving by the portal channel There is, however, this also to be said the destruction of mucosal cells in the colon on a wide scale in stasis releases into the vascular system toxic agents which, coming from such an origin, must have a specific affinity for mucosal cells at a distance Only thus can we explain the frequency and the chronicity of catarrh of remote mucous membranes—nasal, bronchial, uterine—which is so constant a feature in chronic stasis cases, and

which proves so intractable until the main colonic reservoir of these toxins is overhauled and repaired. Closer study of the leaking septic tank will yield a most fruitful contribution to medical science and a further step to the solution of many problems hitherto accepted as insoluble. These will almost certainly include a large proportion of chronic functional disorders within the province of neurology and psychiatry, and with them the problem of epilepsy will never be advanced definitely nearer to complete solution.

I have to acknowledge gratefully the loyal support and co-operation of the many general practitioners who have carried out my suggestions in treatment and the staff of the various hospitals and homes where operations have been performed. I. T. Dr. A. C. Jordan and to Sir W. Arbuthnot Lane especially my thanks are due for the great skill and interest the latter has shown in the X-ray and operational sides of the work.

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British Medical Association

PROCEEDINGS OF SECTIONS AT THE ANNUAL MEETING, BRADFORD, 1924

SECTION OF LARYNGOLOGY AND OTOLOGY

W. JOBSON HORNE, M.D., President.

IMPORTANCE OF EARLY TREATMENT OF ACUTE OTITIS

BY

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EVEN in comparatively recent years among the general public there was a tradition which has not yet died out completely, that ear affections are incidents in the lives of individuals, largely controlled by age periods, such as seven or fourteen years, at which times those afflicted were supposed to "grow out of it." It was believed that ears which discharged were safe whilst they continued to do so, on the principle, I suppose, that it was "better out than in," and became dangerous only when the discharge ceased to appear. Pain in the ear was to be soothed by poultices or laudanum drops, until discharge made its benign appearance to relieve the patient's distress, after which the condition was frequently left to *vis medicatrix naturae* and the doubtful consolation of "growing out of it." All this is being gradually changed, and I look to the various child welfare centres and clinics now at work to dispel finally this *laissez-faire* attitude, but they need guidance from some authoritative source on the present otological view of the whole subject. It should be the object if not the express duty, of meetings of this kind to take a large share in such educational work.

The importance of acute otitis, whether catarrhal inflammatory or suppurative can be put in many ways to convey its true significance to those members of our profession not immediately concerned with the specialty of otology, but I hope you will not consider it is overstating the case to say that fully 90 per cent. of the common and most serious ear affections come within its ambit, if we include all the possible complications and sequelae of otitis media. The term "acute otitis" may be appropriately applied to any acute inflammatory or suppurative process arising in any portion of the organ of hearing whether external, middle, or internal ear; however in the usages of everyday practice we limit the term to affections of the external and middle ear only and refer to those of the inner ear as labyrinthitis, though the latter is due to an extension of disease from the middle ear or its adnexa, with the one exception of cerebro-spinal fever. External and middle ear inflammation expose the function of hearing to the risks of partial or complete destruction, their complications and sequelae not only intensify the evils but are frequently dangerous to life and sometimes prove fatal. Acute otitis of the outer ear usually takes two forms, the circumscribed and the diffuse, the former being the more common. Neither is dangerous to life but may be to hearing since if neglected or not treated with care perichondritis of the pinna and cartilaginous meatus may set in terminating in necrosis and occlusion of the passage. Circumscribed external ear inflammation with its associated oedema in many cases assumes a special significance, inasmuch as it may be confused with mastoid extensions of middle ear infection. This is a pardonable error for the inexperienced to make at times, the error being [illegible] if the rare condition is diagnosed for the simpler than it is.

When we come to consider an acute affection of the middle ear the gravity of the outlook is very different since an acute inflammatory process in such a small air chamber clothed with a vascular lining and containing a delicately jointed bony chain for the conduction of sound constitutes a dangerous menace to the function of hearing. If the middle ear were a cavity constructed on the lines of the antrum of Highmore one would expect an inflammatory infection of its lining to be self-limiting and ending in nothing more serious than an empyema capable of easy drainage and cure, but the possibilities of extension of disease from the middle ear to the cranial cavity through the labyrinth or by the mastoid antrum and air cells to the meninges and lateral sinus are so very real that no effort should be spared in combating the earliest manifestations of the infection to cut short the attack.

Let me briefly recall the formidable array of possible complications and sequelae of acute otitis to emphasize the claims made for the importance of the subject and the need for its early and proper treatment.

1. Acute otitis externa. Perichondritis, necrosis or cartilage, occlusion of meatus, deformity and pain.
2. Acute middle-ear catarrh. Eustachian block, impaired ventilation of middle ear, retraction of membrane, impaired movements of ossicular chain, tinnitus, chronic middle-ear catarrh, various grades of deafness, progressive deafness and internal-ear deafness.
3. Acute purulent otitis media. Acute suppurative mastoiditis, lateral sinus thrombosis, extradural abscess, brain abscess—cerebral or cerebellar, acute labyrinthitis—diffuse or circumscribed, and purulent meningitis.
4. Acute serous labyrinthitis.
5. Acute diffuse suppurative labyrinthitis, which may cause extradural abscess, cerebellar abscess, purulent meningitis, lateral sinus thrombosis.

In addition to these intracranial lesions there are many possible intratympanic ones, such as:

1. Perforation and partial or complete destruction of the drum head depriving the tympanum of its air-cushion effect in the conduction of sound and exposing the cavity to a new route of infection.
2. Arthritis and ankylosis of the ossicular chain with impairment or mobility.
3. Necrosis of ossicles with destruction of their function as a conducting mechanism, probably the commonest intratympanic cause of middle ear suppuration.
4. Ulceration of tympanic lining with caries of bony wall and formation of polypi.
5. Scarring and adhesion in the tympanum impeding the conduction of sound and the drainage and ventilation of the cavity, increasing the difficulty of rendering it free from epithelium and also making it more prone to further infection.
6. Necrosis of the posterior tympanic wall, invasion of the Fallopian canal with neuritis and paralysis of the facial nerve.
7. Various grades of deafness.
8. Deaf mutism.

Over 60 per cent. of all ear diseases are middle-ear diseases. Apart from the personal affliction, deafness has a large economic side. The partial or complete destruction of such an important educational portal as that of hearing deprives the person of the power to acquire knowledge by sound, with two obvious results: (1) incomplete and inefficient education, (2) inability to fill occupations where communication on

by sound is an essential qualification, which means nearly every walk of life There is the further economic handicap that insurance companies debar persons with certain chronic ear affections

So much for the importance of acute otitis as measured by its ravages, now for the urgency of early treatment Details of treatment are outside the scope of this discussion, but if it is to bear any fruit we must give some indication of a better line of action than the old expectant attitude

We must begin with the young Hearing in children is very acute and far in excess of their needs, so that any deafness indicates a serious lesion and requires immediate attention The foundations of deafness are laid in childhood and even in infancy In an aural clinic one is constantly coming across tympanic membrane or cavity lesions of a gross character, of which the possessor or those responsible for his or her health in early life have no history to give The obvious inference is that an acute ear trouble occurred at an age prior to the patient's recollection, probably in association with some other serious illness, and was not observed by the parents or the medical attendant Such cases could not occur if we followed the dictum urged by Kerrison, when he says that "he firmly believes the routine practice of examining the ears of all sick children would prevent not only much unnecessary suffering but also some loss of life"

When lesions of a suppurative nature, the sequelae of acute affections with outstanding symptoms, can escape notice in this way, what chance of receiving early attention have the mild onset and changes of middle-ear catarrh? Yet from the number whose impairment of hearing results from a simple middle-ear catarrh, so common in incidence, insidious in onset, and progressive in deleterious action, without any compelling symptom to send the patient for early advice, we know that it is far more serious as a cause of deafness than the acute suppurative conditions Acute affections attended by pain or discharge will always claim their meed of attention and early treatment, but by the time that middle-ear catarrh has revealed itself by its only manifest symptom, deafness, the earlier stages will have long passed over

When I was aural surgeon at the Evelina Hospital for Sick Children some years ago I made a point of examining the ears of every child brought up for the tonsils and adenoids operation, independently of any history of deafness or earache, and noted any changes to be seen in the drumhead Every child who was prone to recurring colds and had a moderate or large amount of adenoids or large tonsils showed membrane and middle-ear changes, even without any question of deafness These manifestations of middle ear infection are, in my opinion, the forerunners of many of the non-suppurative cases of deafness so frequently met with in adult life and for which we are unable to find any cause in their recent history Any alteration in density, colour, lustre, or cone of light promptly settled my decision in favour of operation for the removal of tonsils, if large or septic, adenoids if present and the necessary treatment of the nose if obstructed These alterations in the appearance of the membrane one has interpreted as evidence of intratympanic infections, and the retraction as an indication of *impairment of ventilation of the middle ear cavity* Only a routine examination of the ears in all children will enable us to get at the early treatment of middle-ear catarrh so as to prevent the deafness which follows years later on tympanic infections in childhood

If a procedure of this sort were adopted I feel that the incidence of non-suppurative deafness in adult life would be very materially mitigated, and otologists would escape much of the reproach that "they can do so little for this form of deafness," when as a matter of fact much of it, which is impossible to cure when fully established, could have been prevented

Now for the early treatment of the more acute conditions, which for practical reasons I will group as follows

1 Deafness and pain with hyperaemia of the membrane, indicating a tympanic infection and acute inflammatory reaction

2 Deafness, pain, hyperaemia, and bulging of the membrane, the serous secretory stage of No 1

3 Acute middle-ear suppuration, the purulent stage of No 2

4 Nos 2 and 3, with suspected mastoid antrum infection

Our position here is not clear, and we are faced with a problem similar to that which confronted general surgeons some years ago with regard to appendicitis—namely, were cases to be treated on purely medical or surgical lines or when was surgery indicated? At that time a well known surgeon made the arresting statement "that a man suffering from appendicitis was in as grave danger as if he were sleeping on the brink of an active volcano" Osler, as far back as 1895, in his textbook said, "There is no medicinal treatment of appendicitis" I am convinced that every surgeon of experience will grant the applicability of Osler's assertion in the case of mastoiditis, but how about acute middle-ear suppuration with or without mastoid antrum infection? Is the treatment to be medicinal and for how long, or, if surgical, how soon and what form should it take? These are questions on which we must make up our minds for the guidance of those who are brought into contact with the cases in the first instance

Should the removal of tonsils and adenoids be regarded as an essential part of early treatment, and how soon after the onset of middle-ear suppuration ought the operation to be performed? Shall we drain the tympanum surgically, and, if so, should this be through the meatus only or in addition, when cases show no definite signs of mitigation of discharge or improvement in hearing, resort to post auricular drainage through the mastoid antrum? The results of the latter procedure have been so uniformly satisfactory in early cases of mastoid with middle ear suppuration in promptly arresting the tympanic condition that its ease of performance and freedom from risks in the hands of any skilled person should commend its early adoption, even in the apparently uncomplicated cases of otorrhoea, long before these could pass into the chronic stage

DISCUSSION

Dr PETER MACDONALD (York) expressed the opinion that there was urgent need for inducing the general practitioner to recognize that delay, sometimes only of hours, in active treatment of acute otitis media was dangerous No general practitioner was competent to deal with a condition which might be acute otitis media unless he was able not only to examine the ear with thoroughness—often a difficult matter—but also to make an immediate decision whether operative interference, such as myringotomy, was called for

Sir MALCOLM WATSON (Federated Malay States) emphasized the fact that although the discussion was being carried on by specialists their words would go out to general practitioners, to whom this was a most important subject

Dr WILLIAM HILL (London) pointed out how necessary it was to instruct the general practitioner how to examine the ear properly He thought that school medical officers did not examine the ear *qua* ear so well as they ought to do, in contradistinction to their care in examining the throat and nasopharynx for enlarged tonsils and adenoids

Dr J S FRASER (Edinburgh) said that the differential diagnosis between furunculosis of the meatus with retro-auricular swelling on the one hand, and mastoiditis from otitis media on the other, was difficult, not only for the general practitioner, but also for the specialist He himself had made mistakes on several occasions, but he thought that if diagnosis was difficult or impossible it was better to treat the case as one of the more serious condition and to open the mastoid It was remarkable how many people had forgotten that they had ever had middle ear suppuration, and supposed it was due to the fact that *none* of them could remember things that had happened during the first four years of life He called attention to the fact that some cases of acute suppurative otitis media went on to meningitis at a very early date, even when there was no

labyrinthitis In such cases it was difficult to be sure of the route of infection It might be by way of the blood stream, thus, in the presence of otitis media the organisms in the blood settled down in the subarachnoid space and produced meningitis On the other hand, the infection might pass by way of the fossa subarcuata from the inner wall of the mastoid antrum beneath the dome of the superior canal to the posterior fossa Dr Fraser also called attention to the economic incidence of chronic middle ear suppuration This was very frequent in hospital practice and rare in private practice, the reason was that wealthier and better educated people did not allow an acute middle-ear suppuration in their children to become chronic—they had it efficiently treated when it was acute Dr Fraser did not advocate paracentesis before bulging of the drumhead (stage 1) carbolic and glycerin drops should be used along with general treatment After suppuration the dry method should be recommended at least in hospital practice, and even in private work if the mother or nurse were competent

Dr W H KELSON (London) thought that when the general practitioner saw a red swelling at the end of the meatus he ought to recognize that that case had passed out of his hands into those of the specialist

Mr C A SCOTT RIDOUT (Portsmouth) believed that this question was not taken seriously enough by the general public, especially in schools—not only elementary schools but public schools He thought the idea held by many general practitioners that a running ear should not be syringed ought to be combated The general practitioner should be taught that an acute middle ear inflammation required the surgeon as much as did an acute appendix

Dr F H WALLACE (Uppingham) suggested that Mr Scott Ridout's views were unnecessarily gloomy as regards the public schools He knew from personal experience that aural conditions were certainly taken seriously not only by the medical officer, but by the *matron and others* responsible

Dr NEIL MACLAY (Newcastle-on-Tyne) said that with regard to the first stage of acute otitis media he was of opinion that early incision of the drumhead was of the *greatest importance and so long as one was satisfied that* the condition was middle ear inflammation and not simply a myringitis and part of an external otitis he thought the membrane should be incised prior to evidence of bulging In those cases where there was a post auricular swelling, and where there was difficulty in determining whether that condition was due to mastoiditis or furunculosis, he thought it was better to expose the bone and be prepared to proceed to the opening up of the mastoid and area if necessary X-ray examination in those cases might give valuable assistance in arriving at a correct diagnosis When discharge had taken place in the acute ear he was in the habit of treating the case by the wet method He advocated syringing out the ear canal in order to remove discharge and debris so that drainage might be facilitated Epithelial debris was very apt to accumulate in such a way as to block up the opening in the drumhead and it seemed to him that the only way by which the debris could be successfully removed was by means of the syringe The risk of introducing fluid into the middle ear need hardly be considered when one remembered the relatively small size of the perforation and the condition of the middle ear cavity resulting from its swollen mucosa

Mr F HOLT DIGGLE (Manchester) thought the question *of an early paracentesis in those cases which presented a* congested membrane but no bulging was a difficult one to decide All of them had had cases cured without paracentesis The density of the membrane had so much to do with determining whether there was early bulging or not Dense membranes resisted bulging for some considerable time, and Mr Diggle considered that the all important point was pain In his opinion if pain persisted for forty-eight hours without bulging the membrane should be incised The fortunate cases as regards preservation of hearing and early cessation of discharge were those which presented an early mastoid abscess, since the mastoid was of necessity opened early They were all familiar with the good results obtained in these cases, such good results should not deter them from opening and draining the mastoid antrum in cases where the otorrhoea persisted in spite of skilful early treatment Mr Diggle found it very difficult to decide clinically whether the mastoid was involved in those cases of profuse persistent otorrhoea without any tenderness or pain over the mastoid He had not found x rays of much value in deciding this question and therefore considered that in these cases the mastoid should be opened and drained if there was no improvement after ten days *If the mastoid* was not opened these cases lingered for several weeks and perhaps ultimately cleared up, but almost invariably with some impairment of hearing if not a permanent perforation of the membrane He believed that the bacterial type of infection was important, as he had found that practically all streptococcal and *influenzal cases required early drainage of the mastoid* antrum even when the usual external signs of mastoiditis were absent

Mr DIXLOP thought that syringing was good treatment if performed properly, but the ordinary syringe used by the *patient was a bad one for the purpose*, especially in unskilled hands

Mr H BELL TAWSE (Nottingham) said that he rarely performed paracentesis of the drum, his first association with the case being usually after the drum had ruptured Enlargement of the perforation for effective drainage was occasionally necessary In the cases with free discharge, no pyrexia, no pain, no mastoid tenderness or swelling and no adenoids, he advised very frequent fomenting of the inflamed drum with the warmest sterile water the patient could bear, using a medicine dropper not a syringe In the interval hot fomentations either wet or dry were applied to the auricle and mastoid One could imagine syringing at high pressure causing mastoid involvement the medicine dropper obviated this He treated an inflammatory process in this locality in exactly the same way as one in other parts of the body—namely by the application of heat, and the wet method seemed the only way to get heat to the *drum and possible to the middle ear* How long was the discharge to be allowed to persist With no marked improvement from treatment he advised opening and draining the antrum at the end of a fortnight and he had been well satisfied with the results The difficulty was to persuade the patient or his parents to allow operation, so many of their friends children had had discharging ears all their lives and seemed none the worse If there were adenoids he advised immediate removal and in most of the cases the discharge ceased without antrotomy

Dr RITCHIE RODGER (Hull) said that in discussing the treatment they seemed to be forgetting a most important item—in his opinion the most important 95 per cent at least of these cases were due to adenoids in the case of children, and to nasal obstruction in the case of adults In children he thought they must remove the adenoids if they were allowed to do so as the initial part of the treatment It was not a severe operation if the tonsils were left untouched In Class 1 he did the adenoid operation alone in Class 2 adenoids and paracentesis, and in Classes 3 and 4 adenoids and paracentesis if the perforation was not large enough or properly situated for effective drainage Even when there was discrete tenderness and oedema over the mastoid process these symptoms very frequently subsided after *removal of adenoids and* paracentesis

Mr DONALD WATSON (Bradford) mentioned those cases of mastoiditis without perforation of the drum In acute otitis media sometimes he incised the drum, sometimes he did not he was still uncertain which was the better method of treatment

RADIUM THERAPY IN CANCER OF THE OESOPHAGUS

THE RESULTS OF FIFTEEN YEARS' EXPERIENCE

BY

WILLIAM HILL, M.D., B.SC. LOND.,

Consulting Surgeon for Diseases of the Throat, Nose, and Ear, St. Mary's Hospital and Endoscopic Surgeon, Metropolitan Ear, Nose, and Throat Hospital

[Condensed Report.]

MALIGNANT strictures in the thoracic gullet may, for practical purposes, be regarded as absolutely outside the limits of radical surgery. They are rarely diagnosed in the early stages when the growth is of small extent and has not passed beyond the actual limits of the gullet, and, even when diagnosed by oesophagoscopic examination as thus limited, the *operation of lateral thoracotomy* is so fatal as not to be worth attempting. It is true that Torek of New York had a recovery from the immediate operation with survival for one year, but the fact remains that thoracotomic excision of a portion of the gullet is probably the most unpromising operation proposed in surgery from the point of view of death within a week or so of its performance.

We are usually reduced to palliative measures to give functional relief, either by enlarging the stricture lumen, or else by resorting to *gastrostomy* for the relief of impending starvation when endo-oesophageal measures fail. *X*-ray therapy and the injection of serums, animal extracts, and chemical substances—for example, metallic colloids—are usually disappointing.

The local means at our disposal for relieving the stricture are various, and include:

1. Dilatation of the narrowed lumen by the passage of bougies passed blindly or by immediate graduated bougieing carried out with the aid of the oesophagoscope.
2. By means of some form of intubation—for example, by Symonds's funnels or some modification of them (including Guisez's, Hill's, and Souttar's), or by long oro-oesophageal red rubber tubes, styletted or otherwise and inserted through the oesophagoscope.
3. Per-endoscopic removal of portions of protruding soft fungating growths by means of snares, of punch forceps or of rasps (Mosher and Bruning).
4. Superficial tissue destruction and reduction by galvano-cautery (ineffectual) or by surgical diathermy (Mollison).
5. Attempted diminution of the growth by endo-oesophageal surface applications of radium salts, or of radium emanation contained in metal cylinders which latter also act as screens to cut off the more violently destructive rays which cause almost immediate necrosis and which are dangerous in extent of action.

Radium radiation, like most therapeutic measures, is unfortunately uncertain in action. Some malignant formations are much more affected by radiation than others—sarcomas, for instance, speaking generally, being as a rule much more susceptible than carcinomas, and the softer forms of carcinoma more readily affected than the harder growths, hence fungating lesions generally yield much more efficiently than non-fungating. This does not mean, however, that hard, non-ulcerating squamous epitheliomas in the gullet never react well to radium rays, as occasionally they do, but the expectation is less promising.

As radium therapy of the gullet implies a long exposure and necessitates the retention of an uncomfortable, almost rigid radium apparatus for many hours, it follows that, in advanced cases, where the patient has been reduced to a low state of debility, radium therapy is contraindicated. An acute and sometimes fatal toxæmia may be set up, exceptionally in cases which do not appear to be far advanced and the general health only moderately lowered, by the liberation of massive doses of toxins into the blood stream, but this is much more likely to occur in advanced cases with an extensive and ulcerating lesion in the gullet. A *careful selection*, as far as it can be made, is therefore imperative.

A growth involving the gullet behind the trachea or the left bronchus is usually unsuitable for radiation if careful tracheo-bronchoscopic examination demonstrates that the growth has permeated the party wall and presents in the air passages, and if employed at all in this region it should be used with caution, in order to *avoid prematurely* bringing about a communication between the gullet and air passages. This happened in at least one of my cases, previously recorded, though the patient survived for nine weeks on account of the protection afforded by a Symonds funnel, which in this case effectually prevented liquid nourishment and swallowed secretions from entering the air passages. The diagnosis of perforation of the party wall is easy, as violent coughing and ejection of fluid ensues within a quarter of a minute of swallowing water.

It should be sufficiently obvious that it is a *sine qua non* in radium therapy of a malignant stricture to make fairly exact observations and measurements of the nature and extent of the lesion, especially longitudinally, and to *radiate the whole extent of the growth* as far as is practicable, superficially at all events. But let us suppose that an inexperienced individual orders a radium emanation apparatus from a radium institute, specifying a strength of emanation equivalent more or less to 100 mg. of radium bromide, and that he receives a styletted silver cylindrical container, the latter being, say, 1 mm. thick and 4 cm. long. Now it must not be assumed that the whole length of the cylinder, *or three-fourths, or even one-half* of it, is uniformly radio-active, if the styletted top of the cylinder is unscrewed and the contained capillary glass emanation tube removed, it may quite likely be found that the latter is approximately 1 cm. in length. If one application only of this apparatus is made for, say, fifteen or more hours to a malignant stricture 3 cm. or more in length, it stands to reason that only a moderate portion of the stricture is efficiently radiated—depending on the position in the cylinder of the active capillary tube. Failure to obtain any marked relief after such a procedure is only to be expected unless the active portion of the apparatus happens to be *vis-à-vis* the tightest portion of the stricture, when some moderate improvement might result. The whole length of the stricture must be radiated.

In my early hospital and private cases, and in many of my later private cases, I had the advantage of using Dr. Finzi's radium apparatus with a longitudinal radio-active efficiency of either 2·5 or 3 cm. With such an apparatus a stricture of about 1 inch long could be radiated by one application, whereas in strictures double or treble this length two or three applications must be immediately and successively made to successive lengths of the stricture if the lesion is to be anything like efficiently radiated.

In ordinary emanation therapy *for a stricture*, say, 3 cm. long the capillary emanation tube should be 3 cm. long, and it is most conveniently charged with the emanation equivalent of at least 150 mg. of radium bromide—that is, 50 mg. (approximately 25 millicuries) to each centimetre of length of the capillary tube. If the metal be silver and 1 mm. thick this amount of radio-activity forms a useful standard for an applicator, but the application can be tolerated and must be applied longer than if, for instance, *there is the emanation* equivalent of 100 to the centimetre.

Anyone embarking on radium therapy in the gullet must at least be prepared first to arm himself with information as to the character, breadth, and length of the stricture. A certain amount of useful information may be obtained by a study of the fluorescent screen phenomena observed during the swallowing of paste of barium or bismuth salts, which are *opaque to the Roentgen rays*, and also by the examination of an *x-ray print*, which should always be taken.

A skilfully-carried out endoscopic examination under general anæsthesia, however, gives the most accurate information which is attainable of the surface appearances, and allows fairly exact measurements *to be made* of the extent of the growth from above downwards. This examination is facilitated by the use of large tubes of 18 mm. diameter.

The question of dosage is most important and complicated, as several varying factors necessarily enter into consideration. Thus we have to take into account in using cylindrical applicators in the gullet:

1. The *radio-active dose* for each centimetre in length reckoned as the equivalent in milligrams of radium bromide (according to the British custom).
2. The *screen dose*, according to the thickness and density of the screen employed—for example, whether silver, platinum, lead or gold, a platinum screen, for instance, can be applied much longer than one of the same thickness of silver which is less dense. 1 mm. in thickness of the latter is employed by the Radium Institute.

[illegible] which [illegible] radioactive [illegible] with a screen of [illegible] tumour [illegible] to each [illegible]

The [illegible] in this country [illegible] weeks according to [illegible] but [illegible] radium [illegible]

So far back as 1909 I used an apparatus with a [illegible] slightly flexible silver stem attached to the proximal end of the cylindrical radium retainer. This stem protrudes from the mouth after the radium cylinder has been accurately adjusted to the diseased portion in the tractured area and the stem is then bent sharply to form an acute bend at the angle of the mouth, and is then curved to the surface of the cheek or even moulded and buried by extra trapping. Previously, for the comfort of the patient the stem is likewise bent behind the fauces so forming a pharyngeal angle, great care being taken in adjusting this not to draw the cylinder up out of its place in the stricture.

In February, 1911, I reported in detail to the Medical Society of London two more cases of malignant stricture of the gullet treated by radium therapy. In three patients there was total temporary local disappearance of naked-eye evidence of growth.

In each of the three patients a total [illegible] radium applications were made in the course of the year, during which time the part on 2 st. in weight and remained free from any subsequent [illegible] growth for a further period of 10 months in one of the cases, the last application [illegible] negative finding was made in the gullet on January 4th, 1912, to which month [illegible] the disease was obviously suffering from secondary growths in the liver and abdominal glands. The primary tumour, if not microscopically [illegible] was greatly [illegible] and a cavity of the growth was [illegible] no [illegible] period than five years and [illegible] to two [illegible] radium treatment [illegible] of the accompanying with [illegible] tumour [illegible] following radium [illegible] occasional gradual [illegible] ing.

The next best case which I report [illegible] that of a man whose malignant growth had apparently [illegible] one application only of Dr. Knaggs's radium, the patient [illegible] in weight in two months and his swallowing [illegible] normal. It was with difficulty he was persuaded to submit to a fourth prophylactic application for months after the third. He was so well that he failed to present himself at hospital until the [illegible] year and one month after the first application of radium. He then complained of a slight amount of recurring dysphagia, although he was then 3 stone heavier than when first treated. There was evidence of some recrudescence of growth even with the oesophagoscope, it being a little of a soft fungating character and [illegible] readily when touched with the end of the endoscope. He was again radiated, but did a few months later from invasion of the lung [illegible] to frequent haemorrhage. He walked remarkably well until a week to the end, but was rapidly losing flesh.

Another man reported on in 1911 as having from [illegible] experience of growth when endoscopic examination had revealed prolonged radium applications at intervals during twenty months the [illegible] malignant stricture extending nearly the whole length of the supraclavicular portion of the gullet. The applicators in this case could be made and were made both externally and internally in the region. He put on 2 st. in weight and remained free from [illegible] evidence of growth in the gullet for three months at least. He lived for two years and nine months after the first application of radium, wallowing nearly normally, to the end, death was due to a sudden profuse haemorrhage, though whether this originated in the primary lesion in the gullet or from a secondary one in the air passage was not determined as the patient died suddenly at home in the suburbs and there was no *post mortem* examination.

Of my 21 cases reported in February 1911 there was temporary gross local disappearance in no less than 5 cases, there was remarkable improvement both objective and subjective in 7 cases, substantial temporary improvement in 7 other cases and no improvement whatever in 4 cases.

I have now dealt altogether with seventy-seven cases of malignant stricture in the gullet by radium. Not all of the later cases were so carefully selected as those in the first series already reported, as in some instances the patient and his medical attendant urged that radium should be used on the off chance after appreciating the caution that improvement was very problematical and the risk by no means negligible.

The number of applications varied in individual cases from one to eight. Two-thirds of the cases had more than one application. I have alluded above to three cases in my first published series (which overlapped in time into the second series) in which there was apparent gross disappearance of growth for from two to no less than five years. I have had at least four further cases in which there was apparently a temporary local disappearance of recrudescence of growth when the diseased area was visually examined with the aid of the oesophagoscope. The temporary freedom from recrudescence of growth lasted in the four cases for from six to eighteen months.

To sum up my results of radium therapy: in about one-third of the cases there was remarkable improvement in another third there was very substantial improvement and in the remaining third the improvement was either very slight and [illegible] there was either no improvement at all or the patient was rather worse than before. In three cases the measure was followed by fatal results within a few days of the application.

I have only included in my cases malignant growths which were obviously primary in the gullet, exception to the gullet from the deep pharynx from the thyroid gland from the mediastinum and from the stomach have been deliberately excluded.

SOME OSSEOUS GROWTHS OF THE NASAL AND ADJACENT BONES

BY

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[*Abstract.*]

The first condition dealt with was leontiasis ossea. Virchow originally applied this title "leontiasis" to certain bony growths which he erroneously considered were analogous to elephantiasis of the extremities. The disease had been considered to be a variety of osteitis deformans and also of acromegaly, but differed from the former in affecting the face, and from the latter in having apparently no connexion with the pituitary region. Leontiasis ossea generally began in youth and gradually. It appeared to be due to some kind of inflammatory process, but no microbe cause had yet been established. Its actual point of origin appeared to be in some part of the nasal cavity. Professor Knaggs had divided the disease into two varieties. In the first it took the form of a slowly spreading periostosis, and in the second of a profuse osteitis. In the periosteal form the disease appeared to be unilateral in origin, the nasal cavities might gradually become filled with bone masses, both septum and turbinates being affected. Nasal obstruction was generally one of the earliest signs. In the second variety—namely, profuse osteitis of the bones of the face and skull—there was no periosteal bone deposit, but the bones became generally swollen as though they were inflamed, and on section was found to be reddish, softer and more vascular than normal, with occasional hard patches of dense bone. The skull bones were often enormously thickened, old bone being replaced by new. Sometimes the osteitis was not diffuse, but limited to one or two bones, especially the frontal bone or one of the jaws. In many of these cases there was also dental caries—a condition associated with osteitis fibrosa by Professor Knaggs. Mr. Kelson gave details of a few cases in which the condition of the nasal cavity had been specially mentioned. In the first case reported in the BRITISH MEDICAL JOURNAL in 1889 by Young, of Bristol, the patient developed painless and symmetrical bony bosses on the superior maxillae at the age of 39; there was no family history of this affection. Two years afterwards mental changes necessitated confinement in an asylum; later the sense of smell disappeared, the vision became weak, and exophthalmos and ectropion appeared. The patient died seven years after the appearance of the first signs. The nasal cavities were filled with bony masses, the frontal sinus and maxillary antra were occluded by bone, and the orbital cavities reduced in size, the bone being cancellous in structure. The sella turcica was normal, and the pituitary body unaffected. In 1903 Mr. Kelson had shown a case at the Royal Society of Medicine; this patient, a man, had for eight years noticed bony swellings in the region of the nasal processes of the superior maxillae with increasing difficulty in nasal breathing. The nasal fossae were blocked by enormously enlarged inferior turbinals; the septum was unaffected, but there were also bony bosses on the mandible, maxillae, and frontal

bones There was no pain, nor evidence of syphilis, and no carious teeth were present The nasal airway was cleared by operation, and the patient was subsequently kept under observation for two and a half years without any recurrence or increase in size of the bony bosses In five out of eight cases described by Westmacott, at the International Congress of Medicine in 1913, carious teeth were found present, but their extraction did not cure the disease The condition was unilateral, and the orbital and nasal cavities were not affected, the alveolar process was chiefly concerned, the antrum being largely invaded In one case sarcomatous elements appeared to be present, but in no case did recurrence follow an operation Westmacott did not regard these cases as leontiasis ossea, but believed them to be cases of osteitis fibrosa Douglas Guthrie described two cases in 1923 the first was a smooth boneless swelling of the left upper jaw, in a girl of 16 In the second case the swelling of the upper jaw, in a child of 4, had been present since birth Many points of resemblance existed in these various cases A history of syphilis was rarely obtained, tuberculosis and malignancy were out of court, and staphylococcal or streptococcal inflammation seemed unlikely Possibly some other bacterial infection or toxin was responsible, and Mr Kelson urged practitioners to be on the lookout for early stages of such conditions in order to clear up the mystery concerning them He then referred to bony growths in the upper part of the maxillae occurring in negroes, described by various authors, and concluded with the consideration of the genuine ivory-like osteomata occurring in the frontal sinus and orbit

This paper will be published in the *Journal of Laryngology and Otology*

The PRESIDENT expressed his indebtedness to Mr Kelson for a paper dealing with a group of cases which had not received adequate attention from the standpoint of pathogenesis As far back as 1899, when the sixth International Otological Congress met in London, all the known specimens of these osseous growths in the museums of the London hospitals were loaned to the Congress The descriptive catalogue[1] of the Congress Museum afforded a useful record of the subject at that time For obvious reasons it was difficult to obtain specimens showing the symmetry of some of these facial growths, but such a specimen was loaned by St Thomas's Hospital

Memoranda:
MEDICAL, SURGICAL, OBSTETRICAL.

TWO OBSTETRICAL EMERGENCIES

THE following account of two cases recently treated at the Dufferin Hospital, Calcutta, seems of sufficient interest to merit publication

CASE I

In March, 1923, an achondroplastic dwarf, aged 19 with a markedly contracted pelvis, was admitted in labour at full term Labour had commenced the day before admission, and she had had a great deal of inexpert examination and manipulation in her home The bladder and intestines were very distended, the membranes had ruptured, and an offensive discharge was coming from the vagina As delivery was practically impossible, even by craniotomy, it was decided to perform Caesarean section A stillborn male child was removed by the abdominal route, followed by a very unhealthy placenta and ragged membranes The interior of the uterus appeared so unhealthy that it was swabbed with iodine before being sutured this was done with a buried muscular layer of silk sutures, and the superficial peritoneal layer and the abdominal wound were closed in layers in the usual way Recovery was uneventful

Between fifteen and sixteen months later she was again brought to hospital in labour and at full term labour had commenced the day before admission, though she had been warned to report at the beginning of the ninth month if she again became pregnant She was rather collapsed, the lips and mucous membranes were blanched, and she was perspiring freely though she showed no untoward restlessness She complained of abdominal pain especially when lying on her back and on any attempt at palpation Vaginal examination showed that the cervix was dilated to admit two fingers, though no definite presenting part could be determined The membranes were unruptured, and it was decided to perform Caesarean section at once When the abdomen was opened and a few adhesions of omentum to the abdominal scar had been broken down I saw what appeared to be a thin walled cyst, this was the child inside the intact membranes with the placenta free in the abdominal cavity This was removed, and the uterus was found to have ruptured in the line of the old scar and to have contracted down after having completely extruded its contents Some large blood clots in the abdomen were removed The child, a male, was stillborn A pint of subcutaneous saline and of strychnine 1/60 grain were injected during the operation The ruptured edges of the uterus were freshened and resutured, and the abdomen closed in layers, about half a pint of saline solution being left in the peritoneal cavity The patient's recovery was uneventful

The question arising was whether the rupture was due to pregnancy distending the uterus again so shortly after the first Caesarean section and while the scar was comparatively soft, or whether the sepsis present in the first confinement was a contributory cause Moreover, was I justified, in the circumstances, in leaving her unsterilized, to risk the possibility of a repetition of these events should pregnancy occur again? I think I was right in so doing, since live children count so largely in the life of an Indian woman, and these two experiences have not daunted the patient, who still hopes to have a live child

CASE II

The history of this patient, a Hindu lady of high caste, was as follows

Eight years previously she had been delivered of a stillborn female child by an Indian dhai The afterbirth had given trouble, and the dhai had removed it manually, causing great shock and pain to the patient Since that time the patient had had no children and came to me to inquire if there was any reason for this On examining her I found that she had an inversion of the uterus which had probably existed since the first delivery I gave a guarded prognosis, but promised to try to replace the uterus For this purpose I took her into a private cottage in the hospital and treated her with four hourly saline douches and applications of ichthyol to the inverted uterus, her bed being raised at the foot After four days of this treatment I made the attempt of replacement under an anaesthetic I fixed the anterior lips of the cervix with a tenaculum in my right hand and with my left hand in the vagina digitally compressed the uterus at the fundus, at the same time gently pushing it up through the cervix till half had gone up When it seemed that I could do no more, my hand being almost paralysed, the fundus slipped up suddenly with a sucking noise—the replacement was complete, and the cervix contracted down

In all, the operation took from twenty minutes to half an hour No one was more surprised than I myself at the result, for I only undertook to try the replacement in order to satisfy the patient and her relatives The after treatment consisted of douches and keeping the patient in bed with the foot of the bed raised, till the tenth day Examination before she left hospital showed the uterus apparently normal in size and position the fundus was palpable on bimanual examination where previously there had been no mass felt and the bimanual impulse was normal I have not yet heard whether she has since become pregnant

E HAMILTON-BROWNE, M B, Ch M,
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A CASE OF HYDATIDIFORM MOLE

THE rarity of occurrence of hydatidiform mole renders the following details of such a case worthy of publication

Two years ago I was called to a woman, aged 28, about five months pregnant, and apparently suffering from a threatened miscarriage I administered an antispasmodic and gave the usual advice, believing that it was a false alarm The next morning the labour pains increased, and the os uteri increased to the size of half a crown, her temperature was 100° F

I left the patient in charge of a nurse Later that day the labour pains became much more violent and closer together, I found the os largely dilated with a mass protruding from it

With due precautions I removed this egg shaped cystic tumour It was followed in quick succession by a large number of similar cystic tumours, varying in size from a pin's head to a large hen's egg I managed to curette the uterus with the fingers, and removed altogether slightly more than a gallon of these cysts There was no sign whatever of a foetus The chorion had evidently become absorbed into the roots of this bunch of "grapes" Some of the cystic moles near the os uteri had already undergone partial degeneration, this process probably gave rise to some septic absorption which accounted for the fever The next day, as the patient's temperature had risen to 101·5°, I sent her to an infirmary where, under an anaesthetic, the uterus was explored, and it was stated that "small pieces of membrane and placenta were removed by the fingers only" She quickly recovered and was discharged within a fortnight It is interesting to note that this woman is again four months pregnant

In the literature I have found mention of seventy-five cases of this kind, and one author states that the proportion of occurrence is only about one in a million pregnancies

London, W A BOYD ROBERTS, M D, C M McGill

[1] Descriptive Catalogue of Museum of Sixth International Otological Congress 1900 Compiled and edited by W Jobson Horne and Arthur H Cheatle (Pp 135-138) J and A Churchill

Reports of Societies.

COLLOIDAL COPPER TREATMENT OF CANCER

At a meeting of the Cardiff Medical Society on November 11th, the President, Dr I I Brierley gave an address on the cancer problem

Dr Brierley first surveyed the history of cancer, which, though known to Hippocrates and Celsus and even earlier, was not seriously studied until about 1870, when Virchow appeared as the pioneer of cancer research Collective cancer research started in this country with the reorganization of the cancer department of the Middlesex Hospital in the beginning of this century and the foundation of the Imperial Cancer Research Fund in 1902 Statistics showed that cancer mortality had trebled during the last sixty years and that the true incidence was now later than formerly New Zealand in 1899, had shown that the average death rate from cancer then was 47 per 1 000 and that the highest mortality rate was 156 per 1 000 in chimneysweeps The experimental production of cancer in animals by irritants or by the cancer in rat by feeding them on cockroaches infected by the larvæ of a nematode *Spiroptera obvelata* (Johannes Ehlinger of Copenhagen) the transplantation of cancers in animals and the continuous propagation of mouse cancer through a series of mice were mentioned A brief description was given of the histopathology of cancer As regard prophylaxis the patient advocated the removal of all possible causes of irritation and advised that the excessive use of meat and alcohol should be avoided being possible causes He reviewed the various treatments and "cures" from the early ages down to the present time and in touching upon the surgical treatment referred to the paper by Sir Harold Stiles of Edinburgh entitled "Dissemination of cancer of the breast and the necessity for" treatment by extensive operation (BRITISH MEDICAL JOURNAL, 1899 vol i p 1452) in which he laid great stress upon the extensive lymphatic system of the breast and the necessity for the removal of all the tissues beneath the breast and in the axilla containing the lymphatics pointing out that secondary operations were never so satisfactory as extensive primary operations

Dr Brierley then referred to the memorandum issued by the Ministry of Health, reported in our issue of May 24th (p 924), in which are summarized deductions from the investigation of the records of upwards of 20 000 cases of cancer of the breast by Dr Janet Lane Claypon In the light of present knowledge surgical operation offered the best chance of cure for cancer, but after his own experience with colloidal copper he was not prepared to admit that it was the "one chance" stated in the memorandum He believed that many patients would have had a better chance of survival over the periods mentioned in the memorandum if a course of colloidal copper injections had been given after operative treatment He reviewed the treatment by means of x rays and radium, and then returned to the treatment by colloidal copper and selenium, giving notes on cases treated by him

Two cases of nodular growths in the breast with secondary gland in the axilla in which leave for operation had been refused were treated by him with intramuscular injections of colloidal copper the growths and the glands disappeared after a course of injections extending a little over a year Both patients were still alive and well ten and seven years after the commencement of the treatment

A patient with a large scirrhous carcinoma of the breast had her breast removed and the axilla cleared in November 1916 the supraclavicular glands on the same side were found to be enlarged in February 1918 Intramuscular injections of colloidal copper were given over a period of eight months the glands disappeared and the patient was still in good health

In a patient aged 62 with a history of haemorrhagic vaginal discharge over a period of two years vaginal examination demonstrated the clinical signs of cancer of the cervix Leave for operation was refused but consent was given for intramuscular injections of colloidal copper after even injection the haemorrhage and discharge had ceased and the patient refused further injections The cervix was then found to be healed and smooth The patient died away from home nine months later from a stroke no return of the vaginal discharge having occurred

A patient who had her breast removed and the axilla cleared for medullary cancer in August 1919 received a course of colloidal copper injections over a period of three months She had had no recurrence and was quite well

Another patient had the right breast removed and the axilla cleared for medullary cancer in February 1920 A there was a small nodular lump in the left breast with enlarged glands in the axilla and the patient did not wish to have a second operation a course of colloidal copper injections was given over a period of three months the nodular lump and glands disappeared In September 1923 the patient returned on account of some enlarged glands in the right supraclavicular region after a course of colloidal copper injections lasting four months the glands subsided The patient was alive at the present time was in excellent health and no glands could be felt

Two patients with advanced and inoperable carcinoma of the rectum had been treated by him one improved and put on weight but died in twelve months the other received no benefit

A case of inoperable cancer of the rectum treated by colloidal copper and selenium had been reported by Mr Lionel E C Norbury FRCS in the *Proceedings of the Royal Society of Medicine* June 1923 After treatment for over two years no growth or ulceration could be detected and the general health of the patient was excellent

In conclusion Dr Brierley urged the trial of colloidal copper after operation for cancer and in inoperable cases He emphasized the importance of not being discouraged if there was no immediate improvement from the treatment and of persevering with the injections until the patient was cured or refused further treatment or until the condition of the patient had become hopeless

SURGERY OF THE BILIARY PASSAGES

At a meeting of the Medico-Chirurgical Society of Edinburgh on December 3rd the President Sir DAVID WALLACE in the chair Professor D P D WILKIE read a paper entitled "Observations on the surgery of the biliary passages"

Professor Wilkie referred to the divergent opinions as to the place of surgery in the treatment of biliary disease though the frequency of biliary infection and gall stones was generally admitted symptomatology and diagnosis were not discussed with the exception of a reminder that flatulent dyspepsia in stout multiparous females very frequently indicated cholecystitis and usually gall stones Neglected biliary disease was a fruitful source of pronounced ill health and at times led to death from pancreatitis and malignant disease The chronic dyspeptic symptoms had a most deleterious effect on the health of the patient Palliative treatment might obviate later surgical treatment Professor Wilkie divided his cases into three groups (1) Cases of biliary trouble demanding surgical treatment (2) cases unsuitable for operation (3) cases in which surgical treatment was debatable In Group (1) he included all cases of acute obstructive cholecystitis in which there was an inflamed and distended gall bladder, cases of flatulent dyspepsia punctuated by occasional attacks of biliary colic and local tenderness and cases of recurrent cholangitis with loss of weight rigors and intermittent jaundice Group (2) included patients suffering from other organic diseases such as bronchitis myocarditis and malignant disease Group (3) included the dyspeptic stout female with symptoms suggesting one aseptic cholesterin stone Professor Wilkie favoured early operation because many of these cases finally became worse and required an operation The group included also vigorous patients with mild attacks of cholecystitis and probably a primary tooth focus of infection and thirdly the deeply jaundiced patient He further classified his cases into five groups from the operative point of view In the first group cases urgently requiring operation there were 8 males and 21 females and the cholecystitis was almost always of the acute obstructive variety In 3 cholecystectomy and in 16 cholecystostomy was performed there was one death a subacute pancreatitis being present The tentative conclusion drawn from this small group was that cholecystectomy was the ideal treatment if the local and general condition was not adverse In the second group interval operations on the gall bladder there were 27 males and 76 female In 99 per cent a history suggesting gall-bladder trouble was obtained of two to thirty years duration In all cases some degree of cholecystitis was present and gall stones were found in 79 cases Cholecystectomy was performed in 47 cases and cholecystostomy in 50 The reasons for adopting one or other method were discussed the functional capacity of the gall bladder wall being the main deciding factor In this series there were four deaths in one case the general condition of the patient

was poor, in two general septicæmia was present, the gall-bladder infection being incidental, and in the fourth case there was marked cirrhosis of the liver Professor Wilkie's general conclusions on this series were that cholecystectomy *should be performed if* the gall-bladder wall was grossly diseased, but if the wall was relatively healthy and all stones were removed recurrence was unlikely In the third group, disease of the common bile duct, there were 5 males and 27 females Many of the patients were in a very poor condition, and in 28 cases one or more stones were found—in most only one stone The operation included free exposure of the common duct, puncture with the hypodermic needle, removal of calculi, and securing the patency of the duodenal opening Some weakly patients were fed for a few days through a catheter passed into the duodenum through the duct Four deaths occurred, one owing to haemorrhage from a large duodenal ulcer, another from acute pulmonary oedema another from haemorrhage into the pancreas due to a wound in the duct, and the fourth after a large piece of gut had been removed because of tuberculous strictures The lessons from this series were the value of free exposure in all biliary operations, aspiration of bile and feeding by a duodenal tube In the fourth group malignant cases, there were 10 cases of carcinoma of the head of the pancreas, 2 cases of primary cancer of the common bile duct, and 6 of the gall bladder Professor Wilkie was convinced that gall stones predisposed to carcinoma In the 6 cases of gall-bladder carcinoma there were long-standing histories of biliary trouble, and gall stones were present In the fifth group, cases with acute or subacute pancreatitis, most of the patients were over 60 years of age, showing the final phase of a chronic and neglected malady All were operated on for urgent symptoms

Professor Wilkie also discussed the question of operation in the presence of jaundice In the whole series of 197 this symptom was present in 35 patients at the time of operation The danger of liver inadequacy was combated by giving glucose before and after operation, but the tendency to haemorrhage in the malignant cases was a serious problem The injection of 30 c.cm. of 30 per cent. sodium citrate was practised, and he had no hesitation in advising this line of treatment and continuing it after operation The age factor in biliary surgery was touched upon, also the matter of associated lesions operated on—for example, diseased appendices The following conclusions were drawn

(1) In action of the gall bladder and gall stones must be regarded seriously in view of the dangerous complications which might eventually supervene (2) Operation in the early and uncomplicated stages was attended with little risk (3) Cholecystectomy was the operation of choice when the gall bladder was seriously diseased (4) Cholecystostomy was effective where the gall bladder had retained its elasticity, and was capable of further function (5) Free exposure of the common duct should be secured in all cases (6) Operation on deeply jaundiced patients with malignant disease was attended with considerable immediate risk (7) Pre- and post-operative treatment to minimize haemorrhage and hepatic shock were essential for all deeply jaundiced patients (8) Operation in the late stages, when acute or subacute pancreatitis had developed was attended with grave risk numerous complications and considerable post-operative morbidity (9) The time for surgery was before and not after complications had set in

Immunity to the Pneumococcus

Dr. STANLEY DAVIDSON referred to the fact that anti-pneumococcal serum was used so far back as 1881, but had little therapeutic effect till the work of the Rockefeller Institute in 1917 explained its failure and defined the different types of pneumococci by agglutination experiments It was also found that potent protective serums could only be obtained from Type I pneumococcus Reference was also made to the incidence of pneumococcal types in lobar pneumonia, and the reduction of mortality in lobar pneumonia at the Rockefeller Institute by using intravenous serum in large quantities The advantages and disadvantages to the general practitioner of serum treatment were summarized the latter being (1) cost of serum, (2) technical difficulties of administration, (3) production of serum sickness (4) necessity of co-operation with a trained bacteriologist The results of 44 cases of pneumococcal infection were described, and it was shown that Type I was the most prevalent organism, 17 empyema cases being all due to this type Dr. Davidson then discussed the experimental side of the question He used three kinds of vaccines to produce active immunization—namely, (1) the ordinary heat-killed saline emulsion, (2) the so-called detoxicated vaccine, and (3) defatted vaccine In a paper read at the Annual Meeting of the British Medical Association in July, 1924 (reported in our issue of December 13th, p. 1103), the speaker had shown that detoxicated and defatted vaccines were not equivalent to the saline heat-killed vaccines in the production of antibody, in these experiments *B. suipestifer* had been used The question of relationship between antibodies and immunity with reference to protection from a lethal dose was raised With the exception of the antitoxins it had to be admitted that they were unable to state definitely the relationship of antibodies to immunity The production of antibodies might, however, be regarded as an indication of the antigenic value of a serum The real test of a vaccine was, therefore, the production of immunity to a lethal dose of the organism Dr. Davidson then described a new series of experiments in which the pneumococcus was used The three types of vaccine were again employed Serums from rabbits injected with these vaccines were introduced into mice and varying strengths of vaccines employed The results were shown by a full table of figures indicating the final conclusion These results demonstrated that (1) the serum from animals injected with ordinary vaccines and the Rockefeller immune serum give complete protection against 10,000 lethal doses of pneumococci, (2) serums from animals injected with detoxicated and defatted vaccines showed no protective properties, since normal rabbit's serum gave similar negative results, (3) in a protective experiment of this kind control animals should receive serum *plus* culture, since introducing foreign protein produced a temporary lowering of resistance Further experiments to show the effect on rabbits treated with vaccines and then injected with live organisms demonstrated that the animals injected with the saline vaccine survived does that killed the animals treated with defatted and detoxicated vaccines The condition of the rabbits at the end of the immunization experiments differed greatly Those injected with detoxicated vaccines were in good health seven days after the last dose, those treated with defatted antigens were in fair health, and hard lumps could be felt at the site of injection, those treated with ordinary vaccine had wasted to some extent, and those treated with a live culture were very ill indeed Therefore the animals in relatively good health showed the least resistance, and those with toxic symptoms were proved by experiment to have a serum of high protective value Finally, Dr. Davidson summed up by saying "As judged by production of antibodies and protection to lethal doses of micro-organisms, detoxicated and defatted vaccines have no immunological value comparable to that of ordinary heat-killed bacterial vaccines"

STRUCTURE AND FUNCTION OF THE CORPUS LUTEUM

A MEETING of the Section of Obstetrics of the Royal Academy of Medicine in Ireland was held on November 28th, the President, Dr. L. CASSIDY, in the chair

Dr. BETHEL SOLOMONS read an abstract of a paper written by him and Professor Gatenby on the formation, structure, and physiology of the corpus luteum of man, the pig, and the duck-billed platypus The theories relating to its formation were discussed, and it was stated that the investigations made indicated that the membrana granulosa layer was the responsible factor in formation The authors had found that liquor folliculi, given by mouth to human patients, had no effect upon the haemorrhages of puberty, adult life, or the climacteric On rats, however, it had a great effect, these experiments were similar to those of Allen and Doisy, but the rats were fed instead of being injected Generally speaking, ovariotomized rats were affected sexually Corpus luteum extract, given by the mouth, was found useful in the treatment of scanty and absent menstruation, it was valuable in the treatment of sterility, but of little service for menorrhagia and metrorrhagia It was occasionally helpful in treating

dysmenorrhœa, but menopausal symptoms were seldom relieved, it was also successful in some cases of vomiting of pregnancy When administered hypodermically it had cured some cases of severe vomiting and menstrual epilepsy It was difficult to understand why corpus luteum administered by the mouth or hypodermically should cure menorrhœa considering its physiological action, this point required intensive investigation by the physiologist in combination with the gynæcologist Theoretical explanations were that the drug stimulated the ovary to action or that the corpus luteum after administration acted in the same manner as the true corpus luteum It was difficult to understand why corpus luteum given throughout pregnancy should help to prevent the stillbirths which usually occurred in the last two months Possibly it produced a healthy corpus luteum which supplied the hormone necessary to the child from the seventh month onwards

Professor J Bronte Gatenby showed lantern slides illustrating the formation of the corpus luteum The theca interna elements preserved their integrity until regression of the corpus luteum set in so that the corpus luteum cells were really of single origin from the membrana granulosa The corpus luteum of pregnancy was not always larger than that of menstruation and the presence or absence of fatty substances constituted no sort of index as to the existence of pregnancy

Professor H Pringle did not agree that the luteal cells originated only from the granulosa cells He believed that the granulosa and interstitial cells originated from the luteal cells If they had two separate origins two specific hormones would be expected There were three separate hormones (1) the hormone of the interstitial tissue, (2) the hormone of the Graafian follicle and (3) the hormone of the corpus luteum, and this hormone seemed to antagonize the second hormone The observations of Dr Solomons and Professor Gatenby seemed to be incompatible with this hypothesis One of the most interesting features of the effect of corpus luteum on ovulation was seen in cases where ovulation only followed coition After sterile coition in a rabbit the corpus luteum was almost indistinguishable from the corpus luteum following pregnancy, and the corpus luteum persisted nearly as long as if the corpus luteum ovum had been implanted When the abdomen was opened and the surface of the ovary was follicized a factor was introduced which might be in every way compatible with sterile coition The whole question was still in a very unsatisfactory state, although Professor Gatenby had added enormously to their knowledge of the physiological changes which occurred in the corpus luteum

Professor J M O'Connor had been very interested by the hormone therapy referred to that evening some of the results given could not be ascribed to physiological effects He had noted particularly the statement that there was no interstitial tissue present in the ovary since he had previously been led to believe that interstitial tissue was the most important thing present in the ovary

Dr W Fearon said that the bodies of the hormones were simple molecule derived from well known amino-acids which was why it was so important that these acids should be in the body to augment the internal secretion For some internal secretions, such as insulin no formula had yet been obtained

FREQUENCY OF MICTURITION IN WOMEN

At a meeting of the London Association of the Medical Women's Federation held on December 9th the President Miss M Chadburn, in the chair Miss F C Lewis read a paper on frequency of micturition in women

Miss Lewis approached the consideration of this symptom from the standpoint of its etiology and clinical characteristic, and discussed its differential diagnosis The causes of this condition could be stated as (1) disease of the bladder (2) irritation of an otherwise healthy bladder, (3) incompatibility between the bladder and its contents, (4) a group of nervous diseases organic and functional, (5) diseases of the kidneys and ureters In the first group cystitis was extremely common in women and might follow any change in the bladder which lowered its resistance Prolonged congestion, retention of urine, traumatism, and changes in the bladder wall predisposed to cystitis, these might be masked by a secondary inflammation but in every case of cystitis the original lesion should be looked for and treated Frequency of micturition in cystitis was easily explicable, but it was less easy to account for it in other bladder lesions such as an uninfected diverticulum A simple papilloma did not cause frequency except when bleeding profusely, and then apparently because of sudden increase in the contents of the bladder, since blood was not irritating to the bladder Miss Lewis had seen cases in which blood was coming down from one of the kidneys in considerable amount, but the bladder itself was normal and there was no frequency Malignant growths, stones or foreign bodies always tended to cause frequency Irritation of the bladder leading to frequency might be caused by external pressure —for instance by an enlarged uterus or an ovarian cyst A uterus of normal size, if much anteflexed or lying horizontally across the pelvis might impede the filling of the bladder and cause frequency This was sometimes accompanied by pain relieved by micturition, unlike the pain associated with disease of the bladder Urethral conditions such as external prolapse of the urethral mucosa which occurred typically at the extremes of life might cause frequency so also might a urethrocele when the patient complained of repeated calls to empty the bladder, and a few drops of urine escaped when she coughed or made any sudden effort Acute pelvic inflammations had probably an irritating effect on the bladder, while in cases of chronic cervicitis a trigonitis could generally be detected by cystoscopy Irritation from within might be caused by change in the reaction of the urine bacilluria, or an abnormal amount of phosphates or oxalates

Relative inadequacy of the bladder to its contents might be due to the bladder being contracted owing to inflammation or to polyuria Nervous diseases might cause motor symptoms of the bladder hyperexcitability or hyperæsthesia frequency usually occurred in both cases Hysterical and neurasthenic polyuria might also be met with In the last group, frequency due to renal and ureteric conditions, inflammatory and several other lesions were included, the more common causes were, however those of the previous group With regard to diagnosis it was important to ascertain the number of times the patient passed water by day and by night and whether the frequency was continuous or sporadic The quantity of urine passed each time indicated whether the bladder was inadequate or whether there was polyuria Urgency with frequency was said to occur in some of the spinal cord lesions and incontinence in some of the urethral conditions In cases of painless frequency without other symptoms some cause outside the bladder should be suspected The routine clinical examination established the presence or absence of caruncle, prolapsed urethra or urethrocele Polyuria might indicate some surgical disease of the kidneys such as chronic relapsing pyelitis or pyelonephritis or in young people early tuberculosis Frequency accompanied by pain or by some abnormality of the urine nearly always indicated a lesion of the urinary tract and in locating this the situation and character of the pain and its timing in relation to micturition were important

Dr Irene Yates dealt with the clinical aspect of those diseases in which frequency was a symptom The commonest of these were (1) disorders of the nervous system (2) inflammatory conditions of the urinary tract (3) chronic interstitial nephritis (4) diabetes mellitus The latter commonly met with were diabetes insipidus and the so-called diabetes phosphaturia and oxaluria Dr Yates discussed frequency of micturition as a symptom of diabetes mellitus and of diabetes insipidus In diabetes insipidus polyuria might be due to a tumour of the pituitary or to irritation of the gland from without as in syphilitic meningitis In other cases the polyuria seemed to depend on a polydipsia of nervous origin here the volume of fluid excreted was no more than the intake whereas in the former cases it exceeded it

Dr C Peake the President Mr R Coltson Holmes Dr L M Jeffries Dr M A Blair Dr M Dobie, Miss Bannerman Dr I M Guest Dr M Brady and Dr Justina Wilson also spoke

Reviews.

AMERICA IN THE WAR

Anthropology

THE first part of the fifteenth volume of the history of *The Medical Department of the United States Army in the World War*[1] relates exclusively to army anthropology. A sidelight will be thrown on the character of its contents if it be mentioned that its index occupies about 60 pages and must supply at least 4,000 references, in addition to some 1,600 others in the table of contents. These calculations will suffice, perhaps, to suggest the tendency of mind which by a species of infection is liable to be created by even an incomplete study of the volume. It may be mentioned that besides letterpress it contains at least 400 elaborate statistical tables, plates, and graphs. It is, in short, by no means a book to recommend for perusal by way of whiling away an after-luncheon odd half-hour, but one which even a serious student may well find difficult to digest unless he takes off his coat for the task. Should he do so he will find himself rewarded by a good deal of information of an interesting and more or less directly useful kind.

On the whole, however, the volume will no doubt appeal chiefly to the professional anthropologist, who, if he lives on this side of the Atlantic, would probably shorten his study of it by refusing to take any notice of a good deal of the text and a great many of the tables. His action would be justified by the fact that the material thus rejected is of essential interest only to inhabitants of the United States, since it relates to the statistical distribution of the basic figures amongst its territorial components.

The volume is almost purely statistical, so, since statistics have been said to be capable of being made to prove anything, it is fun to point out that those responsible for the preparation of the volume do not appear to have directed the work with any preliminary prejudices. They have been content to get together as many data as they could, and then analyse and correlate them in a number of different ways. The primary object would seem to have been first to compare such coloured components of the population of the United States as came under observation with the components of European origin, and then to compare among themselves the eight European nationalities which chiefly contribute to the population as a whole.

One point of general interest that emerges is the immense fund of man strength that the United States possessed when it entered the war. Within about twelve months after that date there were registered as being between the ages of 18 and 45 over 23 million men, and of these nearly 11 million were of ideal military age—that is to say, between 21 and 30. There is no indication of how many of these men were ever medically examined for recruiting purposes, and there is initially a certain amount of obscurity in regard to the exact number of individuals from whom were derived the data handled in the volume. Comparison of the tables and the text leaves, however, no doubt that the number of individuals anthropometrically considered was 2 million, that 500,000 of these were also considered from an essentially medical point of view, and that, in addition, 100,000 individuals who may or may not have formed part of the stated 2 million were considered from the point of view of general anthropology.

The men forming this 2-million group were those first passed for service by recruiting boards, and the measurements derived from them were those ordinarily taken on such occasions—namely, stature, weight, and chest measurement. The half-million group was made up of individuals discharged on medical grounds when the 2 million men already in mobilization and training camps were again subjected to examination. The smallest group mentioned consisted of "veterans"—that is to say, it was made up of individuals who, whether they had been employed overseas or otherwise had all served as soldiers for at least several months. Their measurements were taken at the time of their demobilization, under the supervision of expert anthropologists by men specially trained for the purpose.

The ostensible object of this examination was to secure data for the building of manikins for the use of army tailors of the future; but since it was undertaken at the request of the Medical Department, and carried out by it, the stated object was probably not the only one in view. The measurements taken were stature, span, sitting height, and height of the knee-joint, sternal notch, and pubis, the breadth of the shoulders and pelvis, the breadth, antero-posterior depth, and circumference of the chest, the distance from the second dorsal vertebra to the styloid process of the right ulna, the circumference of the neck, of the waist, and of the thigh, of the leg just above the patella, at the level of the knee, just below the tuberosity of the tibia, and of the calf, and the inside length of the leg from the gluteal fold to the apex of the internal malleolus. Skin colour, hair colour, and eye colour were also recorded in numerous variations of each primary hue, as also the weight of the individual.

We quote this list of measurements almost in full by way of indicating the extent of the inquiry. The army anthropologist may possibly scoff at some of them as being solely of sartorial interest, but the value of the majority is fully obvious. For instance, in grouping men for marching purposes, equality of leg length must certainly be of more importance than equality of total height, and men whose total height is low, but whose chest measurements and weight are relatively high, would carry packs much more easily than tall men of a light general build.

No head or foot measurements seem to have been taken, and this seems curious, both as regards the ostensible and the real object in view. The right fitting of helmets, caps, and foot-gear is certainly of military importance, and important also from the point of view of army outfitters.

In regard to the standard measurements, we note that the mean stature of the first million recruits, both white and coloured, was just under 5 ft. 7½ in., their mean undilated chest measurement just over 33 inches, and their mean weight just over 10 st. 1½ lb. Most of these men, of course, were quite young.

When classified according to the area of the United States from which they were drawn, or according to the races to which they were considered to belong, men from mountain areas were found habitually to "run tall," while racially the order and mean stature of the principal eight European nations were as follows: The Scottish (67·92 in.), the English (67·75 in.), the Germans (67·73 in.), the Irish (67·46 in.), the Poles (66·70 in.), the French (66·37 in.), the Hebrews (65·71 in.), and the Italians (65·03 in.). The assignment of an individual to a particular race was on conventional lines.

The same nations are seen to fall into a very different order when considered from the point of view of robustness, this being a correlation of several measurements. When divided into two main groups, Nordic and Mediterranean, the latter supplies better figures than the former, but the exact order of the nations individually in point of robustness is seen to be Poles, Italians, Germans, French, English, Scottish, Irish. In regard to differences between coloured and white races, the chief point seems to be that men of colour tend to be from the waist downwards longer and stronger than the whites, and from the waist upwards the reverse. This may be a surprise to those who, having lived in Africa, tend to believe that the strong point of a negro is the thickness of his head, and his weak point his shins.

The tables relating to correlations between medical defects and the standard measurements do not seem to justify any very positive conclusions, so we content ourselves by saying that they uphold, on the whole, the old belief that an individual who, for his race, is of average height, weight, and chest measurement, is likely to be better fitted for rough physical work, such as soldiering, than one who is either unusually short or unusually tall.

In regard to the general importance of anthropology from a military point of view, the authors of the report consider that the experience gained in raising an army show that if ever the task has to be undertaken again by the United

[1] *The Medical Department of the United States Army in the World War.* Vol. XV. Statistics. Part I, Army Anthropology. Prepared under the direction of Surgeon General M. W. Ireland by C. B. Davenport, formerly Major, S.C., U.S.A., and A. G. Love, Major, M.C., U.S.A. Washington: Government Printing Offices. 1923. (Super-roy. 8vo, pp. 635, 139 tables. 1.75 dollars.)

States there should at the outset be appointed among the officers of the Medical Department a broadly trained anthropologist for performance of the following duties

1 Collaboration in drawing up schedules for the physical examination of recruits
2 Consultation on the taking of the standard measurements and observations on recruits throughout the country and especially at military camps and posts
3 General supervision of the service of taking identification data
4 Organization of the service of answering questions that may arise about the racial classification and racial differences of individuals

In regard to the duty last named, it seems probable that the authors had in mind the fact that at one time it was intended to form units and aggregations of units on racial lines in such cases questions concerning ration allowance and many other points might clearly have arisen

The analytical treatment of the basic data obtained is certainly remarkably complete and the volume as a whole a worthy companion of the first volume of the same history, to which attention was drawn some time ago

BISMUTH IN SYPHILIS

It is three years since bismuth was introduced for the treatment of syphilis, and sufficient experience has now accumulated to justify the appearance of such a book as *Le Bismuth dans le Traitement de la Syphilis*, by C LEVADITI It opens with an historical account of the discovery of bismuth as a remedy for syphilis, and with a summary of the properties of the metal, its toxicity, its absorption and its elimination Following this comes a chapter on experimental work on animals and then, the most important portion of the book, its use in clinical medicine The author takes in turn the primary, secondary and the tertiary stages of the disease and finally deals with bismuth in neuro-syphilis and in the inherited disease, citing cases to illustrate his thesis and render the account as practical as possible The influence of bismuth on the Wassermann reaction is then studied, and also its action on certain resistant forms of the disease in which mercury and arsenic have failed The last chapter discusses the different methods of administering the drug, its dosage, and the different preparations

Certainly the book has been written by a clinician who understands those points that are of importance to the practising doctor The general conclusion is that bismuth acts curatively, not only in the laboratory with respect to the infected rabbit, but also in the infected human being

PSYCHIATRY

In a volume entitled *The Borderland Some of the Problems of Insanity*,[2] Dr THEO B HYSLOP considers the difficult question of racial degeneracy He takes a frankly pessimistic view of the general mental status of the community He draws attention to the steady increase in the ratio of the certified insane to the population in England and Wales, and states that the American lunacy figures are even more startling than our own He reminds us that statistics only refer to lunatics under official cognizance, and that they do not include those who as imbeciles are yet permitted to remain citizens, the thousands who are on the borderland between sanity and insanity the weak minded the epileptic, the partially demented, the hysteric, the deluded the morally insane the drunkards and the neurasthenics who, having run their course all too soon are incapacitated from taking part in or adding to the physical and mental welfare of the race The author is of the opinion that if we were provided with statistics relating to those who by reason of mental infirmity are incapacitated from competition, or even aiding in their own survival we should realize more completely the true state of affairs and one and all would rise in revolt at the insidious onset of a national dementia which ere long it may be too late to combat or even ameliorate

Dr Hyslop has raised a question of paramount social importance, but we should be reluctant to accept unhesitatingly his views as to the mental decadence of the community, not because they are unpalatable, but because there are insufficient data on which to base an opinion as to whether the general tendency is towards deterioration, mental and physical, or the reverse In an important paper[4] by Professor Kraepelin it is shown that the mental health of the community is determined by the simultaneous action of a great number of complicated, co operating, interacting and conflicting influences and no one can say whither the resultant of the forces is tending In order to determine whether the general tendency is towards decadence on the one hand, or progressive development or productive and resistive power on the other, psychiatric investigation on a large scale as Kraepelin points out, is necessary We need what he describes as a "mass psychiatry," having at its disposal statistics in their widest scope to provide the foundations for a science of mental health—a preventive psychological medicine for combating all those mischiefs that we group under the head of mental degeneracy Without such an inquiry we are scarcely in a position to admit or deny the accuracy of Dr Hyslop's conclusions Facts alone will enable us to estimate the extent of mental instability amongst the community, the degree to which it is increasing or diminishing and the efficacy of our methods of dealing with it Much more is needed than figures relating to the notified insane, but, as was pointed out in the Report of the Board of Control for 1923 the present increase of insane under care by no means necessarily connotes any increase in the incidence of insanity among the general population

The book as a whole lacks continuity of theme and consists of isolated essays treating of various aspects of psychiatry Some of the chapters deal with subjects of purely technical interest and others are more popular in their appeal The book contains a number of repetitions, and in one instance a long passage covering nearly two pages appears in different chapters Dr Hyslop has rendered a service to the community by bringing the problem of degeneracy into the foreground but his treatment of the subject is too discursive to be really forceful and convincing

NOTES ON BOOKS

OPERATIONS upon the sympathetic ganglia and nerves are under trial in connexion with attempts to relieve angina pectoris, exophthalmic goitre varieties of neuralgia and circulatory disturbances, chronic ulcerations, and the employment of regional anaesthesia None of the foregoing proposals have become established procedures, but attempts require from the surgeon a preliminary knowledge of the anatomy and physiology of the vago-sympathetic ganglia, as well as of the results which have followed surgical undertakings The recent book on the surgery of the vago-sympathetic,[5] by Professor BRÜNING and Dr STAHL, supplies a very full account of this subject together with excellent illustrations including some coloured ones, a full table of contents thirty eight pages of bibliography, and a subject index Under the several heads appended to the systematic description are abstracts of cases—both those under the authors, numbering sixty six and others referred to in the bibliography The book forms a most thorough going exposition of its subject

The third International Conference on Leprosy was held at Strasbourg at the end of July, 1923 under the presidency of Professor Jeanselme of Paris, Sir Leonard Rogers being the honorary president Delegates from all parts of the world assembled, including a representative of the Ministry of Health A detailed report of the conference has now been published the lateness of its appearance is stated to be due to the unavoidable delays and difficulties in securing accurate translations of the papers which were read in other languages than French The volume deals with leprosy under six

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L Bismuth dans le Traitement de la Syphilis By C Levaditi Paris Masson et Cie (Med 8vo pp 316 31 figures 1 plate Fr 20)

[2] *The Borderland Some of the Problems of Insanity* By Theo B Hyslop M D F R S E. London Philip Allan and Co 1924 (Roy 8vo pp 319 12s 6d net.)

[4] Ends and Means in Psychiatric Research. *Journal of Mental Science* April 1922

[5] *Die Chirurgie des Vegetativen Nervensystems* Von Dr F Brüning und Dr O Stahl Berlin Julius Springer 1924 (Sup roy 8vo pp viii + 240 72 figures Gold marks 12 bound gold marks 20)

[6] *IIIe Conference Internationale de la Lepre* Communications et Débats recueillis et colligés par le Dr E Marchoux Paris J B Baillière et Fils 1924 (Imp 8vo pp 243 1 plate 25 figures.)

headings—statistical, etiological, pathological, therapeutic, prophylactic, and legislative It is well indexed, and many illustrations are included Besides forming a record of an important congress it constitutes a useful reference book on leprosy, about which far more information is now available than was the case when the previous conference was held at Bergen in 1909

The fact that a third edition of *Kystoskopischer Atlas*,[1] by Dr WOSSIDLO, has appeared is a sufficient proof that the work has found favour with those interested in cystoscopy The new edition differs very little from the old, and the author has avoided the temptation, to which all authors are exposed, of adding to the length of his work The only addition of any note is the section on bilharzia of the bladder. To the coloured plates at the end of the book have been added pictures of syphilitic ulceration of the bladder and bilharzia.

[1] *Kystoskopischer Atlas* Von Dr med E Wossidlo Third edition Leipzig Wilhelm Engelmann 1924 (Imp 8vo, pp 111, 43 coloured plates, 53 figures)

KING EDWARD'S HOSPITAL FUND FOR LONDON.

THE PRINCE OF WALES on December 16th presided over the distribution meeting of the King Edward's Hospital Fund for London, and read a letter from the King expressing satisfaction that the hospitals of London would have before long 2,000 more beds than before the war, and that the King's Fund was helping to provide another 300 beds, including 53 for accident cases

Lord REVELSTOKE, honorary treasurer, reporting the amount received for general purposes, said that the only serious decrease was in the general fund legacies, which were always liable to fluctuation On the other hand, anonymous donations of £7,000 and £5,000 had been received, a contribution of £15,000 had been made by the British Charities Association, while other subscriptions and donations had been well maintained It was possible, therefore, to maintain the ordinary distribution at the figure authorized in 1923—namely, £235,000 It was essential, he thought, that the yearly distribution should correspond with the income In accordance with the decision of the council last July that the proceeds of the legacies of the late Mr and Mrs Wells should be applied in aid of hospital extensions and improvements, the special distribution of £81,000 was available from this source The Wells legacies were expected to amount to about £200,000, of which only £72,000 had yet been received A considerable proportion of the £81,000 allocated at the meeting would not be actually payable for some time, in accordance with the conditions attached to the grants

Sir WILLIAM COLLINS, in making the annual statement on behalf of the League of Mercy, said that by the end of the year the League would be able to hand over £14,500, bringing the total so far subscribed by it to the King's Fund to £368,034 The League of Mercy had benefited by the generosity of the British Charities Association, which had entrusted the League with the distribution of £5,000 to the extra-metropolitan hospitals The League had been able to give the provincial hospitals £9,760, making a total to the extra-metropolitan hospitals of £64,769 the grand total for the last twenty-five years was thus £432,802

Grants to Hospitals and Convalescent Homes

Sir COOPER PERRY presented the report of the Distribution Committee The amount of allocation amongst hospitals, including their recovery and convalescent branches, was £233,000, equalling that of last year Besides co-operating in discussions and inquiries with regard to hospital accommodation, the King's Fund had taken practical steps towards the actual solution of the problem by helping the hospitals to carry out extensions that had been delayed by the war It had also increased the proportion of the ordinary distribution allocated to grants in aid of capital expenditure These grants this year amounted to £35,725, as compared with £30,100 in 1923, and £26,500 in 1922

Major HAROLD WERNHER, honorary secretary, presented the schedule containing the list of awards to hospitals (including recovery and convalescent branches)

The larger sums awarded include £13 250 to the London Hospital, £11 500 to Guy's Hospital, £10,500 to St Thomas's Hospital £8 500 to [illegible]'s College Hospital £8,300 to the Royal £8 000 to St Bartholomew's Hospital £7 50[illegible] Hospital £7 000 to St George's Hospital £6 5[illegible] Hospital, £6 400 to the Middlesex Hospital, £6 100 to the Hospital for Sick Children £6,000 to the Royal Free Hospital, £5 600 to the Miller General Hospital, £5 500 to St Mary's Hospital, £5 000 to the West London Hospital, £4,600 to the Prince of Wales's General Hospital, £4,500 to the Queen's Hospital for Children £4 450 to Queen Mary's Hospital for the Last End, £4 000 to the National Hospital for the Paralysed and Epileptic, and £4 000 to Charing Cross Hospital

Sir COOPER PERRY then presented the report of the Distribution Committee with reference to convalescent homes not attached to particular hospitals, this showed that £2,000 had been distributed during the year Major General Sir CECIL LOWTHER, honorary secretary, presented the schedule of awards Sir COOPER PERRY then presented the report of the committee on the special distribution of the Wells legacies to date The list of grants made or recommended amounted to £81,000, which would increase the number of beds available for patients by 301, of these beds 53 will be reserved for accident cases Included in these grants were amounts of £25,000 to the Woolwich and District War Memorial Hospital, £16,000 to King's College Hospital, and £16,000 to the Miller General Hospital

Improvement in Hospital Finance

The PRINCE OF WALES called attention to the fact that the ordinary distribution this year of £235,000 had again been provided without drawing on reserves, and thanked the British Charities Association for its efforts in aid of the hospitals and for entrusting to the King's Fund the distribution of £15,000 for the London area There were three points of importance in the Distribution Committee's report The first was the enormous improvement in the ordinary finances of the hospitals of London Taken altogether, and omitting the combined appeal and one exceptionally large legacy, the annual deficit had been reduced from £175,000 for the year 1922 to £20,000 for the year 1923 This seemed almost miraculous when compared with the annual deficit of nearly £400,000 four years ago It indicated that the people of London were really attached to the voluntary hospitals, and were willing to make the necessary sacrifices to maintain them It was to be hoped, therefore, that the deficits still remaining would soon be abolished In the second place, the hospitals were being enlarged, and the King's Fund had been very active in this matter The number of beds, 13,000 in 1922, would be increased to 14,000 when the schemes now in hand were completed Further schemes were pending, and still others were only waiting for better times The Distribution Committee had selected for help those hospital schemes which had just reached the stage at which special assistance would be most valuable The third point was the provision of beds for accident cases, the report of the Ambulance Cases Disposal Committee of the King's Fund had been translated into action by both the London County Council Ambulance Service and the Distribution Committee of the Fund Another forward movement by the King's Fund was the extension of the area of operations from a radius of nine miles round Charing Cross to a radius of eleven miles round St Paul's Cathedral, bringing in more of the eastern districts and adding to the liabilities of the Fund The Propaganda Subcommittee, under the chairmanship of Lord Burnham, had been very energetic, partly in connexion with direct propaganda for the hospitals and the King's Fund, and partly in regard to money-raising schemes including propaganda work Arrangements were now being made for lectures in schools to spread among the young of all classes a knowledge of the work of the hospitals and the debt owed to them by the whole community A panel of expert lecturers had been secured, and applications from schools were being received Another subcommittee, with Sir Richard Gregory as chairman, had arranged a series of popular scientific lectures in various parts of London early next year

Viscount CAVE, in moving a very cordial vote of thanks to the Prince of Wales for presiding, alluded to the keen personal interest he had taken in the Fund, and to the encouragement to be derived from his speeches The motion was carried with acclamation

British Medical Journal.

SATURDAY, DECEMBER 27TH, 1924

LISTERISM AND WAR WOUNDS

The authoritative life of Lister by his nephew Sir Rickman Godlee appeared towards the end of 1917 and a detailed review was published in the issue of the BRITISH MEDICAL JOURNAL for December 1st of that year (p. 725). We then said that for the production of a successful biography two conditions were essential—a fit subject and a proper amount of style in the representation—and said that the volume fulfilled both conditions, observing that Lord Lister is one of the great figures in the history of the healing art there can be no question and that Sir Rickman Godlee has provided a memoir that will live as one of the great biographies every competent critic must cordially agree. A second edition was called for within a few months and a third has now been published.[1] For the most part Sir Rickman Godlee says the book remains as it was first published. A little new material has been added partly in the text but chiefly in notes. He has however written a new chapter with the title Postscript 1924 it is founded upon information supplied to him by friends on the staffs of hospitals in England Scotland Ireland Canada America and Switzerland it will revive many memories, and will stimulate thought.

At the outbreak of the war of 1914-18 surgeons were of course far better equipped in knowledge and resources than in pre-antiseptic days. Yet early experiences with gunshot wounds were so disturbing that a feeling of dismay at their inability to check virulent infection swept over all. Cases superficially similar had been under care in civilian practice. Compound fractures were no new problem and yet the military cases were doing so much worse than had been anticipated. What was the essential difference? Were our teachings fundamentally unsound? Had we forgotten lessons we thought we had learned? The obvious thing to do was to go back to Lister to re-examine the writings of the Master and particularly his early papers on compound fractures.

Few people had read and fewer remembered from personal contact the precise technique which Lister himself had advocated for these cases. The younger generations had been brought up on asepsis had been educated in a milieu of high pressure sterilizers rubber gloves masks and dry wounds. Only the elders remembered and only they employed the antiseptic lotion for the wound and the wet towel. When it came to antisepsis it became necessary for the generation actually on the field of battle to work backwards from their bacteriological knowledge to where Lister had been in the sixties. They knew nothing or next to nothing of the rubbing of the wound with pure carbolic of the pastes that Lister tried or the various antiseptic solutions with which an attempt had been made to sterilize infected wounds. To add to their discomfiture a most respected bacteriologist wrote most convincingly on the futility of antiseptics in general. What was the surgeon to believe? Some were for going back completely to the technique described in Lister's early papers—the use of pure carbolic and so forth. This idea found favour with few carbolic is no longer a favourite antiseptic. More were attracted by the salt treatment which certainly appealed to the intelligence, even though the results were disappointing. New antiseptics were sought and discovered. Dakin came in and its powder cupad, and then the Carrel-Dakin treatment. The latter would most certainly have made a strong appeal to Lister himself. In it is fulfilled one of the principles for the application of which he searched so long—the continuous removal of an antiseptic solution which had no markedly deleterious effect on the tissues. And then came Bipp. In general utility the use of this paste far transcends Carrel-Dakin. In this preparation devised by Mr. Lutherford Morison we have an antiseptic paste such as Lister sought and would almost certainly have devised had he been in his heyday in these later troubled times. It is curious that Sir Rickman Godlee makes no mention of it in this book though he pays handsome tribute to the excision of wounds. On the utility of excision there can be no question and most who worked in France felt in the last months of the war that the wound problem at long last had been solved. Wound excision at the earliest possible moment with primary, delayed primary or secondary suture as the nature of the wounds demanded antiseptic treatment (Carrel-Dakin or bipp) for those already too heavily infected for excision to be the wise course these were the principal methods finally adopted as routine. But it required fully three and a half years for them evolution on an unprecedented mass of human material.

[1] *Lord Lister.* By Sir Rickman John Godlee, Bt., K.C.V.O., M.S., F.R.C.S. Third edition, revised. Oxford: The Clarendon Press. 1924. (Med. 8vo, pp. xvi + 645, illustrated, 21s. net.)

INSANITY IN NEW YORK STATE

The report of the State Hospital Commissioners of the State of New York for the year ending June 30th, 1923, is one of the legislative documents published by the State in 1924. The commissioners, three in number, hold much the same position as Commissioners of Lunacy hold in England. The State hospitals to which the report refers are the hospitals for the insane. Thirteen of them are classified as civil hospitals, two as hospitals for the criminal insane, and twenty-eight as licensed and seven as unlicensed institutions. All were visited during the year by the commissioners. The total number of patients under treatment in them was 49,663 in the civil hospitals, 1,698 in the hospitals for criminal insane, and 1,521 in the private institutions. The recovery rate among first admissions was 26·4 per cent. but only 3·7 per cent. of the total under treatment. The death rate among the latter was 79·7 per 1,000, the death rate among the senile, cerebral arterio-sclerosis, and general paralysis cases being as high as 338·6, 363·3, and 321·1 per 1,000 respectively. By far the greatest number of those under treatment were cases of dementia praecox (12,754 males and 13,730 females), the death rate was 33·7 per 1,000. The nearest approach to these numbers were 1,919 male and 3,769 female manic-depressive cases.

Alcoholic patients are classified in the report as those under treatment for the intemperate use of alcohol, and it is not clear if this means insanity due to alcohol, delirium tremens or simply intemperance without definite morbid conditions, for the report notes that in a previous year the alcohol patients included moderate drinkers. Whatever is meant the cases in the hospitals numbered 1,286 males and 501 females with a death rate of 45·9 per 1,000. The only other cases in excess of these numbers were 2,342 of general

paralysis and 2,041 senile cases Patients undergoing treatment for the use of drugs and other exogenous toxins were remarkably few—50 males and 38 females, with 6 deaths We naturally look to a report of this kind to disclose facts bearing on the effects of the American prohibition legislation, which came into force in January, 1920 With the exception of the year 1910, when moderate drinkers were included in the total of 2,172 first admissions for intemperate use of alcohol, the admissions year by year during 1911, 1912, 1913, 1914, and 1915 were respectively 1,384, 1,370, 1,421, 1,285, and 1,164 There was then a drop to 907 in 1916, but a big rise to 1,452 in 1917 There was a decline to 1,104 in 1918, and the figures in the five subsequent years were 965, 803, 822, 879, and 886 The percentage of admissions for intemperate use of alcohol amongst total admissions was 20 9 for males and 4 0 for females in the year 1923 This percentage among males has steadily declined since 1911, but showed no marked decline among females until 1914, when it dropped from 11 1 to 8 8 During the three years 1921, 1922, and 1923, however, there has been a tendency to increase—from 18 9 to 20 9 in males, and 3 7 in 1920 to 4 0 in 1923 in females

Some interesting facts are also disclosed concerning the admission rate for all classes of insane persons in relation to population and to racial origin In 1903 it was 886 per million of population, the lowest rate on record was 677 in 1902 and the highest 944 in 1917 The statistics, however, do not give evidence of progressive increase or decrease in admissions to the State hospitals, although the number of criminal insane admitted in 1923 was higher than in any previous year since 1909, with the exception of the years 1913 and 1914 The statistics of race and nativity are interesting, but require fuller explanation than is given in the report before any conclusions can be drawn from them As regards nativity, 55 2 per cent of the 6,900 first admissions in 1923 were born of parents natives of the United States, and 44 5 per cent of foreign-born parents Only 18 admissions were of unknown origin By far the largest number of "foreign born" were of Irish or Italian parentage—namely, 513, or 16 7 per cent, Irish, and 467, or 15 2 per cent, Italian No other nationality, except German with 11 9 per cent and Russian with 11 2 per cent, reached a percentage of double figures The English "foreign-born" percentage was 4 5 and the Scottish 1 6 The marked difference in these figures may no doubt be due to a preponderance of Irish and Italian "foreign-borns" in the State of New York, but unfortunately the report throws no light on this When the first admissions are classified according to racial origin, as distinct from "foreign-born" nationality, the predominance amongst the insane of cases of Irish origin is still more marked, but this again may be due to an Irish predominance in the population The per centages among the 6,900 first admissions in 1923 were 17 0 of Irish origin, 11 4 German, 10 8 Hebrew, 8 0 Italian, 5 8 Slavonic, 4 6 African, and 4 4 English, 25 7 per cent were of mixed race and 3 5 per cent of unascertained race

Besides these and other statistical analyses of the cases under treatment and first admissions, the report contains an account of the scientific work of the State Psychiatric Institute, but most of it has already been published in psychiatric and other journals The chief scientific investigation recorded in 1923 was the relation of focal infections to the functional psychoses The investigation had been going on for the previous three years, and has now been concluded The results showed that focal infection, whether from the teeth, stomach, intestine, or elsewhere, could not be considered a specific factor in these psychoses Another investigation in 1923 was into the effect of *Bacillus acidophilus* therapy in chronic constipation and diarrhoea It was prompted by a desire to find some method of dealing with intestinal stasis and possible toxaemias by other than radical surgical methods In the course of this investigation the view that the presence of indican in the urine is of clinical significance was disproved, as indican was often excreted with no accompanying constipation, and no evidence of its presence was found in the urine of two patients who had had no normal defaecation for four months There are other interesting notes in the section of the report dealing with the work of the Psychiatric Institute, especially with regard to the absence of abnormality in the brains of patients dying from dementia praecox and the pathological changes found in the brains of epileptics

Overcrowding is stated to have been worse in 1923 than it had ever been in the history of these institutions Attempts are being made in several directions to remedy this The State Legislature passed a bill during the year for the issue of bonds to the amount of 50 million dollars in order to replace the old, worn out, and inflammable State hospital buildings The need of this was brought forcibly to notice by a disastrous fire, in February, 1923, in the Manhattan Hospital for the Insane, a hospital of 4,665 beds, when twenty-two patients and three of the staff perished Another measure for reducing the number of patients was the appointment of a medical examiner to investigate and remove aliens who may have been admitted from other States or countries But the chief measure was the discharge of patients to their homes, where they were kept under medical supervision, or their transport from the overcrowded metropolitan hospitals to hospitals up country In connexion with the treatment and supervision of patients on parole in their own homes, forty three out-patient clinics for mental diseases have been established in large centres of population They are regarded as an important measure also for decreasing the incidence of mental diseases Persons with premonitions of mental disturbance are taken in hand in them by medical experts, and also receive assistance from social workers, of whom there are twenty eight attached to the hospital staffs Effective work has in this way been carried out in preventing mental breakdown and promoting mental health

CHLORINE TREATMENT OF CERTAIN INFECTIONS

THE use of chlorine in certain infectious diseases, such as influenza and tuberculosis, is no new suggestion, conflicting reports as to its value in the latter disease were obtained from British tuberculosis specialists before the war On *June 2nd, 1923* (p 958), we reported experiments that had been made in the University of Arkansas, which were stated to support the conclusion that the daily breathing of air containing small amounts of chlorine acted as a preventive of influenza More recently Lieut.-Colonel E B Vedder and Captain H P Sawyer, of the Medical Corps of the United States Army, investigated the value of chlorine, and came to the conclusion[1] that inhalations of chlorine of a concentration of 0 015 mg per litre had a definitely curative value in common colds, influenza, whooping-cough, and other respiratory diseases in which the infecting organisms

[1] *Journ Amer Med Assoc*, March 8th, 1924 p 764

were situated on the surface of the respiratory mucous membrane. They added that the apparatus for this treatment could be employed in general practice. This report excited considerable interest, and individual practitioners in America, as well as hospitals and health departments began to test the treatment on a large scale. Two clinics were established in New York City, and a report of their results was published in the health bulletin of the City of New York. An article in the *Journal of the American Medical Association* of December 6th 1924 (p. 1851) contains the information that only 6·5 per cent. of 506 patients with various respiratory diseases reported themselves as cured as compared with 71·4 per cent. of 931 patients stated in the original paper by Vedder and Sawyer to have been cured. Of the patients treated in the New York clinics improvement was reported in 53 per cent., but it is remarked that no great importance can be attached to this, since patients with minor respiratory infections tend to improve naturally to some extent. It is stated that in acute cases the claims made for chlorine treatment cannot be sustained. In whooping-cough 18 cases with 12 controls were studied; the chlorine method of treatment was not found to present any appreciable advantages, and no benefit was reported in asthma and hay fever. In fact, three patients with asthma became decidedly worse while under treatment. The conclusion is reached that though the work of the original investigators appears to have been conducted in a most careful and scientific manner the original claims in favour of this treatment have not been substantiated. Numerous investigations are being made elsewhere in America the result of which must be awaited before a final decision can be reached at present however chlorine inhalation treatment cannot apparently be recommended in respiratory disease.

MINERALIZED METHYLATED SPIRIT

SINCE May 1st, 1924 mineralized or denatured methylated spirit (spiritus methylatus) has consisted of a mixture of spirit 90 per cent. wood naphtha 9·5 per cent., crude pyridine 0·5 per cent., mineral naphtha 0·375 per cent. and a small proportion of colouring matter (methyl violet). This is the only methylated spirit allowed to be sold by retailers. Pyridine as a denaturant was introduced by the Board of Customs and Excise in accordance with a promise made by the Government to make such changes in the composition of methylated spirit as would render it quite undrinkable without destroying its usefulness. It soon became apparent however that the new methylated spirit was by reason of its pyridine a skin irritant. The pyridine renders the spirit not merely nauseous and poisonous, but unsuitable for use as a lotion to harden the skin and prevent bed sores; it is also incompatible with picric acid. The matter was raised in the Annual Representative Meeting of the British Medical Association at Bradford last July and a resolution was adopted asking the Council "to consider the alteration in the composition of methylated spirit by the addition of pyridine which renders the spirit unfit for use as an external application to the skin and unpleasant to burn on account of the disagreeable odour produced and to take such steps as are possible to get the use of pyridine discontinued if the spirit is supplied to the order of a medical practitioner." In accordance with this resolution (as mentioned in the SUPPLEMENT of November 8th) the Board of Customs and Excise was urged to take immediate steps to meet the situation. The department replied that it was hoping to arrive at a solution of the difficulty in a short time but in the meanwhile applications from hospitals and bona fide nursing homes for permission to receive industrial methylated spirit—a mixture of 95 volumes of strong spirit with 5 volumes of wood naphtha—would be considered, provided the spirit was used strictly for medical and surgical purposes and not for burning. This of course, touches only one side of the matter and complaints from medical practitioners continue to reach the head office of the Association. Communications have been received also from the Pharmaceutical Society indicating the concern felt by pharmacists at the harmful effects of the compulsory addition of pyridine to methylated spirit. The Board of Customs and Excise has informed the Medical Secretary within the last few days that it is proposing to issue regulations dealing with this question and will give the Association an opportunity of commenting on the regulations before they are issued.

THE SUDHOFF CELEBRATION

DR KARL SUDHOFF the medical historian, was born on November 26th 1853. Imbued with admiration for his services, Dr Charles Singer and Dr Henry E. Sigerist of Zurich have shown that medicine has no geographical limitations or shame in national enmities by celebrating his seventieth birthday in a collection of eighteen *Essays on the History of Medicine*[1] written in their own languages by nineteen contributors from six countries—England, America, Germany, Austria, Italy, and Switzerland. The editors have in no way pulled their punches for Dr Charles Singer contributes two articles—one. The origin of the medical school of Salerno, the first European university, an attempted reconstruction, in collaboration with his wife, and a second with Dr E. C. Streeter of Harvard on fifteenth century miniatures of extramural dissection. Dr Sigerist writes on the birth of Western medicine in the section devoted to the Renaissance, and is responsible for the bibliography of Professor Sudhoff's writings, which occupies twenty-seven pages and numbers more than 680 items. The volume is dedicated to Professor Sudhoff in a short and graceful letter such as Sir Clifford Allbutt writes with a charm all his own. The frontispiece is a half-length photograph of Professor Sudhoff and the articles are arranged under the five headings of antiquity, the Middle Ages, the Renaissance, modern times, and general subjects. The first and the longest article occupying more than a sixth of the volume is on prehistoric attempts to avoid and abolish epidemic diseases and is followed by Dr Lynn Thorndike of Cleveland, Ohio, on Disputed dates, civilization, and climate, and traces of magic in the scientific treatises ascribed to Theophrastus." The section devoted to the Middle Ages contains Dr E. O. von Lippmann's essay on the history of alchemy; Dr and Mrs Singer's account of Salerno and Dr F. T. Withington's translation of Roger Bacon *De Erroribus Medicorum*. Among the articles dealing with the Renaissance times there is a well illustrated account of "The 'Epitome' of Vesalius on Vellum in the British Museum" by Mr W. G. Spencer. A specially interesting article is that by Dr Fielding H. Garrison on The newer epidemiology. Altogether the editors must be heartily congratulated on the success of the volume.

CONTROL OF VENEREAL DISEASE

AT an Abolitionist Congress in Graz, Austria, in September Dr W. F. Vel-huyzen chief medical officer of health for Amsterdam read a thoughtful paper entitled 'Can venereal diseases be dealt with in the same way as other infections?' The paper has been translated for publication in *The Shield*, the official organ of the

[1] *Essays on the History of Medicine*. Presented to Karl Sudhoff on the Occasion of his Seventieth Birthday, November 26th 1923. Edited by Charles Singer and Henry E. Sigerist. London: Oxford University Press; Zurich: Seldwyla. 1924. (Royal 8vo, pp. viii + 478. 36 illustrations. 25s. net.)

Association for Moral and Social Hygiene in this country As the question of compulsory notification of these diseases is attracting increasing attention, and was recently debated at a conference at the Wembley Exhibition, the views of the health officer of the largest city in Holland are worth indicating He says that the reporting of cases by doctors in attendance has a double object (*a*) "to keep the authorities informed of the amount of disease in the community and to enable them to judge of the success of the measures taken against it", and (*b*) "to enable them to take whatever action seems useful in regard to infected individuals" As regards (*a*) he is of opinion that statistics obtained by compulsory notification are no more reliable than those from hospitals and polyclinics, and from information supplied by physicians willing to co-operate He declares that in Denmark compulsory notification of syphilis provides information which is considered so unreliable that alongside this legal system another system has been established, based on the voluntary co-operation of the medical profession All this, however, relates to compulsory notification by numbers, not by names, and he considers this quite useless Concerning notification by name, he takes the well known ground that it is a violation of professional secrecy, that absence of secrecy "would bring mischiefs which no possible advantages could compensate," and that many sufferers under risk of exposure would prefer to do without treatment Notification limited to persons who, after consulting a doctor, fail to carry out his treatment or leave it off too soon, is next considered by Dr Velthuyzen He sets forth what he regards as the argument of those who support this limited notification, including rigorous hospital isolation of cases not able to be dealt with suitably otherwise owing to social factors, and the isolation of infected prostitutes Even here, however, Dr Velthuyzen has certain objections into which want of space forbids our following him The next question discussed is the medical examination of suspected persons, just as school children or teachers suspected of harbouring the diphtheria bacillus are examined But here also Dr Velthuyzen is in opposition, and he summarizes his own experience thus "At Amsterdam, thanks to the devotion of doctors, nurses and the social worker attached to the polyclinic, we have obtained this remarkable result, that 95 per cent of the syphilitic men and 85 per cent of the women have remained continuously under treatment at the clinic and polyclinic during the two years that this system of collaboration has been established These figures are certainly not surpassed by those obtained in countries where compulsory treatment is in force"

SEWAGE TREATMENT IN THE UNITED STATES

ABOUT the middle of the last century it was considered that broad irrigation was almost the last word in the treatment of the sewage of large communities Large sewage farms were constructed, and the sanitary authorities of the day had visions of large profits accruing from them, with a welcome reduction in the local rates Very soon these broad acres became waterlogged, and a double system of sewers was advocated, the aphorism, "the rain to the river, the sewage to the soil," slipping glibly from the tongue of the sanitary engineer The local authorities were soon disillusioned, and the sewage farm was found to be a very costly enterprise It was displaced by a variety of methods of treatment, each having for its object the clarification of the sewage and the production of an effluent sufficiently pure to be discharged into a water course This appears to have been the stage at which the scientific treatment of sewage was entered upon in the United States of America, and a valuable report has recently been issued by the United States Public Health Service on fifteen representative sewage treatment plants in that country Twelve of these plants are modifications of what are known as septic tanks, and three are the more modern method of activated sludge treatment The report is by three officers of the Public Health Service—Mr H H Wagenhals, associate sanitary engineer, Mr E J Theriault assistant chemist, and Mr H B Hommon, sanitary engineer The engineers first spent about four days in inspecting and estimating the efficiency and economy of each plant, and obtaining information concerning the population served, etc The chemist devoted about sixteen days to laboratory studies on the spot, a large number of samples being taken and a series of about twelve analyses made, importance is attached to the fact that the same methods of analysis were adopted at all the plants A most valuable feature of the report is the detailed account given of the sampling methods used as well as of the analytical processes adopted The authors of the report do not appear to have considered themselves called upon to offer any very definite opinion on the efficiency or otherwise of any of the plants investigated, but the reader will have no difficulty in forming his own judgement from the elaborate tables of the analytical results obtained The only exception to the non-committal attitude mentioned is the guarded statement that the activated sludge process is the most recent promising development in the treatment of sewage, a very informing description is given of three such installations, each of which is yielding satisfactory results The value of this report as a contribution to the subject to which it relates can hardly be overestimated, for the investigations which it records have been carried out on such comprehensive lines that the fallacies inherent in the investigations of observers acting independently of one another have been reduced to a minimum

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THE New South Wales Government has recently voted a sum of £2,500 a year towards the staffing and equipment of the department of obstetrics in the University of Sydney This department has hitherto been under a lecturer and three clinical tutors, but the University Senate has now established a professorship of obstetrics to which a salary of £1,100 a year is attached, and applications for the chair are being invited in this country and in Australia Further particulars may be obtained from the Agent-General for New South Wales, Australia House, Strand, London, who, on behalf of the University, will receive applications until Saturday, January 24th, 1925 It is understood that, as is usual in the case of all professorships of the University of Sydney, the Senate will have the assistance of a committee of advice sitting in this country

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THE announcement we were able to make last week that the Earl of Balfour, K G , O M , F R S , has accepted the position of Chairman of the Medical Research Council will have been received with great satisfaction by the medical profession Lord Balfour is not only a man of the highest distinction in public life, but also one who has attained eminence in the department of science, to which he has given special attention The Council had its origin in the Research Committee set up under the Insurance Act of 1911, which provided that Parliament should vote one penny in respect of each insured person, and that the whole or part of this sum should be applied for purposes of research The first chairman of the Medical Research Committee was Lord Moulton of Bank, who held the office from 1914 to 1916, he was succeeded by Viscount Astor, who, again, was succeeded by Viscount Goschen In 1920 the Committee became the Medical Research Council directly

responsible to the Privy Council. Lord Cochrane was succeeded in March by the Right Hon. Edward Wood, who retired on his appointment to be Minister of Agriculture in the present Government. It is to the vacancy thus created that Lord Balfour has been appointed.

Medical Notes in Parliament

[FROM OUR PARLIAMENTARY CORRESPONDENT]

THE House of Commons stood adjourned till February 10th. The following, which it carried on a motion for adjournment, for Christmas did not include any bills on medical or health subject.

The Safeguarding of Food.—Answering Mr. Percy Harris (Lib. Edmonton) on December 15th Mr. Neville Chamberlain, Minister of Health, said he was aware that in the county of Dublin during the year 1919 10 children were killed and over 60 other persons injured by toxic antitoxin administered in connexion with the Schick test for diphtheria, and that in Vienna 72 infants died after an injection of toxin-antitoxin. In these cases the fatal doses were due to careless technique or to a particular batch of the remedy. The question of care had been emphasized in the report of the chief medical officer of the Ministry of Health for 1923. Mr. Broad urged the Minister to withdraw the memorandum (No. 70/Med.) issued by the Ministry in 1922. But Mr. Chamberlain saw no necessity to do so. The memorandum was concerned with Mr. Broad's argument to children in Poor Law institutions, but had general reference to residential schools and institutions.

Puerperal Mortality.—On December 17th Sir Kingsley Wood replying to Dr. Fremantle said that in 1923 deaths certified to pregnancy and childbirth, numbering 2,202, or 3·81 per 1,000 births, the average annual ratio from 1911 to 1920 was 5·49 per 1,000 births; after correction for comparability the ratio for 1923 was 3·6, a decrease of 3 per cent. compared with a decrease of 5 per cent. in the death rate of females between 15 and 55 years from all causes. A circular on maternal mortality had been issued by the Ministry of Health on June 30th, and local authorities were urged to take action with a view to lessening the risks involved in childbirth. The Minister proposed to await the result of the circular before considering further action.

In reply to other questions Sir Kingsley Wood said that eight local authorities had received powers to supervise all maternity homes in their areas. The Minister of Health hoped to introduce legislation on this subject.

Hot Years, Winds and Early Illness.—Dr. D. Shiels (Lab. Edinburgh East) during the debate on the Address referred in a maiden speech to the controversy about the prevalence of tuberculosis in districts exposed to the rain-bearing winds, and after praising the system of building houses with hollow outer walls concurred in the declaration previously made by Dr. Fremantle that tuberculosis could be stamped out in a generation.

Notes in Brief

The Minister of Health is advised that further knowledge is required before any definite opinion could be expressed on the alleged discovery of the causal organism of scarlet fever or the consequent test of susceptibility to the disease and of the specific character of the toxin and antitoxin. These matters were under investigation by the medical staff of the Ministry.

No promise can be given of the introduction of a Smoke Abatement Bill before 1926.

The regulations to be issued for carrying out the principal recommendations of the committee on the use of preservative in food will not, according to present plans, make it an offence to use arsenic in the preparation of cocoa nor soapstone in baking powder.

The average age of death of Sheffield grinders varied between 35·9 in 1918 and 52·9 in 1920. The total deaths between 1914 and 1923 were 1,135, of which 524 were due to pulmonary tuberculosis or other fibroid disease.

Since January 1924 eighteen deputy commissioners of medical service under the Ministry of Pensions have been notified that their employment will not be continued after April 30th, 1925. Fifteen of them served in the forces during the war.

No proposal for the abolition of the Ministry of Pensions is under the consideration of the Prime Minister.

The Minister for War, Sir L. Worthington-Evans, informed Dr. Fremantle on December 16th that only five candidates were accepted for the Royal Army Medical Corps in the July examination. He was personally endeavouring to remedy the present not satisfactory position with regard to the filling of commissions in the R.A.M.C.

The Minister of Health is considering the steps necessary to give effect to the principal recommendations of the Departmental Committee which recently reported on the adulteration of food and the labelling of imported food. The Minister proposes to regulate in particular the use of dyes in food and to do this chiefly by regulations, a bill not being thought necessary. Some time must pass before the regulations can be issued.

Sir Kingsley Wood, Parliamentary Secretary to the Ministry of Health, stated on December 17th that the Minister of Health did not propose to consider further extensions of the village settlements for tuberculous persons and their families until more experience was available on this particular method.

ADDISON'S ANAEMIA

THE ROBERT CAMPBELL MEMORIAL ORATION

THE Robert Campbell Memorial Oration was delivered in the Medical Institute, Belfast, on November 20th, by Dr. THOMAS HOUSTON, O.B.E., director of the clinical laboratories of the Royal Victoria Hospital. Dr. Houston prefaced his oration with an appreciative reference to the personal characteristics of Robert Campbell and to his work as a leader among the group of surgeons who revolutionized surgery in the Belfast School.

Taking as the theme of his oration that remarkable form of anaemia which was first described by Addison in 1855, Dr. Houston gave consideration to the question of the most appropriate name or Addison himself, for the disease in place of the term "pernicious anaemia" which is now commonly employed and which was first used by Biermer in 1872. Although the American clinician Walter Channing in 1842 was the first to describe the disease in connexion with pathological conditions, neither he nor the puerperal state theories could by any doubt that no impartial critic on comparing Addison's original description with the one of Biermer and Channing would hesitate for a moment in giving the honour to the English physician whose account of the disease would pass down to all future students of medicine as a masterpiece of clinical description.

The Legal Factor

The first landmark in the study of the disease was undoubtedly Addison's clinical description, and now after the lapse of seventy years every word of that masterpiece of clinical observation still held good. In considering the etiology of the disease Addison laid stress on what he termed its idiopathic or, as we should express it, cryptogenic character, using that term "to distinguish the disease from cases in which there existed more or less evidence of some of the usual causes or concomitants of the anaemic state." The term was in the main still applicable at the present day. Although most writers admitted that a certain number of cases were met with as the result of such conditions as severe and prolonged haemorrhage, pregnancy, internal parasites and cancer, Dr. Houston explained the opinion that such cases became fewer as methods of clinical examination became more exact. There were, however, he admitted, two exceptions to the general tendency. In a number of cases of infection with the *Bothriocephalus latus* a severe anaemia might develop, having all the characteristics of Addison's anaemia, and in certain cases of cancer with secondary deposit in the bone marrow a similar blood picture had been observed in a case of this kind having been recorded by Dr. Houston himself in the BRITISH MEDICAL JOURNAL of November 14th, 1903. Besides these two conditions, the recognition of which constituted an advance on Addison's original conception, the influence of heredity as an important factor in the etiology of the disease had recently received considerable attention. A number of cases had come under Dr. Houston's notice in which the element of heredity was unmistakably present. In 1902 he had under examination a female patient exhibiting the characteristic symptoms a few years later he examined the blood of her sister and brother; all three patients died from anaemia. In a second case the patient's sister showed the characteristic blood changes, and there was a history of her father and uncle having died with the same disease. In a third case the patient's father, brother, and uncle died from the disease. It had recently been suggested by Hurst that the hereditary factor in such cases was dependent on achlorhydria, a condition which Hurst regarded as being constantly present, as always preceding the anaemia, and as being in most cases congenital. With the exception of one doubtful case, all Dr. Houston's observations tended to confirm Hurst's contention. Another feature which could now be added towards the completion of Addison's picture was the relapsing character of the anaemia—a feature which, in Dr. Houston's opinion was so marked that it could not fail to impress the clinical observer. In one case under Dr. Houston's care the patient, who was comatose from the anaemia, had had two previous

attacks, with an interval of five years between each She recovered from the third attack and remained well for five years, when she died in the fourth relapse This patient, therefore, lived for fifteen years after the first attack, and she stated that during the remissions she was perfectly well and able to attend to her household duties without fatigue Other analogous cases were cited by Dr Houston as having come under his notice, in which patients suffering from grave conditions, such as coma and cardiac failure, recovered and became to all appearance perfectly well, dying, perhaps many years later, from a recurrence or series of recurrences of the disease A point of considerable interest in connexion with some of these cases was referred to by Dr Houston as of prognostic significance—namely, the occurrence of oedema His conclusions, arrived at from a series of observations, were that a gain of weight in a case of Addison's anaemia, under treatment and showing no improvement in the haemoglobin, was to be regarded as an unfavourable sign, indicating dilution of the blood and consequent escape of serum into the tissues On the other hand, the symptom might mark a critical phase in the disease, and indicate the first step towards concentration of the blood Immediately after this sudden increase in oedema either a marked improvement was to be expected or a fatal issue

Another modern observation of importance was that of the frequent occurrence of glossitis William Hunter, who drew attention to the point, had shown that the disease was generally accompanied with glossitis at one period or another of its course, and had indicated his opinion of its importance by suggesting the term "glossitic anaemia" for the disease He believed that it was perhaps the most characteristic and constant of its symptoms In Dr Houston's experience the majority of cases exhibited the symptom at some period in the course of the disease, and in some cases irritability of the tongue was constantly present He had, however, seen a number of otherwise typical cases in which it had never occurred With regard to other symptoms, those originating in the gastro-intestinal tract, such as vomiting, diarrhoea, and abdominal pain, were generally very prominent, and the fact that they were of common occurrence had strengthened the belief that the disease was due to an intestinal toxaemia Byrom Bramwell had suggested, on this account, that the disease might appropriately be termed "gastro-intestinal-hepatic anaemia" The nervous symptoms associated with Addison's anaemia were of particular interest, but although the connexion between the disease and combined sclerosis had been much discussed, no real solution of the problem of their relationship had been reached It was claimed that all cases of true combined sclerosis had a total absence of free hydrochloric acid in the stomach, and the disease could exist for years without any anaemia, but as a rule an anaemia of the Addisonian type developed at some stage of its course A remarkable point in this connexion was that the paresis might become worse as the anaemia improved, and both the anaemia and the nervous symptoms were liable to remissions which appeared to be entirely independent of each other

The Blood Changes

If Addison's description marked the starting-point in the history of the disease, the second important chapter was undoubtedly the study of the concomitant blood changes, which received its impulse in the work of Ehrlich Ehrlich regarded the essential lesion of Addison's anaemia to be a megaloblastic degeneration of the bone marrow, due to some unknown toxin which tended to promote the embryonic type of blood formation One of the most striking features of the disease was the marked anisocytosis which is usually present, but this, as Dr Houston pointed out, was by no means characteristic, if however it were accompanied by a high colour index or an increased amount of haemoglobin per red cell, the condition was almost diagnostic of the disease It might be stated definitely that an increase of haemoglobin per red cell was characteristic of the disease Ehrlich regarded the presence of megaloblasts as being practically pathognomonic, but this view had been called in question, since the presence of these cells had been demonstrated in other forms of anaemia, particularly those occurring in cases suffering from repeated small haemorrhages Piney has recently endeavoured to revive Ehrlich's theory, but as Dr Houston pointed out, a difficulty arises in coming to a decision on the question owing to the frequent impossibility of deciding whether a given cell should be classified as a macro-normoblast or as a true megaloblast It could, however, be stated that the presence of one or two typical megaloblasts often turned the balance of opinion in favour of Addison's anaemia The changes in the number and proportions of the leucocytes had not, in Dr Houston's opinion, received the attention they deserved There was nearly always marked leucopenia, proportional in a rough way to the anaemia When a patient improved it was the rule to find that the leucocytes increased in number, and when the polymorphonuclears were greatly diminished the patient was usually in a grave condition It was quite usual in severe cases to find the total leucocyte count 1,000 per c.mm or under Examination of the blood serum had given important results Van den Bergh's test for bilirubin in the serum always gave an increased positive indirect result in Addison's anaemia, but not in cancerous and other forms of secondary anaemia This was, in Dr Houston's opinion, a very definite proof that haemolysis was a constant feature of the disease Clarke and Evans had shown that the serum in Addison's anaemia had a decreased protective power against haemolysis by saponin They found that this decreased protective power was more pronounced in Addison's anaemia than in any other condition investigated, and that it varied much during the course of the disease, but was an important factor in determining the rate of blood destruction These results have been confirmed by Dr Houston in severe types of the disease, but little diminution of the protective power was found to occur in milder cases

Pathogenesis

The third chapter in the study of Addison's anaemia concerned the origin, nature, and pathogenesis of the disease This chapter might be said to have been opened by Hunter He came to the conclusion that Addison's anaemia was a specific, haemolytic disease, that the main seat of the haemolysis was in the portal circulation, and that the haemolysis was probably due to a poison generated in the alimentary canal As evidence of the occurrence of haemolysis and as supporting the theory, Dr Houston enumerated the following (1) The severe and rapid anaemia without external loss of blood, (2) its occurrence in association with an apparently increased activity of the bone marrow, (3) and with an increased excretion of urobilin, (4) and an increased bilirubin content of the blood, (5) a marked deposit of haemosiderin in certain organs, (6) an increased phagocytosis of red cells, and (7) the fact that a blood transfusion did not always raise, but might even be followed by a fall in, the blood count The evidence was, on the whole, convincing, but did not, in Dr Houston's opinion, amount to absolute certainty

With regard to the second point in Hunter's theory—namely, that the haemolysis took place in the portal circulation, probably by a toxin absorbed from the alimentary tract—the argument for the first conclusion was the enormous amount and peculiar distribution of the haemosiderin deposits found in the liver But it had been shown by McMaster, Rous, Peyton, and Larimore that repeated introductions of small quantities of haemoglobin into the general circulation led to an identical siderosis The foundation of Hunter's doctrine was, therefore, somewhat insecure In Dr Houston's opinion, although there were other reasons for the belief in a toxin originating in the alimentary tract, the only good argument that they possessed of the alimentary origin of the supposed toxin was the similarity of the symptom-complex occurring in *Bothriocephalus* anaemia

Recently Hurst had advocated the theory that achlorhydria was the essential etiological factor in the disease, but it could not be said that the theory rested on anything approaching experimental proof On the other hand, Louisa Ashby had come to the conclusion, on experimental grounds, that there was little evidence of the presence of any toxin circulating in the blood in pernicious anaemia Her results seemed to show that the blood destruction which took

place in this direction was due to a speeding up of the natural methods of blood destruction in the body, rather than to any toxin. Another theory of the pathogenesis of Addison's anæmia which was of great interest was that of Dr Hastings Gilford. He had suggested that the disease was no more than a premature senescence of the blood forming organs. One of the main objections urged against the theory was that Addison's anæmia was rare in old age. Dr Houston, in agreement with Dr Gilford, regarded this as probably incorrect. He had seen a considerable number of cases of typical Addison's anæmia in old people, and believed that many would be found if they were systematically looked for.

Treatment

Dr Houston concluded his oration with a brief reference to treatment. He considered that iron should be tried first, commencing with small doses and not increasing them to any extent, except in cases that did not respond. Arsenic might also be given intravenously as novarsenobenzol (N A B), or hypodermically as sodium cacodylate, but the agent should not be pressed, and if a prolonged trial proved ineffective the administration of the drug should be discontinued. Hydrochloric acid in large doses should always be tried; it sometimes had a good effect on the indigestion, and might determine a remission of the disease. If these measures failed to produce improvement, blood transfusion would often be found to be of extreme value, in some cases producing a definite remission at once. In the case of repeated transfusions it was important that the donor's blood should be carefully tested against that of the recipient, it was insufficient merely to type the blood. In the event of inability to find a suitable vein, extensive cutting operations should be avoided, and intramuscular or subcutaneous injections resorted to. Dr Houston having found that these methods gave exceedingly good results. On general principles it was desirable to remove all septic foci, although Dr Houston had observed little effect on the course of the anæmia in many cases contra-indicating in this respect very markedly with cases of secondary anæmia. Finally, with regard to splenectomy, he had had no experience, but from a study of the literature he concluded that it was to be recommended in certain selected cases.

ROYAL COMMISSION ON LUNACY AND MENTAL DISORDER

(*Continued from page 1127*)

LUNACY ADMINISTRATION UNDER THE POOR LAW

At the resumed sitting of the Royal Commission on Lunacy and Mental Disorder on December 16th and 17th evidence was given on behalf of the Association of Poor Law Unions by the Rev. P. S. G. Propert, president of that body, Mr P. A. Leach, vice-president, Mr J. H. Ford, clerk to the guardians, Leeds, and Mr J. W. Flint, chairman of the Sheffield guardians.

Mr PROPERT stated that his experience as a guardian for thirty years showed that on the whole the lunacy laws in their relation to the Poor Law had worked smoothly and satisfactorily. He had been impressed by the absence of serious complaint.

The Chairman, Mr H. P. MACMILLAN, said that the Commission had been struck by the extent to which Poor Law administration had been brought into lunacy administration. Many felt that this was rather an unfortunate association. By utilization of the Poor Law machinery a person who became mentally sick and was received into a Poor Law institution became for the time being a pauper, whereas this did not happen if a person had some other complaint and went into a general hospital.

Mr PROPERT said that the Poor Law hospitals were becoming very popular. The Poor Law stigma was passing away. He agreed that it was desirable to assimilate the treatment of mental illness as much as possible to the treatment of other forms of illness, and in his own union (Fulham) by means of separate observation wards which were really small hospitals the Poor Law atmosphere had disappeared in this connexion although of course the administration was still Poor Law. Treatment without certification would be a great advantage. Whatever arrangements were arrived at with regard to certificates preceding detention they should be the same for the rate-aided as for the private patient. As to whether two certificates were necessary a good deal depended upon the qualifications of the doctor who gave the first certificate.

Mr LEACH urged the desirability that the number of persons dealt with under the Lunacy Acts when the proceedings taken proved abortive for one reason or another should be recorded in the reports of the Board of Control. He urged also that an alleged lunatic should have all the protection accorded under Section 13 of the Act. While there might not be such a high standard of medical skill for mental cases available in Poor Law institutions the standard of nursing was as high as that in mental hospitals or possibly higher.

Much of the remainder of the evidence of these witnesses was devoted to technical matters of Poor Law administration.

Licensed Houses

The next witness was Dr F. H. EDWARDS, medical superintendent, Camberwell House, who gave the Commission a history and description of the licensed house. He said that institutions of this kind came into legal existence in 1774, when they were spoken of as private asylums. The Act of 1774 laid it down that houses that were to receive the insane must be licensed by law and that people must not be received except under medical certificate. Previous to 1811, however, no certificates were required in the case of pauper patients who were received and detained in licensed houses without any formality whatever, and the only protection they got was due to the fear on the part of those detaining them that action might subsequently be taken for illegal detention.

The Chairman pointed out that both the number of licensed houses and the number of patients under treatment in them had progressively diminished. Dr Edwards said that there was a clear reason for that. The function of the licensed house formerly was largely that of receiving pauper patients under contract. During recent years, however, many large boroughs had provided themselves with mental hospitals, so that the licensed house in this respect had become less necessary.

Figures were put in showing that in 1847 there were 141 licensed houses, with 6,629 inmates of whom 3,996 were paupers; in 1914 there were only 68 licensed houses with 3,493 inmates of whom 638 were paupers; in 1923 there were 56 licensed houses with 2,068 inmates none of whom were paupers. The witness said that the reduction in number of licensed houses meant more particularly the elimination of the very small houses. The largest licensed house in the kingdom was one for 672 patients, and some of the small ones had as few as four. The need for the licensed house still remained, and indeed the number of these places was not sufficient or rather they were not distributed so as to cover the needs of the country properly. There did undoubtedly exist in a large section of the population a demand for the treatment of the insane in other than a public institution. Every country in Europe and America had its licensed houses under some name or other. Another cause which had contributed to their decline in number was that many of them were started by medical men particularly interested in the care and treatment of the insane, and on their death the licensed house which was their private property fell to their heirs who perhaps had not the same interest and so the house as an institution tended to disappear. The licensed house was carried on not for charity but for gain. But it met the needs of a section of the community who did not want any charitable aid, and at the same time did not want to place themselves or their relatives in a public institution. He explained that the licensed house fell into two categories—namely, metropolitan licensed houses licensed by the Commissioners of the Board of Control, and provincial licensed houses licensed by the local justices. He proceeded to describe the safeguards of the patient in the licensed house. To suppose illegal detention would be to connote a conspiracy between the doctors, the magistrates, and the visiting Commissioners. His own licensed house was visited eight times a year by the Commissioners.

Sir CECIL CHUBB, LL.B., gave evidence as the proprietor of the Old Manor House, Salisbury, the largest and one of the oldest licensed houses in the country. The house comprised nineteen separate houses which rendered classification very effective. The patients at present in residence numbered 501. The medical staff consisted of the superintendent and four officers. Patients were given every possible opportunity of speaking to the visiting authority in fact on the occasion of their last visit the Commissioners interviewed ten or twelve patients privately. He considered that the power of granting leave or absence was a useful provision at the stage of convalescence. On the question of policy as between private and pauper patients he thought the rate-aided patient should also have the advantage of two certificates.

The Chairman said that the Commission had been impressed by the divergent methods by which persons reached institutions for the insane. A possible course to recommend might be the institution of a single medical certificate in all cases with the reservation that where any doubt was entertained by the single doctor or by the judicial authority either one or the other should be entitled to call for a second or any number of opinions. This of course had the drawback that the decision as to the supporting evidence would in many cases be left to the discretion of the single doctor.

Sir Cecil Chubb said that the present preliminaries to a patient's reception had occasionally resulted in persons being brought to the institution who should not be there. His doctor had refused to receive such cases. There might have been a mistake in diagnosis such as the confusion of delirium tremens with insanity. He thought there should be a provisional order of short duration, say of three days, which could be extended. The existing code adequately safeguarded the patient in the matter of discharge. The total percentage of recoveries at the Old Manor House compared with direct admissions in 1923 was 31·64. The average rate of discharge from 1914 to 1923 had been 37 per cent. He added that since the Harnett case there had been many more applications for admission as voluntary boarders owing to the refusal of doctors to certify. Only the other morning a doctor had told him that he would not certify a case for £20,000!

Dr FRANK FAWCETT, medical visitor to licensed houses for East Sussex, described the procedure at his visitations, which took place

four times a year. Special attention was paid to recent admissions and every opportunity was given to patients for private interviews. The witness stated, further, that the patients were encouraged to say anything which was on their minds, and were given to understand that the visitors represented a means of communication with the outside world.

SIR JAMES BARR of Liverpool also gave evidence as a medical visitor, an office which he had held for forty years. In his view the provisions of the Act were efficacious as a safeguard against the undue detention of patients. Complaints were more frequent and emphatic from undoubted cases of insanity than from cases on the way to recovery. He agreed that there might occasionally be differing opinions as to when a recovering patient could be discharged. In the institution he visited there were only about six encouraged, because, if people were to understand that the benefits of an institution could be obtained without certification, cases would be received at an earlier and more curable stage. He did not see any special advantage in two medical certificates in all cases.

In reply to Sir Humphry Rolleston, who asked whether the witness had any suggestion to offer with regard to the protection given to medical men certifying, Sir James Barr said that he would like to have the legal protection increased although he had no specific recommendations as to how this should be done. At present medical men felt so strongly on this matter that, unless a man or woman was palpably and dangerously insane, they could not be got to certify, because they feared that the, might be liable at any time to have to withstand an action at law. On another question, he would prefer the mechanism for dealing with incipient cases to be attached to a mental hospital, rather than to a general hospital, the former would be more specialized, and the general atmosphere and surroundings would be quieter and more congenial to the patient.

The Commission adjourned until January 13th, 1925.

England and Wales.

UNIVERSITY OF LEEDS CELEBRATION WEEK

THE celebration week in connexion with the jubilee of the Yorkshire College of Science and the coming of age of the University of Leeds opened on December 15th with a ceremonial gathering at the University in the morning, over which the Duke of Devonshire, Chancellor of the University, presided. Addresses were given by the Vice-Chancellor, Dr J B Baillie, and Sir Dugald Clerk, who was on the staff at the opening of the Yorkshire College fifty years ago. Sir Berkeley Moynihan, professor of surgery in the University, speaking at a reception at the medical school in the evening, gave a brilliant account of the history of medicine in Leeds from William Hey, one of the founders of the Leeds General Infirmary, in 1767, to the present day. At a dinner held in the Town Hall, in the evening, the Earl of Balfour, Chancellor of the University of Cambridge, proposing the toast of "The University of Leeds," described the ideals of the modern university. He was convinced that of all the instruments now in existence for the material advancement of mankind, science, with its many applications, was incomparably the greatest. The teaching of science, however, was not the whole nor perhaps the vital function of a modern university. Specialization was necessary, but it must be accompanied by a wide and generous general culture, acquired not only in lecture theatres, but also in the social centres of university life. A reception of delegates from universities and learned societies was held on December 16th, when honorary degrees were presented to Lord Balfour, Mr E G Arnold, Pro-Chancellor of Leeds University, Sir Berkeley Moynihan, Sir Michael Sadler, formerly Vice-Chancellor of Leeds University, and now Master of University College, Oxford, Professor J B Cohen, Dr J D Eddison, formerly professor of medicine in Leeds University, and others. In the evening two portraits of Sir Michael Sadler were presented to him. Mr Arnold, who presented the portrait, which is to be hung in the University, said that a memorial of the great work performed by Sir Michael during his vice-chancellorship from 1911 to 1923 had been organized, and as a result this portrait would be placed in the great hall, a replica had been painted for Sir Michael himself, and a fund of over £600 had been provided for the relief and help of necessitous students. Sir Berkeley Moynihan, speaking on behalf of the medical department, said that their tribute to Sir Michael Sadler might well be, "That he has enriched greatly the traditions which, planted nearly a century ago in the soil of our school of medicine, have taken deep root in the loyal service of our whole University, and in the days to come will probably flourish, a great heritage to all our people." On December 17th Professor Kendall gave an address at a conversazione held at the University on the contributions of Leeds University to scientific knowledge. The Lord Mayor and the City Council paid an official visit to the University on December 18th, and a comic opera, written by Professor Gustang, was performed in the evening. Representatives of county and county borough councils paid an official visit on December 19th, and in the evening a dinner was held by the Old Students' Association. On December 20th the various departments of the University were thrown open to the public for inspection.

SHEFFIELD ANNUAL MEDICAL DINNER

The annual Sheffield medical dinner was held on December 11th, under the joint auspices of the Sheffield Division of the British Medical Association, the Medical Faculty of the University, the Sheffield Medico-Chirurgical Society, and the Local Medical and Panel Committees. Mr Garrick Wilson, chairman of the Sheffield Division, was in the chair, and Dr H B Brackenbury, the Chairman of the Representative Body of the British Medical Association, was the guest of honour. Professor A J Hall proposed the toast of "The Corporation and City of Sheffield," and the Lord Mayor replied. The Master Cutler, proposing the toast of "The medical profession," said that the city ought to be very proud of its doctors, since among the seventeen largest towns in this country only four had a lower death rate than Sheffield. Dr Brackenbury, replying to this toast, drew attention to the relations of medicine to industry, which year by year were becoming more clearly important. He referred to the schemes for industrial welfare, which depended so largely upon medical co-operation, to the subjects of industrial disease and hygiene, and to the recent psychological inquiries, which were of such value in promoting the efficiency of the workers. The development of the whole personality to its highest capacity was the aim of the medical profession, which tended the mind as well as the body. The health of the community was, however, the responsibility, not of the medical profession, but of the community itself, the individuals of which had in their own hands the ruling of their own health. The real function of the medical profession was to teach, to advise, and to help.

PROFESSOR KENWOOD'S VALEDICTORY

About sixty of his former students gathered at dinner on December 19th to bid farewell to Professor H R Kenwood, C.M.G., who is resigning the Chair of Hygiene and Public Health in the University of London. Major-General Sir Wilfred Beveridge presided, and spoke of the esteem which Professor Kenwood had enjoyed during his thirty five years in a teaching capacity at University College. He had proved to be not only a brilliant instructor and an acute observer, but also a real friend to those who studied under him, and his interest in his pupils did not cease after they had passed from his tuition. He had achieved fame, not only in the laboratory and lecture theatre, but in the field of administration and for his invaluable services in military hygiene during the war he was mentioned in dispatches. Dr Louis Parkes, as an old collaborator with Professor Kenwood, joined in the tribute. It was in 1887 that he himself went to University College to assist Professor Corfield, and two years later Henry Kenwood came as one of the students. The speaker was attracted at once by his evident ability and not less by his very engaging manners, which remained one of his characteristics to this day. Kenwood soon found a place on the teaching staff, and both as assistant and as professor he had proved himself a national asset. He had been the means of instructing in Public Health 1,200 men who had taken the diploma and were now scattered over the United Kingdom, the Dominions, India, and foreign countries. He had given them a good foundation of knowledge in all the various problems connected with this large and ever enlarging subject, and now, when medical officers who had taken the D.P.H. in London met one another abroad, the fact that they had studied under this human and accessible teacher furnished an immediate bond of fellowship. Professor

Kenwood expressed his thanks for the overwhelming kindness shown him He had always felt that at University College the teaching was the great end to be pursued, research was dependent upon teaching for there could be no good research without good teaching The record of research at University College was one of which no one need be ashamed and quite early in his professorship methods of research were adopted which had proved of considerable value in public health work At the same time, a great deal of research had the result of leading a man up in his preoccupations and causing him to neglect his teaching Research was far more absorbing than lecturing, and it was really a self sacrificing individual with a keen sense of duty who concentrated on the teaching side in a university chair University College during the last twenty years had been the largest training centre for students for the D P H in Great Britain There had been times when students had to be turned away owing to lack of accommodation He had been singularly fortunate alike in the readiness of his pupils to learn and the loyalty of his teaching colleagues He deplored that on the chemical side the provision at University College was not what it should be, but here again it was an object lesson of what good work could be done in poor circumstances He added that University College had decided to give him an emeritus professorship, and that the department would remain in the very capable hands of Dr Delafield the present lecturer who had been associated with him for the last five years Dr Delafield would keep the flag flying until the time came *for the department to close down for it was extremely* probable that, when the London School of Hygiene opened the post-graduate teaching at University College would cease, and the London School would become the one centre for public health teaching in the metropolis During the evening Professor Kenwood was presented with a silver rose bowl, and Mrs Kenwood with a boudoir clock

Blackburn and District Medical Society

The annual dinner of the Blackburn and District Medical Society was held on December 11th The President Dr J E Bowes, responding to the toast of his health referred to the great desire in the medical profession to-day to take advantage of every possible means to eradicate and prevent disease Already typhoid fever had been nearly banished and good progress had been made in other directions There was still much to do in the work of abolishing tuberculosis and this ideal would come nearer of realization when local authorities used all the powers they possessed He remarked that the regional incidence of pneumonia was very striking the number of deaths from it in the north western division of England was five times that of the southern counties and twice that of London Active research work with regard to cancer was in progress and he believed that there would have to be an alteration of dietary *in the direction of simplification The amount* spent so far upon the investigation of cancer in this country was not more than £200 000, though £8 000 000 was spent on the construction of one battleship In conclusion Dr Bowes appealed for support for the Royal Medical Benevolent Fund The Mayor of Blackburn responding to the toast of "The town and trade of Blackburn" said there was no section of the community who more fully exhibited the true civic spirit than medical practitioners He referred to the fine work of the Royal Infirmary and the great benefits that Blackburn people had derived from it

Bristol Medical School

At the annual dinner of past and present students of the Bristol Medical School, Mr W Ernest Miles I R C S was the guest of the evening, and proposed the toast of "The Medical School" He paid tribute to the past distinguished teachers in both surgery and medicine recalling the names of Professors Greig Smith and James Swayne and Dr Michell Clarke He alluded to the great traditions of which the school was justly proud and added that with its *present distinguished teachers the school could look* forward with every confidence to continued progress in the future Surgeon Commander Blatchford and Mr J J Hughes responded to the toast Musical items were supplied by the jazz band of the Faculty of Medicine, and the guests were subsequently entertained at the University by the wives of the staff of the Faculty of Medicine

Scotland.

Edinburgh Medical Graduation and Reception

At a graduation ceremony held in the M'Ewan Hall of the University of Edinburgh on December 19th, nine-one graduands received the degrees of M B, Ch B The Edinburgh and Leith Division of the British Medical Association, according to the custom which has prevailed for some years, held a reception for those about to qualify in the hall of the University Union on Tuesday, December 16th About sixty of the graduands accepted the invitation and were received by some sixty members of the Association and their wives The entertainment provided consisted in part of addresses varied by musical items After tea the Women *Students' Orchestra, under the direction of Miss McKay* rendered several pieces, Mr Bryan Williams contributed several pianoforte solos, and Dr Allison Lang Dr Keppie Pater on Chairman of the Edinburgh and Leith Division, who presided and received the guests, introduced Mr Alexander Miles, F R C S, senior surgeon to the Royal Infirmary and stated that this was probably the last occasion on which Mr Miles would address them as a teacher, because he was retiring from the service of the Infirmary early next year Mr Miles delivered an address tinged with a happy humour, upon the privileges and responsibilities of medical practice He said that his hearers approaching graduation was similar to a wedding but a wedding from which there was no divorce because once a graduate always a graduate A medical diploma differed from diplomas in other faculties, because it not only conferred an academic distinction, but it carried with it the immediate privilege of earning a livelihood He urged upon them specially the desirability of taking up some hobby distinct from their professional work which would be a relaxation from their labours and would enable these to be carried out with greater zest during working hours The chairman in thanking Mr Miles took the opportunity to urge upon his hearers the advantages to be derived from solidarity of the medical profession which could be largely gained by joining the British Medical Association which included about 70 per cent of the practitioners in Great Britain He also urged upon them the desirability of keeping themselves in touch with periodical medical literature as well as with the results of research *this could be obtained nowhere better than* in the British Medical Journal He also referred to the desirability of every practitioner being a member of some medical defence association for his individual security Mr McCracken one of the graduand proposed a hearty vote of thanks to the chairman and to the Association for the welcome to the ranks of the profession which had been extended to the graduands

Edinburgh Royal Infirmary Radiology Department

Reference was made in our issues of August 23rd and December 6th to the forthcoming radiological department of the Edinburgh Royal Infirmary The plans for this were passed at the Edinburgh Dean of Guild Court last week, and the department is expected to be the largest and most complete ly equipped in this country It is hoped that it will be in working order by October, 1925, and that it will meet the requirements of the Infirmary for many years to come The building is expected to cost £40 000, while the electrical and other equipment will necessitate a further expenditure of £12 000 The building will be situated to the north of the east *clinical theatre and immediately* to the east of the long corridor connecting the surgical and medical houses and will have two floors, with a large basement in which the heavier pieces of generating apparatus will be housed The ground floor will be arranged for radiography, with a large radiographic room for photographing bones and joints a screening room specially designed for following up opaque meals through the stomach

and intestines, another screening room for heart and lung cases, developing rooms and rooms for superficial x-ray treatment and for deep therapy The deep-therapy room will be used chiefly in the treatment of cancer, and it is intended that the apparatus to be installed for this purpose shall have great power and work at a voltage of 250,000 On the ground floor there will be a demonstration room for students, capable of seating 100, and a smaller room, capable of holding 20 to 30 students, also a laboratory for research work, administrative rooms, and waiting and dressing rooms On the upper floor there will be rooms for massage, remedial exercises, and treatment by electrical applications, radium, and artificial sunlight, as well as photographic and developing rooms A very complete system of artificial ventilation by mechanical suction will be installed, and the building will be heated by steam

LEITH WAR MEMORIAL HOSPITAL WING

The managers of Leith Hospital were entertained by the president of the board, Mr John A Lindsay, to luncheon on December 11th The chairman, replying to the toast of the hospital, intimated that the £54,000 which had been subscribed for the addition of a children's wing to the hospital as a war memorial for Leith had been increased by interest to the sum of £63,000 For further alterations on the present building a sum of £5,000 would be required, and of this £2,000 had been already promised The Principal of the University, who was one of the guests, in commenting upon these gifts, said that the fact that hospitals were able to carry on their work on a purely voluntary basis was a tribute to the practical Christianity of the people, and was an example of what might be called the best kind of socialism

APPEAL FOR GLASGOW SICK CHILDREN'S HOSPITAL

The directors of the Royal Hospital for Sick Children in Glasgow have issued an appeal, signed by the Duchess of York, Princess Louise, and other patronesses and patrons, for support, with a view to additions and extensions of the hospital The sum required is £75,000, and in an appeal for this sum the directors set forth the reasons for which they find it necessary to proceed with additions which will complete the original plan, and also with various extensions which are urgently required for the efficient carrying on of the work of the hospital It is pointed out that the whole sum is not required immediately, and that subscribers may make payments of contributions by instalments

Correspondence.

THE NURSING DIFFICULTY IN THE SMALLER HOSPITALS

SIR,—I wish to call attention to a serious difficulty which will shortly have to be faced if the smaller hospitals are not to be deprived of competent nurses The regulations of the General Nursing Council which came into force last July, admirable as no doubt they are for raising the standard, and in consequence the value, of the future nurse, are having certain serious repercussions which have not perhaps yet been fully realized

By practically confining the training of registrable nurses, even in the earlier stages, to the larger hospitals the Council has dealt a blow at the smaller hospitals which must make the satisfactory nursing of them almost impossible No woman who intends to make the profession of nursing the serious work of her life (and no others are likely to make satisfactory nurses) is likely to begin her training at one of the smaller hospitals From the point of view of qualifying for the *Nursing Register* time spent in this way would simply be time wasted The consequence will be that the matrons of these smaller hospitals will find it impossible to obtain the right stamp of probationer, and the nursing of patients in other than the larger hospitals will become increasingly unsatisfactory This is a most unfortunate effect, especially as it is in such hospitals, in which there is no resident house-surgeon, that the of skilled and reliable nurses is most needed

But there are other unfortunate consequences The demand for well trained nurses is increasing, and it will be quite impossible for the larger hospitals alone to meet this demand, especially with the longer and more strenuous course of training now enforced Many of the most satisfactory nurses now employed throughout the country have been trained, and well trained, at these smaller hospitals, and from now onward that large source of supply will cease Indeed, these hospitals, so far from supplying trained nurses, will in the future have to draw upon the larger hospitals if they are to carry on at all, and thus still further deplete the supply of trained nurses, which is already inadequate Surely some way can be found by which the opportunities for training of nurses afforded by the smaller hospitals can be utilized and not wasted

If the General Nursing Council would work out a plan by which the smaller hospitals and certain special hospitals could contribute their share in the work of training nurses and thus form part of a really comprehensive and national scheme, they would go far to overcome the difficulties which I have mentioned This might be done either by grouping the smaller hospitals in convenient areas, or by their affiliation, where possible, with a large teaching hospital, or by a combination of both methods

In any case there is urgent need for the General Nursing Council to come to the aid of the smaller provincial hospitals —I am, etc,

E N NIXON,
Surgeon to the General Hospital, Nuneaton.

December 15th

THE GENERAL PRACTITIONER AND THE MATERNITY SERVICE

SIR,—Judging by your leading article on this subject in the issue of November 15th, you were concerned at the apparent apathy of the general practitioner, and by the fact that he was less articulate than usual Do you not think that he has somewhat changed in this latter direction of late years, and for the better, and that the change is due to his weariness with the more or less constant demands for a higher and still higher standard, verging on the impossible, in every branch of his work, and added to this the frequent complaints and threats which even the most conscientious panel practitioner cannot hope to avoid? From being ultra-sensitive he has developed a protective thickening of skin, and is not so quick to rush into print when reflections are cast on his skill or benevolence

I have reason to believe that the general practitioner, as never before, is anxious to do his duty by his patients in this very matter, that his sense of responsibility is great, and that he gives a deal of thought to this problem In our present state of knowledge it is wrong to put down all or nearly all cases of puerperal infection to insufficient care on the part of the doctor or midwife at the confinement The environment is often to blame The problem will need a somewhat different solution in the case of large populous centres (with their ante-natal and maternity departments under obstetricians who have at their back laboratories where bacteriological and chemical investigations can be made at once) from what it will require in the country districts The matter will be much more easily dealt with in the former case than in the latter, but, as my life has been spent in the country, I shall confine my remarks to it I may, however, interject that the training given to students in obstetrics about thirty years ago was very insufficient, and I believe that it is still, in the main, insufficient It still seems to be the Cinderella of the medical curriculum

In the country the most important thing is to have a complete network of district nurses of a good class and well trained in ante-natal care and midwifery There are still too many gaps in the countryside without a nurse, and in many cases the districts are too large I consider that the services of a doctor are quite unnecessary in the majority of multiparae, but that the nurse must be able to rely on the immediate help of a doctor when she needs one In most ordinary cases patience is the one thing needed, and the nurse has more of this than the doctor, and has also the time, which the doctor has not There are no statistics available, but there can be little doubt that

forceps cases are only a fraction of what they were twenty years ago, when most cases had to be attended by a doctor.

Next in importance is the provision of a maternity ward, however small, in the hospitals of the small towns all over the country. A parturient woman is the most unwelcome patient that can be sent into one of these hospitals at the present time.

Isolated doctors still struggle single-handed on some times with the aid of a colleague fetched from a long distance, with cases of placenta praevia accidental haemorrhage, transverse and breech presentations in the most insanitary surroundings, without even a minute of such common conveniences as a moderately decent lamp or a sufficient supply of clean hot water. Were these same doctors to meet an equally dangerous and urgent case of any other condition calling for surgical intervention, they would send it at once in an ambulance or covered car to hospital. They would gladly do this for the labour case but they know he would not be welcome because no provision is made for such in the average small hospital. I can recall several cases where immediate removal to hospital would almost certainly have saved the mother's life. There is one maternal death for every 240 births and the number of six to eight children (a usual family in the country) means a risk of about 1 in 40 to 1 in 30 in fulfilling her duties, yet there is little or no hospital provision made for her should he develop any of these grave ante-natal risks.

All acute abdominal emergencies are instantly sent to hospital, even when the trouble is in a woman of the child-bearing age and due to gonococcal infection. All these are rightly sent in for immediate surgical treatment under the best conditions, but there appear to be no provisions for dealing similarly with the decent wife of a labourer in the country who may have developed an equally grave condition in her confinement.

From the hospital's side it is mainly or altogether a matter of finance, as in most cases it would mean some extra building. Otherwise the expense would not be great for the matron or one staff nurse could have the certificate of the Central Midwives Board in addition to the usual qualifications.—I am, etc.,

Shaftesbury Dorset Dec. 8th. T. MACCARTHY.

TONSILLECTOMY

SIR,—The aim of the surgeon at the present time is to remove the tonsil of the child as completely and as cleanly as possible with the least trauma to the patient from the anaesthetic and from subsequent sepsis and scarring, and with the minimum loss of blood. Mr. T. B. Layton's opinion is that this can be done by the guillotine only. If that is so then some good reason must be found why our laryngologists have partially or wholly abandoned the guillotine in favour of dissection. One cannot imagine that they have failed to master the manipulations of the guillotine, and therefore have resorted to the more difficult operation of enucleation by dissection.

Further if these results from dissection are such as Mr. Layton describes surely common sense alone would have led them to give it up.

Still they continue to enucleate by dissection. Why is it? Because dissection in skilled hands prevents bleeding without any added risk to the patient whilst the guillotine causes useless loss of blood. The whole idea of dissection is, I understand, it is to clamp and tie the main blood vessel to the tonsil as the operation progresses so that the only haemorrhage is from the capillaries of the capsule as it is scratched through with a fine toothed dissecting forceps. Therefore I cannot understand Mr. Layton's statement that there is more haemorrhage in dissection unless he means in unskilled hands, when anything is possible.

To my mind the whole question turns on whether haemorrhage is to be allowed to continue till it ceases of its own accord or whether it is to be prevented by pressure on the tonsil bed or by ligature of vessels. If the haemorrhage is of no importance then enucleation by the guillotine under ethyl chloride, skilfully administered, is the operation of choice. A small piece of tonsil may occasionally be left, but as a rule it causes no trouble, at least at the time. If on the other hand, complete enucleation is desired with practically no bleeding, then there is but one method, and that is dissection with ligature of the vessels under oxygen and ether anaesthesia.

In skilled hands there need be no septic after-complications and no cutting, and no more risk from the anaesthetic than in any other operation. The application of pressure to stop bleeding after removal by the guillotine is uncertain in its results and however dry the tonsil bed may appear before the patient leaves the table, cases occasionally arise where haemorrhage has recurred—or, to be more correct, has continued—and the only evidence may be pallor followed by vomiting of a large amount of bright red blood. Then comes the question of how to stop it. Children bitterly resent the application of a tonsil clamp and the introduction of sutures through the pillars and bed of the tonsil is a most painful procedure without an anaesthetic, and scarring almost certainly results. We are therefore left with the alternative of a second anaesthetic in a child already suffering from shock and ligature of the bleeding point, which would have been done at the time if dissection had been employed.

Even if none of these treatments have been necessary and the bleeding has ceased on propping up the patient, the child takes some time to get over the loss of blood and cases have occurred where the effects have been very serious. I have kept a record of the blood lost in many hundreds of cases of enucleation by the guillotine, and in some of them the quantity has appalled me. I am sure that many do not realize the amount that is lost.

Of course, the technique of dissection is more difficult to acquire, much practice is necessary to learn to ligature the vessels rapidly, and here the skilled help of a regular assistant is invaluable. A highly skilled anaesthetist is essential, but he may at the same time act as assistant.

Everyone admits that the tonsillotomy or pre-enucleation days was very successful so far as we know, and that the more expert the surgeon the more tonsillar tissue he removed. In those days the aim was to remove as much of the tonsil as possible for the same reason as we enucleate now, because the extent of the disease could not be diagnosed before operation then any more than it can now.

It is sometimes difficult to decide that the tonsil is diseased. I venture to prophesy that the unnecessary waste of blood by the guillotine method will be the direct cause of dissection being generally adopted by the laryngologists of the next generation.—I am, etc.,

Nottingham Dec. 11th. H. BELL TAWSE.

SIR,—Before this correspondence ceases may I emphasize three points?

1. The great advance in guillotine technique during this past decade owing to the development of the 'reverse' method. Many people in discussing the value of the guillotine base their opinion on their recollection of guillotine operations in pre-war times when the percentage of tonsils cleanly enucleated by this method was under 50. Sluder now claims 99·6 per cent. of complete enucleations for this method—"after real skill has been acquired"—and he is not far wrong. Certainly the percentage of children's tonsils should be 99 and not far short of that for adults.

2. The necessity for practice in acquiring skill with the guillotine. It is like learning golf. No matter how good an athlete a man may be he must practise the golf swing over and over again. He must take out his club and half a dozen balls and play his shot over and over again. After many months he gradually develops the knack of hitting the ball cleanly every time. When he has learned to play a good game he can keep it up with occasional practice. So with the guillotine—repeated practice is necessary in the beginning. The operator must repeat the movement hundreds of times on all types of tonsil before real skill is achieved. Skill in dissection of tonsils is more rapidly gained than skill with the guillotine.

3. The modern guillotine method is that of Whillis and Pybus. The use of the finger to evert the tonsil into the ring of the guillotine was the kernel of their paper published in 1910, and it is the kernel of guillotine enucleation to-day. The essential feature of Sluder's method, as

described in his paper published in 1911, was the use of the "alveolar eminence on the mandible to stuff the tonsil through the ring" The use of the finger is alluded to only as a secondary procedure recommended for occasional use in dealing with flat fibrous tonsils In his latest book (1923) Sluder recommends the use of finger eversion in *all* cases Although the American school deserves great credit for developing and popularizing the reverse method of tonsillectomy, let us render honour where honour is due and call the method by the names of Whillis and Pybus of Newcastle —I am, etc,

Guildford, Dec 14th T B JOBSON

THE DIAGNOSIS OF PNEUMONIC PLAGUE

SIR,—The importance of establishing the diagnosis between plague complicated with pneumonia and pneumonic plague can hardly be exaggerated from the point of view of the medical men and the nurses attending the case, yet it seems to be far from easy Medical textbooks for the most part fight shy of the point, and content themselves with the remark that pneumonic plague is peculiarly fatal to those in attendance Indeed, they leave one to suppose that until a doctor or a nurse dies one has really no right to make a diagnosis of pneumonic plague Yet these latter would prefer to have the diagnosis established before their own death, and it is in these circumstances that I am writing to inquire of your numerous readers whether it is possible to make a diagnosis in a given case

Manson's *Tropical Diseases* gives no help Stitt thinks that plague complicated with pneumonia is the origin of, if not identical with, pneumonic plague Wu Lien Teh, writing in the *Practice of Medicine in the Tropics*, says the diagnosis is usually clear from the bacteriological examination of the sputum, in which the bacillus is found in enormous numbers and in almost pure culture If one accepts his method of diagnosis, then indeed bubonic plague complicated with pneumonia or vice versa is indistinguishable from pneumonic plague in a large number of cases

What of the cases of plague in which a bubo is the only outward and visible sign of the disease, but in which a lung puncture or *post mortem* lung smear shows *B pestis* in pure culture? What, too, of those cases without buboes in which no physical signs are present in the chest until just before death, but in which *B pestis* is found in the blood in life and consolidation, slight or gross, is found after death and a lung smear gives a pure culture of the bacillus? It is true one can take refuge in a terminological harbour and apply the word "septicaemic" to both these cases, but this hardly advances us along the line of discovering wherein they differ from pneumonic plague—so called No one as yet has denied the existence of *B pestis* in the blood in pneumonic plague, and for my part I cannot conceive of pneumonic plague being other than septicaemic in its final stage

A point of close resemblance between plague-cum-pneumonia and the pneumonic plague of the textbooks seems to be that both are absolutely and equally fatal The first sign of chest trouble in a case of mild bubonic plague appears to be comparable with the death token of the Middle Ages At least the result is the same—I am, etc,

Lagos, Nigeria, Oct 24th N A DYCE SHARP,
West African Medical Staff

TREATMENT OF GOITRE BY IODINE

SIR,—Dr Joseph's communication (November 22nd, p 975) on the treatment of goitre by iodine is interesting I am sorry he has not given the minor details and precautions that he says are necessary for success This subject is far from clear and details may prove to be of the utmost importance I can add my testimony to the success of syrup of the iodide of iron in these cases This is a most useful drug in other cases too It is most valuable in enlarged glands of the neck Does the iodine stimulate the thyroid—the defensive gland of the body—and thus cause the enlarged cervical glands to disappear? I feel sure if this preparation was more frequently used there would be fewer tuberculous glands of the neck

Cases of simple goitre are, I am sure, an enlargement of the gland to supply more iodine for the requirements of the body From these two classes of cases iodine would appear to act in a double way it seems to stimulate the thyroid, and also to supply the iodine that is deficient I believe we have in nux vomica a drug that stimulates the suprarenals

In giving syrup of the iodide of iron to children many years ago I was struck by the remark so often made by the mothers that the child's appetite was much improved Other medical men whom I spoke to also tried it in pale children with loss of appetite, and it proved successful in their hands Later I came to the conclusion that these were cases of subthyroidism, and after the course of the syrup they got a good appetite, put on flesh, and had a healthy appearance The failure of the syrup in Graves's disease is what one would expect It is a different disease—sympathetic in origin—and not due to iodine insufficiency

People living in the same district, eating the same food, and drinking the same water do not all develop goitre Is it that some people require more iodine than normal people? It cannot be that they have not the power to assimilate it, for when given in the syrup of the iodide of iron they get better

We get the physiological enlargement in young girls about the age of 14 years Is more iodine required then, and, if so, why? Why also do we see it so seldom in the male sex? In treatment I would advise the giving of very small doses —I am, etc,

Southsea, Nov 24th D MCASKIE, M B

EXERCISES FOR THE PELVIC FLOOR MUSCLES IN DYSCHEZIA AND PROLAPSE

SIR,—The interesting and instructive paper with cases by Dr Stacey Wilson on the cure of uterine prolapse by re-education of the muscles constricting the vagina (December 6th, p 1041) indicates completely the conception of the necessity for and the sufficiency of the pelvic floor muscles for the pelvic visceral retention For although Dr Wilson refers to the muscles, the disability of which is the predisposing cause of uterine prolapse, as "vaginal" muscles, and speaks of the "vaginal sphincter" in this respect, it is quite clear that it is not the "constrictor cunni" but the levatores ani which are affected by the exercises The muscular compression exerted upon the fingers when during vaginal examination the patient, in response to a request, contracts the parts is due to a contraction of the levator ani muscles, especially of their medial parts, which form the postero-lateral parts of the pelvic floor aperture through which both the vagina and rectum pass to quit the pelvis This important part of the levatores ani, known as the pubo-rectalis, was called by Holl the sphincter recti, from its effect on the rectum Passing from the pubes by the sides of the vagina to behind the anal canal, where the belly of one side runs into that of the other without intermediate tendon and without attachment to the ano-coccygeal raphe or the coccyx, on contraction it compresses the anal canal against the pubic arch, and in doing so necessarily compresses the vagina at this level which is placed in between Thus, Dr Stacey Wilson tells us that the voluntary contraction of these "vaginal" muscles, instrumental in the retention of the uterus, is induced by asking the patient to tighten herself up "as if she were endeavouring to control a sudden attack of diarrhoea"

Of course, with such a movement, the sphincter vaginae (that is, the constrictor cunni), when intact, is probably involved, but this movement occurs even in cases of complete rupture of the perineum—that is, in cases in which the two halves of the constrictor cunni are separated from each other posteriorly, and in consequence of which their effect on the vulva as a constrictor must be absent or negligible Dr Wilson has shown that even in such cases as the result of the exercise of frequently tightening herself up—in the beginning "many times during every hour of the day"—the patient "may nevertheless be able to maintain her uterus (previously extruded) in its normal position without the need for a pessary"

Not only do the cases Dr Wilson cites support this conception, but the remarks of Dr Arthur Hurst and of Dr A Adams (in your issue of December 13th p 1136) also do so Dr Hurst mentions a case of rectal prolapse treated successfully in this way Dr Adams refers to the "undue passivity" of many women in regard to their sexual feelings" Dickinson long ago stated that the levator ani is especially well developed in erotic women and that the muscle is in a better state than normal in cases of bowel incontinence from complete perineal laceration is an observation which can be made every day Women of the former type actively participate during coitus during which in the normal the levator ani muscles of the woman grasp the organ of the male That in cases of complete perineal tear the levator should be in constant use is intelligible from the effect of the lesion of the bowel These women are constantly tightening them selves up to prevent the unexpected escape of gas and even of faecal material

But there is another point which should not be missed Important as the levator ani muscles are in the matter of the pelvic viscera retention they are even more important in virtue of their effect on the body as a whole Thus Dr Wilson, in the notes of his first case state that with the local improvement the patient's general health also greatly improved" This simple statement requires elucidation It is true that when the pelvic floor muscles are efficient they prevent extrusion of the pelvic viscera but they do much more than this By preventing the escape of visceral parts they enable the pressure within the pelvis and abdomen, in virtue of which the parts tend to escape to be increased as it is in the normal during activity Without great rises of the intra abdominal pressure great activity is not possible Conversely they allow and even participate in determining a good average pressure during resting states Clearly the condition of the body during rest is related to and corresponds with the degree of potential activity

When the relation of the intra abdominal pressure to general metabolism is realized when it is recognized that this pressure is basal in the adequate return of blood per unit of time *to* the heart and that on this (for one thing) the aortic blood pressure—and so the blood flow through every organ—depends much may happen I prophesy a revolution in medical thought I see on the one hand that neurasthenia (in which the intra abdominal pressure is reduced), and on the other that eclampsia (in which the intra abdominal pressure is increased) and perhaps that many other internal disorders (for example acute nephritis and even convulsions in children) will be understood and that the neglected levator muscle will be acclaimed as playing an essential part in many vital processes—I am, etc,

Rugby Dec 11th R H PARAMORE FRCS Eng

WET WINDS AND EARLY PHTHISIS

SIR,—In reply to Dr Ward's letter (December 13th, p 1140)

1 I have framed no "hypothesis" Anyone who has followed my work with reasonable care will have noticed how scrupulously I have avoided doing so I have simply examined statistics and recorded conclusions

2 To Torquay Dr Ward does grave injustice Much of it is sheltered from westerly winds and I have a high opinion of its value

3 When Dr Ward describes my statistics as 'malleable' he displays a remarkable want of attention in his reading The most outstanding fact about these statistics is the apparent unavoidability of the conclusions I have drawn

4 Dr Ward's criticism of my able collaborators seems *une mauvaise plaisanterie*

5 I have laid down no 'axiom' My conclusions as to limits of shelter are plain deductions from my material

6 In the very paper we are discussing I have thankfully acknowledged the great help afforded me by Dr Brownlee's independent investigation in 1920 in the districts of Barnstaple and Okehampton, and lately by the independent investigations in West Shropshire by Dr A C Watkin and in Derbyshire by the medical superintendent of the County Sanatorium Independent inquiry is what I have always desired Independent inquiry is what I am now asking for all over the country May one hope that it may be undertaken soon and widely?—I am, etc,

Exeter Dec 15th W GORDON

THE LATE PROFESSOR J I HUNTER

SIR,—I should be very grateful if you would correct certain errors which through my own carelessness, were made in the obituary notice of Professor John Irvine Hunter

The name of the journal in which the Murphy Oration is being published (see reference on page 1183 at the top of the first column) should be *Surgery Gynecology and Obstetrics* The date of Professor Hunter's departure from Sydney (see page 1181 at the bottom of the second column) should be August 1921 and of his return February, 1923—I am etc

London Dec 18th G E S

Medico-Legal.

A CHARGE OF SEDUCTION DISMISSED

At the Birmingham Assizes on December 16th a special jury dismissed a claim brought by Mr Thomas Morley of Saltley against Mr R M Pardhy F P C S of Newhall Street, Birmingham for damages for the alleged seduction of his daughter, Mary Margaret Morley aged 19 Mr Justice Lush, in the course of the hearing raised the point as to whether an action for damages could be brought for what was after all, the felony of rape without first vindicating justice by a prosecution for rape Mr Vachell K C who appeared for the defendant said he had not raised the point because Mr Pardhy did not desire to shelter himself behind anything that savoured of a technicality

The plaintiff's daughter in her evidence said that on February 20th 1923 she went with her mother to the Homoeopathic Hospital Birmingham for treatment They waited two hours and at about 2.50 p m they were shown into a room where the defendant was alone After a conversation they were told to go to the other side of a heavy green curtain reaching to the floor which divided the room There the witness partly undressed and after an examination which took place while she was on a table her mother was told by the defendant to go to the other side of the curtain After her mother left the room the witness was told to leave the table and she was provided with a stool to lean over A blanket was placed over her shoulders A little later the defendant washed his hands and she was given a card to go to the dispensary She did not know anything was wrong until she gave birth to a child on November 10th 1923 she was working at a factory on November 9th

The plaintiff's wife in her evidence said she accompanied her daughter to the hospital on February 20th 1923 After the examination of her daughter had proceeded for a little while the defendant asked her to go and sit down There was only one chair and that was on the other side of the curtain which divided the room and the witness went there She sat there reading a book and heard nothing at all to arouse her suspicions that there was anything going on She at there for ten minutes to a quarter of an hour and then the defendant came out and asked her a question about certain marks on her daughter's neck and forearm Then the defendant asked her to help her daughter dress and witness did so

Dr W T James of Bordesley Green gave evidence of the confinement and said he thought the baby was an Oriental—not a Japanese not a Chinese not a negro Witness had a conversation with the mother and then saw the defendant who looked flabbergasted when he heard the suggestion that he was the father The birth of the baby was consistent with intercourse having taken place on the date of the girl visit to the hospital but equally so with intercourse having taken place in the last week in January (when the girl was on holiday at Weston-super Mare)

Mr Vachell opening the case for the defence said Mr Pardhy was a well born native of India a Brahmin His father was a celebrated Indian judge He came to this country somewhere about 1900 having previously served for a short time in the medical service in the South African war Here he became a Fellow of the Royal College of Surgeons and L P C P He was 30 years of age and had married a lady who stood fast by his side in the case In 1910 he became surgeon to the Birmingham and Midland Homoeopathic Hospital a post he had held ever since Throughout the whole of 1923 he was on two days a week seeing out patients in the afternoons it being quite usual to him to see from eighty to ninety patients in one afternoon No one but a lunatic would have attempted to do what it was alleged the defendant did in the teeth of almost certain detection

Mr Pardhy in evidence said he had no personal recollection of the girl's visit—he saw thousands of persons—but he found notes of the case he had made in the register he kept The mode of examination he adopted he had practised for the last twenty years,

and it was a well recognized method for cases of that sort During his work he was liable to interruption Colleagues from the next room came in frequently to ask his opinion about a case The matron, or nurses, might come in, the house surgeon might come in Messages were brought in, and there were telephone calls to be answered The curtain was not a thick one At that hospital no nurse was ever present during the examination of out patients

Cross examined he did not recollect but if he did ask the mother to sit down on the other side of the curtain she must have been in his way He had employed private inquiry agents, but they had not been able to find any coloured person, other than himself, with whom the girl had had anything to do

Dr Thomas Wilson professor of midwifery and diseases of women, Birmingham University said the procedure used by the defendant appeared to him to be in accordance with the routine and custom of the special branch of the profession to which he (the witness) belonged If the allegation were true he could not conceive of the mother not knowing what was happening for the girl not to know was not impossible, but seemed incredible

Mr Justice Lush, summing up directed the jury's attention to three remarkable things first, it was a part of the plaintiff's case that an educated, clever man who would know what he was doing and the risks he ran, was willing in order to gratify his lust, to commit this wicked crime on a young girl while her mother sat about two or three feet away with nothing dividing them but a curtain, and when a single word or cry would have brought her to the girl's side, secondly, that the girl who was said to have been treated in that way never imagined for nine months that the doctor had had relations with her thirdly that the girl, having become pregnant, went right down almost to the moment of child birth without having the slightest idea that anything unusual in a physical sense had happened to her

The jury, who had viewed the consulting room at the hospital where the intercourse was alleged to have taken place and who had been shown the baby returned a verdict for the defendant, Mr Justice Lush observing "I think it is right to say that I quite agree with your verdict"

Messrs Le Brasseur and Oakley, solicitors for the defence were instructed by the London and Counties Medical Protection Society

Universities and Colleges.

OXFORD

AT a congregation [illegible] 17th the following medical degrees were conferred

B M—R J Brocklehurst T A J M Dodd M McCheyne Baird J R B Hern P H Martin J D Mills B E Tompson, A T Lupp H N Stokoe Mathilde E F Bugnion

UNIVERSITY OF CAMBRIDGE

DR A J COPLAND [illegible] has been appointed assistant to the Downing

At a congregation held [illegible] December 15th the following medical degrees were conferred

M B B CHIR—A L Walker A V Pegge E C Rayner B E Schlesinger
M B—J R B Dearden E B Brooke S Orchard G C Millis
B CHIR—H E Harris

The following candidates have been approved at the examinations indicated

THIRD M B B CHIR—*Part I Surgery Midwifery and Gynaecology* F N Adams C Adamson N F Adeney G L Alexander R D Alexander J F Anderson W A Bourne H F Brewer W Brockbank A D Briscoe B H Burns, W L Chiesman W R F Collis J W E Cory J E D Crozier R W Cunningham C H C Dalton G H Day F M Deighton M S Dewhurst R H Dyer H W Eddison J L Edwards, J H Gaddum N T Glynn H G Goldwater, H F Griffiths K E Harris J Holmes W Hunt J J Keevil M C H Kingdon A R Lister D P Marks L P Marshall J G Milner W J Montague M F Nicholls L J Panting P E Pym W Richards D Riley, J Russell Smith F R Sandford A de M Severne, A J Smyth E W P Thomas E J E Topham L A Trim J G E Vachell T F Walsh A G Walter H A Ware J L Warner, and Miss I M Harmer

Part II Principles and Practice of Physic Pathology and Pharmacology P E Baldsley, A Barker W S C Copeman R Cove Smith W I Doggett J H Doggart H G English M W H Evans R B Fawkes J A Galetly W H Gervis T S Goodwin J Gray F N Green, H E Harris L E Harris B D Hendy R A Highmoor F D Howitt P W Jamie A A Lees W A Lister S M Milner E G Morris A C Mowle H B Padwick T M Preece R H T Rea W G Scott Brown F A H Simmonds T H Sims J D M Stewart G B Tait G L Thompson J H G Thompson G B W Walker H Yates

UNIVERSITY OF LONDON

THE PARLIAMENTARY ELECTION

DR F G LITTLE was entertained at dinner on December 16th by the University of London Graduates' Association to congratulate him on his election as parliamentary representative of the University Sir W J Collins, the founder of the association, who was in the chair, presented Dr Little, on behalf of the association, with an illuminated address in commemoration of his election, "irrespective of party politics and in vindication of the policy of the University of London Graduates' Association, for the maintenance and development alike of the teaching work of the University and its open system of examination, without intervention by external agencies unacquainted with its history and progress" The toast of Dr Little's health was proposed by Captain J A Douglas, chairman of the Association of Parliamentary Election Petitions In his reply Dr Little said that the fight at first had seemed a forlorn hope, but it was an occasion for going on with the twenty year struggle to maintain the principles on which the University was founded Throughout the world and in every profession a large number of men and women cherished the warmest affection for it In response to the toast of the colleges and schools of the University, the Principal of King's College said that neither he nor, so far as he knew, any other principal officer of a college was in favour of the cardinal principle of the Haldane Commission or, indeed, of many of its subsidiary principles would desire to see most of its [illegible] with regard to the position of [illegible] tion of the Senate The health of the chairman was given by Sir William Willcox and suitably acknowledged

The following candidates have been approved at the examinations indicated

M D—*Branch I (Medicine)* E A Coldrey C M Gwillim R Hunt Cooke C G Lewis I Lewis B Maclean B S Nissé (University Medal) D C Norris O W Roberts, Kathleen A H Sykes R S Thodhal *Branch IV (Midwifery and Diseases of Women)* B L Jeaffreson *Branch VI (Tropical Medicine)* M L C Irvine
M S—*Branch I (Surgery)* O S Hillman D Levi

VICTORIA UNIVERSITY OF MANCHESTER

THE following candidates have been approved at the examination indicated

FINAL M B CH B—R S Adam J K Barr C E W Bower C V Brown Stella H Brown Elsie Catlow W Cl[illegible]
Jen [illegible]
M [illegible]
Ann [illegible]
Ell [illegible]
A J [illegible]
H [illegible]
Tot [illegible]

N [illegible] oope J Crook,
T A Danby ickenson L F
Evans, Mary E A Gerrard
E St G Gi [illegible] May Johnson
W Johnson J A C Keddie Barbara M Knight G F Langford, G H March C T Marshall E A Marson S L Mucklow R M Pearce A Pearson *Joan Robinson* M R Sagar N F Seed W H Shepley *J Shlosberg Agnes* G Smiles **F H Smirk Lois Stent Jane* B Stubbs J Wilson J C Wilson R Wood N A J Young *Obstetrics* Frances H Bowden T K *Clifford* S J *Firth* I H Freedlander T S Hanlin E P Johnson W D Mitton F Reynolds B R Sandiford, A D Shubsachs W S Slater

* Distinction in Obstetrics

UNIVERSITY OF SHEFFIELD

The following candidates have been approved at the examination indicated

FINAL M B CH B—J R Baker M J Finklestone Alys M. Gregory Josias W Jago O H Swede Margaret Wesley

UNIVERSITY OF DURHAM

THE following candidates have been approved at the examination indicated

THI *Medica Pharmacology and Pharmacy Jurisprudence Pathology and Elementary* [illegible] Dorothy E Crisp R B Dodd, Mabel Dodds W L Fulthorpe Dorothy Hopkinson, J A Livingston L Livingston G M Macintyre M A S Marsai A T H Maisden H O Martin E H Moseley J Niman M A Phillips R H Robinson, Phyllis Routledge R Russell, E P Tulloh

UNIVERSITY OF EDINBURGH

A GRADUATION ceremonial was held in the M'Ewan Hall on December 19th, when the following degrees were conferred

M D—Captain F C K Austin R A M C L C L Averill J Brown *N S Craig †D R Crumb *A M. Drennan A D Edington †Jessie Eeles J W Gray J S Harris F T Ingram (J M Garrit) D S Robertson Hilda D Scott †Muriel J Thomson
D Sc—C W Stump M D
M B CH B—H Addison W Aitchison S H Aung B N V Bailey Evelyne E Baird Mary E Barr G Beveridge A E Blackley D W N Blackmore J F Bland A F Brown A J Cameron L G Campbell V F T Ch
Cormie D J M A Corner T [illegible]
Lilian R Duffy J N Dugd [illegible]
A L Ferguson R C Forrester D Fowlie Matilda L Fowlie A Fraser A M L Fraser D L Frew T D Glaister J Gray C B Grieve D Gunn R B Guyer E A Haslam Fox W Henry Anna M Herdman C W Ho R Hutchinson, B James J W Keighley W D Kiernander G M Lamb A Lazarow A M M Cracken H L Mackintosh A Macrae J C M Vittie M S Malone A L Masterton V W Maxwell Margaret M Meikle J F Menzies R H Mumford Lilian M S Murray, W Nelson R Norton R C Ogg A Owen W Parker F S Paterson A L Phimister, C K Robertson J A Robertson Elsie T D Robson R J Rodger Christina B Ross R N D Sanderson H Schul Lassen G Simpson J K Slater M Sokolovitch M F J Stalker W E Stober Agnes E Stothard G S Strachan J C Tamsh K H Tepper N J Terblanche A G Thomson R M Thomson P R Tingley Dorothy M Wilkie, B O Wilkin J Wilkinson Ada M Woods M H Wright

* Awarded gold medal for thesis † Highly commended for thesis

UNIVERSITY OF LIVERPOOL

THE following candidates have been approved at the examinations indicated

M D—F N Chamberlain A R Jones

M Ch Orth—L B M Vane

FINAL M B Ch B—*Part III* B E Acland M M F Arthur P D Barlin, A Bellis E C Benn T A C arke H A Cole R Co ter W R H Ellis E A R Evans L G Foxcroft, G A Fulton J Gallihan Clara M A Gleave H Gobie M Godwin W J Griffiths A D Harper L F Henry B itha H Irvine F W Johnson C I Jones G F Jumder B D Knoblauch Sirah Lefeh A Osero vic R D Owens J T C Robert s C Sharp R S Turner G R Wadsworth T W Whi e Part I J L C egg J C Edwards A B Follows J F Galloway Lilnor M Gelling M Goldber, Elizabeth J Harding D G Hury B S Jarvi A N Jon s J S Logan M A Lombard D B Macaulay G McLoughlin R M Maher F Murra royd A A Russell M R Sheridan J E Wallace R G Walm ey hathleen M Ward Nora M Wil on Part II Alice M Luca Mabel M he D J T Magowan J Morris ey Irene M Neal Mary T Pennice W J Pierce Thirza Redman D I ot ra

DIPLOMA IN TROPICAL MEDICINE—H S Billimoria B L Davi O B Jennings S W S Lee G Macdonall J M. Mitchell D U Owen B ryl Palmer-Jones E J Sankerall H Singh

* With distinction in surgery † With distinction in pathology
‡ Recommended for the Van H Milne m dal

UNIVERSITY OF DUBLIN

AT the winter commencements held in the Theatre of Trinity College on December 11th the following degrees and licences in medicine surgery, and midwifery were conferred by the Univer ity Caput in the presence of the Senate

M D—D J Malan W F Whaley

M B, B Ch, B A O—J N Adamson Doro hy J Boo h M J Bradlaw J R Bradshaw W A Dickson E Harvey A J Head Doro hy I Henry R F J Henry L S Levit S M Dermo R H M Keag S E Magowan W H Maguir I W May A J Mooney P D Pie l G D Rankin I lo in L I Sayers M Sless W D Speedy R E Steen R G F Thompson R Warnock Sylvia B Wi oder C Wilson

LICENCE IN MEDICINE SURGERY AND OBSTETRICS—L MacS Bell

SCHOOL OF PHYSIC TRINITY COLLEGE

The following candidates have been approved at the examinations indicated

FINAL EXAMINATIONS PART II—*Medicine* *R Warnock A J Mooney L Jacs Bell T W May I Re in J N Adamson M Sless S M Dermo t T G B Cra ford E T S Rudd N C M Ashfie W A Dickson R F S n Agnes L Bells S E Magowan M J Bradlaw J F Wilde L I Sayers Sylvia B Wigoder H Birney R H M Kean Paul D Bell Dorothy L Henry P J G Hyde J G Maguire C R Moore G D Rankin I Sras burn W H Maguire E A Lenne Lucy E R Rinn L J Walsh C Wilson Anna I A B Crawford J M John ton *Surgery* R E J Henry W A Dickson T W May W D Speedy P N H Labuschagne R H Mchean L P Sayers J R Bradshaw W H Maguire W H Anderson M Sless J L Livingston D rothy J Boo h P D Pie l B W Har e G D Rankin G P Rainford G F Gillespie A J Head B G F Thomp on E. C Dudgeon J L Marshall J Herwich H Sa G M Henry J Cu en *Midwifery* Augus a M Young Hepo Trant J P Gregory O D T D Browne P Coleman J Dica W P G Gallagher W P E M In re L Harvey C F D M Caldin R A Heatley J E M Cauley E J Wa sh C R J Boland J Crai, Gladys M A Lowry A. D M Lean Mary S Miller H Tomain W G S Maxwell G A Miller W J A M Mahon J A Pinc us Doro hy A M Enaire Grace J Rankin G I Bamford D Blue t J J Cu ack H M Nevin J C C Boyle W C Somerville Large H Nelson Kathleen M Lall C H Wil on D J Cusack S Gurevich Norah M Smith Margaret E Pedlow

* Passed on high marks

DIPLOMA IN GYNAECOLOGY AND OBSTETRICS—W T Noonan C A Nadicarlanda

ROYAL COLLEGE OF SURGEONS OF EDINBURGH

THE following 24 successful candidates out of 55 entered having passed the requisite examinations have been admitted Fellows

B A Ajmara T E Andrew Captain P K Bardhan L M S E J Bradley R. C. E Brode C C J Cellan-Jones J R de W Connolly D Cromie C M Eynon L S Fallis C K Fuller R McM Glynn W A Jackman, A Leaming Major A P G Lorimer L M S R F Matters Major D F Murphy I M S E R Reay L C Rogers E K. R Thomas V H Wallace W G Waugh Lieut Col R T Wells I M S A H Whyte

LONDON SCHOOL OF HYGIENE AND TROPICAL MEDICINE

DIVISION OF TROPICAL MEDICINE AND HYGIENE

THE following medical officers have passed the school examination at the termination of the seventy sixth session (September-December, 1924)

‡J A O Flynn *W H Dye *C F Shelton *D Hynd *A I Meek T N Banerjee P N Suri R G Griffin J R Mallory H O Watkins-Pitchford Miss H M Caldwell B N Khosla R A Gran D Murray Young H. C E Quin M A El H Gohar G Louw H B Follit M de Bono G Robinson R F Campbell D L J Kahawita Milton C Lang Miss E M Clo on H Goldberg H C Hopkinson C E G Gill M A Cassidy W H Har D H C Given R Sweet, Miss U F M Morton A D Williams H P Hacker J Naudi S L Navaratnam D M de Silva A N Mankarius R. J Harley Mason I H S Smith K. R Bara I Newton A E Wall S Khan T C Lonie E H Evans Miss M C Chappel W Bradbury W A Bartho omeusz Miss M G Sammon F McKernan

* With distinction ‡ Awarded the Duncan Medal

Obituary

HERBERT WILLIAMSON, M A, M B, F R C P,

Physician Accoucheur to St Bartholomew's Hospital

HERBERT WILLIAMSON, whose sudden death is so great a loss to the Medical School of St Bartholomew's Hospital, was in his 53rd year He came to London from St John's College Cambridge, and characteristically determined to find out for himself which of the London schools he should join He wandered and inspected several but, as he often has recounted, when he looked through King Henry the Eighth's Gate and saw the fountain the trees and the flowers he felt his search was at an end and he entered the school in which, save for a very brief period of less than a year he always held an honoured place From the first months of his student days his exceptional powers were recognized alike by his teachers and his fellow students The latter never had any doubt but that Williamson was marked out for success in whatever walk of the profession he should find himself He obtained the M R C S and L R C P diplomas in 1896 and the M A M B, and B Ch degrees in 1898 Naturally he was a prizeman, and after holding the post of resident to those brilliant surgeons Buthin and Lockwood, he became resident in the gynaecological wards Sir Francis Champneys and Dr W S A Griffith who were at that time respectively physician accoucheur and assistant physician accoucheur, were quick to recognize his merit and though for a short time there was no opening for Williamson he was remembered when the opening did occur and came home from the South African war where he was serving as a surgeon in the Imperial Yeomanry Hospital, to take up the position of midwifery tutor In that capacity he served the school and the hospital for several years with so marked a success that in 1906 a fresh post was created in the department and William on was elected to the staff of the hospital He had already an extensive private practice and this rapidly grew so that in a few years his opinion and his services were widely in demand He was elected F R C P in 1911 He enjoyed his success, but still more he enjoyed his work He was never so happy as in the service of the hospital and school whether in teaching or working in their interests in other ways Indeed in those years he took too little relaxation from the exactions of his work and outside his regular holidays very rarely spared time for pleasure He was not especially devoted to any form of sport he was not a golfer, and seldom even gave himself a Sunday freedom from work Latterly his summer holidays had been spent in Cornwall and there he had been accustomed to go for long walks His physique was not robust but he very seldom ailed and his temperament was even and judicial He was always the most delightful companion enjoying and telling a good story and his lectures and bedside teaching were *often illuminated by sparkles of wit or humour*

As the years went on he became more and more trusted in the councils of the school and the hospital and it is in that sphere as much as in any other that he will be greatly missed Outside the hospital he had filled many important posts and always with distinction He had always been a good speaker in public but of recent years since the war, had gained a reputation in this respect which in the estimation of good judges, placed him in the front rank His speeches at the octocentenary dinner of St Bartholomew's Hospital in 1923 and at the dinner of the Royal Society of Medicine last year were a delight to those who heard them and made his name familiar to many who had not previously known him

He had not been in the best of health since the summer, but to most of his colleagues there was no sign of failing powers Only to those who were most intimately associated with him in work was there any indication that he was feeling the strain To the rest he appeared to be in full vigour, and his advice and counsel were as ready and judicious as ever given In November he had an attack of influenza and was distinctly pulled down by it He went away for a short time to the seaside and returned apparently fit A few days' work, however was all that was left for him On December 15th he did not feel up to undertaking his usual full day's work and went for a

walk in the Chilterns His dead body was found the next day, and from the evidence he must have suffered from a sudden syncopal attack after climbing a hill

His death leaves a gap in the ranks of gynaecologists, and will be deeply regretted by the many members of the profession to whom he was known, and by hundreds of private patients to whom he was not only a trusted physician but a valued friend To his contemporaries, his colleagues, and the students of St Bartholomew's Hospital, both past and present, there is a deeper sense of loss Not merely have they lost one of the ornaments of the school, but they mourn the decease of a man whose deep love and devotion to his school was requited by a rare sense of personal attachment in all those with whom he mixed in their common life

H T

CLARENCE COOPER, M D, F R C S,

Deputy Surgeon General I M S (ret)

DEPUTY SURGEON-GENERAL CLARENCE COOPER, Madras Medical Service (ret), died at South Norwood Park, London, on December 18th, aged 94 He was born at Brentford, and was the son of George Cooper, F R C S He was educated at Guy's, and took the M R C S and L S A in 1852, and the M D St Andrews in 1853 He became M R C P Lond in 1860 and F R C S Eng in 1867 He entered the Indian Medical Service in November, 1853, seventy-one years ago, attained the rank of brigade surgeon in November, 1879, and retired at the end of 1881, with an honorary step of rank as deputy surgeon-general

He went to Labuan in Borneo in medical charge of troops in 1855, and not long afterwards his services were lent by the Indian Government to the Colonial Office In Labuan he spent nearly ten years, holding many and various appointments in succession colonial surgeon, coroner, police magistrate, superintendent of convicts, Colonial Secretary, judge, and member of the Legislative Council, receiving the thanks of two Secretaries of State for the Colonies, as well as of the Government of Labuan In 1864 he returned to India, and after holding various military posts was, in 1874, appointed principal medical storekeeper at Madras, he held that office till he retired After his retirement he joined the Court of the Society of Apothecaries, and served as Master of the Society in 1903-4 The Army List assigns him no war service He went to India nearly four years before the Mutiny began, but throughout the two years of that campaign he was serving in Labuan, far from India

Since the death of Surgeon-General Sir Benjamin Simpson, in June, 1923, Clarence Cooper had been the senior officer on the retired list of the I M S His successor as the doyen of the Service is Deputy Surgeon-General Philip Warren Sutherland, who joined the Bengal Service in 1854, and is the only surviving member of the I M S who served in the Indian Mutiny

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DR PERCY WILLIAM SPAULL, who died on December 16th at his residence in West Kensington, was educated at St Thomas's and King's College Hospitals He obtained the diplomas M R C S, L R C P, in 1894, and in 1909 the Diploma of Public Health Dr Spaull was particularly interested in public health administration, and filled the posts of deputy medical officer of health for the metropolitan boroughs of Fulham, Holborn, and the City of Westminster His other appointments included those of assistant medical officer in the Public Health Department of the London County Council and medical officer to the Post Office He was a Fellow of the Society of Medical Officers of Health and lecturer on sanitary law and administration at the Battersea Polytechnic He was chairman, and formerly secretary, of the Chelsea Division of the British Medical Association

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We regret to record the death of DR GORDON ABERCROMBY LANG in Inverness, at the age of 58 His father, the Rev Gavin Lang, had three brothers, all clergymen of the Church of Scotland, of whom one was Professor Marshall Lang, Principal of Aberdeen University another kinsman is the Archbishop of York Dr Gordon Lang was educated at Aberdeen University, where he graduated M B, C M in 1889 Returning to Inverness he commenced practice, and was appointed to the staff of the Northern Infirmary, holding the post of consulting medical electrologist until the time of his death He was also school medical officer for the mainland of Inverness until a few months ago, when he was compelled by ill health to resign His other appointments included those of medical officer of Forbes Dispensary, Inverness, and house-physician to the Great Northern Central Hospital, London Dr Lang was interested in motoring from its commencement, and was one of the first to use a car in his practice, this car was steam driven In his younger days he was a keen athlete, excelling especially at Rugby football He contributed several papers on hygiene and other subjects to school medical magazines He was for many years a member of the British Medical Association He is survived by his widow and one daughter

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DR ALAN OSBORNE COURTIS of Oxted died on December 3rd, at the early age of 34, after an operation for appendicitis He was the son of Sir John Courtis of Llandaff, and was educated at Repton, Pembroke College, Cambridge, and St Bartholomew's Hospital He took the diplomas of the English Conjoint Board in 1916 and graduated B Ch Camb in 1921 and M A and M B in 1922 Dr Courtis began practice at Oxted about two years ago in partnership with Dr G D Laing of Limpsfield, and during that period had made a large number of friends He was a member of the Reigate Division of the British Medical Association He is survived by his widow and a young daughter

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DR JAMES ERNEST DUNBAR, who died at Abertillery on December 7th, from pneumonia, was educated at the London Hospital, and graduated M B, B S Lond in 1906 During the war he served in Palestine and Egypt, and subsequently practised in Wales, eventually settling down about two years ago in Abertillery He was buried at Risca cemetery on December 10th A colleague (D T R) writes His friends knew Dr Dunbar as a man with a very lovable nature, sterling qualities of mind and heart, honesty of purpose, and great natural ability

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DR JAMES DOOLEY, O B E, formerly of Creswell, died at his home at Knocklong, co Limerick, on December 6th, aged 43 He was educated at the Catholic University, Dublin, and graduated M B, B Ch, B A O, N U I, in 1910 After acting as assistant to Dr Wood of Creswell he subsequently entered into partnership Dr Dooley was keenly interested in local sports and pastimes, and was also medical officer to the Creswell Boys' Brigade On his leaving the village in January last he was presented by the brigade with a gold wristlet watch and by the hockey club with a silver cigarette case During the war he was medical officer of the V A D Hospital at Creswell, for which services he was awarded the O B E

The Services.

DEATHS IN THE SERVICES

Lieut Colonel Joseph Gibson R A M C (ret), died on October 1st aged 68 He was educated at Trinity College, Dublin, where he graduated M B and Ch B in 1878 Entering the army as surgeon on February 5th 1881 he became lieutenant-colonel after twenty years' service and retired on July 15th, 1908 He served in the Burmese campaign in 1885-87, receiving the medal with a clasp and in the South African war in 1900-2, when he took part in operations in the Transvaal and Cape Colony, and received the Queen's medal with three clasps and the King's medal with two clasps

Major Robert Carlyle Carlyle, R A M C, is reported as having been killed in the mutiny of black troops at Khartoum on the evening of November 27th He was born on September 22nd 1887 was educated at Edinburgh, where he graduated M B and Ch B in 1911, and entered the army on July 26th, 1912 He was seconded for service in the Egyptian army on February 10th, 1917, and attained the rank of major on July 27th last

Medical News.

DR CHARLES SANDERS, who recently retired from the post of medical officer of health for the Borough of West Ham, was, on December 11th, presented by the Public Health Department with a handsome framed illuminated address (bearing 116 signatures) and a leather suit case, and by the Schools Medical Service with an inscribed silver plated salver, and entrée dishes Dr F G Collins (medical officer of health) and Dr Sherrett (schools medical officer), who made the presentations, testified to the esteem in which Dr Sanders was held Mrs Sanders was presented with a leather handbag

DR P SMYTHE HICHENS, on the occasion of his retiring from the post of honorary physician to the Northampton General Hospital after twenty three years service, has been presented with his portrait in oils and a cheque on behalf of over eighty subscribers to a public testimonial fund

IN response to an appeal recently made by the chairman of directors of Dundee Royal Infirmary for completing extensions to the Caird Hospital, a sum of £5 000 has been sent by Mrs Marryat, a sister of the late Sir James K Caird, Bt, Dundee who two years ago gave £20 000 for the same department of the infirmary

A SPECIAL number of the *Bruxelles Medical* has been devoted to an account of the proceedings of the annual medical congress known as "Journées medicales de Bruxelles, which was held at Brussels from June 29th to July 2nd

THE annual dinner of the Yorkshire Association of Graduates of the University of Glasgow was held in the Great Northern Hotel, Leeds, on December 5th, when there was present a company of ninety members and friends the President Dr George Hanson (Bradford), in the chair The chief guests were Professor John Glaister and Dr J B Baillie, the recently appointed Vice Chancellor of Leeds University The annual report shows that the association is in a flourishing condition, with a membership of 126 Membership is open to all Glasgow graduates resident in Yorkshire particulars may be obtained from the honorary secretary, Dr William MacAdam, Cromer Hall, Leeds

MR ALLAN WYON, sculptor, has presented to the Leeds University a bronze medallion in memory of his brother the late Dr G A Wyon, formerly lecturer in pathology in the University

SIR ARBUTHNOT LANE will lecture on the treatment of fractures in the West Lecture Hall of the Royal Society of Medicine on January 20th at 5 30 p m The London Temperance Hospital, in association with special hospitals, will hold a two weeks intensive course from January 12th in all the general and special departments of medicine and surgery A special course in cardiology limited to sixteen, has been arranged from January 12th to 23rd at the National Hospital for Diseases of the Heart From January 5th to 31st the Royal Eye Hospital (Southwark) will hold a course in ophthalmology, and there will be a special course in the diagnosis and treatment of common diseases of the nervous system at the West End Hospital for Nervous Diseases Dr Porter Phillips and Dr Thomas Beaton will deliver nine lecture demonstrations on psychological medicine, beginning on January 6th, at the Bethlem Royal Hospital A special course in urology will take place at the St Peter s Hospital for Stone from January 12th to February 7th provided ten entries are received The February courses include diseases of children, dermatology, gynaecology, tropical diseases venereal diseases, and a fortnight s intensive course in medicine, surgery, and the special departments Copies of the syllabus of the e courses may be obtained from the Secretary to the Fellowship of Medicine, 1, Wimpole Street, W 1

A COT in the children s ward at the Victoria Hospital, Cork has been endowed as a lasting tribute to the memory of the late Professor W E Ashley Cummins, honorary physician to the hospital for over thirty years

DR W F COPFIELD (M O H Colchester) has been elected a life Fellow of the Royal Sanitary Institute Dr A A Mussen (M O H Liverpool) has been elected a Fellow

DR G BEFBENEP SCOTT, barrister at law, Middle Temple has been appointed deputy coroner for the Western District of London

A DAILY medical journal entitled *El Dia Medico* which claims to be a medical review of reviews and to be the organ of the medical profession in the daily press, made its first appearance at Barcelona on December 1st The specimen copy which we have received contains abstracts from Spanish and foreign literature university and medical society intelligence, reviews of books, and a recent portrait of Ramon y Cajal

THE Anti Prohibition League held an international congress in London last June It has now issued a report of the proceedings at that congress and the text of the papers read before it The volume, which is an octavo of 156 pages, can, we understand, be obtained (price 5s) from the League at 123, Pall Mall, London, S W 1

A POST GRADUATE course of two years duration has been arranged by Professor Comba at the Pediatric Clinic of Florence to train candidates for the diploma of pediatric specialist which has recently been created in Italy by a royal decree

THE October issue of the *National Medical Journal of China* commemorates the tenth anniversary of the China National Medical Association whose official organ it is During the last ten years the Central Government of Peking has been persuaded to allow the official dissection of cadavers in medical schools, and to recognize, since 1915, Western medicine as the proper standard for medical qualification An effort is now being made to establish a central medical council to control the registration of medical students and practitioners throughout the country A long list of hospitals and medical schools organized includes a chain of antiplague hospitals and research laboratories in Manchuria A strong plea is put forward in the journal for an independent head quarters for the as ociation

PROFESSOR BELGONIE of Bordeaux has been awarded the Grand Cross of the Legion of Honour

DURING the recent war in Chekiang the Hangchow C M S Hospital dispatched a Red Cross unit of twenty three to the Huchow front It is hoped to send eventually four or five such units The hospital is reserving 200 beds for casualties, and for the second time in its existence is acting as a base hospital

THE late Dr Alfred Mantle of Harrogate left estate valued at £36,709, with net personalty £33,525

PROFESSOR JEAN LOUIS FAURE has been elected a member of the Academie de Medecine in the Section of Surgery

Letters, Notes, and Answers.

ORIGINAL ARTICLES and LETTERS *forwarded for publication are understood to be offered to the* BRITISH MEDICAL JOURNAL *alone unless the contrary be stated* Authors desiring reprints of their articles published in the BRITISH MEDICAL JOURNAL are requested to communicate with the Financial Secretary and Business Manager 429 Strand W C 2 on receipt of proof

CORRESPONDENTS who wish notice to be taken of their communications should authenticate them with their names—not necessarily for publication

ALL communications with reference to advertisements as well as orders for copies of the JOURNAL should be addressed to the Financial Secretary and Business Manager 429 Strand London W C 2 Attention to this request will avoid delay Communications with reference to editorial business should be addressed to the Editor BRITISH MEDICAL JOURNAL 429 Strand W C 2

Communications intended for the current issue should be posted so as to arrive by the first post on Monday or at latest be received not later than Tuesday morning

THE telephone number of the BRITISH MEDICAL ASSOCIATION and BRITISH MEDICAL JOURNAL is Gerrard 2030 (Internal Exchange) The telegraphic addresses are

EDITOR of the BRITISH MEDICAL JOURNAL *Aitiology Westrand London*

FINANCIAL SECRETARY AND BUSINESS MANAGER (Advertisements etc) *Articulate West and London*

MEDICAL SECRETARY *Mediocracy Westrand London*

The address of the Irish Office of the British Medical Association is 16 South Frederick Street Dublin (telegrams *Bacillus Dublin* telephone 2337 Dublin) and of the Scottish Office 6 Putland Square Edinburgh (telegrams *Association Edinburgh* telephone 4561 Central)

QUERIES AND ANSWERS.

LONDON AMBULANCE SERVICE

V A C —A London horse ambulance service was organized by a voluntary association in 1882 It consisted of three one-horse vagons which were eventually handed over to the police authorities These vehicles which were in existence until the year 1909 were supplemented by 240 litters and 40 hand ambulances In the year the London County Council introduced a bill in the Parliament for powers to establish an ambulance service which was passed and received the Royal Assent in October of the year The service actually came into being in 1915 The Corporation of London had established a service in 1907 but this was confined to the City of London

AMBULANCE CARS

"TRANSPORT" has been asked by his committee to arrange some means of transport for patients to and from an isolation hospital in a very wide district, where the cases are not numerous He would be glad to receive suggestions from any fever hospital medical officer who has had a similar difficulty to meet He asks whether a trailer has been tried anywhere

*** We have consulted Major E W Paget, C B E, liaison officer of the Home Service Ambulance Committee of the Joint Council of the Order of St John and the British Red Cross Society (19, Berkeley Street, W 1) His reply is as follows "For isolation hospital work a small two stretcher ambulance on a chassis of the type used for light American touring cars has been found satisfactory The body should be coach built rather than of canvas, for ease of disinfection The cost of such a vehicle is about £200 to £250 Trailers were occasionally made during the war for ambulance work, but a self contained motor ambulance is now almost universally used" Major Paget is good enough to offer to supply our correspondent with further particulars if desired

INCOME TAX

Partnership Assessment

"R F P"—A and B are partners of equal standing, but entitled to different allowances for life assurance and in respect of children How should they divide the sum of £174 8s 7d which they have had to pay on their joint assessments?

*** Assuming that both receive life assurance allowances at the same rate, say 3s, the division should work out as follows

A's advantage	Life assurance	£30 at 3s	= £4 10 0
	Children's relief	£36 at 4s 6d	= 8 2 0
			£12 12 0
A's share		£80 18 4	
B's share	£12 12s + £80 18s 4d	= £3 10 3	
			£174 8 7

We are unable, however, to make this total agree with the figure quoted as the gross assessment, and we suggest that "R F P" might request the inspector of taxes to let him have a note setting out how the £174 8s 7d should be divided Such requests are, we believe, frequently made and granted

X ray Apparatus

"X RAY" installed an x ray apparatus in February, 1923, at a cost of £500 of which £40 was paid for plates, developing chemicals, etc, and £5 for insurance of x ray tube What deductions are due for income tax?

*** No allowance is due for the capital cost of purchase and installation, but deductions can be claimed for running costs and materials, also for insurance The depreciation allowance is not due because the apparatus is used in a "profession," but the cost of renewal is allowable as and when incurred The only deductions which "X Ray" can make at present therefore are (1) insurance £5, and (2) cost of materials, etc Strictly the latter should be restricted to the cost of materials, etc, used in 1923 but the inspector of taxes may agree as a matter of convenience to allow the lump sum of £40 and further similar expenditure as and when incurred These amounts will be professional expenses affecting the computation of the profit for the year to December 31st

LETTERS NOTES ETC

CHRISTMAS WEEK

OWING to the Christmas holidays we have had to send the current issue of the BRITISH MEDICAL JOURNAL to press on Monday instead of Wednesday This is always a difficult season for the production of a weekly journal, but when Christmas Day falls on a Thursday the dislocation of editorial and printing business is greater than usual—so much so that we can sympathize with the doctor who, when asked by his wife what he would like for a Christmas present, answered 'A Christmas past"

PROTEIN THERAPY IN GONORRHOEA

DR M W BROWDY (London W) writes I was pleased to note the remarks in the *Epitome of Current Medical Literature* for December 13th (No 469) on the finding of H E Ahlswede and W Busch that non specific protein is of such value in the treatment of gonorrhoea I described the method of treatment by injections of sterilized milk in the *Lancet*, April 27th, 1923, with satisfactory results, and since then have found this one of the greatest adjuvants in the treatment of gonorrhoea and its complications

HYOSCINE IN PARALYSIS AGITANS

"M D" a retired practitioner sends an account of a case of paralysis agitans in which great improvement followed the administration of hyoscine by the mouth The patient a male aged 62 had had the disease for seven years during which a considerable variety of treatment had been employed His face was mask like and florid, and his voice very feeble Great muscular wasting was present, his hands were cold and livid, and festination was marked The patellar reflex was feeble, and continuous tremors of the lower jaw, tongue hands, and legs were present These tremors often became violent, the patient could not sit down or rise from a chair, cross his leg over the knee or walk without his feet being placed by a nurse He could not feed himself, and the food tended to drop out of the mouth Hyoscine hydrobromide 1/200 of a grain was given, diluted with water, and another dose of 1/150 of a grain was given four days later Seven days after the first dose general improvement was noted, and two days later the third dose, 1/100 of a grain, was given Twelve days after the first dose the more violent tremors were absent, and the patient was generally better The dose was increased gradually up to 1/50 of a grain, steady improvement resulting Within a month of the commencement of the treatment the patient had regained complete control of his legs and could walk both forwards and backwards A week later he was able to rise from his chair and walk up and down stairs without help, a thing he had been unable to do for five years The treatment was continued, the dosage being varied as required The patient lived in comfort, and died eventually of bronchitis No untoward symptoms attended the use of hyoscine, which was the only remedy employed by our correspondent

BACKWARD DISPLACEMENT OF THE UTERUS

DR HELWOOD SMITH (Chichester) writes Dr Archibald Donald in his lecture (December 13th, p 1087) makes some observations not wholly favourable, on the treatment of cases of retroversion by pessaries In my practice at the Hospital for Women about forty five years ago we observed a large number of cases not only relieved but cured by the proper use of a pessary But then it must be proper, both in the method of replacement and in the pessary employed First the uterine sound should be passed with great care, the turn made, and, with the finger on the cervix, the uterus slowly placed in the normal position Then a proper pessary is introduced The usual Hodge is too flat, and many practitioners use too short a one, and so the uterus slips back into its abnormal position The proper Hodge is a Smith Hodge devised about the same time by Dr Albert Smith of America and myself In this pessary the upper portion is curved considerably forwards and the lower portion somewhat backward, so that when in position—and as long a one as can be comfortably borne is used—the uterus is kept in its forward position by the upper forward curved portion of the pessary, the lower portion being bent back, there is no inconvenient pressure on the urethra If the patient is instructed to use the douche carefully there is no need for frequent visits to the doctor, although she should be warned not to allow too long intervals to elapse, especially if any discomfort arises

ROYAL COLLEGE OF SURGEONS OF EDINBURGH

DR J DICKINSON LEIGH, F R C S Ed (tuberculosis medical officer, Sunderland), writes From the recently published list of Fellows of the Royal College of Surgeons of Edinburgh I find that out of a total of about 1,800 there are 203 resident in Scotland as against 708 living in England I write to suggest the formation of an association of Fellows resident in England Much might be done in the way of raising funds to endow lectures to be delivered on the lines of those given at the sister college in London and also to throw open examinerships to men on this side of the border It is an encouraging sign to find that one examiner for the D P H has been appointed from England in the person of Dr Cookson Surely this appointment is unique

A TRIP TO TIMBUCTOO

To receive a circular endorsed by the familiar name of Thomas Cook and Son, giving times and fares of a trip to Timbuctoo makes the reader think that the earth must be shrinking as fast as, according to Professor Jeans, the sun The tourist goes by way of Marseilles and Algiers to rail head at Colomb Bechir, and thence by motor cars of the enterprising Citroen Company which provides them also with hotels or camps The motor trip from rail head to Gao takes eight days From Gao to Timbuctoo the journey (two days) is made by motor boat on the Niger It is not a poor man's holiday for the fare from Colomb Bechar to Timbuctoo and back is £475, and if the traveller steps off he pays £6 a day, but it must be interesting

WARMING THE ENGINE

MESSRS A W GAMAGE of Holborn, E C, sell a small lamp—the 'Warma" Radiator Lamp—for 14s 9d designed to protect motor car radiators from frost and to make engine starting easy on cold mornings The lamp is made on the principle of the safety lamp, the wick burning inside a cylinder of gauze Round the gauze cylinder is fitted a radiating muff of crinkled metal, said to have the effect of increasing the heat, but useful at all events for protecting the gauze from injury One filling of paraffin will keep the lamp burning for about forty hours The lamp is said to be quite safe so long as the gauze is uninjured, and such an accessory should be useful in protecting the cylinders and radiator from damage in a cold garage.

VACANCIES

NOTIFICATIONS of offices vacant in universities, medical colleges, and of vacant resident and other appointments at hospitals will be found at pages 28, 29, and 31 of our advertisement columns, and advertisements as to partnerships, assistantships, and locumtenencies at pages 30 and 31

A short summary of vacant posts notified in the advertisement columns appears in the *Supplement* at page xxx

EPITOME OF CURRENT MEDICAL LITERATURE.

Medicine

506. **Rickets**

E. J. WATSON and C. V. WEYMOUTH (*Journ. Amer. Med. Assoc.*, November 8th 1924, p. 1479) state that rickets is the most widespread infantile nutritional disorder of temperate climates. In a group of 400 babies, aged 3 to 8 months, in the out patient department of the Boston Children's Hospital skiagraphs and careful examination showed that 95 per cent. of all these babies and 100 per cent. of the Italian and negro babies had either active or healed rickets before the age of 8 months. During the winter all the babies showed some evidence of rickets; the rickety rosary was found the most trustworthy sign. Skiagrams in early cases proving unreliable. Since 1919 numerous observers have reported that ultra violet rays in doses approaching the limit of tolerance will cure rickets and tetany in the absence of any other treatment. In 1923 the authors organized a special clinic at the Boston Children's Hospital and during the last year 86 patients were treated with ultra violet rays three times in each week; six normal children used as controls, receiving the same treatment during a period of two months. Skiagrams of the wrists with palms upward were taken every ten or twelve days and the calcium and phosphorus in the blood plasma were estimated. The lamp was placed 20 inches from the skin surface, and the initial exposures continued for two minutes to the front and two minutes to the back of the body. These times were increased by one minute at each sitting, until a total of thirty minutes was reached. No undue erythema occurred even in the most delicate skins. No cod liver oil or medicine was given but an ordinary antirachitic diet was prescribed. All these 86 patients with acute rickets showed steady improvement and gained weight without change of food. The improvement was so definite that the parents willingly brought the children three times a week to the clinic, often from a considerable distance. Skiagrams showed increased calcium deposit at the end of two weeks but the improvement was much more marked when the longer exposures were being given. In all patients whose blood was examined before the commencement of treatment a low concentration of serum phosphorus was found and in those children who had both tetany and rickets there was also a low calcium figure. During the treatment both concentrations reached the normal in two weeks. Full details of 4 cases, with numerous skiagrams are given.

507. **Internal Secretions and Skin Diseases**

J. S. COVISA and J. BEJARANO (*Arch. de mal. cut. y esp.*, October 25th 1924, p. 149) state that proved cases indicating some relationship between diseases of the skin and endocrine changes are as rare as the hypotheses based on a supposed relationship are numerous. They maintain that the only instances in which a connexion has been definitely established between affections of the endocrine glands and dermatoses are as follows. In the first place in a large percentage of cases of acroasphyxia chilblains erythema induratum (Bazin) angiokeratoma (Mibelli) scrofuloderma and the other dermatoses which constitute the large group of tuberculides there is a more or less pronounced but almost always obvious condition of thyroid insufficiency which is manifested by a constant feeling of chilliness infiltration of the skin of the face, loss of hair etc. The most striking example of this group is illustrated by the skin changes in myxoedema. The authors have found that in many cases of tuberculides opotherapy has a very favourable action, as it shortens the course of the disease prevents the occurrence of secondary infections of the skin and causes a disappearance of the general symptoms of hypothyroidism which accompany these dermatoses. In the second place a relationship has been established between many changes in pigmentation, principally with states of suprarenal insufficiency and to a less extent with changes in the thyroid hypophysis and ovaries. Bahiña has shown that adrenaline causes a rapid disappearance of pigmentary syphilides which, as is well known are refractory to antisyphilitic treatment and sometimes remain unchanged for years. Lastly the authors say that there is an indisputable relationship between many cases of acne with changes in the thyroid especially increased activity of that gland. Their experience differs from that of Levi and Rothchild who found that acne was often associated with hypothyroidism.

508. **Extrocardia in Twins**

C. PEZZI and L. CALLIGARI (*Cuore e Circolazione*, October 1924, p. 361) record a probably unique case of cardio visceral transposition in twins who had reached the age of 25 years. There was no family history of heart disease. The father had died of gastric cancer at the age of 59 and the mother of pulmonary tuberculosis at 35. One sister aged 29 was in an asylum with dementia praecox while another sister aged 27 and a brother, aged 21, were alive and healthy. Before the war when the condition was first discovered, neither of the twins had had any illnesses worth mentioning. Both had taken part in the front line fighting. The condition was detected in one twin during an attack of malaria, when the liver dullness on the left was at first mistaken for splenic enlargement. Skiagrams in both cases showed that the heart was on the right side while the liver occupied the left hypochondrium and the stomach was on the right. Although it was impossible to affirm that the transposition of viscera was complete because the x rays could not demonstrate inversion of certain viscera such as the lungs, it was probable that the transposition involved other organs such as the intestine as was found by De Castro in two out of three cases. The electrocardiogram in the present authors' two cases was characteristic in each instance. In the first deflection the tracing was that of a normal subject but reversed, while in the second and third deflections the curves were normal—with this difference that he second deflection corresponded to the third of a normal subject and the third to the second. As regards the pathogenesis of transposition of viscera the authors accept the views of Martinotti and Lechte. Martinotti has shown that normally the left omphalo mesenteric vein is more developed than the right which disappears rapidly, and on this asymmetry depends the development of the organs especially the liver, stomach and spleen. Persistence of the right omphalo mesenteric vein and disappearance of the left produces transposition of the viscera and secondary rotation of the heart, though the latter is not inevitable like inversion of the abdominal viscera. Lechte attaches considerable importance to the umbilical veins, which are closely connected with the omphalo mesenteric veins and undergo a similar evolution, normally the left only persisting while the right disappears. On the other hand when the right umbilical vein persists, the omphalo mesenteric vein or future portal vein will pass to the left side of the foetus and the liver will develop in this situation the greater curvature of the stomach being found on the right.

Surgery

509. **Diverticula of the Bladder**

M. NEGRO and H. BIANE (*Journ. d'Urol.*, September, 1924, p. 217) from a study of thirteen cases of diverticula of the bladder draw the following conclusions. Diverticula are usually met with after 50 years of age though they are not rare in younger subjects, the authors report three cases occurring before this age. They are occasionally present in females two being found in women among the 8 cases. The diverticula are more commonly placed on the lateral walls of the bladder the size varies from that of a nut to that of a large orange. Two of the largest were discovered in patients of 24 and 32 years of age respectively. Multiple diverticula are more often found than single ones. The multiplicity appears to vary inversely with the size, for the large ones are usually single. Diverticula do not give rise to any special symptoms. The only pathognomonic sign appears to be micturition in two stages and this is found very occasionally. Other symptoms are cystitis and haematuria, and in one case there was *acute retention with acute unilateral pyelonephritis*. As regards complications there were two cases with calculi in the diverticula and one case with papilloma. The authors regard the cystoscope as essential in making the diagnosis. It gives information as to the number position, and location of the diverticula openings, but it is not always sufficient, and cysto-radiography is useful in these cases. By this means calculi in the diverticulum invisible by cystoscopy can be detected. As to treatment palliative means are said to be useless in getting rid of the infection or other complications present. The authors found surgical treatment only of any avail, and they describe the various procedures that have been adopted.

510 Spontaneous Gangrene of the Lower Extremities

F KAZDA (*Deut Zeit f Chir*, August, 1924, p 86) states that the causes of spontaneous gangrene have been classified by Israel as follows (1) Deficient supply of normal blood, as in arterio sclerosis and endarteritis obliterans, (2) normal supply of abnormal blood, as in gangrene of the extremities after infectious diseases, (3) deficient supply of abnormal blood, as in diabetic gangrene Apart from diabetic gangrene, Kazda distinguishes two forms of spontaneous gangrene The first form occurs in young or middle aged persons who are affected with more or less pure forms of angiospasm and endarteritis obliterans The prodromal symptoms, which often last for years, especially when both legs are affected, may be very violent Finally, the gangrene develops rapidly and involves segments of the peripheral parts of the extremities A segment of a toe, one or several toes, or a portion of the foot becomes discoloured, the pain being extremely severe The second form occurs in older persons with very pronounced arterio sclerosis Prodromal symptoms are absent or slight and of short duration The pain is much less severe than in the first form, the gangrene commences slowly, usually from an ulcer, and extends peripherally from it and not in a segmental manner The first form of gangrene is much the more frequent—Kazda saw 37 cases in men and 13 in women of the first form, as compared with 16 in men and 2 in women of the second form The average duration of the prodromal symptoms of the first form in men is one year and two months when one leg only is affected, and five years and two months when both legs are involved, and in women two years and eight months The duration of the prodromal symptoms in the second form never exceeds two months In the first group conservative treatment is always unsuccessful, and primary operation is required, whereas in the second group conservative treatment is indicated In diabetic gangrene conservative treatment should be attempted only in the mildest cases, which may be classified in the second group In all other cases amputation of the thigh should be performed, even if there is no coma Surgical measures should be accompanied by medical treatment of diabetes. The prognosis is always doubtful

511 Chronic Ethmoiditis and Asthma

HUMBLÉ (*Bruxelles Medical*, October 19th, 1924, p 1459) reports the case of a night watchman, aged 55, who had suffered from asthma and bronchitis for ten years or more After the removal of some nasal polypi some years ago he was temporarily relieved, but the attacks of asthma recurred, associated with severe bronchitis Humblé removed the nasal polypi with a cold snare, and also paid attention to some bad teeth and to the dyspepsia A few weeks later he proceeded to clear out the ethmoidal cells, having first ascertained that the sinuses were free from disease The removal of these cells gave complete relief, and the author suggests that the asthma was a spasmodic reflex due to the irritation of nerve filaments by the chronic ethmoiditis

512 Ascariasis and Acute Pancreatitis

W PFANNER (*Deut Zeit f Chir*, August, 1924, p 125) states that the increase of intestinal parasites during and after the war has frequently given rise to conditions requiring surgical interference Invasion of the bile ducts or liver by ascarides is a severe and dangerous disease, which becomes one of exceptional gravity when secondary changes in the pancreas ensue Pfanner records two fatal cases in men aged 44 and 54, in whom invasion of the bile ducts by round worms had not only caused the usual cholangitis, but had also led to severe acute suppurative pancreatitis The onset of the disease was not characteristic in either patient, but resembled that of other cases of ascariasis of the bile ducts, and the possibility of the invasion of the common bile duct or pancreatic ducts was not considered In the first case the possibility of cholecystitis with cholangitis was entertained, while in the second case the onset suggested gastric or duodenal perforation In the first case operation showed acute inflammation of the bile ducts, which contained extremely fetid bile infected with *B coli* In spite of cholecystectomy and drainage of the common bile duct signs of acute pancreatitis developed in a few days and death took place The pancreatic duct at the autopsy was much dilated and filled with an adult *Ascaris lumbricoides*, and multiple punctiform haemorrhages and areas of fat necrosis were found in the pancreas In the second case, in which death took place before operation, the autopsy showed early peritonitis and all the signs of acute pancreatitis A pair of ascarides was found in the common bile duct, with their heads towards the hepatic duct and their tails projecting from the papilla of Vater Twenty more fully developed ascarides were found in the stomach and duodenum

Therapeutics.

513 Caffeine in Epilepsy

P KARGER (*Deut med Woch*, November 7th, 1924, p 1531) states that he began to substitute stimulants for sedatives in the treatment of epilepsy with some scepticism, although the recent work of Stargardter had made out a plausible case for this change But the author's experience during the past three years with more than 60 cases has convinced him that caffeine may be remarkably effective in a considerable proportion of cases With the exception of ten patients, in whom the attacks were comparatively serious, his material consisted of patients suffering from petit mal, associated in most cases with enuresis In every case a definite connexion was established between the attacks, and tiredness and sleep At first caffeine was given only to those children in whom the attacks began on getting up or going to sleep, in the night, or towards the end of school hours The ages of the children ranged from 3 to 13 years, and, in order to eliminate suggestion as a factor in the treatment, tinctura amara was at first given for some days it had no effect Caffeine was then prescribed When the attacks used to occur in the morning only the caffeine was given before rising The dosage and the spacing of the doses were modified according to the requirements of the individual, it was found advisable to continue the treatment for two to three months after the symptoms had disappeared and to discontinue the treatment gradually No harm was done, and there were only three cases in which this treatment was ineffective In no case did the drug interfere with sleep, and in most cases the duration of the cure was considerable

514 Camphor in Bacteriaemia

E JARLOV (*Acta Med Scand*, Supplement VII, 1924, p 57) states that it has long been known that the growth of pneumococci is arrested in as dilute a solution of camphor as 1 in 10,000 Oil of camphor has been found unsuitable for subcutaneous injection because it is absorbed so slowly, and it is unsuited for intravenous injection because of the risk of fat embolism The investigations of Leo have shown that camphor is not so insoluble in water as it was thought to be, and, on Leo's prompting, the author has given intravenous injections of camphor in several cases of bacteriaemia Using a solution of 15 cg of camphor in 125 c cm of water, the author gave from 150 to 500 c cm or more to adults at one injection Each injection took from fifteen to twenty minutes, and in several cases one injection was given every day for a short period Among the numerous cases recorded by the author there was one of septic fever in a man, aged 21, who did not respond satisfactorily to injections of collargol On three successive days he was given 250 c cm of the solution of camphor, after the second injection the temperature fell to normal, and he was discharged from hospital much improved In a case of pneumonia, in a woman aged 29, the injection of as great a quantity as 400 c cm of the solution of camphor was immediately followed by a rigor, the temperature rising to 104° F, but she soon felt much better When, at a later date, 75 cg of camphor were injected in the course of about fifteen minutes, a rigor again developed, and the temperature rose to 103° F, a few hours later she felt perfectly well and she made a complete recovery In a case of severe puerperal sepsis as much as 90 cg of camphor was given in about fifteen minutes, and this dose was so large that the patient was rendered almost unconscious by it for a few seconds But neither in this nor in any other case did the injections inflict any permanent injury, and the author concludes that camphor, given in this way, is a very effective remedy for a great variety of blood infections He adds that it is not only a stimulant, promoting the functions of the vascular and respiratory systems, but it is also a powerful internal antiseptic

515 Atropine Sulphate in Acute Mania

A POPEA, L CONSTANTINESCO, and GIURGIU (*Bull et Mem. Soc Med des Hop de Bucarest*, September, 1924, p 188) have studied the vago sympathetic system in mental disease, with or without pathological lesions, using Daniélopolu's atropine test They have discovered that atropine sulphate has a specific action when injected intravenously in doses sufficiently large to paralyse the vagus, especially in cases of maniacal excitement When the dose was sufficient to accelerate the heart, and to produce mydriasis, maniacal patients became less talkative and excitable, they grew drowsy and more amenable to control In twenty cases, as soon as the test was completed, all the patients slept for three to eight hours, with the exception of two patients, who were drowsy but did not actually sleep, one other patient, a general paralytic suffering from maniacal excitement, was not calmed These patients awoke without the disturbance

that usually follows the administration of hypnotics especially of opiates, and the psychomotor disturbance was definitely less At the end of twenty four to forty eight hours the patients began to return to the maniacal state, but for many nights after the injection of atropine they slept naturally The authors consider that these facts appear to throw light on some obscure points in the pharmacodynamic action of atropine, and cite the following authorities Manquat states that atropine is not hypnotic in the usual sense It only produces sleep when given in massive doses, its action appearing to be the first stage of the coma which supervenes when a toxic dose is given According to Pauchet, however, it is a valuable soporific in disease, and Soulier reports that while belladonna stimulates normal nerve cells it calms those which are functionally deranged Furthermore, Radovici and Nicolesco have described a hypnotic action of atropine in patients suffering from epidemic encephalitis The present authors confirm that view, and show that the sedative and hypnotic effect of atropine corresponds with its paralysing action on the vagus The interdependence of these two effects has yet to be verified and it must be remembered that according to Tinel, Santenoise, and others, maniacal excitement is always preceded, if not produced, by a state of vagotonia If the two phenomena are connected the present authors think that the origin of conditions of excitement and especially of maniacal symptoms, may be due to hypertonia, or hyperexcitability of the pneumogastric which gives rise to attacks of maniacal excitement by cerebral irritation Sleep supervening after the calm produced by atropine would then be due to fatigue resulting from the previous excitement

Anaesthetics.

516. Local Anaesthesia in Cataract Operations

J MATHEWS ROBISON (*Arch of Ophthalmol*, November, 1924 p 570) describes in detail the various methods of anaesthetizing the nerves supplying the lids recommended by various authorities in connexion with cataract operations He has devised a technique of his own by repeated experiments The points which he particularly emphasizes are the necessity of paralysing not only the orbicularis oculi, but also the accessory muscles affecting the closure of the lids—namely the corrugator supercilii and the angular head of the quadratus labii superioris—and also the advisability of producing complete anaesthesia as well as paresis of the lids To ensure this latter it is necessary to block the supraorbital the supratrochlear and infratrochlear, the infraorbital, and the lacrymal nerves

517 Gas Oxygen Anaesthesia.

E I MCKESSON (*Journ Amer Med Assoc* November 8th 1924 p 1502) discusses the advantages gained by using pure gas oxygen anaesthesia in ear, nose, and throat surgery He points out that the coagulation time of the blood is shortened, and that under general pressure narcosis is made perfectly safe for patients with obstructive complications, such as quinsy or tumours Moreover, the danger of inspiration of pus blood, and infectious material appears to be diminished He has encountered no pulmonary abscesses, nor pneumonia as sequels, and no deaths He considers the sitting posture preferable for operations He reports difficulty in obtaining the abolition of the pharyngeal reflex unless morphine is also employed, and a second objection is the requirement of a special apparatus

518 Colonic Anaesthesia.

H W MEYER and B F ROBBINS (*Journ Amer Med Assoc*, November 15th, 1924 p 1581) sketch the history of colonic anaesthesia in a short preliminary note and then point out the indications for this form of narcosis as being (1) obesity (2) hyperthyroidism, and (3) operations about the head neck, and thorax Old age is not considered a contraindication, but intestinal disease, advanced nephritis and diabetes prohibit its use As in other forms of anaesthesia, the usual care before, during, and after induction must be exercised The colon is emptied forty eight hours before operation, and after twelve hours a soap and water enema is given About three to four hours before the operation a tap water enema is given, and an hour and a quarter before operation a suppository is introduced containing 10 grains of trichlor tertiary butyl alcohol and a hypodermic injection of 1/6 to 1/4 grain of morphine with atropine is given One hour before operation the ether oil mixture is introduced gradually into the rectum the rectal tube is left in position and is closed with a clamp Surgical anaesthesia may be expected after forty five minutes The standard formula used is ether 4 oz, paraldehyde 2 drachms and olive oil 2 oz If signs of danger appear during tube and pressure over the si are said to remedy the conditi rocedure includes colonic irrigation followed by a hot coffee enema, morphine should be withheld until the patient is fully awake The method is stated to be a very safe one, and to obviate post operative pneumonia after protracted operations

519 Resuscitation by Direct Cardiac Massage

W E LEES and T M DOWNES (*Annals of Surgery* October, 1924, p 505) call attention to the efficiency of cardiac massage in re establishing heart action after arrest during anaesthesia They emphasize the simplicity of the procedure and suggest that restorative measures are not exhausted until direct cardiac massage has been tried The number of recorded cases in which this has been successful is about 25 per cent They state that artificial respiration is most important in conjunction with cardiac massage, which must be started early, within two or three minutes of the cessation of the heart beat, after an interval of ten minutes it is seldom successful Time should not be wasted in hypodermic stimulation, which cannot act if the circulation has stopped The abdominal subdiaphragmatic method is usually employed, and is easy and quick Through an abdominal incision the heart is rhythmically squeezed against the chest wall If the heart is not restored to activity in two minutes the diaphragm should be incised and direct stimulation tried The authors consider that the intraventricular administration of adrenaline as advocated by Crile will be more certain and efficient in its action if combined with cardiac massage When the heart has ceased to beat it is doubtful whether anything except direct massage will restore its action

Obstetrics and Gynaecology.

520 Incontinence of Urine.

C J MILLER (*Amer Journ Gynecol and Obstet*, October, 1924, p 492) states that incontinence of urine is a common occurrence in women and usually follows injuries sustained at labour, though sphincteric weakness may be responsible in some nulliparous cases In 1 000 gynaecological cases collected by Taylor and Watt control of urine was found to be normal in 79 4 per cent and fair in 6 8 per cent, thus in 13 8 per cent there was poor control or incontinence Multiparity increased the frequency of incontinence, and 45 per cent of patients with prolapse were affected Miller considers that the cause is doubtful but is probably an injury of the vesico vaginal fascia which according to Taylor allows the inferior wall of the urethra to sag This tends to drag on the sphincter urethrae and to hold it open the sphincter itself is rarely injured In these patients the perineum is usually shallow and the anterior vaginal wall bulges on straining Many ingenious methods of treatment had been devised for this condition but failed owing to misconception of the cause of the incontinence The author remarks that modern methods consist in the tightening of the fascia around the vesical neck without attempting to narrow the sphincter, and that these have been eminently successful, especially when Clark's *U suture* was used to give immediate and later permanent support to the urethra and vesical neck An anterior colporrhaphy is required in nearly all cases to complete the readjustment of the whole fascial sheath In cases unsuited for operation he finds that pessary treatment, preferably the ring pessary has proved very efficacious, at any rate in the milder type of incontinence, for the weakened fascia is supported and sagging prevented

521 Operative Treatment of Carcinoma of the Uterus.

ACCORDING to an analysis by A GIPSI (*Ann di Ost e Ginecol* October 31st 1924 p 463) of the statistics of the Milan Obstetric and Gynaecological Institute the prognosis in carcinoma of the body of the uterus is less favourable than has recently been stated During the last four teen years 84 cases have been operated on 46 by the vaginal and 38 by the abdominal route the operative mortality being 2 7 per cent Those surviving patients whose after histories could be traced numbered 53 9 had recurrences within twelve months 8 during the second to the fifth years and one in the tenth year Twenty two patients were free from recurrence after five years 31 after two years The proportion of recurrences was 3 7 per cent, and of five year cures 41 5 per cent So far as statistics are concerned the operative mortality and incidence of recurrence were both less after vaginal than after abdominal hysterectomy but in this series those cases in which some degree of fixation of the uterus was perceptible clinically were chosen for abdominal operation The oldest patient was aged 69 The two youngest were 35 years old Judged by the operative and end results, carcinoma of the

body of the uterus does not appear to show any greater degree of malignancy in the younger than in the older patients In two cases the abdominal operation consisted in subtotal hysterectomy, one patient was lost sight of, but the other was alive and well eight years later It is not stated that the diagnosis was verified microscopically in all cases

522 Foetal Death and Protein Shock

E FISCHER (*Zentralbl f. Gynak*, October 4th, 1924, p 2203) has been accustomed to immunize pregnant patients suffering from any form of streptococcal infection In two cases of pyelitis of pregnancy this was followed by anaphylaxis In the first symptoms appeared in six days in the form of an exanthematous rash, most marked at the site of injection, and accompanied by swollen glands The rash became worse two days later, and the tonsils and larynx were affected Abdominal and joint pains then appeared, and were followed by labour pains Labour ran a very rapid course and was completed in four hours, although the patient was a primipara The child was born dead, petechial haemorrhages were found and an abnormally distended bladder In the second case the anaphylactic phenomena came on six days after the injection They were similar to those in the first case but not so severe They were followed by rapid onset of labour, which was completed in one and a half hours The patient was a multipara The child was born alive but feeble, and died in sixteen hours Marked internal haemorrhages were found, especially in the brain, kidneys, and suprarenals Fischer considers it probable that protein shock was the cause of death in these two cases and that it also accelerated labour unduly He has since then never given serum injections to pregnant women without taking precautions against anaphylaxis, or unless labour has already started, during the last ten months he has had no further cases of protein shock to report

Pathology.

523 Increasing Acquired Immunity in the Guinea-pig

C ZOELLER (*C R Soc de Biologie*, October 24th, 1924, p 858) found that if guinea pigs were given two injections of diphtheria anatoxin they became, after a certain time, refractory to experimental infection with the diphtheria bacillus Inoculating the bacillus on the conjunctiva appeared to be devoid of effect, so far as symptoms were concerned, but on bacteriological investigation it was found that the bacillus had established itself in this position, thus converting the animal into a healthy carrier Wondering whether this establishment of the diphtheria bacillus on the healthy conjunctiva had any effect on the immunity of the animal, Zoeller carried out some experiments in which guinea pigs vaccinated with anatoxin and subsequently treated by conjunctival inoculation of living bacilli were compared with guinea pigs which had received the anatoxin only Into each animal three different dilutions of diphtheria toxin were injected intradermally, the dilutions employed were 1 in 5, 1 in 10, and 1 in 20 Whereas the first series of animals reacted to two of the dilutions and recovered, the second series reacted to all three dilutions and subsequently succumbed in a state of cachexia It appears, therefore, that infection with the diphtheria bacillus, subsequent to the establishment of immunity has a stimulating effect on the immunity of the animal, raising it to a higher level than that attained by the injection of anatoxin alone If this be true for man it is justifiable to suppose that the exposure of vaccinated individuals to infection in an epidemic medium would have the beneficial effect of increasing their immunity

524 Calcium Content of the Blood in Skin Diseases

H J SCHWARTZ and O L LEVIN (*Arch Derm and Syph*, November, 1914, p 544) found in over 300 cases of various diseases of the skin that no positive relationship between the blood calcium content and the disease appeared to exist, and there seemed to be no special significance in a decrease in the blood calcium unless marked In only one case of psoriasis was a definite decrease noted, but in acne, eczema, furunculosis, and folliculitis barbae several cases showed a noticeable decrease, and a decided improvement resulted in some from the internal administration of parathyroid and calcium lactate, such improvement being associated with an increase in the blood calcium Two cases of purpura and two of erythema multiforme gave low figures, but the number examined was too small to warrant conclusions, in urticaria there appears to be no deficiency

525 The Use of Arsenobenzene in Blood Transfusion

CH FLANDIN and A TZANCK (*Bull et Mem Soc Med des Hop de Paris*, November 13th, 1924, p 1487), while recognizing the excellent results obtained with sodium citrate in blood transfusion, believe that the arsenobenzenes have the following advantages (1) Anticoagulant power 0 03 to 0 06 gram of sulfarsenol is sufficient to render 100 c cm of human blood incoagulable, as contrasted with 0 3 to 0 5 gram of sodium citrate (2) Toxicity 0 01 gram of sodium citrate is a lethal dose, on intracardiac injection, for a guinea pig of 500 grams, while a similar guinea pig will survive a dose of 0 03 and even 0 05 gram of sulfarsenol In man the toxicity of the amount of sulfarsenol used in transfusion is *nil*, save in exceptional cases (3) Blood changes The action of the arsenobenzenes on the blood seems analogous to that of sodium citrate Anticoagulant action is not due to the destruction of globulins Complement disappears immediately on the addition of either of these, so that the original Wassermann test is impossible with blood so treated Poikilocytes do not appear so quickly after the addition of sulfarsenol as after sodium citrate (4) Dilution of blood By using sulfarsenol it is only necessary to add a trace of foreign liquid to the blood, while sodium citrate involves the addition of a much larger bulk of fluid.

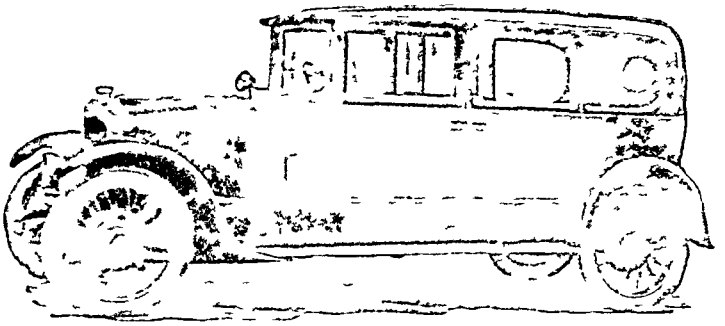
526 Production of Tuberculous Cavities in the Rabbit

A PHILIBERT and F CORDEY (*C R Soc de Biologie*, November 21st, 1924, p 1072), in their experiments on reinfection in tuberculosis, instead of using the guinea pig as most workers have done, chose the rabbit Large doses of tubercle bacilli —type not stated—were injected intratracheally (1) into animals which had been previously infected by subcutaneous injection, and (2) into animals which had been previously infected by intratracheal injection Whereas in the first class the pulmonary lesions following reinfection were diffuse, hyperplastic, and showed no tendency to caseation, in the second class nodular caseous lesions were formed which broke down with the production of large cavities The first injection consisted of 50 mg of bacilli, the second, given one or two months later, of either 1 mg, 50 mg, or 100 mg The rabbits which received 1 mg showed at autopsy large caseous foci, which did not soften and break down, those which received 50 mg showed in two cases out of five large caseous foci, some of which were softened and others of which were on the point of breaking down and discharging, those which received 100 mg showed enormous cavities In the case of one animal which received a preliminary dose of 50 mg, followed a month and a half later by a dose of 100 mg, the autopsy, performed five days after the reinfecting dose, revealed a large cavity, the size of a nut, in the left lung, and a large cavity, the size of a small nut, at the summit of the right lung These experiments show, according to the authors, that infection and reinfection by the tracheal route do not give rise to an allergic reaction with congestion and focal necrosis, but to massive caseation The first infection did not protect the animal against reinfection

527 Conversion of Saprophytic Acid-fast Bacilli into Tubercle Bacilli

A CALMETTE (*Rev Belge de la Tuberculose*, October, 1924, p 293) gives a critical summary of the literature relating to the possible conversion of saprophytic acid fast bacilli into pathogenic tubercle bacilli and the reverse transformation, adding a few experiments of his own Though he has been able to induce certain alterations in the virulence of the tubercle bacillus, he has never succeeded in bringing about a change of such a degree as to justify him in considering it of significance in so far as this question is concerned By cultivating tubercle bacilli on glycerin bile potato for a period of thirteen years he has produced a bacillus which, though still acid fast, has lost all its virulence, and is unable to give rise to tubercles in any species of animal Yet its power of producing tuberculin remains as strong as that of the normal tubercle bacillus, and on injection into animals it gives rise to antibodies which can be titrated by means of the complement fixation test, using an extract of the tubercle bacillus as the antigen Similarly, in the literature, he is unable to find any evidence of value pointing to a conversion of the tubercle bacillus into a saprophytic form With regard to the reverse transformation—the conversion of the saprophytic acid fast bacilli into pathogenic tubercle bacilli—the evidence is equally defective, according to him Experiments he has made with the Timothy grass bacillus have shown a complete lack of adaptation of the organism to a parasitic existence He concludes, therefore, that mankind has nothing to fear from the saprophytic acid fast bacilli.

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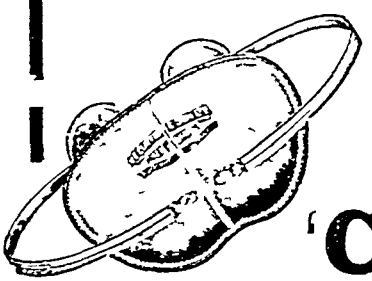


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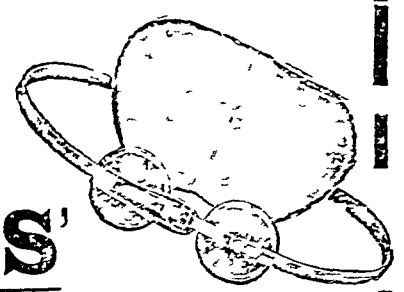
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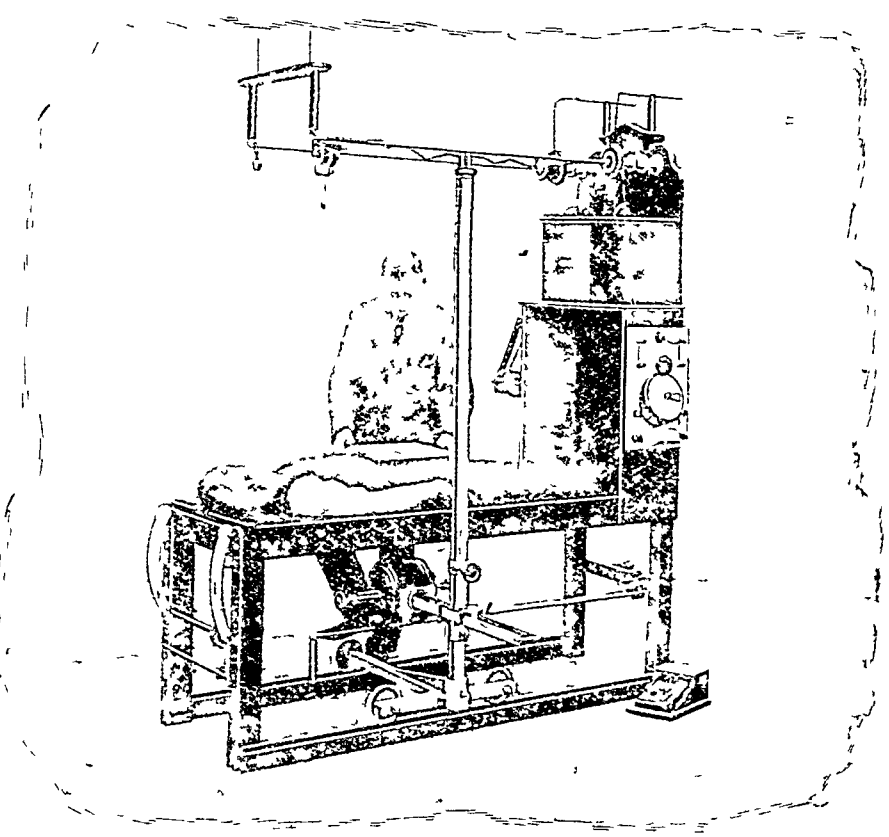
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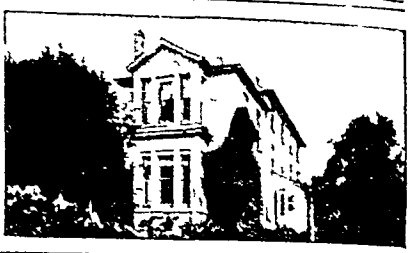
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Both Ladies and Gentlemen received.

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President—
The Most Hon the MARQUESS OF EXETER, C M G, C B E

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Private Nursing Home for Cases of Neurasthenia and allied Functional Nervous Disorders, for general Convalescent Cases, and those requiring Electrical Treatment

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Terms:

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Terms very moderate *Illustrated Brochure on application to The Secretary.*

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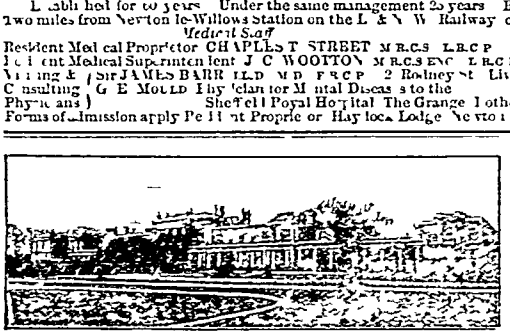
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Consulting Physicians { LIVERPOOL 4 Rodney St. Dr. STREET Thursday 2 till 4. Tel. 2170 Royal Liverpool
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For further particulars and Forms of Admission apply Resident Proprietor, Haydock Lodge, Newton-le-Willows. Telegrams, STREET, Ashton-in-Makerfield. Telephone, Ashton-in-Makerfield



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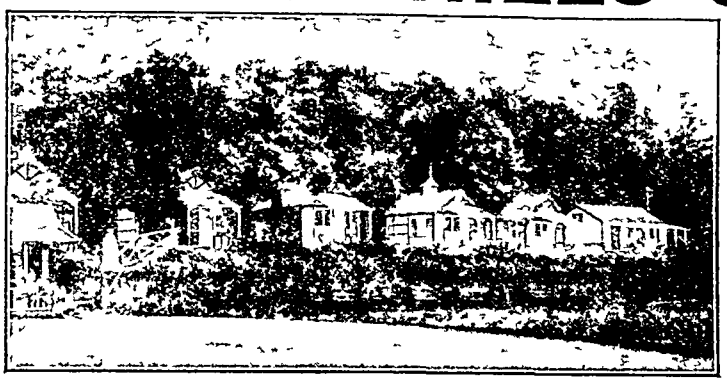
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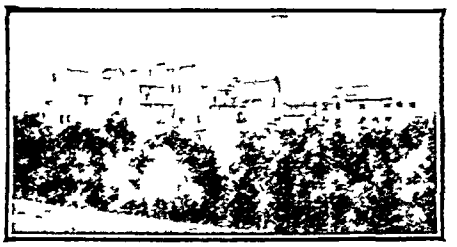
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AT MURTLE, ABERDEENSHIRE

Senior Physician Dr J M JOHNSTON

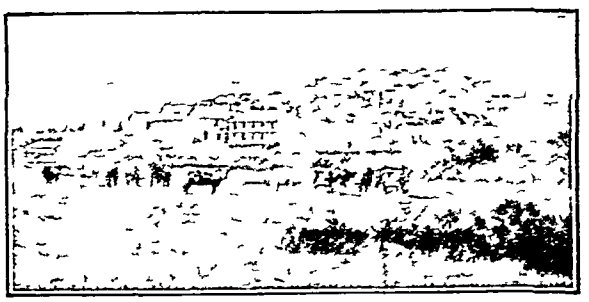
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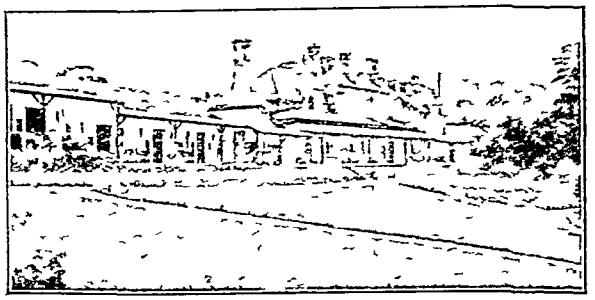
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Three private lessons £1 1s 0d Seven £2 2s 0d
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Primary F R C S (Eng.), 1906 24 - **115**
Final F.R.C.S. (Eng)., 1906 24 **83**
M.R.C.P. (Lond.), 1914 24 - **85**
D.P.H. (Various) 1906 24 (Completed Exam) **228**
F.R.C.S. (Edin.), 1918 24 - **22**
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M.D. (Dur.) (Practitioners) 1906 24 **33**
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Division of Tropical Medicine & Hygiene,
Endsleigh Gardens, N W 1.

Next Session will commence January 5th 1925
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The method is scientifically correct and perfectly effective —*Guy's Hospital Gazette*

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COURSES OF INSTRUCTION (lasting three months) for the Diploma and also in Veterinary Parasitology commence about SEPTEMBER 1st and JANUARY 7th —Prospectus from the Hon DEAN School of Tropical Medicine, University of Liverpool

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For Syllabus and further particulars apply to the Physician-Superintendent

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The Postal Courses are thoroughly clear concise and up to date and the test questions are carefully selected from those set at previous Examinations so as to embrace all parts of the subject By working systematically through the Course the Student is brought up to the examination standard in the minimum time and much unnecessary reading is saved

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Classes for the above examination will begin in January Fee for the whole course 16 guineas

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Further particulars can be obtained on application to the Dean, A E WEBB-JOHNSON, C B E, D S O, F R C S, or to the Secretary, R A FOTHERGILL, Berners Street, W 1

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SKILLED COACHING, GUIDANCE, and ADVICE from Special Tutors in conformity with the Regulations of the various Universities Apply for particulars and free booklet, Hints on Writing a Thesis for the M.D Degree" to the SECRETARY Medical Correspondence College 19 Welbeck Street London W 1

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Sound Education Upper and Lower School Preparation for candidates for all University Entrance Exams The Staff includes M A B A Higher Local (Camb) Inter B A Mus Bac L.R.A.M L.T.C.M B I E &c Games Coached by Variety Man Special Health Record Prospectus from Secretary

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SITUATION Between a large population providing clinical material and one of the best residential districts thus enabling students to live in close proximity to their work

CLINICAL UNITS IN MEDICINE AND SURGERY Certain members of the Medical and Surgical Staff devote their whole time to teaching and research

NEARLY 1000 BEDS available for teaching—additional clinical material being provided by affiliation to the Paddington Hospital and other Institutions

ENTRANCE and RESEARCH SCHOLARSHIPS to the value of £1,200 are awarded annually

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For further particulars and illustrated prospectus apply to the School Secretary

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NORTH EAST LONDON POST GRADUATE COLLEGE,

PRINCE OF WALES'S GENERAL HOSPITAL, N 15.

The Practice of the Hospital is entirely that of a Practitioners An Intensive Course will be held from February 1st to 7th For further particulars apply to A J WHITING M.D Dean

COMMISSIONS in the ROYAL ARMY MEDICAL CORPS.

An Examination for not less than 20 Commissions in the Royal Army Medical Corps will be held on January 28th, 1925

Applications to compete should be made to THE UNDER SECRETARY OF STATE, the War Office, not later than January 18th 1925 The presence of Candidates will be required in London from January 26th

Intending Candidates can obtain a full statement of the duties and emoluments of the Service on making a written application to THE UNDER SECRETARY OF STATE (A M D I) the War Office Whitehall London S W 1

The University of Adelaide.

MARKS LECTURESHIP IN APPLIED PHYSIOLOGY AND SHERIDAN FELLOWSHIP

Applications are invited from graduates in Medicine for the above position

Applicants are requested to submit testimonials, statement of academic qualifications published researches, and a recent photograph to the Vice Chancellor c/o Agent General for South Australia, Australia House Strand, London The envelope containing the application should be marked, "Application for Marks Lectureship" Applications will not be received later than January 31st, 1925

The Lecturer will carry out his work under the general direction of the Professor of Physiology and Biochemistry He will be required to lecture and conduct practical classes and demonstrations in Mammalian Physiology and in its applications to clinical Medicine, during two terms of approximately ten weeks each This course will form part of the third year of the Medical curriculum During the remainder of the academic year the incumbent will conduct research in Physiology and may from time to time be required to furnish a report on this research to the Council of the University

The salary will be £750 per annum If the successful candidate is appointed from beyond the Commonwealth of Australia the sum of £100 will be paid towards travelling expenses The appointment will be for a fixed term of years and will continue thereafter from year to year subject to six calendar months notice in writing on either side given on or before June 30th

The gentleman appointed will be expected to take up his duties in Adelaide at the beginning of the second term namely June 1st He will not be allowed to engage in private medical or surgical practice

Further information may be obtained from the Agent General for South Australia, Australia House Strand London

University of Sydney,

New South Wales

PROFESSORSHIP OF OBSTETRICS

The Senate of the University of Sydney invites applications for the Professorship of Obstetrics in the University, the salary attached to which is £1 100 per annum £150 will be allowed for travelling expenses from the British Isles The Professor will be expected to enter on his duties as soon as possible after the beginning of March next A memorandum giving fuller particulars of the appointment may be obtained on request to the Agent General for New South Wales Australia House Strand London, W C 2 who will receive applications for the position until Saturday, January 24th 1925

Applications (for which there is no special form) should be in quintuplicate and, if testimonials are submitted with the application they should be in quintuplicate also but original testimonials should not be sent by applicants

Leeds University

The Council will proceed shortly to the appointment of a DEMONSTRATOR in the Department of Pathology and Bacteriology at a salary of £300 a year Full particulars may be obtained from the Registrar the University Leeds who will receive applications up to January 5th 1925

The University of Manchester

The Council are about to appoint a LECTURER IN ANATOMY Stipend £500 per annum Last date for applications February 11th, 1925 Further particulars may be obtained from the Internal Registrar

Manchester Victoria

MEMORIAL JEWISH HOSPITAL require SUPERINTENDENT and SECRETARY with Hospital experience salary £350 per annum —Apply with credentials to R BARROW SICKLE, 60, Cross Street Manchester

University of Cape Town

Applications are invited for the post of ASSISTANT TO THE PROFESSOR OF BACTERIOLOGY

SALARY £500 per annum

ENGAGEMENT In the first instance for one year with the prospect of renewal subject to 6 months notice on either side Duties should be assumed on March 10th 1925

TRANSPORT The sum of £40 will be given on account of passage money

QUALIFICATIONS Candidates must hold a Degree or other qualification admitting to registration as a medical practitioner in the Union of South Africa preference given to candidates not over 35 years of age

Applications and copies of testimonials all in triplicate should be lodged with the SECRETARY Office of the Union of South Africa W C 2 (from whom further particulars as to qualifications for registration may be obtained) not later than January 8th, 1925

Stoke and Wolstanton Union.

RESIDENT MEDICAL OFFICER

Applications are invited from duly qualified gentlemen not less than 30 years of age, with experience in hospital administration for the appointment of Senior Resident Medical Officer at the Guardians Institution and Hospital London Road near Newcastle, Staffs The total accommodation at the Institution is approximately 1 000 beds The Hospital (which is a training School for Nurses) has accommodation for 400 patients in addition to which are separate Mental Wards accommodating 150 patients, and a Tuberculosis Pavilion to accommodate 50 patients is nearing completion The medical staff includes a Visiting [illegible] Aural Specialist, and [illegible] Masseur are also equipped with X ray [illegible] apparatus and has [illegible] Theatre

Salary after the rate of £600 per annum (no bonus) together with furnished house board, and [illegible] The [illegible] Poor

Applications stating age qualifications (with the dates [illegible] more t [illegible] to the [illegible]

Candidates will please refrain from canvassing the Guardians, either directly or indirectly

Union Offices T WOOD,
Stoke on Trent Clerk to the Guardians
December 11th 1924

Derbyshire Royal Infirmary,

Derby

APPOINTMENT OF HONORARY DENTAL SURGEON

The Board of Management invite applications for the office of Honorary Dental Surgeon to the Infirmary

Candidates must be qualified in accordance with the rules of the Institution

Any further information may be obtained on application at the Infirmary

Six copies of the application and testimonials (not more than five) must be sent to me not later than 12 o'clock on Thursday January 8th 1925

Candidates are prohibited from personal canvass, but may send copies of their application and testimonials to the Members of the Elective Committee

By order
WALTER BANKS
Dec 18th 1924 Superintendent & Secretary

Swansea County Borough

ASSISTANT MEDICAL OFFICER

The Swansea Borough [illegible] from duly qualified wor[illegible] for the Post of ASSISTA[illegible] to assist with medical services of the Corporation

Special experience of Ante Natal and Maternity work are desirable qualifications

Commencing salary £600 per annum

Form of applicat on and list of duties which can be obtained from Dr THOMAS EVANS Medical Officer of Health Public Health Offices Swansea, to be sent in not later than January 5th, 1925

Royal Hampshire County

HOSPITAL, Winchester

Applications are invited for the post of HONORARY ASSISTANT SURGEON Applicants must be Fellows of one of the Royal Colleges of Surgeons of Great Britain or Ireland or Graduates in Surgery of one of the Universities of Great Britain or Ireland and their names inserted in the Medical Register Applications with testimonials not exceeding three in number must reach the undersigned not later than January 12th 1925

By Order
HERBERT MASLEN Secretary

County of London.

The [illegible] for [illegible] MEDI[illegible] Hospitals Service Candidates must be not more than 35 years of age and must be registered to practise both in medicine and surgery in England Candidates appointed will be pensionable under the Asylums Officers Superannuation Act 1909 Preference will be given to candidates who served or offered to serve with H M Forces during the late [illegible] ing by annual increments without emoluments in addition to salary [illegible] remuneration about £432 a year Charges made for board lodging &c (at present £2 9s weekly) to such officers as are resident Full particulars and conditions of appointment on form of application (on which alone application can be made [illegible]

[illegible] quainted Applications must be received by 11 a m on Thursday, January 1st 1925

JAMES BIRD,
Clerk of the London County Council

Birmingham and Midland

EYE HOSPITAL

Applications are invited from duly qualified gentlemen for the post of RESIDENT SURGICAL OFFICER at the above hospital Salary £150 per annum

The Resident Staff also consists of two House Surgeons and in the event of one of these being promoted applicants should state whether they will be willing to accept the appointment of House Surgeon at a salary of £110 per annum

Applications, with testimonials and evidence of registration must be sent on or before Thursday, January 8th 1925 to the undersigned from whom any further information can be obtained

C A MASON, Gen Superintendent
Church Street Birmingham,
December 19th 1924

City of London Mental

HOSPITAL, near Dartford, Kent

SECOND ASSISTANT MEDICAL OFFICER required Preference will be given to applicant holding a diploma in psychological medicine Those not holding such a diploma must agree to obtain the same within a reasonable period Upon obtaining the same an increase of salary of £50 per annum will be granted

Salary £350 per annum (or £400 if applicant holds diploma in psychological medicine) rising by annual increments of £25 to £450 with board rooms, laundry and attendance

Deductions according to Superannuation Act 1909

Applicants must be male, single and fully qualified A previous resident appointment in a general hospital is desirable

Apply, by letter only, with three copies of testimonials, to the Medical Superintendent

London School of Hygiene

AND TROPICAL MEDICINE

(Division of Tropical Medicine and Hygiene)

Applications are invited for the vacant post of ASSISTANT IN HELMINTHOLOGY Salary £500 plus superannuation under the Universities Federated Superannuation Scheme Candidates must possess a Science Degree and a registrable qualification in Medicine or Veterinary Medicine

Applications stating the candidate's experience in teaching and research with copies of his scientific contributions and the names and addresses of not more than three persons to whom reference may be made should be received not later than January 1st 1925 by the Secretary London School of Hygiene and Tropical Medicine Offices Malet Street London W C 1 from whom further particulars may be obtained

London Temperance Hospital,

Hampstead Road, N W 1

Applications are invited from duly qualified men for the post of CASUALTY OFFICER The salary is £150 per annum with board and residence and the appointment is for six months dating from February 1st next

Applications with copies of testimonials not exceeding three in number should reach the undersigned on or before January 9th 1925

A C ADAMS Secretary

The Mount Vernon Hospital

FOR TUBERCULOSIS AND DISEASES OF THE LUNGS Northwood Middlesex

There is a vacancy for an ASSISTANT RESIDENT MEDICAL OFFICER six months appointment Salary at the rate of £200 per annum with board lodgings etc

Applications with not less than three copies of testimonials to the undersigned on or before January 10th, 1925

W J MORTON Secretary.

Offices 7 Fitzroy Square W 1.

APPOINTMENTS—Important Notice.

(a) British Islands.

Medical Practitioners are requested not to apply for any appointment referred to in the following table without having first communicated with the Medical Secretary of the British Medical Association 429, Strand, London, W.C.2

Town or District	Town or District	Town or District
CONTRACT PRACTICE.		
ENGLAND	**WALES** *(continued)*	**PUBLIC HEALTH** *(continued)*
CANNOCK CHASE AND DISTRICT (Collieries Friendly Societies Hospital Units)	OGMORE VALLEY GLAMORGAN (Llynfi Vale Colliery Medical Aid Society) (Workmen's Medical Scheme.)	LANARK COUNTY (Medical Officer of Health)
MIDDLESBOROUGH (Medical Aid Association or Workmen's Clubs)	TONDU & ABERKENFIG GLAMORGAN (Workmen's Medical Scheme.)	LINCOLN CITY EDUCATION AUTHORITY (Women Assistant School Medical Officer)
SOUTH BANK & ESTON (Medical Aid Associations or Workmen's Clubs)	**PUBLIC HEALTH.**	NORTHAMPTONSHIRE COUNTY COUNCIL (Medical Officer of Health and School Medical Officer)
WALES.	COVENTRY CITY (Assistant School Medical Officer)	NORTHUMBERLAND COUNTY COUNCIL (Woman Assistant Medical Officer of Health)
ABERTRIDWR GLAMORGAN (Workmen's Medical Scheme.)	DULVERTON UNION (Medical Officer of Workhouse and No. 1 District)	NUNEATON RURAL DISTRICT (Medical Officer of Health)
EBBW VALE MON (Workmen's Medical Scheme)	EAST FORTUNE SANATORIUM EAST LOTHIAN (Female Assistant Medical Officer)	SOUTHWARK METROPOLITAN BOROUGH (Tuberculosis Officer)
GILFACH GOCH GLAMORGAN (Workmen's Medical Scheme)	EAST SUFFOLK COUNTY EDUCATION COMMITTEE (Male Assistant School Medical Officer)	STIRLING ROYAL BURGH (Medical Officer of Health, Public Analyst, Inspector of Weights and Measures, Dairy Inspector, Port Medical Officer, Police Surgeon and Medical Attendant at Combination Poorhouse, Disinfecting Station)
NEW TREDEGAR AND LLANCAIACH VALE (NEW TREDEGAR) GLAMORGAN (Workmen's Medical Scheme)	KENT EDUCATION COMMITTEE (Woman School Medical Inspector)	WEST HAM COUNTY BOROUGH (Assistant School Medical Officer)
MARDY GLAMORGAN (Workmen's Medical Scheme)		WIGAN COUNTY BOROUGH (Assistant School Medical Officer)
OAKDALE MON (Medical Officer for Medical Aid Association)		YORKSHIRE NORTH RIDING (Assistant School Medical Officer)

(b) Colonial Medical Service.

WINDWARD ISLANDS MEDICAL SERVICE (Grenada with Curriacou & St. Vincent and St. Lucia)

(c) Overseas Appointments.

Medical Practitioners are requested not to apply for any appointment referred to in the following table without having first communicated with the Honorary Secretary of the Division or Branch named in the second column or with the Medical Secretary of the British Medical Association 429 Strand London, W.C.2

Town or District.	Hon. Sec. of Division or Branch	Town or District.	Hon. Sec. of Division or Branch	Town or District	Hon. Sec. of Division or Branch
NEW SOUTH WALES (*All Friendly Societies' Appointments.*)	Dr. R. H. TODD (Hon. Sec. New South Wales Branch) B.M.A. Building 30-34 Elizabeth Street, Sydney N.S.W.	QUEENSLAND (*Brisbane Associated Friendly Societies' Institute.*)	Dr. R. MARSHALL ALLAN (Hon. Sec. Queensland Branch) Adelaide Street Brisbane	VICTORIA (*All Institute or Medical Dispensaries.*)	Dr. FRANK DAVIES (Hon. Sec. Victorian Branch) Medical Society Hall B.M.A. Bourne, Victoria.
				WESTERN AUSTRALIA. (*Contract and Lodge Practices.*)	Hon. Sec. Western Australian Branch, No. 9 Bank of New South Wales Chambers, St. George's Terrace, Perth

Address 429 Strand, W.C.2.
December 22nd 1924

By Order of the Council of the British Medical Association.
ALFRED COX, Medical Secretary.

Norfolk & Norwich Hospital,
Norwich

Applications are invited for the following appointments which will be vacant on February 1st 1925:
HOUSE PHYSICIAN £150 per annum with board residence and laundry
HOUSE SURGEON £150 per annum, with board residence and laundry

[illegible] age, nationality etc. together with copies of testimonials to the undersigned not later than Friday January 9th 1925.

FRANK INCH
Secretary
December 16th 1924

West Bromwich and District Hospital. (100 Beds.)

Wanted a RESIDENT ASSISTANT HOUSE SURGEON (Male). He must be doubly qualified and unmarried. Salary £120 per annum with board residence and washing.

Applications stating age and if possessing a knowledge of Ophthalmic Surgery and accompanied by copies of testimonials should be sent to me on or before December 16th 1924.

By Order
FRANK I. HANCOCK
Secretary & Superintendent

St. Mary's Hospital,
London W.9

OPEN APPOINTMENT

Applications are invited for the post of MEDICAL SUPERINTENDENT.

The Medical Superintendent is the Senior Resident Medical Officer of the Hospital. His duties are administrative and professional and include the charge of certain beds.

Candidate must be qualified both in Medicine and Surgery and have held the post of Resident Medical Officer to some General Hospital.

Tenure of post — the appointment is for one year the holder being eligible for re-election for a second and third year.

Inclusive salary £400 per annum with board and residence provided.

The successful candidate will be expected to commence duty as soon as possible in January.

Applications to reach the undersigned not later than Wednesday December 31st 1924.

W. PARKES, Secretary.

St. Andrew's Hospital,
Dollis Hill, London.

Applications are invited for the post of additional HONORARY SURGEON FOR DISEASES OF THE THROAT, NOSE AND EAR.

Application with full particulars etc. to be sent to the Administrator St. Andrew's Hospital, Dollis Hill, London, N.W.2.

Chelsea Hospital for Women, Arthur Street, S.W.3.

There is a vacancy for a PATHOLOGIST (Gynæcological). Candidates must be graduates in Medicine of a recognized University, Fellows or Members of one of the Colleges of Physicians of England or Edinburgh or Medical Act and engaged in consulting practice only. There is an honorarium of £40 per annum. Applications for the above post must be sent accompanied by copies of three testimonials as not later than Friday January 2nd 1925 to the Secretary.

HERBERT H. JENNINGS

Princess Alice Hospital,
Eastbourne (90 Beds.)

Applications are invited for the post of MALE RESIDENT HOUSE SURGEON. Candidates must be unmarried and fully qualified. Duties to commence about January 14th next. The appointment will be for six months and may be extended. Salary will be at the rate of £175 p.a. If appointment extended salary will be at the rate of £200 p.a. Applications stating age qualifications and accompanied by no more than three copies of recent testimonials (typewritten) should be sent to the Secretary not later than December 30th.

Wanted—Assistantship by M B, Ch B (woman) aged 24 Two years Hospital experience — Medicine Gynæcology Children's Good Anæsthetist Can drive car—Address No 6379 BRITISH MEDICAL JOURNAL Office, 429, Strand W C 2

Wanted, Assistant £300 indoor for industrial town Cyclist state age height religion, and qualifications Usual bond — Address No 6381 BRITISH MEDICAL JOURNAL Office 429 Strand W C 2

Wanted—Assistant, indoor, single recently qualified for industrial Practice in the Midlands Motor-cyclist State particulars —Addres No 6376 BRITISH MEDICAL JOURNAL Office 429 Strand W C 2

Wanted, early in January, good indoor ASSISTANT in Welsh Colliery Practice Must be a sober, reliable single man and a Protestant. Good local hospital Salary £300 all round Interview essential Usual bond Address, with full particulars, references etc No 6374 BRITISH MEDICAL JOURNAL Office 429 Strand W C

Wanted by Scotch M B, aged 32 ASSISTANTSHIP with view to purchase, or six months PARTNERSHIP Introduction to sound general practice in good provincial town or near large city Can take full charge of practice Would suit doctor about to retire Income £1 000 to £1 400 —Add No 6212 B M J 429 Strand

Doctor's Widow, aged 28, requires post as SECRETARY Thorough knowledge shorthand typewriting, and secretarial duties Excellent references —Address No 5927, BRITISH MED JOURNAL Office 429 Strand W C 2

M.B, B Ch, unmarried, 3 years qualified, aged 28 ex H S and ex H P clinical clerk in Dublin lying in hospital desires ASSISTANTSHIP in a Practice with plenty of midwifery — Address, No 6373 BRITISH MEDICAL JOURNAL Office 429, Strand W C 2

M.R C S, L R C P (male), recently qualified desires post as ASSISTANT to general practitioner in order to gain experience Small salary only expected — Address No 6375 BRITISH MEDICAL JOURNAL Office, 429 Strand W C 2

M.B., Ch B (Glas.), male, married aged 32, desires ASSISTANTSHIP abroad, immediately Recently graduated Ambitious, keen, energetic Tall good appearance Excellent testimonials —Address, Ross, 409 Great Western Road, Glasgow

M.B, Ch B (G.), male, single, Scotch set 28, abstainer, desires ASSISTANTSHIP Indoor or outdoor Long Locum entertained Keen energetic cyclist drives car good testimonials England preferred Free — Address, No 6382 B M J Office 429, Strand W C

M.B, B Ch, B A O (woman), Ex H S *Post-Graduate work in Obstetrics* L M Dublin) SEEKS APPOINTMENT Hospital or other —Address No 6380 BRITISH MEDICAL JOURNAL Office 429 Strand W C 2

Medical Officer required by large Company in the East Three years' agreement Salary approximately £750 per annum with free furnished quarters and passage Applicants should be under 30 years of age and preferably unmarried —Reply giving full particulars of qualifications and experience to Box H REGENT ADVERTISING SERVICE, Ltd., 4, London Wall Buildings L C

Part-time Assistantship desired, in Edinburgh or Suburbs by M B, Ch B Edin honours) aged 29 excel testimonials 1 months experience G P Wishes attend Infirmary morning for extra experience spec subjects Free Dec 24th —Add No 6378 B M J 429 Strand W C

FOR LOCUM TENENS APPLY TO
MR PERCIVAL TURNER
The oldest and only Agent who for 10 years has supplied substitutes at short notice without fee to principals
4, ADAM ST STRAND, LONDON, W C 2
Teleg 'Epsomian, London Phone Gerrard 399

Locum wanted — Motor- cyclist January 6th to February 10th Light work No mids booked Near London Five guineas per week References required — Address No 6370 BRITISH MEDICAL JOURNAL Office 429 Strand, W C 2

FOR A RELIABLE
LOCUM TENENS OR ASSISTANT
APPLY TO
ARNOLD & SONS,
(JOHN BELL & CROYDEN, LTD)
50/2, WIGMORE STREET, W 1
Mr W H GRANT Manager
Telephone LANGHAM 3000 *Telegrams* INSTRUMENTS WESDO LONDON

Wanted — Partnership by Scottish graduate, aged 29 height 5ft 9in Protestant 1½ years experience G P Well received Really good references House to rent essential Capital —Address No 6377 BRITISH MEDICAL JOURNAL Office 429 Strand W C

Wanted by M B Camb, F R C S, D P H aged 33 a good class PARTNERSHIP in the South of England Income £800 up Now free and can pay cash —' C c/o BLUNDELL & Co 22, Craven St Strand, W C 2

Partner wanted —Short Preliminary Assistantship Must be capable Surgeon, preferably F R C S South Coast town Sussex —Address full details to No 5419 BRITISH MEDICAL JOURNAL Office 429 Strand, W C 2

Partner wanted, preliminary Assistantship North of England Must be capable surgeon graduate and F R C S Good class *practice No panel Share for sale about £850* years purchase No agents —Address No 6310 BRITISH MEDICAL JOURNAL Office 429 Strand W C

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December 9th 1924

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By order
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December 9th 1924

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East Coast—Practice in beautiful seaside place Receipts £1,500 Schools golf etc Panel 850 Appointments £80 Good detached house with large garden on lease

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EASTERN COUNTIES —(24) Very old established increasing Country Town PRACTICE about £3 000 House (8 bed and dressing rooms), with good garden, Premium £4 000 £450, Great

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YORKSHIRE (WEST RIDING) —(27) PARTNERSHIP in Country well established increasing Practice about £2,600 in Country Town No panel Not much midwifery Premium one third share £1,670 one half later) Incoming Partner should be aged about 30 at kitchen ab-1000

SOUTH OF ENGLAND —(28) PARTNER required Fees very sound old established Practice in Seaport Town Panel under Share worth £700 to £800 at two years purchase Partner must apply and energetic and not much over 30

YORK (near) —(29) Unopposed Country PRACTICE between £700 and £800 p a (£240 of which is panel), in picturesque growing Village Model detached house with garden Garage electric bath (h & c) etc for sale Premium one and a half years purchase

INLAND HEALTH RESORT —(30) Well established PRACTICE £1 800 including panel £2 400 House (6 or 8 bedrooms) price £700 Premium for practice £2 400

LONDON, S W —(31) Well established PRACTICE £600 to £700 p a in favourite Residential Suburb Panel about much midwifery Excellent detached house (6 bedrooms) with good garden for Sale Ample scope Premium one and a half years purchase

EAST ANGLIA —(32) Old established unopposed Country PRACTICE averaging £3 845 p a in picturesque part, easy distance important Town Panel about 2 200 Good house (6 bedrooms) in ground about 1 acres to be sold Considerable scope for increase Premium one and a half years purchase

WEST OF ENGLAND —(33) Well-established PRACTICE averaging £1 240 p a in important City Panel 1 000 Midwifery discouraged Specially built house (brick and grossing room) Price £2 00 part on mortgage Premium for Practice £1 800 to include Fittings

FAVOURITE HOME COUNTY —(34) PARTNERSHIP in well established Practice £2 300 p a in charming and select County Town Panel 1 000 Premium one half to one two years purchase Cottage Ho puts

NORTH OF ENGLAND. — (35) Old established PRACTICE of £1 460 p a in Industrial District Panel 810 good house (5 bedrooms) in charming grounds two acres Premium practice house and grounds £4 000 Mortgage could be had on house

SOUTH WALES —(36) Well-established PRACTICE £1 250 p a in Country Town Panel over 500 Fees 5s to £2 2 situated double fronted house (6 bedrooms) with large garden Rent £60 Educational facilities Premium £1 500

EASTERN COUNTIES —(37) Old established PRACTICE £1 855 p a in pleasant Market Town Panel 1 100 Very good garden Cottage Hospital lent detached house (7 bedrooms) Premium one and a half years purchase

YORKSHIRE (WEST RIDING) —(38) Practice in £1 500 p a, in thriving Industrial Town Panel 1, over (5 bedrooms) Rent £80 Premium £2 250 ACTICE Good hous

SOUTH WALES —(39) Very old established PRACTICE over £1 550, in beautifully situated Cathedral Town Panel nearly 10 Fine old mansion house with half acre garden to be sold Good school and sport Premium £2 250

WEST OF ENGLAND —(40) Assistantship with view to partnership in mixed practice of over £2 800 p a in Country Town Panel 850 One fourth or one third share at two years purchase Applicants should be keen on surgery Hospital in town

SOUTH OF ENGLAND —(41) PARTNERSHIP in good class non panel practice of about £2 500 in beautifully situated country town Applicants should be Oxford or Cambridge Graduates and preferably F R C S Eng

FIRST-RATE RESIDENTIAL DISTRICT up the THAMES —(42) PARTNERSHIP in good class Practice averaging £1 550 p a Not much Midwifery Good house, with garage, to be Premium one half share £1 200

RESIDENT P[illegible] TRODUCED.

RESIDENT PARTNERSHIPS for Boys

UM TENENS SUPPLIED

d Tutors in all parts of the Country and Abroad recommended for

EDICAL PARTNERSHIPS, PRACTICES AND ASSISTANTSHIPS

All enquiries to be addressed to

dical Association, at their Office, No 4[illegible]3 Strand, in the Parish of St

Ludlam [illegible] Manager

ACTICE of £1 80[illegible] Population 1[illegible]

on good roads Rent [illegible]

£1 500 including furniture

asers stating their requir[illegible]

particulars of other Practices

KEY TO DATES AND PAGES

THE following table giving a key to the dates of issue and the page numbers of the BRITISH MEDICAL JOURNAL and SUPPLEMENT in the second volume for 1924 may prove convenient to readers in search of a reference

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